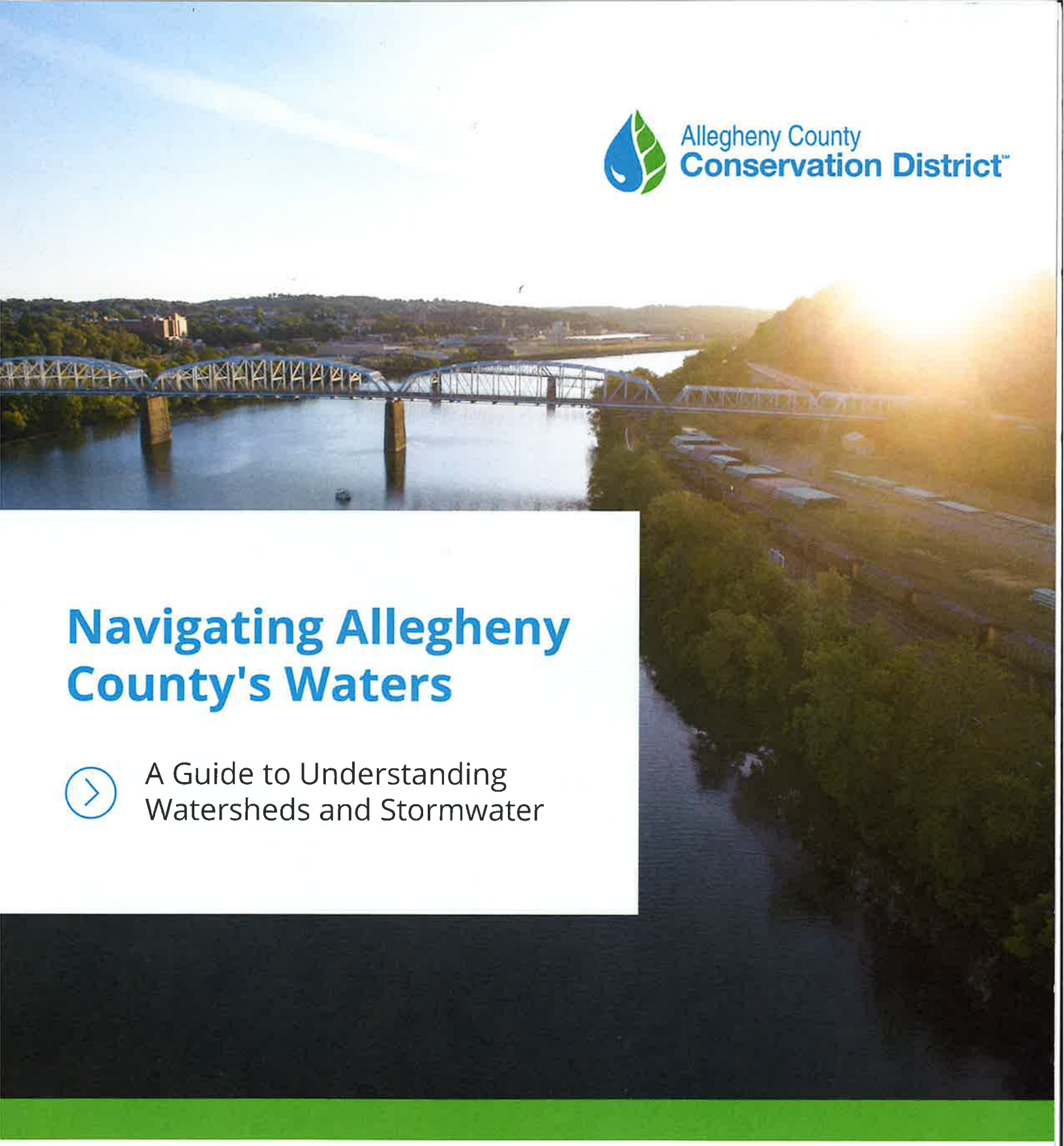
Allegheny County
Conservation District



Navigating Allegheny County's Waters

A Guide to Understanding Watersheds and Stormwater

ACCDPA.ORG

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Protect, Preserve, and Restore

Allegheny County's Natural Resources

ACCD has been serving communities in Allegheny County through expertise in natural resource management since 1948.

Mission

The Allegheny County Conservation District is an urban conservation district that engages and leads through partnerships, innovation, and implementation to conserve, promote, and improve Allegheny County's natural resources.

Vision

The Allegheny County Conservation District envisions an educated and engaged public, clean water, and a sustainable future.

Purpose of This Guide

Rivers, streams, springs, and wetlands are some of the water resources on which Allegheny County depends. Services provided by surface water include drinking water, recreation, habitat, and beautiful viewsheds. Communities flourish when their water resources are healthy.

Allegheny County Conservation District (ACCD) protects, restores, and preserves the water resources of the county for improved ecological and community benefit. For example, ACCD has partnerships to build green infrastructure and stormwater best management practices that infiltrate clean water back into the groundwater system. ACCD enforces erosion and sediment control measures to keep soil on land and out of waterways. Finally, ACCD envisions, through education, improved natural resources.

This guide showcases watersheds of Allegheny County and programs and projects that improve water resources. It illustrates watersheds, their sources of impairment, how to plan for healthier resources, and implementation examples. In addition, the guide outlines all of ACCD's programs that contribute to the conservation of natural resources in Allegheny County.

Financial and other support for the "Watershed Planning and BMPs for Municipalities" project has been provided by the Department of Environmental Protection's Environmental Education Grants Program.

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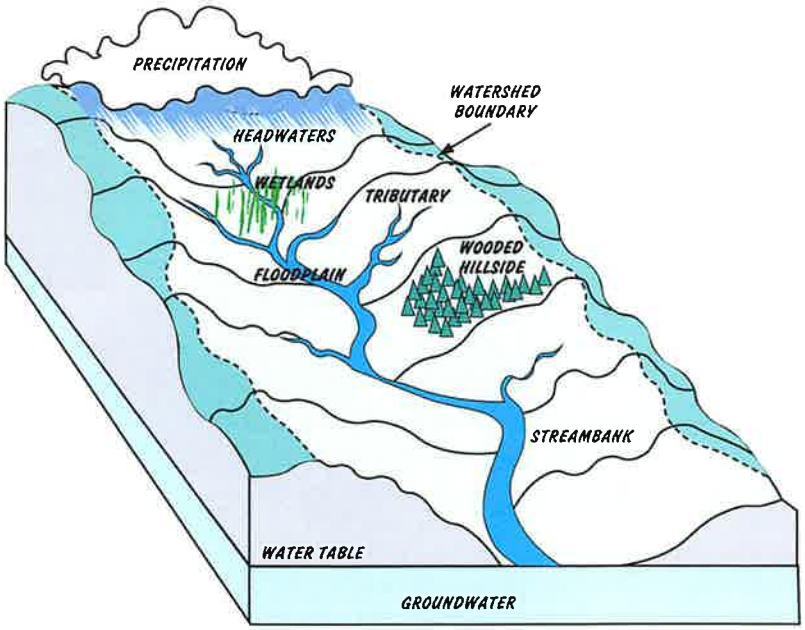
Watershed Overview

In Allegheny County, many streams are damaged by pollutants from erosion and sedimentation, stormwater runoff, and abandoned mine drainage. These pollutants impact our day-to-day lives, increasing drinking water costs, decreasing property values, and causing loss of land. ACCD staff works with local governments and communities to solve these problems.

What Is a Watershed?

A watershed is an area of land that drains to a common point, such as a stream, lake, or wetland.

The hills and ridges of the landscape form watershed boundaries. Watersheds can be small or large. Small watersheds are nested within larger watersheds until they reach an ocean.



We All Live Downstream.

Everyone lives in a watershed. Actions taken by those upstream, impact the people and environment downstream. Water in local creeks, rivers, and reservoirs becomes the source of drinking water for downstream communities.

Watershed Planning

Watershed plans are used to strategically identify areas to improve, protect, and preserve a watershed.

They are intended both to provide an analytic framework to restore water quality in impaired waters and to protect water quality in other waterways. There are a variety of ways to complete watershed planning.

Why Plan?

Local planning initiatives typically tackle problems or seek to improve quality of life. Watershed planning is no different.

Some watershed plans are developed to address continuing watershed issues, like degrading fish habitat. Others seek to address severe pollution problems, like abandoned mine drainage or heavy sediment loads.

Everyone lives in a watershed, and its components, including landscape, water, plants, and animals, shape human interaction with nature. Knowing a watershed involves learning the natural processes working within its boundaries.

Streamline Watershed Planning Tool

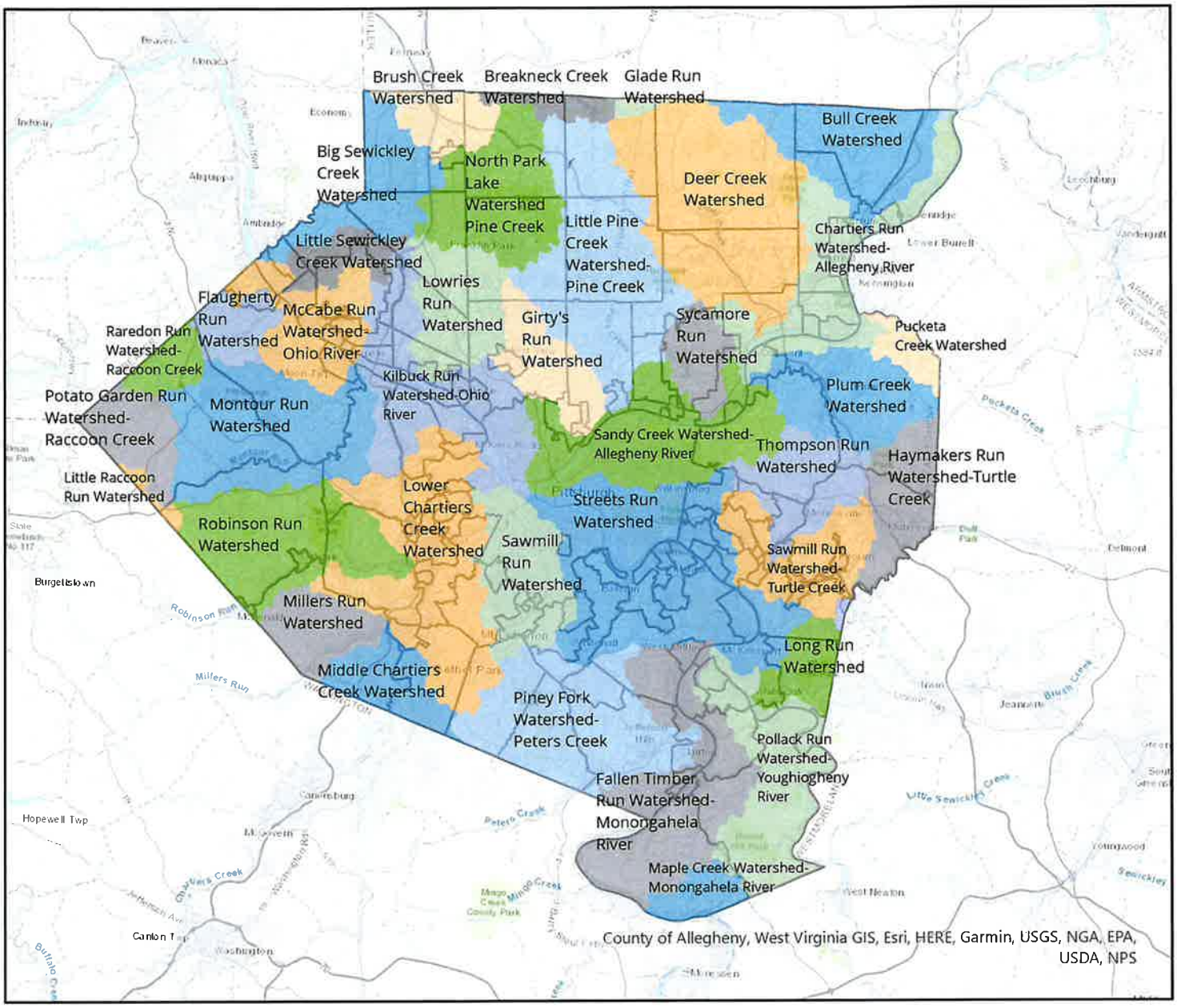
In the Plum Creek Watershed, ACCD is leading a streamlined watershed planning process to reduce the timeline for plan development. Leveraging a combination of municipal input, in-house technical expertise, existing spatial data layers, and innovative modeling web applications, ACCD can identify key areas for intervention and prioritize actions that will yield the greatest benefits.

Project Partnerships

ACCD completed the Montour Run Watershed Assessment and Implementation Plan and is designing and building projects from the plan in partnership with watershed municipalities.

Pictured Here: A rain garden installation is in progress at Findlay Township Community Center.

Watersheds of Allegheny County



About the Map

The map is color-coded by watershed. Municipal boundaries are depicted as lines.

Legend

Allegheny County Watersheds

Allegheny County Municipalities

Stormwater Overview

Forests, wetlands, and meadows allow water to infiltrate into the ground when it rains. There, the water can be utilized by plants and recharge the groundwater. Development, which adds impervious surfaces, inhibits water infiltration. Water can no longer soak into the ground. Instead, it runs off land and creates stormwater.

ACCD has worked in several watersheds to design and install practices to capture, filter, and infiltrate stormwater runoff before it reaches streams or storm sewer systems.

What Is Stormwater?

Stormwater, a nonpoint source pollutant, is the runoff generated when precipitation from rain and snowmelt events flows over land or impervious surfaces without soaking into the ground. This contributes to many issues in our waterways.

Stormwater runoff collects and transports pollutants to surface waters. Runoff causes sudden increases in the amount and speed of water flowing into streams, resulting in increased erosion of streambanks and localized flooding. Stormwater runoff draws heat from concrete and asphalt as it travels, causing river and stream temperatures to rise, which is harmful to aquatic plants and wildlife.

Project Implementation

Monroeville Public Library experienced flooding during heavy rain events. To address this problem, ACCD obtained a grant to install a new permeable paver access drive with handicap parking, a rain garden, and improved drainage at the main entrance doors.

Nonpoint Source Pollution

Nonpoint Source (NPS) pollution results from land runoff, rainfall or snowmelt precipitation, atmospheric deposition, drainage, and seepage. NPS pollution, unlike pollution from industrial and sewage treatment plants, comes from many diffuse sources. As runoff moves, it picks up and carries away natural and human-made pollutants, like soil from eroding streambanks, sediment from improperly managed construction sites, and herbicides from agricultural and residential sites. This pollution is then deposited into lakes, rivers, wetlands, coastal waters, and groundwater.

Stormwater Control Measures

Stormwater control measures (SCMs), also known as Best Management Practices (BMPs), are designed to manage stormwater runoff and mitigate the effects of development on local water quality.

These measures aim to reduce pollution, prevent erosion, manage flow rates, and promote natural infiltration of rainwater. Different SCMs are employed to address specific aspects of stormwater management.

Stormwater Regulations

Earthmoving activities during construction for development can cause sediment to flow into waterways and storm sewers. Sediment pollution negatively impacts people, aquatic life, and infrastructure. Sediment also contributes to flooding and can alter stream flow, causing erosion and property loss.

In order to develop land, current reguations require stormwater control measures (SCMs). SCMs control the rate, volume, and water quality of stormwater flowing from the developed landscape. They remain in place forever and must be maintained regularly to manage excess stormwater from the built environment. Correctly built and maintained SCMs limit flooding and improve water quality in communities.

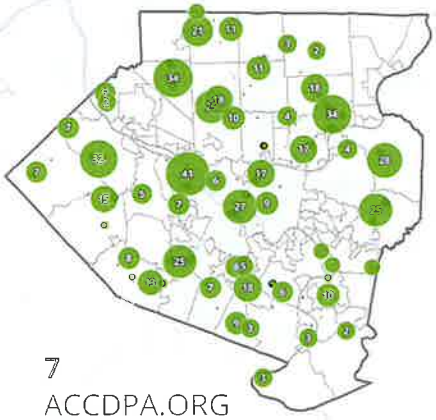
ACCD's Role in Regulating Stormwater

ACCD maintains a delegation agreement with PA Department of Environmental Protection that requires the organization to:

- Conduct educational programming about erosion and sedimentation control and National Pollutant Discharge Elimination System (NPDES) Permitting.
- Receive, review, and process NPDES Permit applications.
- Investigate and inspect complaints related to earth disturbance activities and NPDES permitted sites.

Inspections

ACCD inspects sites from construction start to project completion to ensure erosion and sediment controls as well as stormwater controls are implemented correctly.



The Flow of Development in Allegheny County

For the first time in its history, ACCD has created datasets and mapped NPDES permit applications and locations of SCMs in Allegheny County.

Scan the code to view the data online.

Examples of Stormwater Control Measures

Proper design, implementation, and maintenance are keys to long-term success of any stormwater control measure (SCM).

Choosing the Right SCM

Stormwater control measures (SCMs) either infiltrate stormwater back into the ground or slowly release it back to the landscape to alleviate flooding from overwhelmed storm sewer systems.

While infiltration is the preferred method for controlling stormwater, a site evaluation should be conducted that includes topography or landform, geology, and soils to determine what type of SCM should be used.

Soil is the foundation for infiltration to occur, and the right soil is essential for SCMs that rely on infiltration. Some examples of SCMs that infiltrate stormwater include rain gardens, bioswales, and pervious pavement.

If infiltration is not a viable option, other SCMs can manage the rate and volume of runoff released over time. Some examples of these SCMs include detention basins, constructed stormwater wetlands, and blue roofs also known as rooftop detention.

Across Allegheny County, hundreds of SCMs currently treat runoff.
These are a few examples of SCMs that have been installed to reduce stormwater runoff and associated pollution.

A green roof, or vegetated rooftop, absorbs rainwater, controlling the volume and velocity of runoff to help prevent flooding and reduce stress on stormwater systems.

A detention pond or basin temporarily holds and manages runoff to control quantity and timing of stormwater discharge to downstream water bodies.

Rain gardens are vegetated areas with shallow depressions that allow runoff to be absorbed rather than flowing into storm drains or water bodies.

ACCD Programs

PROTECT

Chapter 102
Erosion and Sediment Control

Chapter 105
Dam Safety & Waterway Management

Livestock Compliance and Regulations
Responsible Livestock Management for Clean Water

PRESERVE

Farmland Preservation
Preserving Farmland for the Future

RESTORE

Watersheds
Cooperative Approaches to Clean Water

Agriculture & Soils
Supporting Healthy Soils and Sustainable Farms

Dirt, Gravel & Low Volume Roads
Safe Roads, Healthy Streams

Agriculture Conservation Assistance Program
Best Management Practices for Farms

Scan the code to learn more about ACCD's programs.

Program Highlights

Regulatory Programs

Chapters 102 & 105

Erosion & Sediment Control
Dam Safety & Waterway Management

Central to ACCD's mission to protect Allegheny County's natural resources is managing the detrimental effects of stormwater. Stormwater is a major contributor to erosion, sediment pollution, and the health of our region's ecosystem. ACCD developed the NPDES permit review fee structure based on disturbed acreage, stormwater discharge points, and green infrastructure to align with current development trends in the county. ACCD's fee structure offers opportunities for credits related to the implementation of green infrastructure.

To protect streams, ACCD has regulatory authority through an agreement with PA Department of Environmental Protection to operate Chapters 102 and 105.

ACCD's review process includes pre-application and pre-construction meetings as well as expedited review options to help applicants get the permit they need to start construction.

Grant Funding

Dirt, Gravel & Low Volume Roads

Dirt, gravel, and low volume roads (DGLVR) are an essential part of the transportation system and a significant source of pollution. Water runs along roads, picks up pollution, and delivers it to nearby streams or lakes.

ACCD has awarded over $2 million in grants to eligible municipalities in Allegheny County to implement Environmentally Sensitive Maintenance Practices on local roads.

Every year, projects are funded that promote cost-effective, environmentally-sound maintenance practices to correct pollution and improve safety.

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To learn more about ACCD's work to protect, restore and preserve Allegheny County's natural resources, **visit accdpa.org.**