

4.0 Permit Requirements

E.7. Public Education

A public education and outreach program shall be implemented to reduce stormwater pollutants. As part of this program, Baltimore County shall develop material and make it available for distribution to the public by watershed associations and at community events. These efforts are to be documented and summarized in the County's annual reports. At a minimum, Baltimore County shall:

- a. Establish and publicize a compliance hotline for the public reporting of suspected illicit discharges, illegal dumping, and spills.
- b. Provide information regarding the following water quality issues to the general public:
 - i. Water conservation;
 - ii. Stormwater management facility maintenance;
 - iii. Erosion and sediment control;
 - iv. Household hazardous waste;
 - v. Lawn care and landscape management (e.g., the proper use of herbicides, pesticides, and fertilizers, ice and snow removal, cash for clippers," etc.);
 - vi. Litter control, recycling, and composting;
 - vii. Car care, mass transit, and alternative transportation;
 - viii. Pet waste management.
- c. Provide information regarding the following water quality issues to the regulated community:
 - i. NPDES permitting requirements;
 - ii. Pollution prevention plan development;
 - iii. Proper housekeeping; and
 - iv. Spill prevention and response.

4.1 Introduction

Baltimore County DEPRM has designated *environmental education (EE), outreach, action, and stewardship through partnerships*, as high priorities in its suite of services to citizens. The County's integrated watershed approach to resource management and its intention to work with and support local citizen watershed organizations, offers many opportunities for effective community partnerships. Baltimore County DEPRM's *Let's Be Partners* and *Getting Greener Schools* environmental education and outreach programs provide the coordination and focus for these efforts.

On June 28, 2000, the Chesapeake Bay Program adopted a new bay agreement, *Chesapeake 2000: A Watershed Partnership*. This document, designed to guide the Bay restoration efforts from 2000-2010, outlines a "rigorous" process of public participation. Recognized in 1997 and again in 2006 as a Chesapeake Bay Partner Community at the Gold level, Baltimore County is committed to continue to improve, and expand its efforts

to reduce stormwater pollutants through environmental education and outreach to the community.

As in past years, each component of the *Let's Be Partners/Getting Greener Schools* program carried the pollution prevention message. Special attention was given to the direct connection between the purchase, use, and disposal of household and commercial toxic materials, pesticides, herbicides, and fertilizers, landscape maintenance and cleaning procedures, pet waste, soil erosion, and water quality in local streams, drinking water reservoirs and the Chesapeake Bay. Emphasis was placed on cost-effective prevention over pollution regulation, structural controls, and cleanup. Recognizing the multiple benefits gained from planting projects (increased diversity, energy saving, erosion control, education and stewardship opportunities, scenic values, habitat restoration, recreation, etc), continued emphasis was placed on encouraging and facilitating the restoration of natural native vegetation on public and private lands for the inherent water quality benefit. In 2006, new school and community partnerships were created to facilitate public awareness, education and outreach.

Assessment of the multi-faceted outreach program is ongoing and guides the process of updating, improving, and enhancing program components. In 2006, following an assessment of program participation by schools and organizations, new initiatives were undertaken in targeted areas to broaden the geographic distribution of services. These included new and expanded community and school partnerships for environmental program planning; outreach to faith communities; expanded professional development opportunities; support for public school principals K-12, administration, supervisors, and landscape facilities managers; wider offerings on the County's webpage; new displays and GIS presentational materials; school maps and local data sets; student internships; environmental career events; and new handouts and brochures.

Increasingly, since 1995, this environmental education program has assisted individual citizens and families, students, teachers, school administrative staff and facilities managers, businesses, homeowners and apartment dwellers, and faith communities and other local organizations. Initiatives in 2006 identified and targeted specific populations, expanded cooperation with local watershed organizations, and developed new local and regional partnerships to better facilitate work in watershed communities. The *Baltimore Watershed Agreement* first signed by Baltimore County and Baltimore City in October 2003, was re-negotiated and signed on December 14th, 2006. An increasing number of Baltimore County's environmental education initiatives have extended across political boundaries into watersheds shared with Baltimore City.

As part of its successful *Maryland Green School* program initiative: *Getting Greener Schools*, Baltimore County continued to use *The Maryland Green School Awards Program* to provide a framework for integrating environmental learning and community involvement in local schools. DEPRM maintained its statewide leadership in this initiative and expanded its effort to target schools in the 2006-07 school year and beyond. DEPRM's workshops and site-based support for teachers provided local and regional resources to enhance staff development opportunities and increase the environmental awareness and interest of local school principals. Baltimore County's recognized

Maryland Green Schools provided important models for environmental awareness and community stewardship.

Long term partnerships with established local *Green Schools*, recognized *Maryland Green Centers* and other organizations and agencies such as the *Maryland Association for Environmental and Outdoor Education (MAEOE)*, the *Herring Run Watershed Association (HRWA)*, *The Irvine Nature Center*, *The Gunpowder Valley Conservancy*, and the *Jones Falls Watershed Association (JFWA)* brought expertise, technical support, volunteers and stakeholders to assist schools and citizens as they explore water quality issues, discuss stewardship opportunities, and make plans. *Small Watershed Action Plans (SWAP)* involve citizens and stakeholders in identification of activities and projects that will improve local water quality.

These partnerships with citizens and community groups resulted in sustained volunteer participation involving donations of time and materials. Increasingly, citizens and organizations volunteered to take the *Let's Be Partners* and *Getting Greener Schools* materials for use at their community festivals, events, and meetings and to share with their local schools. To heighten environmental awareness among homeowners during the spring planting season, the County again joined with the Alliance for the Chesapeake Bay (ACB) and the Towson Garden Day Committee (TGD) to present BayScaping recognitions to citizens and organizations that model functional conservation landscaping and maintenance techniques. The popular *Growing Home Campaign*, a partnership between the county and local businesses to promote the planting of trees on private property, was expanded.

New planning partnerships with local faith communities involved the Christian community (Chesapeake Covenant Congregations), and Jewish synagogues with their affiliated parochial schools (Baltimore Environmental Network of Synagogues). Both the CCC and the BENS are working to identify specific goals and objectives with the intent of encouraging congregations to commit to environmental stewardship in "caring for creation."

To underscore its commitment to promote meaningful environmental education, DEPRM holds a board position in The Maryland Association for Environmental and Outdoor Education (MAEOE) and county staff takes a leadership role at the state level serving as chair of the MD Green School committee.

In January 2005, Baltimore County Executive James T. Smith, Jr. announced *Green Renaissance*, a series of cutting-edge environmental initiatives to insure the protection of natural resources through collaboration with communities, businesses, government agencies, environmental groups, and the development community. Baltimore County's education and outreach activities, including its *Green School* initiatives and *Growing Home Campaign*, support *Green Renaissance* goals and objectives.

Environmental education program activities in 2006 were accomplished by one part-time staff person working approximately 30 hours/week. Other DEPRM staff members, student interns, citizen volunteers, and program partners provided additional assistance.

The *Let's Be Partners/Getting Greener Schools* education program, as well as other ongoing outreach efforts initiated by DEPRM, and all supporting materials developed or

used in the program to date have been fully described and exhibited in previous NPDES Annual Reports 1995-2005. The following section introduces new or expanded components and initiatives; describes the 2006 program implementation; outlines the roles played by program partners; discusses public response and the results of program evaluation/assessment; and suggests actions to update materials, expand certain successful components, and develop new initiatives.

4.2 Program Description

4.2.1 Baltimore County DEPRM's Environmental Education Programs

*"Let's Be Partners... Water Pollution: What We Can Do To Reduce and Prevent It"
"Getting Greener Schools" The MD Green School Program in Baltimore County*

New or Expanded Program Components: In order to increase effectiveness and deliver the pollution prevention message to a wider audience, the following initiatives were developed or expanded:

4.2.1.1 School Initiatives

Support for all schools: To enhance opportunities for high quality, effective, authentic environmental education and community stewardship at public and private schools Pre K-12 in Baltimore County, DEPRM provided the following:

Staff development: In 2006, DEPRM contributed approximately 80 sessions and presentations at training workshops for staff development held in Baltimore County and in the region. Topics included *The MD Green Schools Program, Envirothon*, schoolyard landscape design for water quality enhancement, schoolyard habitat restoration, schoolyard maintenance protocols, conservation landscaping components, invasive species, and developing partnerships for stewardship. In cooperation with BCPS Office of Science, site-based assistance and training was also provided for teachers in use of technical equipment, enhancement of field skills, identifying and strengthening curriculum connections, and developing lesson plans and timelines. Teacher training was accomplished at statewide and regional conferences including the North American Association for Environmental Education (NAAEE), the Association of Independent MD Schools (AIMS), The National Science Teacher's Association (NSTA), Irvine Nature Center's Habitat Stewards Training, and The MD Association for Environmental and Outdoor Education (MAEOE).

As described in the 2005 report, "From My School to the Bay...A Chesapeake Bay Watershed Adventure" was a major initiative in the summer of 2005. Recognizing the critical role that principals play in how their school interacts with community, in 2006, DEPRM partnered with the BCPS Office of Science, CBT and the Irvine Nature Center to follow-up on this professional development experience in environmental education for the principals of 25 local schools. Goals of the initiative were to (1) garner "top-down, administrative buy-in" for site-based, experiential education that uses the environment as an integrating context for learning, (2) show how the school building and landscape can model best management practices, and (3) demonstrate how community partnerships can enhance learning. There is significant indication that the effort was a success. In the year following the event, DEPRM received requests from several of the schools regarding the

desire for more information about how the *Green School* model might be employed at their school. A public school administration Green School committee was instituted for the purpose of assisting schools in adopting the MD Green School model. And, four of the schools that participated in 2005 submitted successful Green School applications in 2006.

The following workshops and events targeting educational staff are currently being planned for 2007-08:

With Irvine Nature Center: Habitat Stewards Fall 2007;

With BCPS, Schoolyard Habitat for middle and high schools, 2008, Green Schools curriculum development summer 2007-8; AP Environmental Science.

With DNR, Aquatics Resources Training;

With MAEOE, 2007 conference workshops and short sessions, mentoring for prospective Green Schools, pre-application review sessions, displays.

With the Urban Nutrient Management Workgroup: follow-up grounds supervisor's workshops on nutrient management and conservation landscaping; nutrient Management for golf course supervisors.

With MAEOE, St Paul's School for Girls and The Jemicy School: The Association of Independent Maryland Schools (AIMS) Conference for private schools; special topic workshops.

With BCPS, MAEOE conference sessions and workshops, and a conference track for principals and administrative staff;

With the Forbush School, workshop at the annual MANSEF conference fall 2007.

With parochial school teachers, workshop at the annual conference for catholic schoolteachers, fall 2007.

With MAEOE national Green School Symposium in Phoenix, Arizona December 2007.

With DEPRM staff, presentations at the Partners in Community Forestry National Conference, November 2007.

Planning and assessment tools: DEPRM provided over 100 enhanced aerial photographs for site analysis of school properties and the surrounding neighborhood. All were titled to highlight the school's "watershed address." These GIS products, rolled or mounted on foam core board, displayed watershed boundaries, land use, streams, riparian buffer zones, forest cover, impervious surfaces, soils, and/or topography. They were designed for planning and display purposes and were provided at no cost to the schools. DEPRM, in cooperation with BCPS, the Forestry Board, the DNR, and local universities and watershed organizations, provided additional technical support and assessment tools. For school and schoolyard assessments, DEPRM provided copies of the DNR's *Check-up for Schools*. The latest edition is expanded to include assessment for schoolyard habitat.

DEPRM provided copies of the USFW publication *Native Plants for Wildlife and Conservation Landscaping* to schools as a reference guide for planning school and

community habitat restoration projects. DEPRM also provided *Plant Invaders of Mid-Atlantic Natural Areas* for distribution to schools and communities interested in (1) identifying troublesome plants and (2) using environmentally sound prevention and control methods, and (3) identifying appropriate native plants for installation following removal of invasive plants. Other fact sheets and brochures were made available upon request.

Presentations, demonstrations, and demonstration sites: PowerPoint, interactive events, and demonstration programs were conducted for teachers, students, and principals for the purpose of highlighting opportunities and inviting discussion. To promote more sustainable landscape improvements on school properties and enhance water quality in local streams, DEPRM developed PowerPoint presentations highlighting the process of identifying opportunities to act, how to establish partnerships to assist in accomplishing projects, and how to engage school administrations and facility managers. Additional topics such as Integrated Pest Management (IPM), BayScaping with Native Plants, Schoolyard Habitat Restoration, Controlling Invasive Plants, Water Quality Monitoring, Exploring Environmental Careers, and other titles were also made available. For schools interested in adopting the *MD Green School* model, staff provided information and guidance for school administration, faculty, PTA, and students. Information was provided to potential program partners for schools, such as local garden clubs, scout troops, watershed organizations, and businesses. These programs served as models for other counties and states in the region.

DEPRM staff members volunteered time to maintain the BayScape demonstration garden outside their Baltimore County Courthouse office (Figure 4-1). For several years, Baltimore County DEPRM has provided funding for planting stock and mulch applications. In 2006, routine maintenance was conducted in spring and fall.



Figure 4-1: DEPRM staff members volunteered time for maintenance of DEPRM's demonstration BayScape garden. This garden demonstrates how native plants can be used effectively in the more formal landscape settings that are often available in urban and suburban communities.

Special events and opportunities:

- Envirothon: DEPRM staff trained teachers from eleven local public schools in preparation for this event; DEPRM developed and administered the testing component.
- Local school festival events: DEPRM provided interactive events for children and families highlighting environmental and watershed topics.
- Environmental Career Exploration: DEPRM hosted or participated in elementary, middle and high school level career fairs. Several paid internships were made available for students at targeted local high school and college students. The internship opportunities at DEPRM allowed students to work with resource professionals, gaining valuable experience in watershed planning and monitoring, GIS, education and outreach, environmental health, ground water and stormwater management, and agricultural preservation. Due to the program's success, it will be continued in 2007.
- Capital Projects near schools: DEPRM encouraged and facilitated school awareness and participation in DEPRM's capital projects to enhance water quality.
- Green Schools: DEPRM provided ongoing program support special programs hosted by Baltimore County's recognized Green Schools. Successful school events such as BayDays at Hereford Middle School, Field Day at Sparks Elementary, and Earth Day and World Water Monitoring Day at Towson High School are used as models. Many of the county's 25 recognized Green Schools served as mentors to other schools in the county and region. Teachers at Sparks ES, Hereford MS, and Towson HS took the lead in these efforts.
- DEPRM fostered partnerships between schools, local watershed organizations, businesses, and the community to increase participation by DEPRM's program partners.
- DEPRM assisted with CBT grant writing.
- DEPRM assisted in the preparation of *MD Green School*, *DNR PLANT* Award and other awards and recognitions.
- GIS maps: DEPRM provided GIS aerial maps and site analyses of local schools for the purpose of watershed awareness, landscape analysis/assessment and development of a plan for resource management and demonstrations on the sites.
- Program model: DEPRM presented the MD Green School program model at the International EMECS 2006 Conference in Caen, France.

Books, materials: DEPRM provided technical assistance, projects lists, plant lists, enhanced aerial photography of school properties and their watersheds, planting guides, site-assessment tools, Green School applications/information, posters, videos, and books. All materials obtained or developed to assist schools are made available upon request and at no charge.

Networking: DEPRM provided assistance in locating programs and resources, contacts for planting stock, mulch, funding, technical support, partnerships, and other assistance.

Information about the *Green Schools/Green Center* program: DEPRM conducted programs to introduce the *MD Green School/Green Center* model, provide professional development, find community partners, help with preparing applications, and provide

assistance in *Green School* type activities. DEPRM assisted with facilities communication concerning planned schoolyard habitat and stormwater management projects on school properties. Staff assisted the Pearlstone Center, Marshy Point, Parks and People Foundation, and many local schools including Dundalk HS and MS, Berkshire ES, Chadwick ES, and Hillcrest ES with their 2006 Green School/Center applications. Website access to program information was maintained on the county site and with a link to www.maeoe.org.

Opportunities for service learning, internships and volunteering: In 2006, DEPRM staff supported numerous internships that provided opportunities for broad employment experience, volunteerism, and service at events and activities hosted by the department and its watershed partners. Some of the activities/venues included: data collection, watershed festivals, school and faculty presentations, tree plantings, Project Clean Stream, and presentations at an international environmental conference in Caen, France.

Recognition: DEPRM provided recognition for schools and individuals that were involved in responsible environmental action and that served as models in their community. In 2006, the recognitions included *MD Green School* and *Green Center* awards, Towson Gardens Day awards, Chesapeake Bay Trust Teacher of the Year, Green Renaissance awards for principals of all the County's Green Schools and Green Centers, County Executive Citations and Proclamations, and (in cooperation with DNR) Governor's Citations. A large laminated map identifying and highlighting all the *Green Schools* in Baltimore County was provided for exhibit in the DEPRM lobby, the offices of BCPS Office of Science and the Baltimore County Superintendent of Schools, and at public presentations at schools and organizations around the County.

Two nominations for special award recognitions were particularly notable. To acknowledge outstanding contributions by individual teachers at Baltimore County Green Schools, Mr. John Sandkuhler of the Forbush School at Sheppard Pratt (Figure 4-2) was nominated for the *2007 Chesapeake Bay Trust Teacher of the Year* at the high school level. Ms. Elizabeth Fair from Sparks ES was nominated at the elementary level by her principal. Both teachers received top honors and were formally recognized at ceremonies in Annapolis and at the MAEOE Conference in February 2007 in Ocean City, MD.

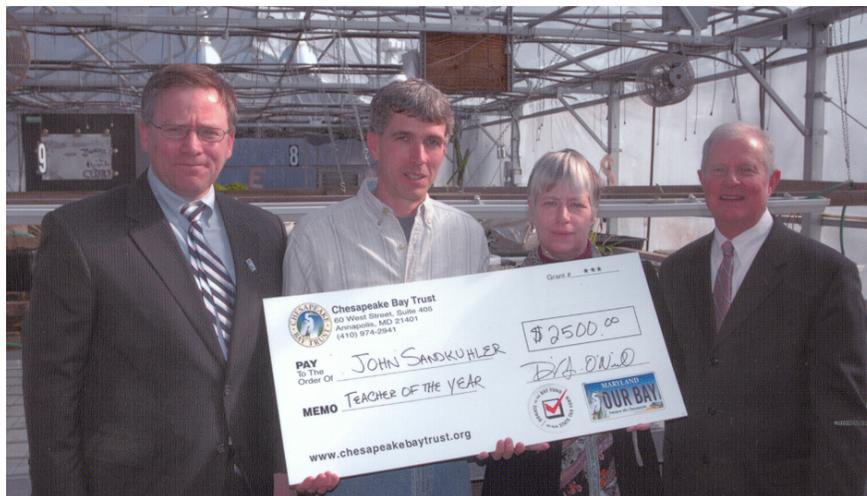


Figure 4-2: Baltimore County Executive James T. Smith, Rebecca Bell (MSDE), and David O'Neill (CBT) join John Sandkuhler of the Forbush School at Sheppard Pratt in Towson. Mr. Sandkuhler was nominated in 2006 as the 2007 Teacher of the Year at the high school level.

Mr. Gene Flanagan of the Rosedale Alternative School, received the *Tawes Award for a Clean Environment* for his remarkable work with at-risk youth and his activities to protect and restore County watersheds. A leader of environmental initiatives at his school in 2006, he is guiding efforts at the two high schools housed at Rosedale to apply as a *Maryland Green School* in 2008.

Recognizing the importance of citing outstanding achievement in environmental education and stewardship, DEPRM continues to explore award opportunities and promote and submit names for local awards such as the DNR's PLANT community award, Tawes Award for a Clean Environment, Facility Manager of the Year, CBT Teacher of the Year, and others.

Support for stewardship projects: In 2006, DEPRM highlighted tree-related topics at over 60 school and community presentations. Services provided included: assisting with planting projects and removal of invasives, conducting environmental education programs about the benefits of trees, teacher training, leading planting demonstrations, providing technical assistance with species and site selection, funding opportunities, providing tree order delivery at no cost to schools, and \$10 discount coupons in the county's *Growing Home Campaign*. DEPRM assisted in planning and advertising local stewardship projects such as Project Clean Stream hosted by the Alliance for the Chesapeake Bay. Students and scouts potted seedlings at the County's nursery. Baltimore County's 25 Green Schools received a 1:1 match on all DNR Tree-Mendous Maryland tree orders.

Green Schools in Baltimore County:

As instituted in 1999, *The Maryland Green School Award Program* recognizes schools that (1) use the environment as an integral part of the instructional program, (2) model conservation best management practices (BMPs) in the school building and grounds, and (3) address environmental issues through partnerships in the community.



Baltimore County leads the state in developing and recognizing model schools. As of April 2006, twenty-five public and private schools had attained *MD Green School* status. Baltimore County's *Green Schools* set an example for the community. They plan, implement, and maintain schoolyard and community projects that provide stormwater management, water conservation, sediment control, integrated pest management, and other water quality benefits. Table 4-1 provides examples of the educational projects in which they have been involved. DEPRM works with potential *MD Green Schools* to provide training, develop program, find community partners, and assist with projects.

Table 4-1: School and Community Environmental Education Projects Implemented by Green Schools Located in Baltimore County

Water Quality Project	Dundalk HS	Ascension	Hillcrest ES	Hereford	Pine Grove MS
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	(2006)	Catholic School	(2006)	MS Re-ap	(2006)
Site analysis	✓	✓	✓	✓	✓
Tree planting	✓		✓	✓	✓
Riparian planting		✓		✓	✓
Bioretention planting	✓	✓			✓
Butterfly garden		✓	✓	✓	
SAV		✓			
Native plants	✓	✓	✓	✓	✓
Turf reduction			✓	✓	✓
Removal of invasives		✓	✓		
Green Roof	✓				
Water quality monitoring			✓	✓	
Energy Conservation	✓	✓	✓	✓	✓
Mulching		✓	✓		✓
Habitat restoration	✓	✓	✓	✓	✓
Litter control	✓	✓		✓	✓
Erosion control					✓
IPM		✓	✓		
Outdoor learning structures/signs	✓	✓	✓	✓	✓
Recycling	✓	✓	✓	✓	✓
Environmental Celebrations	✓	✓	✓	✓	✓
Mentoring	✓	✓	✓	✓	✓

The MD Green School Award Program provides a balanced framework for planning environmental learning, making the curriculum connections, and accomplishing pollution prevention on school landscapes. Recognizing the uneven distribution of *Green Schools* in the County previous to 2006, DEPRM explored new ways to promote and facilitate the integration of environmental learning and awareness in local schools Countywide and with a targeted school population (elementary, middle and high school levels). Following the professional development event for principals in two target areas on the east and west sides of the County: Dundalk (Baltimore Harbor and Back River watersheds) and Woodlawn (Gwynns Falls watershed), several schools initiated actions that will ultimately lead to application as a Maryland Green School. In 2006, 4 of the 6 schools that applied were ones that participated in this professional development experience. Baltimore County now has recognized Maryland Green Schools serving as models in all parts of the county. A map of Green School location is provided in Exhibit 4-1.

In order to introduce the *MD Green School* concept and initiate the process, in 2006, staff met with school administration, teachers, and/or students of over 100 of the County's public and private schools. Follow-up meetings were held to select activities, identify BMPs, develop community partnerships, obtain technical support, identify resources, and in some cases, proceed through the award application process. Although several schools were working towards submitting a *Green School* application in the future, many schools were at "entry level." Staff and students were just beginning to explore ways to establish curriculum connections and enhance environmental education opportunities for all

students at the school. A goal for 2007 through 2010 is that these schools be ready to consider application for *MD Green School* recognition. A long-term goal is to have all schools in Baltimore County operating as *Green Schools*, many receiving full recognition as a *MD Green School*, and all recognized *Green Schools* re-applying regularly to maintain their status. Additionally, all outdoor education facilities and nature centers should operate and be recognized as Maryland Green Centers.

In 2006, the *Getting Greener Schools* effort in Baltimore County involved program awareness and working with students, staff, parents, and community partners at a number of local schools as they planned and carried out the activities that must be documented in a *Green School* application. In April 2006, 6 County public schools were recognized. They include: Hillcrest ES, Berkshire ES, Chadwick ES, Dundalk MS, Pine Grove MS, and Dundalk HS. Hereford MS, first recognized in 2002 (Figure 4-3), was successful in its efforts to be re-awarded for sustaining its operation as a MD Green School. The Forbush School re-applied for the second time and will be eligible for “emeritis” status. DEPRM continues to work with Baltimore County’s *Green Schools* and will be ready to assist the schools that are eligible for re-application in 2007 and 2008.



Figure 4-3: Representatives from Hereford Middle School were Awarded *Green School* Recognition at the National Aquarium in Baltimore City, April 2002. The school was eligible for re-application in April 2006. DEPRM staff attends their annual Bay Days celebration each year and arranges for participation by other program partners such as the Living Classrooms Foundation. Teachers and students at Hereford MS serve as mentors for prospective Green Schools. In 2006, they assisted St Paul’s School for Girls, a private school preparing an application for spring 2007.

All newly awarded *Green Schools* received a *MD Green School* Flag, a Maryland Governor’s Citation, and Baltimore County Executive Citation, a 5’ native tree (courtesy of DNR Tree-Mendous MD), field guides for their classrooms, recycling bins, and other gifts. In addition, as long as Green School or *Green Center* status is maintained, the school or center may receive up to 50 free trees/year with free delivery in a 1:1 match incentive offer provided through cooperation of the MD DNR Tree-Mendous MD

Program and DEPRM. This incentive, first offered in Baltimore County, is made available statewide for all schools and centers that maintain their *MD Green School/Green Center* status. Schools re-applying to maintain their *MD Green School* status received \$100, a plaque, citation, and a free field trip on a Living Classrooms Foundation vessel. Schools re-certifying for the second time (sustaining their Green School operations for 8 years) received a limited series framed photograph with an environmental theme.

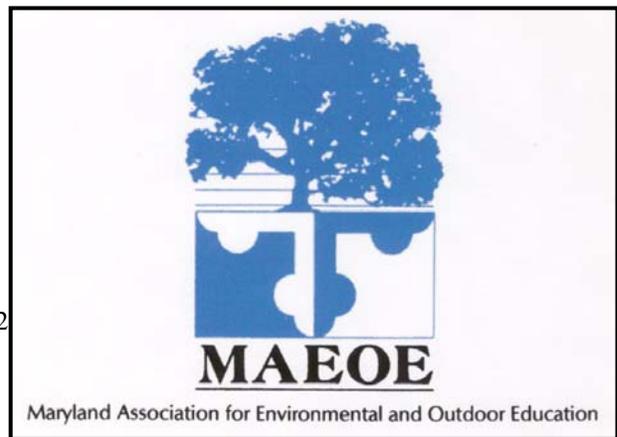
Many of Baltimore County's *Green Schools*, their staff and students, accepted DEPRM's invitation to participate as mentors at the 2006-7 MAEOE conferences and at upcoming staff development workshops. Following DEPRM's lead, MAEOE will send a letter of recognition to all school superintendents in Maryland to increase program awareness, and recognize the accomplishments of their newly awarded *MD Green Schools*.

In order to assure programmatic support for schools working to integrate environmental education across disciplines, a model for *MD Green Centers* was promoted. Nature centers and outdoor education facilities receive statewide recognition for efforts to support *Green Schools*, model conservation best management practices, and maintain community partnerships. As of spring 2006, there are 11 recognized *MD Green Centers* in the state. The Irvine Nature Center located in Stevenson, MD was recognized as Baltimore County's first *Green Center*. Staff at Irvine host annual festivals and workshops, and provide services to Baltimore County and City schools. They assist Baltimore City and County schools with *Green Schools* applications. DEPRM is currently working to promote the *Green Center* program to potential *MD Green Centers* in the County including Benjamin Banneker Park, the proposed Herring Run Watershed Association Education Center, Marshy Point, The Pearlstone Center, and Oregon Ridge. In recognition of the Baltimore County/Baltimore City Watershed Agreement, DEPRM assisted the Parks and People Foundation (Baltimore City) in their preparation to submit a Green Center application in 2006. This organization participates in a task force with the Irvine Nature Center and other stakeholders to promote sustainable operations and the Green School model in city schools.

This excellent program (*MD Green Schools/Green Centers*) raises environmental awareness among school administrators, facilities managers, teachers, students, parents, school neighbors, and nature centers. It promotes and rewards the implementation of conservation BMPs and environmental stewardship. Because of the prominent location of schools in all neighborhoods, *MD Green Schools* are highly visible models for other schools and the community at large. The federal Environmental Protection Agency (EPA), and surrounding states and jurisdictions (VA, DC, PA, WVA, DE) continue to explore this program as a program model for implementation. Further information about the *MD Green School/Green Center* program is available on the MAEOE website:

www.maeoe.org or Baltimore County DEPRM's webpage at www.baltimorecountymd.gov/go/deprm.

Leadership in MAEOE: MAEOE, with its broad-based membership, is the preeminent environmental education organization in the



State of Maryland. It provides a forum for the exchange of information, sponsors the *MD Green School Awards Program* and hosts an annual environmental education conference for professional development. In 2006, MAEOE explored new initiatives that would result in higher quality more accessible environmental education in Maryland. These include 1) the option of partnering with Towson University to certify formal and non-formal teachers, and 2) partnering with other stakeholders in developing an environmental education plan for the state.

Because of Baltimore County's continued leadership and success with assisting schools and promoting environmental education 1999-2006, DEPRM has maintained a position on the governing board of MAEOE and staff chairs the *MD Green School Committee*. MAEOE, the preeminent environmental education organization in the State of Maryland, brings together a wide variety of players from public, private, and non-profit sectors for the purpose of promoting environmentally literate and active schools and communities. Its major projects are *The MD Green Schools Awards Program*, *Schoolyard Habitat* project support, maintaining an informational website, and sponsoring an annual 3-day conference promoting high quality environmental education. Through its participation in MAEOE, Baltimore County has a voice in planning and directing the course of environmental education in Maryland. The county's success and leadership serves as a model for the State and other Maryland counties.

During 2006, working in committee with representatives from the MAEOE Board, DNR, the Chesapeake Bay Trust, classroom teachers and administrators, and representatives from environmental organizations around the State, the *MD Green Schools* program was reviewed and evaluated. Actions to streamline the application process, identify additional incentives and awards, and develop the capacity to sustain contact and support for recognized Green Schools were planned and implemented. Locally, a partnership was forged whereby the BCPS Office of Science will create a committee to actively promote the *MD Green School* program for the 162 public schools in its system. A curriculum development committee was formed in cooperation with MSDE and BCPS to strengthen curriculum connections and align Green School activities with the Voluntary State Curriculum (VSC). Environmental Education certification for non-traditional educators is being planned.

Other School initiatives:

Outreach to faith-based school systems: An evaluation of the geographic distribution of *Green Schools* and the number of independent schools partnering with the County, led to an initiative to reach out to faith-based schools Pre K-12. Presentations at the AIMS Conference in 2005 and 2006 were designed to reach these audiences. Efforts were made to maintain a dialogue and provide support to Catholic schools operating as *MD Green Schools*. Continued meetings were held with the director of environmental education for Jewish schools and community centers in the County and Baltimore City. DEPRM will participate in an advisory role for planning environmental education and outdoor programs for Jewish school children and families at the Pearlstone Center near Reisterstown. DEPRM provided a Green School display for the first annual Jewish environmental conference held in fall 2006. Staff has been invited to participate in

follow-up planning to encourage environmental stewardship and *Green School* activities at schools in the Jewish community.

Outreach to Private Schools and Local Colleges: In 2006, DEPRM targeted local colleges, universities, and private schools and serving students with special needs as well as providing regular Pre K-12 programs. College and university participation involved classroom instruction, mentoring graduate students, and campus festivals as well as awareness and stewardship projects with environmental clubs and interested campus groups.

Because non-public schools operate as independent entities, efforts were made to reach individual schools to raise awareness about the environmental education opportunities available to them. In 2006, many were involved in on-campus projects for habitat restoration or water quality enhancement and hosted education programs and festivals. In fall 2006, DEPRM partnered with MAEOE and Jemicy School to provide a workshop for independent schools at the annual AIMS Conference (Association of Independent MD Schools). This conference is an annual event that draws broad participation from most of the independent schools in Maryland. As a direct result of this outreach effort, the expectation is that the county will see an increase in Green School applications from independent schools by spring 2007.

Environmental Career Exploration and Internships: Again in 2006, students from targeted county high schools were offered paid summer internships working with DEPRM staff. Additional internships were provided for several college students. DEPRM staff provided environmental career information and practice interviews at numerous school career fairs around the county. To support these efforts and promote environmental careers, DEPRM developed two fliers for distribution on the topics: internship opportunities, an introduction to environmental careers, job titles, and suggested coursework. "Take Your Child to Work Day" was celebrated in late April as an opportunity to introduce young people to environmental careers.

4.2.1.2 Outreach to Homeowners, Citizen Groups, Businesses, and Landscape Managers

Through workshops, presentations, community meetings and festivals, contact with chambers of commerce, local coalitions, and individual businesses and trade associations, DEPRM sought voluntary commitments to alternative landscape design and maintenance practices to reduce the flow of pollutants to local waterways, drinking water reservoirs and the Chesapeake Bay. Citizens were reached through multi-media presentations in a variety of settings in an effort to encourage the planning and installation of functional sustainable landscaping. Through DEPRM's participation on the UNMWG and the CCLC, the department has access to representatives in the lawn care and nursery industries and the opportunity to contribute to presentations at trade shows and training workshops for these audiences. Increasingly in 2006, DEPRM took every opportunity to work through coalitions to affect policy decisions and strategic planning that will result in long term goals and objectives related to environmental protection and resource management.

Green Renaissance: In early 2005, the Baltimore County Executive announced the *Green Renaissance* Program. It involves a series of environmental initiatives to ensure the

protection of natural resources through increased collaboration with communities, businesses, government agencies, environmental groups, and the development community. Actions and initiatives include the Montreal Process-Criteria and Indicators to develop a strategy for forest sustainability, the *Growing Home Campaign*, and the Rural Residential Stewardship Project. The goal of these efforts, supported by Chesapeake Bay Small Watershed Grants, is to educate smaller-lot rural residential owners about their role as “managers” of common forest and stream systems, implement reforestation projects through the Rural Residential Stewardship Project and to develop and implement a program to increase urban forest cover using market incentives through the *Growing Home Campaign*. Other major components of *Green Renaissance* will involve an enhanced land preservation strategy and water quality/watershed management program.

The *Maryland Green School Program* in Baltimore County is aligned with the Green Renaissance goals and objectives. In June 2006, the Baltimore County Executive invited principals, teachers, and students from the County’s 25 Green Schools and the one Green Center to a garden reception. Green Renaissance citations were presented in recognition of their leadership and accomplishments. The County’s Office of Communications arranged for media coverage.

Conservation and Sustainable Landscaping information: DEPRM continued its literature distributions at educational events, festivals, the County’s public libraries, schools, Department of Permits and Development Management, and DEPRM’s lobby. In addition, BayScapes color brochures were distributed by DEPRM’s Environmental Impact Review, Critical Areas, and Marina sections. The brochure is provided in cooperation with The Alliance for the Chesapeake Bay (ACB).

DEPRM distributed copies of four environmental publications “Native Plants for Wildlife Habitat and Conservation Landscaping”, “Plant Invaders of Mid-Atlantic Natural Areas” and the “*Growing Home*” program information. These were made available to citizens, County libraries, schools, and community groups. DEPRM also worked with the Baltimore County Soil Conservation District to distribute the booklet “From My Backyard to Our Bay: A Homeowner’s Guide to Improving Our Environment and Drinking Water”. In 2006, over 300 copies of this publication were distributed to citizens and community groups through the DEPRM office. DEPRM assisted MDA in development and review of a new brochure “Choosing a Lawn Care Company”. Copies were made available in DEPRM’s lobby and at special events.

DEPRM and the ACB sponsored the annual BayScaping awards as part of the 2006 Towson Gardens Day Festival. In 2006, the award was presented to a Catholic nun who has led efforts to control soil erosion and establish plantings on the institutional property. The award included a framed certificate, a 5 ft native shrub, species description, planting instructions, and a BayScaping color brochure. In addition to the community award presentation, Towson Gardens Day in April was designated “Arbor Day in Baltimore County” by the reading of an official County Executive Proclamation. DEPRM hosted a tree planting display, provided information and printed literature, and gardening advice for citizens. This day is also proclaimed “Take Your Child to Work Day”, an opportunity DEPRM uses to introduce young people to environmental careers.

As part of a region-wide review and evaluation of conservation landscaping initiatives in the Chesapeake Bay Watershed, DEPRM staff served on an advisory committee, the Chesapeake Conservation Landscaping Council (CCLC), to identify and review existing programs and implementation, training opportunities and local demonstration sites. Ongoing efforts include the establishment of performance standards, identification of training needs and opportunities, assessment and evaluation tools, and exploration of marketing strategies. To facilitate communication among providers and interested parties, a list-serve is administered by the US Fish and Wildlife Service. Information about conservation landscaping was provided to the Baltimore County Advisory Commission on Environmental Quality as background information for a report to be completed in early 2007.

New Materials: The following new materials were developed: Environmental careers and internships flyers, *Growing Home* materials, Neighborhood Source Assessment, and various informational PowerPoint and display presentations.

Community Events and Public Outreach: DEPRM sponsored and supported a wide variety of interactive events for families, informational displays, and presentations highlighting water quality, stormwater topics, and stewardship opportunities. Major highlights included a variety of water quality issues, environmental temporary tattoos, a Flyswatters (IPM) craft, storytelling, and other interactive games and activities.

Two Household Hazardous Waste Collection Events were held in spring and fall 2006. Approximately 2,300 drop-offs of a variety of hazardous materials were made. In addition, citizens were able to drop off hazardous waste items at the County's Eastern Sanitary Landfill from April through October (see Section 3.5 for a summary of material collected).

DEPRM hosted booths and interactive activities at numerous festival events in local neighborhoods and schools throughout the County. Tree planting, partnering with a local Green School, the BayScapes program, and conservation landscaping were topics highlighted at many community group meetings. DEPRM lent its support to local watershed organization events in several watersheds including the Jones Falls, Patapsco, Gwynns Falls, and Herring Run. Additional presentations were made to faith communities, garden clubs, scouts, as well as Countywide and regional audiences. A listing of these community events is included in Appendix 4-1.

Community Partnerships: In 2006, DEPRM strengthened its partnerships with local watershed organizations, adjacent jurisdictions, non-profit environmental organizations, and other County agencies to achieve common water quality and public education goals. Since the first signing of the *Baltimore Watershed Agreement* on October 3, 2002, Baltimore County has shared databases and other resources. In 2006, with the re-signing of the agreement, DEPRM staff provided presentations to Baltimore City public and private schools, other non-Baltimore County schools, and other regional audiences on over 30 occasions. DEPRM staff participated in the Herring Run Watershed Association education program planning workgroup. The group provided recommendations for a new community and school environmental education program to be unveiled at the opening of the new building in spring 2008.

Baltimore County Public Libraries: DEPRM's environmental education materials and presentations have often been used at County libraries. In 2006, BayScaping color brochures were made available in bulk to the 16 branch libraries for distribution to citizens, as well as information about tree availability through the Tree-Mendous MD Program in Baltimore County. In 2006, the libraries as well as the County Senior Centers, and Parks and Recreation facilities distributed over 5,000 *Growing Home Campaign* brochures with the \$10.00 coupon. The libraries as well as County senior centers, and parks and recreation facilities distributed 10,000 brochures with the \$10 tree coupon. *Growing Home* posters with two themes "Plant Your Own Family Tree" and "Who Says Money Doesn't Grow on Trees?" were displayed at these County facilities.

Federated Garden Clubs and Master Gardeners: Since 1994, DEPRM has provided many presentation programs for local garden clubs and Master Gardener's groups. In 2006, garden clubs hosted conservation landscaping and pollution prevention presentations using DEPRM materials at garden clubs, schools, and in communities around the County and region. At the request of Federated Garden Clubs of MD, "garden clubs" were added to the list of local resources available to schools (as provided on DEPRM's PowerPoint presentation and a handout). Baltimore County citizens would be well-served by the establishment of a Master Gardeners program in the County through which additional technical support can be made available to schools and community groups.

Boy and Girl Scout projects: To assist scouts in planning and implementing environmental projects for their Eagle Badge or Gold or Silver Awards, a list of potential projects was provided to scout organizations and individual scouts upon request. Presentations and demonstrations were provided for many scout troop meetings and community events. DEPRM staff worked to coordinate planting projects with Boy Scout troops and served as environmental consultant to Girl Scouts of Central MD (GSCM), providing planning assistance for local Baltimore County troops for their annual April encampment.

Communication media and County Webpage: In an attempt to reach a broader audience, environmental videos were broadcast in cooperation with the County Office of Communication and Comcast Cable. They aired on the County's cable channel 4-5 times each week during 2006. A representative of Comcast Cable reports 240,000 local County subscribers. The County's *Growing Home Campaign* aired ten-minute educational segments daily throughout the month of May 2006.

Additional media and press coverage of the *Growing Home Campaign* during 2006 included:

Television

- WJZ TV - Earth Day 2006. A 10-minute educational interview about tree planting and the *Growing Home Campaign*.
- Fox 45- Interview with County Executive Jim Smith about *Growing Home*
- WBAL TV- Carrie Engle promotion of *Growing Home* on her gardening show
- Fox 45 TV- Gretchen Hanson promotion of *Growing Home* on her gardening show
- Radio- WCBM Radio- Ten minute interview with County Executive and Growing Home Coordinator

Newspapers -

During 2006, articles about the *Growing Home Campaign* appeared in:

- Patuxent Publishing- Catonsville, Towson
- Dundalk Eagle
- Baltimore Sunpaper
- The Baltimore Examiner
- The Bay Journal
- Baltimore County Senior Digest – Balto. Co. Dept. of Aging

Tree-Mendous MD Program information, *Green School* information and applications, pollution prevention messages, environmental careers, and additional program services were incorporated into the department's website:

www.baltimorecountymd.gov/go/deprm. Web offerings include: Kid's Pages, environmental topic information, resources, environmental careers, internships, related links, volunteer and stewardship opportunities.

The *Growing Home Campaign* website www.baltimorecountymd.gov/go/trees was introduced in April 2006. Information included environmental education on the multiple benefits of planting trees, including: (1) slowing stormwater runoff and reducing the cost of controlling stormwater, especially in urban areas, (2) reducing erosion, (3) filtering air and water by absorbing air pollutants and fertilizer and pesticide runoff. A cash incentive for homeowners to plant a tree in their yard in the form of a \$10 coupon redeemable toward the purchase of a qualifying tree was available online. The \$10 coupon and a 4 page educational brochure titled 'Plant Your Own Tree' were available for printing.

During 2006, the results of the *Growing Home Campaign* website included:

- Views of web homepage -over 5,000
- "Plant Our Own Tree" brochure and \$10 tree coupon downloaded PDF- over 5,000
- Qualifying tree plant list downloaded PDF- over 1,000

During 2006, information and links to the *Growing Home Campaign* website appeared on:

- Baltimore County Homepage www.baltimorecountymd.gov
- E-Stream (Balto. Co. DEPRM) email newsletter
- Community Updates email newsletter (Balto. Co.)
- Herring Run Watershed Assoc. www.herringrun.net
- Baltimore County Professional Fire Fighters Association www.local311.org
- Baltimore County Public Library Information website www.bcpl.info

In cooperation with the County's office of Communication and Comcast Cable, the County's new Growing Home Campaign aired ten-minute educational segments daily throughout the month of May 2006. DEPRM provided an educational interview about Growing Home on Earth Day, 2006 on local TV.

The Growing Home Campaign website www.baltimorecountymd.gov/go/trees was introduced in April 2006. Information included environmental education on the multiple benefits of planting trees, including: (1) slowing stormwater runoff and reducing the cost of controlling stormwater, especially in urban areas, (2) reducing erosion, (3) filtering air and water by absorbing air pollutants and fertilizer and pesticide runoff.

Newspaper coverage of the Growing Home Campaign included the Baltimore Sun, local Patuxent Publishing newspapers, the Bay Journal, and the Baltimore Examiner.

Additionally, these media venues provided coverage for other DEPRM projects and events: The Sierran, The Bay Journal, The Jewish Times, E-News Stream, and the BCPS Principal's Bulletin.

DEPRM Lobby Display: In 2006, an array of printed educational materials of interest to citizens, homeowners and businesses was available in DEPRM's office lobby. The display included functional landscaping, IPM, fertilizer application, mosquito control, native plants, invasive plants, well and septic systems, nutrient reduction, soil erosion control, toxic material disposal, Household Hazardous Waste collection events, and other general topics that increase environmental awareness and promote responsible action.

To make effective use of the available lobby space and to reach the >100 people who pass through the area on an average day, a series of seasonal displays were exhibited. Topics included: Environmental Tips for the Winter Holidays, Planting for Winter Landscapes, *Green Schools*, BayScaping with Native Plants, DEPRM Department Functions and Services, Mosquito Control, Fertilizer Recommendations for Fall, Providing Winter Wildlife Habitat, Household Hazardous Waste, Community Health, and Air Quality, Green Renaissance, responsible lawn care, and the *Growing Home Campaign* brochures and posters. Display vases with examples of native plants, accompanied by descriptive signs and plant lists, were available throughout the year. Chesapeake Bay Trust brochures and grant forms, information about the MD Tributary Strategies Teams and other environmental awareness information materials were also made available.

Urban Nutrient Management Workshops: As part of DEPRM's contribution to the Urban Nutrient Management Workgroup (UNMWG), staff participated in the planning and promotion of nutrient management workshops targeting professional landscape managers and turf technicians on public and private landscapes. Staff provided information about DEPRM's integrated watershed approach to resource management, its monitoring programs, and its education and outreach activities, and provided contacts for the purpose of expanding participation on the group. An arrangement was made to have a representative from MDA represent the agency on the MD Green School steering committee. The agency will assist in efforts to promote sustainable operations on school landscapes.

Topics addressed by the UNMWG in 2006 included promoting the training sessions for grounds supervisors and technicians; working with the "Green industry" (Scotts Lawn Care, Tru-Green/Chemlawn) to affect policy, product development, and marketing; and nutrient education messages for public schools. Guidelines for golf courses were reviewed in preparation for a training session to be held in 2007. A new brochure "How to Choose a Lawn Care Service That's Right for You...and the Chesapeake Bay" was developed, reviewed, and printed for distribution.

Program use: As Baltimore County's environmental education opportunities and programs continue to evolve, they have remained popular and in demand by citizens, community groups, businesses, and schools. Regionally, they served as models for other communities and jurisdictions. Due to staffing constraints, the selection of events in 2006 was based upon the size and type of audience, the subject matter requested, and the

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likely degree of effectiveness in reaching desired pollution prevention environmental education outcomes.

In 2006, in approximately 300 presentations, various components of the county's educational messages were presented. Over half of these were scheduled as a result of referrals or requests for return visits. Again this year, DEPRM made use of the County's cable channel to reach a broader audience through regular and frequent airing of videos produced by the County in cooperation with Comcast Cable. DEPRM also expanded its office lobby display to take advantage of the potential audience passing through the office each day. In 2006, in the schools, less emphasis was placed on direct individual classroom involvement and greater emphasis was placed on venues for teacher training, facilities management, and school administration (public and private schools).

As part of the County's integrated, comprehensive approach to watershed management, watersheds where comprehensive plans are being implemented were targeted for program presentations. In many instances, opportunities to reach Countywide or regional audiences became available. In some cases, those participating lived within the boundaries of watersheds that Baltimore County shares with neighboring jurisdictions.

The number of events accomplished for specific watershed audiences is shown in Table 4-2. A majority of the events (76%) occurred in 7 urban watersheds: Back River, Middle River, Baltimore Harbor, Patapsco, Loch Raven, Gwynns Falls, and Jones Falls. The Baltimore Harbor watershed is an area where population and high rate of imperviousness suggest significant urban impact on local water resources. The Baltimore Harbor Watershed Plan recommends increased efforts in public awareness, education, and outreach to citizens and groups in this watershed. In 2002, one event specifically targeted audiences in this watershed. Increased efforts to reach audiences in this watershed and others in Baltimore County in 2006 are shown below. In 2006, an effort was made to conduct environmental outreach and education activities to reach citizens in all county watersheds.

Table 4-2: Education Events Conducted for Residents of the County and Region by Watershed Audience, 2006

Watershed	# Events	Watershed	# Events	Watershed	# Events
Back River	25	Jones Falls	25	Patapsco	18
Baltimore Harbor	15	Liberty	2	Prettyboy	10
Bird River	11	Little Gunpowder	3	Countywide	48
Deer Creek	8	Loch Raven	40	Regional	37
Gunpowder River	4	Lower Gunpowder	7	International	2
Gwynns Falls	11	Middle River	8		

Presentations were made to a wide variety of groups. In 2006, DEPRM placed a special emphasis on school audiences K-12. Table 4-3 reports presentation events by type of audience.

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Table 4-3: Education Events by Type of Audience*, 2006

Type of Group/Audience	# Events for each audience
Citizens, Community Group, or Association	42
Public Schools*	64
Private Schools*	55
Special Needs Education	8
College/University	6
Government Agency, facility, group	23
DEPRM Lobby, Duty room	6
Public Library	16
Festival/Show	9
Conference, Workshop, Training sessions	47
Business	4
International	2
Countywide	50
Regional	27

*Notes: Many individual schools were represented at conference and training events; these audiences were logged as one single entry for a public or private school audience, not as individual school presentations. Contact with individual citizens (as opposed to groups) by phone or site visit often provides valuable opportunities for environmental education and outreach. Other than estimating visitor traffic through the office lobby displays and contact with staff in the office duty room, *individual conversations*, although significant, are not currently tracked. Some presentations and events addressed audiences that included several of the groups listed above and thus were entered in more than one category.

A list of program presentations conducted in 2006 is provided in Appendix 4-1. By June 2007, over 80 events were accomplished or scheduled in advance for the year.

The *Let's Be partners* and the *Getting Greener Schools* programs are becoming well known in the community and region. In 2006, more than one out of every two presentations or events resulted from referrals or were return engagements requested due to the success of a previous visit. Increasingly, individuals, groups, and schools asked for the opportunity to take components of the program into their community or organization for presentations. *BayScapes, From My Backyard to the Bay*, native and invasive plant booklets and color brochures were frequently requested in bulk by Federated Garden Clubs of Maryland, the Gunpowder Valley Conservancy, schools, scout and other community groups.

Baltimore County Public Schools and other organizations requested copies of DEPRM's PowerPoint presentations and other *Green School* materials created by DEPRM to distribute to individual county schools. Notably, program directors and supervisory staff of BCPS outdoor education and elementary science requested materials and planning meetings for the purpose of strengthening formal partnerships with DEPRM to enhance environmental education in County public schools. In 2006 new BCPS curriculum piece requiring environmental issue investigation and a habitat restoration project was instituted for 3rd, 4th, and 5th grade students Countywide. DEPRM participated in ongoing teacher training sessions in preparation for this new requirement. Local and regional *MD Green Centers* including the Irvine Nature Center in Stevenson, MD and the National Aquarium in Baltimore City regularly request the use of DEPRM's presentations at multiple events every year.

In the spirit of the County's 2002 Baltimore Watershed Agreement, re-signed in 2006, Baltimore County has shared data, staff expertise, and many components of its successful programs. As a result, the number of events held in regional settings and including audiences outside Baltimore County has increased.

Program evaluation: Currently, all sections in DEPRM are involved in outreach at some level. In 2006, environmental education and outreach activities were supported by increased use of the web, local community newspapers, the County cable channel, the update of certain departmental brochures, the provision of enhanced aerials for site assessments, and the development or redesign of several displays.

Formal and informal mechanisms for program evaluation and assessment are built into DEPRM's environmental education program. Informal user evaluations have contributed suggestions for revision of the presentation materials and the method of delivery. Contact with Baltimore County public and private school teachers who have reviewed or used program components yielded valuable suggestions for improvement or enhancement. Continued requests for the program as a local and regional model, is an indication of the perception of program quality and effectiveness.

Some indications of education program success in 2006 include:

- *Supporting research and anecdotal reporting leads to increased program participation:* A 2004 research study conducted by MAEOE comparing standardized test scores of *MD Green Schools* and *non-Green Schools* found that students at *MD Green Schools* displayed a higher performance level than those at *non-Green Schools* (MSPAP: Science). After controlling for socioeconomic variables and the percent of students receiving special education services, a positive, statistically significant relationship between higher reading and math achievement was indicated. The increase in student achievement is attributed to factors inherent in the nature of environmental education. The full report is available online at www.maeoe.org.

Other studies show similar results. In June 2005 the California Department of Education released the results of an American Institutes for Research study showing improved science scores and other benefits among at-risk sixth grade students in southern California. Students participating in this short term educational study showed significantly higher gains in cooperation, conflict resolution skills and after six to ten weeks, were still engaging in positive environmental behaviors (e.g., recycling) at home. Teachers reported large gains in self-esteem, problem-solving skills, motivation, and behavior compared to students who did not participate. Pre and post surveys showed that science scores improved by 27%. The full study is available at www.air.org.

Locally, teachers at the Regional Institute for Children and Adolescents (RICA) in Baltimore City, report that their Green School activities have resulted in major changes in student interest, appropriate behavior, and student achievement. Staff and students at RICA are working towards submitting a Green School application in spring 2007.

Increasingly, school principals are finding these studies and reports enlightening and are using them in the decision making process related to making the curriculum connections and offering Green School activities at their school.

- *Getting Greener Schools* program: DEPRM has had notable success in its outreach to schools. As shown in Table 4-4, Baltimore County is a State leader in a number of recognized Green Schools during 1999-2006. Through its leadership in MAEOE, Baltimore County serves in an advisory capacity for other jurisdictions. Currently, 18% of *MD Green Schools* are located in Baltimore County.

Table 4-4: *Maryland Green Schools* by Jurisdiction 1999-2006

# Green Schools Awarded	Maryland Jurisdiction
8	Garrett
2	Allegany
2	Washington
1	Frederick
8	Baltimore City
10	Carroll
7	Howard
15	Harford
9	Anne Arundel
25	Baltimore County
9	Montgomery
9	Prince Georges
3	St. Mary's
5	Charles
12	Calvert
2	Queen Anne's
4	Worcester
1	Dorchester
3	Cecil
1	Wicomico
Total: 136	

In 2006, DEPRM initiated *Green School*-type activities at professional workshops and at many public and private schools around the County. Approximately 6-8 local schools and/or centers are expected to be ready to apply or re-apply in April 2007. As of April 2006, Baltimore County had an 85% success rate for re-application by eligible schools. Eleven out of 15 schools eligible for re-application have sustained their operation as a Maryland Green School. The four schools that were eligible but have not re-applied have experienced major changes in staff during the months or years following their initial recognition as Green Schools. DEPRM, in cooperation with BCPS Office of Science is working with these schools to support their efforts.

- *BCPS Green School Committee*: BCPS has adopted a policy of working towards having all of its schools K-12 operate as Maryland Green Schools. To date, 21 of the 162 public schools in the County operate as Green Schools. In part due to the establishment of a formal committee to promote and support Green Schools, many additional schools have begun the process.
- *Professional development*: Invitations for DEPRM staff to present at seminars and training workshops hosted or sponsored by other environmental organizations have increased.
- *Facilities operations*: Through professional development sessions and workshops, DEPRM has led the effort to highlight the important role played by school and

institutional facilities managers. Schools are encouraged to establish and maintain a dialogue with facilities managers and field technicians. The BCPS Office of Facilities reports favorable results from increased communication and awareness of grounds procedures and protocols.

- *Children with special needs:* In 2006, Green Schools programs were initiated and supported at these schools serving children and adolescents with special needs: The RICA School, the Forbush School at Sheppard Pratt, the Rosedale Center, the Jemicy School, the Harbour School at Baltimore.
- *School Building and Schoolyard projects:* Schoolyard and community landscape design and maintenance projects initiated by Baltimore County *Green Schools* have resulted in an increase in: environmental awareness, turf reduction, tree and forest cover in school communities, bio-diversity, wildlife habitat, bio-retention and other SWM, sediment control and other environmental benefits. Since 1999, the 25 *Green Schools* located in Baltimore County have accomplished over 400 projects on school properties or in local communities. Refer to Table 4-1 on page 4-10 for examples of these activities.
- *Schoolyard assessments:* Through the processes involved in schoolyard assessments, problems such as erosion and stormwater management issues, invasive and noxious plants, and other concerns are being identified (by students) on school properties. As part of the process, and through dialogue with facilities managers, students are finding opportunities for appropriate placement of sustainable schoolyard habitat projects.

For example, while conducting a schoolyard assessment, second grade students at Glyndon Elementary School identified several erosion problems on their school grounds. They discussed possible reasons and impacts and then invited their facility manager and County experts to visit and discuss causes and options for erosion control. This is one example of how teachers are increasingly recognizing curriculum connections and students become involved in research and problem solving related to these issues. Making curriculum connections between classroom instruction and the schoolyard, the neighborhood, and the watershed is one essential component of a school's *Green School* application.

- *Habitat restoration projects:* An increasing number of public and private schools have shown interest in removing unused turf areas on their schoolyard campuses and replacing it with no-mow zones and habitat restoration. Over 250 local schools have attended schoolyard habitat workshops or expressed interest in habitat restoration. Most schools involved in projects in their schoolyard routinely coordinate actions with their facility/grounds manager. The habitat workshops sponsored by MAEOE have provided valuable technical support for these activities. In 2007, summer workshops specially targeted to BCPS teachers, are planned.
- *Program use:* In 2006, as in past years, program presentations were requested by a wide variety of groups. With over 1,570 presentations completed since 1994, the County enjoys high rates of referral and invitations for return visits. In 2006, 293 presentations were conducted as a result of requests from citizens, schools, groups, government agencies, non-profits, other counties and agencies, and in watersheds specifically targeted by DEPRM.

- *Program model:* DEPRM's environmental educational presentations and materials continue to be requested by public and private schools K-12, colleges, local and regional organizations, and for training of teachers and group leaders. Many environmental education fact sheets and other materials have been used as models by other organizations and agencies.
- *Program partners:* In 2006, requests for new or continued cooperation or partnerships in environmental education efforts continued. A current list of program partners include:

- Alliance for the Chesapeake Bay
- Anne Arundel Co Outdoor School at Arlington Echo
- Association of Independent Maryland Schools (AIMS)
- Baltimore City "Greening Schools" initiative
- Baltimore City schools and communities
- Baltimore County Board of Realtors
- Baltimore County Forestry Board
- Baltimore County Government agencies
- Baltimore County Public Library System
- Baltimore County Public Schools (BCPS)
 - Office of the Superintendent
 - Office of Science
 - Office of Facilities
- Baltimore County Senior Centers
- Baltimore Environmental Network of Synagogues
- Baltimore Gas and Electric Company (BGE)
- Boy Scouts of America
- Businesses for the Bay
- Camp Milldale, Jewish Community Center
- Carroll County Outdoor School at Hashawha
- Chesapeake Bay Program
 - Urban Nutrient Management Workgroup
- Tributary Strategy Teams
- Chesapeake Conservation Landscape Coalition (CCLC)
- Chesapeake Bay Trust
- Comcast Cable
- Community Colleges of Baltimore County (CCBC)
- Envirothon
- Federated Garden Clubs of Maryland
- Girl Scouts of Central MD
- Irvine Nature Center
- Jemicy School
- Jewish Community Family Education Center
- Living Classrooms Foundation (LCF)
- Local and regional watershed associations
- Local Chambers of Commerce
- Local community associations and coalitions

Local nurseries and garden centers (30)
Marshy Point Nature Center
MD Cooperative Extension (MCE)
MD Association of Environmental and Outdoor Education (MAEOE)
MD Department of Agriculture (MDA)
MD Department of the Environment (MDE)
MD Department of Natural Resources (DNR),
DNR Forest Service, Tree-Mendous Maryland Program
MD Landscape and Nursery Association
MD Public Television
MD State Department of Education (MSDE)
Mason Dixon Task Force
Master Gardeners (outside Baltimore County)
National Aquarium at Baltimore
National Fish and Wildlife Foundation
North American Association for Environmental Education (NAAEE)
Oregon Ridge Nature Center
Pearlstone Conference and Retreat Center
Prettyboy Watershed Alliance
Professional lawn care industry
Retirement Communities
Schoolyard Habitat Providers Partnership
Soil Conservation Service
US Environmental Protection Agency
US Fish and Wildlife Service, Chesapeake Bay Field Office
US Forest Service
Valleys Planning Council
Towson University
Villa Julie College
Washington Suburban Sanitary Commission
Weyerhaeuser Company Foundation

- *Higher education:* Where program components were used at the college/university level, teachers report final examination test results, class projects, and seminar discussions consistently indicate that the water quality/action alternative message is being understood. When entry and exit surveys were used, informal review indicated a willingness to participate in conservation and water quality BMPs.
- *Green Industry:* Opportunities for dialogue with representatives of the lawn care industry provided through participation on the Urban Nutrient Management Workgroup have raised industry awareness concerning the connection between lawn care and water quality. A partnership with the Scotts Company, the industry leader in lawn care products for the homeowner, has resulted in environmental messages on fertilizer bags and nutrient information at point-of-sale.

- *Volunteer actions:* The estimated number* of volunteer action projects and community outreach initiatives occurring as a direct result of the county's partnerships and projects:

1994-95	3 (pilot)
1996	7
1997	>300
1998	>600
1999	>500
2000	>460
2001	>725
2002	>470
2003	>400
2004	>400
2005	>400
2006	>460

*Notes: the fluctuations in # of actions listed are directly related to the changes in programs offered or emphasized in any year. Reporting in 1997-2001 included individual Pledge Program actions and those occurring as a result of educational presentations; the decline following 1998 and 2001 is due a shift in program emphasis and tracking mechanisms. 2001 included individual citizen pledges and the work of Baltimore County's *Green Schools*. In 2002, due to the high cost in staff time, individual pledges were not sought. Action projects tracked include *MD Green Schools* and other community activities in which DEPRM was involved.

Due to the summer-fall drought in 2002 and Hurricane Isabel in fall 2003, many planting activities scheduled for 2004 were postponed or cancelled. In 2004, teacher training, outreach to supervisors, administrators and facility managers was emphasized over individual classroom and community projects. Action projects in 2005-6 included those accomplished by the 25 Baltimore County Green Schools and its Green Center, other schools, watershed groups and community organizations with whom the County has worked.

- *Community response:* The increasing number of unsolicited requests for DEPRM's environmental education programs and materials indicate:
 - (1) Community interest in the environment in general, and water quality in particular is rising.
 - (2) Citizens want to know more about what they can do and which actions will make a difference.
 - (3) Citizens are ready to become active at home, at school, at work, and in their neighborhoods.
 - (4) Local school administrators and supervisors are working to integrate environmental education in standard curricula. Many teachers are interested and willing to use the local environment as context for learning. The BCPS wants to have all of its 162 public schools operate as Maryland Green Schools.
- *Curriculum development:* The BCPS Office of Science is developing a series of curriculum changes for grades 3, 4, and 5. They involve an increasingly sophisticated and challenging set of outdoor investigations and experiences built into the required curriculum. DEPRM assisted in the professional development sessions provided to prepare teachers for these new initiatives.

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- *Website access:* In response to citizen requests and in an effort to increase the easy availability of information, DEPRM continues to re-focus and expand its offerings. Many items supporting DEPRM programs and projects are available on the Department's webpage; the update and expansion of web offerings are ongoing.
- *Venues, participation, and materials distributed:* In 2006, shifts in program emphasis, method of delivery, and some program components have resulted in the changes noted in Table 4-5 below.

Past experience and program evaluations has shown that DEPRM's participation in certain large community festivals did not result in significant opportunity for environmental education and outreach. As a result, fewer of these events were scheduled for 2006. The total number of festivals and materials distributed reflects this shift in emphasis. However, DEPRM continued to participate in local watershed festivals sponsored by watershed organizations and events sponsored by the County's *Green Schools* and *Green Centers* and has placed increased emphasis on training. Thus the amount of printed materials distributed through workshops and conferences has increased. Many of these workshops were conducted in partnership with the BCPS and copies of DEPRM's materials for teachers were often provided by the school system. Videos and other media productions had wide audience exposure on the County cable channel. A conservative estimate of viewership (based on the county's and Comcast's tracking) was used. Individual copies of videos, CDs, and some booklets were distributed to individuals, communities and organizations. These distributions are not being tracked at this time.

Table 4-5: Presentations, Participants, and Materials, 1994-2006

Year	# Presentations and Events	# Participants	# Literature Distributed
1994	4	100	387
1995	16	414	1,036
1996	22	1,009	2,576
1997	89	4,889	13,519
1998	107	12,415	18,128
1999	79	15,141	18,243
2000	112	21,191	21,178
2001	147	29,193	36,378
2002	165	224,800	32,000
2003	172	425,642	34,301
2004	174	309,030	35,320
2005	155	290,000	20,000
2006	166	317,170	20,100

- *Support materials:* Partnerships for program support materials: It has been the policy of this department to keep abreast of new educational materials available through outside sources. When other agencies or non-profit organizations make certain titles available for distribution, it is cost effective to obtain copies rather than re-create the item. The BayScapes brochures, provided for distribution through a partnership with the Alliance for the Chesapeake Bay, is one of several titles that continue to be useful and popular with citizens. These color brochures were distributed through: Baltimore County Public Libraries, Department of Permits and Development Management, DEPRM Duty Room,

DEPRM Lobby display, Federated Garden Clubs, and community festival and education events. They are also available on DEPRM's webpage.

Detailed native plant lists and information about controlling invasive species developed by the US Fish and Wildlife Service and the MD Native Plant Society were provided to interested schools, citizens and groups.

The booklet, "From My Backyard to Our Bay", a homeowner's guide targeting rural landowners, was produced in partnership with the Baltimore County Soil Conservation District and the University of MD Cooperative Extension. 2,000 copies were available through DEPRM and additional copies distributed to rural school children through partnership with BCPS.

Through the Growing Home Campaign, announced in early 2006, a homeowner brochure with comprehensive education about the multiple benefits of planting trees was produced. More than 10,000 copies of the brochure were widely distributed.

Program Recommendations: The number of requests, user comments, and increasing number of volunteer commitments indicate that Baltimore County's environmental education and outreach program continues to be attractive, popular, and filling a need for local, County-specific information and environmental educational opportunities. An effort has been made to structure presentations in a way to reach those audiences not traditionally "in the choir." DEPRM should continue to identify new audiences and venues where reasonable, cost-effective environmental action alternatives can be explored. One possible option would be to work with Baltimore County Office of Communications to schedule personal interviews with DEPRM staff to air on the County's cable channel. Discussions would highlight program components and citizen action opportunities.

Given limited staffing, creative ways must be found to meet the demand and offer the program message in a cost-effective manner. Careful screening of requests to determine the best situations for learning and stewardship should continue. Increased use of the County's cable channel and website should provide information for citizens, describe services and program offerings, and list upcoming volunteer opportunities.

Joining with local and regional partners to build on successful initiatives such as the *BCPS Principal's initiative* and the *workshop for institutional grounds and facilities managers*, targeting local school populations and staff should be continued even if the efforts do not immediately result in *Green School* applications. Experience has shown that the move to adopt environmentally sustainable school operations is one that requires changes in policy, cooperation, advance planning and budget considerations, and is usually accomplished in phases over time.

To further facilitate "top down" support, every effort should be made to build upon the growing partnership with BCPS Office of Science/supervisors and the BCPS Office of Outdoor Education. These offices have sought and welcomed DEPRM's participation in the planning of in-service learning for County teachers and have requested assistance in preparing central office staff for working with prospective *Green Schools*. A BCPS Green Schools committee is operational.

The professional development event for principals in summer 2005 highlighted topics such as watershed awareness, stormwater issues, the *MD Green School Program*, the correlation of environmental education and standardized test scores, successful schoolyard projects, schoolyard habitat opportunities, funding opportunities, tech support, and other topics. Following this joint initiative to reach BCPS principals on the east and west sides of the County, the comments and initial feedback were positive. Several principals who participated felt that it was important to reach all BCPS principals. This initiative proved to be successful in producing new *Green Schools* (4 in 2006). The County should consider additional joint initiatives in other targeted watersheds or similar means to reach school administrators.

Expansion of similar offerings to an entire school population (high school and its middle and elementary school feeder schools in a targeted geographic area) would provide continuity for the student population and maximize the long-term benefit to the community.

Following these successful initiatives, additional school populations should be considered. In 2007-10, the Lansdowne HS, MS, and ES on the west of the County and Sparrows Point HS and its feeder schools on the east side would be appropriate targets for future initiatives. These sets of public schools, located in highly urbanized sections of the Patapsco, Baltimore Harbor, and Back River watersheds, share close geographic proximity and are characterized by large traditionally maintained landscapes (turf, minimal trees, high impervious, and athletic fields).

Cooperation with the BCPS Office of Science, Outdoor Science Team in its *BCPS Green School* committee is essential. This task force, composed of teachers, administrators and resource personnel will serve as mentors, develop curriculum, host workshops, provide promotion, and present at the annual August Principal's meetings, develop an in-service course for credit, develop web links, and provide materials and equipment. Incentives such as stipends would be instituted. DEPRM should accept the invitation to participate.

Business partnerships are largely untapped resources that may provide technical and funding support for schools, landscapes for demonstration sites, audiences for environmental education, local award recognitions, and visible commitments to community stewardship. They should be pursued at the local school and community level. Recognition should be developed to call attention to those businesses that support a local school's *Green School* initiatives.

With the *MD Green School* designation lasting three years, guidelines and incentives currently in place for re-application should be periodically evaluated. Information gathered through focus groups and other formal and informal means should continue to guide recommendations for program improvement.

Further expanding and focusing the *MD Green School* initiative and adapting it as a model for future *Green Colleges/Universities* and *Green Faith-community* initiatives may be the best way to achieve high visibility of sustainable landscapes in all neighborhoods. The individual efforts now underway in the Christian and Jewish faith communities should be supported in the same manner as the county provides support to other community organizations. Informational signage should be installed at all BayScapes and

conservation landscaping demonstration sites. The feasibility of developing a series of tours to highlight model projects should be identified, mapped, and promoted. A handout should be produced to provide a map, describe projects and explain the environmental benefit gained.

Additional incentives and rewards, especially cash donations; certificates for free field trips (example: Living Classrooms Foundation and Chesapeake Bay Foundation boat trips); field guides, storybooks, and other library resources on environmental topics; environmentally friendly products; presentation trees; tools; rainbarrels and other items should be considered.

The *Getting Greener Schools* initiative offers the opportunity to retrofit old style non-functional school landscapes to create attractive, functional, more sustainable, outdoor learning landscapes that serve as models for the community. Obtaining approval and permission and working closely and effectively with school facility operations staff is essential to the success of any undertaking. Continued efforts should be made to contact public and private school administrations and school facilities supervisors to raise awareness and enlist support for functional landscape projects on school properties. The 2004 landscape manager's workshop held at Towson University and the 2005 initiative for principals are successes that should lead to further dialogue and partnership.

New methods to assist schools and institutions in the costly removal of old, excessive, and no longer functional impervious surfaces should be explored. The success of the Baltimore City initiative *Greening Schools* (targeting 6 city schools for impervious removal and stabilization with turf plantings) should be monitored. Funding mechanisms and school curriculum connections, when developed, may be a program example that could be utilized in Baltimore County. A school's successes in obtaining grant funding to replace turf with native plants, bears watching.

DEPRM should continue to track actions accomplished by citizens and *Green Schools* in local watersheds. Developing a brief questionnaire and re-contacting a percentage of citizens who have participated in DEPRM's environmental outreach programs and initiatives would be useful in measuring the level of behavior modification achieved. Student interns and volunteers could carry out these tasks.

The *Schoolyard Reforestation and Wildlife Habitat Program* as implemented by the Forestry Board provides a working framework and a successful track record for affecting change on school properties. The Forestry Board's past experience and success in working with school staff and facility managers is notable. The Forestry Board has served as an important partner with DEPRM in school environmental outreach. Recent changes in Board leadership may result in changes in the level or type of services offered to schools and communities and should be monitored.

The capacity of Baltimore County's grow-out nursery in Chase is expanding and will soon have the capability to provide trees at no cost to schools and organizations. Demonstration and planting events using stock from this nursery involving local Girl and Boy Scout communities occurred in 2005. These plantings should be tracked and the participating organizations recognized. A formal commitment between the Boy Scout organization and BC DEPRM may be advisable.

Individual citizens, educational and resource professionals, and volunteers who make outstanding contributions should be more formally and publicly recognized. The Herring Run Watershed Association has assumed the role of providing demonstrations, technical support, and planting stock at no cost to groups within its watershed boundaries. Its efforts should be promoted and recognized as a model for other organizations. As DEPRM demonstrated in 2005-6, each year individuals should be considered for nomination in established award categories such as the CBT Teacher of the Year, the Tawes Award for a Clean Environment, MAEOE's Facility Manager of the Year and Best Schoolyard Habitat Project the Year, Woman of the Year, and others.

Through DEPRM's participation at MAEOE, the problem of providing technical assistance and plan review for school projects in Baltimore County and elsewhere was addressed in 2003 through the creation of the Schoolyard Habitat Provider's Partnership, under the umbrella of MAEOE. Additional new partnerships should be explored for the purpose of achieving common environmental goals and extending DEPRM's capabilities to serve citizens and schools with high quality environmental programs and services.

New technical support services and funding mechanisms for schools, communities and private properties should be explored. State and local agencies, strapped by budget constraints find it difficult to commit skilled staff time in support for school projects. Baltimore County should consider bringing the Master Gardeners Program to the County. Through the funding of this program sponsored by the UM Cooperative Extension, additional resources for a basic level of technical support could be made available. Partnerships with local watershed organizations should be strengthened and expanded.

If local watershed organizations are to be encouraged to assist in providing technical support for conservation landscaping projects in their watersheds, there is a need to raise the level of expertise in these groups. DEPRM should explore the potential of a partnership with the CBT, MAEOE SY Habitat Provider's Partnership, and other stakeholders to host a training workshop for watershed groups in Baltimore County. Watershed organizations should be the target audience and topics on the agenda would include: use of native plants, landscaping design for water quality, raingardens and bioretention, storm water management, etc. In recognition of the Baltimore Watershed Agreement, re-signed in 2006, an invitation should be extended to interested citizens in Baltimore City.

Baltimore County should continue to lead by example as it sets policy for maintenance in public buildings and properties. With the *MD Green School* program expanding to include nature and outdoor learning centers in 2003, Baltimore County's facilities at Days Cove, Oregon Ridge, Banneker Park, and Cromwell Valley should utilize this model to institute conservation and maintenance BMPs, provide educational staff development, and provide program opportunities in support of local schools. Since 2003, eleven outdoor education/nature centers have been recognized as *MD Green Centers*; to date, only one, the Irvine Nature Center is located in Baltimore County. The other regional centers however, do model conservation best management practices, and provide high quality environmental learning opportunities for Baltimore County teachers and students through the hosting of field trips and professional development seminars that are

open to regional participation. They should all apply for recognition as a Maryland Green Center.

The Watershed Management Program in DEPRM is developing a series of Small Watershed Action Plans (SWAPs). These plans will supplement existing water quality management plans by involving stakeholders into the process and exploring a broader range of strategies for meeting the water quality goals of this region. This is a collaborative effort between the stakeholders, which include County staff, community members, watersheds associations, institutions, and businesses. Specific actions to be implemented by the businesses and citizen volunteers along with DEPRM Capital projects will be listed in each plan. This will provide site-specific activities that citizens can undertake to improve water quality and help reduce non-point pollution in their watershed.

Measuring progress achieved through environmental education and outreach programs is a challenging task. Creative ways to determine environmental education and outreach program effectiveness must be explored and utilized. Measurement resources for outcome based program evaluations should be examined. Two sources include: <http://mapnp.org/library/evaluatn/outcomes.htm> and http://mapnp.org/library/evaluatn/fnl_eval.htm. Examination of other EE assessments conducted in the region could be useful. The Evaluation of the Chesapeake Bay Foundation's Conservation Education Programs, published in 2001, is one example.

Measurement tools, such as the "Logic Model" and those described in the Water Environment Research Foundation (WERF) Final Report, Project 98-WSM-2, and Watersheds and Ecosystems: Tools to Measure Source Control Program Effectiveness should be further explored. An additional WERF document, Residential and Commercial Source Control Programs to Meet Water Quality Standards Project 95-IRM-1 may also prove useful.

Program Recognition: In the recent Island Press book, Nature Friendly Communities: Habitat Protection and Land Use Planning (May, 2005) by Chris Duerksen and Cara Snyder, Baltimore County is described as having "one of the most ambitious and successful land management and environmental protection programs in the country" and "a model for local governments everywhere". Baltimore County was included among the nine major case studies and eleven focused case studies selected nationwide. The County's programs involve "an impressive combination of tools and strategies- land use regulation, land acquisition, an urban growth boundary, education..." and other initiatives in its integrated approach to watershed management.

Baltimore County has received statewide and regional recognitions that include the Chesapeake Bay partner, Tree city, and the DNR's PLANT Community Award. In addition, the county continues to lead Maryland with more of its schools operating as Maryland Green Schools than any other Maryland jurisdiction.

The county's environmental education programs are in demand as models. In early 2006, the department's environmental education presentation proposals were selected for a half-day workshop and short sessions for teachers at the annual MAEOE conference. These sessions provided hands-on activities related to sustainable schoolyard

reforestation, stormwater management on school property, wildlife habitat projects and the process of applying for *MD Green School* status. This annual conference promotes, facilitates, and enhances environmental education statewide. Staff representing several Baltimore County public and private schools, MAEOE, USFW, and the BCPS Office of Science helped facilitate the effort. Additional selected presentations included The Association of Independent Maryland Schools (AIMS), National Science Teachers Association (NSTA), Baltimore Jewish Environmental Conference, the Environmental Management of Enclosed Coastal Seas (EMECS), Delaware Educational Delegation, Forest Issues Sustainability Tour, and the Chesapeake Conservation Landscaping Coalition conference, among others.

As a result of Baltimore County's success rate in developing and recognizing model schools, DEPRM staff maintained positions of leadership in MAEOE and in the upcoming evaluations of the *MD Green School Awards Program*. In 2006, new initiatives in program direction and expansion; marketing; developing local and statewide organizational support; streamlining the application process; providing meaningful and tangible incentives; and development of recognitions and awards were undertaken. The promotion and facilitation of mentoring by successful schools for the benefit of potential *MD Green Schools* was also planned. DEPRM staff and representatives from successful Baltimore County *Green Schools* will continue to participate.

Leading the state with more certified *MD Green Schools* than any other jurisdiction, Baltimore County has been particularly successful in promoting community and governmental partnerships and developing incentives to support its previously awarded and potential *MD Green Schools*. Components of its *Getting Greener Schools* initiative were used as models statewide. The DNR/DEPRM cooperative incentive 1:1 match offer for Tree-Mendous Program tree orders by *Green Schools* was again offered statewide to all designated *MD Green Schools*.

In 1998, the Chesapeake Bay Program, Toxic Subcommittee and the Local Government Advisory Committee highlighted the *Let's Be Partners* program in its *Local Government Pollution Prevention Toolkit* (May 1998). Periodic calls from outside the County indicate that the distribution of this publication, which recommends programmatic models, is ongoing.

Recognition letters and certificates were received from the BCPS administration and from individual students and teachers around the County; including artwork by students at Hereford MS in thanks for DEPRM's continued support of its environmental programs and activities. In addition, letters have been received from citizens and community groups noting the value of DEPRM's environmental education efforts. A significant indication of positive recognition is the high rate of referrals and repeated invitations from an organization.

Again in 2006, DEPRM was recognized for its efforts in community forestry. The DNR PLANT Community and the National Tree City USA awards recognized Baltimore County's efforts in protecting and restoring urban and suburban tree cover and important forest ecological values. These annual awards are sponsored by the MD DNR and the MD Community Forest Council. DEPRM actively promotes these award recognitions in schools and community groups Countywide as part of its established program for schools

and community groups, its *Tree-Mendous MD* program in the County, and its ongoing *MD Green Schools* initiative.

4.2.2 The Adopt-a-Pond and Secchi Disk Monitoring Programs

In October 2002 Baltimore County contracted for the development of an Adopt-a-Pond Program. The contractors for this program were the Herring Run Watershed Association and the Center for Watershed Protection. This program is intended to encourage community participation in the enhancement and maintenance of public Stormwater Management Ponds and Best Management Practices, and provide community education on the purpose of stormwater management facilities. The two-year contract included provisions for the analysis of existing programs, development of a County Adopt-a-Pond Program and conducting a pilot program to determine if any refinements in the draft program are necessary. The final Adopt-a-Pond Program was presented to the County in 2004. Based on the experience in the development of the program and implementation of the pilot, it was determined that the County, as part of its Stormwater Facilities Management Program, would administer the program. A significant amount of effort on the part of the Herring Run Watershed Association staff was required to entice people into the program. Therefore, the program could not serve as a vehicle to expand the volunteer base of a watershed association. The watershed associations have been made aware of the program and will direct interested County citizens to DEPRM for inclusion in the program. A secchi disk project is being planned and will be piloted in 2007.

4.2.3 The Stream Watch Program

The Stream Watch Program is intended to develop citizen stewardship through participation of citizen volunteers in the program who actively assume the role of caring for segments of the stream network by observing changes in the system, by providing stream clean-ups, and participating in planting activities. The Stream Watch Program also includes identification of potential restoration projects for possible inclusion in the Waterway Capital Improvement Program and can provide a valuable addition to our Illicit Connection Program through reports by Stream Watch participants.

The Stream Watch Program will be expanded throughout the County with the *Watershed Association Restoration Planning and Implementation Grant* program (Section 4.2.4, below). One of the provisions of the grant is to include the Stream Watch Program in the grant proposal. The County provides support to the watershed associations for implementation of the Stream Watch Program. This includes field training and training on use of the GIS system for stream reach segmentation.

4.2.4 Watershed Association Restoration Planning and Implementation Grant Program

At the end of 2004 the County developed a new grant program entitled, *Watershed Association Restoration Planning and Implementation Grant* Program. This grant program was developed to address staffing needs of local Watershed Associations. The intent of the grant is to provide funding for staff time to participate in County restoration planning, identification of restoration projects, implementation of restoration projects, educational activities, and the ability to leverage additional funding. Annual funding is limited up to \$30,000 with a minimum of 1000 hours of staff time to be expended on projects. Funding will be provided for salaries, fringe, and overhead (limited to 10%).

Funding is not provided for restoration materials, supplies, or the Executive Director's salary.

In order to be eligible for a Watershed Association Citizen Restoration Planning and Implementation Grant the organization must meet the following qualifications:

- The organization must be a locally based Watershed Association with membership in Baltimore County.
- The organization must have 501(c)(3) private, non-profit status.
- The organization must have a demonstrated history of identifying and conducting citizen based restoration projects.

4.2.5 The Baltimore Watershed Agreement

With the *Baltimore Watershed Agreement* signed October 2002 and re-signed in 2006, Baltimore County and Baltimore City have renewed their commitment to work together to protect and restore shared watersheds. The agreement calls for workgroups in five topic areas: trash, bacteria, stormwater, tree canopy, and redevelopment. DEPRM and the Baltimore City Department of Public Works will develop goals and action plans. A Committee of Principals will provide policy advice and oversee the implementation of the agreement.

4.2.6 Tree-Mendous Maryland Program in Baltimore County

Baltimore County continues to partner with the MD DNR to actively promote the Tree-Mendous Maryland Program. This state administered tree planting program is designed to provide citizens, schools, and community groups with an inexpensive way to obtain mostly native tree and shrub species for planting on public street tree easements, other public lands, and within community open spaces. DEPRM aggressively promotes the program in Baltimore County through twice-yearly, traditional and electronic mailings to over 800 individual citizens, schools, greening committees, and other interested groups. Each spring and fall, DEPRM provides assistance to groups and individuals planning tree-planting projects in the County. This may include technical advice, information about required permits, project coordination, and free tree delivery. Telephone and e-mail contact with citizens and "greening" committees is made to underscore the need for careful planting, watering, and maintenance, while frequent contact between DEPRM and the DNR staff is maintained to ensure a smooth delivery process.

In 2006, the DNR received orders for a total of 1,672 Tree-Mendous trees from groups in Baltimore County. DEPRM provided technical assistance and received requests for free delivery of 9 orders, totaling 267 trees or 16% of the total number of Tree-Mendous trees planted in Baltimore County.

A major benefit of the Tree-Mendous Maryland Program, as expanded and enhanced in Baltimore County, continues to be citizen education. Contact with citizens, schools, and greening committees provides opportunities to increase environmental awareness, especially concerning the value of trees and forests for managing water movement in watersheds. Tree planting and mulching demonstrations, seedling donations, and education programs for school children and communities are offered as a complimentary component to the "*Let's Be Partners...*" program. The Maryland DNR honors community

tree planting efforts with annual *Maryland PLANT* (People Loving and Nurturing Trees) *Community Awards*.

In addition, Baltimore County's *Green Schools* Program in partnership with the Tree-Mendous Maryland program, provides participating schools with free trees at a 1:1 match for every Tree-Mendous tree purchased for planting on the school properties or on community open space. In 2006, two high schools and two elementary schools benefited from participation in the *Green School* program by receiving 38 free trees, doubling the number of trees enhancing the ecological and aesthetic value of their school properties.

The Tree-Mendous Maryland program in Baltimore County continues to be a valuable component of the effort to increase urban, suburban, and rural forest cover in Baltimore County. During the course of the 34 planting seasons since the program has been in existence, DEPRM has delivered over 11,800 trees in 480 orders requesting free delivery, serving school and neighborhood groups in hundreds of communities. Figure 4-4 below indicates the numbers of trees delivered by Baltimore County since program inception. Since 2004, DEPRM has been tracking the total number of Tree-Mendous trees ordered by Baltimore County groups versus the number delivered free by DEPRM. When tree orders that did not request free delivery are factored in for the years 2004 to 2006, the approximate number of Tree-Mendous trees planted yearly in the County remains at about 1,200 trees.

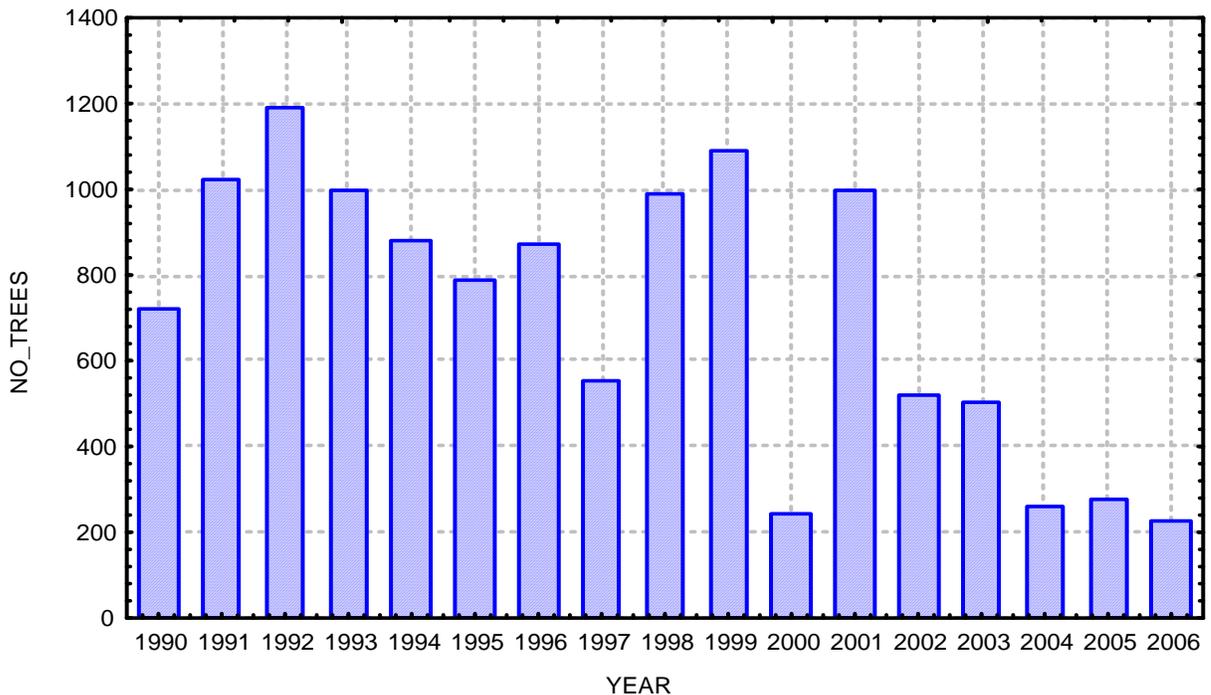


Figure 4-4: Number of trees obtained through the Tree-Mendous Maryland Program with technical assistance and free tree delivery by DEPRM between 1990 and 2006

4.2.7 *The Baltimore County Forest Conservancy District Board*

Urban, suburban, and rural forests play an important role in the protection and enhancement of the County's water resources. For over 50 years, volunteers serving on the Forestry Boards in Maryland have been working to sustain valuable forest resources.

Forestry Boards have always realized the value of forests in providing forest products. In recent years, Baltimore County's Forestry Board has also recognized a growing awareness of the ecological values and benefits of trees and forests for retarding soil erosion, recycling nutrients, improving water quality, providing essential habitats for the region's forest-dependent wildlife, and for adding beauty to the landscapes of the region.

This Board has provided leadership for environmental improvement throughout the County through its tree planting and maintenance events and through its educational programs and opportunities highlighting watershed protection and the benefits of trees and forests. In recognition of the value of these programs, Baltimore County DEPRM has provided support through annual financial grants to the Board. Certain programs, developed and implemented in cooperation with the Maryland DNR and with the support of DEPRM, offer excellent opportunities for environmental education. A brief summary of Forestry board activities includes the following:

- promotion of and support for community "greening," and for the state-sponsored Tree-Mendous Maryland Program;
- participation in the Department of Parks and Recreation forest buffer restoration activities, Senior Expo, BCPS Advanced Placement and MD State Fair events
- maintenance of the Board's website www.bcfb.sailorsite.net/ providing a range of information on tree and forests topics, updated 4 times/year;
- contribution of funds to the Maryland Smokey the Bear fire prevention campaign;
- donation of scholarships for three high school students interested in environmental science careers to attend the annual Natural Resources Career Conference at Camp Hickory in Garrett County, Maryland;
- annual seed collection activities for the State John Ayton tree nursery;
- distribution of seedlings in cooperation with DNR;
- processing of the 2006 Tree City USA award for Baltimore County's commitment to a community forestry program, a forest and tree conservation ordinance and set of regulations, support of the County's Forest Conservancy District Board's environmental education programs, and an annual Arbor Day celebration;
- facilitating the annual *Maryland PLANT Community* award: a DNR recognition program, recognizing the greening committees, schools, and groups that meet established criteria. This award is automatically presented to recipients of the Tree City award;
- providing technical assistance and tree donations to school groups for planting projects at County parks;
- providing technical assistance and donations of soils and fertilizers to schools for planting projects on school properties;
- providing support for the annual Envirothon competition for high school students in cooperation with Baltimore County Department of Education, the Natural Resources conservation Service (NRCS), and DEPRM. Annual topics include forestry, soils, wildlife, aquatic and a fifth rotating topic on current pertinent issues, some of which have included wetlands, agricultural lands preservation, cultural landscapes, exotic, invasive species, natural resource management in urban environments, and in 2006, water stewardship in a changing climate. Since

- 2000, DEPRM staff has served as teaching experts in training sessions for Envirothon participating students in the aquatics and fifth rotating issue topics.
- serving on the steering committee for DEPRM's forest sustainability initiative using the Montreal Process criteria and ecological indicators;
 - developing an urban forestry scholarship program in partnership with the University of MD.

The target audiences for these programs include community groups, individual adult citizens, landowners, students, teachers, and local government officials.

4.2.8 *The Baltimore County Growing Home Campaign*

The *Growing Home Campaign*, Baltimore County's urban tree planting and education project, was introduced to the public in spring 2006. It is an innovative market-based approach to increase the planting of trees on private properties by homeowners. The *Growing Home Campaign* is a partnership between Baltimore County, local nurseries and garden centers, and homeowners and is coordinated by Baltimore County DEPRM. The program is funded in part by the Chesapeake Bay Program and its federal partners, including the U.S. Forest Service with corporate support from Baltimore Gas & Electric Company and the Weyerhaeuser Company Foundation.

The overall goal of the *Growing Home Campaign* is to increase much needed tree cover in Baltimore County, especially in the urban areas of the County. Older Baltimore County communities within the URDL (Urban Rural Demarcation Line) are in great need of additional trees. A 2002 analysis to define the "tree deficit" for urban areas of the country reported 16.9% significant tree canopy in Baltimore County. This falls below the American Forests' guideline of 40% tree canopy overall for urbanized areas.

Growing Home provides a needed alternative for the control of urban non-point source pollution. There are approximately 100,000 acres of residentially zoned land within Baltimore County's urban area (the URDL). Overall only about 20% of the County's urban areas, including non-residentially zoned urban land totaling an additional 32,000 acres, is managed by stormwater facilities, half of which are older stormwater detention ponds providing no significant water quality functions. Additional significant acreage of residential development exists outside the URDL at lower densities. DEPRM's watershed water quality management plans have identified a relatively small number of feasible locations for construction of stormwater water quality retrofits.

Homeowner outreach for the *Growing Home Campaign* includes comprehensive education about the value of adding trees within existing neighborhoods, guidance about site considerations and species selection, and tree planting and maintenance instructions. Also included is information on the multiple environmental benefits of planting trees including : (1) slowing stormwater runoff and reducing the cost of controlling stormwater, especially in urban areas, (2) reducing erosion, (3) filtering air and water by absorbing air pollutants and fertilizer and pesticide runoff. The educational information will be distributed as a printed brochure titled "Plant Your Own Tree" widely distributed throughout the County and on the *Growing Home Campaign* website www.baltimorecountymd.gov/go/trees.

Homeowners are also offered a financial incentive in the form of a \$10 coupon redeemable toward the purchase of a tree from a local participating retailer. The County will reimburse participating retailers \$5 for each coupon used to purchase a qualifying tree. *Growing Home Campaign* brochures with the *Growing Home* Coupon are widely available through County libraries, Senior Centers, and Recreation and Parks Centers, as well as online at www.baltimorecountymd.gov/go/trees.

Baltimore County has identified target areas within the County's URDL (Urban Rural Demarcation Line) where there is an existing tree deficit. An in depth assessment of the urban tree canopy in Baltimore County is currently being completed. However, preliminary analysis was conducted in 2002 to define the "tree deficit" for the urban area of the County and to compare the County's urban tree cover to thresholds recommended by American Forests. Overall, Baltimore County's 130,700 acres of urban area support only 22,099 acres of significant tree canopy (16.9%). This falls below the American Forests' guideline of 40% overall for urbanized areas, as well as the guidelines for urban residential areas (25%) and suburban residential areas.

The sections below describe in detail the activities accomplished of the *Growing Home Campaign* during 2006:

- The *Growing Home* coupon applied to qualifying trees costing at least \$25. The estimated average cost of trees purchased by homeowners through the program was \$55. It is estimated that the number of trees purchased and planted using the \$10 *Growing Home* coupon during the 2006 pilot spring sales season from April 4th through June 30th was 1500 to 1700. One major retailer was unable to return the coupons and their numbers are based on reporting from individual stores.
The *Growing Home Campaign* resulted in a significant "first investment" in increasing the urban tree canopy in Baltimore County. A majority of the trees sold were planted in the more urbanized areas in the County. Baltimore County and retailer cost share for an estimated 1600 trees total \$16,000, and homeowner after-discount tree purchases totaled an estimated \$72,000, for a total investment of \$88,000. Labor provided by homeowners for planting is estimated at an additional \$32,000 (\$20 per tree). Estimated total impact was \$120,000. There were 27 participating *Growing Home* retail nurseries and garden centers in 2006.
- Assessment of public outreach for the *Growing Home Campaign*.
Printed educational material distributed:
 - "Plant Your Own Tree" *Growing Home Campaign* brochure distributed- 11,000
 - *Growing Home* posters distributed- 1,000*Growing Home Campaign* website www.baltimorecountymd.gov/go/trees .
 - Views of web homepage- over 5,000
 - "Plant Our Own Tree" brochure and \$10 tree coupon downloaded - over 5,000
 - Qualifying tree plant list downloaded PDF- over 1,000

4.2.9 Additional Educational Efforts

In addition to the activities described above, DEPRM staff acted on potential opportunities for informal environmental education as they became possible through contact and interaction with citizens.

As citizens routinely visit DEPRM for permits or development review, the opportunity is used to share environmental information and make recommendations. Over 100 telephone calls and email messages per week resulted in opportunities to answer questions and provide environmental education. Responses by phone, fax, email, and traditional mail were followed information packets available on the webpage, faxed, or sent through the mail. Recycling and grasscycling actions were promoted in the *Let's Be Partners* education program and detailed information was distributed by the Baltimore County DPW, Bureau of Solid Waste Management, Recycling Division. Substantial support was provided to local watershed associations in the form of grant funding, organizational guidance, identification of stakeholders, training, educational presentations, brochures, data, GIS maps, and participation at local festival events.

Brochures, maps, and specific information promoting citizen education on the topic of stormwater pollutants were also distributed by staff in the following DEPRM sections: Waste Management, Environmental Health, Watershed Management and Monitoring, Field Operations, Capital Improvement, Environmental Impact Review/Critical Areas/Marinas, Stormwater Engineering, and Groundwater Management.

DEPRM staff attended local Tributary Strategy meetings and participated in the Tributary Strategies Team's Education and Outreach Committee.

4.3 Summary

Baltimore County has fully developed and implemented its education programs for reducing the use of pesticides, herbicides and fertilizers, controlling of stormwater pollutants, and disposing of toxic wastes. Its initiatives and programs are multi-faceted and developed for flexibility so that the message may be easily adapted to a variety of educational settings involving school administration and staff, facility managers, students, homeowners, community groups, watershed coalitions, faith communities, and businesses in various geographic settings around the County and region.

A number of important new components and materials have been developed or enhanced in order to better reach certain target audiences. Through local initiatives by individual watershed organizations, the *MD Green Schools/Green Centers* initiatives, and special professional development projects for school staff, continued emphasis has been placed on institutional landscape design, maintenance, and conservation landscaping concepts such as the benefits of native plants, integrated pest management (IPM), and removal of impervious surfaces. Pet waste, grass clippings, improper application of fertilizer, and other sources of nutrients in urban and suburban neighborhoods have been highlighted. The County's *Green Renaissance* and *Growing Home Campaign* initiatives were promoted.

In its broad-based school initiatives, DEPRM has shifted emphasis from hosting individual classroom events to teacher training, outreach to supervisors and facility staff, and working with community coalition groups to foster new partnerships, provide a wider range of services, and reach more citizens.

Partnerships with other Baltimore County offices and agencies enhanced the level of communication, avoided duplication of services, and increased overall effectiveness and efficiency. Supporting materials developed by the department and by outside organizations were distributed at educational events, in DEPRM's lobby, through the mail, and increasingly via the County web site: www.baltimorecountymd.gov/go/deprm. Surveys, questionnaires, user feedback, and informal review have been used as assessment tools. Volunteer citizen participation in pollution prevention and stewardship was promoted in all components of the program.

Through *BayScaping*, *Green School* and other awards, citizens, organizations, and schools were recognized for committing to actions that will improve water quality. Educators, nominated by DEPRM for special awards, were honored for their significant contributions.

Recommendations for program modification and expansion are being reviewed and the update is ongoing. Recommendations resulting from the current program assessment will guide future program implementation. Continued expansion of the partnerships involving businesses and schools throughout the County is planned for 2007. New school populations on the east and west sides of the County will be targeted for increased education and outreach. Targeted outreach to private independent and parochial schools will be conducted.

DEPRM will identify ways to increase its support of local watershed organizations and recognized *MD Green Schools* and *Centers*. Outstanding citizens and teachers will again be identified and nominated for statewide award recognition. New opportunities to increase awareness, cooperate with school administration at all levels, and affect policy will be pursued. Additional tracking and evaluative strategies will be identified.

In 2006, components of the *Let's Be Partners/Getting Greener Schools* program were used as a models for program development by other counties, agencies and jurisdictions.

As stated in the Bay agreement, Chesapeake 2000,

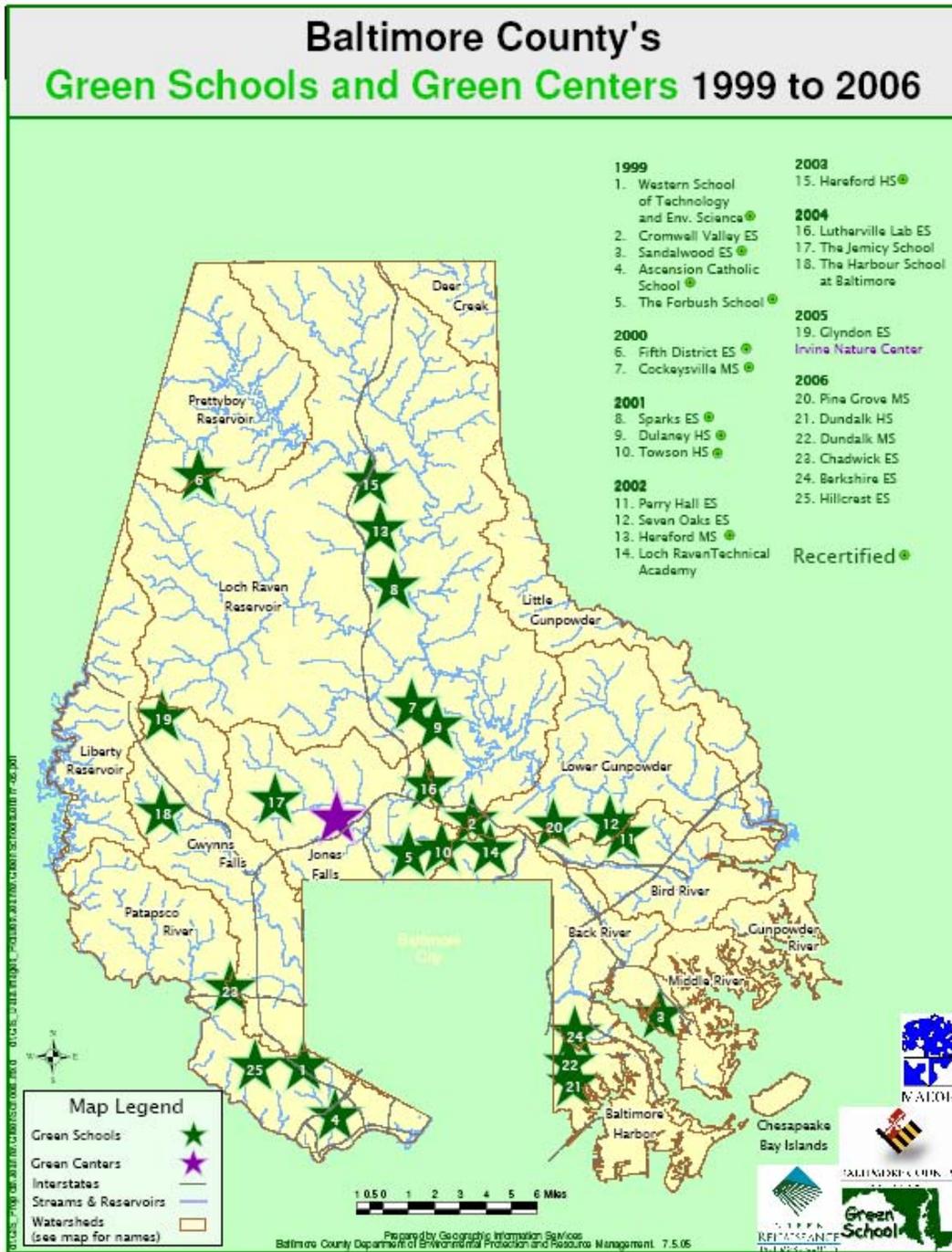
The Chesapeake Bay is dependent upon the actions of every citizen in the watershed, both today and in the future. We recognize the cumulative benefit derived from community-based watershed programs is essential for continued progress toward a healthier Chesapeake Bay.

Paralleling the tenets of the Bay agreement, Baltimore County continues to:

- Make a significant commitment to education, outreach, and stewardship.
- Provide the information and assistance that citizens need to act at home, at school, at work, and in their local watersheds.
- Use new communication technologies, such as the worldwide web and cable television, to provide information for citizens, businesses, and schools.
- Promote and facilitate meaningful outdoor interactive and investigative environmental experiences for young people.
- Provide programmatic models for the state and region.
- Work in partnerships to provide valuable assistance to public and private schools.

- Work towards “government by example,” that is, the implementation of conservation design strategies and sustainable landscaping techniques on publicly owned and managed properties to serve as models for the community.

Exhibit 4-1: Baltimore County's *Green Schools*, 1999-2006



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Appendix 4-1: Education Program Presentations and Events, 2006

DATE	ORGANIZATION	LOCATION	WATERSHED (Audience)	# PEOPLE
Jan-Nov	Lobby Display (6 topics) Ongoing throughout 2006	Towson	Countywide/Regional Jones Falls	2,450
Jan-Dec	DEPRM Duty Room	Towson	Countywide	2,100
Jan-Dec	Comcast video: "Down to Earth"	Countywide	Countywide/Regional	Est 130,000
Jan-Dec	Comcast video: "Our land Our Legacy"	Countywide	Countywide/Regional	Est 130,000
Jan-Dec	BC Public Libraries (16)	16 branches	Countywide	1,600
01/09/06	Chadwick ES Faculty	Woodlawn	Patapsco, Gwynns Falls	100
01/10/06	Mid-Atlantic Nursery and Landscape Trade Show (MANTS)	Baltimore City	Countywide, Regional	250
01/11/06	Mid-Atlantic Nursery and Landscape Trade Show (MANTS)	Baltimore City	Countywide, Regional	250
01/12/06	Mid-Atlantic Nursery and Landscape Trade Show (MANTS)	Baltimore City	Countywide, Regional	200
01/12/06	Hereford MS	Hereford	Loch Raven	8
01/19/06	Saint Paul's Schools	Green Spring	Jones Falls	10
01/26/06	Herring Run Watershed Assn	Baltimore City	Back River	10
02/03/06	MAEOE Conf Workshops (1 session/one display)	Ocean City	Countywide/Regional	125
02/04/06	MAEOE Conf Workshops (1 session/one display)	Ocean City	Countywide/Regional	150
02/04/06	MAEOE Conf pre-review workshop	Ocean City	Countywide/Regional	34
02/07/06	Towson HS	Towson	Back River	50
02/09/06	MD Tributary Strategy Teams	Baltimore City	Patapsco, Back, Gwynns Falls, Regional Countywide	30
02/09/06	TU Graduate Student/Friends School	Towson Baltimore City	Jones Falls	1
02/10/06	GMB LLP for Snow Hill	Eastern Shore	Loch Raven, Regional	30
02/15/06	Jones Falls Watershed Assn	Jones Falls	Jones Falls	4
02/16/06	Dundalk HS	Dundalk	Baltimore Harbor	10
02/23/06	Manheim Township Science Fair	PA	Regional	300
02/27/06	Quaker Meeting House	Hereford area	Loch Raven	50
02/27/06	St James Academy	Monkton area	Loch Raven	40
02/27/06	St Paul's Sch for Girls	Greenspring	Jones Falls	50
02/28/06	HRWA	Baltimore City	Back River	10
02/28/06	Cockeysville MS	Cockeysville	Loch Raven	30
02/29/06	Dundalk HS	Dundalk	Baltimore Harbor	30
03/02/06	Berkshire ES	Dundalk	Back River	15
03/03/06	Home and Garden Show	Timonium	Loch Raven, Regional Jones Falls, Countywide	700
03/04/06	Home and Garden Show	Timonium	Loch Raven, Regional Jones Falls, Countywide	700
03/05/06	Home and Garden Show	Timonium	Loch Raven, Regional Jones Falls, Countywide	700

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03/08/06	North County Ag Seminar	North County	Loch Raven, Deer Creek, Prettyboy	75
03/09/06	Bowleys Quarters Improvement Assn	Middle River	Middle River Gunpowder River	55
03/09/06	North County Ag Seminar	North County	Loch Raven, Deer Creek, Prettyboy	75
03/10/06	MD Home and Garden Show	Timonium	Countywide, Regional	1500
03/11/06	Friends of Cromwell Valley Park Invasive plants	Cromwell Valley	Lower Gunpowder	40
03/11/06	MD Home and Garden Show	Timonium	Countywide, Regional	1500
03/14/06	MD Green School committee presentation	AACo	Statewide	35
03/15/06	Training event: Valley View Farms	Loch Raven	Loch Raven, Jones Falls	75
03/15/06	North County Ag Seminar	North County	Loch Raven, Deer Creek, Prettyboy	75
03/16/06	Chadwick ES GS Review	Woodlawn area	Gwynns Falls Patapsco	23
03/16/06	North County Ag Seminar	Upper Reisterstown	Loch Raven, Prettyboy	75
03/16/06	Catonsville Ed Cntr (RICA)	Baltimore City	Patapsco, Gwynns Falls	18
03/23/06	Career Day Western Tech	Catonsville	Patapsco	50
03/23/06	Envirothon School teams: Sparrows Pt (2) Chesapeake Hereford Western (2) Dulaney (2) Perry Hall	Days Cove	Balto Harbor, Back R Middle R, Back R Loch Raven, Deer Cr Patapsco Loch Raven Bird	60
03/23/06	Career Day Mercy HS	Baltimore City	Back River	50
03/30/06	Green Industry: The Scotts Co LLC	Annapolis	Regional	50
Apr-Oct	HHW Drop-off event	Eastern	Countywide	1000
04/01/06	Project Clean Stream	Countywide	Countywide, Prettyboy, Jones Falls, Gwynns Falls, Back R, Patapsco,	35
04/02/06	Catonsville Ed Cntr (RICA) Spring Event	Baltimore City	Patapsco, Gwynns Falls	200
04/3/06	Arbor Day	Countywide	Countywide	300
04/4/06	Growing Home Kick-off event	Catonsville	Countywide, Patapsco	30
04/4/06	Balto Co Advisory Commission on Environmental Quality	Towson	Countywide	15
04/5/06	Hillcrest ES	Catonsville	Patapsco	35
04/6/06	Career Event Parkville HS	Parkville	Back River	600
04/10/06	Hereford MS	Hereford	Loch Raven	10
04/10/06	Chadwick ES	Woodlawn area	Patapsco, Gwynns Falls	12
04/12/06	Dundalk HS	Dundalk	Baltimore Harbor	15
04/13/06	Ag Prioritization	North County	Liberty, Loch Raven Prettyboy	75

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04/18/06	Envirothon Test School teams: Sparrows Pt (2) Chesapeake Hereford Western (2) Dulaney (2) Perry Hall	Days Cove	Balto Harbor, Back R Middle R, Back R Loch Raven, Deer Cr Patapsco Loch Raven Bird	60
04/20/06	Towson HS Earth Day event	Towson	Loch Raven	1500
04/20/06	Ag Land Preservation Prioritization	North County	Loch Raven	35
04/21/06	Sparks ES	Sparks	Loch Raven	400
04/21/06	Career Event Middleborough ES	Essex	Middle R, Back R	30
04/22/06	Eagle Scouts planting and maintenance	Carroll Island area	Gunpowder River	50
04/22/06	HHW Day	Timonium	Countywide	1000
04/27/06	Pine Grove ES Science Fair	Carney area	Lower Gunpowder	50
04/27/06	Towson Gardens Day/Arbor Day	Towson	Jones Falls, Back River, Loch Raven, Lower Gunpowder	Est 2300
04/27/06	Pinewood ES Sci Fair	Timonium	Loch Raven, Jones Falls	200
04/27/06	Take Your child to Work Day	Towson	Jones Falls Countywide	8
04/29/06	DEPRM Info event	Turner Station	Baltimore Harbor	200
04/29/06	Boy Scouts Fitzhugh Run	Loch Raven	Loch Raven	25
05/01/06	Comcast production for May	Countywide	Countywide	11,800
05/03/06	Dundalk MS Field Day	Dundalk	Baltimore Harbor	100
05/04/06	Susquehanna Flats Environmental Cntr	Cecil Co	Regional	50
05/05/06	Dundalk MS Field Day	Dundalk	Baltimore Harbor	100
05/06/06	Boy Scouts: Patapsco Reforestation	Catonsville	Patapsco	100
05/08/06	EMECS	France	International	100
05/09/06	EMECS	France	International	400
05/13/06	Waterfront Festival	Essex	Middle R, Countywide	15,000
05/16/06	Delaware Education Delegation	Delaware	Regional	20
05/19/06	Forbush School Field Day	Towson	Jones Falls, Countywide	40
05/19/06	Dundalk ES at Forbush	Towson	Baltimore Harbor	100
05/20/06	BCPS STEM Fair	Randallstown	Countywide	1,000
05/23/06	SWAP Steering Committee	Towson	Jones Falls	20
05/24/06	Dundalk HS Award event	Dundalk	Baltimore Harbor	1,000
05/31/06	MD Green Schools Award event	Catonsville	Countywide	450
06/01/06	Bay Days at Hereford MS	Hereford	Loch Raven	80
06/01/06	Forest Sustainability Forum	Meadowood	Countywide	50
06/05/06	Chase ES Faculty presentation	Chase	Bird, Gunpowder River	70
06/06/06	CE event for GS Principals	Towson	Countywide	125
06/07/06	Berkshire ES School GS Celebration	Dundalk area	Back River	415
06/14/06	Herring Run WS Assn Ed Group	Baltimore City	Back River	15
06/15/06	BCPS STEM teachers	Marshy Point	Countywide	75
06/19/06	Ag Prioritization	North County	Liberty, Loch Raven Prettyboy	75
06/22/06	Ag landowners presentation	Jacksonville	Loch Raven Little Gunpowder	25
06/28/06	Wastewater Utilization WCOG		Countywide	20
07/10/06	CBF Workshop	Howard County	Regional	20
07/11/06	NAASF Summer Tour Forest Issues Sustainability		Regional	55

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07/11/06	Charlestown Community	Catonsville	Patapsco	30
07/21/06	BCPS GS Committee	Towson	Countywide	20
08/02/06	HRWA: Growing Home	Baltimore city	Back River	100
08/21/06	Pot Spring ES Faculty	Timonium	Loch Raven	50
09/21/06	Chesapeake Bay Program Exec Council: Growing Home	Sandy Point	Statewide	300
09/22/06	Sparks ES School Celebration	Sparks	Loch Raven	300
09/28/06	Ruxton/Riderwood/Lake Roland Assn Annual Mtg	Ruxton	Jones Falls	40
09/28/06	Western Tech HS Site visit/Faculty	Catonsville	Patapsco	8
09/31/06	Towson U-PLT for St Mary's Co	Towson	Regional	40
10/05/06	Joppatowne Garden Club	Joppatowne	Little Gunpowder Lower Gunpowder	40
10/05/06	Lorelei Beach Community Assn	White Marsh area	Bird R Lower Gunpowder	40
10/07/06	Chesapeake Covenant Congregations	Annapolis area	Regional Countywide	50
10/09/06	Woodbridge ES	Woodlawn area	Patapsco, Gwynns Falls	20
10/14/06	Cromwell Valley Fest	Cromwell Valley	Lower Gunpowder, Loch Raven	50
10/19/06	Irvine Habitat Stewards Training	Stevenson	Jones Falls, Countywide, Regional	18
10/21/06	Household Hazardous Waste Day	Timonium	Countywide	1100
10/22/06	Baltimore Jewish Environmental Conference	Owings Mills	Jones Falls, Countywide Gwynns Falls, Regional	125
11/01/06	Edgemere/Sparrows Pt Comm. Mtg	Edgemere	Back R, Balto Harbor	180
11/02/06	Envirothon Student/teacher Workshop 11 county high schools Millford Mill Catonsville Western Tech Sparrows Point Dulaney Towson Perry Hall Chesapeake Eastern Kenwood Hereford	Days Cove	Countywide Gwynns Falls Patapsco Patapsco Back R, Balto Harbor Loch R, Little GunPow Back R, Jones Falls Bird, Low Gunpowder Back R, Middle R Middle R. Back R Middle R, Bird R, Back Loch Raven , Prettyboy, Deer Creek	113
11/02/06	NSTA Conference session with TU	Baltimore City	Countywide, Regional	60
11/03/06	Ches Consv Landsc Coalition (CCLC)	Bethesda	Regional	200
11/06/06	Assn of Indepen MD Schools (AIMS)	Baltimore City	Regional, Countywide	60
11/09/06	Career Event Hereford HS	Hereford	Loch Raven , Prettyboy, Deer Creek	20
11/14/06	Mother Seton Academy	Emmitsburg	Regional	10
11/14/06	CIP Spur workshop	Edgemere	Back R, Balto Harbor	20
11/15/06	CIP Spur workshop	Sparrows Pt	Back R, Balto Harbor	20
11/16/06	CIP Spur workshop	Edgemere	Back R, Balto Harbor	27
11/17/06	Career Event Woodlawn HS	Woodlawn	Gwynns Falls	50
11/27/06	Holidays Enviro-tips DEPRM Lobby	Towson	Countywide	250
12/01/06	Land Preservation Mtg	Hereford	Loch Raven, Prettyboy Deer Creek	150
12/05/06	Oliver Beach HOA	Oliver Beach	Bird R, Gunpowder R	30

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12/06/06	Ag Field Crop Day	North County	Prettyboy	100
12/07/06	Lutherville Garden Club	Lutherville	Loch Raven, Jones Falls	60
12/08/06	Fields at Renaissance Park Dedication	Essex	Back R, Middle R.	60
12/12/06	Jewish Conference Follow-up	Pikesville	Jones Falls Countywide, Regional	45
12/14/06	Baltimore Watershed Agreement	City/county	countywide	50
12/14/06	MD Science Cntr	Baltimore City	Regional	100