

**THE DISTRICT OF COLUMBIA  
WATER QUALITY ASSESSMENT**

2014 INTEGRATED REPORT TO THE US ENVIRONMENTAL PROTECTION AGENCY  
AND CONGRESS PURSUANT TO  
SECTIONS 305(b) AND 303(d) CLEAN WATER ACT (P.L. 97-117)

District Department of the Environment  
Natural Resources Administration  
Water Quality Division



## PREFACE

The Water Quality Division of the District of Columbia's District Department of the Environment, Natural Resources Administration, prepared this report to satisfy the listing requirements of §303(d) and the reporting requirements of §305(b) of the federal Clean Water Act (P.L. 97-117). The report provides water quality information on the District of Columbia's surface and ground waters that were assessed during 2012-2013 and updates the water quality information required by law. Various programs in the Natural Resources Administration contributed to this report including the Fisheries and Wildlife Division, the Stormwater Management Division, and the Watershed Protection Division. The Lead and Healthy Housing Division, Environmental Protection Administration also contributed to this report.

Questions or comments regarding this report should be forwarded to the address below.

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## ACRONYMS

ARRA	American Recovery and Reinvestment Act
BMP	Best management practice
CBP	Chesapeake Bay Program
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CPUE	Catch per unit effort
C&O	Chesapeake and Ohio
CPDA	Canal Park Development Association
CSO	Combined Sewer Overflow
DCEEC	District of Columbia Environmental Education Consortium
DCPS	District of Columbia Public Schools
DCRA	Department of Consumer and Regulatory Affairs
DC WASA	District of Columbia Water and Sewer Authority
DDOE	District Department of the Environment
DDOT	District Department of Transportation
District	District of Columbia
DMPED	Deputy Mayor for Planning and Economic Development
DO	Dissolved oxygen
DOD	Department of Defense
DMR	District Municipal Regulation
DPR	Department of Parks and Recreation
EA	Environmental assessment
EISF	Environment Impact Screening Form
FEMA	Federal Emergency Management Agency
FUDS	Formally Used Defense Sites
FWD	Fisheries and Wildlife Division
FY	Fiscal year
GIS	Geographic information system
GWPP	Ground water protection program
HBI	Hilsenhoff Biotic Index
HSEMA	Homeland Security and Emergency Management Agency
IPM	Integrated Pest Management
JD	Jurisdictional Determination
LCR	Lead and Copper Rule
LID	Low impact development
LMB	Largemouth Bass
LTCP	Long Term Control Plan
LUST	Leaking underground storage tank
MAB	Monitoring and Assessment Branch

MD	Maryland
MDE	Maryland Department of the Environment
MGD	Million gallons per day
MOU	Memorandum of understanding
MS4	Municipal Separate Storm Sewer System
MSGP	Multi-Sector General Permit
MSL	Mean sea level
MWCOG	Metropolitan Washington Council of Governments
NE	Northeast
NFWF	National Fish and Wildlife Foundation
NPDES	National Pollutant Discharge Elimination System
NPS	US National Park Service
NSMP	Nonpoint Source Management Plan
NRCS	Natural Resources Conservation Service
NWP	Nationwide Permits Program
PCS	Public Charter School
RBP	Rapid bioassessment protocol
RCRA	Resource Conservation and Recovery Act
RSC	Regenerative stormwater conveyance
RSH	River Smart Homes
SAV	Submerged aquatic vegetation
SF	Square feet
SWAP	Source water assessment program
SWMD	Stormwater Management Division
SWPPP	Stormwater Pollution Prevention Plan
TMDL	Total maximum daily load
US	United States
US ACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
US EPA	United States Environmental Protection Agency
US FWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	Underground storage tanks
VA	Virginia
VCP	Voluntary cleanup program
WLA	Waste load allocation
WIP	Watershed Implementation Plan
WPD	Watershed Protection Division
WQD	Water Quality Division
WQS	Water quality standards
WWTP	Wastewater treatment plant

## **PART I: EXECUTIVE SUMMARY**

The District of Columbia 2014 Integrated Report provides information on the quality of the District's water. The Integrated Report combines the comprehensive biennial reporting requirements of the Clean Water Act's Section 305(b) and the Section 303(d) listing of waters for which total maximum daily loads (TMDLs) maybe required.

### **District of Columbia Water Quality**

Thirty-six waterbody segments were monitored for the goals of the Clean Water Act that apply to the District. Each of the waterbodies has been assigned designated uses in the District's water quality standards. The standards also outline numeric and narrative criteria that must be met if a waterbody is to support its uses. Various types of water quality data collected during the period of 2009 to 2013 were evaluated to assess use support of the waterbodies. The evaluation found that the designated uses that directly relate to human use of the District's waters were generally not supported. The uses related to the quality of habitat for aquatic life were not supported. No waterbody monitored by the Water Quality Division fully supported all of its designated uses. The water quality of the District's waterbodies continues to be impaired.

Tables 1.1 to 1.3 show the degree to which the waters of the District supported their designated uses. Appendices 3.4 to 3.8 are maps showing the degree to which those waters met their uses.

Groundwater is not monitored on the same basis as surface water. This is partly due to the fact that surface water north of the District's boundary, not groundwater, is the drinking water source for the District. However, groundwater quality is scrutinized via compliance monitoring and on-going studies.

**TABLE 1.1  
DESIGNATED USE SUPPORT BY RIVERS OR STREAMS**

Waterbody Type: River, Streams	Degree of Use Support			
	Supporting (mi)	Not Supporting (mi)	Insufficient Information (mi)	Not Assessed (mi)
Overall Use *	-	38.4	-	-
Swimmable Use	-	-	33.5	4.9
Secondary Contact Recreation Use	-	-	-	38.4
Aquatic Life Use	-	34.1	4.3	-
Fish Consumption Use		38.4		-
Navigation Use	9.50	-	-	28.9*

\* = not a designated use

**TABLE 1.2  
DESIGNATED USE SUPPORT BY LAKES**

Waterbody Type: Lake, reservoir	Degree of Use Support			
	Supporting (ac)	Not Supporting (ac)	Insufficient Information (ac)	Not Assessed (ac)
Overall Use *	-	238.4	-	-
Swimmable Use	-	238.4	-	-
Secondary Contact Recreation Use	-	-	-	238.4
Aquatic Life Use	-	238.4	-	-
Fish Consumption Use	-	238.4	-	-
Navigation Use	238.4	-	-	-

\* = not a designated use

**TABLE 1.3  
DESIGNATED USE SUPPORT BY ESTUARIES**

Waterbody Type: Estuary	Degree of Use Support			
	Supporting (mi <sup>2</sup> )	Not Supporting (mi <sup>2</sup> )	Insufficient Information (mi <sup>2</sup> )	Not Assessed (mi <sup>2</sup> )
Overall Use *	-	5.93	-	-
Swimmable Use	-	-	5.93	-
Secondary Contact Recreation Use	-	0.8	-	5.13
Aquatic Life Use	4.15	1.78	-	-
Fish Consumption Use	-	5.93	-	-
Navigation Use	5.93	-	-	-

\* = not a designated use

## **Causes and Sources of Water Quality Impairment**

The major causes of impairment to the District's rivers, lakes, and estuaries are organic enrichment/low dissolved oxygen (DO).

The sources with major impacts on District waters are combined sewer overflows (CSO), and urban runoff/storm sewers. Municipal point sources on the estuaries also have a major impact. Rivers and streams are also impacted by bacteria and toxics.

## **Programs to Correct Impairment**

Several programs within the District Department of the Environment (DDOE), Natural Resources Administration (NRA) are involved in activities to correct water quality impairment through the following programs:

- Water pollution control program;
- Sediment and stormwater control program;
- Nonpoint source program; and
- Groundwater protection program.

The water pollution control program implements the water quality standards, monitors and inspects permitted facilities in the District, and comprehensively monitors the District's waters to identify and reduce impairment. The water pollution control program is involved in the search for solutions that will provide maximum water quality benefits.

Given the District's urban landscape, nonpoint source pollution has a large impact on its waters. The sediment and stormwater control program regulates land disturbing activities, stormwater management, and flood plain management by providing technical assistance and inspections throughout the city. The District is also conducting stream restoration activities to improve habitat as well as implementing a RiverSmart program to reduce polluted runoff. The nonpoint source program also provides education and outreach to residents and developers on pollution prevention to ensure that their actions do not further impair the city's water quality.

Several activities are coordinated within the groundwater protection program. Those activities include underground storage tank installation and remediation, and groundwater quality standards implementation.

Construction of the Anacostia River segment of the stormwater storage tunnel of the District's CSO Long Term Control Plan (LTCP) has begun. The plan involves the construction of large

underground tunnels that will serve as collection and retention systems for combined sewage during high flow conditions. Under a 2005 Agreement, the LTCP will be implemented over a 20 year period.

### **Water Quality Trends**

Both of the main waterbodies, the Potomac and Anacostia Rivers support fish and other wildlife populations. But the small streams aquatic communities are still stressed. The Potomac River continues to benefit from the CSO improvements and the implementation of improvements and biological nutrient removal at the Blue Plains wastewater treatment plant. The Anacostia River remains aesthetically and chemically polluted. Much remains to be done.

There have been considerable changes in the submerged aquatic vegetation (SAV) attributes from year to year including; species diversity, cover density, and total acreage values for the grass beds that are observed. The one thing that has remained consistent is the direct relationship that exists between the relative abundance of certain fish species, and the presence or absence of viable SAV beds.

### **Highlights**

Low impact development (LID) projects to improve the quality and reduce the quantity of stormwater runoff are being implemented throughout the city. Projects such as rain gardens, green roofs, rain barrels, and school yard conservation sites continue to be installed or planned.

Stream survey activities occurred during 2012-2013. Information gathered will help to track trends for the streams. Real-time monitoring stations are located on both the Anacostia and Potomac Rivers. This monitoring activity allows web-based viewing of water quality parameters by the general public on an on-going basis.

## PART II: BACKGROUND

The Government of the District of Columbia's environmental protection responsibilities are delegated to DDOE. DDOE's Natural Resources Administration (NRA) is comprised of the Fisheries and Wildlife Division (FWD), the Stormwater Management Division (SWMD), the Water Quality Division (WQD), and the Watershed Protection Division (WPD).

### Atlas and Total Waters

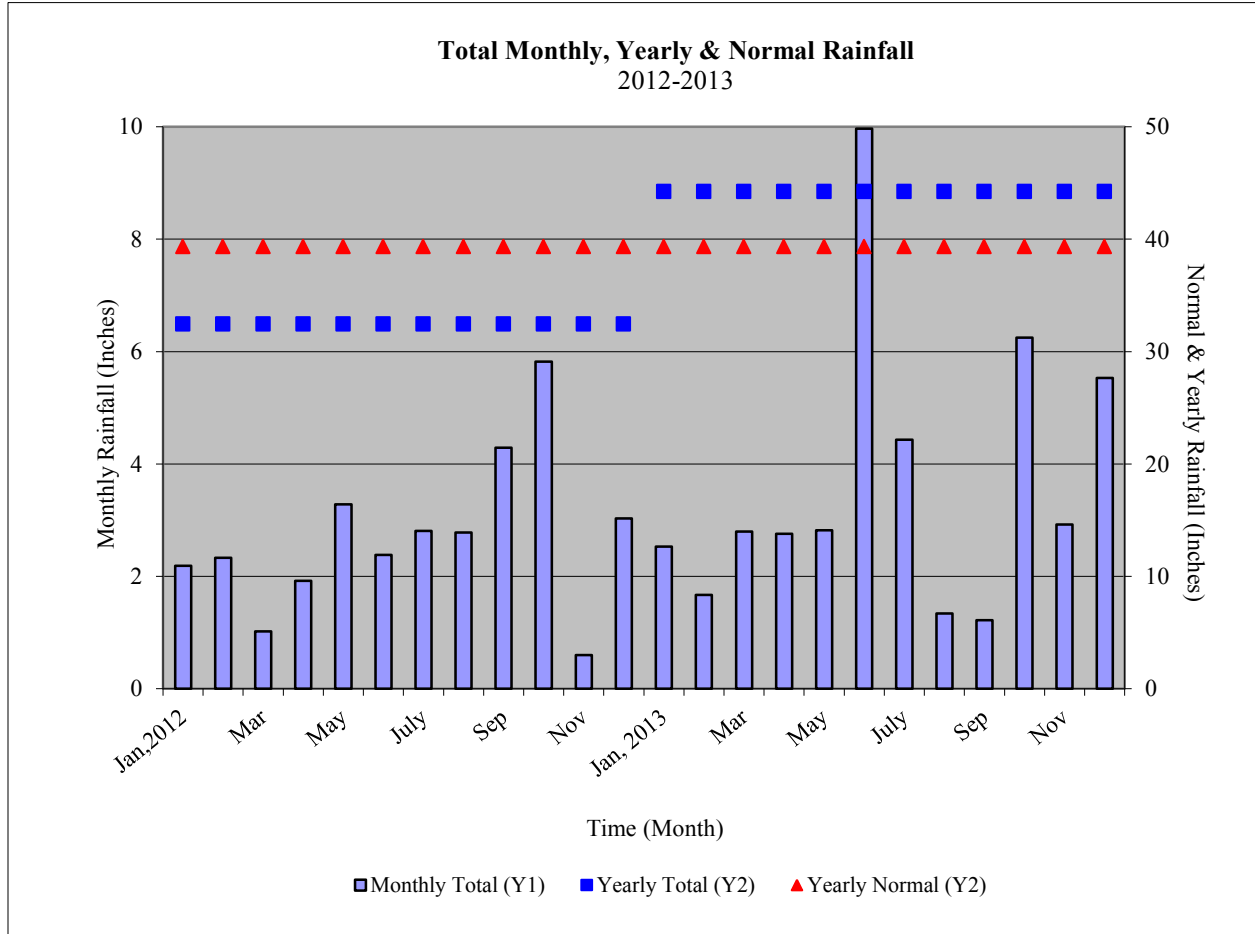
Table 2.1 is a general view of the resources of the District. Figure 2.1 is the monthly and yearly total rainfall graph. The District's rainfall totals were above average for last year. (The National Weather Service, Washington National Airport (the official rain gauge site) is the source for the rainfall totals). Figures 2.2 and 2.3 present monthly and yearly mean flow data for the Anacostia and Potomac Rivers, from 2012-2013 (Source: United States Geological Survey (USGS)).

**TABLE 2.1**  
**ATLAS**

State population: 601,723 (2010 Census)
State surface area: 69 square miles
Number of water basins: one
Total number of river miles: 39 miles
Number of perennial river miles: 39 miles
- Number of intermittent stream miles: none
- Number of ditches and canals: none <sup>1</sup>
- Number of border miles: none
Number of lakes, reservoirs, ponds: eight
Acres of lakes/reservoirs/ponds: 238 acres
Square miles of estuaries/harbors/bays: 6.1 square miles <sup>1</sup>
Acres of freshwater tidal wetlands: 180 <sup>2</sup>
Names of border waterbodies: Potomac River estuary
Number of border estuary miles: 12.5 miles

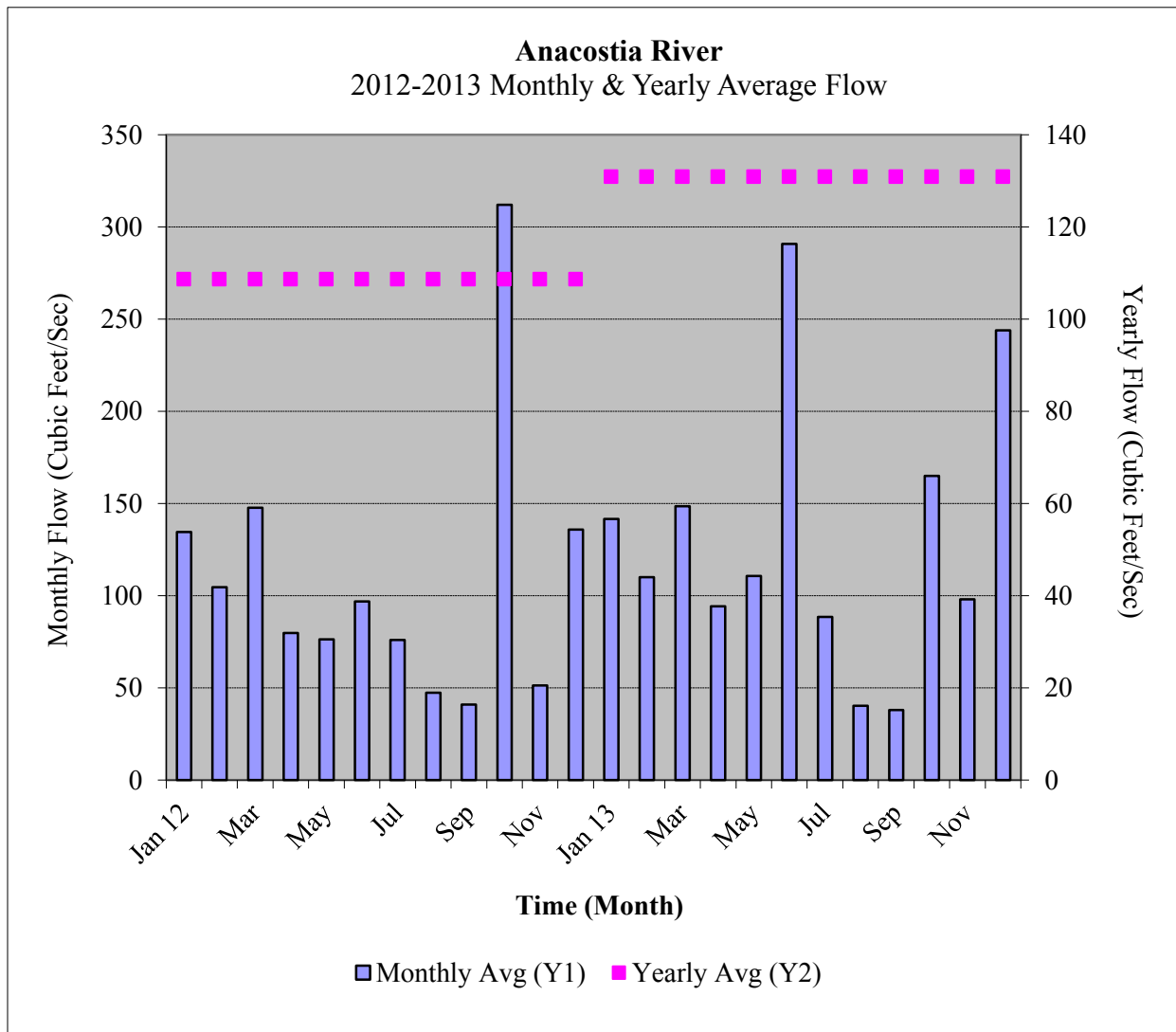
<sup>1</sup>Impoundments are classified according to their hydrologic behavior. The District classifies the C&O Canal as a lake. The estuary estimate includes the Washington Ship Channel, the Channel Lagoon, and Little River.

<sup>2</sup>This total is compiled from the District's Watershed Protection Division.



**Figure 2.1:** Monthly, yearly and normal total rainfall (inches), 2012-2013 (Source: National Weather Service, Reagan National Airport)





**Figure 2.2:** Monthly and yearly average flow on the Anacostia River, 2012-2013 (Source: USGS)

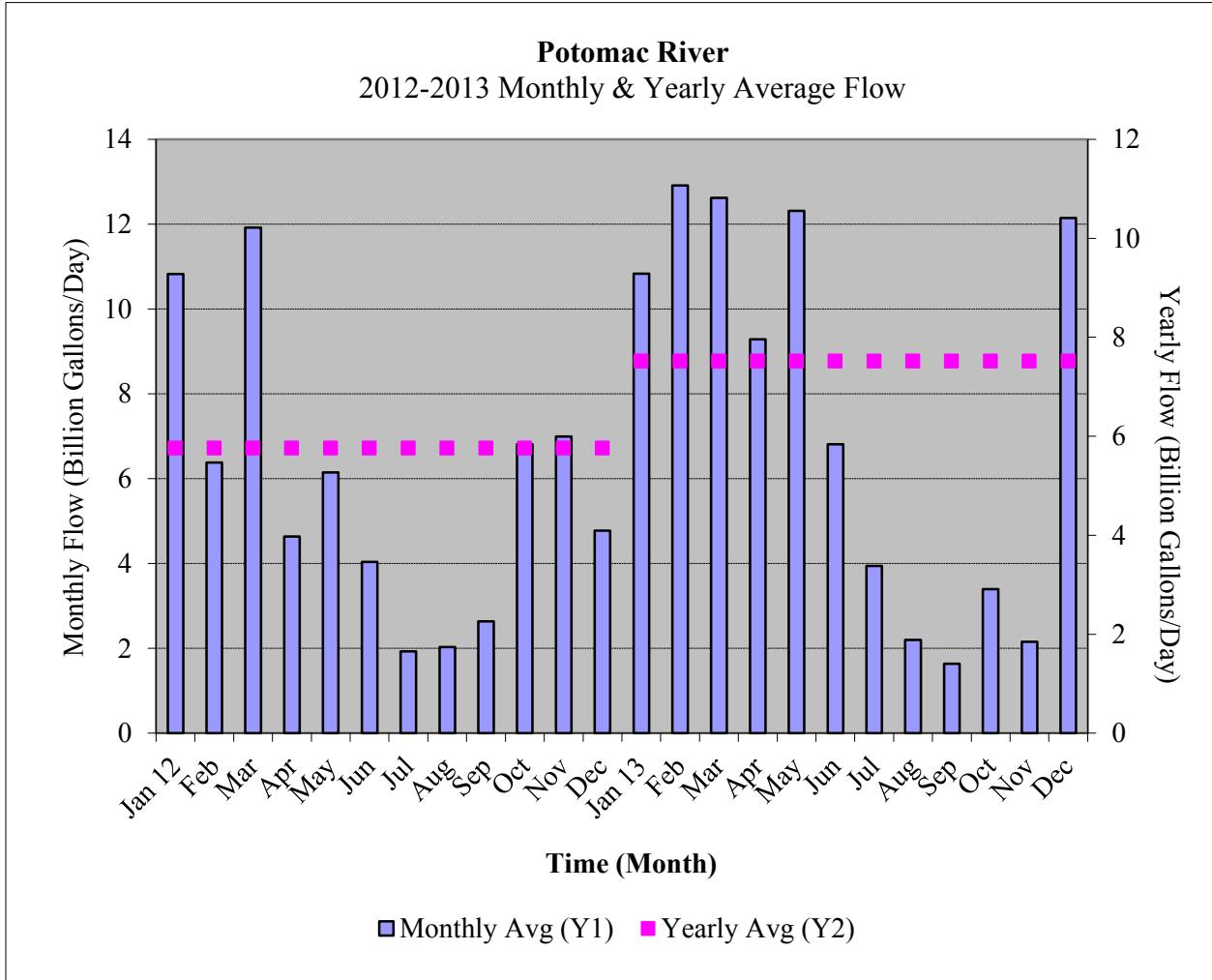


Figure 2.3: Monthly and yearly average flow on the Potomac River, 2012-2013 (Source: USGS)

## Maps

Appendix 2.1 is a map outlining the major watersheds within the District.

## Water Pollution Control Programs

### Watershed Approach

The mission of the District's Nonpoint Source Program is to prevent and control nonpoint source pollution in the District's watersheds. Employing both regulatory and non-regulatory approaches, the Program works to safeguard the District's water and soil resources as well as the health and welfare of citizens using those resources.

The creation of this watershed approach report is written in response to the Integrated Report. This report documents the progress made in 2012 and 2013 by the District in implementing its Nonpoint Source Management Plan. As in previous biennial years report, the District's Nonpoint Source Program has made significant progress towards achieving its short and long-term goals. Long-term goals and short-term milestones to mark progress toward those goals are outlined in the *District Nonpoint Source Management Plan II: Addressing Polluted Runoff in an Urban Environment* (2000). The Plan is aimed at reducing nonpoint source pollution from urban runoff, construction, and hydrologic/habitat modification and includes:

- Supporting activities that reduce pollutant loads from urban runoff, construction activity, combined sewer overflows and trash disposal for the purpose of attaining present designated uses by 2015 and future designated uses by 2025;
- Supporting programs and activities that strive to restore and maintain healthy natural habitat, species diversity and necessary base flow to all of the Anacostia River tributaries by 2015 and to all surface waters of the District of Columbia by 2025 by restoring degraded watersheds and preserving healthy ones;
- Coordinating the District Nonpoint Source Program efforts with other District, federal, not-for-profit, environmental advocacy, private sector programs and adjoining jurisdictions to deliver the best possible nonpoint source pollution prevention and control services in the District, with the resources available; and
- Carrying out effective information and education campaigns on nonpoint source pollution prevention to targeted audiences who live, work, teach or visit in the District and its watersheds, reaching at least ten thousand (10,000) individuals each year.

The District's Nonpoint source management program has also created three detailed Watershed Implementation Plans (WIPs) for three major watersheds in the District. These plans, the *Oxon Run WIP* (2010), the *Rock Creek WIP* (2010) and the *Anacostia River WIP* (2012) have been approved by EPA. Additionally, the District participated in the development of the Army Corps of Engineers (USACE) facilitated Anacostia Watershed Restoration Plan which was released to the public in April of 2010. These plans lay out waterbody impairments, technically appropriate implementation projects, and timelines that guide DDOE in its work.

DDOE assesses the health of all significant waterbodies in the District, and prioritizes water quality improvement efforts based on data gathered from water quality monitoring. DDOE then characterizes waterbody impairments and threats; these characterizations are included in the District's Section 305(b) of the Integrated Report as required by the federal CWA. The report describe many of the District waterbodies as not supporting their swimmable (primary contact) and fishable (fish consumption) designated uses.

WPD continues to coordinate with several District stakeholders including the National Park Service (NPS), the District Department of Parks and Recreation (DPR), the District Department of Transportation (DDOT), the District Office of Planning (OP), the Anacostia Watershed Society, and the Casey Trees Endowment. Since the inception of the EPA's Chesapeake Bay Program (CBP) the District has been an active participant. The program is a public-private partnership consisting of governments in Pennsylvania, Maryland, Virginia, the District of Columbia, the Chesapeake Bay Commission, EPA, citizens, and businesses. Begun in 1983 with the first Chesapeake Bay Agreement, the purpose of the program is to develop and implement coordinated plans to improve and protect the living resources of the Bay.

The District participates in many of the committees, subcommittees and work groups of the Bay Program. On December 3, 2001, the Mayor, along with the other signatories, signed the Chesapeake 2000 Agreement that guides the program until 2010. The District of Columbia sees its participation in the CBP as a way to help restore the Bay and to secure resources and inter-jurisdictional support to clean up its waters which drain into the Bay.

The watershed approach is central to the current effort to restore the Anacostia River. Although the tidal portion of the river is within the District, it is fed by two major tributaries in Maryland, the Northeast and Northwest Branches, which are the main sources of fresh water to the river. The branches drain Montgomery and Prince George's Counties in Maryland. The Anacostia River watershed approach began with the signing of the Anacostia Watershed Restoration Agreement in 1987 by the Mayor of the District of Columbia and the Governor of Maryland.

Since 1987, both parties have reaffirmed their commitment to the Anacostia River cleanup on several occasions. The latest agreement was on May 10, 2001. On December 31, 2001, the signatories to this agreement signed a document that sets targets to measure progress for a restored Anacostia River. From these two agreements, the Metropolitan Washington Council of Governments (MWCOCG) established the Anacostia Watershed Restoration Committee to help coordinate regional efforts to restore the river.

In June 2006, MWCOCG in partnership with the Anacostia jurisdictions established a new Anacostia Restoration Partnership. The structure of the partnership includes a Leadership Council, Steering Committee, and Management Committee (revamped Anacostia Watershed Restoration Committee). The partnership is responsible for the development and tracking of a Comprehensive Anacostia Watershed Restoration Plan.

## Water Quality Standards Program

DDOE conducted its triennial review of the District’s water quality standards (WQS) as required by Section 303(c) of the CWA (33 U.S.C. § 1313 (c)) and the District’s Water Pollution Control Act of 1984. During the 2013 triennial review the District revised aquatic life numeric criteria for acrolein from 10.0 µg/L to 3.0 µg/L and also established aquatic life numeric criteria for carbaryl pesticide. The change was based on EPA toxicity data and other information on the effects of acrolein and carbaryl that were obtained from EPA’s internal and external peer review, including scientific input from the public. The new criteria will protect most aquatic species from adverse effects due to their exposure. The final rulemaking of the 2013 WQS has been approved by EPA Region III.

## Point Source Program

### National Pollutant Discharge Elimination System (NPDES) Permits

#### Background

Currently, there are eleven facilities (see Table 2.2) in the District which have been issued individual (site-specific) industrial discharge permits by EPA under the NPDES program. The Wastewater Treatment Plant (WWTP) operated by DC Water (previously known as District of Columbia Water and Sewer Authority (DC WASA)) continues to be the major discharger. The WWTP, along with other industrial NPDES permitted facilities, are frequently inspected to insure compliance with permit conditions and the District’s WQS.

**TABLE 2.2  
NPDES PERMITTED FACILITIES IN THE DISTRICT OF COLUMBIA**

<b>Permittee/Facility</b>	<b>Permit No</b>	<b>Current Status</b>	<b>Inspection Frequency</b>
Washington Aqueduct – Dalecarlia Plant	DC0000019	Major	once a year
Potomac Electric Power Company (PEPCO), Benning Road	DC0000094	Major	once a year
D.C. Water and Sewer Authority (WASA), Blue Plains AWTP	DC0021199	Major	once a year
Mirant Potomac River, LLC	DC0022004	Major	once a year
Government of the District of Columbia – MS4	DC0000221	Major	varies
CMDT Naval District Washington, DC	DC0000141	Minor	once every 3 years
Super Concrete Corporation	DC0000175	Minor	once every 3 years
John F. Kennedy Center for the Performing Arts	DC0000248	Minor	once every 3 years
Washington Metropolitan Area Transit Authority (WMATA)	DC0000337	Minor	once every 3 years

World War II Veterans Memorial	DC0000345	Minor	once every 3 years
Walter Reed Army Medical Center	DC0000361	Minor	once every 3 years

### Compliance Inspections

WQD conducts periodic compliance inspections of facilities that have been issued an NPDES permit in accordance with annual NPDES Permitting and Enforcement work plans that are submitted to EPA. Compliance inspections are recognized as a vital part of the District's NPDES Program. Appropriate enforcement actions are recommended to EPA for violations and/or deficiencies noted during the compliance inspections. Inspection violations/ deficiencies which do not require a formal enforcement action are handled at the time of the inspection.

The objective of the NPDES Compliance Inspection Program is to provide a level of inspection coverage necessary to assess permit compliance and develop enforcement documentation. The District of Columbia NPDES Compliance Inspection Program generally conducts only Compliance Evaluation Inspections (CEI), but may perform Compliance Sampling Inspection (CSI) if required. The CEI is an inspection designed to verify permittee's compliance with applicable permit effluent limits, self-monitoring requirements and compliance schedules. This inspection involves records reviews, visual observations, and evaluations of the treatment facilities, effluent, receiving waters and disposal practices. The CEI may be a non-sampling or sampling inspection in which sample types other than those required for permittee self-monitoring are collected. From January 2012 to December 2013, the WQD conducted fifteen compliance inspections at the facilities listed in Table 2.3

**TABLE 2.3  
NPDES PERMITTED FACILITIES INSPECTED**

<b>NPDES ID</b>	<b>Permit Name</b>	<b>Type of Facility</b>
DC0000019	Washington Aqueduct - Dalecarlia Plant	Major
DC0000094	PEPCO Environment Management Services	Major
DC0021199	D.C. WASA (Blue Plains)	Major
DC0022004	Mirant Potomac River L.L.C.	Major
DC0000141	CMDT Naval District Washington DC	Minor
DC0000248	JFK Center For Performing Arts	Minor
DC0000337	Washington Metropolitan Area Transit Authority	Minor
DC0000345	World War II Memorial	Minor
DC0000175	Super Concrete Corporation	Minor
DC0000361	Walter Reed Army Medical Center	Minor

### Review and Certification of Draft US EPA Permits

The District is not a delegated state under the NPDES program and therefore cannot issue its own discharge permits. Draft NPDES permits prepared by the EPA are reviewed by the WQD for completeness, compliance with both federal and District laws and WQS in accordance with Section 401 of the CWA. WQD may require changes in a draft permit so as to more stringently comply with applicable laws and standards. Changes in draft permits may also incorporate comments received from various parties during the public comment period, the announcement of which is made in one or more of the District’s local newspapers. The announcement for public comments is a joint venture by both EPA and the District. Final certified permits are issued for a five year period, but contain re-opener clauses in case facility conditions and/or WQS or regulations change. From January 2012 and December 2013, WQD reviewed and/or certified the NPDES permits listed in Table 2.4.

**TABLE 2.4**  
**Permits Reviewed and Certified by WQD**

<b>Permitted Facility</b>	<b>Reviewed/Certified</b>
D.C. Water and Sewer Authority (WASA), Blue Plains AWTP	Certification
World War II Veterans Memorial	Certification
CMDT Naval District Washington, DC	Certification
Government of the District of Columbia – MS4	Reviewed
Draft Construction General Permit	Reviewed
Extension of Construction General Permit	Certification
Pesticide General Permit	Certification
Half Street, SE LLC – Groundwater Discharge	Certification

## Wetlands Protection

### Review and Certification of Permits Issued Under Section 404 of the Clean Water Act

The WQD reviews and certifies permits issued by the USACE – Baltimore District under Section 10 of the Rivers and Harbors Act of 1899 and/or Section 404 of the Clean Water Act, as published in the March 12, 2007 Federal Register, Final Notice of Issuance, Reissuance, and Modification of Nationwide Permits (NWPs)(72 FR 11090). Under Section 404 of the Clean Water Act, the District aims at no net loss of wetlands, stream areas, and their functions within the District. To achieve this goal, the WQD reviews all activities and construction projects, which may impact wetlands and streams in the District, and certifies permits issued by the USACE under Section 404 and 401 of the Clean Water Act. When the USACE delineates a wetland, makes a jurisdictional determination (JD), and issues a dredge and fill permit, the WQD reviews the delineation report, JD and permit for completeness and compliance with both federal

and the District's laws, and WQS. Based on the results of the review, WQD can certify the permit or deny the certification.

Although the purpose of the review process is to avoid and minimize impacts, it is anticipated that some projects that may impact wetlands and streams will still be allowed to proceed. These projects include water dependent projects and projects for which there is no practicable alternative. Mitigation is always required for permanent impacts associated with these types of projects. Mitigation of impacts to wetlands and streams are considered in accordance with the following sequence:

- Avoidance: Modification of the scope of the proposed activity, or construction to completely avoid the potential impacts to the wetland or stream.
- Reduction/Minimization: Reduction of the necessary impacting activity to the greatest extent practicable.
- Restoration: Rectifying the impact by repairing, rehabilitating, or restoring the affected wetland or stream following completion of the activity or construction.
- Compensation: Compensating for the impact to the wetland or stream by creating or enhancing an alternative wetland/stream.



Table 2.5 list projects reviewed and certified between January 2012 and December 2013.

**TABLE 2.5  
NWPS REVIEWED AND CERTIFIED**

<b>Permittee</b>	<b>Certification Number</b>	<b>Project Description</b>
SPAWARSYSCEN-Pacific	DC#12-001	To collect 12 sediment cores to a depth of 2 feet below the bottom substrate to verify an in situ measurement of grain size within the Anacostia River.
GenOn Potomac River, LLC	DC#12-002	To emplace a 5-foot wide by 80-foot long sand bag diversion 10 feet channel ward of the approximate mean high water shoreline for the clean out of outfall pipe.
U.S. EPA, Region III	DC#12-003	Discharges incidental to normal operation of commercial vessels and non-recreational vessels equal to or greater than 79 feet in length. The discharges eligible for coverage under the proposed permit include, but are not limited to, deck wash-down and runoff from routine deck cleaning, bilge water from properly functioning oily water separators, ballast water, and boiler/economizer blow-down.
U.S. EPA, Region III	DC#12-004	Discharges incidental to normal operation of commercial vessels and non-recreational vessels less than 79 feet in length. The discharges eligible for coverage under the proposed permit include, but are not limited to, deck wash-down and runoff from routine deck cleaning, bilge water from properly functioning oily water separators, ballast water, and boiler/economizer blow-down.
U.S. EPA, Region III	DC#12-006	WMATA Mississippi Avenue Pumping Station (the permittee) to discharge treated groundwater collected from inbound and outbound track drainage areas within a 7,000-foot section of tunnel and perimeter drains of the vent shaft from St. Elizabeth's Hospital and the Southern Avenue Station on WMATA's "F" Route (Green Line).
Department of the Army Baltimore District, U.S. Army Corps of Engineers	DC#12-007	DDOE has determined that the public interest in the activities authorized under the proposed NWP in the District of Columbia, requires an individual comprehensive review process and evaluation by the Corps, and subsequent Section 401 water quality certification by DDOE. The substantive standards found in the Environmental Protection Agency Clean Water Act §404(b)(1) guidelines, the Corps' public interest review regulations and policy memoranda of the two agencies provide for this public interest review by both the Corps and DDOE.
U.S. EPA, Region III	DC#12-008	To discharge the following waste streams: groundwater seepage from a steam tunnel that runs under Rock Creek, steam condensate that forms on steam pipes in a tunnel, and stormwater from roof drains to receiving waters named Rock Creek within the District of Columbia.
United States Army Technology Application Office (TAO)	DC#12-009	To install a telecommunication line consisting of one six inch steel casing, containing inner duct with fiber optic cable underneath the riverbed of the Potomac River from Bolling Air

Permittee	Certification Number	Project Description
		Force Base to Reagan National Airport, Washington, District of Columbia.
Government of the District of Columbia / Office of the Deputy Mayor of Planning and Economic Development	DC#12-010	To conduct 33 geotechnical borings by rotary drilling from a barge in the Washington Channel, along Water Street and Ohio Drive, SW, Washington, DC.
Federal Highways Administration / Eastern Federal Lands Highway Division	DC#12-011	To install gabion baskets in Rock Creek, west of the intersection of R Street NW and Sheridan Circle NW in Rock Creek Park, Washington, DC.
District Department of the Environment	DC#12-012	To install temporary fencing and to plant <i>Vallisneria americana</i> in the Anacostia River, upstream of the James Creek Marina and east of the intersection of Water Street SW and Half Street SW, Washington, DC.
District Department of the Environment	DC#12-013	To construct a stream restoration project by regenerative stormwater conveyance (RSC) method in unnamed tributary of Broad Branch Creek, NW in Washington, DC.
Commodore of Seafarers Yacht Club	DC#12-014	To replace existing damaged decking from Docks G and C in the Anacostia River at 1950 M Street, SE, Washington, DC.
District Department of the Environment	DC#12-016	To install temporary fencing and to plant <i>Vallisneria americana</i> in the Anacostia River along the shoreline of Diamond Teague Park, east of the intersection of Potomac Avenue NE and First Street NE, Washington, DC.
District Department of the Environment	DC#12-017	To install temporary fencing and to plant <i>Vallisneria americana</i> in the Anacostia River, south of Heritage Island and north of the East Capitol Street Bridge at the crossing of the Anacostia River, Washington, DC.
Office of the Deputy Mayor of Planning and Economic Development	DC#12-018	To construct piers and docks in the Washington Channel along Water Street and Ohio Drive, SW, SE, Washington, DC.
Federal Highways Administration / Eastern Federal Lands Highway Division	DC#12-020	To stabilize and enhance a portion of Rock Creek, west of the intersection of R Street, NW and Sheridan Circle, NW in Rock Creek Park, Washington, DC.
Pepco Holdings, Inc.	DC#13-001	To conduct an ecological assessment including analytical sediment sampling of approximately 55 subsurface locations in the Anacostia River, in Washington, DC.
National Zoological Park	DC#13-002	To construct stone riprap for outfall protection in Rock Creek at the National Zoo, 3001 Connecticut Avenue, NW, Washington, DC.
Forest City SEFC LLC	DC#13-013	Construction of piers in the Anacostia River at 10 Water Street, SE, Washington, District of Columbia (The Yards)
Competitor Group Inc.	DC#13-015	To install temporary recreational plastic piers in the Potomac River, southeast of the intersection of Independence Avenue SW and Ohio Drive SW and northwest of the intersection of Ohio Drive SW and West Basin Drive SW in Washington, DC.
SPAWARSYSCEN-Pacific	DC#12-001	To collect 12 sediment cores to a depth of 2 feet below the

<b>Permittee</b>	<b>Certification Number</b>	<b>Project Description</b>
		bottom substrate to verify an in situ measurement of grain size within the Anacostia River.
GenOn Potomac River, LLC	DC#12-002	To emplace a 5-foot wide by 80-foot long sand bag diversion 10 feet channel ward of the approximate mean high water shoreline for the clean out of outfall pipe.
U.S. EPA, Region III	DC#12-003	Discharges incidental to normal operation of commercial vessels and non-recreational vessels equal to or greater than 79 feet in length. The discharges eligible for coverage under the proposed permit include, but are not limited to, deck wash-down and runoff from routine deck cleaning, bilge water from properly functioning oily water separators, ballast water, and boiler/economizer blow-down.
U.S. EPA, Region III	DC#12-004	Discharges incidental to normal operation of commercial vessels and non-recreational vessels less than 79 feet in length. The discharges eligible for coverage under the proposed permit include, but are not limited to, deck wash-down and runoff from routine deck cleaning, bilge water from properly functioning oily water separators, ballast water, and boiler/economizer blow-down.
PEPCO Holdings, Inc, Buzzard Point Utility Line	DC-11-014	Authorization to install a probe at three locations to collect data on ambient temperature and thermal resistivity and to collect three jars, approximately quart size, of sediments from the probed areas within the Anacostia River at Buzzard Point near the intersection of V Street and 1 <sup>st</sup> Street, SW, Washington, DC.
Charles Brodsky, Nation's Triathlon	DC-11-015	Authorization to put buoys and temporary piers in the Potomac River for the Nation's Triathlon.
District of Columbia Water and Sewer Authority (DC WASA)	DC-11-016:	Authorization to construct outfall structures as part of the Long Term CSO Control Plan.
District of Columbia Water and Sewer Authority (DC WASA)	DC-11-017	Authorization to replace, lower, and remove sewers at three locations in Watts Branch in northeast quadrant of Washington, D.C
Fort Lincoln Retail, LLC	DC-11-018	Authorization to impact approximately 33,503 square feet (sf) (0.77 acre) and 12,680 sf (0.28 acre) of nontidal wetlands and 1,160 linear feet of tributaries to construct a retail shopping center, in the northeast quadrant of Washington, DC.
District Department of Transportation (DDOT)	DC-11-019	Authorization to rehabilitate the existing Northbound and Southbound 14 <sup>th</sup> Street Bridges over the Potomac River, Washington, DC.
CSX Transportation /BENNING YARD	DC-11-020	Authorization to conduct analytical sediment sampling in Fort DuPont Creek and the Anacostia River along CSX Benning Yard in Washington, DC.
DC WASA	DC-11-021	Authorization to remove existing piles, install pile dolphins or stainless steel cables in the Anacostia River at 1505 M Street, SE in Washington, DC.

## Nonpoint Source Control Program

The District has shown that urban runoff is one of the more important contributors to surface water impairment. A process to rank watersheds for nonpoint source implementation in the District, conducted by the Nonpoint Source Management Program in 1993, determined that the Anacostia River and its tributaries should receive the highest priority. The control of nonpoint source pollution requires the cooperation of many environmental programs. In 1989, the WPD developed The District of Columbia Nonpoint Source Management Plan (NSMP), (D.C., 1989). The NSMP describes the various environmental programs and projects in place to help control nonpoint source pollution. It was the first step by the District to develop a Nonpoint Source Management Program. Since its inception, it has grown and has become institutionalized into a branch within the WPD. The Nonpoint Source Management Program revised its Nonpoint Source Management Plan in FY 2000 to reflect the changes in program activities that had taken place over the previous 10 years and to prioritize future strategies.

Environmental pollution from nonpoint sources occurs when water moving over land picks up pollutants such as sediment, bacteria, nutrients, and toxics and carries them to nearby waters. Sediment and pollutant-laden water can pose a threat to public health. The pollutants may come from both natural sources and human activity. Stormwater runoff and associated soil erosion are significant causes of lost natural habitat and poor water quality in the District and throughout the United States. EPA and the United States Department of Agriculture (USDA) have made the control of soil erosion and the treatment of stormwater runoff important pieces in their strategy to restore the quality of the nation's waters. Nonpoint source pollutants of concern in the District of Columbia are nutrients, sediment, toxicants, pathogens, and oil and grease.

For the District, the origins of nonpoint pollutants are diverse and include:

- Stormwater runoff due to the high degree of imperviousness of urban areas;
- Development and redevelopment activities;
- Urbanization of surrounding jurisdictions; and
- Agricultural activities upstream in the watershed.

The District also sees itself as a champion in watershed protection and environmental justice by increasing stakeholder awareness and involvement in the clean-up efforts in the Anacostia River, Chesapeake Bay, and other neighborhood watersheds and equipping District residents with the knowledge and tools on how to prevent pollution from entering their neighborhood streams.

There are three branches within WPD:

- Planning and Restoration Branch

- Technical Services Branch
- Inspection and Enforcement Branch

WPD is primarily responsible for managing both the District's Nonpoint Source Management (§319(h)) and Chesapeake Bay Implementation (§117(b)) programs. Both the §319(h) and Bay Programs are non-regulatory programs that strive to achieve the same results. Included under the auspices of the Planning and Restoration Branch are tree plantings and riparian buffer restoration projects.

The District employs both regulatory and non-regulatory approaches to reach its nonpoint source milestones. WPD programs that fall under regulation and enforcement include the:

- Stormwater Management Program
- Soil Erosion and Sediment Control Program
- Floodplain Management Program
- Compliance and Enforcement Program

These programs aim to ensure that any development or construction activities occurring within the District properly control potential erosion or runoff from their sites and properly adhere to all federal and city laws relating to floodplains and waterways. In addition, these programs ensure that best management practices (BMPs) are installed correctly and receive appropriate maintenance and upkeep. Non-regulatory programs include:

- Wetland and river habitat creation and restoration programs;
- Use of low impact development (LID) innovative BMP technology;
- Education and outreach programs;
- Pollution prevention programs; and
- Use of sustainable practices.

Through these non-regulatory programs, the District educates community members about nonpoint source pollution and how their actions contribute to it, with the ultimate goal of changing personal behavior for an effective long-term solution. Additionally, the District tests and develops innovative approaches to urban nonpoint source pollution reduction, increases acceptance and implementation of LID, and provides support and financial incentives for citizens wishing to implement LID and pollution prevention techniques.

The District also develops partnerships and collaborations to address the issue of nonpoint source pollution. In recent years, the District has worked closely with federal agencies to ensure that nonpoint source pollution prevention is addressed on both District and federal lands.

Overall, the nonpoint source management strategy attempts to heighten the awareness and stimulate the actions of individuals and communities, elected leaders and agency heads; to concentrate activities on targeted tributaries; and to strictly enforce regulations that protect the District's water quality and natural resources. The District does not shoulder the entire load, but rather enlists assistance from many stakeholders and partners, in an effort to deliver clean water and healthy watersheds to the citizens of the District and its visitors.

Environmental pollution from nonpoint sources occurs when water moving over land picks up pollutants such as sediment, bacteria, nutrients, and toxics and carries them to nearby waters. Sediment and pollutant-laden water can pose a threat to public health. The pollutants may come from both natural sources and human activity. Stormwater runoff and associated soil erosion are significant causes of lost natural habitat and poor water quality in the District and throughout the United States. EPA and the United States Department of Agriculture (USDA) have made the control of soil erosion and the treatment of stormwater runoff important pieces in their strategy to restore the quality of the nation's waters. Nonpoint source pollutants of concern in the District of Columbia are nutrients, sediment, toxicants, pathogens, and oil and grease.

For the District, the origins of nonpoint pollutants are diverse and include:

- Stormwater runoff due to the high degree of imperviousness of urban areas;
- Development and redevelopment activities;
- Urbanization of surrounding jurisdictions; and
- Agricultural activities upstream in the watershed.

### **Regulatory Management Update**

The District employs both regulatory and non-regulatory approaches to reach its nonpoint source milestones. The Branches within WPD responsible for regulatory management of sediment and stormwater runoff are the Sediment and Stormwater Technical Services Branch and the Inspection and Enforcement Branch.

The branches aim to ensure that any development or construction activities occurring within the District properly control potential erosion or runoff from their sites and properly adhere to all federal and District laws relating to floodplains and waterways. In addition, they ensure BMPs are installed correctly and receive appropriate maintenance.

#### **A. Sediment and Stormwater Technical Services Branch**

The Sediment and Stormwater Technical Services Branch reviews construction and grading plans for stormwater management, erosion and sediment control, and flood plain management considerations. As required by EPA regulations regarding new construction permits, all new

construction in the District must have Storm Water Pollution Prevention Plans (SWPPPS) that "identify all potential sources of pollution which may reasonably be expected to affect the quality of stormwater discharges from the construction site."

The District's erosion and sediment control regulations require an erosion and sediment control permit for any land disturbance over 50 sf. In comparison, other jurisdictions require that these permits be filed when more than 5,000 sf of soil are disturbed.

Furthermore, DDOE published revised stormwater and erosion/sediment control regulations in July 2013. The revised regulations reflect a change in the District's approach to stormwater management that parallels the most recent scientific findings, the direction of the EPA and the actions of surrounding jurisdictions. The changes aim to encourage better stormwater management through LID practices and stormwater reuse. While earlier research focused on controlling the rate of stormwater runoff most recent finding say preventing runoff is the best way to preserve and restore our streams and rivers and avoid over burdening the public infrastructure. The new regulations require an on-site retention standard for all development and redevelopment that disturbs more than 5,000 sf of land. DDOE also published a new Stormwater Guidebook and a new civil infraction schedule of fines to accompany the revised regulations.

Between 2012 and 2013, the Sediment and Stormwater Technical Services Branch accomplished the following:

- Reviewed 4400 building permit applications and plans for regulatory compliance;
- Processed 60 Environmental Impact Screening Forms (EISFs) after they were reviewed for regulatory compliance; and
- Provided 8500 customers with technical assistance.

In addition to these regulatory actions, engineers from the Technical Services Branch regularly attend relevant trainings on new stormwater technologies. They also attend regional workshops related to stormwater control and Chesapeake Bay restoration efforts.

#### B. Inspection and Enforcement Branch

The District's Inspection and Enforcement Branch inspects construction sites throughout the District to make sure they are in compliance with District regulations. DDOE regularly inspects existing stormwater management facilities to ensure that they are in proper working order. It also inspects BMPs to ensure they are adequately maintained. In addition, the Inspection and Enforcement Branch is responsible for investigating citizen complaints relating to soil erosion and drainage problems, and recommending appropriate solutions.

DDOE also performs outreach to industrial and construction facilities through workshops, brochures, and site inspections. DDOE personnel use inspections to promote awareness of the

proper methods of facility maintenance for stormwater regulation compliance. To aid facilities in ensuring proper maintenance of stormwater management facilities, DDOE has established and published guidelines for their proper maintenance.

In FY 2012, the Inspection and Enforcement Branch accomplished the following:

- Conducted 9851 inspections at construction sites for enforcement of erosion and sediment control and stormwater management regulations;
- Executed 177 enforcement actions, including stop-work orders and civil infractions, to strengthen enforcement activities;
- Conducted 149 investigations for erosion, drainage and related complaints;
- Inspected 1199 stormwater management facilities to ensure proper functioning of these facilities; and
- Developed a brochure on proper erosion and sediment control measures to distribute to contractors and developers.

In FY 2013, the Inspection and Enforcement Branch accomplished the following:

- Conducted 7997 inspections at construction sites for enforcement of erosion and sediment control and stormwater management regulations;
- Executed 156 enforcement actions, including stop-work orders and civil infractions, to strengthen enforcement activities;
- Conducted 115 investigations for erosion, drainage and related complaints;
- Inspected 770 stormwater management facilities to ensure proper functioning of these facilities; and
- Revised SOPs for erosion and sediment control inspections, stormwater management facility, construction inspections, and stormwater management facility maintenance inspections.

### **Non-Regulatory Management Update**

Through non-regulatory programs, the District educates community members about nonpoint source pollution and how their actions contribute to it, with the ultimate goal of changing personal behavior for an effective long-term solution. Additionally, the District tests and develops innovative approaches to urban nonpoint source pollution reduction, increases acceptance and implementation of LID, and provides support and financial incentives for citizens wishing to implement LID and pollution prevention techniques.



## Planning and Restoration Branch

The Planning and Restoration Branch sponsors and conducts non-regulatory programs and activities that protect and restore river, stream, and wetland habitats in the District and increase the ecological diversity of the District and Chesapeake Bay watersheds. Non-regulatory activities include:

- Wetland and river habitat creation and restoration programs;
- Providing technical advice on the application of LID and innovative BMP technology;
- Administering Request for Proposals to fund LID retrofits;
- Education and outreach programs;
- RiverSmart Rooftops program (Green roof incentive program);
- RiverSmart Homes program;
- RiverSmart Schools program; and
- Pollution prevention programs.

### **A. Habitat Restoration, LID and Watershed Planning**

#### Green Roof Rebate/Retrofit Program

For the last two years the District has offered a rebate for installation of a new green roof or the retrofit of an existing roof. This program, offered through DDOE, provided \$5 per sf for the installation of a green roof on a new structure or existing roof, provided that the green roof was constructed to meet existing DDOE stormwater requirements. For 2014, DDOE has raised the rebate amount to \$7 per sq. f for the majority of the city and \$10 per sf for specific targeted watersheds.

Additionally, the city has been aggressively retrofitting its existing rooftops with green roofs and installing vegetated roofs on new city-owned buildings. As a result of this push, Washington, DC has over 2 million sf of installed green roof. In 2013, DDOE accomplished the following:

- Installed green roofs on 2 District buildings, covering 15,960 sf of rooftops.
- Installed a green roof retrofit on a District Maintenance Facility 1 Garage, covering 8960 sf
- Installed a green roof at the Raymond Recreation Center, covering 7000 sf

#### Stream Restoration

Stream restoration is the act of modifying the current channel of a stream in an attempt to improve the environmental health and habitat of the waterway. Urban streams face immense pressure from high stormwater flows due to runoff from impervious surfaces. The erosion seen in urban streams is the stream's way of adjusting to accommodate the new (geological) flow

regime, it is experiencing. Stream restoration attempts to create a new channel that is in stasis with the flows that a stream experiences.

### Completed Stream Restoration Projects

#### Watts Branch Stream Restoration

The Watts Branch Stream Restoration Project was completed in early FY2012. Since that time DDOE has monitored the project to determine its effectiveness at achieving its design objectives. Similar to other restored stream projects DDOE is using a combination of activities to monitor the restoration project. Restoration monitoring consists of photographic and vegetative surveys, and geomorphic assessments. DDOE previously awarded a grant to the Metropolitan Washington Council of Governments (MWCOC) to monitor macroinvertebrates in Watts Branch pre and post-restoration. In addition, DDOE staff members are presently collecting water quality samples in storm events and comparing the pollution loads with those of the non-restored Oxon Run.

#### Bingham Run and Milkhouse Ford Regenerative Stormwater Conveyances

DDOE constructed two regenerative stormwater conveyance systems in FY2011 in first order tributaries of Rock Creek named Bingham Run and Milkhouse Ford. Activities in FY2012 focused on monitoring the restoration sites to ensure that they functioned as designed, and these activities continued in FY2013. Monitoring activities included vegetative surveys, photographic surveys, and geomorphic surveys. Survey work will help DDOE demonstrate the effectiveness and stability of this type of stream restoration technique while accumulating documentation to prove their effectiveness and understand their weakness.

### Upcoming Stream Restoration Projects

#### Broad Branch Daylighting and Stream Restoration

The goal of this project is to daylight a 1,600-foot portion of Broad Branch, a tributary to Rock Creek. Daylighting a stream is the act of restoring to the open air some or all of the flow of a previously covered creek, or stormwater drainage. Daylighting this section of the Rock Creek watershed will improve water quality at the location and downstream water quality by exposing water to sunlight, air, soil, and vegetation, all of which help process and remove pollutants. Furthermore its restoration will reduce nutrient and sediment pollution from erosion caused by fast flowing stormwater by creating meanders and floodplain wetlands which will have wider cross-section and a greater channel depth than the pipe it will replace. Additional surface flow from adjacent streets and rooftops may be able to be directed to the area by creating curb cuts and redirecting storm sewers to the area, further slowing, cooling, and filtering stormwater in the subwatershed.

## Linnean Park and Linnean Gully Stream Restorations

In FY14, DDOE plans to install Regenerative Stream Channel (RSC) systems to restore 1,050 linear feet of in-stream habitat in two Rock Creek tributaries. The first tributary is a steep gully created by water running directly off the end of Linnean Avenue in upper Northwest leaving exposed a tangle of a sanitary sewer pipe, storm sewer pipe, and a water main. The contributing watershed is 8.6 acres of urban residential neighborhood containing 31% impervious surfaces and highly-managed landscaping. The second location is about a mile in the northwest direction; forested land that surrounds a perennial stream. This waterway is fed by one storm sewer outfall that conveys stormwater runoff from 24.5 acres of urban residential properties. Nitrogen, phosphorous and pesticide pollution are likely to be high in both project areas due to intensive landscaping. In December 2014, DDOE and its subgrantee completed restoration designs and submitted them to municipal and federal permitting agencies for their review and approval.

In January 2013, The University of Maryland, Center for Environmental Science, Chesapeake Biological Laboratory began pre-installation monitoring for concentrations of nutrients, sediments, metals, bacteria, flow volume and velocity, water temperature and habitat health. DDOE staff will perform photo surveys to document RSC system stability over time. This project uses a paired monitoring approach, studying the same set of parameters in Spring Valley, a stream and watershed of similar character that will not be restored in the near-term. Monitoring is scheduled for one year before the stream is restored and at least one year afterward, but will continue as long as necessary to meet the requirements of our restoration permit. This schedule allows researchers to compare the results and determine whether or not the RSC improves wildlife habitat and water quality as expected.

## Nash Run Stream Restoration

In FY2013, DDOE and its contractor neared completion on designs for a 1400 linear foot stretch of restoration work on Nash Run, a tributary of the Anacostia River. The project will include an upstream floatable trash trap and will utilize floodplain reconnection design to create a 55ft wide low floodplain bench along the stream corridor. The project will also include an enlarged mid-reach culvert to minimize flood risk and increase likelihood of fish passage to the upper portion of the restored reach.

The Nash Run restoration project is expected to commence in FY2014. The restoration project will reduce bank erosion, improve stream connectivity to its floodplain, increase the riparian cover along the stream, add wetland area to the stream corridor, and significantly reduce trash and debris in the Anacostia River.

## Pope Branch Sewer Line Rehab & Stream Restoration

In August 2013, DC Water began moving forward with the initial phase of this restoration project by repairing and replacing portions of the sewer line that runs through Pope Branch's stream valley. Sewer line repair work will be completed in 2013. The stream restoration work will begin in 2014. Stream restoration work will connect the stream to its historic floodplain level and create a series of pools and riffles throughout the corridor ensuring that high flow events spread out on the floodplain.

## Alger Park Stream Restoration

In FY2013, DDOE completed a conceptual design project for a stream restoration and upland LID project for a subwatershed of the Texas Avenue tributary, a stream in the Anacostia River watershed. This project aims to restore a 1,540 foot stretch of one of the most degraded stream valleys in the District through a comprehensive approach to managing stormwater upland and restoring the receiving waterbody to a state of improved water quality, bank stability, and enhanced habitat features.

In the coming years, DDOE plans to work to maximize installation of LID practices on private properties throughout the watershed through the RiverSmart Homes program.

## Springhouse Run Stream Restoration

Springhouse Run is a remnant of one of the original tributaries to Hickey Run, a tributary of the Anacostia River, with a drainage area of approximately 100 acres. The majority of the tributary is stable, although it is highly altered and armored in most areas. The armoring has resulted in a stream with poor habitat value and very limited ability to trap sediment and uptake nutrients.

WPD is coordinating the design of stream and habitat restoration for Springhouse Run. The stream will be reconnected to its historic floodplain and its sinuosity will be restored. This project reach measures approximately 1,600 feet in length and lies entirely within the U.S. National Arboretum. In FY2012, in collaboration with the National Arboretum, DDOE expanded the scope of the project to include additional stream sections in the upstream portion of the project reach.

An additional component of this project is to construct bioretention facilities in the parking areas near the Arboretum Visitor Center. This project is being funded in part with EPA 319 funds. DDOE expects the project to commence in late FY2014 and it will be completed in FY2015.

## **B. Environmental Education and Outreach**

WPD sponsors and conducts environmental education and outreach activities targeted to teachers, environmental educators and students throughout the District. These programs and resources include the following:

Environmental Education Resource Center – This center provides resources and materials that teachers and other environmental educators may use to enhance the classroom curriculum and implement conservation projects.

- 10 teachers and organizations received 220 educational resources, maps, posters, and other materials for distribution to other District teachers and students.

Conservation Education Programs (Project Learning Tree, Project WET, and Project WILD) – These internationally recognized programs are utilized to train educators in innovative techniques for exploring a wide range of environmental concepts with students and teaching critical thinking skills that lead to environmental stewardship for grades K-12.

- In 2012, DDOE provided Project Learning Tree PreK-8 grade Training to 18 DPR staff and 16 teachers from St Columba's Nursery School with Early Childhood Experiences training.
- In 2013, DDOE provided 12 Department of Parks and Recreation (DPR) staff and 9 Student Conservation Association staff with Project Learning Tree PreK-8 grade Curriculum training. Additionally, DDOE provided 17 DPR staff with training in the Early Childhood Experiences curriculum.

Teacher Training Workshops – Teacher-training workshops in environmental education, provide teachers with continuing education credits through accredited environmental curriculums that support the District of Columbia Public Schools (DCPS) teaching and learning standards and provide students with meaningful environmental education experiences via outdoor activities and events.

- During 2012, in partnership with members of the DC Environmental Education Consortium, DDOE trained 40 teachers during the DCPS Professional Development Days. In 2013, DDOE and partners worked with 20 teachers during two DCPS Professional Development Days.

In FY 2012 and FY 2013, WPD accomplished the following:

- Provided 72 teachers with an 8-day workshop on RiverSmart schools site usage and programming.
- Conducted 46 classroom visits and provided 8 boat trips to support integration of watershed lessons for the RiverSmart Schools project at each participating school.
- Engaged students, teachers, and volunteers in Community Work Days to construct and maintain Schoolyard Conservation Sites. 400 students from nine (9) schools participate in 32 Community Work Days.

Additionally, WPD completed the construction of RiverSmart Schools projects (see Table 2.6). Some highlights of these projects are:

For FY2012:

#### Elsie Whitlow Stokes Public Charter School

- Retrofitted 7,000 sf of impervious parking with permeable pavement.
- Installed a trench drain system to convey stormwater runoff from another impervious parking area. The system is an underground 24 inch diameter perforated pipe where it infiltrates into the soil.
- Completed an outdoor classroom on the southern side of the campus with seating for 30 students.

#### Hardy Middle School

- Installed a cistern that captures stormwater runoff from an adjacent roadway and then conveys it to a stormwater wetland.
- Performed invasive plant removal on the hillside of the school and planted over 300 species of native and wetland plants and shrubs.
- Provided students in 6th and 7th grades with lessons about their local environment and watershed and engaged students in wetland planting activities.

#### Benjamin Banneker High School

- Constructed two bioretention planters to capture the first 1.2 inches of stormwater runoff from areas of the school rooftop that drain to a central courtyard.
- Installed built-in seating for students using the courtyard.

#### Kelly Miller Middle School

- Completed an outdoor classroom area. Twenty volunteers assisted in the installation and maintenance of a pollinator garden and an edible forest garden.
- Engaged volunteers on DCPS Beautification Day to conduct basic maintenance/weeding of the garden to prepare the outdoor classroom for the upcoming school year.

#### Walker Jones Education Campus

- Constructed a 45' x 12' covered outdoor classroom and installed a 1,300 gallon cistern.

- Educated more than 250 students about rainwater harvesting since the cistern was installed.

For FY2013:

#### Phelps Architecture, Construction, and Engineering High School

- Retrofitted 1,086 sf of impervious parking with bioretention system.
- The bioretention system was able to treat 18,300 sf of drainage area that meets the 1.2” rain fall requirement.
- Completed three (3) community action days with students and teachers to vegetate the rain gardens.
- Conducted four (4) classroom visits and provided two (2) boat trips on the Anacostia River.

#### SEED School

- Installed a 500 gallons cistern that captures stormwater runoff from the student dormitory building that would direct collected runoff to the rain garden.
- Retrofitted 940 sf of compacted courtyard with a bioretention system.
- The bioretention system was able to treat 11,300 sf of drainage area that meets the 1.2” rain fall requirement.
- Constructed an outdoor classroom seating area for a classroom of 15 students.
- Completed two (2) community action days, conducted four (4) classroom visits, and provided two (2) boat trips on the Anacostia River.

#### H.D. Cooke Elementary School

- Stabilized eroded hill by the playground area with native plantings and vertical gardening.
- Expanded the raised bed gardens.
- Completed two (2) community action days, conducted three (3) classroom visits, and provided two (2) boat trips on the Anacostia River.

#### DuPont Park Adventist School

- Constructed a French drain trench with a 6 inches drain pipe under stones to direct water off walkway, along fence to lawn area.
- Installed a pollinator garden after amending the compacted soil.
- Constructed two (2) outdoor classroom seating areas for 30 pre-school students by using logs and tree stumps in circles
- Completed three (3) community action days where students plant natives and landscape plants along the fence area. Conducted four (4) classroom visits and provided two (2) boat trips for two classes on the Anacostia River.

**TABLE 2.6  
RIVERSMART SCHOOL CONSTRUCTION PROJECTS**

2013 Schools					Practices
Name	Ward	Address	Watershed	Sewer System	
Phelps Architecture, Construction, and Engineering High School	5	704 26th Street, NE. Washington, DC 20002	Anacostia River	MS4	Retrofitted 1,086 sf of impervious parking with bioretention system that is able to treat 18,300 sf of drainage area that meets the 1.2" rain fall requirement.
SEED School	7	4300 C Street, SE. Washington, DC 20019	Anacostia River	MS4	Retrofitted 940 sf of compacted courtyard with a bioretention system that was able to treat 11,300 sf of drainage area that meets the 1.2" rain fall requirement.
H.D. Cooke	1	2525 17th Street, NW Washington, DC 20009	Anacostia River	CSO	Stabilized eroded hill by the playground area with native plantings and vertical gardening.
Dupont Park	7	3942 Alabama Ave, SE Washington, DC 20020	Anacostia River	MS4	Constructed a French drain trench with a 6 inches drain pipe under stones to direct water off walkway, along fence to lawn area.
2012 Schools					Practices
Name	Ward	Address	Watershed	Sewer System	
Elsie W. Stokes Community Freedom PCS	5	3700 Oakview Terr, NE. Washington, DC 20017	Anacostia River	MS4	Retrofitted 7,000 sf of impervious parking with permeable pavement.
Hardy Middle School	2	1819 35th Street, NW. Washington, DC 20010	Rock Creek	CSO	Installed a cistern that captures stormwater runoff from an adjacent roadway and then conveys it to a stormwater wetland.
Walker Jones Education Campus	6	1125 New Jersey Ave, NW Washington, DC 20001	Anacostia River	CSO	Constructed a 45' x 12' covered outdoor classroom and installed a 1,300 gallon cistern.
Kelly Miller Middle School	7	301 49th Street, NE. Washington, DC 20019	Anacostia River	MS4	Completed an outdoor classroom area. Twenty volunteers assisted in the installation and maintenance of a pollinator garden and an edible forest garden.
Benjamin Banneker High School	1	800 Euclid Street, NW. Washington, DC 20001	Anacostia River	CSO	Installation a flow-through, bioretention planter in the west courtyard and a 500 gallon cistern.



The District of Columbia Environmental Education Consortium (DCEEC) – DDOE helps to organize a network of environmental educators throughout the city so that ideas and resources can be shared. DCEEC provides opportunities for networking, event coordination and program partnering among its members. The members provide environmental expertise, professional development opportunities, curricula and resources, and hands-on classroom and field studies to District schools.

- In the Healthy Schools Act legislation, DDOE is tasked to develop an Environmental Literacy Plan (ELP) with other District agencies (Office of the State Superintendent, District of Columbia Public Schools (DCPS), and DPR) and stakeholders. DDOE and DCEEC worked with the other District agencies and stakeholders to develop the ELP and submit it to the Mayor and DC Council on July 2, 2012. In March 2013, DCEEC organized a Greening STEM workshop, which brought together District government environmental professionals, nonprofit environmental educators, and teachers, to brainstorm how environmental content can be integrated into school-based lessons in the areas of science, technology, engineering, and math. With a grant from DDOE, DCEEC has identified eight Sustainable DC Model Schools, and is working to develop an environmental literacy framework and further implement the DC Environmental Literacy Plan.

The Anacostia Environmental Youth Summit (formerly Anacostia River Environmental Education Fair) - This annual outdoor event is a city-wide showcase that spotlights youth's voices, demonstrates environmental literacy, and encourages stewardship the Anacostia and Potomac Rivers, and the Chesapeake Bay. By encouraging an ethic of stewardship and responsible action, the Anacostia Environmental Youth Summit emphasizes youth leadership and innovation.

- The Anacostia Fair took place on Friday, May 4, 2012. Nine DCPS schools, 37 teachers, 365 students, and 17 exhibitors were a part of the event. Students took part in activities on and off the water and learned about human behaviors and the connections between the health of their watersheds and the Bay.
- The Anacostia Fair on Friday, May 31, 2013. Ten DCPS, 428 students, and 22 exhibitors were a part of the event. Students took part in activities on and off the water and learned about human behaviors and the connections between the health of their watersheds and the Bay.

Meaningful Watershed Educational Experiences (MWEEs):

- Alice Ferguson Foundation (AFF), with DDOE funding, provided Trash-Focused MWEE for Third-Fifth graders at Burville Elementary School (ES) (114 students), Houston ES

(68 students), Kimball ES (39 students), Anne Beers ES (116 students), and Aiton ES (52 students). They provided 389 MWEE hours.

- The Anacostia Watershed Society (AWS), with DDOE funding, successfully provided 120 students with field experiences on the Anacostia River as well as restoration experiences that will impact their local watershed and the Chesapeake Bay.
- DDOE/WPD provided Living Classrooms of the National Capital Region with a grant to work with all of the 3rd, 4th, and 5th grade classes at two schools, River Terrace ES (40 students) and Kimball ES (90 students). They provided 398 MWEE hours and 20 hours of follow-up for 913 4th and 5th grade students.
- WPD conducted a Watershed Aquatics Environmental Education Camp - July 15-26, 2012 and July 22-26, 2013, at Neval Thomas Elementary School with FWD. A total of 64 campers and youth summer workers participated from 9 am to 2 pm, daily. The following topics were covered: Introduction to Watershed and Aquatics, Fish Habitat and Fishing, Wetlands, and Native Plants. A boat tour on the Anacostia River was provided.

### **C. Pollution Prevention**

#### **RiverSmart Homes Program**

Over the past three years, DDOE has developed a LID retrofit program aimed at single family homes. The program started with eight demonstration sites – one in each Ward of the city. It then expanded to a pilot program in the Pope Branch watershed of the city. The program is now available city-wide.

Through this program, DDOE performs audits of homeowner's properties and provides feedback to the homeowners on what LID technologies can be safely installed on the property. The city also offers up to \$2,600 to the homeowner to help cover the cost of installation of any LID technology the homeowner chooses. Currently, the program offers five different landscaping items including shade trees, native landscaping to replace grass, rain gardens, rain barrels and permeable pavement.

The District has recognized the importance of targeting homeowners for pollution reduction measures because the residential property is the largest single land use in the city and is the slowest of all construction areas to be redeveloped. 2012-2013 accomplishments include the following:

- Conducted 2,050 audits
- Provided District residents with 1,515 rain barrels
- Planted 1,263 shade trees

- Installed 290 rain gardens
- Implemented Bay Scaping at 349 properties
- Replaced impervious surfaces with green space or pervious pavers at 58 properties

## Tree Planting

The District of Columbia has been called “The City of Trees.” It has a tree canopy cover of 35 percent, which is high for a dense urban environment, but is lower than the canopy cover has been historically – even when the city had a higher population density. In an effort to improve air and water quality, reduce the urban heat island effect, and offset greenhouse gas emissions, the city has adopted a 40 percent tree canopy goal. Currently, DDOE and the Urban Forestry Administration (UFA) are drafting an Urban Tree Canopy Plan that lays out concrete actions to achieve the canopy goal. The plan projects that we will need a 25 percent increase in tree planting over current efforts will be needed to achieve this goal. Currently, UFA, which maintains the city’s street trees, plants an average of 4,150 trees annually.

DDOE, with help from non-profit partners such as Casey Trees and Washington Parks and People, plants trees on private, federal, and other District lands. DDOE and its partners planting efforts added 2,476 trees to the District in 2010. Through non-profit partnerships, 5,133 trees were planted in 2011. 2010 accomplishments included the following:

- Planted 252 trees in the Watts Branch sub-watershed through an upland tree-planting grant to plant 600 trees in the watershed.
- Planted 531 trees as part of the RiverSmart Homes Program
- Planted 12 trees at RiverSmart Schools
- Planted 663 trees through tree rebates funded by the 319 grant program
- Planted 418 trees through community tree planting (Casey Trees funded)

## Trash Removal

The District’s MS4 Permit requires the District to reduce trash into the MS4 by 103,188 lb annually, by January 22, 2017. In addition, Section 4.10 of the MS4 Permit requires the District to submit a trash reduction calculation methodology with the 2013 Annual Report to EPA for review and approval. The methodology was submitted to the EPA with the 2012 MS4 Annual Report, dated January 22, 2013.

Since the start of the Permit term, DDOE has removed a total of 177,819 pounds of trash, see Tables 2.7 and 2.8. DDOE is implementing the following trash reduction tools:

- In-stream and end-of-pipe BMPs (e.g. trash traps);
- Stream clean-up activities;

- Street sweeping environmental hotspots;
- Education and outreach; and
- Regulatory approaches (e.g. Bag Fee).

As required by the MS4 permit, DDOE released a draft Anacostia River trash TMDL implementation strategy to local stakeholders for an informal public input period. The informal public input period for the draft strategy was December 19<sup>th</sup>, 2013 to January 31<sup>st</sup>, 2014.

**TABLE 2.7  
2012 TRASH LOAD REDUCTIONS**

<b>Activity Category</b>	<b>Activity</b>	<b>Load Reduction (lbs)</b>	<b>Calculation Methodology</b>
End-of-Pipe and In-Stream BMPs	Watts Branch Bandalongs	4,143	Based on empirical data collected. Data for the lower Watts Branch Bandalong was collected between January & September 2012. Data on the upper Watts Bandalong was collected between December 2011 and November 2012.
	Nash Run Trash Trap	1,894	Annual average (2009–2012) based on empirical data.
	Hickey Run BMP	2,000	Based on assumed efficiency of 100 percent capture for design capture of device. A reduction factor of 20 percent is then applied since glass and plastic bottles may not be emptied of water.
	James Creek Bandalong	327	Based on empirical data collected.
Roadway and Block Cleanups	Adopt-A-Block Program	NA	Collaborating with Office of the Clean City to collect empirical clean-up data.
Sweeping Environmental Hotspots	Sweeping Environmental Hotspots	72,384	Total amount of trash removed was estimated based on trash loading coefficients for roadways. The trash load was then multiplied by the total area of roadways swept within the environmental hotspots. The resulting load was then divided by two because roughly half of the roadway (the middle of the road) is swept in these areas because they are unsigned. Environmental hotspots within the Anacostia watershed are swept twice per month, 8 months out of the year, in addition to other signed and unsigned areas throughout the MS4 area. Total amount of trash calculated using the methodology above is multiplied by 16. A reduction factor of 50 percent is then applied since an entire hotspot may not be swept during each sweeping event.
Clean-Up Activities	Clean-Up Events	3,825	Based on empirical data collected (see additional table for tracking of each clean-up event) during the 2012 Anacostia Watershed Society Earth Day Clean-Up. A reduction factor of 50.8 percent is first applied, which accounts for the District's portion of the Anacostia being served by the

Activity Category	Activity	Load Reduction (lbs)	Calculation Methodology
			MS4. A second reduction factor of 20 percent is applied to account for the fact that not all plastic and glass bottles collected may be emptied of water before trash is weighed.
	Skimmer Boats	5,877	Total amount of trash and debris removed is multiplied by 16.5 percent, since this represents the proportion of the watershed which lies within DC. A second reduction factor of 50.8 percent is applied to account for the area of the District's portion of the watershed served by the MS4. A third reduction factor of 50 percent is applied since not all material collected by the skimmer boats may be trash. Finally, a fourth reduction factor of 20 percent is applied since not all plastic and glass bottles collected are emptied of water.
Education and Outreach	Watershed Wide Anacostia Campaign	NA	Efficiency being assessed.
	Trash MEWEEs	NA	Efficiency being assessed.
Regulatory Approaches	Bag Law	NA	Efficiency being assessed.
<b>Total</b>		<b>90,450</b>	

**TABLE 2.8  
2013 TRASH LOAD REDUCTIONS**

Activity Category	Activity	Amount of Trash Removed (pounds)	Annual Load Reduction (pounds)	Calculation Methodology
Trash Traps	Marvin Gaye Park Bandalong	1,935	39	Annual average taken from empirical data collected between December 2011 & November 2013. The average amount of trash collected during this time period is multiplied by 2% since that is the approximate proportion of the Watts

Activity Category	Activity	Amount of Trash Removed (pounds)	Annual Load Reduction (pounds)	Calculation Methodology
				Branch watershed which lies within District and drains to the trash trap.
	Kenilworth Bandalong	3,329	3,329	Annual average taken from empirical data collected between January 2012 and November 2013. No reduction factors are being applied since the entire drainage area above this trap lies within the District.
	Nash Run Trash Trap	2,061	1,546	Annual average taken from empirical data collected between 2009 and 2013. The total amount collected is then multiplied by 75% since that is the approximate proportion of the Nash Run watershed that lies within the District and drains to the trash trap.
	Hickey Run BMP	10,000	2,000	Based on assumed efficiency of 100 percent design capture of device. A reduction factor of 20 percent was applied since glass and plastic bottles may not have been emptied of water.
	James Creek Bandalong	263	263	Annual average taken from empirical data collected between January 2012 and November 2013. No reduction factors have been applied since the entire drainage area for this practice lies within the District.

Activity Category	Activity	Amount of Trash Removed (pounds)	Annual Load Reduction (pounds)	Calculation Methodology
	Earth Conservation Corps Trash Booms	100	100	Amount collected from trap in 2013. No reduction factors have been applied since the entire drainage area for this practice lies within the District.
Roadway and Block Cleanups	Adopt-A-Block Program	NA	NA	Collaborating with Office of the Clean City to collect empirical cleanup data.
Sweeping Environmental Hotspots	Sweeping Environmental Hotspots	144,768	72,384	The total area of roadways within the environmental hotspots (e.g. blocks found to contain high trash amounts) <sup>1</sup> was calculated. That area was then multiplied by 50% because roughly half of the roadway (the middle of the road) is swept in these areas because they are unsigned. That area is then multiplied by the trash loading coefficient of 31.12 lbs/acre developed for the TMDL. That total mass in pounds is then multiplied by 16 since the DC Department of Public Works (DPW) is supposed to sweep environmental hotspots (i.e. blocks with high amounts of trash) twice per month, 8 months out of the year. That result is then multiplied by 50% because not all hotspots may always be swept.

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<sup>1</sup> - The environmental hotspots which are swept differ from the “hotspot” sewersheds mentioned earlier. The environmental hotspots swept represent a series of blocks found to contain very high amounts of trash.

Activity Category	Activity	Amount of Trash Removed (pounds)	Annual Load Reduction (pounds)	Calculation Methodology
Clean-Up Activities	Clean-Up Events	33,577	563	Based on empirical data collected during the 2013 Alice Ferguson Foundation Potomac Watershed Wide Cleanup (Anacostia watershed sites) and the 2013 Anacostia Watershed Society Earth Day Clean-Up. A reduction factor of 16.5% is applied since this the proportion of the Anacostia watershed which lies within the District. A second reduction factor of 50.8 % is applied to account for the District's portion of the Anacostia served by the MS4. A third reduction factor of 20% is applied to account for the fact that not all plastic and glass bottles collected may have been emptied of water before bagged.
	Skimmer Boats	820,000	6,873	Based on the total amount of material collected by DC Water skimmer boats in 2013. The total amount is first multiplied by 16.5 %, which represents the proportion of the watershed that lies within the District. A second reduction factor of 50.8 % was applied to account for the area of the District's portion of the watershed served by the MS4. A third reduction factor of 50 % was applied since not all material collected by the skimmer boats may have been trash. Finally, a fourth reduction factor of 20 percent was applied since not all plastic



Activity Category	Activity	Amount of Trash Removed (pounds)	Annual Load Reduction (pounds)	Calculation Methodology
				and glass bottles collected were emptied of water.
Education and Outreach	Watershed Wide Anacostia Campaign	NA	NA	Efficiency being assessed.
	Trash MWEEs	NA	NA	Efficiency being assessed.
Regulatory Approaches	Bag Law	1,072	272	DDOE currently estimates (based on data collected for the development of the Anacostia Watershed Trash Reduction Plan) that there are 82,431 bags in the river and tributaries. This amount is first multiplied by 50.8%, since this is the proportion of the Anacostia River served by the MS4. The amount is then reduced by 50% because according to a recent survey report, 50% of businesses in the District report a 50% reduction in bag purchases. Finally, the total number of bags is then multiplied by 0.013 lbs, which is the standard weight for a plastic bag.
<b>Total (pounds)</b>		<b>1,017,105</b>	<b>87,369</b>	

#### Outreach and Education on Pet Wastes/Enforcement of Pet Waste Regulations

DDOE oversees the environmental inspection of any DPR parks that are proposed to be converted for dog parks with DPR via Chapter 7 of Title 19 (Amusements, Parks and Recreation) (June 2001) of the District of Columbia Municipal Regulations. The components that must be in

compliance include the following elements, and each/every park must meet all criteria in order to be eligible for conversion.

- (a) A dog park should be located on well-drained land to prevent soil erosion with a maximum slope of 20%;
- (b) A dog park should sit at least 50 feet from surface waters that drain into the Potomac and Anacostia Rivers and Rock Creek;
- (c) A dog park should be located near a water supply line for drinking-fountain and maintenance purposes; and
- (d) A dog park should have a surface type that allows for positive drainage away from the site and that helps mitigate waste management issues.

A member of the Stormwater Management Division conducts multiple visits (with DOH and DPR, and DPW) to nominated sites, before conversion or approval is conveyed. Ultimately, DPR Director must make the final determination based on the suggestion of the DPARC (Dog Park Application and Review Committee).

DDOE also purchased and distributes thousands of instructional pamphlets/flyers at all media/public events throughout all 8 Wards. DDOE also work closely with DPW and DDOT to install heavy metal “pick up pet waste signs: it’s the law” all over the city. Over 100 signs have been installed with another 100 waiting to be installed. These signs have impact as indicated by calls to 311.

#### Integrated Pest Management and Nutrient Management

DDOE has developed an education and outreach program on Integrated Pest Management (IPM) and Nutrient Management. The purpose of the program is to better inform the public on the proper use and disposal of pesticides and on the use of safer alternatives. The program provides education and outreach activities designed to property owners and managers about environmentally sound practices with regard to the use of pesticides in the yard or garden and the introduction of “good” pests into the landscape. Through DDOE’s Nutrient Management Program, the property owners receive education regarding the proper amount of fertilizer to use on a lawn. In addition to fertilizer use, this program addresses the proper way to mow, the proper use of mulch, and the effects of applying too much mulch.

DDOE Pesticide Management Program trains commercial applicators in the legal and safe appliance of pesticides and herbicides. Commercial applicators receive a certification through the program to legally apply pesticides and herbicides in the District. A part of the training program involves the use of IPM.

#### WPD Storm Drain Marker Program

In 2013, the WPD installed 230 storm drain markers throughout the District with private citizens, youth groups, individuals from various volunteer groups and DCPS school groups.

DDOE staff reached out to several District colleges and universities, several community groups and 2 business improvement district organizations within the District. WPD met with Georgetown University, American University, and Howard University to plan student storm drain marking projects. WPD planned projects with NOMA BID and a community group in the Gateway neighborhood. Ultimately, we were able to complete 10 storm drain marking events which installed around 230 markers.

### Low Impact Development (LID)

LID is focused on four main practices: cistern installation, establishment of bioretention cells, retrofit of vegetated (green) roofs and installation of pervious pavers.

In FY 2012, DDOE/WPD partnered with the Golden Triangle Business Improvement District (BID) to install a bioretention cell at a busy downtown intersection (the corner of Connecticut Avenue, NW and Rhode Island Avenue, NW). Although not treating large stormwater volumes, the project has been a huge success from a public education standpoint. Furthermore this demonstration project initiated new potential restoration and retrofit partnerships with the various city BIDs.

In FY2013, DDOE/WPD partnered with the Golden Triangle Business Improvement District (BID), again, to install four bioretention cells at a busy downtown intersection (the intersection of 19<sup>th</sup> Street and L Street NW). The bioretention cells treat a large stormwater volume in the public right-of-ways with a huge success from a public education standpoint among visitors and business owners of Golden Triangle. Other projects anticipated for FY 2014 featuring LID retrofits in highly visible localities include the bioretention at the Smithsonian National Zoological Park's Conservation Carousel and 400 sf of permeable pavers at Tifereth Israel Congregation.

### **D. Nonpoint Source Pollution Watershed Implementation Plans (WIPs)**

WPD is responsible for watershed management planning within the District of Columbia. The Division manages these activities in accordance with its mission to conserve the soil and water resources of the District and to protect its watersheds from nonpoint source pollution.

By strengthening its existing programs and continuing to seek innovative solutions for reducing nonpoint source pollution in an urban setting the District continues to move steadily toward reaching the goals outlined in its Nonpoint Source Pollution WIPs.

Tables 2.9 through 2.14 below include and describe the coordinated activities conducted in designated watersheds and sub-watersheds to meet those goals. Table 2.15 lists the estimated pollution abatement for LID projects.

**TABLE 2.9  
ROCK CREEK WATERSHED SEPARATED SEWER SYSTEM ACTIVITIES**

<i>Rock Creek Watershed Separated Sewer System Activities</i>					
<b>Activity</b>	<b>Description</b>	<b>Status</b>	<b>Output (quantity)</b>	<b>Partners</b>	<b>Funding</b>
130 gallon rain barrel installations	As part of the RiverSmart Homes program, DC Greenworks installs 130 gallon rain barrels on residential properties.	Completed	238	DC Greenworks	MS4
Shade tree installation	Shade trees are planted as part of the RiverSmart Homes, DDOE tree rebates, street tree planting, and other planting efforts.	Completed	3097	Casey Trees, DDOT	MS4, District Funds
BayScaping installation	As part of the RiverSmart Homes program, BayScaping is installed to replace existing turf.	Completed	46 properties average 120 sf per property	Alliance for the Chesapeake Bay	MS4
Rain Garden installation	As part of the RiverSmart Homes program, rain gardens are installed to replace existing turf.	Completed	42 rain gardens installed average 50 sf per property	Alliance for the Chesapeake Bay	MS4
Permeable pavement installation	As part of the RiverSmart Homes program, permeable pavement is installed to replace impervious surfaces.	Completed	10 permeable pavement retrofits installed averaging 120 sf per property.	Alliance for the Chesapeake Bay	MS4

**TABLE 2.10  
ANACOSTIA WATERSHED SEPARATED SEWER SYSTEM ACTIVITIES**

<i>Anacostia Watershed Separated Sewer System Activities</i>					
<b>Activity</b>	<b>Description</b>	<b>Status</b>	<b>Output (quantity)</b>	<b>Partners</b>	<b>Fund-ing</b>
130 gallon rain barrel installations	As part of the RiverSmart Homes program, DC Greenworks installs 130 gallon rain barrels on residential properties.	Completed	660	DC Greenworks	MS4
Shade tree installation	Shade trees are planted as part of the RiverSmart Homes, DDOE tree rebates, street tree	Completed	8605	Casey Trees, DDOT	MS4, District Funds

<i>Anacostia Watershed Separated Sewer System Activities</i>					
<b>Activity</b>	<b>Description</b>	<b>Status</b>	<b>Output (quantity)</b>	<b>Partners</b>	<b>Fund-ing</b>
	planting, and other planting efforts.				
BayScaping installation	As part of the RiverSmart Homes program, BayScaping is installed to replace existing turf.	Completed	126 properties average 120 sf per property	Alliance for the Chesapeake Bay	MS4
Rain Garden installation	As part of the RiverSmart Homes program, rain gardens are installed to replace existing turf.	Completed	114 rain gardens installed average 50 sf per property	Alliance for the Chesapeake Bay	MS4
Permeable pavement installation	As part of the RiverSmart Homes program, permeable pavement is installed to replace impervious surfaces.	Completed	28 permeable pavement retrofits installed averaging 120 sf per property.	Alliance for the Chesapeake Bay	MS4

**TABLE 2.11  
OXON RUN WATERSHED SEPARATED SEWER SYSTEM**

<i>Oxon Run Watershed Separated Sewer System Activities</i>					
<b>Activity</b>	<b>Description</b>	<b>Status</b>	<b>Output (quantity)</b>	<b>Partners</b>	<b>Funding</b>
130 gallon rain barrel installations	As part of the RiverSmart Homes program, DC Greenworks installs 130 gallon rain barrels on residential properties.	Completed	106	DC Greenworks	MS4
Shade tree installation	Shade trees are planted as part of the RiverSmart Homes, DDOE tree rebates, street tree planting, and other planting efforts.	Completed	1649	Casey Trees, DDOT	MS4, District Funds
BayScaping installation	As part of the RiverSmart Homes program, BayScaping is installed to replace	Completed	24 properties average 120 sf per property	Alliance for the Chesapeake Bay	MS4

	existing turf.				
Rain Garden installation	As part of the RiverSmart Homes program, rain gardens are installed to replace existing turf.	Completed	64 rain gardens installed average 50 sf per property	Alliance for the Chesapeake Bay	MS4
Permeable pavement installation	As part of the RiverSmart Homes program, permeable pavement is installed to replace impervious surfaces.	Completed	6 permeable pavement retrofits installed averaging 120 sf per property.	Alliance for the Chesapeake Bay	MS4

**TABLE 2.12  
POTOMAC WATERSHED SEPARATED SEWER SYSTEM ACTIVITIES**

<i>Potomac Watershed Separated Sewer System Activities</i>					
<b>Activity</b>	<b>Description</b>	<b>Status</b>	<b>Output (quantity)</b>	<b>Partner</b>	<b>Funding</b>
130 gallon rain barrel installations	As part of the RiverSmart Homes program, DC Greenworks installs 130 gallon rain barrels on residential properties.	Completed	78	DC Greenworks	MS4
Shade tree installation	Shade trees are planted as part of the RiverSmart Homes, DDOE tree rebates, street tree planting, and other planting efforts.	Completed	1005	Casey Trees, DDOT	MS4, District Funds
BayScaping installation	As part of the RiverSmart Homes program, BayScaping is installed to replace existing turf.	Completed	14 properties average 120 sf per property	Alliance for the Chesapeake Bay	MS4
Rain Garden installation	As part of the RiverSmart Homes program, rain gardens are installed to replace existing turf.	Completed	14 rain gardens installed average 50 sf per property	Alliance for the Chesapeake Bay	MS4
Permeable pavement installation	As part of the RiverSmart Homes program, permeable pavement is	Completed	4 permeable pavement retrofits installed averaging 120 sf per property.	Alliance for the Chesapeake Bay	MS4

	installed to replace impervious surfaces.				
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**TABLE 2.13  
ROCK CREEK WATERSHED COMBINED SEWER SYSTEM ACTIVITIES**

<i>Rock Creek Watershed Combined Sewer System Activities</i>					
<b>Activity</b>	<b>Description</b>	<b>Status</b>	<b>Output (quantity)</b>	<b>Partners</b>	<b>Funding</b>
130 gallon rain barrel installations	As part of the RiverSmart Homes program, DC Greenworks installs 130 gallon rain barrels on residential properties.	Completed	116	DC Greenworks	MS4
Shade tree installation	Shade trees are planted as part of the RiverSmart Homes, DDOE tree rebates, street tree planting, and other planting efforts.	Completed	1508	Casey Trees, DDOT	MS4, District Funds
BayScaping installation	As part of the RiverSmart Homes program, BayScaping is installed to replace existing turf.	Completed	22 properties average 120 sf per property	Alliance for the Chesapeake Bay	MS4
Rain Garden installation	As part of the RiverSmart Homes program, rain gardens are installed to replace existing turf.	Completed	20 rain gardens installed average 50 sf per property	Alliance for the Chesapeake Bay	MS4
Permeable pavement installation	As part of the RiverSmart Homes program, permeable pavement is installed to replace impervious surfaces.	Completed	4 permeable pavement retrofits installed averaging 120 sf per property.	Alliance for the Chesapeake Bay	MS4

**TABLE 2.14  
ANACOSTIA WATERSHED COMBINED SEWER SYSTEM ACTIVITIES**

<i>Anacostia Watershed Combined Sewer System Activities</i>					
<b>Activity</b>	<b>Description</b>	<b>Status</b>	<b>Output (quantity)</b>	<b>Partners</b>	<b>Funding</b>
130 gallon rain barrel installations	As part of the RiverSmart Homes program, DC Greenworks installs 130 gallon rain barrels on residential properties.	Completed	324	DC Greenworks	MS4
Shade tree installation	As part of the RiverSmart Homes program, Casey Trees installs medium to large	Completed	4242	Casey Trees, DDOT	MS4, District Funds



	shade trees on residential property.				
BayScaping installation	As part of the RSH program, BayScaping is installed to replace existing turf.	Completed	62 properties average 120 sf per property	Alliance for the Chesapeake Bay	MS4
Rain Garden installation	As part of the RiverSmart Homes program, rain gardens are installed to replace existing turf.	Completed	56 rain gardens installed average 50 sf per property	Alliance for the Chesapeake Bay	MS4
Permeable pavement installation	Daylighting (restoring to the open air) the flow of a previously covered portion of Broad Branch.	Completed	14 permeable pavement retrofits installed averaging 120 sf per property.	Alliance for the Chesapeake Bay	MS4

**TABLE 2.15  
ESTIMATIONS OF POLLUTION ABATEMENT RESULTING FROM 2012-2013 LID PROJECTS**

BMP Type	Installed	Property Type		Treatment Area	
	Year	New/Retrofit	Agency	Square Feet	Acres
Bioretention	2012	retrofit	Private/Municipal	2,273,496	52.2
Bioretention	2013	retrofit	Private/Municipal	1,390,639	31.9
Green Roof	2012	retrofit	Private/Municipal	564,609	13.0
Green Roof	2013	retrofit	Private/Municipal	1,108,061	25.4
Permeable Pavement	2012	retrofit	Private/Municipal	40,345	0.93
Permeable Pavement	2013	retrofit	Private/Municipal	80,022	1.84
Infiltration Trench	2012	retrofit	Private/Municipal	640,276	14.7
Infiltration Trench	2013	retrofit	Private/Municipal	483,851	11.1
Harvest/Reuse	2012	retrofit	Private/Municipal	2,156,840	49.5
Harvest/Reuse	2013	retrofit	Private/Municipal	40,584	0.93
<b>TOTAL</b>					
Number of Pollution Abatement projects:		314			
Number of treatment area for 2012-2013 (square ft):				8,778,723	
Number of treatment area for 2012-2013 (acres):					201.5

## **Stormwater Management and Sediment Control Regulatory Programs**

Along with its voluntary activities to control nonpoint source pollution through its Nonpoint Source Management and Chesapeake Bay Implementation programs, WPD also supports activities to regulate land-disturbing and substantial-improvement activities for stormwater management and erosion/sediment control. WPD's major regulatory actions in the area of nonpoint source pollution control include enforcing the provisions of the following:

- District of Columbia Erosion and Sedimentation Control Act of 1977, D.C. Law 2-23;
- Erosion and Sedimentation Control Amendment Act of 1994, D.C. Official Code § 6-1403(c);
- District of Columbia Water Pollution Control Act of 1984, D.C. Official § Code 8-103.01 *et seq*; and
- Stormwater Management Regulations – Chapter 5 of Title 21 of the District of Columbia Municipal Regulations (DCMR).

DDOE conducts the following activities in support of the laws and regulations listed above:

- Reviews and approves construction plans for stormwater runoff control measures, unstable soils, topography compatibility, erosion/sediment control measures, and landscaping;
- Reviews environmental impact screening forms and provides technical comments on environmental assessments;
- Provides technical assistance to developers and District residents;
- Conducts routine and programmed inspections at construction sites for proper stormwater management and erosion/sediment control to ensure compliance with regulations;
- Conducts inspections of stormwater management facilities for proper maintenance;
- Enforces stormwater management and erosion/sediment control regulations at construction sites; and
- Conducts investigations of citizen complaints related to drainage and erosion/ sediment control.

## **Plan Review**

On July 19, 2013, DDOE finalized a new rule on Stormwater Management and Soil Erosion and Sediment Control that updates the District’s existing requirements in 21 DCMR, Chapter 5 to reflect current scientific, engineering, and practical understanding of controlling runoff from development. Knowledge and technology in these fields have changed considerably since 1977, when the majority of soil erosion and sediment control requirements were put into place, and 1988, when the District’s stormwater management requirements were established. The new regulations call for a stormwater retention performance standard that encourages the use of green infrastructure to manage stormwater. A new Stormwater Management Guidebook was developed to accompany the regulations.

The disturbance of 5,000 sf of land has been a trigger since the stormwater management regulations were established in 1988. The new stormwater retention standard will be triggered by two categories of projects. Major land-disturbing projects (sites that disturb 5,000 sf or more of land) are required to retain the stormwater from a 1.2-inch storm, either on site or through a combination of on-site and off-site retention. Major substantial improvement projects (renovations of existing structures that have a combined 5,000 sf footprint and a project cost that exceeds 50 percent of the pre-project value of the structure) are required to retain the volume from a 0.8-inch storm. After reaching 50 percent of its required retention volume on site, a regulated site in either category has the option to meet the remainder of its retention requirement through the payment of an in-lieu fee or the purchase of privately tradable stormwater retention credits (SRCs).

The innovative SRC trading program, also established by the new rule, is the first of its kind in the nation and has the potential to increase benefits to District waterbodies while reducing the cost of compliance, providing flexibility for developers, and providing other sustainability benefits. The SRC trading program creates a financial incentive and business opportunity for sites to install stormwater retrofits that are completely voluntary or that exceed the regulated requirement.

Since 1999, WPD has approved 2,037 construction plans for stormwater management. Of those, 316 were approved between FY 2012 and FY 2013. Table 2.16 breaks out the most popular BMP types that were installed over the past two years and the amount of drainage area that these BMPs served.

**TABLE 2.16  
NUMBER AND TYPE OF STORMWATER MANAGEMENT BMPS APPROVED FOR INSTALLATION**

BMP Type	2012			2013		
	No. of Plans	Drainage Area Served by BMPS		No. of Plans	Drainage Area Served by BMPS	
		Square Feet	Acres		Square Feet	Acres
Bioretention	21	1,930,260	44.30	22	5,051,001	2.31

BMP Type	2012			2013		
	No. of Plans	Drainage Area Served by BMPs		No. of Plans	Drainage Area Served by BMPs	
		Square Feet	Acres		Square Feet	Acres
Filtera/Tree Box	0	0	0	1	10,781	0.25
Infiltration/Ex-filtration and Dry Pond/Swale	19	1,185,978	34.32	10	100,356	14.00
Sandfilter/Stormceptor	6	532,202	12,022.00	8	38,1925	8.77
Green roof	22	1,756,350	40.32	18	856,187	19.66
Porous/Permeable Pavers	12	368,086	8.45	3	215,557	4.95
Underground Detention Systems	3	89,736	2.10	5	21,1892	4.86
Retention Basin System	0	0	0	0	0	0
Hydrodynamic Basins	7	1,263,956	29.02	7	1,113,701	25.57
Cartridge Filtration	37	1,939,504	44.52	43	1,685,574	38.70
<b>Total</b>	<b>127</b>	<b>9,066,072</b>	<b>12,225.03</b>	<b>117</b>	<b>962,6974</b>	<b>119.07</b>

In addition to stormwater management requirements, any construction activity that disturbs more than 50 sf of land is required to submit an erosion and sediment control plan to DDOE for approval. WPD classifies these plans as major (over 5,000 sf) and minor (between 50 and 5,000 sf). During the reporting period, DDOE approved 3,312 erosion/sediment control plans.

### Inspection and Enforcement

Inspectors visit construction sites on a regular basis to ensure compliance with regulations. In an effort to streamline enforcement and ensure compliance, WPD developed and implemented new standard operating procedures (SOPs) as part of a larger DDOE enforcement effort that standardized the format for SOPs. These SOPs provide a consistent framework for conducting inspections and issuing notices, fines, and stop work orders for violations. Civil infraction fines range from \$200 to \$4,000, depending on the nature of the infraction or whether the violator is a repeat offender. During the reporting period, WPD's Inspection Program issued 147 Notices of Violation (NOVs) and 93 Notices of Infraction (NOIs) at construction sites. Only NOIs are associated with a monetary fine.

To ensure compliance with the regulations, DDOE also inspects the maintenance and operation of stormwater BMPs after construction has been completed. WPD's Stormwater Management Facilities Maintenance Inspection Program ensures that permanently installed stormwater

management BMPs continue to function properly throughout their design life. During the reporting period, DDOE conducted 1,909 maintenance inspections. The program also distributes an instructional video and guidance manual highlighting the important elements for maintaining stormwater sand filters to construction and maintenance personnel. An instructional video on the maintenance of green roofs is being developed and will be offered soon. Presently, there is about 55 acres of green roofs installed in the District. Some green roofs date back to 1971; therefore, many were not installed to meet a stormwater retention regulatory requirement. DDOE anticipates that there will be a dramatic increase in green roofs installations, as it's one way a developer can meet the new requirements.

### **Floodplain Management Program**

The District of Columbia joined the National Flood Insurance Program (NFIP) in 1976 under the programs' emergency provisions, which state that properties within the District are eligible for federally backed flood insurance if they are located in designated areas of the city. To qualify for the emergency coverage, the District passed the "District of Columbia Applications Insurance Implementation Act" on May 26, 1976 (D.C. Law 1-64, D.C. Official Code § 6-501, *et seq.*). The law gives the Mayor rulemaking authority and allows the Mayor to delegate this authority to the Director of the Department of Consumer and Regulatory Affairs (DCRA) to promulgate rules. The law requires that the Mayor review all building applications for new construction or substantial improvements to property in the District to determine whether or not the proposed building sites are reasonably safe from flooding.

The District promulgated final regulations that set standards for flood hazard control under D.C. Law 1-64 on November 15, 1985. These regulations, known as "Flood Hazard Regulations of the District of Columbia" are published as 20 DCMR, Chapter 41. Subsequently, 20 DCMR, Chapter 31, "Flood Hazard Rules," were amended and adopted on November 19, 2010.

As an NFIP participating community, the District has committed itself to

- Issue or deny floodplain development and building permits;
- Inspect all development to assure compliance with the Flood Hazard Rules (currently 20 DCMR, Chapter 31);
- Maintain records of floodplain development;
- Assist in the preparation and revision of floodplain maps; and
- Help residents obtain information on flood hazards, floodplain maps and data, flood insurance, and proper construction measures.

Under Mayor's Order 84-193 (dated November 2, 1984), Mayor's Order 98-46 (dated April 15, 1998), and Mayor's Order 2006-61 (dated June 14, 2006), the Mayor delegated the authority pursuant to D.C. Law 1-64 to the Director of the District Department of the Environment. The DDOE Director is designated as the Floodplain Administrator and the NFIP Coordinator for the District of Columbia. As the Floodplain Administrator, DDOE coordinates the floodplain regulations (Flood Hazard Rules and construction codes) review and approval process between DDOE and DCRA. DDOE also coordinates and collaborates with other District and federal agencies on flood risk and floodplain management activities in the District of Columbia.

### **2012–2013 Accomplishments**

- **Floodplain Development Permitting:** DDOE provided flood zone determinations and information to developers as part of the permitting process at DDOE and the satellite office in DCRA. DDOE also reviewed Environmental Impact Screening Forms, Erosion and Sediment Control Plans, Stormwater Management Plans, and Floodplain Management Plans for compliance with DC Flood Hazard Rules (20 DCMR, Chapter 31).
- **General Technical Assistance:** DDOE provided general and specific technical assistance to project managers, engineers, and developers for private and public development projects in Special Flood Hazard Areas, including projects for stream restoration, roads, culverts, bridges, and Southwest Waterfront redevelopment.
- **DDOE/DCRA NFIP Coordination Office:** DDOE and DCRA established the DDOE/DCRA NFIP Coordination Office at DCRA's Permit Service Center to improve interagency coordination in the building permit process and for NFIP compliance and enforcement. DDOE staff provides information, addresses issues during the permitting process, and distributes publications and resources to the public and District officials through this office.
- **DC Floodplain Quick Guide:** DDOE issued the Floodplain Management Quick Guide tailored to the District of Columbia's specific needs. The Quick Guide included essential information about NFIP and focused on information designed to help both residents and District officials understand the basics of floodplain management.
- **Bloomingdale Task Force:** Recent rainfalls in the District resulted in significant flooding and sewer system backups in the Bloomingdale and LeDroit Park neighborhoods. In response, the Mayor formed a task force (see <http://oca.dc.gov/node/226932>) to investigate the causes of these problems and to develop recommendations for actions that may be taken by the District of Columbia Water and Sewer Authority (DC Water), other District agencies, and residents to reduce the future likelihood of flooding and sewer system backups in these neighborhoods. The Mayor's Task Force on the Prevention of Flooding in the Bloomingdale Area established five committees: (1) Technical; (2)

Finance; (3) Emergency Response; (4) Planning and Research; and (5) Legislative and Government Affairs. The Technical Committee includes DDOE staff. DDOE partners with DC Water to provide cisterns to homeowners who request them.

- **Staff Training:** DDOE partnered with the D.C. Homeland Security and Emergency Management Agency (HSEMA) to host training courses for officials from various District agencies and surrounding jurisdictions, including DDOE; the Department of Consumer and Regulatory Affairs (DCRA); the D.C. Office of Planning, DC Water; Arlington County, VA; the City of Alexandria, VA; the City of North Brentwood, MD); and Prince George’s County, MD. Training courses included Floodplain 101, Flood Provisions in Building Codes, Retrofitting Flood-Prone Residential Buildings, and Substantial Improvement/Substantial Damage.
- **Award:** The Federal Triangle Stormwater Drainage Study received the American Planning Association Federal Planning Award for Outstanding Collaborative Planning Project or Program. Partnering agencies and members of the working group included: DDOE, HSEMA, the D.C. Office of Planning, DC Water, The U.S. Federal Emergency Management Agency (FEMA), the National Archives and Records Administration, the National Capital Planning Commission, the National Gallery of Art, the National Park Service (NPS), the Smithsonian Institution, the U.S. Department of Justice, the U.S. Environmental Protection Agency, the U.S. General Services Administration, and the Washington Metropolitan Area Transit Authority (WMATA).
- **DC Flood Risk Management Team:** A DC Flood Risk Management Team was established. The interagency coordinating Team included members from NPS, the U.S. Army Corps of Engineers (USACE), the National Oceanic and Atmospheric Administration/National Weather Service, the U.S. Geological Survey (USGS), FEMA, the D.C. Office of Planning, DC Water, WMATA, and DDOE. The Team’s vision statement is to establish and strengthen intergovernmental federal and District partnerships as a catalyst in developing and implementing comprehensive, resilient, and sustainable solutions to the District of Columbia’s flood-hazard challenges.
- **North Atlantic Coast Comprehensive Study:** DDOE staff attended the North Atlantic Coast Comprehensive Study working meeting in Hoboken, NJ. The intent of this meeting was to bring together federal agencies; tribal, state, and local governments; academic institutions; and non-governmental organizations to gather information and input on how to build resilience and reduce risk for those areas affected by Superstorm Sandy. Participants identified actions that can create resilience and reduce risk along the coastline.

## **Coordination with Other Agencies**

Information on coordination with other local, regional, and federal agencies is included throughout this report.

## **Cost/Benefit Assessment**

### Cost

The District has and continues to commit significant amounts of resources to improve the quality of its waters. Effective wastewater treatment, sewer system maintenance, combined sewer overflow control and stormwater management are the principal elements in water pollution control. The activities undertaken in each of these areas is presented below. Table 2.17 summarizes the costs.

#### *Wastewater Treatment*

The Blue Plains Wastewater Treatment Plant (WWTP) operated by DC Water (formerly DC WASA) provides wastewater services to over two million customers in the District and the surrounding jurisdictions of Maryland and Virginia (Figure 2.4). Blue Plains is one of the largest WWTPs in the nation. The waste water treatment cost which accounts for over sixty percent of the water quality control cost, is reflective of the regional character of the WWTP. The WWTP operates under a stringent National Pollutant Discharge Elimination System (NPDES) permit. Significant plant-wide upgrade, rehabilitation and installation of support system are continually ongoing. Among the major projects is the Biological Nutrient Removal project to meet the goals of the Chesapeake Bay Agreement.



## DC WATER SERVICE AREA



Figure 2.4: DC Water Service Area (Source: DC Water Budget in Brief, Jan 2013)

### *Sanitary Sewer System*

The bulk of the cost of the waste water collection system is associated with the assessment, rehabilitation and replacement of the aging infrastructure in the District. High bacteria counts in various waterways have been attributed to leaking sanitary sewers. Under a multi-year Sewer Assessment Program, DC Water completed the Sewer System Facilities Plan in 2009. The plan addresses the evaluation of the physical condition and capacity of the sewer system, identification and prioritization of rehabilitation needs, record keeping and data management, as well as ongoing inspection and rehabilitation programs. In accordance with key findings and recommendations of the plan, priority projects to rehabilitate sewer collection systems as well as pumping facilities are currently ongoing. In particular, the rehabilitation of sewers in stream valleys will result in significant water quality improvement.

### *Combined Sewer Overflow Long-Term Control Plan*

DC Water completed the CSO Long Term Control Plan (LTCP) report in 2002. The plan involves the construction of large underground tunnels that will serve as collection and retention system for combined sewer during high flow conditions. Under a 2005 agreement with the federal government, the LTCP is to be implemented over a 20 year period. The plan is to reduce combined sewer overflows to District waters by 96 percent. Construction of the Anacostia River segment of the stormwater storage tunnel is underway. In December 2012, EPA, the District government and DC Water entered into an agreement: the Green Infrastructure Partnership Agreement (GIPA). The GIPA reinforces the mutual commitments to Green Infrastructure (GI) to mitigate combined sewer overflows to the District waterways. DC Water is currently

proposing modification of the 2005 agreement to incorporate the GI plan (also known as the Clean Rivers Project). The plan calls for \$100 million investment for the construction of GIs in the Potomac River and Rock Creek watersheds and forego the building of the tunnels in those watersheds. The GI project periods for implementation in the Rock Creek watershed is expected to begin in 2015 and complete in 2032, the Potomac River watershed project will span from 2017 to 2028. The GI Plan is currently under public review, thus the costs are not included in this report.

*Capital Equipment*

The capital equipment cost constitutes a portion of the waste water collection and treatment expenditures in the areas of acquisition and maintenance of information technology and large equipment. It accounts for about three percent of the waste water treatment cost.

*Stormwater Management*

Stormwater management in the District is a multi-agency effort that includes the District Department of the Environment, the District Department of Transportation, the Department of Public Works, the District of Columbia Water, and the District Department of General Services. The cost for storm water management covers a whole array of activities including research and demonstration projects, drainage improvements, monitoring and control of various types of pollutants from various sources, enforcement and public education. The cost may include capital construction costs, and those associated with operation and maintenance of structural controls, such as the rehabilitation/replacement of storm sewers and inlets.

In addition, the District received funding under the American Recovery and Reinvestment Act (ARRA). A number of stormwater management projects were funded under the ARRA. The projects which included enhancing tree canopy, installation of rainwater harvesting and reuse tanks, permeable pavers, and green roofs accounted for less than one percent of the costs.

The cost of other Best Management Practice (BMP) structures and activities incurred by private entities is difficult to estimate. Installation of various BMP devices such as sand filters, infiltration trenches, and oil/water separators have been required for new construction in the District of Columbia since the early eighties. Other BMPs such as green roofs are being actively promoted by DDOE. DDOE sponsored a study of the costs associated with the implementation of District-wide storm water management requirements (Cost Analysis of Proposed District of Columbia Stormwater Regulations - Draft January 11, 2010). The estimated compliance cost for three development scenarios ranges between 0.03% to 0.16% of the total development cost. This cost is not included in this report.

**TABLE 2.17 COST SUMMARY OF WATER POLLUTION CONTROL ACTIVITIES**

Activity Area	FY 2012*	FY 2013*	Total	Percent
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			<b>FY12-13*</b>	
Waste Water Treatment**	253,305	358,543	611,848	60.4
Sanitary Sewer System**	23,783	29,084	52,867	5.2
Combined Sewer System**	112,658	163,509	276,167	27.2
Capital Equipment**	13,713	18,422	32,135	3.2
Storm Water Management***	16,315	17,182	33,497	3.3
ARRA Water Quality Related Projects****	5,275	1,919	7,194	0.7
<b>Total</b>	<b>425,049</b>	<b>588,659</b>	<b>1,013,708</b>	<b>100</b>

\*Dollars in thousands

\*\* Source [http://www.dewater.com/news/publications/bib\\_2013\\_web.pdf](http://www.dewater.com/news/publications/bib_2013_web.pdf)

\*\*\* Cost includes Enterprise Fund, Anacostia Cleanup Fund, and cost to DC Water

\*\*\*\* The cost is for projects completed in the Fiscal Year

## Benefits

The benefits to clean rivers and streams are increasingly being realized in the District of Columbia. In particular, the Anacostia River waterfront development which gained prominence in recent years, promotes recreational use of the waters. The District of Columbia Comprehensive Plan lays the foundation for the policies in support of an ecologically sound waterfront development. Among the key elements of the plan is to “create and enhance relationships between the rivers and District residents, develop urban waterfronts and water-related recreation in appropriate locations, and establish attractive pedestrian connections from neighborhoods to activities along the waterfronts”. Development and rehabilitation of waterfront properties to include residential, retail, office space and green space areas that begun in 2007, continue to expand through the watersheds “... the Mayor’s Sustainability and Green Infrastructures Initiatives”.

Qualitatively, improvements continue to be seen. A quantitative assessment of the benefits resulting from current water pollution control expenditures is difficult to make. However, the long term benefits over time are evident. Fish tumor survey conducted by the US Fish and wildlife Service (“Temporal and Spatial Patterns in Tumor Prevalence in Brown Bullhead (*Ameiurus nebulosus*) in the Tidal Potomac River Watershed”, April 2013) examined fish tissue analysis from the Anacostia River sampled in the years of 1996, 2000-2001, 2009-2011. The survey shows that there has been a marked decrease in the prevalence of tumors in bottom dwelling fish in the Anacostia River. The report indicates that the mitigation efforts “... would have occurred in the 2000-2006 period to be reflected in the tumor prevalence of the mostly 3-5 year old bullheads collected in 2009-2011.” The survey also indicates that “... although there has been marked improvement compared with 1996–2001, both the liver and skin tumor probabilities for the 2009–2011 Anacostia bullheads remain significantly elevated compared with our estimate of Bay-wide background.”

Recreational fishing is active in the District. Annual surveys by the Fisheries and Wildlife Division (FWD) document the general stability of the resident and migratory fish populations in District of Columbia waters. The sale of fishing licenses in the District support the findings of the annual surveys and is an indicator of recreational use. Since 1988, the District of Columbia has required the purchase of licenses to fish in District waters.

Table 2.18 is a summary of the number of licenses sold from 2008 to 2011. In 2008, the federal law for certifying fishing and hunting licenses by the US FWS was changed, now states are required to conduct certification on a fiscal year cycle instead of the former calendar year. 2012 fishing license certification sales will be available August 2014 and 2013 sales will be available August 2015.

**TABLE 2.18  
SALES OF FISHING LICENSES IN THE DISTRICT OF COLUMBIA  
(2008 TO 2011)**

Year	Non-Resident	Resident	Total
2008	7016	1912	8928
2009	5598	1987	7585
2010	6164	1926	8090
2011	4551	1461	6012

### **Special State Concerns and Recommendations**

#### TMDL Implementation Plans

The District faces a challenging task in developing a consolidated TMDL Implementation Plan. However, the District believes this requirement represents a significant opportunity to develop and implement a strategic and meaningful approach for improving the quality of District waters. The approach outlined in the modified MS4 Permit represents a performance-based approach for reducing stormwater runoff volume and pollution, addressing TMDL compliance and ultimate attainment of water quality standards. It starts from a position of understanding that WLA and WQS attainment are long-term goals, likely to require multiple permit cycles, and that the District is in the best position to conduct this analysis. Finally, the approach grants DDOE much-needed flexibility, first to define a compliance schedule that realistically estimates compliance based on available resources, and also to rationalize the number of TMDLs to address, by consolidating, revising, or employing surrogate measures where appropriate.

**Recommendation:** The primary actions required for successful development of TMDL Implementation Plans are:

- Continued support for the TMDL Implementation Plan approach as described in the modified MS4 Permit.

## Federal Role in Anacostia River Restoration

Restoration efforts to attain Clean Water Act goals in the Anacostia River have been ongoing for more than twenty years. Yet there is still a long way to go before the river can be considered fishable and swimmable. In recent years, increased attention has been placed on the Federal government's share of responsibility for the river's current condition, as well as its potential role in restoration efforts. The Federal government owns approximately one-third of the total land area in the District of Columbia, and approximately 20 percent of the impervious surface that contributes stormwater runoff to the District's waters. DC Appleseed's 2011 report "A New Day for the Anacostia" summarized how much of the damage to the Anacostia derives from the outsized role the Federal government has played in the watershed for centuries. These activities range from filling in over half of the watershed's tidal acreage and most of the watershed's wetlands, to designing, constructing and operating for some time the city's combined sewer system, to channelizing streams, to discharging toxic materials from federal installations, and to general development of federal facilities which increased impervious surface.

In recognition of these impacts, a number of drivers now compel the Federal government to take a larger role in improving and restoring the Anacostia's condition. The Energy Independence and Security Act (EISA) included provisions requiring new Federal development and redevelopment projects over 5,000 sf in size to maintain or restore the property's predevelopment hydrology. Executive Order 13514, on Federal Leadership in Environmental, Energy, and Economic Performance, requires 15% of Federal facilities to implement improved stormwater management practices by FY2015. Finally, Executive Order 13508, on Chesapeake Bay Protection and Restoration, calls for the Federal government to take the lead in planning and implementing strategies to restore the Chesapeake Bay, with a focus on reducing water pollution from Federal lands and facilities. Each of these commitments is admirable and represents a significant opportunity to improve water quality in the Anacostia. However, they are all voluntary effort by the Federal government. It is unclear how close actual implementation will come to the specified performance levels in the absence of any accountability and enforcement mechanism.

Recommendation: The primary action required for a successful increased Federal role in the Anacostia River's restoration are:

- Successfully implementing the stormwater management requirements of EISA, E.O. 13508 and E.O. 13514 by developing accountability and enforcement mechanisms to compel Federal agency compliance with these requirements.

Discharge of Treated Groundwater from Contaminated and Potentially Contaminated Construction Sites into Waters of the United States within the District of Columbia

Economic development within the District creates a significant challenge when complying with District and federal regulatory requirements. Frequently, developers encounter high groundwater tables and need to dewater at construction sites. Some of these sites are contaminated and may also be impacted by natural background conditions. Within recent years, there has been an increase in the number of developers applying for National Pollutant Discharge Elimination System (NPDES) permits to discharge treated contaminated groundwater to Waters of the US through the District's MS4. Although the NPDES Construction General Permit authorizes the discharge of uncontaminated groundwater or uncontaminated construction dewatering effluent, currently no EPA NPDES general permit exists that covers the discharge of treated groundwater from contaminated or potentially contaminated construction sites. Additionally, permit applicants have expressed their concern regarding the following issues:

- The need to treat groundwater with naturally-occurring metals concentrations above the District's surface water quality standards; and,
- The need to meet the District's surface water quality standards, although there is no economical technology available to treat groundwater to these surface water quality standards.

Recommendations: The District recommends that EPA conduct the following:

- Finalize and issue the general permit for the discharge of contaminated and/or treated groundwater.
- Develop a new human health criterion for arsenic and other natural occurring metals based on local data or a study to obtain the necessary information such as background concentration values, impacts to biota, and assess the need to possibly revise bioaccumulation factors.

## PART III: SURFACE WATER ASSESSMENT

### Current Surface Monitoring Program

#### Changes

No changes.

There are two real-time monitoring stations on the Anacostia River and one on the Potomac River (Appendix 3.1). Real-time readings of the Rivers show current temperature, DO, pH, specific conductivity, turbidity, and chlorophyll levels. Appendix 3.2 is the percent violation tables for the continuously monitored.

#### **Plan for Achieving Comprehensive Assessments**

WQD has a monitoring strategy based on US EPA's 2003 guidance, *Elements of a State Water Monitoring and Assessment Program*. The strategy will continue the practice of comprehensive monitoring of the District waters. The strategy describes a monitoring program that will move towards allowing water quality resource managers to know the overall quality of District waters, the extent of water quality change, trouble areas, the level of protection needed, and the effectiveness of projects to correct impairments. The approved monitoring strategy includes language to continuously update the document as new areas or issues of concern arise.

#### **Assessment Methodology and Summary Data**

##### Assessment Methodology

To help to compare District water quality and national water quality, the District applies national criteria, where possible, in determining use support of its waterbodies. However, a modified version of the criteria established by EPA had to be used in certain use support decisions because the District did not collect the data as specified in the national criteria. For example, in many cases the District collected monitoring data less frequently than indicated by EPA criteria. The majority of monitoring stations are only sampled once-a-month. The District, therefore, had to modify the criteria for determining primary and secondary contact recreation (Class A and B) use determinations using physical/chemical (pH and turbidity) data to accommodate the sampling frequency. E. coli bacteria data were used to make use support decisions about pathogens. Class A water quality criteria are pH, turbidity and E. coli. Class B water quality criteria are trash and aesthetics, pH and turbidity. The threshold used for these uses may be found in Table 3.1.



A regional Trash TMDL exists and the WQS include narratives that the aesthetic qualities of Class B waters shall be maintained. The waterbody segments are not fully supported. A methodology of the use support determination needs to be developed.

**TABLE 3.1  
THRESHOLD FOR CONVENTIONAL POLLUTANTS AND PATHOGENS**

Support of Designated Use	Threshold for Conventional Pollutants and Pathogens
<b>Fully Supporting</b>	For any pollutant, standard exceeded in $\leq 10\%$ of measurements. Pollutants not found at levels of concern.
<b>Not Supporting</b>	For any one pollutant, standard exceeded in $> 10\%$ of measurements. Pollutants found at levels of concern.
<b>Not Assessed</b>	Not assessed
<b>Insufficient Information</b>	Data to determine if the designated use is fully supporting/not supporting is not available.

Conventional pollutants are defined here as dissolved oxygen (DO), pH, turbidity, and temperature.

Biological/habitat data collected during 2002-2009, habitat data collected during 2009-2013, in addition to physical/chemical data is used to determine aquatic life (Class C) use support for the small District streams. Biological/ habitat data for small streams was evaluated using the EPA stressor identification guidance. If a stream’s aquatic life use is not supported based on the biological information found in the DC Tributary Assessment Report (draft internal document) it is listed under Category 5 of the list, if a TMDL has not been completed.

Table 3.2 indicates streams where rapid bioassessment data is collected. Piney Branch and Foundry Branch only have habitat data available. The reference streams are in Maryland. The Maryland Biological Stream Survey, 2005, was the data source.

Aquatic life use support is based on the relationship between observed stream biological conditions as compared to the reference stream condition producing a percent of reference stream biological condition. This scale rates “impaired” at 0-79 percent, and “non-impaired at 80-100 percent” of reference condition. US EPA 305(b) guidelines on criteria for aquatic life use support classification recommend designation of “not supporting” if impairment exists, and “fully supporting” if no impairment exists. Piedmont and Coastal Plain tributaries were assessed using reference condition data from Montgomery and Prince George’s Counties, Maryland. Piedmont is characterized by relatively low, rolling hills with heights above sea level between 200 feet (50 m) and 800 feet to 1,000 feet (250 m to 300 m). Its geology is complex, with numerous rock formations of different materials and ages intermingled with one another. The Coastal Plain has both low elevation and low relief, but it is also a relatively flat landform and has an average elevation less than 900 meters above sea level and extends some 50 to 100 kilometers inland from the ocean.

Biological Integrity Class scores were determined using scoring criteria adapted from Montgomery County. These scoring ranges were also used for Coastal Plain values. Habitat assessments were compared directly to each ecoregions' corresponding reference condition habitat evaluation.

The following tributaries in Table 3.2 were assessed for the Aquatic Life Use category using data collected during 2002-2013:

**TABLE 3.2  
COASTAL PLAIN AND PIEDMONT STREAMS ASSESSED**

Coastal Plain		Piedmont	
TDU01	Fort Dupont Tributary <sup>1</sup>	TFB02	Foundry Branch <sup>1</sup>
TFC01	Fort Chaplin Run <sup>1</sup>	TLU01	Luzon Branch <sup>1</sup>
TFD01	Fort Davis Tributary <sup>1</sup>	TMH01	Melvin Hazen Valley Branch <sup>1</sup>
THR01	Hickey Run <sup>c</sup>	TPO01	Portal Branch <sup>1</sup>
TOR01	Oxon Run <sup>1</sup>	TPY01	Piney Branch <sup>1</sup>
TWB01	Lower Watts Branch <sup>c</sup>	TSO01	Soapstone Creek <sup>1</sup>
TWB02	Upper Watts Branch <sup>c</sup>	TDA01	Dalecarlia Tributary <sup>2</sup>
TTX27	Texas Avenue Tributary <sup>1</sup>	TFE01	Fenwick Branch <sup>2</sup>
TFS01	Fort Stanton Tributary <sup>2</sup>	TNS01	Normanstone Creek <sup>2</sup>
TNA01	Nash Run <sup>2</sup>	TDO01	Dumbarton Oaks Tributary <sup>2</sup>
TPB01	Pope Branch <sup>2</sup>	TPI01	Pinehurst Branch <sup>2</sup>
TFS01	Fort Stanton <sup>2</sup>	TKV01	Klinge Valley Creek <sup>2</sup>
		TBR01	Broad Branch <sup>2</sup>
		RCRH01	Lower Rock Creek <sup>c</sup>
		RCRH05	Upper Rock Creek <sup>c</sup>
		TBK01	Battery Kemble Creek <sup>1</sup>
		TPIH01	Pinehurst Branch <sup>2</sup>
		TBR01	Broad Branch <sup>2</sup>

1 - First round streams (monitored on the even number year)  
 2 - Second round streams (monitored on the odd number year)  
 c - Core streams (monitored every year)

In 2012 and 2013 habitat assessments were performed on all core and second round streams. The findings from the habitat assessment are included in the individual assessments (Appendix 3.3).

The District has adopted water quality standards for dissolved oxygen, water clarity and chlorophyll a in accordance with the Chesapeake Bay Water Quality Criteria Guidance Document published in 2003 (US EPA, 2003) for the Potomac Tidal Fresh and Anacostia Tidal Fresh (Chesapeake Bay Program waterbody name). DDOE WQD worked with the Chesapeake Bay Program to assess the tidal waters in the District using the 2003 guidance document and all the addendums published through 2009. For the 2014 listing year, these segments are in Category 4a because the Chesapeake Bay TMDL was established in December 2010.

Fish consumption use determinations (Class D) are informed by known fish consumption advisories in effect during the assessment period. Fish tissue contamination data used to issue advisories are collected at stations located on the Anacostia and Potomac Rivers. If no barrier for fish movement exists, it is assumed that fish move freely to the smaller streams and other waterbodies. In these cases, fish tissue contamination data may be considered applicable to the connected tributaries. In waters where fish tissue were collected directly from the Anacostia and Potomac mainstems, and the presence of a pollutant was found in actionable levels in the fish tissue, the pollutant will be listed as a cause of impairment for that waterbody. In tributaries that are hydrologically connected to the Anacostia and Potomac mainstems and have indirect evidence, such as fish tissue contamination data from the mainstem Anacostia or Potomac Rivers, that indicate that a tributary may be impaired by a toxic pollutant of concern, the pollutant/tributary combination is deemed to have insufficient data or information to determine if the pollutant is a cause of impairment in the tributary. Table 3.3 has the threshold for fish consumption use designation.

**TABLE 3.3  
THRESHOLD FOR FISH CONSUMPTION USE SUPPORT CLASSIFICATION**

<b>Support of Designated Use</b>	<b>Threshold for Fish Consumption</b>
<b>Fully Supporting</b>	No fish/shellfish advisories or bans are in effect.
<b>Not Supporting</b>	"No consumption" fish/shellfish advisory or ban in effect for general population, or a subpopulation that could be at potentially greater risk, for one or more fish species; commercial fishing/shellfishing ban in effect.
<b>Not Assessed</b>	"Not assessed" is used when fish consumption is not a designated use for the waterbody.
<b>Insufficient Information</b>	Data to determine if the designated use is fully supporting/not supporting is not available.

Class E use is determined by the presence or absence of unmarked submerged or partially submerged man-made objects that pose a hazard to users of these waters.

The District also determines overall use support for waterbodies with multiple uses according to EPA guidance (Table 3.4). A waterbody fully supports its designated uses when all its uses are fully supported. When one or more uses are not supporting, then the waterbody is not supporting.

**TABLE 3.4  
THRESHOLD FOR OVERALL USE SUPPORT CLASSIFICATION**

Overall Designated Use for Multiple-Use Waterbodies	Threshold for Overall Use Support
<b>Fully supporting</b>	All uses are fully supported.
<b>Not supporting</b>	One or more uses are not supported.
<b>Not Assessed</b>	Not assessed
<b>Insufficient Information</b>	Data to determine if the designated use is fully supporting/not supporting is not available.

Appendix 3.4 includes the tables of percent violations and statistical summary reports for the waterbodies assessed for this reporting cycle.

### Maps

Appendices 3.5 through 3.9 display use support data in map format for the surface waters of the District. The maps were generated by DDOE's GIS using ArcGIS software. These maps should help the reader interpret the water quality information given in this report on a geographic basis. Appendix 3.5 shows the degree of support for primary contact recreation. Appendix 3.6 presents the secondary contact recreation and aesthetic. Appendix 3.7 shows the degree of support for the protection and propagation of fish, shellfish, and wildlife. In addition, Appendix 3.8 presents the degree of support for the consumption of fish, and finally, Appendix 3.9 presents the degree of support for navigation.

### Section 303(d) Waters

#### Background

Section 303(d) of the federal Clean Water Act and regulations developed by EPA require states to prepare a list of waterbodies or waterbody segments that do not meet water quality standards even after all the pollution controls required by law are in place. Waterbodies may be divided into segments. Waterbodies or waterbody segments not meeting the appropriate water quality standards are considered to be impaired. The law requires that states place the impaired waterbody segments on a list referred to as the 303(d) list and develop total maximum daily loads (TMDLs) for the waterbodies on the list in Category 5. The Potomac and Anacostia Rivers, Rock Creek and Watts Branch are divided into segments for the assessment purposes of this list.

US EPA requires that information for the assessment, listing, and reporting requirements for Section 303(d) and 305(b) of the Clean Water Act be submitted in an Integrated Report. The current guidance requires the categorization of all state waters into five assessment categories.

Category 1 should include waters with the status that all designated uses are being met. Category 2 should include waters that meet some of their designated uses, but there is insufficient data to determine if remaining designated uses are met. Category 3 should include waters for which insufficient data exists to determine whether any designated uses are met. Category 4 should include waters that are impaired or threatened but a TMDL is not needed. Category 5 should include waters that are impaired or threatened and a TMDL is needed. Categories can be subcategorized.

EPA regulations require that the Integrated Report (305(b)/303(d) list) and methodology used to categorize the waters be submitted to EPA by April 1. The public must also be given the opportunity to comment on a draft list.

#### Basis for Consideration of Data

Various data sources were considered for use in the preparation of the draft 2014 303(d) List. As the 303(d) list is a tool of the regulatory TMDL process, the District wants to ensure that the 303(d) list produced and eventually approved is based on data that utilized unbiased, scientifically sound data collection and analytical methods. The Water Quality Monitoring Regulations (Title 21, Chapter 19 - District of Columbia Municipal Regulations) were developed to provide for accurate, consistent, and reproducible water quality monitoring data for decision making purposes. Data that did not satisfy the above mentioned monitoring regulations is not reviewed for the development of the 2014 303(d) list.

The draft 2014 list enumerates specific pollutants of concern in various waterbodies or waterbody segments. The draft 2014 303(d) List is based on the following data:

- 2012 303(d) list;
- DC Ambient Water Quality Monitoring data for 2009-2013;
- DC Municipal Separate Storm Sewer System 2007-2011 Monitoring Data;
- Stream Survey data collected between 2002-2003 and 2009-2013;
- Analysis of Biological Samples: District of Columbia Phytoplankton, Zooplankton and Benthic Macroinvertebrate Samples, 2005-2009;
- DC Fish Tissue Contamination Report, 2009; and
- Supplemental toxics monitoring data (collected by TetraTech), 2012-2013

In January 2014 a request for data was sent to organizations that may have data for the waters of the District of Columbia. Data received was reviewed and considered during preparation of the

final 303(d) list.

### Use Support Determination

#### Ambient Monitoring Data and Stream Survey Data

WQD uses the WQS to evaluate its surface waters. The designated uses for the surface waters of the District of Columbia are:

- primary contact recreation (swimmable),
- secondary contact recreation and aesthetic enjoyment (wadeable),
- protection and propagation of fish, shellfish, and wildlife (aquatic life),
- protection of human health related to consumption of fish and shellfish (fish consumption), and
- navigation

For the draft 2014 303(d) list determination, physical, chemical, and bacterial data collected from January 2009 to December 2013 are being used to make the use support decisions for primary contact, secondary contact, and aquatic life support uses for the rivers. A waterbody or waterbody segment is included on the draft 303(d) list if its designated use was not supported, i.e.- greater than 10% exceedance of the conventional pollutant and bacteria measurements taken within the data period of study. It is listed on Category 5 of the list if it is a new instance of non-support of a parameter and a TMDL does not exist. If it is a new instance and a TMDL does exist, the pollutant is placed in Category 4a.

Biological/habitat data collected during 2002-2003, habitat data collected during 2009-2013, in addition to physical/chemical data is used to determine aquatic life use support for the small District streams. Biological/ habitat data for small streams was evaluated using the US EPA stressor identification guidance. If a stream's aquatic life use is not supported based on the biological information found in the Stream Survey data it is listed under Category 5 of the list, if a TMDL has not been completed.

#### Interpretation of Toxic Monitoring Data for 303(d) Listing Purposes

DDOE and EPA (with contractor support from TetraTech) reviewed a ten-year historic record of toxic contaminants in District waterbodies and concluded that the original 303(d) listing of several parameters for toxics such as metals, PCBs, PAHs, and organochlorine pesticides were based on very limited data, primarily fish tissue data collected in the mainstems of the Anacostia and Potomac Rivers, along with some supplementary sediment and water quality data collected in the Anacostia River mainstem in the early 2000 timeframe. An analysis of previous listings for metals and toxic organic pollutants in the tributaries of Rock Creek, the Anacostia and Potomac Rivers mainstem and their tributaries. In many cases this fish tissue data was not

collected in the actual waterbodies being assessed. A supplemental water quality sampling effort was conducted to fill data gaps with current information in preparation for calculating daily loads for existing TMDLs for these waterbodies. A complimentary goal of this work was to use the data to either verify impairment, attainment or to indicate the need for additional data to determine the impairment status.

For situations where the presence of a pollutant in a waterbody was confirmed at an actionable level, either in the historic data record or by the 2013-2014 sampling effort, the pollutant will continue to be listed as a cause of impairment for the waterbody (in Category 4a).

For situations where no water column sampling data, in either the historic record or from the 2013-2014 sampling effort, supports the original determination that a waterbody was impaired by a toxic pollutant of concern, the pollutant will no longer be identified as a cause of impairment in the waterbody, as it has never been detected at an actionable level.

In waters where fish tissue were collected directly from the Anacostia and Potomac mainstems, and the presence of a pollutant was found in actionable levels in the fish tissue, the pollutant will be listed as a cause of impairment for that waterbody (Category 4a or 5).

In tributaries that are hydrologically connected to the Anacostia and Potomac mainstems and have indirect evidence, such as fish tissue contamination data from the mainstem Anacostia or Potomac Rivers, that indicate that a tributary may be impaired by a toxic pollutant of concern, the pollutant/tributary combination is placed in Category 3 (insufficient data or information to determine if the pollutant is a cause of impairment in the tributary).

Under a multi-year Sewer Assessment Program, DC Water completed the Sewer System Facilities Plan in 2009. The plan addresses the evaluation of the physical condition and capacity of the sewer system, identification and prioritization of rehabilitation needs, record keeping and data management, as well as ongoing inspection and rehabilitation programs. In accordance with key findings and recommendations of the plan, priority projects to rehabilitate sewer collection systems as well as pumping facilities are currently ongoing. In particular, the rehabilitation of sewers in stream valleys will result in significant water quality improvement. Since other pollution control requirements are expected to address the waterbody/pollutant combinations and result in attainment of the water quality standards in a reasonable period of time the pollutant will continue to be listed as a cause of impairment for that waterbody (Category 4b).

#### Municipal Separate Storm Sewer (MS4) Data

The MS4 data used is the result of wet and dry weather samples collected from the stations monitored during the MS4 monitoring cycle. Only parameters for which numeric criteria was listed in the WQS were evaluated. The most strict criteria listed was used for comparison with the data results.

## Other Listing Revisions

Hickey Run fecal coliform has been added to Category 4a. It is not a new listing, it was inadvertently missed on earlier 303(d) list. Metals were not listed in the 2010 or 2012 303(d), therefore arsenic, copper, zinc are removed completely from list.

Fort Dupont Creek, Fort Chaplin Tributary, Fort Davis Tributary, and Fort Stanton Tributary exceeded the WQS more than 10% of the time from 2009 to 2013 for TSS. There is an approved Anacostia Watershed TMDL for TSS dated July 2007. Since there is an approved TMDL for TSS, the 2014 listing is covered by the existing TMDL and listed in Category 4a.

## Category Placement Methodology

The pollutant causing an impairment in a waterbody or waterbody segment must be identified. With multiple uses associated with each waterbody it is possible for a single waterbody to need more than one TMDL. The guidance allows for a waterbody segment to be listed in one or more categories. Keep in mind that the main goal of this list is to have TMDLs approved and implemented so that water quality standards can be attained. Following is a general description of the categories.

Category 1 - All designated uses are supported, no use is threatened.

Category 2 - Available data and/or information indicate that some, but not all, designated uses are supported.

Category 3 - There is insufficient available data and/or information to make a use support determination.

Category 4 - Available data and/or information indicate that at least one designated use is not being supported or is threatened, but a TMDL is not needed.

- Category 4a - A State developed TMDL has been approved by EPA or a TMDL has been established by EPA for any segment-pollutant combination.
- Category 4b - Other required control measures are expected to result in the attainment of an applicable water quality standard in a reasonable period of time.
- Category 4c - The non-attainment of any applicable water quality standard for the segment is the result of pollution and is not caused by a pollutant.

Category 5 - Available data and/or information indicate that at least one designated use is not being supported or is threatened, and a TMDL is needed.

## Priority Ranking

Waterbodies that are first placed in 2014 on the draft list for toxics substances such as metals, pesticides, carcinogens or noncarcinogens, etc. are ranked as high priority for TMDL development on the basis of their risk to human health. Experience with the TMDL development



process- data gathering, model development, public participation- the District of Columbia does not foresee the development of TMDL for waterbodies ranked as high priority before the next five years. Keep in mind that impaired waters listed on the 2014 Section 303 (d) list are scheduled for development until 2022. Revisions to TMDLs required by the consent decree are occurring in the interim.

If a waterbody is first listed in 2014 for *E. coli* due to primary contact use violations that waterbody is ranked as Medium priority waterbodies. Bacterial impairment also poses some human health risk, though the effects seen are usually not as severe as toxic substances' effects. The primary contact use exceedances (a current use) will take higher priority than the secondary contact recreation use exceedances as it is also more a efficient use of resource to address the existing uses before the designated uses (such as secondary contact recreation). Waterbodies listed for trash will be ranked as High priority. Waterbodies listed for pH are also ranked as Medium priority as it is a aquatic life use criterion. The medium priority waterbodies (first listed in 2014) will be scheduled for TMDL preparation by 2022.

Waterbodies listed for any other pollutant not previously mentioned will also be ranked low priority. Low priority waterbodies will be scheduled for TMDL preparation by 2022. The TMDL establishment date for some of the waterbodies listed in category 5 has been adjusted to account for changing priorities related to TMDLs development in the region.

#### Georeferencing

The geographic location codes included in the draft 2014 303(d) List were taken from the National Hydrography Dataset. The District has two codes. 02070010 - the Potomac Watershed and 02070008- the Middle Potomac-Catoctin Watershed. Only one District waterbody, Dalecarlia Tributary, is in the Middle Potomac-Catoctin Watershed. All the remaining waterbodies are in the Potomac Watershed. The EPA Assessment Database Version 2.3.1 for Access is being used to compile the data for the Integrated Report.

#### Public Participation

The draft 2014 Section 303(d) list will be available for a 30-day public comment period. The comment period commenced on August 22, 2014 and ends on September 20, 2014. A copy of the draft 303(d) list was available at the Martin Luther King, Jr. Public Library's Washingtonian Room starting on August 22, 2014. The notice was also published on the DDOE website. The formal required responses to the comments received by the submission deadline will be prepared and sent to EPA Region 3.

#### Categorization of District of Columbia waters

See Appendix 3.10 for Categorization List.

## Rivers and Streams Water Quality Assessment

### Designated Use Support

Twenty-four rivers and streams were assessed for this update. Each of those waterbodies were impaired for one or more uses (Table 3.5). Appendix 3.3 contains individual assessments for each of the waterbodies.

**TABLE 3.5  
SUMMARY OF FULLY SUPPORTING, THREATENED,  
AND IMPAIRED RIVERS AND STREAMS**

	Assessment	Category	Total
Degree of Use Support	Evaluated	Monitored	Assessed Size (miles)
Size Fully Supporting All <i>Assessed</i> Uses	0.00	0.00	0.00
Size Fully Supporting All <i>Assessed</i> Uses but Threatened for at Least One Use	0.00	0.00	0.00
Size Impaired for One or More Uses	0.00	38.40	38.40
TOTAL ASSESSED	0.00	38.40	38.40

Based on Table 3.6, no District stream supported its aquatic life use. The fish consumption use was not supported in any of the streams assessed due to the fish advisory in effect for District waterbodies. No stream in the District supported its primary contact use due to pH, turbidity and or *E. coli* violations. Several streams supported its secondary contact use. The navigation use was fully supported in the streams and rivers.

**TABLE 3.6  
INDIVIDUAL USE SUPPORT SUMMARY FOR RIVERS AND STREAMS**

Type of Waterbody: Rivers and Streams (miles)

Goals	Designated Use	Total in State	Total Assessed	Supporting – Attaining WQS	Not Supporting – Not Attaining WQS	Insufficient Data & Information	Size Not Assessed
Protect & Enhance Ecosystems	Aquatic Life	38.4	34.1	0	34.1	4.3	0

Goals	Designated Use	Total in State	Total Assessed	Supporting – Attaining WQS	Not Supporting – Not Attaining WQS	Insufficient Data & Information	Size Not Assessed
Protect & Enhance	Fish Consumption Shellfishing	38.4	38.4	0	38.4	0	0
Public Health	Swimming	38.4	0	0	0	38.4	0
	Secondary Contact	38.4	0	0	0	0	38.4
	Drinking Water	-	-	-	-	-	-
Social & Economic	Agricultural	-	-	-	-	-	-
	Cultural or Ceremonial	-	-	-	-	-	-
	Navigation	38.4	9.5	9.5	0	0	28.9

- = not applicable

### Relative Assessment of Causes/Stressors

The causes of impairment to streams and rivers are varied. For example, Fort Chaplin and Fort Davis have occasional problems with low DO. Many of the streams have poor biological integrity. Table 3.7 lists the causes of impairment to District streams and rivers.

**TABLE 3.7  
TOTAL SIZES OF WATER IMPAIRED BY VARIOUS CAUSE CATEGORIES FOR RIVERS AND STREAMS**

<b>Report for Water Type: RIVER; Units: MILES</b>	
<b>Cause</b>	<b>Total Size</b>
PATHOGENS	0.9
Fecal Coliform	0.9
<b>BIOLOGIC INTEGRITY (BIOASSESSMENTS)</b>	<b>31</b>
Benthic-Macroinvertebrate Bioassessments	4.5
Combination Benthic/Fishes Bioassessments	31
Combined Biota/Habitat Bioassessments	11.6
Fishes Bioassessments	3.9
Habitat Assessment (Streams)	1

OXYGEN DEPLETION BOD, Biochemical oxygen demand	1.4 1.4
FLOW ALTERATIONS Other flow regime alterations	16.5 16.5
HABITAT ALTERATIONS (INCLUDING WETLANDS) Alteration in stream-side or littoral vegetative covers Alterations in wetland habitats Physical substrate habitat alterations	9.2 3.7 4.8 0.7
TOXIC INORGANICS Arsenic Copper Lead Mercury Zinc Chlorine, Residual (Chlorine Demand)	19.4 9 18.5 18.5 9.5 18.5 0.9
TOXIC ORGANICS Polychlorinated biphenyls Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	20.8 17.6 20.8
METALS Copper Lead Mercury Zinc	18.5 18.5 18.5 9.5 18.5
PESTICIDES Chlordane DDD DDE DDT Dieldrin Heptachlor epoxide	20.8 20.8 17.6 17.6 20.8 20.8 20.8
MINERALIZATION Total Suspended Solids (TSS)	4 4
pH/ACIDITY/CAUSTIC CONDITIONS pH	1.1 1.1
SEDIMENTATION Particle distribution (Embeddedness) Total Suspended Solids (TSS)	24.9 24.9 4
OIL AND GREASE Oil and Grease	1.5 1.5
OTHER	13.5

Debris/Floatables/Trash	13.5
Group 1	31
Alteration in stream-side or littoral vegetative covers	3.7
Benthic-Macroinvertebrate Bioassessments	4.5
Combination Benthic/Fishes Bioassessments	31
Combined Biota/Habitat Bioassessments	11.6
Debris/Floatables/Trash	13.5
Fishes Bioassessments	3.9
Habitat Assessment (Streams)	1
Particle distribution (Embeddedness)	24.9
Fecal Coliform	0.9

### Relative Assessment of Sources

A source of impairment that is common to District rivers and streams is urban runoff from imperviousness. Battery Kemble and Portal Branch are highly impacted by runoff. Habitat modification still has an impact on many of the streams as riparian vegetation is removed and stream banks are destabilized due to heavy runoff. Combined sewer overflow continues to affect Klinge Valley Creek, Rock Creek and Piney Branch. Table 3.8 lists the sources of impairment.

**TABLE 3.8  
TOTAL SIZES OF WATER IMPAIRED BY VARIOUS SOURCE CATEGORIES FOR RIVERS AND STREAMS**

<b>Report for Water Type: RIVER; Units: MILES</b>	
<b>Source</b>	<b>Total Size</b>
CONSTRUCTION	5.3
Site Clearance (Land Development or Redevelopment)	5.3
GROUNDWATER LOADINGS	0.6
Landfills	0.6
HABITAT ALTERATIONS (NOT DIRECTLY RELATED TO HYDROMODIFICATION)	12.2
Channelization	5.6
Impacts from Hydrostructure Flow Regulation/modification	10.8
Loss of Riparian Habitat	1.2
HYDROMODIFICATION	19.9
Channelization	5.6
Hydrostructure Impacts on Fish Passage	14
Impacts from Hydrostructure Flow Regulation/modification	10.8

INDUSTRIAL PERMITTED DISCHARGES	17
Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO)	17
LAND APPLICATION/WASTE SITES	11.4
Illegal Dumping	9.9
Illegal Dumps or Other Inappropriate Waste Disposal	11.4
Landfills	0.6
LEGACY/HISTORICAL POLLUTANTS	13
CERCLA NPL (Superfund) Sites	1.6
Illegal Dumps or Other Inappropriate Waste Disposal	11.4
MUNICIPAL PERMITTED DISCHARGES (DIRECT AND INDIRECT)	30.4
Discharges from Municipal Separate Storm Sewer Systems (MS4)	1
Municipal (Urbanized High Density Area)	1.4
Post-development Erosion and Sedimentation	8.5
Residential Districts	27.8
Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO)	17
Wet Weather Discharges (Non-Point Source)	17
STORMWATER PERMITTED DISCHARGES (DIRECT AND INDIRECT)	30.4
Municipal (Urbanized High Density Area)	1.4
Post-development Erosion and Sedimentation	8.5
Residential Districts	27.8
Site Clearance (Land Development or Redevelopment)	5.3
Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO)	17
Wet Weather Discharges (Non-Point Source)	17
SPILLS AND UNPERMITTED DISCHARGES	9.9
Illegal Dumping	9.9
URBAN-RELATED RUNOFF/STORMWATER (OTHER THAN REGULATED DISCHARGES)	30.4
Municipal (Urbanized High Density Area)	1.4
Post-development Erosion and Sedimentation	8.5
Residential Districts	27.8
Site Clearance (Land Development or Redevelopment)	5.3
Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO)	17
Yard Maintenance	13.9
Wet Weather Discharges (Non-Point Source)	17
OTHER	0.6
Source Unknown	0.6
Group 1s	29.9
Impacts from Hydrostructure Flow Regulation/modification	10.8

Residential Districts	27.8
Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO)	17
Yard Maintenance	13.9
Wet Weather Discharges (Non-Point Source)	17

### Lakes Water Quality Assessment

Three waterbodies were monitored for designated use support. The waterbodies classified as lakes are Kingman Lake, C&O Canal, and the Tidal Basin. All of these waterbodies were impaired for one or more of their designated uses. Table 3.9 is a summary of the degree of support by lakes in the District. Individual water quality assessments may be found in Appendix 3.3.

**TABLE 3.9  
SUMMARY OF FULLY SUPPORTING, THREATENED, AND IMPAIRED LAKES**

	Assessment	Category	Total
Degree of Use Support	Evaluated	Monitored	Assessed Size (miles)
Size Fully Supporting All <i>Assessed</i> Uses	0.00	0.00	0.00
Size Fully Supporting All <i>Assessed</i> Uses but Threatened for at Least One Use	0.00	0.00	0.00
Size Impaired for One or More Uses	0.00	238.40	238.40
<b>TOTAL ASSESSED</b>	0.00	238.40	238.40

### Designated Use Support

Lakes in the District supported the goals of the CWA to various degrees. Based on physical/chemical data, the aquatic life use was fully supported in the C&O Canal and Kingman Lake. It was not supported in the Tidal Basin. Due to the fish consumption advisory currently in effect in the District of Columbia, the fish consumption use was not supported in any of the waterbodies. No lake in the District supported its primary contact use due to pH, turbidity and or *E. coli* violations. No lake supported is secondary contact use. The navigation use was fully supported. Table 3.10 is the use support summary for District lakes.

**TABLE 3.10  
INDIVIDUAL USE SUPPORT SUMMARY FOR LAKES**

Type of Waterbody: Lakes (acres)

Goals	Designated Use	Total in State	Total Assessed	Supporting – Attaining WQS	Not Supporting – Not Attaining WQS	Insufficient Data & Information	Size Not Assessed
Protect & Enhance Ecosystems	Aquatic Life	238.4	238.4	0	238.4	0	0
Protect & Enhance	Fish Consumption Shellfishing	238.4	238.4	0	238.4	0	0
Public Health	Swimming	238.4	0	0	0	238.4	0
	Secondary Contact	238.4	0	0	0	0	238.4
	Drinking Water	-	-	-	-	-	-
Social & Economic	Agricultural	-	-	-	-	-	-
	Cultural or Ceremonial	-	-	-	-	-	-
	Navigation	238.4	238.4	238.4	0	0	0

- = not applicable

### Relative Assessment of Causes

All the lakes are highly impacted by turbidity and pH levels. Table 3.11 lists the causes of impairment to District lakes.

**TABLE 3.11  
TOTAL SIZES OF WATER IMPAIRED BY VARIOUS CAUSE CATEGORIES FOR LAKES**

<b>Report for Water Type: FRESHWATER LAKE; Units: ACRES</b>	
<b>Cause</b>	<b>Total Size</b>
OXYGEN DEPLETION	102.7
BOD, Biochemical oxygen demand	102.7
Dissolved oxygen saturation	102.7
TOXIC INORGANICS	102.7
Arsenic	102.7
Copper	102.7
Lead	102.7
Zinc	102.7



TOXIC ORGANICS	211.1
Polychlorinated biphenyls	211.1
Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	211.1
METALS	102.7
Copper	102.7
Lead	102.7
Zinc	102.7
PESTICIDES	211.1
Chlordane	211.1
DDD	211.1
DDE	211.1
DDT	211.1
Dieldrin	211.1
Heptachlor epoxide	211.1
MINERALIZATION	102.7
Total Suspended Solids (TSS)	102.7
pH/ACIDITY/CAUSTIC CONDITIONS	108.4
pH	108.4
SEDIMENTATION	102.7
Total Suspended Solids (TSS)	102.7

### Estuary and Coastal Assessment

The Anacostia River, the Potomac River, and the Washington Ship Channel are classified as estuaries due to their tidal influences. The Potomac River and the Anacostia River are divided into segments for assessment purposes. Individual water quality assessments for the waterbodies can be found in Appendix 3.3.

#### Designated Use Support

All of the estuary waterbodies were impaired for one or more of their designated uses. The total square miles monitored and assessed are shown in Table 3.12.

**TABLE 3.12  
SUMMARY OF FULLY SUPPORTING, THREATENED, AND IMPAIRED ESTUARIES**

	Assessment	Category	Total
Degree of Use Support	Evaluated	Monitored	Assessed Size (miles)

	Assessment	Category	Total
Size Fully Supporting All <i>Assessed</i> Uses	0.00	0.00	0.00
Size Fully Supporting All <i>Assessed</i> Uses but Threatened for at Least One Use	0.00	0.00	0.00
Size Impaired for One or More Uses	0.00	5.93	5.93
<b>TOTAL ASSESSED</b>	<b>0.00</b>	<b>5.93</b>	<b>5.93</b>

The aquatic life use was fully supported along 4.15 square miles of estuary, and not supported along 1.78 square miles of estuary. The fish consumption use was not supported due to the fish consumption advisory in effect for District waters. No estuary in the District supported its primary contact use due to pH, turbidity and or *E. coli* violations. The navigation use was fully supported in estuaries as no hazard to users by submerged or partially submerged artificial objects were known to exist in the waterbodies during this study period.

**TABLE 3.13  
INDIVIDUAL USE SUPPORT SUMMARY FOR ESTUARIES FOR ESTUARIES**

Type of Waterbody: Estuaries (square miles)

Goals	Designated Use	Total in State	Total Assessed	Supporting – Attaining WQS	Not Supporting – Not Attaining WQS	Insufficient Data & Information	Size Not Assessed
Protect & Enhance Ecosystems	Aquatic Life	5.93	5.93	4.15	1.78	0	0
Protect & Enhance	Fish Consumption Shellfishing	5.93	5.93	0	5.93	0	0
Public Health	Swimming	5.93	0	0	0	5.93	0
	Secondary Contact	5.93	0	0	0.8	0	5.13
	Drinking Water	-	-	-	-	-	-
Social & Economic	Agricultural	-	-	-	-	-	-
	Cultural or Ceremonial	-	-	-	-	-	-
	Navigation	5.93	5.93	5.93	0	0	0

- = not applicable

Relative Assessment of Causes

All the estuaries have low DO or turbidity impairments. It is most pronounced in the Anacostia River. Table 3.14 lists the causes of impairment to estuaries in the District.

**TABLE 3.14  
TOTAL SIZES OF WATER IMPAIRED BY VARIOUS CAUSE CATEGORIES FOR ESTUARIES**

<b>Report for Water Type: ESTUARY; Units: SQUARE MILES</b>	
<b>Cause</b>	<b>Total Size</b>
PATHOGENS	0.8
Fecal Coliform	0.8
OXYGEN DEPLETION	0.8
BOD, Biochemical oxygen demand	0.8
NUTRIENTS (Macronutrients/Growth Factors)	1.2
Nitrogen (Total)	1.2
Phosphorus (Total)	1.2
TOXIC INORGANICS	0.8
Arsenic	0.8
Copper	0.8
Lead	0.8
Zinc	0.8
TOXIC ORGANICS	2.88
Polychlorinated biphenyls	2.58
Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	1.1
METALS	0.8
Copper	0.8
Lead	0.8
Zinc	0.8
PESTICIDES	1.1
Chlordane	1.1
DDD	1.1
DDE	1.1
DDT	1.1
Dieldrin	1.1
Heptachlor epoxide	1.1
MINERALIZATION	1.2
Total Suspended Solids (TSS)	1.2
pH/ACIDITY/CAUSTIC CONDITIONS	1.68

pH	1.68
SEDIMENTATION Total Suspended Solids (TSS)	1.2 1.2
OIL AND GREASE Oil and Grease	0.5 0.5
OTHER Debris/Floatables/Trash	0.8 0.8
Group 1 Debris/Floatables/Trash Fecal Coliform	0.8 0.8 0.8

## Special Topics

### Total Maximum Daily Load (TMDL) Program

#### Background

The Federal Clean Water Act (CWA) §303(d)(1)(A) states:

Each state shall identify those waters within its boundaries for which the effluent limitations required by §301(b)(1)(A) and §301(b)(1)(B) are not stringent enough to implement any water quality standards applicable to such waters. The State shall establish a priority ranking for such waters, taking into account the severity of the pollution and the uses to be made of such waters.

Further, §303(d)(1)(C) states:

Each state shall establish for the waters identified in paragraph (1)(A) of this subsection, and in accordance with the priority ranking, the total maximum daily load, for those pollutants which the Administrator identifies under §304(a)(2) as suitable for such calculations. Such load shall be established at a level necessary to implement the applicable water quality standards with seasonal variations and a margin of safety which takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality.

In 1998, the District developed a list of waters that did not or were not expected to meet water quality standards as required by §303(d)(1)(A). The §303(d) list is reviewed and revised as needed every two years. As stated in the CWA, TMDLs shall be developed for those water bodies not attaining water quality standards after application of technology-based and other required controls. A TMDL sets the quantity of a pollutant that may be introduced into a

waterbody without exceeding the applicable water quality standard. A TMDL is typically defined as the sum of the wasteload allocations (WLAs) assigned to point sources, the load allocations (LAs) assigned to nonpoint sources, and a margin of safety (MOS). The TMDL is commonly expressed as:

$$\text{TMDL} = \text{WLAs} + \text{LAs} + \text{MOS}$$

## TMDL Development

TMDL development is an evolving process which also envisions revisions to be made to a TMDL from time to time whenever new information/data becomes available. Since 1998, WQD has developed approximately 357 TMDLs for the District's waters, all of which were approved by EPA. Many of the District's existing TMDLs were established based on limited data and narrow modeling options available at the time. Most of these TMDLs need to be revised by taking into account new available data and improved understanding of the natural environmental processes. Revising these TMDL will provide an opportunity to develop better water quality models with enhanced prediction capabilities, and consequent upon that, an improved implementation plan for better protection of the environment.

WQD has undertaken development of the TMDLs through required monitoring and modeling studies for the Anacostia and Potomac Rivers and their tributaries including Rock Creek. The §303(d) list in this report summarizes the TMDLs that are already completed or planned to be developed in the coming years.

## Current TMDL Development Related Activities in the District

### 1. Chesapeake Bay TMDL

Pursuant to section 303(d) of the CWA, EPA established a Chesapeake Bay-wide TMDL for nutrients and sediment for all impaired segments in the tidal portion of the Chesapeake Bay watershed, on December 29, 2010. As a signatory to the EPA Chesapeake Bay Agreement, DDOE has been actively working with EPA and the other partner jurisdictions (MD, VA, PA, WV, NY and DE) on the Phase 6 suite of models.

DDOE regularly participated in the Bay Water Quality Steering Committee/Water Quality Goal Implementation Team (WQGIT) and the various technical workgroups - and took an active role in addressing issues specific to the District. DDOE also provided source data and related information to the Bay Program as needed.

WIP III preparation/review discussions and updates to the land-use dataset are on-going concerns. Land-use data set updates are intended to improve the accuracy of federal footprint in the DC and also inform the development of the Phase 6 suite of models.

## 2. Bacteria TMDLs Revision

Revision of the fecal coliform based-bacteria TMDLs for the District pursuant to *Friends of the Earth v. EPA 446 F.3d 140 (D.C. Cir. 2006)* have been completed and final documents will be submitted to EPA for approval. The revisions also include *translation* from fecal coliform to *E. coli*, which DDOE adopted as the bacteria water quality criteria on January 1, 2008. Upon EPA's approval of the submitted documentation, the final revised TMDL documents and comment response document (CRD) will be made available on the DDOE web site.

## 3. Toxics Monitoring for TMDL Development

In 1988, the District listed a number of waterbodies for toxics on its 303(d) list, for which TMDLs were subsequently developed. These TMDLs need to be revised by expressing the load allocations in “daily” terms (*Friends of the Earth v. EPA 446 F.3d 140 (D.C. Cir. 2006)*). To fulfill this requirement, EPA has contracted TetraTech, Inc., to develop and implement a monitoring program for collecting data for toxic pollutants in waters of the District. The collected data will be evaluated to identify individual toxics of concern and used, where appropriate, to support any decision to either de-list some toxics TMDLs, or proceed with establishing new toxics TMDLs. Field sampling is on-going.

## 4. Hickey Run's Total Residual Chlorine Impairment

Hickey Run was identified on the 2002 District of Columbia's Section 303(d) List as impaired due to Total Residual Chlorine (TRC) from nonpoint sources, and it was expected that a TMDL would be developed by end of December, 2012. Careful evaluation of the sampling data used in the listing revealed that the data was inadequate, and thus could not be used to construct a defensible TMDL. Instead of a TMDL, DDOE plans, and has formally requested EPA's approval to use alternative approaches tailored to Hickey Run's specific circumstances and incorporate improvement measures and adaptive management. Water quality sampling in the Hickey Run watershed is expected to begin by late 2013, or early 2014. Collected data will be used to validate the impairment listing or to develop a TMDL, if necessary.

## Submerged Aquatic Vegetation

The FWD Fisheries Management Branch (FMB) has been monitoring submerged aquatic vegetation (SAV) since 1993. In this time, FMB has compiled an extensive amount of data that reflects the growth and decline of SAV species within the District. Not only does SAV provide an important habitat for aquatic life, it provides sediment stabilization as well as improvements

in water quality. It is an important component to the health of the District's aquatic ecosystem. Nutrient and sediment pollution are both limiting factors for SAV viability. The District is considered a highly urbanized area, with substantial runoff. Monitoring SAV within the District is an important factor when considering the health of the aquatic ecosystem for these reasons.

2013 observations revealed 8 different species of SAV including: *Ceratophyllum demersum*, *Hydrilla verticillata*, *Najas guadalupeensis*, *Najas minor*, *Heteranthera dubia*, *Vallisneria americana*, *Potamogeton crispus*, and *Stuckenia pectinata*. This is an increase of species diversity compared to 2011 data in which only 5 species of SAV were present in District waters. A total of 203.9 acres of SAV were reported in 2013, this is a dramatic increase from 2011 when the reported acres only reached 31.41. Overall, SAV species diversity and cover densities vastly improved in 2013.

SAV beds provide an important habitat for both juvenile and adult fish in the District. Considered suitable areas for refuge, feeding, and reproduction, SAV beds are of utmost ecological importance in a watershed system (Kraus, Jones 2012). Depicting similarities between SAV cover densities and in fish diversity is an important relationship to review in District waters. Using electrofishing data collected during the months SAV is present (May-November) allows for these relationships to be compared. The electrofishing sites within the Washington Ship Channel (W1E) and adjacent to the National Airport (P2E) are of significant importance due to their close proximity to surveyed SAV beds.

While many relationships can be drawn between relative abundance of fish and the presence of SAV none are as significant as the relationship in regards to *Micropterus salmoides*, largemouth bass. Largemouth bass is an important predator in a freshwater system such as the Potomac River from an ecological and economic perspective. Largemouth bass and other piscivorous fish have been observed occupying holes within dense SAV in the Potomac River (Killgore *et al.*, 1989). Long established as one of the country's best largemouth bass fishing regions, the Potomac River hosts many largemouth bass tournaments as well a healthy largemouth bass recreational fishery. Below are two graphs that illustrate the relationship between SAV and largemouth bass within the District.

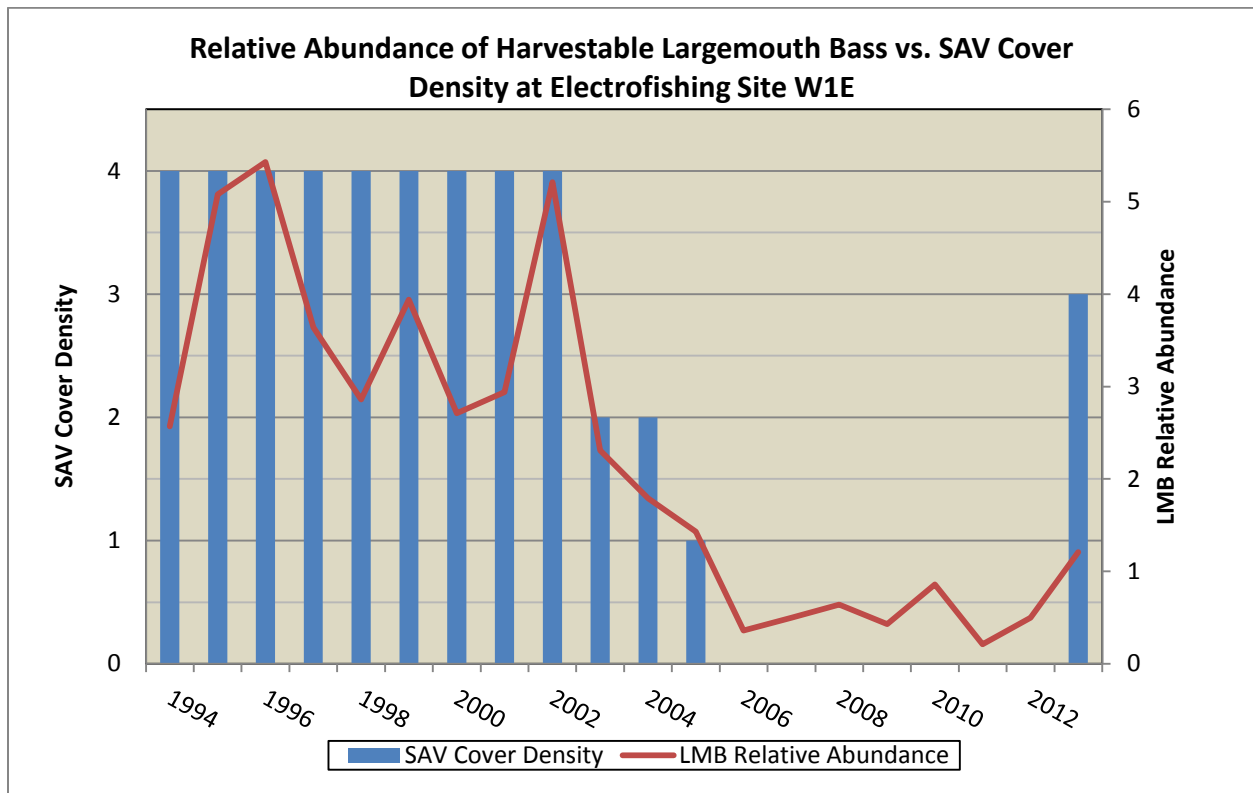


Figure 3. 1: Relative Abundance of Harvestable Largemouth Bass vs. SAV Cover Density at Site W1E

SAV cover density at electrofishing site W1E reached a 10 year high in 2013. An increase in SAV cover density also coincided with an increase of fish species diversity as well as relative abundance of harvestable largemouth bass at electrofishing site W1E. Improved habitat may have influenced the increase of harvestable largemouth bass (305mm) numbers found at W1E.

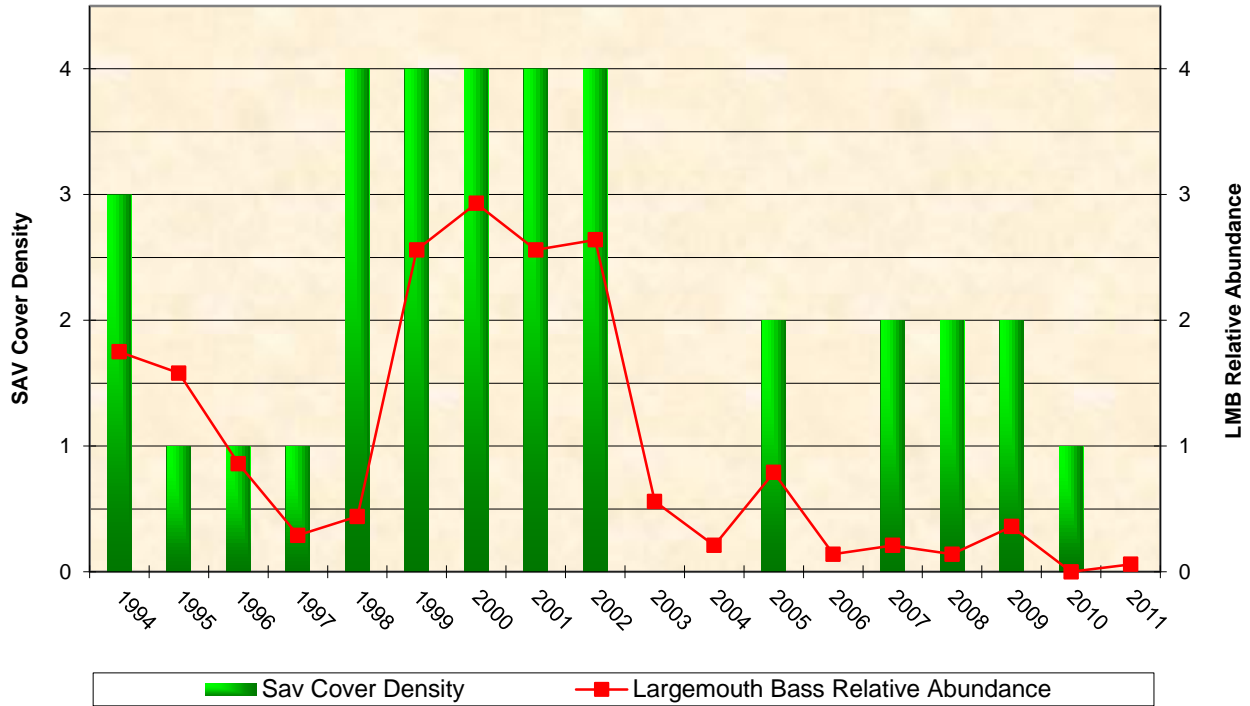
The electrofishing site at the Washington Ship Channel provided consistent data for the first nine years of this study. Figure 3.1 presents how the relative abundance numbers of harvestable largemouth bass fluctuated slightly but never approached critical levels. With the decline and disappearance of SAV from this particular site over the past nine years, the effect on the largemouth bass population is undeniable. When healthy robust grass beds are observed at this site, largemouth bass are observed as well. When the SAV is depleted or eradicated, the largemouth bass are no longer captured during electrofishing surveys. Tagging data suggests that these resident largemouth bass move to different locations where SAV or other alternative habitats are present. Even with subsequent relocation of the bass, the graph shows largemouth bass have a strong affinity to this site when SAV levels are at full saturation.

Largemouth bass may be using the increased cover density for foraging as well as shelter and reproduction. It is also apparent through Figure 3.2 that when SAV cover densities decrease



relative abundance of largemouth bass also decreases. This observation solidifies the strong relationship that largemouth bass have with the presence/absence of SAV.

**Relative Abundance of Harvestable Largemouth Bass vs. SAV Cover Density at Electrofishing Site P2E**



**Figure 3.2: Relative Abundance of Harvestable Largemouth Bass vs. SAV Cover Density at Site P2E**

## MS4

### Stormwater Management Highlights

#### Municipal Separate Storm Sewer System (MS4) Program & Permit

EPA issues the District its MS4 Permits, since the District of Columbia is not a delegated jurisdiction. EPA issued a final permit on October 7, 2011. This final permit was appealed to EPA’s Environmental Appeals Board by a coalition of environmental organizations and DC Water. The appeals primarily addressed the Permit’s TMDL Implementation Plan requirements. As a result, these provisions of the Permit were stayed pending resolution of the appeal, while the remaining majority of the sections of the Permit were in effect as of January 22, 2012. DDOE, EPA, and the appealing organizations participated in an Alternative Dispute Resolution

process in order to resolve the appeals. These appeals were successfully resolved, with all parties reaching agreement on modified permit language, which went into effect as of November 9, 2012. As a result, the District's MS4 Permit is now fully in effect. For the District, compliance with the requirements of the Permit constitutes adequate progress towards compliance with the District's WQS, and will contribute to meeting our Chesapeake Bay TMDL allocations as determined by the Chesapeake Bay Phase 5.3 Model (run in 2011).

The modified Permit contains significant changes (from the previous 2004 permit) intended to move the water quality improvement/protection efforts from smaller scale use of green infrastructure to more wide spread implementation across the District. One of the most significant changes is the requirement to modify the District's stormwater regulations to include a retention standard, which is a paradigm shift from the current regulations which require treatment and extended detention. The updated Stormwater Regulations, effective July 19, 2013, require the design, construction and maintenance of stormwater controls to achieve retention of the volume generated on a site by a 1.2 inch, 24- hour storm event for all land disturbing activities that are greater than 5,000 sf in the District. Additionally, the District's new stormwater regulations will require substantial renovation projects to retain the volume generated on a site by a 0.8 inch, 24- hour storm event. The District will allow up to 50% of the retention volume obligation to be achieved through the use of the Stormwater Retention Credit Trading Program and/or fee-in lieu program. Other key metrics that must be met during the term of the Permit include effectively retrofitting 18 million sf of impervious surface, planting a net gain of 4,150 trees in the MS4 area, and installing an additional 350,000 sf of green roofs.

Further, the District will continue to maximize its use of innovative green infrastructure practices, by leveraging the regulations and Stormwater Retention Credit Trading Program, with the use of subsidy programs, (such as RiverSmart Programs) and the stormwater fee discount program.

DDOE will continue to work proactively with other District agencies and selected federal agencies to promote LID wherever structurally and fiscally feasible. To better track these efforts, DDOE will continue to document the installation of stormwater management practices in the District, whether publicly or privately owned, report on the benefit of incentive programs implemented during the Permit term, and estimate the volume of stormwater and pollutant loading that is being removed from the MS4 system (and combined system, as relevant) in a typical year of rainfall as a result of the new stormwater regulations in the District. Although not outlined in the Permit, the District projects 2.6 million sf of green roofs will be constructed by Spring of 2015: green roof construction is expected to increase dramatically by 2017 with the full implementation of the District's revised Stormwater Management Regulations.

Other Permit highlights that will better equip the District to achieve its stormwater and TMDL goals include (but not limited to) the following measures or categories:

- Operation and maintenance of retention practices (both District owned and non-District owned);
- Management of District government areas;
- Stormwater Pollution Prevention;
- Construction activities management;
- Pesticide, herbicide, and fertilizer minimization program;
- Storm drain system operation and management of solids and floatables reduction;
- Street sweeping;
- Municipal officials training;
- Public education, participation, and outreach;
- Management of illicit discharges & improper disposal;
- Revised monitoring program; and
- Inventory and inspection of critical sources and controls.

Additionally, Permit section 4.1.4. charges DDOE to develop an incentive program to increase the quantity and quality of planted areas using such methods as permeable paving, green roofs, vegetated walls, preservation of existing trees, layering of vegetation along streets and other areas. This requirement has been addressed by the development and implementation of the Green Area Ratio into the District's Zoning Code.

Finally, the modified Permit also requires the District to develop a Consolidated TMDL Implementation Plan by May of 2015, which will include a specific schedule for ultimate attainment of all TMDL waste load allocations assigned to the District's MS4 system, with interim milestones and numeric benchmarks where more than one permit cycle is required.

In short, these and other terms contained in the 2011 Permit lend themselves to better equip the District to comply with the Chesapeake Bay TMDL and other District-adopted TMDLs, by reducing the amounts of nitrogen, phosphorous and sediment resulting from stormwater runoff throughout the District.

Beyond the Permit, the Energy Independence and Security Act Section 438 (and related EPA Guidance) calls for federal facilities to comply with 1.7 inch on-site retention standard. Per the Fact Sheet that EPA released with the Permit when it was first issued as final in October 2011, the Permit was informed by Executive Order 13508 (section 501) which directs federal agencies to implement controls on their own properties.

EPA-issued Fact Sheet references Executive Order 13514, which reiterates that the federal agencies implementing new or redevelopment projects will achieve a 1.7 inch on-site stormwater retention standard. The District will work with federal agencies to meet these requirements.

## **Wetlands Assessment**

### Development of Wetland Water Quality Standards

The development of wetland water quality standards is on going.

### Integrity of Wetland Resources

No change.

### Extent of Wetland Resources

No change.

### Wetland Protection Activities

#### Efforts

The watershed protection specialists and the District's floodplain manager have worked with the wetlands specialist for the design phase of a project in a reach of Nash Run in the northeast quadrant of the District. The area has been cut and eroded down due to stormwater runoff. The watershed protection specialists have projects that include stabilizing the area eroded and preventing further erosion by stabilizing the banks and providing access to the floodplain. The wetlands specialist provides input on the project design to ensure the protection of any adjacent wetlands and to ensure water quality standards are met.

#### Effective Mechanism Used in Protecting Wetlands

The most effective approach used in protecting wetlands is working with the developers at the earliest stage of development. Working with developers (designers and project coordinators) allows DDOE as a regulatory agency to deal with any problematic situations before they arise. Changing paper plans in the earliest phase of development and design is much easier than changing them near the final phase.

#### Coordination Among DDOE Offices

WQD works with other NRA divisions to protect the District's wetland resources. FWD and WPD are commonly approached to discuss their interests in larger wetland issues. WQD routinely requests habitat information or locations of species of greatest conservation need from FWD. WPD is asked for information on their creation and restoration projects and any possible areas for wetland creation. The two divisions also work together on floodplain issues and

regenerative stormwater conveyance systems. The WQD and the SWPD work together when BMPs like trash traps are installed in the District's waterways.

## PART IV: PUBLIC HEALTH - RELATED ASSESSMENTS

### **Drinking Water Program Monitoring & Assessments**

None of the District of Columbia's waterbodies have been designated for either public water supply or drinking water uses. Though the Potomac River is the source of the District's drinking water, the intakes are located outside the District's city limits. The drinking water intakes are located at Great Falls and Little Falls, Maryland.

The District is actively participating in the Potomac River Basin Drinking Water Source Protection Partnership organized by ICPRB. The District is part of the Government committee and participates in the spill exercise programs, agricultural issues, upstream urban source water protection efforts and various emerging issues and continues to track Water Research Foundation projects. The District of Columbia completed its Source Water Assessment Project (SWAP). The primary goals of the SWAP were: (a) source delineation, (b) inventory of potential contaminants from upstream watersheds and within the basin, (c) susceptibility analysis of the inventoried contaminants identified in the source delineation and (d) providing documentation to the general public and the District of Columbia Government describing the source contaminants. Additionally, nonpoint source modeling was incorporated into the SWAP to enable the District to better understand and predict conditions within the basin that might pose a threat to the water supply.

The Potomac Drinking Water Source Protection Partnership's Emerging Contaminants Workgroup is tracking and reporting on findings of research and occurrence of persistent and newly identified threats posed to the Potomac River drinking water supply. Members of the partnership also advocate and support related national-level studies with the goal of providing sound science on how this emerging challenge should be addressed. Some of the specific partnership activities include communication with the public about drinking water contaminants, proper disposal of pharmaceuticals, emerging contaminants challenges and sampling program. The partnership is also conducting a workshop on hazardous algal blooms in source waters. The workshop will focus on monitoring, identification, associated health risks, how to stop outbreaks, best management practices and serve as an educational opportunity for the water operators.

Drinking water is treated by the Washington Aqueduct which is owned and operated by the US Army Corps Engineers. The Aqueduct is responsible for compliance with all of the regulations which pertain to water treatment such as filtration, disinfection and chemical contaminant removal, and corrosion control. DC Water purchases the treated water and distributes it to District residents. Drinking water quality is regulated by US EPA Region 3. The District of Columbia does not have primacy. Persons seeking information (beyond what is provided below)

on the status of lead in drinking water or other compliance issues in the District of Columbia should consult the US EPA website at <http://www.epa.gov/dclead>.

### **Fish Tissue Study**

In June 2013, US FWS began a fish tissue study for DDOE, on fish caught in the Anacostia and Potomac Rivers within the boundaries of the District of Columbia.

DDOE will compare chemical concentrations from fish tissue studies conducted in 1994, 1996, 2001, and 2009 with 2013. Polychlorinated biphenyls (PCBs) and polycyclic aromatic hydrocarbons (PAHs) consistently exceed the screening value in each study (1994, 1996, 2001 and 2009), 0.2 ppm for PCBs and 0.005 for PAHs, which triggers a fish consumption advisory. Due to the existence of a fish consumption advisory for fish caught in District's portion of the Anacostia and Potomac River the Class C (protection of human health) designation is not supported.

### **Anacostia River Algal Bloom**

DDOE responded to two algae bloom events reported during the last reporting period. The first algae bloom was reported by the Anacostia Riverkeeper in July of 2013 for a section of the upper Anacostia River. DDOE staff observed patches of brown foamy scum on the surface of the Anacostia River between the New York Avenue Bridge and the Benning Road Bridge. The patches of scum were typically no larger than a few inches (2-3 inches) in diameter and a thinner, brown pollen-like substance was noted to usually be present on the surface of the water near the patches of scum. The scum was photographed and sampled for analysis on July 18 and July 24, 2013. DDOE staff analyzed live and preserved samples using a light microscope and did not observe any algal species at bloom abundances. In addition, DDOE delivered samples for analysis to local experts at Gallaudet University and the Interstate Commission for the Potomac River Basin (ICPRB). No single species could be identified at bloom abundances or directly linked to the brown foamy scum observed on the surface of the Anacostia River. Weather conditions during July were hot and water temperature readings during algae sampling were greater than 27°C, creating conditions well suited for algal growth. Chlorophyll A values measured ranged from approximately 10-20 ug/L within the sampling area, which was not significantly higher than typical values observed during the summer season.

There was an algae bloom event on the National Mall in August 2013. According to media reports, over one thousand deceased fish were observed in Constitution Gardens Pond. DDOE respond to the event to assist the National Park Service investigation. DDOE staff observed bright green coloration in the water of the Constitution Gardens Pond. Additionally, stringy

green and white filament was observed on the surface of the water. DDOE photographed and sampled the waterbody. Live and preserved samples were analyzed by DDOE staff using a light microscope. DDOE staff identified the most abundant taxon as *Anabaena* and the identification was later verified by experts using micrographs taken by DDOE staff. The *Anabaena* genus includes several different species of cyanobacteria, also known as blue-green algae. Species within the *Anabaena* genus are known to be capable of producing toxins such as microcystin, which does have the possibility to present human health risks or other environmental issues. The United States National Guard 33<sup>rd</sup> Civil Support Team coordinated with the National Park Service and the DDOE Chief of Emergency Operations to conduct chemical analysis of the waters at Constitution Gardens as a part of the response effort. The chemical analysis revealed the presence of 9-Octadecenamide (Oleamide) which is reported to be a toxic fatty acid produced by the alga *Prymnesium parvum*. Water temperature values measured were greater than 24°C, creating favorable conditions for algal growth. Chlorophyll A levels ranged from 20-32 ug/L and Blue-green algae levels ranged from 6-7 ug/L.

DDOE has begun a partnership with the National Oceanic and Atmospheric Administration (NOAA) to enhance the identification capacity of phytoplankton within the District of Columbia. This new partnership between DDOE and the NOAA Phytoplankton Monitoring Network (PMN) allows submission of preserved samples to trained experts for phytoplankton identification and verification.



## **PART V: GROUNDWATER ASSESSMENT**

### **Introduction**

This section updates the District's groundwater assessment and protection efforts for January, 2012 to December, 2013. Several changes have occurred since the 2012 Integrated Report. The most significant are the development of two reports on groundwater by the United States Geological Survey (USGS) for DDOE; the establishment of regulatory restrictions on stormwater infiltration BMPs at contaminated sites; the creation of a new Remediation and Site Response Program to address contaminant issues at regulated sites; and the investigation of the paleohistory of the Anacostia River.

### **Summary of Groundwater Quality**

The District's groundwater monitoring network continues to be maintained in the Anacostia River and Rock Creek Park watersheds. The wells are listed in Appendix 5.1 and their locations are shown in Appendix 5.2. Groundwater elevation data were collected in October 2012 and January 2013 (Appendix 5.3) while the Kenilworth Aquatic Gardens tide gage was monitored every six minutes. Appendix 5.4 contains a compressed graphical display of the tide gage data from 2004 to 2013. Due to limited funding, plans to re-sample the full groundwater monitoring network were cancelled and only two rounds of groundwater elevation data were collected. Monitoring data continue to be available at the DDOE and USGS websites.

In 2014, DDOE in cooperation with USGS will publish a Scientific Investigations Report (SIR) summarizing the hydrogeology and shallow groundwater quality in the tidal Anacostia River watershed in Washington, D.C. The SIR will include a review of historic and current groundwater conditions, new lithologic cross-sections along the Anacostia River and a discussion of the significance of these interpretations for surface water.

### **Overview of Groundwater Contamination Sources**

Appendix 5.5 lists the major sources of groundwater contamination in the District. No new major sources have been identified within this reporting period.

## Overview of Groundwater Protection Programs

DDOE is the primary environmental protection agency in the District of Columbia. The WQD is the body charged with administration of the District of Columbia Water Pollution Control Act, which defines the District's waters as both groundwater and surface water.

In 1993, groundwater regulations were promulgated. Through these regulations, numerical criteria and enforcement standards for forty-seven constituents were established. Later, the District also developed water quality monitoring regulations that set standards for groundwater monitoring supporting preventive as well as remedial activities. Well regulations have been under development for several years and currently are undergoing internal review. DDOE hopes that these regulations will be promulgated in 2014.

Since the last 305(b), DDOE has added the Remediation and Site Response Program to the list of programs responsible for contaminated site investigation and remediation. The program exercises state CERCLA-like authority and focuses on historic hazardous releases to soil and water. Some groundwater-related programs within the DDOE and their functions are as follows:

- **Voluntary Cleanup Program:** The Voluntary Cleanup Program (VCP) is a part of the Environmental Protection Administration. Unlike the media-specific programs that require mandatory cleanup of contaminated property, VCP oversees owner or developer initiated voluntary remediation of contaminated lands and buildings that return actual or potentially contaminated properties to productive uses.
- **Remediation and Site Response Program:** The RSRP is a relatively new program in the same administration as the VCP. It is responsible for investigation and remediation at sites with historic contaminant releases.
- **Construction Grants Program:** Pursuant to the Clean Water and the Safe Drinking Water Acts and various appropriations acts, the US EPA provides and anticipates providing in the future as authorized, funding through the award of assistance grants to the District of Columbia. These assistance awards enable the District to perform construction and/or improvement of wastewater facilities, drinking water distribution and storage facilities and other water related structures. The overall objective of the grant-funded program is to select and fund projects that will protect the quality of water in the District of Columbia. The projects are identified to meet a variety of needs (i.e., Combined Sewer Overflow Long Term Control Plan (LTCP), Municipal Sanitary Storm Sewer Monitoring Network, and the implementation of pollution control measures, and the protection of the public and safety).

- Federal Facilities Program: The Federal Facilities Program oversees the cleanup of Formally Used Defense Sites (FUDS) and currently active defense facilities that are contaminated.
- Hazardous Waste Management Program: The program regulates hazardous waste small and large quantity generators.
- Integrated Pest Management Program: The program conducts public education for pesticide use.
- Nonpoint Source Program: The program plans and implements BMPs, provides oversight of nonpoint source studies.
- Pesticide Certification and Enforcement Program: The program processes registration of pesticide products for use in the District of Columbia, certifies applicators and performs application inspection.
- Stormwater Management Program: The program reviews stormwater management plans and performs compliance inspections.
- TMDL: The program develops point and nonpoint source load allocations to meet water quality standards in impaired waterbodies.
- Underground Storage Tank Management Program: The program provides oversight for installation and removal of underground storage tanks as well as remedial activities for leaking tanks.
- Water Quality Planning and Permitting: The program coordinates water quality planning and research including groundwater quality research.
- Appendix 5.6 provides additional information regarding the District's groundwater protection programs.

### Aquifer Vulnerability Assessment

The District of Columbia's groundwater vulnerability to contamination was assessed in 1992 by the DC Water Resources Research Center (WRRC) in a report entitled *Urban Land Use Activities and The Ground Water: A Background Survey of the District of Columbia* (WRRC, 1992). The probability of groundwater contamination was mapped and ranked accordingly. The District recognizes that this report is old and when funds are identified, it will be revised.

### Aquifer Mapping

The District in conjunction with the USGS has developed a steady-state three-dimensional groundwater flow model of the shallow aquifers in the Anacostia River watershed. The model results will be published by USGS in FY 2014.

## Comprehensive Data Management System

All data collected during the joint District-USGS projects since 2002 have been maintained and managed by the USGS. This data is readily available on the USGS website ([www.usgs.gov](http://www.usgs.gov)) and will continue to grow as more projects are funded. This data includes chemical, locational, and geological information. Monitoring well data are included in the regional groundwater database maintained by the USGS for the District and other states, and will be available in GIS formats in the near future.

## Summary of Groundwater Contamination Sources

Appendix 5.7 summarizes contaminant sources to the shallow groundwater aquifer. No new major sources have been identified since the 2012 Integrated Report. More importantly, the potential for contamination in surface soils to leach down into the shallow aquifer have been reduced due to the District's new stormwater regulations. These regulations restrict the installation of a stormwater infiltration system in an area with contaminated soil or groundwater. In such an area, DDOE may prohibit the installation of the device or limit its use by requiring an impermeable liner.

## Groundwater/Surface Water Interaction

In 2014, DDOE in cooperation with USGS will publish a report about a new regional, steady-state, three-dimensional, groundwater flow model. The model is primarily designed to determine the rate and pattern of groundwater flow to the Anacostia River. It is based upon information collected in the District and vicinity for the Anacostia River watershed and from surrounding watersheds. The model will become a useful tool for groundwater resource management.

DDOE continues to investigate the paleohistory of the Anacostia River and the potential for old river channels also known as, paleochannels, to affect groundwater flow physically and chemically in localized areas. While identifying fluvial paleochannels can be a complex task, the potential for them to become unexpected pathways for contaminant plumes to migrate to the river is a real possibility since many shoreline facilities are recognized contaminated sites.

In 2012 and 2013, as part of a joint DDOE-USGS project, USGS personnel visited several sites and collected samples from deep borehole cores for pollen analyses. These analyses are being

used for age-dating of sediments deposited in ancient riverine environments and will help to unravel the river's erosional and depositional history.

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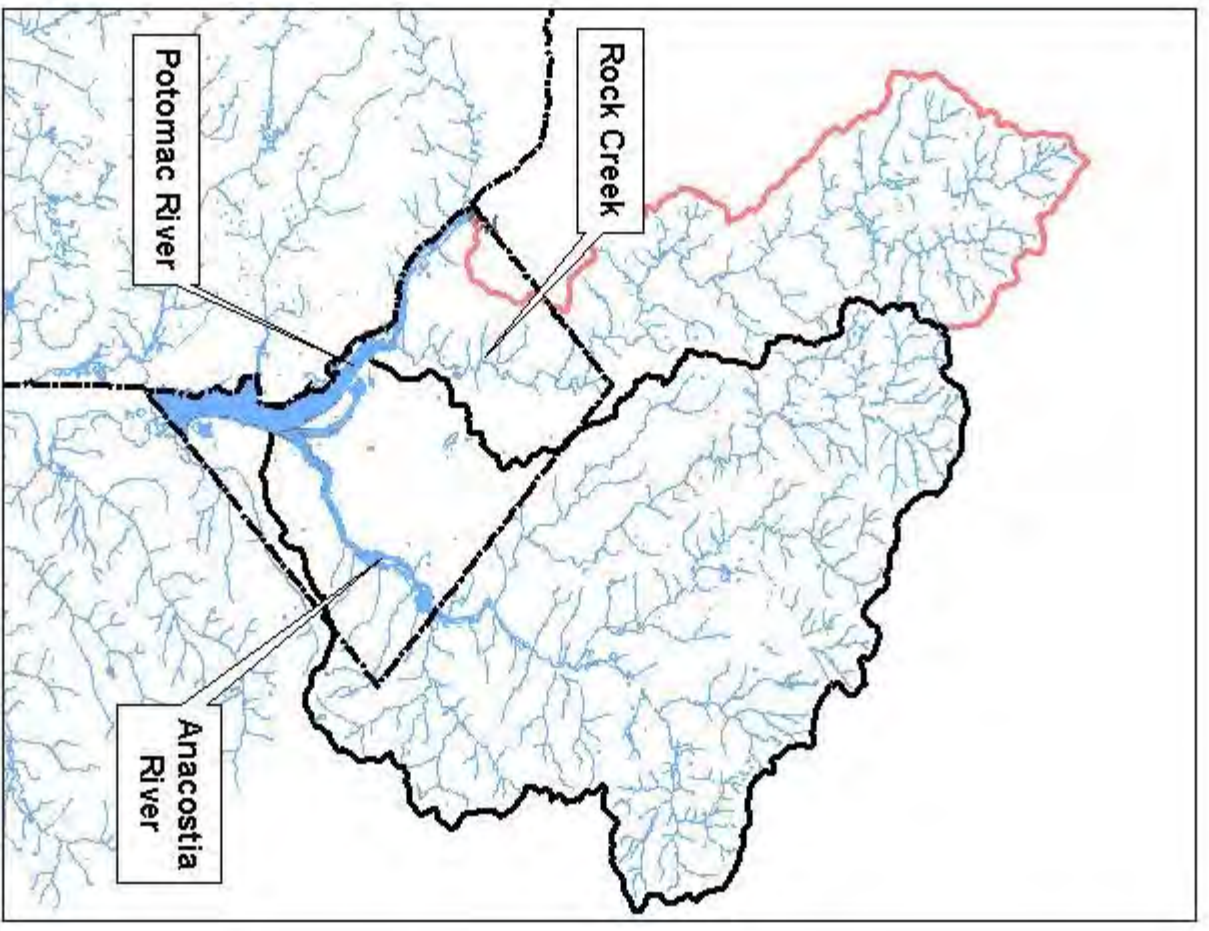
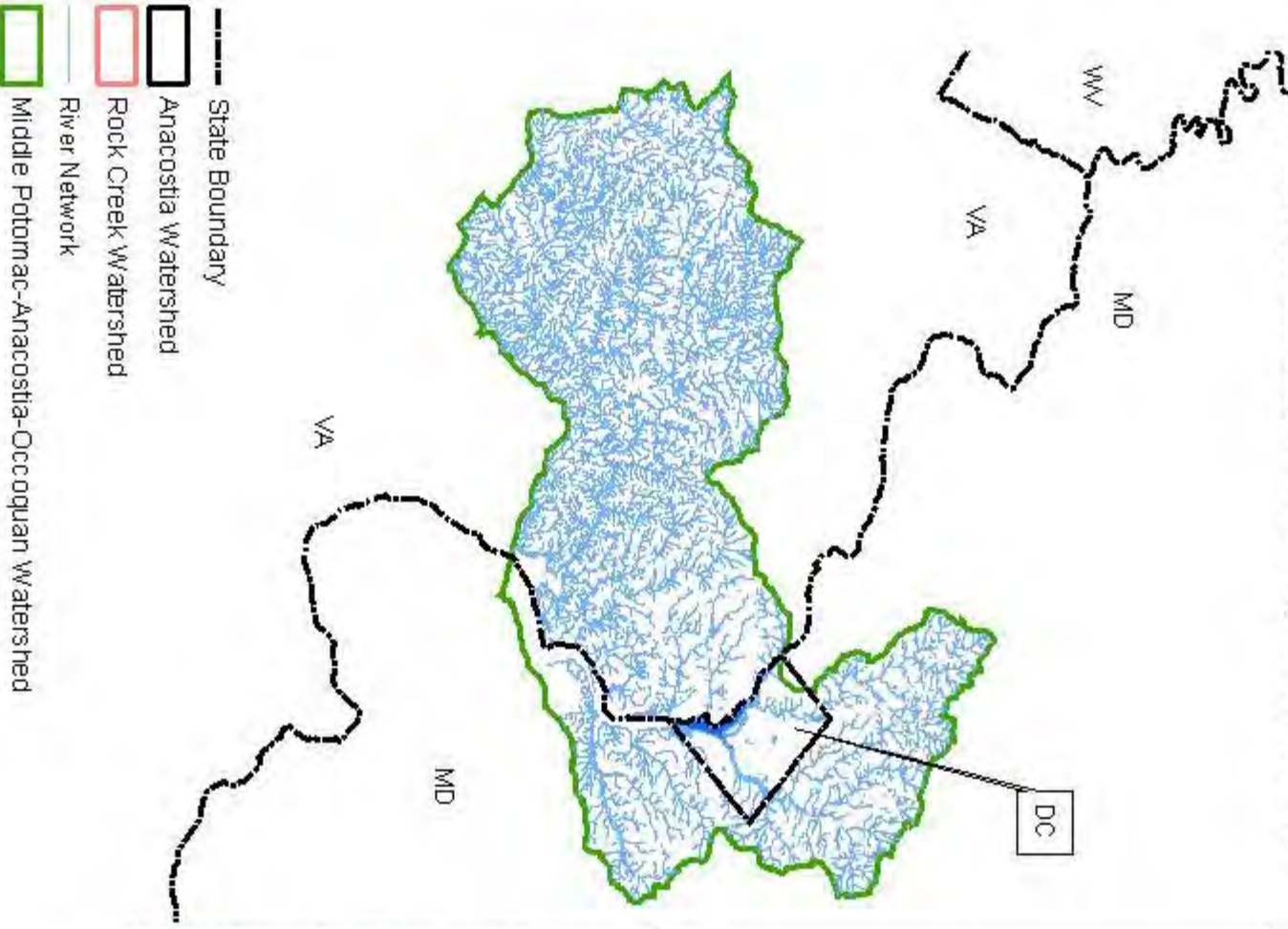
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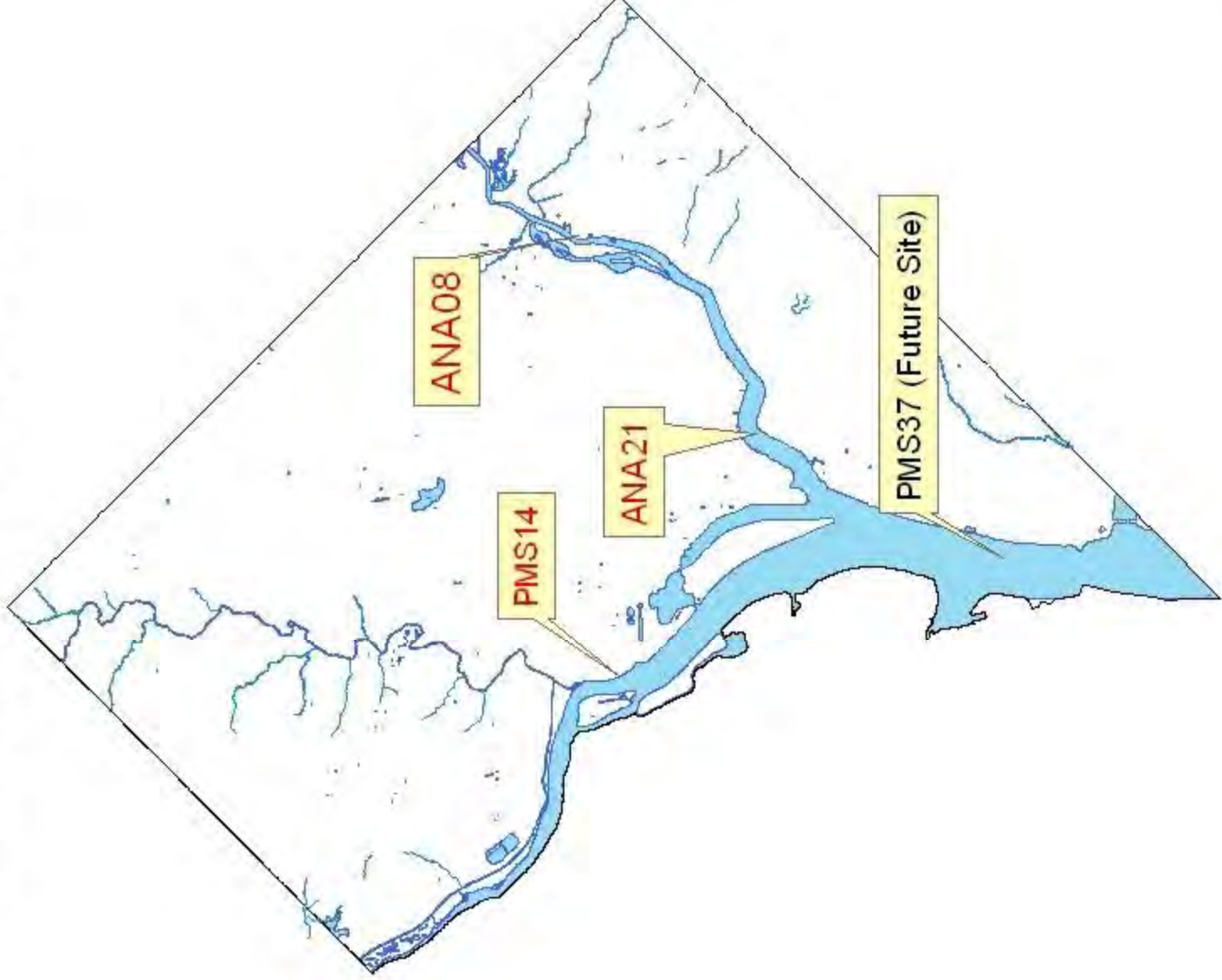
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## **APPENDICES**

# Middle Potomac-Anacostia-Occoquan Watershed



# Real Time Monitoring Stations



## 2012–13 Potomac and Anacostia River Dissolved Oxygen

7 day mean - % violations - criteria standard - 6.0 mg/l Feb-May, 4.0 mg/l Jun – Jan

Year	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct		Nov		% viol year	
	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13
Upper Anacostia	0.0	0.0	0.0	50	100	100	100	75	100	100	60	100	25	75	0.0	75	n/a	n/a	53	72
Lower Anacostia	0.0	0.0	25	50	75	100	75	100	100	100	100	33.3	50	0.0	25	25	n/a	0.0	67	50
Upper Potomac	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

30 day mean – criteria standard – 5.5 mg/l Jun - Jan

Year	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct		Nov		% viol year	
	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13
Upper Anacostia	n/a	n/a	n/a	n/a	n/a	n/a	2.5	2.8	3.2	2.7	3.4	2.5	4.2	4.0	6.4	3.7	n/a	n/a	80	100
Lower Anacostia	n/a	n/a	n/a	n/a	n/a	n/a	4.5	2.4	4.0	3.4	3.9	3.3	4.5	5.2	5.5	4.5	n/a	7.6	80	16.7
Upper Potomac	n/a	n/a	n/a	n/a	n/a	n/a	8.1	8.4	6.8	8.0	7.2	8.0	7.9	8.2	9.7	9.0	12.8	n/a	0.0	0.0

Instantaneous minimum - % violations - criteria standard 5.0 mg/l Feb-May, 3.2 mg/l Jun– Jan

Year	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct		Nov		% viol year	
	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13
Upper Anacostia	15.9	0.0	7.4	53.6	65.4	93.2	73.5	68.6	53.1	66.5	44.4	76.2	22.4	41.0	4.9	44.4	n/a	11.4	37.0	54.5
Lower Anacostia	0.0	0.0	6.6	37.7	42.6	69.9	29.3	69.6	37.5	77.2	34.9	49.1	23.5	11.5	10.9	21.8	n/a	0.0	20.5	35.0
Upper Potomac	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

## Potomac and Anacostia River Turbidity

Monthly % above 20 NTU

Year	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct		Nov		% viol year	
	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13
Upper Anacostia	37.3	71.1	72.5	53.6	19.1	44.5	52.4	78.3	64.3	48.5	58.1	43.0	58.1	n/a	34.3	n/a	73.0	n/a	54.1	58.6
Lower Anacostia	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Upper Potomac	0.7	0.1	2.9	1.2	0.1	19.8	0.0	19.9	n/a	2.7	n/a	0.1	n/a	0.1	n/a	3.8	n/a	n/a	1.3	6.7

- Real time monitoring equipment removed in winter months (Dec – Feb) to prevent ice damage.

## Potomac and Anacostia River pH

Monthly % greater than 8.5 or less than 6.0

	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct		Nov		% viol year	
	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13
Upper Anacostia	0.0	n/a	n/a	0.0	n/a	0.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.0	0.0
Lower Anacostia	0.0	0.0	0.0	14.8	0.0	9.2	1.1	26.6	0.0	32.2	0.0	47.5	0.0	0.0	0.0	0.0	n/a	0.0	0.01	12.2
Upper Potomac	99.8	14.7	62.7	14.9	0.0	0.0	64.0	0.0	31.5	11.7	84.7	61.4	57.8	48.8	41.4	0.0	1.7	n/a	51.6	19.9

## Potomac and Anacostia River Chlorophyll *a*

In situ readings % above 25 µg/L July 1 – September 30

	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct		Nov		% viol year	
	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13
Upper Anacostia	-	-	-	-	-	-	-	-	n/a	n/a	n/a	n/a	n/a	n/a	-	-	-	-	n/a	n/a
Lower Anacostia	-	-	-	-	-	-	-	-	n/a	n/a	n/a	n/a	n/a	n/a	-	-	-	-	n/a	n/a
Upper Potomac	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-	0.0	0.0

## Potomac and Anacostia River Temperature C

In situ readings % above 32.2 C

	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct		Nov		% viol year	
	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13	12	13
Upper Anacostia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.01	0.0
Lower Anacostia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Upper Potomac	n/a	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7

n/a – not assessed

## **INDIVIDUAL WATERBODY WATER QUALITY ASSESSMENTS**

Note: For this Draft document the Individual Reports and the supplemental toxics monitoring data report are at the end of the Appendix Section.

ANACOSTIA DC SEGMENT 01

ANACOSTIA DC SEGMENT 02

BATTERY KEMBLE CREEK

BROAD BRANCH

CHESAPEAKE AND OHIO CANAL

DALECARLIA TRIBUTARY

DUMBARTON OAKS

FENWICK BRANCH

FORT CHAPLIN RUN

FORT DAVIS TRIBUTARY

FORT DUPONT CREEK

FORT STANTON TRIBUTARY

FOUNDRY BRANCH

HICKEY RUN

KINGMAN LAKE

KLINGLE VALLEY

LUZON BRANCH

MELVIN HAZEN VALLEY BRANCH

NASH RUN

NORMANSTONE CREEK

OXON RUN



PINEHURST BRANCH

PINEY BRANCH

POPES BRANCH (HAWES RUN)

PORTAL BRANCH

POTOMAC DC SEGMENT 01

POTOMAC DC SEGMENT 02

POTOMAC DC SEGMENT 03

ROCK CREEK DC SEGMENT 01

ROCK CREEK DC SEGMENT 02

SOAPSTONE CREEK

TEXAS AVENUE TRIBUTARY

TIDAL BASIN

WASHINGTON SHIP CHANNEL

WATTS BRANCH DC SEGMENT 01

WATTS BRANCH DC SEGMENT 02

**2009-2013  
Statistical Summary Report  
For  
Total Summary Report**

<b>Waterbody</b>	<b>Station Data Used</b>	<b>Temp % Violation</b>	<b>pH % Violation</b>	<b>DO % Violation</b>	<b>Turb % Violation</b>	<b>Class A E. coli % Violation*</b>
DCAKL00L	KNG01, KNG02	0.0	2.91	8.91	70.59	27.27
DCANA00E SEG1	ANA19, ANA21, ANA24	0.0	1.08	6.38	8.99	19.23
DCANA00E SEG2	ANA01, ANA05, ANA08, ANA11, ANA14	0.0	2.33	13.11	37.17	29.17
DCPMS00E SEG1	PMS37, PMS44	0.0	6.80	0.0	11.01	10.42
DCPMS00E SEG2	PMS10, PMS21	0.0	11.41	0.0	10.53	12.50
DCPMS00E SEG3	PMS01	0.0	23.53	0.0	13.46	6.52
DCPTB01L	PTB01	0.0	23.33	0.0	1.69	4.35
DCPWC04E	PWC04	0.0	8.77	0.0	0.0	11.54
DCRCR00R SEG1	RCR09	0.0	1.69	0.0	11.86	41.18
DCRCR00R SEG2	RCR01	0.0	1.67	0.0	10.17	40.00
DCTBK01R	TBK01	0.0	0.0	0.0	5.0	23.53
DCTBR01R	TBR01	0.0	5.0	0.0	10.00	87.50
DCTCO01L	TCO01, TCO06	0.0	11.24	0.0	2.22	11.69
DCTDA01R	TDA01	0.0	0.0	0.0	9.52	58.82
DCTDO01R	TDO01	0.0	0.0	0.0	10.53	35.29
DCTDU01R	TDU01	0.0	0.0	10.00	15.79	27.78
DCTFB02R	TFB02	0.0	5.0	0.0	5.0	42.11
DCTFC01R	TFC01	0.0	0.0	15.00	15.79	50.00
DCTFD01R	TFD01	0.0	0.0	16.67	44.44	43.75
DCTFE01R	TFE01	0.0	0.0	0.0	5.26	25.00
DCTFS01R	TFS01	0.0	0.0	0.0	21.05	26.32
DCTHR01R	THR01	0.0	1.67	13.79	10.34	56.86

<b>Waterbody</b>	<b>Station Data Used</b>	<b>Temp % Violation</b>	<b>pH % Violation</b>	<b>DO % Violation</b>	<b>Turb % Violation</b>	<b>Class A E. coli % Violation*</b>
DCTKV01R	TKV01	0.0	0.0	0.0	0.0	20.00
DCTLU01	TLU01	0.0	0.0	0.0	0.0	55.00
DCTMH01R	TMH01	0.0	0.0	0.0	0.0	21.05
DCTNA01R	TNA01	0.0	0.0	10.53	10.53	55.00
DCTNS01R	TNS01	0.0	0.0	5.00	10.00	47.06
DCTOR01R	TOR01	0.0	5.0	0.0	5.0	27.78
DCTPB01R	TPB01	0.0	5.0	0.0	10.0	38.89
DCTPI01R	TPI01	0.0	0.0	0.0	0.0	23.53
DCTPO01R	TPO01	0.0	0.0	0.0	5.0	35.29
DCTPY01R	TPY01	0.0	0.0	5.00	0.0	41.18
DCTSO01R	TSO01	0.0	0.0	0.0	5.26	46.67
DCTTX27R	TTX27	0.0	0.0	5.56	44.44	41.18
DCTWB00R SEG1	TWB01	0.0	10.0	1.69	10.34	38.00
DCTWB00R SEG2	TWB05, TWB06	0.0	8.40	0.85	11.30	41.18

\* Data for E. coli is for samples collected in 2009-2013.

**2009-2013**  
**Statistical Summary Report**  
**For**  
**Dissolved Oxygen (mg/L)**

<b>Waterbody</b>	<b>Station Data Used</b>	<b>Min. Value</b>	<b>Max Value</b>	<b>Avg. Value</b>	<b>Std. Dev.</b>	<b>Median Value</b>	<b>% Violation of WQ Std.</b>
DCAKL00L	KNG01, KNG02	2.80	12.32	6.97	2.52	6.67	8.91
DCANA00E SEG1	ANA19, ANA21, ANA24	1.63	13.96	7.62	2.59	7.36	6.38
DCANA00E SEG2	ANA01, ANA05, ANA08, ANA11, ANA14	1.64	12.65	6.72	2.79	6.20	13.11
DCPMS00E SEG1	PMS37, PMS44	5.24	14.16	9.87	2.39	9.86	0.0
DCPMS00E SEG2	PMS10, PMS21	5.63	15.09	9.59	2.27	9.22	0.0
DCPMS00E SEG3	PMS01	6.60	14.08	10.05	2.21	10.02	0.0
DCPTB01L	PTB01	5.79	14.34	10.46	2.09	10.36	0.0
DCPWC04E	PWC04	5.91	15.95	9.90	2.23	9.84	0.0
DCRCR00R SEG1	RCR09	7.32	15.32	10.58	2.22	10.46	0.0
DCRCR00R SEG2	RCR01	5.84	13.93	9.76	2.25	9.60	0.0
DCTBK01R	TBK01	7.94	13.69	10.58	1.76	10.23	0.0
DCTBR01R	TBR01	6.03	15.62	10.48	2.89	10.38	0.0
DCTCO01L	TCO01, TCO06	6.40	14.45	9.83	1.98	9.41	0.0
DCTDA01R	TDA01	6.98	13.16	9.91	2.18	9.52	0.0
DCTDO01R	TDO01	7.53	15.13	10.16	2.12	9.81	0.0
DCTDU01R	TDU01	1.79	12.81	8.78	2.90	9.07	10.00
DCTFB02R	TFB02	7.21	13.11	9.59	1.92	9.44	0.0
DCTFC01R	TFC01	2.19	12.49	8.41	2.78	8.55	15.00
DCTFD01R	TFD01	3.22	11.99	7.35	2.51	7.43	16.67
DCTFE01R	TFE01	6.19	13.28	9.90	2.14	9.30	0.0
DCTFS01R	TFS01	7.19	13.79	10.24	1.92	9.96	0.0
DCTHR01R	THR01	2.20	15.69	8.45	2.90	8.48	13.79

<b>Waterbody</b>	<b>Station Data Used</b>	<b>Min. Value</b>	<b>Max Value</b>	<b>Avg. Value</b>	<b>Std. Dev.</b>	<b>Median Value</b>	<b>% Violation of WQ Std.</b>
DCTKV01R	TKV01	6.95	14.37	10.44	2.12	10.64	0.0
DCTLU01	TLU01	6.78	16.08	9.88	2.39	9.67	0.0
DCTMH01R	TMH01	7.55	15.15	10.92	2.22	11.07	0.0
DCTNA01R	TNA01	4.56	13.97	8.68	2.50	8.36	10.53
DCTNS01R	TNS01	3.88	14.24	9.80	2.62	9.33	5.00
DCTOR01R	TOR01	6.36	14.44	10.39	2.40	10.77	0.0
DCTPB01R	TPB01	6.10	13.76	9.23	2.07	9.19	0.0
DCTPI01R	TPI01	7.33	14.98	10.25	2.37	9.54	0.0
DCTPO01R	TPO01	5.43	14.22	9.01	2.78	7.89	0.0
DCTPY01R	TPY01	4.92	14.71	9.77	2.58	9.39	5.00
DCTSO01R	TSO01	6.88	15.45	10.65	2.58	9.98	0.0
DCTTX27R	TTX27	4.93	12.83	8.87	1.95	8.74	5.56
DCTWB00R SEG1	TWB01	4.63	19.61	10.34	3.28	9.83	1.69
DCTWB00R SEG2	TWB05, TWB06	3.64	14.33	9.82	2.31	9.68	0.85

**2009-2013**  
**Statistical Summary Report**  
**For**  
**Temperature (°C)**

<b>Waterbody</b>	<b>Station Data Used</b>	<b>Min. Value</b>	<b>Max Value</b>	<b>Avg. Value</b>	<b>Std. Dev.</b>	<b>Median Value</b>	<b>% Violation of WQ Std.</b>
DCAKL00L	KNG01, KNG02	0.95	28.99	16.12	8.22	16.87	0.0
DCANA00E SEG1	ANA19, ANA21, ANA24	-2.65	30.75	17.78	8.65	18.66	0.0
DCANA00E SEG2	ANA01, ANA05, ANA08, ANA11, ANA14	-2.80	30.90	17.29	8.29	17.14	0.0
DCPMS00E SEG1	PMS37, PMS44	-2.34	29.73	15.61	9.28	16.94	0.0
DCPMS00E SEG2	PMS10, PMS21	-2.87	32.00	17.68	8.91	18.43	0.0
DCPMS00E SEG3	PMS01	2.44	29.11	16.23	8.84	15.94	0.0
DCPTB01L	PTB01	-1.44	29.39	14.91	9.21	16.43	0.0
DCPWC04E	PWC04	-2.48	30.28	15.91	9.39	16.97	0.0
DCRCR00R SEG1	RCR09	-2.99	25.54	12.65	7.88	13.49	0.0
DCRCR00R SEG2	RCR01	-2.70	25.33	12.78	7.59	13.49	0.0
DCTBK01R	TBK01	-2.25	22.54	11.88	7.03	11.91	0.0
DCTBR01R	TBR01	-0.87	23.69	12.01	7.28	12.48	0.0
DCTCO01L	TCO01, TCO06	1.62	29.35	17.60	8.10	18.65	0.0
DCTDA01R	TDA01	2.07	22.75	12.61	6.20	12.23	0.0
DCTDO01R	TDO01	1.83	21.86	13.10	5.88	13.37	0.0
DCTDU01R	TDU01	-1.93	24.20	12.83	7.71	13.14	0.0
DCTFB02R	TFB02	3.16	22.98	13.05	5.85	12.94	0.0
DCTFC01R	TFC01	-0.28	22.21	12.33	6.99	12.01	0.0
DCTFD01R	TFD01	1.01	22.94	12.29	6.74	12.09	0.0
DCTFE01R	TFE01	-1.30	24.52	13.12	7.38	13.50	0.0
DCTFS01R	TFS01	-2.59	23.66	11.48	7.59	10.97	0.0
DCTHR01R	THR01	-0.88	25.48	13.51	7.04	13.16	0.0

<b>Waterbody</b>	<b>Station Data Used</b>	<b>Min. Value</b>	<b>Max Value</b>	<b>Avg. Value</b>	<b>Std. Dev.</b>	<b>Median Value</b>	<b>% Violation of WQ Std.</b>
DCTKV01R	TKV01	-1.26	22.71	11.25	6.96	10.07	0.0
DCTLU01	TLU01	3.60	22.89	13.20	5.68	12.42	0.0
DCTMH01R	TMH01	-0.44	22.88	11.59	6.94	10.53	0.0
DCTNA01R	TNA01	-2.79	24.61	13.29	7.07	12.98	0.0
DCTNS01R	TNS01	3.11	20.82	13.19	5.89	15.49	0.0
DCTOR01R	TOR01	1.54	23.30	13.04	7.76	14.48	0.0
DCTPB01R	TPB01	2.88	20.90	12.76	6.42	13.79	0.0
DCTPI01R	TPI01	1.97	20.17	13.07	6.22	15.22	0.0
DCTPO01R	TPO01	2.38	21.49	14.05	6.18	16.12	0.0
DCTPY01R	TPY01	1.49	21.41	13.54	6.68	16.17	0.0
DCTSO01R	TSO01	1.49	20.34	12.71	6.22	14.56	0.0
DCTTX27R	TTX27	3.88	20.20	13.63	5.56	14.99	0.0
DCTWB00R SEG1	TWB01	-2.58	25.85	13.82	7.52	13.86	0.0
DCTWB00R SEG2	TWB05, TWB06	-2.13	24.59	13.47	6.93	13.20	0.0

**2009-2013**  
**Statistical Summary Report**  
**For**  
**pH**

<b>Waterbody</b>	<b>Station Data Used</b>	<b>Min. Value</b>	<b>Max Value</b>	<b>Avg. Value</b>	<b>Std. Dev.</b>	<b>Median Value</b>	<b>% Violation of WQ Std.</b>
DCAKL00L	KNG01, KNG02	6.51	8.62	7.66	0.38	7.63	2.91
DCANA00E SEG1	ANA19, ANA21, ANA24	6.63	9.22	7.58	0.39	7.61	1.08
DCANA00E SEG2	ANA01, ANA05, ANA08, ANA11, ANA14	6.70	9.08	7.50	0.39	7.47	2.33
DCPMS00E SEG1	PMS37, PMS44	6.76	8.91	7.97	0.39	7.98	6.80
DCPMS00E SEG2	PMS10, PMS21	6.84	9.02	8.11	0.38	8.14	11.41
DCPMS00E SEG3	PMS01	6.83	9.48	8.20	0.42	8.22	23.53
DCPTB01L	PTB01	7.48	8.82	8.26	0.32	8.29	23.33
DCPWC04E	PWC04	7.10	9.40	7.96	0.40	7.95	8.77
DCRCR00R SEG1	RCR09	7.26	8.51	7.97	0.30	7.99	1.69
DCRCR00R SEG2	RCR01	7.22	9.02	7.88	0.31	7.90	1.67
DCTBK01R	TBK01	7.35	8.32	7.82	0.21	7.81	0.0
DCTBR01R	TBR01	7.27	8.56	7.93	0.28	7.92	5.0
DCTCO01L	TCO01, TCO06	7.29	9.48	8.13	0.34	8.09	11.24
DCTDA01R	TDA01	7.23	8.30	7.74	0.28	7.62	0.0
DCTDO01R	TDO01	7.25	8.30	7.81	0.25	7.78	0.0
DCTDU01R	TDU01	7.05	8.31	7.77	0.36	7.76	0.0
DCTFB02R	TFB02	7.14	9.12	7.89	0.39	7.87	5.0
DCTFC01R	TFC01	7.27	8.40	7.70	0.32	7.64	0.0
DCTFD01R	TFD01	6.73	8.36	7.56	0.51	7.54	0.0
DCTFE01R	TFE01	7.34	8.33	7.85	0.30	7.82	0.0
DCTFS01R	TFS01	7.10	8.45	7.90	0.44	7.96	0.0
DCTHR01R	THR01	7.11	8.50	7.79	0.31	7.84	1.67



<b>Waterbody</b>	<b>Station Data Used</b>	<b>Min. Value</b>	<b>Max Value</b>	<b>Avg. Value</b>	<b>Std. Dev.</b>	<b>Median Value</b>	<b>% Violation of WQ Std.</b>
DCTKV01R	TKV01	7.12	8.18	7.78	0.28	7.80	0.0
DCTLU01	TLU01	7.10	8.12	7.72	0.29	7.78	0.0
DCTMH01R	TMH01	7.24	8.29	7.87	0.25	7.90	0.0
DCTNA01R	TNA01	7.16	8.36	7.81	0.36	7.86	0.0
DCTNS01R	TNS01	7.28	8.33	7.87	0.29	7.86	0.0
DCTOR01R	TOR01	7.31	8.54	7.98	0.32	8.01	5.0
DCTPB01R	TPB01	7.16	8.66	7.71	0.39	7.75	5.0
DCTPI01R	TPI01	7.30	8.34	7.91	0.26	7.90	0.0
DCTPO01R	TPO01	7.12	8.10	7.68	0.22	7.66	0.0
DCTPY01R	TPY01	7.18	8.44	7.80	0.32	7.82	0.0
DCTSO01R	TSO01	7.23	8.19	7.84	0.23	7.86	0.0
DCTTX27R	TTX27	7.12	8.49	7.63	0.35	7.68	0.0
DCTWB00R SEG1	TWB01	7.28	9.22	7.98	0.39	7.93	10.0
DCTWB00R SEG2	TWB05, TWB06	7.25	11.98	7.98	0.55	7.93	8.40

**2009-2013**  
**Statistical Summary Report**  
**For**  
**Turbidity (NTU)**

<b>Waterbody</b>	<b>Station Data Used</b>	<b>Min. Value</b>	<b>Max Value</b>	<b>Avg. Value</b>	<b>Std. Dev.</b>	<b>Median Value</b>	<b>% Violation of WQ Std.</b>
DCAKL00L	KNG01, KNG02	6.60	253.10	34.37	30.42	27.70	70.59
DCANA00E SEG1	ANA19, ANA21, ANA24	0.40	90.60	13.66	14.49	9.70	8.99
DCANA00E SEG2	ANA01, ANA05, ANA08, ANA11, ANA14	2.30	258.60	24.48	25.29	18.45	37.17
DCPMS00E SEG1	PMS37, PMS44	1.30	225.50	13.45	26.50	8.10	11.01
DCPMS00E SEG2	PMS10, PMS21	0.0	268.70	11.26	29.25	4.25	10.53
DCPMS00E SEG3	PMS01	0.0	107.80	11.84	22.90	3.55	13.46
DCPTB01L	PTB01	0.60	27.30	6.85	4.14	6.30	1.69
DCPWC04E	PWC04	0.0	20.90	4.78	3.87	3.60	0.0
DCRCR00R SEG1	RCR09	0.0	175.90	12.13	28.43	2.90	11.86
DCRCR00R SEG2	RCR01	0.60	129.40	12.55	24.18	4.10	10.17
DCTBK01R	TBK01	0.0	28.50	3.89	7.34	0.70	5.0
DCTBR01R	TBR01	0.0	39.80	4.23	11.34	0.25	10.00
DCTCO01L	TCO01, TCO06	0.0	48.60	7.50	6.96	5.30	2.22
DCTDA01R	TDA01	0.0	26.60	4.52	8.54	0.50	9.52
DCTDO01R	TDO01	0.60	25.20	4.84	6.95	2.50	10.53
DCTDU01R	TDU01	1.10	90.70	12.12	20.44	6.30	15.79
DCTFB02R	TFB02	0.0	22.60	7.56	7.35	6.75	5.0
DCTFC01R	TFC01	2.50	42.00	10.55	11.48	5.40	15.79
DCTFD01R	TFD01	2.00	164.90	37.54	41.98	16.50	44.44
DCTFE01R	TFE01	0.0	24.80	2.63	7.05	0.0	5.26
DCTFS01R	TFS01	0.50	203.90	23.87	45.79	10.80	21.05
DCTHR01R	THR01	1.10	45.40	9.02	9.58	5.60	10.34

<b>Waterbody</b>	<b>Station Data Used</b>	<b>Min. Value</b>	<b>Max Value</b>	<b>Avg. Value</b>	<b>Std. Dev.</b>	<b>Median Value</b>	<b>% Violation of WQ Std.</b>
DCTKV01R	TKV01	0.0	3.60	0.56	1.04	0.05	0.0
DCTLU01	TLU01	0.0	4.50	0.59	1.19	0.0	0.0
DCTMH01R	TMH01	0.0	18.30	1.74	4.07	0.15	0.0
DCTNA01R	TNA01	0.0	29.10	5.77	7.75	3.40	10.53
DCTNS01R	TNS01	0.0	23.80	3.56	7.16	0.45	10.00
DCTOR01R	TOR01	0.0	70.70	4.79	15.55	1.40	5.0
DCTPB01R	TPB01	0.0	53.10	8.17	12.45	4.25	10.0
DCTPI01R	TPI01	0.0	12.80	1.05	3.00	0.0	0.0
DCTPO01R	TPO01	0.0	48.70	4.97	11.08	1.30	5.0
DCTPY01R	TPY01	0.0	5.50	0.73	1.61	0.0	0.0
DCTSO01R	TSO01	0.0	47.90	4.18	10.95	0.50	5.26
DCTTX27R	TTX27	5.80	188.90	34.64	44.49	18.85	44.44
DCTWB00R SEG1	TWB01	0.0	49.20	8.74	10.54	4.70	10.34
DCTWB00R SEG2	TWB05, TWB06	0.0	442.90	11.88	43.32	3.10	11.30

**2009-2013**  
**Statistical Summary Report**  
**For**  
**E. coli (MPN/100mL)**

<b>Waterbody</b>	<b>Station Data Used</b>	<b>Min. Value</b>	<b>Max Value</b>	<b>Avg. Value</b>	<b>Std. Dev.</b>	<b>Median Value</b>	<b>% Violation of WQ Std.</b>
DCAKL00L	KNG01, KNG02	45.00	1414.00	346.20	326.12	201.00	27.27
DCANA00E SEG1	ANA19, ANA21, ANA24	8.00	3088.00	355.21	639.71	118.50	19.23
DCANA00E SEG2	ANA01, ANA05, ANA08, ANA11, ANA14	30.00	2602.00	425.82	555.63	203.00	29.17
DCPMS00E SEG1	PMS37, PMS44	1.00	5748.00	220.70	703.03	40.50	10.42
DCPMS00E SEG2	PMS10, PMS21	1.00	5794.00	189.59	608.60	30.00	12.50
DCPMS00E SEG3	PMS01	1.00	980.00	81.52	195.53	15.00	6.52
DCPTB01L	PTB01	1.00	1553.00	116.35	245.71	28.50	4.35
DCPWC04E	PWC04	6.00	2086.00	188.06	392.56	50.00	11.54
DCRCR00R SEG1	RCR09	32.00	2420.00	609.65	661.64	345.00	41.18
DCRCR00R SEG2	RCR01	47.00	10462.00	794.76	1547.50	297.50	40.00
DCTBK01R	TBK01	24.00	5172.00	567.24	1246.76	129.00	23.53
DCTBR01R	TBR01	28.00	10112.00	2245.81	2891.93	1300.00	87.50
DCTCO01L	TCO01, TCO06	1.00	2420.00	213.64	460.37	77.00	11.69
DCTDA01R	TDA01	12.00	13000.00	1993.65	3658.54	461.00	58.82
DCTDO01R	TDO01	34.00	1414.00	426.24	455.22	178.00	35.29
DCTDU01R	TDU01	15.00	2420.00	417.33	597.05	216.00	27.78
DCTFB02R	TFB02	2.00	2420.00	660.37	799.34	138.00	42.11
DCTFC01R	TFC01	76.00	2420.00	668.94	742.03	378.00	50.00
DCTFD01R	TFD01	12.00	2098.00	682.31	706.35	356.50	43.75
DCTFE01R	TFE01	1.00	3609.00	598.56	962.68	192.50	25.00
DCTFS01R	TFS01	2.00	1986.00	408.32	565.64	155.00	26.32
DCTHR01R	THR01	80.00	2924.00	844.49	775.87	579.00	56.86

<b>Waterbody</b>	<b>Station Data Used</b>	<b>Min. Value</b>	<b>Max Value</b>	<b>Avg. Value</b>	<b>Std. Dev.</b>	<b>Median Value</b>	<b>% Violation of WQ Std.</b>
DCTKV01R	TKV01	16.00	1986.00	373.90	587.77	135.50	20.00
DCTLU01	TLU01	42.00	2420.00	708.60	703.96	423.00	55.00
DCTMH01R	TMH01	8.00	2420.00	331.95	570.01	111.00	21.05
DCTNA01R	TNA01	32.00	2420.00	733.80	643.67	491.00	55.00
DCTNS01R	TNS01	154.0	3282.00	1057.53	1042.52	365.00	47.06
DCTOR01R	TOR01	49.00	2420.00	506.83	649.06	256.50	27.78
DCTPB01R	TPB01	39.00	2420.00	670.06	827.79	215.50	38.89
DCTPI01R	TPI01	14.00	4611.00	605.82	1206.87	79.00	23.53
DCTPO01R	TPO01	22.00	2420.00	565.41	708.33	249.00	35.29
DCTPY01R	TPY01	24.00	5938.00	766.53	1422.85	260.00	41.18
DCTSO01R	TSO01	102.0	2420.00	795.93	757.73	345.00	46.67
DCTTX27R	TTX27	11.00	4786.00	618.88	1136.19	248.00	41.18
DCTWB00R SEG1	TWB01	8.00	2420.00	472.38	585.76	263.50	38.00
DCTWB00R SEG2	TWB05, TWB06	1.00	15531.00	819.93	1849.41	306.50	41.18

## **Categorization of District of Columbia Waters**

**Category 1-** All designated uses are supported, no use is threatened.

No DC waters fit this category.

**Category 2-** Available data and/or information indicate that some, but not all, designated uses are supported.

No DC waters fit this category.

**Category 3-** There is insufficient available data and/or information to make a use support determination.

**Category 4-** Available data and/or information indicate that at least one designated use is not being supported or is threatened, but a TMDL is not needed.

See subcategories below:

Category 4A- TMDLs needed to result in a designated use attainment have been approved or established by EPA.

Category 4B- TMDL not required. Other pollution control requirements (such as permits, strategies) are expected to address waterbody/pollutant combinations and result in attainment of the water quality standards in a reasonable period of time.

Category 4C- Impaired or threatened waters for one or more designated uses. TMDL is not required as impairment is not caused by a pollutant.

**Category 5-** Available data and/or information indicate that a designated use is not being supported or is threatened, and a TMDL is needed.



**DRAFT DISTRICT OF COLUMBIA  
LIST OF IMPAIRED WATERBODIES**

**Category 3**

**Category 3-** There is insufficient available data and/or information to make a use support determination.

303d Assessment Year <sup>1</sup>	Geographic Location	WBID	WB Name	Pollutant(s) or Pollutant Categories Causing Impairment
2014	02070010	DCTWB00R	Upper Watts Branch-segment 2	DDD DDE DDT Heptachlor Epoxide PAH 1,2,3
2014	02070010	DCTWB00R	Lower Watts Branch-segment 1	DDD DDE DDT Heptachlor Epoxide PAH 1,2,3
2014	02070010	DCAKL00L	Kingman Lake	DDD DDE Dieldrin Heptachlor Epoxide Copper Zinc
2014	02070010	DCTDU01R	Fort DuPont Creek	Copper Zinc
2014	02070010	DCTPB01R	Popes Branch	DDD DDT Dieldrin



303d Assessment Year <sup>1</sup>	Geographic Location	WBID	WB Name	Pollutant(s) or Pollutant Categories Causing Impairment
				Arsenic Copper Zinc
2014	02070010	DCPWC04E	Washington Ship Channel	Chlordane DDD DDE DDT Dieldrin Heptachlor Epoxide PAH 1,2,3
2014	02070010	DCTOR01R	Oxon Run	Chlordane DDT Heptachlor Epoxide PAH 1,2,3 Arsenic Copper Zinc
2014	02070008	DCTDA01R	Dalecarlia Tributary	Chlordane DDD DDE DDT PAH 1,2,3 Arsenic Copper Zinc
2014	02070010	DCTNA01R	Nash Run	DDD DDE DDT Copper Zinc

303d Assessment Year <sup>1</sup>	Geographic Location	WBID	WB Name	Pollutant(s) or Pollutant Categories Causing Impairment
2014	02070010	DCTHR01R	Hickey Run	DDD DDT Dieldrin Heptachlor Epoxide Arsenic Copper Zinc
2014	02070010	DCTDO01R	Dumbarton Oaks	DDD DDE DDT PAH 1,2,3 Arsenic Copper Zinc
2014	02070010	DCTFE01R	Fenwick Branch	Chlordane DDE DDD PAH 1,2,3 Arsenic Copper Zinc
2014	02070010	DCTKV01R	Klinge Valley Creek	Chlordane DDD DDE DDT PAH 1,2,3 Arsenic Copper Zinc

303d Assessment Year <sup>1</sup>	Geographic Location	WBID	WB Name	Pollutant(s) or Pollutant Categories Causing Impairment
2014	02070010	DCTLU01R	Luzon Branch	DDD DDE DDT PAH 1,2,3 Arsenic Copper Zinc
2014	02070010	DCTMH01R	Melvin Hazen Valley Branch	Chlordane DDD DDE DDT Heptachlor Epoxide PAH 1,2,3 Arsenic Copper Zinc
2014	02070010	DCTPI01R	Pinehurst Branch	Chlordane DDD DDE DDT PAH 1,2,3 Arsenic Copper Zinc
2014	02070010	DCTPY01R	Piney Branch	DDD DDE DDT PAH 1,2,3 Arsenic Copper Zinc

303d Assessment Year <sup>1</sup>	Geographic Location	WBID	WB Name	Pollutant(s) or Pollutant Categories Causing Impairment
2014	02070010	DCTPO01R	Portal Branch	Chlordane DDD DDE DDT PAH 1,2,3 Arsenic Copper Zinc
2014	02070010	DCTSO01R	Soapstone Creek	DDD DDE DDT PAH 1,2,3 Arsenic Copper Zinc
2014	02070010	DCPTB01L	Tidal Basin	Chlordane DDD DDE DDT Dieldrin Heptachlor Epoxide PAH 1,2,3
2014	02070010	DCTBK01R	Battery Kemble Creek	Arsenic Copper Zinc

<sup>1</sup>Note: These pollutants moved from Category 4a to Category 3. Current fish tissue studies conducted in the District were based on fish caught in the Anacostia and Potomac Rivers, not the tributaries. The Tetrach study did not detect the pollutant, but a TMDL exists for the pollutant. More information is needed to determine if the pollutant is the cause of non-attainment.

**DRAFT DISTRICT OF COLUMBIA  
LIST OF IMPAIRED WATERBODIES  
Category 4A**

**Category 4A-** TMDLs needed to result in a designated use attainment have been approved or established by EPA.

303d Listing Year	Geographic Location	WBID	WB Name	Pollutant(s) or Pollutant Categories Causing Impairment	Priority Ranking for TMDL Development	TMDL Establishment Date
2008	02070010	DCPTF <sup>1</sup>	Potomac Tidal Fresh	DO, Chla		Dec 2010
2008	02070010	DCATF <sup>1</sup>	Anacostia Tidal Fresh	DO, Chla		Dec 2010
2006	02070010	DCANA00E	Lower Anacostia River- segment 1	Trash	High	Sep 2010
2006	02070010	DCANA00E	Upper Anacostia River- segment 2	Trash	High	Sep 2010
1998	02070010	DCTWB00R	Upper Watts Branch-segment 2	Fecal Coliform Chlordane Dieldrin Total PCBs	High	Oct 2003

**DRAFT DISTRICT OF COLUMBIA  
LIST OF IMPAIRED WATERBODIES  
Category 4A**

303d Listing Year	Geographic Location	WBID	WB Name	Pollutant(s) or Pollutant Categories Causing Impairment	Priority Ranking for TMDL Development	TMDL Establishment Date
				Total Suspended Solids	High	Jul 2007
1998	02070010	DCTWB00R	Lower Watts Branch-segment 1	Fecal Coliform Chlordane Dieldrin Total PCBs Total Suspended Solids	High  High	Oct 2003  Jul 2007
1998	02070010	DCAKL00L	Kingman Lake	BOD* Fecal Coliform Chlordane DDT Total PCBs PAH 1,2,3 Arsenic Oil and Grease Total Suspended Solids	High	Oct 2003
1998	02070010	DCTDU01R	Fort DuPont Creek	Fecal Coliform Arsenic	High	Oct 2003
1998	02070010	DCTFD01R	Fort Davis Tributary	BOD Fecal Coliform	Medium	Oct 2003

**DRAFT DISTRICT OF COLUMBIA  
LIST OF IMPAIRED WATERBODIES  
Category 4A**

303d Listing Year	Geographic Location	WBID	WB Name	Pollutant(s) or Pollutant Categories Causing Impairment	Priority Ranking for TMDL Development	TMDL Establishment Date
				Arsenic		
1998	02070010	DCTFS01R	Fort Stanton Tributary	Fecal Coliform PAH 1,2,3 Total PCBs Arsenic	Medium	Oct 2003
1998	02070010	DCTFC01R	Fort Chaplin Tributary	Fecal Coliform Arsenic	High	Oct 2003
1998	02070010	DCTPB01R	Popes Branch	Fecal Coliform Chlordane Heptachlor Epoxide PAH 1,2,3 Total PCBs	Medium	Oct 2003
1998	02070010	DCTTX27R	Texas Avenue Tributary	Fecal Coliform Chlordane DDD DDE DDT Dieldrin	Medium	Oct 2003

**DRAFT DISTRICT OF COLUMBIA  
LIST OF IMPAIRED WATERBODIES  
Category 4A**

303d Listing Year	Geographic Location	WBID	WB Name	Pollutant(s) or Pollutant Categories Causing Impairment	Priority Ranking for TMDL Development	TMDL Establishment Date
				Heptachlor Epoxide PAH 1,2,3 Total PCBs Arsenic		
1998	02070010	DCRCR00R	Upper Rock Creek-segment 2	Fecal Coliform Copper Lead Mercury Zinc	Medium	Feb 2004
1998	02070010	DCRCR00R	Lower Rock Creek- segment 1	Fecal Coliform Copper Lead Mercury Zinc	Medium	Feb 2004
1998	02070010	DCTOR01R	Oxon Run	Fecal Coliform Dieldrin	Medium Medium	Dec 2004 Dec 2004
1998	02070010	DCPWC04E	Washington Ship Channel	Fecal Coliform	Low	Dec 2004



**DRAFT DISTRICT OF COLUMBIA  
LIST OF IMPAIRED WATERBODIES  
Category 4A**

303d Listing Year	Geographic Location	WBID	WB Name	Pollutant(s) or Pollutant Categories Causing Impairment	Priority Ranking for TMDL Development	TMDL Establishment Date
				pH	Low	Dec 2010
1998	02070010	DCTBK01R	Battery Kemble Creek	Fecal Coliform	Low	Dec 2004
1998	02070008	DCTDA01R	Dalecarlia Tributary	Fecal Coliform Dieldrin Heptachlor Epoxide PCBs	Low Low	Dec 2004 May 2005
1998	02070010	DCTCO01L	Chesapeake and Ohio Canal	Fecal Coliform	Low	Dec 2004
2014	02070010	DCTCO01L	Chesapeake and Ohio Canal	pH	Medium	Dec 2010
1998	02070010	DCTNA01R	Nash Run	Fecal Coliform Chlordane Dieldrin Heptachlor Epoxide	Medium	Oct 2003

**DRAFT DISTRICT OF COLUMBIA  
LIST OF IMPAIRED WATERBODIES  
Category 4A**

303d Listing Year	Geographic Location	WBID	WB Name	Pollutant(s) or Pollutant Categories Causing Impairment	Priority Ranking for TMDL Development	TMDL Establishment Date
				PAH 1,2,3 Total PCBs Arsenic		
1998	02070010	DCPMS00E	Upper Potomac River- segment 3	Fecal Coliform  Total PCBs Nitrogen Phosphorus Total Suspended Solids	High  High	Dec 2004  Oct 2007
2014	02070010	DCPMS00E	Upper Potomac River- segment 3	pH	Medium	Dec 2010
1998	02070010	DCPMS00E	Middle Potomac River- segment 2	Fecal Coliform  Total PCBs	High  High	Dec 2004  Oct 2007
2014	02070010	DCPMS00E	Middle Potomac River- segment 2	pH	Medium	Dec 2010

**DRAFT DISTRICT OF COLUMBIA  
LIST OF IMPAIRED WATERBODIES  
Category 4A**

303d Listing Year	Geographic Location	WBID	WB Name	Pollutant(s) or Pollutant Categories Causing Impairment	Priority Ranking for TMDL Development	TMDL Establishment Date
1998	02070010	DCPMS00E	Lower Potomac River- segment 1	Fecal Coliform Total PCBs	High High	Dec 2004 Oct 2007
1998	02070010	DCTFB01R	Foundry Branch	Fecal Coliform	Low	Dec 2004
1998	02070010	DCTBR01R	Broad Branch	Chlordane Dieldrin Heptachlor Epoxide Total PCBs	Low	Feb 2004
1998	02070010	DCTDO01R	Dumbarton Oaks	Chlordane Dieldrin Heptachlor Epoxide Total PCBs	Low	Feb 2004

**DRAFT DISTRICT OF COLUMBIA  
LIST OF IMPAIRED WATERBODIES  
Category 4A**

303d Listing Year	Geographic Location	WBID	WB Name	Pollutant(s) or Pollutant Categories Causing Impairment	Priority Ranking for TMDL Development	TMDL Establishment Date
1998	02070010	DCTFE01R	Fenwick Branch	DDT Dieldrin Heptachlor Epoxide Total PCBs	Low	Feb 2004
1998	02070010	DCTHR01R	Hickey Run	Fecal coliform Chlordane DDE PAH 1,2,3 Total PCBs	High	Oct 2003
1998	02070010	DCTKV01R	Klinge Valley Creek	Dieldrin Heptachlor Epoxide Total PCBs	Low	Feb 2004
1998	02070010	DCTLU01R	Luzon Branch	Chlordane Dieldrin Heptachlor Epoxide Total PCBs	Low	Feb 2004

**DRAFT DISTRICT OF COLUMBIA  
LIST OF IMPAIRED WATERBODIES  
Category 4A**

303d Listing Year	Geographic Location	WBID	WB Name	Pollutant(s) or Pollutant Categories Causing Impairment	Priority Ranking for TMDL Development	TMDL Establishment Date
1998	02070010	DCTMH01R	Melvin Hazen Valley Branch	Dieldrin Total PCBs	Low	Feb 2004
1998	02070010	DCTNS01R	Normanstone Creek	Dieldrin Heptachlor Epoxide Total PCBs	Low	Feb 2004
1998	02070010	DCTPI01R	Pinehurst Branch	Dieldrin Heptachlor Epoxide Total PCBs	Low	Feb 2004
1998	02070010	DCTPO01R	Portal Branch	Dieldrin Heptachlor Epoxide Total PCBs	Low	Feb 2004
1998	02070010	DCTPY01R	Piney Branch	Chlordane Dieldrin Heptachlor Epoxide	Low	Feb 2004

**DRAFT DISTRICT OF COLUMBIA  
LIST OF IMPAIRED WATERBODIES  
Category 4A**

303d Listing Year	Geographic Location	WBID	WB Name	Pollutant(s) or Pollutant Categories Causing Impairment	Priority Ranking for TMDL Development	TMDL Establishment Date
				Total PCBs		
1998	02070010	DCTSO01R	Soapstone Creek	Chlordane Dieldrin Heptachlor Epoxide Total PCBs	Low	Feb 2004
1998	02070010	DCPTB01L	Tidal Basin	Fecal Coliform Total PCBs	Low	Dec 2004
2002	02070010	DCPTB01L	Tidal Basin	pH	Medium	Dec 2010
1998	02070010	DCANA00E	Lower Anacostia River- segment 1	BOD  Fecal Coliform Chlordane DDD DDE DDT Dieldrin Heptachlor Epoxide PAH 1,2,3	High  High	June 2008  Oct 2003

**DRAFT DISTRICT OF COLUMBIA  
LIST OF IMPAIRED WATERBODIES  
Category 4A**

303d Listing Year	Geographic Location	WBID	WB Name	Pollutant(s) or Pollutant Categories Causing Impairment	Priority Ranking for TMDL Development	TMDL Establishment Date
				Total PCBs Arsenic Copper Zinc  Total Suspended Solids  Oil and Grease  Nitrogen Phosphorus	High  High  High	July 2007  Oct 2003  Oct 2007
1998	02070010	DCANA00E	Upper Anacostia River- segment 2	BOD  Fecal Coliform Chlordane DDD DDE DDT Dieldrin Heptachlor Epoxide PAH 1,2,3 Total PCBs Arsenic	High  High	June 2008  Oct 2003

**DRAFT DISTRICT OF COLUMBIA  
LIST OF IMPAIRED WATERBODIES  
Category 4A**

303d Listing Year	Geographic Location	WBID	WB Name	Pollutant(s) or Pollutant Categories Causing Impairment	Priority Ranking for TMDL Development	TMDL Establishment Date
				Copper Zinc		
				Total Suspended Solids	High	July 2007
				Oil and Grease	High	Oct 2003
				Nitrogen Phosphorus	High	Oct 2007
2014	02070010	DCTDU01R	Fort DuPont Creek	Total Suspended Solids	High	Jul 2007
2014	02070010	DCTFC01R	Fort Chaplin Tributary	Total Suspended Solids	High	Jul 2007
2014	02070010	DCTFD01R	Fort Davis Tributary	Total Suspended Solids	High	Jul 2007
2014	02070010	DCTFS01R	Fort Stanton Tributary	Total Suspended Solids	High	Jul 2007
2014	02070010	DCTTX27R	Texas Avenue Tributary	Total Suspended Solids	High	Jul 2007

\*BOD means biochemical oxygen demand



***DRAFT DISTRICT OF COLUMBIA  
LIST OF IMPAIRED WATERBODIES  
Category 4A***

¥The 1998 Middle Potomac Segment 2 listing for pH has been revised to a 2014 listing year based on current monitoring data consideration.

Note:

All Category 4A TMDLs will be revised in accordance with the ANACOSTIA RIVERKEEPER V EPA ((798 F.Supp.2d 210) 2012) Consent Decree, with the exception of the Middle Potomac River (segment 2) pH TMDL, the Lower Anacostia River trash TMDL, and the Upper Anacostia River trash TMDL.

**DRAFT DISTRICT OF COLUMBIA  
LIST OF IMPAIRED WATERBODIES  
Category 4B**

**Category 4B-** TMDL not required. Other pollution control requirements (such as permits, strategies) are expected to address waterbody/pollutant combinations and result in attainment of the water quality standards in a reasonable period of time.

303d Listing Year	Geographic Location	WBID	WB Name	Pollutant(s) or Pollutant Categories Causing Impairment	Pollution Control Requirement
2014	02070010	DCTBR01R	Broad Branch	E. coli	NPDES Permit number DC0000221, Section 4.3.5.3
2014	02070010	DCTDO01R	Dumbarton Oaks	E. coli	NPDES Permit number DC0000221, Section 4.3.5.3
2014	02070010	DCTFE01R	Fenwick Branch	E. coli	NPDES Permit number DC0000221, Section 4.3.5.3
2014	02070010	DCTKV01R	Klinge Valley Creek	E. coli	NPDES Permit number DC0000221, Section 4.3.5.3
2014	02070010	DCTLU01R	Luzon Branch	E. coli	NPDES Permit number DC0000221, Section 4.3.5.3
2014	02070010	DCTMH01R	Melvin Hazen Valley Branch	E. coli	NPDES Permit number DC0000221, Section 4.3.5.3
2014	02070010	DCTNS01R	Normanstone Creek	E. coli	NPDES Permit number DC0000221, Section 4.3.5.3
2014	02070010	DCTPI01R	Pinehurst Branch	E. coli	NPDES Permit number DC0000221, Section 4.3.5.3

**DRAFT DISTRICT OF COLUMBIA  
LIST OF IMPAIRED WATERBODIES  
Category 4B**

303d Listing Year	Geographic Location	WBID	WB Name	Pollutant(s) or Pollutant Categories Causing Impairment	Pollution Control Requirement
2014	02070010	DCTPO01R	Portal Branch	E. coli	NPDES Permit number DC0000221, Section 4.3.5.3
2014	02070010	DCTPY01R	Piney Branch	E. coli	NPDES Permit number DC0000221, Section 4.3.5.3
2014	02070010	DCTSO01R	Soapstone Creek	E. coli	NPDES Permit number DC0000221, Section 4.3.5.3

***DRAFT DISTRICT OF COLUMBIA  
LIST OF IMPAIRED WATERBODIES  
Category 4C***

**Category 4C-** Impaired or threatened waters for one or more designated uses. TMDL is not required as impairment is not caused by a pollutant.

No DC waters fit this category

**DRAFT DISTRICT OF COLUMBIA  
LIST OF IMPAIRED WATERBODIES**

**Category 5**

**Category 5-** Available data and/or information indicate that a designated use is not being supported or is threatened, and a TMDL is needed.

303d Listing Year	Geographic Location	WBID <sup>1</sup>	WB Name	Pollutant(s) or Pollutant Categories Causing Impairment	Priority Ranking for TMDL Development	Targeted for TMDL within 2 years	TMDL Establishment Date
2002	02070010	DCTHR01R	Hickey Run	Chlorine (total Residual)	High	N	Dec 2017
2014	02070010	DCANA00E	Upper Anacostia River –Segment 2	DO	Medium	N	Dec 2022
2014	02070010	DCRCR00R	Lower Rock Creek- segment 1	Total Suspended Solids	Medium	N	Dec 2022
2014	02070010	DCTFC01R	Fort Chaplin Tributary	DO	Medium	N	Dec 2022
2014	02070010	DCTFD01R	Fort Davis Tributary	DO	Medium	N	Dec 2022
2014	02070010	DCTHR01R	Hickey Run	DO	Medium	N	Dec 2022

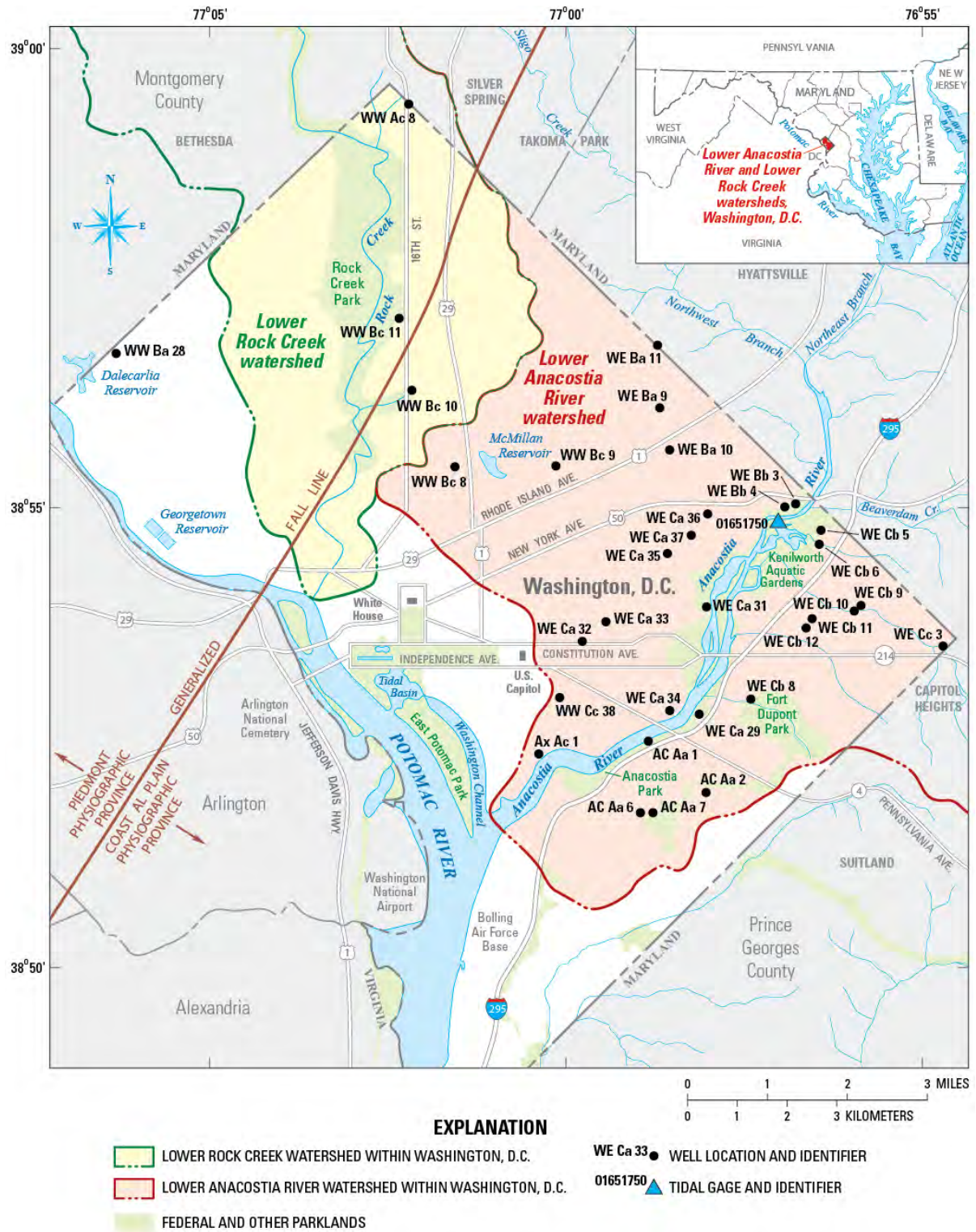
**Appendix 5.1.** List of Monitoring Wells.

<b>USGS site name</b>	<b>USGS site number</b>	<b>DDOE well number</b>	<b>Site location</b>
AC Aa 1**	385225076590101	DCMW001-03	Anacostia Park Recreation Center
AC Aa 2	385157076580301	DCMW010-05	28 <sup>th</sup> Street SE (near Hillcrest Drive and Park Drive)
AC Aa 6	385138076585901	DCMW001-08	Ft. Stanton Park (shallow)
AC Aa 7	385138076585902	DCMW002-08	Ft. Stanton Park (deep)
AX Ac 1**	385219077002201	DCMW006-04	Earth Conservation Corps (ECC)
WE Ba 9	385606076584101	DCMW012-05	Taft Recreation Center
WE Ba 10	385534076582101	DCMW007-05	Langdon Park
WE Ba 11*	385649076584201	DCMW003-08	Ft. Totten
WE Bb 3	385504076563801	DCMW001-02	New York Ave. (shallow)
WE Bb 4	385504076563802	DCMW004-02	New York Ave. (deep)
WE Ca 29	385238076581501	DCMW005-02	Anacostia Park
WE Ca 31	385355076575901	DCMW002-03	Langston Golf Course
WE Ca 32	385332076594701	DCMW001-04	Massachusetts Avenue and 7th Street
WE Ca 33	385349076592801	DCMW006-05	Reservation 210 (Maryland and F Street)
WE Ca 34**	385245076583501	DCMW005-05	RFK near Barney Circle
WE Ca 35	385429076583601	DCMW004-04	U.S. National Arboretum Azalea Hill
WE Ca 36	385460076574801	DCMW003-04	U.S. National Arboretum Weather Station
WE Ca 37	385446076581001	DCMW005-04	U.S. National Arboretum Administration Building
WE Cb 5	385443076562801	DCMW002-02	Kenilworth Aquatic Gardens (shallow)
WE Cb 6	385443076562802	DCMW003-02	Kenilworth Aquatic Gardens (deep)
WE Cb 8	385252076572801	DCMW002-04	Ft. DuPont Park
WE Cb 9	385355076555501	DCMW001-05	Lederer Gardens #1
WE Cb 10	385354076555901	DCMW002-05	Lederer Gardens #2
WE Cb 11	385332076564101	DCMW003-05	Clay and Flint (shallow)
WE Cb 12	385332076564102	DCMW004-05	Clay and Flint (deep)
WE Cc 3	385327076544801	DCMW008-05	Watts Branch Park
WW Ac 8*	385929077020901	DCMW004-08	16 <sup>th</sup> Street NW and Eastern Ave.
WW Ba 28*	385644077061101	DCMW007-08	Dalecarlia Parkway NW at Warren Place NW
WW Bc 8	385519077012601	DCMW009-05	Banneker Recreation Center
WW Bc 9	385527077000701	DCMW011-05	Edgewood Recreation Center
WW Bc 10*	385619077020701	DCMW005-08	Piney Branch Parkway
WW Bc 11*	385707077021801	DCMW006-08	Carter Barron Amphitheater
WW Cc 38	385251011001101	DCMW001-13	Capitol Hill Day School

\* Well installed as part of the DC Pesticides project, but monitored in as part of the Anacostia GW project.

\*\*Well no longer exists.

Appendix 5.2. Map showing locations of monitoring wells and the tide gage, Washington, D.C.



USGS, 2013, Letter Report to Diane Douglas, DDOE, End of Year Summary Report from Cheryl Dieter, USGS, 12/09/13.

## Appendix 5.3 Manual Water-level Measurements for Monitoring Wells, October 2012 and January 2013

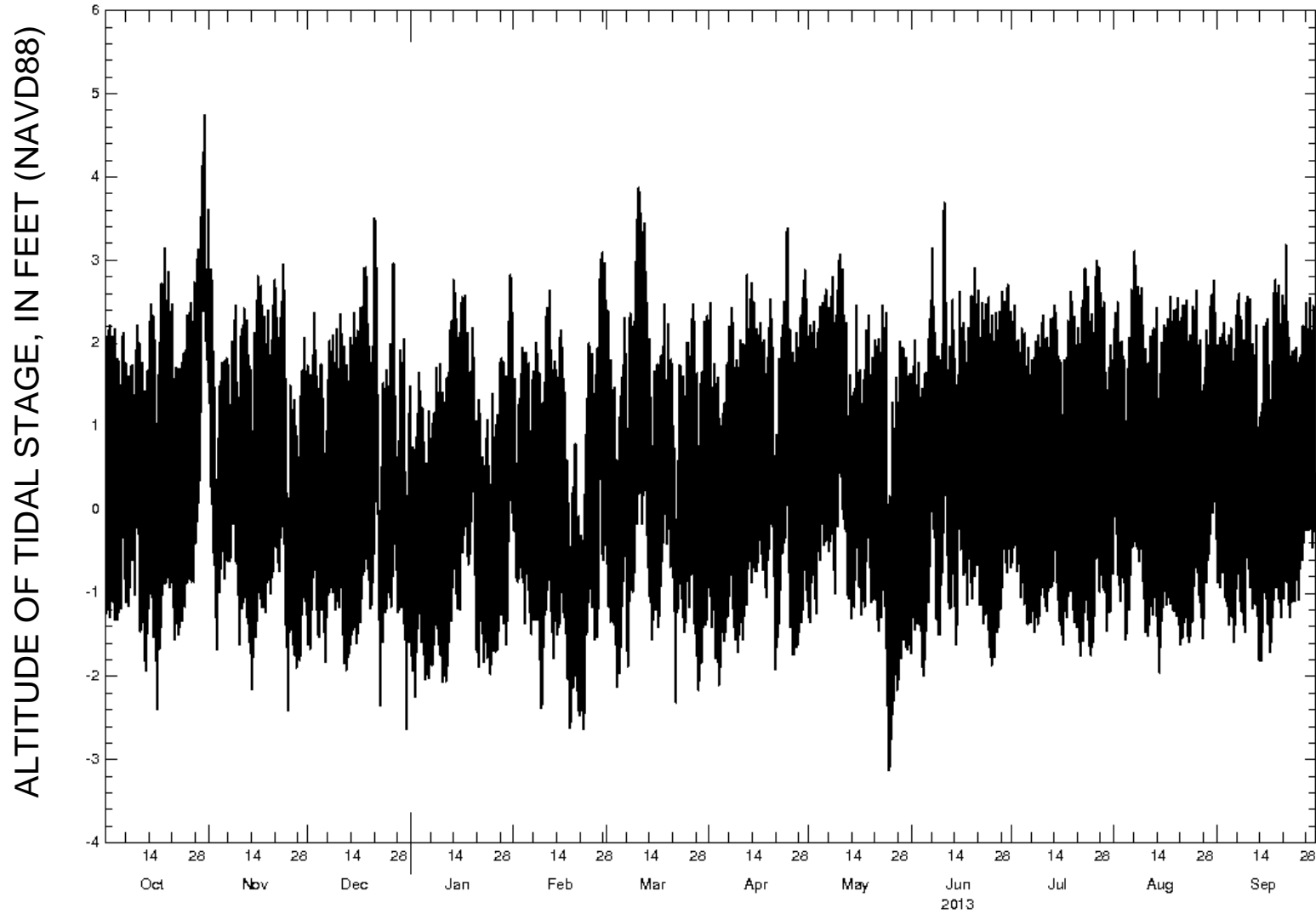
[NAVD88, North American Vertical Datum of 1988; DDOE, District Department of Environment; USGS, U.S. Geological Survey; ft, feet; --, no value measured]

DDOE well number	USGS site number	USGS site name	Date	Altitude of water level (ft, NAVD88)
DCMW010-05	385157076580301	AC Aa 2	10/17/12	115.94
			01/07/13	116.87
DCMW001-08	385138076585901	AC Aa 6	10/17/12	134.25
			01/07/13	134.69
DCMW002-08	385138076585902	AC Aa 7	10/17/12	113.7
			01/07/13	113.7
DCMW012-05	385606076584101	WE Ba 9	10/15/12	66.77
			01/08/13	67.79
DCMW007-05	385534076582101	WE Ba 10	10/15/12	65.4
			01/08/13	68.11
DCMW003-08	385649076584201	WE Ba 11	10/15/2012	74.6
			1/8/2013	75.44
DCMW001-02	385504076563801	WE Bb 3	10/17/2012	0.55
			1/8/2013	-0.33
DCMW004-02	385504076563802	WE Bb 4	10/17/2012	0.43
			1/8/2013	-0.65
DCMW005-02	385238076581501	WE Ca 29	10/17/2012	5.79
			1/7/2013	5.99
DCMW002-03	385355076575901	WE Ca 31	10/17/2012	-1.97
			1/8/2013	2.53
DCMW001-04	385332076594701	WE Ca 32	10/17/2012	56.76
			1/8/2013	56.75
DCMW006-05	385349076592801	WE Ca 33	10/17/2012	43.21
			1/8/2013	43.28
DCMW004-04	385429076583601	WE Ca 35	10/17/2012	29.91
			1/8/2013	29.8
DCMW003-04	385460076574801	WE Ca 36	10/17/2012	36.06
			1/8/2013	35.97
DCMW005-04	385446076581001	WE Ca 37	10/17/2012	45.89
			1/8/2013	46.42
DCMW002-02	385443076562801	WE Cb 5	10/17/2012	5.22
			1/8/2013	6.25



Appendix 5.3 Manual Water-level Measurements for Monitoring Wells, October 2012 and January 2013 (continued)

<b>DDOE well number</b>	<b>USGS site number</b>	<b>USGS site name</b>	<b>Date</b>	<b>Altitude of water level (ft, NAVD88)</b>
DCMW003-02	385443076562802	WE Cb 6	10/17/2012	4.79
			1/8/2013	5.39
DCMW002-04	385252076572801	WE Cb 8	10/17/2012	20.82
			1/7/2013	20.82
DCMW001-05	385355076555501	WE Cb 9	10/17/2012	32.83
			1/7/2013	33.51
DCMW002-05	385354076555901	WE Cb 10	10/17/2012	31.35
			1/7/2013	31.54
DCMW003-05	385332076564101	WE Cb 11	10/17/2012	43.59
			1/7/2013	44.63
DCMW004-05	385332076564102	WE Cb 12	10/17/2012	36.46
			1/7/2013	36.62
DCMW008-05	385327076544801	WE Cc 3	10/17/2012	73.14
			1/7/2013	72.76
DCMW004-08	385929077020901	WW Ac 8	10/15/2012	240.63
			1/7/2013	240.86
DCMW007-08	385644077061101	WW Ba 28	10/15/2012	182.34
			1/7/2013	183.06
DCMW009-05	385519077012601	WW Bc 8	10/15/2012	111.77
			1/7/2013	111.56
DCMW011-05	385527077000701	WW Bc 9	10/15/2012	115.66
			1/7/2013	115.35
DCMW005-08	385619077020701	WW Bc 10	10/15/2012	98.24
			1/7/2013	98.18
DCMW006-08	385707077021801	WW Bc 11	10/15/2012	225.5
			1/7/2013	226.32
DCMW001-13	385251011001101	WW Cc 38	1/8/2013	13.95



**Appendix 5.4.** Altitude of tidal stage at U.S. Geological Survey station 01651750 ANACOSTIA RIVER AQUATIC GARDENS AT WASHINGTON, D.C., October 1, 2012 through September 30, 2013, in feet (NAVD88). [Data are provisional and subject to revision.]



## APPENDIX 5.5 - MAJOR SOURCES OF GROUND WATER CONTAMINATION

Sources	Ten Highest-Priority Sources (T)	Relative Priority	Factors <sup>a</sup>
Animal Feedlots	NA	--	--
Containers		L	A, B, D, E
CERCLIS Sites	T	H	A, B, D, E, F, G, H
De-icing Applications	T	M	A, D, F, G, H
Federal Superfund (NPL)	T	H	A, B, D, E, F, G, H
Fill		H	A, D, E, F, G, H
Graveyards	T	M	--
Landfills (permitted)	T	H	A, B, D, E, F, G, H
Landfills (unpermitted)	T	U <sup>b</sup>	A, B, D, E, F, G, H
Material Transfer Operations		M	A, B, D, E, F, H
Material Stockpiles		L	A, B
Mining and Mine Drainage	NA	--	--
Pesticide Applications	T	M	A, B, C, F, G, H
Pipeline and Sewer Lines	T	M	F, H
Radioactive Disposal Sites	NA	--	--
RCRA Sites	T	M	A, B, D, E, F, G, H
Septic Tanks	NA	--	--
Shallow Injection Wells		L	F, G
Storage Tanks (above ground)		M	A, B, D, F, G, H
Storage Tanks (underground)	T	H	A, B, D, E, F, G, H
Storm Water Drainage Wells		M	I
Surface Impoundments		L	A, B
Transportation of Materials	T	M	A, B, C, D, G, H
Urban Runoff		M	F, H
Waste Tailings	NA	--	--
Waste Piles	NA	--	--

- A. Human health and/or environmental risk (toxicity)
- B. Size of the population at risk
- C. Location of the sources relative to drinking water sources
- D. Number and/or size of contaminant sources
- E. Hydrogeologic sensitivity
- F. State findings, other findings
- G. Documented from mandatory reporting
- H. Geographic distribution/occurrence
- I. Assigned for pipelines and sewer lines and is a combination of the age and construction material of the lines (in D.C., there still are brick lines at least 100 years old).

<sup>a</sup> Unknown. The locations and nature of the materials disposed in unpermitted landfills are not yet known.

NA - Not Applicable

L - Low

M - Medium

H - High

(-) - Not a Priority

**APPENDIX 5.6 - SUMMARY OF DC GROUNDWATER RELATED PROGRAMS**

<b>Programs or Activities</b>	<b>Check</b>	<b>Implementation Status</b>	<b>Responsible State Agency</b>
Ambient ground water monitoring system	<b>T</b>	Partly established	DDOE
Aquifer vulnerability assessment <sup>(1)</sup>	<b>T</b>	Fully established	DDOE
Aquifer mapping <sup>(2)</sup>	<b>T</b>	Under development	DDOE
Aquifer characterization	<b>T</b>	Partly developed	DDOE
Comprehensive data management system <sup>(3)</sup>	<b>T</b>	Partly developed	DDOE
Emergency Response	<b>T</b>	Fully established	HSEMA
EPA-endorsed Core Comprehensive State Ground Water protection Program (CSGWPP)	<b>T</b>	Under development	DDOE
Ground water discharge permits			
Ground water Best Management Practices			
Ground water legislation	<b>T</b>	Fully established	DDOE
Ground water classification	<b>T</b>	Fully established	DDOE
Ground water quality standards	<b>T</b>	Fully established	DDOE
Interagency coordination for ground water protection initiatives	<b>T</b>	Under development	DDOE
Land Remediation and Development (Brownfields Revitalization Program)	<b>T</b>	Fully established	DDOE
Nonpoint Source Controls	<b>T</b>	Under development	DDOE
Pesticide State Management Plan	<b>T</b>	Fully established	DDOE
Pollution Prevention Program	<b>T</b>	Under development	DDOE

<b>Programs or Activities</b>	<b>Check</b>	<b>Implementation Status</b>	<b>Responsible State Agency</b>
State RCRA Program incorporating more stringent requirements than RCRA Primacy (except for corrective action)	T	Fully established	DDOE
State septic system regulations			
Underground storage tank installation requirements	T	Fully established	DDOE
Underground Storage Tank Remediation Fund	T	Fully established	DDOE
Underground Storage Tank Permit Program	T	Fully established	DDOE
Underground Injection Control Program			
Vulnerability assessment for drinking water/wellhead protection	T	Fully established	DDOE
Well abandonment regulations	T	Pending	DDOE
Wellhead Protection Program (U.S. EPA-approved)			
Well installation regulations	T	Pending	DDOE

HSEMA – Homeland Security Emergency management Agency  
DDOE – District Department of the Environment

## APPENDIX 5.7: SHALLOW AQUIFER QUALITY/CONTAMINATION

<b>Aquifer: Shallow Aquifer</b>				
Source Type	Present in reporting area	Number of sites in area	Number of sites that are listed and/or have confirmed releases	Number with confirmed ground water contamination
NPL	Yes	1	1	1
CERCLIS (non-NPL)	Yes	34	18	11
DOD/DOE	Yes (a)	47	9	8
UST- Total opened and closed	Yes	2852 (b) (g)	1736 (g)	477 (g)
UST Active/Opened	Yes	521 (b)	139 (c)	97 (c)
RCRA Corrective Action	Yes	2	2	1
Underground Injection	Yes (d)	23	—	---
State Sites (Voluntary Clean Lands Program)	Yes (e)	23	23	---
Nonpoint Sources	(f)	—	—	---
Other	Yes	26	26	26
<b>Totals</b>		<b>3462</b>	<b>1825</b>	<b>625</b>

NPL - National Priority List

CERCLIS (non-NPL) - Comprehensive Environmental Response, Compensation, and Liability Information System

DOE - Department of Energy

DOD - Department of Defense

UST - Underground Storage Tanks

RCRA - Resource Conservation and Recovery Act

(a) Only DOD facilities. The number represents the number of facilities. Within a facility, there are several areas of concern resulting from distinct sources (e.g., LUST, landfill, maintenance



shops, etc). Ground water contamination assessment is on going for the majority of the sites. Numbers were provided by the Hazardous Waste Division.

(b) Data represent the number of UST sites or facilities known to DC from previous and current annual registration. This value includes sites with heating oil and hazardous materials tanks. Numbers were provided by the Underground Storage Tank Branch, DDOE.

(c) There is on-going groundwater contamination assessment/remediation and monitoring by responsible parties for more than 60 percent of the opened LUST cases pending closure. These cases include heating oil contaminated sites.

(d) One UIC site has stormwater injection wells. The remaining 22 UIC sites are operated for ground water remediation wells. The District does not regulate injection wells. Injection well numbers were not updated from 2006 by the USEPA.

(e) Source type data make no distinction between State and non-State sites.

(f) See Nonpoint Source Section

(g) Most of these sites are not closed, either the USTs were removed or abandoned in-place or the soil and/or groundwater contamination was remediated and the LUST case closed.

# Detail Report for KINGMAN LAKE

**ID:** DCAKL00L\_00

**State:** DC - 2014

**Single Cat.(User Cat.):**  
5(N/A)

**Multi-Category:** 2, 3, 4A, 5

<b>Water Information:</b>	<b>KINGMAN LAKE</b>	
	<b>Location:</b> LOCATED BETWEEN CHILDRENS ISLAND AND RFK STADIUM PARKING LOT ON THE UPPER ANACOSTIA. THE NORTHEAST BOUNDARY SWIRL CONCENTRATOR IS LOCATED JUST DOWN RIVER FROM THE LAKE.	<b>Water Type:</b> FRESHWATER LAKE <b>Size:</b> 102.7 ACRES <b>Next Scheduled Monitoring Date:</b> N/A <b>Trophic Status:</b> N/A <b>Public Lake:</b> No
<b>Use Information</b>		
<b>Assessed:</b>	<b>Attainment Status</b>	<b>Uses</b>
	Fully Supporting	Navigation
	Insufficient Information	Protection of Human Health related to Consumption of Fish and Shellfish
	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Secondary Contact Recreation and Aesthetic Enjoyment

### Types of Assessment

Assessment Type	Uses	Assessment Confidence
HABITAT	Navigation	GOOD
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife Secondary Contact Recreation and Aesthetic Enjoyment	GOOD GOOD
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

### Cause Information

Causes	Associated Uses	Pollutant? Confidence
Arsenic	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes
BOD, Biochemical oxygen demand	Protection and Propagation of Fish, Shellfish and Wildlife	Yes

Chlordane	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Copper	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes
DDD	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
DDE	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
DDT	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Dieldrin	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Fecal Coliform	Primary Contact Recreation	Yes
Heptachlor epoxide	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Oil and Grease	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Polychlorinated biphenyls	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Total Suspended Solids (TSS)	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Secondary Contact Recreation and Aesthetic Enjoyment	Yes
Zinc	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes

### **Comments On:**

#### **Overall Assessment**

KINGMAN LAKE'S EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2009-2013) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

THE PRIMARY CONTACT (SWIMMABLE) USE IS NOT SUPPORTED. E. COLI, PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 27.27%, 2.91%, AND 70.59% OF THE TIME, RESPECTIVELY.

THE SECONDARY CONTACT RECREATION USE IS NOT SUPPORTED. TURBIDITY VIOLATED THE WATER QUALITY STANDARD 70.59% OF THE TIME.

THE AQUATIC LIFE USE IS NOT SUPPORTED. TEMPERATURE, PH, DISSOLVED OXYGEN AND TRUBIDITY VIOLATED THE WATER QUALITY STANDARDS 0%, 2.91%, 8.91%, AND 70.59% OF THE TIME, RESPECTIVELY.

BECAUSE OF A FISH CONSUMPTION ADVISORY IN PLACE, KINGMAN LAKE DID NOT SUPPORT THE FISH CONSUMPTION USE. DETERMINATION OF THE FISH CONSUMPTION USE WAS BASED ON A PUBLIC HEALTH ADVISORY ISSUED ON NOVEMBER 15, 1994, BY THE DC COMMISSIONER OF PUBLIC HEALTH. THE ADVISORY URGES NON-CONSUMPTION OF CATFISH, CARP OR EEL AND LIMITED CONSUMPTION OF OTHER FISH CAUGHT IN ALL DISTRICT OF COLUMBIA WATERS.

KINGMAN LAKE FULLY SUPPORTED ITS NAVIGATION USE.

BECAUSE OF THE ABOVE USE SUPPORT DECISIONS, KINGMAN LAKE DID NOT SUPPORT THE OVERALL SUPPORT CLASSIFICATION.

KINGMAN LAKE IS TIDALLY INFLUENCED AND, THEREFORE, IS AFFECTED BY THE DISTRICT'S LARGEST CSO (COMBINED SEWER OVERFLOW) WHICH LIES DOWNSTREAM OF THE LAKE'S LOWER INLET.

APPROXIMATELY 42 ACRES OF FRESHWATER TIDAL WETLANDS WERE RESTORED IN THE KINGMAN LAKE AREA IN 2000. A POTENTIALLY SIGNIFICANT PROJECT SLATED FOR THE KINGMAN LAKE AREA IS A NATURAL RECREATION AREA ON KINGMAN ISLAND.

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## Detail Report for ANACOSTIA DC

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**ID:** DCANA00E\_01

**State:** DC - 2014

**Single Cat.(User Cat.):**  
5(N/A)

**Multi-Category:** 2, 4A, 5

<b>Water Information:</b>	<b>ANACOSTIA DC</b>	
	<b>Location:</b> PENNSYLVANIA AVENUE BRIDGE TO THE MOUTH AT THE POTOMAC (ANA15 TO ANA29), TIDAL FRESHWATER. IT FLOWS THROUGH A HIGHLY URBAN AREA OF MARINAS, COMMERCIAL BUILDINGS AND NATIONAL PARKLAND.	<b>Water Type:</b> ESTUARY <b>Size:</b> 0.5 SQUARE MILES <b>Next Scheduled Monitoring Date:</b> N/A
<b>Use Information</b>		
<b>Assessed:</b>	<b>Attainment Status</b>	<b>Uses</b>
	Fully Supporting	Navigation
	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish Secondary Contact Recreation and Aesthetic Enjoyment

### Types of Assessment

Assessment Type	Uses	Assessment Confidence
HABITAT	Navigation	GOOD
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife Secondary Contact Recreation and Aesthetic Enjoyment	GOOD GOOD
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

### Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Arsenic	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
BOD, Biochemical oxygen demand	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Chlordane	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Copper	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
DDD	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
DDE	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	

DDT	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Debris/Floatables/Trash	Secondary Contact Recreation and Aesthetic Enjoyment	Yes
Dieldrin	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Fecal Coliform	Primary Contact Recreation	Yes
Heptachlor epoxide	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Nitrogen (Total)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Oil and Grease	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Phosphorus (Total)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Polychlorinated biphenyls	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Total Suspended Solids (TSS)	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Secondary Contact Recreation and Aesthetic Enjoyment	Yes
Zinc	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes

**Comments On:**

**Overall Assessment**

THE LOWER ANACOSTIA'S EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2009-2013) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

THE PRIMARY CONTACT (SWIMMABLE) USE IS NOT SUPPORTED. E. COLI, PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 19.23%, 1.08%, AND 8.99% OF THE TIME, RESPECTIVELY.

THE SECONDARY CONTACT RECREATION USE IS NOT SUPPORTED. THE LOWER ANACOSTIA RIVER IS IMPAIRED BY TRASH. PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 1.08% AND 8.99% OF THE TIME, RESPECTIVELY.

THE AQUATIC LIFE USE IS SUPPORTED. TEMPERATURE, PH, DISSOLVED OXYGEN, AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 0%, 1.08%, 6.38% AND 8.99% OF THE TIME, RESPECTIVELY.

BECAUSE OF A FISH CONSUMPTION ADVISORY, THE LOWER ANACOSTIA DID NOT SUPPORT ITS FISH CONSUMPTION USE. DETERMINATION OF THE FISH CONSUMPTION USE WAS BASED ON A PUBLIC HEALTH ADVISORY ISSUED ON NOVEMBER 15, 1994, BY THE D.C. COMMISSIONER OF PUBLIC HEALTH. THE ADVISORY URGES NON-CONSUMPTION OF CATFISH, CARP OR EEL AND LIMITED CONSUMPTION OF OTHER FISH CAUGHT IN ALL DISTRICT OF COLUMBIA WATERS.

THE LOWER ANACOSTIA FULLY SUPPORTED ITS NAVIGATION USE.

BECAUSE OF THE ABOVE USE DECISIONS, THIS SEGMENT DID NOT SUPPORT THE OVERALL USE SUPPORT CLASSIFICATION.

THE LOWER TIDAL ANACOSTIA EXTENDS FROM THE PENNSYLVANIA RAILROAD BRIDGE TO THE MOUTH OF THE POTOMAC RIVER. THIS SEGMENT SUFFERS FROM OCCASIONAL LOW DISSOLVED OXYGEN, HIGH E. COLI LEVELS, AND SEDIMENT TOXICITY. IT ALSO HAS BEEN SUBJECTED TO BOTH SMALL AND LARGE OIL SPILLS.

SOURCES WITH POTENTIAL IMPACT IN THIS ANACOSTIA SEGMENT INCLUDE SEVERAL ACTIVE AND ABANDONED MINES AND INDUSTRIAL FACILITIES LOCATED ON THE WEST BANK OF THE RIVER. THESE FACILITIES INCLUDE STEUART PETROLEUM, AND OIL TERMINAL AND TANK FARM OPERATION, WASHINGTON GAS AND LIGHT, AND AN ABANDONED COAL GASIFICATION FACILITY. OTHER POTENTIAL SOURCES OF POLLUTANTS INCLUDE A LARGE NUMBER OF BOATS IN SEVERAL MARINAS.

RELATIVELY RECENT EVENTS WITH POTENTIAL IMPACT ON THE UPPER ANACOSTIA WATER QUANTITY INCLUDE: DREDGING OF THE CHANNEL UPSTREAM, AND PENNSYLVANIA AVE. BRIDGE CONSTRUCTION. A FLOATABLE DEBRIS REMOVAL PROJECT, MANAGED BY THE D.C. WASA, REMOVES A SIGNIFICANT AMOUNT OF TRASH, THEREBY CONTRIBUTING TO THE ENHANCEMENT OF THE QUALITY OF THE ANACOSTIA.

SURVEYS CONDUCTED OVER THE PAST SEVERAL YEARS REVEAL THE PRESENCE OF TOXINS IN SEDIMENTS. FISH TISSUE OF SAMPLES OF CERTAIN SPECIES SHOW ELEVATED LEVELS OF CONTAMINANTS INCLUDING CHLORDANE AND PCBs. BIOLOGICAL SAMPLES FROM THE SITE SUGGEST A SEVERELY STRESSED BENTHIC COMMUNITY. THE CAUSES OF STRESS COULD BE ATTRIBUTED TO URBAN STORM WATER RUNOFF FROM UPSTREAM AND POLLUTED TRIBUTARY STREAMS, CSO EVENTS AND

IMPACT FROM THE ADJACENT INDUSTRIAL FACILITIES.

REPORTS WITH MORE INFORMATION INCLUDE:

\* "IMPACT OF DREDGING ON THE WATER QUALITY OF THE ANACOSTIA RIVER" BY ICPRB, 1993.

\* "SEDIMENT CONTAMINATION STUDIES OF THE POTOMAC AND ANACOSTIA RIVER AROUND THE DISTRICT OF COLUMBIA, 1992.

\* "HICKEY RUN SUBWATERSHED ACTION PLAN" BY THE MWCOG, 1991.

\* "HICKEY RUN COMPREHENSIVE POLLUTION ABATEMENT STUDY, PHASE I REPORT" BY THE MWCOG, 1991.

\* "EMERGENT WETLAND ESTABLISHMENT UNDER DIFFERING HABITAT CONDITIONS IN THE ANACOSTIA AND POTOMAC RIVER BASIN", HORN POINT ENVIRONMENTAL LABORATORY, CEES AND MWCOG, 1991.

\* "STEUART PETROLEUM OIL SPILL", VERSAR, PINKNEY, 1993.

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## Detail Report for ANACOSTIA DC

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ID: DCANA00E\_02

State: DC - 2014

Single Cat.(User Cat.):  
5(N/A)

Multi-Category: 2, 4A, 5

<b>Water Information:</b>	<b>ANACOSTIA DC</b>	
	<b>Location:</b> NEW YORK AVE BRIDGE (DC/MARYLAND LINE) TO PENNSYLVANNIA AVENUE BRIDGE (ANA01 TO ANA15), TIDAL FRESHWATER. IT FLOWS THROUGH MOSTLY NATIONAL AND CITY PARK LAND AND PAST A SMALL URBAN AREA OF	<b>Water Type:</b> ESTUARY <b>Size:</b> 0.3 SQUARE MILES <b>Next Scheduled Montitoring Date:</b> N/A



	RESIDENTIAL BUILDINGS, PEPCO, RFK STADIUM AND MARINA.	
<b>Use Information</b>		
<b>Assessed:</b>	<b>Attainment Status</b>	<b>Uses</b>
	Fully Supporting	Navigation
	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish Secondary Contact Recreation and Aesthetic Enjoyment

### Types of Assessment

Assessment Type	Uses	Assessment Confidence
HABITAT	Navigation	GOOD
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife	GOOD
	Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
	Secondary Contact Recreation and Aesthetic Enjoyment	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

### Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Arsenic	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
BOD, Biochemical oxygen demand	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Chlordane	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Copper	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
DDD	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
DDE	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
DDT	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Debris/Floatables/Trash	Secondary Contact Recreation and	Yes	

	Aesthetic Enjoyment	
Dieldrin	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Dissolved oxygen saturation	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Fecal Coliform	Primary Contact Recreation	Yes
Heptachlor epoxide	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Nitrogen (Total)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Oil and Grease	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Phosphorus (Total)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Polychlorinated biphenyls	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Total Suspended Solids (TSS)	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Secondary Contact Recreation and Aesthetic Enjoyment	Yes
Zinc	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes

### Comments On:

#### Overall Assessment

THE UPPER ANACOSTIA'S EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2009-2013) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

THE PRIMARY CONTACT (SWIMMABLE) USE IS NOT SUPPORTED. E. COLI, PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 29.17%, 2.33%, AND 37.17% OF THE TIME, RESPECTIVELY.

THE SECONDARY CONTACT RECREATION USE WAS NOT SUPPORTED. THE UPPER ANACOSTIA RIVER IS IMPAIRED BY TRASH. PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 2.33% AND 37.17% OF THE TIME, RESPECTIVELY.

THE AQUATIC LIFE USE SUPPORT IS NOT SUPPORTED. TEMPERATURE, PH, DISSOLVED OXYGEN AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 0%, 2.33%, 13.11% AND 37.17% OF THE TIME, RESPECTIVELY.

BECAUSE OF THE FISH CONSUMPTION ADVISORY, THIS SEGMENT DID NOT SUPPORT THE FISH CONSUMPTION USE. DETERMINATION OF THE FISH CONSUMPTION USE WAS BASED ON A PUBLIC HEALTH ADVISORY ISSUED ON NOVEMBER 15, 1994, BY THE D.C. COMMISSIONER OF PUBLIC HEALTH. THE ADVISORY URGES NON-CONSUMPTION OF CATFISH, CARP OR EEL AND LIMITED CONSUMPTION OF OTHER FISH CAUGHT IN ALL DISTRICT OF COLUMBIA WATERS.

THE UPPER ANACOSTIA FULLY SUPPORTED ITS NAVIGATION USE.

BECAUSE OF THE ABOVE USE DECISIONS, THIS SEGMENT OF THE ANACOSTIA DID NOT SUPPORT THE OVERALL USE SUPPORT CLASSIFICATION.

THIS SEGMENT OF THE ANACOSTIA INCLUDES THE UPPER TIDAL ANACOSTIA FROM NEW YORK AVE., D.C. BORDER, TO THE PENNSYLVANIA AVENUE RAILROAD BRIDGE.

SEVERAL POLLUTED STREAMS JOIN THIS SEGMENT OF THE ANACOSTIA RIVER. LOWER BEAVER DAM CREEK DRAINS AN INDUSTRIAL AREA AND COULD BE SOURCE OF POLLUTANTS ORIGINATING FROM AUTOMOTIVE RECYCLING AND JUNK YARDS. HICKEY RUN IS A SOURCE OF CHRONIC OIL AND OTHER INDUSTRIAL POLLUTANTS. WATTS BRANCH IS THE LARGEST ANACOSTIA TRIBUTARY IN THE DISTRICT, AND IS A SOURCE OF URBAN RUNOFFS. SIMILARLY, N.E. BOUNDARY, THE LARGEST COMBINED SEWER OUTFALL IN THE DISTRICT, IS LOCATED ALONG THE LOWER PORTION OF THIS SEGMENT.

RECENT EVENTS WITH POTENTIAL IMPACT ON THE UPPER ANACOSTIA WATER QUALITY INCLUDE: DREDGING OF THE CHANNEL, DEPOSITION OF SPOILS IN KENILWORTH MARSH. A FLOATABLE DEBRIS REMOVAL PROJECT, MANAGED BY THE D.C. WASA, REMOVES A SIGNIFICANT AMOUNT OF TRASH AND CONTRIBUTES TO THE ENHANCEMENT OF THE QUALITY OF THE ANACOSTIA.

SURVEYS CONDUCTED IN THE PAST SEVERAL YEARS REVEALS THE PRESENCE OF TOXICS IN SEDIMENTS. FISH TISSUE OF SAMPLES OF CERTAIN SPECIES SHOW ELEVATED LEVELS OF CONTAMINATION INCLUDING CHLORDANE AND PCBs. BIOLOGICAL SAMPLES FROM SELECTED SITES SUGGEST A SEVERELY STRESSED BENTHIC COMMUNITY. THE CAUSES OF STRESS COULD BE ATTRIBUTED TO URBAN STORM WATER RUNOFF FROM

UPSTREAM POLLUTED STREAMS, CSO EVENTS AND IMPACT FROM THE ADJACENT INDUSTRIAL FACILITIES.

REPORTS WITH MORE INFORMATION INCLUDE:

\* "IMPACT OF DREDGING ON THE WATER QUALITY OF THE ANACOSTIA RIVER" BY ICPRB, 1993.

\* "SEDIMENT CONTAMINATION STUDIES OF THE POTOMAC AND ANACOSTIA RIVER AROUND THE DISTRICT OF COLUMBIA" BY ICPRB, VELINSKY, 1992.

\* "HICKEY RUN SUBWATERSHED ACTION PLAN" BY MWCOG, 1991.

\* "HICKEY RUN COMPREHENSIVE POLLUTION ABATEMENT STUDY, PHASE I REPORT" BY MWCOG, 1991.

\* "EMERGENT WETLAND ESTABLISHMENT UNDER DIFFERING HABITAT CONDITIONS IN THE ANACOSTIA AND POTOMAC RIVER BASIN"/ HORN POINT ENVIRONMENTAL LABORATORY, CEES AND MWCOG, 1991.

\* "STEUART PETROLEUM OIL SPILL" BY VERSAR, PINKNEY, 1993.

\* AWRC, 1997, DRAFT ANACOSTIA WATERSHED RESTORATION PROGRESS AND CONDITIONS REPORT 1990-1996, DEPT. OF ENVIRONMENTAL PROGRAM, MWCOG, WASH., DC.

## Detail Report for POTOMAC DC

**ID:** DCPMS00E\_01

**State:** DC - 2014

**Single Cat.(User Cat.):**  
5(N/A)

**Multi-Category:** 2, 4A, 5

<b>Water Information:</b>	<b>POTOMAC DC</b>	
	<b>Location:</b> HAINS POINT TO WOODROW WILSON BRIDGE (PRINCE GEORGE'S COUNTY MARYLAND LINE) (PMS29 TO PMS44), TIDAL FRESHWATER. RIVER PASSES THROUGH AN URBAN AREA OF COMMERCIAL BUILDINGS, MILITARY BASES AND MUNICIPAL FACILITIES.	<b>Water Type:</b> ESTUARY <b>Size:</b> 3.05 SQUARE MILES <b>Next Scheduled Monitoring Date:</b> N/A
<b>Use Information</b>		
<b>Assessed:</b>	<b>Attainment Status</b>	<b>Uses</b>
	Fully Supporting	Navigation
	Not Supporting	Primary Contact RecreationProtection and Propagation of Fish, Shellfish and WildlifeProtection of Human Health related to Consumption of Fish and ShellfishSecondary Contact Recreation and Aesthetic Enjoyment



### Types of Assessment

Assessment Type	Uses	Assessment Confidence
HABITAT	Navigation	GOOD
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife	GOOD
	Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
	Secondary Contact Recreation and Aesthetic Enjoyment	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

### Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Fecal Coliform	Primary Contact Recreation	Yes	
Polychlorinated biphenyls	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Total Suspended Solids (TSS)	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Secondary Contact Recreation and Aesthetic Enjoyment	Yes	

### Comments On:

#### Overall Assessment

THE LOWER POTOMAC'S EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2009-2013) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

THE PRIMARY CONTACT (SWIMMABLE) USE IS NOT SUPPORTED. E. COLI, PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 10.42%, 6.80 AND 11.01% OF THE TIME, RESPECTIVELY.

THE SECONDARY CONTACT RECREATION USE IS NOT SUPPORTED. PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 6.80% AND 11.01% OF THE TIME, RESPECTIVELY.

THE AQUATIC LIFE USE IS NOT SUPPORTED. TEMPERATURE, PH, DISSOLVED OXYGEN AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 0%, 6.80%, 0% AND 11.01% OF THE TIME, RESPECTIVELY.

BECAUSE OF A FISH CONSUMPTION ADVISORY IN PLACE THIS SECTION OF THE POTOMAC DID NOT SUPPORT THE FISH CONSUMPTION USE.

DETERMINATION OF THE FISH CONSUMPTION USE WAS BASED ON A PUBLIC HEALTH ADVISORY ISSUED ON NOVEMBER 15, 1994, BY THE D.C. COMMISSONER OF PUBLIC HEALTH. THE ADVISORY URGES NON-CONSUMPTION OF CATFISH, CARP OR EEL AND LIMITED CONSUMPTION OF OTHER FISH CAUGHT IN ALL DISTRICT OF COLUMBIA WATERS.

THIS SECTION OF THE POTOMAC FULLY SUPPORTED ITS NAVIGATION USE.

BECAUSE OF THE ABOVE USE SUPPORT DECISIONS, THIS SEGMENT OF THE POTOMAC DID NOT SUPPORT ITS OVERALL USE.

THE POTOMAC ESTUARY SEGMENT UNDER REVIEW EXTENDS FROM HAINS POINT TO WOODROW WILSON BRIDGE.

REPORTS WITH MORE INFORMATION INCLUDE:

\* IMPACT OF DREDGING, ICPRB, FISH TISSUE SURVEY, ICPRB, SEDIMENT TOXICITY SURVEY, ICPRB; WETLAND ASSESSMENT, MWCOG, PETROLEUM OIL SPILL, VERSAR\* A DISSOLVED OXYGEN STUDY OF THE UPPER POTOMAC ESTUARY-FINAL REPORT, MWCOG; POTOMAC RIVER WATER QUALITY 1982-1986 - TRENDS AND ISSUES IN THE METROPOLITAN WASHINGTON AREA, MWCOG.

\* AWRC. 1997. DRAFT ANACOSTIA WATERSHED RESTORATION PROGRESS AND CONDITIONS REPORT 1990-1996. DEPT. OF ENVIRONMENTAL PROGRAM, MWCOG. WASH., DC.

\* SEDIMENT CONTAMINATION STUDIES OF THE POTOMAC AND ANACOSTIA RIVER AROUND THE DISTRICT OF COLUMBIA, ICPRB, 1992.

\* FISH TISSUE SURVEY, ICPRB, VELINSKY, 1993.

\* EMERGENT WETLAND ESTABLISHMENT UNDER DIFFERING HABITAT CONDITIONS IN THE ANACOSTIA AND POTOMAC RIVER BASIN, HORN POINT ENVIRONMENTAL LABORATORY, CEES AND MWCOG, 1991.

## Detail Report for POTOMAC DC

**ID:** DCPMS00E\_02

**State:** DC - 2014

**Single Cat.(User Cat.):**  
5(N/A)

**Multi-Category:** 2, 4A, 5

<b>Water Information:</b>	<b>POTOMAC DC</b>	
	<b>Location:</b> KEY BRIDGE, GEORGETOWN, TO HAINS POINT (PMS10 TO PMS 29), TIDAL FRESHWATER. RIVER PASSES THROUGH AN URBAN AREA OF COMMERCIAL AND RESIDENTIAL BUILDINGS AND NATIONAL PARK SERVICE LAND.	<b>Water Type:</b> ESTUARY <b>Size:</b> 1.38 SQUARE MILES <b>Next Scheduled Montitoring Date:</b> N/A
<b>Use Information</b>		
<b>Assessed:</b>	<b>Attainment Status</b>	<b>Uses</b>
	Fully Supporting	Navigation
	Not Supporting	Primary Contact RecreationProtection and Propagation of Fish, Shellfish and WildlifeProtection of Human Health related to Consumption of Fish and ShellfishSecondary Contact Recreation and Aesthetic Enjoyment

### Types of Assessment

**Assessment Type**

**Uses**

**Assessment Confidence**

HABITAT

Navigation

GOOD



PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife	GOOD
	Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
	Secondary Contact Recreation and Aesthetic Enjoyment	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

### Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Fecal Coliform	Primary Contact Recreation	Yes	
pH	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Secondary Contact Recreation and Aesthetic Enjoyment	Yes	
Polychlorinated biphenyls	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	

### Comments On:

#### Overall Assessment

THE MIDDLE POTOMAC'S EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2009-2013) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

THE PRIMARY CONTACT (SWIMMABLE) USE IS NOT SUPPORTED. E. COLI, PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 12.50%, 11.41% AND 10.53% OF THE TIME, RESPECTIVELY.

THE SECONDARY CONTACT RECREATION USE IS NOT SUPPORTED. PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 11.41% AND 10.53% OF THE TIME, RESPECTIVELY.

THE AQUATIC LIFE USE IS NOT SUPPORTED. TEMPERATURE, PH, DISSOLVED OXYGEN AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 0%, 11.41%, 0% AND 10.53% OF THE TIME, RESPECTIVELY.

BECAUSE OF A FISH CONSUMPTION ADVISORY, THE MIDDLE POTOMAC DID NOT SUPPORT ITS FISH CONSUMPTION USE. DETERMINATION OF THE FISH CONSUMPTION USE WAS BASED ON A PUBLIC HEALTH ADVISORY ISSUED ON NOVEMBER 15, 1994, BY THE D.C. COMMISSIONER OF PUBLIC HEALTH. THE ADVISORY URGES NON-CONSUMPTION OF CATFISH, CARP OR EEL AND LIMITED CONSUMPTION OF OTHER FISH CAUGHT IN ALL DISTRICT OF COLUMBIA WATERS.

THE MIDDLE POTOMAC FULLY SUPPORTED ITS NAVIGATION USE.

BECAUSE OF THE ABOVE USE SUPPORT DECISIONS, THE MIDDLE POTOMAC DID NOT SUPPORT ITS OVERALL SUPPORT USE CLASSIFICATION.

THE MIDDLE POTOMAC WATERBODY SEGMENT EXTENDS FROM KEY BRIDGE TO HAINS POINT.

REPORTS CONTAINING MORE INFORMATION INCLUDE:

POTOMAC RIVER WATER QUALITY 1982-1986 - TRENDS AND ISSUES IN THE METROPOLITAN WASHINGTON, D.C.; IMPACT OF DREDGING, ICPRB; FISH TISSUE SURVEY, ICPRB; SEDIMENT TOXICITY SURVEY, ICPRB; WETLAND ASSESSMENT, MWCOG; PETROLEUM OIL SPILL, VERSAR.

\* SEDIMENT CONTAMINATION STUDIES OF THE POTOMAC AND ANACOSTIA RIVER AROUND THE DISTRICT OF COLUMBIA, ICPRB, 1992.

\* FISH TISSUE SURVEY, ICPRB, VELINSKY, 1993.

\* EMERGENT WETLAND ESTABLISHMENT UNDER DIFFERING HABITAT CONDITIONS IN THE ANACOSTIA AND POTOMAC RIVER BASIN, HORN POINT ENVIRONMENTAL LABORATORY, CEES AND MWCOG, 1991.

## Detail Report for POTOMAC DC

**ID:** DCPMS00E\_03

**State:** DC - 2014

**Single Cat.(User Cat.):**  
5(N/A)

**Multi-Category:** 2, 4A, 5

<b>Water Information:</b>	<b>POTOMAC DC</b>	
	<b>Location:</b> CHAIN BRIDGE (MONTGOMERY COUNTY MARYLAND LINE), JUST BELOW FALL LINE, TO KEY BRIDGE (PMS01 TO PMS10), TIDAL FRESHWATER. BORDERED BY NATIONAL PARK SERVICE LAND.	<b>Water Type:</b> ESTUARY <b>Size:</b> 0.4 SQUARE MILES <b>Next Scheduled Monitoring Date:</b> N/A
<b>Use Information</b>		
<b>Assessed:</b>	<b>Attainment Status</b>	<b>Uses</b>
	Fully Supporting	Navigation
	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish Secondary Contact Recreation and Aesthetic Enjoyment

### Types of Assessment

Assessment Type	Uses	Assessment Confidence
HABITAT	Navigation	GOOD
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife	GOOD
	Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
	Secondary Contact Recreation and Aesthetic Enjoyment	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

### Cause Information

Causes	Associated Uses	Pollutant? Confidence
Fecal Coliform	Primary Contact Recreation	Yes

Nitrogen (Total)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
pH	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Secondary Contact Recreation and Aesthetic Enjoyment	Yes
Phosphorus (Total)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Polychlorinated biphenyls	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Total Suspended Solids (TSS)	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Secondary Contact Recreation and Aesthetic Enjoyment	Yes

### **Comments On:**

#### **Overall Assessment**

THE UPPER POTOMAC'S EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2009-2013) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

THE PRIMARY CONTACT (SWIMMABLE) USE IS NOT SUPPORTED. E. COLI, PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 6.52%, 23.53% AND 13.46% OF THE TIME, RESPECTIVELY.

THE SECONDARY CONTACT RECREATION USE IS NOT SUPPORTED. PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 23.53% AND 13.46% OF THE TIME, RESPECTIVELY.

THE AQUATIC LIFE USE SUPPORT IS NOT SUPPORTED. TEMPERATURE, PH, DISSOLVED OXYGEN AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 0%, 23.53 %, 0.0% AND 13.46% OF THE TIME, RESPECTIVELY.

BECAUSE OF A FISH CONSUMPTION ADVISORY, THE UPPER POTOMAC DID NOT SUPPORT ITS FISH CONSUMPTION USE. DETERMINATION OF THE FISH CONSUMPTION USE WAS BASED ON A PUBLIC HEALTH ADVISORY ISSUED ON NOVEMBER 15, 1994, BY THE D.C. COMMISSIONER OF PUBLIC HEALTH. THE ADVISORY URGES NON-CONSUMPTION OF CATFISH, CARP OR EEL AND LIMITED CONSUMPTION OF OTHER FISH CAUGHT IN ALL DISTRICT OF COLUMBIA WATERS.

THE UPPER POTOMAC FULLY SUPPORTED ITS NAVIGATION USE.

BECAUSE OF THE ABOVE DECISIONS, THE UPPER POTOMAC DID NOT

SUPPORT THE OVERALL USE SUPPORT CLASSIFICATION.

THIS WATERBODY SEGMENT INCLUDES THE UPPER TIDAL POTOMAC FROM CHAIN BRIDGE, D.C. BORDER, TO KEY BRIDGE (GEORGETOWN). THIS SEGMENT IS AFFECTED BY HIGH TOXICS IN SEDIMENTS, AND FISH CONTAMINATED WITH TOXICS.

REPORTS WITH MORE INFORMATION INCLUDE:

\* SEDIMENT CONTAMINATION STUDIES OF THE POTOMAC AND ANACOSTIA RIVER AROUND THE DISTRICT OF COLUMBIA, ICPRB, 1992.

\* FISH TISSUE SURVEY, ICPRB, VELINSKY, 1993.

\* EMERGENT WETLAND ESTABLISHMENT UNDER DIFFERING HABITAT CONDITIONS IN THE ANACOSTIA AND POTOMAC RIVER BASIN, HORN POINT ENVIRONMENTAL LABORATORY, CEES AND MWCOG, 1991.

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**Detail Report for TIDAL BASIN**

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ID: DCPTB01L\_00

State: DC - 2014

Single Cat.(User Cat.):  
5(N/A)

Multi-Category: 2, 3, 4A, 5

<b>Water Information:</b>	<b>TIDAL BASIN</b>	
	<b>Location:</b> ADJACENT TO THE JEFFERSON MEMORIAL AND THE WELL-KNOWN CHERRY TREES OF THE NATION'S CAPITOL	<b>Water Type:</b> FRESHWATER LAKE <b>Size:</b> 108.4 ACRES <b>Next Scheduled Monitoring Date:</b> N/A <b>Trophic Status:</b> N/A <b>Public Lake:</b> No
<b>Use Information</b>		
<b>Assessed:</b>	<b>Attainment Status</b>	<b>Uses</b>
	Fully Supporting	Navigation
	Insufficient Information	Protection of Human Health related to Consumption of Fish and Shellfish
	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Secondary Contact Recreation and Aesthetic Enjoyment

**Types of Assessment**

Assessment Type	Uses	Assessment Confidence
HABITAT	Navigation	GOOD
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife	GOOD
	Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
	Secondary Contact Recreation and Aesthetic Enjoyment	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

**Cause Information**

Causes	Associated Uses	Pollutant?	Confidence
Chlordane	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
DDD	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
DDE	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
DDT	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	

Dieldrin	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Fecal Coliform	Primary Contact Recreation Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Heptachlor epoxide	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
pH	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Secondary Contact Recreation and Aesthetic Enjoyment	Yes
Polychlorinated biphenyls	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	Protection of Human Health related to Consumption of Fish and Shellfish	Yes

### Comments On:

#### Overall Assessment

THE TIDAL BASIN'S EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2009-2013) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

THE PRIMARY CONTACT (SWIMMABLE) USE SUPPORT IS NOT SUPPORTED. E. COLI, PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 4.35%, 23.33% AND 1.69% OF THE TIME, RESPECTIVELY.

THE SECONDARY CONTACT RECREATION USE IS NOT SUPPORTED. PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 23.33% AND 1.69% OF THE TIME, RESPECTIVELY.

THE AQUATIC LIFE USE IS NOT SUPPORTED. TEMPERATURE, PH, DISSOLVED OXYGEN AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 0%, 23.33%, 0.0% AND 1.69% OF THE TIME, RESPECTIVELY.

BECAUSE OF A FISH CONSUMPTION ADVISORY, THE TIDAL BASIN DID NOT SUPPORT THE FISH CONSUMPTION USE. DETERMINATION OF THE FISH CONSUMPTION USE WAS BASED ON A PUBLIC HEALTH ADVISORY ISSUED ON NOVEMBER 15, 1994 BY THE D.C. COMMISSIONER OF PUBLIC HEALTH. THE ADVISORY URGES NON-CONSUMPTION OF CATFISH, CARP OR EEL AND LIMITED CONSUMPTION OF OTHER FISH CAUGHT IN ALL DISTRICT OF COLUMBIA WATERS.

THE TIDAL BASIN FULLY SUPPORTED ITS NAVIGATION USE.

BECAUSE OF THE ABOVE USE SUPPORT DECISIONS, THE TIDAL BASIN DID NOT SUPPORT THE OVERALL USE CLASSIFICATION.

THE TIDAL BASIN IS AN IMPOUNDMENT BORDERING THE MIDDLE POTOMAC AND THE WASHINGTON SHIP CHANNEL (PTB01). IT IS LOCATED ADJACENT TO THE JEFFERSON MEMORIAL AND THE WELL-KNOWN CHERRY TREES OF THE NATION'S CAPITOL. THE LAND SURROUNDING THE BASIN IS OWNED AND MANAGED BY THE U.S. NATIONAL PARK SERVICE.

A STUDY TITLED "SEDIMENT CONTAMINATION STUDIES OF THE POTOMAC AND ANACOSTIA RIVERS AROUND THE DISTRICT OF COLUMBIA" WAS COMPLETED BY THE INTERSTATE COMMISSION ON THE POTOMAC RIVER BASIN IN 1992. THE STUDY INCLUDED THE TIDAL BASIN. RESULTS FROM THIS STUDY FOUND ELEVATED LEVELS OF TOTAL (THC) AND POLYCYCLIC HYDROCARBONS (PAHS) AT SAMPLED OUTFALLS AND STORM SEWERS TO THE TIDAL BASIN IN COMPARISON TO BASIN SEDIMENTS. RESULTS DID NOT INDICATE A SPECIFIC OUTFALL AS THE SOURCE. THE STUDY SUGGESTED THAT THE PRIMARY SOURCE FOR THESE HYDROCARBONS WAS MUCH MORE DIFFUSED AND PROBABLY RELATED TO VEHICULAR TRAFFIC.

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## Detail Report for WASHINGTON SHIP CHANNEL

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**ID:** DCPWC04E\_00

**State:** DC - 2014

**Single Cat.(User Cat.):**  
4A(N/A)

**Multi-Category:** 2, 3, 4A

<b>Water Information:</b>	<b>WASHINGTON SHIP CHANNEL</b>	
	<b>Location:</b> DEEP EMBAYMENT OF THE POTOMAC BETWEEN HAINS POINT AND FORT MCNAIR. IT IS CONTIGUOUS TO THE POTOMAC AND ANACOSTIA	<b>Water Type:</b> ESTUARY <b>Size:</b> 0.3 SQUARE MILES



	RIVERS. THE NORTH END IS CONNECTED TO THE TIDAL BASIN (PWC04).	Next Scheduled Monitoring Date: N/A
<b>Use Information</b>		
<b>Assessed:</b>	<b>Attainment Status</b>	<b>Uses</b>
	Fully Supporting	Navigation
	Insufficient Information	Protection of Human Health related to Consumption of Fish and Shellfish
	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Secondary Contact Recreation and Aesthetic Enjoyment

### Types of Assessment

Assessment Type	Uses	Assessment Confidence
HABITAT	Navigation	GOOD
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife	GOOD
	Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
	Secondary Contact Recreation and Aesthetic Enjoyment	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

### Cause Information

Causes	Associated Uses	Pollutant? Confidence
Chlordane	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
DDD	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
DDE	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
DDT	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Dieldrin	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Fecal Coliform	Primary Contact Recreation	Yes
Heptachlor epoxide	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
pH	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Secondary Contact Recreation and	Yes

	Aesthetic Enjoyment	
Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	Protection of Human Health related to Consumption of Fish and Shellfish	Yes

**Comments On:**

**Overall Assessment**

THE WASHINGTON SHIP CHANNEL'S EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2009-2013) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

THE PRIMARY CONTACT (SWIMMABLE) USE IS NOT SUPPORTED. E.COLI, PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 11.54%, 8.77% AND 0.0% OF THE TIME, RESPECTIVELY.

THE SECONDARY CONTACT RECREATION USE IS SUPPPORTED. PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 8.77% AND 0.0% OF THE TIME, RESPECTIVELY.

THE AQUATIC LIFE USE IS SUPPORTED. TEMPERATURE, PH, DISSOLVED OXYGEN AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 0%, 8.77%, 0.0% AND 0.0% OF THE TIME, RESPECTIVELY.

BECAUSE OF A FISH CONSUMPTION ADVISORY, THE WASHINGTON SHIP CHANNEL DID NOT SUPPORT ITS FISH CONSUMPTION USE. DETERMINATION OF THE FISH CONSUMPTION USE WAS BASED ON A PUBLIC HEALTH ADVISORY ISSUED ON NOVEMBER 15, 1994, BY THE D.C. COMMISSIONER OF PUBLIC HEALTH. THE ADVISORY URGES NON-CONSUMPTION OF CATFISH, CARP, OR EEL AND LIMITED CONSUMPTION OF OTHER FISH CAUGHT IN ALL DISTRICT OF COLUMBIA WATERS. THEREFORE, THE WASHINGTON SHIP CHANNEL DID NOT SUPPORT EPA FISH CONSUMPTION CRITERIA.

THE WASHINGTON SHIP CHANNEL FULLY SUPPORTED ITS NAVIGATION USE.

BECAUSE OF THE ABOVE USE SUPPORT DECISIONS, THE WASHINGTON SHIP CHANNEL DID NOT SUPPORT THE OVERALL USE CLASSIFICATION.

SURVEYS CONDUCTED IN THE PAST SEVERAL YEARS REVEAL THE PRESENCE OF TOXICS IN SEDIMENTS. FISH TISSUE OF SAMPLES OF CERTAIN SPECIES SHOW ELEVATED LEVELS OF CONTAMINANTS INCLUDING CHLORDANE AND PCBs. BIOLOGICAL SAMPLES COLLECTED SUGGEST A SEVERELY STRESSED BENTHIC COMMUNITY. THE CAUSES OF STRESS MAY BE ATTRIBUTED TO URBAN STORM WATER RUNOFF FROM POLLUTED

STREAMS ENTERING THE TIDAL POTOMAC ESTUARY, TO CSO EVENTS, AND TO THE IMPACT FROM ADJACENT INDUSTRIAL FACILITIES.

REPORTS WITH MORE INFORMATION INCLUDE:

- "IMPACT OF DREDGING ON THE WATER QUALITY OF THE ANACOSTIA RIVER" BY THE INTERSTATE COMMISSION ON THE POTOMAC RIVER BASIN (ICPRB), 1993,
- "SEDIMENT CONTAMINATION STUDIES OF THE POTOMAC AND ANACOSTIA RIVER AROUND THE DISTRICT OF COLUMBIA," ICPRB, 1992,
- A FISH TISSUE SURVEY REPORT BY ICPRB, VELINSKY, 1993.
- "EMERGENT WETLAND ESTABLISHMENT UNDER DIFFERING HABITAT CONDITION IN THE ANACOSTIA AND POTOMAC RIVER BASIN," HORN POINT ENVIRONMENTAL LABORATORY, CEES AND MWCOG, 1991.
- STEUART PETROLEUM OIL SPILL, VERSAR, PINKNEY, 1993.

## Detail Report for ROCK CREEK DC

**ID:** DCRCR00R\_01

**State:** DC - 2014

**Single Cat.(User Cat.):**  
5(N/A)

**Multi-Category:** 2, 4A, 5

<b>Water Information:</b>	<b>ROCK CREEK DC</b>	
	<b>Location:</b> THE SOUTHERN OR LOWER SEGMENT OF ROCK CREEK WHICH EXTENDS FROM IT'S MOUTH AT THE POTOMAC RIVER IN GEORGETOWN UP TO JUST ABOVE THE NATIONAL ZOO BELOW THE PIERCE MILL DAM	<b>Water Type:</b> RIVER <b>Size:</b> 3.6 MILES <b>Next Scheduled Montitoring Date:</b> N/A
<b>Use Information</b>		
<b>Assessed:</b>	<b>Attainment Status</b>	<b>Uses</b>
	Fully Supporting	Navigation
	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish Secondary Contact Recreation and Aesthetic Enjoyment

**Types of Assessment**

<b>Assessment Type</b>	<b>Uses</b>	<b>Assessment Confidence</b>
HABITAT	Navigation	GOOD
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife	GOOD
	Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
	Secondary Contact Recreation and Aesthetic Enjoyment	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

### **Cause Information**

<b>Causes</b>	<b>Associated Uses</b>	<b>Pollutant?</b>	<b>Confidence</b>
Copper	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Fecal Coliform	Primary Contact Recreation	Yes	
Lead	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Mercury	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Total Suspended Solids (TSS)	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Secondary Contact Recreation and Aesthetic Enjoyment	Yes	
Zinc	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes	

### **Comments On:**

#### **Overall Assessment**

THE LOWER ROCK CREEK'S EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2009-2013) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

THE PRIMARY CONTACT (SWIMMABLE) USE IS NOT SUPPORTED. E. COLI, PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 41.18%, 1.69% AND 11.86% OF THE TIME, RESPECTIVELY. PLEASE NOTE THE DISTRICT OF COLUMBIA WATER QUALITY STANDARDS PROHIBIT SWIMMING IN THE POTOMAC AND ANACOSTIA RIVERS AND ROCK CREEK UNTIL ALL THE PARAMETERS USED TO DETERMINE USE SUPPORT ARE

BEING CONSISTENTLY ATTAINED (DCMR TITLE 21, CHAPTER 11, SECTION 1108). THE PARAMETERS USED TO SUPPORT THE PRIMARY CONTACT RECREATION DESIGNATED USE CAN BE FOUND IN DCMR TITLE 21, CHAPTER 11, SECTION 1104.8. THE DIRECTOR MAY ISSUE A DECISION THAT ALLOWS A SPECIAL SWIMMING EVENT IN THE POTOMAC RIVER. THE GUIDELINES FOR A SPECIAL SWIMMING EVENT ARE FOUND IN DCMR TITLE 21, CHAPTER 11, SECTION 1108.

THE SECONDARY CONTACT RECREATION USE IS NOT SUPPORTED. PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 1.69% AND 11.86% OF THE TIME, RESPECTIVELY.

THE AQUATIC LIFE USE SUPPORT IS NOT SUPPORTED. THE DECISION IS BASED ON THE DC STREAM SURVEY CONDUCTED IN 2010 AND CONVENTIONAL POLLUTANT DATA. TEMPERATURE, PH, DISSOLVED OXYGEN AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 0.0%, 1.69%, 0.0% AND 11.86% OF THE TIME, RESPECTIVELY.

BECAUSE OF A FISH CONSUMPTION ADVISORY, THE LOWER ROCK CREEK DID NOT SUPPORT ITS FISH CONSUMPTION USE. DETERMINATION OF FISH CONSUMPTION USE IS BASED ON A PUBLIC HEALTH ADVISORY ISSUED IN 1994 BY THE DC COMMISSIONER OF HEALTH. THE ADVISORY URGES BANNING CONSUMPTION OF CHANNEL CATFISH, CARP, OR EELS CAUGHT IN THE DISTRICT'S STRETCHS OF THE POTOMAC AND ANACOSTIA RIVERS. BECAUSE ROCK CREEK IS A TRIBUTARY OF THE POTOMAC RIVER, FISH MAY MIGRATE FROM THE RIVER INTO THE TRIBUTARY, THEREFORE THIS ADVISORY EXTENDS TO ROCK CREEK.

LOWER ROCK CREEK FULLY SUPPORTED ITS NAVIGATION USE.

BECAUSE OF THE ABOVE DECISIONS, THIS SEGMENT DID NOT SUPPORT THE OVERALL USE SUPPORT CLASSIFICATION.

THE SOUTHERN SEGMENT OF ROCK CREEK EXTENDING FROM ITS MOUTH AFTER THE POTOMAC RIVER TO NATIONAL ZOO. THE SOUTHERN OR LOWER SEGMENT OF ROCK CREEK WHICH EXTENDS FROM its MOUTH AT THE POTOMAC RIVER IN GEORGETOWN UP TO JUST ABOVE THE NATIONAL ZOO BELOW THE PIERCE MILL DAM. THE ENTIRE REACH OF THIS SEGMENT OF THE TRIBUTARY IS ENCLOSED BY ROCK CREEK PARK. THIS TRIBUTARY IS DESIGNATED AS A "SPECIAL WATERS OF THE DISTRICT OF COLUMBIA" UNDER THE DISTRICT'S WATER QUALITY STANDARDS.

THE LOWER ROCK CREEK SUFFERS FROM A COMBINATION OF STRESSORS BY ITS TRIBUTARY STREAMS. THESE TRIBUTARY STREAMS ARE PREDOMINANTLY BUFFERED BY PARKLAND BUT STILL RECIEVE

STORMWATER DISCHARGES FROM URBAN IMPERVIOUS SURFACES AS WELL AS PROBABLE LEAKAGE FROM UNIDENTIFIED SEWER LINES CROSSING THE STREAMS. NUTRIENT ENRICHMENT, PHYSICAL HABITAT PROBLEMS AND TOXIC EFFECTS ALL MAY BE ATTRIBUTED TO THESE CAUSES.

DURING THE 2013 BENTHIC MACROINVERTEBRATE AND PHYSICAL HABITAT ASSESSMENTS THE RIGHT BANK HAD BEEN STABILIZED WITH A LARGE ROCK AND EMERGENT VEGETATION.

DURING THE 2013 FIN-FISH ASSESSMENT MORE LARGE AND SMALLMOUTH BASS WERE OBSERVED.

DURING THE 2012 BENTHIC MACROINVERTEBRATE AND PHYSICAL HABITAT ASSESSMENTS THE MONITORING SITE WAS MOVED 5 METERS UPSTREAM, BECAUSE THE STREAM IS CHANNELIZED AND THERE IS A BUFFER BREAK ON THE RIGHT BANK.

MACROINVERTEBRATE SAMPLES COLLECTED DURING IN 2012 AND 2013 WILL BE ANALYZED AT A LATER DATE.

THE 2010 MACROINVERTEBRATE ASSESSMENT (SAMPLES COLLECTED IN 2009) REVEALED CHIRONOMIDAE AS THE DOMINANT TAXA WITH MORE THAN 12 SPECIES PRESENT. THERE WERE NOT EPT TAXA PRESENT.

REPORTS WITH MORE INFORMATION INCLUDE:

\*ANALYSIS OF BIOLOGICAL SAMPLES: DISTRICT OF COLUMBIA PHYTOPLANKTON, ZOOPLANKTON AND BENTHIC MACROINVERTEBRATE SAMPLES, RHITHRON ASSOCIATES, OCTOBER 2010.

## Detail Report for ROCK CREEK DC

**ID:** DCRCR00R\_02

**State:** DC - 2014

**Single Cat.(User Cat.):**  
5(N/A)

**Multi-Category:** 2, 4A, 5

<b>Water Information:</b>	<b>ROCK CREEK DC</b>	
	<b>Location:</b> THE NORTHERN SEGMENT OF ROCK CREEK EXTENDING FROM THE PIERCE MILL DAM ABOVE THE NATIONAL ZOO AND KLINGLE ROAD TO THE DISTRICT/MARYLAND LINE. THIS SEGMENT OF ROCK CREEK FLOWS ABOVE THE FALL LINE AND IS SURROUNDED BY ROCK CREEK PARK.	<b>Water Type:</b> RIVER <b>Size:</b> 5.9 MILES <b>Next Scheduled Monitoring Date:</b> N/A
<b>Use Information</b>		
<b>Assessed:</b>	<b>Attainment Status</b>	<b>Uses</b>
	Fully Supporting	Navigation
	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish Secondary Contact Recreation and Aesthetic Enjoyment

### Types of Assessment

Assessment Type	Uses	Assessment Confidence
HABITAT	Navigation	GOOD
	Protection and Propagation of Fish, Shellfish and Wildlife	GOOD
PHYSICAL/CHEMICAL	Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
	Secondary Contact Recreation and Aesthetic Enjoyment	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD



### Cause Information

Causes	Associated Uses	Pollutant? Confidence
Copper	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Fecal Coliform	Primary Contact Recreation	Yes
Lead	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Mercury	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Other flow regime alterations	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Total Suspended Solids (TSS)	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Secondary Contact Recreation and Aesthetic Enjoyment	Yes
Zinc	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes

### Source Information

Sources	Associated Causes	Confirmed?
Hydrostructure Impacts on Fish Passage	Other flow regime alterations	
Residential Districts	Other flow regime alterations	
Wet Weather Discharges (Non-Point Source)	Other flow regime alterations	
Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO)	Other flow regime alterations	
Yard Maintenance	Other flow regime alterations	

### Comments On:

### Overall Assessment

THE UPPER ROCK CREEK'S EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2009-2013) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

THE PRIMARY CONTACT (SWIMMABLE) USE IS NOT SUPPORTED. E. COLI, PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 40.0%, 1.67% AND 10.17% OF THE TIME, RESPECTIVELY.

THE SECONDARY CONTACT RECREATION USE IS NOT SUPPORTED. PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 1.67% AND 10.17% OF THE TIME, RESPECTIVELY.

THE AQUATIC LIFE USE SUPPORT IS NOT SUPPORTED. THE DECISION IS BASED ON THE DC STREAM SURVEY CONDUCTED IN 2010 AND CONVENTIONAL POLLUTANT DATA. TEMPERATURE, PH, DISSOLVED OXYGEN AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 0.0%, 1.67%, 0.0% AND 10.17% OF THE TIME, RESPECTIVELY.

BECAUSE OF A FISH CONSUMPTION ADVISORY, THE UPPER ROCK CREEK DID NOT SUPPORT ITS FISH CONSUMPTION USE. DETERMINATION OF FISH CONSUMPTION USE IS BASED ON A PUBLIC HEALTH ADVISORY ISSUED IN 1994 BY THE DC COMMISSIONER OF HEALTH. THE ADVISORY URGES BANNING CONSUMPTION OF CHANNEL CATFISH, CARP, OR EELS CAUGHT IN THE DISTRICT'S STRETCHS OF THE POTOMAC AND ANACOSTIA RIVERS. BECAUSE ROCK CREEK IS A TRIBUTARY OF THE POTOMAC RIVER, FISH MAY MIGRATE FROM THE RIVER INTO THE TRIBUTARY, THEREFORE THIS ADVISORY EXTENDS TO ROCK CREEK.

THE UPPER ROCK CREEK FULLY SUPPORTED ITS NAVIGATION USE.

BECAUSE OF THE ABOVE DECISIONS, THIS SEGMENT DID NOT SUPPORT THE OVERALL USE SUPPORT CLASSIFICATION.

UPPER ROCK CREEK SUFFERS FROM A COMBINATION OF STRESSORS CONTRIBUTED BY ITS TRIBUTARY STREAMS. THESE TRIBUTARY STREAMS ARE PREDOMINANTLY BUFFERED BY PARKLAND BUT STILL RECEIVE STORMWATER DISCHARGES FROM URBAN IMPERVIOUS SURFACES AS WELL AS PROBABLE LEAKAGE FROM UNIDENTIFIED SEWER LINES CROSSING THE STREAMS. NUTRIENT ENRICHMENT, PHYSICAL HABITAT PROBLEMS AND TOXIC EFFECTS ALL MAY BE ATTRIBUTED TO THESE CAUSES.

DURING THE 2012 AND 2013 MACROINVERTEBRATE AND PHYSICAL HABITAT ASSESSMENTS LOW FLOW WAS OBSERVED. THERE WAS CONCRETE ON THE RIGHT BANK JUST BELOW THE ZERO METER ASSESSMENT LOCATION. THERE WERE MODERATE BAR FORMATIONS. MACROINVERTEBRATE SAMPLES COLLECTED IN 2012 AND 2013 WILL BE ANALYZED AT A LATER DATE.

THE 2010 MACROINVERTEBRATE ASSESSMENT (SAMPLES COLLECTED IN 2009) REVEALED A HIGH DIVERSITY OF SPECIES PRESENT. EPHEMEROPTERA AND TRICHOPTERA WERE PRESENT. CHIRONOMIDAE WAS THE DOMINANT TAXA.

REPORTS WITH MORE INFORMATION INCLUDE:

\*ANALYSIS OF BIOLOGICAL SAMPLES: DISTRICT OF COLUMBIA  
PHYTOPLANKTON, ZOOPLANKTON AND BENTHIC MACROINVERTEBRATE  
SAMPLES, RHITHRON ASSOCIATES, OCTOBER 2010.



# Detail Report for BATTERY KEMBLE CREEK

ID: DCTBK01R\_00

State: DC - 2014

Single Cat.(User Cat.):  
5(N/A)

Multi-Category: 2, 3, 4A, 5

<b>Water Information:</b>	<b>BATTERY KEMBLE CREEK</b>	
	<b>Location:</b> ORIGINATES AT NEBRASKA AVENUE AND FOXHALL ROAD. THE WATERSHED'S NORTHWESTERN BORDER IS UNIVERSITY TERRACE AND THE WESTERN EDGE OF BATTERY KEMBLE PARK.. THE EASTERN BORDER IS FOXHALL ROAD AND THE SOUTHERN BORDER IS NORTH OF W STREET, NW.	<b>Water Type:</b> RIVER <b>Size:</b> 1.2 MILES <b>Next Scheduled Monitoring Date:</b> N/A
<b>Use Information</b>		
<b>Assessed:</b>	<b>Attainment Status</b>	<b>Uses</b>
	Fully Supporting	Secondary Contact Recreation and Aesthetic Enjoyment
	Insufficient Information	Protection of Human Health related to Consumption of Fish and Shellfish
	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife

## Types of Assessment

Assessment Type	Uses	Assessment Confidence
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife	GOOD
	Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
	Secondary Contact Recreation and Aesthetic Enjoyment	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

## Cause Information

Causes	Associated Uses	Pollutant? Confidence
Arsenic	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Copper	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes

Fecal Coliform	Primary Contact Recreation	Yes
Zinc	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes

**Comments On:**

**Overall Assessment**

BATTERY KEMBLE'S EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2009-2013) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

THE PRIMARY CONTACT (SWIMMABLE) USE IS NOT SUPPORTED. E. COLI, PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 23.53%, 0.0% AND 5.0% OF THE TIME, RESPECTIVELY.

THE SECONDARY CONTACT RECREATION USE IS SUPPORTED. PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 0.0% AND 5.0% OF THE TIME, RESPECTIVELY.

THE AQUATIC LIFE USE IS NOT SUPPORTED. THE DECISION IS BASED ON THE DC STREAM SURVEY CONDUCTED IN 2002 AND CONVENTIONAL POLLUTANT DATA. TEMPERATURE, PH, DISSOLVED OXYGEN AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 0.0%, 0.0%, 0.0% AND 5.0% OF THE TIME, RESPECTIVELY.

BECAUSE OF A FISH CONSUMPTION ADVISORY, BATTERY KEMBLE DID NOT SUPPORT ITS FISH CONSUMPTION USE. DETERMINATION OF FISH CONSUMPTION USE IS BASED ON A PUBLIC HEALTH ADVISORY ISSUED IN 1994 BY THE DC COMMISSIONER OF HEALTH. THE ADVISORY URGES BANNING CONSUMPTION OF CHANNEL CATFISH, CARP, OR EELS CAUGHT IN THE DISTRICT'S STRETCHS OF THE POTOMAC AND ANACOSTIA RIVERS. BECAUSE BATTERY KEMBLE CREEK IS A TRIBUTARY OF THE POTOMAC RIVER, FISH MAY MIGRATE FROM THE RIVER INTO THE TRIBUTARY, THEREFORE THIS ADVISORY EXTENDS TO BATTERY KEMBLE CREEK. BATTERY KEMBLE WAS NOT ASSESSED FOR NAVIGATION.

BECAUSE OF THE ABOVE USE DECISIONS, THIS SEGEMENT DID NOT SUPPORT THE OVERALL USE SUPPORT CLASSIFICATION.

BATTERY KEMBLE CREEK IS A TRIBUTARY OF THE POTOMAC RIVER THAT DRAINS BATTERY KEMBLE PARK. BANTA (1993) MISIDENTIFIED THIS STREAM AS FLETCHERS RUN. THE STREAM ORIGINATES AT NEBRASKA AVENUE AND FOXHALL ROAD. THE WATERSHED IS 230 ACRES IN AREA, OF WHICH 60% IS PARKLAND AND FOREST WITH THE REMAINING AREA HIGH-

PRICED RESIDENTIAL PROPERTY. THE WATERSHED'S NORTHWESTERN BORDER IS UNIVERSITY TERRACE AND THE WESTERN EDGE OF BATTERY KEMBLE PARK; THE EASTERN BORDER IS FOXHALL ROAD AND THE SOUTHERN BORDER IS NORTH OF W STREET, NW. IT IS BUFFERED ON EITHER SIDE BY ABOUT 300 FEET OF FORESTED PARKLAND. THIS TRIBUTARY IS CLASSIFIED AS A "SPECIAL WATERS OF THE DISTRICT OF COLUMBIA" UNDER THE WATER QUALITY STANDARDS OF THE DISTRICT.

THE ABOVE DESCRIPTION WAS TAKEN FROM "BIOLOGICAL WATER QUALITY OF THE SURFACE TRIBUTARY STREAMS OF THE DISTRICT OF COLUMBIA," BY W.C. BANTA, THE AMERICAN UNIVERSITY, 1993.

AT RESERVOIR ROAD, TWO LARGE SEWER LINES CROSS THE STREAM AS WELL AS SEVERAL SMALLER SEWER LINES WHICH TRAVERSE THE STREAM FURTHER DOWNSTREAM. THE STREAM AREA NEAR RESERVOIR ROAD RECEIVES DISCHARGE FROM THREE SMALL STORM DRAINS.

THE WATERSHED LIES MAINLY IN THE SYKESVILLE FORMATION, GRANITE ROCKS OF UNKNOWN AGE. ABOUT 1/4 OF THE AREA DRAINS SOME PLEISTOCENE TERRACE GRAVELS DEPOSITED BY THE POTOMAC.

DURING THE 2010 AND 2012 STREAM ASSESSMENTS THERE WAS ALGAE ON ROCKS, VERY LITTLE AQUATIC LIFE OBSERVED AND THE ODOR OF CHLORINE PRESENT.

MACROINVERTEBRATE SAMPLES WERE COLLECTED FOR 2010 AND 2012, THEY WILL BE ANALYZED AT A LATER DATE.

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## **Detail Report for BROAD BRANCH**

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**ID:** DCTBR01R\_00

**State:** DC - 2014

**Single Cat.(User Cat.):**  
5(N/A)

**Multi-Category:** 2, 4A, 4B, 5

<b>Water Information:</b>	<b>BROAD BRANCH</b>	
	<b>Location:</b> BROAD BRANCH IS A WESTERN TRIBUTARY OF ROCK CREEK WHICH IS JOINED BY SOAPSTONE CREEK ABOUT 800 FEET BEFORE IT DISCHARGES INTO ROCK CREEK. THE SURFACE PORTION OF THE STREAM BEGINS NEAR NEBRASKA AND CONNECTICUT AVENUES.	<b>Water Type:</b> RIVER <b>Size:</b> 1.7 MILES <b>Next Scheduled Monitoring Date:</b> 2016
<b>Use Information</b>		
<b>Assessed:</b>	<b>Attainment Status</b>	<b>Uses</b>
	Fully Supporting	Secondary Contact Recreation and Aesthetic Enjoyment
	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish

### Types of Assessment

Assessment Type	Uses	Assessment Confidence
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife	GOOD
	Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
	Secondary Contact Recreation and Aesthetic Enjoyment	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

### Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Alteration in stream-side or littoral vegetative covers	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Chlordane	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Dieldrin	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Escherichia coli	Primary Contact Recreation	Yes	
Heptachlor epoxide	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Polychlorinated biphenyls	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	

### Comments On:

#### Overall Assessment

BROAD BRANCH'S EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED

ON A FIVE YEAR STATISTICAL EVALUATION (2009-2013) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

THE PRIMARY CONTACT (SWIMMABLE) USE IS NOT SUPPORTED. E. COLI, PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 87.50%, 5.0% AND 10.0% OF THE TIME, RESPECTIVELY.

THE SECONDARY CONTACT RECREATION USE IS SUPPORTED. PH AND TURBIDITY VIOLATES THE WATER QUALITY STANDARDS 5.0% AND 10.0% OF THE TIME, RESPECTIVELY.

THE AQUATIC LIFE USE IS NOT SUPPORTED. THE DECISION IS BASED ON THE DC STREAM SURVEY CONDUCTED IN 2010 AND CONVENTIONAL POLLUTANT DATA. TEMPERATURE, PH, DISSOLVED OXYGEN AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 0%, 5.0%, 0.0% AND 10.0% OF THE TIME, RESPECTIVELY.

BECAUSE OF A FISH CONSUMPTION ADVISORY, BROAD BRANCH DID NOT SUPPORT ITS FISH CONSUMPTION USE. DETERMINATION OF FISH CONSUMPTION USE IS BASED ON A PUBLIC HEALTH ADVISORY ISSUED IN 1994 BY THE DC COMMISSIONER OF HEALTH. THE ADVISORY URGES BANNING CONSUMPTION OF CHANNEL CATFISH, CARP, OR EELS CAUGHT IN THE DISTRICT'S STRETCHS OF THE POTOMAC AND ANACOSTIA RIVERS. BECAUSE BROAD BRANCH IS A TRIBUTARY OF THE POTOMAC RIVER, FISH MAY MIGRATE FROM THE RIVER INTO THE TRIBUTARY, THEREFORE THIS ADVISORY EXTENDS TO BROAD BRANCH.

BROAD BRANCH WAS NOT ASSESSED FOR NAVIGATION. BECAUSE OF THE ABOVE USE DECISIONS, THIS SEGMENT DID NOT SUPPORT THE OVERALL USE SUPPORT CLASSIFICATION.

BROAD BRANCH FLOWS THROUGH A RESIDENTIAL PARK PARALLELING BROAD BRANCH RD. FIFTEEN OUTFALLS FEED INTO THIS STREAM. BROAD BRANCH IS A WESTERN TRIBUTARY OF ROCK CREEK WHICH IS JOINED BY SOAPSTONE CREEK ABOUT 800 FEET BEFORE IT DISCHARGES INTO ROCK CREEK. THE SURFACE PORTION OF THE STREAM BEGINS NEAR NEBRASKA AND CONNECTICUT AVENUES AND IS BORDERED BY PARKLAND AND RESIDENTIAL PROPERTY FOR HALF OF ITS REACH AND A 200 FOOT BUFFER OF TREES AND SHRUBS FOR THE REST OF ITS REACH. THE WATERSHED ENCOMPASSES ABOUT 1120 ACRES.

THE ABOVE DESCRIPTION WAS TAKEN FROM "BIOLOGICAL WATER QUALITY OF THE SURFACE TRIBUTARY STREAMS OF THE DISTRICT OF COLUMBIA," W.C. BANTA, THE AMERICAN UNIVERSITY, 1993.



THE 2011 AND 2013 DCSS REVEALED DENSE BROWN MACROPHYTES AND ALGAL GROWTH, DOWNED TREES ON STREAMBED. THERE WERE HEAVY RAINS DURING THE 2011 ASSESSMENT PERIOD.

IN 2011 AND 2013 MACROINVERTEBRATE SAMPLES WERE COLLECTED AND WILL BE ANALYZED AT A LATER DATE.

THE 2010 MACROINVERTEBRATE ASSESSMENT (SAMPLES COLLECTED IN 2009) REVEALED CHIRONOMIDAE AS THE DOMINANT TAXA. TRICHOPTER WERE ALSO PRESENT.

REPORTS WITH MORE INFORMATION INCLUDE:

\*ANALYSIS OF BIOLOGICAL SAMPLES: DISTRICT OF COLUMBIA PHYTOPLANKTON, ZOOPLANKTON AND BENTHIC MACROINVERTEBRATE SAMPLES, RHITHRON ASSOCIATES, OCTOBER 2010.

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## Detail Report for CHESAPEAKE AND OHIO CANAL

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**ID:** DCTCO01L\_00

**State:** DC - 2014

**Single Cat.(User Cat.):**  
5(N/A)

**Multi-Category:** 2, 4A, 5

<b>Water Information:</b>	<b>CHESAPEAKE AND OHIO CANAL</b>	
	<b>Location:</b> IMPOUNDMENT RUNNING PARALLEL TO UPPER POTOMAC (TCO01:GEORGETOWN AND TCO06: FLETCHER'S BOATHOUSE).	<b>Water Type:</b> FRESHWATER LAKE <b>Size:</b> 27.3 ACRES <b>Next Scheduled Monitoring Date:</b> N/A <b>Trophic Status:</b> N/A <b>Public Lake:</b> No

Use Information		
Assessed:	Attainment Status	Uses
	Fully Supporting	Navigation
	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish Secondary Contact Recreation and Aesthetic Enjoyment

### Types of Assessment

Assessment Type	Uses	Assessment Confidence
HABITAT	Navigation	GOOD
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife	GOOD
	Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
	Secondary Contact Recreation and Aesthetic Enjoyment	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

### Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Fecal Coliform	Primary Contact Recreation	Yes	
Fish Advisory - No Restriction	Protection of Human Health related to Consumption of Fish and Shellfish	No	
pH	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Secondary Contact Recreation and Aesthetic Enjoyment	Yes	

### Comments On:

#### Overall Assessment

THE C&O CANAL'S EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2009-2013) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

THE PRIMARY CONTACT (SWIMMABLE) USE IS NOT SUPPORTED. E. COLI, PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 11.69%, 11.24% AND 2.22% OF THE TIME, RESPECTIVELY.

THE SECONDARY CONTACT RECREATION USE IS NOT SUPPORTED. PH AND

TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 11.24% AND 2.22% OF THE TIME, RESPECTIVELY.

THE AQUATIC LIFE USE IS NOT SUPPORTED. TEMPERATURE, PH, DISSOLVED OXYGEN AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 0%, 11.24%, 0.0% AND 2.22% OF THE TIME, RESPECTIVELY.

BECAUSE OF A FISH CONSUMPTION ADVISORY, THE C&O CANAL DID NOT SUPPORT THE FISH CONSUMPTION USE. DETERMINATION OF THE FISH CONSUMPTION USE WAS BASED ON A PUBLIC HEALTH ADVISORY ISSUED ON NOVEMBER 15, 1994 BY THE D.C. COMMISSIONER OF PUBLIC HEALTH. THE ADVISORY URGES NON-CONSUMPTION OF CATFISH, CARP OR EEL AND LIMITED CONSUMPTION OF OTHER FISH CAUGHT IN ALL DISTRICT OF COLUMBIA WATERS.

THE C&O CANAL FULLY SUPPORTED ITS NAVIGATION USE.

BECAUSE OF THE ABOVE USE DECISIONS, THIS SEGMENT DID NOT SUPPORT THE OVERALL USE SUPPORT CLASSIFICATION.

THIS WATERBODY IS AN IMPOUNDMENT RUNNING PARALLEL TO UPPER POTOMAC (TCO01: GEORGETOWN AND TCO06: FLETCHER'S BOATHOUSE).

## Detail Report for DALECARLIA TRIBUTARY

**ID:** DCTDA01R\_00

**State:** DC - 2014

**Single Cat.(User Cat.):**  
5(N/A)

**Multi-Category:** 2, 3, 4A, 5

<b>Water Information:</b>	<b>DALECARLIA TRIBUTARY</b>	
	<b>Location:</b> DALECARLIA TRIBUTARY (ALSO REFERRED TO AS DALECARLIA CREEK) IS A STREAM WHICH ORIGINATES IN DC THEN CROSSES INTO MARYLAND CONTRIBUTING TO THE MARYLAND STREAM, LITTLE FALLS RUN. DALECARLIA FORMS AT THE CONFLUENCE OF MILL CREEK AND EAST CREEK, UNNAMED STRE	<b>Water Type:</b> RIVER <b>Size:</b> 1.7 MILES <b>Next Scheduled Montitoring Date:</b> N/A
<b>Use Information</b>		
<b>Assessed:</b>	<b>Attainment Status</b>	<b>Uses</b>
	Fully Supporting	Secondary Contact Recreation and Aesthetic Enjoyment
	Insufficient Information	Protection of Human Health related to Consumption of Fish and Shellfish

	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife
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### Types of Assessment

Assessment Type	Uses	Assessment Confidence
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife	GOOD
	Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
	Secondary Contact Recreation and Aesthetic Enjoyment	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

### Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Arsenic	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Chlordane	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Copper	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
DDD	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
DDE	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
DDT	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Dieldrin	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Fecal Coliform	Primary Contact Recreation	Yes	
Heptachlor epoxide	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Polychlorinated biphenyls	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Zinc	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes	

## Comments On:

### Overall Assessment

DALECARLIA'S EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2009-2013) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

THE PRIMARY CONTACT (SWIMMABLE) USE IS NOT SUPPORTED. E. COLI, PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 58.82%, 0.0% AND 9.52% OF THE TIME, RESPECTIVELY.

THE SECONDARY CONTACT RECREATION USE IS SUPPPORTED. PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 0.0% AND 9.52% OF THE TIME, RESPECTIVELY.

THE AQUATIC LIFE USE SUPPORT IS NOT SUPPORTED. THE DECISION IS BASED ON THE DC STREAM SURVEY CONDUCTED IN 2010 AND CONVENTIONAL POLLUTANT DATA. TEMPERATURE, PH, DISSOLVED OXYGEN AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 0%, 0%, 0.0% AND 9.52% OF THE TIME, RESPECTIVELY.

BECAUSE OF A FISH CONSUMPTION ADVISORY, DALECARLIA DID NOT SUPPORT ITS FISH CONSUMPTION USE. DETERMINATION OF THE FISH CONSUMPTION USE WAS BASED ON A PUBLIC HEALTH ADVISORY ISSUED ON NOVEMBER 15, 1994, BY THE D.C. COMMISSIONER OF PUBLIC HEALTH. THE ADVISORY URGES NON-CONSUMPTION OF OTHER FISH CAUGHT IN ALL DISTRICT OF COLUMBIA WATERS.

DALECARLIA WAS NOT ASSESSED FOR NAVIGATION.

BECAUSE OF THE ABOVE DECISIONS, THIS SEGMENT DID NOT SUPPORT THE OVERALL USE SUPPORT CLASSIFICATION.

THE STREAM'S WATERSHED IS ALMOST ENTIRELY IN THE DISTRICT OF COLUMBIA. THE WATERSHED MEASURES ABOUT 270 ACRES AND DRAINS SOUTHERN SPRING VALLEY AND NORTHERN KENT. ABOUT 1/4 OF THE WATERSHED IS PARKLAND, WHILE THE REMAINDER IS COMPRISED OF UPSCALE SUBURBAN RESIDENTIAL HOUSING AND POCKETS OF LIGHT COMMERCIAL USE.

THE STORM DRAIN SYSTEM THAT EMPTIES INTO DALECARLIA TRIBUTARY IS PARALLELED BY SEWER PIPE. THE POTENTIAL FOR SEWER LEAKAGE IS HIGH.

THE ABOVE DESCRIPTION WAS TAKEN FROM "BIOLOGICAL WATER

QUALITY OF THE SURFACE TRIBUTARY STREAMS OF THE DISTRICT OF COLUMBIA," W.C. BANTA, THE AMERICAN UNIVERSITY, 1993.

THE HBI SCORE SUGGESTS SEVERE ORGANIC POLLUTION IN THE STREAM. NO SENSITIVE ORGANISMS WERE FOUND (EPT). HABITAT IS MODERATELY IMPAIRED. 73 CHIRONOMIDAE (TOLERANT GENERALIST) WERE FOUND. WITH 73 CHIRONOMIDAE BEING PRESENT, THIS MAY POSSIBLY SUGGEST A STREAM THAT IS IMPACTED WITH TOXICS AND ORGANICS. MORE THAN 100 ORGANISMS FOUND IN THE SAMPLE.

TYPICAL OF STREAMS IN THE DISTRICT OF COLUMBIA, DALECARLIA IS NEGATIVELY IMPACTED BY URBAN NPS STORMWATER RUNOFF. RUNOFF FROM SURROUNDING RESIDENTIAL YARDS AND STREETS MAY BE A SOURCE OF PATHOGENS, ORGANICS, AND METALS.

THE 2010 MACROINVERTEBRATE ASSESSMENT (SAMPLES COLLECTED IN 2009) REVEALED CHIRONOMIDE AS THE DOMINANT TAXA. THERE WAS VERY LITTLE DIVERSITY AMONG BENTHIC MACROINVERTEBRATE SPECIES.

DURING THE 2011 AND 2013 DCSS SEVERE BUFFER BREAK ON THE LEFT AND RIGHT BANKS, AND EROSION ON THE RIGHT BANK, WITH EXPOSED ROOT WADS FOR THE ENTIRE 75 METER STRETCH WERE OBSERVED. A STRONG ODOR OF CHLORINE WAS PRESENT. THERE WAS A HIGH VOLUME OF TRASH PRESENT.

IN 2011 AND 2013 MACROINVERTEBRATES WERE COLLECTED AND WILL BE ANALYZED AT A LATER DATE.

REPORTS WITH MORE INFORMATION INCLUDE:

\*ANALYSIS OF BIOLOGICAL SAMPLES: DISTRICT OF COLUMBIA PHYTOPLANKTON, ZOOPLANKTON AND BENTHIC MACROINVERTEBRATE SAMPLES, RHITHRON ASSOCIATES, OCTOBER 2010.

## Detail Report for DUMBARTON OAKS

**ID:** DCTDO01R\_00

**State:** DC - 2014

**Single Cat.(User Cat.):**  
5(N/A)

**Multi-Category:** 3, 4B, 5

<b>Water Information:</b>	<b>DUMBARTON OAKS</b>	
	<b>Location:</b> THE SURFACE PORTION OF THE STREAM ORIGINATES AT A PAIR OF STORMDRAINS AND FLOWS A LITTLE MORE THAN HALF A MILE SOUTHEAST TO ROCK CREEK.	<b>Water Type:</b> RIVER <b>Size:</b> 0.6 MILES <b>Next Scheduled Monitoring Date:</b> 2016
<b>Use Information</b>		
<b>Assessed:</b>	<b>Attainment Status</b>	<b>Uses</b>
	Insufficient Information	Protection of Human Health related to Consumption of Fish and Shellfish
	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Secondary Contact Recreation and Aesthetic Enjoyment

### Types of Assessment

Assessment Type	Uses	Assessment Confidence
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife	GOOD



	Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
	Secondary Contact Recreation and Aesthetic Enjoyment	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

### Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Arsenic	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Chlordane	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Copper	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
DDD	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
DDE	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
DDT	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Dieldrin	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Escherichia coli	Primary Contact Recreation	Yes	
Heptachlor epoxide	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Polychlorinated biphenyls	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Total Suspended Solids (TSS)	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Secondary Contact Recreation and Aesthetic Enjoyment	Yes	
Zinc	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes	

### Comments On:

## Overall Assessment

DUMBARTON OAK'S EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2009-2013) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

THE PRIMARY CONTACT (SWIMMABLE) USE IS NOT SUPPORTED. E. COLI, PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 35.29%, 0.0% AND 10.53% OF THE TIME, RESPECTIVELY.

THE SECONDARY CONTACT RECREATION USE IS NOT SUPPORTED. PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 0.0% AND 10.53% OF THE TIME, RESPECTIVELY.

THE AQUATIC LIFE USE SUPPORT IS NOT SUPPORTED. THE DECISION IS BASED ON THE DC STREAM SURVEY CONDUCTED IN 2010 AND CONVENTIONAL POLLUTANT DATA. TEMPERATURE, PH, DISSOLVED OXYGEN AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 0%, 0%, 0.0% AND 10.53% OF THE TIME, RESPECTIVELY.

BECAUSE OF A FISH CONSUMPTION ADVISORY, DUMBARTON OAKS DID NOT SUPPORT ITS FISH CONSUMPTION USE. DETERMINATION OF THE FISH CONSUMPTION USE WAS BASED ON A PUBLIC HEALTH ADVISORY ISSUED ON NOVEMBER 15, 1994 BY THE D.C. COMMISSIONER OF PUBLIC HEALTH ADVISORY URGES NON-CONSUMPTION OF CATFISH, CARP OR EEL AND LIMITED CONSUMPTION OF OTHER FISH CAUGHT IN ALL DISTRICT OF COLUMBIA WATERS.

DUMBARTON OAKS WAS NOT ASSESSED FOR NAVIGATION.

BECAUSE OF THE ABOVE USE DECISIONS, THIS SEGMENT DID NOT SUPPORT THE OVERALL USE SUPPORT CLASSIFICATION.

DUMBARTON FLOWS THROUGH A RESIDENTIAL PARK ENTERING ROCK CREEK FROM THE WEST BELOW THE ZOO ABOUT 1000 FEET NORTHEAST OF THE MASSACHUSETTS AVENUE BRIDGE. THE SURFACE PORTION OF THE STREAM ORIGINATES AT A PAIR OF STORMDRAINS AND FLOWS A LITTLE MORE THAN HALF A MILE SOUTHEAST TO ROCK CREEK. THE WATERSHED OF 51 ACRES DRAINS MOSTLY PARKLAND AND INCLUDES ABOUT A QUARTER OF THE GROUNDS OF THE US NAVAL OBSERVATORY AND DUMBARTON OAKS GARDENS. DUMBARTON IS BUFFERED FOR ITS ENTIRE LENGTH BY FORESTED PARKLAND. THE STREAM IS PARALLELED BY A COMBINED SEWER/STORM DRAIN. TWO STORMWATER CONDUITS EXIST NEAR THE HEAD OF THE STREAM.

THE ABOVE DESCRIPTION WAS TAKEN FROM "BIOLOGICAL WATER QUALITY OF THE SURFACE TRIBUTARY STREAMS OF THE DISTRICT OF COLUMBIA," W.C. BANTA, THE AMERICAN UNIVERSITY, 1993.

THE 2010 MACROINVERTEBRATE ASSESSMENT (SAMPLES COLLECTED IN 2009) REVEALED CHIRONOMIDAE AS THE DOMINANT TAXA. HYDROPSYCHIDAE WERE ALSO PRESENT.

DURING THE 2011 AND 2013 DCSS DOWN TREES WITHIN THE 75 METER STRETCH, BUFFER BREAK ON THE LEFT BANK AND GULLY WITH POSSIBLE INPUT FROM SPRINKLER SYSTEM (IN DUMBARTON PARK) OBSERVED. THE STREAM IS STRAIGHT WITH HEAVY CANOPY COVER.

IN 2011 AND 2013 MACROINVERTEBRATE SAMPLES WERE COLLECTED AND WILL BE ANALYZED AT A LATER DATE.

REPORTS WITH MORE INFORMATION INCLUDE:

\*ANALYSIS OF BIOLOGICAL SAMPLES: DISTRICT OF COLUMBIA PHYTOPLANKTON, ZOOPLANKTON AND BENTHIC MACROINVERTEBRATE SAMPLES, RHITHRON ASSOCIATES, OCTOBER 2010.

## Detail Report for FORT DUPONT CREEK

ID: DCTDU01R\_00

State: DC - 2014

Single Cat.(User Cat.):  
5(N/A)

Multi-Category: 3, 4A, 5

<b>Water Information:</b>	<b>FORT DUPONT CREEK</b>	
	<b>Location:</b> THE STREAM AT FORT DUPONT PARK IS A MINOR TRIBUTARY OF THE ANACOSTIA RIVER WHICH ORIGINATES AT FORT DUPONT NEAR ALABAMA AND MASSACHUSETTS AVENUES, SE.	<b>Water Type:</b> RIVER <b>Size:</b> 1.7 MILES <b>Next Scheduled Monitoring Date:</b> N/A
<b>Use Information</b>		
<b>Assessed:</b>	<b>Attainment Status</b>	<b>Uses</b>
	Insufficient Information	Protection of Human Health related to Consumption of Fish and Shellfish
	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Secondary Contact Recreation and Aesthetic Enjoyment

### Types of Assessment

Assessment Type	Uses	Assessment Confidence
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife	GOOD
	Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
	Secondary Contact Recreation and Aesthetic Enjoyment	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

### Cause Information

Causes	Associated Uses	Pollutant? Confidence
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Arsenic	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Copper	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Fecal Coliform	Primary Contact Recreation	Yes
Total Suspended Solids (TSS)	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Secondary Contact Recreation and Aesthetic Enjoyment	Yes
Zinc	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes

**Comments On:**

**Overall Assessment**

FORT DUPONT'S EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2009-2013) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

THE PRIMARY CONTACT (SWIMMABLE) USE IS NOT SUPPORTED. E. COLI, PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 27.78%, 0.0% AND 15.79% OF THE TIME, RESPECTIVELY.

THE SECONDARY CONTACT RECREATION USE IS NOT SUPPORTED. PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 0.0% AND 15.79% OF THE TIME, RESPECTIVELY.

THE AQUATIC LIFE USE SUPPORT IS NOT SUPPORTED. THE DECISION IS BASED ON THE DC STREAM SURVEY CONDUCTED IN 2002 AND CONVENTIONAL POLLUTANT DATA. TEMPERATURE, PH, DISSOLVED OXYGEN AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 0%, 0.0%, 10.0% AND 15.79% OF THE TIME, RESPECTIVELY.

BECAUSE OF A FISH CONSUMPTION ADVISORY, FORT DUPONT CREEK DID NOT SUPPORT TIS FISH CONSUMPTION USE. DETERMINATION OF FISH CONSUMPTION USE IS BASED ON A PUBLIC HEALTH ADVISORY ISSUED UN 1994 BY THE DC COMMISSIONER OF HEALTH. THE ADVISORY URGES BANNING CONSUMPTION OF CHANNEL CATFISH, CARP, OR EELS CAUGHT IN THE DISTRICT'S STRETCHES OF THE POTOMAC AND ANACOSTIA RIVERS. BECAUSE FORT DUPONT CREEK IS A TRIBUTARY OF THE ANACOSTIA RIVER, FISH MAY MIGRATE FROM THE RIVER INTO THIS TRIBUTARY,

THEREFORE THIS ADVISORY EXTENDS TO FORT DUPONT CREEK.

FORT DUPONT WAS NOT ASSESSED FOR NAVIGATION.

BECAUSE OF THE ABOVE DECISIONS, THIS SEGMENT DID NOT SUPPORT THE OVERALL USE SUPPORT CLASSIFICATION.

THE STREAM AT FORT DUPONT PARK IS A MINOR TRIBUTARY OF THE ANACOSTIA RIVER WHICH ORIGINATES AT FORT DUPONT NEAR ALABAMA AND MASSACHUSETTS AVENUES, SE. THE STREAM FLOWS ENTIRELY WITHIN THE CONFINES OF FORT DUPONT PARK AND THE WATERSHED OF ABOUT 410 ACRES IS DELINEATED BY THE BOUNDARIES OF THE PARK OF WHICH OVER 90% IS PARKLAND. THERE ARE FEW DEVELOPMENTAL PRESSURES THAT CAN IMPACT THE STREAM WITH ONLY TWO SMALL STORM DRAINS FROM U.S. NATIONAL PARK SERVICE FACILITIES. FORT DUPONT FLOWS INTO A LARGE STORM DRAIN AFTER IT PASSES UNDER THE B&O RAILROAD WHERE IT IS SUBVERTED FOR APPROXIMATELY 900 FEET BEFORE DISCHARGING INTO THE ANACOSTIA RIVER.

THE ABOVE DESCRIPTION WAS TAKEN FROM "BIOLOGICAL WATER QUALITY OF THE SURFACE TRIBUTARY STREAMS OF THE DISTRICT OF COLUMBIA," W.C. BANTA, THE AMERICAN UNIVERSITY, 1993.

THE WATERSHED OF FORT DUPONT IS ALMOST ENTIRELY ENCOMPASSED BY PARK SERVICE LAND. ONLY TWO STORM DRAINS ENTER THE PARK AND THERE ARE NO SEWER LINE CROSSING UNTIL JUST ABOVE THE STREAM REACH ENTERS THE PIPE FLOWING TO THE RIVER. THE NATIONAL PARK SERVICE BOARDS SEVERAL POLICE HORSES AND HOUSES A FACILITY MAINTAINENCE YARD ON THE SITE.

THE 2012 MACROINVERTEBRATE AND PHYSICAL HABITAT ASSESSMENTS REVEALED SEDIMENT, IRON FLOCCULANT AND AN ORANGE TINT IN THE STREAM BED. THERE WAS A BUFFER BREAK ON THE LEFT BANK.

THE 2010 HABITAT ASSESSMENT REVEALED A FLOW REGIME CHANGE DUE TO DC WASA REPAIRING AN ILLICIT DISCHARGE TO STREAM. IRON FLOCCULANT PRESENT, HEAVY SEDIMENT LOADS.

IN 2010 AND 2012 MACROINVERTEBRATE SAMPLES WERE COLLECTED AND WILL BE ANALYZED AT A LATER DATE.

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# Detail Report for FOUNDRY BRANCH

ID: DCTFB02R\_00

State: DC - 2014

Single Cat.(User Cat.):  
4A(N/A)

Multi-Category: 2, 3, 4A

<b>Water Information:</b>	<b>FOUNDRY BRANCH</b>	
	<b>Location:</b> FOUNDRY BRANCH ORIGINATES FROM A 60" STORM DRAIN JUST SOUTH OF VAN NESS STREET, NW, BETWEEN NEBRASKA AND WISCONSIN AVENUES. THE SURFACE PORTION OF THE STREAM FLOWS THROUGH GLOVER ARCHIBALD PARK. A LARGE PORTION OF THE STREAM IS SUBTERRANEAN AND EMPTIES	<b>Water Type:</b> RIVER <b>Size:</b> 0.8 MILES <b>Next Scheduled Monitoring Date:</b> N/A
<b>Use Information</b>		
<b>Assessed:</b>	<b>Attainment Status</b>	<b>Uses</b>
	Fully Supporting	Secondary Contact Recreation and Aesthetic Enjoyment
	Insufficient Information	Protection and Propagation of Fish, Shellfish and Wildlife
Not Supporting	Primary Contact Recreation Protection of Human Health related to Consumption of Fish and Shellfish	

### Types of Assessment

Assessment Type	Uses	Assessment Confidence
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife	GOOD
	Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
	Secondary Contact Recreation and Aesthetic Enjoyment	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

### Cause Information

Causes	Associated Uses	Pollutant? Confidence
Fecal Coliform	Primary Contact Recreation	Yes
Fish Advisory - No Restriction	Protection of Human Health related to Consumption of Fish and Shellfish	No
Other flow regime alterations	Protection and Propagation of Fish, Shellfish and Wildlife	Yes

### Source Information

Sources	Associated Causes	Confirmed?
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Impacts from Hydrostructure Flow  
Regulation/modification

Other flow regime alterations

### **Comments On:**

#### **Overall Assessment**

FOUNDRY BRANCH'S EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2009-2013) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

THE PRIMARY CONTACT (SWIMMABLE) USE IS NOT SUPPORTED. E. COLI, PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 42.11%, 5.0% AND 5.0% OF THE TIME, RESPECTIVELY. PLEASE NOTE THE DISTRICT OF COLUMBIA WATER QUALITY STANDARDS PROHIBIT SWIMMING IN THE POTOMAC AND ANACOSTIA RIVERS AND ROCK CREEK UNTIL ALL THE PARAMETERS USED TO DETERMINE USE SUPPORT ARE BEING CONSISTENTLY ATTAINED (DCMR TITLE 21, CHAPTER 11, SECTION 1108). THE PARAMETERS USED TO SUPPORT THE PRIMARY CONTACT RECREATION DESIGNATED USE CAN BE FOUND IN DCMR TITLE 21, CHAPTER 11, SECTION 1104.8. THE DIRECTOR MAY ISSUE A DECISION THAT ALLOWS A SPECIAL SWIMMING EVENT IN THE POTOMAC RIVER. THE GUIDELINES FOR A SPECIAL SWIMMING EVENT ARE FOUND IN DCMR TITLE 21, CHAPTER 11, SECTION 1108.

THE SECONDARY CONTACT RECREATION USE IS SUPPORTED. PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 5.0% AND 5.0% OF THE TIME, RESPECTIVELY.

THE AQUATIC LIFE USE SUPPORT HAS INSUFFICIENT INFORMATION TO DETERMINE USE. THE DECISION IS BASED ON THE 2002DC STREAM SURVEY CONDUCTED, THE STREAM WAS DRY. TEMPERATURE, PH, DISSOLVED OXYGEN AND TUBIDITY VIOLATED THE WATER QUALITY STANDARDS 0%, 5.0%, 0.0% AND 5.0% OF THE TIME, RESPECTIVELY.

BECAUSE OF A FISH CONSUMPTION ADVISORY, FOUNDRY BRANCH DID NOT SUPPORT ITS FISH CONSUMPTION USE. DETERMINATION OF FISH CONSUMPTION USE IS BASED ON A PUBLIC HEALTH ADVISORY ISSUED UN 1994 BY THE DC COMMISSIONER OF HEALTH. THE ADVISORY URGES BANNING CONSUMPTION OF CHANNEL CATFISH, CARP, OR EELS CAUGHT IN THE DISTRICT'S STRETCHES OF THE POTOMAC AND ANACOSTIA RIVERS. BECAUSE FOUNDRY BRANCH IS A TRIBUTARY OF THE POTOMAC RIVER, FISH MAY MIGRATE FROM THE RIVER INTO THIS TRIBUTARY, THEREFORE THIS ADVISORY EXTENDS TO FOUNDRY BRANCH.

FOUNDRY BRANCH WAS NOT ASSESSED FOR NAVIGATION.



BECAUSE OF THE ABOVE DECISIONS, THIS SEGMENT DID NOT SUPPORT THE OVERALL USE SUPPORT CLASSIFICATION.

TFB02 IS A MONITORING STATION WHERE PHYSICAL, CHEMICAL, AND BIOLOGICAL ASSESSMENT DATA ARE COLLECTED.

ACCORDING TO NATIONAL PARK SERVICE STAFF, THE PORTION OF FOUNDRY BRANCH IN GLOVER ARCHIBALD PARK ABOVE MASSACHUSETTS AVENUE, NW IS HYDROLOGICALLY SEPERATED FROM THE REACH OF FOUNDRY BRANCH BELOW MASSACHUSETTS AVENUE. ALL WATER ABOVE MASSACHUSETTS AVE. ENTERING THE PIPE FLOWS DIRECTLY TO THE POTOMAC RIVER THROUGH THE STORMWATER NETWORK. ALL WATER FLOWING BELOW MASSACHUSETTS AVE. IN FOUNDRY BRANCH IS HYDROLOGICALLY DISTINCT UNTIL IT ENTERS INTO A PIPE AT RESEVOIR ROAD, NW AND FINALLY DISCHARGES INTO THE POTOMAC RIVER.

FOUNDRY BRANCH FLOWS THROUGH THE ARCHILBALD GLOVER PARK, MAINTAINED BY THE U.S. NATIONAL PARK SERVICE. SEVERAL STREETS CROSS IT AND STORM WATER INPUTS FROM THE IMPERVIOUS SURFACES OUTSIDE OF THE PARK WHICH COMPOSE THE LARGEST PERCENTAGE OF THE WATERSHED AREA. CHIRONOMIDAE AND OLIGOCHAETEA DOMINATED THE INVERTEBRATE COMMUNITY ALTHOUGH RESPECTABLE NUMBERS OF LESS TOLERANT ORGANISMS WERE ALSO IN EVIDENCE. HISTORIC U.S. NAVY OPERATIONS HIGHER IN THE WATERSHED RESULTED IN THE DISPOSAL OF LARGE CONCENTRATIONS OF PCBs WHICH HAVE RECENTLY BEEN REMOVED FROM THEIR DISPOSAL SITES.

DURING THE 2012 MACRINVERTEBRATE AND PHYSICAL HABITAT ASSESSMENTS SEVERAL OVERSERVATION WERE MADE-THERE WERE ROCKS WITH FILAMENTOUS ALGAE, DOWN MATURE TREES, A BUFFER BREAK ON THE LEFT BANK AND FLASHY STREAM FLOW. THE CONDUCTIVITY WAS HIGH.

DURING THE 2010 HABITAT ASSESSMENT SULFOUROUS SMELL OBSERVED AND NO AQUATIC LIFE PRESENT.

IN 2010 AND 2012 MACROINVERTEBRATE SAMPLES W IMPAIRMENT. THIS DETERMINATION WAS BASED ON A BENTHIC MACROINVERTEBRATE BIOLOGICAL ASSESSMENT WHICH FOUND A DOMINANCE OF THE OLIGOCHAETA ORDER OF AQUATIC WORM IN THE SAMPLED STREAM REACH. A DOMINANCE OF OLIGOCHAETE WORMS IS A STRONG INDICATOR OF ORGANIC ENRICHMENT WHICH CAN BE A MAJOR CAUSE OF LOW DISSOLVED OXYGEN CONCENTRATION (BANTA, 1993).

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## Detail Report for FORT CHAPLIN RUN

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**ID:** DCTFC01R\_00

**State:** DC - 2014

**Single Cat.(User Cat.):**  
5(N/A)

**Multi-Category:** 4A, 5

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<b>Water Information:</b>	<b>FORT CHAPLIN RUN</b>	
	<b>Location:</b> FORT CHAPLIN ORIGINATES AS A 6.5 FOOT DIAMETER STORM PIPE NEAR BURNS STREET AND TEXAS AVENUE, SE.	<b>Water Type:</b> RIVER <b>Size:</b> 0.6 MILES <b>Next Scheduled Monitoring Date:</b> N/A
<b>Use Information</b>		
<b>Assessed:</b>	<b>Attainment Status</b>	<b>Uses</b>
	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish Secondary Contact Recreation and Aesthetic Enjoyment

### Types of Assessment

Assessment Type	Uses	Assessment Confidence
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife	GOOD
	Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
	Secondary Contact Recreation and Aesthetic Enjoyment	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

### Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Arsenic	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Debris/Floatables/Trash	Secondary Contact Recreation and Aesthetic Enjoyment	Yes	
Dissolved oxygen saturation	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Fecal Coliform	Primary Contact Recreation	Yes	
Physical substrate habitat alterations	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Total Suspended Solids (TSS)	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Secondary Contact Recreation and Aesthetic Enjoyment	Yes	

### Source Information

Sources	Associated Causes	Confirmed?
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Hydrostructure Impacts on Fish Passage	Physical substrate habitat alterations
Illegal Dumps or Other Inappropriate Waste Disposal	Physical substrate habitat alterations
Impacts from Hydrostructure Flow Regulation/modification	Physical substrate habitat alterations
Residential Districts	Physical substrate habitat alterations
Source Unknown	Physical substrate habitat alterations

### **Comments On:**

### **Overall Assessment**

FORT CHAPLIN'S EVALUATION OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2009-2013) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

THE PRIMARY CONTACT (SWIMMABLE) USE IS NOT SUPPORTED. E. COLI, PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 50.0%, 0.0% AND 15.79% OF THE TIME, RESPECTIVELY.

THE SECONDARY CONTACT RECREATION USE IS NOT SUPPORTED. PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 0.0% AND 15.79% OF THE TIME, RESPECTIVELY.

THE AQUATIC LIFE USE SUPPORT IS NOT SUPPORTED. THE DECISION IS BASED ON THE DC STREAM SURVEY CONDUCTED IN 2002 AND CONVENTIONAL POLLUTANT DATA. TEMPERATURE, PH, DISSOLVED OXYGEN AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 0.0%, 0.0%, 15.0% AND 15.79% OF THE TIME, RESPECTIVELY.

BECAUSE OF A FISH CONSUMPTION ADVISORY, FORT CHAPLIN RUN DID NOT SUPPORT ITS FISH CONSUMPTION USE. DETERMINATION OF FISH CONSUMPTION USE IS BASED ON A PUBLIC HEALTH ADVISORY ISSUED IN 1994 BY THE DC COMMISSIONER OF HEALTH. THE ADVISORY URGES BANNING CONSUMPTION OF CHANNEL CATFISH, CARP, OR EELS CAUGHT IN THE DISTRICT'S STRETCHES OF THE POTOMAC AND ANACOSTIA RIVERS. BECAUSE FORT CHAPLIN RUN IS A TRIBUTARY OF THE ANACOSTIA RIVER, FISH MAY MIGRATE FROM THE RIVER INTO THIS TRIBUTARY, THEREFORE THIS ADVISORY EXTENDS TO FORT CHAPLIN RUN.

FORT CHAPLIN WAS NOT ASSESSED FOR NAVIGATION.

BECAUSE OF THE ABOVE USE DECISIONS, THIS SEGMENT DID NOT SUPPORT THE OVERALL USE SUPPORT CLASSIFICATION.

FORT CHAPLIN RUN IS A MINOR EPHEMERAL TRIBUTARY OF PINEY RUN, A NOW ALMOST COMPLETELY CHANNELIZED AND SUBTERRANEAN STORM DRAIN WHICH WAS ONCE A SURFACE TRIBUTARY OF THE ANACOSTIA RIVER. FORT CHAPLIN ORIGINATES AS A 6.5 FOOT DIAMETER STORM PIPE NEAR BURNS STREET AND TEXAS AVENUE, SE. THE SURFACE PORTION OF THE STREAM IS A LITTLE OVER A HALF MILE LONG AND HAS A WATERSHED THAT ENCOMPASES ABOUT 270 ACRES WHICH IS ABOUT 90% RESIDENTIAL AND COMMERCIAL PROPERTY AND ABOUT 10% PARKLAND. MOST OF THE SURFACE STREAM IS BUFFERED BY ABOUT 200 FEET OF FORESTED AREA ON EACH SIDE ALTHOUGH THE STREAM RECEIVES SEVERAL STORM DRAINS AND IS PARALLELED AND CROSSED BY NUMEROUS SEWER LINES.

THE INVERTEBRATE SAMPLE COLLECTED IN FORT CHAPLIN WAS DOMINATED BY OLIGOCHAETE WORMS AND CHIRONOMIDS. THE STREAM IS BUFFERED BY A SUBSTANTIAL RIPARIAN ZONE, ALTHOUGH IT RECEIVES NUMEROUS STORM DRAINS WHICH HAS CAUSED SEVERE EROSION IN SOME PLACES AND IS CROSSED BY SEVERAL SEWER LINES.

2002 HBI SCORE SUGGESTS FAIRLY SIGNIFICANT ORGANIC POLLUTION. A HIGH PERCENTAGE OF GATHERER-COLLECTOR ORGANISMS SUGGESTS POLLUTANTS, BECAUSE THEY ARE GENERALIST AND CAN THRIVE IN POLLUTED WATERS. THE DOMINANT TAXA WAS OLIGOCHAETA (SEWAGE LOVING ORGANISMS). 47 ORGANISMS WERE FOUND IN THE SAMPLE. THE STREAM'S HABITAT IS SEVERELY IMPAIRED. THE EROSION IS RAPIDLY DESTROYING THIS STREAM. THERE IS A NEED FOR IMMEDIATE ACTION TO SLOW THE EROSION OF THE STREAMS BANKS.

DURING THE 2010 AND 2012 HABITAT ASSESSMENT COPIOUS AMOUNTS OF TRASH AND DEBRIS PRESENT. MOLTING SOIL OBSERVED, LOTS OF YOUNG AND MATURE TREES WERE DOWNED. THERE WAS BANK EROSION ON BOTH BANKS, POOLS OF IRON FLOCCULANT AND YARD CLIPPINGS PRESENT.

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## Detail Report for FORT DAVIS TRIBUTARY

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**ID:** DCTFD01R\_00

**State:** DC - 2014

**Single Cat.(User Cat.):**  
5(N/A)

**Multi-Category:** 4A, 5

<b>Water Information:</b>	<b>FORT DAVIS TRIBUTARY</b>	
	<b>Location:</b> FORT DAVIS IS A TRIBUTARY OF THE ANACOSTIA RIVER OF WHICH THE SURFACE PORTION PARALLELS PENNSYLVANIA AVENUE BEGINNING AT ALABAMA AVENUE AND SUBMERGES FOR THE REMAINDER OF ITS COURSE AT PENNSYLVANIA AVENUE ABOVE BRANCH AVENUE.	<b>Water Type:</b> RIVER <b>Size:</b> 1.4 MILES <b>Next Scheduled Monitoring Date:</b> N/A
<b>Use Information</b>		
<b>Assessed:</b>	<b>Attainment Status</b>	<b>Uses</b>

	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish Secondary Contact Recreation and Aesthetic Enjoyment
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### Types of Assessment

Assessment Type	Uses	Assessment Confidence
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife	GOOD
	Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
	Secondary Contact Recreation and Aesthetic Enjoyment	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

### Cause Information

Causes	Associated Uses	Pollutant? Confidence
Arsenic	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes
BOD, Biochemical oxygen demand	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Debris/Floatables/Trash	Secondary Contact Recreation and Aesthetic Enjoyment	Yes
Dissolved oxygen saturation	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Fecal Coliform	Primary Contact Recreation	Yes
Total Suspended Solids (TSS)	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Secondary Contact Recreation and Aesthetic Enjoyment	Yes

### Comments On:

#### Overall Assessment

FORT DAVIS' EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2009-2013) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

THE PRIMARY CONTACT (SWIMMABLE) USE IS NOT SUPPORTED. E. COLI, PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 43.75%, 0.0% AND 44.44% OF THE TIME, RESPECTIVELY.

THE SECONDARY CONTACT RECREATION USE IS NOT SUPPORTED. PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 0.0% AND 44.44% OF THE TIME, RESPECTIVELY.

THE AQUATIC LIFE USE SUPPORT IS NOT SUPPORTED. THE DECISION IS BASED ON THE DC STREAM SURVEY CONDUCTED IN 2002 AND CONVENTIONAL POLLUTANT DATA. TEMPERATURE, PH, DISSOLVED OXYGEN AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 0%, 0.0%, 16.67% AND 44.44% OF THE TIME, RESPECTIVELY.

BECAUSE OF A FISH CONSUMPTION ADVISORY, FORT DAVIS TRIBUTARY DID NOT SUPPORT ITS FISH CONSUMPTION USE. DETERMINATION OF FISH CONSUMPTION USE IS BASED ON A PUBLIC HEALTH ADVISORY ISSUED IN 1994 BY THE DC COMMISSIONER OF HEALTH. THE ADVISORY URGES BANNING CONSUMPTION OF CHANNEL CATFISH, CARP, OR EELS CAUGHT IN THE DISTRICT'S STRETCHES OF THE POTOMAC AND ANACOSTIA RIVERS. BECAUSE FORT DAVIS TRIBUTARY IS A TRIBUTARY OF THE ANACOSTIA RIVER, FISH MAY MIGRATE FROM THE RIVER INTO THIS TRIBUTARY, THEREFORE THIS ADVISORY EXTENDS TO FORT DAVIS TRIBUTARY.

FORT DAVIS WAS NOT ASSESSED FOR NAVIGATION.

BECAUSE OF THE ABOVE DECISIONS, THIS SEGMENT DID NOT SUPPORT THE OVERALL USE SUPPORT CLASSIFICATION.

FORT DAVIS IS A TRIBUTARY OF THE ANACOSTIA RIVER OF WHICH THE SURFACE PORTION PARALLELS PENNSYLVANIA AVENUE BEGINNING AT ALABAMA AVENUE AND SUBMERGES FOR THE REMAINDER OF ITS COURSE AT PENNSYLVANIA AVENUE ABOVE BRANCH AVENUE. THE WATERSHED IS ONLY 70 ACRES AND IS ROUGHLY HALF FORESTED AND HALF RESIDENTIAL PROPERTY. THE SOUTHEASTERN SIDE IS BUFFERED BY ABOUT 600 FEET OF FOREST WHILE THE NORTHWESTERN SIDE OF THE STREAM IS PENNSYLVANIA AVENUE. THE STREAM RECEIVES THREE SMALL STORM DRAINS AND IS SURROUNDED BUT NOT CROSSED BY SMALL SEWER LINES.

THE ABOVE DESCRIPTION WAS TAKEN FROM "BIOLOGICAL WATER QUALITY OF THE SURFACE TRIBUTARY STREAMS OF THE DISTRICT OF COLUMBIA," W.C. BANTA, THE AMERICAN UNIVERSITY, 1993.

DURING THE 2012 MACROINVERTEBRATE AND PHYSICAL HABITAT ASSESSMENTS DEBRIS HAD BEEN REMOVED FROM PIPED PORTION OF THE STREAM. STREAM FLOW WAS IMPROVED AND THERE WAS A MORE DEFINED STREAMBED. THERE WERE BUFFER BREAKS ON BOTH BANKS. THE ENTIRE 75 METER STRETCH WAS SAMPLEABLE.



THE 2010 STREAM ASSESSMENT REVEALED NO DEFINED STREAM BED, AND IMPASSABLE BEYOND THE 45M STRETCH.

IN 2010 AND 2012 MACROINVERTEBRATE SAMPLES WERE COLLECTED, THEY WILL BE ANALYZED AT A LATER DATE.

THE DOMINANT TAXA AND ONLY TAXA FOUND WAS A SINGLE OLIGOCHAETA (SEWAGE LOVING ORGANISM). EROSION ON THE RIGHT AND LEFT BANKS WERE SEVERE. BANK EROSION MAY HAVE BEEN THE WORST OUT OF ALL THE STREAMS IN THE COASTAL REGION. THE ENTIRE STREAM WAS FILLED WITH A REDDISH COLOR THAT IS THE SAME COLOR AS THE SILT OR CLAY IN THE STREAMBED.

## Detail Report for FENWICK BRANCH

**ID:** DCTFE01R\_00

**State:** DC - 2014

**Single Cat.(User Cat.):**  
5(N/A)

**Multi-Category:** 3, 4B, 5

<b>Water Information:</b>	<b>FENWICK BRANCH</b>	
	<b>Location:</b> THE STREAM ORIGINATES AS A DISCHARGE FROM A STORM DRAIN A FEW FEET OUTSIDE THE DC BORDER IN MARYLAND SOUTH OF EAST-WEST HIGHWAY.	<b>Water Type:</b> RIVER <b>Size:</b> 1 MILES <b>Next Scheduled Monitoring Date:</b> 2016
<b>Use Information</b>		
<b>Assessed:</b>	<b>Attainment Status</b>	<b>Uses</b>
	Insufficient Information	Protection of Human Health related to Consumption of Fish and Shellfish
	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Secondary Contact Recreation and Aesthetic Enjoyment

## Types of Assessment

Assessment Type	Uses	Assessment Confidence
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife	GOOD
	Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
	Secondary Contact Recreation and Aesthetic Enjoyment	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

## Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Alteration in stream-side or littoral vegetative covers	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Arsenic	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Chlordane	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Copper	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
DDD	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
DDE	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
DDT	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Debris/Floatables/Trash	Secondary Contact Recreation and Aesthetic Enjoyment	Yes	
Dieldrin	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Escherichia coli	Primary Contact Recreation	Yes	
Heptachlor epoxide	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Polychlorinated biphenyls	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Zinc	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes	

## Source Information

Sources	Associated Causes	Confirmed?
Impacts from Hydrostructure Flow Regulation/modification	Alteration in stream-side or littoral vegetative covers	
Residential Districts	Alteration in stream-side or littoral vegetative covers	
Wet Weather Discharges (Non-Point Source)	Alteration in stream-side or littoral vegetative covers	
Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO)	Alteration in stream-side or littoral vegetative covers	
Yard Maintenance	Alteration in stream-side or littoral vegetative covers	

## Comments On:

### Overall Assessment

FENWICK BRANCH'S EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2009-2013) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

THE PRIMARY CONTACT (SWIMMABLE) USE IS NOT SUPPORTED. E. COLI, PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 25.0%, 0.0% AND 5.26% OF THE TIME, RESPECTIVELY.

THE SECONDARY CONTACT RECREATION USE IS SUPPORTED. PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 0.0% AND 5.26% OF THE TIME, RESPECTIVELY.

THE AQUATIC LIFE USE SUPPORT IS NOT SUPPORTED. THE DECISION IS BASED ON THE DC STREAM SURVEY CONDUCTED IN 2010 AND CONVENTIONAL POLLUTANT DATA. TEMPERATURE, PH, DISSOLVED OXYGEN AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 0.0%, 0.0%, 0.0% AND 5.26% OF THE TIME, RESPECTIVELY.

BECAUSE OF A FISH CONSUMPTION ADVISORY, FENWICK BRANCH DID NOT SUPPORT ITS FISH CONSUMPTION USE. DETERMINATION OF FISH CONSUMPTION USE IS BASED ON A PUBLIC HEALTH ADVISORY ISSUED IN 1994 BY THE DC COMMISSIONER OF HEALTH. THE ADVISORY URGES BANNING CONSUMPTION OF CHANNEL CATFISH, CARP, OR EELS CAUGHT IN THE DISTRICT'S STRETCHES OF THE POTOMAC AND ANACOSTIA RIVERS. BECAUSE FENWICK BRANCH IS A TRIBUTARY OF THE POTOMAC RIVER, FISH MAY MIGRATE FROM THE RIVER INTO THIS TRIBUTARY, THEREFORE THIS ADVISORY EXTENDS TO FENWICK BRANCH.

FENWICK BRANCH WAS NOT ASSESSED FOR NAVIGATION.

BECAUSE OF THE ABOVE USE DECISIONS, THIS SEGMENT DID NOT SUPPORT THE OVERALL USE SUPPORT CLASSIFICATION.

FENWICK BRANCH FLOWS FROM A COMMERCIAL AREA IN MARYLAND TO A RESIDENTIAL PARK IN THE DISTRICT AND THEN INTO ROCK CREEK. FENWICK BRANCH IS A TRIBUTARY OF ROCK CREEK WHICH INCLUDES THE NORTHERN CORNER OF THE DISTRICT OF COLUMBIA. THE WATERSHED IS ABOUT 500 ACRES BUT ONLY ABOUT 90 ACRES OF IT ARE IN THE DISTRICT. PORTAL BRANCH JOINS FENWICK BRANCH ABOUT 120 FEET NORTH OF ITS MOUTH. THE SURFACE PORTION OF THE STREAM RUNS ALMOST COMPLETELY WITHIN THE DISTRICT. THE STREAM ORIGINATES AS A DISCHARGE FROM A STORM DRAIN A FEW FEET OUTSIDE THE DC BORDER IN MARYLAND SOUTH OF EAST-WEST HIGHWAY. WITHIN THE DISTRICT, SEVEN STORM DRAINS DISCHARGE INTO FENWICK BRANCH. THROUGHOUT ITS LENGTH THE STREAM IS BORDERED ON EITHER SIDE BY 100 FEET OF PARKLAND. BEYOND THAT THE STREAM IS ENTIRELY URBAN WITH RESIDENTIAL DEVELOPMENT INSIDE THE DISTRICT AND LIGHT INDUSTRIAL DEVELOPMENT IN MARYLAND.

THE 2010 MACROINVERTEBRATE ASSESSMENT WHICH WAS COLLECTED DURING THE 2009 DCSS SAMPLING SEASON REVEALED CHIRONOMIDAE AS THE DOMINANT TAXA. TRICHOPERTA WERE PRESENT.

DURING THE 2013 DCSS SEVERE EROSIONS ON BOTH BANKS AND EROSION SCARS ON THE LEFT BANK WERE OBSERVED. THE STREAM HAS LOW FLOW AND DOWNED TREES IN THE STREAMBED.

DURING THE 2011 DCSS TWO LARGE DOWNED TREES, ONE EACH, AT THE 20 AND 75 METER MARKS OBSERVED. GULLY DRAINS E. BEACH DR. INTO STREAM. HEAVY RAINS DURING THE 2011 ASSESSMENT PERIOD. EXTENSIVE SAND, SILT, AND CLAY FOR THE ENTIRE 75 METER STRETCH. BANK EROSION PRESENT, BUT DIFFICULT TO SEE SEVERITY DUE TO HEAVY VEGETATION. DEEP POOLS PRESENT IN PORTIONS OF THE STREAM. FLOATING SAV OBSERVED.

IN 2011 AND 2013 MACROINVERTEBRATE SAMPLES WERE COLLECTED AND WILL BE ANALYZED AT A LATER DATE.

REPORTS WITH MORE INFORMATION INCLUDE:

\*ANALYSIS OF BIOLOGICAL SAMPLES: DISTRICT OF COLUMBIA PHYTOPLANKTON, ZOOPLANKTON AND BENTHIC MACROINVERTEBRATE

## Detail Report for FORT STANTON TRIBUTARY

**ID:** DCTFS01R\_00

**State:** DC - 2014

**Single Cat.(User Cat.):**  
5(N/A)

**Multi-Category:** 4A, 5

<b>Water Information:</b>	<b>FORT STANTON TRIBUTARY</b>	
	<b>Location:</b> FORT STANTON TRIBUTARY IS A TRIBUTARY OF THE ANACOSTIA RIVER WHICH ORIGINATES NEAR ERIE STREET AND PEARSON PLACE, SE JUST NORTH OF THE SMITHSONIAN'S ANACOSTIA MUSEUM.	<b>Water Type:</b> RIVER <b>Size:</b> 1.3 MILES <b>Next Scheduled Monitoring Date:</b> N/A
<b>Use Information</b>		
<b>Assessed:</b>	<b>Attainment Status</b>	<b>Uses</b>
	Not Supporting	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish Secondary Contact Recreation and Aesthetic Enjoyment Primary Contact Recreation

### Types of Assessment

Assessment Type	Uses	Assessment Confidence
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife	GOOD
	Secondary Contact Recreation and Aesthetic Enjoyment	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD
	Protection of Human Health related to Consumption of Fish and Shellfish	GOOD

### Cause Information

Causes	Associated Uses	Pollutant? Confidence
Alteration in stream-side or littoral vegetative covers	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Arsenic	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Debris/Floatables/Trash	Secondary Contact Recreation and Aesthetic Enjoyment	Yes
Fecal Coliform	Primary Contact Recreation	Yes
Polychlorinated biphenyls	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Total Suspended Solids (TSS)	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Secondary Contact Recreation and Aesthetic Enjoyment	Yes

### Comments On:

#### Overall Assessment

FORT STANTON'S EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2009-2013) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

THE PRIMARY CONTACT (SWIMMABLE) USE IS NOT SUPPORTED. E. COLI, PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 26.32%, 0.0% AND 21.05% OF THE TIME, RESPECTIVELY.

THE SECONDARY CONTACT RECREATION USE IS NOT SUPPORTED. PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 0.0% AND 21.05% OF THE TIME, RESPECTIVELY.

THE AQUATIC LIFE USE SUPPORT IS NOT SUPPORTED. THE DECISION IS BASED ON THE DC STREAM SURVEY CONDUCTED IN 2010 AND CONVENTIONAL POLLUTANT DATA. TEMPERATURE, PH, DISSOLVED OXYGEN AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 0%, 0%, 0.0% AND 21.05% OF THE TIME, RESPECTIVELY.

BECAUSE OF A FISH CONSUMPTION ADVISORY, FORT STANTON DID NOT SUPPORT ITS FISH CONSUMPTION USE. DETERMINATION OF THE FISH

CONSUMPTION USE WAS BASED ON A PUBLIC HEALTH ADVISORY ISSUED ON NOVEMBER 15, 1994 BY THE D.C. COMMISSIONER OF PUBLIC HEALTH. THE ADVISORY URGES NON-CONSUMPTION OF CATFISH, CARP OR EEL AND LIMITED CONSUMPTION OF OTHER FISH CAUGHT IN ALL DISTRICT OF COLUMBIA WATERS.

FORT STANTON WAS NOT ASSESSED FOR NAVIGATION.

BECAUSE OF THE ABOVE USE DECISIONS, THIS SEGMENT DID NOT SUPPORT THE OVERALL USE SUPPORT CLASSIFICATION.

FORT STANTON TRIBUTARY IS A TRIBUTARY OF THE ANACOSTIA RIVER WHICH ORIGINATES NEAR ERIE STREET AND PEARSON PLACE, SE JUST NORTH OF THE SMITHSONIAN'S ANACOSTIA MUSEUM. LESS THAN A MILE DOWNSTREAM IT FLOWS INTO A STORMDRAIN WEST OF NAYLOR ROAD ON GOOD HOPE ROAD, SE. WHERE IT IS SUBVERTED FOR THE REST OF ITS JOURNEY TO THE ANACOSTIA. ABOUT HALF OF THE 180 ACRE WATERSHED IS FORT STANTON PARKLAND WITH THE OTHER HALF RESIDENTIAL AND COMMERCIAL PROPERTY. THE STREAM EDGE IS FORESTED AND IT DOES RECEIVE SEVERAL STORM DRAINS.

THE ABOVE DESCRIPTION WAS TAKEN FROM 'BIOLOGICAL WATER QUALITY OF THE SURFACE TRIBUTARY STREAMS OF THE DISTRICT OF COLUMBIA,' W.C. BANTA, THE AMERICAN UNIVERSITY, 1993.

THE 2010 MACROINVERTEBRATE ASSESSMENT WHICH WAS COLLECTED DURING THE 2009 DCSS SAMPLE PERIOD REVEALED CHIRONOMIDAE AS THE DOMINANT TAXA, WITH HIGH DIVERSITY.

THE 2011 AND 2013 DCSS REVEALED FINE SEDIMENT AND IRON FLOCCUTANT IN THE STREAMBED. THERE WAS A BLOCKAGE AT THE 59 METER MARK, AND WQD STAFF WAS NOT ABLE TO ACCESS THE STREAM BEYOND THAT POINT TO THE 75 METER MARK. THE TREES ON THE RIGHT BANK WERECLEARED JUST BEYOND THE 10 METER MARK, GRASSES AND SCHRUBS GROWING IN THEIR PLACE. GULLY ON THE LEFT BANK CAUSES SEVERE BUFFER BREAK, DRAINS PARKING LOT FOR NEW DEVELOPMENT.

IN 2011 AND 2013 MACROINVERTEBRATE SAMPLES WERE COLLECTED AND WILL BE ANALYZED AT A LATER DATE.

REPORTS WITH MORE INFORMATION INCLUDE:

\*ANALYSIS OF BIOLOGICAL SAMPLES: DISTRICT OF COLUMBIA PHYTOPLANKTON, ZOOPLANKTON AND BENTHIC MACROINVERTEBRATE SAMPLES, RHITHRON ASSOCIATES, OCTOBER 2010.

## Detail Report for HICKEY RUN

**ID:** DCTHR01R\_00

**State:** DC - 2014

**Single Cat.(User Cat.):**  
5(N/A)

**Multi-Category:** 3, 4A, 5

<b>Water Information:</b>	<b>HICKEY RUN</b>	
	<b>Location:</b> HICKEY RUN IS A WESTERN TRIBUTARY OF THE ANACOSTIA RIVER WHICH RUNS THROUGH THE NAT'L ARBORETUM (THR01).	<b>Water Type:</b> RIVER <b>Size:</b> 0.9 MILES <b>Next Scheduled Monitoring Date:</b> N/A
<b>Use Information</b>		
<b>Assessed:</b>	<b>Attainment Status</b>	<b>Uses</b>
	Insufficient Information	Protection of Human Health related to Consumption of Fish and Shellfish
	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Secondary Contact Recreation and Aesthetic Enjoyment

### Types of Assessment

Assessment Type	Uses	Assessment Confidence
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife	GOOD
	Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
	Secondary Contact Recreation and Aesthetic Enjoyment	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

### Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Alteration in stream-side or littoral vegetative covers	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Arsenic	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	



	Protection of Human Health related to Consumption of Fish and Shellfish	
Chlordane	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Chlorine, Residual (Chlorine Demand)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Copper	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes
DDD	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
DDE	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
DDT	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Debris/Floatables/Trash	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Dieldrin	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Dissolved oxygen saturation	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Fecal Coliform	Primary Contact Recreation	Yes
Heptachlor epoxide	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Other flow regime alterations	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Particle distribution (Embeddedness)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Polychlorinated biphenyls	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Total Suspended Solids (TSS)	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Secondary Contact Recreation and Aesthetic Enjoyment	Yes
Zinc	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes

### Source Information

**Sources**

**Associated Causes**

**Confirmed?**

Channelization	Alteration in stream-side or littoral vegetative covers Other flow regime alterations Particle distribution (Embeddedness)
Illegal Dumps or Other Inappropriate Waste Disposal	Alteration in stream-side or littoral vegetative covers Other flow regime alterations Particle distribution (Embeddedness)
Impacts from Hydrostructure Flow Regulation/modification	Alteration in stream-side or littoral vegetative covers Debris/Floatables/Trash Other flow regime alterations Particle distribution (Embeddedness)
Municipal (Urbanized High Density Area)	Alteration in stream-side or littoral vegetative covers Debris/Floatables/Trash Other flow regime alterations Particle distribution (Embeddedness)

**Comments On:**

**Overall Assessment**

HICKEY RUN'S EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2009-2013) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

THE PRIMARY CONTACT (SWIMMABLE) USE IS NOT SUPPORTED. E. COLI, PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 56.86%, 1.67% AND 10.34% OF THE TIME, RESPECTIVELY.

THE SECONDARY CONTACT RECREATION USE IS NOT SUPPORTED. PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 1.67% AND 10.34% OF THE TIME, RESPECTIVELY.

THE AQUATIC LIFE USE SUPPORT IS NOT SUPPORTED. THE DECISION IS BASED ON THE DC STREAM SURVEY CONDUCTED IN 2010 AND CONVENTIONAL POLLUTANT DATA. TEMPERATURE, PH, DISSOLVED OXYGEN AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 0.0%, 1.67%, 13.79% AND 10.34% OF THE TIME, RESPECTIVELY.

BECAUSE OF A FISH CONSUMPTION ADVISORY, HICKEY RUN DID NOT SUPPORT ITS FISH CONSUMPTION USE. DETERMINATION OF FISH CONSUMPTION USE IS BASED ON A PUBLIC HEALTH ADVISORY ISSUED UN 1994 BY THE DC COMMISSIONER OF HEALTH. THE ADVISORY URGES BANNING CONSUMPTION OF CHANNEL CATFISH, CARP, OR EELS CAUGHT IN THE DISTRICT'S STRETCHES OF THE POTOMAC AND ANACOSTIA RIVERS. BECAUSE HICKEY RUN IS A TRIBUTARY OF THE ANACOSTIA RIVER, FISH

MAY MIGRATE FOR THE RIVER INTO THIS TRIBUTARY, THEREFORE THIS ADVISORY EXTENDS TO HICKEY RUN.

HICKEY RUN WAS NOT ASSESSED FOR NAVIGATION.

BECAUSE OF THE ABOVE USE DECISIONS, THIS SEGMENT DID NOT SUPPORT THE OVERALL USE SUPPORT CLASSIFICATION.

HICKEY RUN IS A WESTERN TRIBUTARY OF THE ANACOSTIA RIVER WHICH RUNS THROUGH THE NAT'L ARBORETUM (THR01). THE STREAM ORIGINATES FROM A LARGE STORM WATER DISCHARGE NORTH OF NY AVE AND RECEIVES DISCHARGE FROM AT LEAST THREE OTHER LARGE STORM DRAINS BEFORE ENTERING THE NATIONAL ARBORETUM. THE WATERSHED IS ABOUT 1080 ACRES OF MOSTLY URBAN LAND (36% IMPERVIOUS). ABOUT 20% OF WATERSHED IS FOREST OR PARKLAND. THE REMAINDER IS RESIDENTIAL (ABOUT 40%), COMMERCIAL AND INDUSTRIAL (ABOUT 40%). THE HICKEY RUN WATERSHED CAN BE DIVIDED INTO TWO PARTS; THE UPPER CATCHMENT DRAINING THE RESIDENTIAL, COMMERCIAL AND INDUSTRIAL AREAS; AND THE LOWER CATCHMENT IN THE IDYLLIC SETTING OF THE NATIONAL ARBORETUM BEFORE DISCHARGING INTO THE ANACOSTIA RIVER JUST ABOVE KINGMAN LAKE.

THE ABOVE DESCRIPTION IS PARTIALLY TAKEN FROM " BIOLOGICAL WATER QUALITY OF THE SURFACE TRIBUTARY STREAMS OF THE DISTRICT OF COLUMBIA", W.C. BANTA, THE AMERICAN UNIVERSITY, 1993 AND "THE HICKEY RUN SUBWATERSHED ACTION PLAN, D.L. SHEPP, METROPOLITAN WASHINGTON COUNCIL OF GOVERNMENTS, DECEMBER 1991.

AT LEAST ONE SEWER LINE DOES CROSS THE STREAM AND THE WATERSHED EXCOMPASES A RAILYARD AND A METRO MAINTAINANCE FACILITY. INPUTS OF OIL AND GREASE FROM THESE AREAS HAVE BEEN KNOWN TO BE CHRONIC PROBLEM WHICH IS CURRENTLY BEING DEALT WITH.

THE 2010 MACROINVERTEBATE ASSESSMENT (SAMPLES COLLECTED IN 2009) REVEALED CHIRONOMIDAE AS THE DOMINANT TAXA, WITH A HIGH DIVERSITY OF SPECIES.

IN 2009, ONLY THE SPRING SAMPLING WAS CONDUCTED. IN 2011 AND 2012 NO ASSESSMENTS WERE CONDUCTED DUE TO A SEWAGE LEAK FROM DC WASA SERVICE LINES, A MEMO IS ON FILE IN WQD.

REPORTS WITH MORE INFORMATION INCLUDE:

\*ANALYSIS OF BIOLOGICAL SAMPLES: DISTRICT OF COLUMBIA

PHYTOPLANKTON, ZOOPLANKTON AND BENTHIC MACROINVERTEBRATE  
SAMPLES, RHITHRON ASSOCIATES, OCTOBER 2010.

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## **Detail Report for KLINGLE VALLEY**

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**ID:** DCTKV01R\_00

**State:** DC - 2014

**Single Cat.(User Cat.):**  
5(N/A)

**Multi-Category:** 2, 3, 4B, 5

<b>Water Information:</b>	<b>KLINGLE VALLEY</b>	
	<b>Location:</b> KLINGLE VALLEY TRIBUTARY FLOWS THROUGH A RESIDENTIAL AREA AND DISCHARGES INTO ROCK CREEK FROM THE WEST NEAR THE PORTER STREET BRIDGE. THE STREAM'S REACH PARALLELS THE SOUTH SIDE OF KLINGLE ROAD.	<b>Water Type:</b> RIVER <b>Size:</b> 0.8 MILES <b>Next Scheduled Monitoring Date:</b> 2016
<b>Use Information</b>		
<b>Assessed:</b>	<b>Attainment Status</b>	<b>Uses</b>
	Fully Supporting	Secondary Contact Recreation and Aesthetic Enjoyment
	Insufficient Information	Protection of Human Health related to Consumption of Fish and Shellfish
	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife

### Types of Assessment

Assessment Type	Uses	Assessment Confidence
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife	GOOD
	Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
	Secondary Contact Recreation and Aesthetic Enjoyment	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

### Cause Information

Causes	Associated Uses	Pollutant? Confidence
Alteration in stream-side or littoral vegetative covers	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Arsenic	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Chlordane	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Copper	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes
DDD	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
DDE	Protection of Human Health related to Consumption of Fish and Shellfish	Yes

DDT	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Dieldrin	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Escherichia coli	Primary Contact Recreation	Yes
Heptachlor epoxide	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Other flow regime alterations	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Polychlorinated biphenyls	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Zinc	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes

### Source Information

Sources	Associated Causes	Confirmed?
Residential Districts	Alteration in stream-side or littoral vegetative covers Other flow regime alterations	
Wet Weather Discharges (Non-Point Source)	Alteration in stream-side or littoral vegetative covers Other flow regime alterations	
Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO)	Alteration in stream-side or littoral vegetative covers Other flow regime alterations	
Yard Maintenance	Alteration in stream-side or littoral vegetative covers Other flow regime alterations	

### Comments On:

#### Overall Assessment

KLINGLE VALLEY'S EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2009-2013) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

THE PRIMARY CONTACT (SWIMMABLE) USE IS NOT SUPPORTED. E. COLI, PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 20.0%, 0.0% AND 0.0% OF THE TIME, RESPECTIVELY.

THE SECONDARY CONTACT RECREATION USE IS SUPPORTED. PH AND

TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 0.0% AND 0.0% OF THE TIME, RESPECTIVELY.

THE AQUATIC LIFE USE SUPPORT IS NOT SUPPORTED. THE DECISION IS BASED ON THE DC STREAM SURVEY CONDUCTED IN 2010 AND CONVENTIONAL POLLUTANT DATA. TEMPERATURE, PH, DISSOLVED OXYGEN AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 0.0%, 0.0%, 0.0% AND 0.0% OF THE TIME, RESPECTIVELY.

BECAUSE OF A FISH CONSUMPTION ADVISORY, KLINGLE VALLEY DID NOT SUPPORT ITS FISH CONSUMPTION USE. DETERMINATION OF THE FISH CONSUMPTION USE WAS BASED ON A PUBLIC HEALTH ADVISORY ISSUED ON NOVEMBER 15, 1994 BY THE D.C. COMMISSIONER OF PUBLIC HEALTH. THE ADVISORY URGES NON-CONSUMPTION OF CATFISH, CARP OR EEL AND LIMITED CONSUMPTION OF OTHER FISH CAUGHT IN ALL DISTRICT OF COLUMBIA WATERS.

KLINGLE VALLEY WAS NOT ASSESSED FOR NAVIGATION.

BECAUSE OF THE ABOVE USE DECISIONS, THIS SEGMENT DID NOT SUPPORT THE OVERALL USE SUPPORT CLASSIFICATION.

KLINGLE VALLEY TRIBUTARY FLOWS THROUGH A RESIDENTIAL AREA AND DISCHARGES INTO ROCK CREEK FROM THE WEST NEAR THE PORTER STREET BRIDGE. THE STREAM'S REACH PARALLELS THE SOUTH SIDE OF KLINGLE ROAD. A WOODED BUFFER OF A FEW HUNDRED FEET COVERS ONE SIDE OF THE STREAM WITH THE REST OF THE 320 ACRE WATERSHED RESIDENTIAL URBAN AREA. NINE (9) OUTFALLS INCLUDING ONE CSO LINE THE STREAM.

THE ABOVE DESCRIPTION WAS TAKEN FROM 'BIOLOGICAL WATER QUALITY OF THE SURFACE STREAMS OF THE DISTRICT OF COLUMBIA,' W.C. BANTA, THE AMERICAN UNIVERSITY, 1993.

THE 2010 MACROINVERTEBRATE ASSESSMENT (SAMPLES COLLECTED IN 2009) REVEALED CHIRONOMIDAE AS THE DOMINANT TAXA. HYDROPSYCHIDAE AND BAETIDAE WERE ALSO PRESENT.

DURING THE 2013 DCSS THE STREAM HAD LOW FLOW AND BUFFER BREAKS ON THE LEFT BANK. THERE WERE MODERATE BAR FORMATIONS AND DEWATERED ROOTWADS. THERE WAS ALSO A CONCRETE RETENTION BARRIER COVERING 75% OF THE ASSESSMENT SITE.

THE 2011 DCSS REVEALED ALGAL GROWTH, EXTENSIVE BAR FORMATIONS AND POCKETS OF STANDING WATER AT THE 75 METER MARK. LARGE

DOWN TREE ABOVE THE 50 METER MARK. THE MAXIMUM THALWEG DEPTH WAS LESS THAN 0.3 METERS. THE STREAM WAS PARTIALLY DRY.

IN 2011 AND 2013 MACROINVERTEBRATE SAMPLES WERE COLLECTED AND WILL BE ANALYZED AT A LATER DATE.

REPORTS WITH MORE INFORMATION INCLUDE:

\*ANALYSIS OF BIOLOGICAL SAMPLES: DISTRICT OF COLUMBIA PHYTOPLANKTON, ZOOPLANKTON AND BENTHIC MACROINVERTEBRATE SAMPLES, RHITHRON ASSOCIATES, OCTOBER 2010.

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## Detail Report for LUZON BRANCH

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**ID:** DCTLU01R\_00

**State:** DC - 2014

**Single Cat.(User Cat.):**  
5(N/A)

**Multi-Category:** 3, 4B, 5

<b>Water Information:</b>	<b>LUZON BRANCH</b>	
	<b>Location:</b> THE STREAM FLOWS THROUGH A SMALL PARK AND ENTERS ROCK CREEK AT JOYCE ROAD.	<b>Water Type:</b> RIVER <b>Size:</b> 1 MILES <b>Next Scheduled Monitoring Date:</b> 2016
<b>Use Information</b>		
<b>Assessed:</b>	<b>Attainment Status</b>	<b>Uses</b>



	Insufficient Information	Protection of Human Health related to Consumption of Fish and Shellfish
	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Secondary Contact Recreation and Aesthetic Enjoyment

### Types of Assessment

Assessment Type	Uses	Assessment Confidence
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife	GOOD
	Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
	Secondary Contact Recreation and Aesthetic Enjoyment	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

### Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Alteration in stream-side or littoral vegetative covers	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Arsenic	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Chlordane	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Copper	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
DDD	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
DDE	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
DDT	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Debris/Floatables/Trash	Secondary Contact Recreation and Aesthetic Enjoyment	Yes	
Dieldrin	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Escherichia coli	Primary Contact Recreation	Yes	
Heptachlor epoxide	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	

Other flow regime alterations	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Polychlorinated biphenyls	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Zinc	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes

### Source Information

Sources	Associated Causes	Confirmed?
CERCLA NPL (Superfund) Sites	Alteration in stream-side or littoral vegetative covers Other flow regime alterations	
Discharges from Municipal Separate Storm Sewer Systems (MS4)	Alteration in stream-side or littoral vegetative covers Other flow regime alterations	
Impacts from Hydrostructure Flow Regulation/modification	Alteration in stream-side or littoral vegetative covers Other flow regime alterations	
Loss of Riparian Habitat	Alteration in stream-side or littoral vegetative covers Other flow regime alterations	
Residential Districts	Alteration in stream-side or littoral vegetative covers Other flow regime alterations	

### Comments On:

#### Overall Assessment

LUZON BRANCH'S EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2009-2013) OF CONVENTIONAL WATER QUALITY DATA COLLECTED BY THE MAB.

THE PRIMARY CONTACT (SWIMMABLE) USE IS NOT SUPPORTED. E. COLI, PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 55.0%, 0.0% AND 0.0% OF THE TIME, RESPECTIVELY.

THE SECONDARY CONTACT RECREATION USE IS SUPPORTED. PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 0.0% AND 0.0% OF THE TIME, RESPECTIVELY.

THE AQUATIC LIFE USE SUPPORT IS NOT SUPPORTED. THE DECISION IS

BASED ON THE DC STREAM SURVEY CONDUCTED IN 2002 AND CONVENTIONAL POLLUTANT DATA. TEMPERATURE, PH, DISSOLVED OXYGEN AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 0.0%, 0.0%, 0.0% AND 0.0% OF THE TIME, RESPECTIVELY.

BECAUSE OF A FISH CONSUMPTION ADVISORY, LUZON BRANCH DID NOT SUPPORT ITS FISH CONSUMPTION USE. DETERMINATION OF THE FISH CONSUMPTION USE WAS BASED ON A PUBLIC HEALTH ADVISORY ISSUED ON NOVEMBER 15, 1994, BY THE D.C. COMMISSIONER OF PUBLIC HEALTH. THE ADVISORY URGES NON-CONSUMPTION OF CATFISH, CARP OR EEL AND LIMITED CONSUMPTION OF OTHER FISH CAUGHT IN ALL DISTRICT OF COLUMBIA WATERS.

LUZON BRANCH WAS NOT ASSESSED FOR NAVIGATION.

BECAUSE OF THE ABOVE DECISIONS, THIS SEGMENT DID NOT SUPPORT THE OVERALL USE SUPPORT CLASSIFICATION.

THE STREAM FLOWS THROUGH A SMALL PARK AND ENTERS ROCK CREEK AT JOYCE ROAD. THERE ARE 14 OUTFALLS FROM THE RESIDENTIAL AREA TO THE STREAM INCLUDING ONE CSO. LUZON CREEK EMPTIES INTO ROCK CREEK AT JOYCE ROAD, ABOUT 600 FEET DOWNSTREAM OF THE MILITARY ROAD BRIDGE OVER ROCK CREEK. THE SURFACE PORTION ORIGINATES AS A STORM DRAIN NEAR FORT STEVENS DRIVE AND TRAVELS ALMOST STRAIGHT SOUTHWEST TO ROCK CREEK. MOST OF THE WATERSHED IS RESIDENTIAL AND LIGHT COMMERCIAL. THE SURFACE STREAM IS BUFFERED BY A 100-1,000 FOOT BORDER OF PARKLAND ACCOUNTING FOR 10% OF THE WATERSHED. THERE ARE 14 OUTFALLS FROM THE RESIDENTIAL AREA TO THE STREAM INCLUDING ONE CSO.

THE ABOVE DESCRIPTION WAS TAKEN FROM "BIOLOGICAL WATER QUALITY OF THE SURFACE TRIBUTARY STREAMS OF THE DISTRICT OF COLUMBIA," W.C. BANTA, THE AMERICAN UNIVERSITY, 1993.

THE STREAM'S 2002 HBI SCORE SUGGESTED A FAIRLY SIGNIFICANT AMOUNT OF ORGANIC POLLUTION IN THE STREAM. THE DOMINANT TAXA FOUND WAS TURBELLARIA. HABITAT WAS ALSO MODERATELY IMPAIRED ON THE RIGHT BANK AND SEVERELY IMPAIRED ON THE LEFT BANK.

29 ORGANISMS WERE FOUND IN THE SAMPLE COLLECTED. THE DIVERSITY OF THE STREAM WAS POOR AS EVIDENCED BY ONLY 2 TAXA IDENTIFIED. ORGANICS AND TOXICS ARE POSSIBLY THE CAUSE OF DEGRADATION.

DURING THE 2010 AND 2012 STREAM ASSESSMENTS ALGAE WAS PRESENT ON ROCKS, AND ABUNDANCE OF LEECHES, AND AN ABUNDANCE OF

PIEDMONT ROCKS IN THE STREAM. THERE WERE BUFFER BREAKS ON BOTH BANKS AND THE CONDUCTIVITY WAS HIGH. A GOLF COURSE NEAR THE STREAM.

IN 2010 AND 2012 MACROINVERTEBRATE SAMPLES WERE COLLECTED AND WILL BE ANALYZED AT A LATER DATE.

## Detail Report for MELVIN HAZEN VALLEY BRANCH

**ID:** DCTMH01R\_00

**State:** DC - 2014

**Single Cat.(User Cat.):**  
5(N/A)

**Multi-Category:** 2, 3, 4B, 5

<b>Water Information:</b>	<b>MELVIN HAZEN VALLEY BRANCH</b>	
	<b>Location:</b> THE STREAM FLOWS THROUGH A SMALL PARK AND ENTERS ROCK CREEK AT JOYCE ROAD.	<b>Water Type:</b> RIVER <b>Size:</b> 1 MILES <b>Next Scheduled Monitoring Date:</b> 2016
<b>Use Information</b>		
<b>Assessed:</b>	<b>Attainment Status</b>	<b>Uses</b>
	Fully Supporting	Secondary Contact Recreation and Aesthetic Enjoyment
	Insufficient Information	Protection of Human Health related to Consumption of Fish and Shellfish
Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife	

### Types of Assessment

**Assessment Type**

**Uses**

**Assessment**

		<b>Confidence</b>
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife	GOOD
	Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
	Secondary Contact Recreation and Aesthetic Enjoyment	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

### **Cause Information**

<b>Causes</b>	<b>Associated Uses</b>	<b>Pollutant?</b>	<b>Confidence</b>
Alteration in stream-side or littoral vegetative covers	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Arsenic	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Chlordane	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Copper	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
DDD	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
DDE	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
DDT	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Dieldrin	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Escherichia coli	Primary Contact Recreation	Yes	
Heptachlor epoxide	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Polychlorinated biphenyls	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Zinc	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes	

### **Comments On:**

### **Overall Assessment**

MELVIN HAZEN'S EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2009-2013) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

THE PRIMARY CONTACT (SWIMMABLE) USE IS NOT SUPPORTED. E. COLI, PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 21.05%, 0.0% AND 0.0% OF THE TIME, RESPECTIVELY.

THE SECONDARY CONTACT RECREATION USE IS SUPPORTED. PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 0.0% AND 0.0% OF THE TIME, RESPECTIVELY.

THE AQUATIC LIFE USE SUPPORT IS NOT SUPPORTED. THE DECISION IS BASED ON THE DC STREAM SURVEY CONDUCTED IN 2002 AND CONVENTIONAL POLLUTANT DATA. TEMPERATURE, PH, DISSOLVED OXYGEN AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 0.0%, 0.0%, 0.0% AND 0.0% OF THE TIME, RESPECTIVELY.

BECAUSE OF A FISH CONSUMPTION ADVISORY, MELVIN HAZEN DID NOT SUPPORT ITS FISH CONSUMPTION USE. DETERMINATION OF THE FISH CONSUMPTION USE WAS BASED ON A PUBLIC HEALTH ADVISORY ISSUED ON NOVEMBER 15, 1994, BY THE D.C. COMMISSIONER OF PUBLIC HEALTH. THE ADVISORY URGES NON-CONSUMPTION OF CATFISH, CARP OR EEL AND LIMITED CONSUMPTION OF OTHER FISH CAUGHT IN ALL DISTRICT OF COLUMBIA WATERS.

MELVIN HAZEN WAS NOT ASSESSED FOR NAVIGATION.

BECAUSE OF THE ABOVE DECISIONS, THIS SEGMENT DID NOT SUPPORT THE OVERALL USE SUPPORT CLASSIFICATION.

THE STREAM FLOWS THROUGH A SMALL PARK AND ENTERS ROCK CREEK AT JOYCE ROAD. THERE ARE 14 OUTFALLS FROM THE RESIDENTIAL AREA TO THE STREAM INCLUDING ONE CSO. LUZON CREEK EMPTIES INTO ROCK CREEK AT JOYCE ROAD, ABOUT 600 FEET DOWNSTREAM OF THE MILITARY ROAD BRIDGE OVER ROCK CREEK. THE SURFACE PORTION ORIGINATES AS A STORM DRAIN NEAR FORT STEVENS DRIVE AND TRAVELS ALMOST STRAIGHT SOUTHWEST TO ROCK CREEK. MOST OF THE WATERSHED IS RESIDENTIAL AND LIGHT COMMERCIAL. THE SURFACE STREAM IS BUFFERED BY A 100-1,000 FOOT BORDER OF PARKLAND ACCOUNTING FOR 10% OF THE WATERSHED. THERE ARE 14 OUTFALLS FROM THE RESIDENTIAL AREA TO THE STREAM INCLUDING ONE CSO.

THE ABOVE DESCRIPTION WAS TAKEN FROM "BIOLOGICAL WATER QUALITY OF THE SURFACE TRIBUTARY STREAMS OF THE DISTRICT OF COLUMBIA," W.C. BANTA, THE AMERICAN UNIVERSITY, 1993.

THE STREAM'S 2002 HBI SCORE SUGGESTS A SIGNIFICANT ORGANIC POLLUTION. HYDROPSYCHIDAE IS THE DOMINANT TAXA AND THE HABITAT IS SEVERELY IMPAIRED. 47 ORGANISMS WERE FOUND IN THE ENTIRE SAMPLE. HABITAT AND ORGANICS ARE POSSIBLY THE CAUSES OF DEGRADATION TO THE STREAM.

DURING THE 2012 DCSS INVASIVES HAD BEEN REMOVED ON BOTH BANKS, THERE WERE DOWNED TREES ON THE LEFT BANK AND MODERATE BAR FORMATIONS.

DURING THE 2010 STREAM ASSESSMENT THE RIPARIAN BUFFER ZONE HAS BEEN REMOVED JUST BELOW THE ZERO METER PORTION OF THE STREAM SEGMENT.

IN 2010 AND 2012 MACROINVERTEBRATE SAMPLES WERE COLLECTED AND WILL BE ANALYZED AT A LATER DATE.

## Detail Report for NASH RUN

**ID:** DCTNA01R\_00

**State:** DC - 2014

**Single Cat.(User Cat.):**  
5(N/A)

**Multi-Category:** 3, 4A, 5

<b>Water Information:</b>	<b>NASH RUN</b>	
	<b>Location:</b> NASH RUN IS A TRIBUTARY OF THE ANACOSTIA RIVER WHOSE MOUTH IS A BRAIDED WETLAND THAT EMPTIES INTO THE KENILWORTH MARSH. NASH RUN ORIGINATES FROM A STORMDRAIN AT NASH ROAD AND SHERIFF AVENUES IN DEANWOOD PARK IN MARYLAND	<b>Water Type:</b> RIVER <b>Size:</b> 0.1 MILES <b>Next Scheduled Monitoring Date:</b> N/A
<b>Use Information</b>		
<b>Assessed:</b>	<b>Attainment Status</b>	<b>Uses</b>
	Insufficient Information	Protection of Human Health related to Consumption of Fish and Shellfish
	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Secondary Contact Recreation and Aesthetic Enjoyment

### Types of Assessment

Assessment Type	Uses	Assessment Confidence
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife	GOOD
	Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
	Secondary Contact Recreation and Aesthetic Enjoyment	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

### Cause Information

Causes	Associated Uses	Pollutant? Confidence
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Arsenic	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Chlordane	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Copper	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes
DDD	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
DDE	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
DDT	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Debris/Floatables/Trash	Secondary Contact Recreation and Aesthetic Enjoyment	Yes
Dieldrin	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Dissolved oxygen saturation	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Fecal Coliform	Primary Contact Recreation	Yes
Heptachlor epoxide	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Other flow regime alterations	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Physical substrate habitat alterations	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Polychlorinated biphenyls	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Total Suspended Solids (TSS)	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Secondary Contact Recreation and Aesthetic Enjoyment	Yes
Zinc	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes

### Source Information

**Sources**

**Associated Causes**

**Confirmed?**

Channelization	Other flow regime alterations Physical substrate habitat alterations
Hydrostructure Impacts on Fish Passage	Other flow regime alterations Physical substrate habitat alterations
Illegal Dumping	Other flow regime alterations Physical substrate habitat alterations
Illegal Dumps or Other Inappropriate Waste Disposal	Other flow regime alterations Physical substrate habitat alterations
Impacts from Hydrostructure Flow Regulation/modification	Other flow regime alterations Physical substrate habitat alterations
Residential Districts	Other flow regime alterations Physical substrate habitat alterations

### **Comments On:**

#### **Overall Assessment**

EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2009-2013) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

THE PRIMARY CONTACT (SWIMMABLE) USE IS NOT SUPPORTED. E. COLI, PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 55.0%, 0.0% AND 10.53% OF THE TIME, RESPECTIVELY.

THE SECONDARY CONTACT RECREATION USE IS NOT SUPPORTED. PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 0.0% AND 10.53% OF THE TIME, RESPECTIVELY.

THE AQUATIC LIFE USE SUPPORT IS NOT SUPPORTED. THE DECISION IS BASED ON THE DC STREAM SURVEY CONDUCTED IN 2010 AND CONVENTIONAL POLLUTANT DATA. TEMPERATURE, PH, DISSOLVED OXYGEN AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 0.0%, 0.0%, 10.53% AND 10.53% OF THE TIME, RESPECTIVELY.

BECAUSE OF A FISH CONSUMPTION ADVISORY, NASH RUN DID NOT SUPPORT ITS FISH CONSUMPTION USE. DETERMINATION OF THE FISH CONSUMPTION USE WAS BASED ON A PUBLIC HEALTH ADVISORY ISSUED ON NOVEMBER 15, 1994 BY THE D.C COMMISSIONER OF PUBLIC HEALTH. THE ADVISORY URGES NON-CONSUMPTION OF CATFISH, CARP OR EEL AND LIMITED CONSUMPTION OF OTHER FISH CAUGHT IN ALL DISTRICT OF COLUMBIA WATERS.

BECAUSE OF THE ABOVE USE DECISIONS, THIS SEGMENT DID NOT SUPPORT

## THE OVERALL USE SUPPORT CLASSIFICATION.

NASH RUN IS A TRIBUTARY OF THE ANACOSTIA RIVER WHOSE MOUTH IS A BRAIDED WETLAND THAT EMPTIES INTO THE KENILWORTH MARSH. NASH RUN ORIGINATES FROM A STORM DRAIN AT NASH ROAD AND SHERIFF AVENUES IN DEANWOOD PARK IN MARYLAND. THE STREAMS REACH IS PUNCTUATED BY SEVERAL SEGMENTS THAT HAVE BEEN SUBVERTED INTO PIPES ONLY TO EMERGE AGAIN. ALL BUT 5% OF THE 460 ACRE WATERSHED IS URBAN RESIDENTIAL AND COMMERCIAL. THE STREAM RECEIVES NUMEROUS STORMDRAINS AND IS PARALLELED AND CROSSED BY SEVERAL SEWER LINES.

THE ABOVE DESCRIPTION WAS TAKEN FROM 'BIOLOGICAL WATER QUALITY OF THE SURFACE TRIBUTARIES OF THE DISTRICT OF COLUMBIA,' BY W.C. BANTA, THE AMERICAN UNIVERSITY, 1993.

THE 2010 MACROINVERTEBRATE ASSESSMENT (SAMPLES COLLECTED IN 2009) REVEALED CHIRONOMIDAE AS THE DOMINANT TAXA. NO SENSITIVE ORGANISMS PRESENT.

DURING THE 2013 DCSS THERE WAS AN OIL SHEEN ON THE WATER'S SURFACE, MODERATE EROSION ON BOTH BANKS, RIP-WRAP ON BOTH BANKS AND A HIGH TRASH VOLUME.

DURING THE 2011 DCSS MACROPHYTES WERE PRESENT. THE STREAM SMELLED OF SULFUR. WAS ONLY ABLE TO SAMPLE UP TO THE 56 METER MARK, DUE TO HIGH TRASH VOLUME AND DOWNED TREES.

IN 2011 AND 2013 MACROINVERTEBRATE SAMPLES WERE COLLECTED AND WILL BE ANALYZED AT A LATER DATE.

REPORTS WITH MORE INFORMATION INCLUDE:

\*ANALYSIS OF BIOLOGICAL SAMPLES: DISTRICT OF COLUMBIA PHYTOPLANKTON, ZOOPLANKTON AND BENTHIC MACROINVERTEBRATE SAMPLES, RHITHRON ASSOCIATES, OCTOBER 2010.

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# Detail Report for NORMANSTONE CREEK

**ID:** DCTNS01R\_00

**State:** DC - 2014

**Single Cat.(User Cat.):**  
5(N/A)

**Multi-Category:** 2, 4A, 4B, 5

<b>Water Information:</b>	<b>NORMANSTONE CREEK</b>	
	<b>Location:</b> NORMANSTONE CREEK FLOWS THROUGH A SMALL RESIDENTIAL PARK AND ENTERS ROCK CREEK FROM THE WEST ABOUT 1000 FEET ABOVE THE MASSACHUSETTS AVENUE BRIDGE BELOW THE ZOO. THE STREAM ORIGINATES AS A STORMDRAIN NEAR GARFIELD AVENUE AND 3RD STREET, NW	<b>Water Type:</b> RIVER <b>Size:</b> 0.8 MILES <b>Next Scheduled Monitoring Date:</b> 2016
<b>Use Information</b>		
<b>Assessed:</b>	<b>Attainment Status</b>	<b>Uses</b>
	Fully Supporting	Secondary Contact Recreation and Aesthetic Enjoyment
	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish

### Types of Assessment

Assessment Type	Uses	Assessment Confidence
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife	GOOD
	Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
	Secondary Contact Recreation and Aesthetic Enjoyment	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

### Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Dieldrin	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Escherichia coli	Primary Contact Recreation	Yes	
Heptachlor epoxide	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Other flow regime alterations	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Polychlorinated biphenyls	Protection of Human Health related to	Yes	

Consumption of Fish and Shellfish

**Source Information**

<b>Sources</b>	<b>Associated Causes</b>	<b>Confirmed?</b>
CERCLA NPL (Superfund) Sites	Other flow regime alterations	
Hydrostructure Impacts on Fish Passage	Other flow regime alterations	
Impacts from Hydrostructure Flow Regulation/modification	Other flow regime alterations	
Yard Maintenance	Other flow regime alterations	

**Comments On:**

**Overall Assessment**

NORMANSTONE'S EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2009-2013) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

THE PRIMARY CONTACT (SWIMMABLE) USE IS NOT SUPPORTED. E. COLI, PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 47.06%, 0.0% AND 10.0% OF THE TIME, RESPECTIVELY.

THE SECONDARY CONTACT RECREATION USE IS SUPPORTED. PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 0.0% AND 10.0% OF THE TIME, RESPECTIVELY.

THE AQUATIC LIFE USE SUPPORT IS NOT SUPPORTED. THE DECISION IS BASED ON THE DC STREAM SURVEY CONDUCTED IN 2010 AND CONVENTIONAL POLLUTANT DATA. TEMPERATURE, PH, DISSOLVED OXYGEN AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 0.0%, 0.0%, 5.0% AND 10.0% OF THE TIME, RESPECTIVELY.

BECAUSE OF A FISH CONSUMPTION ADVISORY, NORMANSTONE DID NOT SUPPORT ITS FISH CONSUMPTION USE. DETERMINATION OF THE FISH CONSUMPTION USE WAS BASED ON A PUBLIC HEALTH ADVISORY ISSUED ON NOVEMBER 15, 1994 BY THE D.C. COMMISSIONER OF PUBLIC HEALTH. THE ADVISORY URGES NON-CONSUMPTION OF CATFISH, CARP OR EEL AND LIMITED CONSUMPTION OF OTHER FISH CAUGHT IN ALL DISTRICT OF COLUMBIA WATERS.

NORMANSTONE WAS NOT ASSESSED FOR NAVIGATION.

BECAUSE OF THE ABOVE DECISIONS, THIS SEGMENT DID NOT SUPPORT THE OVERALL USE SUPPORT CLASSIFICATION.

NORMANSTONE CREEK FLOWS THROUGH A SMALL RESIDENTIAL PARK AND ENTERS ROCK CREEK FROM THE WEST ABOUT 1000 FEET ABOVE THE MASSACHUSETTS AVENUE BRIDGE BELOW THE ZOO. THE STREAM ORIGINATES AS A STORMDRAIN NEAR GARFIELD AVENUE AND 3RD STREET, NW. THE 231 ACRE WATERSHED INCLUDES MOST OF THE GROUNDS OF THE WASHINGTON CATHEDRAL AND PART OF THE U.S. NAVAL OBSERVATORY AS WELL AS PARTS OF CLEVELAND AND WOODLEY PARKS. MOST OF THE ACREAGE IS RESIDENTIAL AND LIGHT COMMERCIAL PROPERTY WITH ABOUT 10% PARKLAND. THE STREAM PARALLELS NORMANSTONE PARKWAY AND IS CROSSED SEVERAL TIMES BY SMALL SEWER LINES AND LARGE STORM DRAINS.

THE ABOVE DESCRIPTION WAS TAKEN FROM 'BIOLOGICAL WATER QUALITY OF THE SURFACE TRIBUTARY STREAMS OF THE DISTRICT OF COLUMBIA,' W.C. BANTA, THE AMERICAN UNIVERSITY, 1993.

THE 2010 MACROINVERTEBRATE ASSESSMENT (SAMPLES COLLECTED IN 2009) REVEALED CHIRONOMIDAE AS THE DOMINANT TAXA. HYDROPSYCHIDAE WERE ALSO PRESENT.

DURING THE 2011 AND 2013 DCSS THERE WERE BROKEN SEWER PIPES THAT TRANSECT THE STREAM AND THE ODOR OF SEWAGE PRESENT OBSERVED. THERE WERE THREE LARGE DOWNED TREES IN THE 75 METER STRETCH. SEVERE EROSION PRESENT ON THE LEFT AND RIGHT BANK OF THE STREAM. THERE WERE BUFFER BREAKS ON THE LEFT AND RIGHT BANK OF STREAM FROM STORM DRAINS. EXPOSED SEWER LINE AT THE 75 METER MARK WITH DISCHARGE OBSERVED.

IN 2011 AND 2013 MACROINVERTEBRATE SAMPLES WERE COLLECTED AND WILL BE ANALYZED AT A LATER DATE.

REPORTS WITH MORE INFORMATION INCLUDE:

\*ANALYSIS OF BIOLOGICAL SAMPLES: DISTRICT OF COLUMBIA PHYTOPLANKTON, ZOOPLANKTON AND BENTHIC MACROINVERTEBRATE SAMPLES, RHITHRON ASSOCIATES, OCTOBER 2010.

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## **Detail Report for OXON RUN**

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**ID:** DCTOR01R\_00

**State:** DC - 2014

**Single Cat.(User Cat.):**  
5(N/A)

**Multi-Category:** 3, 4A, 5

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<b>Water Information:</b>	<b>OXON RUN</b>	
	<b>Location:</b> THIS STREAM ORIGINATES IN PRINCE GEORGES COUNTY, MARYLAND AND FLOWS INTO THE DISTRICT BEFORE IT DIPS BACK INTO MARYLAND JUST BEFORE IT ENTERS OXON COVE	<b>Water Type:</b> RIVER <b>Size:</b> 3.2 MILES <b>Next Scheduled Monitoring Date:</b> N/A
<b>Use Information</b>		
<b>Assessed:</b>	<b>Attainment Status</b>	<b>Uses</b>
	Insufficient Information	Protection of Human Health related to Consumption of Fish and Shellfish
	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Secondary Contact Recreation and Aesthetic Enjoyment

### Types of Assessment

Assessment Type	Uses	Assessment Confidence
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife	GOOD
	Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
	Secondary Contact Recreation and Aesthetic Enjoyment	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

### Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Arsenic	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Chlordane	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Copper	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
DDT	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Debris/Floatables/Trash	Secondary Contact Recreation and Aesthetic Enjoyment	Yes	
Dieldrin	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Fecal Coliform	Primary Contact Recreation	Yes	
Heptachlor epoxide	Protection of Human Health related to	Yes	



	Consumption of Fish and Shellfish	
Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Zinc	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes

**Comments On:**

**Overall Assessment**

OXON RUN'S EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2009-2013) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

THE PRIMARY CONTACT (SWIMMABLE) USE IS NOT SUPPORTED. E. COLI, PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 27.78%, 5.0% AND 5.0% OF THE TIME, RESPECTIVELY.

THE SECONDARY CONTACT RECREATION USE IS SUPPORTED. PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 5.0% AND 5.0% OF THE TIME, RESPECTIVELY.

THE AQUATIC LIFE USE IS NOT SUPPORTED. THE DECISION IS BASED ON THE DC STREAM SURVEY CONDUCTED IN 2002 AND CONVENTIONAL POLLUTANT DATA. TEMPERATURE, PH, DISSOLVED OXYGEN AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 0.0%, 5.0%, 0.0% AND 5.0% OF THE TIME, RESPECTIVELY.

BECAUSE OF A FISH CONSUMPTION ADVISORY, OXON RUN DID NOT SUPPORT ITS FISH CONSUMPTION USE. DETERMINATION OF FISH CONSUMPTION USE IS BASED ON A PUBLIC HEALTH ADVISORY ISSUED UN 1994 BY THE DC COMMISSIONER OF HEALTH. THE ADVISORY URGES BANNING CONSUMPTION OF CHANNEL CATFISH, CARP, OR EELS CAUGHT IN THE DISTRICT'S STRETCHES OF THE POTOMAC AND ANACOSTIA RIVERS. BECAUSE OXON RUN IS A TRIBUTARY OF THE POTOMAC RIVER, FISH MAY MIGRATE FOR THE RIVER INTO THIS TRIBUTARY, THEREFORE THIS ADVISORY EXTENDS TO OXON RUN.

OXON RUN WAS NOT ASSESSED FOR NAVIGATION.

BECAUSE OF THE ABOVE USE DECISIONS, THIS SEGMENT DID NOT SUPPORT THE OVERALL USE SUPPORT CLASSIFICATION.

OXON RUN IS A TRIBUTARY OF THE POTOMAC RIVER WHICH DISCHARGES

INTO THE RIVER WHERE THE SOUTHEASTERN DISTRICT LINE MEETS OXON COVE. THIS STREAM ORIGINATES IN PRINCE GEORGES COUNTY, MARYLAND AND FLOWS INTO THE DISTRICT BEFORE IT DIPS BACK INTO MARYLAND JUST BEFORE IT ENTERS OXON COVE. THE WATERSHED IS ABOUT 2,650 ACRES OF WHICH 37% IS IN THE DISTRICT. ABOUT 15% OF THE WATERSHED IS FORESTED WITH THE REST RESIDENTIAL AND COMMERCIAL PROPERTY. MOST OF ITS REACH WITHIN THE DISTRICT HAS BEEN CANALIZED AND MOST OF ITS TRIBUTARIES ARE PIPED. IT IS PARALLELED AND CROSSED BY NUMEROUS SEWER LINES OF ALL SIZES.

ALTHOUGH OXON RUN IS PREDOMINANTLY A CONCRETE CHANNEL THROUGHOUT ITS REACH IN THE DISTRICT, THERE ARE TWO RELATIVELY LARGE SEGMENTS WHICH ARE STILL IN THEIR 'NATURAL' STATE. ONE OF THE SEGMENTS IS NEAR THE END OF THE TRIBUTARY AT THE DISTRICT LINE BEFORE IT REACHES THE POTOMAC RIVER. OXON RUN IS A LARGE TRIBUTARY BY DISTRICT STANDARDS AND SHARES A MAJORITY OF ITS WATERSHED WITH MARYLAND. IT IS HIGHLY CHANNELIZED AND MOST OF ITS FIRST AND SECOND ORDER TRIBUTARIES ARE PIPED INTO THE MAIN REACH. STORMWATER PIPES DISCHARGE AT NUMEROUS LOCATION ALONG ITS COURSE AND SEVERAL SEWER LINES CROSS AND PARALLEL IT. THERMAL WATER QUALITY POLLUTION IS ALSO MOST LIKELY A SIGNIFICANT IMPACT DURING THE SUMMER SEASON.

THE ABOVE DESCRIPTION WAS TAKEN FROM 'BIOLOGICAL WATER QUALITY OF THE SURFACE TRIBUTARY STREAMS OF THE DISTRICT OF COLUMBIA,' W.C. BANTA, THE AMERICAN UNIVERSITY, 1993. THE 2002 HBI SCORE SUGGESTS FAIRLY SIGNIFICANT ORGANIC POLLUTION. A HIGH PERCENTAG OF EPT, SUGGEST THE STREAMS HAS SOME SENSITIVE ORGANISMS. THE DOMINANT TAXA WAS COENAGRINIDAE. 42 ORGANISMS WERE FOUND IN THE SAMPLE.

DURING THE 2012 DCSS RIP-WRAP HAD BEEN USED TO STABILIZE THE LEFT BANK, THERE WAS A BUFFER BREAK ON THE LEFT BANK WAS OBSERVED.

THE 2010 STREAM ASSESSMENT REVEALED NEWLY OBSERVED FIN-FISH SPECIES, THE ROSY-NOSE DACE. HIGH SEDIMENT LOADS OBSERVED AT THE 0M PORTION OF STREAM. LARGE OF AMOUNTS OF TRASH PRESENT AT THE 75 METER MARK.

IN 2010 AND 2012 MACROINVERTEBRATE SAMPLES WERE COLLECTED AND WILL BE ANALYZED AT A LATER DATE.

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## Detail Report for POPES BRANCH (HAWES RUN)

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**ID:** DCTPB01R\_00

**State:** DC - 2014

**Single Cat.(User Cat.):**  
5(N/A)

**Multi-Category:** 3, 4A, 5

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<b>Water Information:</b>	<b>POPES BRANCH (HAWES RUN)</b>	
	<b>Location:</b> POPE'S BRANCH, THE LOWER REACHES OF WHICH WERE ONCE CALLED HAWES RUN, DISCHARGES INTO THE ANACOSTIA RIVER BY WAY OF A STORMWATER PIPE ABOVE THE EASTERN FOOTING OF THE PENNSYLVANIA AVENUE SOUSA BRIDGE	<b>Water Type:</b> RIVER <b>Size:</b> 1.1 MILES <b>Next Scheduled Monitoring Date:</b> N/A
<b>Use Information</b>		
<b>Assessed:</b>	<b>Attainment Status</b>	<b>Uses</b>

	Insufficient Information	Protection of Human Health related to Consumption of Fish and Shellfish
	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Secondary Contact Recreation and Aesthetic Enjoyment

### Types of Assessment

Assessment Type	Uses	Assessment Confidence
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife	GOOD
	Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
	Secondary Contact Recreation and Aesthetic Enjoyment	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

### Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Arsenic	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Chlordane	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Copper	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
DDD	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
DDT	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Debris/Floatables/Trash	Secondary Contact Recreation and Aesthetic Enjoyment	Yes	
Dieldrin	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Fecal Coliform	Primary Contact Recreation	Yes	
Heptachlor epoxide	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Particle distribution (Embeddedness)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Polychlorinated biphenyls	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	

Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
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Zinc	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes
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**Source Information**

<b>Sources</b>	<b>Associated Causes</b>	<b>Confirmed?</b>
Channelization	Particle distribution (Embeddedness)	
Hydrostructure Impacts on Fish Passage	Particle distribution (Embeddedness)	
Illegal Dumping	Particle distribution (Embeddedness)	
Illegal Dumps or Other Inappropriate Waste Disposal	Particle distribution (Embeddedness)	
Residential Districts	Particle distribution (Embeddedness)	

**Comments On:**

**Overall Assessment**

POPE BRANCH'S EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2009-2013) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

THE PRIMARY CONTACT (SWIMMABLE) USE IS NOT SUPPORTED. E. COLI, PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 38.89%, 5.0% AND 10.0% OF THE TIME, RESPECTIVELY.

SECONDARY CONTACT RECREATION USE IS SUPPORTED. PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 5.0% AND 10.0% OF THE TIME, RESPECTIVELY.

THE AQUATIC LIFE USE SUPPORT IS NOT SUPPORTED. THE DECISION IS BASED ON THE DC STREAM SURVEY CONDUCTED IN 2010 AND CONVENTIONAL POLLUTANT DATA. TEMPERATURE, PH, DISSOLVED OXYGEN AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 0.0%, 5.0%, 0.0% AND 10.0% OF THE TIME, RESPECTIVELY.

BECAUSE OF A FISH CONSUMPTION ADVISORY, POPE BRANCH DID NOT SUPPORT ITS FISH CONSUMPTION USE. DETERMINATION OF THE FISH CONSUMPTION USE WAS BASED ON A PUBLIC HEALTH ADVISORY ISSUED ON NOVEMBER 15, 1994 BY THE D.C. COMMISSIONER OF PUBLIC HEALTH. THE ADVISORY URGES NON-CONSUMPTION OF CATFISH, CARP OR EEL AND LIMITED CONSUMPTION OF OTHER FISH CAUGHT IN ALL DISTRICT OF

COLUMBIA WATERS.

POPE BRANCH WAS NOT ASSESSED FOR NAVIGATION.

BECAUSE OF THE ABOVE USE DECISIONS, THIS SEGMENT DID NOT SUPPORT THE OVERALL USE SUPPORT CLASSIFICATION.

POPE BRANCH, THE LOWER REACHES OF WHICH WERE ONCE CALLED HAWES RUN, DISCHARGES INTO THE ANACOSTIA RIVER BY WAY OF A STORMWATER PIPE ABOVE THE EASTERN FOOTING OF THE PENNSYLVANIA AVENUE SOUSA BRIDGE. THE SURFACE PORTION OF THE STREAM ORIGINATES NEAR TEXAS AVENUE AND NASH STREET, SE. THE WATERSHED OF ABOUT 210 ACRES INCLUDES A FORESTED SECTION OF UP TO 400 FEET WIDE CALLED POPE'S BRANCH PARK AND ALL OF FORT DAVIS. THE FORESTED WATERSHED ACCOUNTS FOR ABOUT 15% WITH THE REMAINDER RESIDENTIAL AND LIGHT COMMERCIAL PROPERTY. THE STREAM RECEIVES NUMEROUS STORMWATER DISCHARGES ALONG ITS REACH AND IS PARALLELED AND CROSSED BY MANY SMALL SEWER LINES. THE ABOVE DESCRIPTION WAS TAKEN FROM 'BIOLOGICAL WATER QUALITY OF THE SURFACE TRIBUTARY STREAMS OF THE DISTRICT OF COLUMBIA,' W.C. BANTA, THE AMERICAN UNIVERSITY, 1993.

THE 2003 HBI SCORE SUGGESTS SOME ORGANIC POLLUTION. NO SENSITIVE ORGANISMS WERE FOUND (EPT). A HIGH PERCENTAGE OF GATHERER-COLLECTOR ORGANISMS SUGGEST POLLUTANTS; BECAUSE THEY ARE GENERALIST AND CAN THRIVE IN POLLUTED WATER. ALL 75 METERS OF THE HABITAT WERE MODERATELY IMPAIRED. THE DOMINANT TAXA WAS OLIGOCHAETA (WHICH SUGGEST SEWAGE LOVING ORGANISMS). 39 ORGANISMS FOUND IN THE ENTIRE SAMPLE. HABITAT AND TOXICS ARE THE POSSIBLE CAUSES FOR DEGRADATION.

THE 2010 MACROINVERTEBRATE ASSESSMENT (SAMPLES COLLECTED IN 2009) REVEALED CHIRONOMIDAE AS THE DOMINANT TAXA. NO SENSITIVE SPECIES WERE PRESENT.

DURING THE 2013 DCSS SEDIMENT IN THE STREAMBED , LOW FLOW, SAND DEPOSITS, HIGH VOLUME OF TRASH WERE OBSERVED. DEEP POOLS OBSERVED IN 2011 ARE BEING FILLED WITH SEDIMENT.

IN 2011 OBSERVATIONS OF THIS STREAM REVEALED SEVERE EMBEDDEDNESS AND UNUSUALLY DEEP POOLS.

IN 2011 AND 2013 MACROINVERTEBRATE SAMPLES WERE COLLECTED AND WILL BE ANALYZED AT A LATER DATE.

REPORTS WITH MORE INFORMATION INCLUDE:

\*ANALYSIS OF BIOLOGICAL SAMPLES: DISTRICT OF COLUMBIA  
 PHYTOPLANKTON, ZOOPLANKTON AND BENTHIC MACROINVERTEBRATE  
 SAMPLES, RHITHRON ASSOCIATES, OCTOBER 2010.

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## Detail Report for PINEHURST BRANCH

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**ID:** DCTPI01R\_00

**State:** DC - 2014

**Single Cat.(User Cat.):**  
5(N/A)

**Multi-Category:** 2, 3, 4B, 5

<b>Water Information:</b>	<b>PINEHURST BRANCH</b>	
	<b>Location:</b> PINEHURST BRANCH IS A TRIBUTARY OF ROCK CREEK WHOSE MOUTH IS ABOUT 1,200 FEET NORTH OF THE INTERSECTION OF BINGHAM DRIVE AND BEACH DRIVE NW	<b>Water Type:</b> RIVER <b>Size:</b> 1.5 MILES <b>Next Scheduled Monitoring Date:</b> 2016
<b>Use Information</b>		
<b>Assessed:</b>	<b>Attainment Status</b>	<b>Uses</b>
	Fully Supporting	Secondary Contact Recreation and Aesthetic Enjoyment
	Insufficient Information	Protection of Human Health related to Consumption of Fish and Shellfish
	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife

## Types of Assessment

Assessment Type	Uses	Assessment Confidence
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife	GOOD
	Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
	Secondary Contact Recreation and Aesthetic Enjoyment	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

## Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Arsenic	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Chlordane	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Copper	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
DDD	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
DDE	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
DDT	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Dieldrin	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Escherichia coli	Primary Contact Recreation	Yes	
Heptachlor epoxide	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Polychlorinated biphenyls	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Zinc	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes	

## Comments On:

## Overall Assessment



PINEHURST BRANCH'S EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2009-2013) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

THE PRIMARY CONTACT (SWIMMABLE) USE IS NOT SUPPORTED. E. COLI, PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 23.53%, 0.0% AND 0.0% OF THE TIME, RESPECTIVELY.

THE SECONDARY CONTACT RECREATION USE IS SUPPORTED. PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 0.0% AND 0.0% OF THE TIME, RESPECTIVELY.

THE AQUATIC LIFE USE SUPPORT IS NOT SUPPORTED. THE DECISION IS BASED ON THE DC STREAM SURVEY CONDUCTED IN 2010 AND CONVENTIONAL POLLUTANT DATA. TEMPERATURE, PH, DISSOLVED OXYGEN AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 0.0%, 0%, 0.0% AND 0.0% OF THE TIME, RESPECTIVELY.

BECAUSE OF A FISH CONSUMPTION ADVISORY, PINEHURST BRANCH DID NOT SUPPORT ITS FISH CONSUMPTION USE. DETERMINATION OF THE FISH CONSUMPTION USE WAS BASED ON A PUBLIC HEALTH ADVISORY ISSUED ON NOVEMBER 15, 1994, BY THE D.C. COMMISSIONER OF PUBLIC HEALTH. THE ADVISORY URGES NON-CONSUMPTION OF CATFISH, CARP OR EEL AND LIMITED CONSUMPTION OF OTHER FISH CAUGHT IN ALL DISTRICT OF COLUMBIA WATERS.

PINEHURST BRANCH WAS NOT ASSESSED FOR NAVIGATION.

BECAUSE OF THE ABOVE USE DECISIONS, THIS SEGMENT DID NOT SUPPORT THE OVERALL USE SUPPORT CLASSIFICATION.

PINEHURST BRANCH STREAM FLOWS FROM A RESIDENTIAL SECTION OF MARYLAND TO ROCK CREEK IN THE DISTRICT. TEN OUTFALLS DISCHARGE TO THIS STREAM. PINEHURST BRANCH IS A TRIBUTARY OF ROCK CREEK WHOSE MOUTH IS ABOUT 1,200 FEET NORTH OF THE INTERSECTION OF BINGHAM DRIVE AND BEACH DRIVE NW. THE STREAM ORIGINATES AT THE DC/MARYLAND LINE IN CHEVY CHASE MANOR, MARYLAND. THE WATERSHED IS ABOUT 70% URBANIZED RESIDENTIAL AND COMMERCIAL.

THE ABOVE DESCRIPTION WAS TAKEN FROM "BIOLOGICAL WATER QUALITY OF THE SURFACE TRIBUTARY STREAMS OF THE DISTRICT OF COLUMBIA," W.C. BANTA, THE AMERICAN UNIVERSITY, 1993.

THE 2010 MACROINVERTEBRATE ASSESSMENT (SAMPLES COLLECTED IN 2009) REVEALED CHIRONOMIDAE AS THE DOMINANT TAXA. BAETIDAE

WERE PRESENT.

DURING THE 2013 DCSS DOWNED TREES, BROWN MACROPHYTES AND LOW FLOW WAS OBSERVED.

DURING THE 2011 DCSS THE LEFT BANK WAS GOUGED OUT AT THE ZERO METER, THE RIGHT BANK WAS SEVERLY ERODED AND MACROPHYTES WERE PRESENT.

REPORTS WITH MORE INFORMATION INCLUDE:

\*ANALYSIS OF BIOLOGICAL SAMPLES: DISTRICT OF COLUMBIA PHYTOPLANKTON, ZOOPLANKTON AND BENTHIC MACROINVERTEBRATE SAMPLES, RHITHRON ASSOCIATES, OCTOBER 2010.

## Detail Report for PORTAL BRANCH

**ID:** DCTPO01R\_00

**State:** DC - 2014

**Single Cat.(User Cat.):**  
5(N/A)

**Multi-Category:** 3, 4B, 5

<b>Water Information:</b>	<b>PORTAL BRANCH</b>	
	<b>Location:</b> PORTAL BRANCH FLOWS FROM MARYLAND INTO THE NORTHERN CORNER OF THE DISTRICT TO FENWICK BRANCH IN THE DISTRICT BEFORE JOINING ROCK CREEK	<b>Water Type:</b> RIVER <b>Size:</b> 0.5 MILES <b>Next Scheduled Monitoring Date:</b> 2016
<b>Use Information</b>		
<b>Assessed:</b>	<b>Attainment Status</b>	<b>Uses</b>
	Insufficient Information	Protection of Human Health related to Consumption of Fish and Shellfish
	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Secondary Contact Recreation and Aesthetic Enjoyment

### Types of Assessment

Assessment Type	Uses	Assessment Confidence
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife	GOOD
	Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
	Secondary Contact Recreation and Aesthetic Enjoyment	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

### Cause Information

Causes	Associated Uses	Pollutant? Confidence
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Arsenic	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Chlordane	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Copper	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes
DDD	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
DDE	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
DDT	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Debris/Floatables/Trash	Secondary Contact Recreation and Aesthetic Enjoyment	Yes
Dieldrin	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Escherichia coli	Primary Contact Recreation	Yes
Heptachlor epoxide	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Other flow regime alterations	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Particle distribution (Embeddedness)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Polychlorinated biphenyls	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Zinc	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes

### Source Information

Sources	Associated Causes	Confirmed?
Illegal Dumping	Particle distribution (Embeddedness)	
Illegal Dumps or Other Inappropriate Waste Disposal	Particle distribution (Embeddedness)	
Municipal (Urbanized High Density Area)	Particle distribution (Embeddedness)	

**Comments On:**

**Overall Assessment**

PORTAL BRANCH'S EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2009-2013) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

THE PRIMARY CONTACT (SWIMMABLE) USE IS NOT SUPPORTED. E. COLI, PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 35.29%, 0.0% AND 5.0% OF THE TIME, RESPECTIVELY.

THE SECONDARY CONTACT RECREATION USE IS SUPPORTED. PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 0.0% AND 5.0% OF THE TIME, RESPECTIVELY.

THE AQUATIC LIFE USE SUPPORT IS NOT SUPPORTED. THE DECISION IS BASED ON THE DC STREAM SURVEY CONDUCTED IN 2002 AND CONVENTIONAL POLLUTANT DATA. TEMPERATURE, PH, DISSOLVED OXYGEN AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 0.0%, 0.0%, 0.0% AND 5.0% OF THE TIME, RESPECTIVELY.

BECAUSE OF A FISH CONSUMPTION ADVISORY, PORTAL BRANCH DID NOT SUPPORT ITS FISH CONSUMPTION USE. DETERMINATION OF THE FISH CONSUMPTION USE WAS BASED ON A PUBLIC HEALTH ADVISORY ISSUED ON NOVEMBER 15, 1994, BY THE D.C. COMMISSIONER OF PUBLIC HEALTH. THE ADVISORY URGES NON-CONSUMPTION OF CATFISH, CARP OR EEL AND LIMITED CONSUMPTION OF OTHER FISH CAUGHT IN ALL DISTRICT OF COLUMBIA WATERS.

PORTAL BRACH WAS NOT ASSESSED FOR NAVIGATION.

BECAUSE OF THE ABOVE DECISIONS, THIS SEGMENT DID NOT SUPPORT THE OVERALL USE SUPPORT CLASSIFICATION.

PORTAL BRANCH FLOWS FROM MARYLAND INTO THE NORTHERN CORNER OF THE DISTRICT TO FENWICK BRANCH IN THE DISTRICT BEFORE JOINING ROCK CREEK. PORTAL BRANCH JOINS FENWICK BRANCH ABOUT 120 FEET NORTH OF FENWICK'S MOUTH AT ROCK CREEK. THE SURFACE STREAM IS ENTIRELY WITHIN THE DISTRICT BUT ONLY 36% OF IT'S WATERSHED IS WITHIN DC'S BORDERS. A TOTAL OF 10 OUTFALLS DISCHARGE INTO THIS STREAM SIX WITHIN THE DISTRICT. THE SURFACE PORTION OF THE STREAM IS BUFFERED BY 100 FEET OF PARKLAND AND IS PARALLELED BY SEWAGE LINES. THE 198 ACRE WATERSHED IS A MIX OF COMMERCIAL AND

RESIDENTIAL PROPERTY.

THE ABOVE DESCRIPTION WAS TAKEN FROM "BIOLOGICAL WATER QUALITY OF THE SURFACE TRIBUTARY STREAMS OF THE DISTRICT OF COLUMBIA," W.C. BANTA, THE AMERICAN UNIVERSITY, 1993.

PORTAL BRANCH IS LIKELY TO BE SIGNIFICANTLY IMPACTED BY ORGANIC AND TOXIC EFFECTS. THE WATERSHED WITHIN THE DISTRICT OF COLUMBIA IS RESIDENTIAL AND PARKLAND PROPERTY. WHILE THE MARYLAND PORTION HAS INDUSTRIAL AND COMMERCIAL USES.

THE 2002 HBI SCORE SUGGESTS SIGNIFICANT ORGANIC POLLUTION. THE DOMINANT TAXA IDENTIFIED WAS GASTROPODA, WHICH IS VERY TOLERANT TO TOXIC WATER QUALITY. HABITAT IN THE STREAM WAS SEVERELY IMPAIRED. ONLY 21 ORGANISMS WERE FOUND IN THE ENTIRE SAMPLE. SIX STORM DRAINS THAT DISCHARGE IN DC AFFECT PORTAL BRANCH. ORGANICS AND HABITAT ARE POSSIBLY THE CAUSE OF DEGRADATION TO THE STREAM.

DURING THE 2012 DCSS RECENT LEFT BANK STABILIZATION WAS EVIDENT. THE RIPARIAN AREA ON BOTH BANKS WAS REDUCED. THERE WAS ALGAE, FINE SEDIMENT, REDDISH GREY CLAY PRESENT DUE TO SEVERE BANK EROSION.

THE 2010 STREAM ASSESSMENT REVEALED SEVERE BANK EROSION ON BOTH THE RIGHT AND LEFT BANK OF THE STREAM. THE STREAM'S CONDUCTIVITY WAS HIGH.

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## **Detail Report for PINEY BRANCH**

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ID: DCTPY01R\_00

State: DC - 2014

Single Cat.(User Cat.):  
4B(N/A)

Multi-Category: 2, 3, 4B

<b>Water Information:</b>	<b>PINEY BRANCH</b>	
	<b>Location:</b> THIS MINOR STREAM WHICH ENTERS ROCK CREEK FROM THE EAST ABOVE THE NATIONAL ZOO	<b>Water Type:</b> RIVER <b>Size:</b> 1 MILES <b>Next Scheduled Monitoring Date:</b> 2016
<b>Use Information</b>		
<b>Assessed:</b>	<b>Attainment Status</b>	<b>Uses</b>
	Fully Supporting	Secondary Contact Recreation and Aesthetic Enjoyment
	Insufficient Information	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish
	Not Supporting	Primary Contact Recreation

**Types of Assessment**

Assessment Type	Uses	Assessment Confidence
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife	GOOD
	Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
	Secondary Contact Recreation and Aesthetic Enjoyment	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

**Cause Information**

Causes	Associated Uses	Pollutant? Confidence
Arsenic	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Chlordane	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Copper	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes
DDD	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
DDE	Protection of Human Health related to	Yes

	Consumption of Fish and Shellfish	
DDT	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Dieldrin	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Escherichia coli	Primary Contact Recreation	Yes
Heptachlor epoxide	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Polychlorinated biphenyls	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Zinc	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes

### Comments On:

#### Overall Assessment

PINEY BRANCH'S EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2009-2013) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

THE PRIMARY CONTACT (SWIMMABLE) USE IS NOT SUPPORTED. E. COLI, PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 41.18%, 0.0% AND 0.0% OF THE TIME, RESPECTIVELY. PLEASE NOTE THE DISTRICT OF COLUMBIA WATER QUALITY STANDARDS PROHIBIT SWIMMING IN THE POTOMAC AND ANACOSTIA RIVERS AND ROCK CREEK UNTIL ALL THE PARAMETERS USED TO DETERMINE USE SUPPORT ARE BEING CONSISTENTLY ATTAINED (DCMR TITLE 21, CHAPTER 11, SECTION 1108). THE PARAMETERS USED TO SUPPORT THE PRIMARY CONTACT RECREATION DESIGNATED USE CAN BE FOUND IN DCMR TITLE 21, CHAPTER 11, SECTION 1104.8. THE DIRECTOR MAY ISSUE A DECISION THAT ALLOWS A SPECIAL SWIMMING EVENT IN THE POTOMAC RIVER. THE GUIDELINES FOR A SPECIAL SWIMMING EVENT ARE FOUND IN DCMR TITLE 21, CHAPTER 11, SECTION 1108.

THE SECONDARY CONTACT RECREATION USE IS SUPPORTED. PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 5.0% AND 10.0% OF THE TIME, RESPECTIVELY.

THE AQUATIC LIFE USE SUPPORT HAS INSUFFICIENT INFORMATION TO DETERMINE USE; DUE TO AN OVERSIGHT IN 2003, THE STREAM WAS NOT



SAMPLED FOR BENTHIC MACROINVERTEBRATES. TEMPERATURE, PH, DISSOLVED OXYGEN AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 0.0%, 0.0%, 5.0% AND 0.0% OF THE TIME, RESPECTIVELY.

BECAUSE OF A FISH CONSUMPTION ADVISORY, PINEY BRANCH DID NOT SUPPORT ITS FISH CONSUMPTION USE DESIGNATION. DETERMINATION OF FISH CONSUMPTION USE IS BASED ON A PUBLIC HEALTH ADVISORY ISSUED IN 1994 BY THE DC COMMISSIONER OF HEALTH. THE ADVISORY URGES BANNING CONSUMPTION OF CHANNEL CATFISH, CARP, OR EELS CAUGHT IN THE DISTRICT'S STRETCHS OF THE POTOMAC AND ANACOSTIA RIVERS. BECAUSE PINEY BRANCH IS A TRIBUTARY OF THE POTOMAC RIVER, FISH MAY MIGRATE FROM THE RIVER INTO THE TRIBUTARY, THEREFORE THIS ADVISORY EXTENDS TO PINEY BRANCH.

PINEY BRANCH WAS NOT ASSESSED FOR NAVIGATION.

BECAUSE OF THE ABOVE USE DECISIONS, THIS SEGMENT DID NOT SUPPORT THE OVERALL USE SUPPORT CLASSIFICATION.

PINEY BRANCH HAS THE LARGEST WATERSHED OF ANY TRIBUTARY OF ROCK CREEK ENTIRELY IN THE DISTRICT OF COLUMBIA. THIS MINOR STREAM WHICH ENTERS ROCK CREEK FROM THE EAST ABOVE THE NATIONAL ZOO IS INDICATED ON THE USGS 7.5 MINUTE QUADRANGLE AS A TEMPORARY STREAM RUNNING NEAR THE CENTER OF A STRIP OF FORESTED PARKLAND ABOUT 1,000 YARDS WIDE. THE STREAM HAS A VERY LARGE WATERSHED (2,500 ACRES) COMPARED TO THE ACTUAL STREAM SIZE WHICH IS ATTRIBUTABLE TO THE EXTENSIVE SYSTEM OF COMBINED SEWER/STORM DRAINS THAT COLLECT RUNOFF. DURING PERIODS OF HIGH FLOWS THE EXCESS WATER FROM THESE LINES COMBINE WITH RAW SEWAGE AND ARE DISCHARGED INTO THE STREAM.

THE ABOVE DESCRIPTION WAS TAKEN FROM "BIOLOGICAL WATER QUALITY OF THE SURFACE TRIBUTARY STREAMS OF THE DISTRICT OF COLUMBIA," W.C. BANTA, THE AMERICAN UNIVERSITY, 1993.

PINEY BRANCH IS A RECIPIENT OF COMBINED SEWER OVERFLOW DURING HEAVY STORM PEAK FLOWS. THIS EFFECT COUPLED WITH THE STORMWATER DRAIN INPUTS CAUSE EPISODIC WATER QUALITY STRESSORS EVIDENCED BY THE DOMINANCE OF CHIRONOMID MIDGE LARVAE. THE WATERSHED ENCOMPASES A RELATIVELY LARGE PRIMARILY RESIDENTIAL AREA WHICH IS MOST LIKELY THE SOURCE OF TOXICS FROM VARIOUS UNIDENTIFIED SOURCES.

DURING THE 2012 DCSS MACROPHYTES COVERED A MAJORITY OF THE STREAMBED, THERE WAS A BUFFER BREAK ON THE RIGHT BANK AND HIGH

VOLUMES OF TRASH OBSERVED. THE SMELL OF SEWAGE WAS ALSO PRESENT.

DURING THE 2010 MACROINVERTEBRATE ASSESSMENT IT WAS OBSERVED THAT THERE WERE LARGE NUMBERS OF DOWNED TREES. LARGE AMOUNTS OF ALGAE PRESENT. ORDOR CONSISTENT WITH RAW SEWAGE OBSERVED. DURING HABITAT ASSESSMENT IT WAS OBSERVED THAT THE BOTTOM OF STREAM AT 15 METER MARK TO THE 75 METER MARK NOT VISIBLE DUE TO ALGAL BLOOM. LARGE AMOUNTS OF TRASH PRESENT IN STREAM.

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## Detail Report for SOAPSTONE CREEK

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**ID:** DCTSO01R\_00

**State:** DC - 2014

**Single Cat.(User Cat.):**  
5(N/A)

**Multi-Category:** 3, 4B, 5

<b>Water Information:</b>	<b>SOAPSTONE CREEK</b>	
	<b>Location:</b> SOAPSTONE CREEK IS A TRIBUTARY OF BROAD BRANCH WHICH JOINS BROAD BRANCH JUST ABOVE ITS CONFLUENCE WITH ROCK CREEK	<b>Water Type:</b> RIVER <b>Size:</b> 0.8 MILES

	NEAR DUMBARTON OAKS, NW	Next Scheduled Monitoring Date: 2016
<b>Use Information</b>		
<b>Assessed:</b>	<b>Attainment Status</b>	<b>Uses</b>
	Insufficient Information	Protection of Human Health related to Consumption of Fish and Shellfish
	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Secondary Contact Recreation and Aesthetic Enjoyment

### Types of Assessment

Assessment Type	Uses	Assessment Confidence
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife	GOOD
	Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
	Secondary Contact Recreation and Aesthetic Enjoyment	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

### Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Alterations in wetland habitats	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Arsenic	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
	Protection of Human Health related to Consumption of Fish and Shellfish		
Chlordane	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Copper	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
	Protection of Human Health related to Consumption of Fish and Shellfish		
DDD	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
DDE	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
DDT	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Debris/Floatables/Trash	Secondary Contact Recreation and Aesthetic Enjoyment	Yes	
Dieldrin	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	

Escherichia coli	Primary Contact Recreation	Yes
Heptachlor epoxide	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Polychlorinated biphenyls	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Zinc	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes

### Source Information

Sources	Associated Causes	Confirmed?
Illegal Dumping	Alterations in wetland habitats	
Illegal Dumps or Other Inappropriate Waste Disposal	Alterations in wetland habitats	
Impacts from Hydrostructure Flow Regulation/modification	Alterations in wetland habitats	
Residential Districts	Alterations in wetland habitats	
Yard Maintenance	Alterations in wetland habitats	

### Comments On:

#### Overall Assessment

SOAPSTONE CREEK'S EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2009-2013) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

THE PRIMARY CONTACT (SWIMMABLE) USE IS NOT SUPPORTED. E. COLI, PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 46.67%, 0.0% AND 5.26% OF THE TIME, RESPECTIVELY.

THE SECONDARY CONTACT RECREATION USE IS SUPPORTED. PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 0.0% AND 5.26% OF THE TIME, RESPECTIVELY

THE AQUATIC LIFE USE SUPPORT IS NOT SUPPORTED. THE DECISION IS BASED ON THE DC STREAM SURVEY CONDUCTED IN 2003 AND CONVENTIONAL POLLUTANT DATA. TEMPERATURE, PH, DISSOLVED OXYGEN AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 0.0%, 0.0%, AND 0.0% OF THE TIME, RESPECTIVELY.

BECAUSE OF A FISH CONSUMPTION ADVISORY, SOAPSTONE CREEK DID NOT SUPPORT ITS FISH CONSUMPTION USE DESIGNATION. DETERMINATION OF FISH CONSUMPTION USE IS BASED ON A PUBLIC HEALTH ADVISORY ISSUED IN 1994 BY THE DC COMMISSIONER OF HEALTH. THE ADVISORY URGES BANNING CONSUMPTION OF CHANNEL CATFISH, CARP, OR EELS CAUGHT IN THE DISTRICT'S STRETCHS OF THE POTOMAC AND ANACOSTIA RIVERS. BECAUSE SOAPSTONE CREEK IS A TRIBUTARY OF THE POTOMAC RIVER, FISH MAY MIGRATE FROM THE RIVER INTO THE TRIBUTARY, THEREFORE THIS ADVISORY EXTENDS TO SOAPSTONE CREEK.

SOAPSTONE CREEK WAS NOT ASSESSED FOR NAVIGATION.

BECAUSE OF THE ABOVE USE DECISIONS, THIS SEGMENT DID NOT SUPPORT THE OVERALL USE SUPPORT CLASSIFICATION.

SOAPSTONE CREEK IS A TRIBUTARY OF BROAD BRANCH WHICH JOINS BROAD BRANCH JUST ABOVE ITS CONFLUENCE WITH ROCK CREEK NEAR DUMBARTON OAKS, NW. SIX OUTFALLS DISCHARGE INTO THE STREAM. THE 550 ACRE WATERSHED IS MOSTLY URBAN WITH 15% PARKLAND AND FOREST AT ITS LOWER REACHES. ONLY ABOUT 20% OF THE WATERSHED, ALL IN ITS LOWER REACHES, IS NATURALLY DRAINED. BETWEEN THE MAIN STORM DRAIN DISCHARGE AND ITS MOUTH, SOAPSTONE CREEK RUNS THROUGH A STEEP-SIDED, HEAVILY-WOODED VALLEY ABOUT 500 YARDS WIDE.

THE ABOVE DESCRIPTION WAS TAKEN FROM "BIOLOGICAL WATER QUALITY OF THE SURFACE TRIBUTARY OF THE DISTRICT OF COLUMBIA, "W.C. BANTA, THE AMERICAN UNIVERSITY, 1993.

THE 2003 HABITAT SCORE SUGGEST A FAIRLY SIGNIFICANT ORGANIC POLLUTION PROBLEM IN THE STREAM. THE DOMINANT TAXA FOUND WAS CHIRONOMIDAE (TOLERANT GENERALIST). THE STREAM'S HABITAT WAS MODERATELY IMPAIRED. 27 ORGANISMS WERE FOUND IN ENTIRE SAMPLE. THE STREAM POSSIBLY SUFFERS FROM ORGANIC AND TOXIC POLLUTION.

DURING THE 2012 DCSS A BUFFER BREAK ON THE LEFT BANK WAS PRESENT. THERE WAS ALSO ALGAE ON THE ROCKS AND A SANDY SUBSTRATE OBSERVED.

## Detail Report for TEXAS AVENUE TRIBUTARY

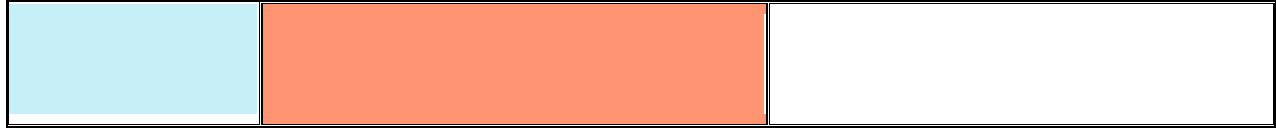
ID: DCTTX27R\_00

State: DC - 2014

Single Cat.(User Cat.):  
5(N/A)

Multi-Category: 4A, 5

<b>Water Information:</b>	<b>TEXAS AVENUE TRIBUTARY</b>	
	<p><b>Location:</b> TEXAS AVENUE IS AN ANACOSTIA RIVER TRIBUTARY OF A NOW ALMOST COMPLETELY SUBTERRANEAN STREAM. THE SURFACE PORTION OF THE STREAM ORIGINATES FROM A STORM DRAIN SOUTH OF THE INTERSECTION OF PENNSYLVANIA AVENUE AND BRANCH AVENUE, SE</p>	<p><b>Water Type:</b> RIVER <b>Size:</b> 0.2 MILES <b>Next Scheduled Montitoring Date:</b> N/A</p>
<b>Use Information</b>		
<b>Assessed:</b>	<b>Attainment Status</b>	<b>Uses</b>
	Not Supporting	Primary Contact RecreationProtection and Propagation of Fish, Shellfish and WildlifeProtection of Human Health related to Consumption of Fish and ShellfishSecondary Contact Recreation and Aesthetic Enjoyment



## Types of Assessment

Assessment Type	Uses	Assessment Confidence
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife	GOOD
	Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
	Secondary Contact Recreation and Aesthetic Enjoyment	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

## Cause Information

Causes	Associated Uses	Pollutant? Confidence
Arsenic	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Chlordane	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
DDD	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
DDE	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
DDT	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Debris/Floatables/Trash	Secondary Contact Recreation and Aesthetic Enjoyment	Yes
Dieldrin	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Fecal Coliform	Primary Contact Recreation	Yes
Heptachlor epoxide	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Other flow regime alterations	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Particle distribution (Embeddedness)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Polychlorinated biphenyls	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Total Suspended Solids	Primary Contact Recreation	Yes

(TSS)

Protection and Propagation of Fish,  
Shellfish and Wildlife  
Secondary Contact Recreation and  
Aesthetic Enjoyment

### Source Information

Sources	Associated Causes	Confirmed?
Illegal Dumping	Other flow regime alterations Particle distribution (Embeddedness)	
Illegal Dumps or Other Inappropriate Waste Disposal	Other flow regime alterations Particle distribution (Embeddedness)	
Impacts from Hydrostructure Flow Regulation/modification	Other flow regime alterations Particle distribution (Embeddedness)	
Loss of Riparian Habitat	Other flow regime alterations Particle distribution (Embeddedness)	
Residential Districts	Other flow regime alterations Particle distribution (Embeddedness)	

### Comments On:

#### Overall Assessment

TEXAS AVENUE'S EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2009-2013) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

THE PRIMARY CONTACT (SWIMMABLE) USE IS NOT SUPPORTED. E. COLI, PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 41.18%, 0.0% AND 44.44% OF THE TIME, RESPECTIVELY.

THE SECONDARY CONTACT RECREATION USE IS NOT SUPPORTED. PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 0.0% AND 44.44% OF THE TIME, RESPECTIVELY.

THE AQUATIC LIFE USE SUPPORT IS NOT SUPPORTED. THE DECISION IS BASED ON THE DC STREAM SURVEY CONDUCTED IN 2002 AND CONVENTIONAL POLLUTANT DATA. TEMPERATURE, PH, DISSOLVED OXYGEN AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 0.0%, 0.0%, 5.56% AND 44.44% OF THE TIME, RESPECTIVELY.

BECAUSE OF A FISH CONSUMPTION ADVISORY, TEXAS AVENUE TRIBUTARY DID NOT SUPPORT ITS FISH CONSUMPTION USE. DETERMINATION OF FISH CONSUMPTION USE IS BASED ON A PUBLIC HEALTH ADVISORY ISSUED IN 1994 BY THE DC COMMISSIONER OF HEALTH. THE ADVISORY URGES BANNING CONSUMPTION OF CHANNEL CATFISH, CARP, OR EELS CAUGHT IN THE DISTRICT'S STRETCHS OF THE POTOMAC AND ANACOSTIA RIVERS.



BECAUSE TEXAS AVENUE TRIBUTARY IS A TRIBUTARY OF THE ANACOSTIA RIVER, FISH MAY MIGRATE FROM THE RIVER INTO THE TRIBUTARY, THEREFORE THIS ADVISORY EXTENDS TO TEXAS AVENUE TRIBUTARY.

TEXAS AVENUE TRIBUTARY WAS NOT ASSESSED FOR NAVIGATION.

BECAUSE OF THE ABOVE DECISIONS, THIS SEGMENT DID NOT SUPPORT THE OVERALL USE SUPPORT CLASSIFICATION.

TEXAS AVENUE IS AN ANACOSTIA RIVER TRIBUTARY OF A NOW ALMOST COMPLETELY SUBTERRANEAN STREAM. THE SURFACE PORTION OF THE STREAM ORIGINATES FROM A STORM DRAIN SOUTH OF THE INTERSECTION OF PENNSYLVANIA AVENUE AND BRANCH AVENUE, SE. THE WATERSHED OF 110 ACRES IS ABOUT 40% FORESTED PARKLAND AND 60% RESIDENTIAL AND LIGHT COMMERCIAL PROPERTY. ONE LARGE STORMWATER OUTFALL DISCHARGES INTO THE STREAM WHILE SEVERAL SEWER LINES PARALLEL AND CROSS IT AS WELL.

THE ABOVE DESCRIPTION WAS TAKEN FROM 'BIOLOGICAL WATER QUALITY OF THE SURFACE TRIBUTARY STREAMS OF THE DISTRICT OF COLUMBIA,' W.C. BANTA, THE AMERICAN UNIVERSITY, 1993.

THE 2002 STREAM'S HBI SCORE SUGGESTS SOME ORGANIC POLLUTION. A HIGH PERCENTAGE OF GATHERER-COLLECTOR ORGANISMS SUGGESTS TOXIC AND ORGANIC POLLUTANTS, BECAUSE THEY ARE GENERALIST AND CAN THRIVE IN POLLUTED WATERS. NO SENSITIVE ORGANISMS WERE FOUND (EPT). THE DOMINANT TAXA SEEN WAS OLIGOCHAETA, (SEWAGE LOVING ORGANISMS). THE STREAM'S HABITAT WAS SEVERELY IMPAIRED. 11 ORGANISMS WERE FOUND IN THE SAMPLE COLLECTED. THIS STREAM WILL HAVE TO BE EVALUATED FOR WAYS TO PREVENT FURTHER BANK EROSION.

DURING THE 2012 DCSS OBSERVATIONS INCLUDED DOWNED TREES, SEVERE EROSION ON BOTH BANKS, EXTENSIVE BAR FORMATIONS AND A LEFT BANK BUFFER BREAK.

DURING THE 2010 DCSS OBSERVATIONS INCLUDED IRON FLOCCULANTS COATING STREAM BED WITH OXIDIZED SEDIMENT PRESENT. EXTREME EMBEDDEDNESS PRESENT IN 75 METER STRETCH. ALSO, SULFUROUS ODOR PRESENT WHEN SEDIMENT WAS DISTURBED. LARGE AMOUNTS OF TRASH PRESENT IN AND AROUND THE STREAM.

THIS TRIBUTARY WAS ASSESSED AS HAVING A POTENTIAL ORGANIC ENRICHMENT/LOW DISSOLVED OXYGEN WATER QUALITY IMPAIRMENT. THIS DETERMINATION WAS BASED ON A BENTHIC MACROINVERTEBRATE

BIOLOGICAL ASSESSMENT WHICH FOUND A DOMINANCE OF THE OLIGOCHAETA ORDER OF AQUATIC WORM IN THE SAMPLED STREAM REACH. A DOMINANCE OF OLIGOCHAETE WORMS IS A STRONG INDICATOR OF ORGANIC ENRICHMENT WHICH CAN BE A MAJOR CAUSE OF LOW DISSOLVED OXYGEN CONCENTRATION (BANTA, 1993). MAB HAS DETERMINED THAT ANY STREAM BENTHIC SAMPLE CONTAINING MORE THAN 20% OF OLIGOCHAETE DOMINANCE WILL BE CLASSIFIED AS HAVING AN ORGANIC ENRICHMENT/LOW DISSOLVED OXYGEN CAUSE.

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## Detail Report for WATTS BRANCH DC

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**ID:** DCTWB00R\_01

**State:** DC - 2014

**Single Cat.(User Cat.):**  
5(N/A)

**Multi-Category:** 3, 4A, 5

<b>Water Information:</b>	<b>WATTS BRANCH DC</b>	
	<b>Location:</b> ANACOSTIA RIVER TRIBUTARY, RUNS THROUGH KENILWORTH PARK WHICH IS A COVERED LANDFILL. SEGMENT 01 (TWB01) IS TOTALLY AFFECTED FROM ITS MOUTH TO 25 YARDS ABOVE THE FIRST LOWER BRIDGE IN THE PARK	<b>Water Type:</b> RIVER <b>Size:</b> 0.3 MILES <b>Next Scheduled Monitoring Date:</b> N/A
<b>Use Information</b>		
<b>Assessed:</b>	<b>Attainment Status</b>	<b>Uses</b>
	Insufficient Information	Protection of Human Health related to Consumption of Fish and Shellfish
	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Secondary Contact Recreation and Aesthetic Enjoyment

**Types of Assessment**

<b>Assessment Type</b>	<b>Uses</b>	<b>Assessment Confidence</b>
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife	GOOD
	Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
	Secondary Contact Recreation and Aesthetic Enjoyment	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

### **Cause Information**

<b>Causes</b>	<b>Associated Uses</b>	<b>Pollutant?</b>	<b>Confidence</b>
Chlordane	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
DDD	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
DDE	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
DDT	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Debris/Floatables/Trash	Secondary Contact Recreation and Aesthetic Enjoyment	Yes	
Dieldrin	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Fecal Coliform	Primary Contact Recreation	Yes	
Heptachlor epoxide	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Other flow regime alterations	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Polychlorinated biphenyls	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Total Suspended Solids (TSS)	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Secondary Contact Recreation and Aesthetic Enjoyment	Yes	

### **Source Information**

<b>Sources</b>	<b>Associated Causes</b>	<b>Confirmed?</b>
Channelization	Other flow regime alterations	
Illegal Dumping	Other flow regime alterations	
Illegal Dumps or Other	Other flow regime alterations	

Inappropriate Waste Disposal	
Residential Districts	Other flow regime alterations
Site Clearance (Land Development or Redevelopment)	Other flow regime alterations
Wet Weather Discharges (Non-Point Source)	Other flow regime alterations
Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO)	Other flow regime alterations

**Comments On:**

**Overall Assessment**

LOWER WATTS BRANCH'S EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2009-2013) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

THE PRIMARY CONTACT (SWIMMABLE) USE IS NOT SUPPORTED. E. COLI, PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 38.0%, 10.0% AND 10.34% OF THE TIME, RESPECTIVELY.

THE SECONDARY CONTACT RECREATION USE IS NOT SUPPORTED. PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 10.0% AND 10.34% OF THE TIME, RESPECTIVELY.

THE AQUATIC LIFE USE SUPPORT IS NOT SUPPORTED. THE DECISION IS BASED ON THE DC STREAM SURVEY CONDUCTED IN 2010 AND CONVENTIONAL POLLUTANT DATA. TEMPERATURE, PH, DISSOLVED OXYGEN AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 0.0%, 10.0%, 1.69% AND 10.34% OF THE TIME, RESPECTIVELY.

BECAUSE OF A FISH CONSUMPTION ADVISORY, LOWER WATTS BRANCH DID NOT SUPPORT ITS FISH CONSUMPTION USE. DETERMINATION OF FISH CONSUMPTION USE IS BASED ON A PUBLIC HEALTH ADVISORY ISSUED IN 1994 BY THE DC COMMISSIONER OF HEALTH. THE ADVISORY URGES BANNING CONSUMPTION OF CHANNEL CATFISH, CARP, OR EELS CAUGHT IN THE DISTRICT'S STRETCH OF THE POTOMAC AND ANACOSTIA RIVERS. BECAUSE LOWER WATTS BRANCH IS A TRIBUTARY OF THE ANACOSTIA RIVER, FISH MAY MIGRATE FROM THE RIVER INTO THE TRIBUTARY, THEREFORE THIS ADVISORY EXTENDS TO LOWER WATTS BRANCH.

LOWER WATTS BRANCH WAS NOT ASSESSED FOR NAVIGATION.

BECAUSE OF THE ABOVE USE DECISIONS, THIS SEGMENT DID NOT SUPPORT THE OVERALL USE SUPPORT CLASSIFICATION.

ANACOSTIA RIVER TRIBUTARY, RUNS THROUGH KENILWORTH PARK WHICH IS A COVERED LANDFILL. SEGMENT 01 (TWB01) IS TOTALLY AFFECTED FROM ITS MOUTH TO 25 YARDS ABOVE THE FIRST LOWER BRIDGE IN THE PARK. THIS PORTION OF THE STREAM IS 23 FEET WIDE AND SHALLOW. ABOUT 80% OF THE STREAM'S WATERSHED IS URBAN RESIDENTIAL AND COMMERCIAL PROPERTY; LESS THAN 15% IS FORESTED.

THE LOWER PORTION OF WATTS BRANCH IS SIGNIFICANTLY AFFECTED BY ORGANIC AND TOXIC EFFECTS STEMMING FROM STORMWATER DISCHARGES AND SEWER LINE LEAKS.

THE 2003 HBI SCORE SUGGESTS NO APPARENT ORGANIC POLLUTION. CHIRONOMIDAE (GENERALIST THAT CAN THRIVE IN POLLUTED WATERS AND OLIGOCHAETA (SEWAGE LOVING ORGANISMS) ARE THE ONLY TWO TAXA FOUND. ONLY 5 ORGANISMS WERE FOUND IN THE SAMPLE COLLECTED AND THEY INCLUDED NO SENSITIVE ORGANISMS (EPT).

THE 2010 MACROINVERTEBRATE ASSESSMENT (SAMPLES COLLECTED IN 2009) REVEALED CHIRONOMIDAE AS THE DOMINANT TAXA, WITH HIGH DIVERSITY. NO SENSITIVE ORGANISMS PRESENT.

DURING THE 2012 AND 2013 DCSS LOW FLOW, IRON FLOCCULLANT RIGHT BANK EROSION AND HIGH VOLUMES OF TRASH WERE OBSERVED. THE STREAM IS STRAIGHT AND CHANNELIZED. THE LEFT BANK IS MOSTLY CONCRETE.

REPORTS WITH MORE INFORMATION INCLUDE:

\*ANALYSIS OF BIOLOGICAL SAMPLES: DISTRICT OF COLUMBIA PHYTOPLANKTON, ZOOPLANKTON AND BENTHIC MACROINVERTEBRATE SAMPLES, RHITHRON ASSOCIATES, OCTOBER 2010.

## Detail Report for WATTS BRANCH DC

**ID:** DCTWB00R\_02

**State:** DC - 2014

**Single Cat.(User Cat.):**  
5(N/A)

**Multi-Category:** 3, 4A, 5

<b>Water Information:</b>	<b>WATTS BRANCH DC</b>	
	<b>Location:</b> PRINCE GEORGE'S COUNTY MARYLAND LINE TO KENILWORTH PARK (TWB05 AND TWB06). IT FLOWS THROUGH A DENSELY-POPULATED RESIDENTIAL AREA WITH A SMALL NUMBER OF COMMERCIAL BUILDINGS. WATTS BRANCH (MD & DC) DRAINS 2583 ACRES	<b>Water Type:</b> RIVER <b>Size:</b> 3.7 MILES <b>Next Scheduled Monitoring Date:</b> N/A
<b>Use Information</b>		
<b>Assessed:</b>	<b>Attainment Status</b>	<b>Uses</b>
	Insufficient Information	Protection of Human Health related to Consumption of Fish and Shellfish
	Not Supporting	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Secondary Contact Recreation and Aesthetic Enjoyment

### Types of Assessment

Assessment Type	Uses	Assessment Confidence
PHYSICAL/CHEMICAL	Protection and Propagation of Fish, Shellfish and Wildlife	GOOD
	Protection of Human Health related to Consumption of Fish and Shellfish	GOOD
	Secondary Contact Recreation and Aesthetic Enjoyment	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

### Cause Information

<b>Causes</b>	<b>Associated Uses</b>	<b>Pollutant? Confidence</b>
Chlordane	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
DDD	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
DDE	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
DDT	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Dieldrin	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Fecal Coliform	Primary Contact Recreation	Yes
Heptachlor epoxide	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Other flow regime alterations	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Polychlorinated biphenyls	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Total Suspended Solids (TSS)	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife Secondary Contact Recreation and Aesthetic Enjoyment	Yes

### **Source Information**

<b>Sources</b>	<b>Associated Causes</b>	<b>Confirmed?</b>
Illegal Dumping	Other flow regime alterations Total Suspended Solids (TSS)	
Illegal Dumps or Other Inappropriate Waste Disposal	Other flow regime alterations Total Suspended Solids (TSS)	
Residential Districts	Other flow regime alterations Total Suspended Solids (TSS)	
Site Clearance (Land Development or Redevelopment)	Other flow regime alterations Total Suspended Solids (TSS)	
Wet Weather Discharges (Non-Point Source)	Other flow regime alterations Total Suspended Solids (TSS)	
Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO)	Other flow regime alterations Total Suspended Solids (TSS)	

### **Comments On:**

## Overall Assessment

UPPER WATTS BRANCH'S EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2009-2013) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

THE PRIMARY CONTACT (SWIMMABLE) USE IS NOT SUPPORTED. E. COLI, PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 41.18%, 8.40% AND 11.30% OF THE TIME, RESPECTIVELY.

THE SECONDARY CONTACT RECREATION USE IS NOT SUPPORTED. PH AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 8.40% AND 11.30% OF THE TIME, RESPECTIVELY.

THE AQUATIC LIFE USE SUPPORT IS NOT SUPPORTED. THE DECISION IS BASED ON THE DC STREAM SURVEY CONDUCTED IN 2010 AND CONVENTIONAL POLLUTANT DATA. TEMPERATURE, PH, DISSOLVED OXYGEN AND TURBIDITY VIOLATED THE WATER QUALITY STANDARDS 0.0%, 8.40%, 0.85% AND 11.30% OF THE TIME, RESPECTIVELY.

BECAUSE OF A FISH CONSUMPTION ADVISORY, UPPER WATTS BRANCH DID NOT SUPPORT ITS FISH CONSUMPTION USE. DETERMINATION OF FISH CONSUMPTION USE IS BASED ON A PUBLIC HEALTH ADVISORY THIS SEGMENT DID NOT SUPPORT THE FISH CONSUMPTION USE. DETERMINATION OF FISH CONSUMPTION WAS BASED ON A PUBLIC HEALTH ADVISORY ISSUED ON NOVEMBER 15, 1994, BY THE D.C. COMMISSIONER OF PUBLIC HEALTH. THE ADVISORY URGES NON-CONSUMPTION OF CATFISH, CARP OR EEL AND LIMITED CONSUMPTION OF OTHER FISH CAUGHT IN ALL DISTRICT OF COLUMBIA WATERS.

PRINCE GEORGE'S COUNTY MARYLAND LINE TO KENILWORTH PARK (TWB05 AND TWB06). IT FLOWS THROUGH A DENSELY-POPULATED RESIDENTIAL AREA WITH A SMALL NUMBER OF COMMERCIAL BUILDINGS. WATTS BRANCH (MD & DC) DRAINS 2583 ACRES. THE STREAM IS SUBTERRANEAN FOR ABOUT 1000 FEET IN DEANWOOD, NE; IT TRAVELS BENEATH PARTS OF DEANE STREET AS TWIN 16-FOOT BY 7-FOOT CONDUITS. THE ENTIRE WATERSHED IS TRAVERSED AND PARALLELED BY NUMEROUS SEWER LINES. ITS ONCE NUMEROUS TRIBUTARIES HAVE BEEN REPLACED BY STORMWATER DISCHARGE WHICH ENTER THE STREAM THROUGH OUT ITS LENGTH.

THE UPPER PORTION OF WATTS BRANCH IS SIGNIFICANTLY AFFECTED BY ORGANIC AND TOXIC EFFECTS FROM STORMWATER DISCHARGES AND PERSISTENT SEWAGE LINE LEAKS. THE UPPER PORTION OF WATTS IS TRAVERSED AND PARALLELED BY SEWAGE LINES AND ALMOST ALL OF ITS



FIRST AND SECOND ORDER TRIBUTARIES HAVE BEEN PIPED. HYDROLOGIC MODIFICATION HAS TAKEN ITS TOLL ON THE HABITAT STRUCTURE OF WATTS. MUCH WORK HAS BEEN UNDERTAKEN TO STABILIZE THE STREAMBANKS BUT THE FORCE OF PEAK STORMFLOW OFTEN SCOURS THE STREAM.

THE 2010 MACROINVERTEBRATE ASSESSMENT (SAMPLES COLLECTED IN 2009) REVEALED CHIRONOMIDAE AS THE DOMINANT TAXA. NO SENSITIVE ORGANISMS PRESENT.

DURING THE 2013 DCSS THE STREAM HAD A GREY COLORED CLAY BOTTOM AND FEW MATURE TREES ON THE RIGHT BANK WAS OBSERVED.

DURING THE 2012 DCSS THERE WERE NEW EVERGREENS AND ROOTMATS ON BOTH BANKS OBSERVED. THE PHYSICAL HABITAT HAS IMPROVED SINCE THE COMPLETION OF THE RESTORATION PROJECT.

REPORTS WITH MORE INFORMATION INCLUDE:

\*ANALYSIS OF BIOLOGICAL SAMPLES: DISTRICT OF COLUMBIA PHYTOPLANKTON, ZOOPLANKTON AND BENTHIC MACROINVERTEBRATE SAMPLES, RHITHRON ASSOCIATES, OCTOBER 2010.

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# Data Collection Activities for District of Columbia Toxic Characterization

District of Columbia

Contract # EP-R8-12-04

Task Order 3

March 2014

*Prepared for:*

United States Environmental Protection Agency  
Region 3

*Prepared by:*

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Fairfax, VA 22030

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## **APPENDICES**

### **Appendix A – ROUND 1**

Sample Summaries

Analytical Results

Comparison of Analytical Results with Surface Water Benchmark Values

Assessment Documentation for Non-detects

### **Appendix B - ROUND 2**

Sample Summaries

Analytical Results

Comparison of Analytical Results with Surface Water Benchmark Values

Assessment Documentation for Non-detects

### **Appendix C - ROUND 3**

Sample Summaries

Analytical Results

Comparison of Analytical Results with Surface Water Benchmark Values

Assessment Documentation for Non-detects

### **Appendix D – Field Notes**

### **Appendix E – Water Quality Data Forms**

### **Appendix F – Photodocumentation**

### **Appendix G – Analytical Laboratory Reports**

## SECTION 1.0 **BACKGROUND**

The District of Columbia (the District) originally listed all of the District's waterbodies as impaired for toxics generally on its 1998 303(d) list and subsequently developed more than 300 Total Maximum Daily Loads (TMDLs) for specific toxic pollutants, including polynuclear aromatic hydrocarbons (PAH's), polychlorinated biphenyls (PCB's), organochlorine pesticides (OCPs) and metals. The District Department of Environment (DDOE) and EPA are revisiting some of these TMDLs now because a 2010, court order based on a litigation brought by the Anacostia Riverkeeper and Friends of the Earth will vacate these TMDLs due to the lack of daily loads. The court has refrained from vacating the TMDLs until 2017 to allow EPA and the DDOE time to revise the TMDLs to include daily loads. The original 303(d) toxics listings and TMDLs were based on the very limited data available at the time of development, primarily fish tissue data with some supplementary sediment and water quality data collected in the Anacostia River. Assumptions arising from this limited data set were extended to Rock Creek and its tributaries and for tributaries to the Anacostia River and Potomac River.

In order to ensure that the revised TMDLs will be based on the most current ambient water quality data, EPA contracted TetraTech on behalf of the District to conduct a data review for any new, updated toxics data available that could be used to inform the impairment status of all of the streams. The result of the data review provided some additional data in the Anacostia and Rock Creek, but little or no useable data for the tributaries. After reviewing the available data, EPA and DDOE are concerned that the original 1998 impairment listing for each TMDL stream segment may not have been accurate.

Because of the lack of toxics data for many of the water segments, and because the Water Quality Standards (WQS) for many of the toxics have changed, it was decided that a simple recalculation of daily loads for the toxic TMDLs would not provide accurate and defensible daily loads. EPA and DDOE decided to gather more data to support, confirm or revise the toxic impairment listings and then develop new TMDLs based on the new information collected.

The data collection included three field deployments, where both surface water quality measurements and surface water samples were taken. Surface water quality measurements are in situ measurements of temperature, DO, conductivity, pH, and salinity, whereas the collected samples were transferred to a lab for analysis of metals, OCPs, PAHs, and PCBs. Surface water quality measurements were taken in-situ using a YSI multiprobe, following protocols described in the Quality Assurance Project Plan (QAPP)(Tetra Tech, 2013b). Two rounds of wet weather

sampling and one round of dry sampling were conducted. The Rock Creek, Potomac River, and Anacostia sites were sampled once during dry conditions, and the Anacostia River sites were sampled in two additional rounds during wet conditions as described in the Sampling Analysis Plan (SAP)(Tetra Tech, 2013a). Additional associated project documents include the Site Specific Safety and Health Plan (SAHP)( Tetra Tech, 2013a). All three documents were submitted and approved by US EPA and DDOE prior to the start of the data collection.

The 28 study areas and 29 sampling locations for this project are shown in Figure 1.1. Fieldwork was performed from October 2013 through January 2014.

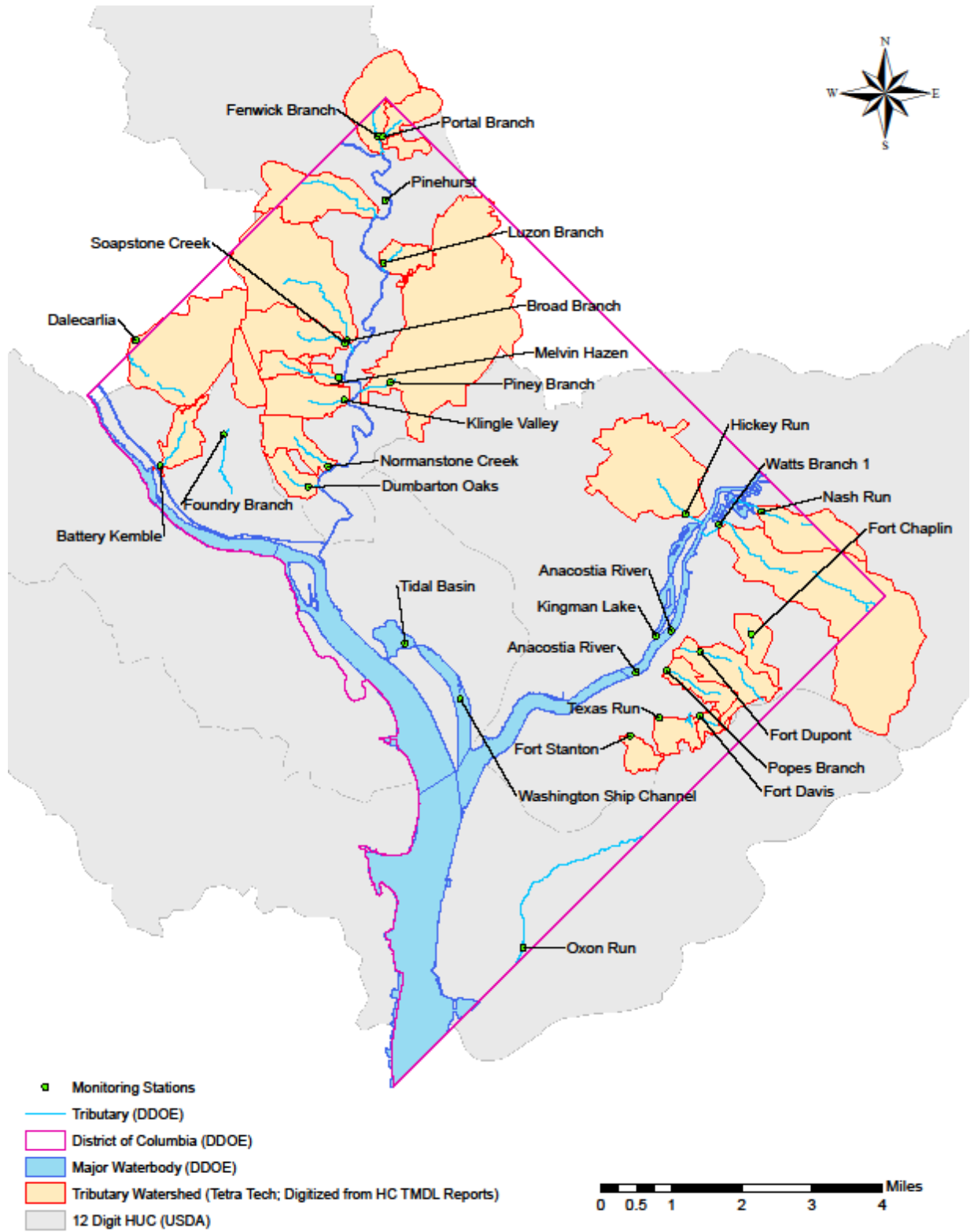


Figure 1.1. Locations of the 28 Waterbodies and 29 Sampling Stations.



## SECTION 2.0 **FIELD ACTIVITIES**

Field activities associated with this project included three rounds of sampling between October 2013 and January 2014. The monitoring included *in situ* water quality monitoring during one dry and two wet weather sampling episodes for the Anacostia River and Anacostia River tributaries to capture surface water chemistry at the proposed sampling locations.

Dry Weather sampling was performed in the Rock Creek, Anacostia River, and Potomac River tributary monitoring locations for pollutants of concern during low flow (dry) conditions. The sampling suite for each water body are listed in Table 2.1, and the suite components are shown in Table 2.2. Dry weather conditions were defined as no precipitation within 72 hour period prior to the sampling event. Wet weather sampling was performed twice in the Anacostia River and its tributaries to collect two wet weather samples. Wet weather conditions are defined as >0.5 inches of precipitation within 24 hours of sampling event and no measurable precipitation at least 72 hours prior to the sampling event.. Precipitation data from Reagan National Airport (KDCA) was used to monitor precipitation.

### 2.1 **ANACOSTIA RIVER AND TRIBUTARIES**

#### 2.1.1 **Anacostia Mainstem**

The Anacostia River main stem was sampled in two locations (Figure 3.1) for water quality: at the Upper Anacostia (above the CSX Railroad bridge), and Lower Anacostia (below the CSX Railroad bridge). The Upper and Lower Anacostia sampling stations were also co-located with previous water quality, sediment and fish collection stations as the Pinkney (2001) sampling locations. Sampling suites for the current effort were identified based on the data review conducted as part of the SAP development. The Anacostia mainstem was monitored for metals (arsenic, lead, copper and zinc), hardness, OCPs and PAHs.

#### 2.1.2 **Kingman Lake, Washington Ship Channel, and Tidal Basin**

The locations of the Kingman Lake, Washington Ship Channel, and Tidal Basin stations are shown in Figure 2.1. Kingman Lake was sampled near where it reenters the Anacostia River at sample location KNG01. The sampling suites for the current effort were identified based on the data review conducted as part of the SAP development. The Kingman Lake sample location sampled for PAHs, OCPs, and metals suites. The Washington Ship Channel station PWC04 and the Tidal Basin station NACC- NPS\_TB02 were monitored for the PAHs and OCPs suites.

**Table 2.1. Monitoring Station Descriptions and Sampling Suites.**

<b>Watershed</b>	<b>Stream Name</b>	<b>Latitude</b>	<b>Longitude</b>	<b>Station ID</b>	<b>Station Description</b>	<b>Sample Suite*</b>
Anacostia	Anacostia River	38.8858	-76.9655944	ANA11	Kingman Island South at Day marker #5	PAH, OCP, arsenic, lead, copper, zinc
Anacostia	Anacostia River	38.8772028	-76.9749028	ANA14	Pennsylvania Avenue; Marina South Dock	PAH, OCP, arsenic, lead, copper, zinc
Anacostia	Fort Chaplin	38.885	-76.94445	TFC01	Fort Chapin; Corner of C Street and Burbank S.E.	arsenic, lead, copper, zinc
Anacostia	Fort Davis	38.8681333	-76.9580333	TFD01	Fort Davis; Pennsylvania Avenue at 33rd Street S.E.	arsenic, lead, copper, zinc
Anacostia	Fort Dupont	38.8814	-76.9578333	TDU01	Fort Dupont; Railroad Yard Under Anacostia Freeway	arsenic, lead, copper, zinc
Anacostia	Fort Stanton	38.8644167	-76.9765667	TFS01	Fort Stanton; Rear of Apartment 1907; Good Hope Road S.E.	PCB, PAH, OCP, arsenic, lead, copper, zinc
Anacostia	Hickey Run	38.9098167	-76.9618333	THR01	National Arboretum; North Side of Bridge on Hickory Lane N.E.	PCB, PAH and OCPs
Anacostia	Kingman Lake	38.885	-76.97	KNG01	Outlet of Kingman Lake to Anacostia	PAH, OCP, arsenic, lead, copper, zinc

<b>Watershed</b>	<b>Stream Name</b>	<b>Latitude</b>	<b>Longitude</b>	<b>Station ID</b>	<b>Station Description</b>	<b>Sample Suite*</b>
Anacostia	Nash Run	38.9062333	-76.9383667	TNA01	Nash Run; Anacostia Avenue N.E.	PCB, PAH, OCP, arsenic, lead, copper, zinc
Anacostia	Popes Branch	38.8774833	-76.9667167	TPB01	Fairlawn Avenue Between M Street and M Place S.E.	PCB, PAH and OCP suites
Anacostia	Texas Avenue Tributary	38.8678	-76.96865	TTX27	Texas Avenue at 27th Street S.E.	PCB, PAH, OCP, arsenic, lead, copper, zinc
Anacostia	Tidal Basin	38.883	-77.035	NACC_NPS_TB_2	Tidal Basin of the Potomac River	PAH and OCP suites
Anacostia	Washington Shipping Channel	38.874	-77.022	PWC04	Washington Channel; 100m West of North Side of Municipal Pier	PAH and OCP suites
Anacostia	Watts Branch 1	38.9077	-76.9529167	TWB01	Watts Branch; Kenilworth Park S.E.	PCB, PAH and OCP suites
Potomac River	Battery Kemble	38.9197833	-77.1004333	TBK01	Battery Kemble/Fletcher's Boathouse; Canal Street N.W.	arsenic, lead, copper, zinc
Potomac River	Dalecarlia	38.9458667	-77.1069833	TDA01	Dalecarlia and Weatherhill Roads N.W.; Upstream of Reservoir Gate	PCB, PAH, OCP suites

Watershed	Stream Name	Latitude	Longitude	Station ID	Station Description	Sample Suite*
Potomac River	Foundry Branch	38.9262333	-77.0836500	TFB01	Foundry Branch Park, 50 yards south of Entrance to TWS Apartments	arsenic, lead, copper, zinc
Potomac River	Oxon Run	38.843	-76.973	TT_TOR01	Upstream of Oxon Run Near Highway at The Washington and Maryland Boundary;	PAH, OCP, arsenic, lead, copper, zinc
Rock Creek	Broad Branch	38.9458167	-77.05105	TBR01	Broad Branch; A Mile Down on Broad Branch Road NW; on Right Side; Across from First	PCB, PAH, OCP suites
Rock Creek	Dumbarton Oaks	38.9155472	-77.0614194	TDO01	Dumbarton Oaks; Lover Land Stnw; 200 Yds Down Trail on Left	PCB, PAH, OCP suites
Rock Creek	Fenwick Branch	38.988	-77.0429833	TFE01	North Portal St; NW on the left side	PCB, PAH, OCP suites
Rock Creek	Klinge Valley	38.9329667	-77.0519583	TKV01	Klinge Branch; Portal Stnw; Under Bridge on Left Side	PCB, PAH and OCP suites
Rock Creek	Luzon Branch	38.9617889	-77.0415194	TLU01	Luzon Stream; Right on Joyce Dr; Station on Left	PCB, PAH and OCP suites

Watershed	Stream Name	Latitude	Longitude	Station ID	Station Description	Sample Suite*
Rock Creek	Melvin Hazen	38.9380889	-77.0532389	TMH01	Hazen Creek; Left on Shoemaker; Left Into Parking Lot; to Footbridge	PCB, PAH and OCP suites
Rock Creek	Normanstone Creek	38.9197417	-77.0560889	TNS01	Normanstone Creek; on Rock Crk Dr; First Corner on Right; Up Hill on 28th	PCB, PAH and OCP suites
Rock Creek	Pinehurst Branch	38.9750167	-77.040925	TPI01	Pinehurst Branch; on Bingham Dr NW; Trail is on Left	PCB, PAH and OCP suites
Rock Creek	Piney Branch	38.9369833	-77.03975	TPY01	Piney Branch; Go Right on PB Pkway; Station on Left	PCB, PAH, OCP, arsenic, lead, copper, zinc
Rock Creek	Portal Branch	38.9879167	-77.0416417	TPO01	Portal Branch; Go Right on North Portal; Station on Right	PCB, PAH and OCP suites
Rock Creek	Soapstone Creek	38.9785417	-77.05195	TSO01	Soapstone Creek; Taken on Broad Branch Road NW; 150 Yards From White House on Left	PCB, PAH and OCP suites

\*See Table 2.2 for description of suite components.





Figure 2.1 Anacostia River Sampling Locations.

**Table 2.2. Analytes by Pollutant Group.**

Metals	Organochlorine pesticides (OCPs)	Polycyclic aromatic hydrocarbons (PAHs)	Polynuclear biphenyls (PCBs)
Arsenic - total	2,4'-DDD	Acenaphthene	PCB-209
Arsenic - dissolved	2,4'-DDE	Acenaphthylene	PCB-101
Calcium - total	2,4'-DDT	Anthracene	PCB-105
Copper - dissolved	4,4'-DDD	Benzidine	PCB-118
Copper - total	4,4'-DDE	Benzo[a]anthracene	PCB-126
Lead - total	4,4'-DDT	Benzo[a]pyrene	PCB-128
Lead - dissolved	alpha-Chlordane	Benzo[b]fluoranthene	PCB-138
Magnesium - total	Chlordane (technical)	Benzo[g,h,i]perylene	PCB-153
Zinc - dissolved	Dieldrin	Benzo[k]fluoranthene	PCB-169
Zinc - total	gamma-Chlordane	Chrysene	PCB-170
	Heptachlor epoxide	Dibenz(a,h)anthracene	PCB-18
		Fluoranthene	PCB-180
		Fluorene	PCB-187
		Indeno[1,2,3-cd]pyrene	PCB-206
		Naphthalene	PCB-28
		Phenanthrene	PCB-44
		Pyrene	PCB-52
			PCB-66
			PCB-77
			PCB-8
			Total Congeners

### 2.1.3 **Fort Chaplin**

“Fort Chaplin Tributary originates from a 6.5 ft. storm discharge near Burns Street and Texas Avenue, Southeast and parallels Burns Street for approximately 0.57 miles until draining into a pipe at C Street which connects with the East Capitol Street storm drain. Originally, Fort Chaplin would have paralleled what is now Benning Road and parts of East Capitol Street, SE. The mouth of Fort Chaplin is a 21 ft. by 7.5 ft. storm drain which discharges into the Anacostia just south of the eastern foot of the East Capitol Street Bridge. Fort Chaplin’s watershed is about 0.42 mi<sup>2</sup> (270 acres). About 90% of the watershed is residential and 10% is parkland. Most of the stream is buffered by 200 feet of forest on each side” (DCDOH, 2003). The sample location is located in the Fort Chaplin Park south of the C Street and Burbank S.E. intersection. The sampling suites for the current effort were identified based on the data review conducted as part of the SAP development For this effort, this sample station was monitored for the metals suite only. Figure 2.2 shows the location of this water body.

### 2.1.4 **Fort Davis**

“Fort Davis is a first order eastern tributary of the Anacostia River. The stream is now conducted by storm drains from Pennsylvania and Carpenter Street SE to a confluent discharge of several storm drains about 2,000 ft. upstream of the Sousa Bridge. The entire watershed measures about 0.11 mi<sup>2</sup> (70 acres) but about 15% of its watershed is drained away independently of the stream by storm drains. Approximately half of the watershed is forested National Parkland with the other half existing as urban residential and including an elementary school” (DCDOH, 2003). The sample location is located in the Fort Davis Park adjacent to Fort Davis. The sampling suites for the current effort were identified based on the data review conducted as part of the SAP development For this effort, the Fort Davis station was monitored for the metals suite only. Figure 2.3 shows the location of this water body.



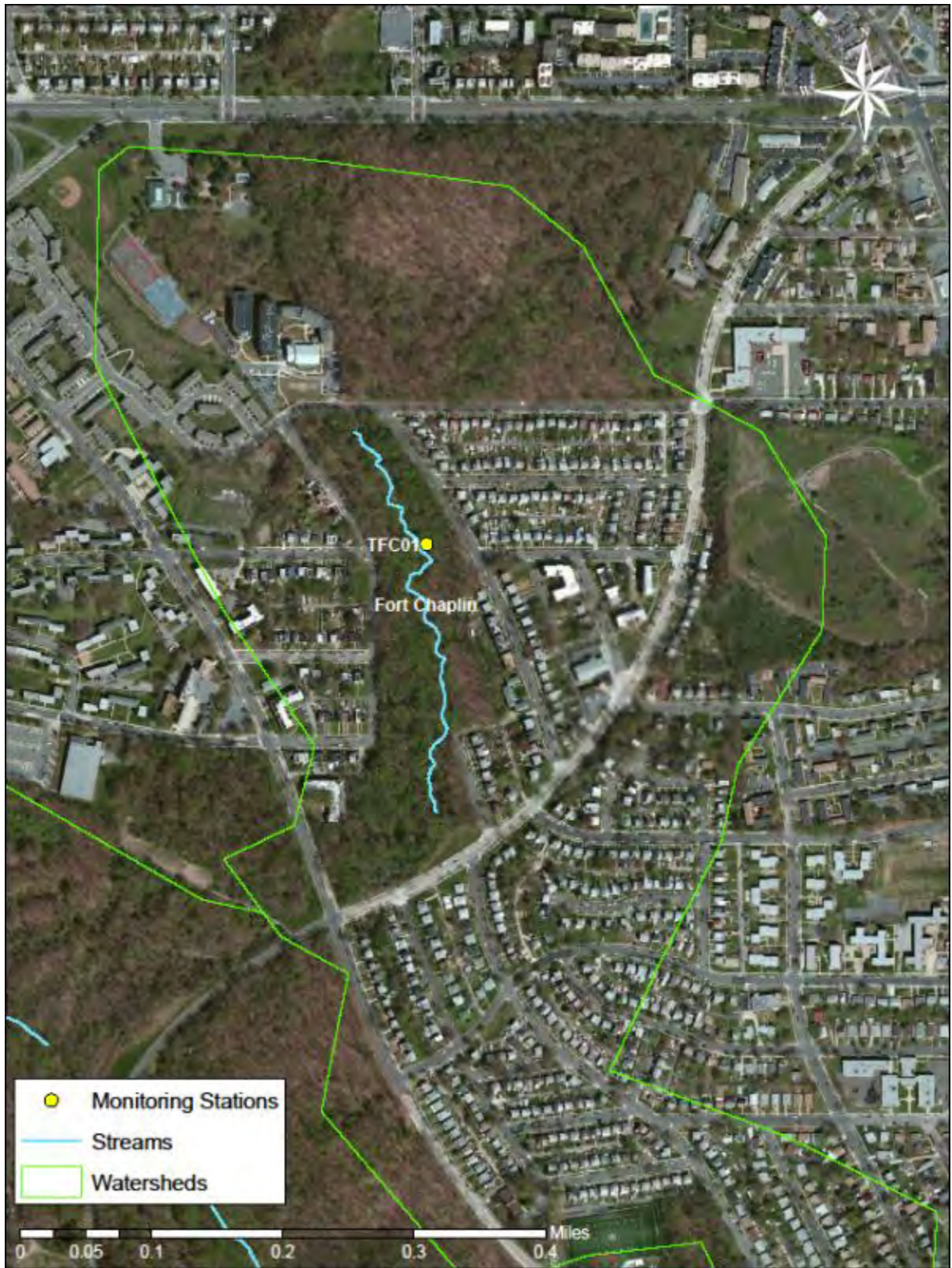


Figure 2.2. Fort Chaplin.



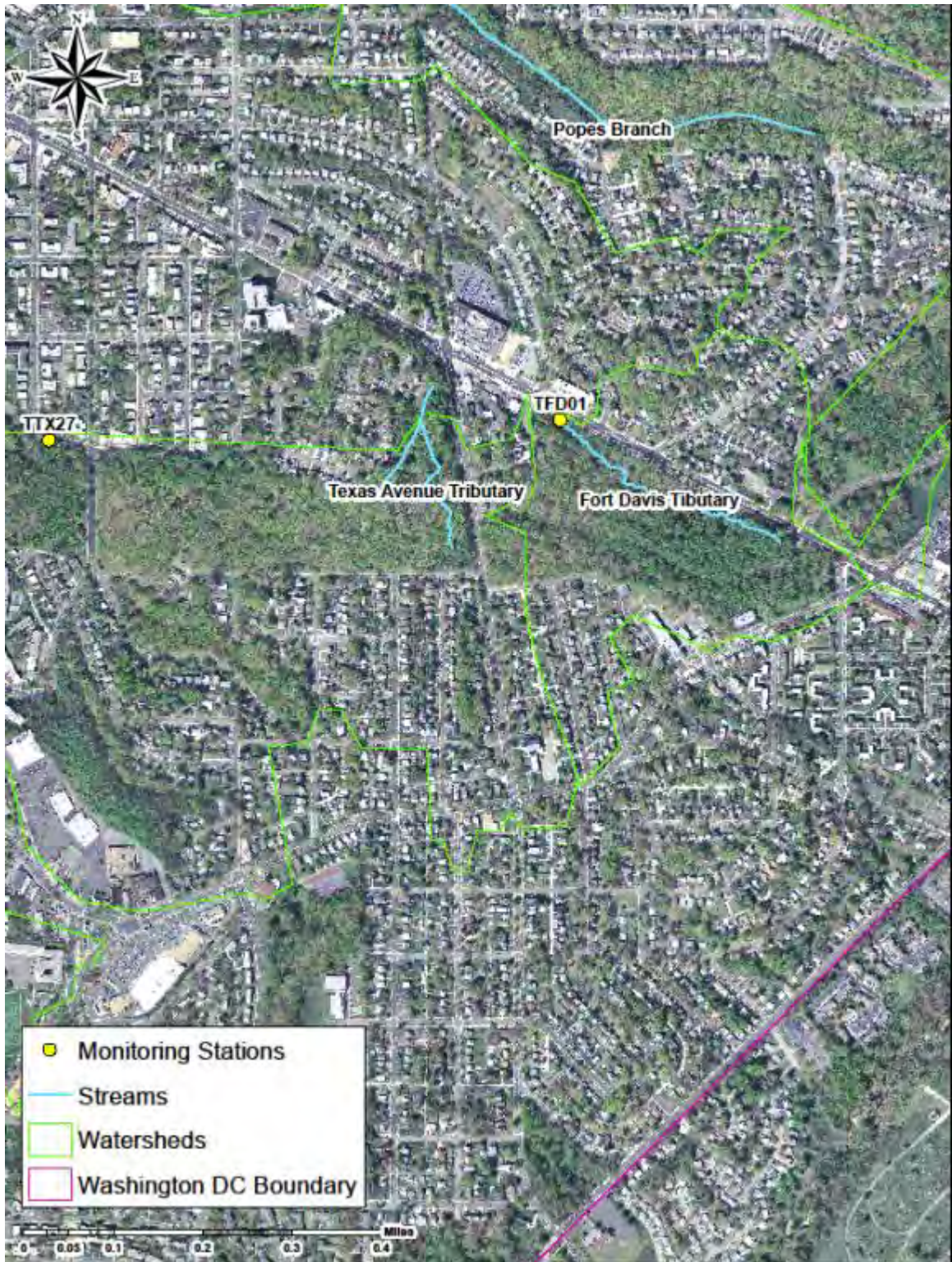


Figure 2.3. Fort Davis.

### 2.1.5 **Fort Dupont Creek**

“The stream’s watershed measures about 0.64 mi<sup>2</sup> (410 acres) of which approximately 90% falls within Fort Dupont Park. Fort Dupont is piped for nearly 1000 ft prior to entering the Anacostia River. The pipe whose cross section area is eight by six feet, starts under the railroad tracks and Anacostia Freeway, crosses beneath the railroad yard to discharge into the Anacostia River between East Capitol Street Bridge and John Philip Sousa Bridge. Much of the stream is buffered on both sides throughout its length by forested parkland. Several portions of the lower stream main stem have narrow riparian buffer zones, encroached upon by the remnant greens. The primary headwater stream receives impervious runoff from the adjacent neighborhood outside of the park. Other impervious areas within the park are roads and parking lots serving the community center and park maintenance yard” (DCDOH, 2003). The sample is located in the Fort Dupont Park. The sampling suites for the current effort were identified based on the data review conducted as part of the SAP development. For this effort, metals sampling suite was collected at this sample location. Figure 2.4 shows the location of this water body.

### 2.1.6 **Fort Stanton**

“Fort Stanton’s watershed measures approximately 0.28 mi<sup>2</sup> (180 acres). Fort Stanton enters a 5 foot diameter pipe at 1907 Good Hope Rd, SE. The headwaters are piped before emerging above ground through a wooded parkland (Fort Stanton Park) before entering the 5 foot diameter pipe. Roughly half of the watershed is National Park Service parkland with the remaining land existing as residential and commercial property” (DCDOH, 2003). The sampling suites for the current effort were identified based on the data review conducted as part of the SAP development. For this effort, the Fort Stanton station was sampled for the PCBs, PAHs, OCPs and metals suites. Figure 2.5 shows the location of this water body.





Figure 2.4. Fort Dupont Creek.





Figure 2.5. Fort Stanton.

### 2.1.7 **Hickey Run**

“Hickey Run is a western tributary of the Anacostia, which discharges into the river just north of Kingman Lake, near the southern border of the National Arboretum. The mouth of the stream is a broad tidally influenced area. The stream daylightes below the historic brick kilns, 1,100 feet East-Southeast of the intersection of Bladensburg Road and New York Avenue NE from an 11' x 11' storm water discharge. The watershed is 2 mi<sup>2</sup> (1300 acres). About 20% of the watershed is forest or managed parkland administered by the U.S. Department of the Interior, National Arboretum. The remainder upper reaches of the watershed are residential, commercial and industrial, including easements for railroad as well as a large bus parking and maintenance yard” (DCDOH, 2003). The sampling suites for the current effort were identified based on the data review conducted as part of the SAP development. For this effort, PCBs, PAHs, and OCPs sampling suites were collected at the Hickey Run station. Figure 2.6 shows the location of this water body.

### 2.1.8 **Nash Run**

“The Nash Run watershed measures approximately 0.7 mi<sup>2</sup> (460 acres), with approximately two-thirds of the watershed in the District. Nash Run exits a storm sewer pipe west of Kenilworth Ave, NE. The 17.5 by 8 feet outfall is located between Douglas and Polk Streets, NE. Prior to the outfall, Nash run is fed by a network of storm sewer pipes, some originating in Maryland. The remainder of the watershed is in Deanwood Park, Prince George’s County, Maryland. All but 5% of the watershed is urban residential and commercial property drained by storm drains” (DCDOH, 2003). Nash Branch was sampled near the confluence with the Anacostia River in the vicinity of the Kenilworth Aquatic Gardens and Kenilworth Parkside Recreation Center. The sampling suites for the current effort were identified based on the data review conducted as part of the SAP development. For this effort, the stream was sampled for PCBs, PAHs, OCPs, and metals suites. Figure 2.7 shows the location of this water body.





Figure 2.6. Hickey Run.



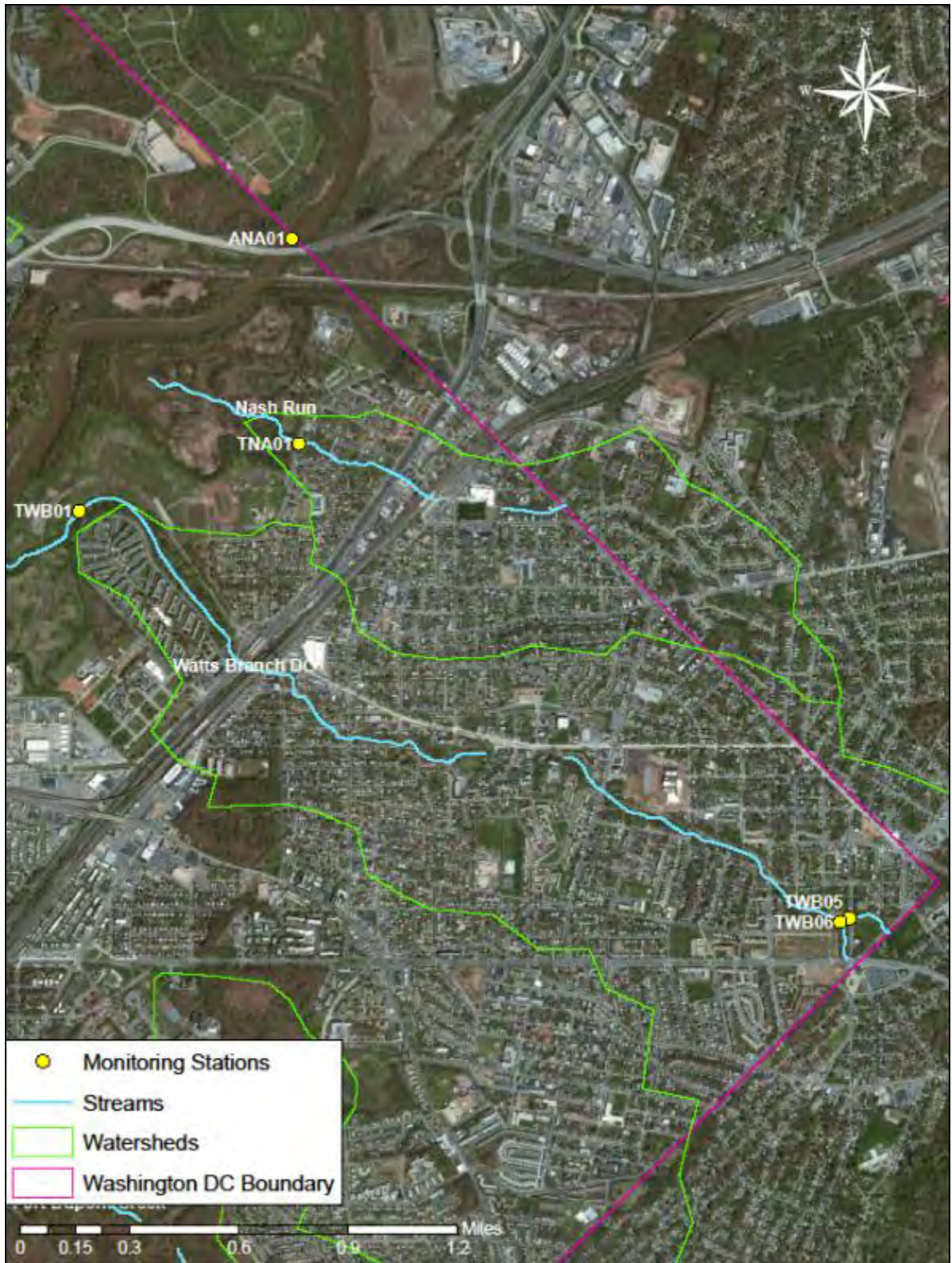


Figure 2.7. Nash Run.



### 2.1.9 **Popes Branch**

“The Popes Branch watershed is 0.33 mi<sup>2</sup> (210 acres) and includes Pope Branch Park, a forested section 1.4 miles long and about 400’ wide, and all of Fort Davis. Popes Branch enters a 7 by 6 foot pipe at Fairlane and M Sts, SE, traveling nearly 1,700 feet to the Anacostia River. Popes Branch is fed by headwaters from many storm sewer lines with outfalls located at Branch Ave and M St, N St, 34th St and Pope Ave, 35th St and Pope Ave, Nash St and Texas Ave, Pope Ave between 38th St and Texas Ave. Popes Branch, also known as Hawes Run, enters the Anacostia River just north of John Philip Sousa Bridge (at Pennsylvania Ave). The watershed is approximately 15% forested parkland; the remaining 85% is residential and light commercial property” (DCDOH, 2003). The sample location is located in Popes Branch Park. The sampling suites for the current effort were identified based on the data review conducted as part of the SAP development. For this effort, Popes Branch was sampled for PCBs, PAHs, OCPs, and metals suites. Figure 2.8 shows the location of this water body.

### 2.1.10 **Texas Avenue Tributary**

“The Texas Avenue Tributary watershed measures 0.17 mi<sup>2</sup> (110 acres). The Texas Avenue Tributary is a small first order stream segment remotely connected to the Anacostia River by a network of storm water pipes. The open channel stream runs along Texas Ave, goes under 28th Street, and enters a storm pipe at 27th St and Texas Ave. Branches of storm pipes joining at 28th St and Hillcrest Dr discharge into the Texas Ave tributary through a 4.7 ft diameter outfall. The upper part of the open stream is fed by various storm discharges with outfalls located at 29th Pl, 30th St and Park Dr, 32nd St, 32nd Pl, and Branch Ave. The piped portion of the Texas Ave tributary joins with other storm sewer networks to discharge into Anacostia River through a 7.2 foot diameter pipe just above the John Philip Sousa Bridge. The watershed is approximately 40% forested parkland and 60% residential and light commercial property” (DCDOH, 2003). The sampling suites for the current effort were identified based on the data review conducted as part of the SAP development. For this effort, this station was sampled for PCBs, PAHs, OCPs and metals suites. Figure 2.9 shows the location of this water body.



Figure 2.8. Popes Branch.



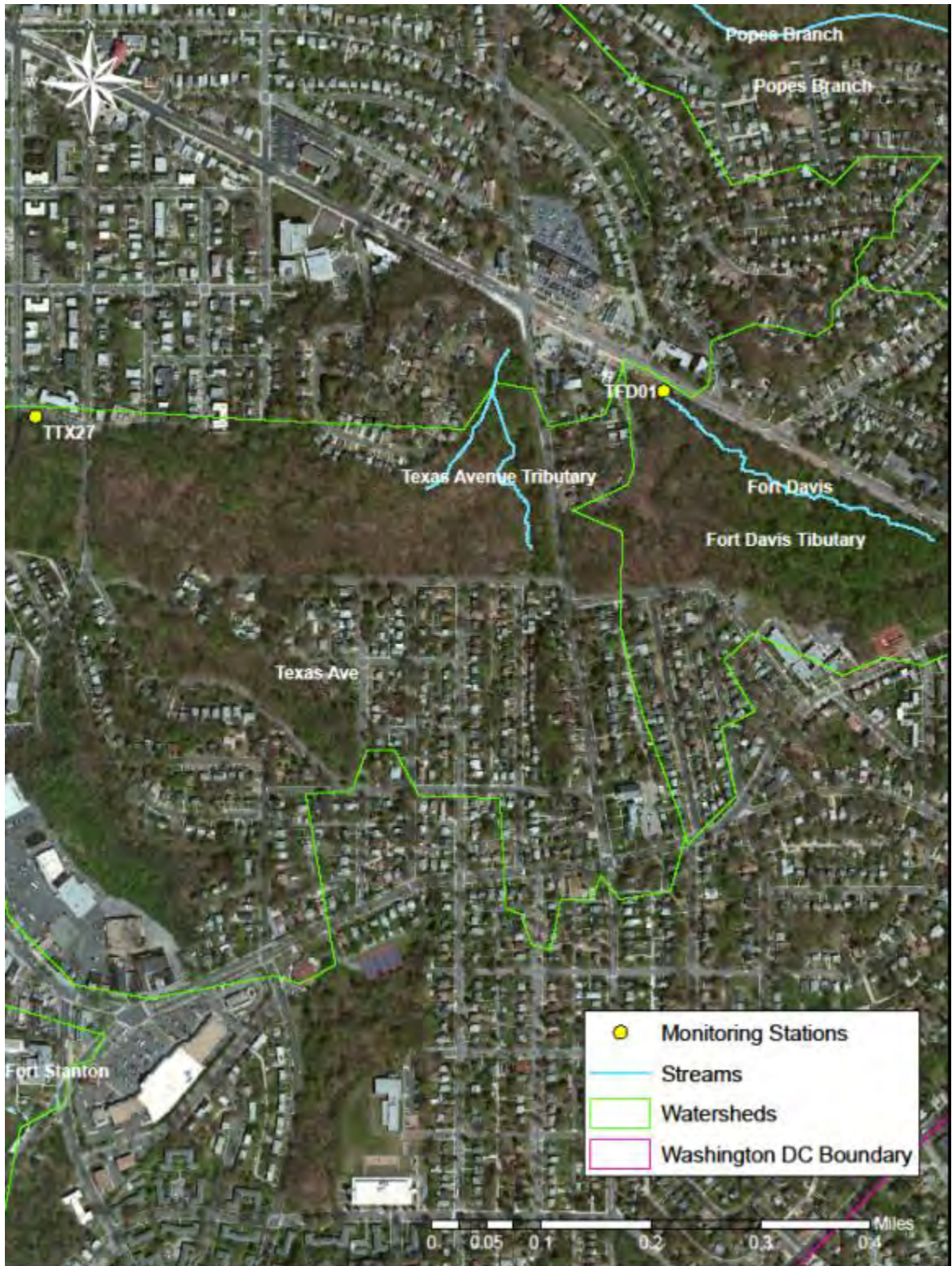


Figure 2.9. Texas Avenue Tributary.

### 2.1.11 **Watts Branch**

“Watts Branch is the largest tributary to the Anacostia River in the District. Originating Prince George’s County, Maryland, Watts Branch travels for four miles to its mouth on the eastern side of the Anacostia. The watershed measures 3.53 mi<sup>2</sup> (2,260 acres). Approximately 80% of the watershed exists as urban residential and commercial property. Less than 15% is forested, mainly along the parkside riparian stream corridor, and approximately 5% light industrial property. Approximately 53% of the watershed lies in Maryland and 47% in the District. Watts Branch receives stormwater discharges” (DCDOH, 2003). The initial sampling was conducted near the confluence of the Anacostia River in the Anacostia Park Section G. The sampling suites for the current effort were identified based on the data review conducted as part of the SAP development. For this effort, PCBs, PAHs, and OCPs sampling suites were collected. Figure 2.10 shows the location of this water body.



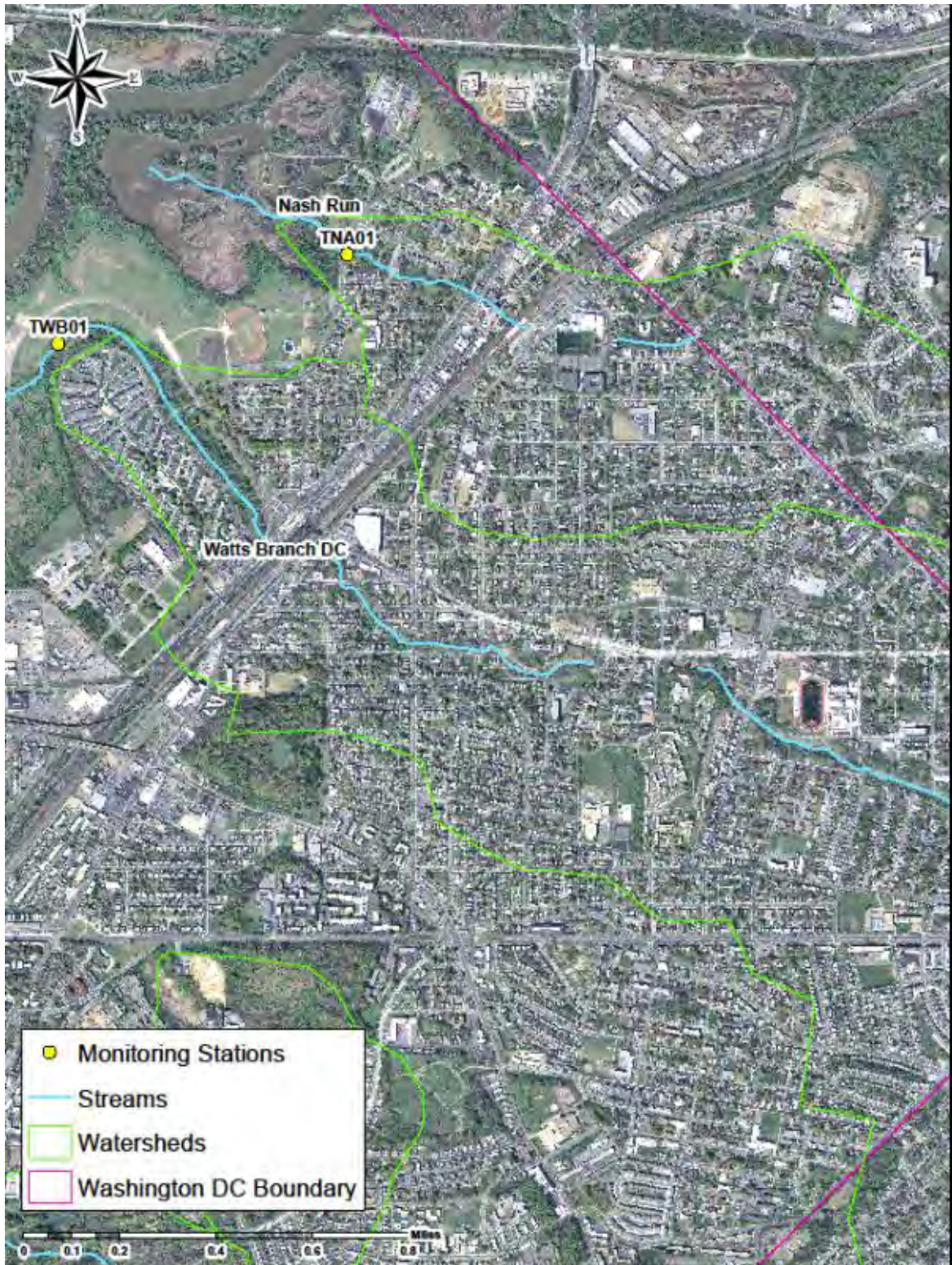


Figure 2.10. Watts Branch.

## **2.2 POTOMAC RIVER TRIBUTARIES**

The Potomac River mainstem was not sampled. Four direct tributaries, Battery Kemble, Dalecarlia, Foundry Branch, and Oxon Run were sampled during a dry weather event as defined previously. The following sections describe the streams and the sampling suites for each sampling location. The sampling suites for the current effort were identified based on the data review conducted as part of the SAP development.

### **2.2.1 Battery Kemble Creek/Fletchers Run**

“Battery Kemble Creek is a tributary of the Potomac River that drains Battery Kemble Park. The stream originates at Nebraska Avenue and Foxhall road. The watershed area is 239 acres, of which 60 percent is parkland and forest with the remaining area as residential. The stream is buffered on both sides by about 300 feet of forested parkland” DCDOH (2004c). The stream enters the C&O Canal which parallels the Potomac River on the East to where the canal enters into Rock Creek. The sampling location is near the mouth of the stream upstream of the confluence with the C&O Canal. For this effort, the stream was sampled for the metals suite. Figure 2.11 shows the location of this water body.

### **2.2.2 Foundry Branch**

“Foundry Branch is a tributary of the Potomac, which is now largely enclosed in storm water pipe. The watershed measures 168 acres. About 80% of the watershed is residential and light commercial property. The remaining 20% is forested parkland operated by the National Park Service. The surface portion of the stream flows for about 2,050 feet through a forested section of Glover-Archibold Park giving the stream a forested buffer of approximately 200 feet on each side. Estimated base flow for Foundry Branch is about 0.9 cubic feet per second” (DCDOH, 2004c). For this effort, this location was monitored for the metals suite. Figure 2.12 shows the location of this water body.



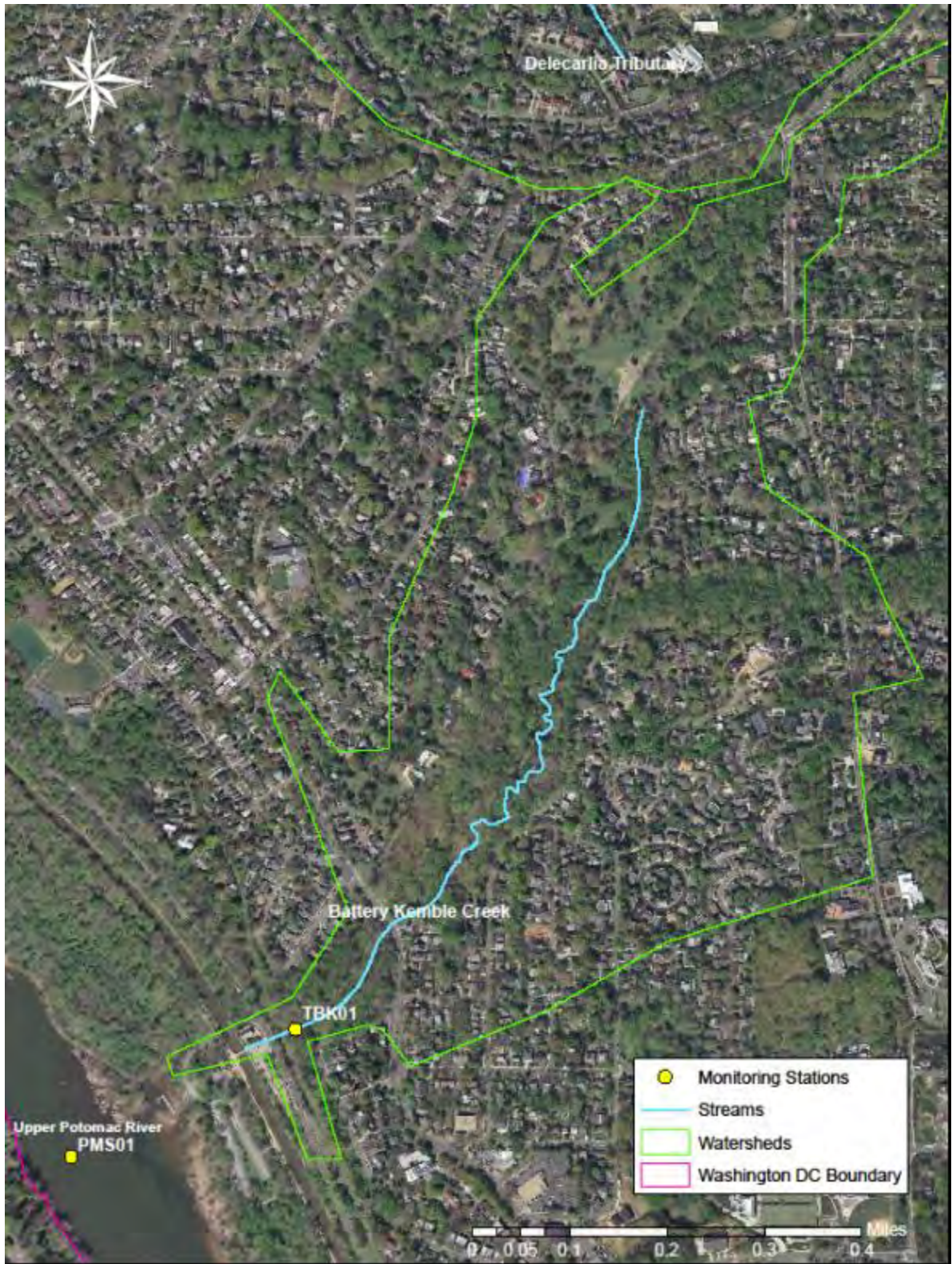


Figure 2.11. Battery Kemble Creek.



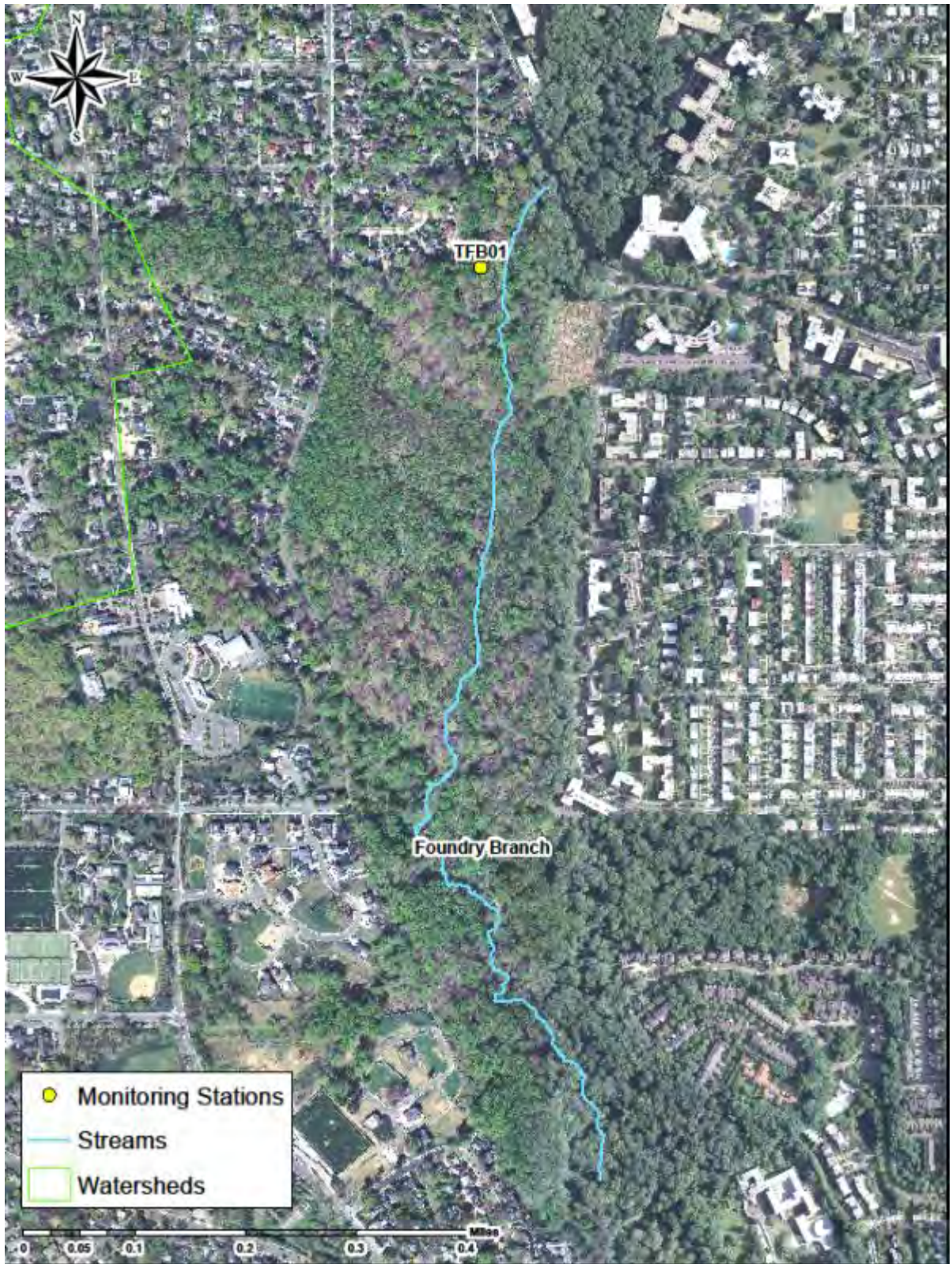


Figure 2.12 Foundry Branch.



### 2.2.3 Dalecarlia Tributary

“Dalecarlia is a tributary of Little Falls Run in Maryland that flows to the Potomac. The stream’s watershed measures 1,111 acres and lies almost entirely (97.3%) in the District with a small portion of its lower reaches falling in Maryland prior to entering a stream that flows into Little Falls Run. West of Dalecarlia Parkway, the tributary flows through sloping parkland accounting for one-quarter of the stream’s watershed. The remainder of the watershed is suburban type residential housing. A number of storm water outfalls discharge to the streams increasing the flows by several folds during rainfall (DCDOH, 2004c).” For this effort, the sampling suite was for PCBs, PAHs and OCPs. Figure 2.13 shows the location of this water body.



Figure 2.13. Dalecarlia Tributary.

### 2.2.4 Oxon Run Tributary

“Oxon Run is a tributary to the Potomac River and the watershed is approximately 7,906

acres, or 12.4 square miles (DOH, 2004). The headwaters of Oxon Run originate in Prince George's County, Maryland and the stream then briefly flows into the southeastern section of the District before crossing back over the Maryland state line where it discharges into the Potomac River. GIS measurements indicate that the length of the mainstem of Oxon Run is approximately 6.8 miles from its headwaters in Prince George's County to the DC/Maryland boundary. The DC portion of Oxon Run is approximately 2.9 miles of concrete-lined trapezoidal channel approximately 50 feet wide and 112 feet deep. There are two reaches in which the natural streambed has remained intact. Most of the Oxon Run tributaries are piped into the mainstem (DOH, 2004a). Stormwater pipes discharge to Oxon Run at numerous locations and several sewer lines run parallel or cross the stream" (DCDOH, 2004b). For this effort, PAHs, OCPs and metals suites were collected. Figure 2.14 shows the location of this water body.





Figure 2.14. Oxon Run.

## **2.3 ROCK CREEK TRIBUTARIES**

“Land use in Rock Creek is predominantly residential, commercial, and park land/open space. Rock Creek Park is one of the oldest city parks in the nation and is host to many recreation activities, including biking, jogging, golf, and horseback riding. The United States Park Police maintain two horse stables within the Park and a private stable is located in Montgomery County just upstream from the District border. The park and watershed are also home to the Smithsonian Institution’s National Zoological Park, boasting a wide array of exotic and domestic fauna.

The Rock Creek tributary streams detailed descriptions were obtained from the DCDOH TMDL document (2004d). The sampling suites for the current effort were identified based on the data review conducted as part of the SAP development. Therefore, every tributary stream was monitored for PCBs, PAHs, and OCPs during this sampling event.

### **2.3.1 Broad Branch**

“Broad Branch is about a 2-mile long western tributary of Rock Creek. It is joined by Soapstone Creek about 800 feet before it discharges into Rock Creek. Broad Branch begins near Nebraska and Connecticut Avenues. For half of its length, Broad Branch is bordered on one side by National Park Service parkland and on the other side by Broad Branch Road which directly abuts it. The lower reach of the stream travels through Rock Creek Park and is bordered by an approximately 200-foot buffer of tree and shrubs. The Broad Branch watershed encompasses 1129 acres. Fifteen percent of the watershed is parkland, while the remaining area is residential and retail commercial. The stream is about 25 feet wide with a very shallow depth of approximately 3 inches and a flow of approximately 7.8 cubic feet per second” (DCDOH, 2004d). Broad Branch was monitored for PCBs, PAHs, and OCPs during this sampling event. Figure 2.15 shows the location of this water body.





Figure 2.15. Broad Branch.

### 2.3.2 **Dumbarton Oaks**

“Dumbarton Oaks is a minor western tributary whose confluence with Rock Creek is about 100 yards south of Massachusetts Avenue over Rock Creek. The Dumbarton Oaks watershed is approximately 168 acres and drains mostly National Park Service parkland, including about a quarter of the grounds of the US Naval Observatory and Dumbarton Oaks Gardens. Approximately two-thirds of the watershed is landscaped or forested parkland, with the remainder area as residential. Dumbarton Oaks is a little more than a half-mile long and is buffered with varying widths of landscaped parkland as it flows eastward to Rock Creek. It is very steep, dropping 200 feet from the head of its watershed to its mouth near Rock Creek. The channel is about 22 feet wide with an estimated flow of 0.3 cubic feet per second” (DCDOH, 2004d). The sampling suites for the current effort were identified based on the data review conducted as part of the SAP development. Dumbarton Oaks was monitored for PCBs, PAHs, and OCPs during this sampling event. Figure 2.16 shows the location of this water body.

### 2.3.3 **Fenwick Branch**

“Fenwick Branch is a second order eastern tributary of Rock Creek originating in Maryland just outside the Northeastern D.C. boarder. Fenwick Branch’s watershed measures approximately 612 acres, but about 205 acres are within District boundaries, the rest being in Montgomery County, Maryland. The watershed is primarily urbanized, including residential areas inside the District and some commercial and light industrial in Maryland. The tributary runs a little more than half a mile before joining Portal Branch, approximately 120 feet north of its confluence with Rock Creek. Throughout the length of the stream it is buffered by approximately 100 feet of forested parkland on both sides. The stream channel is about 6 feet wide with an average depth of about 3 inches and a flow of approximately 2.0 cubic feet per second” (DCDOH, 2004d). The sampling suites for the current effort were identified based on the data review conducted as part of the SAP development. Fenwick Branch was monitored for PCBs, PAHs, and OCPs during this sampling event. Figure 2.17 shows the location of this water body.





Figure 2.16. Dumbarton Oaks.





Figure 2.17. Fenwick Branch.



#### 2.3.4 ***Klinge Valley Creek***

“Klinge Valley tributary flows through a residential area and discharges into Rock Creek from the west near the Porter Street Bridge. The stream’s reach parallels the south side of Klinge road. The watershed comprises about 354 acres and is primarily residential. A wooded buffer of a few hundred feet covers one side of the stream. Klinge Valley Tributary is an approximately half a mile long stream that falls at a grade of about 5% from its headwaters to its confluence with Rock Creek. The stream channel is about 30 feet wide with an average depth of about 3.5 inches and a flow of approximately 0.83 cubic feet per second” (DCDOH, 2004d). The sampling suites for the current effort were identified based on the data review conducted as part of the SAP development. Klinge Valley Creek was monitored for PCBs, PAHs, and OCPs during this sampling event. Figure 2.18 shows the location of this water body.

#### 2.3.5 ***Luzon Branch***

“Luzon Branch is an eastern tributary of Rock Creek. It travels roughly half a mile southwest and empties into Rock Creek at Joyce Road. The stream’s watershed measures about 648 acres, with almost 90 percent of the watershed is residential and light commercial, and the rest is parkland. The stream is buffered by 100-1000 foot of parkland. Luzon Branch is approximately 26 feet wide, and has a depth of about 7 inches and a flow of about 0.8 cubic feet per second” (DCDOH, 2004d). The sampling suites for the current effort were identified based on the data review conducted as part of the SAP development. Luzon Branch was monitored for PCBs, PAHs, and OCPs during this sampling event.

#### 2.3.6 ***Melvin Hazen Valley Branch***

“Melvin Hazen is a second order tributary of Rock Creek. It originates near 34<sup>th</sup> street and Tilden Street, NW and flows approximately 600 feet eastward before emptying into Rock Creek. The Melvin Hazen watershed covers 184 acres, with more than two-thirds of the watershed is residential and commercial. The lower segment of the watershed is parkland. Melvin Hazen stretches approximately 4,500 feet to its mouth at Rock Creek, and buffered on both sides by a several hundred foot wide forested parkland. The stream is about 11 feet wide, 6 inches deep and has a flow of approximately 0.9 cubic feet per second” (DCDOH, 2004d). The sampling suites for the current effort were identified based on the data review conducted as part of the SAP development. Melvin Hazen Valley Branch was monitored for PCBs, PAHs, and OCPs during this sampling event. Figure 2.20 shows the location of this water body.



Figure 2.18. Klingle Valley Creek.





Figure 2.19. Luzan Branch.





Figure 2.20. Melvin Hazen Valley Branch.

### 2.3.7 **Normanstone Creek**

“Normanstone Creek is a first order western tributary of Rock Creek and originates from a storm drain near Garfield Avenue and 33<sup>rd</sup> Street, NW. The stream travels parallel to Normanstone Parkway three quarters of a mile southeast to its confluence with Rock Creek, about 1000 ft northeast of the Massachusetts Avenue bridge. The watershed covers 249 acres area and includes most of the grounds of the National Cathedral, part of U.S. Naval Observatory and parts of Cleveland and Woodley Park. Most of the acreage is residential and light commercial (retail) with about 10% forested parkland along the stream reach. Both sides of the stream are buffered by a 100-1000 feet strip of forested parkland. Normanstone Creek is approximately 12 feet wide and has a shallow depth of 7 inches. The channel flow is estimated to be around 0.63 cubic feet per second” (DCDOH, 2004d). The sampling suites for the current effort were identified based on the data review conducted as part of the SAP development. Normanstone Creek was monitored for PCBs, PAHs, and OCPs during this sampling event. Figure 2.21 shows the location of this water body.

### 2.3.8 **Pinehurst Branch**

“Pinehurst Branch originates at the DC / Maryland state line in Chevy Chase Manor, Maryland. Pinehurst travels about 1.3 miles east-southeast to its confluence with Rock Creek. The 619-acre Pinehurst watershed includes mainly urban land uses, with 70 percent low-medium density residential and commercial, and the remaining area being parklands. About 70 percent of the watershed lies in the District, with the remaining in Montgomery County, Maryland. The average gradient of the stream is approximately 2 percent over its entire length. Pinehurst Branch is shallow with a depth of about 5 inches and a flow of approximately 1-2 cubic feet per second. Evidence of the stream topping its banks suggests high flows are common and easily top their relatively low banks” (DCDOH, 2004d). The sampling suites for the current effort were identified based on the data review conducted as part of the SAP development. Pinehurst Branch was monitored for PCBs, PAHs, and OCPs during this sampling event. Figure 2.22 shows the location of this water body.





Figure 2.21. Normanstone Creek.



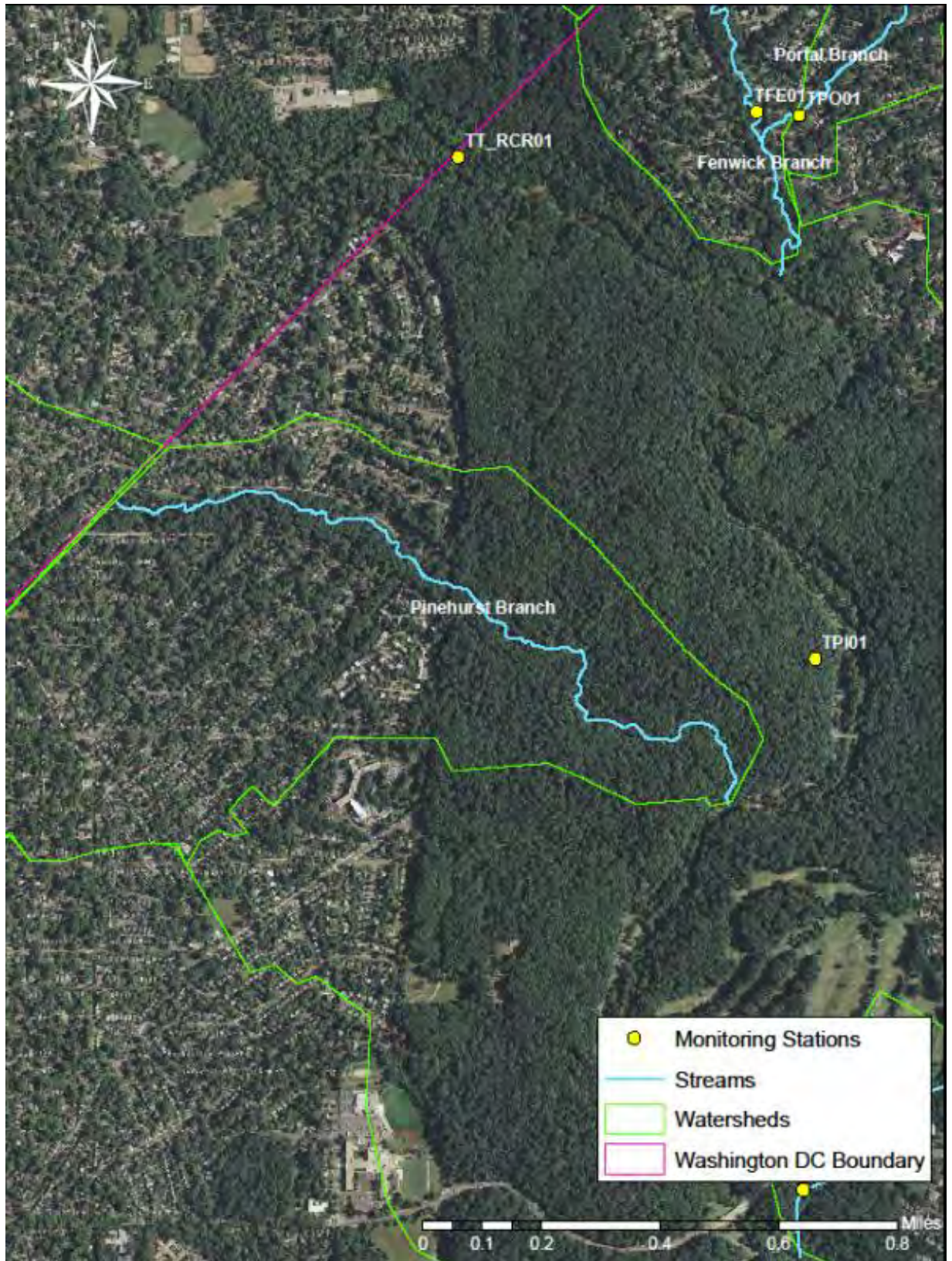


Figure 2.22. Pinehurst Branch.

### 2.3.9 ***Piney Branch***

“Piney Branch runs approximately three-quarters of a mile through a strip of forested parkland about 1,000 yards wide before it enters Rock Creek from the East above the National Zoo. The Piney Branch watershed is the largest of all the District Rock Creek tributaries. The watershed comprises 2,500 acres and is completely within the District. The large size of the watershed compared to such a short stream length can be attributed to the extensive system of combined sewer and storm drains that underlie the city in this area. The surface stream portion of the watershed is surrounded by predominantly forested parkland, and comprises about 5 percent of the entire watershed. The rest of the watershed is primarily urban residential and some light commercial. Piney Branch is approximately 12 feet wide and has a depth of about 4 inches. The flow in the channel is estimated to be about 1.8 cubic feet per second” (DCDOH, 2004d). The sampling suites for the current effort were identified based on the data review conducted as part of the SAP development. Piney Branch was monitored for PCBs, PAHs, OCPs, and metals during this sampling event. Figure 2.23 shows the location of this water body.





Figure 2.23. Piney Branch.



### 2.3.10 Portal Branch

“Portal Branch is an eastern tributary of Rock Creek near the northern corner of D.C., and joins Fenwick Branch about 120 ft. north of the Fenwick Branch’s confluence with Rock Creek. The surface portion of the stream is less than half a mile long and is completely contained in the District. The watershed measures 213 acres, of which 75 acres lie within the District. The watershed in the District is mainly low-medium density residential and parklands, while in Montgomery County mostly commercial/industrial uses dominate the watershed. The stream is buffered by 100 feet or less of parkland. Portal Branch stretches about 2220 feet and has an average width of 10 feet. It is a shallow stream with a depth of 3-4 inches and a flow of approximately 1.1 cubic feet per second” (DCDOH, 2004d). The sampling suites for the current effort were identified based on the data review conducted as part of the SAP development. Portal Branch was monitored for PCBs, PAHs, and OCPs during this sampling event. Figure 2.24 shows the location of this water body.

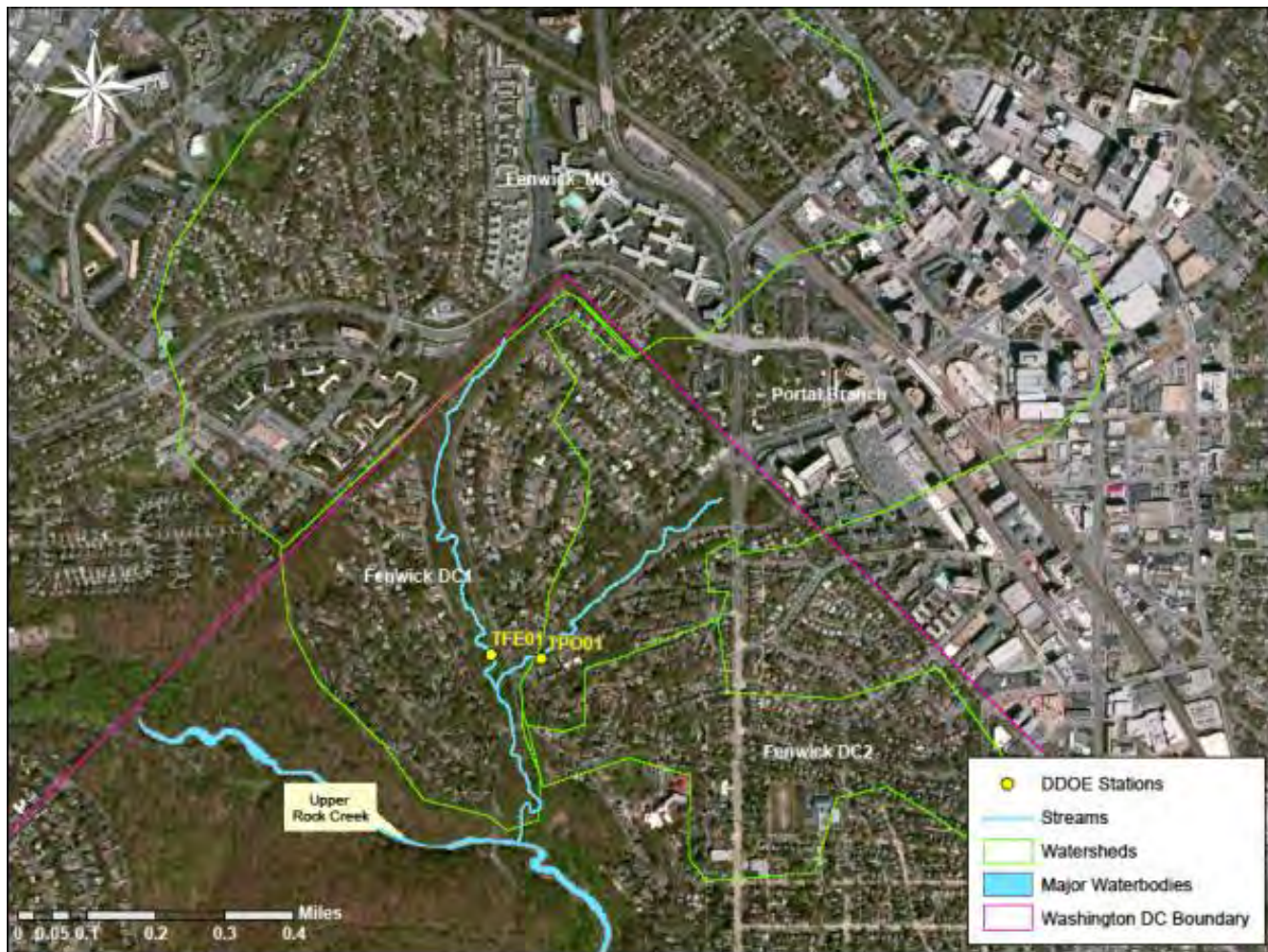


Figure 2.24. Portal Branch.

### 2.3.11 **Soapstone Creek**

“Soapstone Creek is a tributary of Broad Branch. Soapstone joins Broad Branch just before Broad Branch’s confluence with Rock Creek. The watershed covers 520 acres and is mostly urban, with approximately 15% parkland and forest in the lower reaches of the creek. The northern quarter of the urban watershed is densely populated residential property. The southwestern quarter of the watershed is much less densely populated residential and commercial property. Soapstone Creek runs about 0.9 miles through a steep-sided heavily wooded valley about 500 yards wide. The average channel width is approximately 15 feet and the flow rate is estimated to be about 3 cubic feet per second” (DCDOH, 2004d). The sampling suites for the current effort were identified based on the data review conducted as part of the SAP development. Soapstone Creek was monitored for PCBs, PAHs, and OCPs during this sampling event. Figure 2.25 shows the location of this water body.





Figure 2.25. Soapstone Creek.

## **2.4 DATA COLLECTION ACTIVITIES**

The following section describes the monitoring activity for tributary streams and tidal waters in tidal segments of the Potomac River tributaries, Rock Creek tributaries and Anacostia River and tributaries within the District. While all the waters are not technically streams, they encompass surface waters, which can be addressed in a consistent set of protocols for sampling of chemistry either by wading or through navigation in a small boat. Waters were found to be well mixed and all surface water sampling was conducted as grab samples. Grab samples were collected by using a peristaltic or hand pump and by placing disposable tubing into the stream and filling each laboratory bottle for analysis. The field sampling personnel avoided surface effects and debris and did not collect any sheen that might be on the surface of the water. Table 2.2 lists the reference methods used for analysis, and example container types, sizes, and preservation requirements.

### **2.4.1 Surface Water Quality Measurements**

The objective was to collect samples representative of wet weather and dry weather conditions in the study areas in order to assess if streams are impacted by the constituents of concern. A portable instrument (portable sonde-type data logging probe) was used during each day's sampling. In situ water quality measurements of pH, dissolved oxygen, temperature, and salinity or electrical conductivity were collected and recorded at each monitoring station.

On the main stem of the Anacostia River, water column profiles were collected by lowering the sonde and recording measurements every foot through the water column. The resulting measurements help define whether the waters are well mixed and grab samples adequately represent the surface water character or if vertical composite sampling using a Van Dorn, beta, or Kemmerer bottle is required. For the purposes of this assessment, changes of more than 10 percent in salinity were considered a density gradient that must be addressed through composite sampling.

### **2.4.2 Surface Water Quality Samples**

Unfiltered and filtered surface water samples were also collected at all sampling locations. The appropriate analytical suites (PCBs, PAHs, OCPs, arsenic, lead, copper and zinc) were analyzed as indicated in Table 2.2 for each of the sampling stations. All water samples were collected using a GeoTech Geo Pump Series II peristaltic pump outfitted with an EZ-load II pump head with new sample tubing.

**Table 2.2. Parameters, methods, nominal sample size, containers, preservation, and holding times— aqueous samples**

Parameter (Test method)	Sample size	Container type/ size <sup>†</sup>	Preservation/ handling	Holding time
METALS – SW846 6020 (SW6020)	50 – 100 mL	500 mL HDPE	HNO <sub>3</sub> to pH <2	6 months
Arsenic				
Calcium				
Copper				
Lead				
Magnesium				
Zinc				
Hardness (Calcium and Magnesium for SM 2340B calculation)				
Organochlorine Pesticides (SW8081B)	1,000 mL	2 x 1L Amber Glass	Cool to < 6 °C	7 days extraction, 40 days to analysis
Chlordane				
DDD				
DDE				
DDT				
Dieldrin				
Heptachlor Epoxide				
PCBs (8082M or 1668A)	1,000 mL	2 x 1L Amber Glass	Cool to < 6 °C	7 days extraction, 40 days to analysis
Total Polynuclear aromatic hydrocarbons (SW8270D)	1,000 mL	2 x 1L Amber Glass	Cool to < 6 °C	7 days extraction, 40 days to analysis
Acenaphthene				
Acenaphthylene				
Anthracene				
Benzo(a)Anthracene				
Benzo(a)Pyrene				
Benzo(b)Fluoranthene				
Benzo(k)Fluoranthene				
Chrysene				
Dibenzo(a,h) Anthracene				
Fluoranthene				
Fluorene				
Indeno(1,2,3-cd) Pyrene				
Phenanthrene				
Pyrene				
Benzdine (SVOC)				

Note: SM = *Standard Methods for the Examination of Water and Wastewater* (APHA 1998); SW = SW 846; *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*

<sup>†</sup> Container types listed are examples of containers that might be requested for individual testing, exclusive of any other measurements. The field team leader consulted with laboratory staff on the requirements for individual study areas to optimize the sample collection according to the potential for shared containers, or splitting of analytical extracts of digestates.

All tubing was discarded after a single sampling station (single use) to avoid cross contamination. The plastic or silicon tubing was immersed directly into the water body being sampled, and

allowed to pump for 3-4 minutes to surface water prior to collection of sample aliquots to effect rinsing of the tubing with site water. Depending on the proximity of the sample locations, metals samples were returned to a staging area where the 0.45 micron filtering and sample preservation with nitric acid took place. In some cases, the sample was filtered and preserved at the sample location.

The sample containers were then labeled and packaged for shipment to the analytical laboratory. Water samples were preserved in the field and pH verified prior to sealing containers. The sample containers were placed in a large plastic bag inside a sample cooler prior to addition of freezer packs or wet ice for transport, and additional packaging materials were added to shipping containers to fill void space and to limit potential for sample breakage. The Field Team members maintained a record of sample custody and provided Chain-of-Custody forms and a record of airbill numbers for shipped samples. Immediately following the packing of each shipping container, each container (cooler) were secured with packaging tape and labeled for delivery to the appropriate laboratory. The analytical laboratory reports presented in Appendix G provide the chain of custody and additional sample information for each of the three rounds of sampling.

## SECTION 3.0 **QUALITY ASSURANCE**

### 3.1 **DATA QUALITY REVIEW OF ANALYTICAL RESULTS**

All sampling activities were performed in accordance with the approved SAP and QAPP. Field sampling QA/QC procedures included the collection of quality control samples including; field duplicate samples, and matrix spike/matrix spike duplicate samples (MS/MSD). Equipment rinse blanks were also collected to determine the effectiveness of the decontamination procedures. The field duplicate samples were collected randomly side-by-side at designated sample locations, and analyzed by the analytical laboratory. The MS/MSD samples were collected and analyzed to indicate if the matrix of the samples could be causing interference.

The analytical data was reviewed for quality with respect to precision, accuracy, representativeness, completeness, and usability in accordance with the approved QAPP. The data quality review was performed in general accordance with the following guidance documents:

- U.S. EPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, dated February 1994.
- U.S. EPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, dated October 1999
- U.S. EPA's Test Methods for Evaluating Solid Waste (SW-846) Third Edition.

Data qualifiers have been applied where appropriate. Summary of Analytical Results are presented in the appendices of each round of sampling.

### 3.2 **DATA QUALITY ASSESSMENT**

All data was acceptable with respect to accuracy, precision, representativeness, and completeness, so the data have been determined to be appropriate for their intended use. All quality control samples including equipment rinse blanks, matrix spikes, and field duplicate samples further indicated that the analysis of these samples were within the appropriate quality control criteria. All sampling and analysis work was performed in accordance with the approved SAP and QAPP.



## SECTION 4.0 **RESULTS**

Unfiltered and filtered surface water samples were collected at 29 sampling locations. The unfiltered samples were analyzed for total PCBs, PAHs plus benzidine, OCPs and metals suites as shown in Table 2.2. Filtered surface water samples were collected in the field using an inline 0.45 micron filter to determine the dissolved concentrations of metal parameters. The analytical laboratory results are summarized in the following sections. Full surface water results, screening tables, and Water Quality Data Collection Forms from each round of sampling can be found in Appendices A through C, and full analytical laboratory results are provided in Appendix G.

### 4.1 **WATER QUALITY SCREENING**

Water quality screening including dissolved oxygen, pH, water temperature, conductivity, and salinity was conducted at each sample location using an YSI 600XL multi-parameter water quality monitoring instrument. Water quality measurements were collected and recorded from 0.5 feet below the surface and at 1 meter increments down to 0.5 feet from the bottom. Water quality measurements are on the Ambient Water Quality Data/Sediment Collection Forms in the appendices for each round.

### 4.2 **CHEMICAL FINDINGS**

A summary discussion of the analytical results from the 3 rounds of data collection conducted as part of this project is presented below.

#### 4.2.1 **Round 1 – Dry weather sampling; October 29<sup>th</sup>, 2013.**

34 Samples were taken at 29 locations in the study area during the first round of surface water sampling, which included 5 QA/QC samples. Precipitation was not observed at Washington National Airport (DCA) within 72 hours preceding the start of sampling activities on October 29<sup>th</sup>, 2013, which is the dry weather event criteria for this effort.

A summary of primary sample results is shown in Table 4.1, and QA/QC results are provided in Table 4.2. Across the study area, 8 analytes were detected at levels above 30-day Human Health Criteria (HHC) guidance. Of these 8 analytes, 3 were detected across 5 stations at levels above the 4-day average Criterion Continuous Concentration (CCC) Water Quality Standard for the District. No analytes were detected at levels above the District's 1-hr average Criteria Maximum Concentration WQS (CMC). Arsenic was the only metal exceeding either of the criteria in the surface water samples, with a maximum value of 1.2 µg/L exceeding the HHC of 0.14 µg/L. Arsenic exceeded the HHC in 5 out of 13 samples. There is no CCC criterion for arsenic.

Pesticides exceeded the HHC in 19 out of 24 primary surface water samples, at concentrations as high as 0.006 µg/L for 4,4'-DDD, exceeding the CCC of 0.001 µg/L. PAHs did not exceed the HHC in any of the 24 primary samples. PCBs exceeded HHC in all 18 samples taken in the study area, but none exceeded the CCC of 14 µg/L, with the highest level of 10.18 µg/L. Table 4.1 provides a summary of exceedances by watershed and pollutant suite for primary samples.

The QA/QC sample summary shown in Table 4.2 identifies exceedances for arsenic, pesticides, PAHs, and PCBs in QA/QC samples for this round. All of these pollutants exceeded criteria in primary samples in one or more of the other sampling efforts. See Appendix A for the summary table of surface water analytical results and surface water benchmark value comparison tables, and Appendices D through F for ambient water quality data collection forms and photodocumentation for this round of sampling.

**Table 4.1. Primary Samples by Watershed and Pollutant Suite for Dry Weather sampling.**

	Arsenic- Total <sup>1</sup>	Pesticides	Polycyclic aromatic hydrocarbons (PAHs)	Polychlorinated biphenyls (PCBs)
Anacostia Samples	9	11	11	6
Anacostia Exceedances <sup>2</sup>	5	6 (4)	0	6 (0)
Potomac Samples	3	2	2	1
Potomac Exceedances <sup>2</sup>	0	2 (0)	0	1 (0)
Rock Creek Samples	1	11	11	11
Rock Creek Exceedances <sup>2</sup>	0	11 (1)	0	11 (0)
<i>Samples:</i>	<i>13</i>	<i>24</i>	<i>24</i>	<i>18</i>
<i>Exceedances:</i>	<i>5</i>	<i>19</i>	<i>0</i>	<i>18</i>
<i>% Exceeding:</i>	<i>38%</i>	<i>79%</i>	<i>0%</i>	<i>100%</i>

<sup>1</sup>Arsenic was the only analyte exceeding Human Health Criteria in the metals suite.

<sup>2</sup>Human Health Criteria and (DC CCC 4-day avg) exceedances, if applicable.

**Table 4.2. Summary of QA/QC Samples by Detected Analyte for all Sampling Rounds.**

Analytes Detected in QA/QC	Dry Weather Anacostia River Field Duplicate		Dry Weather Anacostia River Rinsate Blank		Dry Weather Foundry Branch Field Duplicate		Dry Weather Dumbarton Oaks Field Duplicate		Dry Weather Portal Branch Field Duplicate		Wet Weather #1 Kingman Lake Field Duplicate		Wet Weather #1 Fort Stanton Field Duplicate		Wet Weather #2 Nash Run Field Duplicate		
	Exceeds HHC	Exceeding in any primary samples	Exceeds HHC	Exceeding in any primary samples	Exceeds HHC	Exceeding in any primary samples	Exceeds HHC	Exceeding in any primary samples	Exceeds HHC	Exceeding in any primary samples	Exceeds HHC	Exceeding in any primary samples	Exceeds HHC	Exceeding in any primary samples	Exceeds HHC	Exceeding in any primary samples	
Arsenic - total	Yes	Yes												Yes		Yes	
4,4'-DDD																	
4,4'-DDE																	
4,4'-DDT	Yes	Yes															
alpha-Chlordane							Yes	Yes									
Chlordane (technical)																	
Dieldrin							Yes	Yes	Yes	Yes							
gamma-Chlordane	Yes	Yes					Yes	Yes			Yes	No					
Heptachlor epoxide							Yes	Yes	Yes	Yes							
Benzo[a]anthracene	Yes	Yes														Yes	Yes
Benzo[a]pyrene																	
Benzo[b]fluoranthene																	
Benzo[g,h,i]perylene																	
Benzo[k]fluoranthene																	
Chrysene	Yes	Yes														Yes	Yes
Dibenz(a,h)anthracene																	
Indeno[1,2,3-cd]pyrene																	
<b>Total Congeners</b>			Yes	Yes			Yes	Yes	Yes	Yes			Yes	Yes	Yes	Yes	

**4.2.2 Round 2 – Wet weather sampling; November 27<sup>th</sup>, 2013**

16 Samples were taken at 14 locations in the Anacostia study area during the second round of surface water sampling, which included 2 QA/QC samples. 1.46” Of precipitation was observed at Washington National Airport (DCA) on November 26<sup>th</sup>, 2013, meeting the minimum precipitation (0.5”) for a wet event sampling event identified in the sampling plan for this effort. Sampling occurred within the 48hr timeframe on November 27<sup>th</sup>, 2013, and an additional 0.74” of rainfall occurred during field activities.

A summary of primary sample results is shown in Table 4.3, and QA/QC results are provided in Table 4.2. 16 Analytes were detected at levels above HHC guidance. Of these 16 analytes, 4 were detected across 4 stations at levels above the 4-day average CCC Water Quality Standard for the District. No analytes were detected at levels above the District’s CMC WQS. Arsenic was the

only metal exceeding either of the criteria in the surface water samples, with a maximum value of 1.5 µg/L exceeding the HHC of 0.14 µg/L. Arsenic exceeded the HHC in 8 out of 9 samples. There is no CCC criterion for arsenic. Pesticides exceeded the HHC in 7 out of 11 primary surface water samples, at concentrations as high as 0.017 µg/L for Chlordane (technical), exceeding the CCC of 0.0043 µg/L. PAHs exceeded the HHC in 3 of 11 samples. There are no CCC criterion for the PAHs detected. PCBs exceeded HHC in all 6 primary samples taken in the study area, but none exceeded the CCC of 14 µg/L, with the highest level of 13.31 µg/L. Table 4.3 provides a summary of primary sample exceedances by watershed and pollutant suite.

**Table 4.3. Primary Samples by Watershed and Pollutant for Wet Weather Sampling #1.**

	Arsenic- Total <sup>1</sup>	Pesticides	Polycyclic aromatic hydrocarbons (PAHs)	Polychlorinated biphenyls (PCBs)
Anacostia Samples	9	11	11	6
Anacostia Exceedances <sup>2</sup>	7	7 (4)	3	6 (0)
<i>Samples:</i>	9	11	11	6
<i>Exceedances:</i>	7	7	3	6
<i>% Exceeding:</i>	78%	64%	27%	100%

<sup>1</sup>Arsenic was the only analyte exceeding Human Health Criteria in the metals suite.

<sup>2</sup>Human Health Criteria and (DC CCC 4-day avg) exceedances, if applicable.

Table 4.2 provides a summary of QA/QC sample results for the first wet weather sampling, and identifies exceedances for arsenic, pesticides, and PCBs. All of these pollutants exceeded criteria in primary samples in one or more of the other sampling efforts except gamma-Chlordane. The pesticide gamma-Chlordane was found in a single duplicate sample at the Kingman Lake station. Three additional primary samples were taken at this location during the project, which did not show exceedances in criteria for gamma-Chlordane. However, of the 11 locations where pesticides were sampled in the Anacostia watershed, 7 showed exceedances of gamma-Chlordane in primary samples (11 out of 33 samples). For this reason, the duplicate sample from Kingman Lake will be treated equivalent to a primary sample when considering water body exceedances in Table 5.1. See Appendix B for the summary table of the surface water analytical results and surface water benchmark value comparison tables, and Appendices D through F for ambient water quality data collection forms and photodocumentation for this round of sampling.

#### 4.2.3 **Round 3 – Wet weather sampling; January 12<sup>th</sup>, 2014**

15 Samples were taken at 14 locations in the Anacostia study area during the third round of surface water sampling, which included 1 QA/QC sample. 0.57” Of precipitation was observed at Washington National Airport (DCA) on January 10<sup>th</sup>, 2014, meeting the minimum precipitation

(0.5”) for a wet event sampling event identified in the sampling plan for this effort. Sampling occurred within the 48hr timeframe on January 11<sup>th</sup>, 2014, and an additional 0.87” of rainfall occurred during field activities.

16 Analytes were detected at levels above HHC guidance. Of these 16 analytes, 4 were detected across 2 stations at levels above the CCC Water Quality Standard for the District. No analytes were detected at levels above the District’s CMC WQS. Arsenic was the only metal exceeding either of the criteria in the surface water samples, with a maximum value of 1.5 µg/L exceeding the HHC of 0.14 µg/L. Arsenic exceeded the HHC in 9 out of 10 samples. There is no CCC criterion for arsenic. Pesticides exceeded the HHC in 6 out of 12 primary surface water samples and duplicate samples, at concentrations as high as 0.0057 µg/L for alpha-Chlordane, exceeding the CCC of 0.0043 µg/L. PAHs exceeded the HHC in 7 of 12 samples. There are no CCC criterion for the PAHs detected. PCBs exceeded HHC in all 7 samples taken in the study area, but none exceeded the CCC of 14 µg/L, with the highest level of 11.92 µg/L. Table 4.4 provides a summary of exceedances by watershed and pollutant suite.

**Table 4.4. Primary Samples by Watershed and Pollutant for Wet Weather Sampling #2.**

	Arsenic- Total <sup>1</sup>	Pesticides	Polycyclic aromatic hydrocarbons (PAHs)	Polychlorinated biphenyls (PCBs)
Anacostia Samples	9	11	11	6
Anacostia Exceedances <sup>2</sup>	8	6 (2)	6	6 (0)
<i>Samples:</i>	9	11	11	6
<i>Exceedances:</i>	8	6	6	6
<i>% Exceeding:</i>	89%	55%	55%	100%

<sup>1</sup>Arsenic was the only analyte exceeding Human Health Criteria in the metals suite.

<sup>2</sup>Human Health Criteria and (DC CCC 4-day avg) exceedances, if applicable.

Table 4.2 provides a summary of QA/QC sample results for the second wet weather sampling, and identifies exceedances for arsenic, pesticides, PAHs, and PCBs. All of these pollutants exceeded criteria in primary samples in one or more of the other sampling efforts. See Appendix C for the summary table of the surface water analytical results and surface water benchmark value comparison tables, and Appendices D through F for ambient water quality data collection forms and photodocumentation for this round of sampling.

## SECTION 5.0 **CONCLUSIONS**

This project was performed to characterize the environmental condition of the aquatic environment of 29 waterbodies within Washington, DC. US EPA Region 3 contracted Tetra Tech to perform data collection activities. This project included collecting additional data pertaining to the quality of the surface water, in three rounds of sampling between October 2013 and January 2014. Surface water quality measurements and surface water samples were collected and recorded.

In summary, the surface water samples had concentrations exceeding Human Health Criteria (HHC) guidance for arsenic only out of the metals suite.

Eight PAHs were exceeded the HHC in 8 locations across the study area. PAHs exceeding HHC values included, Benzo[a]anthracene, Benzo[a]pyrene, Benzo[b]fluoranthene, Benzo[g,h,i]perylene, Benzo[k]fluoranthene, Chrysene, Dibenz(a,h)anthracene, and Indeno[1,2,3-cd]pyrene. 4-day average Criterion Continuous Concentration (CCC) and Criteria Maximum Concentration (CMC) Water Quality Standards do not exist for these analytes.

Twenty-one out of 24 locations sampled for pesticides showed exceedances for one or more analytes across the study area. Eight pesticides exceeded HHC values including 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, alpha-Chlordane, Chlordane (technical), Dieldrin, gamma-Chlordane, and Heptachlor epoxide. 4-day average Criterion Continuous Concentration (CCC) were exceeded for 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, Heptachlor epoxide, alpha-Chlordane, and Chlordane (technical). Criteria Maximum Concentration (CMC) Water Quality Standards were not exceeded for these analytes.

PCBs were detected above HHC across all locations and sampling events. No samples showed PCB in excess of CCC concentrations.

Table 5.1 provides an overall matrix of HHC and CCC exceedances by station and pollutant across all three sampling efforts.

**Table 5.1. Exceedances of 30-day Human Health Criteria and 4-day average Criterion Continuous Concentrations by Pollutant and Water body.**

		Anacostia Watershed										Potomac Watershed		Rock Creek Watershed																
		Anacostia R. ANA11	Anacostia R. ANA14	Kingman Lake	Nash Run	Fort Dupont	Fort Stanton	Fort Chaplin	Fort Davis	Texas Avenue Tributary	Popes Branch	Watts Branch	Tidal Basin	[REDACTED]	Dalecarlia	Oxon Run	Battery Kemble	Foundry Branch	Hickey Run	Broad Branch	Dumbarton Oaks	Fenwick Branch	Klinge Valley	Luzon Branch	Melvin Hazen	Normanstone Creek	Pinehurst	Piney Branch	Portal Branch	Soapstone Creek
Polychlorinated biphenyls (PCBs)					○		○			○	○	○			○				○	○	○	○	○	○	○	○	○	○	○	○
Polynuclear aromatic hydrocarbons (PAHs)		/	○	○	○		○			○	○	/	/	/	/	/			○	/	/	/	/	/	/	/	/	/	/	/
Metals	Zinc	/	/	/	/	/	/	/	/	/					/	/	/											/		
	Copper	/	/	/	/	/	/	/	/	/					/	/	/											/		
	Arsenic	○	○	○	○	○	○	○	○	○					/	/	/											/		
	Lead	/	/	/	/	/	/	/	/	/					/	/	/											/		
Organochloride Pesticides	Chlordane	○	○	○ <sup>1</sup>	○		/			○	○	/	/	/	/				○	○	○	/	/	○	/	/	/	○	/	○
	DDD	/	/	/	/		/			○	○	/	/	/	/				/	/	/	/	/	/	/	/	/	/	/	/
	DDE	/	/	/	/		/			○	○	/	/	/	/				○	/	/	/	/	/	/	/	/	/	/	/
	DDT	○	○	○	/		/			○	○	/	/	/	/	/			/	/	/	○	/	/	/	/	/	/	/	/
	Dieldrin	/	/	/	○		/			○	○	/	/	/	○	○			/	○	○	○	○	○	○	○	○	○	○	○
	Heptachlor Epoxide	/	/	/	○		/			○	○	/	/	/	○	/			/	○	○	○	○	○	○	○	○	○	○	○

Not Sampled

- At least one sample exceeds the 30-day Human Health Criteria (HHC) concentration.
- At least one sample exceeds the 4-day average Criterion Continuous Concentration (CCC) for the District of Columbia.
- / Samples did not detect the contaminant and/or do not exceed HHC, CCC, or CMC concentrations.

<sup>1</sup>Single field duplicate sample exceeded HHC guidance.

## SECTION 6.0 **REFERENCES**

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Tetra Tech, 2013b. Quality Assurance Project Plan for Data Collection Activities for DC Toxics TMDLs.



## **Appendix A - ROUND 1**

**Sample Summaries**

**Analytical Results**

**Comparison of Analytical Results with Surface Water Benchmark Values**

**Assessment Documentation for Non-detects**

## **Appendix B - ROUND 2**

**Sample Summaries**

**Analytical Results**

**Comparison of Analytical Results with Surface Water Benchmark Values**

**Assessment Documentation for Non-detects**

## **Appendix C - ROUND 3**

**Sample Summaries**

**Analytical Results**

**Comparison of Analytical Results with Surface Water Benchmark Values**

**Assessment Documentation for Non-detects**

## **Appendix D – Field Notes**

## **Appendix E – Water Quality Data Forms**

## **Appendix F – Photodocumentation**

## **Appendix G – Analytical Laboratory Reports**