



# COMMONWEALTH of VIRGINIA

## DEPARTMENT OF ENVIRONMENTAL QUALITY

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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: December 1, 2017

Subject: Office of Pollution Prevention, 2017 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 2017 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 2017.

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 2017



Office of Pollution Prevention  
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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 2017 are:

- Engaging organizations by hosting two free regional workshops featuring sessions on finding pollution prevention opportunities, environmental management systems and a regulatory update;
- Presenting twelve Governor's Environmental Excellence Awards at the Environment Virginia symposium in April, including six gold awards to recognize exemplary programs; and,
- Working to enhance the Virginia Green Tourism program's membership process by updating the application to provide a more user friendly online process and transition application processing to the Virginia Green Travel Alliance.

Virginia continues to be a leader in promoting collaborative partnerships through non-regulatory environmental programs. OPP's programs work to provide Virginia organizations the tools and support needed to implement environmental programs that reduce risk and environmental footprints, while being a sound business decision. With the support of Governor Terry McAuliffe, Secretary Molly Joseph Ward and our stakeholders, OPP's programs are well positioned to continue to provide a valuable resource to the Commonwealth.

David K. Paylor



*Pictured with Director Paylor (far right) presenting a Gold Medal for a renewable energy program at the 2017 Governor's Environmental Excellence Award ceremony are (from left to right) Clyde Cristman, Director of the Department of Conservation and Recreation, Secretary of Natural Resources Molly Joseph Ward and winners Larry Wilson, Boiler Operations Manager at the Piedmont Geriatric Hospital, Stephanie Pechura, Assistant Director of Administration at the Virginia Center for Behavioral Rehabilitation and Steven Bowen, Facilities Manager at Piedmont Geriatric Hospital. See page 5 for more information on this year's winners.*

## 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 and organizations voluntarily commit to engage in P2 practices in the core areas of waste reduction, water and energy conservation, and in the support of green events and 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, events and festivals, visitor centers, wineries, golf courses, transportation facilities and supporting organizations. OPP oversees development of all programmatic guidance and reviews each of the submitted applications, while DEQ's partners, the Virginia Green Travel Alliance (VGTA), the Virginia Tourism Corporation and the Virginia Restaurant, Lodging, and Travel Association (VRLTA), coordinate marketing and promotion.

### 2017 Virginia Green Highlights:



The VGTA's Tom Griffin presents Hilton Worldwide Vice President of Corporate Sustainability, Maxime Verstraete, with a welcome bag donated by the Charlottesville Albemarle County Virginia Green Travel Regional Chapter following his keynote presentation at the Virginia Green Conference and Green Travel Stars Awards Ceremony in Charlottesville.

**Certification Program.** Since Virginia Green started as OPP's Green Lodging program in 2006, part of OPP's role has been reviewing applications and renewals for all program participants. In 2017, OPP has worked closely with the VGTA to begin to transition the application review process. OPP will maintain an active role in Virginia Green by continuing to provide technical resources and oversight of the certification standards. In addition, OPP will expand its ability to provide technical assistance to individual tourism businesses when possible.

To start this transition, OPP completely reworked the current Virginia Green checklist application, to combine sectors where applicable and ensure resources and green activities included were up-to-date. The applications were then entered into an electronic system that will allow members from all sectors to apply online, a feature currently only available to events, lodging, restaurants and some attractions. The online application also allows for the collection of more program specific data including metrics and cost savings. OPP will continue to review program requirements and, where applicable, provide resources relevant to activities sited on the application.

**1,650 Virginia Green Participants.** Virginia Green continues to be a leader among state green tourism programs with the most inclusive program in the country. Virginia Green has maintained its membership of over 1,650 participants. As the program transitions to the new application process, all members will be asked to reapply over a two-year period and every two-years thereafter.

**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 is based on established industry averages. Estimated reductions are based on green practices members are required to implement compared to standard practices. Estimates for 2017 will be available in early 2018. For 2016, environmental results include over 29,000 tons of solid waste reduced or diverted from landfills, over 300 million kilowatt hours less of electricity used and over 1.3 billion less gallons of water consumed.

**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 focus has been on regional partnerships, education, program marketing and innovative green tourism projects. In 2017, OPP worked with the VGTA to launch a new website which will host the Virginia Green application. 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 2017, the VGTA hosted the 3rd Annual Support Virginia Green Tourism Oyster Roast & Festival at Historic Tredegar in Richmond to raise awareness of the Virginia Green program and showcase Virginia Green members. The VGTA also partnered with Keep Virginia Beautiful, a 501(c)(3), and ten Virginia craft breweries to celebrate Earth Day.

**Virginia Green Travel Regional Chapters Program.** Last year the VGTA announced the development of the Virginia Green Travel Regional Chapters Program to leverage the work regional tourism partners do locally 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, develops a standard Virginia Green profile that can be used for events. Regional Chapters set annual goals to increase Virginia Green membership and review membership information to ensure contacts are current.

**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. The sortable online directory lists over eighty suppliers providing green services ranging from composting to transportation. Currently the VGSN is overseen by the VRLTA, but the VGSN application is being updated to be incorporated into the new application process.

**Annual Virginia Green Conference and Green Travel Stars Awards Ceremony.** The Virginia Green program held its fourth annual Virginia Green Travel Conference and Travel Star Awards Ceremony on February 16 and 17 at the Darden School of Business Conference Center in Charlottesville. First Lady Dorothy McAuliffe presented nineteen Virginia Green Travel Star Awards and twenty-two 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 educational workshops, a green tourism business expo and more than forty presentations on green tourism efforts in Virginia, including from keynote speaker Maxime Verstraete, Vice President of Corporate Sustainability for Hilton Worldwide. Planning is underway for the 2018 conference and awards, which will be March 1 and 2 at the Virginia Beach Convention Center.



*Four members of the RVA Green Team, coordinated by the VGTA, volunteer at the 3rd Annual Support Virginia Green Tourism Oyster Roast & Festival at Historic Tredegar in Richmond to ensure that waste from the event is properly collected. Thanks to the efforts of volunteers this was a near-zero waste event.*



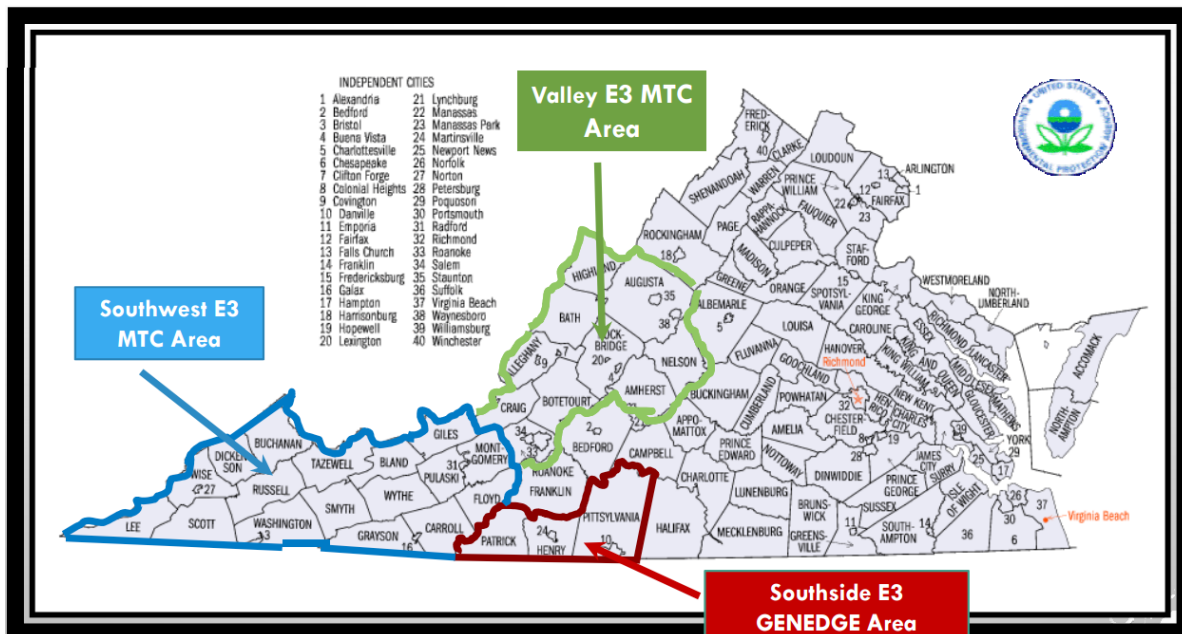
*First Lady Dorothy McAuliffe presented the Virginia Green Travel Star Awards at the Virginia Green Travel Conference and Travel Star Award Ceremony in Charlottesville. Following the presentation, DEQ's Morgan Goodman handed out congratulatory letters from Senator Mark Warner. Pictured above are Tom Griffin with the VGTA, First Lady Dorothy McAuliffe, Morgan Goodman with DEQ and representatives of Virginia Green facilities recognized as Travel Stars.*

## 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 an E3 (Economy, Energy and the Environment) initiative. This initiative was made possible through funding provided by EPA's Region 3 Pollution Prevention grants. 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 City and Pittsylvania County by GENEDGE ALLIANCE. This project provides the same services as delivered in 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 of the Shenandoah Valley, Roanoke Valley and City of 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 August 2017. In addition, through the MTC's partnership with the Department of Energy's Industrial Assessment Center at North Carolina State University, twenty-three energy assessments have been completed in Virginia's E3 service area. 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](mailto:klitz@wcc.vccs.edu) or 276-223-4858.



# Governor's Environmental Excellence Awards



On April 4, the winners of the 2017 Governor's Environmental Excellence Awards were announced at the 28th Environment Virginia Symposium in Lexington. The awards program was co-sponsored by DEQ and the Virginia Department of Conservation and Recreation (DCR). For the second time, the Awards recognized exemplary implementation of the Virginia Outdoors Plan to acknowledge outdoor recreation accomplishments meeting the 2013 Virginia Outdoors Plan goals and objectives. Twelve 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

### Alexandria Renew Enterprises Sustainability and Environmental Program

Alexandria Renew Enterprises (AlexRenew) is committed to protecting public health and the environment through its implementation of sustainable practices at its advanced water resource recovery facility. AlexRenew serves more than 300,000 people in Alexandria and parts of Fairfax County by transforming wastewater into clean water. With its 100 dedicated team members, AlexRenew works to ensure the future of clean water while keeping its energy use at a sustainable level. Because wastewater treatment plants account for 4% of the total electrical use for the nation, AlexRenew works hard to reduce its energy intensity. AlexRenew has been successfully reducing its environmental footprint for the past 8 years by reducing its total annual energy consumption by 17%. In order to reduce total energy consumption and emissions, the facility employs a renewable methane digester which uses microbes to break down waste material and offsets more than 30% of total energy usage. In addition, AlexRenew installed solar panels which provide 40% of the electricity for AlexRenew's Environmental Center.



### Fairfax County Park Authority Huntley Meadows Park Wetland Restoration

Huntley Meadows Park is a rich, natural and historical island of over 1,500 acres located in Fairfax County's Hybla Valley and is the largest park in the Fairfax County Park Authority (FCPA) system. The park's wetlands play a vital role in the overall health of the watershed by keeping river levels normal, filtering surface water and absorbing water during storms to prevent flooding. Over time, what was once considered one of the most productive nontidal wetlands in the mid-Atlantic area was losing its effectiveness due to the deposition of silt and debris, the colonization of invasive species and changing beaver activity. The FCPA faced many obstacles in its goal of restoring the wetlands. The Park Authority used innovative technologies to control water surface elevation to achieve the desired biodiversity goals while allowing for the continued habitation of beavers in the area. The project's innovative design allowed resources to be saved and for the natural regrowth of native vegetation. The Huntley Meadows Park Wetlands Restoration was a success because of the return of rare species and the growth of stewardship education in the community. The park is now enjoyed by tens of thousands of individuals as well as educational groups.

### James City County Department of Parks and Recreation The Freedom Park Multi-Use Trail

The Freedom Park Multi-Use Trail was recognized for its exemplary implementation of the Virginia Outdoors Plan. Freedom Park, the County's most historically significant park, stretches 1.2 miles along a paved trail. The Master Plan set goals to increase connectivity of trails to parks, allowing people to move freely without the interruption of cars and promoting health and fitness. The plan includes water quality monitoring, sediment control and stormwater management. The Freedom Park Multi-Use Trail was designed with the environment in mind, including the 5% grade to reduce runoff and control erosion and paving the trail with shoulders to provide stability, reduce erosion and limit maintenance needs. Threatened plants and wildlife were taken into consideration when the trail was realigned by 700 feet to avoid disrupting a threatened plant species. A bike wash station was established using rain water to reduce the spread of invasive species. Because the trail was funded by the Virginia Recreation Trails Grant program, it was held to the highest environmental standards. The Freedom Park Multi-Use Trail establishes a connection between neighborhoods, a means of alternative transportation for children walking to school and a great opportunity for exercise and connection with the environment.





**Piedmont Geriatric Hospital in partnership with Virginia Center for Behavioral Rehabilitation Renewable Energy Program**



Piedmont Geriatric Hospital (PGH) has partnered with the Virginia Center for Behavioral Rehabilitation (VCBR) to provide heat to both facilities. The PGH operates a boiler that previously used wood waste, supplemented by fuel oil when wood was no longer sufficient, to produce steam that delivered heat. By reducing the use of fuel oil and switching to the use of a herbaceous biomass, the project supports local farms in Southside Virginia. This has also resulted in an increase of wildlife habitat and a reduction of greenhouse gas emissions from fuel burning by 5,292 tons while the soils used for growing the biomass sequesters 3.67 metric tons of CO<sub>2</sub>e per acre per year. This conversion has created a rural economic boost with increased employment opportunities. The cost of fuel oil is approximately twice as much as the cost of grass biomass needed to produce an equal amount of steam. The total savings since 2011 have been \$540,133 as a result of reducing fuel oil consumption by 517,296 gallons.

**Town of Halifax**

**Banister River Blueway-King's Bridge Landing Access**

The Town of Halifax has partnered with many organizations such as the Dan River Basin Association, local civic groups and volunteers in order to secure Virginia Department of Transportation Enhancement Grant Funds for its Banister River Gateway Project. The Town set to work by creating a Halifax Downtown Master Plan that enhanced the downtown area and included water access facilities. This plan included a guide for phased funding, improvements to the public infrastructure and pedestrian access. The Town aimed to enhance the region and worked to achieve the 13 goals created by the Virginia Outdoors Plan which include opportunities for outdoor recreation, economics, wellness and land conservation. The enhancements to the Banister River Blueway and King's Bridge Landing have lifted the community and provided an influx of high profile community events, recreational and environmental initiatives, as well as generating tourism in the Town. The growth and evolution of events that promote eco-tourism include water recreation, water sports and increased opportunity to explore scenic Virginia.



**U.S. Army Garrison, Fort A.P. Hill Army Compatible Use Buffer (ACUB) Program**

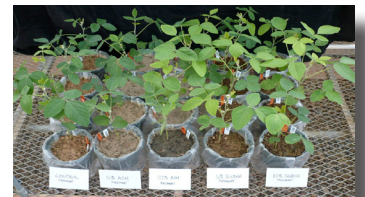
U.S. Army Garrison, Fort A.P. Hill is a Regional Training Center that provides facilities and resources to enable Army, Joint and Interagency Readiness. Fort A.P. Hill integrates environmental quality, biodiversity, conservation and ecosystem management into the operations of the facility. The Fort has worked collaboratively with Federal agencies, State agencies and non-profit organizations to gather funds to purchase conservation easements and fee simple ownership from willing landowners. Funds have also been obtained with

the help of the Virginia National Defense Industrial Authority and the federally appropriated Realignment and Closure program. Through these partnerships, valuable habitats and ecological resources, as well as the historic and rural character of the neighboring landscape, have been permanently protected, including more than 3,000 acres of wetlands, 20 miles of streams, 10,000 acres of riparian forest buffer, 3,000 forested acres and more than 6,000 acres of open lands. These protections of wetland and aquatic habitats benefit water quality and lends to the recovery of the Chesapeake Bay watershed. By implementing sustainable policies and working to maintain the environment around them, Fort A.P. Hill has established good relations with their community.

**SILVER MEDAL WINNERS**

**Bear Island Paper Super Soil**

Bear Island Paper has worked since 1979 to produce high quality newsprint and built a recycling plant to process 120,000 tons of newspaper and magazines in order to sustain the environment and use resources wisely. In 2014, Bear Island commissioned a study by Virginia Tech to evaluate the benefits of using its byproducts of boiler ash and paper mill sludge as a soil amendment called "Bear Island Super Soil". The product was granted a Fertilizer Product Registration License and has been approved by Quality Certification Services, an accredited organic certifying agent for the USDA, for use on organic farms. This innovative project has reduced the costs associated with managing its landfill by \$226,710 and is generating a small income.



**Massimo Zanetti Beverage**

**PURPOD100™**

Massimo Zanetti Beverage USA (MZB) is one of the nation's largest coffee roasters and operates nearly 50 companies in over 100 countries. MZB worked to address consumer interest in creating a more environmentally friendly single serve option for machines like Keurig. MZB worked with Bioproducts Discovery and Development Centre at the University of Guelph to identify a bio-based substance that could withstand the conditions found in a single serve coffee maker while still degrading fast and fully in industrial composting. The work culminated in the development of the PURPOD100™ which is 100% compostable and made from more than 90% renewable resources. The compostability and use of renewable resources in PURPOD100™ has the potential for 100% waste reduction.

**Town of Blacksburg, Virginia Tech and Sustainable Blacksburg Sustainability Week Partnership**

The Town of Blacksburg, Virginia Tech and the local citizen's group Sustainable Blacksburg collaborated to form a green partnership that promotes environmental awareness and sustainable actions in the community. In 2017, the partnership celebrated ten years since the inaugural Sustainability Week which supports 30 events to advance sustainability by educating students and community members. The partnership's mission, "Celebrate-Educate-Motivate", is designed to guide events to highlight innovative ideas and practices while providing the community with practical steps to integrate sustainability into their everyday lives.



**BRONZE MEDAL WINNERS**

**Arlington County Solid Waste Bureau Year-Round Yard Waste Collection Program**

In 2015 the Arlington County Board adopted a 'Zero Waste' goal to divert 90% of waste from landfills and incineration by 2038. Implementing a year-round yard waste collection program is a step towards this goal. In April of 2016, the Arlington County Solid Waste Bureau (SWB) extended its contracted weekly collection to include yard waste, in addition to recycling and garbage. The SWB estimated that 6,100 tons of yard waste was diverted from residential waste by the end of 2016.



**Community Housing Partners Grissom Lane Apartments**

Community Housing Partners (CHP) is a nonprofit community development corporation that works to provide affordable, safe and environmentally sustainable homes to low-income families across the southeastern and mid-Atlantic US. The project achieved net-zero energy consumption and has resulted in an energy reduction of 12,104 kilowatt hours per year based on the Virginia multifamily average. The cost effectiveness of this community keeps the project viable and sustainable for CHP to own and for people to live in.

**Virginia Department of Corrections Environmental Services Unit Mecklenburg Correctional Center Deconstruction and Recycling Project**

The Environmental Services Unit was tasked with the deconstruction and recycling of the Mecklenburg Correctional Center in 2012 and planned to perform a green deconstruction to allow for the reuse, reallocation and recycling of resources from the facility. Overall, Department of Corrections (DOC) was able to divert over 99% of waste from the landfill. In total the DOC was able to transfer over \$795,000 in assets to other correctional facilities and avoid the cost associated with a private demolition vendor which could be up to \$2.65 million.



**HONORABLE MENTION RECIPIENTS**

- City of Suffolk, Sleepy Hole Park Fishing Pier and Canoe and Kayak Launch – Virginia Outdoors Plan Implementation
- Micron Technology, Inc.– Phosphoric Acid Beneficial Reuse
- Roanoke County Parks, Recreation and Tourism, Explore Park Adventure Plan – Virginia Outdoors Plan Implementation



# 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 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: 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 eighty applications for VEEP new and renewing members, including sixteen SP applications.*

## Highlights from 2017

### Outreach:

Every year DEQ employs multiple types of outreach intended to keep current program participants up-to-date as well as to reach potential new members. This includes workshops, conferences, e-newsletters, webinars and updates via social media. This year OPP staff made presentations at the Environment Virginia Symposium and the Virginia Recycler Association, 25th Annual Conference for Recycling – Moving Toward Zero Waste. A presentation on VEEP was also made to the City of Winchester’s Environmental Sustainability Task Force and a series of regional workshops was begun. The first was held at the Virginia Science Museum. Over 60 people attended this initial VEEP Workshop aimed at facilities in central Virginia.

OPP also partnered with VEEP members General Electric Integrated Platforms and Roanoke Cement Company to present a webinar called ‘Creating a Culture of Sustainability: Increasing Buy-in Through Communication.’ There were approximately one-hundred participants in the event. The OPP is always excited to partner with VEEP members and continues to promote mentoring between members and potential applicants as well as conduct complimentary visits to facilities interested in VEEP. The most recent of these was at Shenandoah Valley Organics.



*On August 22, DEQ Director of Central Operations and Piedmont Regional Director Jeff Steers welcomed attendees to the Piedmont Region VEEP Workshop at the Science Museum of Virginia in Richmond. Topics for the workshop included pollution prevention, energy efficiency, environmental regulations and environmental management systems. Attendees included VEEP and non-VEEP members and came from a range of sectors including private industry, state government, local government and consultants.*



Beginning in 2015, OPP made an effort to promote VEEP internally with the idea that a more informed DEQ staff can promote EMS and VEEP externally. In July 2017 the OPP addressed DEQ staff through a monthly event called 'DEQ Talks' that allows various DEQ programs to update the agency on their efforts.

### VEEP Data Management Improvements:

In recent years a VEEP module in DEQ's Comprehensive Environmental Data System (CEDS) has been developed and VEEP file storage has been moved to the agency's Enterprise Content Management (ECM) system. This has improved data management and made VEEP membership information available to the entire agency. These upgrades provide inspectors, monitoring staff and permit writers with a more complete profile of facilities that are part of VEEP. In 2017 VEEP accessed Logi Ad-Hoc, a report building tool. This will further improve data management and provide data mining opportunities. OPP continues to look to the future for program improvements, including recently submitting project proposals to DEQ's Office of Information Systems to transition the SP application to an online form and automate internal and external communications related to VEEP application processing.

### 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). In 2017, VEEP members saved \$152,920 on annual permit fees.

### 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 218,000 employees. Also, VEEP members reported saving almost \$52,000,000 through environmental efforts in 2016. Other environmental results are listed below.



*VEEP Members Celebrate Their Success: Eunice Kulesza with Fareva Richmond is celebrating the renewal of the facility's E4 VEEP membership. The facility hosted a gathering with raffle prizes, cake and information on the site's sustainability efforts to thank employees for their participation and hard work.*

**Aggregate VEEP Results\***

- **Energy use reduced by 771,635.45 MMBTU**  
This savings is equivalent to powering approximately 8,972 Virginia homes for one year.\*\*
- **Recycled water use increased by 105,575,011 gallons**  
This is enough water to supply approximately 7,976 Virginia residents for one year.\*\*\*
- **Greenhouse gas emissions reduced by 99,717.32 tons**
- **Sulfur oxides reduced by 24,207.79 tons**
- **Hazardous waste recycled totaled 64,152.5 tons**

\*Results reported in 2017 are based on calendar year 2016 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.

\*\* A Virginia household on average uses 86 million BTU's per year.

\*\*\*Charlottesville residents use approximately 1103 gallons of water per month.



# DEQ Environmental Management System

*Implementation of DEQ's EMS is ongoing; with the goal of not only reducing DEQ's environmental footprint, but also engaging employees in the day-to-day decision making that is a cornerstone of environmental management. DEQ is leading by example for other state agencies as it strives to continually improve the EMS at its facilities across the state.*

*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 a 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 environmental best 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 and impacts. Of the fourteen objectives and targets that have been implemented to date, twelve have been completed. In 2017 the EMS Team set long-term goals for a 10% paper purchasing reduction and a 5% energy use reduction. The EMS Team will be working on action plans to reach these goals over the coming years.

## Internal Audits

In 2017 the EMS Audit Team, comprised of team members from each region, conducted a second internal audit and made recommendations to the Agency EMS Team based on their findings.

## VEEP Membership

DEQ is 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 serve as an example to other agencies. DEQ has shared EMS information with other state and local agencies that are looking for ways to improve or build an EMS.



*DEQ staff from the Southwest Regional Office's EMS Team participated in the Town of Abingdon's 2017 Earth Day Celebration. The theme was energy conservation and DEQ's exhibit included a tabletop demonstration which compared operating costs of three common types of household light bulbs. The demonstration utilized a watt meter connected to switchable lights, allowing participants to calculate monthly cost estimates for each type. The results of the display indicated the following based on 30 days of continuous use:*

- A 100 watt incandescent would cost \$8.21
- A CFL with similar output would cost \$1.80
- An equivalent LED would cost \$1.39

*Given that the average household has approximately 45-50 light bulbs, converting to CFL or LED could result in substantial savings.*

# Resources

## General Information

[www.deq.virginia.gov/Programs/PollutionPrevention.aspx](http://www.deq.virginia.gov/Programs/PollutionPrevention.aspx)

## Virginia Green Tourism Program

[www.deq.virginia.gov/Programs/PollutionPrevention/VirginiaGreen.aspx](http://www.deq.virginia.gov/Programs/PollutionPrevention/VirginiaGreen.aspx)

[www.virginia.org/green/](http://www.virginia.org/green/)

## Governor's Environmental Excellence Awards Program

[www.deq.virginia.gov/Programs/PollutionPrevention/GovernorsEnvironmentalExcellenceAwards.aspx](http://www.deq.virginia.gov/Programs/PollutionPrevention/GovernorsEnvironmentalExcellenceAwards.aspx)

## Pollution Prevention Case Studies

[www.deq.virginia.gov/Programs/PollutionPrevention/PollutionPreventionCaseStudies.aspx](http://www.deq.virginia.gov/Programs/PollutionPrevention/PollutionPreventionCaseStudies.aspx)

## Virginia Environmental Excellence Program

[www.deq.virginia.gov/Programs/PollutionPrevention/VirginiaEnvironmentalExcellenceProgram.aspx](http://www.deq.virginia.gov/Programs/PollutionPrevention/VirginiaEnvironmentalExcellenceProgram.aspx)

## Virginia Information Source for Energy

[www.deq.virginia.gov/Programs/PollutionPrevention/VirginiaInformationSourceforEnergy.aspx](http://www.deq.virginia.gov/Programs/PollutionPrevention/VirginiaInformationSourceforEnergy.aspx)