



# COMMONWEALTH of VIRGINIA

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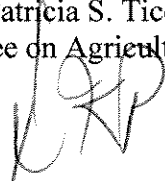
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To: The Honorable Timothy M. Kaine  
  
The Honorable Harvey B. Morgan, Chair  
House Committee on Agriculture, Chesapeake and Natural Resources  
  
The Honorable Patricia S. Ticer, Chair  
Senate Committee on Agriculture, Conservation and Natural Resources

From: David K. Paylor 

Date: December 1, 2009

Subject: Office of Pollution Prevention, 2009 Annual Report

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I am pleased to provide you with a copy of the Department of Environmental Quality's (DEQ's) Office of Pollution Prevention's "2009 Annual Report." This report has been prepared pursuant to Virginia Code § 10.1-1425.17 and sets forth DEQ's pollution prevention activities.

DEQ hosts a number of pollution prevention programs which provide non-regulatory assistance to businesses, institutions, and communities and motivate Virginians to minimize their environmental footprint. This report describes the progress of these programs during 2009.

This report is being made available at [www.deq.virginia.gov/regulations/reports/html](http://www.deq.virginia.gov/regulations/reports/html). If you have any questions concerning this report or if you would like a hard copy of this report, please contact Angela Jenkins, Manager, Office of Policy, at (804) 698-4268.

# Pollution Prevention

## 2009



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## **Inside:**

From the Director	3
Virginia Green Tourism	4
Governor's Environmental Excellence Awards	5
Outreach to Reduce Priority Chemicals	8
Virginia Fluorescent Lamp Recycling Challenge	8
Auto Salvage Industry Mercury Reduction	8
Recycling & Waste Reduction	9
Virginia Environmental Excellence Program	10
Virginia-Department of Defense Environmental Partnership	13
Energy Efficiency & Renewables	14
Resources	15

## From the Director

For more than twenty-five years, prevention has played a key role in the Department of Environmental Quality's (DEQ) mission to protect and enhance Virginia's environment. DEQ's Office of Pollution Prevention (OPP) hosts a number of programs and initiatives that serve as a conduit for non-regulatory assistance to businesses, institutions, and communities. These efforts are aimed at motivating Virginia facilities to minimize their environmental footprint through actions that often enhance their bottom line. A few of the highlights from 2009 are:

- Doubling the size of the Virginia Green tourism program, from just over 300 in 2008 to almost 650 participants today;
- Awarding twenty-three Governor's Environmental Excellence Awards Program to individuals, government agencies, manufacturing facilities and partnerships; and,
- Achieving the milestone of 500 Virginia Environmental Excellence Program facilities.

As in previous years, DEQ's reputation as a leader in promoting partnerships and engaging audiences through non-regulatory environmental programs continues both within the Mid-Atlantic region and nationally. I am confident that as we move forward and face new environmental challenges, pollution prevention will continue to be an important strategy for the Commonwealth.

David K. Paylor



## Virginia Green Tourism

Virginia Green is the Commonwealth's voluntary initiative to promote pollution prevention practices across all sectors of the tourism industry. Businesses, organizations and facilities apply to be in the program and commit to waste-reducing activities such as recycling, optional linen service, water and energy conservation, green cleaning, and purchasing eco-friendly products. The program, which was launched in pilot phase in 2006, now has almost 650 participants statewide, including attractions (35), conference facilities (40), convention centers (3), events (44) lodging (340), restaurants (99), travel organizations (18), visitor centers (5), and partners (63). OPP oversees development of all programmatic guidance and reviews each of the submitted applications, while DEQ's partners, the Virginia Tourism Corporation (VTC) and the Virginia Hospitality and Travel Association (VHTA), coordinate marketing and promotion.



### 2009 Virginia Green highlights:

- On February 1, the Virginia Green program was formalized through a Memorandum of Agreement signed by DEQ, VTC and VHTA, which outlines the roles and responsibilities of each organization.
- Governor Timothy M. Kaine kicked off Virginia Green Travel Month in late March with a challenge to Virginia's tourism industry to recruit forty new members in honor of the 40th anniversary of the "Virginia is for Lovers" slogan. By the end of the month of April, the goal had been more than met, with sixty new tourism businesses accepted into the program. As part of Virginia Green Travel Month, the state tourism office highlighted green travel packages, green getaways and spotlighted Virginia Green travel options.
- A new electronic-newsletter, the "Virginia Green Gazette," was launched in April, providing members with program updates and highlighting member successes.
- In the late spring, the process for applying to the program moved from paper submissions to a web-based system linked to the Commonwealth's larger tourism website. Restaurants became the first group to transition to the new online system; the other Virginia Green categories are expected to be added by early 2010. Not only will this enable faster processing of applications, but it will also integrate members' profiles with their "Virginia is for Lovers" ([www.Virginia.org](http://www.Virginia.org)) profiles.
- On June 10th, Governor Kaine issued Executive Order 82: Greening of State Government. The Order expands existing efforts to encourage and set standards for state agencies and institutions to "go green" and implement sustainable practices in their operations. In addition, the Order also requires that any state meeting attended by fifty or more people not held at a state facility must be held at a Virginia Green facility unless granted permission to select another site by the Chief of Staff. Also, when holding meetings, agencies are required to minimize the use of paper, avoid single-use disposable materials, and make use of biodegradable or recyclable materials to the greatest extent possible.
- The Virginia Green Advisory Committee, representing the many aspects of the Commonwealth's tourism industry, met for the first time in July. The Advisory Committee, which was formed to help provide guidance on the program's direction, promote the program to their industry sector, and recruit new members, is expected to meet quarterly.



# Governor's Environmental Excellence Awards

On April 1, the winners of the 2009 Governor's Environmental Excellence Awards were announced at the Environment Virginia Symposium in Lexington, co-sponsored by the DEQ, the Virginia Department of Conservation and Recreation, the Virginia Manufacturers Association's Outreach Committee, and Dominion. Twenty-three entries were recognized with awards in the categories of Environmental Program, Environmental Project and Land Conservation. Gold medal winners are highlighted below.



## ***Philip Morris USA - Park 500 Facility: Environmental Management System Gold Medal Winner (Environmental Program, Large Business)***



By following the plan-do-check act environmental management system (EMS) process, the Philip Morris USA - Park 500 facility, located in Chester, has been able to significantly reduce its environmental impact. The EMS has been certified as meeting the ISO 14001 Standard, recognized by the Virginia Environmental Excellence Program at the E4 level, and accepted into EPA's Performance Track program. Results to date: solid waste reduction of 1 million pounds per month; 50% reduction in monthly steam use; 40% reduction in electricity use; and, reduction of monthly water use by 10 million gallons or 20%.

## ***The Sustainability Park - Gold Medal Winner (Environmental Program, Small Business)***

Started in 2006, The Sustainability Park, located in Chester, has built an infrastructure focusing on a "sustainability" model, attracting eight businesses including manufacturing, transportation, and recycling. Employment at the site grew from zero in September, 2006, to 80 by end of 2008. In 2007 and 2008, The Sustainability Park beneficially used tobacco by-products and a variety of woody biomass waste for a compost product, ash and construction debris by-product material as structural fill, reused water from retention ponds, and managed clean wood waste for manufacturing boiler fuels and production of horse-bedding and commercial fuel pellets.



## ***City of Roanoke "Clean and Green" Campaign - Gold Medal Winner (Environmental Program, Government)***

In September, 2007, the City of Roanoke launched its "Clean and Green" campaign to improve environmental awareness and amplify citizen efforts towards energy conservation, greenhouse gas reduction, waste management and recycling. Since then, the City has worked with citizens, civic organizations, and businesses to enhance its recycling program, measure and reduce carbon emissions of businesses, increase public education of environmental issues, and develop outreach opportunities for citizens, schools, and businesses. As a result, recycling tonnage has increased, energy consumption is steadily declining, non-governmental entities are measuring carbon footprints, and more citizens are aware of how their behavior impacts the environment.



**Town of Blacksburg: Environmental Management Program - Gold Medal Winner (Environmental Program, Government)**



Blacksburg's Environmental Management Program (EMP) is a comprehensive program initiated to educate employees and the community, promote awareness of the environment, affect changes that will improve the environment, and enhance and continually improve the environmental performance of government operations and the community at large. Goals are accomplished through partnerships with citizens, businesses, non-profit organizations, and Virginia Tech. The EMP is inclusive of a broad

range of environmental objectives encompassing environmental policies, the environmental management system, pollution prevention, sustainability issues, and regulatory compliance for Town operations. Focal areas include climate protection, watershed management, urban forestry, transportation, employee and citizen education, environmentally preferable purchasing, waste minimization and recycling, "Greening the Town code," and adopting green building policies.

**Lynnhaven River NOW - Gold Award Winner (Environmental Program, Not-for-Profit)**

Lynnhaven River NOW, founded in 2002, is dedicated to protecting and substantially improving water quality in Virginia Beach's Lynnhaven River, a once legendary estuary then considered impaired and closed to shellfish harvest. To preserve and enhance the river's health, the organization works to protect and restore valuable habitats such as riparian buffers, wetlands and oyster reefs that filter polluted runoff, improve water quality for the river and its marine life, identify and reduce the sources of nutrients, sediment, bacteria and chemicals entering the river, raise citizen awareness of the river's problems, and engage the community in the restoration effort. Successful efforts to date include the "Save Oyster Shell" program in which local restaurants collect their oyster shells, which are later used for reef restoration, wetlands outreach in schools, oyster gardening, and riparian buffer workshops.



**Philip Morris USA - Park 500 Facility: Park 500 Natural Treatment System - Gold Medal Winner (Environmental Project, Large Business)**

The Philip Morris USA Park 500 facility, located in Chester, withdraws water from the James River, an estuary of the Chesapeake Bay, at a rate of approximately 1.8 million gallons per day. The plant's wastewater is sent through an on-site treatment plant before it is discharged back into the river. The treated water contains nutrients such as nitrogen and phosphorus. As part of the facility's efforts to reduce its environmental impact beyond its permitted levels, Park 500 identified an innovative water treatment method known as a natural treatment system, or engineered wetlands, that would further reduce the level of nutrients in the wastewater discharge from the facility. The natural treatment system (NTS) began operating in

mid-2008. It is designed to reduce total nitrogen by 14% and total phosphorus by 34%. Preliminary data show that the NTS is far exceeding those reduction targets. In addition to reducing nutrient discharges, the wetlands provide over sixteen acres of habitat; seventy new animal species have been identified in the area. Park 500 also has developed a partnership with Virginia Commonwealth University for research and educational opportunities.

***Dometic Corporation, Environmental Division: Idle Reduction Technology for Trucks - Gold Medal Winner (Small Business)***

The Dometic Corporation, Environmental Division, of Richmond develops and manufactures heating and cooling systems for marine and land-mobile applications worldwide. The company developed the first commercially viable battery-powered HVAC technology for trucks, eliminating the need for a separate diesel generator to power the auxiliary HVAC system when the main engine is turned off. The system, designed to run for 10 hours or more between recharges, is estimated to reduce fuel costs by as much as \$9,500 per truck per year. In addition, idling trucks using the Dometic system consume zero fuel and produce zero exhaust and noise emissions.

***Virginia Department of Corrections: Pamunkey Farm Cooperative Venture Project - Gold Medal Winner (Environmental Project, Government)***

The Pamunkey Farm Cooperative Venture Project is a conservation and restoration project established on a 1,800 acre active ranch and farm in Hanover County operated by the Virginia Department of Corrections. It is the largest and most comprehensive project of its type for an active ranching and farming operation in the Commonwealth and was accomplished through a unique partnership of eleven different entities, including local, state, and federal agencies, a non-profit and a university. It has significantly improved water quality through the restoration of ten acres of wetlands, restoration of seven miles of streams and waterways, reclamation of five acres of eroded pastures lands and pastures damaged during Hurricane Gaston, establishment of forty livestock grazing paddocks, doubling of pasture utilization and increasing grazing capacity by 50%, development of nutrient management plans, and planting more than 2,500 trees and shrubs.



***City of Roanoke, Virginia Outdoors Foundation, and Western Virginia Land Trust: Carvins Cove Conservation Easement - Gold Medal Winner (Land Conservation)***

The City of Roanoke's conservation easement in Carvins Cove Natural Reserve represents the single largest easement donation in the history of the Commonwealth. The reserve itself is the largest municipal park east of the Mississippi River, and the eased land may be accessed and enjoyed by several means. Its reservoir provides opportunities for boating, and dozens of trails provide spectacular views and terrain to hikers, horseback riders and mountain bikers. The Appalachian National Scenic Trail runs adjacent to the property for nearly fifteen miles. At least five rare natural communities have been identified within the reserve, and the 6,185 acre property provides an important and unique habitat for countless species of birds, mammals, reptiles, trees and plants.





## Outreach to Reduce Priority Chemicals

An important focus for OPP is to promote the voluntary elimination or minimization of chemicals and metals that have been identified by the U.S. Environmental Protection Agency (EPA) as "Priority Chemicals." These are chemicals identified as persistent, bioaccumulative, and toxic. A list of the chemicals with accompanying fact sheets can be found at [www.epa.gov/epaoswer/hazwaste/minimize/chemlist.htm](http://www.epa.gov/epaoswer/hazwaste/minimize/chemlist.htm). In 2009, six new chemicals were added to the list: benzene, methylene chloride, perchloroethylene, trichloroethylene, phthalates, bisphenol A and formaldehyde. In 2009, DEQ continued its implementation of several Priority Chemical initiatives.

### National Partnership For Environmental Priorities



The National Partnership for Environmental Priorities (NPEP) focuses on the voluntary reduction of Priority Chemicals found in products and wastes. NPEP, which is operated as a joint initiative between EPA and the states, has a goal of removing 4 million pounds of Priority Chemicals from the nation's waste stream by 2011 based on a 2007 baseline. EPA Region 3, which covers the Mid-Atlantic area, has committed to reducing 88,000 pounds per year. OPP coordinates with EPA Region 3 to implement NPEP in the Commonwealth and encourages facilities to participate in the program by voluntarily committing to eliminate or substantially reduce or recycle targeted chemicals.

One of NPEP's most recent success stories is Aetna Insulated Wire, Inc., of Virginia Beach. Aetna reduced the use of lead in its products by 85,000 pounds during the period 2006-2008 (from 135,859 to 50,715 pounds). Lead-containing polyvinyl chloride (PVC) was used in some of the products. Aetna developed a lead-free, less toxic alternative product which was subsequently tested and qualified by two major certification bodies, Underwriters Laboratories, Inc., and the Canadian Standards Association, providing reassurance to the company's customers of the product's usability and safety.



### Virginia Fluorescent Lamp Recycling Challenge

While fluorescent lamps are beneficial to the environment because of their energy efficiency, they do contain small quantities of mercury. To ensure that mercury is not released to the environment, the best option is to recycle fluorescent lamps. In 2007, DEQ challenged facility managers, particularly those at commercial buildings, to recycle their lamps. The "Virginia Fluorescent Lamp Recycling Challenge" now includes nearly fifty organizations. Lamp Recycling Challenge participants have committed to recycle over 53,000 bulbs per year, the equivalent of over 2.5 million square feet of floor space.



### Auto Salvage Industry Mercury Reduction

OPP's partnership with the Virginia Automotive Recycling Association (VARA) yielded a pilot project to remove mercury tilt switches in automobiles as part of the dismantling and salvage process. Mercury-containing switches in automobile scrap have been identified as a primary source of mercury air emissions from the steel industry. Several years ago, OPP sponsored the distribution of pre-paid collection kits with instructions for removing the switches and precautions for safe handling and shipping. VARA promoted the pilot to its membership, and more than thirty facilities participated in the program. VARA also coordinated the pilot program with NPEP, pledging to remove 1,500 switches (the equivalent of almost five pounds of mercury).

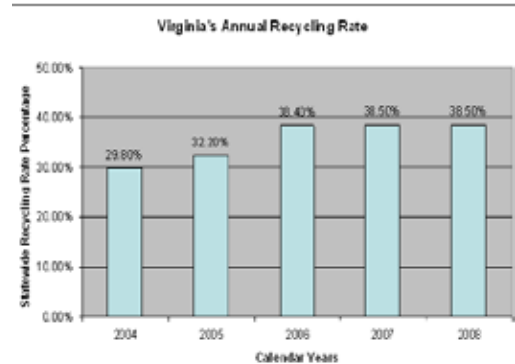
The success of the pilot program resulted in legislation adopted by the 2006 Virginia General Assembly which requires removal of mercury convenience switches from end-of-life motor vehicles prior to demolition. DEQ has worked with VARA, the Virginia Department of Motor Vehicles, the scrap industry, steel manufacturers, and the automotive industry to implement the program. End of Life Vehicle Solutions (ELVS), an organization created by automotive manufacturers, has distributed collection buckets for mercury switches throughout the Commonwealth. In 2008, the last year for which data is available, Virginia facilities collected 16,420 switches and recycled 36.12 pounds of mercury. Nationally, the program recycled 973,366 switches and 2,141.41 pounds of mercury.

### Lead Free Wheel Weight Initiative

This year OPP began actively promoting EPA's Lead Free Wheel Weight Initiative (LFWWI). The LFWWI focuses on finding lead free alternatives for the wheel weights used in balancing tires. Membership in LFWWI provides recognition through NPEP. Virginia participants are: Costco Wholesale (15 sites); Thompson Tire (2 sites), Blacksburg; M&M Tire and Auto Service, Blacksburg; and, South Main Auto Service, Blacksburg.

# Recycling & Waste Reduction

DEQ supports recycling and waste reduction programs throughout Virginia with its information clearinghouse and outreach activities as well as through the administration of an annual grants program. Based on reports from local governments, DEQ has calculated the Commonwealth's 2008 annual recycling rate to be 38.5%. As in previous years, DEQ staff provided guidance and program information through participation in recycling and litter prevention workshops, meetings, and conferences. DEQ's recycling website ([www.deq.virginia.gov/recycle](http://www.deq.virginia.gov/recycle)) provides a wide range of information on recycling topics and links to additional recycling information resources.



## Solid Waste Recycling

Virginia's calculated statewide recycling rate for 2008 reflects the continued commitment by local governments to reduce their waste disposal levels through recycling. Based upon data submitted by the seventy-one jurisdictional solid waste planning units for 2008, Virginians' recycled over 3.6 million tons of material. This material included paper products (870 thousand tons), metals (718 thousand tons), plastics (29 thousand tons), waste tires (67 thousand tons), and electronics (4.5 thousand tons). For more information on Virginia's recycling results, visit [www.deq.virginia.gov/recycle/recycle.html](http://www.deq.virginia.gov/recycle/recycle.html).

**Grants to Localities:** This year, locality-based litter prevention and recycling programs received grant awards of over \$1.8 million. An additional amount of \$48,000 was awarded to three local governments for special projects: Isle of Wight County for a plastic bag recovery and recycling pilot project; the City of Alexandria for a plastic bag recycling pilot project; and, Henry County for an expansion of its Household Hazardous Waste Collection Program. These projects will be completed by mid-2010.



## Computer Recycling

New legislation in 2008 created the Virginia Computer Recovery and Recycling Act, which became effective on July 1, 2009. Computer manufacturers were required to establish and implement a computer recovery program for their equipment sold in the Commonwealth and to notify DEQ by July 1 of the posting of information on their websites. These recovery programs are required to be conveniently available to all Virginia consumers at no cost. Thirty manufacturers have provided program listings, representing 76 computer brands. Visit the following web site for more information: [www.deq.virginia.gov/ecycling/computerManufacturersNotifications.html](http://www.deq.virginia.gov/ecycling/computerManufacturersNotifications.html).



## Waste Reduction Pilot Projects

In 2008, EPA Region 3 awarded DEQ \$100,000 to support three waste reduction pilot projects aimed at increasing access to waste reduction models and infrastructure information. Two projects were completed in 2009: 1) development of a statewide construction and demolition materials management database to increase awareness of the non-disposal opportunities for this material; and, 2) food waste characterization surveys of two food service facilities to develop management strategies for the diversion and composting of this material. The reports and related information for these two projects are posted on DEQ's web site at [www.deq.virginia.gov/recycle/recycle.html](http://www.deq.virginia.gov/recycle/recycle.html). The third project, the planning and coordination of a regional (EPA Region 3) Industrial Materials Roundtable Workshop to facilitate understanding of what would constitute a "green highway project," was cancelled due to budget cuts at the Virginia Department of Transportation resulted in an indefinite delay to new highway construction projects. Other "green" projects are being considered for this funding.

# Virginia Environmental Excellence Program

The Virginia Environmental Excellence Program (VEEP) is intended to recognize facilities that have demonstrated a commitment to enhanced environmental performance and to encourage innovations in environmental protection.

Since 2000, DEQ has promoted the non-regulatory Virginia Environmental Excellence Program (VEEP) as a mechanism to encourage “beyond-compliance” environmental results. VEEP provides recognition and incentives to those facilities meeting the program requirements, which include a demonstration of their commitment to environmental performance through the development of an environmental management system (EMS), implementation of voluntary pollution prevention initiatives and compliance with environmental regulations. There are three types of participation options for interested facilities:

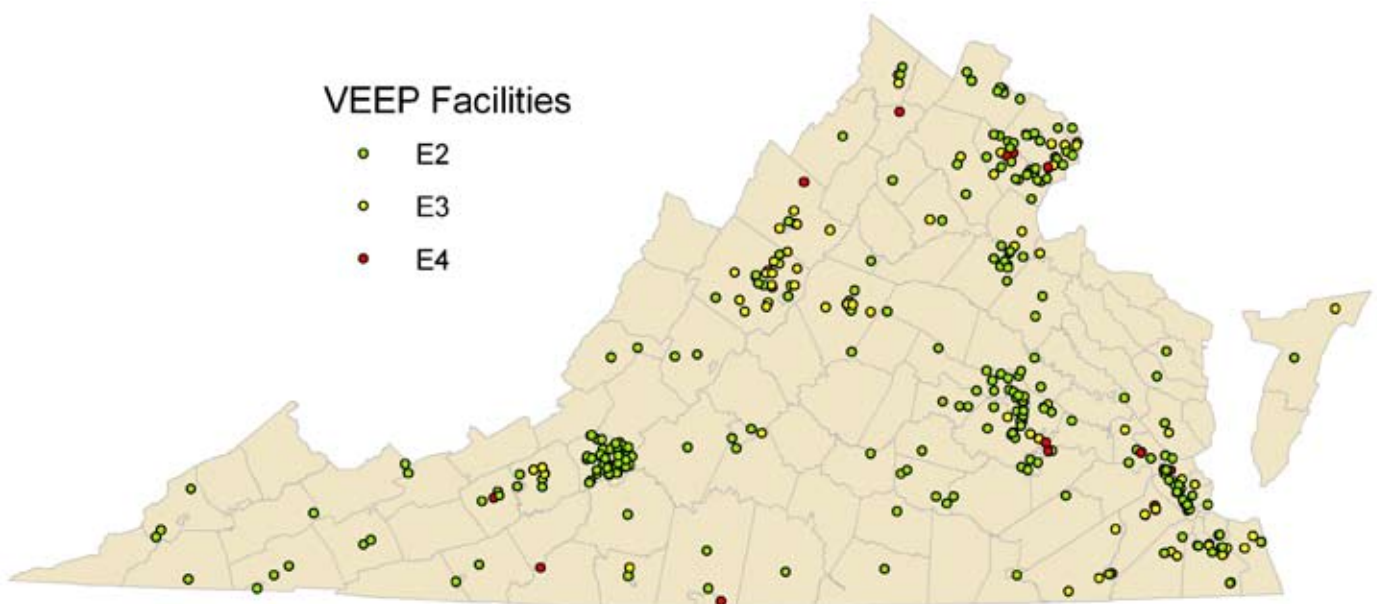
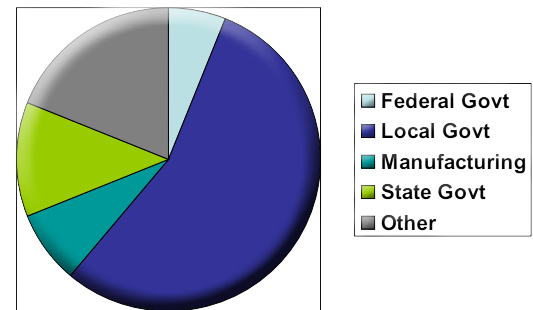
- E2 (Environmental Enterprise) for facilities that have made significant progress toward the development of an EMS, have made a commitment to pollution prevention and have a record of sustained compliance with environmental regulations.
- E3 (Exemplary Environmental Enterprise) for facilities that have exceeded the E2 requirements and have a fully-implemented EMS.
- E4 (Extraordinary Environmental Enterprise) for facilities that have exceeded the E3 requirements, have completed at least one full cycle of an EMS as verified by a third-party auditor and have demonstrated a commitment to continuous and sustainable environmental progress and community involvement.

OPP administers VEEP, reviewing applications and renewals, performing site visits for E3 and E4 applications, conducting compliance reviews and coordinating recognition events.

## Highlights from 2009

**Growth of the Program.** By the end of 2009, there were more than 450 facilities in VEEP, with another 40 applications under review. Almost 60% of the facilities are at the E2 level, another 35% are at the E3 level, and the remaining 5% are at the E4 level.

VEEP facilities are located in all geographic areas of the Commonwealth, with larger numbers in the urban areas. VEEP participation by sector is as follows: 55% local governments; 19% Virginia State agencies; 12% other facilities; 8% manufacturing; and, 6% federal agencies.



**DEQ VEEP Integration Project.** In 2007, DEQ received a \$225,000 grant from EPA to support a multi-year project to better integrate the non-regulatory VEEP program with the policies, procedures and programs of the agency's regulatory divisions. In late 2009, the first phase of the project, which included extensive literature research, policy review and stakeholder engagement, was completed by the project's contractor. In addition to a producing number of specific products, such as a revised operations manual, a series of recommendations for the program was presented to DEQ, which will be considered for implementation in 2010.

**VEEP Incentives.** Members of the Virginia Environmental Excellence Program enjoy two types of incentives: recognition and regulatory flexibility.

- **Recognition Ceremony.** Upon request, DEQ recognizes new and renewing VEEP facilities at ceremonies throughout the commonwealth. In 2009, DEQ participated in events for 14 facilities. These events focus attention on the members' efforts to improve the environment by minimizing their footprint. The ceremonies also emphasize the positive partnership shared by DEQ and its VEEP members and highlight the individuals who commit to reduce their facility's impact, as well as the administrators and managers who support them. At left, DEQ Director David Paylor (right) presents City of Newport News Mayor Joe S. Franks with a plaque at a ceremony in recognition of the City's Deer Run Golf Course E4 acceptance.
- **Regulatory Flexibility.** In 2005, the General Assembly acknowledged that regulatory and administrative flexibility are powerful incentives for driving improved environmental performance when it passes legislation allowing certain VEEP members to request the use of alternative, innovative approaches to meet or go beyond current levels of compliance. In addition, the General Assembly authorized DEQ to offer VEEP members a discount on certain permit fees.
- **Annual Permit Fee Discounts for VEEP Facilities:** Several years ago, the General Assembly adopted legislation establishing annual fees for facilities with certain types of waste and water permits. Simultaneously, the legislature acknowledged that VEEP members "go beyond" compliance and determined that improved environmental performance merited permit fee discounts:
  - Hazardous waste: potentially 5% for E2 facilities and 10-20% for E3 and E4 facilities
  - Solid waste: potentially 10% for E2 facilities and 20% for E3 and E4 facilities
  - Water: potentially 2% for E2 and 5-20% for E3 and E4 facilities.



In 2009, more than 100 permits were discounted, saving VEEP members in excess of \$66,000.

- **Alternate Compliance Methods:** VEEP members at the E3 and E4 levels are eligible to request the use of "alternate compliance methods" - an innovative incentive for any performance-based program. Virginia law authorizes DEQ's three regulatory boards to grant appropriate facility requests. VEEP members have used this mechanism to request reduced monitoring and reporting frequency, streamlined permit application and renewal processes, and to make operational changes without prior approval from the Department. As outlined in the law, only alternate compliance methods that meet the purpose of the applicable regulatory standard, achieve the purpose through increased reliability, efficiency or cost effectiveness, and provide equal or greater environmental protection will be approved; proposals that alter existing standards, increase pollutants released to the environment, increase impacts to Virginia's waters, or result in a loss of wetland acreage will not be approved. Depending on the method requested, the changes may require a permit amendment.

**Executive Order 82.** In June, Governor Tim Kaine released Executive Order 82 on "Greening of State Government." Intended to significantly increase energy conservation activities and reduce the overall environmental impacts of Virginia executive branch agencies and institutions. One of the requirements of the Order is that all state agencies and institutions must either pursue acceptance in VEEP at the E2 level by July, 2011, or develop environmental policies for energy use, water use, waste reduction and travel. The Order outlines the content that must be addressed under each of those areas at a minimum. For instance, for travel, agencies and institutions must address "carpooling to meetings, use of video conferencing and conference calls in lieu of in-person meetings, and purchasing of alternative fuels where available....agencies are encouraged to include restrictions on whether the agency will pay for single-passenger use of personal vehicles for business travel." OPP has posted guidance information on its website for those agencies and institutions opting to apply to VEEP, including sample environmental policy statements, environmental impacts and aspects analysis and prioritization examples and relevant pollution prevention strategies. In addition, OPP has posted similar examples for those agencies and institutions opting to develop policies rather than an EMS.

**Environmental Results.** To remain in good standing, all VEEP facilities must submit a report each year. Several years ago, DEQ instituted an on-line reporting system that emphasizes the reporting of measurable results rather than descriptive updates. When applying for and renewing participation, facilities select from a list of more than thirty-five environmental indicators that they then use as the basis of their results tracking and VEEP annual reporting. Facilities report results in both actual and normalized quantities (i.e., results based on production, number of employees, etc.). Normalized results allow facilities to better track year-to-year performance.

Reports submitted in 2009 show improvements in many of the measures over a baseline amount. The overall program results as presented above should only be considered as a general indication of VEEP facility performance because: the program is voluntary and data is reviewed as submitted by the facilities; many facilities still have limited experience tracking environmental data; in some cases, the numbers shown represent a single facility; and, the reports are a snapshot from one year and may not reflect overall reduction trends.

### **2009 Reported VEEP Results**

(differences from reported baseline)

#### Water Use:

- Reduced total water use by more than 68.5 million gallons
- Increased sediment removal from runoff by 21 tons

#### Material Use:

- Increased amount of non-hazardous materials recycled by 14,032 tons
- Reduced the amount of hazardous materials used by 4.8 tons
- Reduced hazardous waste generation by 968 tons
- Reduced the amount of non hazardous waste disposed by 1,920 tons

#### Energy Use and Air Emissions

- Reduced transportation related energy use by 13,141 MMBTUs
- Reduced NOx emissions by 1,151 tons
- Reduced CO emissions by 1,087 tons

Cost Savings: Over \$9.3 million

A few examples of individual VEEP facility progress and successes:

- A municipal solid waste management department collected approximately 150 tons of obsolete electronic equipment at their five E-waste events. The department's household hazardous waste facilities collected more than 500 tons from residents in addition to 24 tons of used antifreeze, 241 tons of used motor oil and 30 tons of car batteries.
- A large manufacturer instituted a "total productive maintenance" program to return production equipment to "like-new" condition and to empower employees at all levels to identify problems with equipment, tag the problem spots, and to fix any problems they are qualified to fix. The program ensures that equipment repair is not delayed until the regularly scheduled preventing maintenance. The result is a reduction in equipment down time, fluids lost through leaks, air leaks and scrap as well as an increase in machine efficiency.
- A county vehicle maintenance department reported purchasing non-chlorinated parts cleaners and biodegradable floor and parts cleaners at all four facilities, while two purchased waste paint recycling machines to reduce on-site chemical waste storage from 275 gallons to 55 gallons.
- A city department instituted a procedure to review each vehicle replacement request to identify the most environmentally responsible option available for the dedicated use of the vehicle.
- A municipal government with EMSs in many departments developed the "Environmental Information System" website, which contains all of their EMS program information and acts as the program manual.

## Virginia-Department of Defense Environmental Partnership

In 2008, DEQ and the Virginia Department of Conservation and Recreation partnered with the Department of Defense (DoD) to form the “Commonwealth of Virginia and DoD Environmental Partnership with the goal of helping to identify installations which have excelled above and beyond their environmental commitments and to determine the status of installation restoration and conservation efforts to protect natural resources.

Out of the partnership resulted the “Virginia DoD Eagle Award Program” to recognize and encourage “beyond compliance” initiatives at installations. Earlier this year, each was asked to complete an “Installation Environmental Scorecard” that rated their environmental efforts, such as compliance with environmental regulations, habitat protection and restoration and participation in voluntary environmental programs. Performance measures included in the scorecard are: biological resources, habitat protection and restoration, watershed protection and restoration, land use, environmental stewardship, conservation plans, and environmental compliance.

Based on the scorecard nomination packages submitted by 17 installations, on October 14th, three were presented with the 2009 Virginia DoD Eagle Award by Governor Kaine for their exemplary environmental stewardship:

- US Army Garrison Fort A.P. Hill
- Defense Supply Center Richmond (Defense Logistics Agency)
- Army National Guard Training Center Fort Pickett

Nominations packages submitted from all 17 installations indicated the following results:

- Almost 160 acres of invasive species removed
- Over 53 acres of Low Impact Development projects installed
- Nine installations reduced stormwater runoff pollutants
- Reduction in the use of pesticides of more than 550 pounds
- Application of conservation landscaping techniques on more than 225 acres
- Preservation of more than 500 acres of Department of Defense lands
- Preservation of almost 5,000 acres of lands outside of installations
- Participation of seven installations in the Virginia Environmental Excellence Program
- Participation of three installations in the Clean Marinas Program
- Reduction in solid waste of more than 1,500 tons
- Reduction in hazardous waste of more than 535,000 tons
- Reduction in air emissions of more than 930 tons per year



Winners of the 2009 DOD Eagle Award

## Energy Efficiency & Renewables

Virginia and other states continue to face air quality challenges related to ozone non-attainment, regional haze, fine particulates and toxic air pollutants. Air deposition contributes to acid precipitation as well as nutrient and toxic impacts in the Chesapeake Bay. Increasing energy efficiency and implementing clean energy technologies are two ways to mitigate negative impacts.

In many cases, clean, renewable energy approaches provide an environmentally and economically preferable alternative to conventional end-of-pipe pollution control, representing a classic pollution prevention approach. One significant barrier to implementation of these approaches can be a lack of access to current and comprehensive information. OPP actively participates in energy efficiency and renewable energy related outreach and education and seeks out partnerships with other organizations.

2009 was an exciting year with many developments in the renewable energy, energy efficiency, and alternative fuel areas. Interest in this area is growing as a result of available funding through the American Reinvestment and Recovery Act and state initiatives such as Renew Virginia.

### Technical Assistance

OPP offers free energy assessments to interested facilities. OPP also maintains the Virginia Information Source for Energy website, or VISE. VISE is a repository for information on alternative energy options in Virginia, energy efficiency tips and financial incentives.

### Partnerships

OPP collaborates with various organizations to promote energy education and the value of energy efficiency and renewable energy. In 2009, the Department participated in environmental and energy conferences and events throughout the Commonwealth, including two "Earth Day" Events, an energy session at the Virginia Manufacture's Association VEEP Workshop, and the Association of Energy Conservation Professionals Annual Expo. DEQ also joined the Richmond area's GRTC Transit System's Ride Finders and a number of other local partners at "Try Transit Day" to promote the use of alternative modes of transportation in an effort to reduce outdoor air pollution. Starting this fall, OPP will host a series of webinars on energy topics including energy assessments and audits, and federal and state incentivized for energy efficiency and renewable energy. OPP collaborates with several other organizations working on energy issues, including the Virginia Department of Mines, Minerals and Energy and Hampton Roads Clean Cities.

## Resources

### General Information

[www.deq.virginia.gov/p2](http://www.deq.virginia.gov/p2)

### Virginia Green Tourism Program

[www.deq.virginia.gov/p2/virginiagreen](http://www.deq.virginia.gov/p2/virginiagreen)

[www.VirginiaGreenTravel.org](http://www.VirginiaGreenTravel.org)

### Governor's Environmental Excellence Awards Program

[www.deq.virginia.gov/info/geea/2009/homepage.html](http://www.deq.virginia.gov/info/geea/2009/homepage.html)

### Virginia Environmental Excellence Program

[www.deq.virginia.gov/veep](http://www.deq.virginia.gov/veep)

### Virginia Information Source for Energy

[www.deq.virginia.gov/p2/vise](http://www.deq.virginia.gov/p2/vise)

### National Partnership for Environmental Priorities

[www.deq.virginia.gov/p2/wastemin.html](http://www.deq.virginia.gov/p2/wastemin.html)

### Mercury Switch Pilot Project & Fluorescent Lamp Recycling Project

[www.deq.virginia.gov/p2/mercury](http://www.deq.virginia.gov/p2/mercury)

### Recycling & Litter Prevention

[www.deq.virginia.gov/recycle/homepage.html](http://www.deq.virginia.gov/recycle/homepage.html)