Chapter 6. *ACTION PLAN*

With much information gathered about water, what's next? What can anyone do about water problems, and what can anyone do to help conserve or sustain our water resources? Latrobe native Mr. Rogers might counsel us to "Look for the helpers." Indeed there are many helpers working on water resource issues, from large federal agencies to local grass-roots watershed groups, and there are many possible strategies to implement in order to solve these issues. The Westmoreland County IWRP, Chapter 6, outlines both helpers and strategies for helping our water resources.

Taking action on stormwater requires both expertise and funding. Various initiatives provide these in varying forms to municipalities, watersheds, and land owners hoping to address problems. Financial help is available in the form of grants, low-interest loans, or dedicated sources of funding. Technical help is most often given for free by the many agencies, including the Westmoreland Conservation District (District). Some sources of funding do require a 'match' of either dollars or time or both.

Implementing water resource management plans or projects will always begin with a plan. Once again the various federal, state, local, or private/grass-roots groups will be of assistance. Wise planners will identify the problems, prioritize them, and form a plan to address solutions. Sometimes the smallest problems can be solved the easiest—although solving water-related problems is often quite complicated as one must deal with land owners, utilities, buildings, roads, the railroad and other entities.

A few of the programs available for technical assistance and funding are listed here.

INITIATIVES

Lack of knowledge and lack of funding are consistently cited as barriers to the implementation of stormwater management retrofits and the use of green infrastructure to correct stormwater issues and reduce pollutants. To address the lack of knowledge, many federal, state and local agencies and universities are at the cutting edge of research and education initiatives for innovative ways to manage and sustain our water resources. Each of these provide accessible information and assistance across numerous websites for anyone searching out this information. To compete for a variety of diverse funding sources

Photo by Kathy Hamilton

Rain garden and permeable paving in Scottdale Library's reading garden funded by EPA 319, 2011

available at the federal, state, and local levels, innovative and green infrastructure projects have an advantage over conventional work with the ability to generate many stormwater benefits. Links to various research websites are found in our Integrated Water Resources Plan Library in the Appendices and on-line at www.westmorelandstormwater.org .

FEDERAL

The **Federal Emergency Management Agency (FEMA)** can trace its beginnings to the Congressional Act of 1803 that provided assistance to a New Hampshire town following an extensive fire. On April 1, 1979, President Jimmy Carter signed the executive order that created FEMA. They are responsible for the coordination of the federal government's role in preparing for, preventing, mitigating the effects of, responding to, and recovering from all domestic disasters, whether natural or man-made, including acts of terror.

Through FEMA's flood hazard mapping program, Risk Mapping, Assessment and Planning (MAP), FEMA identifies flood hazards, assesses flood risks and partners with states and communities to provide accurate flood hazard and risk data to guide them to mitigation actions. Flood hazard mapping is an important part of the National Flood Insurance Program (NFIP), as it is the basis of the NFIP regulations and flood insurance requirements. FEMA maintains and updates data through Flood Insurance Rate Maps (FIRMs) and risk assessments.

FIRMs include statistical information such as data for river flow, storm tides, hydrologic/hydraulic analyses and rainfall and topographic surveys.

The National Flood Insurance Program (NFIP) aims to reduce the impact of flooding on private and public structures. It does so by providing affordable insurance to property owners, renters and businesses and by encouraging communities to adopt and enforce floodplain management regulations.

The mission of the **Environmental Protection Agency (EPA)** is to protect human health and the environment. Born in the wake of elevated concern about environmental pollution, the EPA was established in 1970 to consolidate a variety of federal research, monitoring, standard-setting and enforcement activities into one agency. Since its inception, the EPA has been working for a cleaner, healthier environment for the American people. It provides information and assistance with air quality; chemicals and toxins, health, green living, land, waste and cleanup, environmental information where you live, science, and water quality.

EPA research supports efforts under the Clean Water Act and Safe Drinking Water Act, providing research, information and assistance related to all water issues, including drinking water quality, watersheds and rivers, waste water and stormwater runoff, and infrastructure financing and assistance.

Learn more at www.epa.gov.

EPA Clean Water Act Nonpoint Source Grant (Section 319 Grants) – Congress amended the Clean Water Act in 1987 to establish the EPA's Section 319 Nonpoint Source Management Program to provide greater federal leadership in focusing state and local nonpoint source efforts. Under Section 319, states can receive grant money to support a wide variety of activities, including:

- technical and financial assistance;
- education and training;
- technology transfer;
- demonstration projects; and
- monitoring to assess the success of projects implemented under the grant.

For more information go to https://www.epa.gov/nps/319-grant-program-states-and-territories.

Photo by Rob Cronauer

WCD Americorps worker Alyssa Harden stands by a riparian buffer designed to protect Cherry Creek at Westmoreland County Community College's Youngwood campus.

EPA Clean Water State Revolving Fund (CWSRF) – The CWSRF program is a federal-state partnership that provides communities a permanent, independent source of low-cost financing for a wide range of water quality infrastructure projects, including stormwater and green infrastructure. Learn more about the program in the Green Infrastructure Approaches to Managing Wet Weather with Clean Water State Revolving Funds fact sheet.

EPA Drinking Water State Revolving Fund (DWSRF) – A drinking water counterpart to the CWSRF, the DWSRF program is a federal-state partnership that provides communities with a permanent, independent source of low-cost financing for drinking water systems and state safe water programs. Green infrastructure projects that improve source water quality and/or quantity or maximize reliance on natural hydrological functions may be eligible for funding.

Additional opportunities may be found at https://www.epa.gov/green-infrastructure/green-infrastructure-funding-opportunities and https://www.epa.gov/sdwa

Americorps is a network of national service programs, made up of three primary programs that each take a different approach to improving lives and fostering civic engagement. Members commit their time to address critical community needs like increasing academic achievement, mentoring youth, fighting poverty, sustaining national parks, preparing for disasters and more.

For more information refer to https://www.nationalservice.gov/programs/americorps.

Photo by Dan Griffith

Vegetated contour strip diversions on farm funded by NRCS's EQIP program.

USDA – NRCS – US Department of Agriculture Natural Resource Conservation Service programs provide financial and technical assistance to help eligible agricultural producers: construct or improve water management or irrigation structures (Agricultural Management Assistance - AMA); improve resource conditions such as soil quality, water quality, water quantity, air quality, habitat quality, and energy (Conservation Stewardship Program - CSP); and implement conservation practices, or activities, such as conservation planning, that address natural resource concerns on their land (Environmental Quality Incentives Program - EQIP). In specific states and locations, funding may also be available for priority issues such as air quality, agricultural energy management plans, seasonal high tunnels and organic operations. Visit your state's EQIP page for more information. https://www.nrcs.usda.gov

US Fish and Wildlife – The mission of the U.S. Fish and Wildlife Service (USFWS) is working with others to conserve, protect and enhance fish, wildlife, plants and their habitats for the continuing benefit of the American people. They are both a leader and trusted partner in fish and wildlife conservation, known for scientific excellence, stewardship of lands and natural resources, dedicated professionals and commitment to public service.

The USFWS issues financial assistance through grants and cooperative agreement awards to commercial organizations, foreign entities, Indian tribal governments, individuals, institutions of higher education, non-profit organizations, and state and local governments.

Learn more at www.fws.gov.

The **Center for Watershed Protection (Center)** is a private group that works to protect and restore our streams, rivers, lakes, wetlands and bays from the impacts of land use activities. They have an experienced staff of scientists, planners and environmental professionals who help municipalities, advocates, policymakers and citizens get clean water projects in the ground.

Founded in 1992, the Center was established with the idea of creating a nonprofit organization dedicated to research and education on watersheds. With an initial focus on protecting urban streams from the impacts of land development, the organization has grown over the years to become a national leader on stormwater management and watershed planning. The Center has continued to maintain the basic premise that watersheds are a logical focus point for environmental efforts, and their services have expanded to include membership and direct assistance to communities.

Learn more at www.cwp.org.

INTERSTATE

Since 1948, **Ohio River Valley Water Sanitation Commission (ORSANCO)** and its member states have cooperated to protect the various ways water is used in the basin and to improve water quality for the citizens of the Ohio River Valley. The Ohio River is a source of drinking water for over five million people, a major transportation route for coal and other energy products, and a natural resource for many plants and animals. ORSANCO works along with many other state and local agencies and organizations to provide safe drinking water, protect aquatic life, guide fish consumption, and inform citizens with information about recreational activities in and around the river.

Ohio River Basin - ORSANCO

State Partners

- Illinois Environmental Protection Agency
- Indiana Department of Environmental Management
- Kentucky Environmental and Public Protection Cabinet
- New York Department For Environmental Conservation
- Ohio Environmental Protection Agency
- Pennsylvania Department of Environmental Protection
- Virginia Department of Environmental Quality
- West Virginia Department of Environmental Protection

Federal partners

- NOAA Satellite and Information Service
- U.S. Army Corps of Engineers
- U.S. Environmental Protection Agency
- U.S. Fish and Wildlife Service
- U.S. Geological Survey

Other Partners

- Ohio River Basin Alliance (ORBA)

Learn more at www.orsanco.org.

Photo by ORSANCO

WCD Board member, Chuck Duritsa (5th from right) participates in an ORSANCO meeting of representatives from across the Ohio River Basin.

STATE

The **Pennsylvania Emergency Management Agency** (PEMA) helps communities and citizens mitigate against, prepare for, respond to, and recover from emergencies including acts of terrorism or other man-made disasters, and natural disasters like flooding. PEMA works to provide community assistance visits and contacts, mapping, floodplain management technical and mapping assistance, and training.

As of October 1, 2018, PEMA is charged with the implementation of the Federal Emergency Management Agency's (FEMA) National Flood Insurance Program (NFIP) and floodplain management technical assistance needs in Pennsylvania.

Pennsylvania's Dirt Gravel, and Low Volume Road Maintenance Program (Program) - provides funding to eliminate stream pollution caused by runoff and sediment from the state's comprehensive network of unpaved and low volume public roads. The Program was enacted into law in April 1997 as Section 9106 of the PA Vehicle Code, with $5 Million in annual funding for "environmentally sensitive road maintenance" for unpaved roads. The goal of the Program is to create a more environmentally and economically sustainable low volume road network through education, outreach, and project funding. Pennsylvania's Conservation Districts are responsible for administering the Program at the county level. Local road-owning entities, typically municipalities, then apply to their Conservation District for project funding.

Learn more at https://www.dirtandgravel.psu.edu

Photos by Rob Cronauer

Mansville Road in Cook Township benefitted from Pennsylvania's Dirt Gravel, and Low Volume Road Maintenance Program

Pennsylvania Infrastructure Investment Authority (PENNVEST) was founded on March 1, 1988, and services the communities and citizens of Pennsylvania by providing low cost financial assistance to fund sewer, storm water and drinking water projects. These projects not only contribute to improving Pennsylvania's environment and the health of its people, they also provide opportunities for economic growth and jobs for Pennsylvania's workers. PENNVEST provides a variety of programs:

- Low interest loans (with some grant funding available) for Drinking Water, Wastewater, Storm water and Non-Point Source Pollution Prevention Projects to pay for costs associated with design, engineering, and construction of public or private owned drinking water or wastewater systems, non-point source pollution mitigation and storm water projects. These include green initiatives for water quality management that promote and encourage environmental responsibility in our communities.
- Low interest loans to individuals to finance repair or replacement of their malfunctioning on-lot system for their primary residence, first time connection to public system, and in some cases replacement of existing connections to reduce inflow and i nfiltration.
- Low interest Brownfield Redevelopment loans available for remediation of sites related to water quality benefits.
- Supplemental grants on a limited basis for systems with residential user rates, or with limited capacity to handle debt service. No separate application is necessary. Analysis is performed on each submittal for grant consideration.

Learn more at http://www.pennvest.pa.gov.

PA DEP GROWING GREENER - Funds are distributed among four state agencies: the Department of Agriculture to administer farmland preservation projects; the Department of Conservation and Natural Resources (DCNR) for state park renovations and improvements; and **PENNVEST** for water and sewer system upgrades. **PA DEP** is authorized to allocate these funds in grants for watershed restoration and protection, abandoned mine reclamation, and abandoned oil and gas well plugging projects.

Learn more at http://www.dep.pa.gov/Citizens/GrantsLoansRebates/Growing-Greener/Pages/default.aspx

Photo by Kathy Hamilton

Street trees planted in a soil containment system beneath a permeable concrete sidewalk in Vandergrift, funded by PA DEP Growing Greener, 2010 .

PA DCNR – Department of Conservation and Natural Resources Bureau of Recreation and Conservation (BRC) assists local governments and recreation and conservation organizations with funding for projects related to parks, recreation, and conservation.

Learn more at http://www.dcnr.pa.gov.

PA Department of Community and Economic Development (**PA DCED)** – provides numerous programs and funding opportunities for business, communities and local governments through grants, loans, loan guarantees, tax incentives and bonds for AMD, abandoned mine land (AML), water quality, infrastructure, flood mitigation and control, water supplies, sanitary sewer and stormwater projects.

Learn more at https://dced.pa.gov.

PA ACT 13 - PA Act 13 of 2012 is a comprehensive law that affects Oil and gas operations in the state to:

- Collect an impact fee on all unconventional wells drilled in the state
- Create the Natural Gas Development Program to increase the use of natural gas for transportation
- Strengthen existing environmental regulations and create new standards for unconventional well drilling
- Improve consistency among local zoning regulations in the state

From the impact fees collected, Act 13 earmarks a portion for state agencies to offset the statewide impact of drilling: 40% to the Marcellus Legacy Fund for environmental initiatives, and the remainder of the fees collected is distributed to the Unconventional Gas Well Fund for counties and municipalities (60%). The Act is administered by the PA Public Utility Commission (PUC); funding is distributed in part by PA DCED.

The Marcellus Legacy Fund was created by Act 13 of 2012 to provide for the distribution of unconventional gas well impact fees to counties, municipalities, and Commonwealth agencies. A portion of the fee revenue will be transferred to the Commonwealth Financing Authority for statewide initiatives that will include abandoned mine drainage abatement, abandoned well plugging, sewage treatment, greenways, trails and recreation, baseline water quality data, watershed restoration, and flood control.

Learn more from the PUC at http://www.puc.state.pa.us
Learn more from the PA DCED at https://dced.pa.gov/programs-funding/commonwealth-financing-authority-cfa/act-13-programs/.

PENNDOT – Highway stormwater systems can be installed by PennDOT, a public applicant through a Highway Occupancy Permit (HOP), a local government, or a combination thereof. Maintenance responsibility of both existing and new systems depends on multiple factors. Information regarding the planning, design, construction, and maintenance of stormwater management systems in state highway right-of-way can be found at http://www.penndot.gov/Doing-Business/LocalGovernment/StormWaterManagement/Pages/default.aspx.

BOND FORFEITURE – Coal mining operations are required to post a bond with PA DEP to ensure proper reclamation of surface areas affected by the mining work. Bonds on projects like strip mining operations can be forfeited when an operator abandons a site. These moneys can be used to perform reclamation and improvements on sites to manage runoff and establish vegetated cover. When bond money is insufficient it can be supplemented with other funds. http://www.dep.pa.gov/Business/Land/Mining/BureauofMiningPrograms/Bonding/Pages/default.aspx

FINES – In some cases, active projects that cannot maintain proper or consistent erosion and sedimentation and/or stormwater management controls, according to their approved permit, may be fined by PA DEP. This fine money may be distributed, at the discretion of PA DEP, to benefit those areas most affected by the project in violation of their permit. Usually the fine money goes to an environmental project in the same watershed as the violation.

Photo by Rob Cronauer

AMD treatment facility at Brinkerton, sponsored by Sewickley Creek Watershed Association, funded by PA BAMR, 2012.

PA BAMR - The Bureau of Abandoned Mine Reclamation (BAMR) administers and oversees the Abandoned Mine Reclamation Program for coal and abandoned mine land (AML) reclamation and the abandoned mine drainage (AMD) abatement and treatment program in Pennsylvania. The bureau is responsible for resolving problems such as mine fires, mine subsidence, dangerous highwalls, open shafts and portals, mining-impacted water supplies and other hazards, and to address AMD which have resulted from past coal mining (pre-1977) practices in accordance with requirements established by the federal Office of Surface Mining under authority of the Surface Mining Control and Reclamation Act.

Learn more at http://www.dep.pa.gov/Business/Land/Mining/AbandonedMineReclamation/Pages/AMD-Set-Aside-Program.aspx.

REGIONAL

The **Southwestern Pennsylvania Commission** (SPC) is the cooperative forum for regional collaboration, planning, and public decision-making for the 10 county region. Operating with public involvement and trust, the Commission develops plans and programs for public investments, and fulfills federal and state requirements for transportation, economic development, and local government assistance programs. SPC is responsible for planning and prioritizing the use of all state and federal transportation funds allocated to the region. Learn more at www.spcregion.org.

Private Foundations – Several private foundations are based in southwestern PA and will fund worthwhile campaigns or projects that are innovative and benefit the region. Many will give support to environmental causes; one just has to study the individual foundation website to find out.

Private companies – Many local companies are willing to invest in the sustainability of the community. Some have active campaigns reaching out to local environmental organizations, while others only need to be approached with an idea to partner on worthwhile projects. Consistent support for WCD has been forthcoming from Peoples Natural Gas and West Penn Power and Dominion have both provided volunteers and funds for work days and cleanups.

StormwaterPA is a private group that was established in 2007 to fill a growing information gap and to provide the impetus for key stakeholders to put better stormwater programs and practices in place. The program has since evolved into an important source of news, information, discussion, and from-the-field examples of collaborative efforts that are protecting water resources, improving community health, and growing local economies.

StormwaterPA is an initiative of GreenTreks Network, Inc., a Philadelphia-based non-profit communications organization whose mission is moving people towards a more sustainable world. Learn more at www.stormwaterpa.org.

LOCAL

Headed by Westmoreland County's commissioners and county agencies, Westmoreland County also has initiatives to reach sustainability of our water resources. The recently updated **County Comprehensive Plan** - **Reimagining Our Westmoreland** explains how. Westmoreland County faces the challenges of an aging and decreasing population base, and a lack of available jobs and housing choices for newcomers. This means the pool of residents and employees available to sustain a healthy economy is shrinking. The Comprehensive Plan has pointed out that we need to realign the county's priorities to attract people to call Westmoreland home and has developed seven core objectives to meet these challenges and new priorities. The core objectives are to:

1. Align workforce, education, employers and entrepreneurship
2. Discover Westmoreland
3. Reposition our towns
4. Connect with parks and nature
5. Build healthy and whole communities
6. Plug into the new economy
7. Create transportation choices

The Core Objective of connecting with parks and nature includes the strategy to improve and sustain our water resources. The comprehensive plan mirrors and supports the IWRP by advancing sustainable water resources through recommendations to adopt a model stormwater ordinance and pursuing watershed restoration projects; to encourage partnerships to address water resources across municipal boundaries; and to provide accessible information for education and awareness of water quality and sustainable water resources.

A second Core Objective, to build healthy and whole communities, promotes going green, supporting the use of green infrastructure and innovative environmental practices described in the IWRP to conserve water and increase water quality to improve the quality of life for residents. Utilizing the planning best management practices and the stormwater management initiatives covered in the Comprehensive Plan and described in the IWRP, we can tackle specific planning issues in the county and protect our natural assets and water resources.

REIMAGINING OUR
WESTMORELAND
a plan for a more livable & prosperous county

Utilizing planning best practices and initiatives to tackle specific planning issues in the county, we can protect our natural assets and water resources. Reimagining Our Westmoreland recommends minimizing development in areas without public water/sewer and promoting the county's open spaces and natural areas including our rich agricultural tradition. By preserving open space and focusing future development within the bounds of existing infrastructure service areas, municipalities can promote denser growth in downtowns, reduce barriers to small scale re-development in urban cores, eliminate blight, and prevent overextension of our water resources.

The County Plan will guide municipalities toward higher standards for quality land development, and help them address the fragmentation of local government to make the navigation of amenities, opportunities and services more accessible. By investing in upgrading existing infrastructure, promoting healthy lifestyles, and educating the community, the quality of life for residents and visitors in the county will increase. By promoting sustainable practices, partnerships and shared services among communities in the same watershed, our municipalities can address stormwater issues together to create more sustainable communities. Learn more at www.co.westmoreland.pa.us

The **Westmoreland Conservation District (District)** is a leader and advocate for innovative stormwater management and has spearheaded this IWRP to meet PA Act 167 requirements and to reach toward sustainable water resources in Westmoreland County. Designing and overseeing the installation of stormwater management best practices across the county, the District also uses our experience to help educate the general public and professional audiences about our water resources. To reach these audiences, District staff participate in nearly 50 different educational events per year, either by hosting and organizing events or collaborating with other organizations and agencies on their educational programs. The District also produces printed educational materials and maintains a digital presence with our website, Facebook page, electronic newsletter, and YouTube channel. In all, the District reaches thousands of people each year with our message of conservation.

Photo by Kathy Hamilton

Permeable paving parking demonstration at the J.Roy Houston Conservation Center funded by Richard King Mellon Foundation, 2016.

The following are specific examples of current District programs:

- The Stormwater Trail at our J. Roy Houston Conservation Center office features a variety of stormwater best management practices. These sites are open to the public and feature interpretive signage describing each of the techniques. Some of these practices are fitted with monitoring devices to help evaluate their effectiveness. WCD staff also provide tours of the stormwater trail and can re view monitoring data with interested parties.
- Best Management Practices (BMPs) around the county are featured on the District's online BMP Portfolio. Parties interested in learning more about the installation, maintenance, and success of these BMPs can view factsheets and photos of these sites. http://wcdpa.com/bmp/
- The Homeowner's Guide to Stormwater and the BMP Toolkit are publications designed to help homeowners evaluate stormwater flow on their property and design innovative ways to manage it. http://wcdpa.com/tech-services/stormwater-management/best-management-practice-bmp-toolkit/
- MS4 Workshops are designed for homeowners, homeowner associations, and public works departments. District staff work with municipalities to provide these workshops as a way to fulfill the municipal permit requirements.
- The annual Engineer's Workshop highlights the latest techniques and policy updates in natural resource management. It attracts nearly 400 natural resource professionals from southwestern Pennsylvania.

Photo by Kathy Hamilton

WCD engineer Jim Pillsbury addresses nearly 200 environmental professionals attending the 2018 Engineer's Workshop at the Fred Rogers Center, Saint Vincent College in Latrobe, PA.

Moving forward, the District recently adopted a strategic plan for 2019 to 2021. Prepared by the Bayer Center for Nonprofit Management, the plan sets forth the goal to "Focus on maintaining high quality core programs [and] actively develop monitoring and science based programs." This includes implementing the county IWRP.

Specifically, the District looks to do the following endeavors:

- Engage county agencies, authorities, environmental groups, and municipalities in cooperative programs to meet IWRP goals for sustainable water resources
- Participate in the formation of sustainable methods or authorities to provide funding streams for installation, monitoring, operation, and maintenance of stormwater BMPs
- Promote watershed wide programs for the monitoring, operation, and maintenance of stormwater management BMPs
- Facilitate stakeholder discussions concerning the formation of a stormwater bank to address long-term stormwater issues including property acquisition in flood hazard areas, establishment of riparian buffers, stormwater management retrofits, etc.

Learn more at www.wcdpa.com

Watershed associations are generally non-profit, volunteer organizations, although four out of seven in our county have full or part-time staff. They are all dedicated to the conservation of our natural resources, rehabilitation of our waterways and watersheds, environmental education and recreation. Often run by a board of directors, they rely on local and regional funding sources and volunteers for man-power and local expertise to address water and pollution issues in their watershed. They perform tasks like:

- Organizing and participating in highway clean-up events, river sweeps, and tackling illegal dump sites
- Providing environmental educational programs to K-12 students and adults
- Purchasing and maintaining properties for recreational opportunities, writing and installing canoe and kayak launches
- Writing grants to stabilize streambanks and improve fish habitat, improving AMD discharges, maintaining and monitoring existing treatment systems
- Raising funds to stock trout
- Organizing fundraisers like golf outings, duck races, sale of small game of chance tickets, 5K races, etc. to cover daily operational costs
- Monitoring and collecting water samples of streams and AMD treatment systems

Watershed associations, like most volunteer driven organizations, are always looking for new volunteers and leadership with new ideas and skills like funding, finances, education, writing, social media, engineering

Photos by Alyssa Harden

Turtle Creek Watershed Association's 2018 Rubber Ducky Race fundraiser—Murrysville.

and construction. Looking to the future, these altruistic organizations are looking to partnerships, alternative funding sources, technology for outreach and education, and volunteers to guarantee succession and viability of their organizations into the future. Bolstered by the partnership and support from the District, several of the watershed groups have recently become more successful and have been able to achieve more water quality awareness and benefits.

The sustainability of watershed associations into the future will rely on their ability to:

- Host events to involve the community
- Engage volunteers with interactive displays at tabling events
- Reach younger audiences through social media and events that show "You can make a difference"
- Provide educational events for professional certification
- Partner with more like minded groups and municipalities within the watershed and region to maximize funding opportunities, administration of programs and meeting MS4 requirements

Learn more or find out how to volunteer by contacting your local watershed association. Watershed groups are listed in the Appendices.

The **Westmoreland County Agricultural Land Preservation (WCALP)** program was established in 1990 to conserve and protect agricultural lands by acquiring voluntary agricultural conservation easements to prevent the loss of productive agricultural land.

Preserving farmland not only provides local meat and produce, but keeps valuable open space, and reduces the impacts of stormwater to our streams and lakes. The program has been approved by the PA Department of Agriculture, and operates within the guidelines of the Agricultural Security Areas Law. Over 80,000 acres are currently enrolled in Agriculture Security Areas in 20 townships in the county and over 12,645 acres have been enrolled under an Agricultural Conservation Easement in perpetuity. The program also promotes Clean & Green Preferential Tax Assessment, Pennsylvania's Century and Bicentennial Farm Program and the Preserved Farm Resource Center.

Agricultural Security Areas (ASA) are established on a voluntary action by the farmland owner(s) who petition their local governing body (municipality) to create an ASA. This tool for protecting our farms from encroachment of non-agricultural uses provides benefits to farmland

Photo by Mark Jackson

Cows out to pasture in Ligonier Township.

owners in three ways:

1. The local officials agree to support agriculture by not passing nuisance laws, which would restrict normal farming operations.
2. Limitations are placed on the ability of government to condemn farmland in the ASA for highways, parks, schools, etc.
3. Landowners will be eligible to voluntarily apply to sell an agricultural conservation easement to the Commonwealth and County.

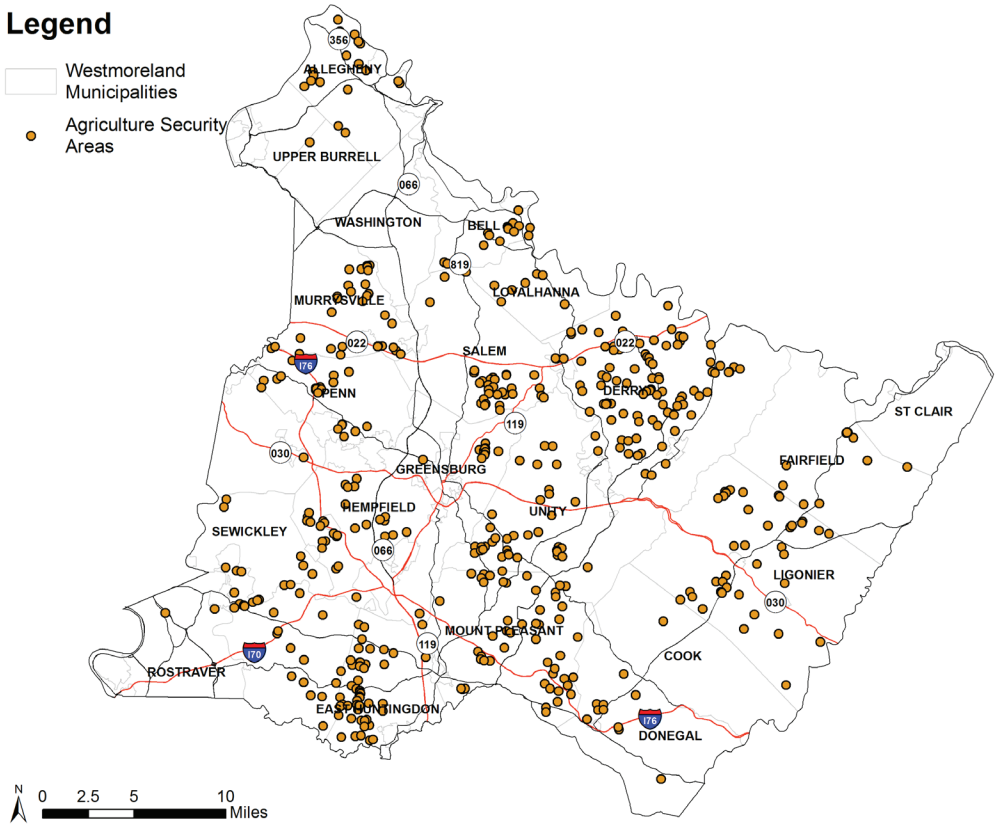
Agricultural Conservation Easements (ACE) prevent the development or improvement of the land for any purpose other than agricultural production. A farmland owner in an ASA may voluntarily apply to be selected for the sale (or donation) of an agricultural conservation easement through the Westmoreland County Agricultural Land Preservation Program, acting through the PA Dept. of Agriculture. The program was developed in 1989 to strengthen Pennsylvania's agricultural economy and protect prime farmland. Pennsylvania, as a matter of public policy, is preserving farmland at a speed greater than any other state.
In addition to being a part of an Agricultural Security Area (ASA), the parcel of land is ranked against other eligible parcels according to several criteria that consider:

- Quality of Farmland
- Surrounding Land Use
- Likelihood of Conversion

The long-term goal of the program is to permanently preserve farmland for future generations.

Learn more at www.wcalp.org.

Agriculture Security Areas



IMPLEMENTATION STRATEGY

The **Westmoreland County IWRP Implementation Strategies** have been developed through the process of reviewing our **Water Resources** in Chapter 3, evaluating the **Impacts** of water use, development and climate change in Chapter 4, and performing an in depth study of the **Issues and Challenges** facing our water resources into the future through the watershed and pollutant modeling of the county's priority watershed areas of interest in Chapter 5. The strategies listed below should help us achieve the IWRP goals of **Advancing Sustainable Water Resources, Encouraging Partnerships, Providing Accessible Information**, and **Meeting Regulatory Mandates**. The following chart lists the proposed implementation strategies, and some are described in greater detail in the remainder of this chapter.

Photo by Stephen Simpson

Loyalhanna Creek flowing through Loyalhanna Gorge.

Implementation Strategy	Priority 0-ongoing 1-immediate 2-short term 3-long term	Preferred Management Entity	Partner(s)
Goal 1: ADVANCE SUSTAINABLE WATER RESOURCES			
* Complete the watershed and pollutant modeling for the balance of the Westmoreland County watersheds listed in the IWRP and create recommended Performance District mapping	0	WCD	WCP
Promote Westmoreland County Department of Planning and Development, the county comprehensive plan and smart growth policies in an effort to minimize the impact that development has on our water resources	0	SGP	WCD, PADEP
Staff a Water Resources Coordinator in order to contribute to the resolution of the County's water resource related issues	3	WCD	WCP
* Encourage the establishment of a Stormwater Authority(ies) to assume responsibility for all stormwater facility management and oversight in the County	3	WC, MUNICIPALITIES	WCD
Pursue stormwater management project opportunities in susceptible areas to reduce flooding and improve water quality	0	ALL	ALL
Goal 2: ENCOURAGING PARTNERSHIPS TO SUPPORT WATER RESOURCE INITIATIVES			
Work in coordination with other County agencies and departments	0	WCD	WCP, WC911, WC PUBLIC WORKS
Maintain partnerships with local water related organizations	0	WCD	WATERSHEDS
Promote coordination and cooperation between local, State, and regional organizations/agencies	0	WCD	PADEP, FEMA, SPC
* Form new partnerships to support watershed initiatives and projects	1	WCD	ALL
Promote the establishment of municipal and joint municipal Environmental Advisory Councils (EACs)	2	WCD	MUNICIPALITIES, WATERSHEDS, PEC, WPC
Work with PennDOT and/or PA Turnpike Commission (PTC) on roadway projects to satisfy water quality requirments	0	WCD	PENNDOT, PTC
Implement the Hazard Mitigation Plan component of the County Comprehensive Plan to address water related issues	0	WC911	WCD, MUNICIPALITIES
Participate in the development and implementation of the Ohio River Basin Plan(s)	2	ORSANCO	WCD

Implementation Strategy	Priority 0-ongoing 1-immediate 2-short term 3-long term	Preferred Management Entity	Partner(s)
Goal 3: PROVIDING ACCESSIBLE INFORMATION ON WATER RESOURCES			
Serve as a water resources information and referral center	0	WCD	PADEP, PSU, USDA-NRCS, ETC
Maintain an information website on water-related and planning issues, and forum for exchange of ideas	0	WCD	WCP
* Maintain the IWRP decision making flowchart tool on the www.westmorelandstormwater.org website	0	WCD	CONSULTANT
Provide education to County stakeholders on water-related topics	0	WCD	WATERSHEDS
* Periodically review and update the IWRP as necessary	1	WCD	WPAC
* Continue sampling, monitoring, and reporting on Westmoreland County water resources	0	WCD	WATERSHEDS, CONSULTANT
Publish any new water related data that is acquired in the IWRP	1	WCD	PADEP
Goal 4: MEETING REGULATORY MANDATES FOR WATER RESOURCES			
* Assist municipalities with adoption of a stormwater management ordinance consistent with the Model Stormwater Ordinance in the County IWRP	1	MUNICIPALITY	WCD, WCP
Provide assistance to MS4 communities to meet regulatory mandates	0	WCD	MUNICIPALITIES
Encourage non-MS4 municipalities to implement some or all of the 6 minimum control measures required of MS4 municipalities	2	WCD	MUNICIPALITIES, EACs
Work with municipalities to incorporate the non-structural BMPs identified in the PA Stormwater BMP Manual into municipal ordinances	2	WCD	WCP
Provide planning and technical assistance to municipalities and community organizations/agencies on stormwater management projects	0	WCD	WCP, PADEP
* These strategies are discussed in greater depth below			

COUNTY WIDE MODEL STORMWATER ORDINANCE

PA Act 167 requires municipalities in the county to adopt or amend and implement a stormwater management ordinance and regulations in a manner consistent with the county-wide stormwater plan, the IWRP, and the provisions of Act 167. Each municipality is responsible for the adoption of a stormwater management ordinance consistent with the IWRP, or state funding may be withheld from their community. WCD and the County Department of Planning and Development will work with the municipalities to adopt an ordinance tailored to their community's needs within six months of the adoption of the IWRP.

In the development of the IWRP, the Westmoreland Conservation District teamed with the WPAC and local experts to create the Model Stormwater Ordinance for county and municipal adoption. Beginning with PA DEP's Model Ordinance 2022, the model ordinance incorporates new sections authored by the District and inspired by other ordinances from across the state to provide innovative ways to address the issues we face in Westmoreland County.

Innovative ideas to meet sustainability that are incorporated into the model ordinance include clarification of what constitutes an impervious surface, what low impact development is, how regulated development activity is defined, what the scope of a small project is, and how stormwater management performance districts are designated to manage stormwater. Stormwater performance districts, established by the watershed modeling process, establish standards for design professionals regarding maximum release rates and water quality standards. The recommended spectrum of what is considered regulated development activity and what each municipality should choose to regulate is defined in the **Regulated Development Activity Table** on this page.

The model ordinance takes a flexible approach to regulation so it can be tailored to each municipality, whether it is urban or rural, a township, borough or city, without causing specific hardships to any one municipality. Projects that may be exempt from regulation may be classified as 'no-harm', may request a waiver or modification, or may demonstrate equivalency by proposing a stormwater mitigation project on another property, are all defined as possible alternative measures in the ordinance.

As stormwater management relates to other regulations for development including erosion and sediment controls, stream encroachment and municipal development regulations, the model ordinance was written to achieve a unified site design approach, requiring all issues be addressed for all parties in one package. The model ordinance encourages the use of low impact development and green infrastructure techniques to manage stormwater as recommended in the PA Stormwater Best Management Practices Manual.

The model ordinance includes a simple approach to small projects that are not required to meet state standards and optional sections on financial issues and guarantees for maintenance to help municipalities achieve sustainable stormwater infrastructure in their communities. Municipalities have the ability to define the statutory authority for the model ordinance prior to adoption to empower them in the regulation of land use activities, and to define the scope of penalties and appeals of any municipal judgements.

The complete Model Stormwater Ordinance can be found in the Appendices.

Regulated Development Activity Table from the Model Stormwater Management Ordinance:

SWM Plan Requirement	New Impervious Area for New and Redevelopment	Disturbed Area*	Next Steps
Exempt	0	Less than 1 acre	Comply with **Exemption** section of this ordinance
No-Harm	Up to [1,000] sf for urban OR [3,000] square feet for suburban/rural areas	Less than [3,000] sf urban OR [5,000] square feet for suburban/rural areas	Comply with **No-Harm** section of this ordinance
Waiver / Modification / Demonstrated Equivalency	Less than 1 acre, subject to municipal approval	Less than 1 acre	Comply with **Waiver / Modification / Demonstrated Equivalency** section of this ordinance
Small Project (per definition), refer to Appendix C	[1,000] [3,000] square feet to [10,000] square feet	[3,000] [5,000] square feet to [20,000] square feet	Submit **Small Project Site Plan** complete with all attachments
Stormwater Management Plan meeting the Ordinance requirements	Greater than [10,000] square feet if Exempt and Small Project criteria are not met, or if improvements do not meet No-Harm criteria	Greater than [20,000] square feet	Consult a qualified professional

WATERSHED PERFORMANCE DISTRICTS

Watershed Performance Districts are one of the outcomes of the Phase 2 Act 167 and IWRP. The result of the watershed modeling described in Chapter 5, and resultant release rate maps, the Performance Districts are integral to the regulations set by the model stormwater ordinance to manage stormwater in new and redevelopment across the county. The performance districts recommend release rates in developed watersheds to correct omissions from historic development and to protect our water resources into the future.

Watershed performance districts with lower recommended release rate percentages (50%, 60%) are in areas where releasing stormwater from land development activities has a greater possibility of causing a downstream flooding problem—or where existing flooding problems are such that the stormwater infrastructure does not have the ability to handle more runoff.

Watershed performance districts with higher recommended release rate percentages (80%, 90%) are in areas where there are not as many man-made or natural limitations on how much water can be released from a land development activity. These higher-percentage areas are often more rural and in a higher or more remote area of a watershed.

It is important to remember that municipalities are allowed to set more stringent requirements on stormwater than the Plan identifies, and many will, based on their local knowledge of runoff, land development, and flooding issues. The recommended release rates are "ideal" and should be treated as only one factor in the development of a municipal stormwater standard and ordinances.

View the Watershed and Pollutant Modeling Task Matrix in the modeling methodology appendix for incomplete tasks.

Learn more in Chapter 5 Issues and Challenges.

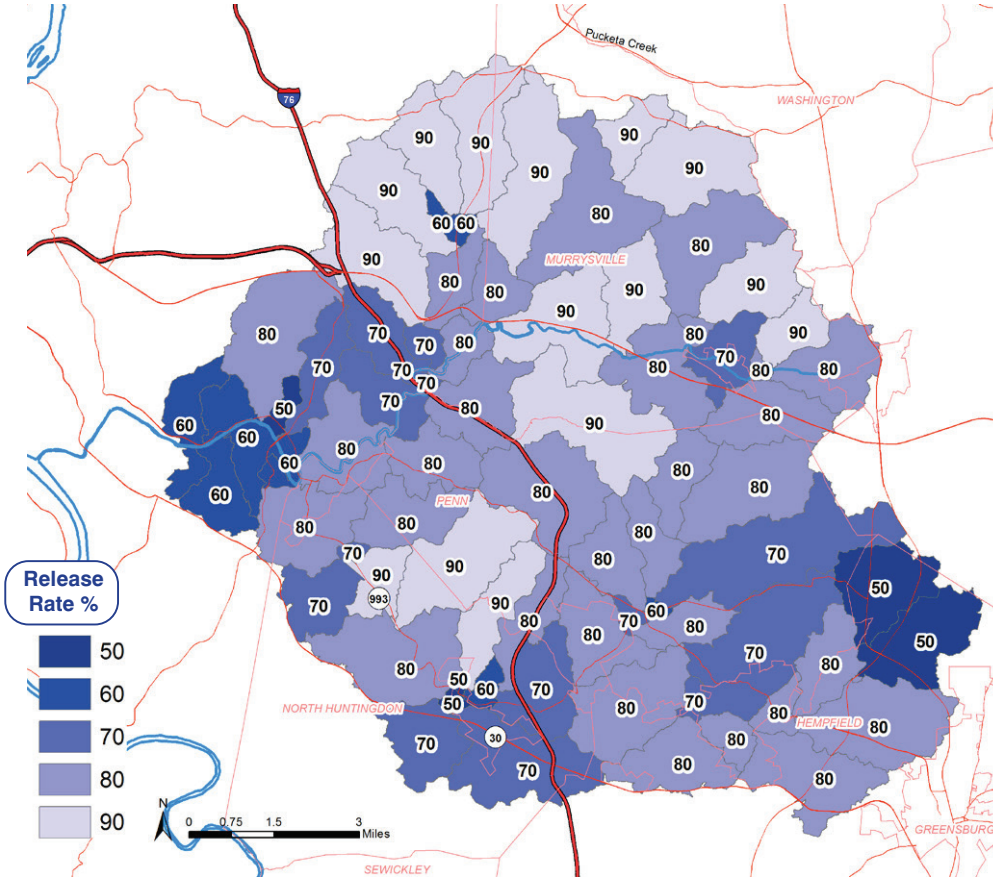
UPDATING THE INTEGRATED WATER RESOUCES PLAN

Adopted by the County, the IWRP is required to be reviewed and updated, as necessary, every five years. The IWRP's Watershed Plan Advisory and WCD's technical advisory committees will be called together annually to review the viability of the plan and monitor its implementation. The IWRP is a living document with an online presence and will be maintained by the District to stay up to date with stormwater issues, innovations in stormwater management, water resources monitoring, and more.

Learn more at www.westmorelandstormwater.org.

Turtle Creek Watershed Recommended Performance District Map

Rationale for using 80% as a default release rate:
In areas not covered by a Stormwater Performance District, an 80% release rate is recommended as a standard. This is to apply a "Factor of Safety" to stormwater calculations; to account for the many variables in site design and stormwater management; and to avoid a land development project inadvertently increasing runoff and causing harm downstream.



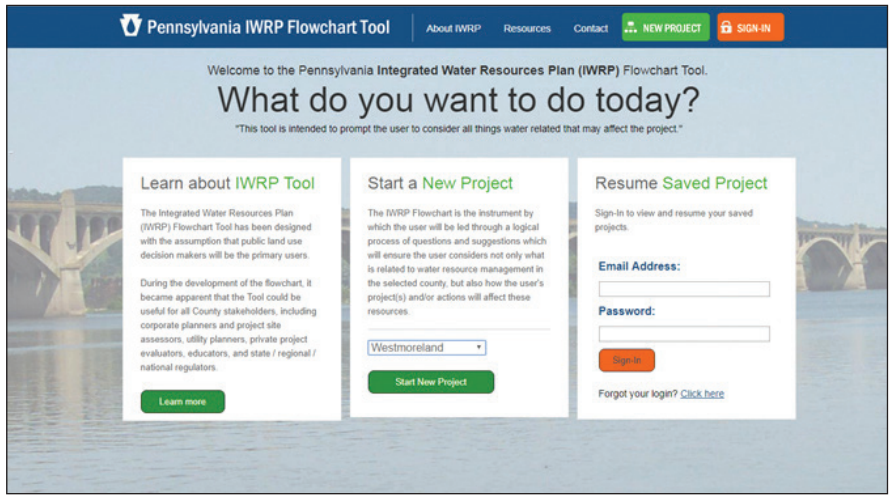
DECISION MAKING TOOL

The Westmoreland County IWRP includes a **web-based decision making flowchart tool** for all residents and visitors to the county to address water-related issues and problems and to answer the questions who, what, where, and why for all water resources. The online tool:

- Addresses all water resources and issues
- Streamlines design and regulatory process
- Is simple to use
- Integrates existing programs, studies, assessments, and resources
- Provides up to date information to the general public for use

The tool is an online decision-making flowchart questionnaire that will be kept current by the District and can be found on the IWRP website at www.westmorelandstormwater.org. The tool addresses all water resources, the way they are used and how to find the appropriate information on the regulations, and use and management of each water resource. The tool guides decision making for land development, infrastructure and utility development, agriculture, and resource extraction.

The instructions and schematics for the decision making flowchart tool are in the Appendices.



Cover page of the PaIWRP Decision-Making Flowchart Tool website: www.paiwrp.com

PARTNERSHIPS, SHARED SERVICES AND REGIONAL DECISION MAKING

Partnerships can produce stronger solutions to protect our water resources and to improve water quality for everyone. The Westmoreland County IWRP and Phase 2 Act 167 Plan are watershed-based and cross municipal lines. Municipalities are encouraged to work together to solve joint issues that plague their municipalities—most of all, stormwater issues.

Reimagining Our Westmoreland states: Service providers such as municipal public works departments offer necessary programs and services to residents and businesses; numerous providers can result in duplicative and inefficient service delivery. Benefits to consolidation may include cost savings and increased efficiency, and reducing administrative overhead and facility costs.

Common shared services include joint use agreements between school districts, park districts, fire districts, inter-municipal agreements between local governments for public works and other essential services, as well as intergovernmental cooperative purchase pooling by all public entities to maximize buying power.

- Mt. Pleasant Borough led the creation of the G14 (now G16) Conference, which brings municipal governments together from both Westmoreland and Fayette Counties (some that share watersheds) to explore inter-municipal agreements and opportunities for savings.
- Hempfield Township plows roads in Adamsburg Borough in exchange for indoor salt storage using a borough-owned storage shed, protecting the surrounding area from polluted runoff from the salt storage.
- A borough with limited staff and equipment can negotiate with a larger neighboring township to correct joint stormwater issues by supplying materials to be used by the neighboring public works department's labor and equipment at cost.

Many of the smaller municipalities could greatly benefit from consolidating into a single municipality or even sharing certain services. Funds, time, and other resources could be reserved for larger and more pressing projects. Unfortunately, the Commonwealth of Pennsylvania does not provide many resources for consolidation or shared services, creating an even larger barrier to the opportunity. The county's greatest role on this matter would be to advocate for better resources from the Commonwealth to help educate the municipalities.

CREATION OF STORMWATER AUTHORITIES

Many people are familiar with the 'cost of living'—the cost of gasoline, housing, groceries, clothing—but there is a cost associated with excess stormwater as well. These costs are hidden but serious: eroded roads, flooded basements, backed-up sewers, waterlogged autos, and clogged culverts. Currently the costs of stormwater are borne by all taxpayers, with little regard to the actual source of the stormwater runoff or the true responsibility for the costs. The tax burden on citizens is a frequent topic of discussion, especially in an election year, but what alternative is there to funding stormwater? A more equitable method, one which has been implemented by certain Pennsylvania municipalities including the City of Philadelphia, is to charge a stormwater fee based on how much runoff is generated by a particular property. Such a fee is based on the impervious area of a site and adjusted according to factors such as a site's location or stormwater infrastructure. The stormwater fee reflects the impact of a large parking lot as compared to that of a small house, charging the parking lot owner proportionally more than the homeowner. Philadelphia uses the revenue generated by the stormwater fee to address stormwater problems city-wide.

To implement the benefits that stormwater management (and green infrastructure) systems provide for municipalities and their residents, substantial funding is required. Various mechanisms are used by municipalities around the country. As we listed in the funding initiatives section of this chapter, many opportunities are available at the federal, state, and local levels to fund individual programs or projects but not necessarily to sustain the operation and maintenance of municipal and watershed stormwater management systems. A steady and reliable funding system is needed. Establishment of a county-wide, or perhaps watershed-wide, or municipal stormwater fee system would enable a direct source of funds to address our county's numerous stormwater issues where they occur.

Photo from Pinterest

A 'green' alley in Philadelphia, with streetside rain garden.

Like gas, electricity, water, and sewage, stormwater runoff can be managed by an authority and billed as a fee. Municipalities can realize many benefits from allowing authorities to handle stormwater permitting and management functions. To form a municipal authority, such as a stormwater authority, in Pennsylvania, a municipality must follow the procedures described in the Municipal Authorities Act, 53 Pa.C.S.A. § 5603. Municipal attorneys are advised to refer to this law when forming an authority.

For more information see this link to the Philadelphia Water Department's site: http://www.phila.gov/water/wu/stormwater/Pages/default.aspx

WATER RESOURCES MONITORING

Prior to undertaking the IWRP we relied heavily on information provided by national and state conservation organizations and on anecdotal evidence from users to judge the effectiveness of various measures. Now the District has up to 25 scientific monitors in place, gathering

Photo by Kathy Hamilton

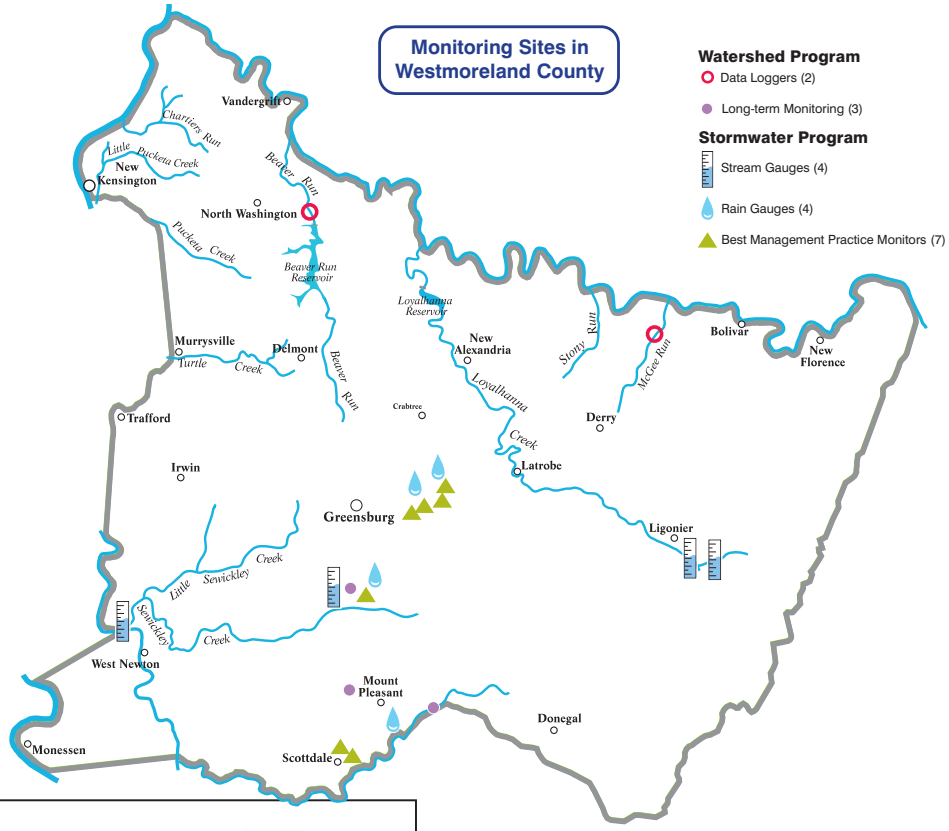
Green Infrastructure Specialist Matt Zambelli explains a rain garden data logger to District visitors.

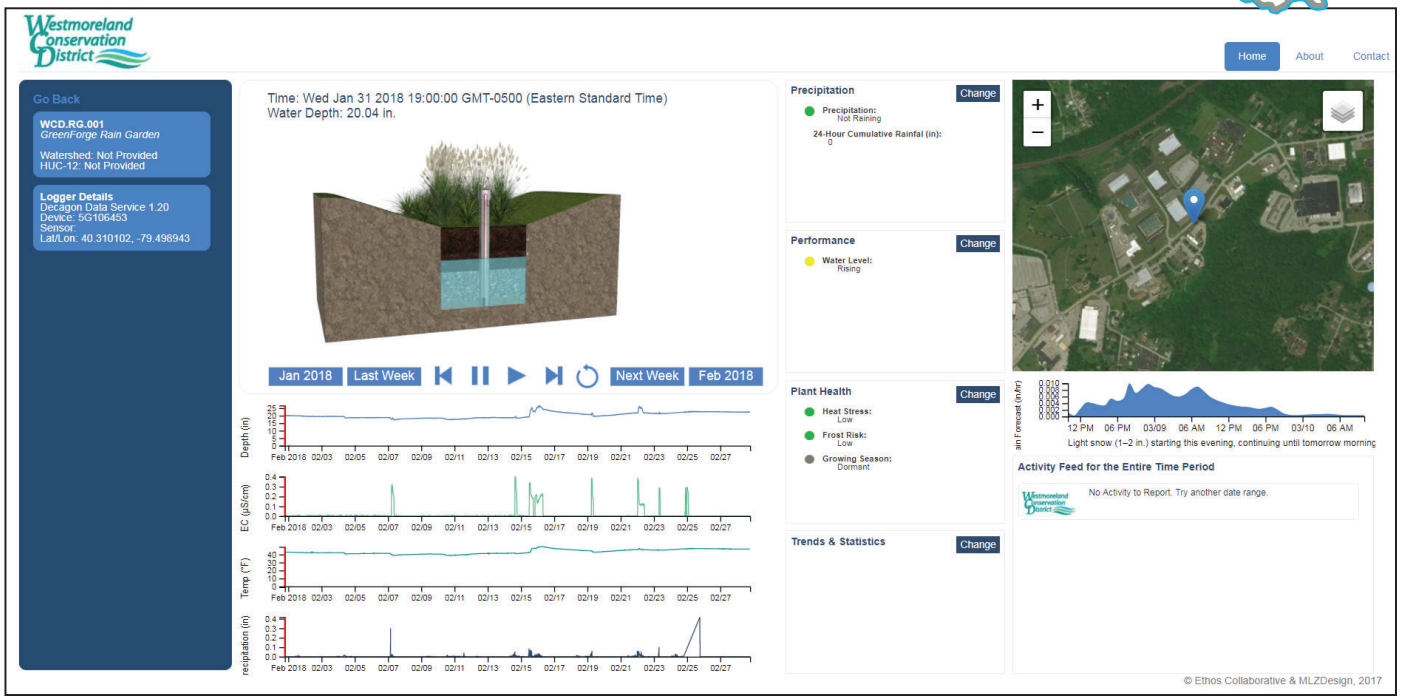
real-world data on rainfall, streamflow and various conservation practices on our campus and in the local community, measuring such things as soil moisture, volumetric water content, temperature, and electrical conductivity.

A real-time dashboard takes the information gathered, analyzes it, and makes it accessible in graphs, animations, trigger notes, and other formats. Historical data is also available for each sensor. This effort is important because it quantifies the effectiveness and benefits of conservation practices and so, we hope, will encourage even more installations.

The current scope of the monitoring program is extensive, and it provides insights into the hydrology of about half of Westmoreland County - where the water is, where it is going, its quality, and the major pollutants. It is available in a format that will be helpful to engineers, developers, architects, and others who may be looking to install a particular conservation practice.

For more information see www.westmorelandstormwater.org





Left: Screen shot of Sensor Insights for a rain garden at GreenForge on the green infrastructure monitoring dashboard at www.westmorelandstormwater.org

Westmoreland Conservation District

BOARD OF DIRECTORS

Ronald J. Rohall
Chairman

Charles Duritsa
Vice Chairman

Conrad Donovan
Treasurer

Kim Edward Miller
Secretary

Emil Bove, PLS

William Doney

County Commissioner Ted Kopas

Paul R. Sarver

Fred J. Slezak

Associate Directors

Christopher Bova
Bruce J. Corna, Jr.
Reid Crosby
Alexander J. Graziani
John Hardiman
Karen Jurkovic
Larry Larese
John Lohr
Barbara D. McMillan
William Mihalco, PE
Robert Pore
Theresa Gay Rohall
John Turack
Keith Walters

STAFF

Gregory M. Phillips
District Manager/CEO

Anthony P. Quadro, Jr.
Assistant District Manager/Technical Programs Director/Forester

Karen Barnhart
Fiscal Administrator

Sandra Dzendzel
Director of Administration

Mark Jackson
Visual Communications Specialist

Sandra Donovan
Receptionist/Administrative Assistant

Technical Staff

James W. Pillsbury, MS, PE
Hydraulic Engineer

Kathryn Hamilton, PLA
Landscape Architect/Stormwater Technician

Matt Zambelli, PLA
Green Infrastructure Specialist

Robert D. Cronauer
Watershed Program Manager

Chelsea Walker
Watershed Specialist

Christopher Droste, CESCO, CESCP
Senior Erosion Control Specialist

Jessica Kane
Erosion Control Specialist/Compliance Coordinator

Daniel Griffith
Nutrient Management Specialist/ Agricultural Conservation Technician

Christie Sebek
Plans and Permits Coordinator

Andrea Halfhill
Technical Programs Secretary

Chelsea Gross
West Nile Virus Program Technician

Alyssa Harden
AmeriCorps Service Member

Kodie Rearick
AmeriCorps Service Member

Educational Staff

Janette Novak-Mitchell
Education Program Coordinator

ADVISORY COMMITTEE TECHNICAL PROGRAMS

Andrew Blenko, PE JD
Christopher Bova
Emil Bove, PLS
Lucien Bove, PE
Kevin Brett, PE
John Campfield, Esq.
Daniel Carpenter
Joseph Dietrick, PE PLS
Kathleen Fritz
Larry Gasparato
Donald Hixson, PE PLS
Greg Holesh, PE
Charles Kubasik
Brian Lawrence
Suzy Meyer, RLA
Dan Mikesic
William Mihalco, PE
Kim Edward Miller
Les Mlakar, Esq.
Ken Murin
Jason Rigone
William Roberts
Ronald Rohall
Thomas Sierzega
Doug Siler, PE
Tamira Spedaliere

Special Thanks to Westmoreland County Commissioners

Gina Cerilli
Ted Kopas
Chuck Anderson

For more information contact:

J. Roy Houston Conservation Center
218 Donohoe Road
Greensburg, PA 15601
724-837-5271

email: waterplan@wcdpa.com

www.westmorelandstormwater.org