THE DISTRICT OF COLUMBIA
WATER QUALITY ASSESSMENT

2012 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

DISTRICT
DEPARTMENT
OF THE
ENVIRONMENT

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 2010-2011 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.

The District of Columbia Government
District Department of the Environment
Natural Resources Administration
Water Quality Division
1200 First Street, NE
5th Floor
Washington, D.C. 20002
Attention: N. Shulterbrandt

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

APPENDICES

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
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
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
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
SWAP	Source water assessment program
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 2012 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 2007 to 2011 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, in the Surface Water section, 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.

The most significant groundwater updates are the expansion of the groundwater monitoring network, a joint study with the USGS to investigate pesticide impacts on groundwater quality. The purpose of the investigation was to resample wells with previously-detected pesticide exceedances in the Lower Anacostia River watershed. In general, the chemical data did not appear to indicate widespread pesticide impacts to the District's groundwater quality.

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^2)	Not Supporting (mi^2)	Insufficient Information (mi^2)	Not Assessed (mi^2)
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 habitat modification and unknown sources.

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 2010-2011. 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 District Department of the Environment (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 have been above average for the past two years. (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 2010-2011 (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[1]
- 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[1]

Acres of freshwater tidal wetlands: 180 [2]

Names of border waterbodies: Potomac River estuary

Number of border estuary miles: 12.5 miles

[1]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.
[2] This total is compiled from the District's Watershed Protection Division.

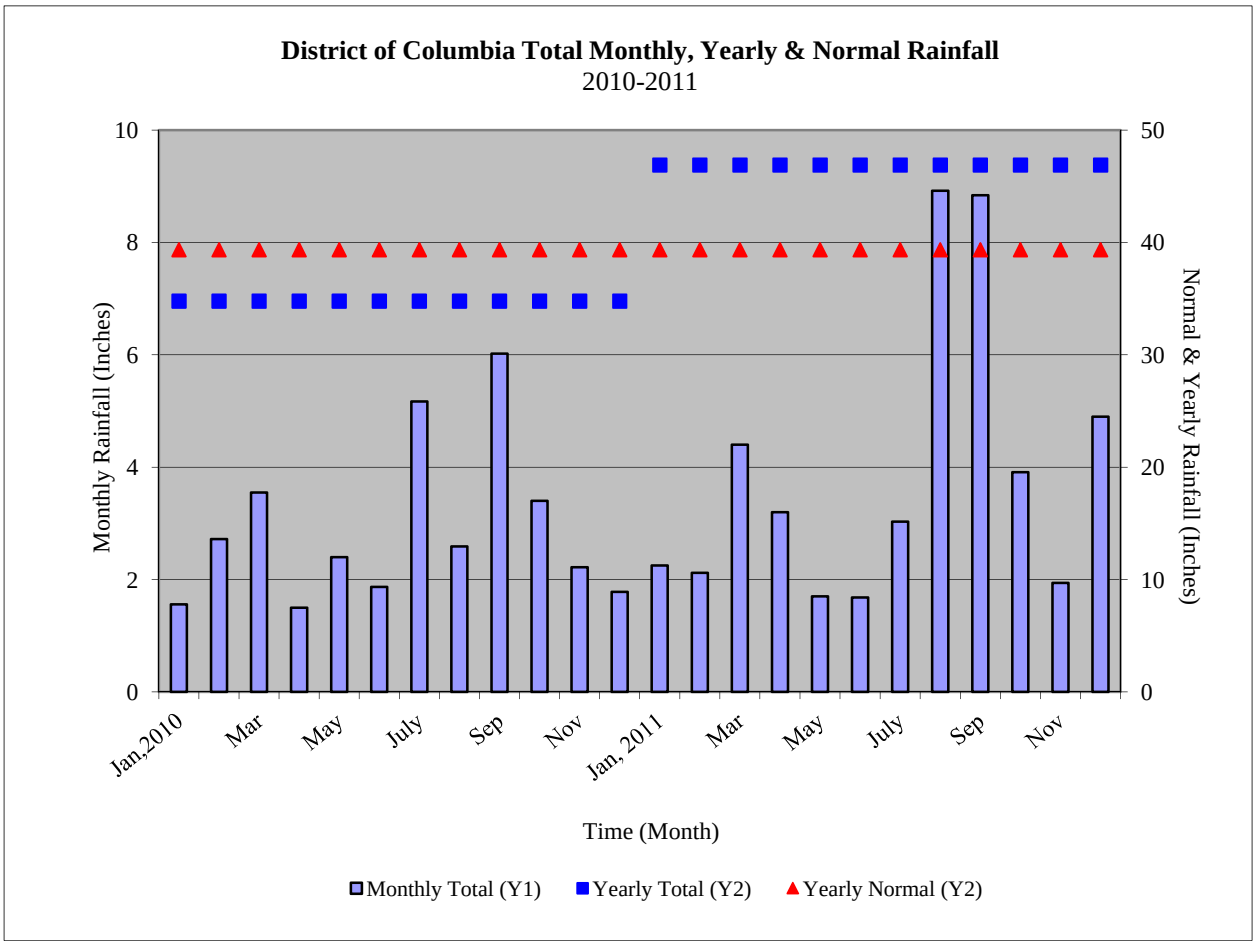


Figure 2.1: Monthly, yearly and normal total rainfall (inches), 2010-2011 (Source: National Weather Service, Reagan National Airport)

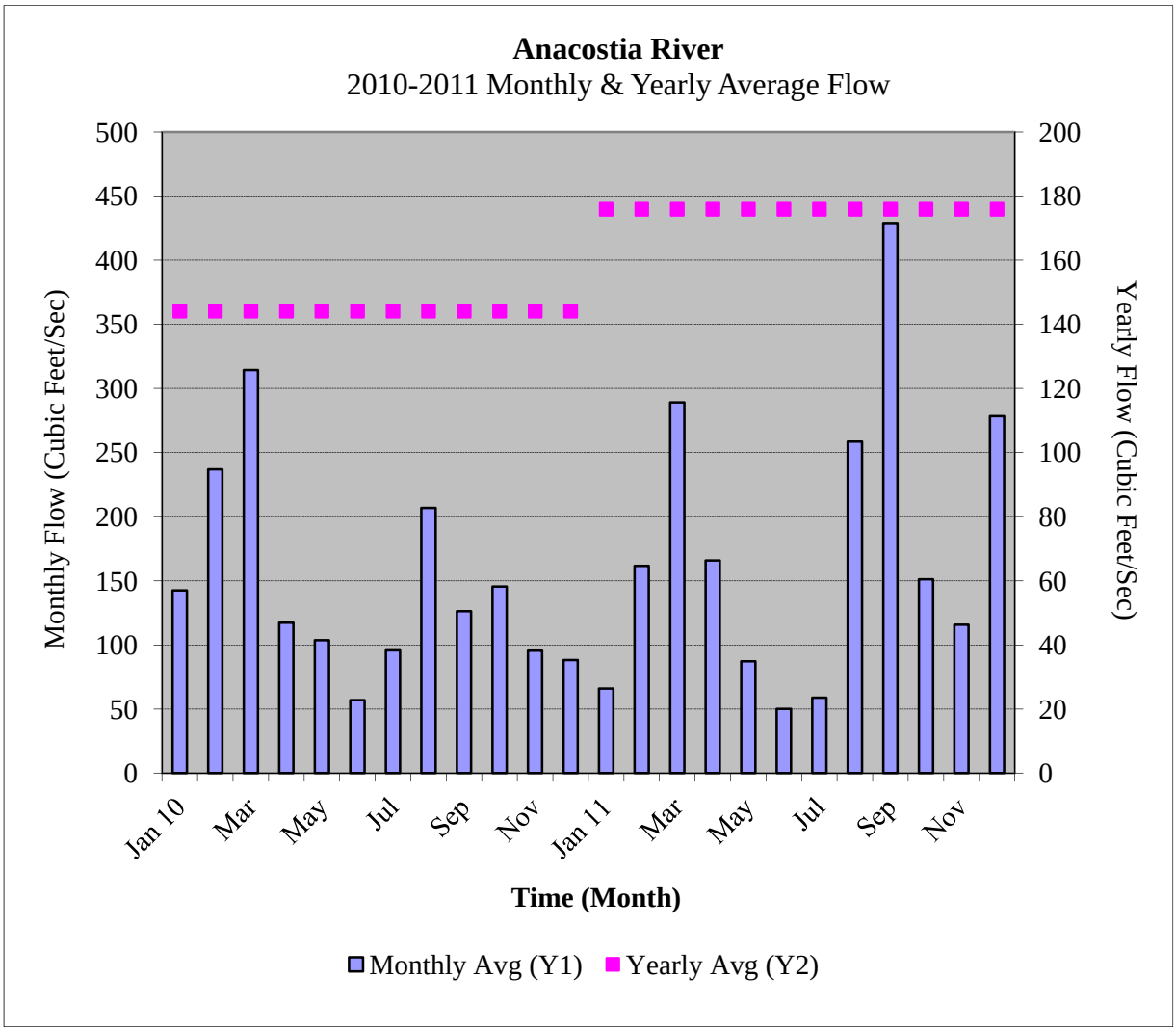


Figure 2.2: Monthly and yearly average flow on the Anacostia River, 2010-2011 (Source: USGS)

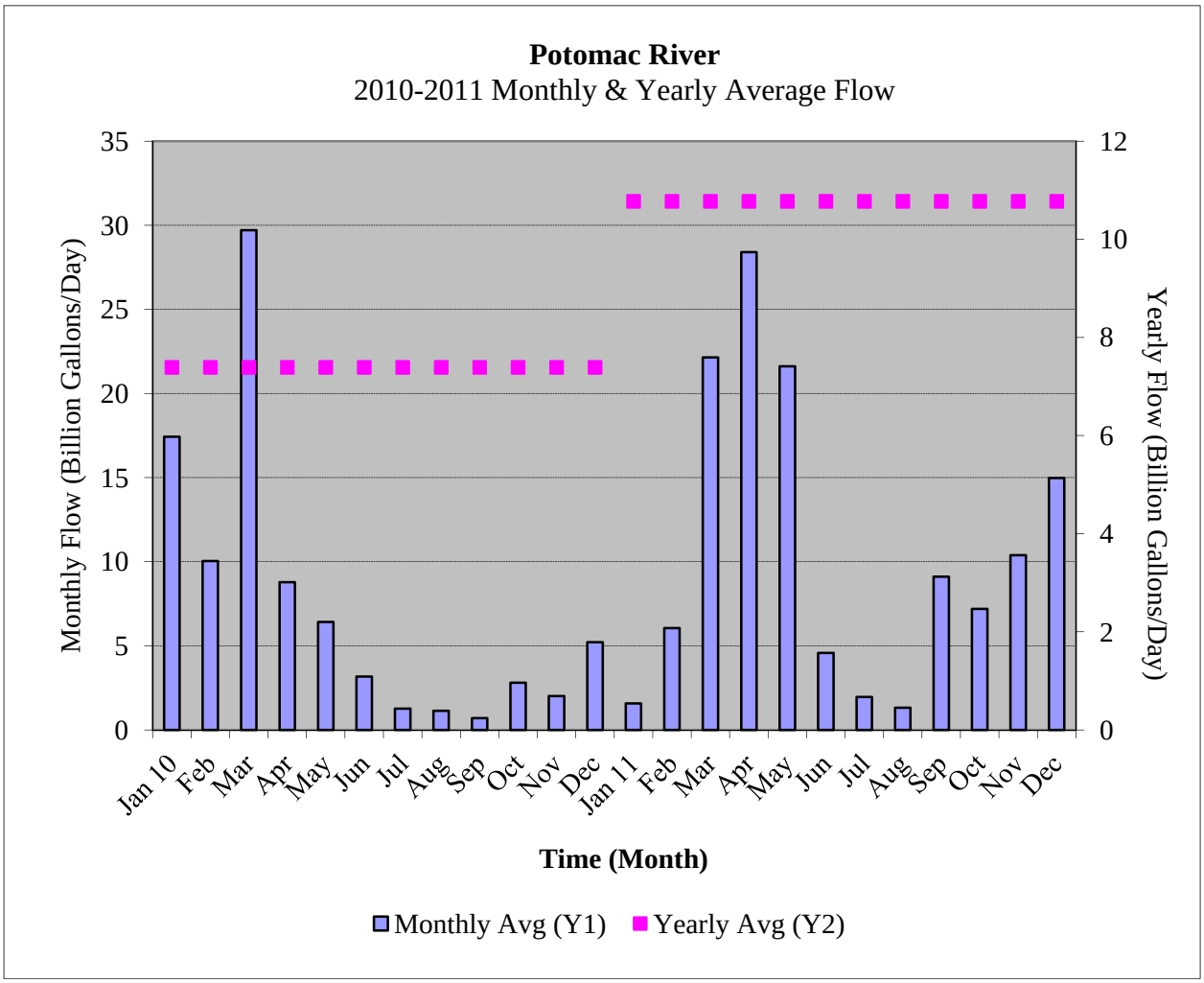


Figure 2.3: Monthly and yearly average flow on the Potomac River, 2008-2009 (Source: USGS)

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 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 that use resources.

This section documents the progress made in 2010 and 2011 by the District in implementing its Nonpoint Source Management Plan. The District's NPS 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 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 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. Of these plans, the *Oxon Run WIP* (2010) and the *Rock Creek WIP* (approved 2010) have been approved by US Environmental Protection Agency (US EPA). The *Anacostia River WIP* (2011) is currently being reviewed by US EPA's Nonpoint Source Pollution Program. Additionally, the District participated in the development of the US Army Corps of Engineers (US ACE) 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.

The Watershed Protection Division (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, to name a few. Since the inception of the US EPA's Chesapeake Bay Program (CBP) the District has been an active participant. This program is a public-private partnership consisting of governments in Pennsylvania, Maryland, Virginia, the District, the Chesapeake Bay Commission, US 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 CBP. In December 2001, the District, along with the other signatories, signed the Chesapeake 2000 Agreement that guides the program until 2010. The District 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 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 in May 2001. In December 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 (MWCOG) established the Anacostia Watershed Restoration Committee to help coordinate regional efforts to restore the river. In June 2006, MWCOG 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.

The District uses the watershed approach to address nonpoint source pollution and non-attainment of designated use categories in District waterbodies. WPD has developed WIPs for five (5) Anacostia tributaries that fall entirely or partially within the District's geographic boundaries. These tributaries are Pope Branch, Ft. Dupont, Hickey Run, Watts Branch, and Oxon Run and one in Rock Creek watershed has also been developed. The WIPs set out the actions

that are required to address impaired water quality in the particular watershed. These actions can range from education and outreach, to stormwater management. These implementation plans serve as documents that will direct future efforts in a coordinated and systematic manner. The WIPs are efforts to create a watershed-based non-point source pollution control plans that meets the US EPA's requirements for acceptance while providing a realistic and adaptable guide for agencies responsible for the restoration of the District's watersheds. Given the fact that two of the tributaries for which WIPs were developed (Oxon Run and Watts Branch) partially fall within Maryland's jurisdiction, efforts made by the WPD will only partially address water quality impairments in those creeks. DDOE currently coordinates closely with these Maryland jurisdictions in all its efforts, and will continue to do so into the future. This approach is most successful when surrounding counties continue to implement restoration activities.

Water Quality Standards Program

The water quality standards (WQS) regulations in the District are developed and revised under the authority of the federal CWA and the District of Columbia Water Pollution Control Act of 1984, D.C. Official Code § 8-103-01 *et seq*. The water quality standards (WQS) play a critical role in implementing essential purposes and functions of the federal CWA. The WQS are used for water quality assessments for reporting, TMDLs, NPDES permits, non-point source programs and recreational water monitoring. Triennial revisions of the WQS are conducted to identify and incorporate new information on water quality criteria and policy changes to protect the surface waters in the District.

The federal CWA requires states to review and revise their water quality regulations every three years with public participation and public hearing. DDOE conducted the 2010 triennial review of the District of Columbia surface water quality standards. The review process started with a notice of the proposed rulemaking that was published in August 2010 in the D.C. Register at 57 DCR 007409, with a 30-day public comment. Copies of the proposed rules were also sent directly to stakeholders and interested parties. A public hearing on the District's WQS triennial review was conducted in September 2010 with a notice of hearing published in the D.C. Register and a major newspaper. DDOE prepared responses to comments received and posted them on the DDOE website at: www.ddoe.dc.gov. After an Office of Attorney General (OAG) certification, the rules were published at 57 DCR 009129 on October 1, 2010 and promulgated as final regulations. DDOE submitted the final rulemaking package with necessary documentation to EPA Region III office in October 2010 for review and approval. The revised final WQS regulations consistent with the federal CWA and US EPA's implementation regulations at 40 C.F.R 131 were approved in December 2010 by US EPA.

The triennial review of WQS added acute and chronic water quality criterion for nonylphenol an organic chemical found to be toxic to aquatic life and updated the standards for phenol and acrolein based on US EPA's recommended section 304(a) water quality criteria were also updated. A definition for non-tidal waters was also included. The 2010 revised rulemaking upgrades the designated use for Hickey Run and Watts Branch tributaries in the District from

Class B(secondary contact recreation and aesthetic enjoyment) to Class A (primary contact recreation) to achieve the goals of federal CWA section 101(a)(2) and provide protection to downstream waters. In addition, DDOE revised section 1105.9 to clarify that it is within DDOE's permitting authority to determine whether a compliance schedule is placed in a NPDES permit. DDOE also updated the guidelines to include the April 2010 addendum published by US EPA in coordination with CBP. These regulatory changes will enable the District to use standards as a programmatic tool in the water quality management process and as a foundation for water quality based control programs.

Emergency Rulemaking - Action to Amend the Ban on Swimming in Potomac River:

The District conducted an emergency rulemaking to maintain the safety of persons swimming in the Potomac River during the Washington, DC Triathlon and the Nation's Triathlon. This action was taken to prevent threats to their health, safety and welfare as a result of their potential exposure to contaminants or conditions that do not comply with the District's standards and criterion for Class A waters set forth in 21 DCMR § 1104.

The rulemaking was adopted as an emergency rule on December 9, 2010, and became effective immediately. The rulemaking expired one hundred and twenty days from the date of effectiveness. DDOE WQD published notice of emergency and proposed rulemaking in December 2010 at 57 DCR 011971 an "Action to Amend the Ban on Swimming in Potomac River" with a 30-day comment period. The rules amended subsection 1158.5 of Title 21 of the District of Columbia Municipal Regulations to create an exemption to the prohibition against swimming in the Potomac and Anacostia River to annually authorize two triathlon in the Potomac River.

A public hearing for the emergency rule was held in February 2011 at DDOE. During the public hearing, District residents presented their testimony regarding the District's action on the temporary event-specific suspension of the prohibition on swimming in Potomac River for the Triathlons. After expiration, the proposed rules were published at 58 DCR 005191 in June 2011 and promulgated as emergency regulations. DDOE's proposed changes to section 1158.5 do not affect designated uses, water quality criteria that are protective of swimming or the anti-degradation policy and that they are not subject to US EPA's review and approval under section 303(c) of the CWA. US EPA Region III supported DDOE's decision on the exemption that would authorize two triathlon swimming events annually.

Point Source Program

National Pollutant Discharge Elimination System (NPDES) Permits

Background

Currently, there are eleven facilities (see Table 1) in the District which have been issued individual (site-specific) industrial discharge permits by US 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

Permittee/Facility	**Permit No**	**Current Status**	**Inspection Frequency**
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

DDOE's 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 US EPA. Compliance inspections are recognized as a vital part of the District's NPDES Program. Appropriate enforcement actions are recommended to US 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 2010 to December 2011, the WQD conducted fifteen compliance inspections at the facilities listed in Table 2.3

TABLE 2.3
NPDES PERMITTED FACILITIES INSPECTED

NPDES ID	Permit Name	Type of Facility
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 US EPA are reviewed by the WQD for completeness, compliance with both Federal and District laws and DC Water Quality Standards 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 US 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 Water Quality Standards or regulations change. During the period of January 2010 and December 2011, WQD reviewed and/or certified the following eight NPDES permits:

TABLE 2.4
Permits Reviewed and Certified by WQD

Permitted Facility	Reviewed/Certified
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

Permitted Facility	Reviewed/Certified
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 401of 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 DC Water Quality Standards. 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.

The following projects were reviewed and certified between January 2010 and December 2011:

TABLE 2.5
NWPS REVIEWED AND CERTIFIED

Permittee	Certification Number	Project Description
DC WASA/Watts Branch Sewer Rehabilitation.	DC-10-002	To relocate sewer, replace sewer siphon, and maintain existing sewer lining in the Watts Branch.
DC DOT/Pope Branch Culvert Rehabilitation	DC-10-003	To rehabilitate the culvert in Pope Branch located at Branch Avenue and Anacostia Road, SE, in the District of Columbia.
Cohen, Edward L.	DC-10-004	To perform work in an unnamed tributary to the Potomac River at 4915 Indian Lane, NW, Washington, District of Columbia.
DDOT-Rehabilitation of 29th, 30th, and Thomas Jefferson Bridges	DC-10-005	To replace three bridges over the C & O Canal in Georgetown, in the District of Columbia.
DDOT-Rehab of 29th, 30th, and Thomas Jefferson Bridges)	DC-10-006	Verification of Nationwide Permit authorization to clean-up petroleum leakage associated with replacing three bridges over the C & O Canal in Georgetown in the District of Columbia.
U.S. Naval Station Anacostia Terminal Maintenance and Repairs	DC-10-007	Verification of Nationwide Permit authorization to remove and replace, in-kind with updated safety improvements, the existing downriver mooring dolphin located at the U.S. Navy Yard within the Anacostia River, in Washington, DC.
National Park Service – Rock Creek Park	DC-10-008	Verification of Nationwide Permit authorization to perform maintenance work on an existing bridge in Rock Creek, on Beach Drive between Bingham Drive and Sherrill Drive, Washington, District of Columbia.
CSX Transportation, Washington, DC	DC-10-009	To repair Bridge No. CFP 114.54 by replacing damaged substructure units (bents) in the Anacostia River in the District of Columbia.
DC Department of Real Estate Services/ Metropolitan Police Department pier repair	DC-10-011	To repair the existing Metropolitan Police Department pier with new decking and a pile; and to replace a five-pile wooden dolphin located at 500 Water Street, SW in the Potomac River, Washington, DC.
GSA/St. Elizabeth's West Campus	DC-10-012	To construct Department of Homeland Security and Coast Guard Headquarters buildings and associated infrastructure impacting a total of approximately 2,304 square feet of forested non tidal wetland for the USCG building and 1,255 linear feet of an unnamed tributary to the Anacostia River for new roads located at St. Elizabeth's West Campus, Washington. D.C., which shall be mitigated based on a final mitigation plan to be reviewed and approved by the District Department of the Environment, Water Quality Division.
Pollin Memorial Community, Washington, DC	DC-10-013	To construct a stormwater management pond and associated outfall structure impacting approximately 250 square feet of non-tidal wetlands abutting an unnamed tributary of Watts Branch, in Washington, DC.
CSX Transportation – Benning Yard Culvert Replacement	DC-10-014	To replace an in in-kind 85-foot section of a 54-inch corrugated metal pipe culvert, to emplace 25 linear feet of riprap bank stabilization; and to remove potential hazardous and toxic accumulated sediments within 35 linear feet of a stream temporarily impacting 125 linear feet of stream and permanently

Permittee	Certification Number	Project Description
		impacting 25 linear feet of stream in Fort DuPont Creek, at the Benning Rail Yard, Washington, D.C.
Airports Authority/River Rescue North Boathouse/ Washington National Airport)	DC-10-015	Authorization to relocate a River Rescue North Boathouse in the Potomac River at Ronald Reagan Washington National Airport, Washington, DC
CSX Transportation, Inc.	DC-10-016	Authorization to conduct benthic macroinvertebrate sampling in Fort DuPont Creek, Washington, DC.
James Ninteman, Commercial Waterproofing, Inc.	DC-11-001	Authorization to install temporary scaffolding in a 12 foot wide by 350 foot long section of the C & O Canal, Washington, DC.
District Department of the Environment	DC-11-002	Authorization to construct 11 rock weir structures of approximately 5 foot long by 14 foot wide, and to construct 5 rock cascade structures approximately 10 foot long by 14 foot wide in order to stabilize approximately 1,000 linear feet of an unnamed tributary to Bingham Run near the intersection of North Hampton Street NW and Oregon Avenue NW in Rock Creek Park, Washington DC.
Government of the District of Columbia Office of the Deputy Mayor for Planning and Economic Development	DC-11-003	Authorization to remove 16 existing finger piers and a 3-foot wide by 66 foot long "T" head; and to install 40 fender piles adjacent to the existing pier to extend no more than 247 feet channel ward of the existing bulkhead in the Washington Channel at 600 Water Street, SW, Washington, DC.
U.S. National Arboretum	WQCM # DC-08-014	Authorization to excavate approximately 1,500 cubic yards of contaminated soil and sediment from the storm drain culvert located beneath New York Avenue and to replace the area with clean fill material.
District Department of the Environment (DDOE)	DC-11-004	Authorization to construct 44 approximately 10 foot long by 14 foot wide rock weir structures to stabilize approximately 1,100 linear feet of two unnamed tributaries of Milkhouse Run near the intersection of North Hampton Street and Oregon Avenue in Rock Creek Park, Washington, DC.
DDOE	Letter of Approval	Authorization to construct regenerative stormwater conveyance system in Pope Branch between Texas Avenue and Pope Branch Park, 35th Street and Pope Branch Park, 35th Street and Pope Branch Park in Washington, DC.
Cynthia Giordano, Arnold & Porter	DC-11-005	Authorization to replace and relocate approximately 90 linear feet of 24" RCP with approximately 150 linear feet of 36" RCP, permanently fill approximately 71 linear feet of partially stabilized stream channel and mitigate the impacts by creating 76 linear feet of stabilized stream channel.
Diamond Teague Park, Office of the Deputy Mayor for Planning and Economic Development	DC-11-006	Authorization to construct a 20-foot wide by 518-foot long walkway with 54-foot by 82-foot platform, parallel to the shoreline and connecting to the existing Diamond Teague Park walkway, to extend a maximum of 104 feet channel ward of the existing bulkhead in the Anacostia River between the southwestern corner of the Yards Park and Diamond Teague Park, just off 2nd Street, SE, Washington, DC.
CSX Transportation, Inc.	DC-11-007	Authorization to conduct benthic macro invertebrate sampling in Fort DuPont Creek, Washington, DC.
U.S. Army Corps of Engineers.	DC-11-010	Certification draft Nationwide Permits and Regional Conditions.
DC Department of	DC-11-013:	Authorization to remove approximately 16,000 square feet of fill

Permittee	Certification Number	Project Description
Transportation		material from within a non-tidal wetland; to restore the area to original grade; and replant the area and surrounding area with native species in wetlands adjacent to the Anacostia River at 1600 M Street, SE, Washington, DC.
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 1st 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 (0.77 acre) and 12,680 square feet (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 14th 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. 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.

Urban stormwater runoff is a prevalent source of pollutants to District of Columbia waterbodies. Primary nonpoint source pollutants of concern include nutrients, sediment, toxicants, pathogens and hydrocarbons. The waterbodies that support a designated use are also threatened by nonpoint source pollutants. A process to rank watersheds for nonpoint source implementation in the District, conducted by the District Nonpoint Source Program in 1995, determined that the Anacostia River and its tributaries should receive highest priority, followed closely by Rock Creek and its tributaries. For over a decade, the District has been using a watershed approach to raise awareness and coordinate public and private sector resources to tackle the water quality problems of the Anacostia River.

Washington, D.C. 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 the city residents with the knowledge and tools on how to prevent pollution from entering their neighborhood streams.

There are three branches within the Watershed Protection Division:

- Planning and Restoration Branch,
- Technical Services Branch, and
- Inspection and Enforcement Branch.

The DDOE, 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 CBP are non-regulatory programs that strive to achieve the similar results. Included under the auspices of the Planning and Restoration Branch are tree plantings and riparian buffer restoration.

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 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, works to increase 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 city and federal lands.

Overall, the nonpoint source management strategy attempts to change the mindset and 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 Capitol city 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 of Columbia and throughout the United States. US EPA and 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 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 are the Sediment and Stormwater Technical Services Branch and the Inspection and Enforcement Branch.

These 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 city laws relating to floodplains and waterways. In addition, they ensure that BMPs are installed correctly and receive appropriate maintenance and upkeep.

A. Sediment and Stormwater Technical Services Branch

This Branch reviews construction and grading plans for stormwater management, erosion and sediment control, and flood plain management considerations. As required by US EPA regulations regarding new construction permits, all new construction in the District must have Stormwater Pollution Prevention Plans (SWPPP) that "identifies all potential sources of pollution which may reasonably be expected to affect the quality of stormwater discharges from the construction site." .

The District already has strong erosion and sediment control regulations in place, requiring an erosion and sediment control permit for any land disturbance over 50 square feet. In comparison, other jurisdictions require that these permits be filed when more than 5,000 square feet of soil are disturbed. Furthermore, the DDOE has published the District of Columbia Soil Erosion and Sediment Control Standards and Specifications and the DC Stormwater Management Guidebook. These documents are used by DDOE in the plan review process for new construction.

In 2010, the Sediment and Stormwater Technical Services Branch accomplished the following:

- Reviewed 1,530 building permit applications and plans for regulatory compliance;
- Processed 10 Environmental Impact Screening Forms (EISFs) after they were reviewed for regulatory compliance;
- Provided 2,411 customers with technical assistance; and
- Filed 35 Notices of Infraction (NOIs).

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. Some examples of this included below:

- One staff engineer attended a one-day STAC Workshop on "Strategies to Protect and Restore Urban Watersheds." The workshop was held at the US Green Council Building in Washington, DC.
- Six staff engineers attended a presentation on the "Terre Kleen TK18 Hydrodynamic Separator" given by consultants from the Terre Hill Stormwater Systems Company.
- Three staff engineers attended a two-day Bioretention Summit in Annapolis, MD. The two-day training was given by a consortium comprising the University of Maryland, Villanova University, and North Carolina State University.
- One staff engineer participated in an open panel discussion on a one-day workshop organized by the Chesapeake Bay Foundation to discuss the concept of "Nutrient Neutral Development" in relation to stormwater regulations in the Bay jurisdictions. The workshop was held at the Chesapeake Bay Foundation Office in Annapolis, MD.
- Three staff engineers participated in the Center for Watershed's webinar training on "Permeable Pavement."

B. Inspection and Enforcement Branch

The District has a strong Inspection and Enforcement Branch that inspects construction sites throughout the District to make sure they are in compliance with 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 DDOE 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 2010, the Inspection and Enforcement Branch accomplished the following:

- Conducted 5,679 inspections at construction sites for enforcement of erosion and sediment control and stormwater management regulations;
- Took 144 enforcement actions, including stop-work orders and civil infractions, to strengthen enforcement activities;
- Conducted 51 investigations for erosion, drainage and related complaints;
- Inspected 748 stormwater management facilities to ensure proper functioning of these facilities;
- Inspected 107 BMPs for proper maintenance;
- Began developing outreach materials, including brochures, web material and presentations; and

- Continued to work with the Department of Consumer and Regulatory Affairs (DCRA) toward the inclusion of stormwater management in their Certificate of Occupancy process.

In 2011, the Inspection and Enforcement Branch accomplished the following:

- Conducted 8,273 inspections at construction sites for enforcement of erosion and sediment control and stormwater management regulations;
- Took 238 enforcement actions, including stop-work orders and civil infractions, to strengthen enforcement activities;
- Conducted 111 investigations for erosion, drainage and related complaints;
- Inspected 287 stormwater management facilities to ensure proper functioning of these facilities;
- Inspected 320 BMPs for proper maintenance; and
- Continued to work with DCRA toward the inclusion of stormwater management in their Certificate of Occupancy process.

WPD is currently working on automating inspection forms for all inspection and enforcement operations as a move toward a totally paperless process. Desktop computers will no longer be provided to inspectors since portable Toughbooks® have replaced them. This is expected to streamline regulatory operations by allowing inspectors to have a complete inspection history of any sites while in the field, including inspections related to other media.

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

This 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 of Columbia and Chesapeake Bay watersheds. Some of this non-regulatory work includes:

- 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
- 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, provides $5 a square foot for the installation of a green roof on a new structure or existing roof less that 2,000 square feet (up to $20,000) and $7 a square foot for the retrofit of a green roof on older roofs over 2,000 square feet (no maximum dollar limit). In the upcoming year, DDOE will retool this rebate program to offer a set dollar rebate amount regardless of the roof size.

Additionally, the city has been aggressively retrofitting some of its existing rooftops with green roofs and installing vegetated roofs on new city-owned buildings. As a result of this push, Washington, DC is second only to Chicago in the square footage of green roofs installed. In 2010, DDOE accomplished the following:

- Installed green roofs on 12 District buildings, covering 90,650 sq. ft. of rooftops (approximately 2 acres);
- Installed a green roof retrofit on District Fire Engine House #6 covering 9,500 sq. ft.; and
- Installed a green roof at the Benning Library, covering 12,030 sq. ft.

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

Bingham Run and Milkhouse Ford Projects

The purpose of these two restoration projects is to demonstrate the effectiveness of regenerative stormwater conveyances by installing a series of them along Oregon Avenue in Northwest, DC. A regenerative stormwater conveyance, also known as a coastal plain outfall, is a specialized type of low impact development technique that uses stream restoration techniques to create a dependable open channel conveyance with pools and riffle-weir grade controls to create a system of physical features, chemical processes, and biological mechanisms that greatly reduce erosive forces and positively impact the ecology of a drainage area. The regenerative stormwater

conveyance installations will reduce erosion and decrease pollutants reaching Rock Creek by slowing down and infiltrating stormwater runoff from the roadway.

These projects are a unique partnership between the District and NPS to control stormwater from District lands while restoring intermittent streams on National Park Service land. If successful, it is hoped that District Department of Transportation (DDOT) and DC Water will adopt these techniques in future roadway and storm sewer upgrades that are adjacent to or drain onto parkland or open space.

Nash Run

Nash Run is located in Northeast (NE) Washington, DC, and is a first-order tributary of the Anacostia River. The headwaters of the stream are located in Prince George's County, Maryland, but 75 percent of the watershed is within the borders of the District. The stream is piped beginning in Prince George's County and outfalls east of Kenilworth Avenue in DC. The Nash Run sewershed encompasses a 229-acre area in the District, 112 acres (49 percent) of which is impervious.

The heavily urbanized character of the Nash Run watershed, and its consequent imperviousness, result in flashy and intense stream flows, even during the most moderate of storms. Considerable amounts of trash and debris wash out of the storm sewer system during rain events, choking portions of the stream and creating areas for ponding and mosquito breeding. The resulting hydrologic alterations have deteriorated the water quality of Nash Run and degraded natural habitat downstream of the outfall. A study on trash in the Anacostia River estimated that Nash Run produces approximately 3percent of the total trash from the District that washes into the Anacostia River. Beginning in 2011, DDOE will fund the design of a system to capture trash and sediment at the end of the storm sewer system as well as the restoration designs for an 800-foot section of the stream valley using natural channel stream design techniques. DDOE plans to implement these designs in 2012.

Installing the end of pipe BMP, coupled with stream restoration at Nash Run, will improve water quality in the stream, improve the general appearance of the stream, reduce sediment and floatable pollution, and improve conditions for terrestrial and aquatic life along the stream corridor. Once work is finally complete the stream will not only be an environmental improvement but will also be an aesthetic asset for the community that surrounds Nash Run.

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 a stream and habitat restoration for the lower reach of Springhouse Run. The lower portion of the stream, from the Hickey Lane Bridge to its confluence with Hickey Run, will be reconnected to its historic floodplain and its sinuosity will be restored. This portion measures approximately 1,200 feet in length and lies entirely within the National Arboretum. DDOE is partnering with USDA, Agricultural Research Service, which owns the Arboretum, to complete this project.

An additional component of this project is to construct a bioretention facility in the circular drive at the entrance to the Arboretum Visitor Center and additional bioretention facilities in the Visitor Center parking lot at the R Street entrance to the Arboretum.

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 in Northwest (NW) DC. "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, the restoration will reduce nutrient and sediment pollution from erosion caused by fast flowing stormwater by creating meanders and floodplain wetlands which will have a 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.

There are four governmental agencies involved in this project: DDOE, DDOT, DC Water, and NPS. Additionally, local residents and a nearby school have expressed great interest in the project and will likely be involved in some aspect of the planting, invasive control, or watering.

Watts Branch Stream Restoration Project

DDOE has partnered with the US Fish and Wildlife Service and the Natural Resources Conservation Service of USDA to restore Watts Branch, a tributary of the Anacostia River, from Southern Avenue to Minnesota Ave. NE. Restoration will encompass 1.7 miles of project work along the largest stream in the District to flow into the Anacostia River. Stream restoration will reshape the channel to reduce channel erosion, create pools and riffles to support aquatic life, and reestablish streamside vegetation. In total the project will follow the natural channel stream design process and will add over 10,000 native trees and shrubs along the stream corridor. The stream restoration is one part of a multi-agency, collaborative effort to improve water quality of the Watts Branch watershed and the Anacostia River. Other projects include rehabilitating sanitary sewers, constructing stormwater management facilities, and reducing the amount of stormwater runoff from impervious areas.

The Watts Branch Stream Restoration work began in 2010 with a large invasive plant species control and removal effort. The entire stream project is broken up into 11 distinct project areas and all 11 project areas were expected to be completed by the end of the 2011 calendar year.

Pope Branch Stream Restoration Project

DDOE in partnership with the District Department of Parks and Recreation and DC Water are undertaking a restoration project for the Pope Branch tributary of the Anacostia River. Pope Branch is a first order tributary of the Anacostia that suffers from high rates of erosion due to high stormwater flows into the stream during rain events. The high rate of erosion has caused sewer lines which run through the stream valley to become exposed. Partner agencies are undertaking a restoration project for 0.8 miles of the above ground stream corridor set to begin in 2011.

Restoration work along Pope Branch will involve installing a new sewer line in the most upstream portion of the stream valley using directional drilling. Upon completion of sewer line work the DDOE and DPR funded portion of the project will involve major stream restoration work which will use base flow channel design for the restoration work. The base flow channel design involves reconnecting the stream to its floodplain by installing sand seepage rock weir in the stream valley so that weirs will assist in controlling and filtering water in the stream. Reconnecting the stream to its floodplain through the installation of the sand seepage weirs will also allow for the creation of a wetland forest community in the stream valley to further increase both water quality conditions in the stream as well as habitat features in the corridor.

In addition to the stream project DDOE, with ARRA funds, will be installing three regenerative stormwater conveyances that lead into the stream valley and is working with residents and local non-profits to reinvigorate the Pope Branch Park Restoration Alliance.

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.

- 37 teachers and 365 students received 402 cloth shopping bags from the resource center at the 2010 Anacostia Fair;
- 37 teachers received educational resources and curriculums, maps, posters, and magnetic clips, totaling 370 pieces of material, from the resource center at the 2010 Anacostia Fair; and

- 365 students received posters, maps, rulers, pencils and activity booklets, totaling 1,825 pieces of material, from the resource center at the 2010 Anacostia Fair.

Conservation Education (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 (grades K-12).

- Provided 22 teachers at Ludlow-Taylor ES with an 8-hour Project Learning Tree certification workshop.

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.

- In the spring of 2010, The Student Conservation Association worked in partnership with DDOE to provide:
    - 24 teachers with four teacher-training workshops to engage students in their environment using their conservation sites
    - 11 teachers with in-class curriculum and teaching support
    - 208 students with environmental education programming
- WPD and the National Oceanic and Atmospheric Administration and Watershed Wise District partners presented a professional development workshop for teachers who participated in the Watershed Wise DC Program. The workshop, held in Rock Creek Park near Pierce Mill on October 2, 2010, focused on macroinvertebrates and stream assessment. Eighteen teachers and seven presenters from partnering organizations participated.

RiverSmart Schools – RiverSmart schools works with applicant schools to install LID practices to control stormwater. These practices are specially designed to be functional as well as educational in order to fit with the school environment. Additionally, schools that take part in the RiverSmart Schools program receive teacher training on how to use the sites to teach to curriculum standards and how to properly maintain the sites.

- Brent ES, Anne Beers Elementary School (ES), Stokes ES, St. Peters School, Center City Public Charter School (PCS) and Banneker High School representatives attended a 16 hour training series on stormwater runoff, soils, composting, the value of trees, natives vs. non-native plants, wildlife habitat, the Chesapeake Bay watershed, and how to start a school garden. 25 teachers received the training, provided by DDOE/WPD and The Student Conservation Association.

- A Volunteer Maintenance Program was developed for RiverSmart schools to assist teachers in maintaining the gardens and continuing to use the gardens to teach about the Bay. There were 38 teachers and volunteers in attendance for the 16 hour training. The course was taught by Common Good City Farm and WPD staff. A total of 22 volunteers were placed in 18 schools.
- DDOE provided funding for the Center City PCS project through a $50,000 donation from FedEx to create an upland forest, outdoor classroom, raised bed vegetable and herb garden and butterfly garden. The Center City PCS ground-breaking ceremony and work day was held in May 2010. Eleven raised beds were built and filled with soil. Grass was removed and the soil was tilled and amended with aggressive compost on the planting site. Three trees, shrubs and about 100 mainly native plants were planted by 30 FedEx and National Wildlife Federation volunteers, and 40 students. The students and volunteers received instruction on how to install various plants. A brief ceremony was conducted with remarks by the DDOE Director and school and FedEx dignitaries.

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 among them. 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 DC agencies (Office of the State Superintendent of Education, DCPS, DPR) and stakeholders. A working group of DCEEC members has been meeting since June 2010, conducting extensive background research on what other states are doing, how other states define environmental literacy, and which stakeholders should be involved in the process.

The Anacostia River Environmental Education Fair - This annual outdoor event offers District school children a variety of educational experiences designed to promote in them a conservation and stewardship ethic toward their watersheds, the Anacostia and Potomac Rivers, and the Chesapeake Bay. The fair also provides additional resources to District teachers interested in enriching their curriculum through environmental studies.

- The Anacostia Fair took place on Friday, May 14, 2010. 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 12, 2011. Eight DCPS schools, 35 teachers, 360 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.

Meaningful Watershed Educational Experiences

- Alice Ferguson Foundation, with DDOE funding, successfully conducted seven overnight field-study trips for 145 4th and 5th grade students at Hard Bargain Farm from May through June 2010.
- 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 a hands-on meaningful watershed experience for 300 students at John Tyler Elementary School by engaging them in a schoolyard garden installation project. DDOE/WPD provided $21,500 for plants, soil, tools, and classroom materials that will help teachers to integrate the site into the curriculum. Volunteers from the Navy and City Year AmeriCorps assisted students, teachers and parents with the planting of 8 trees, 40 shrubs and 2000 plants in September 2010.
- WPD conducted a Watershed Aquatics Environmental Education Camp - August 2010, at the Boys and Girls Club of Greater Washington with FWD. A total of 40 campers and youth summer workers participated. 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 and a native plant garden was installed by the campers at the Boys and Girls Club.

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 $1,200 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. 2010 accomplishments include the following:

- Provided District residents with 388 rain barrels
- Planted 531 shade trees

- Installed 12 rain gardens
- Implemented BayScaping at 65 properties
- Added pervious pavers to one property.

In 2011, DDOE increased its implementation of RiverSmart Homes across the city, aimed for 1,000 rainbarrel installations, 250 raingarden and bayscaping installations, and over 600 shade trees.

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. We have projected that we will need a 25 percent increase in tree planting over current efforts to achieve this goal. Currently, UFA, which maintains the city's street trees, plants an average of 4150 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 have added 2,476 trees to the District in 2010. With 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

Trash removal, although having a minimal impact on pollutant loads, is an excellent activity for involving the public in restoration work and in generating watershed stewards. Many of these projects are small and can be easily and safely accomplished by teams of volunteers in one or two days. 2010 accomplishments include:

- DDOE All Hands Work Day, 200 volunteers, estimate 4 tons of trash removed in Fort Dupont Sub-watershed
- MLK Jr. Clean-up Service Day, 250 volunteers, 3-4 tons of trash removed in Pope Branch Sub-watershed

- Earth Day Clean-up, 35 volunteers, 50 bags of trash removed in Nash Run Sub-watershed

Public Education and Outreach Materials

DDOE has developed educational materials such as fliers and videos that inform citizens of their legal obligations to manage pet waste, proper application and disposal of fertilizers, and the use of landscaping to control stormwater runoff. These materials are regularly distributed at public events such as community meetings, Earth Day celebrations, and community cleanup days. In addition, this information is distributed door to door in communities where storm drain marking is taking place. Finally this information is available on the DDOE website.

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 must receive a certification through the program to legally apply pesticides and herbicides in the District. A part of this program involves the use of IPM.

WPD Storm Drain Marker Program

In 2010, the WPD installed 1,023 storm drain markers throughout the District of Columbia with private citizens, individuals from various volunteer groups and DCPS school groups.

Low Impact Development (LID)

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

In 2010, DDOE/WPD partnered with Casey Trees to create a multi-tiered green infrastructure demonstration site at Casey Trees Headquarters at 3030 12th St NE. This project created a destination showcase on the commercial main street in the Brookland neighborhood, within walking distance to a Metro rail stop. This site is now set up to illustrate how a high-density, small-footprint redevelopment is able to manage all the annual runoff on site. Green

infrastructure on this project begins with rooftop treatment of stormwater with three varieties of green roof systems (2,500 square feet) including trays with plant plugs, trays with mature plants, and built-in-place pre-grown mats. The downspouts from the non-vegetated roof areas drain to a large onsite bioretention area (1,023 square feet), as does the adjacent parking lot. Downspouts serving the vegetated roofs are routed to a harvest system (1,500 gallons). The water collected provides drought irrigation for bioretention and curbside bioretention at 12th St. NE. The site is designed to manage the one-inch design event and is expected to retain, use and infiltrate 35,000 gallons of stormwater annually.

2011 accomplishments include:

- Completed schoolyard retrofit with bioretention at Tyler DCPS;
- Installed curbside bioretention and LID retrofits along 12th St. NE; and
- Installed a large volume cistern at Common Good City farm to harvest stormwater runoff to irrigate the community garden.

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.

The tables below include and describe the coordinated activities conducted in designated watersheds and sub-watersheds to meet those goals. Accomplishments in fiscal year 2010 include the following:

TABLE 2.6
ROCK CREEK WATERSHED ACTIVITIES

Rock Creek Watershed Activities					
Activity	**Description**	**Status**	**Output (quantity)**	**Partners**	**Funding**
130 gallon rain barrel installations	As part of the RiverSmart Homes (RSH) program, DC Greenworks installs 130 gallon rain barrels on residential properties.	Completed	193	DC Greenworks	MS4
Shade tree installation	As part of the RiverSmart Homes program, Casey Trees installs medium to large shade trees on residential property.	Completed	95	Casey Trees	ARRA
BayScaping	As part of the RSH	Completed	16 properties average 120	Alliance for the	ARRA

Rock Creek Watershed Activities					
Activity	**Description**	**Status**	**Output (quantity)**	**Partners**	**Funding**
installation	program, BayScaping is installed to replace existing turf.		square feet per property	Chesapeake Bay	
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 square feet per property	Alliance for the Chesapeake Bay	ARRA
Broad Branch Stream Daylighting	Daylighting (restoring to the open air) the flow of a previously covered portion of Broad Branch.	Designs completed. Working on MOUs for installation and Environmental Assessment (EA)	1,600 linear feet of stream restored. Four bioretention facilities treating about 1.8 acres.	DDOT, Peruvian Embassy, NPS	319, Bag Bill Revenue
Installation of two regenerative stormwater conveyances (RSC): Peruvian Embassy	Type of LID that uses stream restoration techniques to create a dependable open channel conveyance that greatly reduces erosive forces and positively impacts the ecology of the treated area.	Designs completed. Projects will be installed with the Stream Daylighting.	2 regenerative conveyances installed with a combined length of 1300 linear feet.	Peruvian Embassy	319, Bag Bill Revenue
Bingham Run Regenerative Stormwater Conveyance	One RSC to treat and stabilize NPS parkland receiving stormwater runoff from Oregon Avenue.	30% designs are complete and the project is awaiting the completion of an EA by the NPS.	1 regenerative conveyance installed with a length of 950 linear feet.	NPS, DDOT	319
Milkhouse Ford Regenerative Stormwater Conveyance	One RSC to treat and stabilize NPS parkland receiving stormwater runoff from Oregon Avenue.	30% designs are complete and the project is awaiting the completion of an EA by the NPS.	1 regenerative conveyance installed with a length of 1800 linear feet.	NPS, DDOT	ARRA
Klingle Run Restoration	Stream restoration of Klingle Run and the removal of a roadway next to Klingle Run which is to be replaced with a bike path and LID.	60% designs are complete. An EA has been completed. The project is waiting on funding.	3,100 linear feet of stream restored. At least 0.75 acres of impervious surface removed and 1.4 acres of stormwater treated	DDOT, NPS	DDOT
Beach Drive LID	LID retrofits along Beach Drive NW to treat uncontrolled stormwater into Fenwick Branch.	60% designs are complete. The project is waiting on funding.	At least 1 acre of stormwater treated.	DDOT, NPS	MS4

TABLE 2.7
ANACOSTIA WATERSHED ACTIVITIES

Anacostia Watershed Activities					
Activity	**Description**	**Status**	**Output (quantity)**	**Partners**	**Funding**
130 gallon rain barrel installations	As part of the RiverSmart Homes	Completed	93	DC Greenworks	MS4

Anacostia Watershed Activities					
Activity	**Description**	**Status**	**Output (quantity)**	**Partners**	**Funding**
	program, DC Greenworks installs 130 gallon rain barrels on residential properties.				
Shade tree installation	As part of the RiverSmart Homes program, Casey Trees installs medium to large shade trees on residential property.	Completed	63	Casey Trees	ARRA
Pervious Paver installation	As part of the RiverSmart Homes program, pervious pavers are installed to replace existing impervious surface on residential property.	Completed	1 property	Alliance for the Chesapeake Bay	ARRA
BayScaping installation	As part of the RiverSmart Homes program, BayScaping is installed to replace existing turf.	Completed	23 proper-ties average 120 square feet per property	Alliance for the Chesapeake Bay	ARRA
Rain Garden installation	As part of the RiverSmart Homes program, rain gardens are installed to replace existing turf.	Completed	12 rain gardens installed average 50 square feet per property	Alliance for the Chesapeake Bay	ARRA
RiverSmart Schools Program: Stokes Elementary	Bayscaping and edible forest garden installation with native shrubs. A large bioretention/rain garden will collect runoff from the parking lot. Also slows runoff and filters any pollutants that would run down the parking lot hill.	30% completed. Contractors are ready to do work on the bioretention cell.	3 fruit trees planted; 20 native shrubs planted at the bank of the steep slope. Bioretention facility treating about 0.5 acres.	Washington Youth Garden	319
RiverSmart Schools Program: Anne Beers Elementary	Installation of butterfly garden and living wall using Filtrexx filter soxxs filled with compost growing media.	90%	350 sq. ft. of native planting	Cheryl Corson Design, LLC	319
Benning Library	Installation of Green Roof	Completed	12,030 sq. ft. roof	DC Public Libraries	ARRA

TABLE 2.8
WATTS BRANCH SUB-WATERSHED ACTIVITIES

Watts Branch Sub-watershed Activities					
Activity	**Description**	**Status**	**Output (quantity)**	**Partners**	**Funding**
Upland tree planting	Upland tree planting grant to plant 600 trees in the watershed and do job training for area youth	Completed on Sept. 30, 2010	252 trees in the watershed from Jan. 1-Sept. 30, 2010	Washington Parks and People	NFWF
Storm Drain Marking	Marking all storm drains in the Watts Branch sub-watershed with labels identifying pollutants that drain into the Anacostia River	In progress; 50% complete	685 total storm drains	Green Summer	NFWF
H.D. Woodson High School	Installation of Cisterns	In progress		DCPS Office of Public Facilities Management	ARRA

TABLE 2.9
FORT DUPONT SUB-WATERSHED ACTIVITIES

Fort Dupont Sub-watershed Activities					
Activity	**Description**	**Status**	**Output (quantity)**	**Partner**	**Funding**
DDOE All Hands Work Day	A clean-up event in Fort Dupont Park to remove trash from the park and to plant trees and native shrubs	Completed on May 6th, 2010	200 volunteers; estimated 4 tons of trash removed; maintenance & planting for 9 bioretention cells	National Park Service	319
Storm Drain Screen Installation	Installation of trash screens on catch basins in the Ft. Dupont watershed			Earth Conservation Corps	

TABLE 2.10
POPE BRANCH SUB-WATERSHED ACTIVITIES

Pope Branch Sub-watershed Activities					
Activity	**Description**	**Status**	**Output (quantity)**	**Partners**	**Funding**
MLK Jr. Clean-Up Service Day	Community Clean-Up Day	Complete	250 Volunteers; 3-4 Tons of trash; invasive species removal	DC Sierra Club, UFA, DDOT, DPW, ANC 7A, Penn Branch Civic Association	319

TABLE 2.11
NASH RUN SUB-WATERSHED ACTIVITIES

Nash Run Sub-watershed Activities					
Activity	**Description**	**Status**	**Output (quantity)**	**Partners**	**Funding**
Earth Day Clean-Up	A trash clean-up activity along an 800 foot stretch of stream	Completed on April 24th, 2010	35 Volunteers, 50 bags of trash	Anacostia Water-shed Society, Eastland Gardens Flower Club	319

TABLE 2.12
OXON RUN WATERSHED PROJECTS

Oxon Run Watershed Projects					
Activity	**Description**	**Status**	**Output (quantity)**	**Partners**	**Funding**
130 gallon rain barrel installations	As part of the RiverSmart Homes program, DC Greenworks installs 130 gallon rain barrels on residential properties.	Completed	5	DC Greenworks	MS4
Shade tree installation	As part of the RSH program, Casey Trees installs medium to large shade trees on residential property.	Completed	1	Casey Trees	ARRA
BayScaping installation	As part of the RSH program, BayScaping is	Completed		Alliance for the Chesapeake Bay	ARRA

Oxon Run Watershed Projects					
Activity	**Description**	**Status**	**Output (quantity)**	**Partners**	**Funding**
	installed to replace existing turf.				
Rain Garden installation	As part of the RiverSmart Homes program, rain gardens are installed to replace existing turf.	Completed	1	Alliance for the Chesapeake Bay	ARRA
Oxon Run Trail Rehabilitation Project	Rehabilitate and connect bike trails in Oxon Run Park and Include LID techniques throughout the project, including bio-retention cells and permeable pavement and tree planting.	30% designs have been completed and DC Department of Transportation is putting the 2005 designs out for bid.	Nine bioretention areas and 1 acre of new tree planting	DDOT, Department of Parks and Recreation	Funds have not yet been identified for the LID portion of this project.
Bald Eagle Recreation Center Rehabilitation Project	Include bioretention cells and permeable paving to absorb stormwater from this facility and prevent runoff from causing erosion on NPS land	Coordination with OPEFM and conceptual designs		Department of Parks and Recreation and OPEFM	Stormwater Enterprise Funds
District Curb Alternative	Work with community to redesign a residential street as green street	Project is about 60% complete and will be finished in September 2011	Conceptual Designs for Green Streets and Community Enthusiasm for new Street Design	Casey Trees	Stormwater Enterprise Fund

TABLE 2.13
ANACOSTIA CSO WATERSHED ACTIVITIES

Anacostia CSO Watershed Activities					
Activity	**Description**	**Status**	**Output (quantity)**	**Partners**	**Funding**
130 gallon rain barrel installations	RiverSmart Homes program, DC Greenworks	Completed	97 rain barrels installed	DC Greenworks	Bag bill

Anacostia CSO Watershed Activities					
Activity	**Description**	**Status**	**Output (quantity)**	**Partners**	**Funding**
	installs 130 gallon rain barrels on residential properties.				
Shade tree installation	RiverSmart Homes program, Casey Trees installs medium to large shade trees on residential property.	Completed	48 shade trees planted	Casey Trees	ARRA
BayScaping installation	RiverSmart Homes program, BayScaping is installed to replace existing turf.	Completed	26 properties average 120 square feet per property	Alliance for the Chesapeake Bay	ARRA
Rain Garden installation	RiverSmart Homes program, rain gardens are installed to replace existing turf.	Completed	15 rain gardens installed average 50 square feet per property	Alliance for the Chesapeake Bay	ARRA
Green Roof Rebate	As part of RiverSmart Rooftops program, vegetated roof systems are installed.	Completed	Green roofs installed on 12 buildings, covering 90,650 sq.ft .of rooftops (approximately 2 acres)	DC Greenworks and Anacostia Watershed Society	319 & ARRA
Green Roof Municipal retrofit	Green roof retrofit on District Fire Engine House #6	Completed	Green roofs installed on District Fire Engine House #6 covering 9,500 sq.ft.	DC Fire & EMS	ARRA
Green School Yard, bioretention	School yard retrofit with bioretention	Project completed	Extensive pavement removal, rain garden, bayscaping	Tyler DCPS	319
Green School Yard, bioretention	School yard retrofit with bioretention	Design completed		Ludlow-Taylor DCPS	319
Large Volume Cistern, Bioretention	Harvest stormwater runoff to irrigate community garden	Design complete, bioretention completed, harvest structure	¼ acre stormwater captured and retained	Common Good City Farm	319

Anacostia CSO Watershed Activities					
Activity	**Description**	**Status**	**Output (quantity)**	**Partners**	**Funding**
		in place, cistern ordered			
Curbside Bioretention	LID retrofits along 12th Street NE.	Completed	1/8th of an acre of stormwater captured and retained.	Casey Trees, DDOT, NPS	319
Canal Park: large scale harvest/reuse system	Converting three acres of parking lots to a public park.	90% designs are complete. The project is waiting on funding.	3 acre stormwater harvest/reuse park with capacity to receive rooftop runoff from surrounding proposed development, potential future capacity up to 10 acres.	DMPED, CPDA	Technical advisory role
Georgia Ave Great Streets	Bioretention, permeable paving and expanded tree boxes in Street reconstruction to retain stormwater runoff in the public right of way.	Designs are complete. Construction has been mobilized. Project approximately 30% complete.	Approximately 1/2 an acre of PROW stormwater runoff retained/treated on site.	DDOT, NPS	Technical advisory role

TABLE 2.14
ESTIMATIONS OF POLLUTION ABATEMENT RESULTING FROM 2010-2011 LID PROJECTS

Bioretention	Installed	Property Type		Treatment Area	
	Year	New/Retrofit	Agency	Square Feet	Acres
William Penn House 515 EAST CAPITOL ST SE	2010	retrofit	Private	1,800	0.04
Banneker H.S. 800 Euclid ST NW	2011	retrofit	Municipal	4,600	0.11
Coolidge HS 6315 5th ST NW	2010	retrofit	Municipal	13,000	0.3
Idea School - 1027 45TH ST	2010	retrofit	Private	78,400	1.8
Brent Elementary - 420 3RD ST SE	2010	retrofit	Municipal	14,000	0.32
Mayfair Mansions - Jay ST SE	2011	retrofit	Municipal	56,600	1.3
Stream Restoration	Installed	Property Type		Treatment Area	
	Year	New/Retrofit	Agency	Linear Feet	Miles
Watts Branch	2011	retrofit	Municipal	6,300	1.2

Bioretention	Installed	Property Type		Treatment Area	
	Year	New/Retrofit	Agency	Square Feet	Acres
Bingham Run	2011	retrofit	Federal	200	0.04
Milkhouse Run	2011	retrofit	Federal	1,200	0.23
Pope Branch RSC	2011	retrofit	Municipal	800	0.15
Harvest/Reuse	Installed	Property Type		Treatment Area	
	Year	New/Retrofit	Agency	Square Feet	Acres
HD Woodson HS - 5500 Eads St NE	2011	retrofit	Municipal	5,000	0.11
Wilson HS - 3950 Chesapeake St NW	2011	new	Municipal	25,000	0.57
Firestation #3 - 439 New Jersey Ave, NW	2011	retrofit	Municipal	2,600	0.06
Firestation #25 - 3203 MLK Ave SE	2011	retrofit	Municipal	7,550	0.17
Ancostia HS - 1601 16th Street SE	2011	retrofit	Municipal	35,200	0.81
Impervious Surface Removal	Installed	Property Type		Treatment Area	
	Year	New/Retrofit	Agency	Square Feet	Acres
Stokes Charter School - 3700 OAKVIEW TR NE	2011	retrofit	Private	7,000	0.16
DDOT Right of Ways	2010-2011	retrofit	Municipal	124,200	2.85
Tyler Elementary 738 10TH ST SE	2010	retrofit	Municipal	13,000	0.3
Trash Trap	Installed	Property Type		Treatment Area	
	Year	New/Retrofit	Agency	Square Feet	Acres
Watts Branch	2010	retrofit	Municipal	N/A	N/A
Nash Run	2010	retrofit	Federal	N/A	N/A
Watts Branch2	2011	retrofit	Municipal	N/A	N/A
Hickey Run	2011	retrofit	Federal	N/A	N/A
Green Roofs	Installed	Property Type		Treatment Area	
	Year	New/Retrofit	Agency	Square Feet	Acres
1120 19th St NW	2010	retrofit	Private	8,700	0.200
1201 1st St NE	2010	new	Private	36,600	0.840
1250 24th St NW	2010	retrofit	Private	27,750	0.637
1300 New Jersey Ave NW	2010	retrofit	Municipal	9,500	0.218
1302 Gallaudet St NE	2010	new	Private	1,500	0.034

Bioretention	Installed	Property Type		Treatment Area	
	Year	New/Retrofit	Agency	Square Feet	Acres
1430 Independence Ave SE	2010	retrofit	Private	430	0.010
1439 W Street NW	2010	retrofit	Private	480	0.011
1827 West Virginia Ave NE	2010		Municipal	15,750	0.362
1917 Capitol Ave NE	2010	new	Private	1,500	0.034
2160 California NW	2010	retrofit	Private	1,093	0.025
2724 Chain Bridge Road NW	2010	retrofit	Private	1,829	0.042
283 First Street SE	2010	retrofit	Federal	10,000	0.230
3030 12th St NE	2010	new	Private	2,500	0.057
3200 Benning Rd NE	2010	retrofit	Municipal	3,471	0.080
3214 Sherman Ave NW	2010	retrofit	Private	520	0.012
3511 Idaho Ave NW	2010	retrofit	Private	450	0.010
3531 Georgia Ave NW	2010		Municipal	1,600	0.037
3935 Benning Rd NE	2010	new	Municipal	12,000	0.275
417 H Street NE	2010	retrofit	Private	505	0.012
4200 Wisconsin Ave NW	2010	new	Municipal	3,900	0.090
421 H Street NE	2010	retrofit	Private	483	0.011
4400 Massachusetts Ave NW	2010		Private	8,900	0.204
4400 Massachusetts Ave NW	2010		Private	9,600	0.220
4400 Massachusetts Ave NW	2010	retrofit	Private	2,763	0.063
4665 Blue Plains Dr SW	2010	new	Municipal	15,000	0.344
616 East Capitol St NE	2010	retrofit	Private	230	0.005
631 7th Street NE	2010	retrofit	Private	190	0.004
945 Rhode Island Ave NW	2010	new	Municipal	4,000	0.092
1000 Independence Ave SW	2011		Federal	71,271	1.636
1155 16th St NW	2011	retrofit	Private	6,191	0.142
1200 1st St NE	2011	retrofit	Private	10,500	0.241
1601 16th St SE	2011	retrofit	Municipal	21,000	0.482
200 Constitution Ave NW	2011		Federal	24,201	0.556
3001 Wisconsin Ave NW	2011		Private	5,080	0.117
330 C St S.W.	2011		Federal	4,320	0.099
330 Independence Ave SW	2011		Federal	4,320	0.099
3950 Chesapeake St NW	2011	new	Municipal	7,700	0.177
4058 Minnesota Ave NE	2011		Municipal	24,000	0.551
418 4th St SW	2011	new	Municipal	30,000	0.689
4200 Connecticut Ave NW	2011	retrofit	Municipal	92,000	2.112
4200 Connecticut Ave NW	2011	retrofit	Municipal	40,000	0.918
50 49th St NE	2011	retrofit	Municipal	8,500	0.195

Bioretention	Installed	Property Type		Treatment Area	
	Year	New/Retrofit	Agency	Square Feet	Acres
5500 Eads St NE	2011	new	Municipal	45,000	1.033
600 Pennsylvania Avenue NW	2011		Federal	3,600	0.083
800 Independence Ave SW	2011		Federal	5,454	0.125
801 Independence Ave SW	2011		Federal	11,610	0.267
900 Constitution Ave NW	2011		Federal	10,800	0.248
TOTAL					
Number of Pollution Abatement projects:		69			
Number of treatment area for 2010-2011 (square ft):				1,176,120	
Number of treatment area for 2010-2011 (acres):					27

Stormwater Management and Sediment Control Regulatory Programs

In conjunction with its voluntary activities to control nonpoint source pollution through its Nonpoint Source Management and Chesapeake Bay Implementation programs, the WPD also supports activities to regulate land disturbing activities, stormwater management, and flood plain management. The major regulatory actions of the WPD in the area of nonpoint source pollution control include enforcing the provisions of the following:

- D.C. Law 2-23, The District of Columbia Erosion and Sedimentation Control Act of 1977;
- D.C. Law 10-166, The Erosion and Sedimentation Control Amendment Act of 1994;
- D.C. Law 5-188 (§509-518, Storm Water Management Regulations- 1988) of The District of Columbia Water Pollution Control Act of 1984; and
- D.C. Law 1-64, the District of Columbia Applications Insurance Implementation Act of 1976.

DDOE conducts the following activities in support of the laws above:

- Reviewing and approving construction plans for stormwater runoff control measures, flood plain intrusion, unstable soils, topography compatibility, erosion sediment control measures, and landscaping;
- Conducting routine and programmed inspections at construction sites;
- Developing and revising regulations, design standards and specifications;
- Preparing technical manuals;
- Providing technical assistance to developers and D.C. residents; and

- Conducting investigations of citizen complaints related to drainage and erosion and sediment control.

The WPD reviews building permit applications for compliance with the soil erosion and sedimentation control regulations. In 2010, 5,679 construction plans for compliance with sediment and stormwater pollution control were reviewed and 1976 plans were approved. In 2011, 8,273 plans were reviewed and 1,613 plans were approved.

An integral part of this regulatory compliance program is the type of BMPs the District approves for installation. For stormwater management in particular, the District requires developers to control both the quantity and quality of stormwater runoff. Management of stormwater has evolved in the past decade. As a part of that evolution, the District has begun to encourage, where applicable, the use of "greener" BMPs and low impact development techniques such as wetlands, vegetated biofilters, and bioretention facilities.

TABLE 2.15
NUMBER AND TYPE OF STORMWATER MANAGEMENT BMPS APPROVED FOR INSTALLATION

	2010			2011		
BMP Structures	No. of Plans	Drainage Served by BMP (sq.ft.)	Drainage Served by BMP (acres)	No. of Plans	Drainage Served by BMP (sq.ft.)	Drainage Served by BMP (acres)
Bioretention	25	3,227,668	74.10	9	941,820	21.62
Filtera/Tree Box	2	150,210	3.45	0	0	0
Infiltration/Ex-filtration and Dry Pond/Swale	8	1,360,645	31.24	5	610,041	14.00
Sandfilter/Stormceptor	15	1,871,399	42.96	14	1,934,110	44.40
Greenroof	4	272,578	6.26	3	124,903	2.87
Porous/Permeable Pavers	3	126,324	2.90	5	369,366	8.48
Underground Detention Systems	8	818,505	18.79	1	45,303	1.04
Retention Basin System	22	6,614,837	151.86	10	958,165	22.00
Hydrodynamic Basins	3	1,614,334	37.06	1	61,855	1.42
Cartridge Filtration	1	49,319	1.13	4	451,108	10.36
Totals	**91**	**18,544,290**	**425.70**	**52**	**35,027,380**	**804.10**

In 2010, the Watershed Protection Division processed 92 requests for flood zone determinations at various properties in the city. Flood zone information is critical in determining the availability

of flood insurance and eligibility for federal assistance in the event of natural disasters caused by floods. Additionally, Watershed Protection Division processed 85 requests for information on soil characteristics and reviewed and approved approximately 85 geotechnical reports to assess the suitability of soils for various construction projects.

The District recognizes that an effective erosion and sediment control and stormwater management enforcement program is essential to mitigate damage to the aquatic resources caused to its streams and rivers by sedimentation and polluted runoff. In late 2007, DDOE created a separate Office of Enforcement and Environmental Justice to address enforcement in a more focused manner.

WPD created a separate inspection and enforcement program for erosion and sediment control and stormwater management. Prior to this realignment, technical plan reviews, environmental permit issuance, inspections, and enforcement were administered under the same program. However, since 1998 a separate program has conducted the inspection and enforcement components of the soil erosion and sediment control and stormwater management regulations.

In an effort to streamline enforcement of these regulations and ensure compliance, new standards operating procedures were developed and implemented. The standard operating procedures provide a consistent framework for conducting inspections, issuing notices of violations, civil infraction fines, and stop work orders or violations of the regulations. Civil infraction fines range from one hundred to two thousand dollars ($100 - $2,000), depending on the nature of the infraction or whether the violator is a repeat offender.

In year 2010 and 2011, the Watershed Protection Division conducted 13,952 inspections. In addition to the imposition of a civil fine or penalty, anyone convicted of violating the stormwater management regulations is guilty of a misdemeanor, and subject to a fine of at least two thousand five hundred dollars ($2,500), but no more than twenty-five thousand dollars ($25,000).

Since the promulgation of stormwater management regulations in 1998, over 2000 stormwater BMPs have been installed throughout the city at new development and redevelopment projects for nonpoint source pollution control. Hundreds more have been approved for ongoing development projects. Due to the high cost of land and lack of space, most of these stormwater BMPs are installed beneath impervious surfaces such as parking lots and sidewalks, and are generally not visible. Consequently, this exacerbates the challenge of effectively maintaining these facilities in an urban setting. However, the District has also begun emphasizing LID practices (for the management of stormwater) as the first option for land development projects. LID techniques utilize a less invasive method of stormwater management where the treatment and management of the stormwater is distributed and re-introduced into the hydrologic cycle where possible.

The DDOE has developed and implemented an aggressive Stormwater Management Facilities Maintenance Inspection Program. The program assures compliance with the regulations by

inspecting the maintenance and operation of stormwater BMPs to ensure that permanently installed stormwater management BMPs continue to function properly throughout their design life. Inspectors have the same enforcement tools for BMP maintenance as they do for the construction process. Since the development of the Integrated Environmental Planning (IEB) maintenance enforcement program more than 5,000 enforcement actions have been completed for enforcement of the Districts stormwater regulations regarding BMP maintenance.

The enforcement program has evolved into a very effective stormwater management maintenance program. An instructional video and guidance manual highlighting all the important elements of maintaining D.C. stormwater sand filters were produced and disseminated to sand filter owners, persons responsible for maintaining them and stormwater maintenance contractors. The IEB maintenance program has also developed qualification protocols and a list of contractors working in the District who maintain stormwater facilities. Twenty-two contractors remain qualified to perform these types of services.

As a result of WPD's increased enforcement activities, the Division receives fewer citizen complaints relating to sediment control, indicating that the regulated community is starting to respond in a positive manner to increased enforcement of the erosion control and stormwater management regulations in the District of Columbia.

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 2.8 summarizes the costs.

Wastewater Treatment

DC Water provides wastewater services to over two million customers in the District of Columbia and the surrounding jurisdictions of Maryland and Virginia. DC Water operates the Blue Plains WWTP, one of the largest treatment plants in the nation. The WWTP operates under a stringent NPDES permit. Significant plant-wide upgrade, rehabilitation and installation of support system are currently underway. Among the major projects is the Biological Nutrient

Removal project to meet the goals of the Chesapeake Bay Agreement. Yet enhanced nitrogen removal projects are in the planning or design stages.

Sanitary Sewer System

The bulk of the cost of the wastewater 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 underway. 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 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 will reduce combined sewer overflows to District waters by 96 percent. Construction of the Anacostia River segment of the storm water storage tunnel has begun.

Capital Equipment

The capital equipment cost constitutes a portion of the wastewater collection and treatment expenditures in the areas of acquisition and maintenance of information technology and large equipment. It accounts for about six percent of the wastewater 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 Real Estate-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 some capital construction costs, and those associated with operation and maintenance of structural controls, such as the rehabilitation/replacement of storm sewers and inlets.

The cost of other BMPs 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 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 stormwater 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.

TABLE 2.16
COST SUMMARY OF WATER POLLUTION CONTROL ACTIVITIES

Activity Area	FY 2010*	FY 2011*	
Wastewater Treatment**	115,486	204,079	
Sanitary Sewer System**	18,593	47,585	
Combined Sewer System**	74,367	53,128	
Capital Equipment**	15,618	13,288	
Stormwater Management ***	59,727	63,735	
ARRA Water Quality Related Projects	3,785	4,620	

*Dollars in thousands

** Source http://www.dcwater.com/news/publications/DCWASA_BIB2010.pdf

*** Sources - DC Municipal Separate Storm Sewer System, NPDES Permit DC 0000221 Annual Report, August 19, 2011, DC Municipal Separate Storm Sewer System, NPDES Permit DC 0000221 Fiscal Year 2010 Implementation Plan, August 19, 2009, and DC Municipal Separate Storm Sewer System, NPDES Permit DC 0000221 Fiscal Year 2011 Implementation Plan, August 19, 2010.

Benefits

The benefits to clean rivers and streams are increasingly being realized in the District. In particular, the Anacostia River waterfront development which gained prominence in recent years, promotes recreational use of the waters. The Anacostia Waterfront Framework Plan, adopted by the District in 2003, has set out to achieve the following goals:

"- Charting a course for the environmental healing and rejuvenation of water-dependent activities on the Anacostia River;

- Rethinking transportation infrastructure to improve access to waterfront lands and better serve waterfront neighborhoods;

- Creating a system of interconnected and continuous waterfront parks, joined together by the Anacostia Riverwalk and Trail;

- Enlivening the waterfront to celebrate and explore the cultural heritage of the District and the nation;

- Promoting sustainable economic development by reconnecting the District across the river and to a vital waterfront that offers opportunities to live, work and play."

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".

In 2007, the Office of the Deputy Mayor for Planning and Economic Development was charged with the implementation of the Anacostia Waterfront Initiative Framework Plan, the guiding document for the waterfront development. The plan calls for revitalization and development of the area to accommodate new housing units, office space, public park space and a network of riverside trails.

Development and rehabilitation of waterfront properties to include residential, retail, office space and green space areas that begun in 2007, continue to expand. The construction of various portions of the Anacostia River Trail are completed or near completion. The trails will provide for safe bicycle and pedestrian travel along the river.

A quantitative assessment of benefits resulting from water pollution control expenditures over the years is difficult to make. Qualitatively, improvements continue to be seen. 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 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 has required the purchase of licenses to fish in District waters. Table 2.17 is a summary of the number of licenses sold from 2006 to 2009. 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. 2010 fishing license certification sales will be available August 2012 and 2011 sales will be available August 2013.

TABLE 2.17
SALES OF FISHING LICENSES IN THE DISTRICT OF COLUMBIA
(2006 TO 2009)

Year	Non-Resident	Resident	Total
2006	6985	1983	8968
2007	6316	2035	8351
2008	7016	1912	8928
2009	5598	1987	7585

Special State Concerns and Recommendations

MS4 Permit Appeal

The District's current MS4 Permit was issued by US EPA in October 2011. Two petitions for appeal of the Permit were subsequently filed with US EPA's Environmental Appeals Board, one by DC Water and the Wet Weather Partnership, and another by Earthjustice and the Natural Resources Defense Council, on behalf of a coalition of environmental organizations. DDOE has also petitioned the Board to be made a party to the appeal process. Each of these petitions is under review by the Board at the time of this writing.

The resolution of these appeals could have far-reaching effects on the MS4 Permit's requirements. The environmental organization appeal, in particular, focuses on the Permit's overall approach for achieving compliance with WQS and TMDL Waste Load Allocations (WLA). The District would likely be unable to comply with the interpretation of these requirements articulated in the environmental organization's appeal. A decision by the Board that requires WQS and/or WLA compliance by the end of the Permit term would put the District's ability to remain in compliance with the MS4 Permit in jeopardy.

Recommendation: The primary actions required to successfully resolve the appeals of the MS4 Permit are to support:

- DDOE's position that the District is in the best position to conduct the necessary analysis to develop TMDL Implementation Plans and associated compliance schedules.

TMDL Implementation Plans

Assuming a favorable resolution of the MS4 Permit appeals, the District will still face 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 MS4 Permit represents a performance-based process 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. Finally, the approach grants DDOE much-needed flexibility, first to define a compliance schedule that realistically estimates compliance milestones, and also to rationalize the number of TMDLs to address, by consolidating, revising, or employing surrogate measures where appropriate.

Recommendation: The primary action required for successful development of TMDL Implementation Plans is:

- Continued support for the TMDL Implementation Plan approach as described in the current 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 Anacostia 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, 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, 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) includes provisions requiring new Federal development and redevelopment projects over 5,000 square feet 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 percent of Federal facilities to implement improved stormwater management practices by FY 2015. 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, 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 also each 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 actions required for a successful increased federal role in the Anacostia River's restoration are:

- Successfully implementing the stormwater management requirements of EISA, Executive Orders 13508 and 13514 by developing accountability and enforcement mechanisms to compel Federal agency compliance with these requirements.
- DDOE is currently working with federal agencies to implement all of these executive orders-via an memorandum of understanding (MOU) with US EPA.

Implications of Cuts to Federal Grant Funds for Water Quality Management

Annual congressional allocations that fund water quality management activities in the District are expected to continue to decrease, further challenging the District's capacity to run an effective water quality management program. Specifically, allocations from the State Revolving Fund program and the Section 319 Nonpoint Source Management Program are expected to continue to decrease.

The State Revolving Fund program traditionally supports much needed improvements to wastewater facilities, and has recently supported innovative, decentralized green projects that mitigate stormwater and combined sewer overflows. The Section 319 program has traditionally supported a wide variety of important activities, including demonstration projects, technical assistance, financial assistance, education, training, technology transfer, and monitoring. This program was specifically created to address the need for greater federal leadership to help focus state and local nonpoint source efforts, and the continued decrease in funding from this program will result in fewer nonpoint source management activities in the District.

While this programmatic decrease in funding will impact states nationwide, the District will be disproportionately affected. With fewer resources to run an effective water quality management program, fewer projects that are proving to improve water quality in the District would be funded, and efforts to continue the restoration of the Anacostia River would be impacted.

Recommendation: The primary actions required for successful continuation of water quality management in the District are:

- Encourage US EPA to revisit the traditional funding allocation formula and consider more equitable distribution based on needs; and
- Expediting the process of extending grants to the states to avoid risk of congressional rescission.

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 continuous monitors.

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

WQD uses the WQS as one way of evaluating its surface waters. The percentage of time a selected standard is out of compliance at a monitoring station or group of monitoring stations over a selected span of time determines whether a waterbody supports a particular use. For the 2012 reporting cycle, physical, chemical, and bacterial data collected from January 2007 to December 2011 were used to make many of the use support decisions. Biological data collected during 2002-2003 and 2009 was also used.

Fish consumption use determinations (Class D) are based on known fish consumption advisories in effect during the assessment period, and not water quality standards. The District developed its fish consumption advisories from fish tissue contamination data collected in recent years. The following points should be noted for the fish consumption use support determinations. Fish tissue contamination data used to issue advisories are collected at stations 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. The criteria for the fish consumption use (Class D)

support determination is presented in Table 3.1. WQS were not used to make fish consumption support decisions.

TABLE 3.1
CRITERIA FOR FISH CONSUMPTION USE SUPPORT CLASSIFICATION

Support of Designated Use	Criteria for Fish Consumption
Fully Supporting	No fish/shellfish advisories or bans are in effect.
Not Supporting	"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.
Not Assessed	"Not assessed" is used when fish consumption is not a designated use for the waterbody.
Insufficient Information	Data to determine if the designated use is fully supporting/not supporting is not available.

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 US 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 US 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) as well as aquatic life use determinations using physical/chemical data to accommodate the sampling frequency. E. coli bacteria data were used to make use support decisions about pathogens. The criteria used for these uses may be found in Table 3.2.

TABLE 3.2
CRITERIA FOR USING CONVENTIONAL POLLUTANTS AND PATHOGENS
WHEN MAKING USE SUPPORT DECISIONS

Support of Designated Use	Criteria for using Conventional Pollutants and Pathogens
Fully Supporting	For any pollutant, standard exceeded in $\leq$ 10% of measurements. Pollutants not found at levels of concern.
Not Supporting	For any one pollutant, standard exceeded in > 10% of measurements. Pollutants found at levels of concern.
Not Assessed	Not assessed

Support of Designated Use	Criteria for using Conventional Pollutants and Pathogens
Insufficient Information	Data to determine if the designated use is fully supporting/not supporting is not available.

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

The District relies on biological/habitat data and chemical/physical standards to make aquatic life use (Class C) decisions. When streams with both conventional pollutant data and biological data are evaluated both data sets are considered. In the event the data displays conflicting results the District applies the policy on independent applicability to determine use support. If any of the data sets indicate the use is not attained the waterbody is found not to meet the designated use. The District's biological data were used in this report. Rapid bioassessment data were only used for aquatic life use support decisions (Class C waters) on the District's smaller streams. All but one of the District's small streams were re-evaluated from 2002-2003 and 2009 for the Aquatic Life Use attainment category using biological assessment methodologies. These tributary assessments were based on the Maryland 2001 Biological Stream Survey (MBSS) for benthic macroinvertebrates which was used as a reference.

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 3.3 were assessed for the Aquatic Life Use category using data collected during 2002-2003 and 2009:

TABLE 3.3
COASTAL PLAIN AND PIEDMONT STREAMS ASSESSED

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

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 2010 and 2011 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 also determines overall use support for waterbodies with multiple uses according to US 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
CRITERIA FOR OVERALL USE SUPPORT CLASSIFICATION

Overall Designated Use for Multiple-Use Waterbodies	Criteria for Overall Use Support
Fully supporting	All uses are fully supported.
Not supporting	One or more uses are not supported.
Not Assessed	Not assessed
Insufficient Information	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. There was insufficient information to determine primary contact use. Appendix 3.6 depicts the secondary contact recreation and aesthetic enjoyment as not assessed; there is no criteria for secondary contact in the 2010 WQS. 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 US 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. The Potomac and Anacostia Rivers, Rock Creek and Watts Branch are divided into segments for the assessment purposes of this list.

In October 2010, US EPA distributed additional information for the assessment, listing, and reporting requirements for Section 303(d) and 305(b) of the Clean Water Act for the 2012 reporting cycle. The product of the US EPA guidance is called the Integrated Report. The current guidance requires the categorization of all state waters into 5 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.

US EPA regulations require that the 2012 Integrated Report (305(b)/303(d) list) and methodology used to categorize the waters be submitted to US EPA by April 1, 2012. 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 2012 303(d) List. As the 303d 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 used must have been collected in the actual waterbody that is being assessed. Data that did not satisfy the above mentioned monitoring regulations is not reviewed for the development of the 2012 303d list.

Like the 2010 303(d) list, the draft 2012 list enumerates specific pollutants of concern in various waterbodies or waterbody segments. The draft 2012 303(d) List is based on the following data:

- 2010 303(d) list
- DC Ambient Water Quality Monitoring data for 2007-2011 used to make use support determinations for the 2012 305(b) report;
- DC Municipal Separate Storm Sewer System 2007-2009 Monitoring Data;
- Draft Tributary Assessment Report, 2004 (Biological Data collected between 2002-2003) being used to make aquatic life use support determinations for the 2010 305(b) report;
- Analysis of Biological Samples: District of Columbia, Phytoplankton, Zooplankton and Benthic Macroinvertebrate Samples: 2005-2009; and
- DC Fish Tissue Contamination Report, 2009.

A request for data was sent to organizations that may have data for the waters of the District. Data received will be reviewed and considered during preparation of the final 303(d) list.

Data Interpretation for Listing

If a designated use is not supported, then a waterbody or waterbody segment is listed for the pollutant associated with the applicable criteria. In order for a waterbody to be listed the data evaluated for water quality standard attainment must have been collected from that specific waterbody. Only relevant data should be used to make the attainment determination. This stipulation is necessary as development of a TMDL is a major time and monetary investment for the parties involved. WQD must ensure that the funds expended for TMDL purposes are used in an efficient manner and will result in maximum water quality benefits. For example, the Anacostia River cannot be listed for copper if there is no copper data available from water samples collected in a segment of the Anacostia River to indicate that impairment. MS4 data from an outfall to a tributary of the Anacostia River cannot be used to list a segment of the Anacostia River.

Use Support Determination

Ambient Monitoring Data and Draft Tributary Assessment 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 2012 303(d) list determination, physical, chemical, and bacterial data collected from January 2007 to December 2011 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 percent exceedance of the measurements taken with 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.

Biological/habitat data collected during 2002-2003 and 2009, habitat data collected during 2008-2009, 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 DC Tributary Assessment Report (draft internal document) it is listed under Category 4C of the list, if a TMDL has not been completed.

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). DDOE WQD worked with the CBP to assess the tidal waters in the District using the 2003 guidance document and all the addendums published through 2009. For the 2012 listing, the tidal waters were assessed for the 30-day DO attainment. For DO determination, as a signatory to the Chesapeake Bay Agreement, DDOE has agreed to interpret DO data in this fashion for 303d list purposes.

Fish Tissue Contamination Data

Fish consumption use determinations (Class D) are based on known fish consumption advisories in effect during the assessment period. Water Quality Standards (WQS) were not used to make fish consumption support decisions. 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. A fish consumption advisory remains in place in the District. In addition, the US EPA guidance on using fish advisories for Integrated Report categorization indicates that fish and shellfish consumption advisories demonstrate non-attainment when the advisory is based on fish and shellfish tissue data.

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.

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- Waterbody or segment of a waterbody attained all its designated uses and no use is threatened.

Category 2- Waterbody or segment of a waterbody attained some but not all of their designated uses.

Category 3- Insufficient data or information to determine designated use attainment in a waterbody or segment of a waterbody.

Category 4- Waterbody or segment of a waterbody with at least one designated use impaired but a TMDL is not needed. This category is subcategorized below.

Subcategory 4A- Waterbody or segment of a waterbody for which TMDLs for pollutants causing impairments have been approved or established by US EPA may be placed in this category.

Subcategory 4B- Waterbody or segment of a waterbody for which other pollution controls are expected to result in water quality standard attainment in a reasonable period of time.

Subcategory 4C- Waterbody or segment of a waterbody for which TMDLs are not required. Impairment is not caused by a pollutant.

Category 5- Waterbody or segment of a waterbody with at least one designated use not attained or threatened and a TMDL is needed. A waterbody or segment of a waterbody may be placed in this category even if TMDLs have been approved for some of the pollutants/pollution identified as causing non-attainment. All necessary TMDLs for a waterbody or segment of a waterbody must be approved or established by US EPA in order to placed in category 4A.

Priority Ranking

Waterbodies that are first placed in 2012 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 (on the 2012 list) before the next five years or 2018. Keep in mind that impaired waters listed on the 2012 Section 303 (d) list are scheduled for development until March 2018 and there other segments that must be prepared in the interim.

If a waterbody is first listed in 2012 for E. coli due to primary contact use violations with 50 percent or more exceedances, that waterbody is ranked as Medium priority waterbodies. (The term “50 percent or more exceedances” refers to the percentage of time within the 5-year period of study that monitoring data for a waterbody exceeded the water quality standard. For example, if the primary contact use was being evaluated and there are 60 E. coli readings for the Anacostia River during the 5- year study period and 33 of those readings were greater than 410 MPN/100mL then 55 percent of the time during that study period the primary contact use was exceeded and that waterbody would be ranked as a medium priority waterbody.) 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 2012) will be scheduled for TMDL preparation in 2018.

If a waterbody is first listed in 2012 for E. coli for primary contact use violations with less than 50 percent exceedances are ranked as low priority. Waterbodies listed for any other pollutant not previously mentioned will also be ranked low priority. Low priority waterbodies will be scheduled for TMDL preparation in 2018.

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. Resources are now being partially shifted to address completion of the high priority trash TMDLs and the District of Columbia possible allocations in the Chesapeake Bay TMDL.

Georeferencing

The geographic location codes included in the draft 2012 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 US EPA Assessment DatabaseVersion 2.3.1 for Access is being used to compile the data for the Integrated Report.

Public Participation

The draft 2012 Section 303(d) list will be available for a 30-day public comment period. The comment period commenced on February 6, 2012 and ends on March 6, 2012. A copy of the draft 303(d) list was available at the Martin Luther King, Jr. Public Library's Washingtonian Room starting on February 6, 2012. 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 US 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 *Assessed* Uses	0.00	0.00	0.00
Size Fully Supporting All *Assessed* 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. In 2005 the parameter to determine primary contact use was changed from fecal colifom to E. coli. Due to the change there is insufficient data to determine use support for primary contact (swimming). The secondary contact use for streams in the District of Columbia was not assessed, there is no criteria in the 2010 WQS to determine use support. 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
Protect & Enhance Public Health	Fish Consumption Shellfishing	38.4	38.4	0	38.4	0	0
	Swimming	38.4	0	0	0	38.4	0
	Secondary Contact	38.4	0	0	0	0	38.4
	Drinking Water	-	-	-	-	-	-

Goals	Designated Use	Total in State	Total Assessed	Supporting – Attaining WQS	Not Supporting – Not Attaining WQS	Insufficient Data & Information	Size Not Assessed
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, Piney Branch and Fort Dupont 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

Report for Water Type: RIVER; Units: MILES	
Cause	**Total Size**
PATHOGENS Fecal Coliform	0.9 0.9
BIOLOGIC INTEGRITY (BIOASSESSMENTS) Benthic-Macroinvertebrate Bioassessments Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments Fishes Bioassessments Habitat Assessment (Streams)	31 4.5 31 11.6 3.9 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	19.4
Arsenic	9
Copper	18.5
Lead	18.5
Mercury	9.5
Zinc	18.5
Chlorine, Residual (Chlorine Demand)	0.9
TOXIC ORGANICS	20.8
Polychlorinated biphenyls	17.6
Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	20.8
METALS	18.5
Copper	18.5
Lead	18.5
Mercury	9.5
Zinc	18.5
PESTICIDES	20.8
Chlordane	20.8
DDD	17.6
DDE	17.6
DDT	20.8
Dieldrin	20.8
Heptachlor epoxide	20.8
MINERALIZATION	4
Total Suspended Solids (TSS)	4
pH/ACIDITY/CAUSTIC CONDITIONS	1.1
pH	1.1
SEDIMENTATION	24.9
Particle distribution (Embeddedness)	24.9
Total Suspended Solids (TSS)	4
OIL AND GREASE	1.5
Oil and Grease	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 Klingle 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

Report for Water Type: RIVER; Units: MILES	
Source	**Total Size**
CONSTRUCTION Site Clearance (Land Development or Redevelopment)	5.3 5.3
GROUNDWATER LOADINGS Landfills	0.6 0.6
HABITAT ALTERATIONS (NOT DIRECTLY RELATED TO HYDROMODIFICATION) Channelization Impacts from Hydrostructure Flow Regulation/modification Loss of Riparian Habitat	12.2 5.6 10.8 1.2
HYDROMODIFICATION Channelization Hydrostructure Impacts on Fish Passage Impacts from Hydrostructure Flow Regulation/modification	19.9 5.6 14 10.8
INDUSTRIAL PERMITTED DISCHARGES Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO)	17 17

LAND APPLICATION/WASTE SITES Illegal Dumping Illegal Dumps or Other Inappropriate Waste Disposal Landfills	11.4 9.9 11.4 0.6
LEGACY/HISTORICAL POLLUTANTS CERCLA NPL (Superfund) Sites Illegal Dumps or Other Inappropriate Waste Disposal	13 1.6 11.4
MUNICIPAL PERMITTED DISCHARGES (DIRECT AND INDIRECT) Discharges from Municipal Separate Storm Sewer Systems (MS4) Municipal (Urbanized High Density Area) Post-development Erosion and Sedimentation Residential Districts Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO) Wet Weather Discharges (Non-Point Source)	30.4 1 1.4 8.5 27.8 17 17
STORMWATER PERMITTED DISCHARGES (DIRECT AND INDIRECT) Municipal (Urbanized High Density Area) Post-development Erosion and Sedimentation Residential Districts Site Clearance (Land Development or Redevelopment) Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO) Wet Weather Discharges (Non-Point Source)	30.4 1.4 8.5 27.8 5.3 17 17
SPILLS AND UNPERMITTED DISCHARGES Illegal Dumping	9.9 9.9
URBAN-RELATED RUNOFF/STORMWATER (OTHER THAN REGULATED DISCHARGES) Municipal (Urbanized High Density Area) Post-development Erosion and Sedimentation Residential Districts Site Clearance (Land Development or Redevelopment) Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO) Yard Maintenance Wet Weather Discharges (Non-Point Source)	30.4 1.4 8.5 27.8 5.3 17 13.9 17
OTHER Source Unknown	0.6 0.6
Group 1s Impacts from Hydrostructure Flow Regulation/modification Residential Districts Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO) Yard Maintenance Wet Weather Discharges (Non-Point Source)	29.9 10.8 27.8 17 13.9 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 *Assessed* Uses	0.00	0.00	0.00
Size Fully Supporting All *Assessed* 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
TOTAL ASSESSED	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. In 2007 the parameter to determine primary contact use was changed from fecal colifom to E. coli. Due to the change there is insufficient data to determine use support for primary contact (swimming). The secondary contact use for streams in the District was not assessed, there is no criteria in the 2010 WQS to determine use support. 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 Public Health	Fish Consumption Shellfishing	238.4	238.4	0	238.4	0	0
	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 DO 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

Report for Water Type: FRESHWATER LAKE; Units: ACRES	
Cause	**Total Size**
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 Polychlorinated biphenyls Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	211.1 211.1 211.1
METALS Copper Lead Zinc	102.7 102.7 102.7 102.7
PESTICIDES Chlordane DDD DDE DDT Dieldrin Heptachlor epoxide	211.1 211.1 211.1 211.1 211.1 211.1 211.1
MINERALIZATION Total Suspended Solids (TSS)	102.7 102.7
pH/ACIDITY/CAUSTIC CONDITIONS pH	108.4 108.4
SEDIMENTATION Total Suspended Solids (TSS)	102.7 102.7

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)
Size Fully Supporting All *Assessed* Uses	0.00	0.00	0.00
Size Fully Supporting All *Assessed* 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
TOTAL ASSESSED	0.00	5.93	5.93

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. There was insufficient data to determine use support for primary contact (swimming). The secondary contact use for streams in the District was not assessed, there is no criteria in the 2010 WQS to determine use support. 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 Public Health	Fish Consumption Shellfishing	5.93	5.93	0	5.93	0	0
	Swimming	5.93	0	0	0	5.93	0
	Secondary Contact	5.93	0	0	0.8	0	5.13

Goals	Designated Use	Total in State	Total Assessed	Supporting – Attaining WQS	Not Supporting – Not Attaining WQS	Insufficient Data & Information	Size Not Assessed
	Drinking Water	-	-	-	-	-	-
Social	Agricultural	-	-	-	-	-	-
&	Cultural or Ceremonial	-	-	-	-	-	-
Economic	Navigation	5.93	5.93	5.93	0	0	0

- = not applicable

Relative Assessment of Causes

All the estuaries have low DO or pH impairments. It is most pronounced in the Anacostia River. The low DO impairment is moderate in the Potomac River and the Washington Ship Channel. 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

Report for Water Type: ESTUARY; Units: SQUARE MILES	
Cause	**Total Size**
PATHOGENS Fecal Coliform	0.8 0.8
OXYGEN DEPLETION BOD, Biochemical oxygen demand	0.8 0.8
NUTRIENTS (Macronutrients/Growth Factors) Nitrogen (Total) Phosphorus (Total)	1.2 1.2 1.2
TOXIC INORGANICS Arsenic Copper Lead Zinc	0.8 0.8 0.8 0.8 0.8
TOXIC ORGANICS Polychlorinated biphenyls Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	2.88 2.58 1.1
METALS Copper	0.8 0.8

Lead Zinc	0.8 0.8
PESTICIDES Chlordane DDD DDE DDT Dieldrin Heptachlor epoxide	1.1 1.1 1.1 1.1 1.1 1.1 1.1
MINERALIZATION Total Suspended Solids (TSS)	1.2 1.2
pH/ACIDITY/CAUSTIC CONDITIONS pH	1.68 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 of Columbia 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:

$$TMDL = WLAs + LAs + MOS$$

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 the US EPA. Many of these existing District's 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 more sophisticatedwater 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. Anacostia Trash TMDL

Anacostia River traverses both the District and the state of Maryland. In 2006, these two jurisdictions listed the Anacostia River as impaired for trash in their respective §303(d) lists. It therefore made sense for the District and Maryland to work together to develop a joint Anacostia watershed-wide Trash TMDLs. US EPA also assisted significantly. DDOE and Maryland

Department of the Environment (MDE) conducted extensive monitoring to determine trash generation rates from various sources and land uses in both jurisdictions, and worked together to develop consistent methodologies for establishing the TMDL.

US EPA approved the TMDL in August 2010 and DDOE expects to have its draft implementation plan ready for public comments by March 2012.

2. Chesapeake Bay-wide TMDLs

US EPA established the Chesapeake Bay TMDLs (for nutrients and sediment for all impaired segments in the tidal portion of the Chesapeake Bay watershed and also for pH for the tidal Potomac) to improve water in Chesapeake Bay pursuant to §303(d) of the Clean Water Act (CWA). The District worked actively with US EPA and the other Bay partner jurisdictions (MD, VA, PA, WV, NY and DE) towards the development of these Chesapeake Bay-wide TMDLs. After lengthy discussions and outreach, the TMDLs were completed in December 2010. The TMDLs provide target allocations for nutrients for all jurisdictions to enable the development of implementation plans.

The Phase I WIPs provided information for US EPA to consider as it finalized waste load allocations for point sources (known, fixed sources of pollution) and load allocations for nonpoint sources (diffuse sources not specifically identified) under the Bay TMDL. Phase II WIPs, on the other hand, require each jurisdiction to reach out to and involve its local partners (main the federal community whose aggregate footprint is approximately 30 percent, in the District's case) in coming up with plans and making commitments aimed at meeting nutrient and sediment reductions, and includes greater detail on smaller geographic levels about pollutant allocations. Phase II were due on November 1, 2011. Phase III WIPs will cover pollutant reduction actions between 2017 and 2025, during which time the jurisdictions will be expected to have implemented all controls needed to meet the Bay TMDL. These Phase IIIWIPs are due on November 1, 2017.

The District's final WIP I submission to US EPA on November 29, 2010 was approved without any backstops. Draft Phase WIP 2 was submitted on November 1; a final submission is due in March, 2012. Taken together, these WIPs also provide an opportunity for Bay jurisdictions to compile and assess baseline information that will be useful in monitoring progress toward achieving the Bay TMDLs.

DDOE is currently working with both DC Water and federal partners to develop implementation plans that will include allocations for various sources such as WWTP and the MS4 permit.

3. Development of a DO Model Framework for Foundry Branch

DDOE undertook efforts to develop a preliminary modeling framework for the development of a TMDL to address dissolved oxygen impairments in Foundry Branch – A tributary to Rock

Creek. The project comprised data collection, review, modeling, mapping, and analysis of information that could be used for the development of DO TMDL for Foundry Branch.

Metropolitan Washington Council of Government (MWCOG) completed the project on September 30th, 2011.

TMDL Implementation

Once the TMDLs are established, existing loads in excess of those established in the TMDL calculations need to be removed. Various ongoing and/or planned pollution reduction activities mentioned in this report are geared toward removing the excess pollutant loads so as to achieve the TMDL goals for the District's waterbodies. Both regulatory and non-regulatory programmatic measures are needed to do this.

As described elsewhere in this report, a number of other programs/projects (e.g., low impact developments, wetlands and habitat restoration, stormwater BMPs, etc.) are currently in place and many others are being planned to reduce water pollution from nonpoint areas and federally owned lands in the District. Specifically, additional control measures will be added to the existing BMPs to enhance trash reduction in the Anacostia watershed. However, it is important to note that the District cannot both achieve and maintain the required water quality goals without significant reductions in upstream (or boundary) loads in rivers and tributaries shared with other jurisdictions.

Northern Snakeheads

Invasive fish species are an ongoing and ever increasing issue that the District is forced to address. Invasive fish can potentially impact native and introduced fish species that currently reside in District waters, mainly through predation of the fish themselves or their prey but also by out competing for prime habitat. The northern snakehead (C*hanna argus*) is perfect example of an invasive species that is capable of drastically altering the fish populations in the District.

The northern snakehead was first observed in the District in 2006 in a pond on the grounds of the Kenilworth Aquatic Gardens (KAG), a National Park Service facility that exhibits aquatic plants for the public. The Gardens are located adjacent to a tidal marsh on the banks of the Anacostia River. It is unclear if the fish were put in the pond by an individual or if they swam into the pond from the Anacostia River during a flood event. Two adult snakeheads were seen guarding a school of fry, so the decision was made to drain the pond. In total, 8 adult snakeheads and 506 fry were removed from the pond and the pond was allowed to sit dry for several days before refilling, in an attempt to prevent any snakeheads possibly remaining in the pond from surviving.

In 2007, snakeheads again were observed at KAG but instead of only being in one pond they were seen in several different ponds. Draining and chemical treatments were no longer an option because of potential damage to sensitive aquatic plants. Electrofishing was conducted by boat in

the Anacostia River adjacent to the Aquatic Gardens and adult snakeheads were collected. In total, 13 snakeheads were caught and removed from the Anacostia.

Experience gained in 2007, allowed the Fisheries Research Branch to more effectively locate the snakeheads in 2008. The adult snakeheads were moving close to shore in shallow water (less than 18 inches) near cover (mainly woody cover but also trash or anything in the water) beginning in late May and into June for spawning. During low tide levels there is limited cover remaining in the water, allowing staff persons to more easily pinpoint possible locations where snakeheads may be located.

As expected, the snakeheads did not stay confined to the upper reaches of the Anacostia. Following a high flow storm event the snakeheads began expanding their range. Snakeheads were caught at the northwestern extent of the Districts jurisdiction in the Potomac River and in the Rock Creek. These habitats are vastly different from anything previously observed. The snakeheads in the Potomac were positioned next to large rocks in deep water (15-25 feet) that is extremely clear and swift moving. This is drastically different from the slack shallow muddy water of the Anacostia. Snakeheads in Rock Creek (a small tributary of the Potomac) were near the base of Pierce Mill Dam.

Northern snakehead tagging

In 2009, the District participated in a multijurisdictional snakehead tagging study with other local agencies (Maryland Department of Natural Resources, Virginia Department of Game and Inland Fish, Virginia Polytechnic Institute and State University, and the United States Fish and Wildlife Service). The study is designed to give fisheries managers a better understanding of northern snakehead growth, movement patterns, habitat preferences, and hopefully a rough estimate of the size of the northern snakehead population in the Potomac River and its tributaries.

Snakeheads are captured, generally by electrofishing, and inserted with a T-bar style Floy tag with a unique identification number and a phone number for the USFWS. In addition to the tag each fish captured has the length, weight, and capture location recorded. Anglers that catch a tagged fish are asked to immediately kill the snakehead and report to the USFWS the location they caught the fish along with its tag number, length, and weight.

Snakehead tagging in the District in 2010 proved to be even more successful than in 2009. DDOE managed to tag 157 northern snakeheads in all; 131 of which were tagged during the months of April and May. 2010 showed a slight decrease in the overall catch per unit effort (CPUE), dropping from 35.9 fish/hr to 30.9 fish/hr. 2009 showed the highest CPUE of any of the past years, with 35.9 snakeheads caught per hour of shocking. Nearly all of the snakeheads captured came from two locations: the Upper Anacostia River (East Capital Street Bridge to the Bladensburg Waterfront in Prince Georges County Maryland) and the Chain Bridge area (the District boundary on the Potomac River and downstream about a mile). The upper Anacostia yielded 53 snakeheads with an average length of 633 mm (ranging from 280 – 825mm) and

weighing 2783 grams (ranging from 150 – 5200g). The Chain Bridge area produced 91 snakeheads with an average length of 630 mm (ranging from 482-780mm) and weighing 2369 grams (ranging from 950 – 4600g).

Of the District's tagged fish, 11 were recaptured by DDOE biologists and six were caught by anglers. The majority of the recaptured fish did not move from where they were originally tagged (11 of the 17). Six of the recaptures on the other hand did move considerable distances from where they were initially tagged. The vast majority of migrating fish were not at large for an extended period of time before they were recaptured at a different location. All the migrating fish that were recaptured were at large for less than 60 days with one exception. A fish originally tagged by Virginia Game and Inland Fish in Pohick Bay on May 15, 2009 was recaptured by DDOE biologists 353 days later and approximately 22 miles north at Chain Bridge. Only one other fish traveled far enough to make it out of DDOE's jurisdiction. This fish was originally tagged in the Anacostia River on July 7 and was recaptured by and angler approximately 29 miles south at Mattawoman Creek 38 days later. The remaining fish were found within District waters even though they may have migrated more than 3 miles. Three of the recaptured fish provided interesting growth data because they were at large for a long period of time (more than 320 days), the rest of the growth data from the recaptured fish is not reliable because they were not at large for enough time.

The tagging continued to produce some very valuable data in its second year. Snakeheads were finally verified traveling rather far distances during what looks to be spring dispersal. It appears snakeheads originating downriver are moving upstream in the spring during periods of high flow, sticking around for several weeks to a month or so, and then traveling downriver again to their preferred home range. More tagged fish and subsequent recaptures will hopefully strengthen this theory. Growth data was not as useful as expected. The growth of the three recaptures that were at large for more than 320 days varied wildly, ranging from 27 – 138mm per year. If more recaptures can be caught by participating agencies a more accurate assessment of snakehead growth can be determined from this study. It is still unclear exactly what type of impact the snakeheads will have on the other fish species in the District but they are clearly here to stay. Continuing the tagging study along with other future studies like radio telemetry and stomach analysis will provide valuable information into how these Northern snakeheads will impact the Potomac River fishery and potential impacts to the rest of the Chesapeake Bay watershed.

Submerged Aquatic Vegetation

The Fisheries and Wildlife Division of the District has surveyed SAV populations of the Potomac and Anacostia Rivers since 1993. The goal is to monitor the health of the aquatic vegetation found in the District of Columbia and to examine the importance it has on the ecosystem. Surveys include all shorelines in the navigable waters of the Potomac and Anacostia Rivers, contained within the District. There have been considerable changes in the 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.

2011 observations revealed 5 different species of SAV including: *Hydrilla verticillata* (hydrilla), *Heteranthera dubia* (water stargrass), *Ceratophyllum demersum* (coontail), *Myriophyllum spicatum* (milfoil) and *Najas minor*. This is indicative of a dramatic decline in SAV production within the waters of the District. Similar to the reduction in SAV abundance following record rain events in 2003, the observations from this year reveal the disappearance of nearly all of the Districts water grasses. Cover density scores were reduced and overall acreage numbers were near a record low when compared to the previous 18 years of the study.

Although the status of the SAV over the past several years has been erratic, it has provided the opportunity to examine the effects that it has on fish species that inhabit these areas. Several of the electrofishing sites utilized by the Research Branch of the Fisheries and Wildlife Division are directly adjacent to the grass beds that were monitored for the SAV shoreline survey. For this reason, it is valuable to examine the data gathered from each independent survey, and analyze it to see if any significant relationships exist between the SAV and fish species in these areas. Using only electrofishing data from May through December (months when SAV presence is ecologically significant) for the years of 1994-2011, relationships were examined in an effort to show how the members of the two Kingdoms interact. Several relationships were identified, but none is as significant as the relationship that exists between SAV cover density and the relative abundance of largemouth bass. This is an important relationship to examine both ecologically and economically, as largemouth bass are a highly sought after game species and the target of regional fishing tournaments. Understanding the importance of SAV in terms of resident fish populations is necessary so that efforts can be made to conserve and enhance this important habitat type. The figures below illustrate the most “sensitive” sites in terms of SAV dependence.

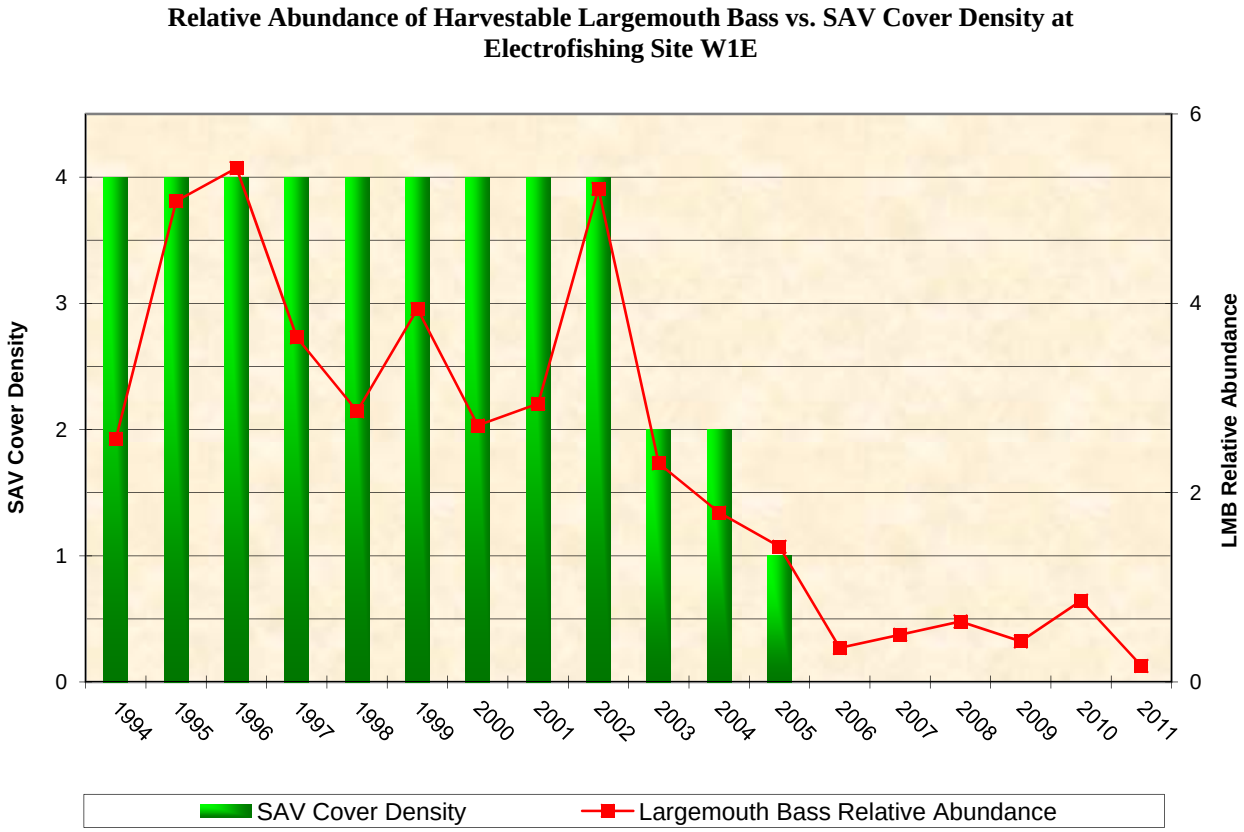


Figure 3. 1: Relative Abundance of Harvestable Largemouth Bass vs. SAV Cover Density at Site W1E

The electrofishing site at the Washington Ship Channel provided consistent data for the first nine years of this study. 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. Regardless of the subsequent relocation of the bass it is clear to see that largemouth bass have a strong affinity to this site when SAV levels are at full saturation.

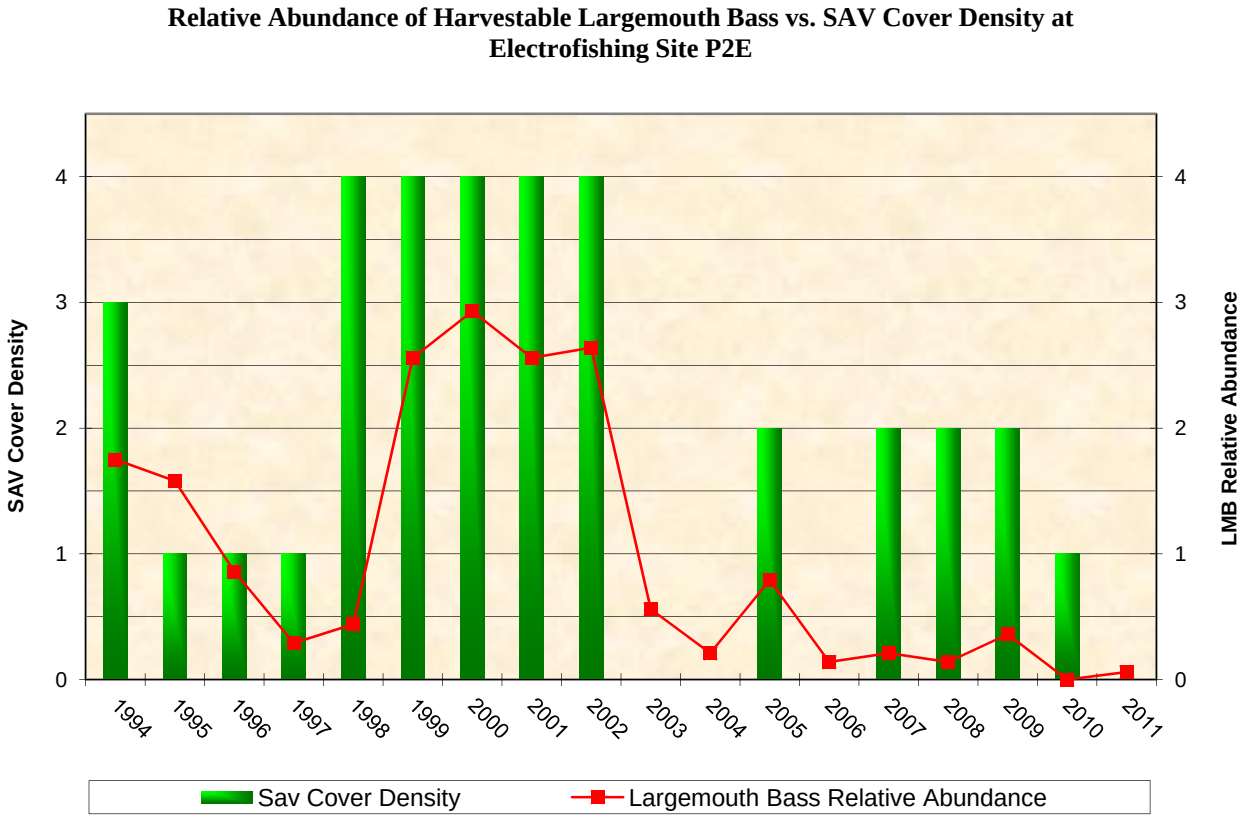


Figure 3.2: Relative Abundance of Harvestable Largemouth Bass vs. SAV Cover Density at Site P2E

The area of the river adjacent to the Washington National Airport peninsula also shows a dependence upon SAV when it comes presence of harvestable largemouth bass. This site has no alternative habitat opportunities for largemouth bass to utilize. Without the presence of SAV; ambush points, and sheltered areas are limited to sparsely scattered isolated rocks and tide dispersed woody debris. Even with the moderate recovery of SAV observed at this site from 2005-2009, the largemouth bass relative abundance numbers remained near all time lows. Now with the complete disappearance of SAV from this site in 2011 the largemouth bass relative abundance has reached and remained at an 18 year low mark. Fully mature and flourishing beds are required at this site to provide adequate habitat for many species, especially largemouth bass. There are other relationships that exist between SAV cover density and fish populations. They are highlighted in the comprehensive SAV report.

Fish Populations

Table 3.15 shows the yearly relative abundance of select game fish in the District of Columbia.

TABLE 3.15
YEARLY RELATIVE ABUNDANCE OF SELECT GAME FISH
FROM 1994 TO 2011 FOR REGULAR ELECTROFISHING SITES

Yearly Relative Abundance For Select Gamefish Species in the District of Columbia				
Year	**Largemouth Bass**	**Striped Bass**	**Yellow Perch**	**Smallmouth Bass**
1994	4.40	0.73	4.56	0.69
1995	3.12	0.17	6.20	0.32
1996	2.77	0.50	3.76	0.40
1997	1.66	0.96	5.93	0.28
1998	2.40	0.67	8.18	0.56
1999	4.30	0.74	8.29	0.74
2000	5.42	0.41	8.79	0.47
2001	6.54	1.07	6.31	0.85
2002	5.90	0.49	5.78	0.28
2003	4.32	0.66	3.47	0.23
2004	1.81	1.11	3.73	0.35
2005	1.81	0.47	2.59	0.17
2006	1.07	0.30	1.96	0.14
2007	1.25	0.57	0.99	0.23
2008	1.85	0.73	1.92	0.35
2009	1.40	0.43	1.20	0.24
2010	1.74	0.44	0.90	0.44
2011	1.16	0.30	2.62	0.24
Overall Average	**2.84**	**0.62**	**4.15**	**0.37**

Sampling conducted over the past 18 years has revealed several interesting trends concerning the relative abundance of several game fish species at eight electrofishing sampling stations in the waters of the District. After remaining stable for a period of five years (1999-2003) the relative abundance of all of the closely monitored game fish found in the District of Columbia has declined. Much of this is related to the dramatic decline in SAV cover density at or near several of the electrofishing sites. Although the SAV has recovered in some areas, it sometimes takes the fish species a bit longer to re-populate areas where a significant cover source has been eliminated. With the continued recovery and development of SAV in the District, the game fish relative abundance should eventually increase as well. If continued SAV re-establishment and maturation is experienced without an increase in game fish species relative abundance, it will be time to review the effects of other factors that may affect fish populations such as; tournaments, creel limits, sampling methods, and competition from newly introduced invasive species (Blue Catfish and Snakeheads).

The introduction and expansion of two invasive species has prompted specific protocols for collecting data to establish base line information to track and monitor the situation moving forward. Blue catfish have been positively identified throughout the Potomac River system as they have been showing up in electrofishing samples for several years. A blue catfish tagging

program was launched in 2005 whereby, information gathered by anglers and biologist would be used to assess the condition of the growing population and effectively establish creel limits and regulations that will manage this species without negatively impacting the other species that inhabit District waters. The tagging program has been arrested due to lack of tag returns. After experimenting with several different tags and anchoring systems the returns remained nearly nonexistent, even in scientific collections. Tag retention was suspected to be the biggest obstacle to gaining important data. Currently the Fisheries Research Branch is continuing a stomach content analysis on blue catfish to help gain understanding as to how these invasive species may be negatively impacting regional ecosystems. Snakeheads have also been confirmed in the waters of the District and they are addressed independently in this report.

Tagging efforts using passive integrated transponder (PIT) tags, continued in 2011. DDOE has been tagging largemouth bass for the past fourteen years in an effort to determine site affinity, movement patterns, age and growth analysis, and validation of scale age analysis. In all, we have over 1600 recapture records, and many fish have been recaptured multiple times. Approximately ninety percent of the recapture records are from fish which have been recaptured at the same site where they were originally tagged. PIT tag recaptures also indicated our length measurement error to be on average no more than two millimeters.

Fish population restoration continued in 2010 with over two million American shad fry being released into the Anacostia River. This process involves collecting adult American shad and "strip spawning" them to obtain fertilized eggs. The eggs are then transported to the Fisheries Research Branch hatching facility in Anacostia Park. The eggs are hatched and the larval fish are chemically marked, then released into the Anacostia River. Sampling of the shad juvenile shad population months later, reveals how successful hatchery efforts are by comparing the number of hatchery fish (chemically marked) with the number of wild fish (no mark). American shad production was halted in 2011 due to water quality issues at the hatching facility, however the Push Net Survey which focuses on the monitoring of the juvenile population continued. Push Net efforts revealed resurgence in young of year numbers for both American shad and blueback herring. Restoration efforts for other species in Rock Creek are addressed in the appropriate section of this report.

Southwest Waterfront Redevelopment / The Wharf

The Southwest Waterfront redevelopment is a project that is located along Water Street and Ohio Drive in the Washington Channel in the SW quadrant of the District (general location: latitude 38.876776, longitude -77.023712). The project entails the construction of five new piers, two independent marinas, day use docks, sewage pumpout facilities, and a replacement bulkhead; the installation of utilities for the marinas and for the fixed and floating piers; the installation of a mooring field; and the construction a residential building and multi-use buildings on the new piers.

According to the DDOE Fisheries and Wildlife Division, the local aquatic community includes anadromous fish species. Anadromous fish are fish that spend their adult lives in the open ocean as pelagic schooling fish and enter bays and tributaries during the spring (in our hemisphere) where they spawn. These fish use the Fort McNair seawall as a spawning ground before returning to the estuary downstream and any potential in-water development would affect the fish in the channel and rivers. Historically, the area along the Fort McNair seawall also had submerged aquatic vegetation (SAV), typically 10-12 feet in width and 20 feet at its widest; currently, there is no SAV located there.

Developers interested in the site have been working with DDOE on incorporating the District's environmental requirements to the project. This seems to be the best situation for both regulatory agency and developer; problems are addressed at the earliest phase possible and DDOE's requirements are met early on in the design phase.

MS4

Stormwater Management Highlights

Municipal Separate Storm Sewer System (MS4) Program & Permit

US EPA issues the District its MS4 Permits, since the District of Columbia is not a delegated jurisdiction. US EPA issued a final permit on October 7, 2011, but it is undergoing the process of appeal through US EPA's Environmental Appeals Board. As the appeal primarily addresses the TMDL Implementation Plan requirements, as directed by US EPA, the majority of the sections of the Permit are effective as of January 22, 2012.

DDOE will utilize the October 2011 version until such time as the appeal changes the terms of the permit, or if the Appeals Board or US EPA instructs DDOE differently. In addition to the 2011 permit, DDOE is also guided by an Upgraded Stormwater Management Plan, February 2009, which outlines our efforts. The 2011 Permit contains significant changes (from the previous 2004 permit) intended to move the water quality improvement/ protection efforts from planning stages into more practical and achievable implementation. One of the most significant changes is the requirement to modify the District's stormwater regulations to include a 1.2 inch retention standard; current regulations require treatment and extended detention. The District plans to maximize its use of innovative green infrastructure practices with the use of incentive programs, such as RiverSmart Programs (RiverSmart Homes and RiverSmart Schools) and the Stormwater Fee Discount program that is under development.

For the District, compliance with best management practices (BMPs) outlined in the Permit will constitute compliance with the District's WQS, which will contribute to meeting the District's allocations as determined by the Chesapeake Bay Phase 5.3 Model (run in 2011). Pending Stormwater Regulation and the 2011 Permit require the design, construction and maintenance of stormwater controls to achieve retention of the volume generated on a site by a 1.2", 24- hour

storm for all new development and re-development greater than 5,000 square feet in the District. The District may allow a portion of the 1.2" volume to be compensated through an off-site mitigation and/or fee-in lieu program. Any allowance for adjustments to the retention standard will be defined in the forthcoming Stormwater and Erosion Control regulations and shall include a minimum baseline on-site retention standard. Additionally, the District's new stormwater regulations will require substantial renovation projects to include stormwater retention practices. DDOE will manage runoff from millions of square feet of impervious surfaces over the Permit term (5 years), with approximately 1,500,000 square feet of impervious surface to be in transportation rights-of-way to be retrofitted with stormwater retention practices. The District will continue to pursue its Tree Canopy goal, increasing the tree canopy coverage within the District from 35% to 40% over twenty five years; and installing at least 350,000 square feet of green roofs over the Permit cycle on properties within the District during the Permit term (including schools and school administration buildings). DDOE, in partnership with other District and federal agencies, will continue to promote LID wherever structurally and fiscally feasible. DDOE will document the square footage of green roof coverage 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 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. The District will implement the Permit by requiring the use of retention and harvest/reuse practices to reduce stormwater runoff from new development and redevelopment. It is projected that 1.3 million square feet of green roofs will be constructed by Spring of 2015; and 2.5 million square feet by 2017.

Other Permit highlights to aid the District in achieving stormwater and TMDL goals include the following measures or categories:

- Off-site mitigation, and/or fee-in-lieu and trading program;
- Retrofit program for existing discharges;
- Tree canopy and green roof projects;
- 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.

As required by the October 2011 Permit Section 4.1.5.3 for each retrofit project DDOE will estimate pollutant loads and volume reductions achieved for each major waterbody for nitrogen, phosphorus, total suspended solids and other contaminants of concern. Permit Section 4.1.5.2 calls on the District to work with federal agencies including the General Services Administration (GSA), the Department of Defense (DOD) and National Park Service (NPS), with US EPA's facilitation to identify retrofit opportunities, document federal commitments, and track pollutant reductions from relevant federal actions. Further, 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. Section 2.3.3. states that "*within 180 days of permit issuance, the permittee shall complete an assessment of additional governmental agencies and departments…to partner with to administer required elements of the permit. Additional government organizations and programs to consider include… federal departments and agencies, including but not limited to, NPS, Department of Agriculture, DOD, GSA, responsible for facilities in the District.*"

DDOE will comply with the Permit by developing within 2 years of the effective date of the permit, a Consolidated TMDL Implementation Plan (Permit Section 4.10.3.). This consolidated plan will include a specific schedule for compliance with each TMDL, interim numeric milestones where more than one permit cycle is required, and indicate whether a specific existing TMDL needs to be updated or changed.

All terms contained in the October 2011 Permit enable the District to be in compliance 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, US EPA reminds DDOE that the Energy Independence and Security Act Section 438 (and related US EPA Guidance) calls for federal facilities to comply with 1.7 inch on-site retention. Per the Fact Sheet that EPA released with the October 2011 Permit, the 2011 Permit was informed by Executive Order 13508 (section 501) which directs federal agencies to implement controls on their own properties. Additionally, the US 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.

Existing Stormwater Regulations

DDOE is in the process of revising its Stormwater Management (SWM) regulations, as required by the final Municipal Separate Storm Sewer System (MS4) permit issued October 2011. In addition to the channel protection and flood control provisions in the existing regulations, the revised regulations will require development that disturbs 5,000 square feet or more of soil to retain the stormwater volume from a 1.2 inch storm. A new trigger will also be added for "substantial improvement" projects on buildings with a footprint of 5,000 square feet or greater (interior renovations with a cost of greater than 50% of the property), though the MS4 permit

allows a retention standard for these properties of less than 1.2 inches. DDOE is also developing two off-site retention options so that a regulated site, after achieving a minimum portion of its retention requirement on site, will have the option of purchasing Stormwater Retention Credits (SRCs) from the private market or paying an in-lieu fee to DDOE. DDOE is in the process of finalizing draft regulation to go through the approval process within District government, prior to publishing for public comment, and DDOE expects that the rule will be in effect by the June 2013 deadline in the MS4 permit (18 months from the permit effective date of the non-stayed sections of the Permit).

DC MS4 Permit Challenge Status

The October 2011 DC MS4 Permit as issued from US EPA, Region III is undergoing the process of appeal. The outcome of the appeals is unknown, but will likely involve a protracted process. DDOE remains in communication with US EPA. Currently, the District knows what sections of the Permit will be stayed. The timeframe for full and final resolution of the appeals had not been determined. In order to move forward with the implementation of day to day stormwater program efforts, DDOE will remain guided by the October 2011 version of the Permit. However, if major changes to the Permit occur as a result of the challenges, then some of the projected stormwater initiatives may be revised to reflect the Permit appeal outcome(s).]

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

A team of DDOE staff members have collaborated on regenerative stormwater conveyance systems. Areas in the District have been cut and eroded down due to stormwater runoff. WPD projects include stabilizing the area eroded and preventing further erosion through raising the ephemeral stream bed, stabilizing the banks and providing access to the floodplain. WQD provides input on the project design to ensure the protection of any adjacent wetlands and to ensure WQS are met.

PART IV: PUBLIC HEALTH - RELATED ASSESSMENTS

Drinking Water Program Monitoring & Assessments

None of the District'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 the Interstate Commission on the Potomac River Basin. 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 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.

Drinking water is treated by the Washington Aqueduct which is owned and operated by the US ACE. 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 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 should consult the US EPA website at http://www.epa.gov/dclead.

Lead in Drinking Water

The DDOE Lead and Healthy Housing Division has been testing water for lead content since late 2007, as part of its routine activities when following up on lead poisoning cases and when conducting lead inspections as part of the daycare center licensing process. DDOE takes water samples only after ensuring that a 6 to 8 hour stagnation period has been in effect immediately prior to the sampling.

DDOE's testing reveals lead above the US EPA Action Level (AL = 15 ppb) present in water only seldom. No results at all were found above the AL in all of 2010. In 2011, out of a total of 94 properties in the District where water was tested, results above the AL were found at 5 properties, of which 4 were prospective daycare centers. Of these 5 properties, only one had a sampling result higher than 24 ppb. DDOE alerted DC Water of this result and asked for follow up investigation by DC Water. The outcome was a DC Water determination that in this particular vacant daycare center, the water had not been used for several weeks. DC Water explained that when water remains stagnant in a property's system for several weeks, metals do tend to accumulate and are flushed out when the water is finally used.

Since the daycare properties that DDOE samples are applying for licenses and are not yet functioning daycare centers, it is likely that the other elevated lead in water results that DDOE obtained in its sampling of prospective daycare centers are similarly due to under-used water systems at those properties.

The one residential property where 2 out of 4 water samples were above the AL, those results were 24 ppb on the first draw and 17 ppb on the second draw (both were hot water draws).

Overall, the Lead and Healthy Housing Division's sampling results tend to show:

- If a water system is not used on a regular, fairly frequent basis, lead may accumulate in that system and significant flushing of the system is called for; and
- In the overwhelming majority of District homes where water is drawn on a daily basis, lead should not exceed the US EPA Action Level.

It should be noted that the US Centers for Disease Control and Prevention published an epidemiologic study on December 1, 2010, which found that a home that is connected to a lead service line or to a partial lead service line is at increased risk of lead exposure. It is estimated that in the District of Columbia, there are more than 23,000 homes with lead service lines, and more than 14,000 homes with partial lead service lines.

In response to this study, the District Government issued and broadly disseminated a letter to the District's health care providers, dated February 17, 2011, which summarized the study's findings and urged medical providers to take appropriate steps, in accordance with recommendations the District Government outlined in the letter. This letter was signed by the Directors of DDOE, the Department of Health, and the Department of Health Care Finance, as well as by the General Manager of DC WASA.

Fish Tissue Study

In March 2009, US FWS conducted a fish tissue study for DDOE, on fish caught in the Anacostia and Potomac Rivers within the boundaries of the District of Columbia. DDOE has

submitted its recommendations for another fish consumption advisory to the Department of Health (DOH). Once approved DOH will issue a public health advisory.

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

Anacotia River Algal Bloom

In September 2011, US EPA, in conjunction with other state and local agencies investigated discolored water in the Anacostia River. There was a large patch of the river's surface that was discolored. The discoloration with a blackish appearance; the discoloration was easily seen because the Anacostia River has a muddy-brown color. It was thought that the discoloration was due to an illegal discharge into the River. Samples were collected and analyzed for VOCs and PAHs, the test didn't yield and unusual or unexpected results.

When chemical testing didn't reveal a cause biologically analyses were performed. The samples contained a bloom of the dinoflagellate algae Gymnodinimun species. Visible dinoflagellate blooms in the tidal Anacostia River are uncommon.

It is believed this algal bloom occurred because of very favorable hydroclimatological conditions. There were windy, warm and very sunny days that provided for ideal conditions for an algal bloom to occur.

The probability of human health risks or other environmental harm associated with Gymnodinimun bloom are very low.

PART V: GROUNDWATER ASSESSMENT

Introduction

This section updates the District's groundwater assessment and protection efforts for FY 2012. Several changes have occurred since the 2010 Integrated Report. The most significant are the publication of a United States Geological Survey (USGS) Scientific Investigations Report on pesticides in groundwater, the logging of a deep borehole to bedrock at the DC Water O Street Pump Station, and an evaluation of the volume of groundwater being discharged to the sewer system.

Summary of Groundwater Quality

The District's groundwater monitoring network was reduced from 32 wells to 29 wells due to construction activities in the vicinity of the wells. All three wells were part of the Anacostia monitoring network. A list of all of the existing wells and their locations can be found in Appendix 5.1. Detailed well construction information is in Appendix 5.2 and Appendix 5.3 depicts the well locations.

In 2008, DDOE in cooperation with USGS sampled 24 monitoring wells. The purpose of the investigation was to resample wells with previously-detected, isolated pesticide exceedances (Klohe and Debrewer, 2007) in the Lower Anacostia River watershed and to assess the types and spatial distribution of pesticides in other parts of the District. In general, the chemical data did not appear to indicate widespread pesticide impacts on the District's groundwater quality (Koterba, Dieter and Miller, 2010). However, as the well coverage in the Rock Creek and Potomac River watersheds is very limited and not located in areas with suspected heavy pesticide use, further investigation appears to be warranted. The complete report is available at http://pubs.usgs.gov/sir/2010/5130/.

Data from the 2005 sampling event (USGS, 2007) which also covered a wide range of analytes are available at: http://md.water.usgs.gov/publications/ofr-2006-1392/. Other groundwater monitoring data for the District including annual water level measurements and tide gauge data continue to be available at the bottom of the following page under General Data and Reports: http://green.dc.gov/service/water-quality-regulation.

Overview of Groundwater Contamination Sources

Appendix 5.4 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. There are no significant changes regarding the groundwater protection programs since the last 305(b) report. In 1993, numerical criteria and enforcement standards for forty-seven constituents were established. The regulations also set the guidelines for groundwater monitoring supporting preventive as well as remedial activities. 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.
- 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 inspection.
- 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 Monitoring and Assessment: The program coordinates water quality planning and research including groundwater quality research.
- Appendix 5.5 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 is developing a steady-state three-dimensional groundwater flow model of the shallow aquifers in the Anacostia River watershed. The model was successfully calibrated in 2010. However several modifications were made to it to improve calibration using objective parameter estimation and to include layer geometry. The effort should be completed during 2012.

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) 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.

State Superfund

Although the District does not have a State Superfund or CERCLA program, the WQD provides regulatory oversight under the DC Water Pollution Control Act at CERCLIS, Superfund, RCRA,

and any other sites with reported groundwater contamination. The WQD also provides regulatory oversight and attends meetings at CERCLA/NPL sites in the District whenever appropriate.

Summary of Groundwater Contamination Sources

Appendix 5.6 summarizes shallow aquifer quality contamination.

Groundwater/Surface Water Interaction

In this section, the discussion started in the 2010 Integrated Report about the effect of lithology in the vicinity of the Anacostia River on expected groundwater/surface water interactions is continued. The potential for sewer lines to convey contaminated groundwater to surface water bodies also is considered.

Deep Borehole Data

The 2010 Integrated Report contained a discussion of how borehole data from various sources indicate a discontinuity or break in the Arundel Clay underlying the Anacostia River. In 2009, DDOE in conjunction with DC Water drilled a deep borehole which extended to -315 feet means sea level (msl) (approximately 325 feet below ground surface) at the DC Water O Street Pump Station. The boring log (DC Water, 2011) is presented in Appendix 5.7. Bedrock, in the form of a severely weathered, highly to intensely fractured, dark greenish gray gneiss was encountered at approximately -293 feet msl.

While the lithological boring log shows that the discontinuity does not extend inland to the location of the boring, it does establish that the Arundel Clay is not as thick at this location as it usually is thought to be, nor is it as close to ground surface as found in other places. In fact, without the benefit of the entire boring log, several clay lenses appearing at various depths such as, at approximately -42 to -44 feet msl; -57 to 65 feet msl; and -85 to -88 feet msl could easily be mistaken for the Arundel Clay.

As dense non-aqueous phase liquids (DNAPLs) such as, halogenated solvents and polychlorinated biphenyls are expected to sink through the subsurface to geologic strata that are relatively impermeable and laterally continuous, great care should be taken during site investigations for density-driven contaminants to identify the true top of the Arundel Clay. Of course, if groundwater flux transports the contaminants to where the discontinuity in the Arundel occurs, then upward hydraulic gradients from the underlying Patuxent Aquifer could carry the contaminants to the Anacostia River. A steady-state groundwater flow model under development by USGS for DDOE may help to provide further insight into groundwater flow in this section of the Anacostia River.

Dry Weather Flows

Stormwater lines provide an important but overlooked pathway for groundwater to reach surface water bodies. Stormwater lines are normally expected to be leaky allowing flow into or out of the pipes depending on the hydraulic pressure in the lines. However, in the District, stormwater lines also were deliberately designed to provide street drainage as well as intercept perennial streams (DC Department of Sanitary Engineering, 1955). In fact, many springs and streams were piped (Williams, 1977) and built over to allow the city to expand. The gravel beds under the lines also can provide preferential groundwater pathways especially in soils with lower hydraulic conductivities such as, sands, silts and clays. Thus, when stormwater lines intersect contaminated groundwater they can unintentionally act as conduits to surface waterbodies.

As at 2011, 407 MS4 outfalls have been field identified in the District and many more are yet to be found. More than 150 of these storm water outfalls have been observed to carry dry weather flow. Dry weather flow is comprised of flow that is not directly related to storm water discharges. It includes uncontaminated groundwater from sumps; uncontaminated dewatering effluent from construction sites; condensate from air conditioners, illicit discharges, etc. Appendix 5.8 shows the locations of the outfalls carrying known dry weather flow. A preliminary examination of the dry weather monitoring data shows that contaminants are entrained in the effluent discharges and that these concentrations can be diluted to non-detectable levels during wet weather monitoring events.

Dry weather flows are not quantified, so the magnitude of these discharges is unknown. However, it may be possible to obtain a sense of the amount of flow involved by considering information released by DC Water for the combined sewer area. Appendix 5.8 shows that the combined sewer area is approximately 30 percent of the District of Columbia. In the Sewer System Facilities Plan, DC Water (2009) estimates that in the combined sewer area, infiltration/groundwater discharge constitutes about 50 to 77 percent of all waste water that flows to the WWTP. For the assessment period May 2003 to May 2004, infiltration/groundwater discharge to the WWTP was 74 million gallons per day (mgd) compared to 95.6 mgd for strictly wastewater flows. The total of all flows except captured combined sewerage was 172 mgd. http://www.dcwater.com/news/publications/Sewer%20System%20Facilities%20Plan.pdf

BIBLIOGRAPHY

Chadwick, D. Bart, et al, 2001. Anacostia River Seepage & Porewater Survey Report - Draft. February 27, 2001.

CH2MHILL, 2002. FFA Draft, Interim Groundwater Summary, Washington Navy Yard, Washington, D.C. Prepared for the Department of the Navy, Atlantic Division, Naval Facilities Engineering Command, Norfolk, VA. July 2002.

Cooke, C.W., 1952. Sedimentary Deposits of Prince Georges County and the District of Columbia, *in* Cooke, C.W., Martin, R.O.R., and Meyer, Gerald, Geology and Water Resources of Prince Georges County: Baltimore, Maryland, Marlyand Department of Geology, Mines, and Water Resources Bulletin 10.

Davis, A.M., Southworth, C.S., Schindler, J.S., and Reddy, J.E., 2001. Geologic Map database of Washington, D.C. area featuring Data From Three 30 X 60 Minute Quadrangles - Fredrick, Washington West, and Fredricksburg: U.S. Geological Survey Open - File Report 01-277.

Darton, N.H., 1950. Configuration of the Bedrock Surface of the District of Columbia and Vicinity: U.S. Geological Survey Professional Paper 217.

DC Department of Sanitary Engineering, 1955, Summary of the Sewerage System of the District of Columbia, March, 1955.

DC Municipal Separate Storm Sewer System, NPDES Permit DC 0000221 Annual Report, August 19, 2011.

DC Municipal Separate Storm Sewer System, NPDES Permit DC 0000221 Fiscal Year 2010 Implementation Plan, August 19, 2009.

DC Municipal Separate Storm Sewer System, NPDES Permit DC 0000221 Fiscal Year 2011 Implementation Plan, August 19, 2010.

DC Water and Sewer Authority (DC Water), 2011, Volume 4: Geotechnical Data Report; Conformed Documents; Project: CSO Long Term Control Plan; Division A - Blue Plains Tunnel; Location: Blue Plains Advanced Wastewater Treatment. January 10, 2011

District of Columbia Government, Department of Consumer and Regulatory Affairs, Housing and Environmental Regulation Administration, Water Hygiene Branch. The District of Columbia Nonpoint Source Management Plan. December 1989.

DC Water and Sewer Authority, 2009, Sewer System Facilities Plan. Prepared by Engineering Program Management Consultant-3A Greeley and Hansen, June 2009

DC Water Resources Research Center (WRRC), 1992. Urban Land Use Activities and the Ground Water: A Background Survey of the District of Columbia. Prepared for United States Geological Survey, Water Resources Division, National Center, Reston, VA. August 1992

D.C. Water and Sewer Authority (WASA). 2003. Revised FY 2004 and Proposed FY 2005 Operating Budgets Report. www.dcwasa.com PDF file, Washington, D.C.

D.C. Water and Sewer Authority (WASA) and the D.C. Department of Health (DOH). 2001. The 2000 District of Columbia Clean Water Needs Survey, Washington, D.C.

District of Columbia, Department of Consumer and Regulatory Affairs, Tributary Nutrient Reduction Strategy for the Restoration of the Chesapeake Bay, November 1995.

Environmental Health Administration- Fisheries and Wildlife Division, 1998 Submerged Aquatic Vegetation Surveys of the Potomac and Anacostia Rivers within the District of Columbia, 1999.

Environmental Health Administration- Fisheries and Wildlife Division, 1999 Submerged Aquatic Vegetation Surveys of the Potomac and Anacostia Rivers within the District of Columbia, March 2000.

Environmental Health Administration, Hickey Run total maximum daily load (TMDL) to Control Oil and Grease. D.C. Department of Health, 1998.

Environmental Health Administration-Water Quality Division, The District of Columbia Unified Watershed Assessment and Watershed Priorities, September 1998.

Fleming, A.H., Drake, A.A., Jr., and McCartan, Lucy, 1994. Geologic Map of the Washington West Quadrangle, District of Columbia, Montgomery and Prince Georges Counties, Maryland, and Arlington and Fairfax Counties, Virginia: U.S. Geological Survey Geologic Quadrangle 1748, 1 Sheet, Scale 1:24,000.

Froelich, A.H., and Hack, J.T., 1976. Physiology, Drainage, and Geology, in Smith Horace, Soil Survey of the District of Columbia: Washington, D.C., U.S. Department of Agriculture, Soil Conservation Service.

Gordon, Martin K., 1984. The Army Corps of Engineers and the Origins of the Anacostia River Improvement Project. Presentation to the 11th Annual Conference on the D.C. Historical Studies, February 25, 1984.

Greely and Hansen. 2001. Combined Sewer System Long Term Control Plan, Report

prepared for the DC Water and Sewer Authority, Washington, D.C.

HIS GeoTrans, 1998. Deep Production Well Report, Aquatic Resources Education Center, Anacostia Park, Washington, D.C. Prepared for U.S. National Park Service, North Capital Street, Washington, D.C. August 5, 1998.

Johnston, P.M., 1964. Geology and Ground-Water Resources of Washington, D.C. and Vicinity. USGS Water Supply Paper 1776. Reston, Virginia.

Johnston, P.M., 1961. Geology and Ground-Water Resources of Washington, D.C. and Vicinity [incl. well and foundation borings, tables, and logs]: U.S. Geol. Survey open file report. Reston, Virginia.

Klohe, C.A, and Debrewer, L.M., 2007, Summary of ground-water-quality data in the Anacostia River Watershed, Washington, D.C., September-December 2005: U.S. Geological Survey Open-File Report 2006-1392, 64 p.

Koterba, M.T., Dieter, C.A., and Miller, C.V., 2010, Pesticides in groundwater in the Anacostia River and Rock Creek watersheds in Washington, D.C., 2005 and 2008: U.S. Geological Survey Scientific Investigations Report 2010-5130, 90p.

Layne Geoscience, Inc., 1998. Ground Water Development Report, DC Aquatic Resource Education Center, Well PW-1, Anacostia Park, Washington DC. Prepared for National Parks Service. May 4, 1998.

Logan, W.S., 1999a, Role of Ground Water in the Hydrology of the Fort Lincoln Wetland Complex, Anacostia River, Washington, D.C. (Phase II). Report for D.C. Department of Health, 1999a.

Logan, W.S., Estimation of Shallow Groundwater Flux to the Anacostia River. Draft Report for D.C. Department of Health, 1999b.

Matrix Environmental and Geotechnical Services (Matrix), 2003. Quantifying Specific Discharge Across the Sediment – Water Interface Within A Test Area of the Anacostia River, Washington, D.C., A Pre-Capping Evaluation. Data Report. Prepared for Yuewei Zhu, PhD., PE, Senior Environmental Engineer, Horne Engineering Services, Inc., 2750 Prosperity Ave, Suite 450 Fairfax, VA and Danny D. Reible, PhD, PE, Chevron Professor of Chemical Engineering, Director, Hazardous Substance Research Center/South & Southwest, 3221 CEBA, Louisiana State University, Baton Rouge, LA. October 6, 2003.

MACTEC, 2005, Preliminary Geotechnical Services South Capitol Street Bridge Washington, D.C. Prepared for HNTB, Inc. Arlington, Virginia MACTEC Project Number 3551-05-0587, May 25, 2005.

Metropolitan Washington Council of Governments, An Existing Source Assessment of Pollutants to the Anacostia Watershed. Final Draft. Prepared for the Environmental Regulation Administration, Department of Consumer and Regulatory Affairs, District of Columbia, 1996.

Metropolitan Washington Council of Governments, Estimation of Nonpoint Source Loads to the Anacostia River in the District of Columbia for the Total Maximum Daily Load Process, prepared for the Department of Health, March 2000.

Miller, C.V., and Klohe, C. A., 2003. Summary of Water- and Sediment- Quality Data for Anacostia River Well Sites Sampled in July-August 2002: U.S. Geological Survey Open-File Report 03-73.

Morris, V., et. al., September 2007, Evaluation of Seasonal Wet and Dry Deposition of Heavy Metals and Organics in Washington, DC, Howard University, Washington, D.C. 20059.

Quality Environmental Solutions, Inc. (QES), 2003. Deep Aquifer Exploration and Testing Report, Arena Stage, Washington D.C. Prepared for Mr. Doug Pegg, Earth Energy Utility Co. June 20, 2003.

Stribling, J. B., C.G. Gerardi, and B.D. Snyder. Biological Assessment of the Mattaponi Creek and Brier Ditch Watersheds. Winter 1996 Index Period. Prepared by Tetra Tech, Inc., Owings Mills, MD for Prince George's County, Department of Environmental Resources, Largo, MD. PGDER 96-4, 1996.

Tenbus, Frederick J., 2003. Lithologic Coring in the Lower Anacostia Tidal Watershed, Washington, D.C., July 2002. U.S. Geological Survey Open-File Report 03-318.

The DC Water Resources Research Center (WRRC), 1992. Urban Land Use Activities and the Ground Water: A Background Survey of the District of Columbia. Prepared for United States Geological Survey, Water Resources Division, National Center, Reston, VA. August 1992

U.S. EPA. "Rapid Bioassessment Protocols for Use in Streams and Rivers - Benthic Macroinvertebrates and Fish." May 1989.

U.S. EPA, *Clean Water Action Plan: Restoring and Protecting America's Waters*, EPA-840-R-98-001, February 1998.

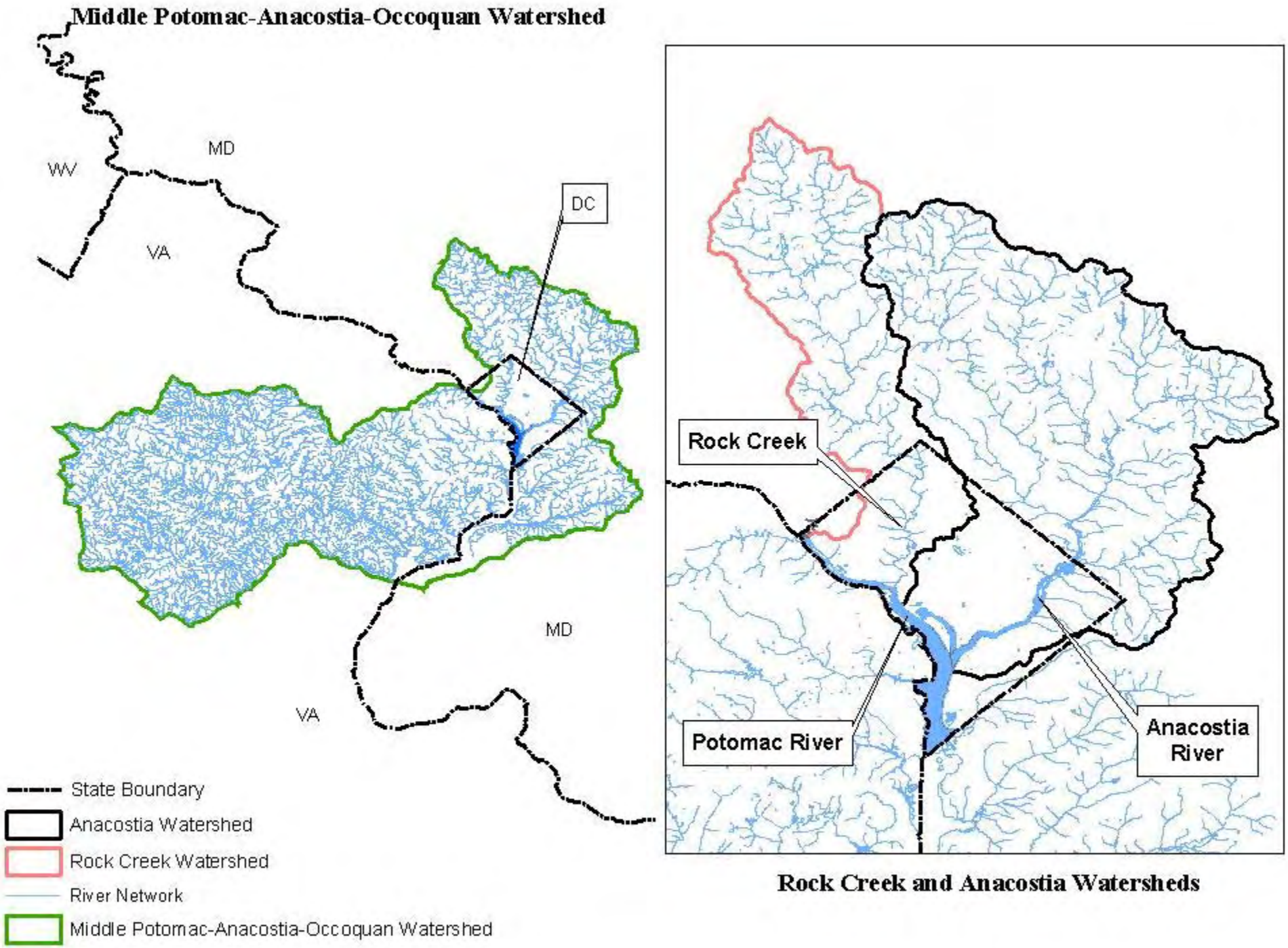
U.S. EPA, Ambient Water Quality Criteria for Dissolved Oxygen, Water Clarity, and Chlorophyll a for the Chesapeake Bay and its Tidal Tributaries, 2003.

U.S. EPA, Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act, 2005.

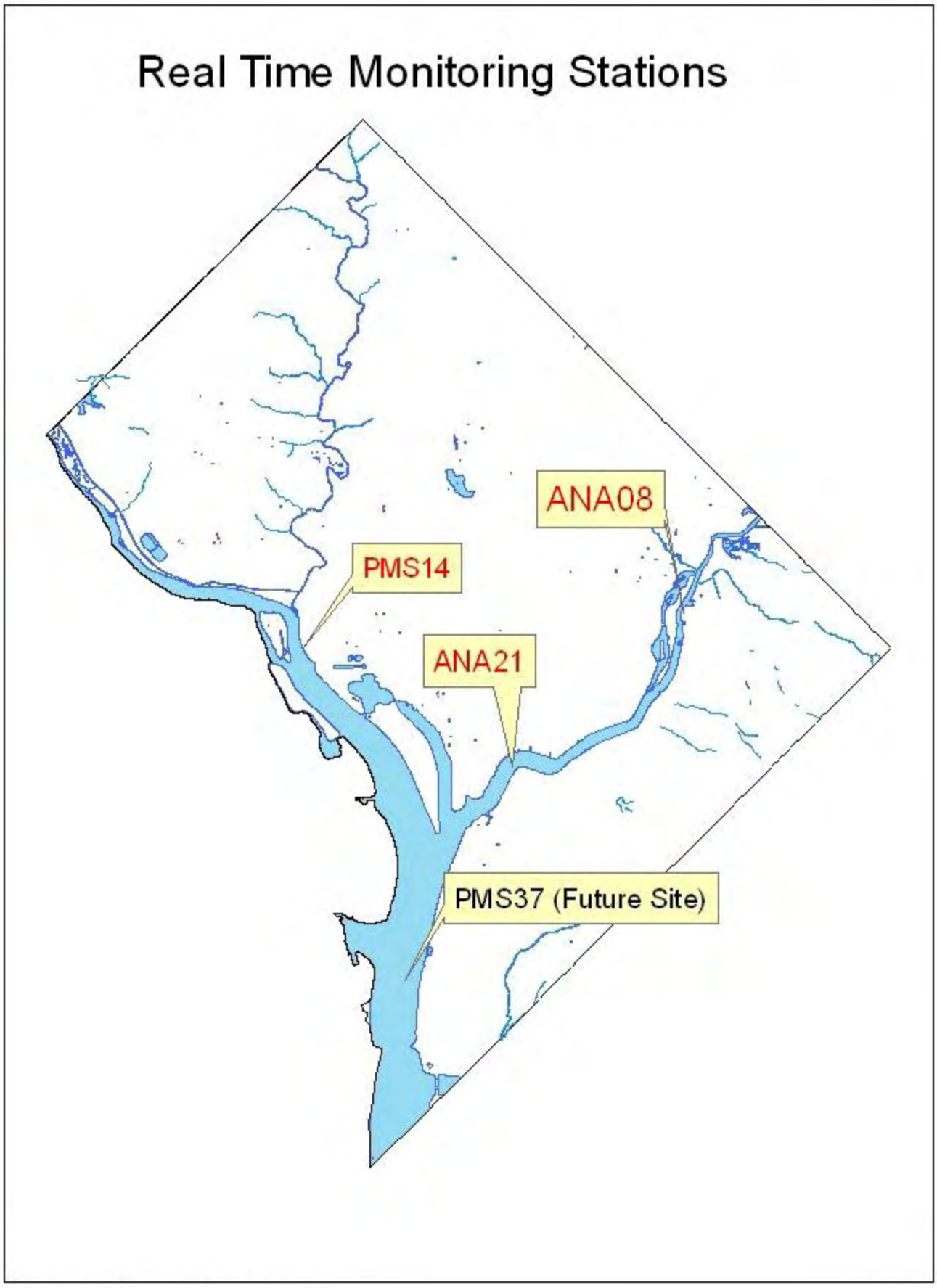
U.S. EPA, Information Concerning 2010 Clean Water Act Sections 303(d), 305(b), and 314 Integrated Reporting and Listing Decisions, 2009.

Van Ness, K., K. Brown, M.S. Haddaway, D. Marshall, D. Jordahl. Montgomery County Water Quality Monitoring Program Stream Monitoring Protocols. Montgomery County Department of Environmental Protection, Watershed Management Division. Rockville, MD, 1997.

Williams, Garnett P., 1977. Washington D.C.'s Vanishing Springs and Waterways, Geological Survey Circular 752.



Appendix 2.1: Major D.C. Watersheds



Appendix 3.1: Real Time Monitoring Stations

Appendix 3.2
Percentage Violations for Continuous Monitoring

2010–11 Potomac and Anacostia River Dissolved Oxygen

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

	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct		Nov		% viol year	
Year	10	11	10	11	10	11	10	11	10	11	10	11	10	11	10	11	10	11	10	11
Upper Anacostia	0.0	0.0	n/a	25.0	n/a	100	n/a	25.0	0.0	0.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.5	16.7
Lower Anacostia	0.0	0.0	25.0	0.0	75.0	0.0	25.0	0.0	0.0	0.0	75.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	25.0	6.1
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

	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct		Nov		% viol year	
Year	10	11	10	11	10	11	10	11	10	11	10	11	10	11	10	11	10	11	10	11
Upper Anacostia	11.5	9.1	n/a	6.4	n/a	3.6	n/a	4.7	5.5	6.4	5.0	5.2	6.2	5.4	5.6	5.8	6.0	7.2	40	50
Lower Anacostia	10.0	8.9	8.5	8.3	5.7	7.3	5.4	5.3	6.4	5.8	3.6	3.4	6.4	4.2	4.7	5.6	6.3	7.8	50	50
Upper Potomac	n/a	n/a	10.3	n/a	8.8	9.9	5.7	8.8	6.6	7.6	5.7	7.9	6.6	7.8	9.5	9.5	11.3	11.0	0	0

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

	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct		Nov		% viol year	
Year	10	11	10	11	10	11	10	11	10	11	10	11	10	11	10	11	10	11	10	11
Upper Anacostia	0.0	0.0	n/a	19.9	n/a	94.3	n/a	27.6	11.8	8.3	15.6	20.9	4.8	9.7	0.0	0.0	0.0	0.0	6.1	19.0
Lower Anacostia	0.0	0.0	17.2	0.0	38.7	5.9	25.3	0.4	11.9	12.7	45.3	55.6	5.6	22.9	5.8	5.8	0.9	0.0	16.3	9.6
Upper Potomac	n/a	0.0	0.0	0.0	0.0	0.0	4.8	0.0	2.0	0.0	5.0	0.0	5.7	0.0	0.0	0.0	0.0	0.0	2.1	0.0

Potomac and Anacostia River Turbidity

Monthly % above 20 NTU

	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct		Nov		% viol year	
Year	10	11	10	11	10	11	10	11	10	11	10	11	10	11	10	11	10	11	10	11
Upper Anacostia	62.4	98.8	96.6	80.6	94.1	68.0	62.8	51.7	65.4	72.6	84.2	68.1	72.5	88.5	69.6	56.6	90.7	38.1	75.2	74.5
Lower Anacostia	42.4	40.5	16.9	30.4	6.3	4.0	60.7	5.8	25.9	23.7	25.1	33.5	10.8	6.7	22.1	1.0	7.2	2.2	23.1	15.9
Upper Potomac	n/a	41.4	8.9	57.2	18.8	80.3	17.4	3.2	14.5	0.0	23.6	1.7	22.4	15.9	14.4	20.2	0.6	18.0	20.3	26.8

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

Appendix 3.2
Percentage Violations for Continuous Monitoring

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	
Year	10	11	10	11	10	11	10	11	10	11	10	11	10	11	10	11	10	11	10	11
Upper Anacostia	0.0	0.0	n/a	0.0	n/a	0.0	n/a	0.0	6.9	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	6.2	7.6	5.7	17.4	13.1	0.3	2.6	1.5	n/a	0.0	0.0	0.0	0.0	2.9	3.1
Upper Potomac	n/a	n/a	59.9	0.0	61.3	0.0	31.9	53.6	4.7	100	0.0	48.8	0.7	2.2	0.0	0.0	66.7	0.0	20.3	21.1

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	
Year	10	11	10	11	10	11	10	11	10	11	10	11	10	11	10	11	10	11	10	11
Upper Anacostia	-	-	-	-	-	-	-	-	43.9	56.8	32.9	65.8	49.2	99.4	-	-	-	-	41.9	65.1
Lower Anacostia	-	-	-	-	-	-	-	-	29.4	29.6	0.02	4.9	7.4	0.0	-	-	-	-	13.2	17.0
Upper Potomac	-	-	-	-	-	-	-	-	47.8	27.5	6.9	89.3	0.7	0.7	-	-	-	-	18.6	38.2

Potomac and Anacostia River Temperature C

In situ readings % above 32.2 C

	Mar		Apr		May		Jun		Jul		Aug		Sep		Oct		Nov		% viol year	
Year	10	11	10	11	10	11	10	11	10	11	10	11	10	11	10	11	10	11	10	11
Upper Anacostia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.07	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	1.6	3.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3

n/a – not assessed

INDIVIDUAL WATERBODY WATER QUALITY ASSESSMENTS

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

Detail Report for ANACOSTIA DC

ID: DCANA00E_01 **State:** DC - 2012 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	**ANACOSTIA DC**	
	Location: 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.	**Water Type:** ESTUARY **Size:** 0.5 SQUARE MILES **Next Scheduled Montitoring Date:** N/A

Use Information

Assessed:	**Attainment Status**	**Uses**
	Fully Supporting	Navigation Protection and Propagation of Fish, Shellfish and Wildlife
	Insufficient Information	Primary Contact Recreation
	Not Supporting	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
	Secondary Contact Recreation and Aesthetic Enjoyment	GOOD
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Arsenic	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
BOD, Biochemical oxygen demand	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 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	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
Lead	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Nitrogen (Total)	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Oil and Grease	Primary Contact Recreation Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Phosphorus (Total)	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)	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Zinc	Protection of Human Health related to Consumption of Fish and Shellfish	Yes

Source Information

Sources	Associated Causes	Confirmed?
Highway/Road/Bridge Runoff (Non-construction Related)	Oil and Grease	

Comments On:

Overall Assessment

EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2007-2011) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

IN 2007 THE WATER QUALITY STANDARDS CHANGED THE PARAMETERS FOR EVALUATING PRIMARY AND SECONDARY CONTACT.

EVALUATION OF THE LOWER ANACOSTIA'S PRIMARY CONTACT (SWIMMABLE) IS BASED ON E.COLI DATA COLLECTED AND ANALYZED OVER A FOUR YEAR PERIOD, 2008-2011. WITH AN AVERAGE E. COLI COUNT OF 564.58 MPN/100ML, FOR 2008-2011. THERE IS INSUFFICIENT INFORMATION TO DETERMINE SUPPORT FOR THE SWIMMABLE USE DISIGNATION.

SECONDARY CONTACT RECREATION USE WAS NOT SUPPORTED. THE LOWER ANACOSTIA RIVER IS IMPAIRED BY TRASH.

THE AQUATIC LIFE USE IS SUPPORTED. TEMPERATURE, PH, AND DISSOLVED OXYGEN VIOLATED THE WATER QUALITY STANDARDS 0%, 1.2%, AND 5.39% 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 QUATITY 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.

Detail Report for ANACOSTIA DC

ID: DCANA00E_02 **State:** DC - 2012 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	ANACOSTIA DC	
	Location: 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 RESIDENTIAL BUILDINGS, PEPCO, RFK STADIUM AND MARINA.	**Water Type:** ESTUARY **Size:** 0.3 SQUARE MILES **Next Scheduled Montitoring Date:** N/A

Use Information

Assessed:	Attainment Status	Uses
	Fully Supporting	Navigation Protection and Propagation of Fish, Shellfish and Wildlife
	Insufficient Information	Primary Contact Recreation
	Not Supporting	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
Arsenic	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
BOD, Biochemical oxygen demand	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Chlordane	Protection of Human Health related to	Yes	

	Consumption of Fish and Shellfish	
Copper	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	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
Lead	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Nitrogen (Total)	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Oil and Grease	Primary Contact Recreation	Yes
Phosphorus (Total)	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)	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Zinc	Protection of Human Health related to Consumption of Fish and Shellfish	Yes

Source Information

Sources	Associated Causes	Confirmed?
Highway/Road/Bridge Runoff (Non-construction Related)	Oil and Grease	

Comments On:

Overall Assessment

EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR

STATISTICAL EVALUATION (2007-2011) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

IN 2007 THE WATER QUALITY STANDARDS CHANGED THE PARAMETERS FOR EVALUATING PRIMARY AND SECONDARY CONTACT.

EVALUATION OF THE UPPER ANACOSTIA'S PRIMARY CONTACT (SWIMMABLE) IS BASED ON E.COLI DATA COLLECTED AND ANALYZED OVER A FOUR YEAR PERIOD, 2008-2011. WITH AN AVERAGE E. COLI COUNT OF 390.84 MPN/100ML, FOR 2008-2011. THERE IS INSUFFICIENT INFORMATION TO DETERMINE SUPPORT FOR THE SWIMMABLE USE DESIGNATION.

SECONDARY CONTACT RECREATION USE WAS NOT SUPPORTED. THE UPPER ANACOSITA RIVER IS IMPAIRED BY TRASH.

THE AQUATIC LIFE USE SUPPORT IS SUPPORTED. TEMPERATURE, PH AND DISSOLVED OXYGEN VIOLATED THE WATER QUALITY STANDARDS 0%, 1.10%, AND 8.76% 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 DISTRCT, 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 BATTERY KEMBLE CREEK

ID: DCTBK01R_00 **State:** DC - 2012 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	**BATTERY KEMBLE CREEK**	
	Location: 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.	**Water Type:** RIVER **Size:** 1.2 MILES **Next Scheduled Montitoring Date:** N/A

Use Information

	Attainment Status	Uses
Assessed:	Insufficient Information	Primary Contact Recreation
	Not Supporting	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish
Not Assessed:	Not Assessed	Navigation 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
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Arsenic	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Benthic-Macroinvertebrate Bioassessments	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Combination Benthic/Fishes Bioassessments	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Copper	Protection and Propagation of Fish,	Yes	

	Shellfish and Wildlife	
Fecal Coliform	Primary Contact Recreation	Yes
Fishes Bioassessments	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Lead	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Zinc	Protection and Propagation of Fish, Shellfish and Wildlife	Yes

Source Information

Sources	Associated Causes	Confirmed?
Hydrostructure Impacts on Fish Passage	Combination Benthic/Fishes Bioassessments	
Post-development Erosion and Sedimentation	Combination Benthic/Fishes Bioassessments	
Yard Maintenance	Combination Benthic/Fishes Bioassessments	

Comments On:

Overall Assessment

EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2007-2011) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

IN 2007 THE WATER QUALITY STANDARDS CHANGED THE PARAMETERS FOR EVALUATING PRIMARY AND SECONDARY CONTACT.

EVALUATION OF BATTERY KEMBLE'S PRIMARY CONTACT (SWIMMABLE) IS BASED ON E.COLI DATA COLLECTED AND ANALYZED OVER A FOUR YEAR PERIOD, 2008-2011. WITH AN AVERAGE E. COLI COUNT OF 612 MPN/100ML, FOR 2008-2011. THERE IS INSUFFICIENT INFORMATION TO DETERMINE SUPPORT FOR THE SWIMMABLE USE DESIGNATION.

SECONDARY CONTACT RECREATION USE WAS NOT ASSESSED; THERE IS NO CRITERIA IN THE 2007 WATER QUALITY STANDARDS TO DETERMINE USE SUPPORT.

THE AQUATIC LIFE USE IS NOT SUPPORTED. THE DECISION IS BASED ON THE DC STREAM SURVEY CONDUCTED IN 2002 AND CONVENTIONAL POLLUNTANT DATA. TEMPERATURE, PH AND DISSOLVED OXYGEN VIOLATED THE WATER QUALITY STANDARDS 0%, 0%, AND 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 2008 AND 2010 STREAM ASSESSMENT THERE WAS ALGAE ON ROCKS, VERY LITTLE AQUATIC LIFE OBSERVED AND THE ODOR OF CHLORINE PRESENT.

Detail Report for BROAD BRANCH

ID: DCTBR01R_00 **State:** DC - 2012 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	**BROAD BRANCH**	
	Location: 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.	**Water Type:** RIVER **Size:** 1.7 MILES **Next Scheduled Montitoring Date:** N/A

Use Information

	Attainment Status	Uses
Assessed:	Insufficient Information	Primary Contact Recreation
	Not Supporting	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish
Not Assessed:	Not Assessed	Navigation 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
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Benthic-Macroinvertebrate Bioassessments	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Chlordane	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Combination Benthic/Fishes Bioassessments	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
DDD	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	

DDE	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
DDT	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Debris/Floatables/Trash	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Dieldrin	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Fecal Coliform	Primary Contact Recreation	Yes
Fishes Bioassessments	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Heptachlor epoxide	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Particle distribution (Embeddedness)	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Polychlorinated biphenyls	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes

Source Information

Sources	Associated Causes	Confirmed?
Impacts from Hydrostructure Flow Regulation/modification	Fishes Bioassessments	
Residential Districts	Fishes Bioassessments	
Wet Weather Discharges (Non-Point Source)	Fishes Bioassessments	
Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO)	Fishes Bioassessments	
Yard Maintenance	Fishes Bioassessments	

Comments On:

Overall Assessment

EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2007-2011) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

IN 2007 THE WATER QUALITY STANDARDS CHANGED THE PARAMETERS FOR EVALUATING PRIMARY AND SECONDARY CONTACT.

EVALUATION OF BROAD BRANCH'S PRIMARY CONTACT (SWIMMABLE) IS BASED ON E.COLI DATA COLLECTED AND ANALYZED OVER A FOUR YEAR PERIOD, 2008-2011. WITH AN AVERAGE E. COLI COUNT OF 3260 MPN/100ML, FOR 2008-2011. THERE IS INSUFFICIENT INFORMATION TO DETERMINE SUPPORT FOR THE SWIMMABLE USE DESIGNATION.

SECONDARY CONTACT RECREATION USE WAS NOT ASSESSED; THERE IS NO CRITERIA IN THE 2007 WATER QUALITY STANDARDS TO DETERMINE USE SUPPORT.

THE AQUATIC LIFE USE IS NOT SUPPORTED. THE DECISION IS BASED ON THE DC STREAM SURVEY CONDUCTED IN 2010 AND CONVENTIONAL POLLUNTANT DATA. TEMPERATURE, PH AND DISSOLVED OXYGEN VIOLATED THE WATER QUALITY STANDARDS 0%, 5.56%, AND 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 2007 HABITAT ASSESSMENT REVEALED THE OVERALL HABITAT QUALITY HAS BEEN DEMINISHED FROM THE 2003 ASSESSEMENT. LARGE QUANTITY OF ALGAE WAS PRESENT IN THE STREAM DURING THE 2007 ASSESSMENT AND STREAM REACH IS PARTIALLY CHANNELIZED.

THE 2009 ASSESSMENT REVEALED HIGH ALGAL BLOOMS, HIGH CONDUCTIVITY, AND NO FISH.

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

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

IN 2011 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 CHESAPEAKE AND OHIO CANAL

ID: DCTCO01L_00 **State:** DC - 2012 **Single Cat.(User Cat.):** 5(N/A)

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

Use Information

	Attainment Status	Uses
Assessed:	Fully Supporting	Navigation
	Insufficient Information	Primary Contact Recreation
	Not Supporting	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish
Not Assessed:	Not Assessed	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
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

Cause Information

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

Comments On:

Overall Assessment

EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2007-2011) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

IN 2007 THE WATER QUALITY STANDARDS CHANGED THE PARAMETERS FOR EVALUATING PRIMARY AND SECONDARY CONTACT.

EVALUATION OF THE C&O CANAL'S PRIMARY CONTACT (SWIMMABLE) IS BASED ON E.COLI DATA COLLECTED AND ANALYZED OVER A FOUR YEAR PERIOD, 2008-2011. WITH AN AVERAGE E. COLI COUNT OF 200 MPN/100ML, FOR 2008-2011.

SECONDARY CONTACT RECREATION USE WAS NOT ASSESSED; THERE IS NO CRITERIA IN THE 2007 WATER QUALITY STANDARDS TO DETERMINE USE SUPPORT.

THE AQUATIC LIFE USE IS NOT SUPPORTED. TEMPERATURE, PH, AND DISSOLVED OXYGEN VIOLATED THE WATER QUALITY STANDARDS 0%, 16.28%, AND 0% 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 CONSUPTION 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 - 2012 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	DALECARLIA TRIBUTARY	
	Location: 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	**Water Type:** RIVER **Size:** 1.7 MILES **Next Scheduled Montitoring Date:** N/A

Use Information

	Attainment Status	Uses
Assessed:	Insufficient Information	Primary Contact Recreation
	Not Supporting	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish
Not Assessed:	Not Assessed	Navigation 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
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Chlordane	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
DDD	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
DDE	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
DDT	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	

Dieldrin	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Fecal Coliform	Primary Contact Recreation	Yes
Heptachlor epoxide	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Polychlorinated biphenyls	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes

Comments On:

Overall Assessment

EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2007-2011) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

IN 2007 THE WATER QUALITY STANDARDS CHANGED THE PARAMETERS FOR EVALUATING PRIMARY AND SECONDARY CONTACT.

EVALUATION OF DALECARLIA'S PRIMARY CONTACT (SWIMMABLE) IS BASED ON E.COLI DATA COLLECTED AND ANALYZED OVER A FOUR YEAR PERIOD, 2008-2011. WITH AN AVERAGE E. COLI COUNT OF 628 MPN/100ML, FOR 2008-2011. THERE IS INSUFFICIENT INFORMATION TO DETERMINE SUPPORT FOR THE SWIMMABLE USE DESIGNATION.

SECONDARY CONTACT RECREATION USE WAS NOT ASSESSED; THERE IS NO CRITERIA IN THE 2007 WATER QUALITY STANDARDS TO DETERMINE USE SUPPORT.

THE AQUATIC LIFE USE SUPPORT IS NOT SUPPORTED. THE DECISION IS BASED ON THE DC STREAM SURVEY CONDUCTED IN 2010 AND CONVENTIONAL POLLUNTANT DATA. TEMPERATURE, PH AND DISSOLVED OXYGEN VIOLATED THE WATER QUALITY STANDARDS 0%, 0%, AND 0% 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 RESIDENTAL YARDS AND STREETS MAY BE A SOURCE OF PATHOGENS, ORGANICS, AND METALS.

DURING THE 2007 HABITAT ASSESSMENT THE LEFT BANK RIPARIAN BUFFER WAS IMPROVED FROM 2003. EVIDENCE OF AN ABUNDANCE OF PERIPHYTON ON ROCKS, SUSPECTED OVERFLOW FROM FT. RENO RESERVOIR. A PROMINENT ORDER OF CHLORINE WAS ALSO PRESENT.

THE 2009 ASSESSMENT REVEALED SEVERE EROSION AND UNDERCUTTING OF THE RIGHT BANK.

THE 2010 MACROINVERTEBRATE ASSESSMENT (SAMPLES COLLECTED IN 2009) REVEALED CHIRONOMIDE AS THE DOMINANT TAXA. VERY LITTLE DIVERSITY AMOUNG BENTHIC MACROINVERTEBRATE SPECIES.

DURING THE 2011 DCSS SEVERE BUFFER BREAK ON THE LEFT BANK, AND EROSION ON THE RIGHT BANK FOR THE ENTIRE 75 METER STRETCH WERE OBSERVED. STRONG ODOR OF CHLORINE PRESENT. 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 - 2012 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	**DUMBARTON OAKS**	
	Location: 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.	**Water Type:** RIVER **Size:** 0.6 MILES **Next Scheduled Montitoring Date:** N/A

Use Information

	Attainment Status	Uses
Assessed:	Insufficient Information	Primary Contact Recreation
	Not Supporting	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish
Not Assessed:	Not Assessed	Navigation 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
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Benthic-Macroinvertebrate Bioassessments	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Chlordane	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Combination Benthic/Fishes Bioassessments	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
DDD	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	

DDE	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
DDT	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Debris/Floatables/Trash	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Dieldrin	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Fecal Coliform	Primary Contact Recreation	Yes
Heptachlor epoxide	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Polychlorinated biphenyls	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes

Source Information

Sources	Associated Causes	Confirmed?
CERCLA NPL (Superfund) Sites	Benthic-Macroinvertebrate Bioassessments Combination Benthic/Fishes Bioassessments Debris/Floatables/Trash	
Hydrostructure Impacts on Fish Passage	Benthic-Macroinvertebrate Bioassessments Combination Benthic/Fishes Bioassessments Debris/Floatables/Trash	

Comments On:

Overall Assessment

EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2007-2011) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

IN 2007 THE WATER QUALITY STANDARDS CHANGED THE PARAMETERS FOR EVALUATING PRIMARY AND SECONDARY CONTACT.

EVALUATION OF DUMBARTON OAK'S PRIMARY CONTACT (SWIMMABLE) IS BASED ON E.COLI DATA COLLECTED AND ANALYZED OVER A FOUR YEAR PERIOD, 2008-2011. WITH AN AVERAGE E. COLI COUNT OF 266 MPN/100ML, FOR 2008-2011. THERE IS INSUFFICIENT INFORMATION TO DETERMINE SUPPORT FOR THE SWIMMABLE USE DESIGNATION.

SECONDARY CONTACT RECREATION USE WAS NOT ASSESSED; THERE IS NO CRITERIA IN THE 2007 WATER QUALITY STANDARDS TO DETERMINE USE SUPPORT.

THE AQUATIC LIFE USE SUPPORT IS NOT SUPPORTED. THE DECISION IS BASED ON THE DC STREAM SURVEY CONDUCTED IN 2010 AND CONVENTIONAL POLLUNTANT DATA. TEMPERATURE, PH AND DISSOLVED OXYGEN VIOLATED THE WATER QUALITY STANDARDS 0%, 0%, AND 0% 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 2007 ASSESSMENT SHOWED AN IMPROVEMENT IN THE RIGHT BANK RIPARIAN ZONE FROM THE 2003 ASSESSMENT; THUS LEADING TO AN INCREASE IN BANK STABILITY. ALTHOUGH THIS IMPROVEMENT WAS NOTICED THE RIPARIAN ZONE IS IN MARGINAL CONDITION.

DURING THE 2009 ASSESSMENT THE STUDENT CONSERVATION ASSOCIATION WAS CONDUCTING FIELD WORK UPSTREAM OF THE MONITORING SITE, MAY HAVE AN AFFECT ON OUTCOME OF THE ASSESSMENT.

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

DURING THE 2011 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. 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 FENWICK BRANCH

ID: DCTFE01R_00 **State:** DC - 2012 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	**FENWICK BRANCH**	
	Location: THE STREAM ORIGINATES AS A DISCHARGE FROM A STORM DRAIN A FEW FEET OUTSIDE THE DC BORDER IN MARYLAND SOUTH OF EAST-WEST HIGHWAY.	**Water Type:** RIVER **Size:** 1 MILES **Next Scheduled Montitoring Date:** N/A

Use Information

	Attainment Status	Uses
Assessed:	Insufficient Information	Primary Contact Recreation
	Not Supporting	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish
Not Assessed:	Not Assessed	Navigation 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
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	
Benthic-Macroinvertebrate Bioassessments	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Chlordane	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Combination Benthic/Fishes Bioassessments	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	

Combined Biota/Habitat Bioassessments	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
DDD	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
DDE	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
DDT	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Debris/Floatables/Trash	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Dieldrin	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Fecal Coliform	Primary Contact Recreation	Yes
Fishes Bioassessments	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Habitat Assessment (Streams)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Heptachlor epoxide	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Particle distribution (Embeddedness)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Polychlorinated biphenyls	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes

Source Information

Sources	Associated Causes	Confirmed?
Impacts from Hydrostructure Flow Regulation/modification	Alteration in stream-side or littoral vegetative covers Benthic-Macroinvertebrate Bioassessments Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments Debris/Floatables/Trash Fishes Bioassessments Habitat Assessment (Streams) Particle distribution (Embeddedness)	
Residential Districts	Alteration in stream-side or littoral vegetative covers Benthic-Macroinvertebrate Bioassessments Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments Debris/Floatables/Trash Fishes Bioassessments Habitat Assessment (Streams)	

	Particle distribution (Embeddedness)
Wet Weather Discharges (Non-Point Source)	Alteration in stream-side or littoral vegetative covers Benthic-Macroinvertebrate Bioassessments Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments Debris/Floatables/Trash Fishes Bioassessments Habitat Assessment (Streams) Particle distribution (Embeddedness)
Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO)	Alteration in stream-side or littoral vegetative covers Benthic-Macroinvertebrate Bioassessments Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments Debris/Floatables/Trash Fishes Bioassessments Habitat Assessment (Streams) Particle distribution (Embeddedness)
Yard Maintenance	Alteration in stream-side or littoral vegetative covers Benthic-Macroinvertebrate Bioassessments Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments Debris/Floatables/Trash Fishes Bioassessments Habitat Assessment (Streams) Particle distribution (Embeddedness)

Comments On:

Overall Assessment

EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2007-2011) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

IN 2007 THE WATER QUALITY STANDARDS CHANGED THE PARAMETERS FOR EVALUATING PRIMARY AND SECONDARY CONTACT.

EVALUATION OF FENWICK BRANCH'S PRIMARY CONTACT (SWIMMABLE) IS BASED ON E.COLI DATA COLLECTED AND ANALYZED OVER A FOUR YEAR PERIOD, 2008-2011. WITH AN AVERAGE E. COLI COUNT OF 367 MPN/100ML, FOR 2008-2011. THERE IS INSUFFICIENT INFORMATION TO DETERMINE SUPPORT FOR THE SWIMMABLE USE DESIGNATION.

SECONDARY CONTACT RECREATION USE WAS BIT ASSESSED; THERE IS NO CRITERIA IN THE 2007 WATER QUALITY STANDARDS TO DETERMINE USE SUPPORT.

THE AQUATIC LIFE USE SUPPORT IS NOT SUPPORTED. THE DECISION IS BASED ON THE DC STREAM SURVEY CONDUCTED IN 2010 AND CONVENTIONAL POLLUNTANT DATA. TEMPERATURE, PH AND DISSOLVED OXYGEN VIOLATED THE WATER QUALITY STANDARDS 0%, 0%, AND 0% 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 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 2007 ASSESSMENT IT WAS NOTICED THAT THE RIGHT BANK RIPARIAN ZONE HAD IMPROVED FROM THE 2003 ASSESSMENT.

THE 2009 ASSESSMENT REVEALED BOTH BANKS OF THE STEAM WERE MODERATELY TO SEVERELY ERODED. SILT, SAND AND CLAY WERE ABUNDANT.

THE 2010 MACROINVERTEBRATE ASSESSMENT WHICH WAS COLLECTED DURING THE 2009 DCSS SAMPLING SEASON REVEALED CHIRONOMIDAE AS THE DOMINANT TAXA. TRICHOPERTA WERE PRESENT.

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 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. 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 FORT CHAPLIN RUN

ID: DCTFC01R_00 **State:** DC - 2012 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	**FORT CHAPLIN RUN**	
	Location: FORT CHAPLIN ORIGINATES AS A 6.5 FOOT DIAMETER STORM PIPE NEAR BURNS STREET AND TEXAS AVENUE, SE.	**Water Type:** RIVER **Size:** 0.6 MILES **Next Scheduled Montitoring Date:** N/A

Use Information		
	Attainment Status	**Uses**
Assessed:	Insufficient Information	Primary Contact Recreation
	Not Supporting	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish
Not Assessed:	Not Assessed	Navigation 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
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Arsenic	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Combination Benthic/Fishes Bioassessments	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Combined Biota/Habitat Bioassessments	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Copper	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	

Debris/Floatables/Trash	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Fecal Coliform	Primary Contact Recreation	Yes
Lead	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Oil and Grease	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Particle distribution (Embeddedness)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Physical substrate habitat alterations	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Zinc	Protection and Propagation of Fish, Shellfish and Wildlife	Yes

Source Information

Sources	Associated Causes	Confirmed?
Hydrostructure Impacts on Fish Passage	Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments Debris/Floatables/Trash Particle distribution (Embeddedness) Physical substrate habitat alterations	
Illegal Dumps or Other Inappropriate Waste Disposal	Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments Debris/Floatables/Trash Particle distribution (Embeddedness) Physical substrate habitat alterations	
Impacts from Hydrostructure Flow Regulation/modification	Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments Debris/Floatables/Trash Particle distribution (Embeddedness) Physical substrate habitat alterations	
Landfills	Oil and Grease	
Residential Districts	Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments Debris/Floatables/Trash Particle distribution (Embeddedness) Physical substrate habitat alterations	
Source Unknown	Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments Debris/Floatables/Trash Oil and Grease Particle distribution (Embeddedness) Physical substrate habitat alterations	

Comments On:

Overall Assessment

EVALUATION OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2007-2011) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

IN 2007 THE WATER QUALITY STANDARDS CHANGED THE PARAMETERS FOR EVALUATING PRIMARY AND SECONDARY CONTACT.

EVALUATION OF FORT CHAPLIN'S PRIMARY CONTACT (SWIMMABLE) IS BASED ON E.COLI DATA COLLECTED AND ANALYZED OVER A THREE YEAR PERIOD, 2008-2011. WITH AN AVERAGE E. COLI COUNT OF 505 MPN/100ML, FOR 2008-2011. THERE IS INSUFFICIENT INFORMATION TO DETERMINE SUPPORT FOR THE SWIMMABLE USE DESIGNATION.

SECONDARY CONTACT RECREATION USE WAS NOT ASSESSED; THERE IS NO CRITERIA IN THE 2007 WATER QUALITY STANDARDS TO DETERMINE USE SUPPORT.

THE AQUATIC LIFE USE SUPPORT IS NOT SUPPORTED. THE DECISION IS BASED ON THE DC STREAM SURVEY CONDUCTED IN 2002 AND CONVENTIONAL POLLUNTANT DATA. TEMPERATURE, PH AND DISSOLVED OXYGEN VIOLATED THE WATER QUALITY STANDARDS 0%, 11.76%, AND 0% 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 SUPSTANTIAL RIPARIAN ZONE, ALTHOUGH IT RECIEVES NUMEROUS STORM DRAINS WHICH HAS CAUSED SEVERE EROSION IN SOME PLACES AND IS CROSSED BY SEVERAL SEWER LINES. THE STREAM IS CURRENTLY IN THE PROCESS OF DOWNCUTTING TO SEWER LINES AND SEVERAL STORMWATER OUTFALLS HAVE COLLAPSED INTO THE STREAM.

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 STEAMS BANKS.

DURING THE 2008 STREAM ASSESSMENT THERE WAS A BROKEN FIRE HYDRANT OBSERVED DRAINING DIRECTLY INTO THE STREAM. THERE WAS EXTENSIVE SILT AND CLAY PRESENT IN BOTH THE STREAM BED AND ALONG THE BANKS OF THE STREAM PRECEDING THE RIPARIAN BUFFER ZONE. THERE WAS AN ABUNDANCE OF TRASH PRESENT IN AND AROUND THE STREAM ALONG WITH DOWNED (MATURE, OLD) TREES.

DURING THE 2010 HABITAT ASSESSMENT COPIOUS AMOUNTS OF TRASH AND DEBRIS PRESENT. MOLTING SOIL OBSERVED, LOTS OF YOUNG TREES

WERE DOWNED.

Detail Report for FORT DAVIS TRIBUTARY

ID: DCTFD01R_00 **State:** DC - 2012 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	FORT DAVIS TRIBUTARY	
	Location: 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.	**Water Type:** RIVER **Size:** 1.4 MILES **Next Scheduled Montitoring Date:** N/A

Use Information

	Attainment Status	Uses
Assessed:	Insufficient Information	Primary Contact Recreation
	Not Supporting	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish
Not Assessed:	Not Assessed	Navigation 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
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Arsenic	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
BOD, Biochemical oxygen demand	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Copper	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Fecal Coliform	Primary Contact Recreation	Yes	

Lead	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Zinc	Protection and Propagation of Fish, Shellfish and Wildlife	Yes

Comments On:

Overall Assessment

EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2007-2011) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

IN 2007 THE WATER QUALITY STANDARDS CHANGED THE PARAMETERS FOR EVALUATING PRIMARY AND SECONDARY CONTACT.

EVALUATION OF FORT DAVIS' PRIMARY CONTACT (SWIMMABLE) IS BASED ON E.COLI DATA COLLECTED AND ANALYZED OVER A FOUR YEAR PERIOD, 2008-2011. WITH AN AVERAGE E.COLI COUNT OF 721 MPN/100ML, FOR 2008-2011. THERE IS INSUFFICIENT INFORMATION TO DETERMINE SUPPORT FOR THE SWIMMABLE USE DESIGNATION.

SECONDARY CONTACT RECREATION USE WAS NOT ASSESSED; THERE IS NO CRITERIA IN THE 2007 WATER QUALITY STANDARDS TO DETERMINE USE SUPPORT.

THE AQUATIC LIFE USE SUPPORT IS NOT SUPPORTED. THE DECISION IS BASED ON THE DC STREAM SURVEY CONDUCTED IN 2002 AND CONVENTIONAL POLLUNTANT DATA. TEMPERATURE, PH AND DISSOLVED OXYGEN VIOLATED THE WATER QUALITY STANDARDS 0%, 8.7%, AND 22.73% 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.

THE 2008 HABITAT ASSESSMENT REVEALED STREAM BED IS HEAVILY SILTED WITH A STRONG SULFUROUS ODOR EMANATING FROM STREAM. ONLY 50 METERS OF THE 75 METER REACH WAS SAMPLEABLE. PIPED PORTION OF THE STREAM IS CLOGGED WITH WOODY DEBRIS AND TRASH, SLOWING STREAM FLOW. THE STREAM RUNS PARALLEL TO A MAJOR ROAD. THERE WAS NO DISTINCT STREAM BED FOR PORTIONS OF THE 75 METER REACH.

THE 2010 STREAM ASSESSMENT REVEALED NO DEFINED STREAM BED, AND IMPASSABLE BEYOND THE 45M STRETCH.

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 FORT DUPONT CREEK

ID: DCTDU01R_00 **State:** DC - 2012 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	FORT DUPONT CREEK	
	Location: 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.	**Water Type:** RIVER **Size:** 1.7 MILES **Next Scheduled Montitoring Date:** N/A

Use Information

	Attainment Status	Uses
Assessed:	Insufficient Information	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife
	Not Supporting	Protection of Human Health related to Consumption of Fish and Shellfish
Not Assessed:	Not Assessed	Navigation 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
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Arsenic	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Copper	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Fecal Coliform	Primary Contact Recreation	Yes	
Lead	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Zinc	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	

Comments On:

Overall Assessment

EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2007-2011) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

IN 2007 THE WATER QUALITY STANDARDS CHANGED THE PARAMETERS FOR EVALUATING PRIMARY AND SECONDARY CONTACT.

EVALUATION OF FORT DUPONT'S PRIMARY CONTACT (SWIMMABLE) IS BASED ON E.COLI DATA COLLECTED AND ANALYZED OVER A FOUR YEAR PERIOD, 2008-2011. WITH AN AVERAGE E. COLI COUNT OF 377 MPN/100ML, FOR 2008-2011. THERE IS INSUFFICIENT INFORMATION TO DETERMINE SUPPORT FOR THE SWIMMABLE USE DESIGNATION.

SECONDARY CONTACT RECREATION USE WAS NOT ASSESSED; THERE IS NO CRITERIA IN THE 2007 WATER QUALITY STANDARDS TO DETERMINE USE SUPPORT.

THE AQUATIC LIFE USE SUPPORT HAS INSUFFICIENT INFORMATION TO DETERMINE ITS USE. TEMPERATURE, PH AND DISSOLVED OXYGEN VIOLATED THE WATER QUALITY STANDARDS 0%, 5.0%, AND 10.53% 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 MATINTAINENCE YARD ON THE SITE.

DURING THE 2008 STREAM ASSESSMENT THERE WAS A HEAVY SEDIMENT LOAD (SILT, CLAY, SAND) PRESENT, WITH AN IRON FLOCCULANTS COATING. THERE ARE TWO WETLAND GROUND WATER SEEPS THAT DRAIN INTO THE STREAM THAT WERE OBSERVED.

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.

Detail Report for FORT STANTON TRIBUTARY

ID: DCTFS01R_00 **State:** DC - 2012 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	**FORT STANTON TRIBUTARY**	
	Location: 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.	**Water Type:** RIVER **Size:** 1.3 MILES **Next Scheduled Montitoring Date:** N/A

Use Information

	Attainment Status	Uses
Assessed:	Insufficient Information	Primary Contact Recreation
	Not Supporting	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish
Not Assessed:	Not Assessed	Navigation 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
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
Arsenic	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Chlordane	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Combination Benthic/Fishes Bioassessments	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	
Combined Biota/Habitat Bioassessments	Protection of Human Health related to Consumption of Fish and Shellfish	Yes	

Copper	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
DDD	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
DDE	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
DDT	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Dieldrin	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Fecal Coliform	Primary Contact Recreation	Yes
Heptachlor epoxide	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Lead	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Particle distribution (Embeddedness)	Protection of Human Health related to Consumption of Fish and Shellfish	Yes
Polychlorinated biphenyls	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Zinc	Protection and Propagation of Fish, Shellfish and Wildlife	Yes

Source Information

Sources	Associated Causes	Confirmed?
Hydrostructure Impacts on Fish Passage	Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments Particle distribution (Embeddedness)	
Impacts from Hydrostructure Flow Regulation/modification	Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments Particle distribution (Embeddedness)	
Residential Districts	Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments Particle distribution (Embeddedness)	
Site Clearance (Land Development or Redevelopment)	Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments Particle distribution (Embeddedness)	

Comments On:

Overall Assessment

EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR

STATISTICAL EVALUATION (2007-2011) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

IN 2007 THE WATER QUALITY STANDARDS CHANGED THE PARAMETERS FOR EVALUATING PRIMARY AND SECONDARY CONTACT.

EVALUATION OF FORT STANTON'S PRIMARY CONTACT (SWIMMABLE) IS BASED ON E.COLI DATA COLLECTED AND ANALYZED OVER A FOUR YEAR PERIOD, 2008-2011. WITH AN AVERAGE E. COLI COUNT OF 411 MPN/100ML, FOR 2008-2011.

SECONDARY CONTACT RECREATION USE WAS NOT ASSESSED; THERE IS NO CRITERIA IN THE 2007 WATER QUALITY STANDARDS TO DETERMINE USE SUPPORT.

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

DURING THE 2007 HABITAT ASSESSMENT A NEW HOUSING DEVELOPMENT WAS ON THE LEFT SIDE OF THE BANK FACING UPSTREAM, THERE IS EVIDENCE OF SEVERE EMBEDDEDNESS AND STREAMBANK EROSION. THERE IS A NEW ROAD COVERT. FALLEN TREES ARE PREVALENT.

THE 2009 ASSESSMENT REVEALED EXTENSIVE SILT, SAND, CLAY, OIL, AND IRON FLOCCULANT PRESENT. THERE WAS AN ABUNDANCE OF TRASH PRESENT. A MAJORITY OF BOTH BANKS WERE SEVERELY ERODED. IT WAS NOTED THE APPEARANCE IS MORE LIKE CONSTRUCTION DRAINAGE THAN AN ACTUAL STREAM. DC WASA CUT PATH TO STREAM ON RIGHT BANK TO GET TRASH REMOVAL EQUIPMENT INTO STREAM AREA.

THE 2010 MACROINVERTEBRATE ASSESSMENT WHICH WAS COLLECTED DURING THE 2009 DCSS SAMPLE PERIOD REVEALED CHIRONOMIDAE AS THE DOMINANT TAXA, WITH HIGH DIVERSITY.

THE 2011 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. 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 FOUNDRY BRANCH

ID: DCTFB02R_00 **State:** DC - 2012 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	FOUNDRY BRANCH	
	Location: 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	**Water Type:** RIVER **Size:** 0.8 MILES **Next Scheduled Montitoring Date:** N/A

Use Information

	Attainment Status	Uses
Assessed:	Insufficient Information	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife
	Not Supporting	Protection of Human Health related to Consumption of Fish and Shellfish
Not Assessed:	Not Assessed	Navigation 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
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Arsenic	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Copper	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Dissolved oxygen saturation	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Fecal Coliform	Primary Contact Recreation	Yes	

Lead	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Other flow regime alterations	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Zinc	Protection and Propagation of Fish, Shellfish and Wildlife	Yes

Source Information

Sources	Associated Causes	Confirmed?
Impacts from Hydrostructure Flow Regulation/modification	Other flow regime alterations	

Comments On:

Overall Assessment

EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2007-2011) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

IN 2007 THE WATER QUALITY STANDARDS CHANGED THE PARAMETERS FOR EVALUATING PRIMARY AND SECONDARY CONTACT.

EVALUATION OF FOUNDRY BRANCH'S PRIMARY CONTACT (SWIMMABLE) IS BASED ON E.COLI DATA COLLECTED AND ANALYZED OVER A FOUR YEAR PERIOD, 2008-2011. WITH AN AVERAGE E. COLI COUNT OF 358 MPN/100 ML, FOR 2008-2011. THERE IS INSUFFICIENT INFORMATION TO DETERMINE SUPPORT FOR THE SWIMMABLE USE DESIGNATION.

SECONDARY CONTACT RECREATION USE WAS NOT ASSESSED; THERE IS NO CRITERIA IN THE 2007 WATER QUALITY STANDARDS TO DETERMINE USE SUPPORT.

THE AQUATIC LIFE USE SUPPORT HAS INSUFFICIENT INFORMATION TO DETERMINE ITS USE. TEMPERATURE, PH AND DISSOLVED OXYGEN VIOLATED THE WATER QUALITY STANDARDS 0%, 11.76%, AND 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 FOUNDARY 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.

FOUNDARY 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.

FOUNDARY BRANCH WAS VISITED FOR AN ASSESSMENT IN AUGUST 2002. THE MONITORING SITE WAS DRY AND NO BIOLOGICAL ASSESSMENT COULD OCCUR.

DURING THE 2008 STREAM ASSESSMENT THE FOLLOWING OBSERVATIONS WERE MADE: OIL PRESENT, MAIN STREAM IS PIPED. THERE ARE LARGE AMOUNTS OF ALGAE PRESENT ON ROCKS IN STREAM BED. RIPARIAN BUFFER ZONE COMPRISED OF EMERGENT VEGETATION, YOUNG AND OLD DECIDUOUS TREES, AND SHRUBS AND GRASSES.

DURING THE 2010 HABITAT ASSESSMENT SULFOUROUS SMELL OBSERVED AND NO AQUATIC LIFE PRESENT.

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).

Detail Report for HICKEY RUN

ID: DCTHR01R_00 **State:** DC - 2012 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	**HICKEY RUN**	
	Location: HICKEY RUN IS A WESTERN TRIBUTARY OF THE ANACOSTIA RIVER WHICH RUNS THROUGH THE NAT'L ARBORETUM (THR01).	**Water Type:** RIVER **Size:** 0.9 MILES **Next Scheduled Montitoring Date:** N/A

Use Information		
	Attainment Status	**Uses**
Assessed:	Insufficient Information	Primary Contact Recreation
	Not Supporting	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish
Not Assessed:	Not Assessed	Navigation 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
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 and Propagation of Fish, Shellfish and Wildlife	Yes	
Chlorine, Residual (Chlorine Demand)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Combination Benthic/Fishes Bioassessments	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	

Combined Biota/Habitat Bioassessments	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
DDD	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
DDE	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
DDT	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Debris/Floatables/Trash	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Dieldrin	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Fecal Coliform	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Heptachlor epoxide	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Oil and Grease	Protection and Propagation of Fish, Shellfish and Wildlife	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 and Propagation of Fish, Shellfish and Wildlife	Yes
Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes

Source Information

Sources	Associated Causes	Confirmed?
Channelization	Alteration in stream-side or littoral vegetative covers Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments Other flow regime alterations Particle distribution (Embeddedness)	
Illegal Dumps or Other Inappropriate Waste Disposal	Alteration in stream-side or littoral vegetative covers Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments Other flow regime alterations Particle distribution (Embeddedness)	
Impacts from Hydrostructure Flow Regulation/modification	Alteration in stream-side or littoral vegetative covers Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments	

	Debris/Floatables/Trash Other flow regime alterations Particle distribution (Embeddedness)
Municipal (Urbanized High Density Area)	Alteration in stream-side or littoral vegetative covers Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments Debris/Floatables/Trash Other flow regime alterations Particle distribution (Embeddedness)

Comments On:

Overall Assessment

EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2007-2011) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

IN 2007 THE WATER QUALITY STANDARDS CHANGED THE PARAMETERS FOR EVALUATING PRIMARY AND SECONDARY CONTACT.

HICKEY RUN'S PRIMARY CONTACT (SWIMMABLE) IS BASED ON E.COLI DATA COLLECTED AND ANALYZED OVER A TWO YEAR PERIOD, 2010-2011. WITH AN AVERAGE E. COLI COUNT OF 163 MPN/100ML, FOR 2010-2011. THERE IS INSUFFICIENT INFORMATION TO DETERMINE SUPPORT FOR THE SWIMMABLE USE DESIGNATION.

SECONDARY CONTACT RECREATION USE WAS NOT ASSESSED; THERE IS NO CRITERIA IN THE 2007 WATER QUALITY STANDARDS TO DETERMINE USE SUPPORT.

THE AQUATIC LIFE USE SUPPORT IS NOT SUPPORTED. THE DECISION IS BASED ON THE DC STREAM SURVEY CONDUCTED IN 2010 AND CONVENTIONAL POLLUNTANT DATA. TEMPERATURE, PH AND DISSOLVED OXYGEN VIOLATED THE WATER QUALITY STANDARDS 0%, 1.72%, AND 3.45% 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 BRFORE 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.

DURING THE 2007 HABITAT ASSESSMENT THE LEFT BANK STABILITY AND RIPARIAN VEGETATION INCREASED FROM THE 2003 ASSESSMENT. EVIDENCE OF CHANNELIZATION THROUGHOUT THE ENTIRE STRETCH.

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 2010 AND 2011 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.

Detail Report for KINGMAN LAKE

ID: DCAKL00L_00 **State:** DC - 2012 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	**KINGMAN LAKE**	
	Location: 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.	**Water Type:** FRESHWATER LAKE **Size:** 102.7 ACRES **Next Scheduled Montitoring Date:** N/A **Trophic Status:** N/A **Public Lake:** No

Use Information

	Attainment Status	Uses
Assessed:	Fully Supporting	Navigation
	Insufficient Information	Primary Contact Recreation
	Not Supporting	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish
Not Assessed:	Not Assessed	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
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Arsenic	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
BOD, Biochemical oxygen demand	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Chlordane	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	

Copper	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
DDD	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
DDE	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
DDT	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Dieldrin	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Dissolved oxygen saturation	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Fecal Coliform	Primary Contact Recreation	Yes
Heptachlor epoxide	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Lead	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Oil and Grease	Primary Contact Recreation	Yes
Polychlorinated biphenyls	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Total Suspended Solids (TSS)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Zinc	Protection and Propagation of Fish, Shellfish and Wildlife	Yes

Comments On:

Overall Assessment

EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2007-2011) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

IN 2007 THE WATER QUALITY STANDARDS CHANGED THE PARAMETERS FOR EVALUATING PRIMARY AND SECONDARY CONTACT USE.

EVALUATION OF KINGMAN LAKE'S PRIMARY CONTACT (SWIMMABLE) IS BASED ON E.COLI DATA COLLECTED AND ANALYZED OVER A THREE YEAR

PERIOD, 2008-2010. WITH AN AVERAGE E. COLI COUNT OF 465.6 MPN/100ML, FOR 2008-2011. THERE IS INSUFFICIENT DATA TO DETERMINE SUPPORT FOR THE SWIMMABLE USE DESIGNATION.

SECONDARY CONTACT RECREATION USE WAS NOT ASSESSED; THERE IS NO CRITERIA IN THE 2007 WATER QUALITY STANDARDS TO DETERMINE USE SUPPORT.

THE AQUATIC LIFE USE IS NOT SUPPORTED. TEMPERATURE, PH, AND DISSOLVED OXYGEN VIOLATED THE WATER QUALITY STANDARDS 0%, 3.09%, AND 12.5% 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.

Detail Report for KLINGLE VALLEY

ID: DCTKV01R_00 **State:** DC - 2012 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	**KLINGLE VALLEY**	
	Location: 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.	**Water Type:** RIVER **Size:** 0.8 MILES **Next Scheduled Montitoring Date:** N/A

Use Information

	Attainment Status	Uses
Assessed:	Insufficient Information	Primary Contact Recreation
	Not Supporting	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish
Not Assessed:	Not Assessed	Navigation 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
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 and Propagation of Fish, Shellfish and Wildlife	Yes	
Combination Benthic/Fishes Bioassessments	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
DDD	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	

DDE	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
DDT	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Debris/Floatables/Trash	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Dieldrin	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Fecal Coliform	Primary Contact Recreation	Yes
Heptachlor epoxide	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Other flow regime alterations	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Polychlorinated biphenyls	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes

Source Information

Sources	Associated Causes	Confirmed?
Residential Districts	Alteration in stream-side or littoral vegetative covers Combination Benthic/Fishes Bioassessments Debris/Floatables/Trash Other flow regime alterations	
Wet Weather Discharges (Non-Point Source)	Alteration in stream-side or littoral vegetative covers Combination Benthic/Fishes Bioassessments Debris/Floatables/Trash Other flow regime alterations	
Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO)	Alteration in stream-side or littoral vegetative covers Combination Benthic/Fishes Bioassessments Debris/Floatables/Trash Other flow regime alterations	
Yard Maintenance	Alteration in stream-side or littoral vegetative covers Combination Benthic/Fishes Bioassessments Debris/Floatables/Trash Other flow regime alterations	

Comments On:

Overall Assessment

EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR

STATISTICAL EVALUATION (2007-2011) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

IN 2007 THE WATER QUALITY STANDARDS CHANGED THE PARAMETERS FOR EVALUATING PRIMARY AND SECONDARY CONTACT.

EVALUATION OF KLINGLE VALLEY'S PRIMARY CONTACT (SWIMMABLE) IS BASED ON E.COLI DATA COLLECTED AND ANALYZED OVER A FOUR YEAR PERIOD, 2008-2011. WITH AN AVERAGE E. COLI COUNT OF 395 MPN/100ML, FOR 2008-2011. THERE IS INSUFFICIENT INFORMATION TO DETERMINE SUPPORT FOR THE SWIMMABLE USE DESIGNATION.

SECONDARY CONTACT RECREATION USE WAS NOT ASSESSED; THERE IS NO CRITERIA IN THE 2007 WATER QUALITY STANDARDS TO DETERMINE USE SUPPORT.

THE AQUATIC LIFE USE SUPPORT IS NOT SUPPORTED. THE DECISION IS BASED ON THE DC STREAM SURVEY CONDUCTED IN 2010 AND CONVENTIONAL POLLUNTANT DATA. TEMPERATURE, PH AND DISSOLVED OXYGEN VIOLATED THE WATER QUALITY STANDARDS 0%, 0%, AND 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 2007 HABITAT ASSESSMENT REVEALED MODERATE BANK EROSION ON THE LEFT SIDE FACING UPSTREAM.

THE 2009 ASSESSMENT SITE'S RIGHT BANK IS A CONCRETE RETENTION BARRIER, COVERING 75% OF THE ASSESSMENT SITE.

THE 2010 MACROINVERTEBRATE ASSESSMENT (SAMPLES COLLECTED IN 2009) REVEALED CHIRONOMIDAE AS THE DOMINANT TAXA. HYDR0PSYCHIDAE AND BAETIDAE WERE ALSO PRESENT.

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. 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 LUZON BRANCH

ID: DCTLU01R_00 **State:** DC - 2012 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	**LUZON BRANCH**	
	Location: THE STREAM FLOWS THROUGH A SMALL PARK AND ENTERS ROCK CREEK AT JOYCE ROAD.	**Water Type:** RIVER **Size:** 1 MILES **Next Scheduled Montitoring Date:** N/A

Use Information

	Attainment Status	Uses
Assessed:	Insufficient Information	Primary Contact Recreation
	Not Supporting	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish
Not Assessed:	Not Assessed	Navigation 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
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 and Propagation of Fish, Shellfish and Wildlife	Yes	
Combination Benthic/Fishes Bioassessments	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Combined Biota/Habitat Bioassessments	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	

DDD	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
DDE	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
DDT	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Dieldrin	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Fecal Coliform	Primary Contact Recreation	Yes
Heptachlor epoxide	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Other flow regime alterations	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Polychlorinated biphenyls	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes

Source Information

Sources	Associated Causes	Confirmed?
CERCLA NPL (Superfund) Sites	Alteration in stream-side or littoral vegetative covers Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments Other flow regime alterations	
Discharges from Municipal Separate Storm Sewer Systems (MS4)	Alteration in stream-side or littoral vegetative covers Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments Other flow regime alterations	
Impacts from Hydrostructure Flow Regulation/modification	Alteration in stream-side or littoral vegetative covers Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments Other flow regime alterations	
Loss of Riparian Habitat	Alteration in stream-side or littoral vegetative covers Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments Other flow regime alterations	
Residential Districts	Alteration in stream-side or littoral vegetative covers Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments Other flow regime alterations	

Comments On:

Overall Assessment

EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2007-2011) OF CONVENTIONAL WATER QUALITY DATA COLLECTED BY THE MAB.

IN 2007 THE WATER QUALITY STANDARDS CHANGED THE PARAMETERS FOR EVALUATING PRIMARY AND SECONDARY CONTACT.

EVALUATION OF THIS SECTION OF LUZON BRANCH'S PRIMARY CONTACT (SWIMMABLE) IS BASED ON E.COLI DATA COLLECTED AND ANALYZED OVER A FOUR YEAR PERIOD, 2008-2011. WITH AN AVERAGE E. COLI COUNT OF 897 MPN/100ML, FOR 2008-2011. THERE IS INSUFFICIENT INFORMATION TO DETERMINE SUPPORT FOR THE SWIMMABLE USE DESIGNATION.

SECONDARY CONTACT RECREATION USE WAS NOT ASSESSED; THERE IS NO CRITERIA IN THE 2007 WATER QUALITY STANDARDS TO DETERMINE USE SUPPORT.

THE AQUATIC LIFE USE SUPPORT IS NOT SUPPORTED. THE DECISION IS BASED ON THE DC STREAM SURVEY CONDUCTED IN 2002 AND CONVENTIONAL POLLUNTANT DATA. TEMPERATURE, PH AND DISSOLVED OXYGEN VIOLATED THE WATER QUALITY STANDARDS 0%, 0%, AND 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 2008 AND 2010 STREAM ASSESSMENTS ALGAE WAS PRESENT ON ROCKS, AND ABUNDANCE OF LEECHES, AND AN ABUNDANCE OF PIEDMONT ROCKS IN THE STEAM. THERE IS A GOLF COURSE NEAR THE STREAM.

Detail Report for MELVIN HAZEN VALLEY BRANCH

ID: DCTMH01R_00 **State:** DC - 2012 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	**MELVIN HAZEN VALLEY BRANCH**	
	Location: THE STREAM FLOWS THROUGH A SMALL PARK AND ENTERS ROCK CREEK AT JOYCE ROAD.	**Water Type:** RIVER **Size:** 1 MILES **Next Scheduled Montitoring Date:** N/A

Use Information

	Attainment Status	Uses
Assessed:	Insufficient Information	Primary Contact Recreation
	Not Supporting	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish
Not Assessed:	Not Assessed	Navigation 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
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Chlordane	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Combination Benthic/Fishes Bioassessments	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Combined Biota/Habitat Bioassessments	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
DDD	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	

DDE	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
DDT	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Dieldrin	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Fecal Coliform	Primary Contact Recreation	Yes
Heptachlor epoxide	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Polychlorinated biphenyls	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes

Source Information

Sources	Associated Causes	Confirmed?
Residential Districts	Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments	
Yard Maintenance	Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments	

Comments On:

Overall Assessment

EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2007-2011) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

IN 2007 THE WATER QUALITY STANDARDS CHANGED THE PARAMETERS FOR EVALUATING PRIMARY AND SECONDARY CONTACT.

EVALUATION OF MELVIN HAZEN'S PRIMARY CONTACT (SWIMMABLE) IS BASED ON E.COLI DATA COLLECTED AND ANALYZED OVER A FOUR YEAR PERIOD, 2008-2011. WITH AN AVERAGE E. COLI COUNT OF 820 MPN/100ML, FOR 2008-2011. THERE IS INSUFFICIENT INFORMATION TO DETERMINE SUPPORT FOR THE SWIMMABLE USE DESIGNATION.

SECONDARY CONTACT RECREATION USE WAS NOT ASSESSED; THERE IS NO CRITERIA IN THE 2007 WATER QUALITY STANDARDS TO DETERMINE USE

SUPPORT.

THE AQUATIC LIFE USE SUPPORT IS NOT SUPPORTED. THE DECISION IS BASED ON THE DC STREAM SURVEY CONDUCTED IN 2002 AND CONVENTIONAL POLLUNTANT DATA. TEMPERATURE, PH AND DISSOLVED OXYGEN VIOLATED THE WATER QUALITY STANDARDS 0%, 0%, AND 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 2008 STREAM ASSESSMENT MELVIN HAZEN WAS OBSERVED TO HAVE EXCELLENT HABITAT PRESENT IN THE 75 METER STRETCH. GOOD ABUNDANCE OF PIEDMONT ROCKS PRESENT IN STREAM. THERE WAS A HIKERS TRAIL OBSERVED RUNNING PARALLEL TO THE STREAM.

DURING THE 2010 STREAM ASSESSMENT THE RIPARIAN BUFFER ZONE HAS BEEN REMOVED JUST BELOW THE ZERO METER PORTION OF THE STREAM SEGMENT.

Detail Report for NASH RUN

ID: DCTNA01R_00 **State:** DC - 2012 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	**NASH RUN**	
	Location: 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	**Water Type:** RIVER **Size:** 0.1 MILES **Next Scheduled Montitoring Date:** N/A

Use Information

	Attainment Status	Uses
Assessed:	Insufficient Information	Primary Contact Recreation
	Not Supporting	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish
Not Assessed:	Not Assessed	Navigation 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
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Arsenic	Primary Contact Recreation	Yes	
Chlordane	Primary Contact Recreation	Yes	
Combination Benthic/Fishes Bioassessments	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Copper	Primary Contact Recreation	Yes	
DDD	Primary Contact Recreation	Yes	

DDE	Primary Contact Recreation	Yes
DDT	Primary Contact Recreation	Yes
Dieldrin	Primary Contact Recreation	Yes
Fecal Coliform	Primary Contact Recreation	Yes
Heptachlor epoxide	Primary Contact Recreation	Yes
Lead	Primary Contact Recreation	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
Physical substrate habitat alterations	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Polychlorinated biphenyls	Primary Contact Recreation	Yes
Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	Primary Contact Recreation	Yes
Zinc	Primary Contact Recreation	Yes

Source Information

Sources	Associated Causes	Confirmed?
Channelization	Combination Benthic/Fishes Bioassessments Other flow regime alterations Particle distribution (Embeddedness) Physical substrate habitat alterations	
Hydrostructure Impacts on Fish Passage	Combination Benthic/Fishes Bioassessments Other flow regime alterations Particle distribution (Embeddedness) Physical substrate habitat alterations	
Illegal Dumping	Combination Benthic/Fishes Bioassessments Other flow regime alterations Particle distribution (Embeddedness) Physical substrate habitat alterations	
Illegal Dumps or Other Inappropriate Waste Disposal	Combination Benthic/Fishes Bioassessments Other flow regime alterations Particle distribution (Embeddedness) Physical substrate habitat alterations	
Impacts from Hydrostructure Flow Regulation/modification	Combination Benthic/Fishes Bioassessments Other flow regime alterations Particle distribution (Embeddedness) Physical substrate habitat alterations	
Residential Districts	Combination Benthic/Fishes Bioassessments	

Other flow regime alterations
Particle distribution (Embeddedness)
Physical substrate habitat alterations

Comments On:

Overall Assessment

EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2007-2011) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

IN 2007 THE WATER QUALITY STANDARDS CHANGED THE PARAMETERS FOR EVALUATING PRIMARY AND SECONDARY CONTACT.

EVALUATION OF NASH RUN'S PRIMARY CONTACT (SWIMMABLE) IS BASED ON E.COLI DATA COLLECTED AND ANALYZED OVER A FOUR YEAR PERIOD, 2008-2011. WITH AN AVERAGE E. COLI COUNT OF 764 MPN/100ML, FOR 2008-2011. THERE IS INSUFFICIENT INFORMATION TO DETERMINE SUPPORT FOR THE SWIMMABLE USE DESIGNATION.

SECONDARY CONTACT RECREATION USE WAS NOT ASSESSED; THERE IS NO CRITERIA IN THE 2007 WATER QUALITY STANDARDS TO DETERMINE USE SUPPORT.

THE AQUATIC LIFE USE SUPPORT IS NOT SUPPORTED. THE DECISION IS BASED ON THE DC STREAM SURVEY CONDUCTED IN 2010 AND CONVENTIONAL POLLUNTANT DATA. TEMPERATURE, PH AND DISSOLVED OXYGEN VIOLATED THE WATER QUALITY STANDARDS 0%, 0%, AND 5.26% 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 CLASSIFICAION.

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 2007 HABITAT ASSESSMENT IN NASH RUN REVEALED THE HABITAT HAD BEEN SEVERELY IMPACTED. EXPOSURE TO TOXICS POSSIBLY DEGRADED THE STREAM. IMPROVING THE HABITAT COULD IMPROVE THE OVERALL QUALITY OF THE STREAM. THE HABITAT QUALITY HAS NOT IMPROVED FROM THE 2003 ASSESSMENT.

THE 2009 ASSESSMENT REVEALED HIGH TRASH VOLUMES AND DOWNED TREES AT THE 75 METER PORTION OF THE STREAM ACTING AS A TRASH TRAP.

THE 2010 MACROINVERTEBRATE ASSESSMENT (SAMPLES COLLECTED IN 2009) REVEALED CHIRONOMIDAE AS THE DOMINANT TAXA. NO SENSITIVE ORGANISMS PRESENT.

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. 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 NORMANSTONE CREEK

ID: DCTNS01R_00 **State:** DC - 2012 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	NORMANSTONE CREEK	
	Location: 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	**Water Type:** RIVER **Size:** 0.8 MILES **Next Scheduled Montitoring Date:** N/A

Use Information

	Attainment Status	Uses
Assessed:	Insufficient Information	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife
	Not Supporting	Protection of Human Health related to Consumption of Fish and Shellfish
Not Assessed:	Not Assessed	Navigation 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
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Chlordane	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Combination Benthic/Fishes Bioassessments	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
DDD	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
DDE	Protection and Propagation of Fish,	Yes	

	Shellfish and Wildlife	
DDT	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Debris/Floatables/Trash	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Dieldrin	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Fecal Coliform	Primary Contact Recreation	Yes
Heptachlor epoxide	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Other flow regime alterations	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Polychlorinated biphenyls	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes

Source Information

Sources	Associated Causes	Confirmed?
CERCLA NPL (Superfund) Sites	Combination Benthic/Fishes Bioassessments Debris/Floatables/Trash Other flow regime alterations	
Hydrostructure Impacts on Fish Passage	Combination Benthic/Fishes Bioassessments Debris/Floatables/Trash Other flow regime alterations	
Impacts from Hydrostructure Flow Regulation/modification	Combination Benthic/Fishes Bioassessments Debris/Floatables/Trash Other flow regime alterations	
Yard Maintenance	Combination Benthic/Fishes Bioassessments Debris/Floatables/Trash Other flow regime alterations	

Comments On:

Overall Assessment

EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2007-2011) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

IN 2007 THE WATER QUALITY STANDARDS CHANGED THE PARAMETERS FOR EVALUATING PRIMARY AND SECONDARY CONTACT.

EVALUATION OF NORMANSTONE'S PRIMARY CONTACT (SWIMMABLE) IS BASED ON E.COLI DATA COLLECTED AND ANALYZED OVER A FOUR YEAR PERIOD, 2008-2011. WITH AN AVERAGE E.COLI COUNT OF 546 MPN/100ML, FOR 2008-2011. THERE IS INSUFFICIENT INFORMATION TO DETERMINE SUPPORT FOR THE SWIMMABLE USE DESIGNATION.

SECONDARY CONTACT RECREATION USE WAS NOT ASSESSED; THERE IS NO CRITERIA IN THE 2007 WATER QUALITY STANDARDS TO DETERMINE USE SUPPORT.

THE AQUATIC LIFE USE SUPPORT HAS INSUFFICIENT INFORMATION OT DETERMINE ITS USE. TEMPERATURE, PH AND DISSOLVED OXYGEN VIOLATED THE WATER QUALITY STANDARDS 0%, 0%, AND 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.

DURING THE 2007 HABITAT ASSESSMENT A NEW HOUSING DEVELOPMENT WAS ON THE LEFT SIDE OF THE BANK FACING UPSTREAM, THERE IS EVIDENCE OF SEVERE EMBEDDEDNESS AND STREAMBANK EROSION. THERE IS A NEW ROAD COVERT. FALLEN TREES ARE PREVALENT.

THE 2009 ASSESSMENT REVEALED LARGE CHUNKS OF CONCRETE (BROKEN STORM/SEWER PIPES) IN THE STREAM BED. STREAM WAS MALODOROUS, WITH A STRONG SMELL OF SULFUR. THE LEFT BANK IS SEVERELY ERODED.

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

DURING THE 2011 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.

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 OXON RUN

ID: DCTOR01R_00 **State:** DC - 2012 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	**OXON RUN**	
	Location: 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	**Water Type:** RIVER **Size:** 3.2 MILES **Next Scheduled Montitoring Date:** N/A

Use Information

	Attainment Status	Uses
Assessed:	Insufficient Information	Primary Contact Recreation
	Not Supporting	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish
Not Assessed:	Not Assessed	Navigation 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
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Arsenic	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Chlordane	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Combination Benthic/Fishes Bioassessments	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Copper	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	

DDT	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Debris/Floatables/Trash	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Dieldrin	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Fecal Coliform	Primary Contact Recreation	Yes
Heptachlor epoxide	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Lead	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Particle distribution (Embeddedness)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Zinc	Protection and Propagation of Fish, Shellfish and Wildlife	Yes

Source Information

Sources	Associated Causes	Confirmed?
Channelization	Combination Benthic/Fishes Bioassessments Debris/Floatables/Trash Particle distribution (Embeddedness)	
Hydrostructure Impacts on Fish Passage	Combination Benthic/Fishes Bioassessments Debris/Floatables/Trash Particle distribution (Embeddedness)	
Illegal Dumping	Combination Benthic/Fishes Bioassessments Debris/Floatables/Trash Particle distribution (Embeddedness)	
Illegal Dumps or Other Inappropriate Waste Disposal	Combination Benthic/Fishes Bioassessments Debris/Floatables/Trash Particle distribution (Embeddedness)	
Impacts from Hydrostructure Flow Regulation/modification	Combination Benthic/Fishes Bioassessments Debris/Floatables/Trash Particle distribution (Embeddedness)	
Post-development Erosion and Sedimentation	Combination Benthic/Fishes Bioassessments Debris/Floatables/Trash Particle distribution (Embeddedness)	
Residential Districts	Combination Benthic/Fishes Bioassessments Debris/Floatables/Trash Particle distribution (Embeddedness)	

Comments On:

Overall Assessment

EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2007-2011) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

IN 2007 THE WATER QUALITY STANDARDS CHANGED THE PARAMETERS FOR EVALUATING PRIMARY AND SECONDARY CONTACT.

EVALUATION OF OXON RUN'S PRIMARY CONTACT (SWIMMABLE) IS BASED ON E.COLI DATA COLLECTED AND ANALYZED OVER A FOUR YEAR PERIOD, 2008-2011. WITH AN AVERAGE E. COLI COUNT OF 520 MPN/100ML, FOR 2008-2011. THERE IS INSUFFICIENT INFORMATION TO DETERMINE SUPPORT FOR THE SWIMMABLE USE DESIGNATION.

SECONDARY CONTACT RECREATION USE WAS NOT ASSESSED; THERE IS NO CRITERIA IN THE 2007 WATER QUALITY STANDARDS TO DETERMINE USE SUPPORT.

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 AND DISSOLVED OXYGEN VIOLATED THE WATER QUALITY STANDARDS 0%, 5.26% AND 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.

OBSERVATIONS FROM THE 2008 STREAM ASSESSMENT INCLUDE OIL SHEEN PRESENT ON SURFACE AT 75 METER STRETCH. STREAM IS BRAIDED AT THE MACRO INVERTEBRATE AND FIN-FISH SAMPLING LOCATIONS. STREAM SAMPLING SITE RUNS PARALLEL TO A COVERED LAND FILL. STREAM WAS SAMPLED IN WESTERN BRAID UP STREAM OF CONFLUENCE. THE 75 METER PORTION OF THE REACH WAS EXTREMELY STRAIGHT.

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.

Detail Report for PINEHURST BRANCH

ID: DCTPI01R_00 **State:** DC - 2012 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	**PINEHURST BRANCH**	
	Location: 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	**Water Type:** RIVER **Size:** 1.5 MILES **Next Scheduled Montitoring Date:** N/A

Use Information

	Attainment Status	Uses
Assessed:	Insufficient Information	Primary Contact Recreation
	Not Supporting	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish
Not Assessed:	Not Assessed	Navigation 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
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Chlordane	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Combination Benthic/Fishes Bioassessments	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
DDD	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
DDE	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	

DDT	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Dieldrin	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Fecal Coliform	Primary Contact Recreation	Yes
Heptachlor epoxide	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Polychlorinated biphenyls	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes

Source Information

Sources	Associated Causes	Confirmed?
Residential Districts	Combination Benthic/Fishes Bioassessments	
Yard Maintenance	Combination Benthic/Fishes Bioassessments	

Comments On:

Overall Assessment

EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2007-2011) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

IN 2007 THE WATER QUALITY STANDARDS CHANGED THE PARAMETERS FOR EVALUATING PRIMARY AND SECONDARY CONTACT.

EVALUATION OF PINEHURST BRANCH'S PRIMARY CONTACT (SWIMMABLE) IS BASED ON E.COLI DATA COLLECTED AND ANALYZED OVER A FOUR YEAR PERIOD, 2008-2011. WITH AN AVERAGE E. COLI COUNT OF 383 MPN/100ML, FOR 2008-2011. THERE IS INSUFFICIENT INFORMATION TO DETERMINE SUPPORT FOR THE SWIMMABLE USE DESIGNATION.

SECONDARY CONTACT RECREATION USE WAS NOT ASSESSED; THERE IS NO CRITERIA IN THE 2007 WATER QUALITY STANDARDS TO DETERMINE USE SUPPORT.

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

DURING THE 2010 STREAM ASSESSMENT THE 15M TO 75M STRETCH OF STREAMBED WAS NOT VISIBLE DUE TO AGAL BLOOM. ODOR OF RAW SEWAGE PRESENT.

THE 2010 MACROINVERTEBRATE ASSESSMENT (SAMPLES COLLECTED IN 2009) REVEALED CHIRONOMIDAE AS THE DOMINANT TAXA. BAETIDAE 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 PINEY BRANCH

ID: DCTPY01R_00 **State:** DC - 2012 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	**PINEY BRANCH**	
	Location: THIS MINOR STREAM WHICH ENTERS ROCK CREEK FROM THE EAST ABOVE THE NATIONAL ZOO	**Water Type:** RIVER **Size:** 1 MILES **Next Scheduled Montitoring Date:** N/A

Use Information

	Attainment Status	Uses
Assessed:	Insufficient Information	Primary Contact Recreation Protection and Propagation of Fish, Shellfish and Wildlife
	Not Supporting	Protection of Human Health related to Consumption of Fish and Shellfish
Not Assessed:	Not Assessed	Navigation 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
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Arsenic	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Chlordane	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Copper	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
DDD	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
DDE	Protection and Propagation of Fish,	Yes	

	Shellfish and Wildlife	
DDT	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Dieldrin	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Fecal Coliform	Primary Contact Recreation	Yes
Heptachlor epoxide	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Lead	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Polychlorinated biphenyls	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Zinc	Protection and Propagation of Fish, Shellfish and Wildlife	Yes

Comments On:

Overall Assessment

EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2007-2011) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

IN 2007 THE WATER QUALITY STANDARDS CHANGED THE PARAMETERS FOR EVALUATING PRIMARY AND SECONDARY CONTACT.

EVALUATION OF PINEY BRANCH'S PRIMARY CONTACT (SWIMMABLE) IS BASED ON E.COLI DATA COLLECTED AND ANALYZED OVER A FOUR YEAR PERIOD, 2008-2011. WITH AN AVERAGE E. COLI COUNT OF 1152 MPN/100ML, FOR 2008-2011. THERE IS INSUFFICIENT INFORMATION TO DETERMINE SUPPORT FOR THE SWIMMABLE USE DESIGNATION.

SECONDARY CONTACT RECREATION USE WAS NOT ASSESSED; THERE IS NO CRITERIA IN THE 2007 WATER QUALITY STANDARDS TO DETERMINE USE SUPPORT.

THE AQUATIC LIFE USE SUPPORT WAS NOT ASSESSED; DUE TO AN OVERSIGHT IN 2003.

THE AQUATIC LIFE USE SUPPORT IS NOT SUPPORTED. THE DECISION IS BASED ON THE DC STREAM SURVEY CONDUCTED IN 2003 AND CONVENTIONAL POLLUNTANT DATA. TEMPERATURE, PH AND DISSOLVED OXYGEN VIOLATED THE WATER QUALITY STANDARDS 0%, 0%, AND 10.53% 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 2008 HABITAT ASSESSMENT IT WAS OBSERVED THAT THE STREAM EMERGES FROM A NETWORK OF PIPED STREAMS S.W. OF OUTFALLS. LARGE AMOUNTS OF ALGAE PRESENT. GOOD ABUNDANCE OF PIEDMONT ROCKS PRESENT IN STREAM. HIGH NUMBER OF LEECHES OBSERVED IN STREAM. STREAM RUNS PARALLEL TO MAJOR ROAD WAY.

DURING THE 2010 MACROINVERTEBRATE ASSESSMENT IT WAS OBSEREVED 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.

Detail Report for POPES BRANCH (HAWES RUN)

ID: DCTPB01R_00 **State:** DC - 2012 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	**POPES BRANCH (HAWES RUN)**	
	Location: 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	**Water Type:** RIVER **Size:** 1.1 MILES **Next Scheduled Montitoring Date:** N/A

Use Information

	Attainment Status	Uses
Assessed:	Insufficient Information	Primary Contact Recreation
	Not Supporting	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish
Not Assessed:	Not Assessed	Navigation 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
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Arsenic	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Chlordane	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Combination Benthic/Fishes Bioassessments	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Combined Biota/Habitat Bioassessments	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	

Copper	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
DDD	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
DDE	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
DDT	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Dieldrin	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Fecal Coliform	Primary Contact Recreation	Yes
Heptachlor epoxide	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Lead	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Particle distribution (Embeddedness)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
pH	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Polychlorinated biphenyls	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Zinc	Protection and Propagation of Fish, Shellfish and Wildlife	Yes

Source Information

Sources	Associated Causes	Confirmed?
Channelization	Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments Particle distribution (Embeddedness)	
Hydrostructure Impacts on Fish Passage	Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments Particle distribution (Embeddedness)	
Illegal Dumping	Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments Particle distribution (Embeddedness)	
Illegal Dumps or Other Inappropriate Waste Disposal	Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments Particle distribution (Embeddedness)	
Residential Districts	Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments Particle distribution (Embeddedness)	

Comments On:

Overall Assessment

EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2007-2011) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

IN 2007 THE WATER QUALITY STANDARDS CHANGED THE PARAMETERS FOR EVALUATING PRIMARY AND SECONDARY CONTACT.

EVALUATION OF POPE BRANCH'S PRIMARY CONTACT (SWIMMABLE) IS BASED ON E.COLI DATA COLLECTED AND ANALYZED OVER A T FOUR YEAR PERIOD, 2008-2011. WITH AN AVERAGE E. COLI COUNT OF 397 MPN/100ML, FOR 2008-2011. THERE IS INSUFFICIENT INFORMATION TO DETERMINE SUPPORT FOR THE SWIMMABLE USE DESIGNATION.

SECONDARY CONTACT RECREATION USE WAS NOT ASSESSED; THERE IS NOT CRITERIA IN THE 2007 WATER QUALITY STANDARDS TO DETERMINE USE SUPPORT.

THE AQUATIC LIFE USE SUPPORT IS NOT SUPPORTED. THE DECISION IS BASED ON THE DC STREAM SURVEY CONDUCTED IN 2010 AND CONVENTIONAL POLLUNTANT DATA. TEMPERATURE, PH AND DISSOLVED OXYGEN VIOLATED THE WATER QUALITY STANDARDS 0%, 5.26%, AND 0% OF THE TIME, RESPECTIVELY.

BECAUSE OF A FISH CONSUMPTION ADVISORY, POPE BRANCH DID NOT SUPPORT ITS FISH CONSUMTION 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 ORGANISIMS). 39 ORGANISMS FOUND IN THE ENTIRE SAMPLE. HABITAT AND TOXICS ARE THE POSSIBLE CAUSES FOR DEGRADATION.

A LARGE AMOUNT OF SEDIMENT WAS PRESENT DURING THE 2007 HABITAT ASSESSMENT. LEFT BANK STABILITY, FACING UPSTREAM, WAS INCONSISTENT THROUGHOUT.

THE 2009 ASSESSMENT REVEALED AN ABUNDANCE OF SILT, SAND, CLAY AND TRASH PRESENT. LOTS OF DOWNED TREES AT THE ZERO METER PORTION OF THE STREAM. THE STREAM IS SEVERELY EMBEDDED.

THE 2010 MACROINVERTEBRATE ASSESSMENT (SAMPLES COLLECTED IN 2009) REVEALED CHIRONOMIDAE AS THE DOMINANT TAXA. NO SENSITIVE SPECIES WERE PRESENT.

IN 2011 OBSERVATIONS OF THIS STREAM REVEALED SEVERE EMBEDDEDNESS AND UNUSUALLY DEEP POOLS. 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 PORTAL BRANCH

ID: DCTPO01R_00 **State:** DC - 2012 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	**PORTAL BRANCH**	
	Location: PORTAL BRANCH FLOWS FROM MARYLAND INTO THE NORTHERN CORNER OF THE DISTRICT TO FENWICK BRANCH IN THE DISTRICT BEFORE JOINING ROCK CREEK	**Water Type:** RIVER **Size:** 0.5 MILES **Next Scheduled Montitoring Date:** N/A

Use Information		
	Attainment Status	**Uses**
Assessed:	Insufficient Information	Primary Contact Recreation
	Not Supporting	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish
Not Assessed:	Not Assessed	Navigation 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
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Chlordane	Primary Contact Recreation	Yes	
Combination Benthic/Fishes Bioassessments	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Combined Biota/Habitat Bioassessments	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
DDD	Primary Contact Recreation	Yes	
DDE	Primary Contact Recreation	Yes	

DDT	Primary Contact Recreation	Yes
Debris/Floatables/Trash	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Dieldrin	Primary Contact Recreation	Yes
Fecal Coliform	Primary Contact Recreation	Yes
Heptachlor epoxide	Primary Contact Recreation	Yes
Particle distribution (Embeddedness)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Polychlorinated biphenyls	Primary Contact Recreation	Yes
Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	Primary Contact Recreation	Yes

Source Information

Sources	Associated Causes	Confirmed?
Illegal Dumping	Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments Debris/Floatables/Trash Particle distribution (Embeddedness)	
Illegal Dumps or Other Inappropriate Waste Disposal	Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments Debris/Floatables/Trash Particle distribution (Embeddedness)	
Municipal (Urbanized High Density Area)	Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments Debris/Floatables/Trash Particle distribution (Embeddedness)	
Post-development Erosion and Sedimentation	Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments Debris/Floatables/Trash Particle distribution (Embeddedness)	

Comments On:

Overall Assessment

EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2007-2011) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

IN 2007 THE WATER QUALITY STANDARDS CHANGED THE PARAMETERS FOR EVALUATING PRIMARY AND SECONDARY CONTACT.

EVALUATION OF PORTAL BRANCH'S PRIMARY CONTACT (SWIMMABLE) IS BASED ON E.COLI DATA COLLECTED AND ANALYZED OVER A TWO YEAR PERIOD, 2008-2011. WITH AN AVERAGE E. COLI COUNT OF 425 MPN/100ML, FOR 2008-2011. THERE IS INSUFFICIENT INFORMATION TO DETERMINE SUPPORT FOR THE SWIMMABLE USE DESIGNATION.

SECONDARY CONTACT RECREATION USE WAS NOT ASSESSED; THERE IS NO CRITERIA IN THE 2007 WATER QUALITY STANDARDS TO DETERMINE USE SUPPORT.

THE AQUATIC LIFE USE SUPPORT IS NOT SUPPORTED. THE DECISION IS BASED ON THE DC STREAM SURVEY CONDUCTED IN 2002 AND CONVENTIONAL POLLUNTANT DATA. TEMPERATURE, PH AND DISSOLVED OXYGEN VIOLATED THE WATER QUALITY STANDARDS 0%, 0%, AND 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 2008 STEAM ASSESSMENT IT WAS OBSERVED THAT THE STREAM WAS NOTICEABLY BRAIDED WITH HIGH AMOUNTS OF FINE SEDIMENT LOADS PRESENT. THERE WAS ALSO A LARGE AMOUNT OF ALGAE PRESENT ON THE ROCKS THAT LINED THE STREAM BED.

THE 2010 STREAM ASSESSMENT REVEALED SEVERE BANK EROSION ON BOTH THE RIGHT AND LEFT BANK OF THE STEAM. HIGH CONDUCTIVITY.

Detail Report for POTOMAC DC

ID: DCPMS00E_01 **State:** DC - 2012 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	**POTOMAC DC**	
	Location: 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.	**Water Type:** ESTUARY **Size:** 3.05 SQUARE MILES **Next Scheduled Montitoring Date:** N/A

Use Information

	Attainment Status	Uses
Assessed:	Fully Supporting	Navigation Protection and Propagation of Fish, Shellfish and Wildlife
	Insufficient Information	Primary Contact Recreation
	Not Supporting	Protection of Human Health related to Consumption of Fish and Shellfish
Not Assessed:	Not Assessed	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
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

Cause Information

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

Comments On:

Overall Assessment

EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2007-2011) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

IN 2007 THE WATER QUALITY STANDARDS CHANGED THE PARAMETERS FOR EVALUATING PRIMARY AND SECONDARY CONTACT.

EVALUATION OF THE LOWER POTOMAC'S PRIMARY CONTACT (SWIMMABLE) IS BASED ON E.COLI DATA COLLECTED AND ANALYZED OVER A FOUR YEAR PERIOD, 2008-2011. WITH AN AVERAGE E. COLI COUNT OF 1017.7 MPN/100ML, FOR 2008-2011. THERE IS INSUFFICIENT DATA TO DETERMINE SUPPORT FOR THE SWIMMABLE USE DESIGNATION.

SECONDARY CONTACT RECREATION USE WAS NOT ASSESSED; THERE IS NO CRITERIA IN THE 2007 WATER QUALITY STANDARDS TO DETERMINE USE SUPPORT.

THE AQUATIC LIFE USE IS SUPPORTED. TEMPERATURE, PH AND DISSOLVED OXYGEN VIOLATED THE WATER QUALITY STANDARDS 0%, 8.74%, AND 0% 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, SEDIMNET 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 - 2012 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	**POTOMAC DC**	
	Location: 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.	**Water Type:** ESTUARY **Size:** 1.38 SQUARE MILES **Next Scheduled Montitoring Date:** N/A

Use Information

	Attainment Status	Uses
Assessed:	Fully Supporting	Navigation
	Insufficient Information	Primary Contact Recreation
	Not Supporting	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish
Not Assessed:	Not Assessed	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
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Fecal Coliform	Primary Contact Recreation	Yes	
pH	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Polychlorinated biphenyls	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	

Comments On:

Overall Assessment

EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2007-2011) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

IN 2007 THE WATER QUALITY STANDARDS CHANGED THE PARAMETERS FOR EVALUATING PRIMARY AND SECONDARY CONTACT.

EVALUATION OF THE MIDDLE POTOMAC'S PRIMARY CONTACT (SWIMMABLE) IS BASED ON E.COLI DATA COLLECTED AND ANALYZED OVER A FOUR YEAR PERIOD, 2008-2011. WITH AN AVERAGE E. COLI COUNT OF 1113.9 MPN/100ML, FOR 2008-2011. THERE IS INSUFFICIENT INFORMATION TO DETERMINE SUPPORT ITS SWIMMABLE USE DESIGNATION.

SECONDARY CONTACT RECREATION USE WAS NOT ASSESSED; THERE IS NO CRITERIA IN THE 2007 WATER QUALITY STANDARDS TO DETERMINE USE SUPPORT.

THE AQUATIC LIFE USE IS NOT SUPPORTED. TEMPERATURE, PH AND DISSOLVED OXYGEN VIOLATED THE WATER QUALITY STANDARDS 0%, 14.29%, AND 0% 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 - 2012 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	**POTOMAC DC**	
	Location: CHAIN BRIDGE (MONTGOMERY COUNTY MARYLAND LINE), JUST BELOW FALL LINE, TO KEY BRIDGE (PMS01 TO PMS10), TIDAL FRESHWATER. BORDERED BY NATIONAL PARK SERVICE LAND.	**Water Type:** ESTUARY **Size:** 0.4 SQUARE MILES **Next Scheduled Montitoring Date:** N/A

Use Information

	Attainment Status	Uses
Assessed:	Fully Supporting	Navigation
	Insufficient Information	Primary Contact Recreation
	Not Supporting	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish
Not Assessed:	Not Assessed	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
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	
Phosphorus (Total)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Polychlorinated biphenyls	Protection and Propagation of Fish,	Yes	

	Shellfish and Wildlife	
Total Suspended Solids (TSS)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes

Comments On:

Overall Assessment

EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2007-2011) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

IN 2007 THE WATER QUALITY STANDARDS CHANGED THE PARAMETERS FOR EVALUATING PRIMARY AND SECONDARY CONTACT.

EVALUATION OF THE UPPER POTOMAC'S PRIMARY CONTACT (SWIMMABLE) IS BASED ON E.COLI DATA COLLECTED AND ANALYZED OVER A FOUR YEAR PERIOD, 2008-2011. WITH AN AVERAGE E. COLI COUNT OF 151.42 MPN/100ML, FOR 2008-2011. THERE IS INSUFFICIENT INFORMATION TO DETERMINE SUPPORT FOR THE SWIMMABLE USE DESIGNATION.

SECONDARY CONTACT RECREATION USE WAS NOT ASSESSED; THERE IS NO CRITERIA IN THE 2007 WATER QUALITY STANDARDS TO DETERMINE USE SUPPORT.

THE AQUATIC LIFE USE SUPPORT IS NOT SUPPORTED. TEMPERATURE, PH AND DISSOLVED OXYGEN VIOLATED THE WATER QUALITY STANDARDS 0%, 24.49 %, AND 0% 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.

Detail Report for ROCK CREEK DC

ID: DCRCR00R_01 **State:** DC - 2012 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	ROCK CREEK DC	
	Location: 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	**Water Type:** RIVER **Size:** 3.6 MILES **Next Scheduled Montitoring Date:** N/A

Use Information

	Attainment Status	Uses
Assessed:	Fully Supporting	Navigation
	Insufficient Information	Primary Contact Recreation
	Not Supporting	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish
Not Assessed:	Not Assessed	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
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Combination Benthic/Fishes Bioassessments	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Copper	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Fecal Coliform	Primary Contact Recreation	Yes	
Lead	Protection and Propagation of Fish,	Yes	

	Shellfish and Wildlife	
Mercury	Protection and Propagation of Fish, Shellfish and Wildlife	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
Zinc	Protection and Propagation of Fish, Shellfish and Wildlife	Yes

Source Information

Sources	Associated Causes	Confirmed?
Post-development Erosion and Sedimentation	Combination Benthic/Fishes Bioassessments Other flow regime alterations Particle distribution (Embeddedness)	
Residential Districts	Combination Benthic/Fishes Bioassessments Other flow regime alterations Particle distribution (Embeddedness)	
Wet Weather Discharges (Non-Point Source)	Combination Benthic/Fishes Bioassessments Other flow regime alterations Particle distribution (Embeddedness)	
Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO)	Combination Benthic/Fishes Bioassessments Other flow regime alterations Particle distribution (Embeddedness)	

Comments On:

Overall Assessment

EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2007-2011) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

IN 2007 THE WATER QUALITY STANDARDS CHANGED THE PARAMETERS FOR EVALUATING PRIMARY AND SECONDARY CONTACT.

EVALUATION OF THE LOWER ROCK CREEK'S PRIMARY CONTACT (SWIMMABLE) IS BASED ON E. COLI DATA COLLECTED AND ANALYZED OVER A FOUR YEAR PERIOD, 2008-2011. WITH AN AVERAGE E. COLI COUNT OF 612 MPN/100ML, FOR 2008-2011. THERE IS INSUFFICIENT INFORMATION TO DETERMINE SUPPORT FOR THE WIMMABLE USE DESIGNATION.

SECONDARY CONTACT RECREATION USE WAS NOT ASSESSED; THERE IS NO CRITERIA IN THE 2007 WATER QUALITY STANDARDS TO DETERMINE USE SUPPORT.

THE AQUATIC LIFE USE SUPPORT IS NOT SUPPORTED. THE DECISION IS BASED ON THE DC STREAM SURVEY CONDUCTED IN 2010 AND CONVENTIONAL POLLUNTANT DATA. TEMPERATURE, PH AND DISSOLVED OXYGEN VIOLATED THE WATER QUALITY STANDARDS 0%, 3.70%, AND 0% 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 LEEKAGE FROM UNIDENTIFIED SEWER LINES CROSSING THE STREAMS. NUTRIENT ENRICHMENT, PHYSICAL HABITAT PROBLEMS AND TOXIC EFFECTS ALL MAY BE ATTRIBUTED TO THESE CAUSES.

THE 2011 BENTHIC MACROINVERTEBRATE OR PHYSICAL HABITAT ASSESSMENTS WERE NOT CONDUCTED IN LOWER ROCK CREEK BECAUSE THE STREAM WAS NOT ACCESSIBLE DUE TO CONSTRUCTION. DETAILED INFORMATION CONTAINED IN WQD FILES.

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

DURING THE 2007 HABITAT ASSESSMENT IT HAS BEEN NOTED IN THIS PORTION OF LOWER ROCK CREEK THE CANOPY HAS BEEN SOMEWHAT REDUCED FROM PREVIOUS YEARS.

ON MAY 7, 2008 LARGE AMOUNTS OF TREATED WATER ENTERED STREAM FROM A 16 INCH WATERMAIN BREAK IN MONTGOMERY COUNTY. THIS EVENT COULD POSSIBLY AFFECT THE 2009 MACROINVERTEBRATE AND FIN FISH ASSESSMENTS.

THE 2009 HABITAT ASSESSMENT REVEALED LEFT BANK EROSION AND LITTLE TO NO CANOPY COVER.

THE 2010 HABITAT ASSESSMENT THE 75 METER PORTION WAS ADJUSTED 10M DOWNSTREAM, DUE TO HIGH FLOW.

DURING THE 2010 FIN-FISH ASSESSMENT MORE LARGE AND SMALLMOUTH BASS OBSERVED THAN IN PREVIOUS YEARS.

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 - 2012 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	**ROCK CREEK DC**	
	Location: 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.	**Water Type:** RIVER **Size:** 5.9 MILES **Next Scheduled Montitoring Date:** N/A

Use Information

	Attainment Status	Uses
Assessed:	Fully Supporting	Navigation
	Insufficient Information	Primary Contact Recreation
	Not Supporting	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish
Not Assessed:	Not Assessed	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
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Combination Benthic/Fishes Bioassessments	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Copper	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Fecal Coliform	Primary Contact Recreation	Yes	

Lead	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Mercury	Protection and Propagation of Fish, Shellfish and Wildlife	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
Zinc	Protection and Propagation of Fish, Shellfish and Wildlife	Yes

Source Information

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

Comments On:

Overall Assessment

EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2007-2011) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

IN 2007 THE WATER QUALITY STANDARDS CHANGED THE PARAMETERS FOR EVALUATING PRIMARY AND SECONDARY CONTACT.

EVALUATION OF THE UPPER ROCK CREEK'S PRIMARY CONTACT (SWIMMABLE) IS BASED ON E. COLI DATA COLLECTED AND ANALYZED

OVER A FOUR YEAR PERIOD, 2008-2011. WITH AN AVERAGE E. COLI COUNT OF 331 MPN/100ML, FOR 2008-2011. THERE IS INSUFFICIENT INFORMATION TO DETERMINE SUPPORT FOR THE SWIMMABLE USE DESIGNATION.

SECONDARY CONTACT RECREATION USE WAS NOT ASSESSED; THERE IS NO CRITERIA IN THE 2007 WATER QUALITY STANDARDS TO DETERMINE USE SUPPORT.

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

IN 2007 THERE WERE HEAVY RAINS PRIOR TO THE MACROINVERTEBRATE COLLECTION AND STRONG CURRENTS DURING THE COLLECTION. AS A RESULT OF THE HEAVY RAINS ROOT WADS WERE CLEANED. ADDITIONALLY, AN EARTHQUAKE OCCURRED DURING THE MACROINVERTEBRATE ASSESSMENT.

DURING THE 2008 STREAM ASSESSMENT THERE WAS AN ABUNDANCE OF PIEDMONT ROCKS IN STREAM. A SULFUROUS ODOR WAS PRESENT. DURING THE 2008 FIN FISH ASSESSMENT SMALL MOUTH BASS WERE OBSERVED.

THE 2009 ASSESSMENT REVEALED NO CHANGES FROM THE 2008 ASSESSMENT.

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.

THE 2011 MACOINVERTEBRATE ASSESSMENT HAS BEEN CONDUCTED. SAMPLES 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 SOAPSTONE CREEK

ID: DCTSO01R_00 **State:** DC - 2012 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	**SOAPSTONE CREEK**	
	Location: SOAPSTONE CREEK IS A TRIBUTARY OF BROAD BRANCH WHICH JOINS BROAD BRANCH JUST ABOVE ITS CONFLUENCE WITH ROCK CREEK NEAR DUMBARTON OAKS, NW	**Water Type:** RIVER **Size:** 0.8 MILES **Next Scheduled Montitoring Date:** N/A

Use Information

	Attainment Status	Uses
Assessed:	Insufficient Information	Primary Contact Recreation
	Not Supporting	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish
Not Assessed:	Not Assessed	Navigation 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
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	
Chlordane	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Combination Benthic/Fishes Bioassessments	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
DDD	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	

DDE	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
DDT	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Dieldrin	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Fecal Coliform	Primary Contact Recreation	Yes
Heptachlor epoxide	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Particle distribution (Embeddedness)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Polychlorinated biphenyls	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes

Source Information

Sources	Associated Causes	Confirmed?
Illegal Dumping	Alterations in wetland habitats Combination Benthic/Fishes Bioassessments Particle distribution (Embeddedness)	
Illegal Dumps or Other Inappropriate Waste Disposal	Alterations in wetland habitats Combination Benthic/Fishes Bioassessments Particle distribution (Embeddedness)	
Impacts from Hydrostructure Flow Regulation/modification	Alterations in wetland habitats Combination Benthic/Fishes Bioassessments Particle distribution (Embeddedness)	
Residential Districts	Alterations in wetland habitats Combination Benthic/Fishes Bioassessments Particle distribution (Embeddedness)	
Yard Maintenance	Alterations in wetland habitats Combination Benthic/Fishes Bioassessments Particle distribution (Embeddedness)	

Comments On:

Overall Assessment

EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2007-2011) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

IN 2007 THE WATER QUALITY STANDARDS CHANGED THE PARAMETERS FOR EVALUATING PRIMARY AND SECONDARY CONTACT.

EVALUATION OF SOAPSTONE CREEK'S PRIMARY CONTACT (SWIMMABLE) IS BASED ON E.COLI DATA COLLECTED AND ANALYZED OVER A FOUR YEAR PERIOD, 2008-2011. WITH AN AVERAGE E. COLI COUNT OF 203 MPN/100ML, FOR 2008-2011. THERE IS INSUFFICIENT INFORMATION TO DETERMINE SUPPORT FOR THE SWIMMABLE USE DESIGNATION.

SECONDARY CONTACT RECREATION USE WAS NOT ASSESSED; THERE IS NO CRITERIA IN THE 2007 WATER QUALITY STANDARDS TO DETERMINE USE SUPPORT.

THE AQUATIC LIFE USE SUPPORT IS NOT SUPPORTED. THE DECISION IS BASED ON THE DC STREAM SURVEY CONDUCTED IN 2003 AND CONVENTIONAL POLLUNTANT DATA. TEMPERATURE, PH AND DISSOLVED OXYGEN VIOLATED THE WATER QUALITY STANDARDS 0%, 0%, AND 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 2008 STREAM ASSESSMENT THERE WAS HIGH AMOUNTS OF FINE SEDIMENT PRESENT. ALGAE PRESENT ON ROCKS IN THE STREAM BED.

DURING THE 2010 STEAM ASSESSMENT ODOR OF RAW SEWAGE PRESENT. HIGH AMOUNTS OF FINE SEDIMENT OBSERVED.

Detail Report for TEXAS AVENUE TRIBUTARY

ID: DCTTX27R_00 **State:** DC - 2012 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	**TEXAS AVENUE TRIBUTARY**	
	Location: 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	**Water Type:** RIVER **Size:** 0.2 MILES **Next Scheduled Montitoring Date:** N/A

Use Information

	Attainment Status	Uses
Assessed:	Insufficient Information	Primary Contact Recreation
	Not Supporting	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish
Not Assessed:	Not Assessed	Navigation 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
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Arsenic	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Chlordane	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Combination Benthic/Fishes Bioassessments	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Combined Biota/Habitat	Protection and Propagation of Fish,	Yes	

Bioassessments	Shellfish and Wildlife	
Copper	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
DDD	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
DDE	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
DDT	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Debris/Floatables/Trash	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Dieldrin	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Fecal Coliform	Primary Contact Recreation	Yes
Heptachlor epoxide	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Lead	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Oil and Grease	Primary Contact Recreation	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 and Propagation of Fish, Shellfish and Wildlife	Yes
Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Zinc	Protection and Propagation of Fish, Shellfish and Wildlife	Yes

Source Information

Sources	Associated Causes	Confirmed?
Illegal Dumping	Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments Debris/Floatables/Trash Other flow regime alterations Particle distribution (Embeddedness)	
Illegal Dumps or Other Inappropriate Waste Disposal	Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments Debris/Floatables/Trash Other flow regime alterations Particle distribution (Embeddedness)	

Impacts from Hydrostructure Flow Regulation/modification	Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments Debris/Floatables/Trash Other flow regime alterations Particle distribution (Embeddedness)
Loss of Riparian Habitat	Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments Debris/Floatables/Trash Other flow regime alterations Particle distribution (Embeddedness)
Residential Districts	Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments Debris/Floatables/Trash Other flow regime alterations Particle distribution (Embeddedness)

Comments On:

Overall Assessment

EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2007-2011) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

IN 2007 THE WATER QUALITY STANDARDS CHANGED THE PARAMETERS FOR EVALUATING PRIMARY AND SECONDARY CONTACT.

EVALUATION OF TEXAS AVENUE'S PRIMARY CONTACT (SWIMMABLE) IS BASED ON E.COLI DATA COLLECTED AND ANALYZED OVER A FOUR YEAR PERIOD, 2008-2011. WITH AN AVERAGE E. COLI COUNT OF 163 MPN/100ML, FOR 2008-2011. THERE IS INSUFFICIENT INFORMATION TO DETERMINE SUPPORT FOR THE SWIMMABLE USE DESIGNATION.

SECONDARY CONTACT RECREATION USE WAS NOT ASSESSED; THERE IS NO CRITERIA IN THE 2007 WATER QUALITY STANDARDS TO DETERMINE USE SUPPORT.

THE AQUATIC LIFE USE SUPPORT IS NOT SUPPORTED. THE DECISION IS BASED ON THE DC STREAM SURVEY CONDUCTED IN 2002 AND CONVENTIONAL POLLUNTANT DATA. TEMPERATURE, PH AND DISSOLVED

OXYGEN VIOLATED THE WATER QUALITY STANDARDS 0%, 0%, AND 5.88% 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 PERCENTAGLE 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 2008 AND 2010 STREAM ASSESSMENTS 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.

Detail Report for TIDAL BASIN

ID: DCPTB01L_00 **State:** DC - 2012 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	**TIDAL BASIN**	
	Location: ADJACENT TO THE JEFFERSON MEMORIAL AND THE WELL-KNOWN CHERRY TREES OF THE NATION'S CAPITOL	**Water Type:** FRESHWATER LAKE **Size:** 108.4 ACRES **Next Scheduled Montitoring Date:** N/A **Trophic Status:** N/A **Public Lake:** No

Use Information

	Attainment Status	Uses
Assessed:	Fully Supporting	Navigation
	Insufficient Information	Primary Contact Recreation
	Not Supporting	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish
Not Assessed:	Not Assessed	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
PATHOGEN INDICATORS	Primary Contact Recreation	GOOD

Cause Information

Causes	Associated Uses	Pollutant?	Confidence
Chlordane	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
DDD	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
DDE	Protection and Propagation of Fish,	Yes	

	Shellfish and Wildlife	
DDT	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Dieldrin	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Fecal Coliform	Primary Contact Recreation	Yes
Heptachlor epoxide	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
pH	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Polychlorinated biphenyls	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes

Comments On:

Overall Assessment

EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2007-2011) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

IN 2007 THE WATER QUALITY STANDARDS CHANGED THE PARAMETERS FOR EVALUATING PRIMARY AND SECONDARY CONTACT.

EVALUATION OF THE TIDAL BASIN'S PRIMARY CONTACT (SWIMMABLE) IS BASED ON E.COLI DATA COLLECTED AND ANALYZED OVER A FOUR YEAR PERIOD, 2008-2011. WITH AN AVERAGE E. COLI COUNT OF 79.18 MPN/100ML, FOR 2008-2011. THERE IS INSUFFICIENT INFORMATION TO DETERMINE SUPPORT FOR THE SWIMMABLE USE DESIGNATION.

SECONDARY CONTACT RECREATION USE WAS NOT ASSESSED; THERE IS NOT CRITERIA IN THE 2007 WATER QUALITY STANDARDS TO DETERMINE USE SUPPORT.

THE AQUATIC LIFE USE IS NOT SUPPORTED. TEMPERATURE, PH, AND

DISSOLVED OXYGEN VIOLATED THE WATER QUALITY STANDARDS 0%, 25.86%, AND 0% OF THE TIME, RESPECTIVELY.

BECAUSE OF A FISH CONSUMPTION ADVISORY, THE TIDAL BASIN DID NOT SUPPORT THE FISH CONSUMPTION USE. DETERMINATION OF THE FISH CONSUPTION 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.

Detail Report for WASHINGTON SHIP CHANNEL

ID: DCPWC04E_00 **State:** DC - 2012 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	**WASHINGTON SHIP CHANNEL**	
	Location: DEEP EMBAYMENT OF THE POTOMAC BETWEEN HAINS POINT AND FORT MCNAIR. IT IS CONTIGUOUS TO THE POTOMAC AND ANACOSTIA RIVERS. THE NORTH END IS CONNECTED TO THE TIDAL BASIN (PWC04).	**Water Type:** ESTUARY **Size:** 0.3 SQUARE MILES **Next Scheduled Montitoring Date:** N/A

Use Information

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

EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2007-2011) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

IN 2007 THE WATER QUALITY STANDARDS CHANGED THE PARAMETERS FOR EVALUATING PRIMARY AND SECONDARY CONTACT.

EVALUATION OF THE SHIP CHANNEL'S PRIMARY CONTACT (SWIMMABLE) IS BASED ON E.COLI DATA COLLECTED AND ANALYZED OVER A FOUR YEAR PERIOD, 2008-2011. WITH AN AVERAGE E. COLI COUNT OF 303.25 MPN/100ML, FOR 2008-2011.

SECONDARY CONTACT RECREATION USE WAS NOT ASSESSED; THERE IS NO CRITERIA IN THE 2007 WATER QUALITY STANDARDS TO DETERMENE USE SUPPORT.

THE AQUATIC LIFE USE IS SUPPORTED. TEMPERATURE, PH AND DISSOLVED OXYGEN VIOLATED THE WATER QUALITY STANDARDS 0%, 5.45%, AND 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 OD 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 WATTS BRANCH DC

ID: DCTWB00R_01 **State:** DC - 2012 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	**WATTS BRANCH DC**	
	Location: 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	**Water Type:** RIVER **Size:** 0.3 MILES **Next Scheduled Montitoring Date:** N/A

Use Information

	Attainment Status	Uses
Assessed:	Insufficient Information	Primary Contact Recreation
	Not Supporting	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish
Not Assessed:	Not Assessed	Navigation 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
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	
Chlordane	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Combination Benthic/Fishes Bioassessments	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Combined Biota/Habitat Bioassessments	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	

DDD	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
DDE	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
DDT	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Debris/Floatables/Trash	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Dieldrin	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Fecal Coliform	Primary Contact Recreation	Yes
Heptachlor epoxide	Protection and Propagation of Fish, Shellfish and Wildlife	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 and Propagation of Fish, Shellfish and Wildlife	Yes
Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Total Suspended Solids (TSS)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes

Source Information

Sources	Associated Causes	Confirmed?
Channelization	Alterations in wetland habitats Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments Debris/Floatables/Trash Other flow regime alterations Particle distribution (Embeddedness)	
Illegal Dumping	Alterations in wetland habitats Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments Debris/Floatables/Trash Other flow regime alterations Particle distribution (Embeddedness)	
Illegal Dumps or Other Inappropriate Waste Disposal	Alterations in wetland habitats Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments Debris/Floatables/Trash Other flow regime alterations Particle distribution (Embeddedness)	

Residential Districts	Alterations in wetland habitats Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments Debris/Floatables/Trash Other flow regime alterations Particle distribution (Embeddedness)
Site Clearance (Land Development or Redevelopment)	Alterations in wetland habitats Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments Debris/Floatables/Trash Other flow regime alterations Particle distribution (Embeddedness)
Wet Weather Discharges (Non-Point Source)	Alterations in wetland habitats Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments Debris/Floatables/Trash Other flow regime alterations Particle distribution (Embeddedness)
Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO)	Alterations in wetland habitats Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments Debris/Floatables/Trash Other flow regime alterations Particle distribution (Embeddedness)

Comments On:

Overall Assessment

EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2007-2011) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

IN 2007 AND 2010 THE WATER QUALITY STANDARDS CHANGED THE PARAMETERS FOR EVALUATING PRIMARY AND SECONDARY CONTACT, RESPECTIVELY.

LOWER WATTS BRANCH'S PRIMARY CONTACT (SWIMMABLE) IS BASED ON E.COLI DATA COLLECTED AND ANALYZED OVER A TWO YEAR PERIOD, 2010-2011. WITH AN AVERAGE E. COLI COUNT OF 163 MPN/100ML, FOR 2010-2011. THERE IS INSUFFICIENT INFORMATION TO DETERMINE SUPPORT FOR THE SWIMMABLE USE DESIGNATION.

SECONDARY CONTACT RECREATION WAS NOT ASSESSED; THERE IS NO CRITERIA IN THE 2007 WATER QUALITY STANDARDS TO DETERMINE USE SUPPORT.

THE AQUATIC LIFE USE SUPPORT IS NOT SUPPORTED. THE DECISION IS BASED ON THE DC STREAM SURVEY CONDUCTED IN 2010 AND CONVENTIONAL POLLUNTANT DATA. TEMPERATURE, PH AND DISSOLVED OXYGEN VIOLATED THE WATER QUALITY STANDARDS 0%, 7.27%, AND 1.82% 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 2008 FIN FISH ASSESSMENT A QUEEN SNAKE WAS OBSERVED IN THE STREAM BED. THE STREAM CHANNEL IS EXTEMELY STRAIGHT.

THE 2009 ASSESSMENT REVEALED MAJORITY OF LEFT BANK IS CONCRETE AND BOTH BANKS ARE ERODED. A TRASH TRAP HAS BEEN INSTALLED.

DURING THE 2010 STREAM ASSESSMENT DOWN TREES WERE OBSERVED, DUE TO HEAVY SNOW. STREAM IS COMPLETELY STRAIGHT.

IN 2011 THE ENTIRE 75 METER STRETCH WAS LOADED WITH SILT, THERE WERE HEAVY RAINS PRIOR TO THE ASSESSMENT. A DISCHARGE INTO THE STEAM WAS OBSERVED A DAY BEFORE THE ASSESSMENT WAS CONDUCTED. VERY HIGH TRASH VOLUME WAS OBSERVED.

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 - 2012 **Single Cat.(User Cat.):** 5(N/A)

Water Information:	**WATTS BRANCH DC**	
	Location: 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	**Water Type:** RIVER **Size:** 3.7 MILES **Next Scheduled Montitoring Date:** N/A

Use Information

	Attainment Status	Uses
Assessed:	Insufficient Information	Primary Contact Recreation
	Not Supporting	Protection and Propagation of Fish, Shellfish and Wildlife Protection of Human Health related to Consumption of Fish and Shellfish
Not Assessed:	Not Assessed	Navigation 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
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	
Chlordane	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Combination Benthic/Fishes Bioassessments	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	
Combined Biota/Habitat Bioassessments	Protection and Propagation of Fish, Shellfish and Wildlife	Yes	

DDD	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
DDE	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
DDT	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Debris/Floatables/Trash	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Dieldrin	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Fecal Coliform	Primary Contact Recreation	Yes
Heptachlor epoxide	Protection and Propagation of Fish, Shellfish and Wildlife	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 and Propagation of Fish, Shellfish and Wildlife	Yes
Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes
Total Suspended Solids (TSS)	Protection and Propagation of Fish, Shellfish and Wildlife	Yes

Source Information

Sources	Associated Causes	Confirmed?
Illegal Dumping	Alterations in wetland habitats Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments Debris/Floatables/Trash Other flow regime alterations Particle distribution (Embeddedness) Total Suspended Solids (TSS)	
Illegal Dumps or Other Inappropriate Waste Disposal	Alterations in wetland habitats Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments Debris/Floatables/Trash Other flow regime alterations Particle distribution (Embeddedness) Total Suspended Solids (TSS)	
Residential Districts	Alterations in wetland habitats Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments Debris/Floatables/Trash Other flow regime alterations	

	Particle distribution (Embeddedness) Total Suspended Solids (TSS)
Site Clearance (Land Development or Redevelopment)	Alterations in wetland habitats Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments Debris/Floatables/Trash Other flow regime alterations Particle distribution (Embeddedness) Total Suspended Solids (TSS)
Wet Weather Discharges (Non-Point Source)	Alterations in wetland habitats Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments Debris/Floatables/Trash Other flow regime alterations Particle distribution (Embeddedness) Total Suspended Solids (TSS)
Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO)	Alterations in wetland habitats Combination Benthic/Fishes Bioassessments Combined Biota/Habitat Bioassessments Debris/Floatables/Trash Other flow regime alterations Particle distribution (Embeddedness) Total Suspended Solids (TSS)

Comments On:

Overall Assessment

EVALUATIONS OF USE SUPPORT DECISIONS ARE BASED ON A FIVE YEAR STATISTICAL EVALUATION (2007-2011) OF AMBIENT WATER QUALITY DATA COLLECTED BY THE MAB.

IN 2007 AND 2010 THE WATER QUALITY STANDARDS CHANGED THE PARAMETERS FOR EVALUATING PRIMARY AND SECONDARY CONTACT, RESPECTIVELY.

UPPER WATTS BRANCH'S PRIMARY CONTACT (SWIMMABLE) IS BASED ON E.COLI DATA COLLECTED AND ANALYZED OVER A TWO YEAR PERIOD, 2010-2011. WITH AN AVERAGE E. COLI COUNT OF 163 MPN/100ML, FOR 2010-2011. THERE IS INSUFFICIENT INFORMATION TO DETERMINE SUPPORT FOR THE SWIMMABLE USE DESIGNATION.

SECONDARY CONTACT RECREATION USE WAS NOT ASSESSED; THERE IS NO CRITERIA IN THE 2007 WATER QUALITY STANDARDS TO DETERMINE USE SUPPORT.

THE AQUATIC LIFE USE SUPPORT IS NOT SUPPORTED. THE DECISION IS BASED ON THE DC STREAM SURVEY CONDUCTED IN 2010 AND CONVENTIONAL POLLUNTANT DATA. TEMPERATURE, PH AND DISSOLVED OXYGEN VIOLATED THE WATER QUALITY STANDARDS 0%, 6.09%, AND 0% 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 SIGNIGICANTLY 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 2008 HABITAT ASSESSMENT IT WAS NOTED THAT THERE IS NEW CONSTRUCTION BEING DONE IN THE IMMEDIATE VICINITY OF THE STREAM. SOME OF THE CONSTRUCTION CAN BE ATTRIBUTED TO STREAM RESTORATION PROJECTS. THERE ARE LARGE PIECES OF CONCRETE IN THE STREAM BED.

THE 2009 ASSESSMENT REVEALED LARGE CHUNKS OF CONCRETE IN THE STREAM BED. THE STEAM IS CHANNELIZED, THE LEFT BAKE IS STABLE THE RIGHT BANK IS VERY UNSTABLE.

DURING THE 2010 STREAM ASSESSMENT ONGOING CONSTRUCTION WAS OBSERVED.

IN 2011 MAJOR STREAM RESTORATION PROJECT COMPLETED. CONCRETE ENFORCED BANKS WERE REMOVED. LARGE ROCKS PLACED IN STREAM TO GRADIENT AND SLOWER FLOWS. NO SUITABLE IN-STREAM HABITAT, JUST SEDIMENT AND GREY CLAY. ENTIRE 75 METER BANK MODIFIED WITH MESH MATS TO STABALIZE BANKS. RIPARIAN BUFFER ZONE ATLERED; TREES REPLACES WITH SCHRUBS AND GRASSES TO CREAT A FLOOD PLAIN.

REPORTS WITH MORE INFORMATION INCLUDE:

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

2007-2011
Statistical Summary Report
For
Dissolved Oxygen (mg/L)

Waterbody	Station Data Used	Min. Value	Max Value	Avg. Value	Std. Dev.	Median Value	% Violation of WQ Std.
DCAKL00L	KNG01, KNG02	1.70	18.64	7.81	3.01	7.83	12.50
DCANA00E SEG1	ANA19, ANA21, ANA24	3.04	15.72	8.13	2.96	7.76	5.39
DCANA00E SEG2	ANA01, ANA05, ANA08, ANA11, ANA14	1.86	16.41	7.50	3.09	6.9	8.76
DCPMS00E SEG1	PMS37, PMS44	5.10	18.10	10.03	2.89	9.74	0
DCPMS00E SEG2	PMS10, PMS21	5.63	19.84	10.09	2.84	9.88	0
DCPMS00E SEG3	PMS01	6.60	19.86	10.21	2.66	10.02	0
DCPTB01L	PTB01	5.79	15.15	10.60	2.36	10.70	0
DCPWC04E	PWC04	5.47	17.79	10.29	2.69	10.18	0
DCRCR00R SEG1	RCR09	6.64	16.18	10.51	2.53	10.27	0
DCRCR00R SEG2	RCR01	5.28	16.13	9.81	2.60	9.64	0
DCTBK01R	TBK01	7.94	16.01	10.83	2.22	10.23	0
DCTBR01R	TBR01	6.38	15.82	10.34	3.00	10.61	0
DCTCO01L	TCO01, TCO06	5.86	16.69	10.04	2.55	9.38	0
DCTDA01R	TDA01	6.98	13.86	10.01	2.34	9.88	0
DCTDO01R	TDO01	7.53	14.91	10.34	2.04	10.05	0
DCTDU01R	TDU01	1.79	17.20	9.70	3.33	10.12	10.53
DCTFB02R	TFB02	5.89	16.01	10.03	2.63	9.44	0
DCTFC01R	TFC01	4.16	12.29	8.68	2.51	8.55	11.11
DCTFD01R	TFD01	1.70	14.49	7.43	3.18	7.49	22.73
DCTFE01R	TFE01	6.44	13.28	9.57	2.15	9.22	0
DCTFS01R	TFS01	7.19	18.64	10.50	2.73	10.08	0
DCTHR01R	THR01	4.42	18.53	9.60	2.97	9.00	3.45

Waterbody	Station Data Used	Min. Value	Max Value	Avg. Value	Std. Dev.	Median Value	% Violation of WQ Std.
DCTKV01R	TKV01	6.95	14.39	10.25	2.13	9.89	0
DCTLU01	TLU01	6.78	16.08	9.80	2.46	9.10	0
DCTMH01R	TMH01	7.48	15.10	10.53	2.15	10.17	0
DCTNA01R	TNA01	4.95	19.02	9.05	3.48	8.03	5.26
DCTNS01R	TNS01	7.13	15.57	10.43	2.50	10.06	0
DCTOR01R	TOR01	6.79	15.82	10.52	2.36	10.62	0
DCTPB01R	TPB01	6.10	14.15	9.55	2.21	9.21	0
DCTPI01R	TPI01	6.46	17.11	10.32	2.86	9.80	0
DCTPO01R	TPO01	5.51	15.96	9.28	3.10	7.71	0
DCTPY01R	TPY01	3.94	17.36	10.10	3.13	9.52	10.53
DCTSO01R	TSO01	7.17	17.24	11.15	2.89	11.58	0
DCTTX27R	TTX27	4.93	14.00	9.62	2.45	9.87	5.88
DCTWB00R SEG1	TWB01	4.63	19.64	10.12	3.12	9.51	1.82
DCTWB00R SEG2	TWB05, TWB06	5.00	20.23	10.31	2.76	9.97	0

2007-2011
Statistical Summary Report
For
pH

Waterbody	Station Data Used	Min. Value	Max Value	Avg. Value	Std. Dev.	Median Value	% Violation of WQ Std.
DCAKL00L	KNG01, KNG02	6.51	8.62	7.67	0.34	7.65	3.09
DCANA00E SEG1	ANA19, ANA21, ANA24	6.84	9.22	7.59	0.38	7.60	1.20
DCANA00E SEG2	ANA01, ANA05, ANA08, ANA11, ANA14	6.58	9.08	7.50	0.34	7.48	1.10
DCPMS00E SEG1	PMS37, PMS44	7.07	8.96	7.97	0.38	7.96	8.74
DCPMS00E SEG2	PMS10, PMS21	6.93	8.95	8.10	0.40	8.11	14.29
DCPMS00E SEG3	PMS01	6.92	9.02	8.18	0.42	8.18	24.49
DCPTB01L	PTB01	7.52	8.89	8.25	0.34	8.24	25.86
DCPWC04E	PWC04	7.10	9.40	7.96	0.41	7.94	5.45
DCRCR00R SEG1	RCR09	7.19	8.58	7.97	0.30	7.97	3.70
DCRCR00R SEG2	RCR01	7.09	8.38	7.82	0.28	7.82	0
DCTBK01R	TBK01	7.23	8.32	7.84	0.25	7.89	0
DCTBR01R	TBR01	7.43	8.56	7.96	0.29	7.92	5.56
DCTCO01L	TCO01, TCO06	7.16	11.13	8.16	0.51	8.12	16.28
DCTDA01R	TDA01	7.11	8.30	7.75	0.33	7.68	0
DCTDO01R	TDO01	7.16	8.30	7.85	0.24	7.85	0
DCTDU01R	TDU01	7.15	8.52	7.77	0.35	7.75	5.00
DCTFB02R	TFB02	7.06	9.22	7.95	0.53	7.83	11.76
DCTFC01R	TFC01	6.61	8.52	7.62	0.38	7.62	5.26
DCTFD01R	TFD01	6.89	8.86	7.69	0.57	7.59	8.70
DCTFE01R	TFE01	7.04	8.33	7.81	0.36	7.82	0
DCTFS01R	TFS01	7.10	8.44	7.85	0.39	7.95	0
DCTHR01R	THR01	6.83	8.50	7.81	0.33	7.84	1.72

Waterbody	Station Data Used	Min. Value	Max Value	Avg. Value	Std. Dev.	Median Value	% Violation of WQ Std.
DCTKV01R	TKV01	7.41	8.18	7.76	0.25	7.70	0
DCTLU01	TLU01	7.22	8.21	7.68	0.29	7.65	0
DCTMH01R	TMH01	7.53	8.29	7.86	0.22	7.87	0
DCTNA01R	TNA01	7.16	8.36	7.75	0.37	7.71	0
DCTNS01R	TNS01	7.28	8.33	7.94	0.28	7.91	0
DCTOR01R	TOR01	7.31	8.54	7.99	0.30	8.05	5.26
DCTPB01R	TPB01	7.21	8.66	7.75	0.36	7.80	5.26
DCTPI01R	TPI01	7.30	8.24	7.89	0.26	7.94	0
DCTPO01R	TPO01	7.12	8.44	7.70	0.27	7.66	0
DCTPY01R	TPY01	7.18	8.44	7.79	0.31	7.80	0
DCTSO01R	TSO01	7.23	8.19	7.88	0.26	7.87	0
DCTTX27R	TTX27	7.21	8.49	7.70	0.30	7.70	0
DCTWB00R SEG1	TWB01	7.28	9.14	7.94	0.37	7.88	7.27
DCTWB00R SEG2	TWB05, TWB06	7.14	11.98	7.92	0.54	7.84	6.09

2007-2011
Statistical Summary Report
For
Temperature (°C)

Waterbody	Station Data Used	Min. Value	Max Value	Avg. Value	Std. Dev.	Median Value	% Violation of WQ Std.
DCAKL00L	KNG01, KNG02	0.95	28.25	16.06	8.07	15.67	0
DCANA00E SEG1	ANA19, ANA21, ANA24	-2.65	30.73	17.17	8.80	18.07	0
DCANA00E SEG2	ANA01, ANA05, ANA08, ANA11, ANA14	-2.80	30.62	16.65	8.47	16.52	0
DCPMS00E SEG1	PMS37, PMS44	-2.32	29.31	15.39	9.32	15.45	0
DCPMS00E SEG2	PMS10, PMS21	-2.87	31.07	16.66	9.25	17.13	0
DCPMS00E SEG3	PMS01	2.44	30.00	16.52	9.04	16.50	0
DCPTB01L	PTB01	-1.44	29.39	15.31	9.70	15.40	0
DCPWC04E	PWC04	-2.48	29.80	15.69	9.60	16.30	0
DCRCR00R SEG1	RCR09	-2.99	25.54	12.77	8.25	13.49	0
DCRCR00R SEG2	RCR01	-2.70	25.33	13.23	7.88	13.85	0
DCTBK01R	TBK01	-2.25	22.37	12.48	6.98	12.38	0
DCTBR01R	TBR01	-0.87	23.69	12.70	7.13	12.72	0
DCTCO01L	TCO01, TCO06	0.17	29.35	17.91	8.56	19.01	0
DCTDA01R	TDA01	2.07	22.75	12.96	6.12	12.55	0
DCTDO01R	TDO01	1.83	21.86	13.40	5.75	13.88	0
DCTDU01R	TDU01	-1.93	24.40	12.88	7.70	12.28	0
DCTFB02R	TFB02	0.53	22.82	12.77	6.17	13.06	0
DCTFC01R	TFC01	-0.28	22.84	12.68	6.53	11.99	0
DCTFD01R	TFD01	0.52	22.67	11.78	6.26	11.06	0
DCTFE01R	TFE01	-1.30	24.52	14.06	7.40	13.50	0
DCTFS01R	TFS01	-2.59	23.66	11.87	7.21	12.54	0
DCTHR01R	THR01	-0.88	25.48	13.57	6.96	13.63	0

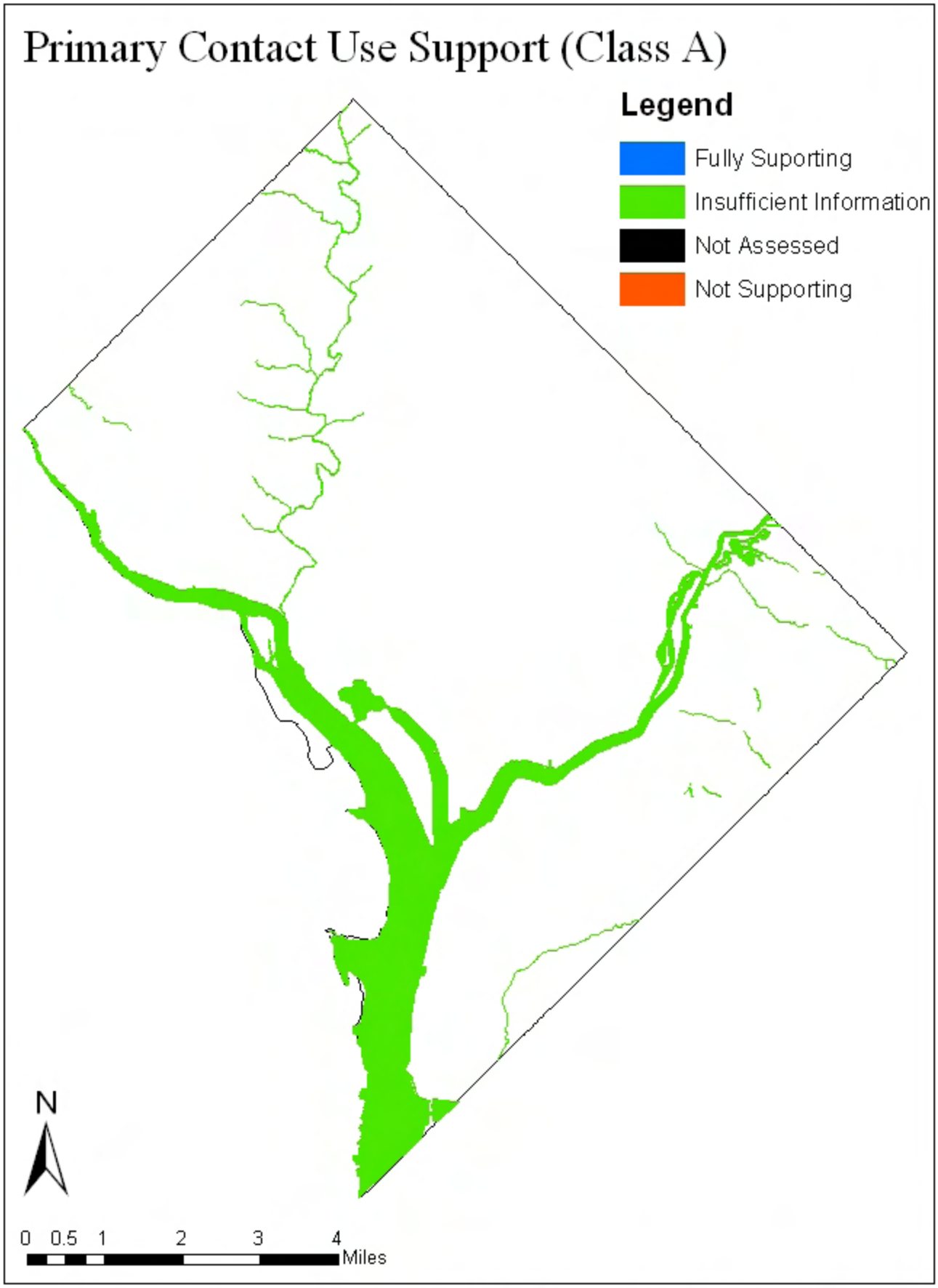
Waterbody	Station Data Used	Min. Value	Max Value	Avg. Value	Std. Dev.	Median Value	% Violation of WQ Std.
DCTKV01R	TKV01	-1.26	22.71	12.08	6.73	12.44	0
DCTLU01	TLU01	2.46	22.89	13.44	5.96	14.36	0
DCTMH01R	TMH01	-0.44	22.88	12.62	6.63	12.78	0
DCTNA01R	TNA01	-2.79	24.58	13.52	6.93	14.24	0
DCTNS01R	TNS01	2.53	21.72	12.39	6.66	13.38	0
DCTOR01R	TOR01	0.95	21.74	12.16	8.14	12.94	0
DCTPB01R	TPB01	2.21	19.93	11.83	6.71	12.07	0
DCTPI01R	TPI01	1.97	22.15	12.75	7.33	15.97	0
DCTPO01R	TPO01	2.38	22.86	13.47	7.19	15.44	0
DCTPY01R	TPY01	1.49	23.31	13.22	7.82	15.84	0
DCTSO01R	TSO01	1.49	22.57	11.54	7.24	9.84	0
DCTTX27R	TTX27	3.88	20.65	11.45	6.28	10.46	0
DCTWB00R SEG1	TWB01	-2.58	25.85	13.87	7.02	13.66	0
DCTWB00R SEG2	TWB05, TWB06	-2.13	24.51	13.13	6.85	12.83	0

2007-2011
Statistical Summary Report
For
Total Summary Report

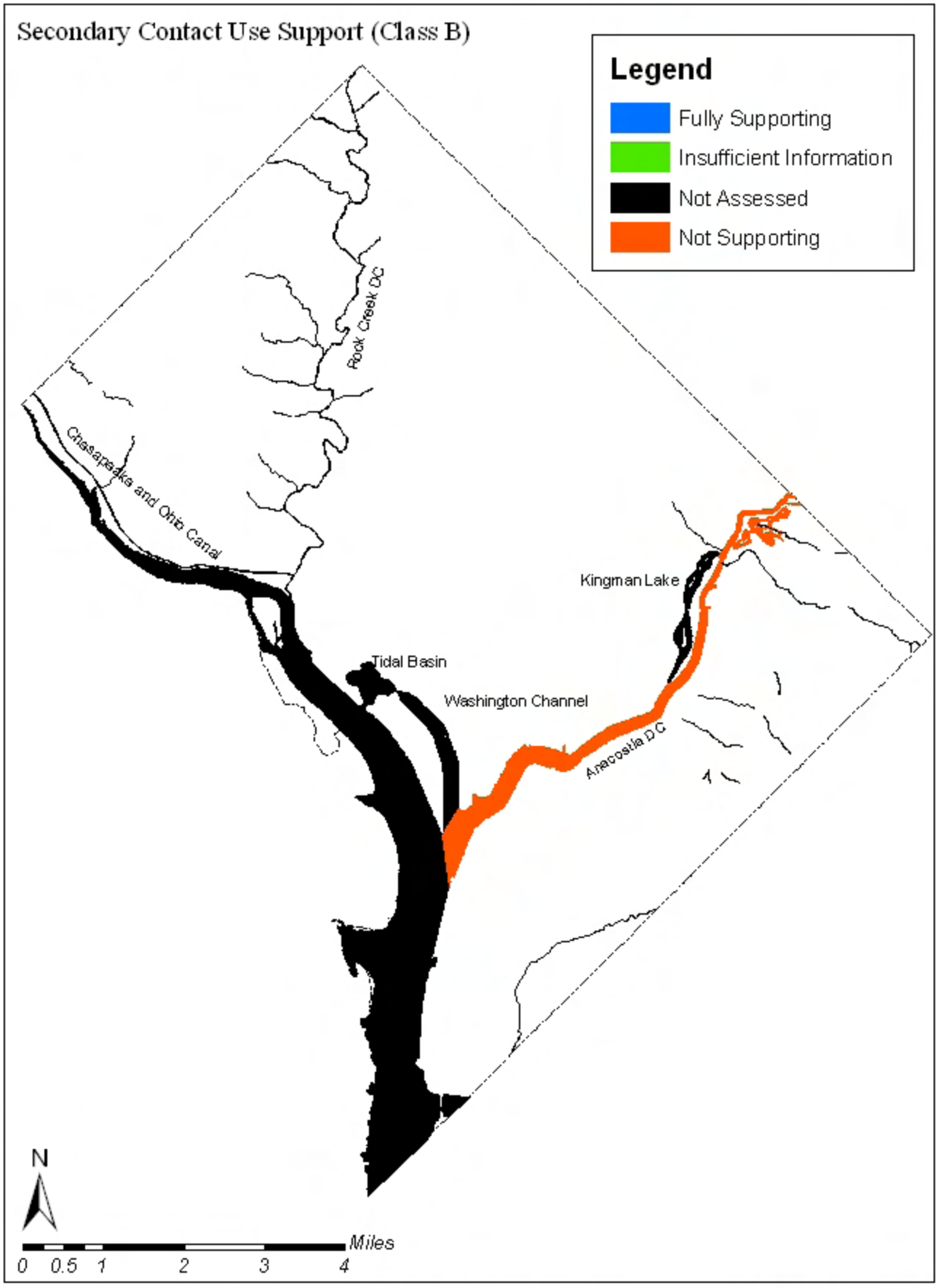
Waterbody	Station Data Used	Temp % Violation	pH % Violation	DO % Violation	Class A E. coli % Violation*
DCAKL00L	KNG01, KNG02	0	3.09	12.50	
DCANA00E SEG1	ANA19, ANA21, ANA24	0	1.20	5.39	
DCANA00E SEG2	ANA01, ANA05, ANA08, ANA11, ANA14	0	1.10	8.76	
DCPMS00E SEG1	PMS37, PMS44	0	8.74	0	
DCPMS00E SEG2	PMS10, PMS21	0	14.29	0	
DCPMS00E SEG3	PMS01	0	24.49	0	
DCPTB01L	PTB01	0	25.86	0	
DCPWC04E	PWC04	0	5.45	0	
DCRCR00R SEG1	RCR09	0	3.70	0	
DCRCR00R SEG2	RCR01	0	0	0	
DCTBK01R	TBK01	0	0	0	
DCTBR01R	TBR01	0	5.56	0	
DCTCO01L	TCO01, TCO06	0	16.28	0	
DCTDA01R	TDA01	0	0	0	
DCTDO01R	TDO01	0	0	0	
DCTDU01R	TDU01	0	5.00	10.53	
DCTFB02R	TFB02	0	11.76	0	
DCTFC01R	TFC01	0	5.26	11.11	
DCTFD01R	TFD01	0	8.70	22.73	
DCTFE01R	TFE01	0	0	0	
DCTFS01R	TFS01	0	0	0	
DCTHR01R	THR01	0	1.72	3.45	

Waterbody	Station Data Used	Temp % Violation	pH % Violation	DO % Violation	Class A E. coli % Violation*
DCTKV01R	TKV01	0	0	0	
DCTLU01	TLU01	0	0	0	
DCTMH01R	TMH01	0	0	0	
DCTNA01R	TNA01	0	0	5.26	
DCTNS01R	TNS01	0	0	0	
DCTOR01R	TOR01	0	5.26	0	
DCTPB01R	TPB01	0	5.26	0	
DCTPI01R	TPI01	0	0	0	
DCTPO01R	TPO01	0	0	0	
DCTPY01R	TPY01	0	0	10.53	
DCTSO01R	TSO01	0	0	0	
DCTTX27R	TTX27	0	0	5.88	
DCTWB00R SEG1	TWB01	0	7.27	1.82	
DCTWB00R SEG2	TWB05, TWB06	0	6.09	0	

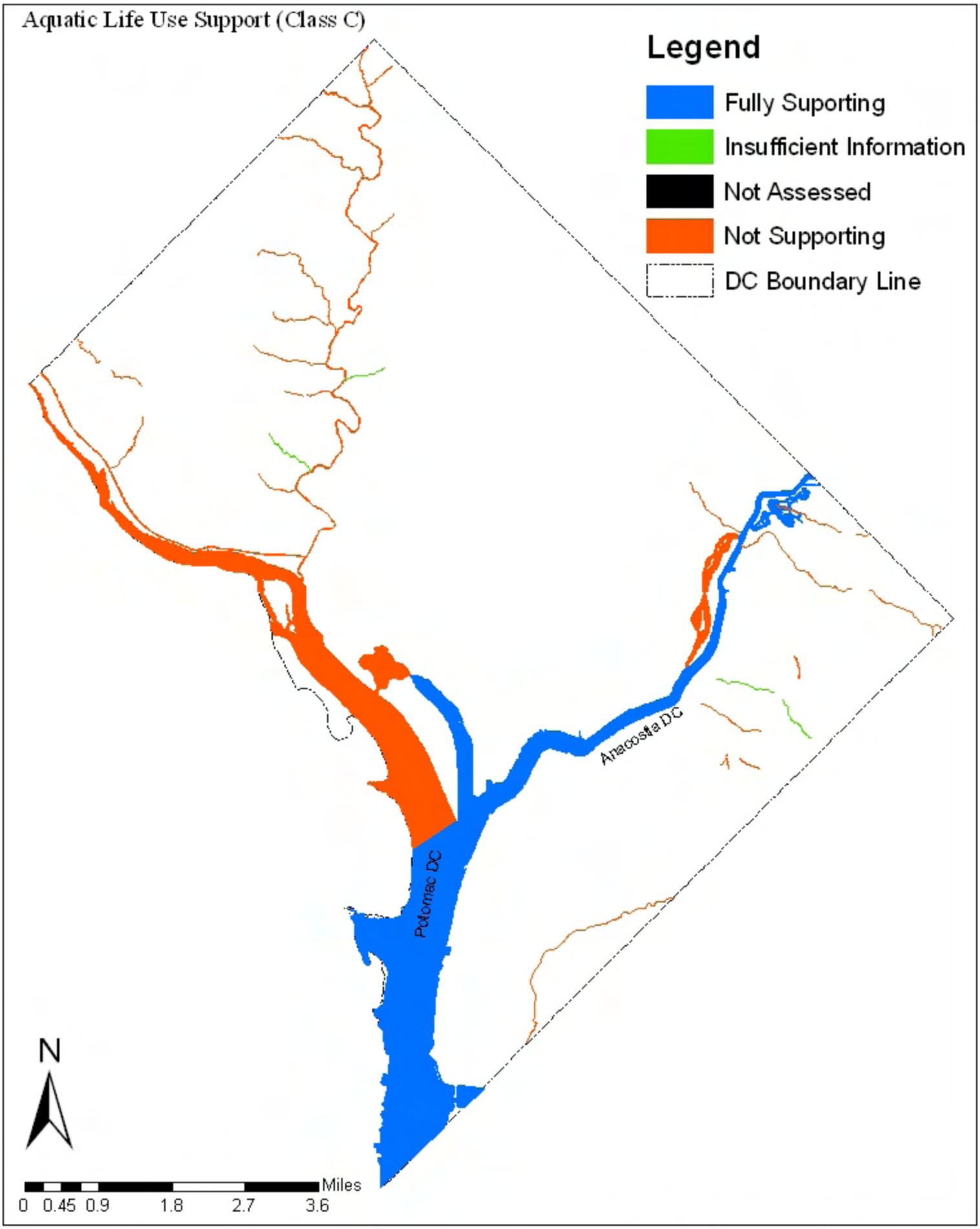
* Data for E. coli is for samples collected in 2008-2011.



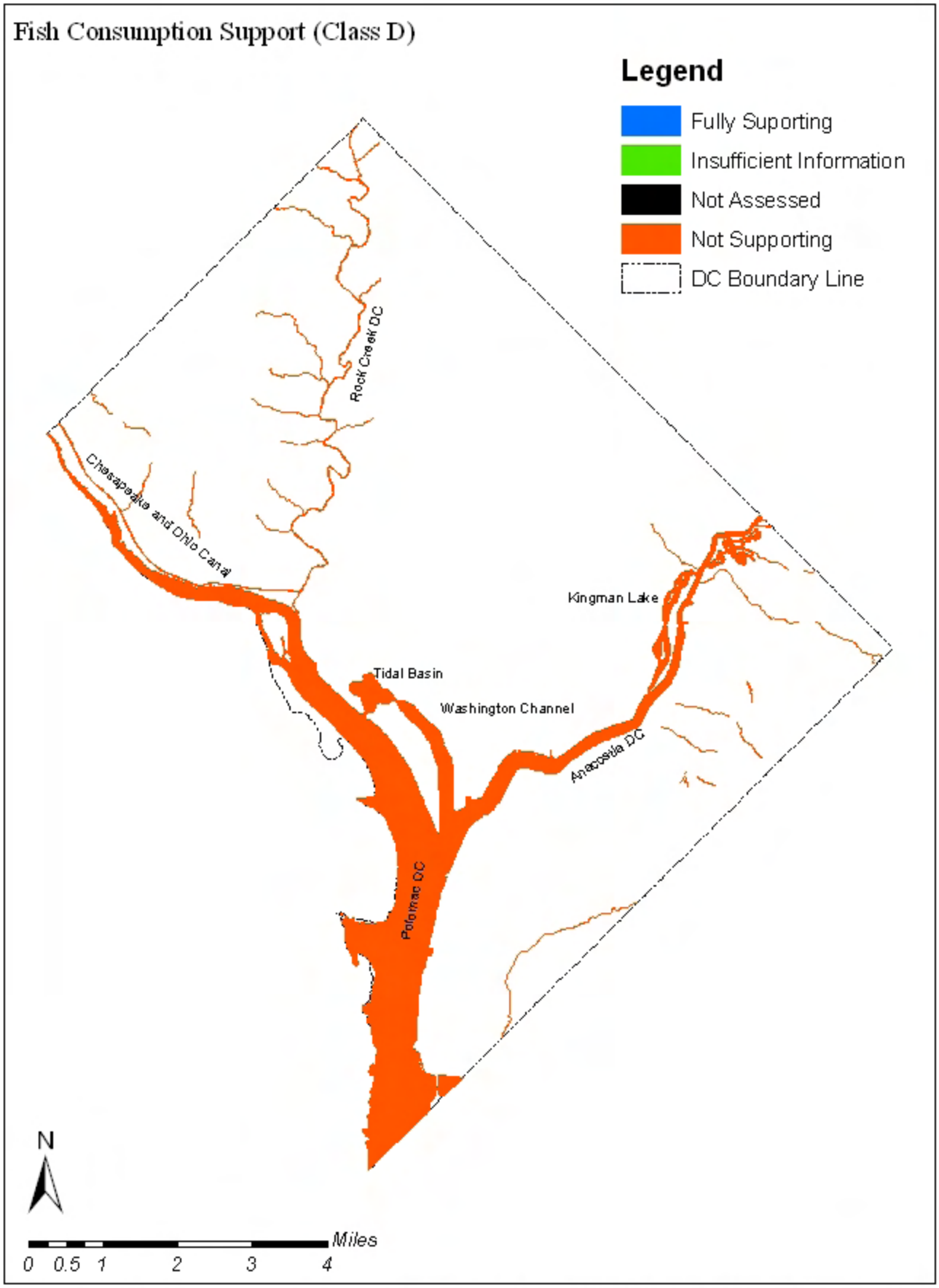
Appendix 3.5: Degree of Support for the Protection of Primary Contact Recreation



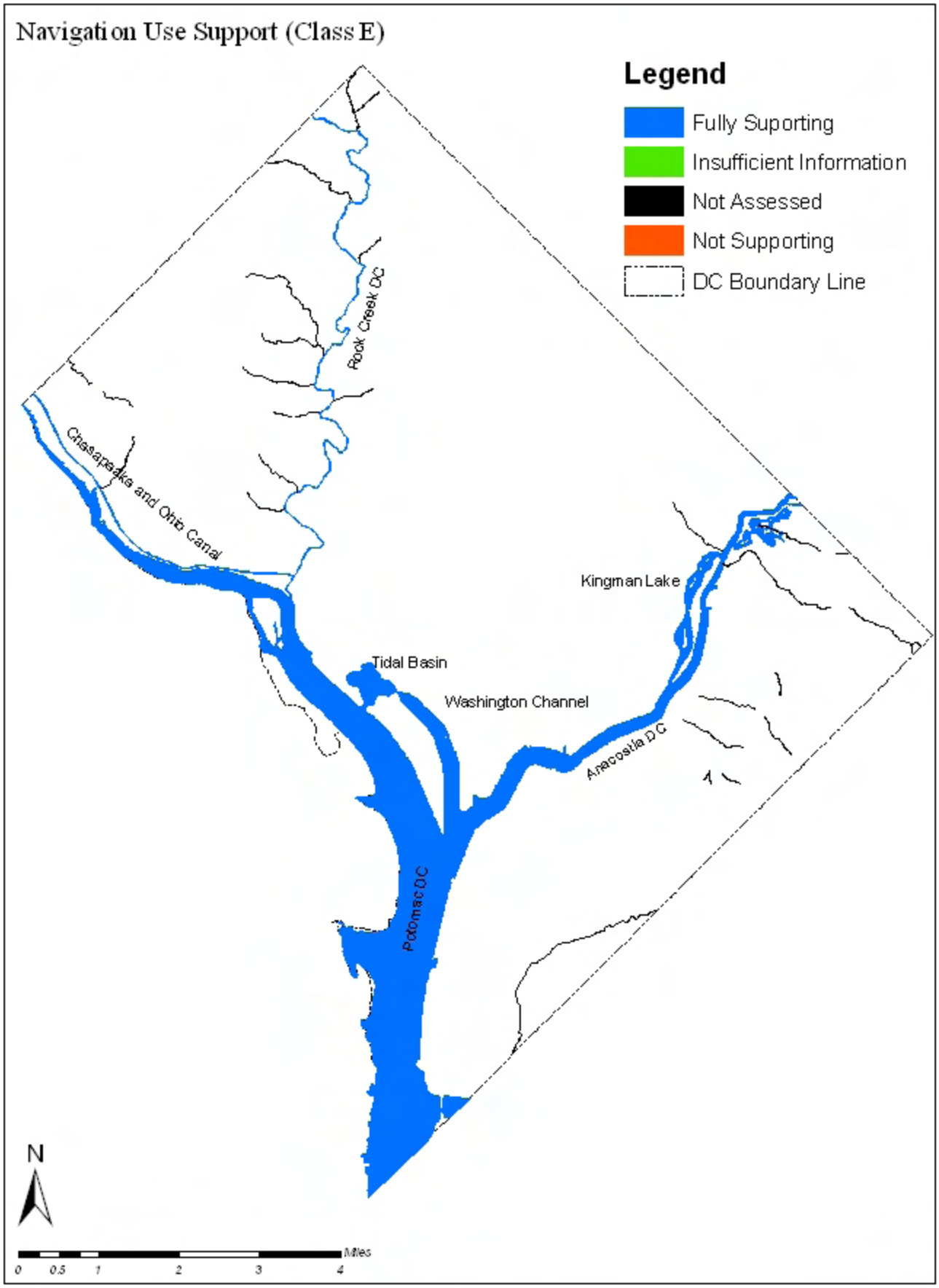
Appendix 3.6: Degree of Support for the Protection of Secondary Contact and Aesthetic Enjoyment.



Appendix 3.7: Degree of Support for the Protection and propagation of Fish, Shelfish and Wildlife.



Appendix 3.8: Degree of Support for the Protection of Human Health Related to the Consumption of Fish and Shellfish.



Appendix 3.9: Degree of Support for Navigation.

Categorization of District of Columbia Waters

Category 1- All designated uses are attained and no use is threatened.

No DC waters fit this category.

Category 2- Some, but not all, of the designated uses are attained and no use is threatened. The attainment status of the remaining designated uses is unknown as insufficient data exists to make an attainment determination.

No DC waters fit this category.

Category 3- Insufficient data exists to determine whether any designated uses are attained.

Category 4- Water is impaired or threatened for one or more designated uses, but a TMDL is not needed.
See subcategories below.

Category 5- Water is impaired or threatened for one or more designated uses and a TMDL is needed.

DISTRICT OF COLUMBIA

LIST OF IMPAIRED WATERBODIES

Category 3

Category 3- Insufficient data exists to determine whether any designated uses are attained.

303d Assessment Year	Geographic Location	WBID	WB Name	Pollutant(s) or Pollutant Categories Causing Impairment	Priority Ranking for TMDL Development	TMDL Establishment Date
2008	02070010	DCPTF[1]	Potomac Tidal Fresh	DO, Chla		
2008	02070010	DCATF[1]	Anacostia Tidal Fresh	DO, Chla		

[1] The waterbody segments as delineated by the Chesapeake Bay Program.

The District has adopted water quality standards for dissolved oxygen, water clarity and chlorophyll a (Chla) in accordance with the Chesapeake Bay Water Quality Criteria Guidance Document published in 2003 (EPA, 2003). 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 2008 listing, the tidal waters were assessed for the 30-day DO attainment and Chla.

DISTRICT OF COLUMBIA
LIST OF IMPAIRED WATERBODIES
Category 4A

Category 4A- All TMDLs needed to result in 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
1998	02070010	DCPMS00E	Middle Potomac River- Segment 2	pH	High	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	Bacteria Pathogens Fecal Coliform Organics Chlordane DDD DDE DDT Dieldrin Heptachlor Epoxide PAH 1,2,3	High High	Oct 2003 Oct 2003

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 Total Suspended Solids	High	
1998	02070010	DCTWB00R	Lower Watts Branch-segment 1	Bacteria Pathogens Fecal Coliform Organics Chlordane DDD DDE DDT Dieldrin Heptachlor Epoxide PAH 1,2,3 Total PCBs Total Suspended Solids	High High High	Oct 2003 Oct 2003 Oct 2003
1998	02070010	DCAKL00L	Kingman Lake	BOD* Bacteria Fecal Coliform Organics Chlordane DDD DDE DDT Dieldrin Heptachlor Epoxide	 High High	 Oct 2003 Oct 2003

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 Metals Arsenic Copper Lead Zinc Oil and Grease Total Suspended Solids	 High High	 Oct 2003 Oct 2003
1998	02070010	DCTDU01R	Fort DuPont Creek	Bacteria Fecal Coliform Metals Arsenic Copper Lead Zinc	High High	Oct 2003 Oct 2003
1998	02070010	DCTFD01R	Fort Davis Tributary	BOD Bacteria Fecal Coliform Metals Arsenic Copper Lead Zinc	 Medium Medium	 Oct 2003 Oct 2003
1998	02070010	DCTFS01R	Fort Stanton	Bacteria	Medium	Oct 2003

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
			Tributary	Fecal Coliform		
				Organics	Medium	Oct 2003
				Chlordane		
				DDD		
				DDE		
				DDT		
				Dieldrin		
				Heptachlor Epoxide		
				PAH 1,2,3		
				Total PCBs		
				Metals	Medium	Oct 2003
				Arsenic		
				Copper		
				Lead		
				Zinc		
1998	02070010	DCTFC01R	Fort Chaplin Tributary	Bacteria	High	Oct 2003
				Pathogens		
				Fecal Coliform		
				Metals	High	Oct 2003
				Arsenic		
				Copper		
				Lead		
				Zinc		
1998	02070010	DCTPB01R	Popes Branch	Bacteria	Medium	Oct 2003
				Fecal Coliform		
				Organics	Medium	Oct 2003

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
				Chlordane DDD DDE DDT Dieldrin Heptachlor Epoxide PAH 1,2,3 Total PCBs Metals Arsenic Copper Lead Zinc	Medium	Oct 2003
1998	02070010	DCTTX27R	Texas Avenue Tributary	Bacteria Fecal Coliform	Medium	Oct 2003
				Organics Chlordane DDD DDE DDT Dieldrin Heptachlor Epoxide PAH 1,2,3 Total PCBs	Medium	Oct 2003
				Metals Arsenic Copper	Medium	Oct 2003

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
				Lead Zinc		
1998	02070010	DCRCR00R	Upper Rock Creek-segment 2	Bacteria Pathogens Fecal Coliform Organics Metals Copper Lead Mercury Zinc	Medium Medium Medium	Feb 2004 Feb 2004 Feb 2004
1998	02070010	DCRCR00R	Lower Rock Creek- segment 1	Organics Bacteria Fecal Coliform Metals Copper Lead Mercury Zinc	Medium Medium Medium	Feb 2004 Feb 2004 Feb 2004
1998	02070010	DCTOR01R	Oxon Run	Bacteria Fecal Coliform Organics Chlordane DDT Dieldrin	Medium Medium	Dec 2004 Dec 2004

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 Metals Arsenic Copper Lead Zinc	Medium	Dec 2004
1998	02070010	DCPWC04E	Washington Ship Channel	Bacteria Fecal Coliform Organics Chlordane DDD DDE DDT Dieldrin Heptachlor Epoxide PAH 1,2,3 pH	Low Low Low	Dec 2004 Dec 2004 Dec 2004
1998	02070010	DCTBK01R	Battery Kemble Creek	Bacteria Fecal Coliform Metals Arsenic Copper Lead Zinc	Low Low	Dec 2004 May 2005

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	02070008	DCTDA01R	Dalecarlia Tributary	Bacteria Fecal Coliform Organics Chlordane DDD DDE DDT Dieldrin Heptachlor Epoxide PAH 1,2,3 PCBs Toxics	Low Low	Dec 2004 May 2005
1998	02070010	DCTCO01L	Chesapeake and Ohio Canal	Bacteria Fecal Coliform	Low	Dec 2004
1998	02070010	DCTNA01R	Nash Run	Bacteria Fecal Coliform Organics Chlordane DDD DDE DDT Dieldrin	Medium Medium	Oct 2003 Oct 2003

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 Metals Arsenic Copper Lead Zinc	Medium	Oct 2003
1998	02070010	DCPMS00E	Upper Potomac River- segment 3	Bacteria Pathogens Fecal Coliform Organics Total PCBs Nitrogen Phosphorus Total Suspended Solids	High High	Dec 2004 Oct 2007
1998	02070010	DCPMS00E	Middle Potomac River- segment 2	Bacteria Fecal Coliform Organics Total PCBs	High High	Dec 2004 Oct 2007

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	Bacteria Pathogens Fecal Coliform Organics Total PCBs	High High	Dec 2004 Oct 2007
1998	02070010	DCTFB01R	Foundry Branch	Bacteria Fecal Coliform Metals Arsenic Copper Lead Zinc	Low Low	Dec 2004 May 2005
1998	02070010	DCTBR01R	Broad Branch	Organics Chlordane DDD DDE DDT Dieldrin Heptachlor Epoxide PAH 1,2,3 Total PCBs	Low	Feb 2004

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	DCTDO01R	Dumbarton Oaks	Organics Chlordane DDD DDE DDT Dieldrin Heptachlor Epoxide PAH 1,2,3 Total PCBs	Low	Feb 2004
1998	02070010	DCTFE01R	Fenwick Branch	Organics Chlordane DDD DDE DDT Dieldrin Heptachlor Epoxide PAH 1,2,3 Total PCBs	Low	Feb 2004
1998	02070010	DCTKV01R	Klingle Valley Creek	Organics Chlordane DDD	Low	Feb 2004

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
				DDE DDT Dieldrin Heptachlor Epoxide PAH 1,2,3 Total PCBs		
1998	02070010	DCTLU01R	Luzon Branch	Organics: Chlordane DDD DDE DDT Dieldrin Heptachlor Epoxide PAH 1,2,3 Total PCBs	Low	Feb 2004
1998	02070010	DCTMH01R	Melvin Hazen Valley Branch	Organics Chlordane DDD DDE DDT Dieldrin Heptachlor Epoxide	Low	Feb 2004

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		
1998	02070010	DCTNS01R	Normanstone Creek	Organics Chlordane DDD DDE DDT Dieldrin Heptachlor Epoxide PAH 1,2,3 Total PCBs	Low	Feb 2004
1998	02070010	DCTPI01R	Pinehurst Branch	Organics Chlordane DDD DDE DDT Dieldrin Heptachlor Epoxide PAH 1,2,3 Total PCBs	Low	Feb 2004

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	DCTPO01R	Portal Branch	Organics Chlordane DDD DDE DDT Dieldrin Heptachlor Epoxide PAH 1,2,3 Total PCBs	Low	Feb 2004
1998	02070010	DCTPY01R	Piney Branch	Organics Chlordane DDD DDE DDT Dieldrin Heptachlor Epoxide PAH 1,2,3 Total PCBs	Low	Feb 2004
				Metals Arsenic Copper Lead Zinc	Low	Feb 2004

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	DCTSO01R	Soapstone Creek	Organics Chlordane DDD DDE DDT Dieldrin Heptachlor Epoxide PAH 1,2,3 Total PCBs Toxics	Low	Feb 2004
1998	02070010	DCPTN01L	Tidal Basin	Bacteria Fecal Coliform Organics Chlordane DDD DDE DDT Dieldrin Heptachlor Epoxide PAH 1,2,3 Total PCBs	Low Low	Dec 2004 Dec 2004
1998	02070010	DCANA00E	Lower Anacostia	BOD	High	June 2008

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
			River- segment 1	Bacteria	High	Oct 2003
				Fecal Coliform		
				Organics	High	Oct 2003
				Chlordane		
				DDD		
				DDE		
				DDT		
				Dieldrin		
				Heptachlor Epoxide		
				PAH 1,2,3		
				Total PCBs		
				Metals	High	Oct 2003
				Arsenic		
				Copper		
				Lead		
				Zinc		
				Total Suspended Solids	High	July 2007
				Oil and Grease	High	Oct 2003
				Total PCBs	High	Oct 2007
				Nitrogen		
				Phosphorus		
1998	02070010	DCANA00E	Upper Anacostia River- segment 2	BOD	High	June 2008
				Bacteria	High	Oct 2003
				Fecal Coliform		
				Organics	High	Oct 2003
				Chlordane		

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
				DDD DDE DDT Dieldrin Heptachlor Epoxide PAH 1,2,3 Total PCBs		
				Metals Arsenic Copper Lead Zinc	High	Oct 2003
				Total Suspended Solids	High	July 2007
				Oil and Grease	High	Oct 2003
				Nitrogen	High	Oct 2007
				Phosphorus		

*BOD means biochemical oxygen demand

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.

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 all waterbody/pollutant combinations and result in attainment of all water quality standards in a reasonable period of time.

No DC waters fit this category.

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

DISTRICT OF COLUMBIA
LIST OF IMPAIRED WATERBODIES

Category 5

Category 5- Water is impaired or threatened for one or more designated uses and a TMDL is needed**.**

303d Listing Year	Geographic Location	WBID[1]	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	DCTFB02R	Foundry Branch	DO	Medium	N	Aug 2013
2002	02070010	DCTBR01R	Broad Branch	Fecal coliform	Medium	N	Aug 2013
2002	02070010	DCTDO01R	Dumbarton Oaks	Fecal coliform	Low	N	Apr 2014
2002	02070010	DCTFE01R	Fenwick Branch	Fecal coliform	Low	N	Apr 2014
2002	02070010	DCTKV01R	Klingle Valley Creek	Fecal coliform	Low	N	Apr 2014
2002	02070010	DCTLU01R	Luzon Branch	Fecal Coliform	Medium	N	Aug 2013
2002	02070010	DCTMH01R	Melvin Hazen Valley Branch	Fecal Coliform	Low	N	Apr 2014

DISTRICT OF COLUMBIA
LIST OF IMPAIRED WATERBODIES

Category 5

303d Listing Year	Geographic Location	WBID[1]	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	DCTNS01R	Normanstone Creek	Fecal coliform	Low	N	Apr 2014
2002	02070010	DCTPI01R	Pinehurst Branch	Fecal coliform	Medium	N	Aug 2013
2002	02070010	DCTPO01R	Portal Branch	Fecal coliform	Medium	N	Aug 2013
2002	02070010	DCTPY01R	Piney Branch	Fecal coliform	Low	N	Apr 2014
2002	02070010	DCTSO01R	Soapstone Creek	Fecal Coliform	Medium	N	Aug 2013
2002	02070010	DCPTB01L	Tidal Basin	pH	Medium	N	Aug 2014
2002	02070010	DCTHR01R	Hickey Run	Chlorine(total Residual)	High	N	Dec 2012

Table 1. *List of monitoring wells.*

USGS site name	USGS site number	DDOE well number	Site location
AC Aa 1	385225076590101	DCMW001-03	Anacostia Park Recreation Center
AC Aa 2	385157076580301	DCMW010-05	28th Street SE (near Hilcrest 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. Toten
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	16th 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
"New well"	not yet available	n/a	Capitol Hill Day School

* Well installed as part of the DC Pesticides project, but monitored in FY10 and FY11 as part of the Anacostia GW project.

Yellow highlight indicates well no longer exists

APPENDIX 5.2: Identification, location, and construction information for ground-water monitoring wells in Washington, D.C. used to obtain pesticide samples from September through December 2005, and (or) August through September, 2008 (modified from Klohe and Debrewer, 2007)

[USGS, U.S. Geological Survey; DDOE, District Department of the Environment; NAD83, North American Datum, 1983; NAVD 88, North American Vertical Datum of 1988; ft., feet; a.l.s, altitude of land surface; b.l.s., below land surface; unk, unknown; (° ' "), degrees, minutes, seconds; '05, 2005; '08, 2008; Alluv., Alluvium; Pot. Fm, S; Potomac Formation, sand lithofacies; Pot. Fm, C; Potomac Formation, clay lithofacies; Ter., Terrace; dep., deposits; Sap., saprolite; Fm, Formation; Shaded couplets indicate paired shallow and deep wells located at the same site]

USGS well number	USGS site identifier	DDOE well number	Latitude (° ' ", NAD83)	Longitude (° ' ", NAD83)	Altitude (ft a.l.s. NAVD 88)	Date[1] well constructed	Well depth (ft b.l.s.)	Cased interval (ft b.l.s.)	Casing diameter (outer, inches)[2]	Screened interval (ft b.l.s.)	Lithology of the screened interval [3]	Pesticide sampling '05	Pesticide sampling '08
Anacostia River Watershed													
AC Aa 1	385225076590101	DCMW001-03	38° 52' 25"	76° 59' 01"	5.7	2/5/1998	30	0 - 25	2	25 - 30	Alluv.	X	
AC Aa 6	385138076585901	DCMW001-08	38° 51' 38.4"	76° 58' 59.3"	140.0	5/8/2008	18.5	0.24 - 12.5	2	12.5 - 18.5	Alluv.		X
AC Aa 7	385138076585902	DCMW002-08	38° 51' 38.4"	76° 58' 59.3"	140.0	5/8/2008	60	0.62 - 49.5	2	49.5 - 59.5	Pot. Fm, S		X
WE Ba 9	385606076584101	DCMW012-05	38° 56' 06.5"	76° 58' 41.4"	81.3	8/15/2005	18	0.35 - 8	1	8 - 18	Pot. Fm, S	X	X
WE Ba 10	385534076582101	DCMW007-05	38° 55' 34.4"	76° 58' 21.4"	74.4	8/18/2005	17	0.35 - 7	1	7 - 17	Alluv.	X	
WE Ba 11	385649076584201	DCMW003-08	38° 56' 48.8"	76° 58' 21.4"	88.0	7/30/2008	28.5	0.47 - 18.5	2	18.5 - 28.5	Pot. Fm, C		X
WE Bb 3	385504076563801	DCMW001-02	38° 55' 03.6"	76° 56' 37.7"	12.3	7/24/2002	25	-3.6 - 15	2	15 - 25	Alluv.	X[4]	
WE Bb 4	385504076563802	DCMW004-02	38° 55' 03.6"	76° 56' 37.7"	12.4	7/26/2002	32	-3 - 22	2	22 - 32	Alluv.	X[4]	
WE Ca 29	385238076581501	DCMW005-02	38° 52' 38.4"	76° 58' 15.3"	13.4	7/29/2002	48.5	0.15 - 38.5	2	38.5 - 48.5	Alluv.	X[4]	
WE Ca 32	385332076594701	DCMW001-04	38° 53' 31.8"	76° 59' 47.1"	80.0	10/1/1992	29	0 - 19	4	19 - 29	Ter. dep.	X[5]	X
WE Ca 33	385349076592801	DCMW006-05	38° 53' 49.8"	76° 59' 28.3"	67.8	8/5/2005	38	0.47 - 28	2	28 - 38	Ter. dep.	X	
WE Ca 34	385245076583501	DCMW005-05	38° 52' 45.6"	76° 58' 35.1"	19.6	8/10/2005	33	0.55 - 13, 33 - 43	2	13 - 33	Alluv. -Ter. dep.	X	X
WE Cb 5	385443076562801	DCMW002-02	38° 54' 43.5"	76° 56' 28.4"	18.5	7/24/2002	22.6	0.2 - 12.6	2	12.6 - 22.6	Ter. dep.	X[4]	X
WE Cb 6	385443076562802	DCMW003-02	38° 54' 43.5"	76° 56' 28.4"	18.8	7/25/2002	46.3	0.2 - 36.3	2	36.3 - 46.3	Ter. dep.	X[4]	
WE Cb 8	385252076572801	DCMW002-04	38° 52' 52.3"	76° 57' 28"	61.0	4/1/1992	265	0 - 255	4	255 - 265	Pot. Fm, S	X[5]	X

USGS well number	USGS site identifier	DDOE well number	Latitude (° ' ", NAD83)	Longitude (° ' ", NAD83)	Altitude (ft a.l.s. NAVD 88)	Date[1] well constructed	Well depth (ft b.l.s.)	Casing interval (ft b.l.s.)	Casing diameter (outer, in inches)[2]	Screened interval (ft b.l.s.)	Lithology of the screened interval[3]	Pesticide sampling ' 05	'08
Anacostia River Watershed, continued													
WE Cb 11	385332076564101	DCMW003-05	38° 53' 32.1"	76° 56' 41.2"	60.0	7/28/2005	21	0.32 - 16	1	16 - 21	Alluv.	X	
WE Cb 12	385332076564102	DCMW004-05	38° 53' 32.1"	76° 56' 41.2"	60.6	8/3/2005	39	0.32 - 29	2	29 - 39	Pot. Fm, C	X	
WE Cc 3	385327076544801	DCMW008-05	38° 53' 27"	76° 54' 48.5"	88.7	8/16/2005	23	0.31 - 13	1	13 - 23	Pot. Fm, C	X	X
WW Bc 8	385519077012601	DCMW009-05	38° 55' 19.3"	77° 01' 26.9"	123.4	8/18/2005	32	0.33 - 22	1	22 - 32	Pot. Fm, S	X	
WW Bc 9	385527077000701	DCMW011-05	38° 55' 27.8"	77° 00' 07.7"	133.6	8/17/2005	36	0.27 - 26	1	26 - 36	Pot. Fm, S	X	X
Rock Creek Watershed													
WW Bc 10	385619077020701	DCMW005-08	38° 56' 19.3"	77° 02' 07.3"	120	7/29/2008	32	0.86 - 22	2	22 - 32	Laurel Fm		X
WW Bc 11	385707077021801	DCMW006-08	38° 57' 06.6"	77° 02' 17.9"	250	7/28/2008	38.4	0.45- 28.4	2	28.4 - 38.4	Sap. above Laurel Fm		X
WW Ac 8	385929077020901	DCMW007-08	38° 59' 29.3"	77° 02' 08.6"	265	7/31/2008	34	0.58 - 23.6	2	23.6 - 33.6	Sap. above Laurel Fm		X
WW Ba 28	385644077061101	DCMW004-09	38° 56' 44"	77° 06' 11"	220	7/1/1992	100	0 - 50	4	50 - 100	Sykesville Fm		X

[1] Except for well AC Aa 1, all wells are constructed of polyvinyl chloride casings and screens. Well AC Aa 1 is constructed of stainless steel materials.

[2] Except for well AC Aa 1 and well WE Cb 6, the diameter of the well screen is similar to the diameter of its casing. Diameters of the screens in well AC Aa 1 and well WE CB 6 are 1.25 inches and 0.75 inches, respectively.

[3] On basis of well drilling-logs and geologic units described and mapped by Southworth and Denenny, 2006.

[4] Previously sampled in July - August 2002 (Miller and Klohe, 2003).

[5] Previously sampled quarterly in 1992-93 (Schneider and others, 1993a).

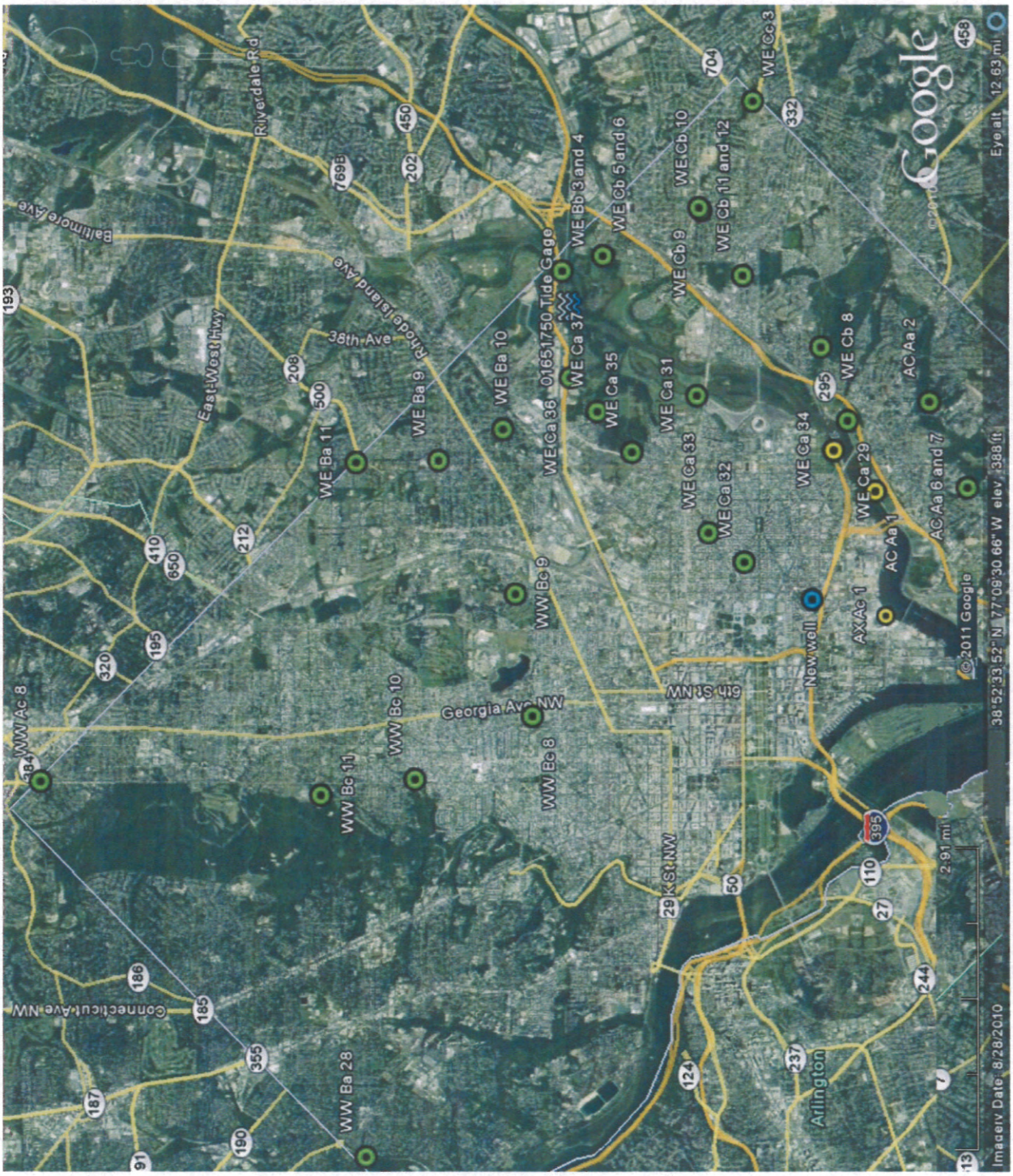


Figure 1. Map showing locations of monitoring wells and the tide gage, Washington, D.C.

APPENDIX 5.4 - MAJOR SOURCES OF GROUND WATER CONTAMINATION

Sources	Ten Highest-Priority Sources (✓)	Relative Priority	Factors[a]
Animal Feedlots	NA	--	--
Containers		L	A, B, D, E
CERCLIS Sites	✓	H	A, B, D, E, F, G, H
De-icing Applications	✓	M	A, D, F, G, H
Federal Superfund (NPL)	✓	H	A, B, D, E, F, G, H
Fill		H	A, D, E, F, G, H
Graveyards	✓	M	--
Landfills (permitted)	✓	H	A, B, D, E, F, G, H
Landfills (unpermitted)	✓	U[b]	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	✓	M	A, B, C, F, G, H
Pipeline and Sewer Lines	✓	M	F, H
Radioactive Disposal Sites	NA	--	--
RCRA Sites	✓	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)	✓	H	A, B, D, E, F, G, H
Storm Water Drainage Wells		M	I
Surface Impoundments		L	A, B
Transportation of Materials	✓	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).

[a] 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 5.5 - SUMMARY OF DC GROUNDWATER PROTECTION PROGRAMS

Programs or Activities	Check	Implementation Status	Responsible State Agency
Active SARA Title III Program	✓	Fully established	OEP
Ambient ground water monitoring system	✓	Partly established	DDOE
Aquifer vulnerability assessment[1]	✓	Fully established	DDOE
Aquifer mapping[2]	✓	Under development	DDOE
Aquifer characterization	✓	Under development	DDOE
Comprehensive data management system[3]	✓	Under development	DDOE
EPA-endorsed Core Comprehensive State Ground Water protection Program (CSGWPP)	✓	Under development	DDOE
Ground water discharge permits			
Ground water Best Management Practices			
Ground water legislation	✓	Fully established	DDOE
Ground water classification	✓	Fully established	DDOE
Ground water quality standards	✓	Fully established	DDOE
Interagency coordination for ground water protection initiatives	✓	Under development	DDOE
Nonpoint Source Controls			
Pesticide State Management Plan	✓	Fully established	DDOE
Pollution Prevention Program	✓	Under Development	DDOE
Resource Conservation and Recovery Act (RCRA) Primacy	✓	Fully established	DDOE

Programs or Activities	Check	Implementation Status	Responsible State Agency
Active SARA Title III Program	✓	Fully established	OEP
State Superfund [4]			
State RCRA Program incorporating more stringent requirements than RCRA Primacy	✓	Fully established	DDOE
State septic system regulations			
Underground storage tank installation requirements	✓	Fully established	DDOE
Underground Storage Tank Remediation Fund	✓	Fully established	DDOE
Underground Storage Tank Permit Program	✓	Fully established	DDOE
Underground Injection Control Program			
Vulnerability assessment for drinking water/wellhead protection	✓	Fully established	DDOE
Well abandonment regulations	✓	Pending	DDOE
Wellhead Protection Program (U.S. EPA-approved)			
Well installation regulations	✓	Pending	DDOE

OEP - Office of Emergency Preparedness
DDOE – District Department of the Environment

APPENDIX 5.6: SHALLOW AQUIFER QUALITY/CONTAMINATION

Aquifer: Shallow Aquifer				
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	25	12	10
DOD/DOE	Yes (a)	47	9	8
UST- Total opened and closed	Yes	2806 (b) (g)	1696 (g)	437 (g)
UST Active/Opened	Yes	659 (b)	257 (c)	112 (c)
RCRA Corrective Action	Yes	2	2	1
Underground Injection	Yes (d)	53	—	---
State Sites (Voluntary Clean Lands Program)	Yes (e)	19	19	---
Nonpoint Sources	(f)	—	—	---
Other	Yes	26	26	26
Totals		3635	2042	599

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.

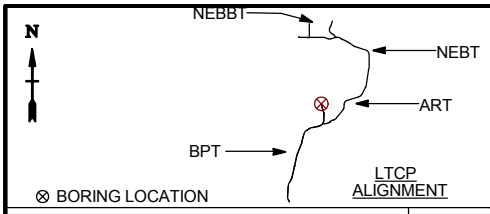
(c) There is on-going groundwater contamination assessment/remediation and monitoring by responsible parties for more than 60 percent of the opened LUST cases pending closure. These cases include heating oil contaminated sites.

(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.



Log of Boring BPS-42

PROJECT: **CSO LONG TERM CONTROL PLAN**

PROJECT LOCATION: **WASHINGTON DC** COORD. SYS./DATUM: **MD NAD 83/91/DC DPW**

PROJECT NUMBER: **DCFA # 421-WSA** COORDINATES: **N 439896.419 E 1311372.13**

DATE STARTED: **9/28/2009**
DATE COMPLETED: **10/8/2009**
LOGGED BY: **K. Ainslie/ S. Karimi**
CHECKED BY: **A. Harding**
DRILLING CONTRACTOR: **Bowser Morner**
DRILL RIG: **Versa Sonic**
DRILLER: **Dennis Sink/ Wilbur**

DRILL METHOD: **Sonic**
HAMMER TYPE/WEIGHT: **NA/NA**
CASING TYPE: **Steel**
CASING SIZE: **8" I.D. / 6" I.D.**
BIT TYPE/SIZE: **Button/Diamond / 4" I.D/NQ**
BOREHOLE DEPTH: **326.0 FT**
SURFACE ELEVATION: **10.16 FT**

Groundwater Observations

	Date	Time	Depth	Casing Depth
Encountered ▽	09-28-2009	10:55	8.0	8.0

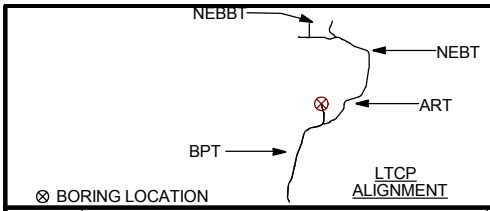
DEPTH (FT)	ELEV. (FT)	DESCRIPTION	USCS	GRAPHIC LOG	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS	REC (IN.) (%)	RQD (%)	WELL	MOISTURE CONTENT / ATTERBERG (MC PL LL; 20 40 60 80)	Pocket Pen. (tsf)	Torvane (tsf)	REMARKS AND TESTS
0	10.16	(FILL) Sampled as moist, brown to dark brown, fine to coarse, Silty Sand With Gravel, estimated 15-25% fines, estimated 15-25% gravel, subangular to subrounded gravel, contains brick fragments, upper 0.5' contains asphalt and concrete	SM											0.0' : Performed soft dig on 09/28/09 from 0'-8.3'. No utilities encountered. Advanced boring using Versa Sonic.
5	5													
▽														
10	0	(FILL) Sampled as wet, dark grayish brown, soft, low to medium plasticity, Sandy Lean Clay, estimated 15-25% fine to coarse sand, estimated 5-10% fine gravel	CL											
		(FILL) Sampled as wet, dark grayish brown, medium plasticity, Lean Clay, estimated 5-10% sand, estimated 5-10% fine to coarse gravel and cobbles (1"-3" diameter), angular to subangular, contains wood debris	CL		SC-1			97" (67%)					
15	-5													
20	-10													20.0' : Added clean water to hole for drilling
		Moist, very dark grayish brown and very dark brown, ORGANIC SOIL WITH SAND, estimated 15 - 25% fine to medium sand, moderate organic odor, numerous organics, contains wood fibers, approximately 1"-3" peat layers from 21'-25'	OL/OH											21.0' : See note at the end of the boring log
25														

WASA SOIL+CORE REV2 LTCP FINAL DATABASE.GPJ DXF TRIAL 4.GPJ 11/22/10 REV-4

Program Consultants Organization

GREELEY AND HANSEN | JA UNDERGROUND

B = Bulk Sample
G = Geoprobe
S = Split Spoon Sample
T = Shelby Tube Sample
P = Pitcher Sample
D = Denison Sample
RC = Rock Core
SC = Sonic Core



Log of Boring BPS-42

PROJECT: **CSO LONG TERM CONTROL PLAN**

PROJECT LOCATION: **WASHINGTON DC**

PROJECT NUMBER: **DCFA # 421-WSA**

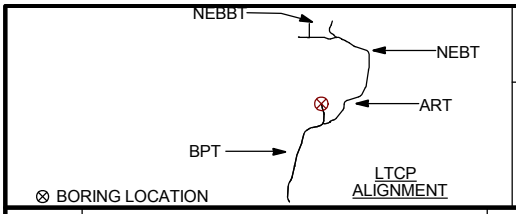
DEPTH (FT)	ELEV. (FT)	DESCRIPTION	USCS	GRAPHIC LOG	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS	REC (IN.) (%)	RQD (%)	WELL	MOISTURE CONTENT / ATTERBERG (MC PL LL)	Pocket Pen. (tsf)	Torvane (tsf)	REMARKS AND TESTS
			OL/OH		SC-2			85" (71%)						
30	-20	Wet, dark grayish brown, fine to coarse, WELL GRADED GRAVEL, subrounded gravel	GW		SC-3			18" (15%)						30.0' : No water returned during run 30'-40'. Driller unsure of cause for low recovery.
40	-30	Moist, dark grayish brown, low plasticity, LEAN CLAY WITH SAND, estimated 15 - 25% fine sand, 4" cobble encountered at 42'	CL											40.0' : No water returned from 40'-50'
		Wet, dark gray, fine to medium, POORLY GRADED SAND, estimated <5% fine sand At 43.7' contains 3" layer of silt with wood fibers at 43.7'	SP											
45	-35	Wet, dark gray, fine to medium, POORLY GRADED SAND WITH GRAVEL, estimated 30 - 45% gravel, estimated <5% fines, subrounded gravel, contains 6" layer of moist to wet, light gray to dark gray, fine to medium, POORLY GRADED SAND WITH SILT, estimated 5-10% fines	SP		SC-4			78" (65%)						
50	-40	Moist, very stiff, reddish brown and olive brown, high plasticity, FAT CLAY, estimated <5% fine sand, **(G1)**	CH									>4.5		50.0' : SC-5 sample recovery indicated 14% elongation upon recovery
		Moist, dark yellowish brown and light gray,	SM											

Program Consultants Organization

GREELEY AND HANSEN | JA UNDERGROUND

B = Bulk Sample
G = Geoprobe
S = Split Spoon Sample
T = Shelby Tube Sample
P = Pitcher Sample
D = Denison Sample
RC = Rock Core
SC = Sonic Core

WASA SOIL+CORE REV2 LTCP FINAL DATABASE.GPJ DXF TRIAL 4.GPJ 11/22/10 REV-4



Log of Boring BPS-42

PROJECT: **CSO LONG TERM CONTROL PLAN**

PROJECT LOCATION: **WASHINGTON DC**

PROJECT NUMBER: **DCFA # 421-WSA**

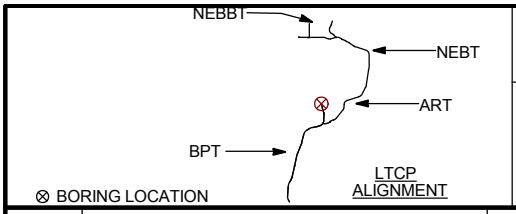
DEPTH (FT)	ELEV. (FT)	DESCRIPTION	USCS	GRAPHIC LOG	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS	REC (IN.) (%)	RQD (%)	WELL	MOISTURE CONTENT / ATTERBERG (MC PL LL)	Pocket Pen. (tsf)	Torvane (tsf)	REMARKS AND TESTS
55	-45	low plasticity, fine to medium, SILTY SAND, estimated 15 - 25% fines, **(G3A)**	SM		SC-5			120" (100%)						
		Moist, dark yellowish brown and light gray, fine to medium, POORLY GRADED SAND WITH SILT, estimated 5 - 10% fines, **(G4)**	SP-SM											
60	-50													60.0' : SC-6 sample recovery indicated 24% elongation upon recovery
		Moist, gray, medium plasticity, SANDY LEAN CLAY, estimated 30 - 45% fine to medium sand, estimated <5% dark gray-black lignite, lignite is soft/smears, **(G2)**	CL											
		Moist to wet, gray, fine to medium, POORLY GRADED SAND WITH CLAY, estimated 5 - 10% fines, **(G4)**	SP-SC		SC-6			120" (100%)						
65	-55													
		Moist, very stiff, gray and olive brown, medium plasticity, SANDY FAT CLAY, estimated 30 - 45% fine sand, **(G1)**	CH									3.5		70.0' : SC-7 sample recovery indicated 25% elongation upon recovery
70	-60													
		At 73.0' changes to estimated 30-45% lignite, contains approximately 4" layer of crisp lignite												
75	-65	Moist to wet, gray, fine to medium, CLAYEY SAND, estimated 15 - 25% fines, **(G3A)**	SC		SC-7			120" (100%)						
		Wet, gray, fine to medium, POORLY GRADED SAND, estimated <5% fines, **(G4)**	SP											
		Moist to wet, gray, fine to medium, CLAYEY SAND, estimated 15 - 25% fines, **(G3A)**	SC											
80	-70	Wet, light gray, fine to medium, CLAYEY SAND, estimated 15 - 25% fines, estimated <5% fine gravel, **(G3A)**	SC											80.0' : SC-8 sample recovery indicated 9% elongation upon recovery

Program Consultants Organization

GREELEY AND HANSEN | JA UNDERGROUND

B = Bulk Sample
G = Geoprobe
S = Split Spoon Sample
T = Shelby Tube Sample
P = Pitcher Sample
D = Denison Sample
RC = Rock Core
SC = Sonic Core

WASA SOIL+CORE REV2 LTCP FINAL DATABASE.GPJ DXF TRIAL 4.GPJ 11/22/10 REV-4



Log of Boring BPS-42

PROJECT: **CSO LONG TERM CONTROL PLAN**

PROJECT LOCATION: **WASHINGTON DC**

PROJECT NUMBER: **DCFA # 421-WSA**

DEPTH (FT)	ELEV. (FT)	DESCRIPTION	USCS	GRAPHIC LOG	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS	REC (IN.) (%)	RQD (%)	WELL	MOISTURE CONTENT / ATTERBERG (MC PL LL; 20 40 60 80)	Pocket Pen. (tsf)	Torvane (tsf)	REMARKS AND TESTS
85	-75				SC-8			120" (100%)						
90	-80	At 92.5' Contains 6" layer of SANDY CLAY	SC											90.0' : SC-9 sample recovery indicated 19% elongation upon recovery
95	-85	Moist, very stiff, light gray, high plasticity, FAT CLAY, estimated 5 - 10% fine sand, **(G1)**	CH		SC-9			120" (100%)				>4.5	>2.5	
		Moist, light gray and olive brown, fine to medium, CLAYEY SAND, estimated 15 - 25% fines, **(G3A)**	SC											
100	-90	Wet, light gray, fine to medium, POORLY GRADED SAND WITH SILT, estimated 5 - 10% fines, contains 12" layer of moist, light gray, fine to medium, CLAYEY SAND at 104', **(G4)**	SP-SM								O			100.0' : Advanced 8" casing over 6" casing to 50' 100.0' : SC-10 sample recovery indicated 17% elongation upon recovery
105	-95	Moist, very stiff, dark gray, high plasticity, FAT CLAY, estimated <5% fine sand, **(G1)** At 106.0' Fine sand laminations present from 106'-109.5'	CH		SC-10			120" (100%)				>4.5		
110	-100	Moist, dark gray and light gray, high plasticity, SANDY FAT CLAY, estimated 30-45% fine to medium sand (present in layers/laminations, interbedded with clay), contains 6" layers of POORLY GRADED SAND WITH CLAY and POORLY GRADED SAND at 113' and 113.5', **(G1)**	CH											110.0' : SC-11 sample recovery indicated 37% elongation upon recovery

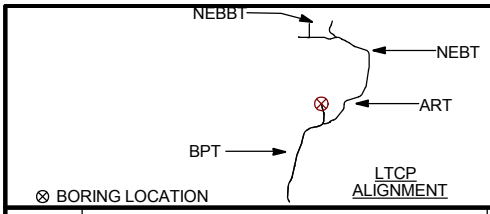
Program Consultants Organization

GREELEY AND HANSEN | JA UNDERGROUND

B = Bulk Sample
G = Geoprobe
S = Split Spoon Sample
T = Shelby Tube Sample
P = Pitcher Sample
D = Denison Sample
RC = Rock Core
SC = Sonic Core

SHEET 4 of 12

WASA SOIL+CORE REV2 LTCP FINAL DATABASE.GPJ DXF TRIAL 4.GPJ 11/22/10 REV-4



Log of Boring BPS-42

PROJECT: **CSO LONG TERM CONTROL PLAN**

PROJECT LOCATION: **WASHINGTON DC**

PROJECT NUMBER: **DCFA # 421-WSA**

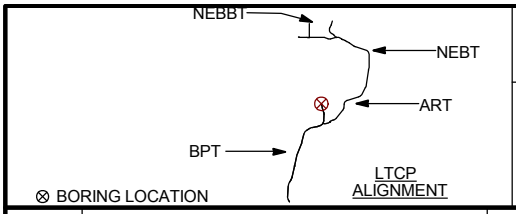
DEPTH (FT) / ELEV. (FT)	DESCRIPTION	USCS	GRAPHIC LOG	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: BLOWS	SAMPLES: REC (IN.) (%)	SAMPLES: RQD (%)	WELL	MOISTURE CONTENT / ATTERBERG (MC PL LL; 20 40 60 80)	Pocket Pen. (tsf)	Torvane (tsf)	REMARKS AND TESTS
115 -105	Moist, gray to very dark gray, fine to medium, POORLY GRADED SAND WITH SILT, estimated 5 - 10% fines, estimated 30 - 45% lignite, crisp lignite, **(G4)**	SP-SM		SC-11			120" (100%)						
	Moist, dark gray, fine, SILTY SAND, estimated 30 - 45% fines, low plasticity, laminated, **(G3A)**	SM											
	Moist, dark gray, medium plasticity, LEAN CLAY WITH SAND, estimated 15 - 25% fine sand, **(G2)**												
120 -110		CL									>4.5		120.0' : SC-12 sample recovery indicated 29% elongation upon recovery
125 -115				SC-12			120" (100%)						
	Moist to wet, dark gray, fine to medium, POORLY GRADED SAND WITH CLAY, estimated 5 - 10% fines, **(G4)**	SP-SC											
130 -120											>4.5	>2.5	130.0' : SC-13 sample recovery indicated 41% elongation upon recovery
	Moist, hard, dark gray, high plasticity, FAT CLAY, estimated <5% fine sand, **(G1)**	CH											
135 -125	Moist to wet, dark gray, fine to medium, CLAYEY SAND, contains 6" and 15" layers of moist, dark gray, fine to medium, POORLY GRADED SAND at 135', 136' and 138', contains 4" and 6" layers of FAT CLAY at 136.2' and 137', contains lignite fron 138'-139'. contains 2" layer of crisp lignite at 139', **(G3A)**	SC		SC-13			120" (100%)						
140 -130	Wet, loose, dark gray, fine to medium, POORLY GRADED SAND, estimated <5% fines, **(G4)**	SP											140.0' : SC-14 sample recovery indicated 19% elongation upon recovery
	Moist to wet, dark greenish gray, fine to medium, CLAYEY SAND, estimated 15 - 25% fines, FAT CLAY lenses present, **(G3A)**	SC											
	Moist, hard, dark greenish gray, high plasticity, FAT CLAY, estimated <5% fine to	CH									>4.5	>2.5	

Program Consultants Organization

GREELEY AND HANSEN | JA UNDERGROUND

B = Bulk Sample
G = Geoprobe
S = Split Spoon Sample
T = Shelby Tube Sample
P = Pitcher Sample
D = Denison Sample
RC = Rock Core
SC = Sonic Core

WASA SOIL+CORE REV2 LTCP FINAL DATABASE.GPJ DXF TRIAL 4.GPJ 11/22/10 REV-4



Log of Boring BPS-42

PROJECT: **CSO LONG TERM CONTROL PLAN**

PROJECT LOCATION: **WASHINGTON DC**

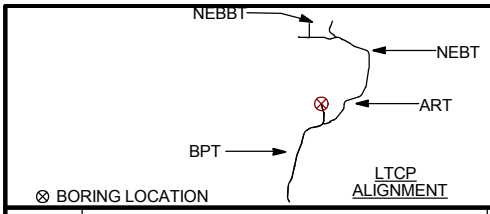
PROJECT NUMBER: **DCFA # 421-WSA**

DEPTH (FT) / ELEV. (FT)	DESCRIPTION	USCS	GRAPHIC LOG	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS	REC (IN.) (%)	RQD (%)	WELL	MOISTURE CONTENT / ATTERBERG (MC PL LL 20 40 60 80)	Pocket Pen. (tsf)	Torvane (tsf)	REMARKS AND TESTS
	coarse sand, **(G1)**	CH									>4.5	>2.5	
145 -135	Wet, light gray to gray, POORLY GRADED SAND WITH CLAY, estimated 5 - 10% fines, **(G4)**	SP-SC		SC-14			120" (100%)						
	Moist, gray to dark gray, fine to coarse, CLAYEY SAND WITH GRAVEL, estimated 15 - 25% fines, estimated 15 - 25% fine to coarse gravel, subrounded gravel, contains 2" lense of crisp lignite at 148', **(G3A)**	SC											
150 -140	Moist, hard, gray to dark gray, high plasticity, FAT CLAY, estimated <5% fine sand, **(G1)**	CH									>4.5	>2.5	150.0' : SC-15 sample recovery indicated 23% elongation upon recovery
	Wet, gray, fine to medium, POORLY GRADED SAND, estimated <5% fines, **(G4)**	SP											
	Moist, hard, dark gray, medium plasticity, LEAN CLAY, estimated 5 - 10% fine sand, estimated <5% lignite, contains fine sand as 2"-3" laminated layers, **(G2)**	CL									>4.5	>2.5	
155 -145				SC-15			120" (100%)						
	Wet, light gray, fine to medium, POORLY GRADED SAND WITH CLAY, estimated 5 - 10% fines, **(G4)**	SP-SC											
160 -150	Moist, hard, gray with mottles of olive brown, high plasticity, FAT CLAY, estimated <5% fine sand, mottles are multi colored with gray, olive brown and reddish brown, **(G1)**												160.0' : SC-16 sample recovery indicated 40% elongation upon recovery
	At 162.0' changes to stiff to very stiff										3.5	1.6	
165 -155				SC-16			120" (100%)						
	At 167.0' changes to hard, dark reddish brown with mottles of olive brown	CH									>4.5 >4.5	>2.5 >2.5	
170 -160	At 170.0' changes to stiff										3.0	1.4	170.0' : SC-17 sample recovery indicated 50% elongation upon recovery

Program Consultants Organization

GREELEY AND HANSEN | JA UNDERGROUND

B = Bulk Sample
G = Geoprobe
S = Split Spoon Sample
T = Shelby Tube Sample
P = Pitcher Sample
D = Denison Sample
RC = Rock Core
SC = Sonic Core



Log of Boring BPS-42

PROJECT: **CSO LONG TERM CONTROL PLAN**

PROJECT LOCATION: **WASHINGTON DC**

PROJECT NUMBER: **DCFA # 421-WSA**

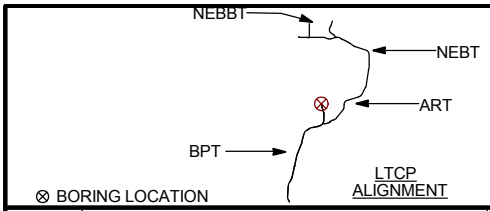
DEPTH (FT) / ELEV. (FT)	DESCRIPTION	USCS	GRAPHIC LOG	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS	REC (IN.) (%)	RQD (%)	WELL	MOISTURE CONTENT / ATTERBERG (MC PL LL; 20 40 60 80)	Pocket Pen. (tsf)	Torvane (tsf)	REMARKS AND TESTS
175 -165	At 175.0' changes to hard, dark reddish brown with mottles of light bluish gray	CH		SC-17			120" (100%)				>4.5 >4.5	>2.5 >2.5	
	Moist, hard, light bluish gray, high plasticity, SANDY FAT CLAY, estimated 30 - 45% fine sand, **(G1)**	CH											
180 -170	Moist, hard, dark reddish brown and light bluish gray, high plasticity, FAT CLAY, estimated <5% fine sand, **(G1)** At 180.0' changes to stiff, light bluish gray										3.5	1.5	180.0' : SC-18 sample recovery indicated 49% elongation upon recovery
	At 181.0' changes to hard, dark reddish brown and light bluish gray										>4.5	>2.5	
	At 182.5' changes to dark reddish brown and olive brown, contains mottles of light bluish gray										>4.5	>2.5	
185 -175		CH		SC-18			120" (100%)				>4.5		
190 -180	At 191.0' changes to light bluish gray and dark reddish brown, contains mottles of pale red and olive brown										>4.5	1.2	190.0' : SC-19 sample recovery indicated 43% elongation upon recovery
	Moist, hard, bluish gray with mottles of dark reddish brown, SANDY FAT CLAY, estimated 30 - 45% fine sand, **(G1)**												
195 -185		CH		SC-19			120" (100%)						
	Moist, bluish gray, CLAYEY SAND, estimated 30 - 45% fines, **(G3A)**												
200 -190		SC									1.2	0.2	200.0' : SC-20 sample recovery indicated 18% elongation upon recovery

Program Consultants Organization

GREELEY AND HANSEN | JA UNDERGROUND

B = Bulk Sample
G = Geoprobe
S = Split Spoon Sample
T = Shelby Tube Sample
P = Pitcher Sample
D = Denison Sample
RC = Rock Core
SC = Sonic Core

WASA SOIL+CORE REV2 LTCP FINAL DATABASE.GPJ DXF TRIAL 4.GPJ 11/22/10 REV-4



Log of Boring BPS-42

PROJECT: **CSO LONG TERM CONTROL PLAN**

PROJECT LOCATION: **WASHINGTON DC**

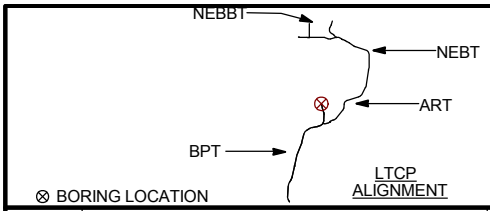
PROJECT NUMBER: **DCFA # 421-WSA**

DEPTH (FT) / ELEV. (FT)	DESCRIPTION	USCS	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: BLOWS	SAMPLES: REC (IN.) (%)	SAMPLES: RQD (%)	WELL	MOISTURE CONTENT / ATTERBERG (MC, PL, LL; 20, 40, 60, 80)	Pocket Pen. (tsf)	Torvane (tsf)	REMARKS AND TESTS
205 -195		SC	SC-20			120" (100%)						
	Moist, bluish gray, fine to medium, SILTY SAND, estimated 15 - 25% fines, **(G3A)**											
210 -200		SM								4.2	0.6	210.0' : SC-21 sample recovery indicated 46% elongation upon recovery
	Moist, hard, bluish gray with mottles of reddish brown, medium plasticity, FAT CLAY, estimated 5 - 10% fine sand, **(G1)**		SC-21			120" (100%)						
215 -205												
220 -210	At 220.0' changes to light bluish gray and dark reddish brown, estimated <5% fine sand	CH								>4.5	>2.5	220.0' : SC-22 sample recovery indicated 18% elongation upon recovery
	At 222.0' contains thin (<0.1') fine to medium gravel lenses at 222' and 226'											
225 -215			SC-22			120" (100%)						
	Moist, light bluish gray, medium plasticity, SANDY LEAN CLAY, estimated 30 - 45% fine sand, **(G2)**	CL								>4.5	1.75	
230 -220	Moist to wet, light bluish gray, fine to medium, CLAYEY SAND, estimated 15 - 25% fines, **(G3A)**	SC										230.0' : SC-23 sample recovery indicated 22% elongation upon recovery

Program Consultants Organization

GREELEY AND HANSEN | JA UNDERGROUND

B = Bulk Sample
G = Geoprobe
S = Split Spoon Sample
T = Shelby Tube Sample
P = Pitcher Sample
D = Denison Sample
RC = Rock Core
SC = Sonic Core



Log of Boring BPS-42

PROJECT: **CSO LONG TERM CONTROL PLAN**

PROJECT LOCATION: **WASHINGTON DC**

PROJECT NUMBER: **DCFA # 421-WSA**

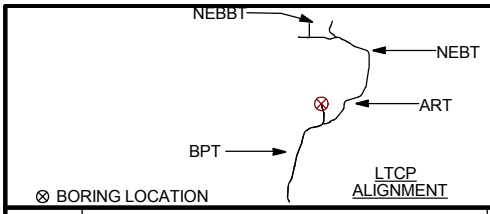
DEPTH (FT) / ELEV. (FT)	DESCRIPTION	USCS	GRAPHIC LOG	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: BLOWS	SAMPLES: REC (IN.) (%)	SAMPLES: RQD (%)	WELL	MOISTURE CONTENT / ATTERBERG (MC PL LL; 20 40 60 80)	Pocket Pen. (tsf)	Torvane (tsf)	REMARKS AND TESTS
235 -225		SC		SC-23			120" (100%)						
240 -230	Moist, hard, dark greenish gray, low plasticity, LEAN CLAY, estimated 5 - 10% fine sand, **(G2)**	CL									>4.5		240.0' : SC-24 sample recovery indicated 64% elongation upon recovery
245 -235	At 244.5' changes to dark greenish gray with mottles of olive brown			SC-24			120" (100%)				>4.5	2.0	
250 -240	Wet to moist, medium stiff to stiff, dark grayish brown, medium plasticity, SANDY SILT, estimated 5 - 10% fine sand, **(G2)**	ML									>4.5	2.5	250.0' : SC-25 sample recovery indicated 11% elongation upon recovery
255 -245	Moist, hard, dark gray, medium plasticity, LEAN CLAY, **(G2)**	CL		SC-25			120" (100%)						
260 -250	Moist, dense, light bluish gray, fine to medium, CLAYEY SAND, estimated 30 - 45% fines, **(G3A)**	SC											
	Wet, dark gray, fine to coarse, WELL GRADED SAND WITH CLAY, estimated 5 - 10% fine gravel, estimated 5 - 10% fines, subrounded gravel, **(G4)**	SW-SC											

Program Consultants Organization

GREELEY AND HANSEN | JA UNDERGROUND

B = Bulk Sample
G = Geoprobe
S = Split Spoon Sample
T = Shelby Tube Sample
P = Pitcher Sample
D = Denison Sample
RC = Rock Core
SC = Sonic Core

WASA SOIL+CORE REV2 LTCP FINAL DATABASE.GPJ DXF TRIAL 4.GPJ 11/22/10 REV-4



Log of Boring BPS-42

PROJECT: **CSO LONG TERM CONTROL PLAN**

PROJECT LOCATION: **WASHINGTON DC**

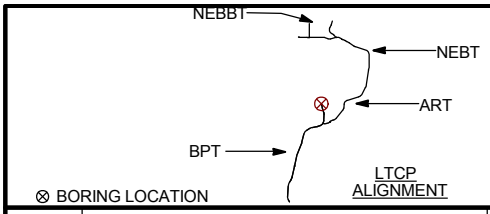
PROJECT NUMBER: **DCFA # 421-WSA**

DEPTH (FT) / ELEV. (FT)	DESCRIPTION	USCS	GRAPHIC LOG	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: BLOWS	SAMPLES: REC (IN.) (%)	SAMPLES: RQD (%)	WELL	MOISTURE CONTENT / ATTERBERG (MC 20 40 60 80 PL LL)	Pocket Pen. (tsf)	Torvane (tsf)	REMARKS AND TESTS
265 -255	Moist, bluish gray, fine to medium, SILTY SAND, estimated 15 - 25% fines, contains 2" crisp, dense lignite at 265', **(G3A)**	SM		SC-26			120" (100%)						
	Moist, hard, bluish gray, medium plasticity, LEAN CLAY, estimated 5 - 10% fine sand, **(G2)**												
270 -260		CL									>4.5	1.25	270.0' : SC-27 sample recovery indicated 17% elongation upon recovery
											>4.5	1.25	
275 -265				SC-27			120" (100%)						
	At 276.0' Contains 6" layer of moist, dark gray, fine to medium, CLAYEY SAND at 276'-276.5'										>4.5	1.25	
	Moist to wet, bluish gray, fine to coarse, WELL GRADED SAND WITH CLAY, estimated 5 - 10% fines, estimated 5 - 10% fine to coarse gravel, rounded to subrounded gravel, **(G4)**	SW-SC											
280 -270	Moist to wet, bluish gray, fine to coarse, POORLY GRADED SAND WITH SILT AND GRAVEL, estimated 5 - 10% fines, estimated 15 - 25% fine gravel, subrounded gravel, weak cementation, **(G4)**	SP-SM									>4.5	>2.5	280.0' : SC-28 sample recovery indicated 29% elongation upon recovery
	Moist, hard, bluish gray, high plasticity, FAT CLAY, estimated <5% fine sand, very thinly bedded to very thinly laminated, **(G1)**	CH											
285 -275	Moist, loose, bluish gray, fine to medium, SILTY SAND, estimated 15 - 25% fines, contains 2" layer of FAT CLAY at 284.8', **(G3A)**	SM		SC-28			120" (100%)						
	Moist, loose, bluish gray, fine to coarse, SILTY GRAVEL WITH SAND, estimated 15 - 25% fines, estimated 15 - 25% fine to coarse sand, rounded to subrounded gravel, strong cementation, **(G3B)**	GM											
	Moist, hard, bluish gray, high plasticity, FAT CLAY, estimated <5% sand, very thinly bedded to very thinly laminated, **(G1)**	CH											
290 -280	Moist to wet, loose, bluish gray, fine to coarse, WELL GRADED SAND, estimated <5% gravel, estimated <5% fines, **(G4)**	SW											290.0' : SC-29 sample recovery indicated 14% elongation upon recovery

Program Consultants Organization

GREELEY AND HANSEN | JA UNDERGROUND

B = Bulk Sample
G = Geoprobe
S = Split Spoon Sample
T = Shelby Tube Sample
P = Pitcher Sample
D = Denison Sample
RC = Rock Core
SC = Sonic Core



Log of Boring BPS-42

PROJECT: **CSO LONG TERM CONTROL PLAN**

PROJECT LOCATION: **WASHINGTON DC**

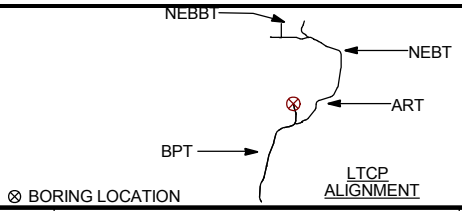
PROJECT NUMBER: **DCFA # 421-WSA**

DEPTH (FT) / ELEV. (FT)	DESCRIPTION	USCS	GRAPHIC LOG	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS	REC (IN.) (%)	RQD (%)	WELL	MOISTURE CONTENT / ATTERBERG (MC PL LL 20 40 60 80)	Pocket Pen. (tsf)	Torvane (tsf)	REMARKS AND TESTS
295 -285	Moist, loose, bluish gray, fine to coarse, WELL GRADED SAND WITH GRAVEL, estimated 30 - 45% gravel, rounded to subrounded gravel, **(G4)**	SW		SC-29			120" (100%)						
	Moist, medium dense, bluish gray and greenish gray, fine to coarse, WELL GRADED GRAVEL WITH SAND, estimated 30 - 45% sand, rounded to subrounded gravel, weak to strong cementation, **(G5)**	SW / GW											
300 -290	Wet, greenish gray, fine to coarse, SILTY GRAVEL, estimated 15 - 25% fines, estimated 15 - 25% fine to coarse sand, rounded to subrounded gravel, **(G3B)**	GM											300.0' : SC-30 sample recovery indicated 43% elongation upon recovery
	Moist, very stiff, greenish gray, medium plasticity, ELASTIC SILT WITH GRAVEL, contains, rounded to subrounded gravel, moderate cementation, **(G1)**	MH											
305 -295	Very weak, severely weathered, highly fractured to intensely fractured, dark greenish gray, GNEISS			SC-30			120" (100%)						
310 -300	At 312.0' changes to Very weak to weak, severely weathered to highly weathered			SC-31			72" (100%)						310.0' : SC-31 sample recovery indicated 94% elongation upon recovery
315 -305	At 315.0' changes to Weak to medium strong, highly weathered												
	Strong, moderately weathered, highly fractured, greenish gray, GNEISS, medium to coarse grained, strongly foliated, 5 joints at 316, 316.5, 317.2, 318.3 and 318.9 oriented at 70-80 degrees, moderately to closely spaced, slightly rough surfaces, no infilling to spotty infilling of cemented clay			RC-1			57" (95%)	51.7					316.0' : Switched to Mobile B-57 mud rotary rig (TL Brown) for rock coring using NQ bit and water as drilling fluid.
320 -310													

Program Consultants Organization

GREELEY AND HANSEN | JA UNDERGROUND

B = Bulk Sample
G = Geoprobe
S = Split Spoon Sample
T = Shelby Tube Sample
P = Pitcher Sample
D = Denison Sample
RC = Rock Core
SC = Sonic Core



Log of Boring BPS-42

PROJECT: **CSO LONG TERM CONTROL PLAN**

PROJECT LOCATION: **WASHINGTON DC**

PROJECT NUMBER: **DCFA # 421-WSA**

DEPTH (FT) / ELEV. (FT)	DESCRIPTION	USCS	GRAPHIC LOG	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: BLOWS	REC (IN.) (%)	RQD (%)	WELL	MOISTURE CONTENT / ATTERBERG (MC PL LL; 20 40 60 80)	Pocket Pen. (tsf)	Torvane (tsf)	REMARKS AND TESTS
325 -315	At 321.0' changes to light gray to light greenish gray, contains joints at 322.6, 323.9, 324.2 and 325.5 oriented at 45-55 degrees			RC-2			54" (90%)	71.7					
	BORING COMPLETED AT 326.0 FT ON 10/8/2009 AT 1730 HOURS. Upon completion, installed 3" PVC monitoring well with 0.020" well screen placed from 80' to 90' and with sand filter at 78' to 94'. Vibrating Wire Piezometer (S/Ns 09-1958) installed at 45'. Piezometer was affixed to the monitoring well PVC pipe.												326.0' : Switched to Versa Sonic rig for VWPZ/Monitoring Well and reamed hole from 316'-326'.

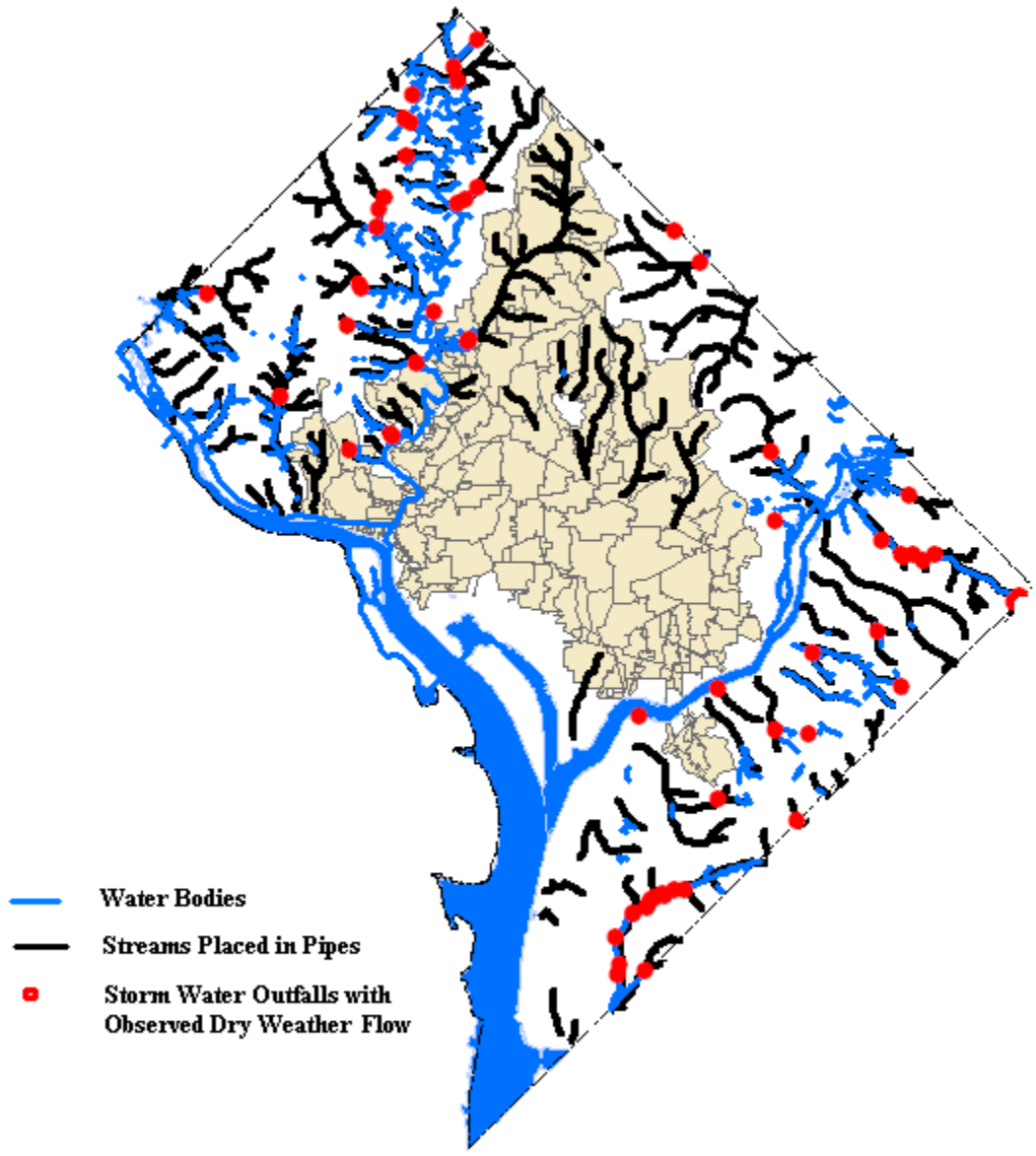
Note:
Soil classification for OL/OH is based on visual methods and non oven-dried Atterberg Limits test. See report for further discussion.

Program Consultants Organization

GREELEY AND HANSEN | JA UNDERGROUND

B = Bulk Sample
G = Geoprobe
S = Split Spoon Sample
T = Shelby Tube Sample
P = Pitcher Sample
D = Denison Sample
RC = Rock Core
SC = Sonic Core

APPENDIX 5.8 – DISCHARGE LOCATIONS WHERE DRY WEATHER FLOW HAS BEEN OBSERVED IN THE DC MS4



- **Tan area depicts the combined sewer area.**