

2017 Governor's Environmental Excellence Awards Ceremony



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Gold Medal Recipients

Alexandria Renew Enterprises

Sustainability and Environmental Program

Sustainability Program — Gold Medal

Alexandria Renew Enterprises is committed to protecting public health and the environment through its implementation of sustainable practices at its advanced water resource recovery facility.

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

While constructing the Nutrient Management Facility, AlexRenew replaced more than 143,000 acres of asphalt from an existing landfill with clean topsoil and vegetation, which expanded the stream-side buffer by 69,000 square feet to preserve prime habitat areas. Additionally, AlexRenew partners with the public on projects including the 2,300 square feet Urban Wildlife Habitat planting, which showcas-

es native plants and will serve as an outdoor classroom for community groups.

Viewing wastewater as a renewable resource, AlexRenew is committed to recovering water through its treatment process. This involves reaching out to the community to protect water resources, including programs that encourage the community to properly dispose of pharmaceuticals to protect water.

AlexRenew has partnered with researchers at George Mason University and nonprofit groups to test wastewater innovations. They have also partnered with wastewater company VCS from Denmark in order to exchange information about wastewater technology and operations, climate change and energy efficiency. Together they achieved the Utility of the Future (UTOF) designation which is a partnership of water sector organizations. Through collaboration and education AlexRenew continues to work towards their goal of energy reduction while transforming about 13 billion gallons of wastewater into clean water each year.



Fairfax County Park Authority
Huntley Meadows Park Wetland Restoration
Environmental Project — Gold Medal



Huntley Meadows Park is a rich, natural and historical island of over 1,500 acres located in Fairfax County’s Hybla Valley and is the largest park in the Fairfax County Park Authority system. The park’s wetlands play a vital role in the overall health of the watershed by holding water, which keeps river levels normal, helps filter surface water and absorbs water during storms to prevent flooding. The unique habitat of this wetland is known as a hemi-marsh which indicates its shallow depth of less than 3 feet and its contents of 50% open water and 50% vegetated water. This type of marsh has been created and maintained by dams built by beavers and attracts a wide variety of wildlife species.

Over time, what was once considered one of the most productive and diverse nontidal wetlands in the mid-Atlantic area was losing its effectiveness due to the deposition of silt and debris, the colonization of invasive species and changing beaver activity. Before beginning restoration to the wetland, extensive research was conducted by 3 environmental engineering firms, park staff and volunteers to set priorities for the project. The priorities included biodiversity, resource protection and environmental education.

The Fairfax County Park Authority faced many obstacles in their goal of restoring the wetlands, such as implementing control structures that blend into the environment and allow for the continued habitation of sensitive species like beavers. The Park Authority used innovative technology in the form of Clemson Beaver Pond levers which allowed for controlled water surface elevation to achieve the desired biodiversity goals while allowing for the continued habitation of beavers in the area. A hemi-marsh needs fluctuating water levels to maintain diverse plant communities which was obtained using a system of plastic pipes and metal sliding gates that allow park staff to change the wetland's water levels. Another innovative technique was the water control structure, the berm, which controlled water levels by preventing erosion while blending into the park environment. To provide year-round habitat for wildlife such as otters, fish and crayfish five pools were excavated about 3 feet below grade. These pools allow for refuge during times of drought. Another habitat was installed in the form of brush shelters and sunning logs for birds, reptiles, amphibians and aquatic mammals. The Park Authority remained conscious of the materials used and the manner in which the restoration was implemented. For example, when trees were removed they were reused as habitat piles and basking logs. The project's innovative design allowed resources to be saved and for the natural regrowth of native vegetation. The Huntley Meadows Park Wetlands Restoration was a success because of the return of rare species and the growth of stewardship education in the community. The park is now enjoyed by tens of thousands of individuals as well as educational groups.

James City County Department of Parks and Recreation
The Freedom Park Multi-Use Trail
Virginia Outdoors Plan Implementation — Gold Medal

The Freedom Park Multi-Use Trail is located within Freedom Park, the County's most historically significant park, and stretches 1.2 miles along a paved trail. Planning for the trail incorporated public input and is part of the larger Freedom Park Master Plan. The Master Plan set goals to increase connectivity of trails to parks, allowing people to move freely without the interruption of cars and promoting health and fitness. The plan includes water quality monitoring, sediment control and stormwater management as required by the Gordon Creek Watershed and Chesapeake Bay Preservation Ordinances.

The Freedom Park Multi-Use Trail was designed with the environment in mind. It was designed at a 5% grade to reduce runoff and control erosion as well as to limit the impact on the neighboring park and the watershed of Colby Swamp. The path is paved with shoulders to provide stability, reduce erosion and limit maintenance needs. Threatened plants and wildlife were taken into consideration as the trail was realigned by 700 feet to avoid disrupting a threatened plant species. A bike wash station was established using rain water to reduce the spread of invasive species. Because the trail was funded by the Virginia Recreation Trails Grant program, it was held to the highest environmental standards. The construction impacts of the trail were lessened because it follows the path of an old logging road which required less clearing and damage to natural habitats and vegetation. The trail established operating hours to limit the possibilities of vandalism. Maintenance will utilize community volunteers to contribute to the cost effectiveness of the trail.

Visitors have the opportunity to hike, walk, bicycle and take part in nature studies. The Freedom Park Multi-Use Trail establishes a connection between neighborhoods, a means of alternative transportation for children walking to school, and a great opportunity for exercise and connection with the environment.

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**Piedmont Geriatric Hospital in partnership with Virginia Center
for Behavioral Rehabilitation**
Renewable Energy Program
Environmental Project — Gold Medal

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The Piedmont Geriatric Hospital (PGH) has partnered with the Virginia Center for Behavioral Rehabilitation (VCBR) to provide heat to both facilities. The PGH operates a boiler that previously used wood waste, supplemented by fuel oil when wood was no longer sufficient, to produce steam that delivered heat. PGH established a new way to obtain heat by using locally grown herbaceous biomass as a feedstock, in collaboration with FDC Enterprises and the Conservation Management Institute at Virginia Tech. Before the project was implemented there were years of testing and evaluation of methods for delivering and processing material through the existing feed and boiler systems. The new feedstock consisted of native warm season grasses that provide benefits in water quality protection, wildlife habitat and soil restoration. By reducing the use of fuel oil and switching to the use of the herbaceous biomass, the project supports local farms in Southside Virginia. This has also resulted in an increase of wildlife habitat and a reduction of 5,292 tons of greenhouse gases into the atmosphere as well as 3.67 metric tons of CO₂e/acre-year sequestered in soils. This conversion has created a rural economic boost and employment opportunities. The total savings since 2011 has been \$540,133 which was the result of reduced fuel oil consumption by 517,296 gallons. The cost of fuel oil is approximately twice as much as the cost of grass biomass needed to produce an equal amount of steam.

This program provides other businesses with an outline for how small facilities can switch to renewable energy in heat delivery systems. Other facilities have reviewed information by PGH to evaluate the possibility of switching to renewable biomass.

Town of Halifax

Banister River Blueway-King's Bridge Landing Access Virginia Outdoors Plan Implementation — Gold Medal

The Town of Halifax has partnered with many organizations such as the Dan River Basin Association, local civic groups and volunteers in order to secure Virginia Department of Transportation Enhancement Grant Funds for their Banister River Gateway Project. The Town set to work by creating a Halifax Downtown Master Plan that enhanced the downtown area and included efficiency and cost effectiveness for water access facilities on the Banister River. This plan also included a guide for phased funding, improvements to the public infrastructure, and parking and pedestrian access. They aimed to enhance the region and worked to achieve the 13 goals created by the Virginia Outdoors Plan which include opportunities for outdoor recreation, economics, wellness and land conservation. To achieve this last goal, the Town would identify water access, regional trails, thematic driving tours, and historic and landscape resources through the Virginia Byways Program.

The town worked to improve King's Bridge Landing with the replacement of the iron truss bridge and many environmentally conscious efforts such as permeable parking areas for bio-retention. In cooperation with the Dan River Basin Association, Roanoke River Basin Association-Upper Reach and the Halifax County Soil and Water Conservation District, staff continues to engage with citizens and local businesses to help raise awareness about the environmental management practices. The improvements also included bridge streetlights, stone walkways, landscaping and decorative lighting that will attract community involvement. Now the King's Bridge wing dams between the historic stone piers are visible from the wayside during low flow. The overlook of the historic river navigation structures allow access to the river for canoe launching. This also sets the stage for future upstream development of access to the river corridor. The enhancements to the Banister River Blueway and King's Bridge Landing have

lifted the community and provided an influx of high profile community events, recreational and environmental initiatives, as well as generating tourism in the Town. The growth and evolution of events that promote eco-tourism include water recreation, water sports and increased opportunity to explore scenic Virginia.

U.S. Army Garrison, Fort A.P. Hill
Army Compatible Use Buffer (ACUB) Program
Land Conservation Program — Gold Medal

U.S. Army Garrison, Fort A.P. Hill is a Regional Training Center that provides facilities and resources to enable Army, Joint and Inter-agency Readiness. Fort A.P. Hill integrates environmental quality, biodiversity, conservation and ecosystem management into the operations of the facility. The Fort has worked collaboratively with Federal agencies, State agencies and non-profit organizations to gather funds to purchase conservation easements and fee simple ownership from willing landowners. Funds have also been obtained with the help of the Virginia National Defense Industrial Authority and the federally appropriated Realignment and Closure program. Through these partnerships, valuable habitats and ecological resources, as well as the historic and rural character of the neighboring landscape, have been permanently protected. Under these protections are wetland and aquatic habitats, which benefit water quality and lends to the recovery of the Chesapeake Bay watershed.

The undeveloped lands that surround Fort A.P. Hill contain an abundance of natural habitats and biodiversity that directly and tangibly benefit from Fort A.P. Hill's land protection efforts. The undeveloped land that has been protected by the ACUB program to date includes more than 3,000 acres of wetlands, 20 miles of streams, 10,000 acres of riparian forest buffer, 3,000 forested acres and more than 6,000 acres of open lands in production for agricultural products which

also provide early successional habitats for a variety of game and non-game species including bobwhite quail and woodcock; populations that have been on the decline due to habitat loss.

By implementing sustainable policies and working to maintain the environment around them, Fort A.P. Hill has established good relations with their community. Their collaborative approach encourages landowners to allocate funds, knowing they will benefit from the program due to enhancements in public and private outdoor recreation and the protection of cultural resources. The community surrounding Fort A.P. Hill now has the benefit of increased recreational and outdoor activities that stimulate environmental education and a sense of community involvement.

Silver Medal Recipients



Bear Island Paper
Super Soil
Environmental Project — Silver Medal



Bear Island Paper has worked since 1979 to produce high quality newsprint and built a recycling plant to process 120,000 tons of newspaper and magazines in order to sustain the environment and use resources wisely. In 2014, Bear Island commissioned a study by Virginia Tech to evaluate the benefits of using their byproducts of boiler ash and paper mill sludge as a soil amendment. This innovative idea would reuse waste material rather than disposing of it in a landfill. The study resulted in Bear Island being granted a Fertilizer Product Registration License that allows the use of their newly named “Bear Island Super Soil” in compost operations and on farms. Super Soil has been approved by Quality Certification Services, an accredited organic certifying agent for the USDA, for use on organic farms. This product, currently sold at \$.01 per ton, has beneficial effects on soil pH and plant-available nutrients such as calcium carbonate and nitrogen.

Other paper mills have the opportunity to follow Bear Island Paper’s initiatives and reduce their solid waste generation by converting waste to a valuable product. This innovative project has reduced the costs associated with managing their landfill by \$226,710 and are generating a small income. Bear Island’s hard work has paid off in the form of reducing landfill contributions and reducing greenhouse gas emissions from the landfill.

Massimo Zanetti Beverage
PURPOD100™
Environmental Project — Silver Medal

Massimo Zanetti Beverage USA (MZB) is one of the nation's largest coffee roasters and operates nearly 50 companies in over 100 countries. MZB worked to address consumer interest in creating a more environmentally friendly single serve option for machines like Keurig. Petroleum-based plastic cups have been the norm for single serve brewers, but create unnecessary waste. To combat this MZB conducted research to find a compostable pod that would be environmentally responsible without sacrificing customer convenience. By connecting with the Bioproducts Discovery and Development Centre (BDDC) at the University of Guelph, MZB worked to identify a bio-based substance that could withstand the conditions found in a single serve coffee maker, but still degraded fast and fully in industrial composting. Researchers at BDDC made the innovative finding that coffee chaff, the thin skin of coffee beans that comes off during roasting, could be used to enhance the composting process. Based off of this discovery PURPOD100™ was invented with the ring of the pod made from coffee chaff. It features 100% compostable materials and more than 90% renewable resources.

The environmental benefits of this innovative product include diverting 1 ton of coffee chaff from landfills for every 2.5 million compostable coffee pods. The compostability and use of renewable resources in PURPOD100™ has the potential for 100% waste reduction. This innovative idea satisfies MZB's eco-minded customers and provides an opportunity for other coffee companies to convert to this new and sustainable option.

Town of Blacksburg, Virginia Tech and Sustainable Blacksburg
Sustainability Week Partnership
Sustainability Program — Silver Medal

The Town of Blacksburg, Virginia Tech and the local citizen's group Sustainable Blacksburg collaborated to form a green partnership that promotes environmental awareness and sustainable actions in the community. In October 2007 they launched Sustainability Week which supports 30 events to advance sustainability by educating students and community members. The partnership's mission is "Celebrate-Educate-Motivate" and is designed to guide events to highlight innovative ideas and practices while providing the community with practical steps to integrate sustainability into their everyday lives. They achieve this by establishing a core planning team that is composed of members from every part of the community from university and high school students to professionals and professors. Drawing upon volunteers from different sectors such as local government, nonprofits and local schools helps to provide a unique outlook on sustainability. The volunteers work together to create events that focus on fostering a sustainable future through energy, transportation, housing, consumption, disposal, food and land use. Some examples of these events include home energy conservation workshops, environmental films, tours of homes that feature sustainable architecture, and presentations on recycling and incorporating sustainability into every aspect of one's life. The Sustainability Week Partnership believes they have succeeded in accelerating the Town's and University's commitment to pursuing sustainability.

Bronze Medal Recipients

Arlington County Solid Waste Bureau
Year-Round Yard Waste Collection Program
Environmental Project — Bronze Medal

In 2015 the Arlington County Board adopted a 'Zero Waste' goal to divert 90% of waste from landfills and incineration by 2038. Implementing a year-round yard waste collection program is a step towards this goal. In April of 2016, the Arlington County Solid Waste Bureau (SWB) extended their contracted weekly collection to include yard waste, in addition to recycling and garbage. At the same time, the County implemented a policy that prohibits residents from disposing of yard waste as trash and prohibits yard waste disposal in plastic bags. The implementation of year-round collection in 2016 has diverted materials from the waste stream to a beneficial use. Prior to this policy, residential solid waste was approximately 33% yard waste during months that yard waste was not being collected. Nearly a year into the program, this number has fallen to approximately 7%. The SWB estimated that 6,100 tons of yard waste was diverted from residential waste by the end of 2016.

The introduction of roll-out carts for yard waste and banned use of plastic bags has received positive feedback from the community, making it the most successful and comprehensive yard waste collection program in the region. The absence of plastic bags in the waste stream allows for more efficient composting. The diverted yard waste and efficient policies have saved SWB about \$68,000. They are currently reviewing options for food waste processing.

Community Housing Partners
Grissom Lane Apartments
Environmental Project — Bronze Medal

Community Housing Partners (CHP) is a nonprofit community development corporation that works to provide affordable, safe and environmentally sustainable homes to low-income families across the southeastern and mid-Atlantic U.S. They were established in 1975 to address poor housing conditions in southwest Virginia and have expanded their mission to preserving the environment by using green building standards. CHP succeeded in going above and beyond to make the Grissom Lane Apartments, affordable housing for senior citizens, environmentally sustainable. The project achieved net-zero energy consumption and has resulted in an energy reduction of 12,104 kWh/year based on the Virginia multifamily average. To create homes capable of generating all the energy needed, the homes were designed with rooftop solar panels and extensive air sealing to maintain temperatures. In addition, the homes used ducted mini-split heat pumps that reduce the amount of energy needed to heat the home. CHP installed energy monitoring to identify areas that had a big impact on total energy consumption and the residents were ready and enthusiastic to cut back on their energy usage.

The Grissom Lane Apartments create a standard of energy independence for senior living that can be duplicated by CHP for future developments as well as by other public and private housing developers. The cost effectiveness of this community keeps the project viable and sustainable for CHP to own and for people to live in. The green building standards used provide comfortable and sustainable living to senior citizens.

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Virginia Department of Corrections Environmental Services Unit
Mecklenburg Correctional Center
Deconstruction and Recycling Project
Environmental Project — Bronze Medal

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The Environmental Services Unit was tasked with the deconstruction and recycling of the Mecklenburg Correctional Center in 2012 and planned to perform a green deconstruction that would allow for the reuse, reallocation and recycling of resources from the facility. Their prior success in waste reduction and cost savings with the deconstruction of Southampton Correctional Center gave them the experience necessary to utilize more efficient recycling options for this project. The deconstruction of the facility included the return of 189 acres of land to the original grade, reducing the impervious surfaces to a fraction of the previous footprint. The total 16 structures that spanned 265,679 square feet were deconstructed with the planning of a team of well-trained environmental remediation staff that evaluated each waste stream individually. VA DOC trained an offender workforce in practices that will be valuable upon reentry into society.

The first step involved removing the items typically destroyed during demolition to repurpose them at different facilities, which saved money and diverted waste from going to the landfill. This step was vital to preventing dangerous pollutants, such as mercury containing light bulbs and refrigerants from entering the waste stream. Then metals were removed and recycled or sold during the soft demolition process. The last step included the processing of concrete through a portable rock crushing unit which allowed 46,000 tons of gravel to be diverted from the landfill. Overall, VA DOC was able to divert over 99% of waste from the landfill. In total the VA DOC was able to transfer over \$795,000 in assets to other correctional facilities and avoid the cost associated with a private demolition vendor which could be up to \$2.65 million.

Honorable Mentions

City of Suffolk

Sleepy Hole Park Fishing Pier and Canoe and Kayak Launch Virginia Outdoors Plan Implementation — Honorable Mention

The Sleepy Hole Park Fishing Pier and Canoe and Kayak Launch is a pier that offers scenic views for fishing and boating and was completed in collaboration between the Suffolk Department of Parks and Recreation, the National Park Service and nonprofits. The City of Suffolk has shown its commitment to parks and recreation by establishing the goals of leisure, health, wellness and conservation education to provide a safe healthy community. In this project, the City established the goal of economic sustainability.

This project recruited over 100 volunteers to help enhance the adjacent Resource Protection Area buffer along the river by planting over 170 native trees and shrubs along with a layer of wood chips to act as an absorbent surface and reduce runoff. Through this project they provided citizens of Suffolk access to the Nansemond River for recreation and as an opportunity to conduct water safety classes.

Micron Technology, Inc.
Phosphoric Acid Beneficial Reuse
Environmental Project — Honorable Mention

Micron Technology works with its customers and partners to engineer new technology in the semiconductor industry. Micron’s Phosphoric Acid Beneficial Reuse project involved installing pipes and modifying the existing collection system for phosphoric acid in order to sell the spent material to a vendor. Previously, the phosphoric acid was drained to be treated by an on-site wastewater treatment plant. Since the project’s completion in 2014, Micron has beneficially reused about 425,000 pounds (31,500 gallons) of spent phosphoric acid. This has removed a source of phosphate from wastewater and has prevented 1,100,000 pounds of filter cake from being disposed of. This project has benefitted the environment through pollution prevention and has lowered costs to Micron because the current collection rates estimate about \$187,000 in savings each year.

Roanoke County Parks, Recreation and Tourism
Explore Park Adventure Plan
Virginia Outdoors Plan Implementation — Honorable Mention

Roanoke County has entered a 99-year lease agreement for the management of Explore Park and created a master plan that began with input from the community through online surveys, public meetings and stakeholder meetings. Together these groups proposed the development of 22 activity zones in the park that would support their community goals of transportation, quality of life, education, community health and well-being. The park now includes over 14 miles of hiking and mountain biking trails, access to 2 miles of the Roanoke River and new outdoor recreation opportunities such as camping, zip lines, equestrian trail and tubing on the river. The expanse of the Roanoke River Greenway will attract nature lovers to Explore Park. As a result of community involvement through volunteer meetings, Explore Park is now a top regional priority for economic development and tourism.