

2011 VPDES Permit Annual Report

Prepared by

Fairfax County, Virginia
VPDES Permit No. 0088587

Submitted to

Virginia Department of Conservation and Recreation

March 6, 2012



A Fairfax County, Va., publication

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The following annual report is submitted to the Virginia Department of Conservation and Recreation (DCR) in compliance with Fairfax County's Virginia Pollutant Discharge Elimination System (VPDES) permit. The permit was issued on January 24, 2002, and expired on January 24, 2007. The county is currently operating under an administrative continuance of the existing permit in anticipation of permit renewal. This report covers the previous calendar year from January 1, 2011, through December 31, 2011, and describes all of the activities performed to satisfy the county's permit requirements.

NOTE: Annual Report requirements as specified in Part I.C.4 of the permit are indicated below by **bold** section headings and the stormwater program requirements as specified in Part I sections B.1, C.1, C.2 and C.3 of the permit are in *italics* directly beneath the applicable section heading.

a) Watershed Management Program Implementation

The permittee shall develop and implement Watershed Management Plans to maintain water quality and manage environmental resources within the county's watersheds (B.1).

Starting with the Little Hunting Creek Watershed Management Plan in 2003, the county embarked on a watershed planning initiative that assessed the needs of and resulted in proposed improvements for the county's 30 watersheds over approximately the next 25 years. The watershed management planning process is one component of the county's MS4 Program and is part of the Fairfax County Board of Supervisors' Environmental Agenda. The overarching goals for the watershed plans are:

1. Improve and maintain watershed functions in Fairfax County, including water quality, habitat and hydrology.
2. Protect human health, safety and property by reducing stormwater impacts.
3. Involve stakeholders in the protection, maintenance and restoration of County watersheds.

A total of 13 plans, which cover all 30 watersheds, were developed during this watershed planning initiative. The plans were developed with the assistance of the community through public meetings and individual plan stakeholder groups. This public involvement process helped to ensure that the plans meet the needs in the watershed and have the support of county residents. The county completed and adopted six watershed plans between 2005 and 2008 as part of the first round of planning. By early February 2011, the seven remaining watershed management plans were completed and adopted by the Fairfax County Board of Supervisors. In November 2011 the county held a meeting of watershed advisory groups and other public interests to give a status update on the watershed plans and the broader stormwater management program. Attachment 1 lists the 13 county watershed management plans.

It is anticipated that structural projects proposed in the plans will be primarily funded from the Stormwater Services fund and from the Pro Rata Share Drainage Construction fund. The number of projects selected for implementation annually will be determined as part of the annual budgetary process. Efforts to include implementation of non-structural projects and policy recommendations from the watershed plans are ongoing.

a.1) Structural and Source Controls

The Municipal Separate Storm Sewer System and any storm water structural controls shall be operated in a manner that reduces the discharge of pollutants to the maximum extent practicable (B.1.a).

a.1 (a) Report all inspections performed on SWM facilities and BMP Ponds.

In 2011 the county inspected 1,156 (79 percent) of the 1,465 county-maintained stormwater management (SWM) and best management practice (BMP) facilities at least once. In anticipation of a new annual reporting schedule with a renewed MS4 permit, these inspections are being tracked on a fiscal year basis (July 1 through June 30), resulting in approximately 725 inspections per fiscal year. In 2011 the county inspected 616 (17 percent) of the 3,611 privately-maintained facilities, with the goal of inspecting all privately-maintained facilities at least once during the permit cycle as required by the permit.

a.1 (b) Report all maintenance performed on SWM facilities and BMP Ponds.

In 2011 the county cleaned and/or mowed 1,259 dam embankments, including 52 regional ponds which were maintained four times each during the calendar year. Cleaning involves removing trash, sediment, and debris from the trash rack, control structure, and all inflow channels leading to the control structure. At each stormwater management facility, deposited sediment is removed from the trickle ditch upstream of the control structure and disposed of offsite. The cleaning helps keep the facility functioning properly by conveying water and performing the BMP function as it was designed. The county completed 256 maintenance work orders to correct deficiencies in publicly maintained SWM/BMP facilities.

a.2) Areas of New Development and Significant Redevelopment

The permittee shall comply with and enforce all components of the County's Comprehensive Land Use Plan that are relevant to storm water discharges. The goals of such controls shall be to limit increases in the discharge of pollutants from storm water as a result of development and significant re-development (B.1.b).

The Comprehensive Plan, as amended through 2011, provides explicit support for better site design and low impact development (LID) measures, and opportunities to implement such measures are explored during the zoning process. A 2010 Area Plan amendment for the Tysons Corner Urban Center included recommendations for attainment of LEED stormwater design credits and retention of at least the first inch of rainfall on-site for zoning applications proposing significant increases in development density/intensity. Plan amendments for the Annandale and Baileys Crossroads Community Business Centers also included recommendations for attainment of the LEED stormwater design credits for some or all development and redevelopment proposals. This Comprehensive Plan guidance helps staff to negotiate for measures such as reductions in proposed impervious cover and LID measures that will serve to reduce stormwater discharges.

The Department of Planning and Zoning (DPZ) provides a full range of environmental review, and does not track stormwater efforts independently from other environmental efforts. In coordination with other DPZ staff and staff from other county agencies, DPZ accepted and reviewed 45 rezonings and related applications (e.g., amendments), 19 special exceptions and amendments, and 47 special permits and amendments in fiscal year 2012 for environmental considerations.

a.3) Roadways

Public streets, roads, and highways maintained by the permittee shall be operated and maintained in a manner to minimize discharge of pollutants, including those pollutants related to deicing or sanding activities (B.1.c).

The Virginia Department of Transportation (VDOT), which is covered by a separate Phase II MS4 permit, is responsible for maintenance and operation of public roads (interstate, primary, secondary, and residential) in Fairfax County. The county is only responsible for maintaining several miles of discontinuous road segments, many of which are unpaved. A significant component of Fairfax County's roadways program is sweeping parking lots associated with county facilities such as government centers, libraries, public schools (funded by Fairfax County Public Schools), fire stations, police stations, health centers, bus transit facilities, park and ride lots, commuter rail stations, public housing facilities, and staffed park locations.

In an effort to limit the discharge of pollutants from parking lots into the county's streams, the county provides sand and chemical treatment only when dictated by safety. The county sweeps material from each treated parking area once annually during the spring.

The county's parking lot sweeping program is currently carried out by three organizations: Department of Public Works and Environmental Services (DPWES), Department of Housing and Community Development (DHCD), and Fairfax County Park Authority (FCPA, or Park Authority). DPWES sweeps parking lots at county government and public schools sites as well as paved county road segments, where feasible. DHCD sweeps parking lots on residential developments such as apartment complexes, townhouse developments, group homes, and senior facilities that are owned and operated by DHCD. FCPA maintains (plows and/or treats) essential use parking areas at staffed park locations and commuter parking lots on a case-by-case basis to remove snow and provide for safe driving and footing. In 2011 more than 1,842 cubic yards of material was removed from 316 county government and public schools sites, 41 residential sites, 28 essential use areas at parks, and 31 county-maintained road segments through sweeper trucks and hand sweeping.

a.4) Retrofit

Receiving water quality impacts shall be assessed for all storm water management facilities. When the permittee determines water quality impact, they shall continue to evaluate and implement retrofitting existing storm water management facilities and areas without stormwater controls (B.1.d).

In compliance with retrofit requirements, Fairfax County agencies completed 11 retrofit projects throughout the county to enhance stormwater management functionality. While the majority (7) of the projects involved dry extended detention pond retrofits, the county also employed wet pond dredging, bioretention/raingardens, and urban filtration practices (such as installation of tree box filters and pervious pavement). The results of the county's retrofit efforts are summarized below:

- Projects were completed in 9 of the 30 county watersheds: Accotink Creek, Bullneck Run, Cameron Run, Cub Run, Dead Run, Little Hunting Creek, Pohick Creek (2), Popes Head Creek (2), and Turkey Run.
- Most of the retrofits occurred on properties zoned for residential land use.
- Seven of the 11 retrofits were recommended by county watershed management plans.
- The drainage area to the 11 retrofits totals approximately 952 acres, and the impervious area treated by the retrofits totals at least 234 acres.
- Combined, the 11 retrofits are estimated to remove nitrogen, phosphorus, and sediment at rates of approximately 796 pounds/year, 225 pounds/year, and 104 tons/year, respectively.
- The estimated cost of these retrofits is approximately \$7 million.

Retrofit project documentation is maintained by the Maintenance and Stormwater Management Division and the Stormwater Planning Division of DPWES and the Park Authority.

a.5) Pesticides, Herbicide, and Fertilizer Application

The permittee will implement controls to reduce the discharge of pollutants related to the storage and application of pesticides, herbicides, and fertilizers applied to public right of ways, parks, and other municipal property. The permittee shall develop and implement a program within one year of the effective date of the permit to achieve the above goal (B.1.e).

County agencies involved in the administration of public rights-of-way, parks and other municipal properties currently have some form of nutrient and pest management plans and either implement the plans themselves or have contractors implement them. County personnel and private contractors follow the Virginia Department of Conservation and Recreation's nutrient management guidelines, the Virginia Department of Agriculture's guidelines, and the Virginia Pesticide Control Act, 2006. In addition, many agencies are also collecting information on the application rates and total annual usage of pesticides, herbicides and fertilizers (PHF).

In 2011 Park Authority staff worked to reduce the amount of mowed turf areas and improve stream buffers at several park sites around the county to promote water and air quality and provide additional wildlife habitat. Staff at Lake Fairfax Park increased the stream buffer along 600 linear feet of Colvin Run. No-mow areas at Pinecrest Golf Course were expanded to 3.5 acres around the Turkeycock Run Resource Protection Area. Jefferson Golf Course staff expanded un-mowed buffers around six ponds.

The Park Authority currently has nutrient management plans for approximately 515 acres of golf courses and 252 acres of natural turf athletic fields. The vast majority of the remaining mowed turf areas do not receive any regular treatments of either fertilizers or pesticides.

In 2011 a Virginia state-certified nutrient management planner from the Northern Virginia Soil and Water Conservation District (NVSWCD) prepared nutrient management plans covering 188.4 acres in the county. These included 152 "new acres," which were not previously part of any current or expired plan, and 36.4 "revised acres," which were already under plans that had been recently rewritten because the previous ones had expired or were about to expire. All of the plans were for horse operations or mini-farms (such as Frying Pan Park).

a.6) Illicit Discharges and Improper Disposal

a.6 (a) Report all identified illicit dischargers. This shall include site inspections and a description of any follow-up activities associated with illicit dischargers (see a.12 below for related dry weather screening program activities and findings);

Non-storm water discharges to the Municipal Separate Storm Sewer System will be effectively prohibited (B.1.f).

Fairfax County's efforts regarding the permit requirements related to Industrial and High Risk Runoff are also presented in sections a.12.a of this report, which contain a discussion of the county's Dry Weather Screening Program.

The Fire and Rescue Department's (FRD) Fire and Hazardous Materials Investigative Services (FHMIS) section aggressively enforces County Code Chapters 62, 105 and 106 in conjunction with the Department of Public Works and Environmental Services and the Department of Planning and Zoning. FHMIS also issues criminal citations during investigations of hazardous materials incidents. Chapter 62 establishes that the Fire Marshall and all permitted members of the Fire Marshall's staff have police powers to investigate and prosecute certain offenses including offenses related to

storage, use, and transportation of hazardous materials and hazardous waste, and environmental crimes. Chapters 105 and 106 contain provisions that address illicit discharges to state waters and the county's storm drainage system. Procedural Memorandum No. 71-01, Illegal Dump Site Investigation, Response, and Cleanup, outlines the process of follow-up action for non-emergency incidents of illegal dumping; establishes action under County Code Chapter 46, Health or Safety Menaces; and provides referrals for action on complaints that are neither public health hazards nor regulated.

Programs that can help to prevent, detect, and eliminate illicit discharge of sanitary wastes into the MS4 are implemented and documented in the Wastewater Management business area of DPWES. The Sanitary Sewer Infiltration Abatement Program conducts wastewater flow measurements and analysis to identify areas of the wastewater collection system with excessive inflow/infiltration problems, and uses closed circuit television (CCTV) to inspect trunk sewer mains in an effort to specifically identify defective sewer lines for repair and rehabilitation. In 2011, 198.25 miles of old sewer lines and 7.84 miles of new sewer lines were inspected, resulting in the identification of sanitary sewer lines and manholes needing repair and rehabilitation. In 2011, 30.83 miles (162,763 feet) of sanitary sewer lines were rehabilitated, bringing the total length of sewer lines repaired over the past ten years to 211.15 miles (1,114,868 feet).

The Sanitary Sewer Extension and Improvement Program addresses pollution abatement and public health considerations by providing sanitary sewer service to areas identified by the Department of Health as having non-repairable, malfunctioning septic systems. In 2011, one (1) Extension and Improvement project was completed consisting of 703 linear feet of eight-inch sanitary sewer and sanitary sewer connections for seven existing homes.

The Health Department mailed 14,921 flow diversion valve reminder notices in 2011. The notices are sent to homeowners on the anniversary of the installation of their septic system to remind them to turn their flow diversion valve once a year. It reminds them to pump out their septic tank every three to five years.

In 2011, 1,831 non-compliance letters were mailed to owners of homes that have not pumped out their septic tank during the five-year period required in Chapter 68.1 of the Fairfax County Code and the Chesapeake Bay Preservation Area Designation and Management Regulations. If a homeowner fails to comply, a follow-up letter is mailed to them informing them that action will be taken under the regulations to insure their septic tank is pumped out as required.

There were 54 new alternative onsite sewage systems approved in 2011, bringing the total number of alternative systems in Fairfax County to 678. It is required that each of these systems is inspected annually by a licensed operator and a report be filed with the Health Department. Regulations for these systems went into effect December 7, 2011. The Health Department plans to send notices to all owners of these systems in 2012 which will outline the requirements resulting from these regulations.

a.7) Spill Prevention and Response

A program to prevent, contain, and respond to spills that may discharge into the Municipal Separate Storm Sewer System shall be implemented. The spill response program may include a combination of spill response actions by the permittee (and/or another public or private entity), and legal requirements for private entities within the permittees' jurisdiction (B.1.g).

The FRD responds to all reported incidents of hazardous material releases, spills and discharges in the county (regardless of whether the material has potential to enter the county-operated MS4,

another system such as VDOT's, or waters of the state). The department maintains and tracks firefighter training/certification under OSHA 29 CFR 1910.120 (q) and NFPA 472. The department's FHMIS personnel receive regular training in pollution prevention and are equipped to initiate spill control measures to reduce the possibility of hazardous materials reaching the MS4. Resources available to personnel include personal protective equipment, technical tools and equipment for spill control, and absorbent products such as pads and booms for spill containment. The section also maintains a contract with a major commercial hazardous materials response company to provide additional containment and clean-up support for large-scale incidents.

In 2011 FHMIS received 585 complaints. Approximately 326 of the complaints involved the actual release of various petroleum or chemical substances. Of the 326 releases, 232 involved the release of either diesel fuel (27), home heating fuel oil (80), gasoline (33), motor oil (37), or hydraulic oil (55). Other releases investigated involved antifreeze, paint, sewage, waste water discharges, water treatment chemicals and mercury. Storm drains were involved in 58 of the releases.

In both emergency and non-emergency spills that reach the MS4, FHMIS enforces appropriate codes and ordinances to ensure that responsible parties take appropriate spill control and cleanup actions to protect and restore the environment.

FHMIS monitors, on a long-term basis, contaminated sites that have a potential for the contaminant coming in contact with surface waters or stormwater management facilities. As a part of the oversight program, FHMIS, as an agent of the Director of DPWES, accepts, reviews and processes requests to discharge treated groundwater from remedial activities at contaminated sites into county storm sewers. FHMIS then monitors the discharge for the duration of the agreement. In 2011 the Hazardous Materials Technical Support Branch of FHMIS started the year with 56 oversight files. During the year, 101 new oversight files were opened and 93 were closed. Most of these oversight files involve contaminated underground storage tank sites.

Fire and Rescue continued to maintain membership in the Fairfax Joint Local Emergency Planning Committee (FJLEPC), which includes representatives of Fairfax County, the City of Fairfax, and the towns of Vienna and Herndon. Fire and Rescue periodically updates its Hazardous Material Emergency Response Plan.

a.8) Industrial & High Risk Runoff

a.8 (a) Report on all inspections of any new or previously unidentified facilities.

a.8 (b) Report an updated list of all industrial storm water sources and VPDES permitted facilities that discharge into the MS4.

A program to identify and control pollutants in storm water discharges to the Municipal Separate Storm Sewer System (municipal landfills; other treatment, storage, or disposal facilities for municipal waste; hazardous waste treatment, storage, disposal and recovery facilities; facilities that are subject to EPCRA Title III, Section 313) and any other industrial or commercial discharge the permittee determine are contributing a substantial pollutant loading to the Municipal Separate Storm Sewer System shall be implemented under this program (B.1.h).

Fairfax County's efforts regarding the permit requirements related to Industrial and High Risk Runoff are also presented in sections a.12.b and a.12.c of this report, which contain a discussion of the county's Wet Weather and Industrial and High Risk Runoff Monitoring Program.

There are currently 35 facilities that are covered under a Virginia Pollutant Discharge Elimination System (VPDES) general permit and nine facilities that are covered under a VPDES individual permit that drain to Fairfax County's MS4. In addition, there is currently one facility with a no-exposure certification. Of the 44 permitted facilities, seven are county facilities. As required by the permits, each county facility has developed and is implementing a stormwater pollution prevention plan (SWPPP), which includes spill prevention and response procedures.

a.9) Construction Site Runoff

a.9 (a) Report all Erosion and Sediment Control Plans the permittee has approved for sites disturbing greater than 1 acre of land for that year.

A program to reduce the discharge of pollutants from construction sites (land disturbing activities equal to or greater than one acre) shall be implemented under this program (B.1.i).

In 2011 a total of 758 Erosion and Sediment (E&S) Control plans for projects that would disturb a land area of 2,500 square feet or more were submitted and approved. Written reports listing these individual sites were provided on a monthly basis to the Virginia Department of Conservation and Recreation (DCR).

Fairfax County's E&S control program is fully approved by DCR and is implemented by Land Development Services (LDS). In 2011, 27,849 E&S inspections were performed through the county's Alternative Inspection Program on all sites under construction. Those E&S inspections represent 57.4 percent of the 48,496 total site inspections that were performed by Site Development and Inspection Division (SDID) personnel. The site inspections total also includes 2,198 projects that were inspected for purposes other than strictly E&S control (e.g., pre-construction, streets, sanitary sewer, storm sewer, and project release).

In 2011 SDID wrote 905 "2030" E&S control reports, which identify the E&S control deficiencies developers must correct within five days. Failure to comply within the specified time frame can result in issuance of a violation to the developer. In 2011 SDID issued 86 violations and 76 of those were later cleared. The remaining 10 violations are extended until the required corrections are made or court action is initiated. SDID held 198 escrows for either landscaping or stabilization issues.

The Land Disturbance and Post Occupancy Branch of LDS investigated 184 complaints alleging violations of Fairfax County's Erosion and Sediment Control Ordinance (Chapter 104). The branch also investigated 46 complaints alleging violations of the county's Chesapeake Bay Preservation Ordinance (Chapter 118). In 180 of the total complaints there was either no violation or there was timely compliance if a violation was cited. The other 50 complaint investigations led to the branch undertaking 50 criminal proceedings to ensure compliance, with some proceedings resulting in fines issued by the court.

The county sponsors an annual Land Conservation Awards program to recognize the developers, contractors, site superintendents, and site inspectors who demonstrated an exemplary effort during the past year in the installation and maintenance of erosion and sediment control measures on construction projects and preservation of natural resources (such as trees, wetlands and Resource Protection Areas). In 2011, 12 sites were nominated for awards in the following categories: Large Commercial, Small Commercial, Large Single Family Residential, Infill Lot, and Special Project. One Large Commercial, one Large Single Family Residential, and one Special Project were selected for awards. In addition, one site was recognized as the Best Protected Environmentally Sensitive Site of

the year. At the 2011 Land Conservation Awards program held on January 20, 2012, an Outstanding Superintendent, an Outstanding Engineering Firm, and an Outstanding Contractor were also recognized. These awards are valued by recipients in the construction industry and provide incentives to do excellent work. County employees will also be recognized with awards for Outstanding E&S County Inspector and Outstanding E&S County Reviewer.

Residents may report complaints about erosion and sedimentation to the county by phone or through email. Residents can visit the following website to find contacts for specific land development issues:

<http://www.fairfaxcounty.gov/dpwes/publications/urbanfor.htm>

a.10) Storm Sewer Infrastructure Management

A program to maintain and update the accuracy and inventory of the storm sewer system shall be implemented. The permittee shall submit to the Department of Environmental Quality, Northern Virginia Office a plan and schedule by which the entire storm sewer Infrastructure will be mapped. The plans and schedule shall be submitted within 180 days of the effective date of this permit (B.1.j).

A Storm Sewer Infrastructure Management Plan and Schedule was submitted to the Virginia Department of Environmental Quality (DEQ) on July 24, 2002, in accordance with the permit, and has been updated with each annual report as shown in Attachment 2 Table 3. The requirements in the plan have been fulfilled and the infrastructure inventory will continue to be updated in accordance with the permit.

Fairfax County is comprised of an area of 399 square miles (land and water) as identified on 436 tax map grids. During the initial five-year permit cycle (completed in 2005), Fairfax County staff field verified the location of the storm drainage conveyance system on each tax map grid, identified storm sewer pipes, outfalls and associated appurtenant structures, and created a GIS-based data layer. During 2011 the GIS inventory was continuously updated with new as-built plans and field verification of system location and components within identified easements. More than 265 as-built construction plans were digitized along with 268 tax map grids having been reviewed for completeness, proper maintenance responsibility identification, and spatial accuracy verification. Routine maintenance of the GIS-based stormwater easement database has continued through 2011.

The county continued implementation of its infrastructure inspection and rehabilitation program. In 2011, 850 pipe segments and 15,000 storm structures were inspected with video and photo documentation. Under the rehabilitation program, more than 17 miles of pipe were videoed. The videos documented the existing structural and service conditions of the interior of the storm drainage system. The inspection efforts represent 319 miles, or 21.2 percent of the storm drainage network being photographed or screened for obvious deficiencies. The inventory continues to be assessed for ongoing repair of identified deficiencies. In addition, more than 4,700 feet of storm pipe in the county's storm system inventory were rehabilitated or repaired through replacement or by lining entire pipe segments using cured-in-place pipe lining methods.

a.11) Public Education

A public education program shall be implemented (B.1.k).

Fairfax County's public education program is an essential component of stormwater management. The program raises awareness about stormwater challenges throughout the county, educates residents about watersheds and the need for stormwater management, and offers opportunities for

residents to become involved in efforts to restore and protect Fairfax County's local waterways, the Occoquan Reservoir, the Potomac River and the Chesapeake Bay. While a number of county organizations contribute to the public education program, the following summary highlights the extensive education and outreach efforts of the Stormwater Planning Division (SWPD), the Solid Waste Management Program (SWMP), Fairfax County Park Authority (FCPA) and Northern Virginia Soil and Water Conservation District (NVSWCD) as well as the regional Clean Water Partners.

In 2011 the county reached out to residents to raise awareness of environmental issues. Following are some efforts included providing education to help residents with recognition of illicit discharges of pollutants and improper disposal of wastes.

- County employees promoted environmental awareness and watershed-friendly behaviors at public events like the Earth Day/Arbor Day Celebration, Celebrate Fairfax (featuring the DPWES "Greenology" tent), and the Fall For Fairfax Kidsfest.
- Stormwater and Solid Waste employees gave 17 presentations to more than 430 students in 6 high schools highlighting issues related to watersheds and management of stormwater and solid waste.
- During the hands-on wastewater Sewer Science Laboratory, Wastewater employees reviewed the difference between the storm drainage and the sanitary sewer systems. Sixty eight classes, 1,477 students, and 16 high schools participated in the Sewer Science Program.
- FCPA provided water quality and environmental education to hundreds of thousands of park visitors each year through five nature centers and a naturalist at the Cub Run Recreation Center.
- SWMP supports Clean Fairfax Council's annual Johnnie Forte Environmental Grant program, which offers \$500 grants to support environmental projects in FCPS.
- SWPD updated its website with information on flooding and stream litter, and created "What's that Stuff in the Stream?" to educate residents and to facilitate reporting of suspected illicit discharges.
- Through the storm drain marking program, NVSWCD coordinated 31 projects to mark 2,554 storm drains, educated more than 14,000 households, and engaged over 600 volunteers who contributed more than 1,700 hours. The program addresses stewardship, nonpoint source pollution, and proper disposal of wastes.
- Podcasts on composting, native pollinators, swimming pool discharge, lawn fertilizing, and rain barrels aired through the county website for a weekly audience of about 350 listeners.
- Educational public service announcements on stormwater, wastewater, recycling, and urban forestry aired on county Channel 16 and were posted on YouTube, where there were more than 7,000 views.
- SWPD posted numerous messages to the County's environmental Facebook page on such topics as stream cleanups and restorations, invasive plants, rain barrels, Lake Barton fish restocking, how to enjoy "green" holidays, cigarette butt litter, and watershed management plan updates.
- Stormwater Management created fact sheets on rain gardens and barrels, reforestation plots, detention basins, impervious pavement and pavers, water quality swales, and cigarette butt litter.
- Stormwater Management was interviewed numerous times by local and national media on topics related to stormwater management.

- NVSWCD mailed the monthly *Watershed Calendar*, listing training and other events, to 962 recipients.
- Fairfax County participated in the Clean Water Partners 2011 campaign.
- Clean Water Partners' Google, Facebook and YouTube advertisements appeared more than 26 million times on individual computers, with more than 85 percent of these ads including action-oriented messages.
- Clean Water Partners aired three public service announcements related to proper disposal of pet waste and motor oil and proper use of fertilizer on five radio stations 174 times, reaching an estimated 967,000 listeners.
- Clean Water Partners surveyed 500 Northern Virginia residents and found that of the one-third of respondents who recalled hearing or seeing their public service announcements, 5 percent pick up pet waste more often, 5 percent recycle used motor oil, and 17 percent fertilize less and more carefully.
- Clean Water Partners' Only Rain website was updated in Spring 2011. Visitors to the website spend an average of two minutes each on the site.
- Clean Water Partners, through the Northern Virginia Dog Blog, sponsored a "Wag Your Words essay contest" attracting 2,300 participants and a dog trivia quiz attracting 700 respondents.

Several of the county's outreach and education efforts focused specifically on watershed and stream health.

- SWPD conducted one public meeting about the watershed plan updates and the status of the county's stormwater program that attracted approximately 70 participants.
- NVSWCD presented the Enviroscape® watershed model 11 times to more than 750 students in schools and scout programs.
- FCPA held the annual Wetlands Awareness Day on May 1 to educate the public on maintaining healthy watersheds.
- SWPD distributed more than 3,100 copies of Stormy the Raindrop activity books to children through public libraries, district offices and public events, and made them available on the county website. The Stormy the Raindrop educational campaign was awarded a 2011 Governor's Environmental Excellence bronze medal.
- SWPD mailed a flood protection newsletter to 20,000 county residents and posted a new page to the county's website about the functions of floodplains.
- NVSWCD sponsors a volunteer stream monitoring program to build awareness of watershed issues. Approximately 45 volunteers collected data at 21 sites four times per year. In addition, 34 public stream monitoring workshops and field trips were attended by 619 county residents.
- NVSWCD's newsletter, *Conservation Currents*, featured articles on stream health, stream monitoring and stream restoration, including actions that residents can take to improve stream water quality.
- FCPA participates in stream water quality monitoring at several Resource Management sites and trains and sponsors citizen volunteer monitors.

In addition to sponsoring stream cleanup events (further described in section a.12.f), the county addressed litter through the following efforts:

- In summer 2011 a multi-agency, county workgroup launched its regional anti-littering campaign using materials developed from the Alice Ferguson Foundation's anti-littering

outreach toolkit. SWMP collaborated with the Alice Ferguson Foundation on the Trash-Free Potomac River Watershed Initiative and placed five full-page ads regarding the litter clean-up program in the *Living* section of the *Washington Post*.

- In fall 2011 the trash workgroup initiated an education and outreach campaign on improperly discarded cigarette butts and other smoking-related litter. The initial focus was on educating county employees about the impacts of cigarette litter on the environment and encouraging proper disposal of smoking waste. In November 2011 the trash workgroup hosted a cigarette butt pickup event on the grounds of the Fairfax County Government Center campus and later disseminated the results to county employees. The findings will be used to develop additional outreach materials for county employees and the general public.
- Staff from SWPD and SWMP worked together to develop a litter website with links to other county pages (such as the updated Floatables page, renamed the Stream Litter page) as well as the websites of partner organizations and programs (such as NVSWCD, CFC, DCR's Adopt-a-Stream and Adopt-a-Highway) providing information about litter-related topics, associated organizations and volunteer programs.
- FCPA hosted and organized lake and stream valley clean up days in many stream valley parks and two lake front parks, providing excellent learning and stewardship opportunities for volunteers.
- SWPD distributed 1,000 Stormy the Raindrop reusable bags at public events.

The county continued to educate the public on how to properly dispose of solid wastes and offered collection programs aimed at preventing wastes from polluting county waterways.

- SWMP is responsible for the county's Household Hazardous Waste (HHW) Management Program where county residents can, at no charge, properly dispose of HHW at two permanent HHW collection facilities.
- SWMP continued its monthly *Electric Sunday* program where county residents have, over three years of its operation, brought 3,000,000 pounds (1,500 tons) of electronic waste (equating 70 tons of lead) for recycling.
- SWMP made presentations to students in 52 schools and 45 presentations to community groups and business leaders about solid waste and recycling practices.
- SWMP dedicates a portion of its website specifically for student education on recycling.
- SWMP hosted 35 group tours at county solid waste management facilities.
- SWMP works with the Northern Virginia Region Commission on the regional KnowToxics program, educating business owners on federal and state regulations requiring proper disposal or recycling of spent fluorescent lamps, rechargeable batteries, computers, and related electronics.
- SWMP collaborated with the industry-funded Rechargeable Battery Recycling Corporation Program to make battery collection boxes available at County Board of Supervisors' offices and county government buildings.
- SWMP annually creates and electronically distributes the Schools/County Recycling Action Partnership SCRAPBook, which is a compendium of resources dedicated to conducting environmental education in the schools.
- SWMP created SCRAPmail, an electronic resource available by e-mail subscription for teachers, students and school administrators to receive periodic news items, event announcements, and updates and reviews on environmental education resources available to county schools.

- SWMP works with the Metropolitan Washington Council of Governments on its annual Go Recycle radio campaign, which provides two weeks of intensive announcements on five major Washington DC radio stations to address recycling issues. Fairfax County is a major financial sponsor.
- SWMP provided financial and operational support for events where outreach and education on proper waste management and recycling were major goals, such as the 4-H Fair.

NVSWCD employees provided residents in the county with technical assistance and resources to help them better manage their land to address erosion and nutrient management issues.

- NVSWCD to provide advice on solving drainage and erosion problems to homeowners and HOAs during 117 site visits.
- NVSWCD's website is a source of information on managing land and protecting water quality, controlling stormwater, preventing erosion and encouraging native vegetation. One resource is the comprehensive *You and Your Land – a Homeowner's Guide for the Potomac Watershed*.
- The *Earth Friendly Suburban Horse Farming* publication was distributed to the horse-keeping community at events and online.
- Through a program for horse-keeping operations sponsored by NVSWCD, managers of 443 acres received information about nutrient management and composting. The 26 conservation plans included instructions for 2,250 linear feet of new vegetated buffer and 8,405 linear feet of replanted buffers. Two educational events were attended by 70 people.
- NVSWCD coordinated two "build-your-own" composter workshops through which 30 participants constructed 30 tumbler-style composters.

The use of low impact development practices to improve water quality continued to be promoted in the county.

- NVSWCD organized the June 2011 Watershed Friendly Garden Tour showcasing low impact development practices and inspiring visitors to adopt the practices at home and at area schools.
- NVSWCD provided education and training at three rain garden workshops attended by 78 county residents and industry professionals.
- NVSWCD and FCPA distributed the manual *Rain Garden Design and Construction: A Northern Virginia Homeowner's Guide*, containing the instructions and calculations needed for a homeowner to build a rain garden. The manual is available in hard copy and electronic formats.
- NVSWCD published in hard copy and electronic formats a *Residential LID Landscaping Guide* for homeowners, which has design and installation information as well as sources of supplies and plant materials.
- NVSWCD coordinated a Northern Virginia rain barrel initiative and held 11 build-your-own rain barrel workshops, 3 pre-made rain barrel sales, and 1 "train the trainer" event which in total attracted 422 participants (320 county residents) and resulted in distribution of 601 barrels.
- NVSWCD partnered in a new Artistic Rain Barrel program to renew interest in rain barrels and other best management practices. Twenty-five painted and decorated rain barrels were displayed at libraries, schools, businesses and community centers for two months, culminating in an artists' reception and auction.

a.12) Monitoring Programs

a.12 (a) Report on the Dry Weather Screening Program; (1) Number of outfalls inspected and test results; (2) Follow-up activities to investigate problematic areas and illicit dischargers.

The permittee shall continue ongoing efforts to detect the presence of illicit connections and improper discharges to the Municipal Separate Storm Sewer System. Representative outfalls of the entire Municipal Separate Storm Sewer System must be screened at least once during the permit term. Screening methodology may be modified based on experience gained during actual field screening activities and need not conform to the protocol at 40 CFR 122.26(d)(1)(iv)(D). Sample collection and analysis need not conform to the requirements of 40 CFR Part 136 (B.1.1.1).

In 2011 the county selected 101 MS4 outfalls for dry weather screening in accordance with the general protocol outlined in "Fairfax County Dry Weather Screening Program: Site Selection and Screening Plan" (July 2007). Physical parameters were recorded at each outfall. Water was found to be flowing at 48 of the outfalls, and was tested for a range of pollutants (conductivity, surfactants, fluoride, pH, phenol, copper, and temperature) using field test kits. Of the outfalls tested, 15 required follow-up investigations because they exceeded the allowable limit for at least one pollutant. Upon retesting these sites, 12 continued to exceed the screening criteria, and further testing was conducted in an attempt to track down the source. This track down procedure consisted of using the county's GIS mapping system. A map of the county's storm drainage system was printed from GIS and used to track the storm network upstream of each site. Staff recorded observations of flowing water and land use, and tested the water where flow was found. This procedure was followed up the network of storm sewer pipes until the source was found or there was no flowing water.

Two of the track downs had very minimal flow and the source could not be determined. Two of the track downs resulted in finding that restrooms were connected to the stormwater system instead of the sanitary system. One of these sites in Reston had a business office's restrooms linked to the stormwater network. Another site in Vienna had two separate office buildings with illicit connections to the same MS4 outfall. The first of these two buildings had an entire restaurant connected to the stormwater network and a washing machine from a drycleaners while the second building had a hair salon. SWPD is working closely with Fairfax County's Wastewater Division, Health Department, and Department of Code Compliance to resolve these connections. The sources of flow for the remaining eight sites are still under investigation. These sites mostly consist of outfalls with high levels of conductivity and/or fluoride levels and low flow levels with no solids. Plans to resolve these locations include using video cameras in the stormwater pipes and follow up visits in an attempt to locate the sources of the discharge and eliminate them as expeditiously as possible.

a.12 (b) Report on the Wet Weather Screening Program; (1) Number of outfalls inspected and test results; (2) Follow-up activities to investigate problematic areas and illicit dischargers.

The permittee shall investigate, and address known areas within their jurisdiction that are contributing excessive levels of pollutants to the Municipal Separate Storm Sewer System. The Permittee shall specify the sampling and nonsampling techniques to be used for initial screening and follow-up purposes. Sample collection and analysis need not conform to the requirements of 40 CFR Part 136 (B.1.1.2).

Wet Weather Screening/Monitoring was conducted during 2011 using the previously developed "Wet Weather Site Selection and Screening Plan" (2006). The current goal of the Wet Weather Screening Program is to field screen 20 sites and to monitor 10 sites over the course of one year starting in September 2011. Twelve sites have been selected using the plan and the county's

geographical information system (GIS) and have been field screened. These sites were identified in industrial, commercial and other high risk areas and ranked according to the county land use code and potential to contribute pollutants to the MS4. Two sites have been monitored for the analytes listed in Appendix A of the county's MS4 permit and for metals. The preliminary water quality analysis indicates that the runoff from the two sites is not a significant source of pollution to the MS4. These two sites will be monitored a second time to verify the results.

a.12 (c) Report on the Industrial and High Risk Runoff Monitoring Program

The permittee may include monitoring for pollutants in storm water discharges to the Municipal Separate Storm Sewer System which include: municipal landfills; other treatment, storage, or disposal facilities for municipal waste; hazardous waste treatment, storage, disposal and recovery facilities; facilities that are subject to EPCRA Title III, Section 313. Monitoring may also be required on other industrial or commercial discharges the permittee determines are contributing a substantial pollutant loading to the Municipal Separate Storm Sewer System. Permittee may require the industrial facility to conduct self-monitoring to satisfy this requirement (B.1.1.3).

This part of the permit is satisfied through the Wet Weather Screening Program described in the preceding section, a.12 (b).

a.12 (d) Report on the Watershed Monitoring Program; (1) Monitoring plan; (2) Summarize the implementation including, Storm Event Data, Station test results, Seasonal Loadings and Yearly Loadings.

The permittee shall develop a long-term monitoring plan and trend analysis to verify the effectiveness and adequacy of control measures in the County's Storm Water Management Plan and to identify water quality improvement or degradation. The permittee shall submit an approvable monitoring program to the Department of Environmental Quality no later than one year from the effective date of this permit. The program shall be implemented within two years of the effective date of the permit. Monitoring shall be conducted on representative stations to characterize the quality of storm water in at least two watersheds during the term of this permit (C.1).

In 2011 three rainfall events were monitored at each of the two water quality monitoring sites, Henderson Road in Occoquan (OQN) and Kingsley Avenue in Vienna (VNA) in accordance with Fairfax County's Watershed Water Quality Monitoring Program submitted on January 24, 2003. Samples were tested for concentrations of nine constituents of concern. Table 1 contains the median, high and low concentrations of each of the nine constituents during the seven-year period from 2005 to 2011.

In addition, statistical analyses using the Mann-Whitney 2-sample test were performed to determine if there were significant differences between constituent concentrations at the two stations. In 2011, as in 2010, the analysis found significant statistical differences for concentrations of all of the nine constituents measured at the two sites. In addition, seasonal and annual unit-area constituent loadings for 2011 were calculated and presented in Table 2.

Table 1: Results of statistical analysis to determine if there is a significant difference between observed constituent concentrations at Vienna and Occoquan Stations for 2005 through 2011

Constituent	Vienna Median	Vienna High	Vienna Low	Occoquan Median	Occoquan High	Occoquan Low	Differences Statistically Significant?
NH ₃ -N	0.18	0.73	0.00	0.01	0.27	0.00	YES
COD	53	292	22	26	122	0	YES
<i>E. Coli</i>	901	200000	0	583	38000	27	YES
Fecal Strep	4200	129000	100	925	51000	18	YES
NO ₃ +NO ₂ -N	0.78	1.64	0.16	0.43	0.73	0.10	YES
TDS	128	836	51	100	160	71	YES
TKN	1.65	11.30	0.48	0.58	2.41	0.00	YES
TP	0.30	1.61	0.06	0.06	0.80	0.00	YES
TSS	52.57	1207.00	4.90	15.75	485.00	1.40	YES

All constituent units are expressed in milligrams per liter, other than *E. coli* and Fecal Strep which are in colonies per 100 milliliters. Statistical significance was based on a Mann-Whitney 2-sample test at a 0.1 significance level.

Table 2: Computed seasonal and annual unit-area constituent loadings at monitored locations for 2011

Constituent	Vienna Winter	Occoquan Winter	Vienna Spring	Occoquan Spring	Vienna Summer	Occoquan Summer	Vienna Fall	Occoquan Fall	Vienna Annual	Occoquan Annual
NH ₃ -N	0.194	0.003	0.105	0.027	0.226	0.024	0.084	0.003	0.608	0.057
COD	51.208	6.185	36.269	15.348	64.339	10.199	77.177	8.587	228.993	40.318
<i>E. Coli</i>	0.704	0.391	6.299	23.078	105.132	13.304	26.633	7.367	268.541	34.326
Fecal Strep	0.945	1.671	22.072	19.974	78.881	38.664	76.379	7.140	275.330	62.148
NO ₃ +NO ₂ -N	0.558	0.122	0.413	0.117	1.018	0.263	0.403	0.110	2.393	0.612
TDS	141.438	31.649	75.620	26.061	114.808	67.123	94.909	33.126	426.776	157.959
TKN	1.237	0.124	1.792	0.356	2.012	0.434	0.954	0.194	5.995	1.107
TP	0.182	0.010	0.126	0.094	0.393	0.048	0.286	0.015	0.986	0.168
TSS	73.440	3.291	47.314	57.792	117.683	28.590	27.398	4.927	265.834	94.600

All loadings are expressed in pounds per acre, except for *E. coli* and Fecal Strep which are in billions of colonies per acre. To compute total loads in pounds or billions of colonies, unit-area loading was multiplied by the drainage area of the monitoring station in acres.

a.12 (e) Report on the Bioassessment Monitoring Program; (1) Monitoring plan; (2) Summarize test results.

The permittee can use and is encouraged to use a rapid bioassessment monitoring program to demonstrate the effectiveness of the stormwater management plan. The program will be implemented within one year of the effective date of the permit and an approvable program must be submitted within six months of the effective date of the permit (C.2).

A probability-based site selection sampling methodology was used to identify randomly-selected stream bioassessment locations throughout Fairfax County. These sites were stratified and proportionally distributed throughout the county based on Strahler stream order applied to all perennially flowing streams in Fairfax County. This methodology eliminates any site selection bias and is commonly used as a cost-effective way of obtaining a statistically defensible determination of

stream conditions at a countywide scale. A total of 53 sites were sampled in 2011: 40 sites randomly selected within Fairfax County as part of the annual probabilistic monitoring program; 11 Piedmont reference locations in Prince William National Forest Park; and two Coastal Plain reference sites in the Kane Creek watershed of Fairfax County. Results from the 40 randomly selected sites suggest that approximately 69 percent of the county's waterways are in "Fair" to "Very Poor" condition based on a decrease in biological integrity of streams. The monitoring program is part of the framework to evaluate future changes and trends in watershed conditions.

a.12. (f) Report on the Floatables Monitoring Program

The permittee shall conduct surveys of floatables. The intent of the survey is to document the effectiveness of the litter control programs for the Municipal Separate Storm Sewer System. Surveys shall be done in accordance with the following procedures: c) The above may be accomplished through the "Adopt a Stream" program referenced in Part I.B.1.k.2 (C.3.c).

In 2011 the multi-agency trash workgroup (consisting of representatives from the Stormwater Planning Division, Division of Solid Waste, Northern Virginia Soil and Water Conservation District and Clean Fairfax Council) began developing a Trash Assessment For Improved Environments (TAFIE) stream condition assessment form for Fairfax County. Similar to rapid assessment methods used to inventory the physical condition of stream habitats, the TAFIE approach can provide visual estimates of certain characteristics (such as amount of visible trash, threats to human health and wildlife, evidence of illegal dumping) and describe the overall condition of a particular location. The goal is to develop and make available a more rigorous method of evaluating the pre- and post-cleanup condition of a stream cleanup site that is easily understood by volunteers and to use the resulting information to guide future litter control and outreach efforts. The TAFIE worksheet and the accompanying guidance were field tested at several stream cleanup sites in 2011; feedback from these events was used to refine and clarify the worksheet and instructions for use. In 2012 the TAFIE form and guidance will be made available to schools, scout troops, and other stream cleanup groups.

The county continued to work with and support the following organizations that coordinate large and small-scale volunteer cleanups:

- Clean Fairfax Council
- The Alice Ferguson Foundation (Potomac River Watershed Cleanup)
- Clean Virginia Waterways (International Coastal Cleanup)

Clean Fairfax Council documented the following metrics regarding litter and clean-up activities that they organized:

- Report a Litterer reports (via anonymous fill-in form at Clean Fairfax website or the Report a Litterer hotline) – 102
- Total number of clean up events either planned or supported – 75
- Total number of volunteers at clean up events – 1,630
- Total number of volunteer hours – 8,050
- Cubic yards of garbage collected – 720

The county continued to provide support and staff for various stream and river cleanup events. In the spring of 2011 approximately 76 sites were established throughout the county for the Alice Ferguson Foundation's annual Potomac River Watershed Cleanup. Cleanups were conducted at numerous state, county and local parks, schools, the county wastewater treatment plant and other

locations. These cleanups were advertised in publications such as the Department of Solid Waste's SCRAPBook and the Fairfax County Park Authority's Parktakes Magazine, as well as on the internet. Staff from the Stormwater Planning Division, Division of Solid Waste, Wastewater Management Division, Fairfax County Park Authority and the Northern Virginia Soil and Water Conservation District participated in these cleanups. More than 1,734 volunteers removed approximately 1,713 bags of trash and litter, 200 tires, 1,883 cigarette butts, 8,559 plastic shopping bags and 31,750 plastic bottles from Fairfax County streams. All told, over 27.96 tons of trash were collected.

According to Clean Virginia Waterways, a total of 1,022 volunteers participated in the International Coastal Cleanup in Fairfax County during September and October 2011. More than 57.5 stream and shoreline miles were cleaned, and 19,478 pounds of trash and marine debris were removed. Food wrappers and containers, litter from recreational activities and fast food consumption (i.e. cups, plates, forks, etc.), and plastic bags were the most commonly collected trash items in the county.

The county continued to promote the "Adopt a Stream" program. The Stormwater Planning Division distributed copies of its Floatables Monitoring Program Brochure to various public offices and during educational activities and outreach events throughout the county. The brochure was also made available on the county Stream Litter website:

<http://www.fairfaxcounty.gov/dpwes/stormwater/streamlitter.htm>

Stream cleanup event organizers were encouraged to record their cleanup information on the Floatables Data Reporting Form (available in the brochure or on the county website) and return the completed form to the county. Cleanup data submitted to the county are entered in the Floatables database.

b) Proposed Changes to the Stormwater Management Program

Storm Water Management Program Review and Update (B.4).

In 2009 Fairfax County and Fairfax County Public Schools proposed to the Department of Conservation and Recreation that the two jurisdictions be covered by the county's Phase I MS4 permit. The arrangement would be contingent upon the two jurisdictions submitting formal documentation to DCR outlining the commitments of each jurisdiction and upon DCR issuing a new permit. In 2009 the county and Public Schools drafted a memorandum of understanding outlining the roles and responsibilities of each jurisdiction that pertain to specific requirements of the MS4 permit. In 2011 both parties continued to monitor changes in the county's draft permit requirements which may impact specific terms of the MOU.

In 2011 the county continued to implement the existing MS4 program per its current Phase I permit. Likewise, Fairfax County Public Schools continued to implement its existing Phase II permit (VAR040104). Public Schools completed and submitted its Annual Report to DCR in August 2011.

c) Assessments of controls and the fiscal analysis of the effectiveness of new controls established by the Stormwater Management Program

As the county approaches build-out conditions, it has become increasingly challenging to mitigate the impacts of impervious area and nonpoint source pollution on streams. Several efforts through the existing stormwater management program are helping to reduce or minimize water quality impacts. They include: the mandate of controls (BMPs) by the Chesapeake Bay Preservation Ordinance; development and implementation of Comprehensive Watershed Management Plans;

development of a retrofitting program for existing developed areas; and ongoing changes to stormwater management codes, policies, ordinance, and guidelines.

d) Annual Expenditures for the StormWater Management Program and Budget

The county has not tracked expenditures to meet permit requirements separately from its overall stormwater program administered by the Department of Public Works and Environmental Services, nor have other agencies tracked the resources they have expended on programs that contribute towards meeting MS4 permit conditions. For calendar year 2011, an analysis of expenditures is available only through October 31, 2011, because Fairfax County began implementing a new financial management system. The total expenditures in the Stormwater Management business unit from January 1, 2011, through October 31, 2011, were \$26.8 million.

In FY 2006, the Board of Supervisors had dedicated the value of one penny of the real estate tax, or approximately \$20 million annually to stormwater capital projects. As part of the FY 2010 Adopted Budget Plan, a new service district was created to support the stormwater management program, as authorized by Virginia Code Annotated Sections 15.2-2400. As part of the FY 2011 budget, the Board of Supervisors approved a stormwater service district levy to \$0.015 (one and a half cents) per \$100 of assessed real estate value to support both staff operating requirements and stormwater capital projects. The stormwater service district will generate approximately \$28 million in FY 2012 that will be dedicated to funding the entire stormwater management program.

e) Identification of water quality improvements or degradation

As the county approaches build-out, we will continue to implement best management practices to control stormwater pollutants, meet regulatory requirements, and take a holistic approach to watershed restoration and preservation. Efforts include enhanced infrastructure maintenance and inspections, implementation of watershed management plans, a continued construction inspection program, and ongoing outreach efforts to increase public awareness. It is anticipated that these efforts will have a positive long-range impact on the future health of county watersheds, will help to satisfy stream water quality standards and support the goals of restoring both local waterways and the Chesapeake Bay.

Attachment 1: Fairfax County's Watershed Management Plans

The following is a list of Fairfax County's thirteen watershed management plans. The date of plan adoption is specified as well as the watershed or watersheds that were included in the watershed planning group.

1. Little Hunting Creek Watershed Management Plan (adopted February 2005)
 - Included watershed: Little Hunting Creek
2. Popes Head Creek Watershed Management Plan (adopted January 2006)
 - Included watershed: Popes Head Creek
3. Cub Run and Bull Run Watershed Management Plan (adopted February 2007)
 - Included watersheds: Cub Run and Bull Run
4. Difficult Run Watershed Management Plan (adopted February 2007)
 - Included watershed: Difficult Run
5. Cameron Run Watershed Management Plan (adopted August 2007)
 - Included watershed: Cameron Run
6. Middle Potomac Watersheds Management Plan (adopted May 2008)
 - Included watersheds: Bull Neck Run, Dead Run, Pimmit Run, Scotts Run, and Turkey Run
7. Pohick Creek Watershed Management Plan (adopted December 2010)
 - Included watershed: Pohick Creek
8. Sugarland Run and Horsepen Creek Watershed Management Plan (adopted December 2010)
 - Included watersheds: Sugarland Run and Horsepen Creek
9. Belle Haven, Dogue Creek and Four Mile Run Watershed Management Plan (adopted January 2011)
 - Included watersheds: Belle Haven, Dogue Creek, and Four Mile Run
10. Lower Occoquan Watershed Management Plan (adopted January 2011)
 - Included watersheds: High Point, Kane Creek, Mill Branch, Occoquan, Old Mill Branch, Ryans Dam, Sandy Run, and Wolf Run
11. Nichol Run and Pond Branch Watershed Plan (adopted January 2011)
 - Included watersheds: Nichol Run and Pond Branch
12. Accotink Creek Watershed Management Plan (adopted February 2011)
 - Included watershed: Accotink Creek
13. Little Rocky Run and Johnny Moore Creek Watershed Plan (adopted February 2011)
 - Included watersheds: Little Rocky Run and Johnny Moore Creek

Print copies of final approved plans are available at the Stormwater Planning Division office, Fairfax County Public Libraries, and Board of Supervisors District offices. Digital copies are available upon request from the Stormwater Planning Division.

Attachment 2: Infrastructure Management Plan and Schedule Table

Table 3: Infrastructure Management Plan and Schedule

Year of Measurement	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Number of Tax Maps Field-verified During the Year	87	65	69	217	57	83	66	46	122	76
Number of Tax Maps Digitized During the Year	87	114	90	145	0	0	0	0	0	0
Total Number of Updated Tax Maps (Field-verified and Digitized)	174	179	159	362	134	176	156	118	283	268
Number of Tax Maps Remaining To Be Digitized	349	235	145	1	0	0	0	0	0	0
Number of Easements Completed (Tax Maps)	N.A.	N.A.	N.A.	15	60	91	230	40	0	0
Miles of Pipes Videoed (by CCTV)	N.A.	N.A.	N.A.	N.A.	43	50	N.A.	10.1	67	17.1
Miles of Pipes Photographed	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	80	32	N.A.
Tax Maps Reviewed for Storm Structure Maintenance Needs	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	88

N.A means “not applicable.”

Zero (0) indicates that the task has concluded so no additional work was performed during the calendar year.