



**Virginia Department of Environmental Quality
Office of Pollution Prevention**

2021 Pollution Prevention Annual Report

Released December 2021



Contents

From the Director _____	1
Virginia Environmental Excellence Program _____	2
Virginia Green Travel _____	5
Governor’s Environmental Excellence Awards _____	8
DEQ Leading the Greening of State Government _____	12
Resources _____	14

FROM THE DIRECTOR

Pollution prevention means eliminating or reducing the use, generation or release of environmental waste at their source. These proactive environmental strategies will be vital as the Commonwealth moves to address climate change and environmental justice. The Virginia Department of Environmental Quality's Office of Pollution Prevention (OPP) hosts a number of programs and initiatives that support pollution prevention (P2) 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 often exceed regulatory requirements while enhancing bottom lines. OPP coordinates incentive programs and assistance, as well as internal programs that allow DEQ to lead by example.



A few of the program's accomplishments from 2021 are:

- Promoted climate adaptation, resilience and mitigation by incorporating information and questions into the Virginia Environmental Excellence Program applications
- Engaged people and organizations to reduce reliance on single-use plastics and reduce solid waste through outreach on implementation of Executive Order Seventy-Seven, Virginia Leading by Example to Reduce Plastic Pollution and Solid Waste and the Virginia Green Travel program
- Presented nine Governor's Environmental Excellence Awards at the virtual Environment Virginia symposium in March, which allowed the ceremony to be broadcast to a wider audience

OPP continues to promote initiatives and programs that enhance the environment and engage Virginians in protecting the Commonwealth's natural resources. Support from Governor Northam and Secretary of Natural and Historic Resources Matt Strickler succeeded by Secretary Ann Jennings along with stakeholders and the public have been critical in advancing OPP's programs which are well positioned to continue to provide a valuable resource to the Commonwealth.

David Paylor
DEQ Director

VIRGINIA ENVIRONMENTAL EXCELLENCE PROGRAM



BACKGROUND

The Virginia Environmental Excellence Program (VEEP) recognizes facilities that have demonstrated a commitment to enhanced environmental performance and encourages innovations in environmental performance.

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 (SP) and the Environmental Management System (EMS) track.

VEEP 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 an SP.

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 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, organizing recognition events and providing educational resources. In 2021, OPP staff reviewed over 70 applications for new and renewing VEEP members, including 11 SP applications.

2021 VEEP HIGHLIGHTS:

OPP works continuously to support, promote and improve VEEP and its goals. This includes keeping current program participants up-to-date as well as reaching out to potential new members. VEEP is becoming more automated and easily accessible to both external members and DEQ staff. Below are a few examples of recent program improvements and outreach efforts:

- As part of DEQ’s effort to update its website, VEEP pages were revised to provide better and easier access to program information.
- The “Virginia Environmental Excellence Program Operations Manual” was updated in the past year and made available to the public.
- VEEP staff provide facility-specific P2 guidance directly to facilities by request.



Yokohama Tire Manufacturing Virginia, LLC, in Salem has been VEEP E4 since May of 2014 and renewed participation in VEEP this past January. Pictured above is the ‘Forever Forest’ project started in 2007 by Yokohama Rubber Corporation in Japan, with a goal of planting 500,000 trees at their various plant locations worldwide.

VIRGINIA ENVIRONMENTAL EXCELLENCE PROGRAM

- The myDEQ portal combines DEQ's online reporting functions into one convenient location. VEEP annual reporting was one of the earliest adopters of this technology. In early 2021, the myDEQ Portal functionality expanded and OPP updated the guidance for submitting annual reports to VEEP. The myDEQ portal is linked to DEQ's internal database and allows OPP to edit annual report questions easily.
- VEEP continues to evolve to meet environmental challenges. Questions about climate adaptation, resilience and mitigation were added to the EMS Track annual report and the Sustainability Partners application. This will raise climate awareness, promote climate resilience and collect information so that DEQ may better respond to climate change.

Pollution Prevention Resources

OPP continues to highlight successful P2 actions that show real world examples and identify technologies and techniques that were successful. In 2021, OPP built on a [series of case studies](#) to host a webinar open to all. Additional webinars are planned for the coming months.

- [From Risk to Reward: Turning Environmental Impacts into Success](#) On Sept. 2, OPP hosted a webinar focusing on identifying and prioritizing a facility's environmental aspects and impacts to reduce risk and strengthen environmental management. A team from Coca-Cola Consolidated shared how the company uses the Plan, Do, Check & Act aspect of its consolidated management system, which includes its EMS, to achieve measurable results. OPP then led attendees through the details of identifying aspects and impacts to create a strong foundation for an EMS.

VEEP Member Highlights

The OPP supports VEEP members to help them accelerate their programs and celebrate successes. Throughout the year, OPP participates in events and provides recognition materials to VEEP members.

- Department of Corrections (VADOC): VADOC was a charter member of VEEP SP, joining when the program started in 2012. VADOC is the only charter member that has continuously remained in the program from the start. In 2021, VADOC renewed its participation in VEEP SP for the 10th year. Many VADOC facilities also participate in the VEEP EMS Track. To support the continual development of their EMS, OPP staff provided a general overview of VEEP at a quarterly meeting for all VADOC facilities.
- O'Sullivan Films Inc. – Continental: As part of its transition from the E3 to E4 level of VEEP's EMS track, OPP staff conducted a non-regulatory site visit at O'Sullivan Films Inc. – Continental in Winchester. During VEEP site visits, the facility showed OPP staff the P2 best practices that have been implemented, and OPP staff shared P2 suggestions.
- Shenandoah Valley Organic: DEQ staff presented Shenandoah Valley Organic's (SVO) a VEEP SP certificate. This was the company's first year as a VEEP SP member. SVO had joined the EMS Track, at the E2 level, the previous year. SVO has a strong commitment to community outreach demonstrated by efforts like Tree Planting with the Pure Water Forum and supporting the Valley Conservation Council. SVO's continuous improvement is evident through practices like daily maintenance checks for water conservation opportunities and consistent efforts in seeking innovative projects to enhance sustainability and environmental stewardship.



DEQ Water Permits and Compliance Manager Brendan Kiracofe and DEQ Office of Pollution Prevention Manager Meghann Quinn present Mike Breeden and Jesse Layne with Shenandoah Valley Organic a VEEP SP certificate. The recognition ceremony was held at their Harrisonburg facility to an audience of employees involved in the implementation of sustainability programs.

VIRGINIA ENVIRONMENTAL EXCELLENCE PROGRAM

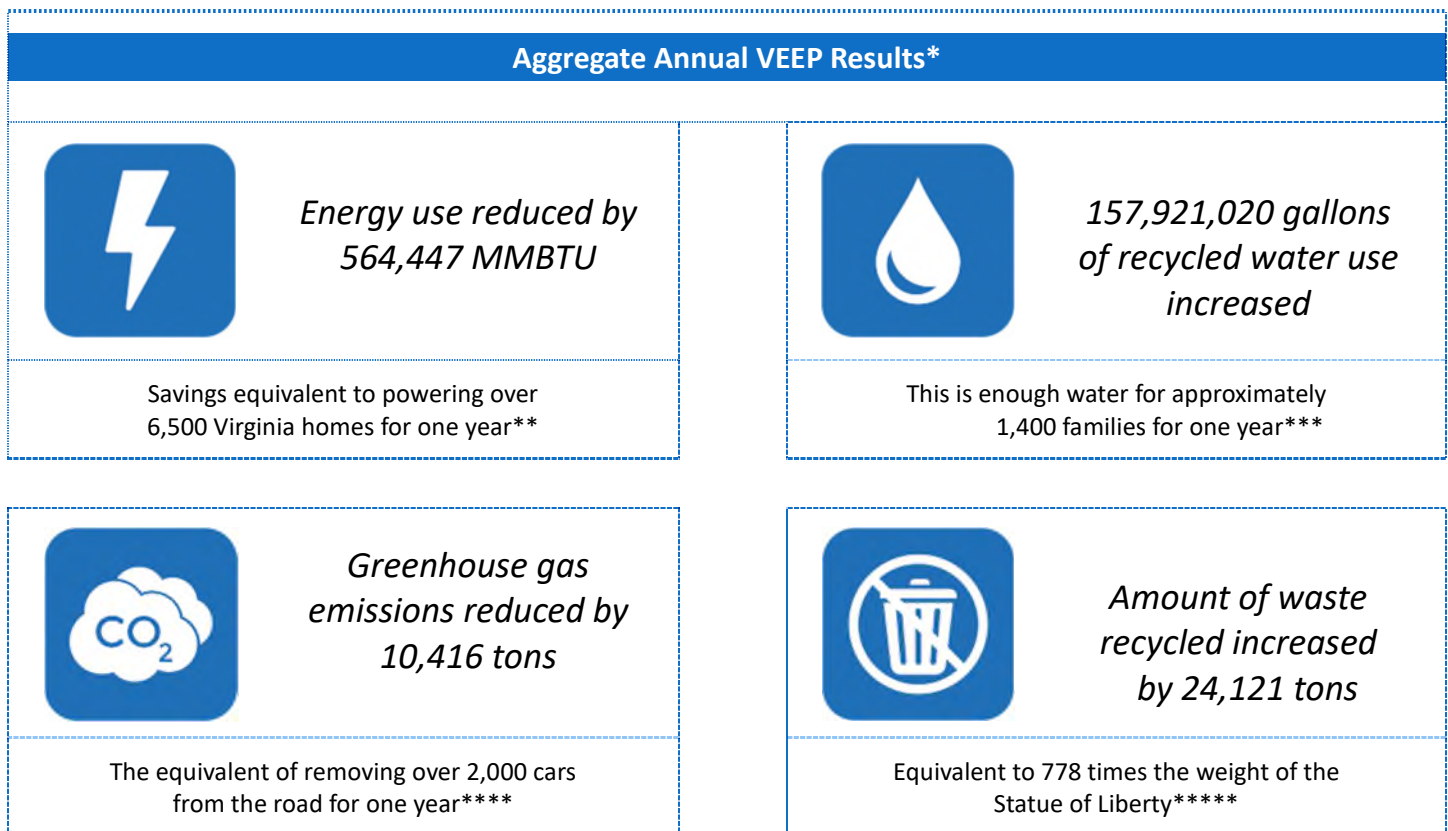
Annual Permit Fee Discounts for VEEP Facilities

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 the following permit fee discounts: Hazardous waste (potentially five percent for E2 facilities and 10 percent for E3 and E4 facilities); solid waste (potentially 10 percent for E2 facilities and 20 percent for E3 and E4 facilities); and water (potentially two percent for E2 and five percent for E3 and E4 facilities). The total discounts available for each media is capped at a fixed level and the discount received will drop if the total is exceeded. In 2021, VEEP members saved approximately \$110,182 on annual permit fees.

Environmental Results

To remain in VEEP’s EMS track, members must submit an annual progress report including detailed metrics. 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 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 compare year-to-year performance. In their annual application VEEP SP members also include quantifiable results using the same 35 indicators.

VEEP EMS track members reported saving over \$49 million through environmental efforts in 2020. Other environmental results are listed below.



*Results reported in 2021 are based on calendar year 2020 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 four percent 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.

***** The Statue of Liberty weighs 31 tons.

VIRGINIA GREEN TRAVEL

BACKGROUND

Virginia Green is the Commonwealth's voluntary initiative to promote 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 (VTC) 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 processes 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 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. Fully-Certified Partners undergo an application review that may require the submittal of photographs and other documentation of the green programs they have implemented.

To help connect members to green products, the Virginia Green Suppliers Network (VGSN) is maintained as a fee-based online directory of green service providers. The directory lists almost 50 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.

2021 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.

Virginia Green Program Updates

This year, Virginia Green announced a new core partner: Virginia State Parks. State Parks has been an active member in Virginia Green since 2012, when State Parks celebrated its 75th anniversary with an effort to register all State Parks as Virginia Green members. Virginia State Parks is a logical addition to the core partners of Virginia Green; pairing Virginia's parks, tourism and environmental agency to work together to embrace sustainable tourism and green practices.

In addition, this year Virginia Green has invested in strategic planning by working with two consultants to help find sustainable funding and enhance the efficiency of online tools. Virginia Green is starting work with VTC, another core partner, to improve the current membership management system.

VIRGINIA GREEN TRAVEL

Virginia Green Resources

OPP is working with the VGTA and other partners to develop branded materials to promote the implementation of pollution prevention initiatives. OPP looked for opportunities where providing additional resources would ease the implementation of green practices, which led to Virginia Green's Skip the Straw campaign. OPP provides [downloadable](#) table cards and tents that thank patrons for not using straws and explains how their choice helps the environment.

Brewery Outreach

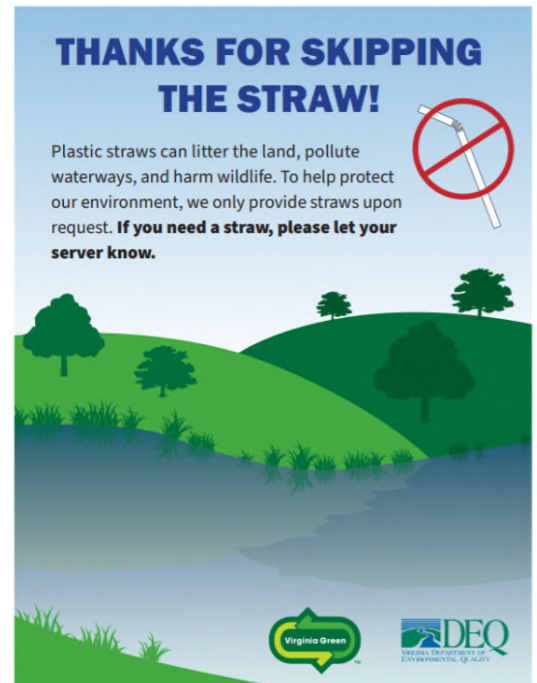
Beginning in 2020, the OPP has focused outreach efforts on breweries. This outreach aims to increase recognition of green breweries in Virginia and highlight breweries implementing practices that reduce pollution while reducing costs. Some of these efforts include creating an environmental checklist for breweries, an informational event currently under development and on-site energy treasure hunts. The first of these treasure hunts is planned for 2 Witches Winery & Brewing Company in Danville and will be conducted by members of the Association of Energy Engineers and OPP staff.

Several valuable relationships have been established to support this project. Selvedge Brewing provided a tour of their operation and explained the brewing process to OPP staff while providing some insight into environmental priorities. Murphy & Rude Malting Co. and the Mid-Atlantic Master Brewers Association have both been invaluable in providing information and feedback to support OPP's brewery outreach.

Annual Virginia Green Conference and Green Travel Star Awards Ceremony

The eighth annual Virginia Green Travel Conference and Travel Star Awards Ceremony was hosted virtually April 28-29. The event focused on adapting to change while being committed to sustainability. Tourism professionals from across the Commonwealth gathered to seek sustainable solutions that both protect Virginia's environment and are profitable for tourism businesses. Virginia Green Travel partners are ready to help lead the way to recovery after a turbulent year for the tourism industry. Two keynote speakers emphasized how the tourism industry can lead the Commonwealth in promoting justice for all communities. Earl B. Hunter, Jr., the Founder and President of Black Folks Camp Too, led a campfire conversation on unity in the outdoor industry. Marc Bereika, Director of Community and Government Affairs for REI, described how he works with his colleagues to advocate for public policies that support the outdoors. DEQ staff participated in conference planning and moderated or presented at four conference sessions:

- *Update from the Capitol:* This update provided a high-level review of legislation from the 2021 General Assembly on expanded polystyrene, plastic bags, balloons, clean energy, electric vehicles, public transportation, water and land conservation, and clean air. Many of the regulatory changes discussed are encouraged or required for membership in Virginia Green. For example, Virginia Green members already commit to avoid the use of expanded polystyrene food service containers, and are encouraged to support electric vehicle use and infrastructure.
- *Single-use Plastics:* The discussion started with a description of widespread plastic pollution before moving to ways to reduce the use of single-use plastics and find safe, useful alternatives. OPP was able to highlight the straw-free campaign, efforts of Executive Order Seventy-Seven, Virginia Leading by Example to Reduce Plastic Pollution and Solid Waste (EO 77) and other regulatory initiatives in Virginia.



Example of downloadable table tent for the Virginia Green Skip the Straw campaign.

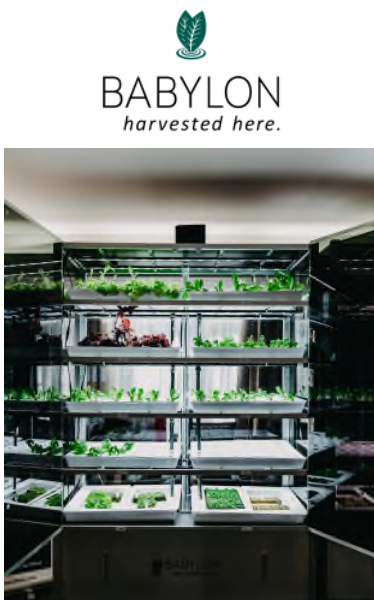
VIRGINIA GREEN TRAVEL

- *Water and Energy Efficiency:* EPA’s EnergyStar and WaterSense programs are amazing programs that have branded energy- and water-efficient products that make it easy for businesses and the public to make meaningful consumer choices. Representatives from both of these programs and suppliers who strive to achieve and market their standards encouraged attendees to reduce energy and water usage.
- *Sustainability in Breweries:* Three Virginia breweries discussed how they incorporated sustainable practices into all aspects of brewing. Their initiatives include: local sourcing and innovative techniques, sustainable design and long-term commitments to environmental stewardship and the community.

During the conference, award winners were announced. This year, 15 Virginia tourism operations were chosen to receive the Virginia Green program’s highest award, the Virginia Green Travel Star Award. Eleven additional tourism businesses were recognized with the Virginia Green Travel Leader Award for their continued environmental stewardship and six individuals received the Green Team All-Star Award for their efforts to lead their organization’s green efforts. Additionally, three of the award winners were also recognized in the inaugural Virginia Green Travel People’s Choice Awards. For the first time, all 2021 Virginia Green Travel Award winners were invited to participate in the People’s Choice Awards, which allowed winners to run social media campaigns highlighting their Virginia Green participation.

Planning is underway for the 2022 conference and awards, which will be held in April in downtown Richmond. The awards application will emphasize providing data to document the environmental benefits of programs that have been implemented.

HIGHLIGHTS FROM THE VIRGINIA GREEN TRAVEL AWARDS



Babylon Micro-Farms, Inc. Green Supplier of the Year

Babylon offers plug-and-play micro-farms and a guided growing application. Its micro-farmers use 94 percent less fertilizer, 95 percent less water and have 71 percent fewer carbon emissions.



Virginia Aquarium & Marine Science Center Innovative Green Project

The aquarium implemented new projects in response to COVID that had environmental benefits. The e-ticketing project eliminated the use of 194,000 paper tickets. Disposable gloves at the Aquarium have been recycled since 2018, but in 2020, the Aquarium focused on reduction as well and cut glove usage by 50 percent.

GOVERNOR'S ENVIRONMENTAL EXCELLENCE AWARDS

BACKGROUND

On March 25, the winners of the 2021 Governor's Environmental Excellence Awards were announced virtually as part of the Environment Virginia Symposium to an audience of over 100. Meryem Karad, Assistant Secretary of Natural and Historic Resources, welcomed the attendees and congratulated the winners. The awards program was co-sponsored by DEQ and the Virginia Department of Conservation and Recreation. The virtual nature of the event allowed employees and partners of award winners to join conference registrants and view the ceremony. 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. A [recording of the ceremony](#) is available.



GOLD MEDAL WINNERS

Freddie Mac Sustainability Program

Freddie Mac has demonstrated its commitment through the development of an environmental sustainability program that spans facilities operation, landscape maintenance, environmentally-oriented business products, employee engagement, community partnerships and dedicated leadership.



A core team of employee volunteers led a corporate-wide environmental sustainability program. The program encompassed green-focused newsletters, virtual and in-person educational events on the environment, facilities and food service improvements and campus recycling and composting. As a corporation, Freddie Mac has also demonstrated industry leadership through its energy-efficiency mortgage offerings.

The program resulted in a significant increase in waste diversion, including the donation of 11 tons of food to local food rescue centers. Proceeds from business products, including green bonds, have financed energy improvements projected to save 175 million kBtu and 242 million gallons of water per year. Freddie Mac's environmental sustainability program owes its success to the business' unwavering commitment, a dedicated implementation team and host of enthusiastic employees. Its leadership recognizes that energy savings and positive environmental impacts directly contribute to affordable housing and create a win-win situation for both the environment and local communities.

Harrisonburg Public Works – Purcell Park Bioreactor Project Environmental Project

Harrisonburg Public Works department partnered with the Natural Resource Conservation Service (NRCS), Ridges to Reefs, and the National Fish and Wildlife Foundation to install a denitrifying woodchip bioreactor located in Purcell Park. This bioreactor removes nitrogen from the water before it returns to Blacks Run, an impaired tributary of the Chesapeake Bay.

Woodchips for the bioreactor came from dead and dying ash trees removed by City staff. Hundreds of ash trees required removal and have been gradually replaced by diverse, native trees. City staff excavated the bioreactor site and transported the woodchips to Purcell Park, where the bioreactor was installed under the guidance of Ridges to Reefs.



GOVERNOR'S ENVIRONMENTAL EXCELLENCE AWARDS

Harrisonburg Public Works Stormwater Division continues to monitor the nitrates removed from the system with help from James Madison University's chemistry department. This innovative practice incorporates new technology typically found in agriculture and applies it to stormwater management needs. The Purcell Park Bioreactor is 3,300 square feet in size, installed underground and adjacent to a stream in Purcell Park. Unlike traditional best management practices (BMPs), bioreactors are below ground allowing the space to be utilized for recreational activities.

The practice removes 1,070 pounds of nitrogen annually. Bioreactors offer the ability to improve water quality at a cost of around \$7-\$10 per pound of nitrogen, compared to traditional stormwater BMPs that can range from \$2,000-\$13,000 per pound of nitrogen. Denitrifying bioreactors offer localities a cost-efficient BMP that can be implemented with less time and space than is needed for traditional stormwater BMPs.

SILVER MEDAL WINNERS

James River National Wildlife Refuge – Powell Creek Nature Trail Implementation of the Virginia Outdoors Plan

James River National Wildlife Refuge safeguards nationally significant habitats along the lower James River for bald eagles and vulnerable species of the Chesapeake Bay. Since being established in 1991, the wildlife refuge has focused primarily on the conservation aspects of its mission. Public use access has been limited and highly regulated. However, in 2020, based on needs described in the Virginia Outdoor Plan and public interest captured in the Crater District Comprehensive plan, as well as the refuge's Comprehensive Conservation Plan, the Powell Creek Nature Trail was opened. The 1.5 mile pedestrian use only trail offers awe-inspiring vistas and opportunities to recreate in nature. The property now allows visitors a passageway to reconnect with nature alongside the passive waters of Powell Creek as it flows into the mighty James River. The Trail serves as an excellent example of how the Wildlife Refuge can manage its lands in a way that perpetuates the natural ecologic function while allowing visitors.



Newport News Shipbuilding – Division of Huntington Ingalls Incorporated – SOAR Sustainability Program

Newport News Shipbuilding (NNS), a division of Huntington Ingalls Industries, is the nation's sole designer, builder and refueler of nuclear-powered aircraft carriers and one of only two shipyards capable of designing and building nuclear-powered submarines. In 2003, NNS was certified to the international standard of EMSs to add value for its customers and company. This achievement outlined NNS's commitment of maintaining a healthy environment for its employees and the people in its community. The policy of NNS is to minimize environmental risks, emissions to the air and water, and the generation of waste while complying with all applicable environmental laws and regulations. The adoption of the EMS led to the development of NNS's Sustainability Program, which is a multi-operational program across various departments to reduce, reuse and recycle. Primary benefits include cost savings, waste reductions, and employee and community involvement. The program's success is mainly due to the commitment of the many individuals at NNS who aim to always improve and prioritize environmental sustainability.



GOVERNOR'S ENVIRONMENTAL EXCELLENCE AWARDS

Virginia State University – Facilities and Capital Outlay – Fleet's Branch Stream Restoration Phase I Environmental Project

Virginia State University (VSU) conducted a restoration of Fleet's Branch using innovative strategies to engage the public and partner with neighboring jurisdictions. Fleet's Branch flows through the campus of VSU to the Appomattox, then to the James River, and ultimately to the Chesapeake Bay. Over the years, the condition of Fleet's Branch, and the surrounding vegetation, had slowly declined due to steep, eroding banks and falling mature trees to become an unstable stream. As the stream eroded and straightened out, it lost connection with the floodplain. This caused water entering the stream to shoot straight downstream faster and with more volume, quickly carrying pollutants with it. To address this problem, VSU restored approximately 2,000 linear feet of stream channel on campus. The work reshaped the eroded V-shaped channel to its original form of meandering stream. Surrounding waterbodies and habitats will benefit from enhanced water quality, better flood mitigation and improved resource conservation. A second phase of the project is planned to extend the restoration project and provide nutrient credits to the City of Petersburg.



BRONZE MEDAL WINNERS

County of Page – Battle Creek Landfill Successful Recycling in a Dying Market Environmental Project

The County of Page sees diverting as much solid waste as possible from the landfill as part of its primary function. When the county was faced with the decision to recycle the bare minimum or develop an alternative process, it decided to invest in equipment that would allow it to bale materials. Baling its own materials allowed Page to combat one of the largest challenges in the recycling industry, contamination, which also determines the value of the baled material. By weeding out contaminants before baling, Page was able to increase the value of its recycled material. This has allowed the county to appeal to a vendor outside of its immediate area. The county worked with RDS, a recycling vendor in Roanoke, to exchange refuse for recycling. Baling has also led to a drastic decrease in road miles to transport the material, as baling the material allows each truck to carry more. Since the project started, Battle Creek Landfill has used the increased revenue and decreased transportation costs to add two additional balers and a separator. Diverting wastes has increased the life of the landfill. The county has been able to insource from other localities and businesses, continuing to increase its efficiency.



Luck Stone Leesburg Plant – Peregrine Falcon Conservation Environmental Project

A quarry is rarely thought of as an environmental amenity, but Luck Stone works diligently to maintain significant undisturbed buffers to its industrial operations. Wildlife corridors over 300 feet wide remain intact on the site in order to provide habitat for wildlife. The Leesburg Plant, which is bisected by Goose Creek, provides natural habitat for an extraordinary number of species, including a pair of nesting peregrine falcons. In Virginia, there are only 30 known breeding pairs of peregrine falcons and of these, very few are nesting in non-manmade structures.



This project sets itself apart for its cooperative nature. Luck Stone invited the Center for Biological Conservation onsite to study and tag the falcons and has committed to allowing the Center access to its network of

GOVERNOR'S ENVIRONMENTAL EXCELLENCE AWARDS

quarries in order to survey for additional pairs of falcons. Luck Stone can provide learning opportunities for local schoolchildren, community groups, and even professional researchers.

NASA Goddard Space Flight Center – Wallops Flight Facility Goddard Sustainability Program Sustainability Program

Situated on Virginia's Eastern Shore, and in close proximity to three wildlife refuges and a national seashore, Wallops Flight Facility (WFF) takes its sustainability and environmental stewardship seriously. The WFF workforce is committed to environmentally sound and sustainable scientific research and mission success through its active EMS and sustainability program.



WFF completed a 3.5 megawatt photovoltaic array on carports and unbuildable land, which will reduce the facility's carbon footprint by approximately 4,000 tons. The project was completed using an energy savings performance contract, which allows the agency to obtain facility improvements paid for with future energy savings. Two new buildings incorporated sustainable design elements including: capturing 90 percent of average rainfall, geothermal heating and cooling systems, using regional materials, reducing light pollution, using reflective materials to reduce the heat island effect, planting native landscaping, installing bike racks, and dedicating parking for low emission and alternative transportation vehicles.

Sky Meadows State Park – Sensory Explorers' Trail Implementation of the Virginia Outdoors Plan

The Sensory Explorers' Trail at Sky Meadows State Park in Delaplane is a place where everyone expands their senses in the exploration of nature. The project took two years and more than 5,000 volunteer hours to complete. The three-tenths of a mile long loop with bridges and walkways is a gentle introduction to the serenity, beauty, and surprises of nature. Crossing a forested hillside and a seasonal wetland, visitors explore billion-year-old geology, attune to sounds of forest and field, discover amphibian species dependent on vernal pools, and step into the amazing world of tree communication. They learn how these pieces form a complex and fascinating ecosystem.



The trail was designed for the blind and visually impaired. It features an easily navigable tactile pathway. The trail pairs interpretive signs with an audio tour, which explores concepts in greater depth. It also includes a written booklet with the audio narration for the hearing impaired.

DEQ LEADING THE GREENING OF STATE GOVERNMENT

LEADING BY EXAMPLE:

DEQ embraces its role to lead the greening of state government. Reducing our own environmental footprint and encouraging others to do the same is incorporated into our everyday activities. From the programs OPP runs to the way DEQ does business, protecting and enhancing Virginia's environment is our core mission. OPP leads by example and creates tools for others to use. DEQ uses an environmental management system (EMS) to evaluate our own environmental impacts, lead the state's efforts to reduce usage of single-use plastics, and provide outreach to encourage state employees to reduce food waste.

DEQ'S ENVIRONMENTAL MANAGEMENT SYSTEM

Background

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.

Objectives & Targets

Since 2014, 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 16 objectives and targets that have been implemented to date, 14 have been completed. In 2021, DEQ continued researching green purchasing to support EO 77 implementation and looking into ways to assess DEQ's climate impacts. The EMS Team will continue to 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. Since 2020, these awareness events have been virtual, but still serve as a crucial way to engage with DEQ staff on the importance of protecting the environment through actions at home as well as at work. In addition to these two events, the EMS Team provides an annual EMS Awareness Training to all employees about the Agency's priorities and progress on environmental goals. The year 2021 saw the highest percentage of employees completing the training at almost 100 percent. Increasing environmental awareness is an important part of encouraging employees to assess the daily decisions they make that impact the environment.



The image above is from a newsletter sent to DEQ staff to celebrate Earth Week, the week of Earth Day, to encourage staff to make every day earth day.

DEQ LEADING THE GREENING OF STATE GOVERNMENT

REDUCING PLASTIC POLLUTION AND SOLID WASTE

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. DEQ's new EMS Manual includes efforts to address climate change mitigation and resiliency through the agency's EMS, leading the way for other state agencies to do the same in the coming years.

With the signing of EO 77 on March 23, 2021, DEQ's green government efforts shifted to assisting executive branch state agencies and institutions with implementation of the order. DEQ developed guidance and a Plastic Pollution and Solid Waste Reduction Plan template for state agencies and institutions to use to comply with EO 77. Additionally, DEQ's Office of Pollution Prevention has hosted multiple EO 77 Office Hours to get feedback and answer questions from stakeholders. Numerous meetings have also been conducted with agencies that needed additional guidance or had unique circumstances with which they needed assistance. DEQ has developed EO 77 webpages with guidance and resources to raise awareness about the executive order for the public and agencies. OPP processed over 175 extension concurrence requests and is working with agencies across the Commonwealth to implement the executive order.

In addition to facilitating implementation of EO 77 throughout the state, OPP has also been working to help DEQ implement our Plastic Pollution and Solid Waste Reduction Plan across our seven offices throughout the Commonwealth. DEQ will continue to look for opportunities to lead by example for other state agencies and provide guidance where possible.

OUTREACH TO STATE AGENCIES

OPP worked with the Department of General Services (DGS) to promote events through OnTheSquare to reach state employees with green actions they could take at work and at home. In late 2020, OPP coordinated an America Recycles Day virtual event to motivate employees across the Commonwealth to celebrate and increase recycling. The webinar covered tips for everyone from novices to seasoned recyclers about recycling right. Over 150 people attended.

On March 18, OPP hosted a second OnTheSquare event focused on reducing food waste, which included two speakers. The webinar started with information tying wasted food to environmental wastes. Then Jenny Elmes with Full Circle Catering demonstrated how to get the most from your food by making both a delicious soup and stock. Beth Gingold with Recycle Leaders shared information on how we can all *Make the Most of Food*. The *Make the Most of Food* challenge helps participants take action to reduce food waste. The event was attended by over 150 people from 11 agencies. In addition, Commonwealth employees signed up to take the challenge.



Jenny Elmes with Full Circle Catering provided a live demonstration of a recipe that does double duty: Making a soup and stock.



RESOURCES

General Information

<https://www.deq.virginia.gov/get-involved/pollution-prevention>

Virginia Green Tourism Program

<https://www.deq.virginia.gov/get-involved/pollution-prevention/virginia-green>

www.virginia.org/green/

www.virginiagreen.net

Governor's Environmental Excellence Awards Program

<https://www.deq.virginia.gov/get-involved/pollution-prevention/governor-s-environmental-excellence-awards>

Pollution Prevention Case Studies

<https://www.deq.virginia.gov/get-involved/pollution-prevention/case-studies>

Virginia Environmental Excellence Program

<https://www.deq.virginia.gov/get-involved/pollution-prevention/virginia-environmental-excellence-program>

Virginia Information Source for Energy

<https://www.deq.virginia.gov/get-involved/pollution-prevention/virginia-information-source-for-energy>

Executive Order Seventy-Seven

<https://www.deq.virginia.gov/get-involved/pollution-prevention/greening-of-government/eo-77>