Westmoreland Conservation District

2018 ANNUAL REPORT


Westmoreland
Conservation
District

Dear Friend of Conservation,

An unprecedented amount of rain fell in 2018, causing levels of flooding and other water-related problems not normally seen in our county.

Yet there is no doubt that even greater and more widespread problems were averted because of the work that has been going on here for the past 40 years – work the District has been doing with local municipalities, with developers, and with hundreds of landowners to manage stormwater on construction sites, road projects, farms, in residential neighborhoods, and even in forests.

Over the years, we have helped many install diversions, swales, catch basins, cisterns, ponds, rain gardens, permeable pavement, and even a green roof to help retain rainwater, or allow it to infiltrate into the ground instead of running off and raising the levels of our creeks, rivers, and storm sewers.

Just one of the many stormwater controls put in place – the permeable pavers we installed around our barn headquarters several years ago – allows nearly 176,000 gallons of rain to sink into the ground every year instead of running off.

Multiply that single 'avoided runoff' installation by the hundreds of municipal stormwater ponds; dozens of residential rain gardens; numerous community permeable parking lots, plazas, and sidewalks; miles of vegetated buffers along streams; and lengths of gutters and downspouts added to farm buildings over the years, and the amount of runoff that no longer presents the potential for flooding and other problems is enormous.

Still, there is more work to do. That's why one of our current major initiatives is the Integrated Water Resources Plan. This is a comprehensive guide for managing stormwater, and it gives municipalities a critical tool – a draft ordinance – to help in this effort (see pages 6-7).

We're also continuing to encourage site-specific stormwater controls on every new and expanding development and earthmoving project, and to demonstrate new, effective stormwater management practices.

We hope that our region won't see 2018's level of rainfall again for a very long time. But we're confident that, through the growing number of stormwater management efforts installed each year, Westmoreland County will be better and better able to control the precipitation that does fall.

Sincerely,

Ronald J. Rohall
Board Chair

Gregory M. Phillips
District Manager/CEO

Ron Rohall stands in the parking lot made of permeable pavers, a stormwater management practice, in front of the District headquarters.

Greg Phillips enjoys the benefits of good stormwater management on the water quality of his favorite local trout stream.

It rained more in Westmoreland County in 2018 than in any year since official records of such things began to be kept in the late 1880s.

Our county got 72 inches of precipitation – nearly double the 40 inches our area normally receives in a year. And all that rain created a lot of problems.

Throughout the county, gutters overflowed and drainage pipes ran full. Basements flooded and roads became rivers.

So much water collected underground in abandoned coal mines that the water came shooting out of the ground in at least five places in Irwin.

Linn Run broke through the doors of a classroom building at the Valley School of Ligonier. A floodwall collapsed in South Greensburg.

Farmers lost crops because the fields were just too wet to harvest. Timber harvesters and developers delayed their project schedules, hoping the rains would slow.

The almost continuous presence of standing water increased mosquito populations and in one community, the insects were so thick that parents drove their children to the end of the driveway so they could stay inside the car until the school bus came.

The rain impacted each and every one of our technical program areas, and our staff spent much of their time responding to the record number of phone calls from landowners who were experiencing problems with large amounts of stormwater runoff, sedimentation buildup, streambank erosion, and other issues that the rain caused.

Our staff helped to expedite getting the state permits needed to repair flood damage, and they worked with municipalities on sites where there were extreme flooding problems, such as the area in the Sulphur Run Watershed in the City of Latrobe and Derry Township.

They also kept in touch with contractors who were closely monitoring the stormwater and erosion controls on their construction sites. Pushed to the limit, these controls had to be frequently checked and in some cases, built up, to resist the unprecedented levels of runoff. Overall, the controls held; a testament to the technology, the installers, and our staff's regular site inspections.

District stormwater and erosion control staff Jim Pillsbury (left) and Chris Droste (right) meet with Bill Roberts, community development director for Penn Township, to offer technical assistance on how to reduce erosion and so reduce flooding along this unnamed tributary to Bushy Run. Many new developments have been built in this watershed, increasing stormwater runoff and challenging stream capacity.

CLEAN STREAMS

We helped initiate repairs when a severe late June storm devastated thousands of feet of Linn Run, and along with it, several school buildings and residential bridges in Rector.

The storm so badly eroded the mountain stream in its upper reaches, and filled it with sediment in its lower ones, that the high water had nowhere to go except over its banks, damaging several buildings of the Valley School of Ligonier.

We helped the school to quickly apply for a permit to restore the stream channel, which the storm had filled with rock from rim to rim, so that water would have a contained channel to flow through.

Also along Linn Run, we helped four homeowners who had access bridges to their homes washed out obtain the permits they needed to reconstruct them.

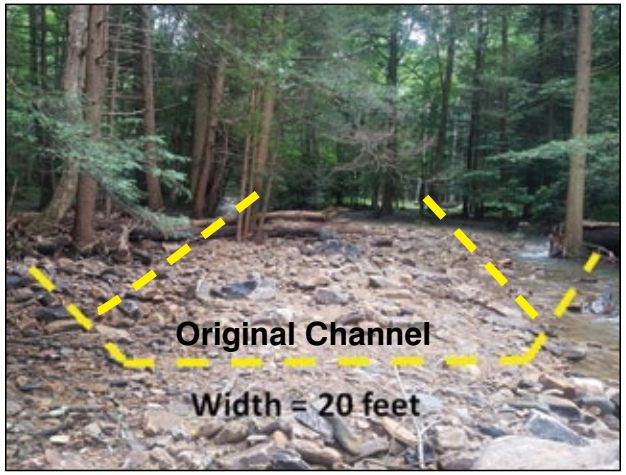
Severe flash flooding in the Lincoln Road area of Latrobe badly damaged a number of homes and businesses, and prompted a series of meetings between city officials, officials from adjacent Derry Township, the municipalities' common engineer, and the District.

The area where the flash flooding occurred – part of the Sulphur Run Watershed – is downstream of mixed residential and commercial development, most of which was built before stormwater management guidelines.

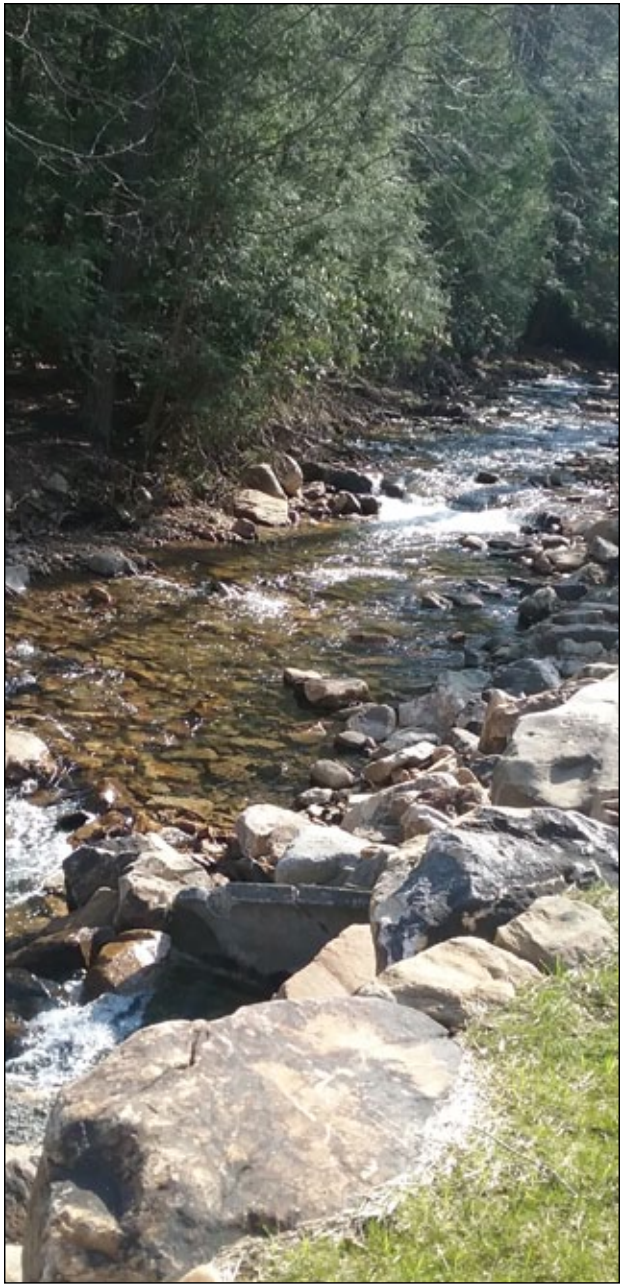
A study of the larger watershed was proposed to determine the most effective stormwater controls for this area, which historically has had flooding problems, but not as severe as this year's.

In October, the Pennsylvania Department of Environmental Protection awarded a $250,000 grant

A look at Linn Run downstream from the Valley School of Ligonier shows the damage left behind by the high, swift floodwaters – the large amounts of sediment deposited on the right side of the stream; the severe undercutting of the streambank (behind boulders) on the left side of the stream.



A look at Linn Run upstream from the Valley School shows how rocks and gravel carried by the floodwater completely filled the stream's original channel and forced the water to create an entirely new path (visible on the right side of the photo).



The restored streambank (foreground), with re-installed boulders, new rock riprap bedding, and filter layer. The restored stream channel with riffles and pools, shallow and deep sections of fast and slow flowing water, respectively. *Photo courtesy of Lori Pettigrew, Habitat Forever*

to Derry Township for stormwater management in Sulphur Run.

Our work with this effort was continuing at year-end.

Improvement work on Jacobs Creek, just upstream from Bridgeport Dam, involved installing stacks of logs along some 1,200 feet of the stream edge to reduce erosion and create habitat for fish.

The finished project.

Unprecedented rainfall and unexpected soil conditions at the site **made a stormwater retrofit project in Murrysville extremely challenging, and pushed its completion date into next year**.

Stormwater management wasn't much thought about in the 1960s and 1970s when the First Presbyterian Church of Murrysville was being built, and so stormwater runoff from the buildings' roofs, parking lot, and other impervious surfaces had for years just been taking the path of least resistance – flowing down a steep slope on the west side of the church property and onto an open grass field that the volunteer fire department next door used as a carnival site.

The volume of this flowing water and the force it built up from travelling down the more than 25% slope had created a severe erosion problem. A small canyon had been carved into the slope, and the missing soil was being carried into Haymaker Run, a high-quality stream, immediately on the other side of Sardis Road.

Working with the local partners, we designed a project to remedy these problems. But as the contractor began to clear the site to install the retrofits we designed, natural springs were uncovered all through the site. Even at a depth of 10 feet, the ground was wet.

The costs of digging deeper and bringing in dry soil were far beyond the amount of money awarded for this project by the Pennsylvania Growing Greener program, and so we had to find a new way to handle the stormwater.

At the end of the year, we were working with the local partners and Growing Greener to revise this project (see "Above and Beyond Projects," pages 26-27).

The first stream day-lighting project we know of in Westmoreland County got underway during the year at the former Jeannette Glass site.

This 14-acre brownfield is being redeveloped by the Westmoreland County Industrial Development Corporation and the Elliott Group. Elliott plans to use it to test pumps and expanders manufactured at the company's current Jeannette location.

As part of the redevelopment, most of the stream that runs through this site will be liberated from the six-foot-diameter brick tunnel it has been enclosed in for more than 100 years.

In years past, it was common practice on industrial sites to bury streams, which often were considered a 'nuisance.' New ways of thinking recognize the value of our waterways and the importance of caring for them.

Our hydraulic engineer, landscape architect/ stormwater technician, and green infrastructure specialist worked during the year to help design what the day-lighted stream will look like, including recommending shrubs and small trees to be planted along its banks.

The plantings, the soil, and the exposure to sunlight all will help remove pollutants from the water, improving water quality for residents in the City of Jeannette and everyone downstream.

Some 700 feet of this stream will be naturalized. The remaining 200 feet of stream on this site will flow through a new pipe that will carry it through the existing floodwall and into Brush Creek (see "Above and Beyond Projects," pages 26-27).

To offset the impact of the major highway construction work at the intersection of PA Route 31 and the Donegal interchange of the Pennsylvania Turnpike on a nearby stream and wetland, **new conservation improvements were installed in two other**

locations in the same watershed, Jacobs Creek.

Both conservation projects are designed to benefit water quality and both project sites are located downstream of the highway construction area, where they will do the most good.

The first conservation project was designed and completed during the year and involved about 1,200 feet of streambank along Jacobs Creek, just upstream of Bridgeport Dam.

Logs stacked three-high were placed parallel to the streambank and tied into it as a way to protect the bank and reduce the amount of soil eroding into the stream. This conservation practice, called a mud sill, also provides the added benefit of creating habitat for fish.

Stream quality in this area also was addressed with improvements that will lessen flooding on a road into the dam, and so also lessen erosion.

The second conservation project is a wetland being constructed about three and a half miles west of the highway work, in Chestnut Ridge Park. Here, one large wetland will be created by connecting six smaller, pocket wetlands that are already there. Work on the wetland began in the fall and ultimately will cover about three acres near Acme Dam. It is scheduled to be complete in the spring of 2019.

Both conservation projects are on property owned by the Westmoreland County Bureau of Parks and Recreation, and both are funded by PennDOT.

Additionally, both sites will be monitored regularly – the stream work for five years; the wetland for ten (see page 11 for information on this highway project; page 22 for monitoring information).

About 5% of the land in Westmoreland County is designated by the federal government to be in the "100-year floodplain." This means that these places are expected to be flooded during a very large storm or during extended periods of rain, as we had in 2018. Any homes, businesses, or community facilities built there are likely to suffer damage.

Municipalities can protect their communities from flooding by adopting and enforcing regulations – such as codes or ordinances – that provide a standard for how the land in floodplain areas is used and developed.

A community's agreement to adopt and enforce floodplain management regulations, particularly in regard to new construction, is important in making flood insurance available to home- and business-owners. Banks require flood insurance before they will issue a mortgage for any property in a floodplain.

During the spring of 2018, **District staff visited 12 Westmoreland County municipalities to help officials address floodplain questions and provide the best flood-protection possible for their citizens.**

All Westmoreland County municipalities are eligible for this free assistance, which the District provides every year through a contract with the Pennsylvania Municipal League/Department of Community and Economic Development.

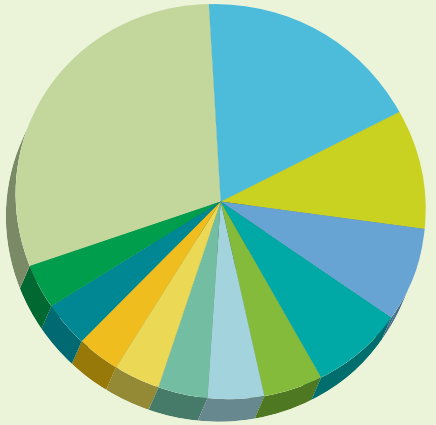
Our stormwater staff and forester provided assistance to homeowners in Oakwood Hills in Ligonier Township who asked for our **help with managing timber, excessive stormwater runoff, and erosion** on a steep, three-quarter-acre woodlot in the center of this housing plan, and a persistent problem with water ponding on the roadway.

We suggested solutions and worked with Ligonier Township and the local water and sewer utilities to install a small basin, a new inlet box, a vegetated channel, and a pipe as initial runoff controls for this community, which was built before stormwater management regulations.

Our staff is continuing to work with the project partners to find additional ways to manage stormwater here and improve the quality of the woodlot.

2018 Stormwater Plans Reviewed

by Municipality



Hempfield Township	36
North Huntingdon Township	19
Municipality of Murrysville	16
Penn Township	15
Rostraver Township	9
Unity Township	9
Derry Township	8
Donegal Township	7
Ligonier Township	7
Sewickley Township	7
South Huntingdon Township	7
Municipalities with six plan reviews or fewer	60

Total Stormwater Plans Reviewed 200

We recommended stormwater controls for a project to reinvigorate a small park/gathering space in the City of Greensburg.

For Grove Street Park, we identified the opportunity to include some permeable off-street parking, a walking path, and rain gardens for the space, which is in the city's Fifth Ward, near Prantl's Bakery. A block party to celebrate the potential for this community space was held in October.

A local nonprofit citizens group spearheaded the project, which is just several blocks from Zellers Run.

Grove Street Park in the City of Greensburg. Yesteryear (top) and today (bottom). We offered stormwater management suggestions as part of the park's revitalization efforts.

Also for the City of Greensburg, **we were part of a committee designing a new entrance to the athletic field** in what is now a grassy area on East Pittsburgh Street between Triangle Tech and the Flat Tire Bike Shop.

The new entrance will be a wide, direct connection from the city's main eastbound street to Offutt Field, providing a dramatic entrance for bands, cheerleaders, and fans coming to the games.

Our conceptual plan for the new entrance calls for underground infiltration trenches to capture the runoff created when the current grass is replaced with pavement.

Jack's Run, which drains a large portion of the Sewickley Creek Watershed, is less than a block away from the proposed site.

Through the combined efforts of our stormwater management staff, our visual communication specialist, and our contractor, Ethos Collaborative, **the Integrated Water Resources Plan was published as a draft** online at www.westmorelandstormwater.org, and a paper copy of this 218-page document and its 160-page appendix was sent to every Westmoreland County municipality for review and comment. It was also provided to the project's funder, the Richard King Mellon Foundation, and to the Westmoreland County commissioners.

The Integrated Water Resources Plan is a guidance document for managing our county's water resources.

A draft of a detailed plan for managing the county's water resources was completed and shared for comment.

It looks at all aspects of water, including stormwater, drinking water, sewage, lakes and streams, and groundwater. And it includes a model stormwater ordinance for municipalities, as well as a flowchart for making decisions about land development.

Thanks to the District's commercial-grade copier, we were able to print these documents in-house at a significant cost-savings.

We plan to host question and answer sessions and a public hearing in 2019 to gather input on the draft plan.

Our newest AmeriCorps service member visited the sites, researched information, and **prepared a three-panel brochure on the recent stormwater improvements made in the Borough of Delmont.**

The brochure explains the streambank stabilization and rain garden near the borough maintenance yard, the grassy swales and pond at Shields Farm, and the variety of work done along the road to both those places (see pages 11-12).

The brochure will be made available to Delmont residents and any interested member of the public.

Our newest AmeriCorps service member also began work on a **matrix that will show the pertinent differences among various kinds of permeable paving**, including gravel, brick, stone, grass with grids, concrete pavers, and poured-in place options such as permeable concrete and rubber chips.

The matrix will include technical information on cost per square foot, installation and maintenance requirements, design, use, and whether or not the practice meets Americans with Disabilities Act accessibility regulations.

The matrix was nearly complete at the end of the year. We anticipate that it will be available in 2019.

Integrated Water Resources Plan

Recommended stormwater release rates by sub-watershed

As part of developing an integrated plan for managing our county's water resources, we looked at the current land use in several priority areas of the county. We asked questions like: Is it more rural or urban? How much development is there? Is it an older community with limited stormwater management? All of these factors and more determine how much stormwater runoff there is.

We also looked at how much water an area can absorb during a storm. Lakes, ponds, and floodplains all are places where water can be infiltrated or stored. The more water that can be infiltrated or stored, the less water that goes into streams, and the less risk there is for rising waters and flooding.

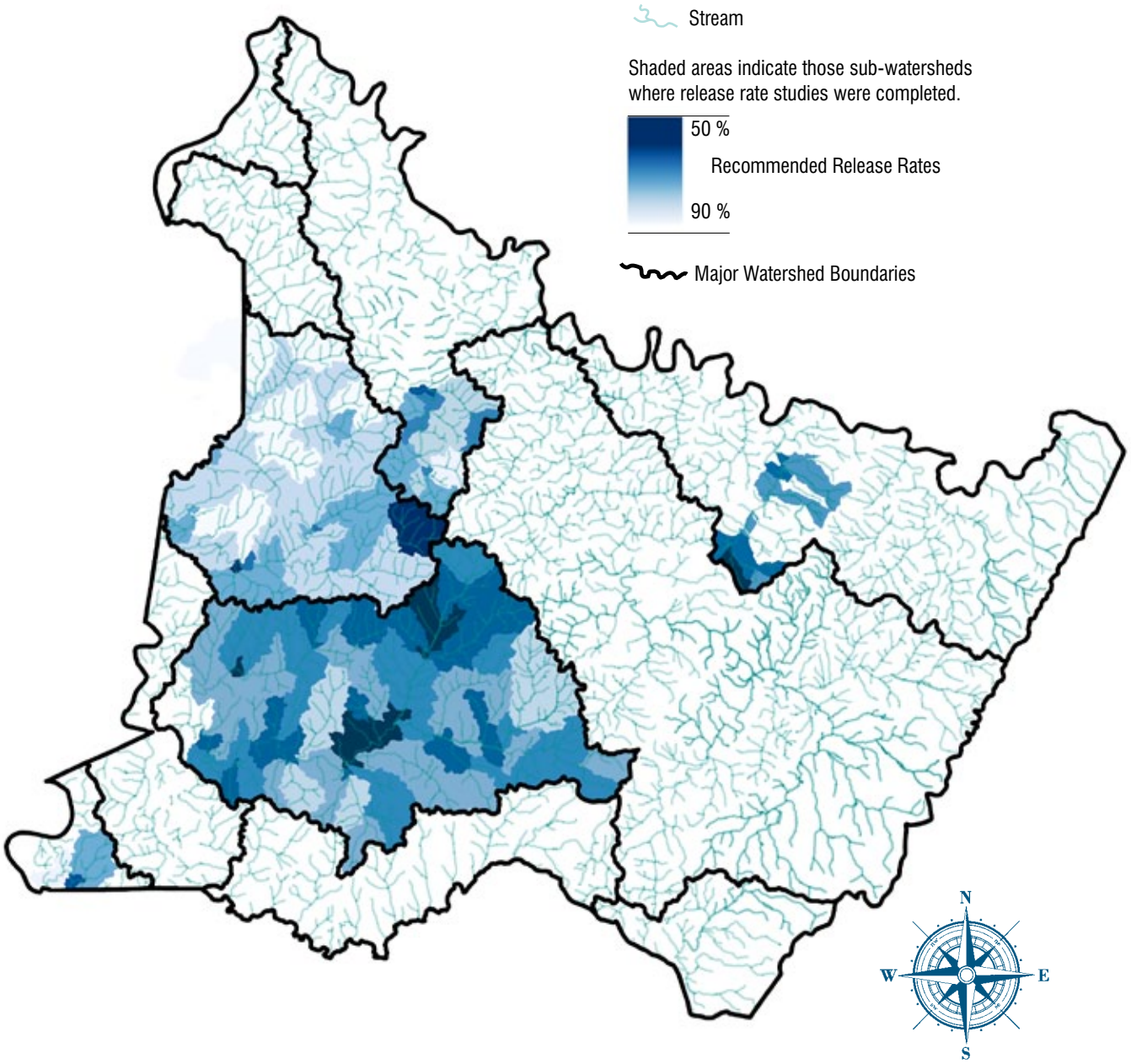
From this information, we came up with specific recommendations for each study area showing how much stormwater should be controlled in new developments to reduce localized flooding. These recommendations are called "release rates."

Darker colors on the map and smaller release rate percentages indicate areas where future development should reduce the rate of stormwater runoff.

A release rate of 50% indicates that future development should reduce the rate at which stormwater moves out of that watershed by half.

Lighter colors and higher release rate percentages indicate areas where future development does not need to control as much stormwater.

A release rate of 100% indicates that future development only has to control the volume of stormwater runoff that it creates.



See www.westmorelandstormwater.org for more information.

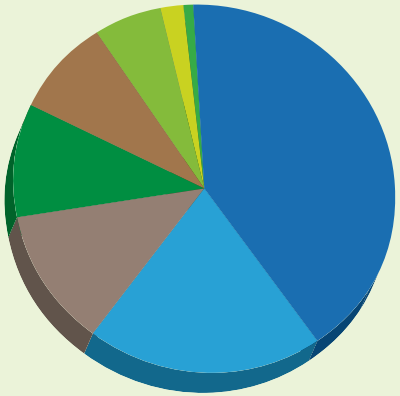
A capacity crowd joined us for our annual Engineers' Workshop, which again this year featured the Integrated Water Resources Plan that is now being developed for Westmoreland County.

Speakers included local municipal solicitor Les Mlakar, who explained the plan's model stormwater ordinance. When adopted by area communities, this ordinance would provide guidelines for managing stormwater runoff and preventing erosion, which will lead to less flooding and better water quality for residents.

Three hundred ninety engineers and design professionals came to the Engineers' Workshop, which is offered twice, on two consecutive days in March.

2018 Stream Encroachment Permits Obtained

by Category



Utility Line Stream Crossings	62
Bank Rehabilitation, Bank Protection & Gravel Bar Removal	30
Temporary Road Crossings	18
Minor Road Crossings	15
Intake and Outfall Structures	13
Fish Habitat Enhancement Structures	9
Small Docks & Boat Launching Ramps	3
Agricultural Activities	1
Total Permits Obtained	**151**

A bus tour for municipal officials highlighted green infrastructure projects in the Jacobs, Sewickley, and Turtle creek watersheds.

Twenty-seven people, many from Allegheny County, came to see the variety of practices that had been installed to manage stormwater and improve water quality in our county, and to get information on their effectiveness.

The group saw permeable pavers made of asphalt, trees planted in Silva Cells™, and rain gardens.

Annie Quinn, executive director of Jacobs Creek Watershed Association, provided valuable information on some of the lessons learned with practices installed in Scottdale that had to be redone.

A green infrastructure bus tour gave municipal officials a chance to see stormwater management projects such as this one at Southmoreland High School parking lot.

The group also visited Westmoreland County Community College, where work had been done to improve Cherry Creek, and Monroeville library, where a joint stormwater pond project with the Allegheny County Conservation District was in place.

Funding for the bus tour was provided by the Pennsylvania Association of Conservation Districts Nonpoint Source Pollution Prevention Educational Mini-Grant.

Much of the soil in Westmoreland County is silty clay. And silty clay soil has a low rate of absorption, meaning that only about 10 to 12 inches of the 40 inches of precipitation we usually get each year actually sinks into the ground. Plants and trees lift about another 20 inches of that annual precipitation back into the air through evapotranspiration. The rest of it – about 10 to 12 inches – has essentially nowhere to go so it just runs off.

Most stormwater controls are built to handle the runoff from the average rainfall we get each year, plus the occasional big storm that historically happens only once in every 10 or 25 years.

But 2018 was far from an average year. Instead of 40, we had 72 inches of precipitation! Still, the most our silty clay soil could absorb was 10 to 12 inches.

And the most the plants could evapotranspire was still 20 inches.

So the remaining 40-plus inches just ran off – down streets, across yards, into storm sewers and already swollen streams. Much of it found nowhere to go except places where it wasn't wanted, like basements.

STABLE SOILS

RESIDENTIAL

We continued to **inspect four new residential development sites**, as that sector continues the building uptick that began several years ago.

All the **earthmoving for Willow Ridge**, a new 39-acre housing plan in Penn Township, was completed during the year and an untypically large stormwater control – a 36-inch-diameter piping system – was installed at the request of the township because this area on Gombach Road near Claridge is rapidly changing from farming to single-family residential, and did not have the stormwater infrastructure it needed to address the runoff from that change.

The Willow Ridge project site also was one where the erosion and sediment controls were damaged – twice – by two severe rain events in 2018, including one that registered 1.5 inches of rain in just 25 minutes.

Our senior erosion control specialist offered ideas on how to make field changes, including building the silt sock traps higher, in an attempt to manage these unprecedented storms.

We also inspected the grading work done for **Phase II of the Tuscan Hills development in North Huntingdon**, and the completion of home building in both **the Lorien plan in Penn Township and the Brandywine plan in Manor.**

WATER, SEWAGE

We continued to inspect work being done by the Western Westmoreland Municipal Authority as part of a comprehensive plan to prevent sewage overflows into Brush Creek.

Improving water quality in Brush Creek is a multi-year effort that involves installing new sewer lines.

As the new sewer pipe is being laid, sewage has to be diverted through temporary pipe connections stretching from one manhole to another (shown in photo on left).

A finished section of new sewer line (right photo), installed under a stabilized steambank that has just been reseeded. Live stakes, including the native black willow tree, have also been planted in the mesh-like area between the streambank and the rock. The grass, trees, and rock all will help prevent erosion.

2018 marked the halfway point of the WWMA's six-year work plan, and focused on building a new sewer line from the newly constructed storage tank and pump station through the town of Irwin.

This is challenging work, as the new 33- to 48-inch-wide interceptor line is being located in the narrow streambank along Brush Creek.

Work requires closing off sections of the old sewer line between two manholes, and diverting the sewage through a temporary pipe connection. Because of the extremely limited work area, the temporary pipe was suspended in the stream.

Our erosion control specialist closely monitored this project, which also was greatly challenged by the year's unprecedented rains. The force and frequency of the storms washed out a number of small trees and jute matting that had been correctly installed on a section of the streambank where new pipe had been laid. At one point, the velocity of the rain-swollen creek was so strong that it carried a 3,000-pound diversion pump downstream.

Despite these setbacks, one-half mile of new sewer line was completed and no sewage escaped into Brush Creek, thanks to heroic efforts on the part of the construction contractor, who at one point put an excavator in the stream and used it to brace the temporary pipe connection against the swift waters.

This project is expected to continue through 2021.

We inspected three separate 48-inch water line replacement projects during the year.

The largest, which will eventually replace some 15,000 feet of water supply line, began at the Omnova plant in Jeannette and will eventually connect to a tank in Adamsburg.

The other two projects were smaller-run lines that disturbed a total of eight acres in South Greensburg and Hempfield Township, including a trench that ran under Route 119 near the intersection with Broad Street.

Other water infrastructure projects our senior erosion control inspected included an eight-inch water line replacement along Clay Pike Road between Sewickley and North Huntingdon, and a sewer line installed by the Hempfield Township Sanitary Authority along Slate Creek.

2018 Erosion and Sedimentation Control Inspections

by Municipality

Hempfield Township	52
Penn Township	34
North Huntingdon Township	23
Salem Township	22
Unity Township	22
Derry Township	19
East Huntingdon Township	11
South Huntingdon Township	11
Sewickley Township	11
New Stanton Borough	10
Municipality of Murrysville	9
Ligonier Township	9
City of Latrobe	7
Municipalities with six inspections or fewer	69
Total Inspections..... 309	

HIGHWAYS AND ROADS

Major highway projects in our county required continuing inspections by our erosion control staff throughout the year.

A heavily travelled intersection on **Route 130 in Penn Township was upgraded during the year and our senior erosion control specialist inspected it through the variety of improvements**, including relocated utilities, an underground stormwater management system, and widening of the road and shoulder.

This intersection where Pleasant Valley Road, Sandy Hill Road, and PA Route 130 meet previously had an elevated grade, making for poor line of sight and frequent accidents. The high volume of traffic on these roads, which are used as major routes to the nearby Pennsylvania Turnpike, also created frequent traffic congestion.

Penn Township is a growing residential area of the county, and we anticipate that more road improvements will be done here in the future.

We conducted eight inspections on a project that constructed a new bridge across the Pennsylvania Turnpike. This bridge is on Trafford Road/Murrysville Road/PA Route 4033 in Murrysville.

Because this is an important route for emergency vehicles, the old bridge remained in place and open while the new bridge was constructed beside it.

The road in this area also was realigned, and a maintenance road was added to access both sides of the turnpike.

Work on **Interstate 70** continued for the third year, with construction now focused on the area of the West Newton/Mount Pleasant (PA Route 31) interchange.

Both the road in this area and the interchange are being widened, and the interchange is being replaced with a "diamond" configuration, which will provide longer acceleration/deceleration ramps and better sight lines for drivers.

This work is disturbing 166 acres, including a wetland and a portion of Sewickley Creek, and so **our erosion control specialist/compliance coordinator conducted a number of inspections to ensure that the project was in compliance with all regulations.**

The highway's impact on the waterways will be offset by the creation of new conservation projects that

"Squash pipes" were the perfect replacement for two badly deteriorated 36-inch pipes that carried an unnamed tributary under Sugar Run Road in Saint Clair Township because they could contain the entire seven-foot width of the stream without having to markedly raise the road profile.

One of the new squash pipes doing its job after a heavy rain six days after installation.

The road to Shields Farm was often plagued with large volumes of stormwater runoff that began at the top of the hilly lane and spilled out onto East Pittsburgh Street, a main street in Delmont.

Shields Farm Lane (foreground) and East Pittsburgh Street after stormwater management improvements

Improvements included a large detention basin (center, background) near the top of the road. Rock riprap and a drainage pipe under an improved access road (foreground) help direct runoff into the new basin.

improve water quality in that watershed.

We continued to inspect work at a major highway project in Donegal, at the junction of PA Route 31 and the Pennsylvania Turnpike.

Poor soil conditions and excessive rain made it difficult for the contractor to establish vegetative cover on disturbed areas, including the project's new earthen embankments, but the contractor eventually was able to do so.

This project will continue in 2019. It is disturbing 42 acres.

Some $523,225 of improvements were installed on 15 dirt, gravel and low volume road projects throughout the county in 2018 (see map on page 27).

A total of six dirt and gravel roads and nine low volume roads were improved.

Improvements were specific to the road conditions, and included such things as cross pipes, infiltration trenches, underdrain, and Driving Surface Aggregate.

Most improvements involved a portion of the road, not the entire length of the road.

Funding for the 2018 projects was provided by allocations in 2017 and 2018 from the Dirt, Gravel, and Low Volume Road Maintenance Program.

One of the **road improvement projects we coordinated during the year was in Saint Clair Township on a one-mile section of Sugar Run Road**, between the Sugar Run Dam and Reservoir.

Turnouts, which had previously been installed to redirect water from this road into the woods, were not working well, and so significant amounts of rain and melting ice and snow were flowing down and eroding this dirt and gravel road.

Water quality in nearby Sugar Run Reservoir, which provides public drinking water to customers in Westmoreland and Indiana counties, was being affected.

We worked with the municipality and contractor Adam Eidemiller, Inc. to install eight grade brakes, which can be likened to exaggerated speed bumps that are angled to help shed water, along Sugar Run Road and an adjacent access road whose water was flowing onto Sugar Run Road.

We also replaced two badly deteriorated 36-inch pipes with new, elliptical-shaped "squash pipes" that allowed us to contain the entire seven-foot width of the stream without having to significantly raise the road profile.

We plan to work on another portion of Sugar Run Road in 2019.

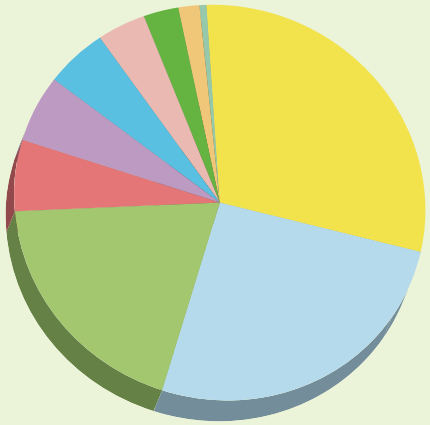
A conservation project in the borough of Delmont improved a road heavily travelled by residents and visitors alike.

The road, often referred to as Shields Farm Lane, serves the municipality's compost facility, public ball fields, and Shields Farm, a popular recreation location and site of the annual Apple 'n Arts Festival.

Improvements included the addition of three infiltration trenches that direct water away from the road, a large stormwater detention basin, underdrain and a rain garden at the foot of the road, and a French mattress – clean, coarse rock wrapped in geotextile fabric that lets water pass through freely – installed on an

2018 Erosion and Sedimentation Control Plan Reviews

by Watershed



Sewickley Creek	84
Turtle Creek	75
Loyalhanna Creek	54
Pucketa Creek/Allegheny River	17
Youghiogheny River	16
Kiskiminetas River	14
Jacobs Creek	11
Conemaugh River	8
Monongahela River	5
Indian Creek	1

Erosion and Sedimentation Control Total Plan Reviews 285

access road to prevent it from acting as a dam.

The $109,000 project also included planting trees, plus milling and repaving about 800 feet of road.

Funding for the work was provided by the Dirt, Gravel, and Low Volume Road Maintenance Program and the state's Growing Greener program.

In 2015 and 2016, Growing Greener also funded stormwater management installations on Shields Farm, which is uphill from the residential area of Delmont and in the Beaver Run Watershed.

DAMS AND BRIDGES

Reconstruction of the dam at the 90-acre Donegal Lake began in 2018 and our erosion control specialist/compliance coordinator continued her inspections of the site.

The lake had been drained and the fish relocated in 2016 in preparation for this work, which will include replacing the entire emergency spillway and removing part of the dam's earthen breastwork and rebuilding it with rolled concrete.

Previously, our inspections of the drained but unseeded and unmulched lake prompted major discussions with the Pennsylvania Fish and Boat Commission about the need for conservation practices on these exposed sites, where rain easily carves rills and gullies and sends large amounts of sediment into nearby streams. The exposed soil conditions at Donegal Lake were significantly polluting Fourmile Run, a trout-stocked stream.

Our discussions led to the establishment of vegetation at the drained Donegal Lake, as well as at a similar drained-lake project in Somerset County.

Work on the dam at Donegal and our inspections there will continue in 2019.

ENERGY

The **Mariner East 2 pipeline** project resumed tying in sections in June.

Most of the 35-mile stretch of the primary, 20-inch pipeline in Westmoreland County had been completed in 2017, and only about 1,000 feet in Penn Township remained to be done when the Pennsylvania Department of Environmental Protection suspended all work on the project, statewide, because some contractors were not containing hydraulic fracturing fluid and allowing it to spill into waterways.

Some of these "inadvertent returns" did occur during the 2017 pipeline construction in Westmoreland County, and our erosion control staff conducted many follow-up inspections to ensure that they were properly contained and thoroughly cleaned up.

Statewide, work on the pipeline was permitted to resume later in 2018 after Sunoco, the pipeline's originator, agreed to a $12.6-million civil penalty, which was used to provide grants for projects to improve water quality (see page 20).

As part of this pipeline project, a smaller, 16-inch pipeline is also being built in our county – from Delmont, eastward – and the two sections will be tied together.

All Mariner East 2 pipeline work is expected to be completed by the fall of 2019.

2018 saw the near completion of the **Tenaska** natural-gas-fueled electric generating and switching station in South Huntingdon Township.

The project began in 2016, with preparation of the combined 130-acre site and continued in 2017, with the construction of buildings.

During 2018, the contractor was working toward restoring the parking areas and laydown space that had been created for the construction phase but that will no longer needed.

Our inspections consisted primarily of ensuring that the site was stabilized, kept in cover, and that the erosion and sedimentation controls were maintained.

This major project required a number of permits, including ones for the power plant, the switching station, the water lines, electrical lines, and so on. We will be working to close those permits out in 2019.

SERVICES

The number of pre-construction meetings jumped by 70% during the year, increasing from 29 in 2017 to 50 in 2018, as the benefits of these discussions are becoming better understood.

Pre-construction meetings are an opportunity for the project coordinator/engineer to talk with our technical staff on the project site, after development plans are approved and just before earthmoving begins.

Especially important for large or complex projects, pre-construction meetings help ensure that the work will be done in compliance with permits and regulations such as the Pennsylvania Clean Streams Law and so reduce the potential for violations.

Pre-construction meetings are encouraged for all earth-disturbance activities, and required for National Pollutant Discharge Elimination System permits.

We introduced a new service in 2018 to help those who need a National Pollutant Discharge Elimination System permit for their project.

This new service provides a meeting during which applicants can have their permit paperwork reviewed by our administrative staff, and their plan initially reviewed by our technical staff.

While the purpose of this meeting is not to approve plans, it has already proven to greatly increase the likelihood that a plan will be approved on first submittal if the technical comments our erosion control staff and stormwater staff give in the meeting are incorporated.

Jessica Kane, erosion control specialist/compliance officer, discusses erosion controls with attendees at a contractors' workshop.

It also can result in the applicant leaving the meeting with a Completeness Letter, if our administrative staff determine that the permit application is complete. If not, the applicant will leave with a list of areas that need attention.

In 2018, we held 15 of these new, one- to two-hour Assisted Plan Consistency Check meetings, which have gotten good reviews not only from our clients but also from our staff, who feel they result in better plans and save time.

This is a fee-based service, with the amount determined by the number of project acres disturbed.

We offered a workshop to help contractors be aware of installing and maintaining controls during water, sewer, and gas pipeline construction.

Thirty-five people came to learn about horizontal directional drilling and stream crossings, how to detect involuntary returns and mitigate them, installing best management practices to restore work sites, and understanding permits.

The first topics were especially timely in light of the situation with the Mariner East 2 pipeline project (see page 12). A representative from Gremminger and Associates, a contractor specializing in geological issues who worked on the Mariner East 2 project, was one of our speakers.

Our erosion and sedimentation control, stormwater, and West Nile virus staff spoke at the event as did representatives from sponsor companies ACF Environmental; JMD Company; S3 Stormwater Solution Source, LLC; and Triton Environmental.

We began planning our 2019 education offerings late in the year and, because of all the rain in 2018, will be including topics not normally addressed, including how to manage landslides, and stormwater management of excess rainfall.

PRODUCTIVE FARMS

The heavy rains of 2018 made life challenging on many area farms and, while they didn't increase the overall number of agricultural-related complaints we received, they did increase the complexity of some those complaints when, for instance, a farmer would property install measures such as mulching and seeding to correct an erosion problem, only to have a new series of heavy rains wash them out again.

Our nutrient management specialist/agricultural conservation technician dealt with 12 complaints during the year, all related to erosion and sediment problems on farms.

Eleven of these complaints were successfully resolved by year-end.

The twelfth complaint was moving toward resolution. The landowner agreed and the farmer developed a conservation plan with the Natural Resources Conservation Service. The farmer partially implemented the plan and it will be fully implemented within two full growing seasons, as required.

Also this year, our board began to review the District's agricultural complaint policy, which has been in effect since 2012 when we first assumed this responsibility from the state Department of Environmental Protection.

A plan was developed during the year that will **invest some $80,000 of Pennsylvania Growing Greener funding on the McQuaide dairy farm in Salem Township.**

The farm was identified because of its location – just one-half mile from Beaver Run Reservoir, which provides drinking water for some 50,000 homes and businesses in Westmoreland County. By installing conservation practices that reduce sediment and runoff from the farm, the quality of that water will improve.

Work is scheduled to begin in 2019, and will include some 1,000 feet of animal walkway, 200 feet of rain gutters and downspouts on the barn and extensive underground drainage, streambank fencing, spring developments, and a 90-foot by 20-foot manure storage structure.

Growing Greener also funded a variety of conservation improvements on the nearby Boggs Dairy Farm in 2016-2017.

Our nutrient management specialist/agricultural conservation technician provided personalized assistance to farmers throughout the year.

He made 49 visits to local farms, met with 33 individuals who came to the District to discuss the specifics of their agricultural operation, **and**

Conservation is a family affair with all six members of the McQuaide family (left, center, and background right) as they discuss proposed conservation improvements on their dairy farm with Tom Sierzega and Gisela Carmenaty (right foreground) of our partner organization, the Natural Resources Conservation Service

The first-ever "Next Generation Farm Summit" was a big success with upwards of 20 vendors/information providers and nearly 100 participants who came to learn innovative ways to make their farm operations more successful, such as connecting farm products with local businesses.

responded to nearly 400 phone calls for conservation assistance.

The state has been working on a new document that puts **increased importance on agricultural operations having a current erosion and sedimentation plan.**

For years, Pennsylvania has required agricultural operations to use best management practices to prevent erosion. And, when an ag operation involves 5,000 square feet or more of disturbed land, it also must have a written plan for preventing erosion. This latter requirement applies to plowing and tilling activities (including no-till) as well as to animal heavy-use areas.

About 1,000 farms in Westmoreland County have written erosion and sedimentation plans. Not all of them are current with operations on the farm.

Our nutrient management specialist/agricultural conservation technician has been monitoring the specifics of the new state guidance document and, in 2018, **he held two workshops where eight farmers prepared written erosion and sediment plans that meet the intent of that document.**

He also helped another three farmers prepare these plans by working with them individually.

An erosion and sediment plan includes such information as the conditions of each farm field, the crops planted there, and the tons of soil loss allowed per acre/per year (versus the actual).

More workshops on preparing an erosion and sediment plan are planned for 2019.

In addition to hosting workshops on ag erosion and sediment plans, **the District offered five workshops during the year to help farmers prepare manure management plans.** From these workshops and one-on-one assistance, 36 new plans were developed.

A manure management plan is a relatively simple document, about 12 pages in length, that helps the farmer keep track of where manure is spread and the yields of those fields. It is updated by the farmer each year, and required by state law for any operation that has production animals and where manure ends up on the land.

The District has been hosting these workshops annually since 2014, in a variety of municipalities throughout the county.

The District sponsored a "Next Generation Farm Summit" on June 29 that explored emerging trends in agriculture, and offered ways to make today's farm operations successful, including ways to diversify growing, connect farm products with local businesses, and make operations more energy efficient.

Area farmers who already have successfully built a niche market for their products – including John and Sukey Jamison of Jamison's Lamb Farm, Jessica Hoover of Jessi's Chickens, and organic goat and free-range chicken farmer Richard Nolt – shared their experiences with the nearly 100 participants.

A variety of agricultural agencies and partners

also were on-hand with information about their programs, including: the event sponsors – Westmoreland Conservation District, AgChoice Farm Credit, and Commonwealth Alternative Medical Options – as well as Peoples Natural Gas; Hollymead Capital; Chatham University's sustainable Eden Hall campus; Republic Food Enterprise Center; Penn State Extension Westmoreland County; Pennsylvania Association for Sustainable Agriculture; United States Department of Agriculture's Rural Development, Farm Service Agency, and Natural Resources Conservation Service; Westmoreland Land Trust; Pennsylvania Veterans Farming Project/Troops to Tractors; Southwest Project Grass; and National Young Farmers Coalition.

We plan to host a farm summit again in 2019.

One immediate outcome from the "Next Generation Farm Summit" was a survey by Chatham University's Center for Regional Agriculture, Food, and Transformation.

The survey is compiling information on anyone who is in any phase of the agricultural food business – from producers to seed suppliers. This information will be used to bolster the local food economy.

The annual Southwest Pennsylvania Soil Health Conference was held on January 31 at Saint Vincent College in Latrobe.

Speakers addressed weed, disease and insect control with fertility; plant industry; corn yields; soil mechanics; the Resource Enhancement and Protection Program; no-till and cover crops; and the Republic Food Enterprise Center, a local facility that provides equipment and guidance on how to take advantage of specialty ag markets.

More than 110 people attended.

FORESTRY

Our forester provided advice to eight landowners who were considering selling their timber. This advice generally includes information on how to make the process easier, more profitable, and better for the woodlot. It also advises the landowner if his/her municipality has an ordinance regarding timber sales.

The borough of Export was one of the landowners that sought our advice during the year for 20 acres of forest it owns off Borland Farm Road. Officials there took our most critical recommendation and contracted the services of a consulting forester. These independent professionals act in the best interest of the landowner, and often develop a larger, long-term management plan for the particular woodlot.

In the case of Export's property, the consulting forester recommended following our forester's advice and treating the invasive plants in the woodlot before cutting any timber. This is a good conservation practice because it significantly reduces the number of these unwanted plants, which can quickly overtake our native plant communities and hinder regeneration.

Fourteen landowners benefitted from an exam of their woodland by our forester and the brief plan he developed for managing it.

Properties included 25 acres of woods in South Huntingdon Township, 100 acres in Cook Township, and a 25-acre parcel in Derry Township that may not have been timbered for more than 100 years.

These Basic Forest Management Plans include an inventory of the trees, information on the soils, identification of different types of stands, and some general recommendations for stewardship.

In addition to suggesting ways to care today for these important natural resources, these basic forestry consultations often also lead to continued working relationships between the landowner and the District, and more comprehensive and long-term stewardship of the woodlot.

Volunteers helped to plant some 400 tree seedlings in 10 acres of Ann Rudd Saxman Nature Park as part of a stewardship project to improve the quality of this wooded oasis that is just one mile from Westmoreland Mall.

The number of pre-plan meetings we held with timber harvesters continued its steady, five-year annual increase, with 20 such meetings held in 2018.

These one-hour meetings are a chance for our forester to discuss the particulars of a site with those planning to harvest timber, and offer information on soils, site layout, and mapping. He also helps to ensure that the necessary erosion and stormwater controls are planned correctly. If they are, he can approve the plan on the spot.

A nominal fee of $50 for these meetings was initiated in 2018.

Twenty-five timber-harvest plans were reviewed during the year.

All timber harvests are required have a written plan, outlining how erosion and sediment will be controlled on the site. In some Westmoreland County municipalities, this plan has to be submitted to the District for review before any work begins. Review of a written plan by our forester involves a fee, which is based on the size of the harvest.

There is **a new guidance document/form for creating an erosion and sedimentation plan for timber-harvesting sites.**

The new form is a result of recent changes to the Pennsylvania Code that governs erosion and sediment control (Title 25, PA Chapter 102).

Our forester and board chairman served on the statewide committee that created this document, which details four new, approved best management practices for timber sites (turnouts, water deflectors, compost filter socks, and wood chip filter berms). It also shows the new spacing for ditch relief culverts, waterbars, and filter strips; and provides a simple, one-page template that can be used to document inspections of active harvesting sites.

Our forester worked during the year to make loggers aware of this new form, which is available on the District's website.

Timber-harvesting complaints, like those related to other forms of earthmoving, were up during the year because the heavy and persistent rains increased the amount of erosion, and sometimes even created small landslides.

On one harvesting site, even though controls were sized properly and in place, the unprecedented rains overwhelmed them. We worked with the logger to get the site back into compliance.

Toward the end of the season, the rain and mud had reduced activity on many sites to only two or three days a week.

Three property owners in Westmoreland County were interested in enrolling their woodlots in the state's Clean and Green program and, as part of the application process, **our forester visited the sites to identify the type of trees growing there.**

One of the primary goals of this program is to encourage land to be kept in forest reserve. It is a low-cost way to do so, as there are no fees associated with the program (as opposed to establishing an easement, which has costs associated with it).

In exchange for agreeing to keep a woodlot intact, a landowner whose property is accepted for the Clean and Green program gets a reduction in his/her property tax. The community benefits because forests perform many important functions, including filtering rainwater and reducing greenhouse gases.

In 2018, nearly 200 acres in Westmoreland County were accepted into the program.

The Westmoreland Woodlands Improvement Association held a number of public events during the year, including programs on the American chestnut tree and forest generation, and several woodland walks.

Some 80 private citizens, many of whom own woodlots, are members of WWIA and their goal is to encourage good stewardship of these natural resources.

The District supports their efforts and our forester serves as the group's treasurer.

The Westmoreland Woodlands Improvement Association sponsors talks, field trips, and woods walks such as the one where this photo was taken, at the Otto and Magdalene Ackermann Nature Preserve in North Huntingdon.

SUSTAINABLE COMMUNITIES

Forest management work continued for the second year in Ann Rudd Saxman Nature Park.

A portion of the 12 acres that had been treated to control invasive plant species in 2017 was fenced off to keep deer from browsing there, and 400 seedlings were planted in this two-acre fenced area and in an additional eight acres of the park.

Fast-growing black walnut *(Juglans nigra)*, sugar maple *(Acer saccharum)*, and red oak *(Quercus rubra)* trees were planted along with elderberry *(Sambucus canadensis)* and red chokeberry *(Aronia arbutifolia)* shrubs.

District staff, members of the Westmoreland Woodlands Improvement Association, volunteers from True Health and Fitness, and a student from Saint Vincent College participated in the planting effort.

A fence was erected around two acres in Ann Rudd Saxman Nature Park to keep deer from browsing the new tree seedlings that were planted there (also see picture on page 16).

Work to improve the park's trail is planned for 2019. Our landscape architect/stormwater technician designed this portion of the project during the year and awarded the bid.

All management work in Nature Park is being done in accordance with a stewardship plan developed for the property by our forester.

The first three years of this effort are being made possible by grants from the Dominion Foundation ($15,000), the Community Foundation for the Alleghenies ($5,000), and the Pennsylvania Department of Conservation and Natural Resources ($29,500).

A series of six manmade ponds and a wetland at Lowber have been keeping iron from entering Sewickley Creek for the past 13 years.

But every five to seven years, the iron sludge builds up in the ponds to the point where they can no longer do their job efficiently and must be cleaned out.

Three of the six ponds were cleaned out in 2012. And, **thanks to a $171,000 grant the District helped to procure from Pennsylvania's Growing Greener program, the remaining three ponds will be cleaned out in 2019.**

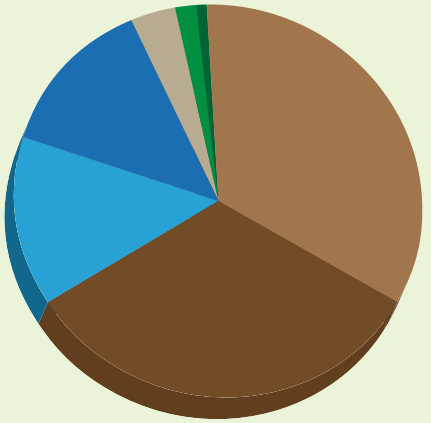
The iron sludge removed from the ponds is very pure and has value as an earth-tone pigment.

The District is acting as a pass-through organization for a $90,000 grant from the Colcom Foundation to Saint Vincent College to study the impacts of sewage and mine drainage on water quality.

Our watershed program manager helped identify the best locations to take water samples and is providing technical assistance to the interdisciplinary science professor leading the study.

2018 Technical Assistance

by Program



Erosion and Sediment Pollution Control	1,796
Agriculture	1,734
Stream Encroachment	739
Stormwater Management	703
Dirt, Gravel and Low Volume Roads	189
Watershed Restoration	82
Forestry	39
Total Technical Assistance	**5,282**

We were part of a team **helping the borough of Bolivar improve access to the Conemaugh River**, which borders it to the north.

In May, Bolivar received a $40,000 grant from the Community Foundation of Westmoreland County to establish a kayak launch, and add amenities such as

additional parking at nearby Kelly Memorial Park.

Construction estimates for the project revealed the need to raise additional funds and that effort got underway later in the year.

Bolivar has the potential to be a kayak/canoe destination as water quality in the Conemaugh River in that area has greatly benefitted from erosion control, dirt and gravel road improvements, and other conservation efforts that have been put in place along Tub Mill Creek, which surrounds the borough on two sides before emptying into the Conemaugh.

The new kayak launch is scheduled for construction in early 2019.

When Irwin Borough workers stopped mowing right up to the edge of Tinkers Run in Irwin Park, they were doing the right, conservation thing. But many people who use the park didn't understand, and wondered if the municipality was just getting lax in keeping up with the mowing.

That's when the District got the idea to **create "No Mow Zone" signs and offer them free-of-charge to Westmoreland County municipalities.**

The signs were designed during the year and use simple language to explain that allowing grass and even shrubs and small trees to grow along the sides of a stream is a beneficial practice. The plants' roots help protect the banks from eroding while their green side helps slow down water runoff and catch pollutants that otherwise might find their way into the stream.

Signs were created to educate the public on the importance of not mowing, but instead allowing vegetation to grow, along streambanks.

Thirty-eight of the signs were created during the year and will be offered to municipalities for installation on any public site in the town or borough.

This project was funded with a $1,700 nonpoint source pollution prevention – section 319 minigrant from the Pennsylvania Association of Conservation Districts.

2018 Envirothon winners, Kiski Area High School. (l-r) Makenna Hayes, Gabriella Tepke, Gendyah Short, Alison Bresnahan (team advisor), Logan Kelly, William Nese.

For the 32nd year, **we hosted an academic competition that helps high school students learn the value of the natural resources.**

Eighteen teams of area high school students took part in the 2018 Envirothon, which was held in late April at Twin Lakes Park in Greensburg.

During this academic competition, students are asked to do such things as measure a tree, and examine animal skulls to identify the species.

They also are asked to answer challenging questions related to forestry, soil, land use, aquatic ecology, and wildlife, and to address an environmental issue, which in 2018 focused on the benefits of grassland and pastureland management.

Kiski Area High School captured first place in the event; Norwin High School Team 1 took second; and Yough Senior High School Team 2 took third place.

New laser-cut wooden medallions were presented for the first time to this year's Envirothon winners.

The first place winner went on to compete in the state competition.

The Westmoreland Conservation District has hosted the local Envirothon every year since 1986. This year, in addition to our long-time partners, we were joined by 10 community volunteers, including four from Smithfield, one of the event sponsors.

New awards debuted at the 2018 Envirothon.

The individual wooden medallions for students and wooden plaques for team advisors feature graphics that depict four of the Envirothon's major focus areas – soils, wildlife, forests, and streams.

They also include the year and the place the team took.

The new awards, designed by our staff, are laser-cut on wood and replace a generic marble plaque and medals that had previously served as the event's recognitions.

We continued to provide support to area trail groups and watershed associations during the year.

WESTMORELAND HERITAGE TRAIL

We continued to support the construction of the Westmoreland Heritage Trail by **applying for and receiving a grant to stabilize the streambanks** where the next trail section will be built.

We began doing this important pre-trail work in 2015, when we stabilized about 1,000 linear feet of slopes in anticipation of an earlier phase of that project (Phase III). That part of the trail has now been built and is open for use between Murrysville and Trafford.

The slopes in the next phase of the trail (Phase IV) are not as steep as those we stabilized previously because the trail's route in this area will be closer to the headwaters of Turtle Creek, and the stream here is not as wide.

The $62,000 grant for the Phase IV stabilization work came from a penalty paid by Sunoco for permit violations during construction of the Mariner East 2 pipeline. It was awarded by the Pennsylvania Department of Environmental Protection (see page 12). An additional $40,000 was provided by the PA Department of Conservation and Natural Resources.

Our watershed program manager identified a number of locations in both the next and previous construction phases where additional drainage was needed.

He provided technical assistance regarding the best fixes and, with sanction from Westmoreland County Parks, oversaw the retrofitting of six additional drainage culverts in the trail's third construction phase. Funding for this retrofit was provided by several trail groups and county parks.

The additional drainage recommendations made for Phase IV of the trail will be included during construction, which is scheduled to begin in 2019.

The new trail website we created in 2017 went live in January.

During the year, we also added two more interactive maps to the site – one on historical points of interest, and one on geological and wildlife items of interest.

A merchandise page and links to related websites also were added, along with the ability to pay membership on line.

Thanks to the ability to track visitors, we learned that the new site had more than 3,600 visits in 2018, and some 50 memberships were paid online through PayPal®.

Our full-time AmeriCorps service member coordinated these improvements, as well as serving as the point of contact for all emails sent to the site.

KISKIMINETAS WATERSHED ASSOCIATION

We helped to plan and host a **ribbon-cutting ceremony** at the Kiskiminetas Watershed Association's new native plant preserve in West Leechburg on April 21, created and distributed the group's first **newsletter and membership mailing**, and applied for and **received a $4,000 grant** from the Western Pennsylvania Conservancy to improve canoe access to the Kiskiminetas River.

JACOBS CREEK WATERSHED ASSOCIATION

At the request of this group, **our watershed specialist designed a streambank stabilization project for Shupe Run**, as it flows near Willows Park and the Coal and Coke Trail in Mount Pleasant.

The design includes adding rock and log vane structures, saw tooth deflectors, and multi-log vane

A rubber duck race brought 100 people and raised $2,700 in support of the Turtle Creek Watershed Association and the Westmoreland Heritage Trail.

deflectors in nine lengths of the stream to slow erosion.

Also, because the stream overflows its banks onto the trail in some places, the design will add grade-break structures on the trail itself. These small, intentional increases in the trail elevation cause water to flow off the surface on both sides.

The design also proposes removing log jams and trees leaning into the stream due to the heavy rains during the year.

Funding for this work came from a $10,000 grant to Jacobs Creek Watershed Association.

TURTLE CREEK WATERSHED ASSOCIATION

We worked with this watershed association, which **installed a kiosk at the Roberts access to the Westmoreland Heritage Trail.**

The two-sided informational kiosk welcomes visitors to the Turtle Creek Watershed and offers information about streambank stabilization.

A second informational kiosk will be installed along the trail in 2019, thanks to $700 in funding received during the year from the Allegheny County Conservation District's Conservation, Leadership, and Innovation Program. This kiosk will be installed along a portion of the trail in Monroeville.

Materials and funding for the first kiosk and signs was provided in 2017 by 84 Lumber and the Dominion Energy Watershed Mini Grant Program.

Also for the Turtle Creek Watershed Association, our full-time AmeriCorps service member helped procure $470 from the Dominion Energy Watershed Mini Grant Program for the **printing of a summer newsletter and "buzz cards"** that give a map and brief facts about the watershed.

She also coordinated a rubber duck race that raised $2,700 that was shared by the Turtle Creek Watershed Association and the Westmoreland Heritage Trail.

Despite a late-season snow, the April event drew 100 people, who paid $5 to float a plastic duck in a tributary of Turtle Creek that runs along the edge of Bear Hollow Park in Murrysville.

The 500-foot-long watercourse took about a half-hour for the ducks to complete and prizes were awarded for first, second, third, and last place.

Our full-time AmeriCorps service member worked on three detailed project reports during the year:

- one explored the feasibility of a possible extension of the Five Star Trail from Youngwood to New Stanton;
- one looked at the current conditions of Saint Vincent Lake in Latrobe and suggested possible ways to stabilize eroding areas; and
- one offered suggestions for remediating problems with the Jacks Run flood control measures in the City of Greensburg.

To prepare each report, she visited the locations, conducted interviews, and researched historical information. For the Greensburg and Five Star Trail projects, she walked the project area.

All documents are now being reviewed by the respective parties.

Our watershed specialist is serving as treasurer of the Western Pennsylvania Coalition for Abandoned Mine Reclamation.

In that role, she and a finance committee are working to create a financial plan for the nonprofit, which reclaims land and waterways polluted by historic coal mining.

The organization received a $13,000 grant in 2018 from the Foundation for Pennsylvania Watersheds for its efforts to raise awareness of abandoned mine pollution.

The group also is preparing for a major joint conference, to be held in Pittsburgh in September of 2019, of the National Association of Abandoned

Mine Land Program, the Pennsylvania Abandoned Mine Reclamation Conference, and the National Association of State Land Reclamationists.

We also continued to **support other, likeminded area organizations** by providing office and meeting space to the Westmoreland Land Trust, serving as the fiscal pass-through for the Troops to Tractors program, and providing bookkeeping and other support to the Five Star Trail and the Westmoreland Woodlands Improvement Association.

We also made our large meeting room available to a variety of regional and local organizations during the year, including the Westmoreland County Beekeepers Association, the National Young Farmers Coalition, and the Southwestern Pennsylvania Commission.

The Pennsylvania Department of Agriculture, Bureau of Plant Industry uses our meeting room once or twice each month to administer examinations to individuals who want to be certified to use pesticides on their property, commercially, or for the government. Some 250 individuals come to take this test each year.

An official state site in Latrobe/Derry measures rainfall, including daily extremes.

In 2018, it registered 14 days when the amount of precipitation set a new record.

Records have been kept from this site since the early 1900s.*

** Pennsylvania State Climatologist*

SCIENTIFIC MONITORING

We are **extremely pleased with the accuracy of our new scientific monitoring system**, which has 61 monitors in place throughout our county to gather real-world data on how well various conservation measures are working in our soils and specific conditions.

Results from the gauge on the GreenForge roof, for example, registered 72.4 inches of rainfall for the year, almost exactly the same as the official data from the National Weather Service, which registered 71.8 inches. The difference, only .6 over an entire year, is not statistically significant.

2018 was the third year of our pioneering efforts to gather real-world data on conservation practices.

Prior to undertaking this work in 2016, we, like most conservation districts, relied heavily on "average data" provided by national and state conservation organizations and on anecdotal evidence from users to judge the effectiveness of various conservation practices.

Even though they were installed in line with the streams' flow, **some of our gauges were disrupted by the continuous and heavy rains during 2018.**

As weather permitted, we were able to get out to these field locations in Jacks Run, and in Sewickley, Loyalhanna, and Mill creeks and get most back on line.

Our staff compiled a monitoring manual, with detailed information on the location of each scientific monitor we installed over the past several years and the procedures for checking them, downloading their data, and maintaining them.

Additionally, multiple members of our staff are cross-training to learn the scientific monitoring program (see page 31).

PennDOT mitigation sites have to be regularly field-monitored for water quality after they are created.

In 2018, we added one new site to that monitoring program: a section of Jacobs Creek near Bridgeport Dam that was improved to mitigate the impact of the highway work at the intersection of PA Route 31 and the Pennsylvania Turnpike (see pages 4-5, 11).

To monitor this new site, we will join a stream monitoring program that is already in place and conducted by the Jacobs Creek Watershed Association and California University of Pennsylvania.

Another PennDOT mitigation site was being constructed during the year at Chestnut Ridge Park, and we gathered baseline data here in preparation for the ongoing monitoring of the soils and vegetation we will conduct when the site is complete in 2019. We also will be watching to see how this area transitions to the larger wetland.

Other PennDOT mitigation sites that we monitored in 2018 include Cherry Creek as it flows through Westmoreland County Community College (monitoring of this site will continue annually through 2021), and Sherrick Run as it flows near U.S. Route 119 (monitoring of this site will continue annually through 2022).

2018 was the second year **the District coordinated a program that monitors mosquito populations for the West Nile and Zika viruses.**

The number of West Nile-infected mosquitos we found was up from 2017 (67 positive samples in 2018 versus 16), no doubt due to the wet and humid summer, which increased the overall mosquito population in the county despite efforts to eliminate their larvae and pupae.


Westmoreland Conservation District
Monitoring Sites in Westmoreland County
Watershed Program
Long-term Monitoring (4)
Stormwater Program
Stream Gauges (4)
Rain Gauges (5)
Best Management Practice Monitors (9)
West Nile Virus Program
Gravid Traps - West Nile Virus Surveillance (52)
BG Sentinel Traps - Zika Surveillance (13)
Kiskiminetas River
Allegheny River
Vandergrift
Chartiers Run
Little Pucketa Creek
New Kensington
Beaver Run
North Washington
Pucketa Creek
Beaver Run Reservoir
Conemaugh River
Loyalhanna Reservoir
Murrysville
Delmont
Turtle Creek
Beaver Run
New Alexandria
Stony Run
McGee Run
Bolivar
New Florence
Loyalhanna Creek
Crabtree
Derry
Trafford
Latrobe
Irwin
Greensburg
Ligonier
Youghiogheny River
Little Sewickley Creek
Sewickley Creek
West Newton
Mount Pleasant
Acme
Donegal
Monongahela River
Monessen
Scottdale
Jacobs Creek
N
W
E
S

Stream Gauges Show Impact of Land Use

Sewickley Creek near Lowber.

Jack's Run in Youngwood.

Two monitors on two streams in the same watershed got drastically different readings when it came to the amount of pollution in the water after a heavy rain.

The top image shows Sewickley Creek near Lowber. It registered 180 parts per million of total dissolved solids* after the September 10 rain.

The bottom image shows Jacks Run in Youngwood. It measured more than 5,000 parts per million of total dissolved solids after the same rain.

Temperature, flood crest stage, and other factors were similar.

What was different is the way the land is used around each stream location.

Sewickley Creek in this area is surrounded by a large amount of undeveloped land and trees.

Jacks Run in Youngwood is surrounded almost entirely by hard, impervious surfaces – roads, rooftops, and a new shopping plaza. Likewise, many of the smaller streams that feed into Jacks Run are also surrounded by dense development and impervious surfaces.

In general, the more rain can sink into the ground naturally, the better the water quality of the nearby streams.

Many older communities like Youngwood were built before stormwater controls were required. But they can be added as new development occurs, and this will happen when the Route 119 corridor through the borough is updated.

Supporting Streams

Impared Streams

Monitoring Location

Percent Tree Canopy in Riparian Buffers

0-9	>26-43	>59-73
>9-26	>43-59	>73-89

Map data collected from the Westmoreland Conservation District's IWRP interactive watershed resource, completed by the District and Ethos Collaborative.

**Total dissolved solids include sediment and common elements such as phosphates and nitrates. Alone, a high concentration of dissolved solids is usually not a health hazard. However, it can produce hard water, which leaves deposits on fixtures. It also can corrode pipes, reduce the ability of soaps to lather, and give water a metallic taste. Aquatic life in the stream may be adversely affected.*

Complaints about swarms of adult mosquitos also increased during the year and we worked with municipalities to address these problems with a variety of remedies, from removing standing water to coordinating two, late-evening ultra-low-volume sprays by the Department of Environmental Protection with a pesticide that passes through the environment very quickly.

Despite the high mosquito populations, only one person in Westmoreland County tested positive for the disease in 2018. There also was one positive case in 2017.

West Nile virus appeared for the first time in Pennsylvania in 2000, and two years later, it was found in Westmoreland County.

Most often, West Nile virus is a mild disease in people, characterized by flu-like symptoms that last only a few days and do not appear to cause any long-term health effects.

It is estimated that 1 in 150 persons who are infected with the virus will develop a more severe form of the disease.

There were no cases of the Zika virus in Westmoreland County or in the continental United States.

Because birds also can contract West Nile virus from mosquitoes, **we established a partnership with Wildlife Works, Inc.,** a wildlife rescue service in Youngwood that rehabilitates injured, ill, and orphaned song birds, birds of prey, and animals.

The wildlife organization agreed to take swab samples of any birds it received for rehabilitation that were exhibiting possible symptoms, and our West Nile virus technician then submitted these samples to the state Department of Environmental Protection for analysis.

Ten samples from birds were submitted in 2018 and three tested positive for the virus. This information helped us know if additional controls might be needed and where. Because the positive samples came from areas of the county with very little human population, it was determined that no additional controls were needed.

We will continue this partnership with Wildlife Works in 2019.

Information on how to reduce mosquito populations was offered to the public by West Nile Virus Program Technician Chelsea Gross at the Earth Day event held at Saint Vincent College in Latrobe.

In late 2018, **we assumed responsibility for surveying the blacklegged tick population in Westmoreland County.**

We gathered adult tick samples from four different trail and recreation sites in four municipalities in the county and sent them to the Pennsylvania Department of Environmental Projection for testing. The lab is looking for any evidence of three common diseases caused by a bite from this tick: Lyme disease, human babesiosis, and human granulocytic anaplasmosis.

Because this sampling program started in November, lab results were not yet available at year-end.

We will continue to collect samples of the blacklegged tick in 2019, when it is in the nymph stage from May to August.

If sampling reveals this insect to be a public health issue, recommendations will be made for controlling its population and educating the pubic on how to prevent being bitten.

Currently, there is more tick-borne disease in Pennsylvania than any other state in America, according to a report by the Centers for Disease Control and Prevention.

In April, **we sponsored a special tire-recycling event** with the help of Westmoreland Cleanways and Recycling.

Tires left lying on the ground collect rainwater, making them a favorite breeding ground for mosquitos, and increasing the threat of West Nile virus and other diseases mosquitoes carry.

The half-day recycling event collected more than 475 tires brought in by residents of 18 different Westmoreland County communities.

Above and Beyond Projects

To do conservation projects that are needed in Westmoreland County, but that are "above and beyond" our funded, mandated duties, we seek out nontraditional sources of funding.

This mainly involves applying for competitive grants from the state and federal governments, and from foundations and organizations. How successful we are in winning these grants is a major factor in determining how many "above and beyond" conservation projects we can do.*

Sometimes, we also receive nontraditional funding from consulting fees or contracts for "above and beyond" projects. In one case this year, we received funding for a project from a private individual.

In 2018, we had a total of $1,744,520 from all sources of nontraditional funding in-hand, and were using it to put 19 "above and beyond" conservation projects in place in our county.** These projects are shown as numbers 1 through 17 on the map on the next page.

In addition to the numbered projects, there were two other "above and beyond" projects – the Integrated Water Resources Plan and the No Mow Signs – that are not numbered or shown on the map because they are countywide efforts. These two projects also are listed below, and a map of details related to the Integrated Water Resources Plan is shown on page 7.

In the following list, all projects are funded by competitive grants (shown with the dollar amount of the award and the funding source), unless indicated otherwise by Consulting Fee Project, Contract Project, or Private Donation.

** Most of these grants are awarded directly to the District. Some are awarded to a partner agency that we work on the particular project with.*

*** Some of the "above and beyond" projects are multi-year efforts.*

Integrated Water Resources Plan*
Management of Water Resources
Countywide
$300,000 Richard King Mellon Foundation

No Mow Signs*
Education Project
Countywide
$1,700 Pennsylvania Association of Conservation Districts Mini-grant

1 **Ann Rudd Saxman Nature Park***
Stewardship Plan Development and Implementation
Hempfield Township
$29,500 PA Department of Conservation and Natural Resources
$15,000 Dominion Foundation
$ 5,000 Community Foundation for the Alleghenies

2 **Bolivar**
Boat Launch and Park Enhancements
Partnership project with the municipality
Bolivar
$40,000 Community Foundation of Westmoreland County

Westmoreland Heritage Trail

3 ***Streambank Stabilization***
Municipality of Murrysville
$62,000 PA Department of Environmental Protection
$40,000 PA Department of Conservation and Natural Resources

4 ***Retrofitting, Adding Additional Drainage***
Municipality of Murrysville – Trafford
Consulting Fee Project: $7,800
Westmoreland Heritage Trail Chapter, Regional Trail Corporation/Westmoreland County Parks

5 ***Information Kiosk Materials***
Partnership project with Turtle Creek Watershed Association
Municipality of Murrysville
$700 Allegheny County Conservation District Conservation, Leadership, and Innovation Program

6 **Acme Dam***
Wetland Improvements
Chestnut Ridge Park
Contract Project: $375,000 PennDOT mitigation funding

7 **Jacobs Creek***
Stream Improvements
Bridgeport
Contract Project: $281,000 PennDOT mitigation funding

8 **Municipal Stormwater Basins***
Retrofits – Six basins total
Municipality of Murrysville
$64,420 Growing Greener

9 **Green Infrastructure Bus Tour**
Awareness/Outreach
Monroeville, Scottdale, Alverton, Youngwood
$1,400 Pennsylvania Association of Conservation Districts Nonpoint Source Pollution Prevention Educational Mini-grant

10 **Lowber Treatment System**
Iron Oxide Recovery
Lowber
$171,000 Growing Greener

11 **Shields Farm Lane***
Stormwater Management
Delmont
$60,000 Growing Greener*
$49,000 Dirt, Gravel, and Low Volume Road Maintenance Program (see page 27)

12 **Shupe Run**
Streambank Stabilization (Design)
Partnership project with Jacobs Creek Watershed Association
Mount Pleasant
$10,000 Pennsylvania Department of Environmental Protection through Section 319 of the Federal Clean Water Act administered by the U.S. Environmental Protection Agency

13 **Oakwood Hills**
Stormwater and Woodlot Management
Ligonier Township
Privately Funded Project: $24,000

14 **First Presbyterian Church of Murrysville and Murrysville Volunteer Fire Company***
Stormwater Best Management Practices
Municipality of Murrysville
$103,000 Growing Greener

15 **Former Jeannette Glass Site**
Stream Day-lighting
Partnership Project with Westmoreland County Industrial Development Corporation
City of Jeannette
Consulting Fee Project: $20,000

16 **McQuaide Dairy Farm***
Agricultural Best Management Practices
Salem Township
$80,000 Growing Greener

17 **Kiskiminetas River**
Canoe Access
Partnership project with Kiskiminetas Watershed Association
East Vandergrift Borough
$4,000 Western Pennsylvania Conservancy

* Funding for these projects was awarded in a prior year. Work began, continued, or was completed in 2018.

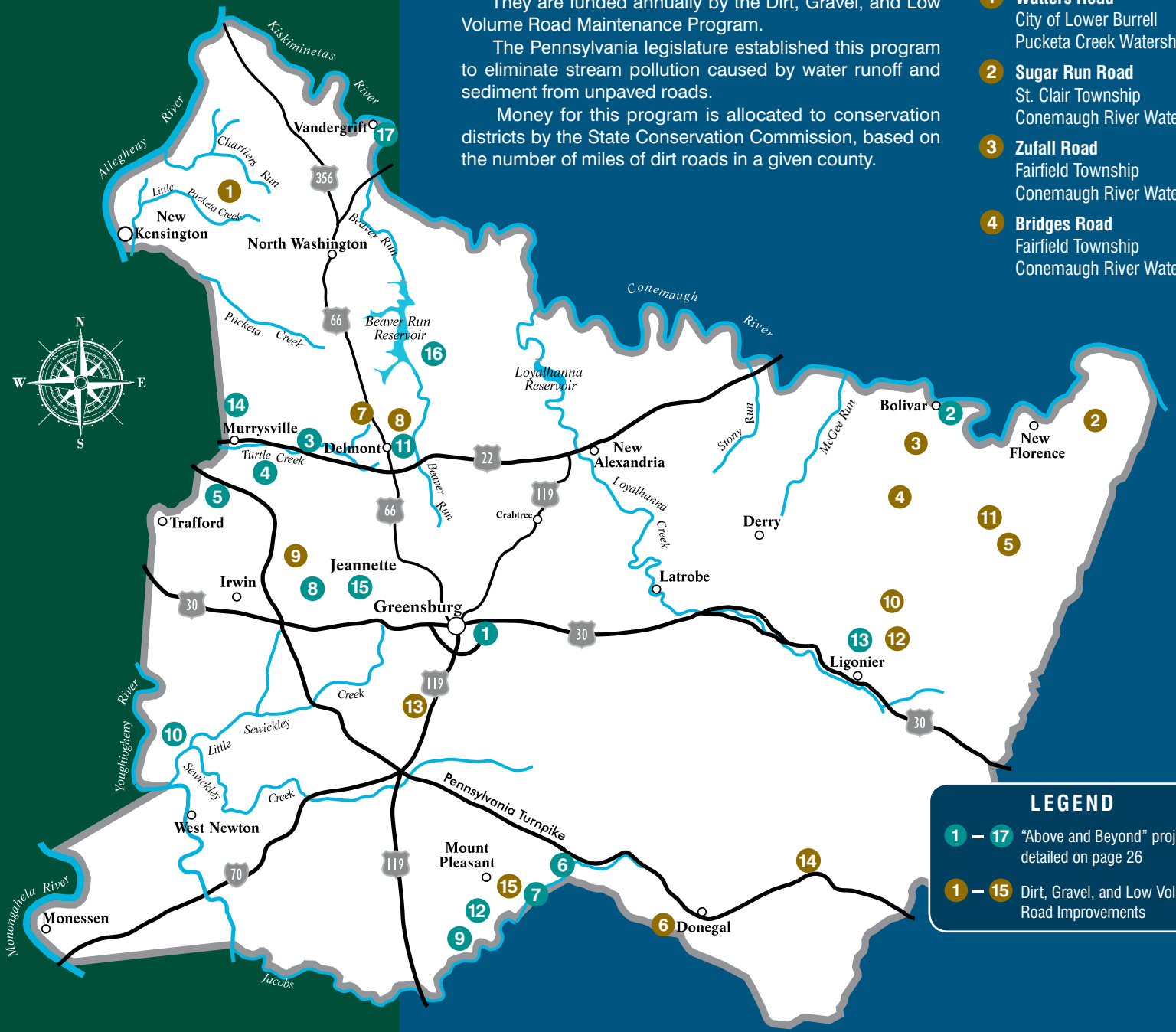
Dirt, Gravel, and Low Volume Road Maintenance Projects

These projects are put in place under a standing District program.

They are funded annually by the Dirt, Gravel, and Low Volume Road Maintenance Program.

The Pennsylvania legislature established this program to eliminate stream pollution caused by water runoff and sediment from unpaved roads.

Money for this program is allocated to conservation districts by the State Conservation Commission, based on the number of miles of dirt roads in a given county.



DIRT AND GRAVEL ROADS

1. **Watters Road**
   City of Lower Burrell
   Pucketa Creek Watershed
2. **Sugar Run Road**
   St. Clair Township
   Conemaugh River Watershed
3. **Zufall Road**
   Fairfield Township
   Conemaugh River Watershed
4. **Bridges Road**
   Fairfield Township
   Conemaugh River Watershed
5. **Gross Road**
   Fairfield Township
   Conemaugh River Watershed
6. **Cummings Road**
   Donegal Township
   Indian Creek Watershed

LOW VOLUME ROADS

7. **Morosini Farm Court**
   Municipality of Murrysville
   Turtle Creek Watershed
8. **Shields Farm Road**
   Delmont Borough
   Beaver Run Watershed
9. **Brush Street**
   Manor Borough
   Turtle Creek Watershed
10. **Berkley Road**
    Ligonier Township
    Loyalhanna Creek Watershed
    Funded in 2018. Work to be done in 2019.
11. **Love Hollow Road**
    Fairfield Township
    Conemaugh River Watershed
    Most work completed in 2018. Paving to be done in 2019.
12. **Peoples Road**
    Ligonier Township
    Loyalhanna Creek Watershed
13. **Wineman Road**
    Youngwood Borough
    Sewickley Creek Watershed
14. **Upper Tabernacle Road**
    Donegal Township
    Indian Creek Watershed
15. **Church Street**
    Mount Pleasant Township
    Jacobs Creek Watershed
    Funding for this improvement was allocated in 2017. Improvements were made in 2018.

LEGEND

- 1 – 17 "Above and Beyond" projects detailed on page 26
- 1 – 15 Dirt, Gravel, and Low Volume Road Improvements

While the immediate impacts of the year's unprecedented rains took much of our energy and focus during the year, we also continued to strategically plan for the future – a future that we hope will include ever-better countywide stormwater management and ever-less flooding thanks to one of our major initiatives, the Integrated Water Resources Plan.

This plan, the first of its type in Westmoreland County, is a blueprint for managing all aspects of our water resources, from drinking water to stormwater.

A key element of the water resources plan is a model stormwater ordinance that will help local municipalities better manage the stormwater runoff that comes with new and re-development projects.

Many of our communities have older infrastructure that was not designed to handle today's volume of stormwater runoff. The IWRP, which was published as a draft in 2018, offers runoff guidelines and creative ways that stormwater management can be built into strip malls, housing plans, and other projects, such as including rain gardens and permeable paving, to lessen the burden on infrastructure.

The IWRP and Westmoreland County's just-adopted "Reimagining Our Westmoreland" strategic plan complement each other in the importance they give to improving and sustaining our area's water resources, and in encouraging economic development while lessening its impacts on water quality and sustainability.

Also during 2018, the District's focus on the future resulted in another major organizational effort – the development of a new strategic plan, created with the help of the Bayer Center.

Two key areas of focus in the plan are District staffing and sustainability. Specific actions have been identified to help us responsibly prepare for a major organizational transition – the retirement of several of our leadership staff in the next few years.

We took the first steps toward these goals by initiating extensive cross-training of staff, investing in new efforts to help younger staff develop leadership skills, performing an inventory of our information technology to see how to best improve this important organizational support system, and making an allocation to our operational reserve.

District board members (left side of photo) work with representatives from the Bayer Center for Nonprofit Management to develop the District's latest strategic plan.

District staff members (foreground) at the annual Engineers' Workshop.

Allocations from both the state and the county were flat in 2018, but income from fees increased due to an increase in the number of both stormwater and erosion and sediment control plans that were filed with our office during the year.

Although we did not increase fees in 2018, we were one of three conservation districts across the state asked to meet with the state legislative budget and finance committee to explain why district fees across the board have been rising.

Our last fee increase was in 2017.

Grants, sponsorships, and donations added to our income and allowed us to plan a new major project – a summer kitchen for our campus – and continue to provide quality outreach programs and publications.

Major private foundations that provided grants to the District during the year included the Katherine Mabis McKenna Foundation (summer kitchen), the Community Foundation of Westmoreland County (summer kitchen), and the Laurel Foundation (education programs and website redesign).

Peoples Natural Gas again was the signature sponsor of our awards reception.

Corporate sponsorships also helped to fund our Partners' Breakfast, Engineers' Workshop, Conservation Directory, and Annual Report.

Our year-end fundraising appeal raised $9,100 from 25 separate donors. This is the second year we have made this appeal to individuals and partner organizations (see page 35).

A number of conservation projects also were made possible with government and private donations during the year. See "Above and Beyond Projects," pages 26-27, for a description of these.

We were able to **make a rare allocation to our operational reserve** in 2018. Although this allocation is something we regularly budget for, it is not something we are often able to achieve because of other budget demands.

The operational reserve is important to long-term financial stability because it provides revenue for future anticipated expenses.

Our auditor reassessed our indirect cost rate and recalculated it at 32%.

This rate essentially reflects the administrative costs – everything from copies to mileage – that we incur when we design and oversee construction of conservation projects.

Many projects that we manage allow us to be partially compensated for these costs.

We completed the work we began in 2017 on a new strategic plan, and our board adopted it.

This is the third plan we have developed with the guidance of the highly respected Bayer Center for Nonprofit Management at Robert Morris University.

Five areas of focus were identified during this process: staffing, sustainability, technology, outreach, and programs. Goals for each area and actions for achieving them also were set.

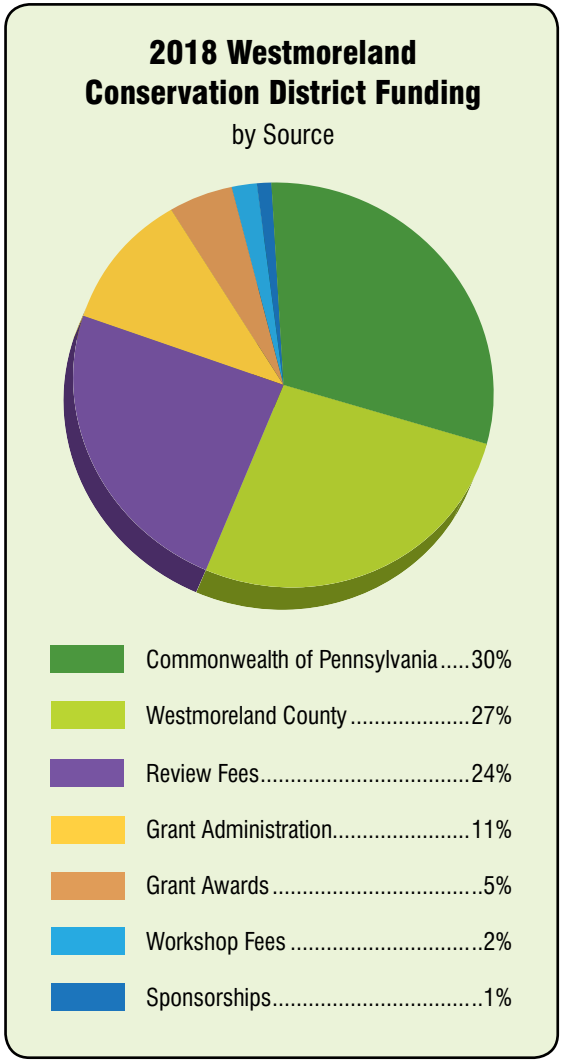
As part of our strategic plan, the Bayer Center

helped us **undertake a comprehensive assessment of our information technology**, including an inventory of our current capacity and identification of our needs.

One of the top priorities identified was to update our firewall – the network security system that controls incoming and outgoing network traffic. Another was our website, which was overdue for an update, and the third top priority was the specialized equipment needed to support the new conservation programs technologist position (see page 32).

Because of ongoing budget constraints, we had not been consistently funding our IT needs at the recommended level of 2% of total budget.

Our board set out to improve that by earmarking a one-time allocation in the 2019 budget to address the three most critical needs, and also by increasing the budget for routine technology improvements.



We advanced plans to create a summer kitchen on our campus.

We visited local farms to gather information from still-standing vintage smokehouses, spring houses, and summer kitchens and found one of the best models on the Lauffer farm – the same family farm our barn originally was part of.

Along with a committee of board, associates, and our architect, our District manager met with caterers and chefs to help identify key design elements and equipment.

The summer kitchen, envisioned as a small outbuilding sited close to our barn headquarters, would continue our effective practice of creating conservation demonstrations – this time demonstrating the many benefits of local agriculture/foods.

It will provide opportunities to foster new, more, and innovative relationships for local agricultural producers, expanding their exposure and, with it, their profitability.

Major funding for the summer kitchen has been provided by the Katherine Mabis McKenna Foundation, Peoples Natural Gas, and the Community Foundation of Westmoreland County.

Joe Dietrick, who served as vice chair of our board since 2016, **resigned late in the year** due to his retirement and pending move to Utah.

Joe was a professional engineer and professional land surveyor with Markosky engineering group.

He was a member of our technical programs and government advisory committees and also served as secretary of the Pennsylvania Association of Conservation Districts since July 2016.

Joe's association with the District goes back to 2008, when he was named an associate director.

Chuck Duritsa, a member of our board since 2010, **was named vice chairman** of the board to fill the vacancy left by Joe Dietrick's resignation.

Emil Bove, president of Bove Engineering Company of Greensburg, **was appointed to the District Board of Directors** in August to fill the unexpired

Board member Joe Dietrick retired in 2018.

Emil Bove was appointed to the District board.

term of Joe Dietrick.

In his work as a municipal engineer for numerous Westmoreland County communities, Emil has been a long-time, valuable partner, helping to ensure that conservation measures are incorporated in municipal infrastructure projects – from streets and sidewalks to water and sewer systems.

From 2013 to 2018, Emil served as an associate director (nonvoting) of the District and has been a member of our stormwater/technical programs advisory committee since 2008.

Pennsylvania State Conservation Commission rules allow the county commissioners to appoint an associate director to fill the unexpired term of a board member.

Reappointed to the board of directors were: Chuck Duritsa (public director; four-year term); Bill Doney (farmer director; four-year term); and Ted Kopas (county commissioner; one-year term).

Four associate board members were reappointed during the year: Bruce Corna, Karen Jurkovic, Barbara McMillan, and Theresa Gay Rohall.

Their terms run for two years.

Associate directors are nonvoting members of our board.

The Pennsylvania State Conservation Commission determines **which organizations are permitted by law to nominate individuals to serve on district boards**.

In 2018, the commission made some changes to the Westmoreland Conservation District's nominating organization list, removing the Women's Business Network, Laurel Highlands Chapter; and the League of Women Voters of Westmoreland County, and adding the Forbes Trail Chapter of Trout Unlimited.

To help our staff develop leadership skills and make important partnership connections, the District board gave approval for our watershed program manager and our erosion control specialist/compliance coordinator to attend Leadership Westmoreland, a nine-month program sponsored by the Westmoreland County Chamber of Commerce.

This was the first time District staff participated in this program.

Once each month from September 2018 through May of 2019, our two District staff members join attendees from other companies and organizations for a day of talking with county decision makers, visiting county facilities and companies, and exploring the tenants of leadership.

They also are asked to give back by helping with a community project, such as identifying businesses that will host student interns.

Cross-training is another important element of expanding the knowledge base of our staff and preparing our organization for the future, and we made great strides in this area in 2018.

Our technical programs secretary has been learning our plans and permits coordinator's work and she, in turn, is learning the job of our fiscal administrator.

Our full-time AmeriCorps service member is learning the West Nile virus program technician's work and she, in turn, is learning the job of our nutrient management specialist/agricultural conservation technician (see below).

Also, our landscape architect/stormwater technician, West Nile virus program technician, technical programs secretary, and part-time AmeriCorps service member all have been actively learning the scientific monitoring program we put in place several years ago.

Funding for our nutrient management specialist/agricultural conservation technician held firm in 2018, but the position continues to be only three-quarters time.

Obviously, we would like to see it expanded to full-time, not only because of the current workload but also because of the potential to support more and new agricultural opportunities in the future, such as industrial hemp (see pages 15-16).

Until additional funding can be secured, we are employing a cross-training program in which our West Nile virus program technician is learning the specifics of the ag conservation program area and providing support, especially during the winter months when her primary work is less demanding.

During this time of the year, she helped to plan and promote the Southwest Pennsylvania Soil Health Conference, the ag erosion and sediment control workshops, and provided some help for farmers developing manure management plans (see pages 14-16).

The Forejt family, represented by Gregory and Lesley (right), received the Conservation Farmer of the Year Award, presented by Greg Phillips and Ted Kopas (left).

Malcolm Sias (right) received the J. Roy Houston Partnership Award. He is joined in this photo by his wife, Patti, and District Board Members Conrad Donovan and Kim Miller.

When our **green infrastructure specialist** resigned late in the year, we **reconfigured the position** to provide much-needed technology support to our technical programs and corporate and outreach efforts.

The new conservation programs technologist will provide computer-assisted designs, data-management assistance, mapping and charts for a variety of District projects; help with maintenance of the environmental monitoring equipment; and help with web design, and computer applications for our education and outreach.

Our goal is to fill the new position in early 2019.

Our second AmeriCorps service member joined us in August.

Kodie Rearick is working half-time with the District and half-time with the Westmoreland Land Trust, an organization that preserves open space in Westmoreland County and has its office in our barn headquarters.

Kodie has a bachelor of science in wildlife and fisheries science from Penn State University and has worked for an environmental company, a natural heritage association, and the Pennsylvania Department of Conservation and Natural Resources.

The District's newest AmeriCorps member, Kodie Rearick (foreground), helps representatives of local watershed groups survey Pine Run near West Leechburg for macroinvertebrates, a measurement of water quality.

For the District, she is doing a variety of work in support of our technical programs, including monitoring stream restoration projects and working on technical information documents.

The benefits we receive from our first-ever AmeriCorps service member who joined us full-time in August of 2017, prompted us to apply for this second position.

Hank Bradish, a sophomore studying environmental engineering at Geneva College, **joined us as a student intern.**

Among other things, Hank helped compile the draft Integrated Water Resources Plan (see page 6).

Our receptionist was **promoted to receptionist/administrative assistant**.

Some 300 people joined us at our **annual awards reception to recognize the Forejt Family** as

Al Barnett was posthumously inducted into the District's Hall of Honor. Shown with the plaque honoring Al is his wife, Helen, his son, Dennis, and his daughter, Debra (all seated). District representatives making the award were Board Members Bill Doney and Ron Rohall.

Conservation Farmer of the Year, **Malcolm Sias** as the J. Roy Houston Partnership Award recipient, and to posthumously induct **Al Barnett** into the Hall of Honor.

The Forejts run one of Westmoreland County's largest agricultural operations, Windy Heights. On the 149-acre home farm and network of 52 rented parcels, they employ a variety of good conservation practices – including a split application of nitrogen, native grasses and legumes, crop rotation, and no-till planting of every field crop except early sweet corn.

Sophisticated technology, including a GPS-guided planter/sprayer and drift-reducing nozzles, also supports the Forejts' conservation efforts by ensuring that chemicals aren't over-applied and lessening the chance for drift. On pastureland, weeds are controlled by mowing instead of spraying.

The Forejts have a Natural Resources Conservation Service Grazing Plan, a Conservation Plan, a Manure Management Plan, and participate in the Conservation Stewardship Program. Their home farm was the first in the county to be preserved through the Westmoreland County Agricultural Land Preservation Program.

Malcolm Sias, in his 40 years with Westmoreland County Parks and Recreation, has expanded the acreage, amenities, and activities at Westmoreland County's 10 parks, and built more than 40 miles of walking/biking trails throughout Westmoreland County.

He was central to an effort in the mid-1990s that added an entirely new park to the county system – the 26-acre Sewickley Creek Wetlands near New Stanton that is not only a peaceful place to observe birds and wildflowers, but also a hard-working conservation practice that continuously manages stormwater, filters pollutants from the water, and helps to prevent flooding downstream.

Malcolm worked with our forester and others to develop a management plan for the 1,275-acre second-growth forest in the Loyalhanna Gorge. And he put good stewardship practices in place on wooded portions of historic Hanna's Town and Ann Rudd Saxman Nature Park.

Malcolm and his staff also have been a long-time partner in the District's annual Envirothon.

Al Barnett was posthumously inducted into the District's Hall of Honor.

Al served for more than 25 years on the Westmoreland Conservation District board as a volunteer director.

An avid hunter and fisherman, Al represented the sportsmen to the District's board, a large segment of the local population with a keen interest in water quality, forest health, and other areas where conservation plays an important role. It was a long and beneficial partnership that, among other things, helped the District reach thousands of people over the years through a conservation display in the sportsmen's tent at Westmoreland County Fair.

Al took his service on the District board very seriously, and always made an effort to attend and participate in meetings, even in later years when his health made that more difficult. In 22 years of active board service, Al's attendance rate was more than 90%. He could always be counted on to cast his support at those meetings behind initiatives that advanced the best interests of the organization.

We made our barn and new paved parking area available for two nonprofit partner organizations to host events and, in the process, **introduced some new audiences to conservation.**

The Sewickley Creek Watershed Association held its first-ever show car cruise in June.

Despite the threat of rain, 32 cars participated, including a 1952 Citroën Traction Avant (the first mass-produced front-wheel drive car); a 1946 Nash Slipstream with all accessories, including a "swamp box" air conditioner that used ice for cooling; and a

Sewickley Creek Watershed Association hosted a car cruise at our headquarters, bringing a new audience to conservation.

1956 Mack truck.

The event included a quilt display and food, and raised about $1,000 for the watershed association. We plan to host it again next June.

We also hosted the Westmoreland Land Trust's 10th anniversary celebration in September, which attracted more than 120 attendees who enjoyed American roots music, heavy hors d'oeuvres, and an auction of items for the great outdoors.

The land-conservation organization was formed in 2008 and has conserved 275 acres in seven Westmoreland County communities.

More than 120 people attended the Westmoreland Land Trust's 10th anniversary party, which also introduced people to our barn headquarters and mission.

Our **electronic communications program** continued to periodically issue quick conservation news and a calendar of upcoming events.

Indications are that this information is well-received, with up to one in every three recipients opening the email and 16% of those clicking on a link for more information (the industry average 'click rate' is 9%).

Likewise, our annual report – available both in hard copy and electronically – continues to be a trusted source of information on the District's extensive accomplishments.

We were fortunate to **have the help of volunteers** for some of our conservation projects.

Seven employees of Peoples Natural Gas spent a day on our campus in August doing some needed updates and maintenance. They painted our shed and built a ramp for it, and cleaned the informational signs on the Stormwater Trail.

We also benefitted from the help of volunteers with the tree planting in Ann Rudd Saxman Nature Park (see pages 16 and 18), the joint tire-recycling event we sponsored with Westmoreland Cleanways and Recycling (see page 25), and the Envirothon (see pages 19-20).

Volunteers from Peoples Natural Gas spent a day doing some needed updates and maintenance to our facilities.

Thanks to the support of the Westmoreland County Public Works Department, **we were able to do needed maintenance on our barn headquarters,** including painting and sealing the barn roof, replacing the gutters, repairing the stormwater management pond, painting and staining the interior entrance doors, and reconfiguring cubicle space for our stormwater management staff.

Financial Statement

Concise Statement of Financial Position

Combined Funds - December 31, 2018

ASSETS

Cash	$ 1,317,947
Grants Receivable.	$ 216,168
Capital Assets	$ 266,591
Prepaid Expenses	$ 12,377
Total	$ 1,813,083

LIABILITIES AND NET ASSETS

Current Liabilities	$ 341,165
Net Assets	$ 1,379,847
Long Term Liabilities	$ 92,071
Total	$ 1,813,083

Concise Statement of Activities

Combined Funds - Year Ending December 31, 2018

SUPPORT

Westmoreland County	$ 671,685
State Grants	$ 1,002,945
Administrative Services	$ 92,620
Consulting, Planning & Fees	$ 559,415
Room Rental/Interest	$ 5,448
Unclassified Operating Revenues	$ 58,561
Grants & Contributions	$ 197,715
Special Projects/Intergovernmental	$ 94,768
Total	$ 2,683,157

EXPENDITURES

General Conservation	$ 1,624,353
Special Projects	$ 938,578
Capital Outlays	$ 19,981
Other	$ 48,673
Total	$ 2,631,585
Excess of Revenue	$ 51,572
Proceeds of Long Term Debt	$ 17,981
Net Change in Fund Balance	$ 69,553
Fund Balance - Beginning	$ 1,116,879
Fund Balance - End	$ 1,186,432

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ADVISORY COMMITTEES

These committees are made up of community volunteers, District board members, associate board members, and staff members. We very much appreciate all the volunteers who provide their professional expertise and give their time to help develop and sustain the District's programs.

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Thank you to our state legislators and county commissioners, who allocate funding every year for the District.

State funding supports many of the core conservation programs we offer, including programs delegated to us by the state in agriculture, post-construction stormwater management, erosion and sedimentation control, and dirt, gravel, and low volume roads.

County funding has been instrumental in helping us attract significant additional dollars for "above and beyond" conservation improvements throughout Westmoreland County (see pages 26 - 27).

Westmoreland County State Government Officials

Rep. Frank Dermody

Rep. George Dunbar

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Westmoreland Conservation District

J. Roy Houston Conservation Center • 218 Donohoe Road • Greensburg, PA 15601

724-837-5271 • Fax: 724-837-4127 • website: wcdpa.com • email: wcd@wcdpa.com

District staff (l-r): Kathy Hamilton, Dan Griffith, Tony Quadro, Chris Droste, Chelsea Walker, Chelsea Gross, Alyssa Harden, Sandy Dzendzel, Karen Barnhart, Sandy Donovan, Andrea Halfhill, Christie Sebek, Greg Phillips, Jessica Kane, Rob Cronauer, Jen Novak, Jim Pillsbury, Kodie Rearick, Mark Jackson.