

## **VI. Public Outreach and Education**

Public outreach and education are of foremost importance to environmentally sound stormwater management. They raise the level of awareness of the county at large with regards to existing stormwater problems and environmentally friendly solutions. The primary goal of public outreach and education is “pollution prevention.” An aware county resident will most likely change pollution-causing behaviors and seek to help in supporting environmental programs.

### ***Outreach and Education by the Stormwater Planning Division of the Department of Public Works and Environmental Services***

#### **Stormwater Public Education and Involvement Program 2005 Overview**

The information that follows provides a brief summary of the outreach and education activities conducted by Fairfax County in 2005 to its more than one million residents.

#### ***Presentations on General Information***

Fairfax County makes presentations to various groups throughout the county regarding stormwater management and watershed basics. The presentations include an overview of watersheds, stormwater management, and actions that residents can take to protect the water quality of local streams, the Occoquan Reservoir, the Potomac River, and the Chesapeake Bay. In 2005, the county presented to the following groups:

- 3 Fairfax County homeowners associations
- 2 Environmental groups
- 5 Schools
- 2 Youth Groups

#### ***Exhibition/Educational Booths at Public Events***

Fairfax County hosts educational booths at several public events annually to raise awareness among residents about stormwater issues facing the county and to encourage behaviors that positively impact watersheds. The following list includes the events Fairfax County participated in as an exhibitor and or environmental educator:

- Celebrate Fairfax
- Centerville Days
- Fall for Fairfax
- Earth Force Youth Summit
- Fairfax County Earth Day Exposition
- Earth Day Celebration Tree Planting
- Geographic Information Systems Week
- Hidden Oaks Nature Center Kids Camp
- Hidden Pond Nature Camp
- McLean Day
- Middle Ridge Community Night Out
- Mount Vernon Town Hall Meeting
- Naturefest at Runnymede Park
- Providence District Environmental Workshop
- Riverside Fall Festival at Riverbend Park

**Explore Your Watershed Walks**

Fairfax County partners with the Audubon Naturalist Society and Northern Virginia Soil and Water Conservation District to host watershed walks. These walks provide an opportunity for residents to learn more about the organisms living in Fairfax County’s stream valleys, the pollution that threatens them, and how we can work together to improve the quality of our local waterways and those downstream.

Watershed walks were conducted in the following three watersheds in 2005:

- Cub Run
- Accotink Stream Valley
- Bull Neck Run

**Watershed Cleanups**

Fairfax County Stormwater staff, in partnership with numerous other local agencies, support the ongoing efforts to improve the water quality and habitat of Fairfax County’s waterways by participating in semi-annual and annual watershed cleanups. Large-scale annual and/or semi-annual events that the county participates in include:

- The Alice Ferguson Foundation’s Potomac Watershed Cleanup
- The Virginia Department of Conservation and Recreation’s Adopt-a-Stream Program
- The International Coastal Cleanup
- The Friends of the Occoquan’s Occoquan River Shoreline Cleanup



Volunteers remove trash from a local stream in April, 2005.

Of special note, the annual 2005 Potomac Watershed Cleanup yielded great success with more than 1,000 volunteers participating to remove more than 2,000 bags of trash.

Number of Cleanup Sites	Number of Volunteers	Number Bags of Trash	Number Bags of Recyclables	Number Tires	Number Balls	Interesting Items Found
86	1336	2025	275.5	168	985.5	basketball hoop, Easter egg filled with candy, DVD player, washing machine, rocking horse, bicycles, a crutch

**Regional Pollution Prevention Outreach Campaign**

In partnership with the Northern Virginia Regional Commission and surrounding jurisdictions, Fairfax County implemented a region-wide radio outreach campaign. The radio campaign aired in July, 2005. It was aimed at raising awareness among residents about harmful non-point source pollutants and actions residents can take to help protect the water quality of local streams and the Chesapeake Bay.

### ***Web Page Development***

The following Web pages were developed or reorganized in 2005 to provide better and more information to residents regarding volunteer opportunities, stormwater management projects in the county, and the state of local waterways:

- Stormwater Management home page
  - [www.fairfaxcounty.gov/dpwes/stormwater](http://www.fairfaxcounty.gov/dpwes/stormwater)
- Riparian Buffer Restoration
  - [www.fairfaxcounty.gov/dpwes/stormwater/riparianbuffer/](http://www.fairfaxcounty.gov/dpwes/stormwater/riparianbuffer/)
- Calendar of Events
  - [www.fairfaxcounty.gov/dpwes/stormwater/events.htm](http://www.fairfaxcounty.gov/dpwes/stormwater/events.htm)
- Reports
  - [www.fairfaxcounty.gov/dpwes/stormwater/resources.htm#reports](http://www.fairfaxcounty.gov/dpwes/stormwater/resources.htm#reports)
- Storm Drainage System
  - [www.fairfaxcounty.gov/dpwes/utilities/stormdrains.htm](http://www.fairfaxcounty.gov/dpwes/utilities/stormdrains.htm)

### ***High School Science Program***

Fairfax County Stormwater Management is partnering with the county's Wastewater Department to implement a sewer science program for high school students. This new program promotes an understanding of stormwater, its relationship with wastewater, how the water and the land are connected, and how each individual can make a difference in the health of our environment.

The program teaches high school students about municipal wastewater treatment and stormwater management using specially designed tanks, analytical equipment, and a student workbook. Fairfax County works with students in grades nine through 12 to raise awareness about pollution prevention messages and introduce students to careers in the wastewater and stormwater field.

### ***Meaningful Watershed Experience Program***

Fairfax County Stormwater is partnering with Fairfax County Public Schools to implement the Meaningful Watershed Experience Program. The program is aimed at training Life Science teachers in the county's water quality monitoring techniques and program; local, state, and federal policies surrounding watershed protection; and stewardship opportunities offered by the county for teachers and students. The two objectives of the program are as follows:

- Beginning with the class of 2005, provide a meaningful Bay or stream outdoor experience for every school student in the watershed before graduation from high school.
- Provide students and teachers alike with opportunities to directly participate in local restoration and protection projects, and to support stewardship efforts in schools and on school property.

In 2005, Fairfax County participated in three teacher trainings workshops to build the capacity of teachers in approximately 15 schools, ultimately resulting in meaningful outdoor watershed experiences for more than one thousand seventh grade students.

### ***Stream Buffer Restoration***

Fairfax County initiated a countywide riparian buffer restoration project in collaboration with volunteers and various partners to mitigate stormwater runoff into local streams and to support the Board of Supervisors' adopted Environmental Agenda.

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The buffer restoration initiative began in spring of 2005 with restoration of seven sites. Since then, the county, its partners, and many volunteers have restored 12 areas by removing invasive plants and planting native trees and shrubs. The results for 2005 are listed below:

- Number of trees/shrubs planted: 3,430
- Restored areas: 8 acres
- Number of volunteers: 722



Volunteers plant trees at a Fairfax County park to protect local streams on April 23, 2005.



Volunteers install a protective sleeve around a newly planted tree.

### ***Fairfax Watershed Network***

The Fairfax Watershed Network is a dedicated group of organizations, agencies, and individuals that support and promote the improvement and protection of Fairfax County's streams and watersheds through outreach and education efforts. Fairfax County Stormwater Management is a founding member of this group.

### ***Earth Force***

Fairfax County Stormwater Management serves as a technical resource for Earth Force's Global Rivers Environmental Education Network program. Responsibilities include identifying stream monitoring sites, assisting with outdoor training exercises, developing presentations, and presenting to students and teachers in a classroom setting.

Earth Force engages young people as active citizens who improve the environment and their communities now and in the future.

Global Rivers Environmental Education Network builds on national academic standards and teaches elementary, middle, and high school-aged youth essential skills including critical thinking, teamwork, problem solving, and the application of science to real world problems. Using proven scientific methods, Earth Force teaches young people to assess the quality of their local water, using water monitoring equipment and conducting classroom research to understand the health of their watershed.

### ***Volunteer Stream Water Quality Monitoring***

Fairfax County Stormwater Management works with the following partners to conduct volunteer monitoring training Fairfax County:

- Audubon Naturalist Society
- Northern Virginia Soil and Water Conservation District

### ***The Environmental Horticulture Division of Fairfax County Extension***

The Environmental Horticulture Division of Fairfax County Extension provides research-based technical information from Virginia Polytechnic Institute and State University promoting sound landscaping practices that reduce the quantity of pesticide and fertilizers added to the environment, slow runoff rates, keep erosion to a minimum, and encourage significant absorption of pollutants by plant materials.

Environmental Horticulture Division programs educate private residents on ways of achieving attractive and sustainable home landscapes with the minimum use of fertilizer, pesticides, and other chemical inputs. Each year:

- One-on-one advisory services reach more than 18,000 residents.
- Low-input lawn care advice is circulated to more than 25,000 residents through monthly articles in resident association newsletters.
- Approximately 4,000 Virginia Polytechnic Institute publications are distributed on such topics as “Lawn Fertilization in Virginia,” “Horse Pastures in Virginia,” and “Selection of Plant Material Suitable for this Area.”
- More than 2,500 residents and commercial horticultural companies use the extension office’s soil testing service to determine the precise levels of fertilizer and liming necessary for a healthy landscape (Note: In part, due to information and assistance provided by the Fairfax County Public Library, Fairfax is the greatest user of this service in Virginia).
- Over 40 pre-recorded messages on environmental horticulture and horticulture topics are available to the public 24 hours a day on Parkline at (703) 324-8700.

Environmental Horticulture Division also works intensively with horticulture professionals, both in private industry and local government. In addition to providing one-on-one technical advice on request, Environmental Horticulture Division provides educational and logistical assistance to the Northern Virginia Nursery and Landscape Association and the Professional Grounds Management Society. In 2004, more than 770 people received professional training at the annual three-day Greens Industry Professional Seminar. Similarly, Environmental Horticulture Division plays a major role in the Virginia Nursery and Landscape Association Certification training.

Pesticide use and safety is a major focus of the Environmental Horticulture Division program, which provides educational materials and logistical support for pesticide applicator certification in cooperation with the Virginia Department of Agriculture and Consumer Services. A three-day training session prepared over 90 landscape professionals and local government employees for testing with Virginia Department of Agriculture and Consumer Services to become certified Pesticide Applicators or Registered Technicians. Most, if not all, of the participants were already applying pesticides without proper certification. In addition, more than 450 horticultural professionals and members of the structural pest control industry received recertification training and credit at the annual Green Industry Seminar. At a Procrastinators Re-certification Training in late June, 2005, 148 participants had the ability to get re-certified in five states and in eighteen categories.

Environmental Horticulture Division offers technical support to other agencies on demand, for example, the review of nutrient and pesticide management plans for the Department of Planning and Zoning. The nutrient and pesticide management plans are developed pursuant to development conditions that are negotiated by the Department of Planning and Zoning during the zoning process for cases (typically special permit or special exception applications) involving substantial turf-oriented recreational activities (e.g. athletic fields, golf courses, and driving ranges).

### ***Fairfax County Health Department***

Environmental Health Specialists presented 12 public awareness programs to approximately 338 county residents during the year, each about the Chesapeake Bay requirement to pump septic tanks every five years. Other outreach programs have been given that incorporate preventative maintenance issues for onsite sewage disposal systems, a stream awareness component to alert residents to possible stream health hazards, and information on how to report stream pollution problems. In 2005, the county sent out 14,220 Flow Diversion Valve reminder notices. These reminders are sent to homeowners on the anniversary of the installation of their system to remind them to turn their Flow Diversion Valve once a year. It also reminds them to pump their septic tank on a regular schedule of every three to five years.

### ***Fairfax County Public Schools***

Environmental issues and concerns are a part of many science courses. The Fairfax County Public Schools curriculum for its approximately 14,000 seventh grade students includes a course in “Investigations in Environmental Science.” During this course, the students study basic ecology concepts and how to apply them to their local watershed and the Chesapeake Bay ecosystem. The curriculum for the approximately 10,000 ninth grade students includes “Biology 1,” in which the students explore the interactions of populations in ecology. Another course is “Chemistry 1,” which addresses chemistry in the community and water quality issues. In it, issues involving the use of resources as it relates to the conservation of matter are addressed. A course in “Geosystems” is also available and includes a section on the hydrologic cycle and a study of the effect of economic and public policy on our resources. The “Geosystems” course includes specific environmental projects tied to environmental science courses across the county. Herndon students in Advanced Placement Biology are doing stream monitoring following the Fairfax stream protection strategies. In addition to the courses offered, there are school-based projects that examine geomorphologic changes, nonpoint source pollution, and stream monitoring.

Daniels Run Elementary School has a school-wide environmental education program. The objective is to increase the students’ understanding of how watersheds function and the impact development has on them, focusing particularly on their specific watershed and its interaction with the larger system. An effort is made to create a sense of environmental stewardship among the students.



The “pollinators” garden at Daniels Run Elementary School



Another view of the garden, showing an interpretive sign

The students at Daniels Run have been involved in many environmental projects including the creation of a “Bayscaped” area located on the school grounds. This area includes two rain gardens, a pollinator garden, a native grass hillside, a restored forest edge, a restored forest understory, a riparian buffer, and stream bank stabilization.

In 2005, the school partnered with the City of Fairfax and Filtrexx International to stabilize portions of the Daniels Run Stream. This stream was very impacted by a new development upstream from the school; they urged the City of Fairfax to join their efforts to stabilize the stream banks using a new non-invasive technique. Fortunately, the City of Fairfax agreed and Filtrexx International designed and installed this new technique along 760 feet of stream bank. The restoration process was completed in June of 2005.

The area to be stabilized was infested and degraded by invasive plants, most notably invasive vines, which had to be removed. This portion of the work was done by teachers and community volunteers. Erosion and undercutting along the banks of the stream was so severe, numerous trees had fallen into the stream; exposed tree roots and unstable trees were common. The Filtrexx technique offered a chance to save all of the existing trees along the stream bank. The technique backfilled the undercut areas and placed and secured stabilizing “soxx” along the banks and around existing vegetation.



Before Stream Bank Stabilization



After Stream Bank Stabilization

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In addition to the stream bank stabilization project, in fall, 2005, students created a riparian buffer along the stream to increase biodiversity and habitat and reduce stormwater runoff. They received a Virginia Naturally grant to help them in this effort. The participating students gained a fundamental understanding of stormwater runoff issues in developed areas and the value of riparian buffers in reducing the negative impacts of development. Soil and water conservation were addressed in very real terms.

In order to increase the ability of the riparian area to absorb stormwater, before student planting, the area was trenched parallel to the stream and the trenches were filled with a soil mix high in compost content. This technique, devised by Dr. Frank Gouin of University of Maryland, is recommended for treatment of compacted soil to increase water retention and vegetation growth. The open space portion of our riparian area was compacted and the turf cover acted more like a sheet carrying runoff to the stream rather than intercepting and absorbing it. The Gouin technique was applied to improve the growing conditions of the riparian area and reduce runoff reaching the stream. The soil mix used was a composted growing medium provided by Mulch Solutions, a local distributor of Filtrexx International. Fairfax County partnered with Filtrexx in this component and provided men and machinery for removing the turf and doing the trenching. Earth Sangha drew up the design for the buffer zone and provided the native riparian plants.



The trenches in the riparian buffer were filled with compost.



Students planting the riparian buffer

Other activities and accomplishments include participation in the Chesapeake Bay Foundation restoration of underwater grasses project where underwater grass were grown in an aquatic system that replicates the Chesapeake Bay water conditions; they were later transplanted into the Chesapeake Bay. Students at Daniels Run also competed in a stormdrain marker design contest. The final design was a composite of several student designs and will go on every stormdrain in the City of Fairfax.



This marker was designed by students and will go on stormdrains in the City of Fairfax.

In the courtyard area (The Gardens), students grow crops to learn about the life processes of plants. By using red wiggler worm compost as fertilizer, students learn about the role of resources in the natural

world and how people can utilize those resources in a sustainable way. The red wigglers are fed fruit and vegetable scraps from the school cafeteria.

### ***Fairfax County Recycling***

Fairfax County's Solid Waste Management Program is a strong supporter of the education of the community regarding the prevention of litter and recycling. This educational effort assists the county in protecting the surface water by preventing litter and by emphasizing the benefits of recycling. The following information describes the public education efforts of Solid Waste Management Program that will help in reducing impacts to surface water from litter and trash.

The Solid Waste Management Program supports school recycling efforts through the Schools County Recycling Action Program. Solid Waste Management Program publishes a catalog (the SCRAPbook) describing the many educational opportunities available to teachers and students through the Solid Waste Management Program and the Clean Fairfax Council. This catalog allows teachers to utilize the county's educational resources and work them into their lesson plans if desired. Solid Waste Management Program, in conjunction with Clean Fairfax Council, awarded \$6000 in grant funding to 12 Fairfax County Public School classes to fund school environmental projects.

America Recycles Day is always held on November 15 and is promoted by the Solid Waste Management Program in county schools. To recognize America Recycles Day, the Solid Waste Management Program distributes information about the benefits of recycling to all Fairfax County Public School students (about 150,000) which includes a form to enter the America Recycles contest where prizes are awarded at the national, regional and county level. This year, a Fairfax County Public Schools student won the regional grand prize of a \$300 gift certificate to a local bicycle store and a \$500 grant to the school for an environmental project. Solid Waste Management Program also hosted its third annual Community Recycling Roadshow at Herndon High School where electronics, shoes, bicycles, cell phones, rechargeable batteries, and eyeglasses were collected either for recycling or reuse. Over 500 residents participated in this one-day event held on November 5

In 2005, the Solid Waste Management Program strengthened its relationship with the Fairfax County Public Schools by partnering with Chantilly Academy and Edison Academy to support two computer and electronic recycling events held in April and September, 2005, respectively. At these two events over 1,000 residents were provided with recycling services as well and educational material about litter prevention and recycling.

Clean Fairfax Council provides information on litter prevention and recycling directly to students in the Fairfax County Public Schools. Each year, the Clean Fairfax Council makes grade-specific presentations in the schools on issues including litter control, recycling, graffiti and water pollution caused in part by litter. Twice during the year, the Clean Fairfax Council offers a program called "Critters Don't Need Litter" which describes the impact of roadside litter. The Clean Fairfax Council distributed litter/recycling newsletters to all fifth- and seventh-grade students. Each year, the Clean Fairfax Council sponsors the Fairfax County Earth Day/Arbor Day celebration and participates in two county events: Fall for Fairfax and Celebrate Fairfax. Additionally, the Clean Fairfax Council sponsors two countywide cleanups (spring and fall) which involve approximately 20,000 volunteers.

The Fairfax County Solid Waste Management Program worked to change the county's solid waste ordinance to require that privately-owned refuse and recycling collection companies collect additional recyclables at the curb. Plastic bottles and jugs, mixed paper and flattened cardboard are now required to

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be collected for recycling at the curb. Advertisements about this change appear in all 12 editions of the *Times Community News* distributed in Fairfax County and the *Fairfax Weekly* of the *Washington Post*. This information was also developed into a Public Service Announcement that is continually run on Fairfax County's television channel, channel 16.

A rechargeable battery recycling program was initiated in 2005 through which rechargeable batteries can be recycled at any of the Fairfax County Board of Supervisors offices.

The Solid Waste Management Program continued its innovative and productive partnership with ServiceSource to recycle used computers. ServiceSource is a non-profit that employs people with disabilities to disassemble and recycle computers. The program has co-sponsored and advertised several community collection events in partnership with nearly a dozen schools, businesses, and non-profit organizations. Advertisements were placed in local newspapers and distributed through the school system. Three highly successful computer recycling events were held in 2005. Approximately 1,000 tons of computers have been recycled since the program's inception in 2002.

Solid Waste Management Program staff made presentations and sent information to various community groups and schools. Citizens were able to learn more about recycling at booths at various community fairs and festivals including Celebrate Fairfax, Fall for Fairfax, Earth Day/Arbor Day, and at several events sponsored by individual members of the Fairfax County Board of Supervisors. The Solid Waste Management Program won the grand prize at Celebrate Fairfax for its display design; the event draws over 10,000 attendees yearly.

To encourage commercial recycling, the Solid Waste Management Program continues its business recycling awards program. Three businesses won awards. In addition to presenting the awards to the recipients at Earth Day/Arbor Day, staff traveled to each of the winner's sites to present the awards at a staff gathering to maximize program exposure.

Internally, the Employee Recycling Committee has continued to thrive. The Employee Recycling Committee has increased its membership and sponsors several events to encourage employees to recycle including contests and seminars for Clean Your Files Day, a countywide Earth Day Expo, and an intranet site with county employee recycling information.

The Recycling Ambassadors program continues with over 120 people volunteering over the course of 2005. The Junior Ambassador program launched last year has continued to grow with over 300 hours of service given by students in 2005.

Fairfax County participated cooperatively with the Metropolitan Washington Council of Governments in a regional recycling radio campaign, which was broadcast over seven radio stations during a two-week period in the fall of 2005.

The Solid Waste Management Program maintains a web site at the following address:

[www.fairfaxcounty.gov/dpwes](http://www.fairfaxcounty.gov/dpwes)

The site includes information on residential, office, and yard waste recycling; buying recycled content products; and reducing waste. It also provides electronic versions of most division publications. New information about recycling education opportunities and events is constantly being added to the website. An e-newsletter, the *Fairfax Recycler*, is sent to over 500 listserv subscribers with specific information about recycling and county-sponsored environmental events.

### ***Northern Virginia Soil and Water Conservation District***

During 2005, the Northern Virginia Soil and Water Conservation District hosted six Green Breakfasts to provide an opportunity for the community to hear about topics of environmental interest and discuss environmental issues. Presentations and discussions included:

- innovative ways to manage stormwater in Stuttgart, Germany
- a film about the low impact development concept and practices, “Reining in the Storm”
- county trails, including the Cross-County Trail, which will help to foster an appreciation for and foster stewardship of stream valleys
- funding for stormwater management, including findings and recommendations of the Stormwater Advisory Committee
- riparian buffers
- the natural resources management plan developed by the Fairfax County Park Authority
- the proposed Tree Action Plan developed by the Tree Commission

The Northern Virginia Soil and Water Conservation District sponsors neighborhood education programs about the dangers of dumping pollutants (e.g., leaves, fertilizer, oil, toxic chemicals, animal waste, trash, etc.) in storm drains. The information and education program culminates with stenciling a message on the face of several drains throughout the neighborhood, or gluing a small plastic marker on the top of drains that reads “No Dumping, Drains to Stream” in both English and Spanish. Northern Virginia Soil and Water Conservation District has the responsibility for guiding storm drain stenciling projects in the county and ensuring they adhere to District and Virginia Department of Transportation standards. The Department of Public Works and Environmental Services and the Northern Virginia Soil and Water Conservation District have forged a partnership whereby the Department of Public Works and Environmental Services purchases storm drain markers and the Northern Virginia Soil and Water Conservation District provides the oversight and guidance for volunteers to carry out the community education and marking projects. In 2005, six projects brought nonpoint source pollution prevention information directly to 6,198 households. Eight hundred and twenty-two drains were labeled with a reminder message. One hundred forty-six volunteers were involved in the implementation of these projects. Three of the projects were in the Difficult Run watershed, one was in the Pohick Creek watershed, and two were in the Accotink Creek watershed.

The Northern Virginia Soil and Water Conservation District provides technical assistance and information to county agencies and citizens for the prevention and control of soil erosion; the management of stormwater; the reduction of nonpoint source pollution in runoff to streams and lakes; and the sound management of our urban, suburban, and agricultural lands.

During 2005, the Northern Virginia Soil and Water Conservation District received 395 public information inquiries and distributed approximately 5,268 brochures and flyers related to the reduction of nonpoint source pollution. The Northern Virginia Soil and Water Conservation District’s Water Quality Stewardship Guide is available on its Web page. It contains a great deal of useful information about water and watersheds, water quality, and the sources of nonpoint source pollution, and suggests specific actions citizens can take to improve water quality.

Education resource materials, watershed awareness programs, and an interactive watershed model provided by the Northern Virginia Soil and Water Conservation District are aimed at teachers, youth, schools, Scout groups, and the general public. The watershed model, called an *Enviroscape*, is used to

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demonstrate the sources and methods for controlling nonpoint source pollution from various land uses. During 2005, the watershed model was used during 11 presentations to educate 966 people.

The Northern Virginia Soil and Water Conservation District makes presentations at seminars and workshops and provides displays, information and publications for events throughout the year. These cover a wide range of topics, from “Stream Dynamics,” “low impact development Site Hydrology Analysis,” “Learning about Soils,” “Erosion and Sediment Controls on Construction Sites,” and “Managing Manure in Your Horse-Keeping Operation,” to “Dumping in Storm Drains Pollutes Our Streams,” “Responsible Lawn Care,” “Dealing with Drainage Problems,” and “Cleaning up Trash in the Potomac.” During 2005, 20 presentations were made to over 1,300 people in groups ranging from 10 to 150 or more. Exhibits were manned at seven events.

The Northern Virginia Soil and Water Conservation District provided technical advice to 598 homeowners and homeowner associations, including 94 on-site visits to advise on erosion, drainage, pond management and other environmental problems.

The Northern Virginia Soil and Water Conservation District provides administrative, technical, and educational support to citizen-based watershed groups, including the Difficult Run Community Conservancy, Fairfax Trails and Streams, Friends of Sugarland Run, Friends of Cub Run, and Friends of Little Rocky Run.

The Northern Virginia Soil and Water Conservation District, The Department of Public Works and Environmental Services, Audubon Naturalist Society, and several ‘Friends of’ groups meet bi-monthly as the “Fairfax Watershed Network.” Their purpose is to exchange information, to promote community-based watershed stewardship groups, and to provide support. In 2005 a major project was to promote the annual Potomac River cleanup, which is coordinated regionally by the Alice Ferguson Foundation. The Board of Supervisors declared April 2 as “Clean Streams Day” and the Chairman signed the Trash Treaty, agreeing that Fairfax County, along with neighboring jurisdictions, will work toward eliminating trash that is carried to the Potomac River. In Fairfax County, 83 sites were registered for the April cleanup. Forty tons of trash were picked up by 1,500 volunteers. This included 281 bags of trash that could have been recycled.

The Northern Virginia Soil and Water Conservation District sponsored teams from James Madison High School and Hidden Pond Nature Center in the Virginia Envirothon, a natural resources competition for high school students. Participants learn about stewardship and management concepts and work to solve real and hypothetical environmental problems. The program is field-oriented and gives students an opportunity to work with natural resource professionals in the areas of aquatics, forestry, soils, and wildlife.

The Northern Virginia Soil and Water Conservation District partnered with the Department of Public Works and Environmental Services to assist with training middle school science teachers to implement the new science curriculum that has an emphasis on watershed education. The training program is funded by the Bay Watershed Education and Training grant program. More than 100 teachers were trained.

The Northern Virginia Soil and Water Conservation District’s annual seedling program emphasizes the role of vegetation in preventing erosion, conserving energy, and decreasing and filtering stormwater runoff. Besides being aesthetically pleasing, trees and shrubs, particularly those planted in and near riparian areas, help to protect stream water quality and channel stability. In 2005, 6,061 tree and shrub native plant seedlings, mostly in 400 packages of 14 seedlings each, were sold to citizens at a small cost.

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The Northern Virginia Soil and Water Conservation District continues to expand its reach with a home page that is part of Fairfax County's Internet site. The site gets an average of more than 6,000 visitors each month and is credited with increasing the county's environmental presence on the Web. The most popular pages are those with information about soils and drainage (*You and Your Land Homeowner's Guide*), followed by science fair information, water quality stewardship, the seedling sale, volunteer stream monitoring, and building an amenity pond. Northern Virginia Soil and Water Conservation District's Web address is as follows:

[www.fairfaxcounty.gov/nvswcd](http://www.fairfaxcounty.gov/nvswcd)

The Northern Virginia Soil and Water Conservation District published and circulated *Conservation Currents*, an eight-page newsletter, four times in 2005. In addition to the printed newsletter, the Northern Virginia Soil and Water Conservation District distributes the newsletter via e-mail upon request and posts the articles on its Web page. Topics relevant to stormwater included:

- Citizen *E. coli* monitoring program
- Stormwater retrofit of the parking lot at Providence District office
- Fall lawn care and environmentally-friendly weed-free lawns
- No-till agriculture reduces soil erosion and improves soil
- Reducing soil erosion problems in horse-keeping operations
- Proper disposal of household hazardous waste
- Storm drain marking and pollution prevention education
- Solving pond problems
- Announcements: Clean Streams Workshop; publication of a Rain Garden Guide; Northern Virginia Watershed Institute (Center for Watershed Protection)
- Protecting a pond during development
- Heavy metal pollution in runoff

Newsletters and calendars are sent to about 900 people and forwarded to hundreds more, a very effective way to reach large numbers of existing and potential monitors. Several newsletters are available for downloading from the monitoring websites. The monitoring Web addresses are below:

[www.fairfaxcounty.gov/nvswcd/monitoring.htm](http://www.fairfaxcounty.gov/nvswcd/monitoring.htm)

<http://mason.gmu.edu/~jcornell/StreamMonitoring/index.html>

In 2005, partners included: George Mason University's New Century College, Arlington County's Environmental Services Department, Reston Association, Stormwater Planning Division—Department of Public Works and Environmental Services, Lake Accotink Park—Upper Accotink Creek Watershed Education Program, Riverbend Park, National Park Service—George Washington Memorial Parkway, Alexandria Seaport Foundation, Eleanor C. Lawrence Park, George Mason University's Hemlock Overlook Center for Outdoor Education, and Hidden Oaks Nature Center. The Stream Monitoring Program worked with the following schools: Woodson High School, G.C. Marshall High School, Fairfax High School, Robinson High School, Westfields High School, Thomas Jefferson School for Science and Technology, and GW Community School, South County High School.

The Northern Virginia Soil and Water Conservation District continues to distribute *A Volunteer Partnership, Working with Citizens to Improve our Streams*. The brochure was developed by the Department of Public Works and Environmental Services and Northern Virginia Soil and Water

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Conservation District to inform citizens about the Stream Protection Strategy study and ways they can become involved through stream monitoring and Adopt-a-Stream programs.

More than 4,500 Earth Team volunteer hours were logged by citizens doing stream monitoring, tree plantings, and stream cleanups. Earth Team is a United States Department of Agriculture – Natural Resources Conservation Service program coordinated by the Northern Virginia Soil and Water Conservation District.

The Northern Virginia Soil and Water Conservation District assisted with the Occoquan Water Trail project, overseen by the Northern Virginia Regional Park Authority. More than 15 agency and organizational partners worked on the project. The project will result in maps showing access points along the Occoquan, educational signs, and water trail markers.

### ***Fairfax County Park Authority***

As in past years, Fairfax County Park Authority sponsored and organized lake and stabilization projects on Difficult Run and two of our lake front parks. These day-long volunteer events draw many citizens into the creeks, lakes and woods, providing excellent learning opportunities as well as removing more than six dumpster loads of trash in 2005.

The Park Authority also partnered with the Virginia Department of Forestry, the Northern Virginia Soil and Water Conservation District and the Virginia Department of Game and Inland Fisheries to conduct a stream stabilization workshop for staff from numerous agencies and citizen volunteers on Accotink Creek at Americana Park. Lake Accotink Park also maintains two rain gardens to enhance water quality and educate citizens. Staff developed educational signs for use along the Cross County Trail and at Lake Accotink Park and elsewhere promoting the benefits of establishing vegetated buffers along bodies of water.

Several Resource Managers participate in the county stream quality monitoring program directly, as well as through training and sponsoring citizen volunteer monitors. Huntley Meadows staff also held the annual Wetlands Awareness Day to educate citizens on the importance of maintaining healthy wetlands.

### ***Fairfax ReLeaf***

Through Fairfax ReLeaf, 379 volunteers planted 806 trees this year. Sprint/Nextel worked with ReLeaf to plant vegetation around a stormwater pond in the Herndon/Dulles Toll Road area. ReLeaf participated with Earth Sangha in the planting of three riparian sites in the spring of 2005 and three in the fall of 2005. ReLeaf volunteers also spent 437 hours on invasive plant removal from 12 sites.

### ***Virginia Department of Forestry***

The Virginia Department of Forestry worked with volunteers from organizations such as the Chesapeake Bay Foundation, Difficult Run Community Conservancy, Potomac Conservancy, and Eagle Scouts in 2004 to plant approximately 3,500 seedlings within Fairfax County. The Virginia Department of Forestry continues to plant riparian buffers in watersheds throughout the county and is supporting the Department of Public Works and Environmental Services with their riparian project initiative. The Virginia

Department of Forestry assisted an Eagle Scout with a stormwater management project in the Rocky Run watershed. The project resulted in erosion reduction along a 200-foot drainage-way next to New Braddock Road. A buffer of shrubs was planted along the drainage-way to stabilize the embankment and step pools were constructed to slow the water.

The Virginia Department of Forestry works with Fairfax County in conducting watershed/water quality presentations on a regular basis to students, homeowners, professionals, and organizations. Volunteers are educated and enlisted to plant riparian buffers. Rain garden presentations and workshops are given for garden clubs, homeowner associations, and professionals. Brochures and exhibits have been developed for public outreach at festivals, Arbor Day, and other environmental celebrations. There were 30 such activities presented by the Virginia Department of Forestry in 2004.

The Virginia Department of Forestry worked with Fairfax County Park Authority's Lake Accotink Park to construct a crib wall to reduce bank erosion along a 30-foot section of stream bank below the Lake Accotink dam. The Virginia Department of Forestry has also developed and published a Rain Garden Guide for citizens and worked with homeowners to develop rain gardens on their property as additional stormwater retention.

The Virginia Department of Forestry also assists Fairfax County with the Agricultural and Forestal District Program. This program provides tax incentives for landowners with 20 acres or more of land in agricultural and forest management. Stream management zones are particularly noted on these plans and efforts are made to include buffers from the agricultural uses. The protection of forest cover and water quality are both promoted in the Agricultural and Forestal management plans. Sixteen such plans were completed this year.

### ***Reston Association***

The Reston Association, the homeowners association for the large, planned community of Reston, has an active watershed and lakes management program that focuses on the monitoring and improvement of water quality in its streams, lakes and ponds; public education; and innovative approaches to erosion and drainage control. Reston Association helps educate and engage members of the community in watershed improvements efforts. Accomplishments and efforts in 2005 related to stormwater management and watershed improvements include:

- Continued work with Northern Virginia Stream Restoration, L.C., the Virginia Department of Environmental Quality, the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, and the Environmental Protection Agency and Wetlands Studies and Solutions Inc. to establish the groundwork for developing the Reston Stream Restoration Banking Instrument.
- Continued distribution and promotion of the "Help Our Watersheds – Living in the Potomac and Chesapeake Bay Watershed" brochure, which was funded through the Chesapeake Bay License Plate Grant. The brochure covers several topics: controlling runoff, preventing and managing erosion, improving water quality with "bayscaping", and helpful local resources. This brochure and other best management practices are advocated on the Reston Association website [www.reston.org](http://www.reston.org).
- Continuation of the volunteer stream monitoring program in conjunction with the Northern Virginia Soil and Water Conservation, and the Virginia Save Our Streams program. There are currently 12 sites monitored in Reston with 15 volunteers participating.
- Monitoring of water quality in Reston's four lakes (Anne, Newport, Thoreau, and Audubon) and two ponds (Bright and Butler) from April through September. The annual lakes report provided data analysis and recommendations.

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- Commencement of algaecide treatments on Lake Anne for treatment of the persistent blue-green algae bloom problems.
- Staff's continuation of the goose management program in Reston to protect water quality of the lakes.
- Inspection of Reston's four primary lake spillways in late 2005. In addition to the dive inspections, the riser stems and gates were cleaned and greased and the spillway gates on Lake Thoreau Dam were replaced.
- Installation and maintenance of several shoreline stabilization and stream restoration projects using biologs, erosion cloth, and native plantings in 2005. Staff worked with several clusters and individual homeowners on shoreline stabilization projects. Reston Association continues to promote natural shoreline stabilization and encourages the use of more environmentally sensitive materials for bulkheads and docks as opposed to conventional pressure-treated timber.
- Participation of Reston Association staff and volunteers in the 17<sup>th</sup> Annual Potomac Watershed Cleanup by hosting numerous cleanup sites along Snakeden Branch, The Glade, and Colvin Run tributaries. Reston Association staff members and 39 volunteers removed 100 bags of trash and about 350 pounds of loose debris. Additional items of interest were collected such as a bird cage, mattresses, bikes, and various car parts and construction supplies.

## *Northern Virginia Regional Commission*

### **Virginia Coastal Program: Regional Pollution Prevention Outreach Strategy**

The Northern Virginia Regional Commission, in coordination with Fairfax County and seven other localities, launched a stormwater education radio campaign during June and July of 2005. A 60-second radio spot was aired on nine radio stations for four weeks. The spot was also aired in Spanish, and it targeted three pollution-causing behaviors: excessive use of fertilizer and improper disposal of pet waste and used motor oil.

The campaign resulted in the airing of a total of 895 ads and public service announcements. Free Web banners, public service announcements and brochure distribution were negotiated by the media buyer as part of a paid campaign. The result of the campaign was that the ad was heard by 70 percent of the target audience an average of 12 times.

Public education is a required component of nonstructural best management practices for stormwater and other water quality programs, such as Total Maximum Daily Loads. The Northern Virginia Regional Commission continues to coordinate with the Environmental Protection Agency Chesapeake Bay Program's media strategy to look for opportunities to reinforce messages and strengthen stormwater education in the region.

### **Citizens' Erosion and Sediment Control and Watershed Tools Workshop**

Fairfax County was a participant in a regional workshop by the Northern Virginia Regional Commission to train citizens to identify and report erosion and sediment control problems during land disturbing activities. A handbook for citizens was included in the project.

The workshop also introduced citizens to a range of natural resource protection tools and programs. These include the green infrastructure design network, watershed planning, conservation design, better site design, low impact development, and green building.

### **Chesapeake Bay Support**

Fairfax County staff members have been assisting in guiding local policies and programs at the Federal Chesapeake Bay Program through their activity and support of the Urban Nonpoint Source Workgroup,

which a staff member of the Northern Virginia Regional Commission chairs. Activities include participating on a conference planning subgroup of the workgroup. This subgroup is planning a second Urban Summit Conference to be sponsored by the Chesapeake Bay Program at the request of the Bay Programs Implementation Committee. Fairfax staff members continue to be active in a workgroup initiative to look at the science of biofiltration best management practices and all their derivatives and the implication to local government operations and pollution credit. Some of the more specific concerns being addressed are the application or miss-application of the Chesapeake Bay Watershed Model for the development of Maryland local Total Maximum Daily Loads; the potential for a Bay Total Maximum Daily Load and how the Chesapeake Bay model relates to local water quality impairment issues; and a belief that the tidal Potomac Total Maximum Daily Load for nutrients and sediment will be based entirely upon the Bay Agreement derived Tributary Strategies with the potential for nutrient limits based on a local government political subdivision.

### **Low Impact Development**

“Reining in the Storm – One Building at a Time,” Northern Virginia Regional Commission’s 30-minute digital film presenting the basics of low impact development, continues to be aired on cable television stations and distributed around Virginia by The Department of Conservation and Recreation and across the country by the Environmental Protection Agency. Northern Virginia Regional Commission was asked to present a paper regarding the use of film as a medium for reaching certain audiences. “Selling Low Impact Development: Audiences, Messages and Media” was presented at the National Non-point Source Pollution Outreach Conference in Chicago in October, 2005. The Northern Virginia Regional Commission staff members continue to be invited to speak at presentations of the film and meetings to present the basics of low impact development to developers, engineers, watershed organizations, and citizens groups.

### **Citizen’s Guide to Tree Planting Projects**

With funds from the Virginia Department of Forestry, Urban and Community Forestry Assistance, Northern Virginia Regional Commission produced an updated version of its publication, *A Citizen’s Guide to Tree Planting Projects in Northern Virginia*. The guide is designed to improve public understanding of the benefits of tree cover, promote volunteerism, encourage planting of trees in urban areas, and assist individuals and organizations in accessing technical resources needed for sustainable tree-planting projects in Northern Virginia.

### **Private Owner’s Guide to best management practices Maintenance and Rain Gardens: Homeowners Guide, Workshops And Demonstration**

The update of Northern Virginia Regional Commission’s publication, “Maintaining Your Best Management Practices – A guidebook for private owners and operators in Northern Virginia” was initiated in partnership with Fairfax County in late 2005. The updated guide will include a wider range of low impact development practices that are increasingly being constructed on private lots and expected to be maintained by the homeowner. As part of the project Northern Virginia Regional Commission is partnering with the Community Appearance Alliance to foster the use of rain gardens as an attractive addition to the landscape that confers water quality benefits as well. Two forums (one for homeowners and one for the trades), a demonstration rain garden, and a do-it-yourself rain garden manual for homeowners are included in the project.