



6.0 MANAGEMENT PROGRAMS

This chapter provides an overview of the current status and recent innovations of Frederick County's various management programs. Frederick County continually evaluates its stormwater management programs in an effort to identify and bring about needed improvements as required under its NPDES permit. Now that a number of programs have been in operation for several years, it is appropriate to evaluate their progress and effectiveness. Current program components, improvements made during the past year, and plans for future activities, particularly as the County continues to implement management programs under its current permit, are discussed below.

6.1 STORMWATER MANAGEMENT PROGRAM

Frederick County maintains its current Stormwater Management Program in compliance with Environmental Article, Title 4, Subtitle 2, Annotated Code of Maryland. The County will continue to do so through plan review and inspection of all developer projects and through implementation of the *2000 Maryland Stormwater Design Manual*.

6.1.1 Maintenance Inspections of Stormwater Management Facilities

The Environmental Compliance Section (ECS) of the Frederick County Division of Public Works continues to conduct a regular program of preventative maintenance inspections of all stormwater management facilities built, approved, and operating within the County. Required triennial inspections of all facilities Countywide are completed on a rotating basis. For sites found unacceptable, responsible parties are notified and the site is re-inspected in a follow-up visit to confirm that appropriate actions have been taken to bring the site into compliance. A complete Access database containing data for the inspection program, including enforcement actions, is included on the accompanying CD. Examples of inspection forms and database reporting formats are presented in Appendix C.

During the time period of January 1, 2005 to December 31, 2005, the following inspections were completed:

- Total number of SWM Maintenance facilities inspected: 169
- Total number of facilities finding initial conditions acceptable: 102
- Total number of facilities finding initial conditions unacceptable: 58
- Total number of re-inspected facilities finding site conditions corrected: 9
- Total number of re-inspected facilities finding site conditions not corrected: 0
- Ongoing enforcement actions pending at end of 2005: 50 (all require re-inspection)

Evaluation: The County continues to maintain an acceptable stormwater management program in accordance with State stormwater management laws. This includes implementation of appropriate County ordinances. The County remains committed to implementing the latest stormwater management technologies while addressing the concerns of the development community.

The County's Facility Maintenance Inspection program is fully established. For all SWM facilities, the County implements preventative maintenance inspections, corrective actions, and enforcement. Inspections are the responsibility of the ECS within the Division of Public Works. The County showed nearly a 100% compliance record on facility maintenance and is well-respected for its effectiveness.

County inspections in 2005 met the requirements for triennial inspections in its inspection of more than 150 facilities. During the period from January 1, 2005 to December 31, 2005, County SWM maintenance inspections included wet/dry screenings of 169 facilities with visual inspections for illicit connections. The program has not yet encountered sites needing significant structural repairs. There is a continuing concern that if a substantial structural problem were to be encountered, a homeowners' association, developer, or other responsible party would be required to make costly repairs beyond funds available. Program managers note that County facilities have no special contingency funds set aside for SWM maintenance, but have researched possible funding sources with the County's Grants Office.

Of the facilities inspected, 58 did not pass the visual inspection. The reasons included the presence of unacceptable vegetation, debris, and rodent damage to structures. Responsible parties were notified that these facilities needed to be cleaned or repaired. The County's stormwater engineers continue to provide the document entitled "Stormwater Management Facility (Ponds) Operation and Maintenance Schedule" to assist landowners with maintenance of SWM facilities.

6.1.2 Implementation of 2000 Maryland Stormwater Design Manual

Frederick County implemented the stormwater management design policies, principles, methods, and practices of the *2000 Maryland Stormwater Design Manual* and subsequent changes to the Code of Maryland Regulations through the County's Stormwater Management Ordinance and its Design Manual, on June 5, 2001. It became effective July 1, 2001. The Ordinance amended the stormwater management regulations to adopt the *2000 Maryland Stormwater Design Manual* Volumes I and II. The Board of County Commissioners adopted the County's Storm Drainage and Stormwater Management Design Manual effective January 2, 2003. This document helps address safe conveyance of runoff in channels, pipes, swales, culverts, etc. to stormwater management facilities and/or receiving channels.

The County's Development Review staff continues to encounter problems with single-family home construction projects that are using the MDE-provided standard plan. The standard plan does not give consultants sufficient design information and contains a substantial number of design criteria that sites in Frederick County are not able to meet. There have also been delays in implementing the standard plan due to unresolved legal and program challenges.

The Development Review staff has encountered numerous problems with the use of a few of the facility designs outlined in the *2000 Maryland Stormwater Design Manual* and are in the process of making corrective changes in order to better facilitate the original intent of the Manual. These items include modifying the biofilter soils to allow a combination of 50 percent or more sand blended with highly organic soils. Current soil mixes outlined in the Manual have been found to

drain poorly. Wet retention pond facilities, which incorporate open water micro pools, have been found to be problematic when built too shallowly. These problems include stagnation of water, filling in by vegetation prematurely and mosquito problems. It has been found that when these open pools are deepened, the problems outlined above lessen dramatically.

Frederick County has found that it is very difficult to effectively use the non-structural methods and credits identified in the MD2000 design guidelines. Often the developer and its consultants choose not to get involved in SWM design issues until they are too far into the process, or the sites currently being developed have a difficult time meeting all the criteria outlined. It has been our experience that these methods are often used as a “loop hole” alternative for meeting SWM requirements in areas that are difficult to treat with structural methods. Due to the language of these credits, it is difficult for staff to enforce the intent of the regulations as opposed to the written language. Any efforts to make the design guidelines more analytical, or to provide a “users manual” to allow more consistent and effective implementation, would help developers better meet the intent of these design guidelines rather than the exact written code. This could also be done effectively if all of the jurisdictions shared their successes and challenges.

Evaluation: The County continues to work with the development community to better understand the goals of the *2000 Maryland Stormwater Design Manual*. Enhancements will continue to be made for some of the design concepts in order to achieve the ultimate goal of the manual. The County will also continue to educate both the development community and the general public to educate them in the proper type of design for site-specific areas, as well as in facility installation timetables and maintenance issues.

6.2 ILLICIT CONNECTION DETECTION AND ENFORCEMENT PROGRAM

6.2.1 Illicit Connection Program

Frederick County continues to improve its Illicit Connection Detection and Enforcement Program. Field inspectors note evidence of dry weather flows, if present, at all Stormwater Management Structure "As-Built" inspections, and at every triennial maintenance inspection. If water is present, inspectors gather chemical information. If water quality test results or inspections indicate potential illicit connections, pollutant sources are identified and appropriate measures are taken to abate violations. These illicit connection screening data are reported on the CD accompanying this report and in examples provided in Appendix C. Additionally, ECS Inspectors investigate complaints alleging violations. Follow-up actions to resolve all suspected water quality problems are documented in the County's field inspection databases.

The County has greatly expanded its public outreach and information efforts to aid in detecting illicit discharges. Frederick County is committed to eliminating any illegal storm drain system discharge discovered through its illicit connection inspection program. As part of this program, the County worked with the Center for Watershed Protection (CWP) to create a training manual and a training program for responsible personnel. The County has not identified illicit discharges through its existing screening process since its inception; improvements to the program will be coordinated with an overall effort by MDE and other NPDES-permitted entities.

The County invited Phase II municipalities and adjoining counties to participate in the program. The program also included a workshop for concerned citizens involved in the WRAS process.

The County used funds from a DNR grant to have the CWP lead a training program for responsible personnel. CWP developed a technical manual, *Illicit Discharge Detection and Elimination – A Guidance Manual for Program Development and Technical Assessments* in October 2004. The manual is designed to provide Phase I & II municipalities with guidance for the development and implementation of their own Illicit Discharge Detection and Elimination (IDDE) programs. It is organized to address both administrative and technical considerations involved with developing an IDDE program. The manual and its appendices are available for download at <http://www.cwp.org>.

Once the manual was developed, the County worked closely with CWP to provide training for employees of Phase I & II municipalities in Frederick County. The training was held on April 28, 2005 in the City of Brunswick. There were a total of 24 attendees from the City of Frederick, the Town of Myersville, the Town of Thurmont, Frederick County, the City of Brunswick, the Town of Middletown, the Town of Walkersville, Maryland Department of Agriculture, Washington County, Carroll County, Fort Detrick, Canaan Valley Institute, Frederick Forestry Board, and Community Commons.

Training attendees received instruction on implementing the protocols set forth in the manual. The training included in-depth instruction on the basics of illicit discharge, the components of an IDDE program, establishing responsibility and legal authority, developing implementation strategies, identifying illicit discharges in the field, and the fixing and prevention of illicit discharges and connections. It also included fieldwork that trained employees in the outfall reconnaissance inventory protocol, indicator monitoring, tracking discharges to a source, and techniques to fix discharges.

The County intends to implement the reconnaissance inventory protocol that is detailed in CWP's IDDE manual. In order to prepare for the fieldwork required for the outfall reconnaissance inventory protocol, an office GIS reconnaissance will first be performed. A list of questionable pipe outfalls to initially investigate will be generated by mapping subdivisions on well and septic, mapping subdivisions that were built prior to stormwater management facilities, obtaining the storm drain layer for Frederick County municipalities (if available), georeferencing commercial/industrial properties in the County, and overlaying the Stream Corridor Assessment data that identifies pipe outfalls.

As part of the Watershed Restoration Action Strategy (WRAS) process that the County was involved in for both the Lower and Upper Monocacy River watersheds, approximately 466 miles of stream have already been walked in the County using the Stream Corridor Assessment (SCA) process. The SCA survey is a method designed by the Maryland DNR to rapidly assess the general physical conditions of the stream corridor and to identify and prioritize environmental problems for restoration opportunities. Potential environmental problems include:

- Erosion Sites
- Inadequate Stream Buffers

- Fish Migration Barriers
- Exposed or Discharging Pipes and Pipe Outfalls
- Channelized Stream Sections
- Trash Dumping Sites
- In- or Near-Stream Construction
- Unusual Conditions/Comments

As mentioned above, the County intends to use the collected pipe outfall data to generate a list of questionable outfalls. Further, the County plans to perform SCA surveys on additional miles of stream in priority watersheds. At this time, the outfall reconnaissance inventory protocols will be combined with the SCA protocols. As field crews complete SCA data sheets for pipe outfalls, they will also complete data sheets for the IDDE inventory so that the outfalls can be mapped and tracked for future use in reporting.

6.2.2 Other IDDE Activities in Frederick County

In an effort to meet its NPDES Phase I permit requirements, the Maryland State Highway Administration (MD SHA) has contracted with KCI Technologies, Inc. to perform Illicit Discharge Detection and Elimination field reconnaissance in Frederick County. Field reconnaissance took place between March 2005 and June 2005. At that time, 95% of the fieldwork was completed and approximately 15 potential illicit discharges/connections were identified. Fieldwork is projected to be complete by the end of December 2005 with report submission to SHA in late January 2006. Frederick County will respond to any illicit discharges requiring further investigation by MD SHA that are not related to SHA activities. The County will report on its progress in the next annual report.

Evaluation: Over the past three years, all SWM structures were inspected for illicit connections or discharges through the County's ongoing maintenance inspection program. During the period from January 1, 2005 to December 31, 2005, the County conducted inspections at 169 sites. Field screening results are recorded in the County's facilities database to ensure proper tracking and to follow up when potential problems are detected. Chemical results from wet/dry screenings did not indicate any illicit discharges, largely because many outfalls were dry due to frozen conditions. Any new inspection staff will be trained in emergency management and in the use of CWP's training manual for illicit connection detection.

6.2.3 NPDES Permit Evaluation Process for County-Owned Properties

As stipulated in items 2a and 2b of Section E, Management Programs, of the County's NPDES MS4 Permit, the County is required to ensure that all non-stormwater discharges to the municipal storm sewer system are permitted or eliminated. All County-owned properties requiring an NPDES industrial discharge permit must be identified and the County must submit documentation that a permit has been applied for or obtained. Consultation by County staff with various County agencies and MDE in 2004 identified fifteen County-owned properties that were required to apply for some type of permit. Eight properties were required to apply for an

Industrial Stormwater permit and seven properties were required to apply for a No Exposure Certification for Exclusion.

Evaluation: All permit applications have been submitted and are on record with MDE (Table 6-1). Of the eight properties required to apply for an Industrial Stormwater permit, seven of those permits have been issued. The County is still waiting on response from MDE on one permit application that was submitted in December 2005. After additional investigation by MDE employees, it was not necessary for six of the seven properties originally identified as requiring No Exposure Certification for Exclusion to submit applications for this certification. A letter stating reasons for not requiring a permit and the original application were returned to each facility (Appendix N1). All eight properties that were required to submit an application for an Industrial Stormwater permit have done so (Appendix N2). They are now required to develop pollution prevention plans. The County intends to provide guidance on how to prepare these plans.

6.3 SPILL RESPONSE

Frederick County has continued to implement a successful program to respond to illegal dumping and spills. This program includes procedures, which are publicized on the County's web site, for public reporting and citizen complaints. The establishment of procedures to address spills is being coordinated between ECS and the County's Office of Emergency Response. As of January 2005, all ECS field staff were trained and certified as "First Response" personnel for HAZ-MAT spill response. This HAZ-MAT training enhances the County's current capabilities and improves protections to staff and citizens.

The Frederick County NPDES Program has developed a database to track all known environmental permits throughout the county. The database contains current information from MDE's Environmental Permits Service Center (EPSC) in addition to information from AFS, PCS, RCRAInfo, DOCKET, and other relevant databases. The facilities have been georeferenced for the purpose of spill response. This information will be valuable to the County's NPDES, Environmental Compliance Section, Health Department, Law Enforcement, and Emergency Response programs. The database is updated periodically. Future database enhancements will allow the County to determine whether facilities are at risk for spills and whether adequate spill response information is available. The County will then begin to collect drainage information for permitted facilities.

The County continues to maintain reporting information for illicit discharges and spills on its website and provides a hotline number for citizen inquiries.

The County did not have any spill responses in 2005.

Evaluation: Frederick County has maintained an active program to respond to illegal dumping and spills, including expanding its procedures for public reporting and responding to citizen complaints. In addition, DPW's coordination with the Office of Emergency Response to develop procedures for addressing spills, provide HAZ-MAT training, and track permit information will further augment the County's capabilities for spill response.

Table 6-1. Status of Frederick County industrial stormwater discharge permits and permit applications				
Facility	Application Submitted By	Type of Permit Required	Received Copy of Application	Comments from MDE
Myersville Highway Satellite Facility	Highway Operations	No Exposure for Exclusion	X	Application returned – not necessary
East Church St. Satellite Facility (430 Pine Ave)	Highway Operations	No Exposure for Exclusion	X	Application returned – not necessary
Jefferson Satellite Facility	Highway Operations	No Exposure for Exclusion	X	Application returned – not necessary
Highway Dept & Motor Pool	Highway Operations	Industrial SW	X	Permit valid through Nov 30, 2007 Registration # 02SW1890
Thurmont Satellite Facility	Highway Operations	Industrial SW	X	Permit valid through November 30, 2007 Registration # 02SW1892
Urbana Satellite Facility	Highway Operations	Industrial SW	X	Permit valid through November 30, 2007 Registration # 02SW1893
Johnsville Satellite Facility	Highway Operations	Industrial SW	X	Permit valid through November 30, 2007 Registration # 02SW1891
430 Pine Ave	Parks and Recreation	No Exposure for Exclusion	X	Application not necessary – just vehicle storage not maintenance
Rose Hill Manor	Parks and Recreation	Industrial SW	X	Permit effective as of March 3, 2005 Registration # 02SW1894
Ballenger Creek Park	Parks and Recreation	No Exposure for Exclusion	X	Application not necessary – just vehicle storage not maintenance
Middletown Park	Parks and Recreation	No Exposure for Exclusion	X	Application not necessary – just vehicle storage not maintenance
Transit Facility	Frederick County Transit	Industrial SW	X	Permit valid through November 30, 2007 Registration # 02SW1888
Law Enforcement Complex	Frederick County Law Enforcement	Industrial SW	X	Submitted to MDE on December 8, 2005
Green Valley Sub Station	Fire-Rescue Station	No Exposure for Exclusion	X	Certification letter dated April 13, 2005 Registration # 02SW1898
Hayward Complex	Frederick County Public Schools	Industrial SW	X	Permit issued February 22, 2005 Registration # 02SW1887

6.4 EROSION AND SEDIMENT CONTROL PROGRAM

Frederick County strives not only to maintain an acceptable Erosion and Sediment Control Program in accordance with Environment Article, Title 4, Subtitle 1, Annotated Code of Maryland, but also to excel at site compliance and minimum inspection guidelines. County Inspectors work closely and cooperatively with the Soil Conservation Districts (SCD) and the NRCS. Frederick County welcomes constructive input from MDE delegation review personnel and implements any improvements as necessary. Frederick County is currently under review and anticipates a full 2-year delegation of authority for the inspection and enforcement of sediment control.

Recent program improvements include:

1. Regular meetings with SCD to discuss issues such as:
 - Allowable Field Modifications
 - Defining Agricultural Exemption
 - Plan review improvements

2. Regular contact with Frederick County Builders' Association to discuss:
 - Standard Plan Agreements
 - Contiguous lot construction
 - Disturbed area phasing
 - Plan and implementation deficiencies

3. Quality Assurance / Quality Control (QA/QC) Program:
 - The current QA/QC program continues to be a valuable field inspection tool when used during sediment and erosion control and SWM facility construction evaluations. Inspectors are required to conduct QA/QC evaluations on sites randomly selected by the Field Supervisor. The evaluations are then reviewed and the sites visited by either the Field Supervisor and/or the ECS Manager. The data are carefully evaluated to determine areas requiring improvements and/or adjustments and then discussed with staff to facilitate effective plans of action. As improvements to the inspection process continue within Frederick County, the QA/QC program will provide valuable enhancement.

The recently installed Hansen Permitting System improves the program by providing a means of reporting and tracking inspection activities on all permitted sites requiring sediment and erosion controls and stormwater management. All field reports are now recorded within the pertinent grading permit (A/P#) file, making it a "one stop" source for all information relevant to a specific project. The introduction of "Air Cards" now allows mobile, real-time access to the Hansen and E-Mail systems.

6.4.1 Responsible Personnel Certification Classes

Frederick County has implemented responsible personnel certification classes (“Green Card” classes) to educate construction site operators about erosion and sediment control requirements. Frederick County conducts regular classes to certify responsible personnel. All classes are advertised on County Cable TV, area radio stations, and in local newspapers. Instructional materials include a PowerPoint slide presentation with an audio narrative. Table 6-2 presents certification class dates and number of attendees recorded at each. Fifty of fifty-six attendees received certification. An Access 2000 database containing information on class attendees accompanies this report on CD. Example data are shown in Appendix C.

Class Number	Date of Class	Number of Attendees	Name of Instructor
1	01/04/2005	24	Sipes/Fellers
2	04/13/2005	14	Sipes/Fellers
3	09/06/2005	2	Masser/Fellers
4	12/07/2005	16	Fellers/Cramer

6.4.2 Construction Site Data

ECS provides quarterly reports of all grading activities disturbing more than 1 acre to MDE to cross reference against their NOI records. This data was formerly provided in hard-copy format, but new requirements mandate electronic submission. Several methods of retrieving the information from within the Hansen Permitting software were attempted, but none proved successful. The result is a time consuming query and manual input of data into a MS-Access database. This process of redundant data input caused ECS to fall nearly a year behind on providing the quarterly information. As of this writing, all data has been input and ECS is current with its reporting requirements.

ECS notes that the manual input of redundant data is an extreme strain on its resources and is making every effort to accomplish this task in another manner.

Evaluation: Frederick County’s Erosion and Sediment Control program is well established and the County’s delegation is under review for renewal soon. The County strives not only to maintain an acceptable program, but also to excel at site compliance and minimum inspection guidelines. County agents work closely and cooperatively with the SCD and the NRCS, including regular meetings. Program staff have regular contact with the building community. The County’s QA/QC site evaluations are a strong component of the program, as are improved record-keeping and mobile access to project files. Frederick County continues to implement a successful and effective series of Responsible Personnel Certification classes to educate construction site operators regarding erosion and sediment control requirements. Over the past year, 50 individuals successfully completed the certification during the four classes held by the County. Frederick County plans to continue to implement this successful training program in the

coming years. In addition, the County has met requirements for reporting of earth disturbances in 2005 despite database incompatibilities. Staff are seeking ways to improve efficiency and timeliness of quarterly reporting.

6.5 PUBLIC OUTREACH AND EDUCATION PROGRAM

In 2005, NPDES Program staff made diverse and far-reaching impacts through its public outreach and education program. Frederick County addressed permit-suggested outreach topics and met its own goals and objectives from *The Strategic Plan to Improve Water Quality Through Public Outreach in Frederick County, Maryland*, published in November 2003. Extensive outreach was conducted through the Watershed Restoration Action Strategy (WRAS) processes for the Lower and Upper Monocacy River watersheds. This type of outreach also helped to build partnerships among Steering Committee members using the unique strengths of each group. The Monocacy and Catoctin Watershed Alliance (MCWA), born of the two WRAS Steering Committees has developed a logo and public outreach materials and participated in outreach events to support water quality and habitat initiatives. NPDES staff coordinated internally with various County divisions to enhance and track their outreach products. Outreach activities were used not only for their own merits, but also to direct the course of watershed plans and identify landowners for potential restoration activities.

The results of a year of hard work can be seen in the following section and in the summary of public outreach and education activities in Table 6-3.

6.5.1 Public Outreach Related to WRAS

The County hosted five public community meetings related to its WRAS planning and outreach process during 2005. First, the outgoing Lower Monocacy WRAS Steering Committee welcomed interested citizens to an interactive supper meeting in the “A” frame building at the County’s Pinecliff Park during mid-January. As a part of the Upper Monocacy WRAS planning process, the Steering Committee and County staff hosted public community meetings beginning in the Glade Creek watershed in late January; the Tuscarora watershed in February; and the Fishing, Owens, Toms, and Hunting Creek watersheds in early March. Citizens learned about the WRAS findings, expressed their priorities and concerns, and helped identify priority restoration sites in their watersheds. In addition, on March 17, Steering Committee members welcomed agricultural landowners to a meeting and lunch during which WRAS findings were shared and public comments and strategic suggestions were solicited.

The County continued to enhance its Landowner Tracking Database that was developed to track landowner permission responses for Stream Corridor Assessments (SCA). Staff used mailing lists to contact landowners who requested specific property information (*i.e.*, want results of the SCA on their property) or expressed a specific restoration and outreach program interest (*e.g.*, want to install cattle fencing). Staff also tracked responses to County-sponsored initiatives like the Backyard Buffers program, which distributed free trees to landowners with stream frontage. Future projects may include targeted outreach to properties with well and septic systems and invitations to Homeowner Associations to consider co-sponsoring Greener Lifestyle workshops. Owner outreach will be enhanced by the County’s parcel mapping project, which will enable

Table 6-3. Summary of public outreach and education activities		
Type	Date(s)	Description
<i>Water Conservation</i>		
Great Frederick Fair	9/17-24/05	NPDES program staff assisted the Monocacy and Catoctin Watershed Alliance with staffing its booth for the full week of the Great Frederick Fair, making presentations and providing information on harvesting rain water, using native plants, making natural household cleaners, and composting. Many partners assisted during the Fair covering a total of more than 50 volunteer shifts. Volunteers participated in training before the Fair, each receiving an Alliance T-shirt for the occasion.
County Web Page	Ongoing	The NPDES web pages (www.co.frederick.md.us/npdes/) feature information for citizens on water conservation at home, at school, and on the farm.
<i>Stormwater management facility maintenance</i>		
Woody Vegetation Control Methods Handout	Ongoing	County SWM inspection staff routinely hand out a one-page fact sheet on “Woody Vegetation Control Methods: Guidelines for Stormwater Facilities” to homeowner associations, property management groups, developers, and others responsible for maintaining stormwater management facilities.
Outdoors Maryland TV program	11/12/05	Outdoors Maryland Program aired locally that was filmed at Emmitsburg and Sabillasville Elementary Schools about School Yard Habitat initiatives including rain gardens. Community Commons partnered with Frederick Public Schools and the U.S. Fish and Wildlife Service to implement this program.
Inspection Program	Ongoing	Stormwater Management Facility inspections are conducted triennially with explicit direction for maintenance/correction when problems are discovered.
<i>Erosion and sediment control</i>		
Backyard Buffers Program	4/05	The County participated in the WRAS citizen practices working group with several other partners including the Western Maryland RC&D to publish brochures and conduct outreach that provides free trees to homeowners with frontage on unbuffered streams. The County identified streamside landowners from its landowner data base for direct mail. The program assisted 68 homeowners adjacent to streams with bundles of 25 free trees in 2005.
<i>Lawn care and landscape management</i>		
World Water Monitoring Day	10/18/05	The County celebrated World Water Monitoring Day by working with a local reporter for the Frederick News Post on an article discussing the County’s efforts to monitor the effects of storm water runoff (See Appendix I for article).
Workshops, Building a Greener Lifestyle Series	2/26/05, ongoing	The County used grant funds through the WRAS to sponsor the “Building a Greener Lifestyle for Frederick County” workshop series, which featured local experts engaging citizens in activities relating to watershed protection. In 2005, the workshop on Natural Lawn Care was taught by John deNoma from Natural Lawn Care at Fountain Rock Park Nature Center in Walkersville, Glade Creek watershed. This initiative reached 13 participants; materials were requested by and mailed to an additional 4 households.
Coordination with Cloverhill HOA	4/05	The County worked with the Cloverhill Homeowner’s Association, MD DNR Forest Service, ICPRB, and Community Commons to coordinate a community restoration project in an area of the commonly held open space of the Clover Hill Homeowners Association. The restoration (described in Chapter 7) featured tree plantings using a plan created by Mike Kay of the Forest Service and trees from Community Commons’ school growout stations, using funding from the Chesapeake Bay Trust. A quality interpretive sign was installed to explain the significance and impacts of the project. Local citizens participated in planting the trees on Earth Day in April.

Table 6-3. Continued		
Type	Date(s)	Description
Bennett Creek Restoration Initiative	July 2005, ongoing	Potomac Conservancy partnered with the County and several other Alliance partners in launching its Bennett Creek Restoration Initiative on Pleasant and Fahrney Branches in the Bennett Creek watershed. Letters were mailed to all riparian property owners; telephone contact and site visits were made to a number of property owners. In addition, Potomac Conservancy is working with Windsor Knolls Middle School on retrofit and other low impact development projects.
County Web Page	Ongoing	The NPDES website (www.co.frederick.md.us/npdes/) contains information relating to lawn care and landscape management.
Invasive Species Removal Workshop	5/15/05	The Frederick Forestry Board, DNR Forest Service and Frederick County Government sponsored training for citizens on methods to identify and control invasive plants. The County's Community Restoration Coordinator participated in the workshop. The MBSS Stream Survey published by the MD DNR found that the greatest stresses to County streams are invasive species in the riparian corridor along an estimated 92% of stream miles.
Invasive identification and control training and removal	9/8/05	MD DNR's Watershed Forester led an on-site training session for the Friends of Waterford Park to identify and discuss various control methods for invasives on this 18-acre natural City of Frederick Park. The confluence of Rock and Carroll Creeks is on the park property. As a result of the training, a team from the Friends of Waterford Park was able to pull Japanese Hops before it went to seed along a stretch of the creek.
Bay Wise Yardstick Training	10/ 27/05	Frederick Master Gardeners and Frederick County's Community Restoration Coordinator organized and hosted a training workshop at St. Peter the Apostle Roman Catholic Church in Libertytown to provide training to area citizens about Bay-friendly landscape practices as part of the Libertytown Stewards project.
<i>Household hazardous waste</i>		
County Web Page	Ongoing	The Department of Solid Waste Management has information on the web (http://www.co.frederick.md.us/Recycling/) for County residents on various Landfill Programs, such as disposal of household hazardous wastes, recycling, source reduction, and backyard composting.
Used Motor Oil and Antifreeze Dropoff Sites	Ongoing	The county maintains a list on its website of used motor oil recycling dropoff locations.
Household Hazardous Waste Day	2x/year	The County sponsors two household hazardous waste days each year and promotes them widely in the media.
Frederick County Fair	9/17 – 24/05	The NPDES/WRAS staff and Alliance partners staffed a booth for the full week of the Frederick County Fair, which featured four topics in the Greener Lifestyle Series, including demonstrations. One topic presented was natural household cleaners. Participants were given sample cleaners and recipes for making their own and encouraged to choose healthier alternatives for home use.
<i>Litter control, recycling, and composting</i>		
4 th Annual Big Sweep	4/16/2005	Frederick County co-sponsored this annual cleanup organized by Volunteer Frederick. A total of 47 teams were involved. The County provided trash pickup and waived tipping fees at the landfill. 13.38 tons of trash was collected, including 2.45 tons of recyclables (18% of total waste, sent to the recycling center) and 420 tires. Volunteers from MCWA partners Community Commons, Potomac Conservancy, and ThorpeWood each focused on different sites for the trash pick up day.
Composting Workshop	9/18 – 25/05	The Monocacy and Catoctin Watershed Alliance exhibit and booth for the week-long Frederick County Fair provided information and demonstrations on composting including vermiculture. ThorpeWood, an MCWA partner, provided leadership and demonstrations on composting.

Table 6-3. Continued		
Type	Date(s)	Description
Frederick County "Adopt-a-Road" Program	Ongoing	The Office of Highway Operations runs an "Adopt a Road" Program to help control litter along County roads.
County Web Page	Ongoing	The Department of Solid Waste Management provides information for County residents on the internet (http://www.co.frederick.md.us/Recycling/) on various Landfill Programs such as disposal of household hazardous wastes, recycling, source reduction, and backyard composting.
<i>Car care, mass transit, and alternative transportation</i>		
County Web Page	Ongoing	The Transit Services of Frederick County web page (http://www.co.frederick.md.us/Transit/) contains information on public transit routes, schedules, commuter assistance, rider bulletins, a ride-share matching service, and other information to facilitate the use of mass transit services. In 2005, the following improvements to the site were made: <ul style="list-style-type: none"> • Addition of schedules for TransIT and other regional transportation options • Addition of travel training videos • On-line surveys were available to assist in updating the 5-year Transportation Development Plan with over 400 people responding. • TransIT website hits increased by 10% over last year, with nearly 74,000 hits.
TransIT Improvements	2005	<ul style="list-style-type: none"> • For the third consecutive year, ridership increased by more than 20%. TransIT provided 553,344 passenger trips in FY05. • Route information was added to bus stop signs to increase ridership. • Dispatch hours were extended to cover evenings, Saturdays and holidays.
TransIT Awards	2005	TransIT was recognized in 2005 with the following awards: <ul style="list-style-type: none"> • Outstanding Transit System for 2005, awarded to TransIT by the Chesapeake Chapter of the Association of Commuter Transportation (ACT). This award recognizes an organization that has developed and implemented a results-oriented transit program. TransIT was selected from members in Maryland, Virginia, Delaware, West Virginia and the District of Columbia. • Best Fixed Route System in the State for 2005, awarded to TransIT by the Transportation Association of Maryland (TAM). • TransIT driver Devin Naylor, Maryland Fixed Route Driver of the Year, awarded by TAM. • TransIT driver Sherry Wahl, Maryland Paratransit Driver of the Year, awarded by TAM.
The Transportation Services Advisory Council (TSAC)	Ongoing	TSAC is appointed by the Board of County Commissioners to provide guidance and support to TransIT and transportation-related decision making within the County. Members include consumer, business, human service, regional, and at-large representatives. The mission of the TSAC is to identify transportation trends and issues, to increase public awareness of transportation alternatives, and to influence public policy by advising Frederick County elected officials and decision-makers on the development of a comprehensive and coordinated regional transportation network. <ul style="list-style-type: none"> • Co-sponsored a Transportation Conference to promote a balanced transportation network in Frederick County. • Supported development of transit-friendly design guidelines to integrate transportation and land use planning. • TSAC supported re-design of the proposed downtown MARC train station. The MARC station design was changed to provide an off-street passenger transfer point for the local bus system.

Table 6-3. Continued		
Type	Date(s)	Description
Public Education and Media Outreach	Ongoing	<ul style="list-style-type: none"> The County has brochure stands in conspicuous places (e.g., lobby of Winchester Hall) that include all of the public transit routes, schedules, and alternative transportation programs. Increased visibility of TransIT in the community was achieved through marketing and outreach efforts. The County participated in community events that included the Business and Employment Center Job Fair, Transitioning Fair at Frederick Community College, Communities in Motion Day, NIH Transportation Fair, Fun After 50 Fallfest, Elder Expo, the Great Frederick Fair, the Chamber of Commerce Business Expo, Business Appreciation Week, In the Streets Festival, Bike To Work Day, and the 5th Annual Stuff-A-Bus. TransIT staff participated in partnership efforts with local and regional groups and organizations, including the Frederick Area Committee for Transportation, the Frederick County Chamber of Commerce, the Downtown Frederick Partnership, the Maryland Transit Administration, and the Washington Metropolitan Area Transit Authority. In addition, staff met with human service providers and job training counselors to discuss local transportation needs and ways to improve transportation services. TransIT advertising appeared on local radio, television, print, on-line media, and on-screen cinema advertising. News stories featured the County's Summer Pass Program for teens, annual ridership increase, Air Quality Action Days, Bike to Work Day, Communities in Motion Day, new service proposals, and TransIT Drivers of the Year. Three new regional rideshare commercials promoted car and vanpool options. TransIT Lines, a newsletter for community service professionals and their clients; and F.A.S.T. Notes, a newsletter on transportation options, were distributed quarterly.
<i>Private well and septic system management</i>		
Booklet	Ongoing	During field inspections, the Frederick County Health Department provides booklets on septic maintenance to applicants requesting permits for accessory buildings.
Presentations	Periodic	Health Department personnel presented information on proper well and septic system inspection and maintenance at realtor meetings (2 during 2005).
Wastewater 101 Workshop	11/16/2005	The Monocacy & Catoctin Watershed Alliance, facilitated by the County's Community Restoration Coordinator, along with the New Forest Society and the Canaan Valley Institute, cosponsored a workshop at ThorpeWood for officials from Thurmont and Emmitsburg and residents of northern Frederick County. John Boris with MDE spoke about On Site Systems and discussed the new Flush Tax revenue. The workshop included a field trip to see three alternative, innovative wastewater treatment applications.
<i>Procedures for public identification and reporting of illicit discharges</i>		
Program Web Site	Ongoing	The NPDES Program's web site contains information describing illicit discharges, presents examples, and provides telephone contact information and a County Resident Complaint Form.
<i>Providing information to regulated community</i>		
NPDES Phase II assistance to Municipalities	Ongoing	NPDES staff continues to meet with municipalities by request in support of their NPDES Phase II permits. The County has provided sample handouts, activities, and other information to assist with implementing recommendations made by MDE upon review of the first annual reports submitted by the municipalities. Staff has also involved municipalities within Frederick County, as well as in Washington and Carroll Counties, in the training by the Center for Watershed Protection on illicit discharge detection and elimination.

Table 6-3. Continued		
Type	Date(s)	Description
Illicit Discharge Detection & Elimination Training	4/28/05	Frederick County provided training to public works officials from the County, local municipalities, and interested members of the WRAS Steering Committees. The training was conducted by the Center for Watershed Protection (CWP), which also provided digital and hard copies of its manual on this topic. The training included a Field Assessment to illustrate the protocols and field use of the manual (discussed in detail in Chapter 6).
Source Water Protection Plan for Lake Linganore	Spring 2005	The County's Planning, Public Works, Utilities and Solid Waste, and GIS Program staff completed a Source Water Protection Plan for Lake Linganore and its associated drinking water intakes. NPDES staff assisted with developing maps and a table of recommendations for policy makers' use.
Program Web Site	Ongoing	The NPDES Program's web site contains background information on stormwater, the County's NPDES Permit, and other stormwater-related information. The web site also contains information on sediment and erosion control permits, Forest Resource Ordinance Permits, and inspections for sediment control and SWM facilities.
NPDES Industrial Stormwater Permit Evaluation	12/05	County properties have been evaluated for the need for industrial stormwater discharge NPDES permits. DPW Staff assisted County offices with applications.
Maryland Water Monitoring Council Annual Conference	11/17/05	Nancy Roth from Versar, Inc. presented Frederick County's progress and challenges in its long term monitoring activities.
<i>Other outreach and education initiatives</i>		
WRAS Steering Committee Meeting	1/13/2005	The Lower Monocacy WRAS Steering Committee hosted a public meeting to solicit additional citizen involvement.
Upper Monocacy WRAS Steering Committee Meetings	1/06/05 & 5/16/2005	The Upper Monocacy WRAS Steering Committee met during January and May to help formulate WRAS strategies. The Steering Committee met at ThorpeWood to review data from the SCA, Watershed Characterization, and Synoptic Survey. The group worked together to mark restoration and protection priority sites on subwatershed maps, identify key goals for the plan, and define the structure for continuing work in its development. Steering Committee members also participated in four Community meetings to educate citizens and solicit their comments; the committee also met with agricultural landowners for the same purpose.
WRAS Working Groups	January – April 2005	Six working groups, identified during the December 2004 Upper Monocacy WRAS workshop, were formed and met during the winter and spring to formulate their education, outreach, and natural resource objectives for inclusion in the Upper Monocacy WRAS plan.
Community Meetings	1/25/05, 2/10/05 & 3/3/05	The Upper Monocacy WRAS Steering Committee hosted public meetings from January through March, starting with a late January meeting at Walkersville High School in the Glade Creek watershed followed by a meeting at Yellow Springs Elementary for the Tuscarora Creek watershed. The four northern-most watersheds, Toms, Owens, Hunting, and Fishing Creeks, were invited to join a meeting in March at Catoctin High school. The main purpose of the meetings was to share information learned during the SCA, Synoptic Survey, and Watershed Characterization. Another purpose was to seek input from citizens about problems and priorities. Citizens reviewed and added additional priority sites for consideration.
Frederick Lions Club	1/25/05	The WRAS Coordinator presented a program to the Frederick Lions Club membership on the findings from the WRAS planning process for the Lower Monocacy. The members were interested in learning about practices that would protect water quality.

Table 6-3. Continued		
Type	Date(s)	Description
Potomac River Sojourn Sponsorship	7/13/05	Frederick County Watershed Management Section sponsored a day of the Potomac River Sojourn hosted by Interstate Commission on the Potomac River Basin (ICPRB) during which staff presented information on water quality and quantity efforts taking place in Frederick County.
Special Listening Session with Agricultural owners	3/17/05	The Steering Committee hosted a listening session and lunch with agricultural owners at the Thurmont Grange Hall. The Farm Bureau representative to the WRAS helped arrange for meeting space and personally invited farmers to participate in the meeting. Twenty-one agricultural owners joined five Steering Committee hosts.
Liberty Kiwanis Club	7/19/05	The County's Community Restoration Coordinator presented WRAS results and shared maps of priority sites at a regular meeting of the Kiwanis Club in Libertytown.
WRAS Outreach to Liberty Civic Association	8/08/05	The County's Community Restoration Coordinator met with the Civic Association in Libertytown to share results from the WRAS, share maps showing environmental problems along Town Branch, and publicize plans for community restoration projects and Bay Wise Landscape training.
Monocacy & Catoctin Watershed Alliance	7/21/05 8/30/05 10/6/05	Staff met with interested partners from the Lower and Upper Monocacy WRAS Steering Committees who wished to help shape a successor organization, the Monocacy & Catoctin Watershed Alliance (discussed later in this chapter). The Alliance has published a website at www.watershed-alliance.com .
Landowner Conservation Workshop	11/20/04, spring 2005	WRAS partners ThorpeWood, Catoctin Land Trust, Potomac Conservancy, and Chesapeake Wildlife Heritage cosponsored an outreach and education event for landowners to educate them on options to protect land and conserve natural resources. Sixty-seven landowners were invited to the workshop and lunch at Hawkbill Farm and 17 attended. A second workshop on the same topic was offered during Spring 2005.
Program Web Site	Ongoing	The NPDES Program's web site contains background information on stormwater problems, the County's efforts to manage nonpoint source (NPS) pollution, assess watersheds, and conduct water quality and stream monitoring.
Maryland Department of Planning	10/04	Staff met with Maryland Department of Planning to review the interaction of watershed plans and priority-funding areas (PFAs). This review became part of Upper Monocacy River WRAS document.
Conservation Brown Bag Luncheon	Ongoing	County staff continues to participate in a Brown Bag Monthly Lunch Discussion for groups involved in watershed-based activities in Frederick County to coordinate their areas of expertise and support each other's projects. The group continues to meet at Community Commons' office.
<i>Special Programmatic Conditions</i>		
Upper Potomac Tributary Team	Ongoing	County representatives attended tributary team meetings and participated in activities related to the team, including the preparation of nutrient strategies for the basin.
Upper Monocacy Watershed Restoration Action Strategy (WRAS)	Completed June 2005	Frederick County completed its Upper Monocacy River Watershed Restoration Action Strategy (WRAS) to improve water quality and habitat. (The Lower Monocacy WRAS was completed in May 2004) The reports can be accessed in their entirety at http://www.dnr.state.md.us/watersheds/surf/proj/wras.html .
TMDL Implementation	Ongoing	Staff has participated in a committee with MDE's TARSA group to provide guidance to local governments on TMDL implementation. Staff continued to meet with Jim George of TARSA to discuss Linganore TMDL implementation and is working with him to create a database tool to track pollution reductions based on BMP implementation. Staff is working on an Action Plan for the Lake Linganore Watershed, which has TMDLs for sediment and phosphorus. Staff will ultimately use the tool to create baseline and cap management strategies.

greater flexibility in the production of mailing lists for projects and will automate landowner notification and permission for further SCAs.

Through the WRAS, staff partnered with a number of outside groups. For example, the County partnered with the Potomac Conservancy in its Bennett Creek Restoration Initiative and wrote letters to owners of riparian frontage along Fahrney and Pleasant Branches explaining the restoration initiative. Additionally, staff partnered with Frederick County Master Gardeners in the Libertytown Stewards project and offered a workshop in Libertytown on “Bay Scaping”, the landscaping method using the Maryland Yardstick landscape management program. In addition, staff mapped and communicated assessments of trash dumping sites identified during the Stream Corridor Assessments and provided resulting information on accessibility and feasibility to Volunteer Frederick for use by area nonprofits during the Big Sweep trash collection effort. As in 2004, the County sponsored Greener Lifestyle workshops with Community Commons and, jointly with Alliance partners, hosted a booth at the Frederick County Fair in September.

Both the Lower Monocacy River WRAS and the Upper Monocacy River WRAS included community outreach and education objectives. Many of the outreach and education activities listed in Table 6-3 grew out of the WRAS objectives. Such extensive outreach would not have been possible without the involvement of many partners, many of which are listed below.

- Hood College
- Mount Saint Mary’s College
- Municipalities in Frederick County
- Carroll and Washington Counties
- Audubon Society of Central Maryland
- Fort Detrick
- Lake Linganore Conservation Society
- Friends of the Lake
- Lake Linganore Association
- Fox Haven Center, Inc.
- New Forest Society
- Catoctin and Frederick Soil Conservation Districts
- Community Commons
- National Park Service
 - Catoctin Mountain Park
 - Monocacy National Battlefield Park
 - Rivers, Trails and Conservation Assistance
- Maryland Department of Natural Resources
 - Forest Service
 - Fisheries
 - Watersheds Program
- Maryland Department of the Environment
- Canaan Valley Institute
- Chesapeake Wildlife Heritage, Inc.
- U.S. Fish and Wildlife Service
- Cloverhill Homeowners Association
- Friends of Waterford Park
- Colony Village HOA
- Frederick Forestry Board
- Upper Potomac Tributary Team
- Potomac Conservancy
- Potomac Watershed Partnership
- Western Maryland RC&D
- Alice Ferguson Foundation
- Interstate Commission on the Potomac River Basin (ICPRB)
- Maryland State Highway Administration
- University of Maryland Environmental Finance Center
- Chesapeake Bay Program
- Catoctin Land Trust
- ThorpeWood
- Carrollton Manor Land Trust
- Local Developers, Contractors and Engineering Firms
- Local Farmers
- Local Citizens
- Liberty Village Cohousing Community
- Liberty Elementary School
- St. Peter the Apostle Roman Catholic Church
- The Center for Watershed Protection
- Chesapeake Bay Trust
- National Fish and Wildlife Foundation

6.5.2 Public Outreach Related to Monocacy & Catoctin Watershed Alliance (MCWA)

As outreach efforts continue to occur throughout the County, the members of the MCWA have worked to define the role the Alliance will play in the implementation of the Upper and Lower Monocacy WRAS plans. They have developed and adopted a mission statement, **“The Monocacy and Catoctin Watershed Alliance coordinates the efforts of a diverse group of stakeholders dedicated to the protection and restoration of the natural resources in the Monocacy and Catoctin watersheds.”** The group selected the logos shown in Figure 6-1.



Figure 6-1. Monocacy and Catoctin Watershed Alliance logos.

Other outreach efforts of the Alliance include participating in the Frederick County Fair (September 2005). Alliance members jointly staffed a booth focusing on four “Greener Lifestyle” topics including native plants, harvesting rain water, composting, and natural household cleaners. ThorpeWood (an Alliance partner) and the County are partnering on a project to install 50 watershed signs along County-owned roads in the Upper Monocacy watershed. The sign design and sign locations are provided in Appendix I.

The Alliance secured assistance from a graphic designer and is developing a website <http://www.watershed-alliance.com/> which was posted during late November 2005. The website is managed and updated by the County with content from Alliance partners about

restoration activities, volunteer opportunities, calendar alerts, and other water quality-related topics (Appendix I).

6.5.3 Other NPDES Outreach Initiatives

Along with the Division of Public Works, other Divisions in Frederick County are also reaching out to the public in a variety of ways. Some of these initiatives are discussed in detail below while others are summarized in Table 6-3.

6.5.3.1 Frederick County Recycling Program

The Frederick County Recycling Program was able to divert a growing proportion of solid waste from the landfill by promoting recycling among county residents. In fiscal year 2005, 39,981 tons of waste were collected and recycled from the County’s residential curbside and satellite drop off programs (Table 6-4). In 2005, Frederick County reported a recycling rate of 36% and a source reduction credit rate of 2% for a combined waste reduction rate of 38%.

Table 6-4. Quantity of recycled material by type		
Frederick County Tons Recycled		
	FY04	FY05
Recycling Collected on Curbside	8,646.37	8,618.82
Recycling Collected at Drop-off Centers	4,986.03	6,504.14
Used Motor Oil	339.50	340.00 estimate
Antifreeze	12.71	13.00 estimate
White Goods/Scrap Metal	1,706.10	1,835.05
Tires	339.02	243.43
Car Batteries	62.19	71.45
Flexible Foam	5.74	2.35
Pallets	180.83	281.21
Yard Trimmings	21,018.72	22,071.74
TOTAL	37,297.21	39,981.19

Household Hazardous Waste Days are held twice annually: once in the spring and once in the fall (Table 6-5). They are held at the Public Safety Training Facility.

Table 6-5. Household Hazardous Waste Day Events		
	May 2005	October 2005
Collection Cost	\$11,520.13	\$11,000 estimate
Advertising	\$3,751.44	\$2,500 estimate
Total Cost	\$15,271.57	\$13,500 estimate
Vehicles Attended	249	207
Cost Per Resident	\$61.33	\$65.22
Pounds Collected	10,240	7,980

6.5.3.2 Alternative Transportation

The Transportation Association of Maryland (TAM), a statewide association of over 40 rural and urban transportation providers, selected TransIT Services of Frederick County as the 2005 "Best Fixed Route System" in the State. TAM also named TransIT fixed- route driver Devin Naylor and paratransit driver Sherry Wahl "Drivers of the Year". **TransIT increased its total system ridership by more than 20% for the third consecutive year**. This year's ridership increase is particularly notable in that no new services were added in fiscal year 2005, yet over 90,000 more passenger trips were provided than the previous year. **The total system ridership was over 553,000.** The Chesapeake Chapter of the Association for Commuter Transportation (ACT), the regional chapter of North America's most respected association of professionals specializing in commute options and solutions **also selected TransIT as 2005 Outstanding Transit System.** The Chesapeake Chapter includes all of Maryland, Virginia, and the District of Columbia.

In September, TransIT expanded service with the #80 North-West Connector Route. This route provides service Monday through Friday between the Frederick Towne Mall and Frederick Community College. In addition to the new Connector route, two new shuttle routes provide service Mondays and Wednesdays during the morning and afternoon hours between downtown Frederick and the north Frederick area. The East County shuttle provides service on Tuesdays and Thursdays during the morning and afternoon hours between the Spring Ridge community and downtown.

TransIT's website contains a wealth of information on TransIT services as well as regional transportation alternatives. Links are provided to schedules and maps for TransIT, MARC train, MTA Commuter Bus to Shady Grove Metro, Montgomery County Ride-On and Metro. There is a Travel Training Video that can be viewed from the site. Rider bulletins, press releases, annual reports, and newsletters are also available. There are links to information for seniors and persons with disabilities, commuters, vanpoolers, and those interested in Telework.

TransIT promotes alternatives to driving as well as providing assistance with:

- Commuter trip planning via phone or email (301-694-2065 or transit@fredco-md.net).
- Formation of vanpools - TransIT provides free on-line ride-matching and provides a financial incentive for 1st year vanpools with open seats. TransIT assists existing and new vanpools in finding riders.
- Telework
- Employer Services - TransIT can provide local employers with assistance in setting up telework programs, assessing parking management, employee commute surveys, providing commute tax benefits, and more.
- Air Quality Action Days (AQAD) - TransIT e-mails over 2000 County employees and over 700 City employees on Code Red days to advise how they can help improve Air Quality. TransIT recruits employers for the AQAD program. As participants in the program, employers notify employees of ways they can improve Air Quality and provide information on transportation alternatives.

- Bike to Work Day - TransIT sponsors a "pit stop" at the downtown Transit Center to promote biking as a driving alternative. Recent events have had more than 50 participants.

6.5.3.3 Private well and septic system management

The Frederick County Health Department provides citizen education and outreach materials on proper septic system maintenance and well testing and protection. During site visits to evaluate accessory building permit applications, Health Department staff distributes copies of a handbook on septic system maintenance. By Frederick County Ordinance, a well providing a sufficient yield must be drilled on a building lot prior to issuance of a building permit to the property owners. Once the house has been built, the Health Department directs the homeowners to have the water tested to secure a Certificate of Potability, indicating the quality of the water supply. In addition, Health Department staff present information at meetings of boards of realtors at least twice annually to acquaint new real estate professionals with requirements for proper management, inspection, and maintenance of wells and septic systems.

Monocacy & Catoctin Watershed Alliance partners, the New Forest Society and the Canaan Valley Institute, worked in cooperation with staff of the Town of Thurmont to plan and offer a Wastewater 101 workshop at ThorpeWood on November 16, 2005. The workshop addressed the basic science and mechanics of decentralized wastewater treatment; innovative systems that are available to replace failed systems; cluster systems; and the Maryland Department of the Environment's new flush tax-funded program that will be available in competitive grants to help address problems with decentralized on-site wastewater treatment.

6.5.4 Evaluation

Frederick County continues to excel in public outreach. Not only has Frederick County addressed all of the suggested topics for outreach in the NPDES permit, it has also extended its public outreach strategy to meet restoration goals. Frederick County has greatly expanded its network through the WRAS process discussed above and through the Monocacy and Catoctin Watershed Alliance. Agencies within Frederick County continue to educate the public about water quality through diverse programs.

6.6 ROAD MAINTENANCE ACTIVITIES

During 2005, Frederick County continued to implement recommendations from its 2002 assessment of road maintenance practices (Versar 2002). The objective of this study was to assess the effects of road maintenance activities on stormwater runoff and resulting impacts on surface water quality. The assessment evaluated current practices, analyzed alternative practices, and presented a plan to incorporate alternative practices into the County's road maintenance programs. Members of the County's Department of Highways and Transportation provided data and information on current practices and plans of the Department.

Activities included in the evaluation included:

- chemical usage in snow and ice removal,
- herbicide spraying for vegetation control,
- street sweeping,
- litter control,
- road surface maintenance, and
- maintenance of unpaved surfaces.

The assessment report was submitted to MDE on June 11, 2002 and was found to meet NPDES permit requirements for developing a plan to reduce pollutants associated with road maintenance activities.

The County continues to move ahead with several of the recommendations developed in the June 2002 evaluation report. An example of quarterly reports for January to December 2005, prepared by the Office of Highway Operations for a variety of subject areas, is provided in Appendix J. Some of the activities that the County Office of Highway Operations undertook in 2003 to reduce runoff pollution were:

1. **Street Sweeping:** street sweeping was conducted in the second and third quarters of 2005. A total of 33.58 miles were swept, with special attention paid to bridges. The County tends to apply more deicer to bridges and currently removes these materials after storm events in response to citizen requests. A total of 20 bridges were swept in 2005.
2. **Litter Control:** The Office of Highways and Transportation was a main sponsor of the Big Sweep Cleanup in 2005, which removed 15.83 tons of trash and recyclables and 420 tires from 47 county roads and illegal dumpsites. Highway Operations staff removed 758 tires and 74.375 tons of trash in 2005. Additionally, the Department continued its Adopt-A-Road program in 2005.
3. **Deicing:** Caliber 1000, which is a 30% Magnesium Chloride solution with an agricultural by-product, is used in 25 of the County's trucks when the temperature is $\leq 20^{\circ}\text{F}$. The mixture is sprayed on a salt/cinder mix as it is applied. Eight of the trucks, which are equipped with saddle tanks for spraying the solution onto the salt/cinder mixture, are new. Overall, the County has 49 full-sized 10-ton dump trucks and 8 smaller 1-ton dump trucks for deicing. The additive makes the salt/cinder mix more effective and prevents corrosion. The County has not yet determined if the additive is cost-effective at temperatures above 20°F . The State uses 100% Magnesium Chloride at all temperatures; however, it is very corrosive. According to product literature for Caliber 1000 (http://www.anti-icers.com/caliber_m1000.htm):

“As a pre-wetting agent for salt and sand, Caliber M1000 reduces bounce and scatter, increases the speed at which the salt begins working, increases the melting capacity of the salt, and permits the use of salt at lower temperatures. Additionally, Caliber M1000 also reduces corrosion, inhibits crystal formation and product fallout at

lower temperatures, and improves roadway traction when compared to other liquid products.”

Additional information on Caliber M1000 is also available at http://www.es-pa.com/caliberm1.htm#ENVIRONMENTAL_PROPERTIES

The use of deicers in 2005, by DNR watershed, is presented in Table 6-6. A total of 2,600 gallons of liquid deicer (Caliber M1000), 13,320 tons salt, and 7,304.15 tons cinders were used in 2005 for all watersheds.

4. Inlet Cleaning: All Highway Operations foremen began reporting inlet-cleaning statistics in 2004. A total of 494 inlets were cleaned in 2005. Inlet-cleaning statistics are reported in the quarterly reports under Drainage (Appendix J).
5. Data Collection: Reports were collected quarterly from district foremen and submitted to the department head. In 2005, significant data collection improvements were made by each district, especially in the areas of street sweeping, trash collection, herbicide use, and inlet cleaning.
6. Reducing the Use of Pesticides, Herbicides, Fertilizers and Other Pollutants: The 2002 road maintenance assessment report presented data on two herbicides, Razor and Pendulum, which were used by the County’s Office of Highway Operations in 2001. Pendulum, with 37.4% pendamethalin as the active ingredient, was noted to be an environmentally unfriendly chemical with potential impacts to aquatic life. The report recommended that the County review its use and consider alternative treatments. The information provided by the Office of Highway Operations for the 2003 Pesticide/Herbicide report (Versar 2003) indicates that they accepted this recommendation, as use of Pendulum was not reported in the fall 2002 survey. In addition, it should be noted that Gly Star Pro (a herbicide containing glyphosate) is now used instead of Razor by the Office of Highway Operations. In 2005, 11,819.95 gallons of Gly Star Pro were used to control weeds along guardrails, with a total of 955,520.8 feet (approx 181 mi) sprayed. Herbicide use is reported in the quarterly reports under Guardrails (Appendix J).

Evaluation: The County’s Office of Highways and Transportation continues to implement the recommendations of the Road Maintenance Report and experiment with new technology to reduce its activities’ impacts on water quality. Significant improvements were made in reporting practices in 2005.

Table 6-6. Snow removal materials used in 2005, by watershed

Date	Catoctin Creek			Double Pipe Creek			Lower Monocacy			Potomac			Upper Monocacy		
	Gallons	Tons		Gallons	Tons		Gallons	Tons		Gallons	Tons		Gallons	Tons	
	Liquid	Salt	Cinders	Liquid	Salt	Cinders	Liquid	Salt	Cinders	Liquid	Salt	Cinders	Liquid	Salt	Cinders
1/17/2005	90.00	186.88	134.38	0.00	50.00	27.00	0.00	301.25	166.50	0.00	16.25	11.25	0.00	263.20	169.63
1/19/2005	0.00	325.40	225.00	0.00	63.00	36.00	0.00	566.10	290.25	0.00	94.00	27.00	200.00	430.00	235.50
1/20/2005	0.00	88.45	57.38	0.00	6.50	4.50	0.00	180.03	86.63	0.00	0.00	0.00	0.00	42.85	28.13
1/22/2005	180.00	305.05	195.75	0.00	74.00	36.00	0.00	630.25	281.63	0.00	70.00	18.00	320.00	408.95	260.25
1/23/2005	0.00	244.55	159.75	0.00	39.00	27.00	90.00	415.20	200.75	0.00	19.50	13.50	90.00	311.58	183.38
1/24/2005	0.00	121.93	84.38	0.00	32.50	22.50	0.00	120.20	77.63	0.00	0.00	0.00	0.00	159.88	105.38
1/30/2005	90.00	291.85	192.38	0.00	59.75	33.75	50.00	548.90	216.13	0.00	90.00	9.00	150.00	350.65	217.49
2/3&4/2005	90.00	398.40	267.98	0.00	45.50	31.50	180.00	622.35	306.00	0.00	35.75	24.75	90.00	422.25	234.75
2/14/2005	90.00	126.88	87.75	0.00	9.75	6.75	45.00	59.25	33.75	0.00	0.00	0.00	0.00	264.25	156.75
2/18/2005	0.00	21.15	14.63	0.00	19.50	13.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	68.25	47.25
2/21/2005	45.00	68.30	47.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	108.00	67.50
2/24/2005	90.00	469.20	315.00	0.00	93.50	49.50	270.00	908.53	417.75	0.00	135.50	40.50	90.00	679.90	409.13
2/28/2005	90.00	297.38	201.94	0.00	90.25	47.25	300.00	891.95	360.38	0.00	112.00	9.00	0.00	503.35	300.75
3/1&2/2005	0.00	68.25	47.25	0.00	16.25	11.25	0.00	40.63	28.13	0.00	0.00	0.00	0.00	22.75	15.75
3/8&9/2005	0.00	191.95	132.75	0.00	48.75	33.75	50.00	267.75	138.00	0.00	13.00	9.00	0.00	109.50	72.00
Totals	675.00	3018.73	2029.16	0.00	598.25	353.25	985.00	5251.13	2437.00	0.00	569.75	150.75	940.00	3882.15	2333.99

6.7 HERBICIDE, PESTICIDE, AND FERTILIZER USE STUDY

Because of concern for environmental health, MDE, through the requirements of NPDES MS4 Permits, requires local jurisdictions to evaluate their current uses of pesticides, herbicides, and fertilizers and to seek opportunities to reduce use of these materials. To address this requirement, Frederick County sponsored a study to characterize current uses of pesticides, herbicides, and fertilizers by County agencies and to identify potential reduction strategies. The following is a summary of practices since the completion of the study, *Recommendations for Alternatives to Pesticide/Herbicide/Fertilizer Use for Frederick County*, December 17, 2003 (Versar 2003).

6.7.1 Introduction

Study results indicated that pesticide/herbicide/fertilizer use by Frederick County did not require any drastic reduction in application practices because County agencies have, in general, already minimized use of these chemicals, or are using more environmentally acceptable substitutes. In most cases, the overall recommendation was to continue current chemical control practices, while considering possible biological and mechanical controls that could be used in place of, or in combination with, current practices.

Frederick County DPW initiated this study in fall 2002 by surveying pesticide, herbicide, and fertilizer use at all County-owned facilities and by all Frederick County Government agencies or departments. Five County departments apply at least one of these types of chemicals: (1) the Maryland Department of Agriculture's (MDA) Vector Control Program, which works in conjunction with the Frederick County Mosquito Control Program, (2) the DPW's Department of Parks and Recreation, (3) Frederick County's Office of Highway Operations, (4) the Frederick County Weed Control Program, and (5) Frederick County Public Schools.

A number of current practices are already employed by those surveyed to control the application of chemicals and, where possible, to use minimal amounts. In general, most Frederick County departments apply pesticides on an "as needed" basis, while fertilizer applications are performed 1-3 times per year at specific locations. Most of the departments indicated that application rates are based on label instructions and are made at the lowest rate required for effectiveness. This section provides an update to the amounts and uses presented in the 2003 report.

6.7.2 Herbicide Use

Frederick County's Parks and Recreation Department and the Frederick County Weed Control Program continue to monitor weather conditions around the time of application; applications are not performed if heavy rain is expected within 2 hours of application. The Weed Control Program continues to verify that application personnel are registered with the MDA Pesticide Regulation Section and are either licensed applicators or work directly under the supervision of one.

In 2005, Frederick County Public Schools used 40 gallons of diluted Roundup. As noted in the Road Maintenance Report section, Frederick County Highway Operations has phased out the use

of the herbicide Pendulum, which is toxic to aquatic life, and has replaced its use of Razor with Gly Star Pro, another glyphosate herbicide.

Frederick County Parks and Recreation Department used the following herbicides and amounts in 2005:

- Aquashade, 8 gallons
- Cutrine Plus, 310 gallons (liquid), 10 pounds (granular)
- Prosecutor Pro, 17 gallons

6.7.3 Pesticide Use

The majority of pesticides currently being used in Frederick County continue to be for the control of mosquitoes by MDA's Vector Control Program and for the control of pest insects by Frederick County Public Schools. Both programs continue to use Integrated Pest Management (IPM) programs. The SOP for IPM by the Public Schools is included as Appendix O. IPM programs identify and control pest problems through staff training, inspection, and sanitation practices that minimize and/or eliminate the need for pesticide use. Under IPM, improvements in cleaning, sanitation, occupant education, or other non-chemical methods are required before pesticide use can be authorized.

The pesticides used by the Vector Control Program for mosquito control include two larvicides, Vectobac and Vectolex, which contain naturally occurring bacteria commonly found in soils in the United States. These pesticides have not been shown to cause any serious health effects in humans. The third pesticide currently being used to control mosquitoes, Altosid, contains a chemical insect growth regulator. This pesticide has not been shown to be harmful to humans. Some formulas used have a slight degree of residual time and can remain active for 30-150 days.

Survey responses indicate that the public schools do not use excessive applications of pesticides and that these are applied only on an as-needed basis. In addition, one of the pesticides, Merit, is known for its low percentage of active ingredient compared with other pesticides. Use of one pesticide previously used by the school system, Statesman Insect Control with diazinon, was affected by EPA's plans to phase out diazinon for all lawn, garden, and turf use by December 2003. Diazinon is an organophosphate which can affect the nervous system and cause nausea, headaches, vomiting, etc. In addition, diazinon's use on turf poses a risk to birds, and is one of the most commonly found pesticides in air, rain, and drinking and surface water. Therefore, the report recommended that the public schools discontinue use of Statesman Insect Control with diazinon and select a safer, more appropriate product to be used in its place. The Public Schools discontinued the chemical once its (small) inventory was consumed. In 2005, the Public Schools used 4000 lbs. Dylox and 60 lbs. Merit.

6.7.4 Fertilizer Use

Fertilizer use by Frederick County agencies is mainly attributed to the Public Schools for maintenance and upkeep of school athletic fields. In addition, the Department of Parks and Recreation uses fertilizers at its facilities. Public Schools and the Department of Parks and Recreation regularly test the soil to determine if and how much fertilizer needs to be applied.

The Parks and Recreation Department conducts soil tests every three years and applies fertilizer according to soil test results. The majority of fertilization is performed once per year in the fall and consists of applying 1 lb of N per 1000 ft² to sports fields. The Superintendent is a certified Nutrient Applicator under the State Nutrient Management Program.

In 2005, the Public Schools used the following fertilizers in the following amounts:

- 18-24-12, 4000 lbs.
- 39-0-0, 2000 lbs.
- 15-3-7, 4000 lbs.
- 26-4-18, 4000 lbs.
- 10-10-10, 200 lbs.
- Pelletized lime, 4000 lbs.

The Public Schools used to use one type of organic fertilizer, Milorganite, which is composed of composted sewage sludge, but have since phased out its use.

Frederick County Parks and Recreation Department used the following fertilizers and amounts in 2005:

- 18-0-18, 9635 lbs.
- 18-24-10, 18 lbs.
- 18-24-12, 2400 lbs.

Evaluation: Frederick County continues to implement responsible use of herbicides, pesticides, and fertilizers. Agencies strive to minimize use of these materials to the lowest rate required for effectiveness. Applicators have proper certification. Integrated Pest Management programs are in place. Earlier evaluations of herbicide use along roadsides led to a shift away from one potentially harmful herbicide to a more environmentally friendly alternative.

6.8 OVERALL PROGRAM EVALUATION

Frederick County continues to build upon and strengthen the various components of its NPDES stormwater management programs. As detailed throughout this report, the past year brought progress in many areas. This evaluation is based on program improvements noted over the past year. In addition, the current status of management programs was viewed in relation to the County's program objectives, goals, and NPDES permit requirements.

Frederick County government has been particularly effective in leading well-coordinated efforts involving multiple agencies and organizations working toward common goals for water quality improvements and better management of the County's watersheds. The County has capitalized on opportunities to leverage substantial funding for outreach and restoration. This has allowed the County to accomplish program goals most cost-effectively, despite having a small in-house staff. County leadership of Watershed Restoration Action Strategies (WRAS) since 2002 has provided substantial benefits in public outreach, stream monitoring, watershed characterization, and identification of watershed improvements. Building on this success, Frederick County has

effectively used its Stream Corridor Assessment results to support identification of retrofit and restoration opportunities for CIP funding and for community restoration projects.

County staff has actively sought opportunities for numerous restoration projects, successfully attracting outside funding and establishing key partnerships with other organizations. Development of the Lower and Upper Monocacy WRAS strategies has served as a springboard for action. Ongoing implementation of WRAS recommendations, along with projects proposed through the County's restoration and retrofit evaluations, will further the County's progress in watershed management and will continue to include substantial public involvement.

A project with the Center for Watershed Protection has enhanced the County's illicit discharge detection and elimination (IDDE) program. Efforts to date have included development of procedures and training to aid in identifying illicit discharges. The County plans to incorporate these improvements into permit-required field screening.

Frederick County has supported NPDES Phase II municipalities with execution of their permits. The County has provided consultation, public outreach materials, GIS mapping protocols, and IDDE training for local Phase II municipalities.

The County continues to implement long-term monitoring to meet NPDES requirements, including evaluation of the effectiveness of the *2000 Maryland Stormwater Design Manual*. Long-term chemical, physical, and biological monitoring at Peter Pan Run has provided a continuous record since 1999. The study has now compiled three years of data at a tributary to Peter Pan Run to evaluate Manual effectiveness.

Watershed restoration is a key focus of current programs. In 2005, an assessment of stormwater retrofit and stream restoration opportunities was completed for Ballenger Creek watershed. A similar investigation is in progress for Linganore Creek watershed. Frederick County DPW is integrating these plans for watershed improvements with proposed source water protection measures for Lake Linganore. An Action Plan for the Linganore Watershed was developed in 2005. NPDES staff have supported the County's Water Resource Management Task Force, created by the Board of County Commissioners to address water quality and quantity issues in Frederick County. In addition, Frederick County is coordinating its restoration planning with implementation of sediment and phosphorus TMDLs for Lake Linganore.

During 2005, Frederick County focused its stream monitoring efforts to provide information to assess potential restoration sites and ultimately to evaluate restoration success. Biological and physical monitoring was targeted to locations of planned restoration projects, including those to be implemented by partners such as the Potomac Conservancy. Results from 2005 provide pre-construction monitoring as baseline information. Future monitoring in 2006 and beyond will continue to track conditions at these and new locations, as additional project sites are recommended. The County will also continue to monitor overall stream conditions in priority watersheds on a rotating basis.

To provide the best information on County water resources for decision-makers and the public, Frederick County is undertaking a monitoring data integration project. A number of agencies and organizations are involved in stream monitoring throughout Frederick County. Data gathered

by these programs can augment and “fill in gaps” of information currently collected by the Division of Public Works through its own monitoring efforts. An integrated picture of stream conditions gained through these monitoring programs will help inform the public on water quality issues. In addition, this integrated assessment will aid the County in managing its water resources and strategically targeting its own future monitoring efforts. This effort has begun by compiling a database of organizations conducting monitoring within the County, creating a survey questionnaire to solicit information about available data sets, and distributing the questionnaire.

County staff has completed a review of county-owned properties and, through coordination with MDE, has determined which require NPDES permits. The Division of Public Works took a lead role in coordinating and providing technical assistance to other County agencies in applying for all required permits. Most required permits are now in place and development of Stormwater Pollution Prevention Plans (SWPPP) is planned.

The County continues to implement the recommendations of its Road Maintenance Activities and Pesticide/Herbicide/Fertilizer reports. Highway Operations made significant improvements to its reporting in the past year to identify its progress towards meeting the goals of these reports. Chemical applications that were suggested for phase-out have been replaced by more environmentally friendly materials by the Frederick County Public Schools and by Highway Operations.

ECS continues to make improvements in stormwater inspections, field screening, and erosion and sediment control. The Hansen permitting system is streamlining permit processes considerably.

To build communication with MDE and other County programs, many at a similar stage of program development, Frederick County has been an active participant in the state’s stormwater workgroup. Lessons learned from other municipal programs in Maryland continue to help to guide the County’s future management efforts.

Frederick County has continued to add and enhance its GIS library. The Division of Public Works completed the main phase of its Storm Drain Data Collection Project including QA/QC. Digitizing of pond boundaries and drainage areas continues. Aerial photography was flown in 2005 and will provide enhanced topography and updated images for future work.

In general, Frederick County has increased its commitment of staff time and resources to NPDES program activities. In 2005, along with a full-time NPDES program manager, the program was supported by two other staff in its Watershed Management Section. The Community Restoration Coordinator (formerly the WRAS Program Coordinator, a position created in May 2003), has proved highly effective in the County’s partnership restoration efforts. This position is funded jointly by DPW and grant funds. The County has secured grant funds to extend the support for this position through 2007. A Project Manager I full-time position was approved in July 2005, replacing the part-time Program Assistant position. This individual provides key support in Stream Corridor Assessment efforts, GIS, Annual Report preparation, and other projects.

During 2005, the County also established contracts to provide design and consulting services for stream restoration and stormwater retrofit projects to be implemented through the CIP. In addition, the County established a Cooperative Agreement with U.S. Fish and Wildlife Service's Chesapeake Bay Field Office, which provides added expertise in stream geomorphology and restoration.

As detailed in Section 8, the County has maintained steady funding of NPDES programs through its operating budget. The NPDES program is operating well at its current funding level. In addition, substantial CIP funds have been committed to current stormwater retrofit and stream restoration projects. Future CIP funding is earmarked for identifying and implementing watershed restoration and stormwater retrofit projects. During 2005, two CIP-funded projects were awarded to consultants, a stream restoration project in Ballenger Creek watershed and Low-Impact Development enhancements to stormwater management at Urbana High School. The program continues to seek and utilize outside grant funds, including grant funds from the National Fish and Wildlife Foundation, Chesapeake Bay Trust, and EPA's 319(h) program to support implementation of watershed restoration measures. The County continually seeks ways to leverage its resources with grants, cost shares, and other reciprocal programs.