



RT ENVIRONMENTAL SERVICES, INC.

Your Solution-Oriented Environmental Services Firm

*Governor's Awards
for Environmental
Excellence*



We are pleased to present in this Email Blast information on the 2018 Governor's Awards for Environmental Excellence.

- Gary Brown

AeroAggregates, LLC
Delaware

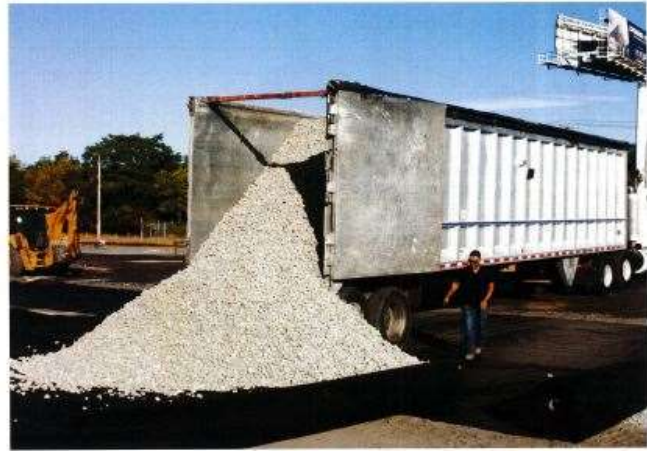
Bottle to Building, Ultra-Lightweight Aggregates Manufactured from 100% Post-Consumer Recycled Glass

AeroAggregates is the first vertically integrated manufacturer in North America of ultra-lightweight aggregates made from 100% recycled glass. The production capabilities of AeroAggregates transforms mixed glass cullet from residential recycling programs into foamed glass for use in infrastructure construction projects.

The founders of AeroAggregates realized the need for a sustainable solution for lightweight construction materials. Today's civil engineering challenges include construction on soft soils, load reduction behind retaining walls and structures, insulating subgrade, and the protection of underground utilities. AeroAggregates foamed glass aggregate provides an answer to most of these challenges by transforming glass cullet into a lightweight material with a significant load bearing capacity and high friction angle. The product is also insulating, free draining, rot, acid, and chemical resistant, noncombustible, and a beneficial reuse for glass containers.

After purchasing the former Baldwin Locomotive brownfield site in Eddystone, PA, AeroAggregates licensed its automated process in which glass is cleaned and sized and then crushed into a powder. It is then mixed with a recycled mineral as a foaming agent to manufacture the foamed glass aggregate. As the blended powder passes on a conveyor belt through a 60 foot long gas fired kiln at about 1,800 degrees Fahrenheit, the glass powder softens, and the foaming agent produces bubbles that make the mix rise like yeast in expanded dough. After a 40 minute residence time through the kiln, the aerated glass emerges in a continuous gray cake. As it cools, it cracks into pieces up to two inches wide, with visible cavities similar to that of volcanic pumice stone.

The company is proud of the fact that the first use of their material for an infrastructure project in North America was right here in Pennsylvania in partnership with PADOT. They are encouraged by the response in the marketplace and will be doubling their manufacturing capacity in June to meet the demand. This significant private investment represents not only the commitment to the product but the confidence that AeroAggregates has in their partners including PA DEP, Recycling Markets Center, and PADOT.



American Eagle Paper Mills

Blair

Project Phoenix

American Eagle Paper Mills® (Tyrone, PA) commissioned Project Phoenix to reinvent the paper mill's critical infrastructures by primarily focusing on efficiency, using less electricity, less water, and less steam to produce high quality recycled uncoated paper.

American Eagle PAPER MILLS®

The Tyrone mill constructed in 1880 and is one of the oldest working paper mills in the United States. Over the years, the mill's plumbing, electrical distribution, steam generation and distribution had all been modified many times, creating significant long-term inefficiencies. American Eagle installed several new technologies to improve the mill's infrastructure including a highly efficient natural gas boiler that replaced a 1957 coal fired boiler. Over 5,000 feet of new piping was also installed, which improved the efficiency of steam distribution and collection of the condensate to minimize waste. A custom water treatment system was also installed and scaled to match the new boiler which more efficiently treats condensate and further reduces water waste. American Eagle also installed new equipment focused on power factor correction, which delivered significant electrical efficiencies.

Project Phoenix achieved tremendous environmental savings. Annual GHG emissions were reduced by 68.7%. Daily fresh water withdrawal was reduced by 83%, and overall electrical consumption declined by 6.6% annually. Central PA's Little Juniata watershed was positively impacted by Project Phoenix. Prior to implementing the project, the spring water feed that would have flowed into the Little Juniata River had been diverted for mill operations dating back to 1935. Now, the natural water inflow has been restored and water feeds directly into the Little Juniata at a constant 50 degree temperature, which is critical to the watershed's natural ecosystem.

Project Phoenix' success gave new life to American Eagle Paper Mills, delivered dramatic environmental savings, and generated significant operational cost reductions key to the mill's long-term economic sustainability. It also reaffirmed American Eagle's belief that smaller, more efficient, more flexible operations with the highest level of commitment to environmental sustainability will remain successful well into the future.



Autoneum Bloomsburg

Columbia

Carpet Trim and Water Recycling Project

Autoneum Bloomsburg manufactures automotive carpet and trim products for the automotive industry. Founded in 1889 in Bloomsburg, PA, the company entered the automotive carpet business as a supplier of carpet for horse-drawn buggies. Current customers include Ford, General Motors, Fiat Chrysler, Nissan, Toyota, Mercedes Benz, Volvo, BMW, Volkswagen, and Honda. Autoneum Bloomsburg is a global company supplying the U.S., Canada, Mexico, South America, Europe and Asia markets with full carpet assemblies, auxiliary mats, roll goods, vinyl floor systems and acoustical parts.

Ninety percent of the residual waste generated from manufacturing carpet is carpet trim edges from molding and die cutting operations. The most significant development to reduce the amount of residual waste for disposal has been a recycling system that Autoneum Bloomsburg has perfected and continues to improve upon with their carpet trim edge recycling process.

With input and assistance from Autoneum Bloomsburg employees, the Northcentral PA DEP office, and recycling partners, Autoneum Bloomsburg has been able to separate additional waste streams previously unable to be recycled. With continuous improvements in the carpet trim edge recycling operation, Autoneum Bloomsburg is now capable of recycling in excess of 100,000 pounds of material on a daily basis keeping material out of landfills.

This project has been a huge success. Last year the Autoneum Bloomsburg team kept over 12,000 tons of material from entering a landfill as well as reduced millions of dollars in raw material purchases.

The Autoneum Bloomsburg energy conservation team has also made significant progress on reducing facility energy costs. The team recently completed a water/sewer reduction project by recycling cooling water from three vacuum pumps that previously had been sent down the drain. Cooling water was redirected back through a water storage tank and then reused in the carpet dyeing process. Savings for this conservation project was 16.9 million gallons of water per year. Autoneum Bloomsburg continues to perfect these operations as they have been critical to the company's environmental commitment and mission statement as well as vital to their profitability.



autoneum



Berks County Water and Sewer Association Berks

Berks County Source Water Protection Program

In 2016, the Berks County Water and Sewer Association (BCWSA), in partnership with its member organizations, began development of a comprehensive source water protection program for the County. The project, underwritten by PA DEP's Source Water Protection Technical Assistance Program, incorporated existing and new protection zones for drinking water utilities, identified potential sources of contamination for both surface water and groundwater sources, and selected management strategies to be implemented across the region.



The program employed the principles of Integrated Water Resources Management (IWRM). IWRM incorporates a coordinated effort to plan, develop, protect, and manage natural resources in a sustainable manner. The objective of the Berks County program was to produce a plan that not only benefitted all residents of the County but could be sustained by large and small utilities and united municipalities and organizations in watershed wide improvement projects. The benefits to working with BCWSA included shared resources in public education, access to funding for Best Management Practices, and leadership for coordinating source water protection activities.

BCWSA provided a unique opportunity to leverage data collection, funding, and inter-agency cooperation. Berks County Planning Commission, Department of Emergency Services, Conservation District, BCWSA, and individual water suppliers worked together to create a database to help prevent water contamination events through better interaction with emergency personnel. This included real life data being catalogued into a Geographic Information System to be used during table top exercises to better educate emergency personnel and create dialogue between emergency responders and water providers.

By coordinating efforts, the County was able to maximize funding spent, minimize duplication of services, ensure that consistent information was disseminated, and create streamlined operations. The inception of the BCWSA in 2013 has proven each year that the more cooperative and coordinated efforts are, the better the results achieved.



City of Scranton

Lackawanna

LED Street Lighting Conversion Project

The City of Scranton LED Street Lighting Conversion project focused on replacing street lighting fixtures, refinishing and painting aging poles, and installing lighting controls. By replacing the street lighting system, the City reduced its energy consumption and maintenance, improved optical control and visibility, increased safety, and decreased hazardous waste and energy consumption.

This project reduced carbon emissions, demand for lighting, and the need for power plants. It also reduced waste for equipment and infrastructure. LED technology has been found to be the least environmentally harmful lighting source available. The system is managed by software in real time which provides the City with data on energy use and control action histories. The programs diagnostic capabilities register system failures, load failures, field outages, and line voltage changes.

LED lighting is increasingly emerging as a way to capture energy efficiency savings locally, state-wide, nationally, and across the globe. The benefits of LED lighting include long operational life time, energy efficiency, durability, and ideally designed for operation under cold and low outdoor temperature settings. Currently, the new LED lighting is saving the City approximately \$32,000 a month. The project also has major benefits for the overall community of Scranton with respect to safety including facilitating the work of neighborhood watch groups and law enforcement.

The City of Scranton wants to lead by example with this LED Street Lighting Program. They hope to encourage other municipalities to implement a similar program and reap the same benefits. As well, residents are encouraged to learn from this experience when choosing the lighting options they select for their own properties.



Dr. Blair T. Carbaugh

Northumberland

Dr. Blair T. Carbaugh Conservation Area

Dr. Blair Carbaugh grew up on a dairy farm near Waterside, PA in Bedford County. He taught biology at Lock Haven University. He began the Hardwoods Resource Center at Lock Haven University, supporting Pennsylvania's hardwood industry. He has been an active member of the PA Forest Stewardship Program, the PA Forestry Association, the Northcentral PA Conservancy, Susquehanna Greenway Partnership, Northumberland County Conservation District, and Roaring Creek Watershed Association. Dr. Carbaugh has also been actively involved in efforts of the Office of Surface Mining, the Bureau of Abandoned Mining Reclamation, Appalachian Regional Reforestation Initiative, and American Chestnut Foundation to plant a blight-resistant variety of American Chestnut tree on abandoned coal mine lands.

The dedication of the Carbaugh Conservation Area located on the Anthracite Outdoor Adventure Area (AOAA) park grounds is a culmination of Dr. Carbaugh's affinity for conserving natural resources. Built on former coal mine lands, the AOAA is a 6,500-acre property with an extensive off-road trail system for ATVs, full-size vehicles and dirt bikes. The soil conditions on abandoned coal mine lands are a perfect mix for the American chestnut tree to thrive. Once the Northumberland County Commissioners (owners of the AOAA property) gave their approval for the plantings, Dr. Carbaugh evaluated the site to determine the proper seed recommendations and with the help of the AOAA, Northumberland County Conservation District, local volunteers and others, planted 3 one-acre American Chestnut tree enclosures. The fencing enclosures were provided by PA DEP Bureau of Abandoned Mine Reclamation to prevent deer from invading the plantings and the American Chestnut foundation provided the seed.

AOAA visitors can see conservation at work by viewing these plantings and learning about the life, death, and rebirth of the American Chestnut tree from an educational kiosk located at the main planting site. The plantings themselves add diversity to the existing forested area on reclaimed mine lands and research information from the plantings are being provided to the American Chestnut Foundation.



Earth Conservancy Luzerne

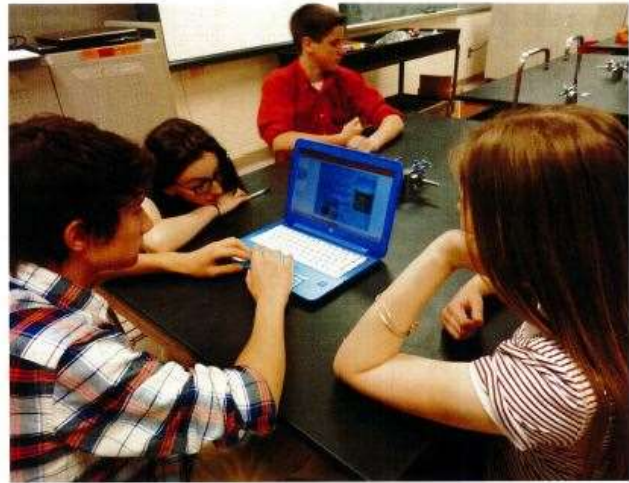
Askam Borehole Wayside Exhibit

Although the Askam borehole relieves water pressure in underground mines, it also releases AMD into the Nanticoke Creek, polluting its watershed and its tributary, the Susquehanna River. In 2014, Earth Conservancy (EC) constructed a treatment system to mitigate these AMD effects. Since then, EC has repeatedly fielded questions from citizens about the system's most prominent feature, a large orange pond. Citizens fear its effects on the environment. In truth, the orange color indicates that the system is working, preventing AMD from flowing downstream. Earth Conservancy decided that people should understand the system, its background, mechanics, and role in water and watershed protection. As well, they should learn about the innovative AMD-treatment technology being utilized. However, communicating this to the public had proven challenging.



EC's solution was to invite the public to the site to see the treatment system up close. Easily accessible and surrounded by trees with wetland features, the site was an excellent setting for a wayside exhibit. To begin, EC and its partner, the Eastern Pennsylvania Coalition of Abandoned Mine Reclamation (EPCAMR), worked with two classes of students from the Wilkes-Barre Area School District. The students learned about AMD and the treatment system, and were then asked to provide their input for interpretive panels to be designed for the site. EC took the students' ideas and professionally reinterpreted them. In the spring of 2017, a parking area and walking path were constructed and four laminate signs were installed along the trail. The project was supported by EC, PA DEP, Luzerne County, and the Anthracite Region Independent Power Producers Association (ARIPPA).

The wayside project had three primary goals: Increase students' STEM knowledge and their connection to community; Enhance the accessibility and safety of the site; and Educate future visitors about AMD, the treatment system, regional history, and the environment. All three goals have been and continue to be fulfilled.



Happy Hollow Farm York

Happy Hollow Farm Buffer Project

The Happy Hollow Farm in Southern York County boasts a 4 acre multifunctional forested riparian buffer along a creek running through Don and Ann English's family farm. The Happy Hollow Farm, like much of Pennsylvania's farmland had been in row crops for years. The English's worked through the USDA Conservation Reserve Enhancement Program (CREP) whose mission is to encourage farmers to conserve and enhance their land by making it fiscally attractive to landowners to change production from row crops. The English's went even further by planting a forest buffer with 80 different tree and shrub species to filter pollutants, provide food and habitat for wildlife, and produce usable products including nuts, berries, and syrup.

Riparian forest buffers are one of the most cost-effective best management practices for improving water quality. They act as filters to reduce pollutants and keep sediment from reaching the water. Riparian forest buffers don't just filter water they improve bank stability and reduce erosion and flooding. Buffers slow down surface run-off and allow rainfall to infiltrate, recharging critical groundwater resources. The wildlife benefit from the food, shelter, and travel corridors provided by buffers. Buffers also cool water temperatures, increase oxygen, and increase organic materials that feed fish and other stream life.

While there are numerous forest buffers in Pennsylvania, the buffer on the English farm is truly unique in that it is a prime example of a multifunctional buffer. When in the initial planning stages of their project, the English's spent an incredible amount of effort selecting the most appropriate species to plant, and they meticulously chose the design to replicate the spaced manner of forest growth.

This project was designed to benefit multiple generations. They created visual features to draw the eye and delight the visitor. In 7 years since installation, the buffer has been a mix of work and discovery. The rewards are numerous including a clean stream, less erosion from adjacent fields, small harvests, and increased diversity of birds, insects, and mammals. The hollow is living up to its name.



Loyalhanna Watershed Association Westmoreland

STEM Education at the Watershed Farm

Since its founding, a key activity of the Loyalhanna Watershed Association (LWA) has been sharing knowledge of conservation practices and the importance of our natural environment with others. With the help of numerous partners, LWA recently completed an adaptive reuse project on a historic 123-acre farm in the Ligonier Valley. The Watershed Farm is now home to a rotational cattle grazing operation that highlights best management practices and sustainable features, pollinator and native plant gardens, bee hives, walking trails and a wetland trail and overlook.



While LWA has been extremely successful in reaching hundreds of students in our area school districts over the years, they felt there was an unmet need in the community to increase the environmental learning experiences for local students that would align with topics they were discussing in their classrooms. Oftentimes, the "environment" gets lost behind the current focus of science and technology in our school system. The concept of integrating environmental education with present STEM curriculum would provide students with a new understanding of the environment as a science and prepare them to be more engaged on environmental and conservation related issues - the primary goal of the program.

LWA worked to develop and implement new STEM Environmental Education program offerings for area students designed as both field and in-class experiences for grades K-12. Students were exposed to programs that incorporate a variety of materials and techniques to perform various experiments, including using technology and equipment in a field setting, while also replicating on a smaller scale many innovations in design and function in place at the Watershed Farm in the areas of agriculture, soils, building reuse/sustainable design, water systems and art in nature. Most importantly, ALL programs for ALL students are offered free of charge. This project has provided a new opportunity for students of all ages and backgrounds to participate in unique hands-on programming whether on or off the Farm to foster an environmental conservation ethic they will carry with them throughout their lives.



Merck & Co., Inc.
Montgomery

Waste Diversion and Recycling Initiative

Merck & Co. Inc. demonstrates respect and care for the environment in everything it does because it believes a healthy planet is essential to human health as well as the sustainability of the company. Merck has a long history of environmental stewardship and compliance, but realized that its strategy and efforts needed to evolve in order for it to operate in an increasingly resource-constrained world.

Merck has developed corporate sustainability goals over recent years that are fully aligned with its business and focus on key environmental challenges. In 2015, Merck achieved its goal of sending less than 30% of operation wastes to landfills and direct incineration five years ahead of schedule. In an effort to continue to evolve and improve, Merck has set a new corporate goal of sending less than 20% of wastes by 2025. Merck's focus through this project was to demonstrate its initiative and commitment to achieve these goals at all three of its PA locations Lansdale, North Wales and West Point.

Using its integrated facility management model and encouraging collaboration with its partners, Merck has taken a leadership role in supporting sustainability. The highlights of the accomplishments of this project included:

- Educational and outreach effort that included standardized signage and containers that resulted in a 27% reduction of recyclable items in the trash by weight and a 33% reduction of trash in the recycling by weight.
- Integration of a sustainability message in its approximately 10,500 employee workforce through events such as Earth Day, America Recycles Day, Employee E-waste collection Household goods collection, Elementary environmental education lessons at the Child Learning Centers during the school year and summer camp programs, and Bring Your Child To Work Day activities.
- Embracing the partnership with its suppliers.
- Using the essential facilities management function of waste management to continuously drive improvement through recycling.
- Achieving a Return on Investment of approximately one year.



Penn State Extension Lehigh

Master Watershed Steward Program

The Master Watershed Steward program began in 2012 through a collaboration of environmental organizations in Lehigh and Northampton counties, who saw that citizens in communities everywhere cited 'clean water,' and a 'healthy environment' among their most important concerns. While at the same time, watershed associations and environmental organizations were struggling to recruit and retain volunteers. To address this gap between concern and volunteering, Penn State Extension worked with the Watershed Coalition of the Lehigh Valley, and the Northampton County Conservation District to create a formal volunteer training program to provide citizens with a foundational knowledge, allowing them to engage effectively with environmental efforts in their communities.

Over five years of tireless work by Erin Frederick and Rebecca Kennedy, the single pilot program has grown to 13 counties. From a class of 20 to over 270 volunteers who have completed the program or are currently training, the Master Watershed program is transforming the citizen volunteer landscape across the Commonwealth. Along the way, dozens of partner organizations - too many to name! - have offered their time and resources.

What sets the Master Watershed Steward program apart from other volunteer programs is the ongoing support provided to volunteers to keep them involved. From monthly newsletters detailing volunteer opportunities from local partners, social gatherings to bring volunteers together to make new friends and recognize their efforts, and the strong backing of Penn State Extension's long history with effective volunteer management with the Master Gardener program, Stewards are never 'on their own,' but part of the Extension family. The efforts have paid off - in 2017, the volunteers contributed over 7,500 volunteer hours, assisting 60 organizations with education and on-the-ground projects, reaching nearly 200,000 Pennsylvania residents.



PennState Extension

**Master Watershed
Steward Program**



Pennsylvania Parks and Forests Foundation Cumberland

Graffiti: No Place in Nature

In 2015, the Pennsylvania Parks and Forests Foundation (PPFF) recognized that there was a need to provide volunteer support in parks and forests that might not have an organized group of volunteers to assist them.



PPFF created the Stewards of Penn's Woods program. To kick off the program, PPFF hosted a stewardship day at Hammonds Rocks, a 500 million year old rock outcropping in the Michaux State Forest. The task to remove the layers of graffiti from the 6,500 sq. ft. of rock was enormous, requiring help from rock climbers, forestry staff, local fire departments, and over 50 volunteers from the community. It was the first of many graffiti removal events held by PPFF across the state.

PPFF did research to determine the best products and procedure to remove the graffiti. Partnering with several local businesses and organizations, donations were made that provided some of the supplies needed for the graffiti removal as well as snacks and lunches for the volunteers. From the beginning, the project required the help of the community, state park and forest staff, and local businesses for physical work and supplies. Local volunteers, ages 17-75, contributed over 1,000 hours of work to the project. The project to remove graffiti needed to include education about the illegality and harmful effects of graffiti while highlighting the beauty of the locations where people, plants, and animals can thrive.

PPFF understands that it will require a combination of improved enforcement and education to discourage future graffiti on our state lands. Involving local organizations like the students, teachers, volunteer firefighters and cabin owners was the first step in increasing community awareness.

When the Graffiti-No Place In Nature project started no other organizations were part of cleaning up the 37 sites in Pennsylvania's state parks or forests. PPFF and its partners, along with 219 volunteers have now cleaned up more than six of the sites, with plans for clean ups in more locations.



Pequea Creek Watershed Association Lancaster

Big Beaver-Esh Stream Restoration Project

Big Beaver Creek, flows from Quarryville Borough to the Pequea Creek in southern Lancaster County. The creek is a trout-stocked fishery and is impaired due to excessive sediment from agricultural land practices. The creek flows through the pasture and cropland of the Esh farm for approximately 2,700 linear feet.



Through the years, the creek had carved-out areas of vertical streambanks which were actively eroding with each storm event and presented a physical danger to both humans and livestock. In addition, the farmer was losing valuable agricultural land to the creek. In some areas the livestock had access to the stream which caused further deterioration.

The goal of the project was to eliminate the actively eroding streambanks and reconnect the creek to the natural floodplain. The project included excavating and regrading the high streambanks, installing in-stream structures to direct stream flows away from the streambanks, providing fish habitat, planting native vegetation to stabilize the streambanks, and installing fencing and livestock crossings to protect the streambanks from grazing animals and provide safe access to both sides of the creek.

Stabilizing the streambank improved its water quality by reducing sediment, phosphorus, and nitrogen loads in to the stream. The 4-acre riparian buffer planted along the stream provided shade, habitat, food, and much-needed biodiversity for aquatic species and other wildlife. Installation of 4,500 linear feet of streambank fencing with the design of two livestock crossings prevented grazing horses and dairy cows/heifers from degrading the newly improved streambanks.

The Pequea Creek Watershed Association believes that the community is best served when the natural environment is improved and protected from continued threats and degradation. Clean surface water systems provide better-quality drinking water, habitat for aquatic species, a source of food and livelihood for fisherman, oysterman, and crabbers, and opportunities for safe recreational activity.



Potter County Conservation District Potter

Water Quality Protection and Education Initiative: Ludington Run and Beyond

In 2017, The Potter County Conservation District (PCCD) embarked on a pilot/demonstration project. Their focus was on a comprehensive water quality and riparian habitat restoration to Ludington Run, a tributary to the Genesee River in the headwaters region. Ludington Run is one of many valued high-quality, naturally reproducing trout streams in the headwaters region. The overarching goal of the project was to build a collaborative model that could be applied to other sites experiencing water quality degradation, not only in Potter County, but in other jurisdictions. Equally important to the on-the-ground activities was a comprehensive public education campaign focused on the importance of protecting water resources.

The project sought to expand on a section of stream that limited trout passage. Trout movement into miles of headwater tributaries had been blocked by culverts that channel the water underneath roads, but prevented many aquatic species from migrating. Enhancement of the Ludington Run habitat required a three-staged approach including stream barrier remediation, fish habitat structure placement, and road sediment reduction. Restoring the section on Ludington Run included site identification, grant procurement, permit writing, survey, construction management, and biological monitoring to fully rectify the impediment.

The result is brook and brown trout accessibility to improved habitat totaling over 2 miles with improved access to an additional 10 miles. A newly functional stream corridor will additionally reduce frequency of flooding and sediment loading. PCCD collaborated with the National Fish and Wildlife Foundation, Bingham Township, Potter County Commissioners, PennDOT, PA DEP, and Trout Unlimited along with many others on this project.



Wildlands Conservancy Lehigh

Building Partnerships and Restoring Riparian Buffers in the Lehigh Valley

Wildlands Conservancy is a non-profit land trust in the Lehigh Valley that has been taking on environmental issues since 1973. For the past 45 years, Wildlands has worked to protect land from development, restore degraded stream and wildlife habitat, create trail connections for recreation, improve stream water quality, and educate and engage local communities in environmental issues. Wildlands envisions a Lehigh Valley and Lehigh River watershed that contain expansive natural areas, connected green spaces, healthy waterways, and an enlightened community where people embrace conservation and sustainability.



The Lehigh Valley is a vibrant region of diverse communities, unique natural resources, and protected open space. However, rapid urbanization and development left many of the region's streams impaired. Riparian buffers were cleared from many streams, creating problems with stormwater, streambank erosion, and water quality degradation. Through funding from the PA Department of Conservation and Natural Resources and the PA Department of Environmental Protection, Wildlands Conservancy analyzed the quality of riparian buffers in the Lehigh Valley. Years spent performing spatial analysis, identifying and prioritizing restoration needs, and building relationships with landowners and conservation partners yielded a list of potential projects.

In 2017, Wildlands began tackling that list. With the support of several funders, Wildlands worked with more than 15 partners to plant 8.5 acres of native riparian buffers at 10 sites. These native buffers provide floodplain storage, filter pollutants, stabilize streambanks, provide organic material for aquatic species, and create wildlife habitat. Many of the sites are in public spaces, which created opportunities to educate and engage local communities while creating a model of best management practices. Wildlands will work with partners to plant at more than 12 sites in 2018, with many more in development for the coming years. These efforts will help restore stream ecosystems, create safer, more beautiful green spaces for residents to enjoy, and provide habitat for wildlife.

Slippery Rock University Butler

Healthy Planet, Healthy People Environmental Summer Camp & Community Project

During June of 2017 Slippery Rock University's Office of Sustainability launched the SRU Healthy Planet, Healthy People Environmental Summer Camp and Community Project Incubator. The focus of this program was to engage high school students in a year-long environmental project that addressed a local environmental issue. The goal was to create a ripple effect of environmental awareness, education and stewardship action in the students' communities.

At the start of the project, 13 teams of high school teachers and students attended an action-packed, week-long summer camp. During the camp, teacher-student teams participated in leadership training, immersive field experiences and collaborative project planning sessions. With support from camp staff, environmental professionals, and university faculty, each team had a completed project plan by the end of the camp. Project plans included a budget, management details, a timeline, and team assignments. Each team left the camp with a high level of confidence that they could successfully carry out their projects.

The camp was the beginning of what would become a year-long process of engaging high school students as volunteers in environmental projects across the region. Thanks to an EPA Model Environmental Education Grant, each of the 13 high school teams received seed money to kickstart their community project. The projects ranged from starting recycling programs to reducing the use of single-use plastic water bottles, creating rain gardens to protect the French Creek Watershed, creating community vegetable gardens in an urban food desert, monitoring water quality in the pristine Little/Middle Shenango Rivers, improving the ecology of Oil Creek, and more. The end result has been the creation of 13 projects located in 8 counties, with the potential to raise environmental awareness among more than 2 million Pennsylvania residents.



**Southwestern Pennsylvania Commission, Water Resource Center
Allegheny**

MS4 Workshop Series

Southwestern Pennsylvania Commission (SPC) is the official Metropolitan Planning Organization, Local Development District, and Economic Development District for Southwestern Pennsylvania. The SPC covers a 10-county region and contains a total of 548 municipalities. In 2013, SPC created the Water Resource Center (WRC) with a mission to promote regional collaboration on water topics, be a leader in facilitating coordination and education, and provide technical assistance to member governments.



The SPC WRC developed the MS4 Workshop Series, a regional education and collaboration initiative for its 311 Municipal Separate Storm Sewer (MS4) communities. The MS4 Workshop Series was developed to provide a quality educational experience for workshop attendees at no cost.

In 2017, a total of 15 MS4 workshops were offered with 783 attendees. The efforts of the WRC have served as a foundation for the development of successful municipal programs for compliance with MS4 regulations in the region.

Workshop topics included: MS4 Program Management: Introduction to Pollutant Reduction Plans (PRPs), MS4 Program Overview and Mock Inspection, MS4 Workshop Series: PRPs - Digging into the Details, MS4 Workshop Series: NOI Workshop, MS4 Toolbox: Compliance, O&M and BMPs for successful PRPs, Using ArcGIS for your MS4 Data Management, Funding Strategies for Stormwater BMPs, MS4 Program Management: TMDL Implementation, Make Brine Work for You, and Stormwater and MS4 101.

The workshops assisted municipalities in navigating the complexities of the MS4 program with the goal of program compliance, greater environmental understanding amongst local government/elected officials, and regional collaboration between county planning departments, elected officials the region's municipalities, conservation districts, engineering firms and environmental non-profits.



***For more information on the Pennsylvania Environmental Council,
you can contact Cindy Ferguson at cferguson@pecpa.org or by
phone at 215-545-4570 x 100.***

The School District of Philadelphia Philadelphia

GreenFutures Sustainability Program



The School District of Philadelphia is the largest public school district in Pennsylvania, with over 134,000 students enrolled, 17,373 employees, 50,159 free breakfasts and 86,006 free lunches served daily. Additionally, 42,593 students are transported daily to and from schools in every neighborhood in Philadelphia. There are 218 schools and over 300 buildings with 26 million square feet of building space and 1,300 acres of land. The average building age is 70 years, ranging from schools that were recently constructed and have been designated as Leadership in Energy and Environmental Design (LEED) Platinum certified, to historical buildings that are over 100 years of age. With a large organization comes a large environmental footprint and a great opportunity to affect change in the reduction of greenhouse gas emissions, stormwater runoff, and water and energy consumption.

GreenFutures, the District's first sustainability plan, was designed by dedicated partners and staff to reduce the District's environmental footprint and to grow a culture of sustainability in every school community. Through the sustainability plan, well defined targets were established with specific actions and metrics. The five focus areas and targets were:

1. Education for Sustainability-100% of schools and offices show EfS.
2. Consumption and Waste-10% increase in waste diversion from landfills.
3. Energy and Efficiencies-20% decrease in energy consumption.
4. School Greenscapes-5 green school yards constructed per year.
5. Healthy Schools-30 schools/year assessed for healthy school parameters.

In addition to the environmental impact of GreenFutures, the program aims to make every school a green school to better serve students and communities. A green school is a school that provides students with equitable access to healthy, clean and energy efficient learning spaces, as well as resources that cultivate student, staff, family and community engagement in environmental stewardship, social justice and Education for Sustainability opportunities.

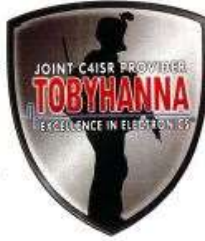
Over the past year, the District has made considerable strides in becoming a more sustainable and equitable organization. With the support of dedicated partners, staff and stakeholders, this past year has been an affirmation that every school can be great and every school can be green.



Tobyhanna Army Depot Monroe

Sustainability at Tobyhanna Army Depot

Tobyhanna Army Depot (TYAD) is the largest, full-service electronics maintenance facility in the Department of Defense. TYAD is the region's largest industrial employer with 3,800 employees and a regional economic impact of \$2.9 billion. TYAD sustainability goal is to reduce the environmental footprint of the facility through pollution prevention, energy efficiency, and sustainability. To reach this goal, TYAD implemented a number of sustainable practices and technologies across the workplace.



TYAD integrated several solar technologies throughout the facility including the installation of energy efficient lighting and solar tubes as well as the installation of rooftop solar panels. A solar carport was constructed to provide covered parking spots, generate electricity and reduce greenhouse gas emissions. TYAD also installed solar wall heating systems to provide heat which resulted in significant energy savings. Light-Emitting Diode (LED) lighting has been installed and green roofs have been constructed which also integrate sustainability and reduce energy consumption. TYAD is the first army installation to build and maintain over 100,000 square feet of green roof which has provided substantial energy savings, filtered storm water and created habitat.

TYAD's waste reduction goals included a continuous annual reduction in hazardous waste disposal and at least 50% of the solid waste is recycled and diverted from landfills. TYAD has a NetZero water program, a Sequencing Batch Reactor wastewater treatment process and water reuse tanks to reduce water usage and improve water quality of the local waters.

The environment does not have to be negatively impacted by a large industrial business. TYAD strives to continuously make improvements in the environmental field to make the work environment and the community around it, a better, safer, and cleaner place.



Tookany/Tacony-Frankford Watershed Partnership Philadelphia

Jenkintown Creek Restoration

Located along the headwaters of the Tookany/Tacony-Frankford Watershed in Abington Township, the Jenkintown Creek Restoration Project harnesses the capacity and commitment of multiple partners to improve water quality in a highly developed suburban watershed. The project demonstrates how collaborative efforts can manage water quality on private and public lands and serve as a model for other urbanized watersheds throughout Greater Philadelphia and across Pennsylvania. Watershed planning and analysis form the foundation for installation of best management practices (BMPs) across multiple scales that compliment existing land use to maximize the benefits of stormwater volume and velocity reduction on this 3.6 mile creek.

The Tookany/Tacony- Frankford Watershed Partnership (TTF) and its project partners have led over 1,000 volunteers in the implementation of restoration efforts, engaging students and their families from nine primary and secondary educational institutions including Abington Friends School, A First Step Academy, Arcadia University, Drexel University, Manor College, McKinley Elementary School, Saint Basil Academy, Temple University, and Villanova University in regular hands-on environmental education and stewardship activities.

TTF's volunteer Streamkeepers and staff, supported by the Academy of Natural Sciences and the Stroud Water Research Center, as well as the Temple Center for Sustainable Communities and the Villanova Urban Stormwater Partnership, actively gather water quality data to support and measure this project. Each site features an interpretive sign with project goals and resources for action, as well as photos and graphics documenting the community effort and providing information on plants and design.

The Jenkintown Creek Project provided a real-time model of how to effectively prevent pollution and ensure the sustainability of pollution mitigation into the future, in a diverse suburban landscape with many partners.



Tookany/Tacony-Frankford
Watershed Partnership, Inc.



Upper Moreland School District Montgomery

Alternative Fuel Propane Infrastructure and Bus Fleet

Upper Moreland School District (UMTSD) is a public school district located in Montgomery County Pennsylvania serving the communities of Hatboro, Willow Grove and Huntington Valley.



The Upper Moreland School District converted its school bus fleet to propane and installed fueling infrastructure to not only support its use, but the use of neighboring government entities.

Since 1947, UMTSD has been primarily using diesel fuel in their larger 72-passenger buses, and a combination of diesel and gasoline in their medium-sized, para-transit and passenger vans. The goal of their Alternative Fuel Propane Infrastructure and Bus Fleet project was to create a sustainable, environmentally friendly atmosphere for the children who ride the buses daily. Additionally, UMTSD held community education sessions on the project. Since implementation, surrounding school districts to include Hatboro Horsham and Centennial have begun to partially utilize propane and fuel through Upper Moreland's extensive infrastructure investment. In the larger scope of Pennsylvania, Pocono Mountain, East Stroudsburg, Greensburg Salem have all moved forward with propane buses following the success of Upper Moreland. Both the Business Manager and Transportation Director for the School District have been asked to make numerous presentations at the state and national level regarding the success of this program.

The district will realize annual savings of \$256,766 through a decrease in preventative maintenance and repair costs along with savings in fuel. Over a five-year period including the grant award, the district will realize over \$1.5 million in combined savings and financial support of the propane bus fleet.

The project touches every family in the UMTSD school district not just those with students who ride the bus daily, but those who attended events and those who see quiet buses without emissions pass them on the street.



Western Pennsylvania Conservancy Allegheny



TreeVitalize Pittsburgh

The Western Pennsylvania Conservancy (WPC) has become a leader in major urban forestry efforts in the City of Pittsburgh and Allegheny County since becoming the managing partner of TreeVitalize Pittsburgh project in 2008. TreeVitalize Pittsburgh is a partnership of the Pennsylvania Department of Conservation and Natural Resources (DCNR), the City of Pittsburgh, Allegheny County Parks, Tree Pittsburgh and WPC, and maintains a focus on planting trees throughout Allegheny County.

A healthy urban tree canopy provides many environmental, economic, health, social and aesthetic benefits to communities including cleaner air, stormwater runoff control, opportunities for community engagement, increased business in shopping districts and higher residential property values. Through the TreeVitalize Pittsburgh partnership, WPC has led the planting of over 29,000 trees throughout Pittsburgh and Allegheny County to help achieve these benefits. WPC has also supported Tree Pittsburgh in the training of more than 1,400 Tree Tenders, involved over 12,000 volunteers in tree planting events, worked with numerous county municipalities to develop tree ordinances and tree commissions, and managed a comprehensive street tree inventory project in the City of Pittsburgh in 2014 with the Pittsburgh Shade Tree Commission.

There is an ongoing and increasing demand for community forestry resources throughout Allegheny County and Western Pennsylvania, including support with tree inventories, tree planting coordination, community education and engagement, and tree maintenance planning. WPC and the TreeVitalize Pittsburgh partners are poised to meet this demand through our collective resources. Among the partners, we have expertise in urban and community forestry practices, project development and management, education and outreach, volunteer coordination, contractor management, and maintenance planning and implementation. WPC and its partners have developed a highly successful model for community tree plantings that include using the highest quality materials and plants, fostering community engagement, building productive relationships with municipal staff and officials, and ensuring the short and long-term health of the trees. This combination of experience, skills, and quality has enabled the TreeVitalize Pittsburgh partners to meet their urban forestry project goals on a large scale with a high success rate and with a model that is easily replicable.



Wyoming Valley Sanitary Authority Luzerne

Regional Stormwater Management Plan and MS4 Permit Collaboration

Wyoming Valley Sanitary Authority forged a partnership with 32 municipalities in Luzerne County to cooperate on stormwater management and MS4 permit compliance. The goal of the partnership is to reduce the cost of managing stormwater, so that it becomes feasible for municipalities to improve water quality. For many communities, the cost of regulatory compliance and the burden of replacing aging infrastructure is simply too much for their current budget to manage, but cooperation spreads fixed costs over a greater number of people and produces efficiencies that provide millions of dollars in savings. These savings put a seemingly unattainable goal within reach.

The municipalities participating in this regional partnership are able to submit one unified Pollutant Reduction Plan (PRP) for each impaired watershed within the region. Had they prepared individual plans, it would have cost them each up to \$30,000, but their share of the single unified plan is just \$3,000. Because they are submitting one unified plan, they receive credit for pollutant reduction measures constructed anywhere within the watershed. This allows them to construct fewer, more effective projects. Had the participating municipalities chosen to work individually, the region would have needed to construct an estimated 200 projects to meet pollutant reduction goals. Working together, they are projected to meet their goals with only 65 projects. This reduced the construction cost from \$50 million for the region to just \$12 million.

When the entire watershed works together to improve water quality, partners are able to coordinate a consistent approach that eliminates pollution at the source. This produces better results at a lower cost. The 32 municipalities participating in the Wyoming Valley Sanitary Authority's plan are projected to save more than \$200 million dollars over the next 20 years while ensuring the long-term sustainability of the watershed and their stormwater management systems. This regional approach is a model for other communities to show that improved water quality is indeed possible and practical. Using this approach, Pennsylvania can ensure our rivers and streams are safe for future generations to enjoy clean water and recreation.



WVSA WYOMING VALLEY
SANITARY AUTHORITY



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