

IV. Strategic Initiatives, Policy, Management, and Emergency Response

This section discusses stormwater management strategic initiatives, policy, pesticides, landfill management, and emergency response related to the effort to respond to the stormwater regulatory challenges faced by the county.

IV. (A) Strategic Initiatives

The following are some key Strategic Initiatives identified for the Stormwater Management business area.

Development Standards

Federal and state guidelines are placing an increasing emphasis on controlling stormwater runoff close to its source. Environmentally sensitive site design and low impact development practices serve to minimize impervious cover and replicate natural hydrologic conditions. With this in mind, the county's Environmental Agenda includes suggestions for better site design practices that protect our streams and other natural resources. It also encourages the use of low impact development concepts and techniques, especially in new residential and commercial areas, and in retrofitting established areas.

Two letters to industry on the use of best management practices have been sent to all architects, builders, developers, engineers, and surveyors practicing in the county—one letter in 2001, the other in 2002 (*Appendix C*). *Procedures for requests to use innovative Best Management Practice facilities in Fairfax County* are defined in a Letter to Industry dated October 2, 2001; and *Innovative Best Management Practices—3.07 Enhanced extended detention dry ponds now acceptable for public maintenance in residential areas and on governmental sites* was sent on May 14, 2002. Enhanced detention dry ponds are now acceptable for public maintenance in residentially zoned areas and on governmental sites subject in compliance with the revised design standards in the “Guidelines for the Use of Innovative Best Management Practices in Fairfax County, Virginia.”

In 2005, as part of a larger effort to integrate low impact development techniques and practices into the county's stormwater management program, six low impact development practices were identified by the Department of Public Works and Environmental Services in coordination with a stakeholders' group for incorporation into the Public Facilities Manual. The six practices are: bioretention basins and filters (rain gardens), water quality (vegetated) swales, tree box filters, vegetated roofs (green roofs), permeable pavers, and reforestation. Final adoption by the Board of Supervisors is projected to occur by the end of the summer of 2006. The Department of Public Works and Environmental Services will provide appropriate training for review and inspection staff as part of implementation of the Public Facility Manual amendments after adoption.

In addition to the low impact development amendments, the Department of Public Works and Environmental Services also developed amendments to the adequate drainage provisions of the Public Facilities Manual to address adequate outfall and drainage diversions. These amendments were adopted by the Board of Supervisors in February 2006. The amendments to the adequate outfall provisions clarify the extent of downstream analysis that must be provided; and provide options for proving no adverse impact and a proportional improvement of outfalls. The amendments to the drainage diversion provisions provide guidance as to when a diversion may be justified and requirements for analyzing downstream impacts.

Stormwater Needs Assessment and Funding

The Department of Public Works and Environmental Services conducted a study known as the Fairfax County Watershed Community Needs Assessment and Funding study to explore options to provide an adequate and stable funding source to implement stormwater strategies. The study was prepared by AMEC Earth and Environmental, Inc. with the assistance of a special advisory committee appointed by the Board of Supervisors. The recommendations of the study were presented to the Board of Supervisors in March, 2005. The study identified types of stormwater services and levels of services provided by Fairfax County and compared these current levels of service against a benchmark of similar communities in the United States in order to show how Fairfax County compares in relation to these other programs. Funding strategies were presented for stormwater management programs to reflect changing service levels, increased infrastructure inventories, unfunded mandates, and emergency events. As part of the budget deliberation process, the Board of Supervisors elected to adopt a one-cent dedication of real estate tax revenues to fund the overall stormwater program. The dedication resulted in \$17.9 million for Fiscal Year 2006 and is estimated to be \$21.9 million for Fiscal Year 2007.

IV. (B) Policy

Resource Protection Areas and perennial streams, the Chesapeake Bay Preservation Ordinance, Total Maximum Daily Loads, the county’s Comprehensive Land Use Plan, infill plans, erosion and sedimentation control regulations, and Zoning Ordinance requirements all play a key part in effective stormwater management. They are discussed in this section.

Perennial Streams Identification and Mapping Project

In the summer of 2005, the results of the Quality Assurance/Quality Control study along with the revised Chesapeake Bay Preservation Area Maps were presented before the Board of Supervisors. A total of 154 sites were resurveyed during the Quality Assurance/Quality Control study. Eighty-one percent (124) of the sites were randomly selected and 19 percent (30) of the sites were targeted. The field resurveys resulted in approximately 7.7 miles of streams being reclassified as perennial and 2.2 miles of streams being reclassified as intermittent. This net change of 5.5 miles of perennial streams represents 0.6 percent of the total 860 miles of perennial streams (excluding the shorelines of the Occoquan River, Potomac River and embayments) within Resource Protection Areas on the adopted 2003 maps. In general, these changes were refinements to the upstream limits of perenniality and were not complete reclassifications of an entire stream.

Perennial Streams Miles:	
Old* (not shorelines).....	520
Additional*	340
Total.....	860
Increase from 1993.....	65%
RPA Miles² (including water):	
Old.....	55.3
Additional.....	17.4
Total.....	72.7
Increase from 1993.....	31%
* “Old” represents the extent of the 1993 RPAs, while “Additional” represents the final extent of the 2005 RPAs.	

In July of 2005, the Board of Supervisors adopted all but one updated Chesapeake Bay Preservation Area Map, with the last map adopted in December. In addition to the 5.5 miles of newly mapped perennial stream, Chesapeake Bay Preservation Area Map Quality Assurance/Quality Control brought the total perennial stream miles to 860. Resource Protection Areas now make up 18.4 percent of land within Fairfax County. The figure identifies the refinements to Resource Protection Areas from the 1993 to the 2005 amendments.

In addition to identifying and mapping all perennial streams in the county, this project helped to develop an updated stream data layer of the county's waterways. It also aided in the informal characterization and inventory of headwater streams by providing information on their physical and ecological conditions.

The Fairfax County Stream Classification Protocol, Field Data Sheet, and interactive maps displaying the county's Chesapeake Bay Preservation Areas are available on the county's Web site, by visiting:

www.fairfaxcounty.gov/dpwes/watersheds/perennial.htm

Chesapeake Bay Preservation Ordinance

Revisions to the map of Chesapeake Bay Preservation Areas were most recently adopted by the Board of Supervisors on July 11, 2005; the revisions became effective the next day. The revisions included corrections to the buffer components of Resource Protection Areas and the refinement of Resource Protection Area designations based on an extensive quality control effort that was pursued subsequent to the initial mapping of perennial streams throughout the county.

The Chesapeake Bay Preservation Ordinance, Chapter 118 of The Code of the County of Fairfax, Virginia, was adopted by the Board of Supervisors on March 22, 1993, and became effective July 1, 1993. This ordinance protects certain areas along the corridor of streams, designated as Resource Protection Areas, from most development and requires that the remaining areas outside Resource Protection Areas be designated as Resource Management Areas. Resource Protection Area and Resource Management Area components are identified in § 118-1-7 of the Code. Performance criteria have been established that require water quality control measures designed to prevent a net increase in non-point source pollution from new development based on average land cover conditions.

The Chesapeake Bay Preservation Ordinance has been amended several times since its initial adoption in 1993; a particularly noteworthy amendment was adopted on July 7, 2003 and became effective on November 18, 2003. This amendment incorporated a Resource Protection Area designation along all perennial streams, including many that were not previously so designated. The amendment also included changes to the performance criteria for development and redevelopment in Resource Protection Areas and Resource Management Areas; changes in the information to be provided with plans of development in applications for construction permits; and changes to the procedures and criteria for the granting of exceptions to the requirements of the Chesapeake Bay Preservation Ordinance.

This ordinance is enforced through the development review and inspection process, which assures that the development plans address the requirements of the ordinance and are constructed as approved. Civil and criminal penalties are available to address violations.

The Department of Public Works and Environmental Services enforces compliance with the Chesapeake Bay Preservation Ordinance through the development review and inspection process. In addition, the Department of Public Works and Environmental Services has the responsibility for assuring that development plans address the requirements of the ordinance as well as are constructed as approved. During 2005, the Department of Public Works and Environmental Services received 376 site, subdivision, and public improvement plans for review and approval; of these, 198 were first submission plans (a plan may be submitted multiple times before approval is granted).

The Northern Virginia Soil and Water Conservation District develops soil and water quality conservation plans for all land in agricultural use. In most cases in Fairfax County, these are horse-keeping operations.

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The plans are written to comply with the Chesapeake Bay Preservation Act guidelines to include best management practices to reduce sediment pollution from erosion; excess nutrients from animal waste and fertilizers; and misuse of pesticides and herbicides. The plans also prescribe riparian buffers for Resource Protection Areas. As required by county ordinance, soil and water quality conservation plans are developed for all agricultural and forestal districts in the county. Plans are updated and technical assistance is provided by the Northern Virginia Soil and Water Conservation District as needed. The Northern Virginia Soil and Water Conservation District also develops conservation plans for landowners receiving state cost-share money for installing agricultural best management practices, such as manure storage and composting structures, or fencing animals out of streams. In 2005, spot checks were made on four practices installed earlier. All were found to be well maintained and in good working order.

In 2005, twenty soil and water quality conservation plans were developed for 544 acres and included 21,255 linear feet of Resource Protection Areas. Cumulatively, 10,504 acres and 288,416 linear feet of Resource Protection Areas are covered by water quality conservation plans that have been developed since 1994 when the program began.

Two stream crossing designs for horse trails were prepared for the Fairfax County Park Authority's Turner Farm property. These crossings will allow horses to cross streams without damaging streambanks and degrading water quality.

At Meadowood Farm, the Bureau of Land Management property on Mason Neck, the Northern Virginia Soil and Water Conservation District designed and sited a windrow composting pad as a demonstration project to show how to better manage horse manure.

Four Mile Run Total Maximum Daily Load/Implementation Plan

In compliance with the Virginia Water Quality Monitoring Information and Restoration Act Association, the Northern Virginia Regional Commission, under a contract with the Virginia Department of Environmental Quality, worked with the four watershed jurisdictions—Fairfax and Arlington Counties and the Cities of Alexandria and Falls Church—to develop an implementation plan for the Total Maximum Daily Load study developed for bacteria in Four Mile Run. The implementation plan focuses on limiting bacteria contamination associated with human and pet sources in the waters of Four Mile Run. The Four Mile Run plan covers a myriad of initiatives from community and individual behavioral changes to large-scale capital projects. The plan was the first Total Maximum Daily Load Implementation Plan developed for an urban area in Virginia and was endorsed by all four watershed jurisdictions.

Although only the very upper reaches of Four Mile Run flow through Fairfax County, it is important to note the Total Maximum Daily Load associated with Four Mile Run and Fairfax County's participation in the long standing regional Four Mile Run Watershed Management Program.

Information about the Four Mile Run Watershed Management Program can be found at:

www.novaregion.org/fourmilerun.htm

Four Mile Run was listed as impaired in 1996 on the state's 303(d) Impaired Waters List due to elevated levels of fecal coliform bacteria. It was subsequently on the list published in 1998 and thus fell under the 1999 Consent Decree requiring Virginia to develop Total Maximum Daily Loads for all of the impaired stream segments listed on the 1998 303(d) Impaired Waters List by 2010. During 2001 and 2002

Northern Virginia Regional Commission and the Department of Environmental Quality developed the Fecal Coliform Total Maximum Daily Load for Four Mile Run approved by the Environmental Protection Agency in May, 2002. Following up on the Total Maximum Daily Load document, Northern Virginia Regional Commission led an effort with the local jurisdictions and the Department of Environmental Quality in 2003 and 2004 to develop an Implementation Plan for the Total Maximum Daily Load. Under this plan the four watershed jurisdictions including Fairfax County have committed to specific actions directed at reducing bacteria in Four Mile Run. Both the Total Maximum Daily Load study and the implementation plan as well as additional background information and ongoing efforts can be found at:

www.novaregion.org/tmdlresource.htm

Other Total Maximum Daily Loads in Fairfax County

There are nineteen Category 5 waterbodies (impaired—requiring a Total Maximum Daily Load) with drainage areas in Fairfax County included in the Department of Environmental Quality’s Virginia Water Quality Assessment 305(b)/303(d) Integrated Report (August 2004). Of the listed waterbodies, 12 are riverine systems totaling 58.45 miles, six are estuarine systems with a total area of 23.23 square miles, and one is a drinking water reservoir with an area of 1,700 acres. Several waterbodies that were listed in previous assessment cycles have additional impairment causes shown in the 2004 report, mainly for bacteria (fecal coliform and/or *E. coli*). This is usually due to the change in the bacteria water quality standard from 1,000 cfu/100 mL to 400 cfu/100 mL, and the transition from a fecal coliform to an *E. coli* standard, which became effective February 12, 2004.

The cause of impairment for the majority of the riverine waterbodies in Fairfax County is either bacteria or impacts to the benthic community. For the estuarine waterbodies, the cause of impairment for the majority of systems is bacteria or PCBs in fish tissue. Ten of the 19 waterbodies are multi-jurisdictional, i.e., include drainage areas outside Fairfax County. Fecal coliform Total Maximum Daily Loads have been completed for two waterbodies, Accotink Creek (above Lake Accotink) and Four Mile Run, and were approved by Environmental Protection Agency on May 31, 2002, and by the Virginia State Water Control Board on June 17, 2004. According to the Department of Environmental Quality’s current schedule, seven waterbodies require Total Maximum Daily Load studies to be completed by 2010, nine require studies to be completed by 2014, with three to be completed by 2016. In order to meet this schedule, bacteria and benthic Total Maximum Daily Loads are being developed for seven tributaries to the Occoquan River, including Popes Head Creek and Bull Run, and will be submitted to Environmental Protection Agency in May 2006. Virginia is also partnering with Maryland and the District of Columbia to develop a PCB Total Maximum Daily Load for the Tidal Potomac. The PCB Total Maximum Daily Load will be submitted to Environmental Protection Agency in September 2007. A complete list of impaired waterways in Fairfax County can be found in ***Appendix F***.

Comprehensive Land Use Plan

On November 15, 2004, the Board of Supervisors adopted an amendment to the Comprehensive Plan pursuant to the comprehensive planning requirements of Virginia’s Chesapeake Bay Preservation Act and Chesapeake Bay Preservation Area Designation and Management Regulations. Included in the amendment were revisions and additions to Comprehensive Plan text and policies as well as the incorporation into the plan of a “Chesapeake Bay Supplement.” The amendment satisfied the specific requirements identified by the state while more comprehensively addressing water resource conditions, issues, policies, regulations, and initiatives in support of the county’s commitment to the regional

Chesapeake Bay Program, in furtherance of the county Board of Supervisors' "Environmental Excellence 20-year Vision Plan," and in support of other environmental and open space goals. The supplement presents information regarding water quality factors, water pollution sources, water quality conditions, and shoreline conditions in the county within the context of the county's land use and its water quality policies, regulations, and initiatives. The supplement culminates in an analysis and series of recommendations addressing water pollution sources, infill development, redevelopment, shoreline erosion control, and shoreline access.

The Environmental Quality Corridor policy, as found in the Environment section of the Policy Plan volume of the county's Comprehensive Plan, does not directly address stormwater discharges; however, it is particularly relevant to the county's overall water quality management program as it serves to identify, protect, and, in some cases, restore environmentally-sensitive resources. Specifically, the Environmental Quality Corridor policy recommends the preservation and restoration of areas including floodplains, steep slopes (slope gradients of 15 percent or greater) adjacent to streams or floodplains, wetlands connected to stream valleys, minimum stream buffers (variable in width depending on topography), and sensitive habitat areas. While there is no county regulation requiring Environmental Quality Corridor protection (Resource Protection Area and floodplain provisions in the County Code protect many, but not all, Environmental Quality Corridor areas), the application of the Environmental Quality Corridor policy during the zoning process has been effective in protecting, and in some cases restoring, environmentally sensitive areas.

Another area of interest with respect to the Comprehensive Plan is an objective addressing water quality and stream protection; there are a series of policy statements in the plan that are related to this objective. This section of the plan was amended in the year 2000 to provide explicit support for better site design and low impact development measures, and opportunities to implement such measures are explored during the zoning process. In a number of cases, staff has negotiated successfully for measures such as reductions in proposed impervious cover and the provision of biofiltration facilities (rain gardens) to provide water quality control through infiltration.

The Environment and Development Review Branch of the Department of Planning and Zoning, in coordination with other Department of Planning and Zoning staff and staff from other county agencies, reviewed 147 rezonings and related applications (e.g., amendments), 72 special exceptions and amendments, and 78 special permits in 2005 for environmental considerations.

Zoning Ordinance and Subdivision Ordinance

During 2005, 376 site, subdivision, and public improvement construction plans were reviewed for code compliance; of these, approximately 146 were approved for construction. The Department of Public Works and Environmental Services enforces the Zoning Ordinance and Subdivision Ordinance criteria related to stormwater for new development and redevelopment through its plan review process. This ensures that best management practices are implemented on all new developments in compliance with the Occoquan Water Supply Protection Overlay District and the Chesapeake Bay Preservation Ordinance. The on-site inspection program and Bonding assures that sites are constructed in accordance with approved plans.

The Zoning Enforcement Branch of the Department of Planning and Zoning investigates complaints of possible Zoning Ordinance violation issues, including several types of complaints that may have potential

stormwater impacts. The following table summarizes the 2005 complaint investigation activity for complaints related to stormwater issues.

2005 Zoning Ordinance Complaints Related to Potential Stormwater Issues

	Complaints Received	Cases Closed	Cases Pending
Drainage	21	19	2
Junk Yard	44	38	6
Outdoor Storage	649	626	23
Storage Yard	23	20	3
Total	737	703	34

Erosion and Sedimentation Control Program

The Department of Public Works and Environmental Services staff, Northern Virginia Building Industry Association, and Engineers and Surveyors Institute are working together exploring ways to improve the effectiveness of the county's Erosion and Sediment Control Program. The committees' work is scheduled to be complete in 2006.

Classes and workshops were conducted in 2005 through the Engineers and Surveyors Institute on the county's Erosion and Sediment requirements, constructability issues, quality control of plans and inter-jurisdictional Erosion and Sediment regulations. The class and workshop were attended by both private and public sector employees. This supplemented the course conducted by Land Development Services staff through Engineers and Surveyors Institute which addressed house lot grading issues with an emphasis on the design of Erosion and Sediment controls and state and federal permit requirements.

Land Development Services organized and conducted a presentation to the Fairfax County Environment Quality Advisory Council pertaining to Erosion and Sediment controls and the protection of natural resources during the land development process. Other efforts included presentations to several citizen groups on the county's environmental protection requirements. In 2006, Land Development Services is expanding its outreach to other groups that are interested to learn about the county's efforts to protect our resources during the land development process.

Construction Site Runoff

During 2005 a total of 258 Erosion and Sediment plans were submitted and approved for projects that would disturb one acre or more of land. Monthly letters were written to the Department of Environmental Quality informing them of these individual sites ([Appendix G](#)). In addition, 27,469 Erosion and Sediment inspections were conducted by Land Development Services staff during 2005 on all sites under construction in Fairfax County. This amounted to providing Erosion and Sediment inspections on over 3,100 projects each month. Approximately 45 percent of the 3,100 projects per month consisted of bonded site plans and subdivision plans. The remaining 55 percent consisted of individual residential grading plans and minor site plans.

A 24-hour hotline established by the Code Enforcement Division of the Department of Public Works and Environmental Services continues to be an effective means for citizens to report complaints about erosion and sedimentation.

Land Conservation Awards

Each year, the county recognizes those developers and site superintendents who do an excellent job of installing and maintaining erosion and sediment controls on construction sites in its Land Conservation Awards Program. While sites normally are nominated by county inspectors, others are encouraged to make nominations as well. Northern Virginia Soil and Water Conservation District provides a judging team that evaluates sites twice a year for these awards; 17 sites were judged in 2005. An award also is given to an outstanding county inspector. Those sites that demonstrate excellence in tree preservation are also recognized in these annual awards; the judging is done by the Fairfax County Tree Commission. An awards ceremony that includes remarks by elected officials and representatives of the development community is held in January.

Northern Virginia Regional Commission

Occoquan Watershed Management Planning

Northern Virginia Regional Commission continues to direct the Occoquan Basin Nonpoint Pollution Management Program, which was established in 1982 to provide an institutional framework for maintaining acceptable levels of water quality in the Occoquan Reservoir through management of nonpoint source pollution. The Occoquan Reservoir is one of two major water sources of the majority of Northern Virginians. Six jurisdictions within the watershed, including Fairfax County, as well as various stakeholders participate in this program.

Because of continued high population growth, the Occoquan Program will begin to turn its attention to broader watershed management and planning issues in addition to its current emphasis on best management practices and modeling. As part of the watershed management planning process, the Northern Virginia Regional Commission continues to review local policies and meet with key stakeholders in Prince William, Fauquier, Fairfax, and Loudoun counties.

The Occoquan Watershed and Reservoir models have been calibrated to 1995 land uses and now are undergoing a verification step to the 2000 land uses. This verification step should be completed by winter of 2006. Northern Virginia Regional Commission will incorporate 2005 land use upon availability of aerial photography.

IV. (C) Management

Management of pesticides, herbicides, fertilizers, and control of our landfills has a significant role in watershed management.

Pesticide, Herbicide and Fertilizer Application Program

A Pesticide, Herbicide, and Fertilizer Application Program was submitted on January 24, 2003, in accordance with the Municipal Separate Storm Sewer System permit requirement. A survey was conducted in 2003 and 2004 and an application rate reduction report was generated recommending that the county develop a Nutrient Management Plan and an Integrated Pest plan. The development of a Nutrient Management Plan and an Integrated Pest Management is part of an effort to control excessive use of pesticides, herbicides and fertilizers in the county. Currently the county's 2003/2004 application rate reduction report is being reviewed as well as the Department of Conservation and Recreation, the

Environmental Protection Agency, the Northern Virginia Soil and Water Conservation District and the Environmental Horticulture Division of Virginia publications on proper use of Pesticide, Herbicide, and Fertilizer. An updated survey is being conducted to see what changes may have taken place since 2003. Initially, only county agencies responsible for county public right of ways, parks and other municipal property will be the ones surveyed as they are part of the county's Municipal Separate Storm Sewer System permit. Other agencies and private organization such as the county's public schools, private golf courses, Federal Government-owned land in the county, the Virginia Department of Transportation and others will be asked to participate on a voluntary basis. Personal interviews may also be conducted to further define the current usage of Pesticide, Herbicide, and Fertilizer.

The Nutrient Management Plan and Integrated Pest Management of other counties will be reviewed and compared to the data collected in Fairfax County, with the ultimate goal being the development of a Nutrient Management Plan and Integrated Pest Management for the county.

Northern Virginia Soil and Water Conservation District (Northern Virginia Soil and Water Conservation District)

The Northern Virginia Soil and Water Conservation District continues to distribute *You and Your Land—A Homeowner's Guide for the Potomac Watershed*. It can be viewed at the Northern Virginia Soil and Water Conservation District's web site at:

www.fairfaxcounty.gov/nvswcd/yyl-intro.htm

Under the county's Chesapeake Bay Preservation Ordinance, the Northern Virginia Soil and Water Conservation District develops soil and water quality conservation plans for land in agricultural use. The plans recommend best management practices so that sediment, fertilizers, pesticides, herbicides, and animal wastes do not harm water quality.

The Northern Virginia Soil and Water Conservation District continues to distribute *Agricultural Best Management Practices for Horse Operations in Suburban Communities*. It is posted on the Web site with several photographs to accompany the text. The web page gets 50 to 100 visitors each month. The address is:

www.fairfaxcounty.gov/nvswcd/horse.htm

In addition, the Northern Virginia Soil and Water Conservation District reviews nutrient management and integrated pesticide management plans for golf courses and provides comments and recommendations to the Department of Planning and Zoning. The Northern Virginia Soil and Water Conservation District reviewed a nutrient management plan for the International Country Club golf course that includes 123 acres and 7,000 linear feet of Resource Protection Areas. It also reviewed water chemistry test results submitted by Mount Vernon Country Club, as part of its requirement to monitor water quality within the golf course operation.

Landfill

Hazardous Waste Treatment, Storage, and Disposal Facilities

There were no new or previously unidentified landfills, hazardous waste treatment, or storage and disposal facilities identified in the county since the Municipal Separate Storm Sewer System permit application was submitted in November, 1992.

Landfill Monitoring Program

The Division of Solid Waste Disposal and Resource Recovery, of the Department of Public Works and Environmental Services, is responsible for the operation of the I-95 Landfill located at 9850 Furnace Road, Lorton, Virginia 22079, and the I-66 Transfer Station/Closed Landfill, located at 4618 West Ox Road, Fairfax, Virginia 22030. Both facilities are located on county property. Both facilities are covered under the Virginia Pollution Discharge Elimination System General Permit. The I-95 Landfill is registered under the permit as VAR051076, and the I-66 Transfer Station/Closed Landfill is registered under the Virginia Pollution Discharge Elimination System permit as VAR051074. The permit expires on June 30, 2009.

The I-95 Closure Project was designed to complete the capping of approximately 130 acres of the Municipal Solid Waste section of the landfill, as approved by the Virginia Department of Environmental Quality. The closure project is divided into four phases, with each phase consisting of approximately 40 acres. Phase III and Phase IV of the closure project are currently being implemented in the central area of the landfill. The final cover system consists of 18 inches of low-permeability soil and a 15-inch protective cover/vegetative support layer. As a result of this work, stormwater is managed more efficiently and infiltration is reduced significantly, in turn providing for less generation of leachate. The final cover system also minimizes the need for post-closure maintenance. In addition, a new stormwater detention pond is currently under construction north of the ash cell in Area Three Lined Landfill, Phase IIB.

The Area Three Lined Landfill, Phase IIB project is part of the I-95 Area Three Lined Landfill Project. The Phase IIB project has a disposal capacity of 375,000 tons, and will accept ash from the Energy/Resource Recovery Facility located at the I-95 Complex and a similar facility in Alexandria. This phase has a service life of four years. The 7.5-acre cell consists of a bottom lining system that includes two feet of low-permeability soil, a double synthetic liner (60 mil HDPE) system, and a leachate collection and detection system.

Division staff performs quarterly visual inspections of the stormwater outfalls located at the I-95 Landfill and the I-66 Transfer Station/Closed Landfill. The inspections are performed in each quarter of the calendar year (January through March, April through June etc.). Annual benchmark sampling is performed between July 1 and June 30 of the monitoring year. The cost for the required Virginia Pollution Discharge Elimination System monitoring, testing, and other related activities are included as part of the operating budget for each facility and is not funded separately. This is done because most of the activities required by the Virginia Pollution Discharge Elimination System permit are also required under the operating permits granted by the Department of Environmental Quality. Test results and inspection reports are maintained at the division's main office, and copies are on file at the facility's administration offices.

Training in pollution prevention for facility staff is provided and is a part of the I-95 Landfill and I-66 Transfer Station/closed landfill waste disposal permits. Pollution Prevention Plans are maintained at each facility and are updated when conditions change. Additionally, spill kits are readily available at each location. Water quality test results conducted to satisfy the Virginia Pollution Discharge Elimination System permit condition have been satisfactory.

The division maintains a Web site at:

<http://fairfaxcounty.gov/dpwes/trash/recyclingtrash.htm>

IV. (D) Emergency Response

Fairfax County has a proactive dam safety program, floodplain management program, and a hazardous materials pollution response team. They provide the county's emergency response network for stormwater related problems.

Floodplain Management

Digital Elevation Model and Floodplain Study in the Belle Haven Watershed

After Hurricane Isabel delivered a record tidal surge to several communities along the Potomac and Cameron Run, the need for a more accurate digital elevation model was identified. Working with Geographic Information Systems, the Stormwater Planning Division contracted with photogrammetry and mapping specialists to create one-foot contour interval digital mapping over the two square miles of the flood prone area.

In cooperation with the USACE's Baltimore District, County and USACE staff performed a flood study, using joint probability methods, to more accurately assess the flooding risks to the Belleview and New Alexandria Communities and other nearby communities. This project, due to be completed in 2006, will create the critical hydrologic, hydraulic and statistical models necessary to perform cost benefit analysis for alternatives to reduce flooding risks in this area.

Level I Digital Flood Insurance Rate Map

With the help of a grant from Federal Emergency Management Agency, the source data for the current Federal Flood Insurance Rate Maps was digitized and a draft Level I Digital Flood Insurance Rate Map was created. This is the first and most involved step in the process of creating an official Digital Federal Flood Insurance Rate Maps. Once approved by Federal Emergency Management Agency, this information can be overlaid on base mapping to create the final product. The final version of the Digital Federal Flood Insurance Rate Maps will enable engineers, mortgage lenders, and citizens access to accurate flood insurance data, with associated base mapping information, online. It will also virtually eliminate the high volume of corrections to the maps which are submitted to Federal Emergency Management Agency. Hundreds of these mapping corrections are currently on file with the county, which impact over 1000 properties. These corrections (or "Letters of Map Amendment") will also be incorporated in the final phase of the Digital Federal Flood Insurance Rate Maps production.

Fairfax Inspections Database Online Floodplain Warning Tool

The new permits computer database, "Fairfax Inspections Database Online" or "Fairfax Inspections Database Online," scheduled to be launched in February, 2006, will be equipped with a floodplain warning tool. Because only about 500 miles of the county's 900 miles of floodplain are mapped, a tool was needed to somehow flag permits associated with properties containing floodplain. Although approximate mapping of much of the county's minor floodplains using aerial topography and HECGEO will be completed over the next five years as the watershed master plans are completed, the floodplain warning tool had to be created now as the software for the Fairfax Inspections Database Online was being created. The Stormwater Planning Division and the Geographic Information Systems department worked to create a collage of available floodplain data with approximate floodplain limits used where no other data was currently available. A table was then created of all the properties in Fairfax County that are impacted by either floodplain. Because the Fairfax Inspections Database Online program only references the database table, updated floodplain information can be easily added as each of the watershed master plans are completed and as new studies are submitted.

Spill Prevention and Response

The Fire and Rescue Department responds to all reported incidents of hazardous material releases, spills, and discharges. Staff are trained and equipped to initiate spill control measures to reduce the possibility of hazardous materials reaching the municipal separate stormsewer system. Resources available to Fire and Rescue Department personnel include personal protective equipment, technical tools and equipment for control, and absorbent products such as pads and booms for containment. The Fire and Rescue Department 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 2005, the Fire and Rescue Department's Hazardous Materials and Investigative Services section responded to 584 calls involving hazardous material, including 525 reported spills, leaks or releases of hazardous materials. There were 146 hydraulic oil spills/releases (mostly from trash trucks), 88 fuel oil or home heating oil releases, 51 gasoline releases and 36 diesel fuel releases. There were 66 responses to incidences which had the potential to discharge, or did discharge, hazardous materials into storm drains or surface water.

Hazardous Materials and Investigative Services staff, through vigorous enforcement of appropriate codes and ordinances, ensures that the responsible party takes appropriate spill control and cleanup action. In both emergency and non-emergency spills that reach the municipal storm sewer system, Hazardous Materials and Investigative Services staff utilizes appropriate enforcement actions to ensure that proper cleanup activities are undertaken to protect and restore the environment as well as recover costs incurred by the county for initial emergency response to the incident.

The Hazardous Materials and Investigative Services monitors, on a long-term basis, contaminated sites that have a potential for the contaminant coming in contact with surface structures including stormwater management facilities. As a part of the Oversight Program, Hazardous Materials and Investigative Services, as an agent of the Director of Department of Public Works and Environmental Services, accepts, reviews, and processes requests to discharge treated groundwater from remedial activities at those sites into county sewers. Hazardous Materials and Investigative Services then monitors the discharge for the duration of the agreement. Department of Public Works and Environmental Services staff members receive regular training in pollution prevention measures and in proper response procedures for incidences where pollutants or spills are found that are exposed to stormwater. Select groups are also trained in the proper handling of hazardous wastes and operate the Household Hazardous Waste collection program.

Ordinances and Enforcement

The Fire and Rescue Department's Hazardous Materials and Investigative Services section aggressively enforces County Code Chapters 105 and 106 in conjunction with the Department of Public Works and Environmental Services and the Department of Planning and Zoning and has issued criminal citations during the investigations of Hazardous Materials Incidents. Chapters 105 & 106 contain the 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, (***Appendix H***) 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 not public health hazards nor regulated.

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In May, 1995, the county established the Fairfax County Hazardous Materials Task Force. Their charge is to provide oversight of remedial activities required as a result of Corrective Action Plans. A Corrective Action Plan may be issued to a site for remedial activity required because of groundwater contamination. The Corrective Action Plan may involve the discharge of treated groundwater to the storm sewer system. The Fire and Rescue Department's Hazardous Materials Services Section acts as an agent of the Director of the Department of Public Works and Environmental Services to permit and enforce actions on these activities. The Hazardous Materials Technical Support Branch currently monitors 68 active sites undergoing remediation activities.