Pollution Prevention
2019
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From the Director

DEQ’s Office of Pollution Prevention (OPP) hosts a number of programs and initiatives that support the Pollution Prevention Act and serve as a conduit for non-regulatory assistance to businesses, institutions and communities. These programs encourage the minimization of environmental footprints through actions that exceed regulatory requirements while enhancing bottom lines. OPP coordinates incentive programs and technical assistance, as well as internal programs that allow DEQ to lead by example. A few of the program’s accomplishments from 2019 are:

- Engaged people and organizations by presenting information on pollution prevention at numerous events ranging from discussing the value of voluntary programs with the regulated community to discussing the reduction of contamination in recycling with citizens;

- Developed educational materials on topics including waste diversion, hazardous material usage and solar energy to provide guidance on why and how to implement successful programs that prevent pollution; and,

- Presented ten Governor’s Environmental Excellence Awards at the Environment Virginia Symposium in March, including four gold awards to recognize exemplary 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. The Commonwealth is a leader among states in promoting collaborative partnerships through non-regulatory environmental programs and works with other states to continue to advance resources. The leadership of Governor Ralph Northam and Virginia Secretary of Natural Resources Matthew J. Strickler has demonstrated the importance of environmental quality to the Commonwealth. DEQ will continue to engage Virginians through programs that enhance the environment.

David Paylor

(Pictured, left to right) Virginia Department of Conservation and Recreation Director Clyde Cristman, Virginia Deputy Secretary of Natural Resources Joshua Saks, Carilion Clinic Environmental Stewardship Council members Nathalia Esteves-Fuentes and Sara Whohlford, and DEQ Director David Paylor attend the Governor’s Environmental Excellence Awards in Lexington on March 28, 2019. Carilion Clinic Environmental Stewardship Council was recognized as a gold medal recipient for its Efficiency and Sustainability Program that has donated surplus medical supplies, created an urban farm and reduced energy consumption.
VEEP Sustainability Partners (SP) 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 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 EMS. 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 2019 OPP staff reviewed approximately 70 applications for new and renewing VEEP members, including 10 SP applications.

**2019 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 case studies covering VEEP and strategies to reduce environmental waste and increase efficiency.

OPP staff presented, exhibited or attended approximately 10 events promoting VEEP and other OPP initiatives including the Virginia Recycling Association’s Annual Conference on May 6 - 8 in Glen Allen and the Virginia Manufacturers Association’s Environmental, Health and Safety Conference on September 18 - 19 in Richmond. Staff also conducted targeted outreach to encourage facilities to adopt programs that reduce environmental risk through an EMS and VEEP. Over 400 facilities with solid waste or Virginia Pollutant Discharge Elimination System permits were contacted about the benefits of VEEP along with an offer to assist in the development of an EMS. Past Green Ribbon School applicants were also contacted about VEEP because of their commitment to the environment.

OPP has begun a series of Regional VEEP Workshops. The most recent workshops were held in DEQ’s Northern and Tidewater Regions. The
Virginia Environmental Excellence Program

Northern Regional workshop was held, with the assistance of Prince William County, at the Potomac Science Center in Woodbridge on December 6, 2018 with approximately 60 attendees. During the Northern workshop, speakers discussed reducing the use of hazardous materials and maintaining an EMS. The Tidewater Regional workshop was held at the Old Donation School in Virginia Beach on June 20, 2019. The Virginia Beach City Public School Division donated the use of the facility. The Division participates in the VEEP SP program and won a Governor’s Environmental Excellence Award in 2018. This workshop had approximately 40 attendees. The Tidewater workshop focused on climate change and climate adaptation. Both workshops provided valuable information and networking opportunities to all attendees. The next workshop is currently being planned for southwest Virginia.

This year OPP began developing a series of case studies to highlight the successful P2 actions of VEEP members by showing benefits and implementation strategies for projects that are easily transferable between facilities. Case studies are currently available for strategies to reduce hazardous material usage by choosing safer cleaning products and to promote the installation of solar arrays. OPP will continue to develop case studies.

**VEEP Data Management Improvements**

In recent years, data management improvements have made membership information easily accessible to the entire agency by integrating VEEP membership and application records into the agency’s Comprehensive Environmental Data System (CEDS) and the agency’s electronic document retention system. In 2019 work started to integrate VEEP member annual reporting into the DEQ Portal and CEDS. This will provide a better user experience to members and make annual metrics accessible at the facility level through CEDS to all agency personnel.

**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 2018, VEEP members saved $190,444 on annual permit fees.

**Environmental Results**

To remain in VEEP’s EMS track, members must submit an annual progress report. 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. In addition to the footprint reductions below, VEEP members reported saving over $53,500,000 through environmental efforts in 2018.

![Aggregate VEEP Results*](image)

*Results reported in 2019 are based on calendar year 2018 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. All numbers reported are actual quantities reported and not normalized.

** U.S. Energy Information Administration - Virginia households consume an average of 86 million Btu per year, about 4% less than the U.S. average.
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. OPP oversees development of all programmatic guidance and requirements for membership. Coordination of the application review process, marketing and promotion is done by DEQ’s partners, the Virginia Green Travel Alliance (VGTA); the Virginia Tourism Corporation; and the Virginia Restaurant, Lodging, and Travel Association.

VGTA, a fully-accredited 501(c)(3) non-profit organization, was created in 2014 to help promote Virginia Green and its partners. The VGTA processing all Virginia Green certification applications, promotes program partners on the VGTA website and social media outlets, and administers outreach efforts.

Run by the VGTA, 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.

2019 Virginia Green Highlights:
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.

Ask Virginia Green
As part of OPP’s role of providing assistance to the tourism sector on green practices, OPP launched Ask Virginia Green, a call to anyone in the tourism industry to submit questions on green practices and implementation strategies. The feature is open to everyone, not only Virginia Green members.

Sustainable Event Guide
Festivals, conferences, meetings and other events are important contributors to regional and statewide tourism. However, they can 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 Sustainable Event Guide includes planning and how-to information to assist planners in implementing green practices that clearly communicate to participants the organizer’s commitment to minimizing the event’s environmental impacts. Documenting the steps and procedures for creating a green event has allowed the VGTA to move away from providing on-site green event assistance by giving event coordinators the tools needed to host a green event.

The Environment Virginia Symposium held at the Virginia Military Institute in Lexington which took place March 26 through 28 was a certified Virginia Green Event. The Virginia Green banner in the photo above is available by request to registered Virginia Green Events to communicate green practices to attendees.
Waste Diversion Calculator
OPP developed a waste diversion calculator to allow users to calculate the portion of trash that is diverted from landfills. Diverting trash from landfills can be done by recycling, composting or donating. The calculator provides the recycling and landfill disposal percentages and incorporates cost information which can be used by facilities to make informed decisions on waste management.

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.

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 40 suppliers providing green services ranging from composting to transportation. The VGTA oversees the registration process and maintains the online listing of suppliers. VGSN members, in addition to selling green products and services, are required to commit to reducing environmental impacts. As part of joining the VGSN, members are listed on the VGTA website; given a discount at Virginia Green workshops, conferences, and other events; provided direct sales access to Virginia Green Travel partners; and given use of the VGSN logo.

Annual Virginia Green Conference and Green Travel Star Awards Ceremony
The Virginia Green program held its sixth annual Virginia Green Travel Conference and Travel Star Awards Ceremony on April 24 and 25 at the Hotel Madison & Shenandoah Valley Conference Center in Harrisonburg. The conference, attended by over 125 people, included two days of speakers and engaging panels on green tourism as a transformation in the sector, not a trend. First Lady of Virginia Pamela Northam opened the conference with remarks on the Commonwealth’s tourism sector. Sessions at the conference covered the impacts of climate change, solar and wind energy, electric vehicles, as well as recent changes in the recycling markets and global sustainability trends such as the elimination of plastic straws and bags. The keynote speaker was Shawn Norton with the National Park Service, who took attendees on a virtual tour of sustainable features of parks across the nation.

The Green Travel Star Awards recognized 19 Travel Stars, 5 Travel Leaders, 3 Green Team All-Stars and 1 Industry Game-Changer for their efforts to protect the environment. The Green Team All-Stars were a new award category for the 2018 awards intended to recognize the passionate individuals that champion sustainable changes at their facilities.

Planning is underway for the 2020 conference and awards, which will be held in March in downtown Richmond. The awards application is being updated to increase the emphasis on providing data to document the environmental benefits of programs that have been implemented.
Governor’s Environmental Excellence Awards

On March 28, the winners of the 2019 Governor’s Environmental Excellence Awards were announced at the 30th 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

Capital Region Land Conservancy - Malvern Hill Farm
Land Conservation
In August 2016, the 871-acre Malvern Hill Farm, which is listed on the Virginia Landmarks Registry and the National Register of Historic Places, was listed for sale for a 515 home residential development project. While many conservation groups had an interest in Malvern Hill, the Capital Region Land Conservancy (CRLC) stepped into a leadership role and ratified a purchase agreement for $6.6 million. As the local land trust for the Richmond region, CRLC coordinated with many partners to finalize a complex arrangement to finance acquisition of the property, secure protections through conservation easements and transfer portions of the land to long-term holders who will manage and make it available for future public access. Preserving Malvern Hill Farm allows the land to continue to be actively farmed and provides the opportunity for cultural tourism and outdoor recreation.

Carilion Clinic - Efficiency and Sustainability Program
Sustainability Program
Carilion Clinic’s Efficiency and Sustainability Program is led by its Environmental Stewardship Council and over 100 Sustainability Champions from various departments who recognize that the health of our environment directly impacts the health of our communities. Carilion Clinic is committed to creating a comprehensive environmental sustainability program and working with its community partners in Southwest Virginia. Through the Efficiency and Sustainability Program, Carilion Clinic has expanded recycling efforts, increased funding to purchase food from local farmers, installed 4,000 solar panels and upgraded lighting. Carilion Clinic has donated over 40 tons of excess medical supplies to support medical education and international missions, sponsored a community bike share program and funded an urban farm which offers produce to anyone who tends the garden or attends on-site health education events.

Chesterfield County Parks and Recreation - Dutch Gap Relic River Trail and Water Access
Implementation of the Virginia Outdoors Plan
The Dutch Gap Relic River Trail and Water Access project includes a 430-foot floating boardwalk and launch dock. It is Chesterfield’s first interpretive boardwalk featuring a unique portion of the James River that has been separated from the main channel by elimination of oxbows in the river route. The boardwalk’s dock includes a fully accessible canoe and kayak launch. This new water access offers a way to reach the non-tidal marsh and, via a wooden portage boardwalk, access the main James River channel. The marsh has a rich history and is unique to the region for the way it was formed and for the fish and wildlife habitat it supports. A need for water access was documented by both the Chesterfield Parks and Recreation Comprehensive Master Plan and the 2017 Virginia Outdoors Demand Survey. Prior to the boardwalk, the non-tidal marsh at Dutch Gap was not accessible to the public.
Hampton Roads Sanitation District (HRSD) - SWIFT Research Center

Environmental Project

HRSD’s Sustainable Water Initiative for Tomorrow (SWIFT) fundamentally changes the way water is managed in eastern Virginia, providing a sustainable source of groundwater to the Potomac aquifer; reducing nutrients discharged to the Chesapeake Bay watershed; protecting the Potomac aquifer from salt water intrusion; and, potentially slowing, stopping or reversing land subsidence related to groundwater withdrawal. The SWIFT Research Center is a multipurpose facility recharging the Potomac aquifer with one million gallons of SWIFT Water daily. SWIFT Water is produced by adding additional advanced water treatment processes to already highly treated wastewater resulting in water that meets safe drinking water standards. Beyond producing SWIFT Water and recharging the aquifer, the SWIFT Research Center is a public education facility, a water treatment and groundwater research facility and an operator training center. Data from the SWIFT Research Center will inform the full-scale implementation of SWIFT at five HRSD facilities over the next 12 years, ultimately recharging the Potomac aquifer with more than 100 million gallons of SWIFT Water daily.

Silver Medal Winners

Chesterfield County General Services - Energy Management & Sustainability Program

Sustainability Program

For over 15 years, Chesterfield County has been committed to and continually developing an Energy Management and Sustainability Program. The main functions of the program have been to track and monitor energy use, identify facility improvement measures and consistently work toward improved energy efficiency and sustainability. The facility has conducted energy audits, facility condition assessments, benchmarking, lighting retrofits, and HVAC replacements in addition to participation in efficiency programs such as demand response. The program activities have developed over the years to increasingly include community outreach and education through placement of real-time utility educational kiosks in each middle school, the library system's energy monitoring equipment check-out program, and most recently, an employee behavior-based energy efficiency initiative called Cfield Unplugged. Energy management initiatives over the past five years have saved the County nearly $5 million.

Prince William County - Department of Fire and Rescue - Smarter Chemicals Program

Environmental Project

Prince William County (PWC) Department of Fire and Rescue worked with others in the County to develop a Smarter Chemicals product list. It was found that the average station had over 40 different cleaning products, compared to an average of eight for custodial companies hired by PWC. At the same time, a review of employee injuries revealed that many “slips and falls” were related to inappropriate dilutions of cleaners leaving floors slick and many “strains and sprains” were related to heavy products. The program has reduced employee injuries, decreased damage to facilities due to improper dilutions, limited exposure to potentially hazardous substances, cut excessive purchasing and the resulting disposal costs, and minimized the effort to maintain Safety Data Sheets. On average, 116 cleaning chemicals with safety hazards were eliminated from each fire station.

Roanoke County Parks, Recreation & Tourism - Jae Valley Park

Implementation of the Virginia Outdoors Plan

Jae Valley Park resulted from a partnership between Roanoke County and Roanoke City to develop a canoe and kayak launch facility, opening up five miles of Back Creek, which connects to the Roanoke River Blueway. Jae Valley Park encompasses 10 acres along Jae Valley Road with 2,200 linear feet of natural surface walking trails and 1,400 linear feet of frontage along Back Creek with several launch points. The Chairman of Friends of the Rivers of Virginia noticed the property sitting fallow and worked with both the City and County, leading to
the City selling the property to the County for $1 as part of a 2016 land swap agreement. Roanoke County will continue to expand and promote the County’s outdoor recreational advantages, like Jae Valley Park, which support watershed management protection by encouraging recreational use, protection and environmental stewardship.

Town of Appalachia - Powell River Trail & Trailhead Implementation of the Virginia Outdoors Plan
Completed in October of 2017, the Powell River Trail & Trailhead is a rails-to-trails project in the Town of Appalachia that converted an abandoned Louisville & Nashville Railroad line into a multi-use recreation trail that is wheelchair accessible. The project consists of approximately 1.5 miles of paved trail that follows the scenic Powell River and includes two tunnels and two bridges. Additionally, the trailhead area includes parking and is highlighted by a refurbished Norfolk & Western train caboose. Funded by VDOT and maintained by the Town of Appalachia, the project is an outstanding addition to the regional outdoor recreation initiative which has stimulated recreational and economic growth in the area. To capitalize on the success and interest the project has generated, the Town is developing a Comprehensive Outdoor Recreation Plan.

Bronze Medal Winners

Virginia State University - Simms Hall Demolition and Site Redevelopment Environmental Project
In April 2017, the Virginia State University (VSU) Board of Visitors approved the demolition of Simms Hall following a 2016 fire that caused significant structural damage to the building. VSU contacted the Virginia Department of Corrections (VADOC) about partnering for the project. As part of the Governor’s Re-entry Initiative, offenders gain job experience in general construction while also learning about green projects. VSU and VADOC strove to reduce the amount of material disposed. Due to meticulous separation of building materials, 64 tons of wood and 94 tons of steel were diverted from landfills. The Simms pad site is now being redeveloped as a river overlook area with improved stormwater drainage and safety features such as site lighting and railings.

Wärtsilä Defense, Inc. - WDI Environmental Sustainability Program Sustainability Program
In its work to build and repair propulsion systems, Wärtsilä Defense Inc. (WDI) holds an international, third-party certification for meeting high standards of environmental management system implementation (ISO 14001:2015). The Chesapeake facility touts zero landfill waste and has continually reduced electrical consumption since 2009. Since initiating the phased LED re-lamping, electrical consumption is down 313 MWh, reducing CO2 emissions by about 231 tons and saving the company around $25,000. In 2018 WDI recycled or repurposed over 38 tons of trash. The priority is: repurpose for company use, repurpose by employees, recycle, send to incinerator for energy production. In addition, WDI sponsored the first “Seabin” on the East Coast to collect marine debris at the Nauticus maritime-themed science center and museum in Norfolk.

Honorable Mention Recipients
- Virginia Tech's Office of Sustainability - Student Internship Program
- Wild Wolf Brewing - Every Day is Earth Day
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 awareness and decision making that is a cornerstone of environmental management. DEQ is leading by example as it strives to continually improve the EMS and environmental awareness at its facilities across the state.

The EMS is integrated into DEQ's strategic plan, committing the agency to lead the Commonwealth's greening of government efforts. The EMS Team works to enhance environmentally sound practices, increase environmental awareness through annual training, increase communication of mutually beneficial knowledge and encourage 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
Since its inception the EMS Team has implemented 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 2019 DEQ continued working towards the long-term goal for a 10% paper reduction and an additional objective to research Green Purchasing Plans for potential implementation at DEQ. The EMS Team continues to develop and implement 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 every April and America Recycles Day every 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.

In early 2019, DEQ renewed its VEEP E3 membership. OPP uses DEQ's EMS as a model when meeting with other state agencies. OPP recently received a VEEP E3 application from another state agency. Although many other state facilities participate in VEEP, this is the first E3 application from a state agency other than DEQ.

Certificate of Achievement

Virginia Department of Environmental Quality

Presented for achieving the level of Exemplary Environmental Enterprise (E3) by demonstrating proactive environmental management, compliance with environmental requirements and continuous improvement in its environmental performance.

Thank You for Making the Environment Your Business.

Joined December 2015 | Renewed January 2019
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/CaseStudies.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