



Pollution Prevention

2018

Office of Pollution Prevention
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Inside:

From the Director	1
Virginia Green Travel	2
Governor's Environmental Excellence Awards	4
Virginia Environmental Excellence Program	8
DEQ Environmental Management System	10
Resources	11

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 regulatory requirements while enhancing their bottom line. A few of the program's accomplishments from 2018 are:

- Engaged organizations by hosting an energy efficiency webinar and planning a free regional workshop promoting sustainable practices;
- Presented 17 Governor's Environmental Excellence Awards at the Environment Virginia symposium in April, including five gold awards to recognize exemplary programs; and,
- Worked to enhance the Virginia Green Tourism program's membership process by providing resources, including the Sustainable Event Toolkit.

Virginia is a leader among states in promoting collaborative partnerships through non-regulatory environmental programs. OPP's programs serve Virginia organizations by providing tools to implement environmental programs that reduce risk and environmental footprints, recognizing innovative programs and leveraging what has been successfully implemented and can be duplicated. Support from Governor Ralph Northam, Virginia Secretary of Natural Resources Matthew J. Strickler and our stakeholders have been critical in advancing OPP's programs, which are well positioned to continue to provide a valuable resource to the commonwealth.

David K. Paylor



(Pictured, left to right) Clyde Cristman, Director of the Department of Conservation and Recreation, Mary Wolf with Wild Wolf Brewing Company, Virginia Secretary of Natural Resources Matthew Strickler and DEQ Director David Paylor attend the Governor's Environmental Excellence Awards in Lexington on April 5, 2018. Wild Wolf Brewing was recognized as a gold medal recipient for its "Everyday is Earth Day" sustainability program.

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 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, 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 requirements for the application, while DEQ's partners, the Virginia Green Travel Alliance (VGTA), the Virginia Tourism Corporation and the Virginia Restaurant, Lodging, and Travel Association (VRLTA), coordinate the application review process, marketing and promotion.



2018 Virginia Green Highlights:

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 began to transition the application review process to the VGTA, which included revising the current Virginia Green checklist applications to combine 14 sector specific applications into four more general applications. The transition was completed this year with the VGTA assuming responsibility of the application review process.

The new certification process is fee-based and includes two levels of participation. The fee structure was developed with input from tourism partners to ensure the program's accessibility to the entire travel and tourism sector, while providing the VGTA with funding to offset the cost of processing applications. The Virginia Green Commitment Level, the entry level, requires that a tourism business certify that it has made commitments to implement sustainable practices. Many businesses choose to start at the Commitment Level and work towards being Fully-Certified. Fully-Certified Virginia Green Partners have implemented a required number of sustainable practices in various categories such as recycling and waste reduction, water and energy conservation and green event management. Certified Partners undergo an application review that may require the submittal of photographs and other documentation of the green programs they have implemented.

OPP has maintained an active role in Virginia Green by continuing to provide technical resources and oversight of the certification standards. In addition, OPP is expanding its ability to provide technical assistance to individual tourism businesses when possible.

1,800 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 grown to over 1,800 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.

Sustainable Event Guide. Festivals, conferences, meetings and other events are important contributors to regional and statewide tourism. However, they can also result in significant environmental impacts from the waste generated, the amount of materials used, transportation to and from the event, and the energy and water consumed during the event. The Virginia Green Events checklist application was established early in the program along with corresponding guidance, but in 2018 the event guide was expanded. The new Sustainable Event Guide includes planning and how-to information to assist planners in implementing green practices that clearly communicate to participants that the organizers are committed to minimizing the event's environmental impacts.



The recently opened Hotel Madison & Shenandoah Valley Conference Center in Harrisonburg uses the Virginia Green logo on tent cards in guest rooms asking guests to reuse towels to reduce the facility's carbon footprint by reducing water and energy consumption. Having a linen reuse program, like the one described above, is a requirement for Virginia Green Lodging facilities.

Measurable 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 2018 will be available in early 2019. For 2017, environmental results include 30,000 tons of solid waste reduced or diverted from landfills, over 320 million pounds of carbon dioxide emissions avoided and over 1.3 billion fewer gallons of water consumed.

Green Travel Champion. Recognizing that tourists and consumers play an important role in supporting the green efforts of the tourism sector, the Green Travel Champion was created in 2018 to engage consumers in support of the Virginia Green Travel Program. Green Travel Champions are individual customers or sustainably-minded organizations which pledge to make green travel choices, give feedback, both positive and negative to Virginia Green Travel Partners, and make referrals to the VGTA for restaurants, attractions and other tourism partners that should be Virginia Green Partners.

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, innovative green tourism projects and, as of this year, processing Virginia Green Travel Partner applications.

Virginia Green Suppliers Network (VGSN). The VGSN is a fee-based internet directory of green service providers in support of Virginia Green. The sortable online directory lists over eighty suppliers providing green services ranging from composting to transportation. In 2018, the VGTA took over the VGSN application process.



Rita McClenny, President and CEO of the Virginia Tourism Corporation, presents Mark Swingle of the Virginia Aquarium and Marine Science Center a Virginia Green Travel Star Most Innovative & Impactful Green Project Award with Jack Berry, VGTA Board Member, and Tom Griffin, VGTA Executive Director. The Virginia Aquarium and Marine Science Center was recognized for its "In Our Hands" program, which works to find a solution to plastic pollution through the reduction of single-use plastics.



The VGTA's RVA Green Team volunteered at Riverrock, an outdoor sports and music festival in Richmond, where more than 4,000 pounds of waste was diverted from the landfill, including nearly 1,000 pounds that were composted. Signage shown above helped educate attendees on how to properly dispose of materials, which is an important part of composting at events.

Annual Virginia Green Conference and Green Travel Stars Awards Ceremony.

The Virginia Green program held its fifth annual Virginia Green Travel Conference and Travel Star Awards Ceremony on March 1 and 2 at the Virginia Beach Convention Center. The conference, attended by over 150 people, included two days of speakers and engaging panels on green tourism topics including the impact of climate change on tourism, innovative green products, how to market green tourism and the evolution of green consumers. The overall theme of celebrating 10 years of green was highlighted by two keynote speakers:

- Glenn Hasek, the publisher of Green Lodging News, who discussed major trends in green hotels and innovative practices for the hospitality industry; and,
- Anthony Rossi with TerraCycle, who discussed eliminating the concept of waste worldwide.

The Green Travel Stars Awards recognized 19 Travel Stars and 16 Travel Leaders for their efforts to protect the environment. Planning is underway for the 2019 conference and awards, which will be held April 24 and 25 at the Hotel Madison and Shenandoah Valley Conference Center in Harrisonburg. The awards categories have been expanded to include a People's Choice Award, giving Virginia Green members the opportunity to promote their green initiatives to consumers, and an All Star Award to recognize team members going above and beyond to reduce a facility's environmental footprint.

Governor's Environmental Excellence Awards

On April 5, the winners of the 2018 Governor's Environmental Excellence Awards were announced at the 29th Environment Virginia Symposium in Lexington. The awards program was co-sponsored by DEQ and the Virginia Department of Conservation and Recreation (DCR). The Awards recognized the significant contributions of environmental and conservation leaders in four categories: sustainability, environmental project, land conservation and implementation of the Virginia Outdoors Plan.



GOLD MEDAL WINNERS

Big Stone Gap, The Greenbelt Trail Virginia Outdoors Plan Implementation

The Greenbelt Trail is a paved three-mile long trail located along the north and south forks of the Powell River that offers access to the historical and recreational features of the Town of Big Stone Gap. The trail serves the community as a means for enhancing tourism, encouraging alternative modes of transportation, providing an outlet to outdoor recreation and is a major stepping stone for the Town's long-term goal of creating a walkable community. The trail serves as a natural buffer for watershed management and protection of sensitive lands near the Powell River. The Town actively enforces ordinances for the protection of plants and wildlife and for prohibition of litter. Land adjacent to the streams are preserved and used as buffers. Trees within the park are both protected from deforestation and actively monitored for health purposes. Any development located near waterways is required to submit a Joint Permit Application for work to ensure that habitats are protected for species of concern. Planned expansion of the trail will provide walking and biking access to the Appalachia Greenbelt Trail and the Town of Appalachia itself. Not only will this provide an alternate way to commute between towns, but it will increase tourist activity and provide connection to a larger community for the whole area.

Middle Peninsula Chesapeake Bay Public Access Authority, Coastal Land Giving Public Access Program Environmental Project

In February 2013, following an economic recession, waterfront land owners began to contact the Middle Peninsula Chesapeake Bay Public Access Authority (MPCBPAA) looking to donate their land to receive the tax benefits of donating land to a public entity. The Authority found that other property owners were interested in donating land to benefit the general public and improve access to waterways. To capitalize on this interest, the MPCBPAA began to promote that the Authority was open to receiving waterfront property. Between 2006 and 2016, a total of 35 separate parcels, totaling over 17 acres, valued at approximately \$3.9 million were gifted with limited to no deed encumbrances. As more land donations were offered, it was clear that the process needed to be formalized. In 2015, with funding assistance through the Virginia Coastal Zone Management Program, the Coastal Land Giving Public Access Program was developed. The program created a process for land acquisition for public use, educating both the public and private sectors on the economic benefits to private land donations and creating an outreach program targeting potential donors. The program has taken multiple steps to generate community awareness and support for land conservation.



University of Virginia, Sustainability Program Environmental Project

The University of Virginia (UVA) is a community of approximately 26,500 students and almost 17,500 faculty and staff, including a total of 525 buildings encompassing 17.5 million square feet. In the last nine years the University has seen unprecedented growth and interest in sustainability by its faculty, students, practitioners and alumni. UVA's Committee



on Sustainability, with support from Facilities Management and the Office of Sustainability, developed a plan to outline a framework by which the University's educational, operational and financial resources will be mobilized to achieve significant positive environmental and societal impacts across a local to global scale. The Committee is tasked with providing leadership across grounds both in sustainable operational practices and in driving sustainability related dialogue and action across the University. The Sustainability Plan builds on existing programs and accomplishments and is organized around three interrelated themes: Engagement, Steward and Discover. Each theme has its own subcommittee to address a specific goal and objectives over the next four years. The success of

the program is measured by the breadth of projects implemented by the group, the opportunities provided to students and staff to reduce UVA's environmental footprint and the ability for these projects to meet UVA's sustainability goals. Individual programs supported by the Council greatly reduce the energy, water, waste and greenhouse gas footprints of UVA operations. In 2016, greenhouse emissions decreased from the 2009 baseline by 11.6%. The reduction is due to extensive conservation work and energy efficiency in existing buildings, reduced coal consumption on-grounds and a shorter heating season compared to previous years.

Virginia Beach Public Schools, Sustainable Schools Program Environmental Project

Virginia Beach Public Schools System has educated nearly 69,000 students, 12,000 staff and the general public about the economic, social and health benefits of conserving resources and protecting the environment. The program aims to develop a sustainable building infrastructure, integrate sustainable practices through the school division and educate the public about the importance of sustainability. By analyzing the way school facilities are built, maintained and operated, Virginia Beach Public Schools System has developed programs that have significantly decreased operating costs, reduced greenhouse gas emissions and brought forth a culture of change within the school division. Implementation of the program has yielded tremendous results. More than 10,000 tons of refuse from the waste stream were diverted through recycling efforts. The average Energy Star score for the school system rose from an initial score of 38 to the current average of 74. The overall annual total energy use was reduced by 26%, saving approximately \$4.5 million per year, during a time when square footage increased 9% and reliance on technology increased. The system has been recognized as a Platinum Certified Green School Division by the Virginia School Board Association and an Energy Star Partner of the Year.



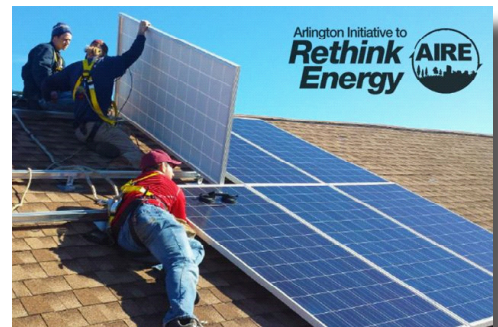
Wild Wolf Brewing Company, Everyday is Earth Day Sustainability Program

Wild Wolf Brewing Company is a small production brewery and 300 seat restaurant situated on 10 acres in Nelson County. The owners have keenly focused on brewery waste and found ways to recycle all packaging, allowing the brewery to be considered a zero waste facility. Wild Wolf is the first brewery in the Commonwealth to package all flagship beers in cans rather than bottles. All of its beer sold inside and outside of the brewery is packaged in a recyclable container and/or reusable vessel, which has also greatly reduced the weight of the shippable product. Pack-tek carriers and cans are used for beer packaging; both are made of 80% or more recycled materials. Cardboard, glass, metal and plastic materials are collected and brought to a recycling facility because there are no recycling pickup options located near the brewery. Wild Wolf provides an incentive for its customers to recycle by offering Wild Wolf Bucks in exchange for clean bottles. The brewery has published various articles in its weekly newsletter and videos about its green projects such as composting and even using scrap wood as part of enhancing the taste of selected beers. Herbs, edible flowers and mushrooms are all grown on site, eliminating the need to have them delivered. Wild Wolf has added a new composting system, increasing the efficiency and amount of compost and now composts all of its yeast waste, yard debris and kitchen waste. Wild Wolf has saved \$1,500 by using its own compost; an additional \$1,500 was saved on waste costs through recycling.

SILVER MEDAL WINNERS

Arlington County, Arlington Initiative to Rethink Energy Environmental Project

Arlington's Residential Energy Efficiency Programs are sponsored by the Arlington Initiative to Rethink Energy (AIRE) to target energy use in residential, commercial and public buildings within the County. The County aims to reduce per capita greenhouse gas emissions by 75% by 2050. AIRE has developed a wide range of programs to reduce energy consumption in the residential sector, which consumes 70% of Arlington's energy. Programs such as the Green Home Choice certification for new construction and renovations, the Green Choice Kitchen certification program, home energy rebates and the solar co-op program are aimed at a wide variety of residents, including homeowners and renters in single and multi-family homes. In addition, creative tools



and techniques are available to educate and assist residents in reducing energy use at home. Through coordinated programs, community partnerships and creative education methods, residential energy efficiency programs operated by AIRE help homeowners and renters reduce home energy use and lower utility costs to achieve Arlington County's community-wide greenhouse gas emissions targets. Overall greenhouse gas emissions in Arlington have fallen 18% between 2007 and 2016, due in part to a decrease in energy consumption in buildings.

City of Alexandria and Arlington County, Four Mile Run Tidal Wetland and Living Shoreline Restoration Project Environmental Project

Completed in 2016, the Four Mile Run Tidal Wetland project in Alexandria plays a prominent role in regional efforts to protect the Potomac River and Chesapeake Bay by restoring two acres of diverse wetland habitat and natural cycles that support wildlife and improve water quality by removing phosphorus, nitrogen and sediment. The Arlington Living Shoreline Restoration project, completed in 2017, involved naturalization of five acres of the stream bank by replacing stone that was used to harden the stream banks with native meadow plants. The project has created extensive new wildlife habitat along the stream to support birds, insects, fish and other animals in the watershed. The amount of pollution removed as a result of the project includes 43 pounds per year of phosphorus, 247 pounds per year of nitrogen, and 18,800 pounds per year of sediments.



Goochland County, Tucker Park at Maidens Crossing Sustainability Program

Located on the border of Goochland and Powhatan Counties, Tucker Park is comprised of 36 acres of land with 1,200 feet of riverfront and consists of several amenities including a non-motorized boat launch, playground, "Natural Walkabout" outdoor classroom and over 1.3 miles of multi-use trails. The project was a combined effort from a variety of groups: the Friends of Goochland Parks, Dominion Virginia Power, Goochland County, the CarMax Cares Foundation and many community volunteers. The park is maintained using best management practices, a routine mowing schedule and bi-weekly inspection of its trails and amenities. Park facilities have retained a 100-foot riparian buffer along the James River and permeable

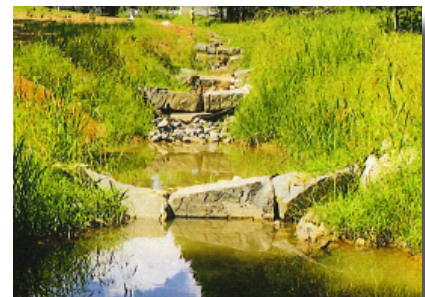
parking lot to reduce stormwater runoff. Park staff is constantly looking for ways to enhance the buffer area; in 2016, volunteers with the James River Association planted approximately 50 seedlings in tree tubes to supplement the riparian buffer.

Henrico County, Energy Management Program Sustainability Program

Henrico County made a commitment to energy efficiency and sustainability with the creation of its Energy Management Program and the hiring of its first Energy Manager in 2003. The primary purpose of the program is to identify and implement energy efficiency projects for county facilities and to reduce resource use and associated costs. The Energy Management Program has been a partnership between government, schools and utilities, with leadership from each of these areas participating in the development of the program and receiving annual reporting on the program's efforts and successes. Completed projects include energy use benchmarking, energy audits, HVAC and lighting system upgrades, participation in demand response programs, building commissioning, traffic and street light upgrades, building automation systems and construction of a 4-megawatt methane gas-to-electricity generator at the Henrico landfill.

Town of Kilmarnock, Sediment Reduction & Stream Restoration Project Environmental Project

The Town of Kilmarnock, located in Lancaster County, covers approximately 2,200 acres and has a population of around 1,500. Many areas within the town were developed prior to consideration of stormwater runoff and its effects on water quality. Stormwater management practices are required for new development and redevelopment, and the Town aims to take further action in protecting and enhancing its water quality. In 2013, a watershed assessment funded by the National Fish and Wildlife Foundation was completed. Priority



was given to three specific headwater stream reaches of the Corrotoman River watershed, a tributary of the Rappahannock River and Chesapeake Bay. A plan of action was created to restore these areas using a non-traditional stormwater conveyance method not normally seen in the region. Crucial funding for implementation was awarded through grants from the National Fish and Wildlife Fund, the DEQ's Stormwater Local Assistance Fund and the Virginia Conservation Assistance Program. The project was completed during the summer of 2017, successfully reducing stream erosion and sedimentation in the watershed. The restoration sites are actively used as outdoor classrooms for environmental educators. Lancaster County Middle School participates with the project adjacent to their school as an outdoor lab for science classes.

BRONZE MEDAL WINNERS

Town of Culpeper, Lake Pelham Adventures Virginia Outdoors Plan Implementation

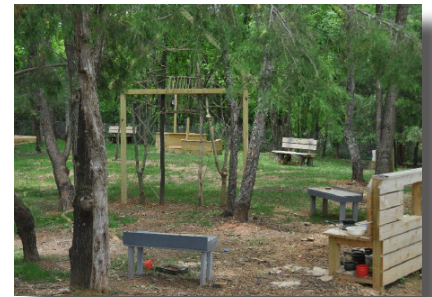
Lake Pelham Adventures is a public-private partnership providing a new municipal park on the shore of the Town of Culpeper's 255 acre municipal lake, Lake Pelham. The park provides access to the lake and Mountain Run, which was previously accessible only to those who owned their own watercraft and had access to a difficult-to-find boat ramp on the lake. The Town partnered with The Ole Country Store & Bakery to secure a park easement on their property as well as entering into an operational agreement with the store to provide a self-sustaining boat rental program.

Pittsylvania County, Park Project Virginia Outdoors Plan Implementation

Utilizing existing middle school campuses, the Pittsylvania County Parks and Recreation Department built the first parks in the County's 250 year history. The parks include a variety of community resources such as picnic shelters, restrooms, paved walking tracks, playgrounds and athletic fields to promote outdoor recreation. Funding was obtained through the County's budget along with an extensive year-long fundraising campaign. The parks received the Virginia Treasures designation, a regional health award and a Virginia Recreation and Park Society award for Best New Facility at the 2017 Virginia Recreation and Park Society conference.

City of Staunton Parks and Recreation, NatureRidge Natural Playground Virginia Outdoors Plan Implementation

The City of Staunton Parks and Recreation developed a natural playground, which encourages children to explore the natural elements surrounding the park and interact in creative ways. The playground is an excellent example of a successful public-private partnership, as the community, including individuals, civic groups and local businesses, covered all building costs. This project provides motivation for families and residents to connect with the natural landscapes and engage in active or passive activities. Families visiting the park for play can enjoy spending time outdoors while interacting with other park goers or other recreational activities, such as swimming, hiking and picnicking.



Virginia Tech College of Natural Resources and Environment, Sustainability Boot Camp Sustainability Program

The Sustainability Boot Camp 10-day intensive training is designed to connect classroom learning to the workplace in an innovative "pre-onboarding" approach to deal with the complex natural resource issues facing the planet. The training program differentiates itself from other sustainability training programs by letting employers drive the content, teaching sustainability as an interdisciplinary lens for problem-solving, mimicking a workplace and connecting students to professionals in their fields and partner organizations to create talent pipelines for employment. The interdisciplinary approach allows for program participants to utilize sustainable practices and environmentally conscious thinking in different job sectors and industries even at the entry-level positions. In the past four boot camp trainings, the program has received over 290 applications spanning 75 different majors from almost every undergraduate department on campus.

HONORABLE MENTION RECIPIENTS

- Lynchburg Parks and Recreation, Please Do Hug the Trees Campaign – Virginia Outdoors Plan Implementation
- City of Roanoke Parks and Recreation, Carvins Cove Trail & Kayak Launch at the Bridges – Virginia Outdoors Plan Implementation
- Virginia Tech Dining Services, Reusable To-Go Services – Sustainability Program



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 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. Each level of the EMS track builds on the previous level, requiring a more robust system to identify and address environmental risks. 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.

OPP administers VEEP, which includes reviewing applications and renewals, performing site visits, coordinating compliance reviews and organizing recognition events. In 2018 OPP staff will review approximately 75 applications for new and renewing VEEP members, including 12 SP applications.

2018 VEEP Highlights:

Outreach. Every year DEQ employs many types of outreach intended to keep current program participants up-to-date on VEEP as well as to reach potential new members. This includes workshops, conferences, newsletters, webinars and updates via social media. This year OPP’s efforts included:

- A webinar on energy efficiency, titled ‘Are you Meeting Your Energy Efficiency Potential’ was hosted with 50 attendees and recorded for future access. The webinar featured Carrie Webster, Energy Manager for Henrico County, whose program was recognized as a Governor’s Environmental Excellence Award winner in 2018, discussing energy benchmarking, Nick Polier with the Virginia Department of Mines, Minerals and Energy discussing energy performance contracts and Stephen Terry, the Director of the Industrial Assessment Center at North Carolina State University, discussing best management practices for reducing energy costs and increasing energy efficiency.
- OPP staff exhibited at many events promoting VEEP and other OPP initiatives. Events included the GE Intelligent Platforms Environmental Health and Safety Fair attended by over 400 employees, the Virginia Agritourism Conference, the Joint Solid Waste Association of North America and Virginia Recycling Association Conference, the Virginia



DEQ Valley Regional Director Amy Owens (center) helped to congratulate representatives of Daikin for achieving VEEP EMS track E4 status. Daikin has implemented many projects through its EMS, including implementing a green procurement program, a grey-water toilet flushing system, a solar installation, and on-site cafeteria composting.

Manufacturers Association's Annual Virginia Environmental Health & Safety Conference and the Henrico Energy Fair.

- An article promoting the value of VEEP for counties appeared in the Virginia Association of Counties newsletter 'County Connections' on June 18. In addition, a separate article appeared in the Winter 2018 issue of The Conduit, the Official Publication of the Virginia Water Environment Association, promoting the value of VEEP.
- OPP staff targeted outreach to over 400 facilities to encourage reduction of environmental risk through an EMS. OPP identified facilities for outreach that, based on industry sector and chemical handling, were required to submit a Toxic Release Inventory report.
- Last year OPP began a series of Regional VEEP Workshops. The first was held at the Virginia Science Museum. Over 60 people attended this initial VEEP Workshop aimed at facilities in central Virginia. The second was held at DEQ's Valley Regional Office, late last year with approximately 70 attendees. The next workshop is currently being planned for later this year in northern Virginia with the assistance of Prince William County.



The VEEP exhibit at the GE Intelligent Platforms Environmental Health and Safety Fair in Charlottesville in May. There were over 100 exhibitors and over 400 employees in attendance.

VEEP Data Management Improvements. In recent years VEEP's database has been integrated into DEQ's Comprehensive Environmental Data System (CEDS), 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 easily accessible to the entire agency. These upgrades provide DEQ staff with a more complete profile of facilities that are part of VEEP. In 2017 VEEP began using Logi Ad-Hoc, a report building tool. OPP continues to be a leader in integrating the agency's electronic resources into operations.

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 \$144,895 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. VEEP EMS and SP track members combined include over 218,000 employees. Also, VEEP members reported saving over \$52,000,000 through environmental efforts in 2017. Other environmental results are listed below.

Aggregate VEEP Results*

- **Energy use reduced by 617,118 MMBTU**
Savings equivalent to powering approximately 7,175 Virginia homes for one year.**
- **Total water use reduced by 133,249,578 gallons**
This is enough water to supply approximately 1,200 families for one year.***
- **341,357,190 gallons of recycled water used**
This is enough water to supply approximately 3,100 families for one year.***
- **Greenhouse gas emissions reduced by 6577.5 tons**
The equivalent of removing almost 1,280 cars from the road for one year.****

*Results reported in 2018 are based on calendar year 2017 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.
 ** U.S. Energy Information Administration - Virginia households consume an average of 86 million Btu per year, about 4% less than the U.S. average.
 *** EPA WaterSense - The average American family uses more than 300 gallons of water per day at home.
 **** EPA Greenhouse Gases Equivalencies Calculator - 4.67 metric tons (5.14 US tons) CO2E/vehicle/year

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 other state agencies by example as it strives to continually improve the EMS at its facilities across the state.

The EMS is integrated into 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 develop and implement an EMS, DEQ Agency Policy Statement No. 5-2014. This policy sets the foundation for DEQ to maintain a strong EMS, and it is the basis for which DEQ sets 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 annual reviews of the agency's environmental aspects and impacts. Of the 15 objectives and targets that have been implemented to date, 13 have been completed. In 2018 DEQ achieved the EMS goal for 5% energy reduction and is still working towards the long-term goal for a 10% paper reduction. In addition to paper reduction the EMS Team will be researching Green Purchasing Plans for potential implementation at DEQ. The EMS Team will be working on action plans to reach these goals. In addition to these objectives and targets the Agency and Regional EMS Teams also coordinate events for Earth Day in April and America Recycles Day in November. Increasing environmental awareness is an important part of encouraging employees to take a look at the daily decisions they make at home and at work that impact the environment.

Leading by Example. DEQ's EMS is not only an opportunity for DEQ to reduce its environmental footprint, but also serves 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 or other environmental programs. OPP has provided information on best practices for recycling programs and input on developing signage and informational materials.



Almost 20 staff members from the Valley Regional Office participated in the North River Cleanup on June 21, collecting 1.5 tons of litter from the river including 31 tires, a freezer, a car bumper and scrap metal.

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