



PENNSYLVANIA CLEAN WATER LEGISLATIVE BRIEFING BOOK

A State Legislator's Guide to Protecting
Pennsylvania's Waterways for the Future

2024–2025
3rd Edition

A person wearing a light-colored shirt is holding a black mesh fishing net. The net is filled with water and contains a fish. The background shows a wooden bridge over a body of water, with sunlight filtering through the trees, creating a dappled light effect on the water and the bridge. The overall scene is outdoors and appears to be a fishing spot.

TABLE OF CONTENTS



OUR WATERS	4
PENNSYLVANIA’S MAJOR WATERSHEDS	6
Potomac & Susquehanna River Watersheds.....	8
Delaware River Watershed.....	9
Ohio River Watershed.....	10
Genesee River and Lake Erie Watersheds.....	11
LEGISLATIVE PRIORITIES	12
Establish a Dedicated Fund for Watershed Restoration	14
Increase Funding for State Special Environmental Funds.....	16
Provide Adequate Funding for State Resource Agencies	18
Restore Fair Share Funding to Basin Commissions	20
Support the Pennsylvania Game Commission and the Pennsylvania Fish & Boat Commission	22
IMPORTANT ISSUES	24
Investing in the Agricultural Conservation Assistance Program.....	26
Cleaning Up Abandoned Mine Lands	28
Advancing Environmental Justice.....	30
Prioritizing Green Stormwater Infrastructure.....	32
Combating Combined Sewer Overflows (CSOs)	34
Addressing Lead in School Drinking Water	36
Prioritizing Equity in Public Water Systems	38
ACKNOWLEDGEMENTS	39
REFERENCES	40
GLOSSARY	41

Grant funding was made possible through the Foundation for Pennsylvania Watersheds (FPW) and is intended to support outreach and education pursuant to water quality impacts, funding needs, and pollution policy concerns.



OUR WATERS

Kristin Reilly, Choose Clean Water Coalition

Pennsylvania is home to

124 state parks

26 water trails

2.2 million acres of forest land

19 national parks

3 national wildlife refuges



While Pennsylvania has the highest density of stream miles per acre of any state in the continental United States, one-third of these stream miles are listed as impaired and unsafe for their intended use. This means that drinking water, recreational activities, and sustenance fishing can be dangerous in many local waterways across the Commonwealth. This is even more prevalent in low-income communities and communities of color, as many of these residents also face existing environmental injustices to their air, water, and land.

The Keystone State's 86,000 miles of waterways provide critical resources to hundreds of communities and return billions of dollars in economic value to small businesses, agriculture, recreation, tourism industries, and tax revenues. These public lands are economic engines for surrounding communities, serve as the outdoor playground for a majority of Pennsylvania residents, and naturally filter the sources of the water we drink. Whether focused on safe drinking water, supporting farmers, or addressing pollution from abandoned mines, each of the legislative requests in this Clean Water Legislative Briefing Book highlights a return on investment in one of our most precious resources—our rivers and streams.

Recent polling shows that most Pennsylvanians, whether from urban, suburban, or rural communities, support increased state investments in clean water programs.¹ Enacting policy recommendations in this book will advance sustainable solutions to Pennsylvania's water challenges, maintain the integrity of the Commonwealth's natural systems, and promote public health, all while addressing the needs of municipalities, industry, agriculture, business, and those who have been overburdened by negative environmental impacts. By drafting legislation to support these policy recommendations, legislators commit to upholding the desires and needs of their constituents, which are inextricably linked to the health of their waterways and the Commonwealth's economy.



Photo credit: Will Parson/Chesapeake Bay Program

A Great Egret stands in a marshy area with a pond and dense green vegetation in the background. The bird is positioned in the lower-left foreground, facing right. The background is filled with lush green plants and a body of water reflecting the surrounding foliage. A semi-transparent grey box is overlaid on the center of the image, containing the title text.

PENNSYLVANIA'S MAJOR WATERSHEDS



**POTOMAC & SUSQUEHANNA RIVER
WATERSHEDS | Page 8**

Central Pennsylvania, a part of the
Chesapeake Bay Watershed

DELAWARE RIVER WATERSHED | Page 9
Eastern Pennsylvania

OHIO RIVER WATERSHED | Page 10
Western Pennsylvania

**GENESEE RIVER & LAKE ERIE
WATERSHEDS | Page 11**

Smaller Pennsylvania Watersheds



POTOMAC & SUSQUEHANNA RIVER WATERSHED

Michael Mehrazar, PennFuture

Introduction

The central region of Pennsylvania, encompassing more than 50 percent of its landmass, is characterized by the prominence of the Susquehanna and Potomac watersheds—two vital river systems essential to both the Commonwealth’s and Chesapeake Bay’s economic and ecological integrity.

The Susquehanna River begins near Cooperstown, New York, and flows through Pennsylvania cities like Wilkes-Barre and Harrisburg before reaching the Chesapeake Bay in Havre De Grace, Maryland. Fed by numerous tributaries, the Chesapeake Bay watershed is influenced by cities like Scranton, Williamsport, Lancaster, and York.

Although the Potomac River’s main stem doesn’t directly reach Pennsylvania, key tributaries like Conococheague Creek and Rock Creek are significant. Conococheague Creek, flowing through Chambersburg, is renowned for its excellent rock bass. Meanwhile, Rock Creek holds historical importance, traversing Gettysburg battle sites, and served as a major Underground Railroad artery.

Photo Credit: Will Parson/Chesapeake Bay Program

Background

Since the signing of the Chesapeake Bay Agreement in 1983, Pennsylvania has been committed to collaborating with state and federal partners to comprehensively address the sources of pollutants throughout the Bay watershed. Pennsylvania plays an outsized role in this process, with the Susquehanna River alone contributing half of the freshwater flowing into the Bay daily. Unfortunately, this also includes the discharge of excess nitrogen, phosphorus, and sediment downstream, leading to harmful outcomes such as algal blooms and dead zones. The largest sources of these pollutants in Pennsylvania’s rivers and streams come from nonpoint source pollution like agriculture and stormwater runoff.

In 2014, Pennsylvania entered the latest Chesapeake Watershed Agreement, which outlined ten goals and 31 measurable outcomes for pollution reduction targeted to be achieved by 2025. Despite their progress, Pennsylvania is poised to fall short of the majority of its commitments by 2025. **This shortfall doesn’t merely affect the Chesapeake Bay; it reverberates across the lives of millions of Central Pennsylvanians who depend on local creeks and streams for drinking water, economic sustenance, and recreational activities.** The gravity of these challenges is exacerbated by emerging issues like rapid development and the escalating impacts of climate change, which bring heightened heat and flooding. These circumstances underscore the pressing need for urgent action to address and mitigate these interconnected issues.

The major obstacle to achieving these goals has been insufficient investment from the Commonwealth. Frankly, the implementation of best management practices (BMPs) to reduce pollution runoff comes with a hefty price tag. According to the *“Underfunded and Polluted: Solutions to Fund Clean Water in Pennsylvania and the Chesapeake Bay Watershed”* report, there is an estimated budget shortfall of \$325 million per year. Finding the resources to close this gap remains the chief challenge for lawmakers.²

Nevertheless, there are encouraging signs of progress. The 2022 budget marked a significant step forward, earmarking more than \$800 million for investments in clean water, land conservation, infrastructure, parks, energy efficiency, and forests. Included in this was the establishment of the Clean Streams Fund, which is dedicated to the restoration and protection of rivers and streams statewide. This initiative encompasses the Agriculture Conservation Assistance Program (ACAP), a crucial cost-sharing program aiding farmers in adopting conservation BMPs.

Unfortunately, the funding for the Clean Streams Fund is slated to expire after 2026, and that represents but a fraction of what we ultimately need. To ensure the sustained success of these efforts, consistent financial support for the Department of Environmental Protection (DEP), Department of Agriculture (PDA), Department of Conservation and Natural Resources (DCNR), and County Conservation Districts (CCDs) is imperative. Their capacities directly impact public health and the provision of clean water—an essential constitutional right for every Pennsylvanian. The preservation of rivers and streams in the Susquehanna and Potomac watersheds must serve as a lasting legacy for future generations of Pennsylvanians.



DELAWARE RIVER WATERSHED

Meagan Schaefer, Coalition
for the Delaware River Watershed

Introduction

The main stem of the Delaware River is the longest undammed river east of the Mississippi, traveling 300 miles from its headwaters in the Catskill Mountains down to the Delaware Bay Estuary. The watershed spans parts of New York, Pennsylvania, New Jersey, and Delaware through one of the most densely populated areas in the country. The Delaware River Basin supports a world-class trout fishery and is home to striped bass, the endangered Shortnose and Atlantic sturgeon, bald eagles, horseshoe crabs, and more. The watershed is diverse in biodiversity, landscapes, and issues of concern, including flow management, habitat protection, and stormwater management. While the headwaters are clean and healthy, serious threats remain throughout the watershed, including polluted runoff, aging drinking and wastewater infrastructure, habitat loss, and the threats of climate change. The need for protection and restoration of the Basin is urgent for the 14.2 million people and countless wildlife species that depend on clean water.

Photo Credit: M Schaefer

The watershed is critical to the region's economic wellbeing of the region, powering a \$20 billion economy that supports more than half a million jobs and sustains vibrant fishing, farming, and tourism businesses. Additionally, the watershed provides an estimated \$21 billion in ecosystem services to the region, including water filtration and carbon sequestration, as well as habitats such as forests and wetlands.³

Background

The vast river system of the Delaware River Watershed provides vital habitat for a rich variety of fish and wildlife species and drinking water to 14.2 million people, including two of the five largest metropolitan centers in the country: New York City and Philadelphia. In total, the Delaware River supplies more than 40 percent of Pennsylvania's residents with drinking water, despite covering only 14 percent of the state's landscape. Maintaining this system depends, in part, on the Delaware River Basin Commission's (DRBC) ability to monitor and control the salinity of the estuary. The salt line is a boundary between brackish and freshwater, and its location is expected to fluctuate along the tidal river below Philadelphia and can be unduly influenced by drought and sea level rise due to climate change. If the salt line encroaches on drinking water intakes, it will threaten public health, increase water treatment costs, and cause costly corrosion damage to industry infrastructure. Many rivers, creeks, and streams flow into the Delaware River, creating a watershed that spans 12,800 square miles of diverse landscape that includes rural agricultural areas and major urban centers. Significant ecological and recreational assets include:

- The Delaware Water Gap National Recreation Area, one of the country's most visited national parks;
- More than 400 miles of waterways designated under the National Wild and Scenic Rivers program;
- Six national wildlife refuges, including Cherry Valley and John Heinz in Pennsylvania; and
- The highly complex Delaware Estuary, which is one of the most important shorebird migration sites in the world.

Conclusion

The health of the Delaware River system has improved over recent years as we have reduced toxic industrial pollution, but we have more work to do. The Delaware River Watershed provides significant economic and health benefits to the region and is worthy of priority investments by decision-makers to protect and restore this natural resource.



OHIO RIVER WATERSHED

PennFuture

Introduction

The Ohio River is a valuable economic and ecological resource used for transportation, recreation, and hydropower. It provides drinking water to more than 25 million people, and commodities worth \$43 billion are transported along the river and its tributaries each year. Despite its economic and cultural value, the Ohio River Basin remains dangerously vulnerable to pollution.

The basin is polluted by harmful algae and bacteria; legacy toxins from industry; and excess nutrients caused largely by improper wastewater and stormwater management, acid mine drainage, and excessive agricultural runoff. To improve water quality in the Ohio River Basin, the Pennsylvania Legislature must provide more resources for safe and effective wastewater and stormwater infrastructure and properly fund agricultural best management practice (BMP) programs to reduce the nutrient runoff.

Background

Prior to the establishment of the Ohio River Valley Water Sanitation Commission (ORSANCO) in 1948, the Ohio River and its tributaries were subject to unmonitored and unrestricted pollution. Wastewater effluent has historically been the most significant water quality threat to the Ohio River Basin. By collaborating with Ohio River Basin states and the U.S. Environmental Protection Agency (EPA), the Commission reduced bacterial contamination, most notably *E. coli*. However, pollution from farm fields, urban runoff, and sewage overflows continue to be a major problem.

Pennsylvania is the second leading producer of methane in the United States. Much of the state's shale gas development is concentrated in the Ohio River basin, with detrimental impacts on water quality from leaks, spills of drilling wells, and pipelines. For example, Shell Chemicals has constructed a factory on the banks of the Ohio River in Beaver County that will convert a component of shale gas into millions of tons of plastics pellets annually. This plant, and the ethane pipeline that accompanies it, will likely have many and varied detrimental effects on the Ohio River basin and the people that live in this area in the decades ahead.

Combined Sewer Overflows (CSOs) occur when rainwater from storm drains is carried to sewer lines and exceeds their volume capacity. When carrying volume is exceeded, human waste and contaminated rainwater overflow the sewer lines into rivers. These CSOs contribute a significant amount of bacterial pollution to the Ohio River Basin, threatening human health in this area. Nonpoint pollutants are a significant and growing threat to the Ohio River Basin. Legacy pollution, such as acid mine drainage (AMD) from abandoned coal mines, has contaminated more than 5,500 miles of streams and groundwater in Pennsylvania. AMD is one of the Commonwealth's most extensive water pollution problems. Because of the toxic concentrations of acidity, metals, and sediment, many of the streams polluted by AMD cannot support any life.

Conclusion

Bacteria, toxins, and excess nutrients enter waterways in the Ohio River Basin from point and nonpoint sources, polluting our water and putting basin communities' health at risk. Increased resources for safe and effective wastewater and stormwater infrastructure will reduce bacterial pollution. Proper funding for agricultural BMP programs will reduce the excess nutrient pollution which can cause harmful algal blooms (HABs) that, if left unabated, can cause dead zones and depletion of aquatic life as well as negative health impacts for wildlife, people, and pets.



GENESEE RIVER & LAKE ERIE WATERSHEDS

Jenny Tompkins, PennFuture

Introduction

Within Pennsylvania lie portions of not one but two Great Lakes watersheds—Lake Erie and Lake Ontario. From Ulysses, PA, the headwaters of the Genesee River flow north for 11 miles before reaching New York, eventually draining into Lake Ontario at Rochester, NY, 140 miles later. The Genesee River Watershed spans 99 square miles in Pennsylvania, and is home to just over 2,000 people. The Lake Erie Watershed encompasses 750 square miles across Erie and Crawford Counties, with over 240,000 Pennsylvanians calling it home.

Genesee River Watershed

Many of the water quality challenges facing the Genesee River Watershed are tied to unsustainable land use practices.

Agriculture within the majority rural areas upstream in the Pennsylvania portion of the watershed contributes to nutrient runoff, riparian area loss, streambank erosion, and sedimentation.

Protecting the Genesee's Pennsylvania headwaters is important as they are home to trout species and bring enjoyment to anglers from near and far. Boating, swimming, hiking, camping, fishing, and hunting are prevalent throughout the entire watershed.

Lake Erie Watershed

By the 1960s, Lake Erie became synonymous with water pollution. Pollutants from factories, waste from sewers, and fertilizer and pesticides from farms made their way into the lake, which led to significant algal blooms, dead zones, and toxic contamination. In 1969, the Cuyahoga River, a tributary to Lake Erie, was so polluted that it caught on fire and prompted Congress to pass the federal Clean Water Act.

Thanks to legislative action and dedicated funding for pollution cleanup, Lake Erie's Pennsylvania waters are today considered the best walleye fishery in the world, and the fishing industry contributes \$40.6 million to the state economy annually.

Economic contributions of tourism contribute \$1.2 billion annually, driven largely by the most visited state park in the Commonwealth—Presque Isle. The lake also supplies drinking water to over 240,000 Pennsylvanians.

In the City of Erie, the largest urban center in the Pennsylvania portion of the watershed, a majority of city residents reside in state-defined Environmental Justice Areas.⁴ In these areas, residents face disproportionate impacts from pollution and climate change, and inequitable access to the economic benefits of increased regional tourism.

While efforts to improve water quality in Lake Erie addressed critical issues including point source pollution, the watershed still faces considerable challenges. Lake Erie is the shallowest of all of the Great Lakes, making it more prone to impacts of pollution. To add to this issue, the Lake Erie watershed continues to support more farms (livestock and crops), more urban centers, and more people than any other Great Lake. In 2012, Lake Erie saw the largest harmful algal bloom (HAB) in its history, affecting the water supply of 11 million people. HABs and *E. coli* levels also cause beach closures and swim advisories throughout the summer, harming the local economy.

Urban and agricultural runoff, sedimentation from unstable streambanks, failing septic systems, invasive species, legacy industrial pollution, and emerging contaminants also threaten water quality and are exacerbated by a warming climate. The City of Erie is one of the ten fastest warming cities in the U.S.,⁵ and the region experienced an 11.93 percent increase in annual precipitation between 1952 and 2022.⁶

An aerial photograph of a city waterfront. A wide river flows from the top right towards the bottom right. A large bridge crosses the river in the lower half of the image. The city is built on a peninsula or along the riverbank, with a mix of residential houses, commercial buildings, and industrial structures. A road with a median runs along the river. The sky is clear and blue.

LEGISLATIVE PRIORITIES



**ESTABLISH A DEDICATED FUND FOR
WATERSHED RESTORATION | Page 14**

**INCREASE FUNDING FOR STATE SPECIAL
ENVIRONMENTAL FUNDS | Page 16**

**PROVIDE ADEQUATE FUNDING FOR STATE
RESOURCE AGENCIES | Page 18**

**RESTORE FAIR SHARE FUNDING TO BASIN
COMMISSIONS | Page 20**

**SUPPORT THE PENNSYLVANIA GAME
COMMISSION AND THE PENNSYLVANIA
FISH & BOAT COMMISSION | Page 22**

Photo Credit: Will Parson, Chesapeake Bay Program



ESTABLISH A DEDICATED FUND FOR WATERSHED RESTORATION

Katie Blume and Tim Hayes, Conservation Voters of PA

RECOMMENDATIONS

Continue to utilize new state and federal investments for watershed protection and restoration. Public officials should:

1. Ensure that all funding allocated to the Clean Streams Funds via the American Rescue Plan Act (ARPA) is equitably spent before the 2026 deadline approaches.
2. Prioritize investments for municipalities in the Chesapeake Bay Watershed so that they may help the state comply with U.S. Environmental Protection Agency (EPA) requirements.
3. Support legislation that offers greater protection for riparian buffers and natural infrastructure. Natural infrastructure investments will help reduce more pollution per dollar invested over the course of the project's life cycle.
4. Explore every method of revenue generation to maximize funding for restoration projects.

Introduction

Nearly one-third, or about 28,000 miles, of Pennsylvania's waterways have been labeled as impaired, making them unsafe for wildlife and community members.⁷ Of that pollution, 70 percent comes from acid mine drainage or agriculture runoff. The Chesapeake Bay Watershed in particular suffers from high levels of nitrogen and phosphorus pollution, which leads to

an increase in algae growth.⁸ Pennsylvania's environmental justice communities have suffered the most from degraded water infrastructure and heightened pollution from industrial sites. Watershed associations and environmental groups in every corner of the commonwealth have advocated for years for a fund dedicated to clean water and watershed restoration.

Clean Streams Fund

In 2022, Governor Tom Wolf signed the 2022-2023 state budget into law, which invested \$220 million in ARPA funds into the creation of the bipartisan Clean Streams Fund, a program designed to reduce legacy pollution and agricultural runoff in Pennsylvania waterways and improve stormwater resilience. The bulk of the funding, \$154 million, was directed to the newly created Agricultural Conservation Assistance Program (ACAP) to help County Conservation Districts work with farmers to reduce agricultural runoff and improve soil quality. The rest of the funding was allocated for stormwater infrastructure upgrades, nutrient management assistance, abandoned mine drainage, and outcomes-based nutrient reductions. This funding has been effective in supporting projects across Pennsylvania that the Department of Conservation and Natural Resources (DCNR) has been working on, such as forest buffers, lawn conversions and native tree plantings. But even with the dedicated funds from Clean Streams Fund, there are still millions of dollars in unfunded DCNR projects. State officials need to secure additional funding to support Pennsylvania's Outdoor Corps to complete future projects, and for the development of disease-resistant stock.

In addition to the Clean Streams Fund, Pennsylvania implemented the State Parks & Outdoor Recreation Program (formerly known as Growing Greener). This program also invests in stream improvements, infrastructure and trail upgrades, and farmland conservation.⁹ State officials need to ensure that all federal and state investments are available to municipalities that need them, especially for environmental justice communities that have experienced the brunt of legacy pollution, and that technical and planning assistance is offered. With so many programs available, it's easy for local officials to lose track and miss out on potential

Photo Credit: Chesapeake Bay Foundation



investment opportunities. In order to educate local elected officials, state legislators need to use every method of public outreach at their disposal to increase educational opportunities for potential funding beneficiaries. Outreach methods include public seminars, mailers, emails, pamphlets, and newsletters.

In addition to distributing these new investments to Pennsylvania communities, state legislators also need to bolster the effectiveness of the infrastructure upgrades, such as strengthening protections for natural infrastructure projects, and ensuring all workers completing these infrastructure upgrades are paid family-sustaining wages. Natural infrastructure uses existing natural areas to combat flooding, erosion, and runoff.¹⁰ The 2022-2023 budget allocated funds to the Department of Environmental Protection (DEP) for grants and reimbursements for local government's Act 167 municipal stormwater management plans.¹¹ Local governments should be encouraged to be current with Act 167 requirements, conduct comprehensive planning that incorporates

the results of a stormwater management inventory, and clearly define high-priority areas for watershed conservation and restoration, along with areas for development.

Conclusion

The passage of several state key programs, like the Clean Streams Fund and the State Parks & Outdoor Recreation Program, in conjunction with federal investments from the Inflation Reduction Act (IRA) and Infrastructure Investment and Jobs Act (IIJA), are critical in addressing Pennsylvania's water pollution problem. But additional support is needed to address the commonwealth's millions of dollars worth of project backlogs. Municipal elected officials need to be made aware of all funding at their disposal, and ensure that they are in compliance with all Act 167 standards. Clean water organizations and advocates throughout the commonwealth stand ready to support state and local officials in their efforts to address Pennsylvania's water pollution.



INCREASE FUNDING FOR STATE SPECIAL ENVIRONMENTAL FUNDS

Brad Barkdoll, WeConservePA

RECOMMENDATIONS

1. Identify new sustainable funding sources for the Environmental Stewardship Fund and the Keystone Recreation, Parks & Conservation Fund that can work in addition to current funding streams to increase annual funding levels.
2. Shift the burden of debt service payments from the Environmental Stewardship Fund to the General Fund.
3. End recent annual exemptions of Oil & Gas Lease Fund dollars from being distributed into the Environmental Stewardship Fund.

Introduction

Flooding and water pollution are two of the most significant problems facing Pennsylvania's waterways. Abandoned mine drainage, agricultural and stormwater runoff, and increased severe weather incidents are a few of the many issues leading to the reduction in the quality of our waters. With more than 28,000 miles of Pennsylvania's rivers and streams being polluted, it is critical that adequate funding be appropriated to funds that focus on mitigating threats to and preventing future contamination of our waterways and to improving our outdoor spaces. County and local governments, as well as nonprofit organizations, benefit from their ability to leverage state dollars to see long lasting, quality improvement projects take root across the Commonwealth. These projects encompass a broad scope

of improvements, ranging anywhere from expanding outdoor recreation opportunities and connecting our vast system of trails to improving outdoor spaces for overburdened and underserved communities. In a time where Pennsylvania is experiencing an \$18 billion funding gap for water treatment facility projects, we need to work together to carve a path forward to see lasting investments in our waters.¹²

Environmental Stewardship Fund

The Environmental Stewardship Fund (ESF) was created by Act 68 of 1999 as part of the first Growing Greener program.¹³ Since its inception, the ESF has made significant investments in preserving farmland, conserving open space, restoring water quality, promoting outdoor recreation, and revitalizing communities. Annually, the ESF receives funding from the Landfill Tipping Fee, the Impact fee, and transfers from the Oil and Gas Lease Fund, averaging between \$90 and \$110 million. Though significant, the ESF still carries the burden of repaying its debt service from the initial injection of funds via bond referendum and has also become subject to misappropriations in recent years for issues such as agency shortfalls. Even during the 2023-2024 budget cycle, fiscal code language prohibits the annual transfer of around \$20 million from the Oil & Gas Lease Fund to the ESF, following a common practice that has plagued the fund in recent history.¹⁴ These misappropriations of dedicated funds threaten the full functionality of the ESF's capabilities to make lasting environmental improvements.

The impact that the ESF has on water quality across the Commonwealth cannot be understated. Since 1998, the fund has completed more than 1,500 projects to prevent water pollution and control flooding. The fund has also contributed to the restoration of more than 1,600 acres of abandoned mine lands and more than 270 acres of brownfields. Additionally, more than 200 miles of riparian buffers and 17 hazardous dam restoration projects can be attributed to funding from the ESF.¹⁵ **Increasing funding to the ESF or relieving the fund from its bond repayment obligation would unlock millions in state dollars that local governments and nonprofit organizations can leverage to increase projects across Pennsylvania.**

The continued and improved funding for the ESF will extend beyond the scope of just quality improvements. The ESF contributes to the preservation of farmland, conservation of open space, improvement of outdoor recreation spaces, and the revitalization of community spaces including targeted environmental justice community projects. The ESF has funded more than 250 projects aimed to repair and improve state park and state forest infrastructure and facilities, conserved more than 80,000 acres of natural areas, preserved more than 78,000 acres of farmland, and has plugged more than 1,000 abandoned oil and gas wells across the Commonwealth.¹⁶ The broad scope of impacts that ESF investments make should be celebrated and fiercely protected from misappropriation, limitations on dedicated funding transfers, and long-lasting debt repayments.

Keystone Recreation, Parks & Conservation Fund

The Keystone Recreation, Parks & Conservation Fund (Keystone Fund) takes a community-oriented approach to addressing environmental needs across the Commonwealth. Established in 1993 by a nearly unanimous General Assembly vote and later boosted by an overwhelming referendum vote, the Keystone Fund enjoys a 15 percent share of the State's realty transfer tax revenues. By providing direct, local investments in our parks, trails, community green spaces, and libraries, the Fund has contributed to the completion of more than 7,700 projects, totaling more than \$1.25 billion.¹⁷ These investments have provided significant community benefits across the last 30 years, but more is needed to assist state agencies in addressing programmatic backlogs, propelling community-based projects, and expanding recreational opportunities for all communities across the commonwealth.

The Keystone Fund is the Department of Conservation and Natural Resources' (DCNR) primary source of funding for their Community Conservation Partnership Program grant program. In 2021, two-thirds of the program was funded by Keystone Fund dollars, totaling around \$48 million.¹⁸ Each dollar of investment into the Keystone Fund leverages \$3.13 million in direct return to community spaces.¹⁹ These dollars have helped Pennsylvania become a national leader in trail systems, protect more than 161,000 acres of green space, develop more than 2,700 community park projects, and upgrade more than 400 public libraries to improve accessibility and safety.²⁰ Keystone Fund dollars benefit every Pennsylvanian and are a great deal for our state government, as it helps communities who may be underserved or overburdened help themselves.

These dollars help aid our state agencies as well. Pennsylvania is home to the nation's third largest state park system, featuring 124 parks on more than 300,000 acres of land. In her 2022 address to the Senate Appropriations Committee, DCNR Secretary Cindy Dunn asserted that critical investments are needed to reduce the \$1.4 billion infrastructure repair backlog that the agency is currently facing.²¹ Increased investments in the Keystone Fund help to relieve the burden, as the fund targets state park and forest improvement projects, such as the restoration and repair of dams, sewage treatment facilities, roads, bridges, visitor centers, and other public facilities. Each dollar of investments targeted at our state parks and forests returns \$12.41 back into our economy.²² The exponential return on investment of Keystone Fund dollars speaks volumes to the need for future increased investments.

Conclusion

Special environmental funds bring real-world benefits to local governments, counties, state agencies, and all communities across the Commonwealth. It is the responsibility of the administration and legislature to work collaboratively to identify new ways to sustainably increase funding for the Environmental Stewardship Fund and the Keystone Recreation, Parks & Conservation Fund so future Pennsylvanians can enjoy clean waterways and protected open spaces.



Photo Credit: Page 16, Brandywine Conservancy, Above, Growing Greener Coalition

PROVIDE ADEQUATE FUNDING FOR STATE RESOURCE AGENCIES

Renee Reber, National Parks Conservation Association

RECOMMENDATION

Provide the state resource agencies with adequate funding to protect and restore Pennsylvania's 86,000 miles of streams. Appropriation levels should meet the agencies' programmatic, staffing, and compliance needs, fulfill their missions, and uphold Pennsylvanians' constitutional right to pure water.

Introduction

The health of the Commonwealth's 86,000 miles of streams depends on the stewardship of our state resource agencies: the Department of Environmental Protection (DEP), the Department of Conservation and Natural Resources (DCNR), and the Department of Agriculture (PDA). Each one of these agencies plays a critical role in ensuring Pennsylvanians' constitutional right to pure water established in Article I, section 27 of the state constitution. Pennsylvania's Environmental Rights Amendment further states,

"As trustee of these resources, the Commonwealth shall conserve and maintain them for the benefit of all the people." Pennsylvania's resource agencies must have adequate funding and staffing to uphold our constitutional right and protect our waterways."

Pennsylvania's state resource agencies provide the Commonwealth with a range of pollution prevention, conservation, and land preservation programs. They restore

degraded waterways, protect wildlife and native ecosystems, and help communities and farmers implement conservation practices that provide benefits locally and regionally.

Background

Department of Environmental Protection (DEP)

The mission of the DEP is "to protect Pennsylvania's air, land, and water from pollution and to provide for the health and safety of its citizens through a cleaner environment." In addition to administering Pennsylvania's clean water regulatory programs, DEP monitors and assesses the health of our rivers and streams and oversees cleanup plans for Pennsylvania's polluted streams. The DEP also administers numerous grant programs that help Pennsylvania's communities protect and restore local lands and waters, such as the Growing Greener Plus Grants Program. Several of DEP's grant programs take environmental justice into consideration through the application process, including the Environmental Education Grants Program.

DEP manages the Conservation District Fund Allocation Program for Conservation Districts to provide critical administrative, technical, and financial assistance to farmers, municipalities, and other landowners for installing conservation practices. Most Pennsylvania farms are small, family-owned operations with heavy debt loads and often lack the funding to implement conservation practices.

DEP's funding peaked over 20 years ago, at \$246 million in 2002. Since then, DEP's budget was cut to a low of 40 percent which resulted in the loss of nearly 700 positions. Recent increases have allowed DEP to hire additional staff, including 30 full-time equivalent (FTE) staff in the FY24 budget to enhance permitting processes. However, **staffing levels still fall short, more than 350 positions from its staffing high point.**²³ Meanwhile, the threats to the health of our waterways continue to increase, such as rapid population growth, development pressure, and climate change.

Department of Conservation & Natural Resources (DCNR)

DCNR's mission is "to conserve and sustain Pennsylvania's natural resources for present and future generations' use and

Photo Credit: Chesapeake Bay Program

enjoyment.” **The DCNR manages 124 state parks and 2.2 million acres of state forest land** and provides grants and technical assistance through the Community Conservation Partnerships Program Grants that can help communities improve access to rivers, trails, greenways, parks, and open spaces across the Commonwealth.

Parks, forests, and greenspaces are important components for clean water. They act as a sponge, soaking up precipitation and reducing the amount of runoff, pollution, and erosion that reaches waterways. Furthermore, riparian forested buffers alongside streams are a cost-effective way to protect and clean up waterways. They also help to keep water temperatures cool, which is important for aquatic life, including Pennsylvania’s state fish, the native Brook Trout. The DCNR leads Pennsylvania’s Riparian Forest Buffer Initiative to plant 95,000 acres of riparian forest buffers statewide by 2025.

Recreation is an important economic driver in the Commonwealth, providing more than \$58 billion in economic output and supporting more than 430,000 jobs. Despite their economic importance, **the DCNR has a maintenance backlog of \$1.4 billion for improving public access and safety through fixing aging dams, bridges, roads, water and sewer systems, and other infrastructure.**

Pennsylvania Department of Agriculture (PDA)

Agriculture is an important part of Pennsylvania’s economy and heritage. **Pennsylvania is home to 52,700 farms and 7.3 million acres of farmland that contribute \$132.5 billion to Pennsylvania’s economy.** Conservation is an important part of the PDA’s mission “to ensure a vibrant economy, a successful future for Pennsylvania, and to safeguard the public.” **Pennsylvania farmers are stewards of the land, leading the country in the number and acres of preserved farmland.**

The State Conservation Commission (SCC) is housed within the Department of Agriculture and co-managed with DEP. The role of the SCC is to provide support and oversight to Pennsylvania’s 66 county conservation districts that assist farmers with implementing conservation practices that conserve resources and protect waterways.

Agriculture is the number-one leading source of water pollution across the Commonwealth. Conservation, clean

water, and sustainable farming practices go hand in hand. **When investments are made in conservation practices, water quality improves and farmers can increase their bottom line.** Water quality monitoring data collected by the U.S. Geological Survey shows improving trends for nitrogen pollution in the Conestoga River, which is the largest watershed in Lancaster County where many efforts are underway to improve water quality.

Conclusion

Recent budget increases are a step in the right direction. However, previous cuts resulted in major impacts, including staffing cuts, conservation setbacks, and limited resources for efficient and effective permitting.

The cuts to DEP are particularly dangerous as the agency struggles to meet its minimum enforcement obligations, which threatens Pennsylvania’s access to matching federal grants, federal pass-through dollars, and its ability to maintain state authority over its compliance and enforcement programs. These cuts are especially harmful to under resourced and overburdened environmental justice communities that are disproportionately impacted by pollution and inadequate infrastructure.

Water quality monitoring by DEP has shown that 34 percent of Pennsylvania’s streams are degraded. **Adequate funding for the state resource agencies is essential for healthy waterways that support our vibrant tourism economy, provide the water we drink, and promote quality of life for local communities.**



RESTORE FAIR SHARE FUNDING TO BASIN COMMISSIONS

Aneca Atkinson, National Audubon Society

RECOMMENDATION

Restore and maintain full funding to all six interstate commissions as defined in each compact that serves Pennsylvania's watersheds.

Introduction

Basin Commissions are agencies formed by interstate compacts to serve state and/or federal government agencies that coordinate interstate waterway planning and management. The health and prosperity of each basin and its residents rely on strong participation and supportive funding of the member states. Apart from the Great Lakes Commission, all the commissions below and the Delaware River Master appear as a Budget Line-item Appropriation in Pennsylvania's Budget.

Delaware River Basin Commission

Created in 1961 by the Delaware River Basin Compact (Compact), the Delaware River Basin Commission (DRBC) is a regulatory body. The members of DRBC are the four basin states' governors (or their designee)—Delaware, Pennsylvania, New York, New Jersey—and the federal representative. DRBC manages the water resources for more than 14 million Americans, including the residents of Philadelphia, Allentown, Reading, and Easton. DRBC works with the states' environmental agencies in a cooperative and mutually supportive manner, described by the November 2018 Pennsylvania Auditor General Report as "complementary and/or augmentative in nature." DRBC's programs fall into two categories—flow and quality—and include: water quality protection, water supply

allocation, permitting, drought management, flood loss reduction, education/outreach, and recreation.

There is some overlap, but also differences between, DRBC and the Delaware River Master, which administers provisions of the 1954 U.S. Supreme Court Decree (Decree). The Decree Parties are made up of New York State, New York City (NYC), New Jersey, Pennsylvania, and Delaware. The Decree governs the water releases from NYC's reservoirs in the headwaters. Through time, the Decree Parties have unanimously come to agreements, such as the recent October 2017 Flexible Flow Management Program (FFMP 2017). FFMP 2017 is intended to meet water supply demands, protect fisheries' habitat downstream of the NYC reservoirs, enhance flood mitigation, and repel saltwater intrusion. On May 8, 2023, an amendment of the FFMP 2017 was unanimously approved; FFMP 2017 will remain in effect through May 31, 2028, instead of May 31, 2023.

DRBC hosts the Decree Parties and provides technical and administrative support as they work to resolve outstanding issues toward optimizing operation of NYC's reservoirs in the headwaters. For example, DRBC staff are assigned to a multidisciplinary, multi-agency team to provide objective recommendations to the Decree Parties on the Salinity Study that is identified in FFMP 2017.

DRBC works with Pennsylvania Department of Environmental Protection (DEP) to ensure consistent effluent monitoring requirements. Additionally, DRBC has partnered with the Pennsylvania Emergency Management Agency to provide outreach and capacity-building on several hazard mitigation assistance grants, enabling Pennsylvania communities to become more climate resilient.

In 1988, the Commissioners reached an agreement by which the states and federal government would appropriate sufficient funds in their annual budgets to support the functions of the DRBC. Pennsylvania's contribution is 25 percent of the DRBC's annual budget. However, Pennsylvania's FY2024 budget only included 24 percent of the full amount.

Susquehanna River Basin Commission

Created in 1971 by the Susquehanna River Basin Compact (Compact), the Susquehanna River Basin Commission (SRBC) was established to lead the management of the Susquehanna

River Basin's (SRB) water resources. The members of SRBC are the three basin states' governors (or their designee)—Pennsylvania, New York, Maryland—and the federal representative. SRBC's programs align with four key areas: water supply, water quality, flood and drought, and watershed management. For example, SRBC coordinates the Susquehanna Flood Forecast and Warning System among various federal and state agencies and has developed flood inundation maps for river communities. The system helps save lives and reduces average annual flood damage by \$32 million. SRBC enhances protections for the drinking water supply of more than 4.1 million basin residents and spans 43 Pennsylvania counties. The SRB is the largest tributary to the Chesapeake Bay and SRBC tracks nutrient and sediment loadings within the basin to help inform the Chesapeake Bay Watershed Agreements, to which PA is partied.

The Compact's budgetary processes establish Pennsylvania's equitable apportionment required to finance SRBC. However, as of Pennsylvania's FY2021 budget, only 32 percent of Pennsylvania's full contribution was included.

Chesapeake Bay Commission

The Chesapeake Bay Commission (Commission) was created in the early 1980s through the establishment of similar state laws in Maryland, Pennsylvania, and Virginia. The Commission consists of 21 members, seven each from Virginia, Maryland, and Pennsylvania. In Pennsylvania, two senators, three representatives and the Governor (or his or her designee) serve as members. The Commission serves as a legislative voice and acts as a liaison to the U.S. Congress on policy and budgetary matters related to the restoration of the watershed. The Commission's current budget is apportioned equally among the signatory parties.

Interstate Commission for the Potomac River Basin

Authorized by Congress in 1940 and subsequently amended in 1970, the Potomac River Basin (ICPRB) is an advisory, non-regulatory agency of the District of Columbia, Maryland, Virginia, West Virginia, Pennsylvania, and the federal representative. ICPRB's mission is to protect and enhance the water resources of the Potomac River Basin through science, regional cooperation, and education. For example, ICPRB assisted Pennsylvania's Adams County Conservation District in creating the framework for stakeholder involvement and engagement with the Phase III Chesapeake Bay Watershed Implementation Plan.

Funding for the ICPRB includes appropriations from the signatory parties and the federal government and are equitably delineated. ICPRB's annual request from Pennsylvania is the lowest of all the other jurisdictions within the Basin, however, Pennsylvania's FY2024 budget only included 50 percent of the full appropriation.

Ohio River Valley Water Sanitation Commission

Created in 1948 by the Ohio River Valley Water Sanitation Compact (Compact), the Ohio River Valley Water Sanitation Commission (ORSANCO) is an interstate commission that controls and abates pollution in the Ohio River Basin (ORB). The members of ORSANCO are the eight basin states—Illinois, Indiana, Kentucky, New York, Ohio, Virginia, West Virginia, Pennsylvania—and the federal representative. This collaborative effort improves water quality in the ORB and ensures that it can support diverse uses. ORSANCO sets wastewater discharge standards, performs biological assessments, and conducts watershed surveys and studies. ORSANCO establishes water quality standards for the mainstem of the Ohio River and each state chooses how to adopt these standards for discharges to the river. ORSANCO coordinates emergency response activities for pollution events into the river and promotes public participation in watershed protection. The compact established Pennsylvania's equitable apportionment of ORSANCO's annual budget. Pennsylvania's FY2024 budget only included 50 percent of the full contribution.

Great Lakes Commission

The Great Lakes Commission (GLC) was established in 1955 by the Great Lakes Basin Compact. Members include Illinois, Indiana, Michigan, Minnesota, Wisconsin, New York, Ohio, Pennsylvania, and the Canadian provinces of Ontario and Québec. The GLC works to address issues of common concern, and collectively advance an agenda to protect and enhance the region's economic prosperity and environmental health. In Pennsylvania, the GLC is critical in protecting and restoring Lake Erie for ecological and economic benefits, such as its commitment to reduce phosphorus in Lake Erie by 40 percent by 2025. The GLC's budget is apportioned equitably among the signatory parties.

Conclusion

For the Commissions to undertake their vital work for the citizens of Pennsylvania, it is imperative that they have the necessary resources. Pennsylvania does not often contribute their full apportionment to the Commissions, dramatically underfunding key collaborative agencies that protect the health and availability of Pennsylvania's water. The governor is strongly encouraged, through the Governor's Executive Budget, to allocate funds to the Commissions that fulfill the equitable funding requirements of their respective interstate compacts. In turn, the Pennsylvania General Assembly is strongly encouraged to provide stable funding for all Commissions.

Without properly funded and staffed Commissions, Pennsylvania's communities are increasingly at risk of the negative effects of climate change.

SUPPORT THE PENNSYLVANIA GAME COMMISSION AND THE PENNSYLVANIA FISH & BOAT COMMISSION

Nikki Ghorpade, Ducks Unlimited; Emily Baldauff, Trout Unlimited;
Alex Kozak, Theodore Roosevelt Conservation Partnership

Pennsylvania Game Commission

For more than 100 years, the Pennsylvania Game Commission (PGC) has managed and protected wildlife and their habitats, while supporting recreational hunting and trapping for current and future generations. **The Commission accomplishes this by enacting science-based wildlife management programs on more than 1.5 million acres of state game lands throughout the Commonwealth with the support of countless conservation and sportspeople organizations.** As the state's wildlife agency, PGC uses these programs to manage habitat for wildlife and provide opportunities for hunting and trapping as well as other types of recreation. PGC does not receive state General Fund appropriations and is supported solely by hunters and trappers, or assets that have been procured with hunting license dollars. PGC is funded primarily by hunting license sales (\$844,000 in 2022), state game land timber, mineral, and oil/gas revenues, and a federal excise tax on firearms, ammunition, and other hunting equipment, known as the Federal Aid in Wildlife Restoration Act or the "Pittman-Robertson Fund." Although revenue sources such as license sales are a relatively fixed income source, funds for the PGC fluctuate year-to-year, making long-term project planning critical to their success. It is crucial that the PGC is able to determine the best use for its independently acquired funds so they can continue to protect our wildlife resources and maintain critical habitat for the health, recreation, and economic benefit of Pennsylvanians throughout the Commonwealth.

Pennsylvania Fish and Boat Commission

The Pennsylvania Fish and Boat Commission's (PFBC) mission is to protect, conserve, and enhance the Commonwealth's aquatic resources and provide fishing and boating opportunities. The Commission accomplishes this by implementing science-based aquatic resource management programs on more

than 86,000 miles of streams and hundreds of lakes within the Commonwealth, enacting boating safety protocols to protect users, and by offering angling instruction and opportunities to Pennsylvanians to enhance interest in water recreation for future generations. PFBC does not receive state General Fund appropriations to fund their programs.

PFBC is an independent commission of 10 Commissioners appointed by the Governor and approved by the Legislature. The Boating Advisory Board advises and makes recommendations to the Commission. PFBC operates out of two special funds: the Fish Fund and the Boat Fund. The Fish Fund revenue is driven by the sales of fishing licenses (more than \$1 million in 2022) and fees and federal funds generated by the sale of fishing-related equipment. Revenue for the Boat Fund is primarily generated from boat registration fees, boat titling fees, federal aid, and refunds of liquid fuel taxes on gas used by motorboats. Long term project planning is crucial to the success of the PFBC due to the fluctuating funding sources such as license sales. The PFBC is also generously supported by citizens interested in maintaining and enhancing access to Pennsylvania's waters by donating to the Conservation Acquisition Partnership Program.

As leader of aquatic preservation in the Commonwealth, the Commission supports and administers an extensive grants program aimed at conserving and enhancing opportunities for fishing, boating, and aquatic resource conservation. **The program aims to develop and support partnerships that seek to ensure robust and vibrant life and opportunities on and around Pennsylvania's waterways.** In this role, it is crucial that PFBC is supported to make independent decisions on where best to enact user-generated funds to help promote clean water, pristine streams, healthy lakes, and boater safety of all Pennsylvanians.



Photo Credit: Emily Baldauff, Trout Unlimited

An aerial photograph of a large industrial facility, likely a power plant, situated along a river. The plant features several tall smokestacks emitting thick white plumes of steam or smoke. In the foreground, a large substation with numerous electrical towers and power lines is visible. The surrounding landscape is a mix of green fields, dense forests, and distant hills under a clear sky. A semi-transparent grey box is overlaid in the center of the image, containing the text 'IMPORTANT ISSUES' in white, bold, sans-serif capital letters.

IMPORTANT ISSUES



**INVESTING IN THE AGRICULTURAL
CONSERVATION ASSISTANCE
PROGRAM | Page 26**

**CLEANING UP ABANDONED MINE
LANDS | Page 28**

**ADVANCING ENVIRONMENTAL
JUSTICE | Page 30**

**PRIORITIZING GREEN STORMWATER
INFRASTRUCTURE | Page 32**

**COMBATting COMBINED SEWER
OVERFLOWS (CSOs) | Page 34**

**ADDRESSING LEAD IN SCHOOL
DRINKING WATER | Page 36**

**PRIORITIZING EQUITY IN PUBLIC
WATER SYSTEMS | Page 38**



INVESTING IN THE AGRICULTURAL CONSERVATION ASSISTANCE PROGRAM

Trisha Salvia, Chesapeake Bay Foundation

RECOMMENDATIONS

1. Establish dedicated and equitable funding for Agricultural Conservation Assistance Program (ACAP) that will target funding for local farms to invest in conservation practices.
2. Improve workforce development to allow for more boots-on-the-ground technical support to help implement ACAP.
3. Increase funding for Resource Enhancement and Protection tax credits to complement ACAP.

Introduction

In 2022, the General Assembly passed the Clean Streams Fund, which included a new program, the Agricultural Conservation Assistance Program (ACAP). The purpose of ACAP is to provide much-needed financial and technical assistance to implement best management practices (BMP) on agricultural operations in the Commonwealth. The State Conservation Commission was provided a one-time allocation of \$154 million to implement ACAP, which helped start the program.

Pennsylvania farmers want to help clean up the Commonwealth's rivers and streams. They're willing to invest their time, land, and effort. **ACAP provides a true statewide cost-share program to help them implement practices that keep healthy soils and nutrients on their land and out of waterways.**

The one-time investment in Pennsylvania farmers through ACAP is a great start, but long-term sustainable funding is needed to make a difference across the Commonwealth.

Background

Pennsylvania's farmers are stewards of the land. ACAP establishes a statewide cost-share program to help farmers implement best management practices and leave a legacy of healthy soils and clean water.

ACAP is different from Pennsylvania's other financial assistance programs like the Resource Enhancement and Protection (REAP) program that provides tax credits and the pilot Conservation Excellence Grant (CEG) Program that is limited to certain counties, as well as United States Department of Agriculture Natural Resources Conservation Service (USDA NRCS) programs funded through the Federal Farm Bill.

Enacted in 2022 as part of the Clean Streams Fund legislation, ACAP invests \$154 million of federal American Rescue Plan Act (ARPA) funds to establish a statewide program directed locally by County Conservation Districts. The program provides financial resources to farmers to install conservation practices that work best for each farm and technical assistance funding to the conservation district to support farmer requests.

The State Conservation Commission (SCC) has developed guidelines for the application process as well as template applications. Each county receives funding based on the number of farms, cropland acres, livestock and poultry production, and streams impaired by agricultural nutrient and sediment runoff. Farms are able to adopt practices that best fit their needs, such as streambank fencing, cover crops, riparian forested buffers, manure storage, and more. There are no mandated practices in ACAP.

Modeled after Pennsylvania's lauded Dirt and Gravel Road Maintenance Program (also administered by the SCC), ACAP funding is distributed to County Conservation Districts based on areas with the greatest need for improvement.

Also similar to the Center for Dirt and Gravel Road Studies, the legislation directed Pennsylvania State University to create the Center for Agricultural Conservation Assistance Training in collaboration with the SCC and USDA NRCS. The Center will

Photo Credit: Kelly O'Neill



Practices funded and implemented through ACAP provide a plethora of benefits to farmers, sportsmen/women, and all citizens across the Commonwealth. Some of the many benefits include:

HEALTHIER LANDS

Protecting and restoring the lands and soils will improve crop production, control diseases, protect from runoff and improve local water quality. It will also improve meadows and woodlot habitats for wildlife and game species.

CLEANER STREAMS

Restoring water quality will help protect vulnerable aquatic plants, insects, and animals that depend on cool, clean water. It will also reduce treatment costs for drinking water and allow for better recreation.

LASTING LEGACIES

Lowering costs to farmers to install conservation practices will not only allow the farming heritage and legacy to be vibrant and successful for future generations, but those communities that support those lands and waters as well.

These benefits can only come with dedicated investments.

provide resources and training to undergraduate students and conservation professionals to design and implement agricultural practices. The larger pool of trained professionals will alleviate the shortage of technical assistance that has been one of the largest barriers to the adoption of conservation practices across Pennsylvania to improve water quality, soil health, and farm viability.

Although ACAP is a statewide program and will benefit farms and waterways across the Commonwealth, investing in ACAP will help Pennsylvania in reaching its Chesapeake Bay pollution reduction goals.

Pennsylvania's final Phase 3 Watershed Implementation Plan identifies a funding shortfall in excess of \$300 million annually between now and the Blueprint's 2025 deadline—the vast majority of which is needed to help farmers implement conservation practices on their land.

Conclusion

ACAP's initial investment of \$154 million is a historic start, but with more than 28,000 miles of impaired streams across the state, there's more work to be done. Farmers are willing to make investments in conservation and County Conservation Districts, along with Center for Agricultural Conservation Assistance Training, are standing by to help. **What happens on the Commonwealth's agricultural lands directly impacts our communities and access to clean water.** It's time for Pennsylvania legislators to make commitments to help farmers improve environmental stewardship on their land in a way that has longevity. Funding ACAP should be a priority in that the funding and technical assistance will also positively impact EJ communities, such as rural, low-income, or BIPOC owned farms. **Long-term, consistent investments in ACAP and the Center for Agricultural Conservation Assistance Training will leave a legacy to all citizens of this Commonwealth and to future generations.**



CLEANING UP ABANDONED MINE LANDS

Bobby Hughes, Eastern Pennsylvania Coalition for Abandoned Mine Reclamation

RECOMMENDATIONS

1. Support the recommendations contained in the *Assessment of Opportunities for Grid-Scale Solar Development on Previously Impacted Mine Lands in Pennsylvania Report* published by the PA Department of Environmental Protection's Energy Programs Office.
2. Ensure federal funding is accessed and implemented in a timely manner toward the monitoring, development planning, design, construction, future operation and maintenance of abandoned mine drainage (AMD) treatment systems across the Commonwealth.
3. Support the advancement of mine pool geothermal development as alternative energy and economic development opportunities on abandoned mine lands, previously mined lands, and at AMD discharges.
4. Support the need for the sampling of AMD, waste culm piles, and ash from Co-Generation facilities for critical and rare earth elements to determine market value and would be returned as investments in long-term operation and maintenance of state-funded and/or community-operated treatment facilities.

Introduction

Pennsylvania has more unreclaimed mine sites than any other state. **Abandoned mine drainage is one of mining's most serious threats to public health and water quality. Of the 11,249 abandoned mines in the state, 9,977 have health, safety, or environmental impacts. More than 5,500**

miles of streams have been devastated by billions of gallons of polluted water from abandoned mines. Each day, children and families living in close proximity to these areas are exposed to toxic chemicals and drinking water contamination. These issues present complex challenges and opportunities for remediation across the Commonwealth. By working together, we can identify solutions that will stimulate economic growth while protecting human health and the environment.

Background

AMD is generally characterized by acidic water containing iron, aluminum, and other metals that threaten human health and water quality and that can render streams uninhabitable by living things. AMD is a legacy of coal mining practices prior to the 1977 Surface Mining Control and Reclamation Act, when mining companies were not required to address the impacts to land and water resources. AMD is the second-leading source of pollution to Pennsylvania's waterways.

Innovative and long-term solutions are needed to address complex challenges that pose major threats to Pennsylvania. According to an estimate by the U.S. Geological Survey, the cost of correcting AMD problems with current technology across the Commonwealth could reach \$1 billion. Passive treatment systems are traditionally used to treat polluted streams, but other cost-effective technologies exist. Recovering rare earth elements from AMD sites can be used as a source for mine-water geothermal heating and cooling technology. Geothermal heating and cooling systems can save 40-65 percent in heating costs, 30 percent in cooling costs, and 15 percent for hot water costs when compared to conventional air-source heat pumps or natural gas systems. Harnessing this energy will stimulate economic development, create jobs, provide cost savings to residents, protect human health, diversify Pennsylvania's energy portfolio, and minimize the need for mining operations.

Areas that have been restored by damages from AMD will also create new recreational opportunities for the public. With support from state funding, these technologies can address the negative impacts of AMD while protecting human health, adding to economic interests, and restoring the environment for recreational use and enjoyment.

Planning and implementing mine drainage treatment projects can take years. Given the scope of the problem, ongoing

funding—particularly for the long-term operation and maintenance of treatment systems—is critical to restoring polluted waters.

Solar Development on Previously Mine Lands

The Commonwealth of Pennsylvania will see a massive expansion in the deployment of grid-scale solar installations over the next decade. Preliminary analyses indicate a majority of the 15 gigawatts of grid-scale solar projects currently under review by PJM Interconnection are proposed to be sited on “greenfield” locations, which are previously undeveloped commercial sites, as well as land used for agricultural purposes. Analysis is required to explore what factors need to be present to incentivize and increase commercial development of previously disturbed sites, such as current and former previously mined and abandoned mine lands. This analysis should aim to:

- Explore in-depth the different challenges associated with siting grid-scale solar development on previously mined lands;
- Gain a better understanding of the roles and responsibilities of different stakeholders involved in the development process;
- Identify factors leading to successful deployments of grid-scale solar projects in Pennsylvania and other states on previously mined lands;
- Develop actionable recommendations to improve the processes and other factors involved in siting grid-scale solar projects on previously mined lands.

Mine Water Geothermal

In 2023, House Resolution 185 directed the Joint State Government Commission to conduct a study on the feasibility of using geothermal energy technologies that utilize abandoned mining locations and operations in the Commonwealth.²⁴ Initial development costs are high for developers when it comes to discovery, drilling, sampling, and assessing the locations and extent of the underground mine pools that exist. They have also not been entirely mapped with the complex hydrogeological conditions that are present in underground mine workings in both the Anthracite and Bituminous Regions of Pennsylvania. Mine pools and AMD could turn into investment and resource recovery opportunities for new economic markets and business developers across the Commonwealth.

Union work, displaced miners, drillers, operators, electricians, and technology specialists are just some of the new job opportunities that could be available in this new technological area. The Eastern PA Coalition for Abandoned Mine Reclamation (EPCAMR) has recommended this opportunity be taken for over a decade; they completed their Mine Water Resources of the Anthracite Coal Fields of Eastern Pennsylvania Report nearly a decade ago.²⁵

AMD and mine pool water could also be a renewable resource and source of new energy as opposed to a

legacy liability to our coalfield communities. This type of new energy development can create jobs, improve the environment, and restore watershed impacts that have historically occurred in the mining impacted streams across Pennsylvania. This is especially true for environmental justice communities that have borne the burden of living with polluted mine water and lack of recreational opportunities in these areas.

Critical and Rare Earth Elements Sampling and Production of Domestic Sources

There is a need to support funding for the measurement of the number of oxides, critical mineral resources, or rare earth elements that are extracted and removed from AMD, culm piles, and ash from Co-Generation facilities across the Commonwealth. The remediation and sampling for these resources could yield revenues on the market that could lead to domestic production at legacy abandoned mine sites. Monitoring equipment is needed to obtain flow measurements that can lead to loadings of the critical and rare earth elements when combined with the chemistry data collected on the various raw elements that might be found in the mine water pollution. The reclamation of abandoned mine lands by Co-Generation facilities that are member plants of Appalachian Region Independent Power Producers Association (ARIPPA) where combustible fluidized bed boilers are used to generate an alkaline ash material that should also be further analyzed. Electricity is being generated from the removal of the waste culm piles for energy development to the grid infrastructure in Pennsylvania. A focus on innovative measurements with partners in the private sector, landowners where the AMD discharges are located, and higher education institutions can lead to the reduction of the United States import reliance on these critical mineral resources and rare earth elements from foreign countries. Critical minerals and rare earth elements are needed for defense and green energy industries.

There are no oxide separation and reduction processing facilities in the United States. Monetization of these critical mineral resources and rare earth elements can become one way for the Department of Environmental Protection (DEP) to reinvest anticipated revenue for funding of continued operations of AMD Treatment facilities for the long term.

Conclusion

With support from federal, state, private, foundation, and other funding programs and years of experience designing and implementing AMD treatment practices, Pennsylvania is making some headway in addressing its signature legacy water pollution problem. Still, the scope of the problem is enormous, demanding that the Commonwealth commit to long-term cleanup and a significant investment of additional resources. Addressing these challenges can create lasting solutions for remediation, while improving the quality of life for all Pennsylvanians who deserve clean water and aquatic resources restored in our mining impacted watersheds.



ADVANCING ENVIRONMENTAL JUSTICE

Katie Ruth and Renika Weimer, Pennsylvania Interfaith Power & Light;
Julie Ulrich, The Nature Conservancy

RECOMMENDATIONS

- 1. ANALYSIS:** Commission an environmental justice analysis on current energy, industrial, and infrastructure projects. Develop qualitative and quantitative recommendations to alleviate environmental burdens and injustice in dialogue with environmental justice communities.
- 2. PUBLIC PARTICIPATION:** Evaluate cumulative environmental and public health impacts as a factor for siting, rule-making, and permitting decisions. Create opportunities for meaningful public participation and influence in these processes.
- 3. FUNDING:** Prioritize funding for disenfranchised, frontline, & fenceline communities. Authorize state grant programs that are dedicated to addressing environmental injustice. Review current funding opportunities to identify potential barriers and inequities. Evaluate how much state funding and agency support is directed to alleviate burdens taken on by communities facing environmental injustices.
- 4. LEGISLATE:** Codify and expand the Office of Environmental Justice. Legislate Environmental Justice Policy. Seek community participation in these endeavors.

Background

Pennsylvania's constitution names the right of its people to clean air, pure water, and the preservation of the natural, scenic, historic, and aesthetic values of the environment. It further names Pennsylvania's natural resources as the common property of all people, including future generations, and assigns the Commonwealth responsibility to serve as trustee in the conservation and maintenance of them. The guiding principle of environmental justice is that everyone is entitled to equal environmental access along with protection from environmental harms and risks. Pennsylvania's Department of Environmental Protection (DEP) defines Environmental Justice (EJ) in its recent policy revision as "the just treatment and meaningful involvement of all people, regardless of income, wealth, race, color, national origin, area of residence, Tribal affiliation, or disability, in agency decision-making and other activities that affect human health and the environment." They further note that EJ includes "the prevention of future environmental injustice and the redress of historic environmental injustice." The lack of equal access and protection results in environmental injustice. Recent revisions to DEP EJ policy set new guidelines for determining EJ communities in Pennsylvania.²⁶ The factors used in determining scoring include environmental, health, socioeconomic, and demographic.

EJ communities are at the forefront of facing air, water, and climate challenges. These communities are more likely to be located near industrial pollution sources, petrochemical hazards, and lead contamination. They are also more likely to experience transit injustice and food deserts. Air and water pollution along with a changing climate disproportionately impact BIPOC (Black, Indigenous, People of Color), immigrant/refugee, LGBTQIA2S+, disabled, rural, and low-income communities.

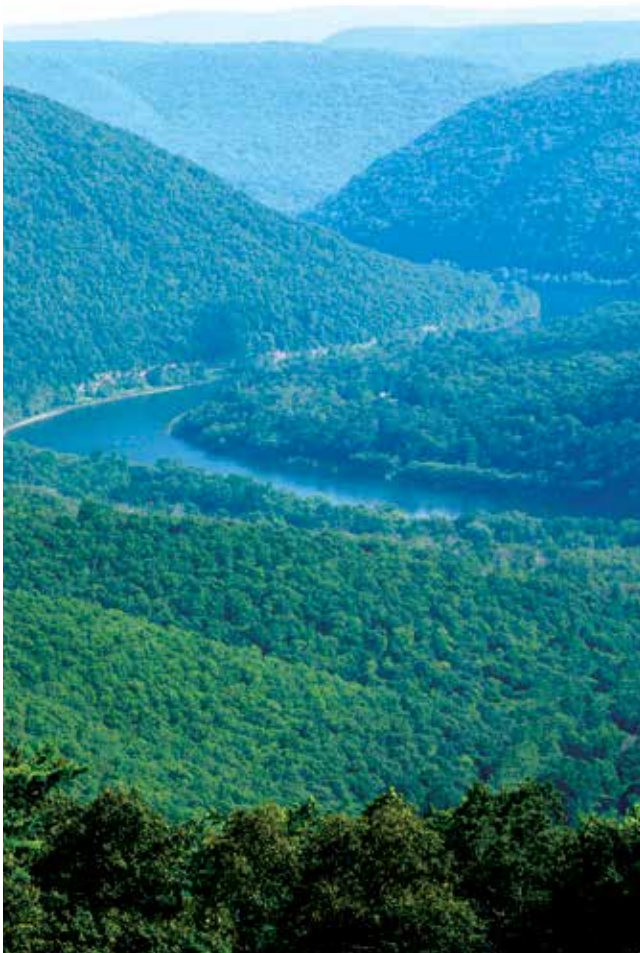
Recent studies from the University of Pittsburgh investigated the relationship between fracking and health issues. Conducted over three years, the researchers found that living near unconventional gas development activities or other environmental hazards increased the risk of childhood lymphoma, worsening asthma, and lower birth weight. Pollution from power plants, uncapped oil and gas wells, and chemicals from toxic waste sites all further contribute to poor health outcomes. These occur along disparate social and economic lines.

Photo Credit: Will Parson, Chesapeake Bay Program

Page 31: Left, Chesapeake Bay Program, Right, Germantown Tree Tenders from PA IPL

The COVID-19 pandemic has further exacerbated the equity gap. The consequences from the pandemic are felt more acutely by people who have underlying conditions, those who lack access to healthcare, and frontline workers. Chronic pollution in environmental justice communities can cause asthma, lung disease, and cardiovascular disease. People who experience these health impacts are at risk of developing severe illness after catching COVID-19. These realities bring into clear view the long-term harm caused by chronic pollution to EJ communities, compounded by additional stressors such as the COVID-19 pandemic. It is imperative that the frontline and fenceline communities who are most affected by these challenges are brought to the forefront of the policymaking process.

Reducing pollution should be treated as a justice issue and a public health priority. In establishing the Environmental Justice Advisory Board and Office of Environmental Justice, the Commonwealth has begun to demonstrate its understanding of the need



to confront the disproportionate pollution impacts that legacy and present pollution has on frontline and fenceline communities. However, they lack formal decision-making authority. The legislature can and must do much more to support the rights to clean air and water of all Pennsylvanians. This can be achieved through supporting the recommendations.

Conclusion

Written into the Commonwealth's constitution is a promise of a clean environment for all Pennsylvanians. Pennsylvanians bear the undue burden of pollution hazards across disproportionate lines. This affects health, limits economic opportunities, and reduces opportunities for safe recreation. This is an overall quality of life issue. All state residents deserve equitable rights to Pennsylvania's natural resources, including clean air and clean water. It is the responsibility of elected officials to work with the people of Pennsylvania to co-develop and support stronger policies that uphold human rights.



PRIORITIZING GREEN STORMWATER INFRASTRUCTURE

Julie Ulrich, The Nature Conservancy; Adam Schellhammer, American Rivers

RECOMMENDATIONS

1. Provide dedicated, long-term state funding to Act 167, the Stormwater Management Act, to ensure that counties and municipalities have the resources to strategize and implement their stormwater management plans.
2. Provide funding to communities for increased technical assistance capacity on their green stormwater infrastructure (GSI) projects. Access to technical assistance from experts can support communities in their planning and implementation processes. Funding should be prioritized for communities that have the greatest need to mitigate flood volume and to reduce pollution.
3. Support policies and investments at all levels of government that promote integration of natural resources and green infrastructure into the fabric of local communities and neighborhoods, bringing residents a suite of benefits including stronger local economies, increased access to green space, and reduced flooding impacts.
4. Integrate green infrastructure into local and regional planning. Develop policies that require or incentivize the inclusion of green elements into new construction and redevelopment projects.

Photo Credit: Will Parson, Chesapeake Bay Program

Introduction

Stormwater runoff from rain and snowmelt continues to be a major source of water pollution in Pennsylvania. It carries trash, bacteria, heavy metals, and other pollutants across impervious surfaces—such as roads, buildings, and parking lots—through storm sewers and into local waterways. Heavy rainstorms can lead to even greater levels of water pollution and cause severe flooding that damages property and risks human life. Pennsylvania’s stormwater infrastructure currently scores a “D” on the American Society of Civil Engineers’ infrastructure report card. This score highlights the need for investments to help upgrade aging systems and install new infrastructure that bolsters stormwater capacity. To meet this challenge, many communities are constructing green stormwater infrastructure (GSI) projects that introduce nature-based approaches to curb flooding, filter pollution, reduce urban heat, improve air quality, and invest in community health and safety.

Background

Municipalities must manage stormwater to avoid stream impairment, higher water treatment costs, and flooding. Investments in protecting existing stormwater systems and adding green infrastructure will protect local businesses, create jobs, and improve public health. As increased costs of aging infrastructure put a strain on municipal budgets, communities across Pennsylvania are getting strategic about stormwater management. Many municipalities have found innovative solutions to address their storm water challenges by upgrading their GSI. GSI uses nature-based approaches (rain gardens, bioswales, constructed wetlands, and green roofs) in tandem with traditional “gray” infrastructure to reduce and treat stormwater at the source rather than diverting it into large underground tunnels and reservoirs.

Cities and towns across the Commonwealth have a proven track record in implementing GSI and this is helping to advance quality of life, economic prosperity, and environmental quality of Pennsylvania’s communities. Green infrastructure provides many benefits, such as reduced flooding, improved air and water quality, better health outcomes, and increased business activity, often at a lower cost than conventional gray infrastructure.

Construction and maintenance of a green infrastructure network at the local, regional, and state levels must be supported by policy and stable sources of funding to maintain and grow the



environmental, economic, and social benefits they provide for urban, suburban, and rural communities. Advancing regulations, policies, and funding for green approaches to stormwater management can result in a vibrant and growing GSI industry. Act 167 and the MS4 program are valuable tools for managing stormwater. However, to implement these programs more fully, municipalities need resources for planning and to invest local funding which, with stretched budgets, may require additional resources and support. Our recommendations provide pathways for the state legislature to help municipalities advance best management practices and fund stormwater programs with a focus on collaboration and equity.

Conclusion

The legislature has an important role to play in providing municipalities with the resources they need to manage stormwater. Namely, state resource agencies need increased funding to provide technical

and financial support to municipalities, which will empower them to reduce pollution and limit the impacts of flooding using green infrastructure. Investing state resources in the stormwater solutions described above will help protect our waterways and the many benefits they offer communities throughout the Commonwealth, especially communities of color who are disproportionately impacted by polluted stormwater.

Faced with growing stormwater pollution, excess nutrient pollution from agriculture, legacy toxins, and more frequent extreme weather events, Pennsylvania's rivers and streams require increased investments in restoration, adaptation, and protection efforts.

Yet these investments are too often caught in political crosshairs, which result in environmental setbacks. Prioritizing green infrastructure and creating a dedicated fund for technical assistance for communities implementing this infrastructure are strategic, cost-effective, and logical solutions.



COMBATting COMBINED SEWER OVERFLOWS (CSOs)

Emma Bast, PennFuture

RECOMMENDATIONS

1. Implement updates to PENNVEST's Clean Water State Revolving Fund (SRF) criteria that will enable more municipalities to access funding as either grants or forgivable loans, instead of low-interest loans.
2. Adopt state policies to incentivize or reward municipalities that utilize nature-based stormwater management strategies, such as green stormwater infrastructure.
3. Increase funding for Pennsylvania's sewage treatment infrastructure to the \$2.83 billion figure suggested by the U.S. Environmental Protection Agency (EPA) in the 2012 Clean Watersheds Needs Survey. According to the EPA, this is the amount needed to correct CSO infrastructure using both traditional gray infrastructure and green and nature-based control methods.

Introduction

Wastewater is used water from any combination of domestic, industrial, commercial or agricultural activities; stormwater runoff; and any sewer inflow or sewer infiltration. Wastewater can be conveyed in a separate or combined system. Combined sewer systems (CSSs) are designed to collect both stormwater runoff and household and commercial wastewater (raw, untreated sewage) into a single pipe. In dry periods, this flows directly to treatment plants. **During heavy rainfall or snowmelt, however, CSSs can reach max capacity and then discharge untreated wastewater into local waterways.** These events are called Combined Sewer Overflows (CSOs).

CSOs are remnants of the country's early infrastructure, often dating to the early 1900s. Pennsylvania has the largest CSO problem in the United States, with 120 permitted CSS communities creating a combined 1,540 outflows that release untreated sewage and wastewater directly into the Commonwealth's waters. CSOs often contain high levels of suspended solids, pathogenic microorganisms, toxic pollutants, organic compounds, excess nutrients, oil and grease, and other pollutants. These can pose risks to human health, threaten aquatic life and habitat, and impair the use and enjoyment of the Commonwealth's waterways by its residents.

Background

Communities with CSO discharges are required to take action to control these discharges and reduce their impact to waterways. In addition to the implementation of technology-based control measures, these communities are also required to develop a Long-Term Control Plan (LTCP). The ultimate goal for the LTCP is compliance with state water quality standards.

There are two general approaches for communities to manage their CSOs. The first is called "gray" or "centralized" infrastructure (e.g., storage tunnels, pipes, and gutters), which uses one large facility to treat stormwater from a large drainage area. The second is a more innovative "green" or "distributed" infrastructure approach, utilizing environmental or low-impact design principles and creating smaller facilities treating stormwater close to the source (e.g., rain gardens, permeable pavement, tree planting). Green stormwater infrastructure (GSI) can be stand-alone practices or placed in treatment trains, with a series of facilities feeding into each other.

In addition to a growing body of research suggesting that GSI is more effective at the main goal of reducing flooding and CSO events during normal storms, GSI also is known for providing a wide array of environmental and social benefits to the community where it is installed. These benefits—which can include cleaner air, increased property values, reduced urban heat islands, energy savings, climate resiliency, and lowered crime and violence rates, among other things—were not captured in traditional cost assessments. For example, mapping of urban heat effect shows green space can lower urban temperatures by up to 10 degrees, and

recent research out of the University of Pennsylvania has shown that the greening of 12,788 vacant lots in Philadelphia between 2006-2018 resulted in a 5.59 percent overall drop in crime. Greening and gardening of vacant lots can reduce firearm violence by more than five percent. GSI is now a well-established approach to managing stormwater, and multiple cost-assessment tools exist to help communities accurately make sound decisions when undertaking cost-benefit analyses.

Whether CSO communities opt to use a green, gray, or hybrid approach to bring their systems into compliance, stormwater infrastructure repair and improvement can pose significant logistical and financial challenges. Implementation of LTCs requires significant resources at every stage, from planning to implementation to long-term maintenance. It is critically important to the health of the Commonwealth's waters and residents that CSOs be brought under control, and so these challenges must be recognized and then addressed.

Unfortunately, available state and federal assistance often has structural barriers that make it difficult for CSO communities to access the funds. Lack of guidance, incentive, or both can result in communities passing over use of GSI for CSO upgrades, a missed opportunity for both stormwater controls and the compounding benefits that GSI can add to a community.

A variety of funding mechanisms are available to CSO communities, but one key source is Clean Water and Drinking Water State Revolving Funds (SRFs). The SRFs are funded by the federal EPA and managed by states. In Pennsylvania, the SRF is managed by PENNVEST, which can distribute SRF funds as grants, "principal forgiveness" loans, or low-interest loans. Grants and principal forgiveness loans can be obtained when the rate impact of loans on low-income households would be too great. However, low-income communities who might otherwise qualify for grants or principal forgiveness loans currently encounter several significant impediments to accessing these funds.

The barriers to access are multilayered and intersectional. First, it is key to recognize that municipalities are often reluctant or unable to add to their debt service burdens. This may be for policy reasons within a municipality's control, but it may be due to more fundamental structural legal

limits, such as being written into a city charter. In both cases, the outcome is that low-interest and principal forgiveness loans are a non-starter for these communities. Even though the loans would seem to provide a good deal that should enable infrastructure projects, adding debt burden is simply not an option. These effects can be exacerbated for low-income communities.

Certain prerequisites written into the state law also make it impossible for some municipalities to access grants or forgivable loans. For example, Pennsylvania state law currently requires that a utility have a separate rate for water and sewer charges. This prevents municipalities who have a single combined rate for drinking water, sewer, and stormwater services from obtaining grants. This barrier can and should be dismantled: PENNVEST is legally able to modify its regulations to allow waivers of this requirement.

Another requirement preventing access is that applicants must demonstrate a proposed project's funding will result in a 15 percent rate reduction in customer rates. As noted before, CSO infrastructure is old and expensive to fix; the cost of a project that would result in a 15 percent rate reduction in a large or mid-sized city, such as Pittsburgh or Allentown, would exceed the entire PENNVEST funding budget by itself. The effect of this requirement is thus the outright disqualification of these large and mid-sized cities, whose residents are no less deserving of equal access to clean water than those who live in smaller cities and towns. There are several options to address this barrier: two simple solutions would be to amend the statute either to a proportional limitation, or to allow waivers that would give equal access to this critical funding to all Pennsylvanians.





ADDRESSING LEAD IN SCHOOL DRINKING WATER

Steve Hvozdovich, Clean Water Action

RECOMMENDATIONS

1. Reintroduce and pass legislation that addresses lead in drinking water in Pennsylvania schools. A program should be implemented that requires replacement of old drinking fountains with lead-filtering water stations by 2025, and that ensures schools: a) test water outlets used for drinking and cooking, b) tell parents or guardians about the results of testing, and c) coordinate remediation efforts among appropriate state agencies in order to eliminate any problems.
2. Increase annual appropriations to PENNVEST to support drinking water infrastructure upgrades, including funding for full lead service line replacements and to staff Pennsylvania's Department of Environmental Protection (PA DEP) Safe Drinking Water Program who are responsible for overseeing drinking water permits and facilities.
3. Correct shortcomings in screening practices by passing a policy that: a) requires universal blood lead level screening in children at 12 months of age and 24 months of age, and b) ensures that insurance shall provide coverage for the screenings.

Photo Credit: Chesapeake Bay Program

Background

Lead is a highly poisonous metal. Exposure puts residents in harm's way, especially children, as they absorb more lead than adults and because their brains and nervous systems are still developing. Exposure can result in permanent neurological damage and behavioral disorders, like impaired memory, decreased IQ, impulsivity, hyperactivity, and attention disorders, even when lead is ingested in small amounts.

This is more alarming when you consider that according to the latest Center for Disease Control and Prevention (CDC) report, Pennsylvania ranks second for greatest number of children poisoned by lead. Yet the Pennsylvania Department of Health's 2020 Childhood Lead Poisoning Prevention Report stated that only approximately 32 percent of children within the Commonwealth under the age of two were tested for lead. Legislation attempting to address this was passed during the 2021-22 session but the language was amended at the last minute to merely consider testing children according to their risk for lead poisoning, which is what currently happens under CDC guidelines.

Pennsylvanians can be exposed to lead in a variety of ways. Pennsylvania is third in the nation for the number of housing units built before 1950, meaning a significant number were likely constructed with lead paint. Demolition work impacting lead-based painted surfaces can also generate dangerous levels of lead contamination in soil.

The U.S. Environmental Protection Agency (EPA) estimates that lead in drinking water due to aging infrastructure can be responsible for 20 percent or more of a person's lead exposure. Almost 90 percent of Pennsylvanians get their drinking water from a public water system. The American Society of Civil Engineers' 2022 report card ranks Pennsylvania's public drinking water systems with a failing grade of "D." Pittsburgh Water and Sewer Authority has removed 10,000 pipes from the drinking water supply, which is more than halfway to meeting its goal of removing all public lead service lines from its water system. Since 2017, the Philadelphia Water Department has replaced more than 2,600 of its estimated 20,000 to 40,000 lead service lines and received federal funding in early 2023 through the

Bipartisan Infrastructure Law (IIJA) to replace close to 20 additional miles of water mains. Yet a number of other cities and water systems across Pennsylvania are woefully behind in not only replacing their lead service lines but conducting the necessary inventory to identify where they are within a service area.

Pennsylvania Infrastructure Investment Authority (PENNVEST) is a state government program that provides low-interest loans and grants for clean water infrastructure projects since 1988. It is funded by a combination of voter-approved state funds, Growing Greener, Marcellus Legacy funds, EPA grants, and recycled loan repayments from previous PENNVEST funding awards.

The 2023-24 budget included increases for PENNVEST programs with an additional \$289 million going to the Drinking Water State Revolving Fund (DWSRF) as well as an additional \$83 million to the Water Pollution Revolving Fund. DWSRF provides a resource for financing various public drinking water systems (including systems owned by for-profit entities and not-for-profit entities) for expenditures for projects that will facilitate compliance with national and state drinking water regulations or otherwise advance the health-protection objectives of the Safe Drinking Water Act. Over the past year, approximately \$62.5 million has been distributed for lead service line replacement projects across Pennsylvania.

Testing water in schools and daycare facilities is important because children spend a significant portion of their days in these facilities and likely consume water while there. The longer water remains in contact with leaded plumbing, the more opportunity exists for lead to leach into water. As a result, facilities with on again/off again water use patterns, such as schools and daycare facilities, may have elevated lead concentrations in the water. A survey conducted in 2021 by a non-profit environmental health organization of a randomized sample of 65 Pennsylvania school districts found that 89 percent of districts had tested for lead. Pennsylvania's school code was updated fairly recently to include a section on lead testing, but the law contains a broad loophole: Schools need not perform lead testing if they instead "discuss lead issues in the school facilities" at a single public meeting. When

testing does occur, schools that find lead levels more than 15 parts per billion must perform remediation and provide their results to the Pennsylvania Department of Education, though only test results showing elevated levels of lead must be posted online, and the information is often incomplete. In 2017, Philadelphia passed a city law requiring more testing and lead remediation in schools, including replacing all drinking fountains with water stations featuring lead-removing filters by 2025.

Conclusion

We need to ensure safe drinking water for all Pennsylvanians. Despite improved investment in main replacement, most of Pennsylvania's public drinking water systems are struggling to fund projects to meet their replacement goals and there remain 689,000 lead service lines, making up 7.5 percent of all service lines in the Commonwealth, according to the Environmental Protection Agency's "7th Drinking Water Infrastructure Needs Survey and Assessment." This poses an ongoing risk to public health, particularly for underserved communities. Testing all children will help us more accurately define the scope of the childhood lead poisoning problem, identify lead-laden communities, and develop and implement a comprehensive lead-poisoning prevention strategy. Failure to ramp up investment in infrastructure and set strong standards protective of health continues to compromise our drinking water and children. Adequate resources and protective standards will require leadership and commitment from our legislators.





PRIORITIZING EQUITY IN PUBLIC WATER SYSTEMS

Leslie Centola, UpstreamPgh

RECOMMENDATIONS

1. Pass legislation mandating all water utilities have Customer Assistance Programs (CAP) for low-income customers including debt forgiveness programs.
2. Pass legislation mandating all water utilities adopt a Customer Advisory Board (CAB) to ensure community engagement, public feedback, and provider accountability.
3. Support a statewide moratorium on shut-offs until CAP and CAB are implemented at all Pennsylvania water authorities.
4. Support and advocate for the expansion of LIHWAP to an all season/year-round, permanent program.
5. Commission a state-wide study/audit on water utility transparency, water quality, and affordability requiring all public water authorities participate.
6. Repeal Act 12 of 2016 to ensure public utilities remain publicly owned and end predatory practices.

Introduction

Water is essential for life and a right guaranteed by the Pennsylvania constitution, and it is also a commodity that is bought and sold for profit while being distributed inequitably across Pennsylvania, **where race is the biggest indicator of access to water.**²⁷ Approximately 2.2 million Americans do not have access to running water,²⁸ while more than 1.5 million households in 12 major U.S. cities owe \$1.1 billion in past-due water bills to publicly owned utilities.²⁹ This data paints a stark picture,

especially considering utility bills are often prioritized over other financial needs. **Growing utility debt reflects the struggles of Commonwealth residents to thrive in today's economic climate.** This burden won't end anytime soon as aging water systems that provide lower quality of water are requiring more intense investments paid for by increased rates. This leaves Black and brown communities with the most significant burdens to bear. For the first time in our history, we are going backwards concerning water accessibility.³⁰

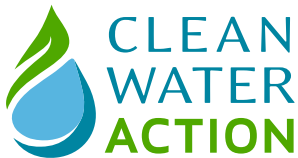
Background

In Pennsylvania, data on water utilities is alarmingly sparse, posing a threat to Pennsylvanians' health, wellbeing, and quality of life. Publicly-owned water utilities are fragmented by zip code or municipality. Therefore, they are all governed differently and report data differently, if at all.³¹ Allegheny County, for example, has 130 different municipalities with 36 different water suppliers. Most of these suppliers are publicly owned, understaffed, and under-resourced.³² When Allegheny County water authorities were recently pressed for data on transparency, affordability, and water quality, only 17 of the 36 water authorities responded to the request. Further, the report revealed one water authority serving 64 percent environmental justice populations had three percent total shut-offs, while a neighboring water authority serving 52 percent environmental justice populations had shut off water access for 26 percent of its total customers.³³ If more than one-quarter of a water servicer's customers cannot afford water and/or do not have running water, this lack of data reporting could facilitate a public health crisis with little-to-no warning.

Conclusion

If building equitable water systems is the goal, water utilities should be regulated federally as gas and electric are. Federal programs, like the Low-Income Household Water Assistance Program (LIHWAP), should be expanded and public water utilities should be required to implement CAP for low-income customers. Co-creating a mandatory CAB with residents from the communities that are most impacted would promote increased transparency and accountability for water utilities. **The future of our water should never be in question—access to it and quality of it is a guaranteed right to all Pennsylvanians.** We must address systemic poverty from its root and ensure all people have access to clean and affordable water in practice, not just in theory.

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ENVIRONMENTAL GLOSSARY

This Environmental Glossary defines terms found within the 2024–2025 Pennsylvania Clean Water Legislative Briefing Book. This glossary intends to provide a foundation for environmental education and understanding of the challenges facing our climate, public health, and natural resources.

Acid mine drainage (AMD): The formation of highly acidic water rich in heavy metals caused by contact with mining activity, commonly coal mining. The resulting fluids may be highly toxic and, when mixed with groundwater, surface water and soil, may have harmful effects on humans, animals and plants. (Source: EPA)

Agricultural best management practices (BMPs): Conservation and technological practices, such as riparian buffers, cover crops, and nutrient management, that reduce runoff and excess nutrients to water supplies. (Source: USDA NRCS)

Algal blooms: These occur when toxin-producing algae grow excessively in a body of water. The excessive algal growth, or algal bloom, becomes visible to the naked eye and can be green, blue-green, red, or brown, depending on the type of algae. (Source: National Institute of Environmental Health Sciences)

BIPOC (Black, Indigenous, People of Color): This term is used to broadly reference multiple races other than white. It is also meant to unite all People of Color for liberation, while also acknowledging that not all People of Color face the same levels of injustice. (Source: Alliance for the Chesapeake Bay)

Brownfields: A property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. (Source: EPA)

Budget line-item appropriation: Line-item budgets presented expenditures by organization and object, such as salaries, wages, office supplies, automobiles, etc. Because a line-item budget was not designed to describe the services to be performed, review for

effectiveness was impossible. The Governor may line-item veto a bill, by deleting or reducing appropriations contained in the bill and then signing it. (Source: PA Office of the Budget)

Carbon sequestration: Forests sequester carbon by capturing carbon dioxide from the atmosphere and transforming it into biomass through photosynthesis. Sequestered carbon is then accumulated in the form of biomass, deadwood, litter and in forest soils. Release of carbon from forest ecosystems results from natural processes (respiration and oxidation) as well as deliberate or unintended results of human activities (i.e. harvesting, fires, deforestation). (Source: UNECE)

Chesapeake Watershed Agreement: Signed in 2014, this landmark accord establishes goals and outcomes for the restoration of the Bay, its tributaries and the lands that surround them; signatories include representatives from the entire Chesapeake Bay watershed, committing for the first time the Bay's headwater states to full partnership in the Bay Program (Source: Chesapeake Bay Program)

Clean Water Act (CWA): Reorganized and expanded in 1972, the Clean Water Act establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters (Source: EPA)

Climate change: Long-term shifts in temperatures and weather patterns. Such shifts can be natural, due to changes in the sun's activity or large volcanic eruptions. But since the 1800s, human activities have been the main driver of climate change, primarily due to the burning of fossil fuels like coal, oil and gas. (Source: United Nations)

Combined sewer overflow (CSO): A system where rainwater runoff, domestic sewage and industrial wastewater are combined in a combined sewer system (CSS) and routinely overflow into nearby bodies of water. (Source: EPA)

Combined sewer system (CSS): Collects rainwater runoff, domestic sewage, and industrial wastewater into one pipe which transports all of the wastewater to a treatment plant. (Source: EPA)

Dead zone: Low oxygen or hypoxic areas in water where most marine life dies or if they are mobile such as fish, will leave the area; habitats that would normally be teeming with life become, essentially biological deserts. (Source: NOAA)

Department of Environmental Protection (DEP): A state agency whose mission is to protect Pennsylvania's air, land and water from pollution and to provide for the health and safety of its citizens through a cleaner environment. (Source: PA DEP)

Escherichia coli (E. coli): Bacteria found in the environment, foods, and intestines of people and animals. (Source: CDC)

Ecosystem services: Any positive benefit that wildlife or ecosystems provide to people. (Source: NWF)

Effluent: Waste material discharged into the environment especially when serving as a pollutant. (Source: Merriam Webster)

Emerging contaminants: Chemicals that recently have been shown to occur in the environment and have been identified as a potential environmental or public health risk. (Source: NJ DEP)

Environmental justice: Remedying environmental harms that have been purposefully or incidentally imposed on communities based on racial, political, or socioeconomic status and preventing similar injustices from happening in the future. (Source: EDF)

Environmental Justice Areas: Census block groups with a composite percentile score greater than or equal to the 80th percentile based on more than 30 environmental, health, and socioeconomic indicators. (Source: PA DEP)

Environmental Protection Agency (EPA): United States agency that protects people and the environment from significant health risks, sponsors and conducts research, and develops and enforces environmental regulations. (Source: Usa.gov)

Environmental Rights Amendment: A 1971 amendment to the Pennsylvania Constitution that establishes the peoples' right to clean air, pure water, and preservation of environmental values. (Source: ELSC)

Erosion: A natural process in which soil and rock material is loosened and removed. (Source: EPA)

Ethane: A paraffinic hydrocarbon with molecular formula C₂H₆. It is mainly used to produce ethylene, a feedstock to make plastics. (Source: EPA)

Frontline: Communities are those that experience "first and worst" the consequences of climate change. These are often communities of color and low-income, whose neighborhoods often lack basic infrastructure to support them and who will be increasingly vulnerable as our climate deteriorates. (Source: Ecotrust)

Geothermal energy: Heat within the earth and is a renewable energy source because heat is continuously produced inside the earth. (Source: EIA)

Greenfield locations: An area of land that has never previously had buildings on it or been used for industry. (Source: Cambridge Dictionary)

Grid-scale solar: A solar photovoltaic system that participates in the wholesale electrical market and typically produces electricity for sale, not to offset local energy demand. (Source: PA DEP)

Groundwater: Water that exists underground in saturated zones beneath the land surface. (Source: USGS)

Hydrogeological: The study of groundwater. (Source: IAH)

Invasive species: An organism that causes ecological or economic harm in a new environment where it is not native. (Source: NOAA)

Mine pool geothermal development: The utilization of geothermal energy resources, often involving the extraction of heat from water that has accumulated in underground mine workings. (Source: OSMRE)

National Environmental Policy Act (NEPA): Established to ensure that federal agencies take into account the environmental effects of their actions and decisions. This law requires federal agencies to carefully assess and consider the potential impacts on the environment before making decisions related to their projects or initiatives. (Source: US GSA)

Nonpoint source pollution (NPS): Results from land runoff, precipitation, drainage, seepage, or hydrologic modification. NPS, unlike pollution from industrial and sewage treatment plants, comes from many diffuse sources. (Source: EPA)

Nutrient management: Management of nutrients and soil amendments to maximize their economic benefit while minimizing their environmental impact. (Source: USDA NRCS)

Nutrient pollution: Pollution caused by excess nutrients, mainly nitrogen and phosphorus, which can cause abnormal effects, such as overgrowth of algae. (Source: EPA)

Nutrient runoff: When nutrients run off of land in urban areas and can enter local waterways, fueling the growth of algae blooms and create conditions that are harmful to underwater life. (Source: Chesapeake Bay Program)

Pennsylvania Department of Agriculture (PDA): State agency that encourages, protects and promotes agriculture and related industries throughout the Commonwealth while providing consumer protection through inspection services that impact the health and financial security of Pennsylvania's citizens. (Source: PDA)

Pennsylvania Department of Conservation and Natural Resources (DCNR): State agency established in 1995 and is charged with maintaining and protecting state parks; managing state forest land; providing information on the state's ecological and geologic resources; and establishing community conservation partnerships with grants and technical assistance to benefit rivers, trails, greenways, local parks and recreation, regional heritage parks, open space, and natural areas. (Source: PA DCNR)

Pennsylvania Department of Environmental Protection (DEP): DEP's mission is to protect Pennsylvania's air, land and water from pollution and to provide for the health and safety of its citizens through a cleaner environment (Source: PA DEP)

Phase III Chesapeake Bay Watershed Implementation Plan (WIP): Actions that the jurisdictions within the Chesapeake Bay watershed must take by 2025 to meet pollution reduction targets. (Source: EPA)

Point source: Any single identifiable source of pollution from which pollutants are discharged, such as a pipe, ditch, ship, or factory smokestack. (Source: NOAA)

Riparian area: Lands that occur along the edges of rivers, streams, lakes, and other water bodies. Examples include streambanks, riverbanks, and floodplains. (Source: NPS)

Riparian Forest Buffer Initiative: The Commonwealth has a goal of planting 95,000 acres of riparian forest buffers statewide by 2025 to improve waterways in Pennsylvania and the Chesapeake Bay. (Source: PA DCNR)

Salinity: The dissolved salt content of a body of water; helps determine the many aspects of the chemistry of natural waters and the biological processes within them. (Source: EPA)

Sediment: Loose particles of sand, silt and clay; in excess amounts, sediment can cloud water bodies, harming aquatic life. (Source: Chesapeake Bay Program)

Septic systems: A disposal system, and all of its components, used to receive, treat, and dispose of domestic wastewater through microbiological decomposition and soil absorption. (Source: EPA)

Stormwater: Rainwater or melted snow that runs off surfaces, collecting debris and pollutants. With more intense and frequent storm events due to climate change, there is a higher risk of pollution and debris from these surfaces ending up in local waterways. (Source: EPA)

Total maximum daily load (TMDL): Also known as a pollution diet, it is a calculation of the maximum amount of a pollutant allowed to enter a waterbody so that the waterbody will meet and continue to meet water quality standards for that particular pollutant; a TMDL determines a pollutant reduction target and allocates load reductions necessary to the source of the pollutant. (Source: EPA)

Waste culm: Another term for waste coals, the low-energy-value discards of the coal mining industry. Waste coal piles leach iron, manganese, and aluminum pollution into waterways and cause acid drainage that kills neighboring streams. (Source: Energy Justice Network)

Wastewater: Also referred to as sewage or liquid waste from homes, businesses, schools, industrial facilities and other institutions; can also refer to runoff from stormwater, agriculture, and other sources. (Source: CDC)

Watershed: An area of land that channels precipitation to creeks, streams, and rivers. These eventually outflow to points such as reservoirs, bays, and the ocean. (Source: NOAA)

