



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
Street address: 629 East Main Street, Richmond, Virginia 23219
Mailing address: P.O. Box 1105, Richmond, Virginia 23218
www.deq.virginia.gov

Molly Joseph Ward
Secretary of Natural Resources


David K. Paylor
Director

(804) 698-4000
1-800-592-5482

To: The Honorable Terence R. McAuliffe

The Honorable Danny Marshall, III, Chair
House Committee on Agriculture, Chesapeake and Natural Resources

The Honorable Richard H. Stuart, Chair
Senate Committee on Agriculture, Conservation and Natural Resources

From: David K. Paylor 

Date: November 21, 2016

Subject: Office of Pollution Prevention, 2016 Annual Report

I am pleased to provide you with a copy of the Department of Environmental Quality's (DEQ's) Office of Pollution Prevention's 2016 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 2016.

This report is being made available at <http://www.deq.virginia.gov/LawsRegulations/ReportstotheGeneralAssembly.aspx>. If you have any questions concerning this report or if you would like a hard copy of this report, please contact Angie Jenkins, Policy Director at (804) 698-4268.

Pollution Prevention 2016



Office of Pollution Prevention
629 East Main Street
Richmond, Virginia 23219

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From the Director

DEQ's Office of Pollution Prevention (OPP) promotes pollution prevention through incentive programs and technical assistance. OPP hosts a number of programs and initiatives that support the Pollution Prevention Act as a conduit for non-regulatory assistance to businesses, institutions, and communities. These efforts are aimed at motivating Virginians to minimize their environmental footprint through actions that exceed what is required while enhancing their bottom line. A few of the highlights from 2016 include:

- Leading by example, DEQ continued to improve our own environmental management system (EMS) including being the first state agency to become an E3 member of the Virginia Environmental Excellence Program;
- Presenting eight Governor's Environmental Excellence Awards at the Environment Virginia symposium in April, including three awards for exemplary implementation of the Virginia Outdoors Plan; and,
- Assisting the Department of General Services and Executive Mansion staff with their efforts to green the Executive Mansion under the direction of First Lady Dorothy McAuliffe.

The support of Governor Terry McAuliffe and Secretary Molly Joseph Ward, combined with our engaged and committed stakeholders, allow Virginia to be a leader in promoting collaborative partnerships through non-regulatory environmental programs. I am confident that DEQ's pollution prevention and sustainability initiatives will continue to guide organizations of the Commonwealth to reduce their environmental footprints.

David K. Paylor



Director Paylor pictured with a Virginia Environmental Excellence Program (VEEP) flag. Although Director Paylor has presented many VEEP flags to organizations throughout the Commonwealth recognizing environmental management, pollution prevention and a sustained record of compliance, this flag acknowledges DEQ's VEEP E3 membership.

Virginia Green Travel

Virginia Green is the Commonwealth's voluntary initiative to promote pollution prevention (P2) practices across all sectors of the tourism industry. Participating tourism businesses, organizations, events and festivals voluntarily commit to engage in P2 practices in the core areas of waste reduction, water conservation, energy conservation and in support of green meetings. Virginia Green partners join through a checklist process that also serves as a learning tool for additional green practices and resources. The program is unique in that an online Virginia Green profile is created for each partner documenting all of their green practices so that consumers can review the list and be part of the process that encourages continuous improvements in environmental performance.



The program, which was first launched as a pilot project in 2006, is structured to encompass the entire travel and tourism sector, and includes lodging, restaurants, attractions, conference facilities, convention centers, campgrounds, breweries, events, visitor centers, wineries, golf courses, transportation facilities, catering facilities, and supporting organizations. OPP oversees development of all programmatic guidance and reviews each of the submitted applications, while DEQ's partners, the Virginia Tourism Corporation and the Virginia Restaurant, Lodging, and Travel Association, coordinate marketing and promotion.

2016 Virginia Green Highlights:

1,650 Virginia Green Participants

Virginia Green continues to be a leader among state green tourism programs. Virginia Green has maintained its membership of over 1,650 participants. This year, Virginia Green began the process of requiring members to renew membership by asking lodging facilities to renew. The program is transitioning to a format that requires all members to renew on a three-year cycle which ensures that current contact information is maintained and that green commitments and practices are still in place. In the coming months, additional sectors will be prompted to update membership information.



Jack Berry moderates a plenary session at the annual Virginia Green conference in Arlington in February. The session, titled "Cycling for Green Tourism Dollars," featured Alicia Zatcoff from the City of Richmond and Charlie Denny from Alta Planning & Design.

Virginia Green Travel Alliance

The Virginia Green Travel Alliance (VGTA), a fully-accredited 501(c)(3) non-profit organization, was created in 2014 to help promote Virginia Green and its partners. The VGTA focuses on regional partnerships, education, program marketing and innovative green tourism projects. The VGTA's RVA Green Team Volunteer Network continues to be active at festivals and events in the Richmond area providing knowledgeable volunteers to assist events in reducing waste generation. In 2016, the VGTA hosted two Oyster Roast & Festivals to raise awareness of the Virginia Green program and showcase Virginia Green members. The VGTA also announced its Travel Partner Membership Program which will focus on promotional assistance to expand outreach to green-minded consumers and advocate for the support of green tourism efforts statewide.



From left to right: (1) The Hampton Roads Oyster Roast & Seafood Festival was held at the Brock Environmental Center, a 2015 Governor's Environmental Excellence Award gold medal winner. (2) Clementine Macon-Boyd, who holds several state and national shucking titles, shucks oysters for the Oyster Roast & Festival held in Richmond at Tredegar Iron Works. (3) Chilled oysters are served at the Oyster Roast & Festival held in Richmond. Over six hundred pounds of oyster shells from the event were collected for the Virginia Oyster Shell Recycling Program. The shells will be moved to the Bay after being impregnated with oyster spat.

Measureable Results

Virginia Green does not require annual reporting of environmental results; however, environmental progress data is garnered through technical assistance, the awards program and voluntary reporting. These data allow for the program to annually determine conservative measures of overall progress that are based on established industry averages. Estimates for 2016 will be available in early 2017. Estimated 2015 environmental results include over 20 tons of solid waste reduced or diverted from landfills, over 200 million kilowatt hours of electricity conserved and over 500 million gallons of water consumption avoided.

Virginia Green Suppliers Network (VGSN)

The VGSN is a fee-based internet directory of green service providers in support of Virginia Green. Fees generated are used for enhanced program outreach and marketing. Over eighty suppliers are currently participating in the VGSN.

Annual Virginia Green Conference and Green Travel Stars Awards Ceremony

The Virginia Green program held its third annual Virginia Green Travel Conference and Travel Star Awards Celebration on February 23 and 24 in Arlington. First Lady Dorothy McAuliffe and Rita McClenny, president and CEO of the Virginia Tourism Corporation, presented twenty-one Virginia Green Travel Star Awards and twenty-one Virginia Green Travel Leader Awards to Virginia tourism businesses for their efforts to protect the environment and promote green tourism in Virginia. The conference featured more than thirty-five presentations on green tourism efforts in Virginia and enabled presenters and attendees to share green practices. Planning is underway for the 2017 conference and awards.



First Lady Dorothy McAuliffe and Rita McClenny, president and CEO of the Virginia Tourism Corporation, present a Virginia Green Travel Star award to the Virginia Department of Transportation (VDOT) for Most Innovative Green Project at the Virginia Green Conference held in Arlington in February. VDOT's Pollinator Habitat Program, an initiative to restore habitat for pollinators statewide by planting pollinator habitat gardens and promoting education through signage, was one of eight projects to be awarded Most Innovative Green Project.

Virginia Green Travel Regional Chapters Program

This year the VGTA announced the development of the Virginia Green Travel Regional Chapters Program to leverage the work regional tourism partners do in local communities with Virginia Green. Regional tourism partners are critical to the success and continued growth of the Virginia Green program, and the Regional Chapters Program provides a clear way to market green tourism options as a Virginia Green Travel Destination. OPP works with the Regional Chapters to ensure regional events and tourist destinations are registered with Virginia Green and, when applicable, develop a standard Virginia Green profile that can be used for events.

Ten Inaugural Virginia Green Travel Chapters:

- Arlington Convention and Visitors Service
- Blacksburg/Christiansburg/Montgomery County Regional Tourism
- Charlottesville Albemarle Convention & Visitors Bureau
- Discover Prince William & Manassas
- Hampton Convention & Visitor Bureau
- Harrisonburg Tourism & Visitor Services
- Newport News Tourism
- Richmond Region Tourism
- Shenandoah County Tourism
- Virginia Beach Convention & Visitors Bureau

E3: Economy, Energy and Environment Initiative

The Manufacturing Technology Center (MTC), located at Wytheville Community College, is a long-time OPP partner in promoting pollution prevention throughout the Commonwealth. In August of 2011, the MTC, a partner with GENEDGE ALLIANCE, a National Institute of Standards and Technology Manufacturing Extension Partnership (NIST MEP) affiliate, spearheaded the launch of the first Virginia E3 (Economy, Energy and the Environment) initiative. This initiative was made possible through funding provided by the Environmental Protection Agency's (EPA) Pollution Prevention grant program. Called E3 Southwest Virginia, the effort supports sustainable manufacturing in seventeen counties in that region. Joining forces with the local community, the MTC provides manufacturers with hands-on assessments of production processes to reduce energy consumption, minimize their carbon footprint, comply with environmental regulations, prevent pollution, increase productivity and drive innovation. Over twenty-seven different public and private-sector organizations are participating in the E3 Southwest Virginia project, including OPP, the Virginia Community College System, EPA Region 3, the US Department of Energy, the US Department of Labor and the US Department of Commerce.

In 2012, a separate E3 project, E3 Southside Virginia, was initiated in the Southside Virginia metropolitan area consisting of Danville and Pittsylvania County by GENEDGE ALLIANCE. This project provides the same services as the Southwest Virginia project. E3 Southside Virginia was expanded in 2013 to include Martinsville, Patrick County and Henry County. E3 services are also available in ten counties and eleven cities in the Shenandoah Valley, Roanoke Valley and Lynchburg referred to as Valley E3. Funding for this expansion was made available by an EPA Source Reduction Grant. In addition to these specific localities, E3 technical assessments are available to food manufacturers throughout the Commonwealth. Over sixty two-day E3 Technical Assessments have been completed in Virginia as of September 2016.

In 2016, DEQ's Office of Pollution Prevention worked with the EPA, NASCAR and the MTC to coordinate the NASCAR Green E3 Challenge, a competition between manufacturers that have participated in the E3 initiative. The competition culminated with a recognition event at Richmond International Raceway which began with a peer-to-peer presentation sharing best management practices learned from E3 technical assessments. The Challenge winner, Intertape Polymer Group, was recognized for its implementation of numerous projects to increase quality, reduce waste, increase energy efficiency and emphasize safety while saving over \$3.2 million since the initial E3 assessment in 2013. NASCAR provided a VIP Experience to the winner for the NASCAR Sprint Cup Series race at Richmond International Raceway in September. Other manufacturers recognized included ABB, Tempur-Sealy and NIBCO of Virginia. During the event, EPA recognized OPP and the MTC with a certificate of appreciation for the support of the E3 Initiative.

OPP supports E3 efforts by encouraging facilities to participate in assessments and raising awareness of the E3 programs by including E3 Initiative information in all conference exhibits. For more information on Virginia's E3 project, contact Keith Litz at the Manufacturing Technology center at klitz@wcc.vccs.edu or 276-223-4858.

E3: Economy, Energy and Environment Initiative

Representatives from NASCAR, Richmond International Raceway, the MTC, and the Commonwealth congratulate representatives from Intertape Polymer Group for winning the 2016 NASCAR Green E3 Challenge at a recognition ceremony in August at Richmond International Raceway's Torque Room.



Governor's Environmental Excellence Awards

On April 7, the winners of the 2016 Governor's Environmental Excellence Awards were announced at the 27th Environment Virginia Symposium in Lexington. The awards program was co-sponsored by DEQ and the Virginia Department of Conservation and Recreation (DCR). For the first time, the Awards recognized the exemplary implementation of the Virginia Outdoors Plan to acknowledge outdoor recreation accomplishments meeting the 2013 Virginia Outdoors Plan goals and objectives. Eight entries were recognized with awards in the categories of Sustainability, Environmental Project, Land Conservation and Virginia Outdoors Plan Implementation. An additional three applicants were presented Honorable Mention certificates.



GOLD MEDAL WINNERS

City of Richmond & Virginia Green Travel Alliance Greening the 2015 UCI Road World Championships

The City of Richmond's Sustainability Office and the Virginia Green Travel Alliance partnered to make the 2015 Union Cycliste Internationale (UCI) Road World Championship (Worlds) the greenest event of its kind. Waste management practices, including food donation, composting, repurposing and recycling, diverted 65,000 pounds from landfills. This was accomplished by working with vendors to ensure that only compostable disposables were used and creating an RVA Green Team Volunteer Network to ensure volunteers were onsite to assist spectators with the proper disposal of waste. In addition, through source reduction techniques like reusable cups and water-filling stations, the generation of 14,500 pounds of waste was avoided. Worlds also provided bike valets, purchased Renewable Energy Credits to offset 100% of the events' operations and completed numerous community improvement projects. The 2015 UCI Road World Championships was the first ever Road World Championship to receive the UCI's reCycling eco-label. As part of the City's goal to leave a positive legacy, a toolkit is being created to serve as a resource for future events.



Governor's Environmental
Excellence Awards

Luray Hawksbill Greenway Trail Virginia Outdoors Plan Implementation



The Luray Hawksbill Greenway Trail was recognized as an example of exemplary implementation of the Virginia Outdoors Plan. Bordering the Hawksbill Creek, the Greenway is a 2-mile walking and biking trail that runs through the Town of Luray, connecting neighborhoods and parking areas with the downtown shopping district. The 10-foot corridor is protected by ownership and easements. The Greenway protects water quality with riparian buffers, community creek cleanups, structures to dissipate stream energy and monofilament fishing line and bait container recycling. Using informational kiosks and interpretive signage, the trail educates users on local history, native species and pet waste cleanup campaigns. The Trail encourages wellness and connectivity by partnering with area health facilities, establishing community exercise classes and offering free health screenings.

Virginia Outdoors Foundation Land Conservation Program

Since its inception in 1966, the Virginia Outdoors Foundation (VOF) has conserved a significant amount of land in the Commonwealth. Ninety-five percent of all Virginians live within 10 miles of VOF-conserved land. Currently, the organization protects more than 750,000 acres in 107 counties and independent cities throughout Virginia making it not only the state's largest land conservation agency but also one of the largest land conservation organizations in the nation. Since its creation, VOF has preserved open space in Virginia at a rate of about 2 acres every hour, primarily through the use of open-space easements. VOF manages nearly



4,000 open-space easements, which are voluntary agreements with landowners that restrict certain types of development on land in perpetuity while keeping the land available for farming, forestry, recreation and other compatible uses. VOF-managed easements account for approximately 80% of all the open-space easement acreage in the Commonwealth. The foundation currently owns four open-space reserves, with the largest being the Bull Run Mountains in Northern Virginia, which is a 2,350 acre publicly accessible property that is also managed cooperatively with DCR as a Natural Area Preserve. VOF has been instrumental in the conservation goal set by the Chesapeake Bay Agreement to conserve 20% of the Bay's watershed in all six states; of the 572,000 acres conserved to date across all six states, VOF has contributed over 175,000 acres.

SILVER MEDAL WINNERS

**Chesterfield County
Wastewater Treatment Process Optimization**

Chesterfield County's Department of Utilities is committed to providing the highest quality water and wastewater services available. The Department uses their Performance Plan, which includes over 100 performance measures, and their environmental management system (EMS) to identify opportunities for improvements. The EMS has become an integral part of their business culture and is an effective tool to safeguard the environment and public health. By tracking chemical consumption and process parameters, the Department identified excess air in the aeration tanks which lead to approximately a 520,000 kilowatt-hours savings when the air demand was decreased. One of the Department's facilities was able to reduce concurrent peak demand by staggering the startup of key pieces of equipment, saving over \$325,000. Another project involved cleaning equipment to increase efficiency, which reduced natural gas usage by 6.6 million cubic feet. Also, Department staff designed and built a filtration system to use treated effluent, which reduced the total water usage by 2.3 million gallons. Staff involvement in identifying and implementing process changes has been key to the success of the program.



**Roanoke River Blueway
Virginia Outdoors Plan Implementation**

The Roanoke River Blueway provides cost-free opportunities for canoeing, kayaking, fishing, tubing, wading, wildlife viewing and watershed education with convenient access to other outdoor and cultural amenities in Virginia's Blue Ridge all year long. The 45-mile Blueway, which includes 15 public boating access points, aims to promote healthy living and economic sustainability through increased use and awareness. Access points are located in local parks allowing for shared parking. In addition, information is provided for using the Valley Metro and bicycle accommodations. Watershed management and stewardship through education are supported through a dedicated webpage to water quality. The Roanoke River Blueway Interactive Map was designed to provide a range of information to facilitate safe use and enjoyment of this regional resource. Funding for the Blueway was leveraged from a variety of sources including private donators, the Virginia Tourism Cooperation Market Leverage Program, American Electric Power and Virginia Department of Game and Inland Fisheries (DGIF).



BRONZE MEDAL WINNERS

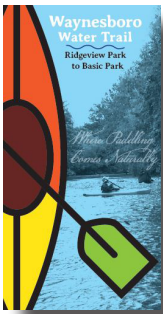
**ABB
Stormwater Quality Improvements – Phase I**

The ABB South Boston manufacturing facility builds and supplies liquid-cooled power transformers of 75 mega-volt-amperes and 161 kilo-volt-amperes to serve the energy infrastructure needs of the country. Although polychlorinated biphenyls (PCBs) have not been used in the manufacturing process since prior to 1978, stormwater runoff from the South Boston site still contains PCBs. ABB committed to voluntarily and proactively address this contamination. ABB diverted the stormwater flow by eliminating an open channel, adding a detention system, installing a new energy dissipater and establishing vegetated surface areas. PCB



concentrations decreased from approximately 250,000 picograms per liter prior to the changes to approximately 25,000 picograms per liter upon the completion of Phase I. Understanding the environmental behavior of persistent and hydrophobic PCB compounds was a critical step in developing this cost-efficient project.

**Waynesboro Water Trail
Virginia Outdoors Plan Implementation**



The City of Waynesboro is being recognized for its exemplary implementation of the Virginia Outdoors Plan as demonstrated through the Waynesboro Water Trail. The Waynesboro Water Trail utilizes two new boat ramps to enable paddlers to travel on the South River through a four mile stretch of Waynesboro. Access is free for everyone. Design of the new boat ramps included optimizing the location by taking into account storm events and erosion, as well as future maintenance needs. A companion brochure was created to educate the public on recreational opportunities including points of interest along the river like rapids, access, a fishing pier and greenway, as well as providing entry level information on how to plan a paddling trip. The project was made possible through funding from a DGIF River Access Grant, a US Department of Housing and Urban Development Community Development Block Grant and the City of Waynesboro.

**Yokohama Tire Manufacturing Virginia, LLC
Zero Landfill Operation**

Yokohama Tire Manufacturing Virginia (YTMV) has become a zero landfill manufacturer by reducing waste generation and working with non-landfill vendors. The facility's efforts are part of a larger initiative of the Yokohama Rubber Company's Grand Design 1000 Plan which set standards for company-wide operations to be harmonized with the environment. YTMV first looked at how to reduce the amount of waste being produced by limiting scrap material and reducing raw materials. By working to limit scrap, YTMV was able to reduce the use of carbon black and compounding from over 10,000 pounds in 2013 to 4,300 pounds in 2015. In total, the facility was able to reduce the amount of waste produced monthly by an average of 44 tons. Employee participation and upper management support, including monthly meetings to discuss issues and opportunities, were critical to the success of the project. YTMV will share their success story with other Yokohama facilities throughout North America.



HONORABLE MENTION RECIPIENTS

- The Hermitage Foundation Museum and Gardens, Norfolk: Conservation Easement
- James Madison University, Harrisonburg: Strategies for Residence Hall Energy Reduction
- Tucker Park at Maidens Crossing, Goochland County: Outdoor Classroom - Virginia Outdoors Plan Implementation



Thomas Faha, DEQ's Northern Regional Director, announced the 2016 Governor's Environmental Excellence Award winners at the Environment Virginia Symposium in Lexington on April 7th.



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. There are two separate and distinct VEEP tracks: the Sustainability Partners and the Environmental Management System (EMS) track. VEEP Sustainability Partners (SP) is the newest VEEP track, which is designed to encourage organizations to make environmental sustainability part of their culture through leadership, innovation, and continual improvement and provides recognition to members. An EMS is not a requirement to be a Sustainability Partner.

The VEEP EMS track has three levels of participation, all supplying recognition and other benefits such as permit fee discounts, a single point of contact at DEQ and in some cases the opportunity for regulatory flexibility. The three levels of participation for facilities interested in the VEEP EMS track are:

- 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.

The OPP administers VEEP, which includes reviewing applications and renewals, performing site visits, coordinating compliance reviews, and organizing recognition events. This year OPP staff reviewed approximately ninety-six applications for VEEP new and renewing members, including fourteen SP applications.

Highlights from 2016

Outreach: As in previous years, DEQ continues to employ multiple types of outreach intended to keep current program participants up-to-date as well as to reach potential new members. This includes workshops, conference participation, e-newsletters, webinars and updates via social media. This year the OPP partnered with Smithfield Foods on a webinar titled ‘Taking Control of Your Environmental Risks’. There were over ninety participants in the event which explained the value of an EMS, its tie to VEEP and Smithfield’s successes through the implementation of EMS. The OPP is always excited to partner with a VEEP member and continues to promote mentoring between members and potential applicants.

OPP works to promote VEEP at every outreach event where the information is appropriate. Beginning in 2015 and stretching through 2016, OPP made an effort to promote VEEP internally. The concept of EMS is being promoted internally in the hopes that a better educated DEQ staff can promote EMS information and related



On June 3rd, DEQ Tidewater Deputy Regional Director Janet Weyland recognized Canon Environmental Technologies, Inc., and Canon Virginia for renewing their VEEP membership. Both facilities have been VEEP members for 10 years. Canon Environmental Technologies, Inc., has developed an innovative handling process for color toner cartridges that allows it to recycle many parts of the cartridge. The updated handling process recovered over 10 million pounds of material for recycling its first year. Canon Virginia eliminated 12,600 gallons of hazardous waste per year by replacing a chlorinated solvent with a non-chlorinated solvent.

VEEP opportunities externally. This effort has resulted in DEQ attaining the E3 level of VEEP. As part of a larger Division of Environmental Enhancement effort, OPP programs like VEEP are being showcased to DEQ regional offices through in-person presentations. Lastly, the most recent group of Career Path III (CPIII) graduates, a two-year internal leadership program offered by DEQ, presented findings from their project which focused on how to add value to VEEP procedures and incentives to the agency Leadership Team. Throughout the year, OPP has worked to incorporate the CPIII suggestions into the program.

VEEP Data Management Improvements: This year VEEP has gained access to DEQ’s Enterprise Content Management (ECM) system which captures, manages, stores, preserves and delivers material related to agency activities. ECM allows for the electronic use of agency information regardless of the original format. With ECM access, VEEP information becomes more available to all agency staff, and the program improves transparency. Complementing this improvement, VEEP has been integrated into the Comprehensive Environmental Data System (CEDS) following over three years of planning. This has improved data management by making VEEP membership information available, in real-time, to the rest of the agency. The integrated database provides inspectors, monitoring staff and permit writers with a more complete profile of facilities that are part of VEEP. In addition, the integration has automated the process of applying VEEP permit fee billing discounts reducing errors and staff time.

Annual Permit Fee Discounts for VEEP Facilities: When legislation establishing annual permit fees for facilities was put in place, the General Assembly acknowledged that VEEP members “go beyond” compliance and determined that their improved environmental performance merited permit fee discounts: hazardous waste (potentially 5% for E2 facilities and 10% for E3 and E4 facilities); solid waste (potentially 10% for E2 facilities and 20% for E3 and E4 facilities) and water (potentially 2% for E2 and 5% for E3 and E4 facilities). For the first time, the CEDS automated system was used to determine permits eligible for VEEP discounts. In 2016, the discounts totaled approximately \$138,000.

Environmental Results: To remain in VEEP’s EMS track, members must submit an annual progress report. Several years ago, DEQ instituted an online 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 35 environmental indicators that they then use as the basis of their results tracking and VEEP annual reporting. Members report results in both actual and normalized quantities (i.e., results based on product, number of employees, etc.). Normalized results allow facilities to better track year-to-year performance. VEEP SP track members include quantifiable results in their annual applications. The VEEP EMS and SP track members combined include over 162,000 employees and cover over 1,000 square miles of land in Virginia. Also, VEEP members reported saving over \$41,000,000 through environmental efforts. Other environmental results are listed below.



VEEP Members Sharing Successes
Patrick Newton (far left) with the Albemarle County Service Authority, a VEEP E3 member, explains spill control measures at the County’s newly updated fueling station, to personnel from Albemarle County Schools, University of Virginia, and City of Charlottesville. All are current VEEP members.

2016 Aggregate VEEP Results*

- **Increased recycled material usage by 34,543 tons**
- **Reduced hazardous material use by 240 tons**
- **Reduced total water use by 238,156,000 gallons**
- **Increased recycled water use by 88,732,500 gallons**
- **Reduced greenhouse gas emissions by 111,275 tons**
Equivalent of almost 600 railcars’ worth of coal
- **Reduced total energy usage by 1,449,690 MMBtus**
Equivalent to the annual energy usage of over 30,000 homes
- **Total cost savings of \$41 million**

*Results reported in 2016 are based on calendar year 2015 accomplishments. The overall program results as presented above should only be considered a general indication of VEEP facility performance because: (1) the program is voluntary and data is submitted by the facilities; (2) many facilities still have limited experience tracking environmental results data; and, (3) the aggregate results are a snapshot from one year and may not reflect overall reduction trends.

DEQ Environmental Management System

Implementation of DEQ's EMS continued this year. The goal of the EMS is to not only reduce DEQ's environmental footprint, but also engage employees in the day-to-day decision making that is a cornerstone of environmental management. DEQ is setting an example for other state agencies.

The EMS is a part of DEQ's strategic plan, committing the agency to enhancing environmentally sound practices, increasing environmental awareness, increasing communication of mutually beneficial knowledge and encouraging innovative environmental solutions. These efforts go hand-in-hand with our mission of protecting and enhancing Virginia's environment and promoting the health and well-being of the citizens of the Commonwealth.



On July 1, 2014, Director David Paylor signed an updated commitment to the EMS, DEQ Agency Policy Statement No. 5-2014. This policy sets the foundation for DEQ to build and maintain a strong EMS, and it is the basis for which DEQ will set internal objectives and targets to improve our own environmental performance. The policy commits DEQ to ensuring compliance with applicable laws and requirements, identifying environmentally sound practices, communicating the policy and programs to employees and the public and collaborating with stakeholders on opportunities for environmental stewardship.

Objectives & Targets

The EMS Team has worked to implement numerous objectives and targets to address risks identified by a review of the agency's environmental aspects. Of the twelve objectives and targets that have been implemented to date, ten have been completed.

Completed Objectives & Targets:

- Included environmentally friendly printer/copier requirements in the request for quotes
- Developed EMS Awareness training for all DEQ staff
- Expanded DEQ's recycling efforts
- Distributed an aerosol can disposal fact sheet
- Updated DEQ's Pollution Prevention Plan
- Established an EMS Newsletter
- Developed a tracking sheet and guidance to ensure the effective use of DEQ fleet vehicles
- Expanded plastic film recycling programs to the regional offices
- Increased awareness about energy use by creating materials with information on ways to save energy
- Developed and compiled results of a commuter survey of all DEQ employees

Internal Audit

The first internal audit of the EMS was completed by a subgroup of the EMS Team in 2015. The audit identified strengths and opportunities for improvement in the program. Based on audit findings, the EMS Team developed action plans to strengthen the EMS. In 2016, the EMS Team has continued to address the issues identified through the audit.

VEEP Membership

DEQ was accepted as an E3 member of the Virginia Environmental Excellence Program (VEEP). DEQ is the first state agency to participate in VEEP at the E3 level and hopes to lead by example for other agencies.

Greening the Executive Mansion

Under the direction of First Lady Dorothy McAuliffe, OPP worked with the Virginia Department of General Services (DGS) and staff of the Executive Mansion on projects to reduce the environmental footprint of the Executive Mansion. The project began in 2015 when DEQ staff met with Mansion staff and DGS to identify ways to reduce the Mansion's impact on the environment. In the last year, the Executive Mansion worked with DEQ and DGS to implement many sustainable projects including:



- Installing a water bottle filling station, which has replaced the use of disposable plastic water bottles;
- Collecting kitchen grease for recycling;
- Participating in the Virginia Oyster Shell Recycling Program;
- Composting food waste;
- Using green cleaning products approved as "Safer Choice" by EPA;
- Replacing exterior metal halide fixtures with LEDs;
- Installing motion sensors in appropriate areas;
- Planting native species throughout the grounds; and
- Installing low-flow toilets and EPA WaterSense certified shower heads.

The Executive Mansion hosted a reception to celebrate Earth Day, where the Mansion's participation in Virginia Green was announced. During the reception the Secretary of Natural Resources Molly Joseph Ward, DEQ Director David Paylor and DEQ Division of Environmental Enhancement Director Sharon Baxter highlighted the achievements of the Executive Mansion.



First Lady Dorothy McAuliffe is presented with a Virginia Green certificate for the Executive Mansion. Pictured from left to right: DEQ Division of Environmental Enhancement Director Sharon Baxter, DEQ Director David Paylor, Director of the Executive Mansion Kaci Easley, First Lady of Virginia Dorothy McAuliffe, Governor Terry McAuliffe, and Virginia Green Travel Alliance Executive Director Tom Griffin.

Resources

General Information

www.deq.virginia.gov/Programs/PollutionPrevention.aspx

Virginia Green Tourism Program

www.deq.virginia.gov/Programs/PollutionPrevention/VirginiaGreen.aspx

www.virginia.org/green/

Governor's Environmental Excellence Awards Program

www.deq.virginia.gov/Programs/PollutionPrevention/GovernorsEnvironmentalExcellenceAwards.aspx

Pollution Prevention Case Studies

www.deq.virginia.gov/Programs/PollutionPrevention/PollutionPreventionCaseStudies.aspx

Virginia Environmental Excellence Program

www.deq.virginia.gov/Programs/PollutionPrevention/VirginiaEnvironmentalExcellenceProgram.aspx

Virginia Information Source for Energy

www.deq.virginia.gov/Programs/PollutionPrevention/VirginiaInformationSourceforEnergy.aspx