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DEPARTMENT OF ENVIRONMENTAL
PROTECTION

Bureau of Watershed Restoration
and Nonpoint Source Management



Pennsylvania's Chesapeake Bay Watershed

Lower Susquehanna Source Water Protection Partnership Meeting

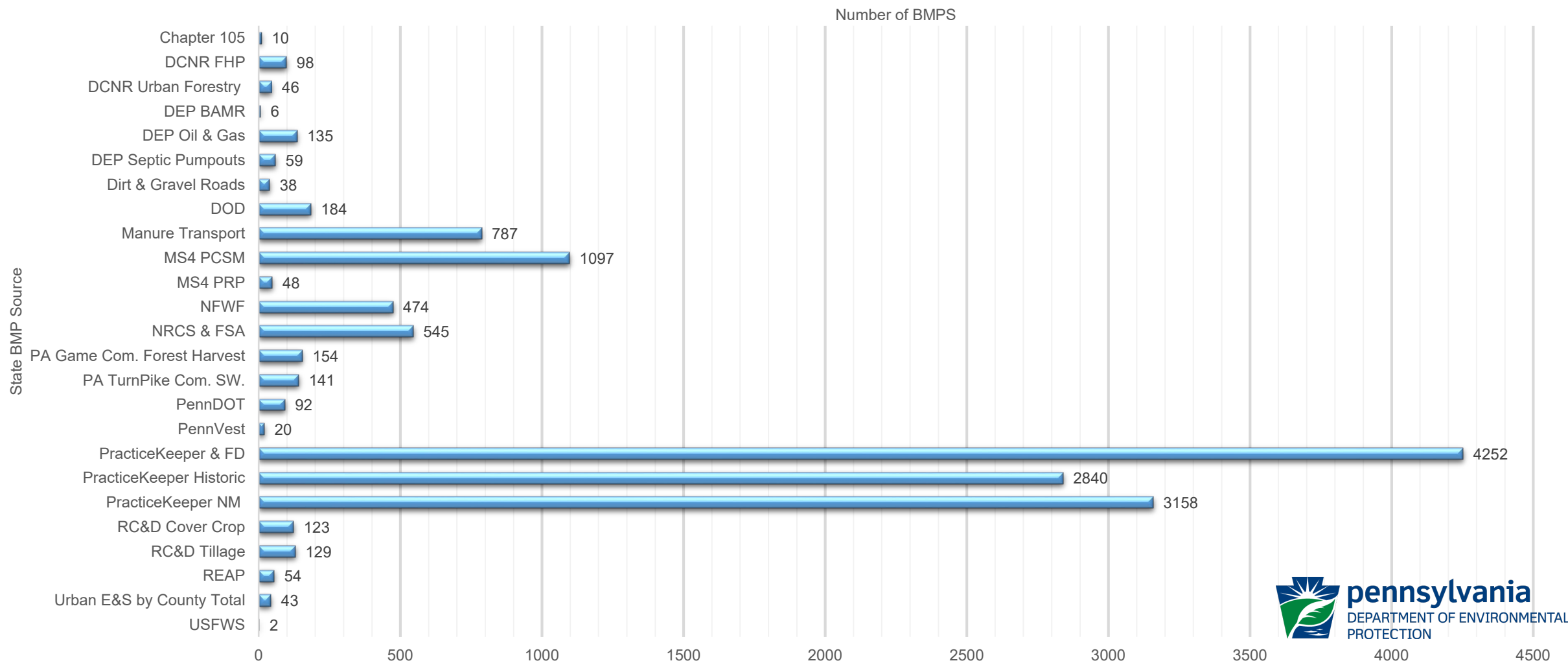
May 16, 2024

Josh Shapiro, Governor

Jessica Shirley, Acting Secretary

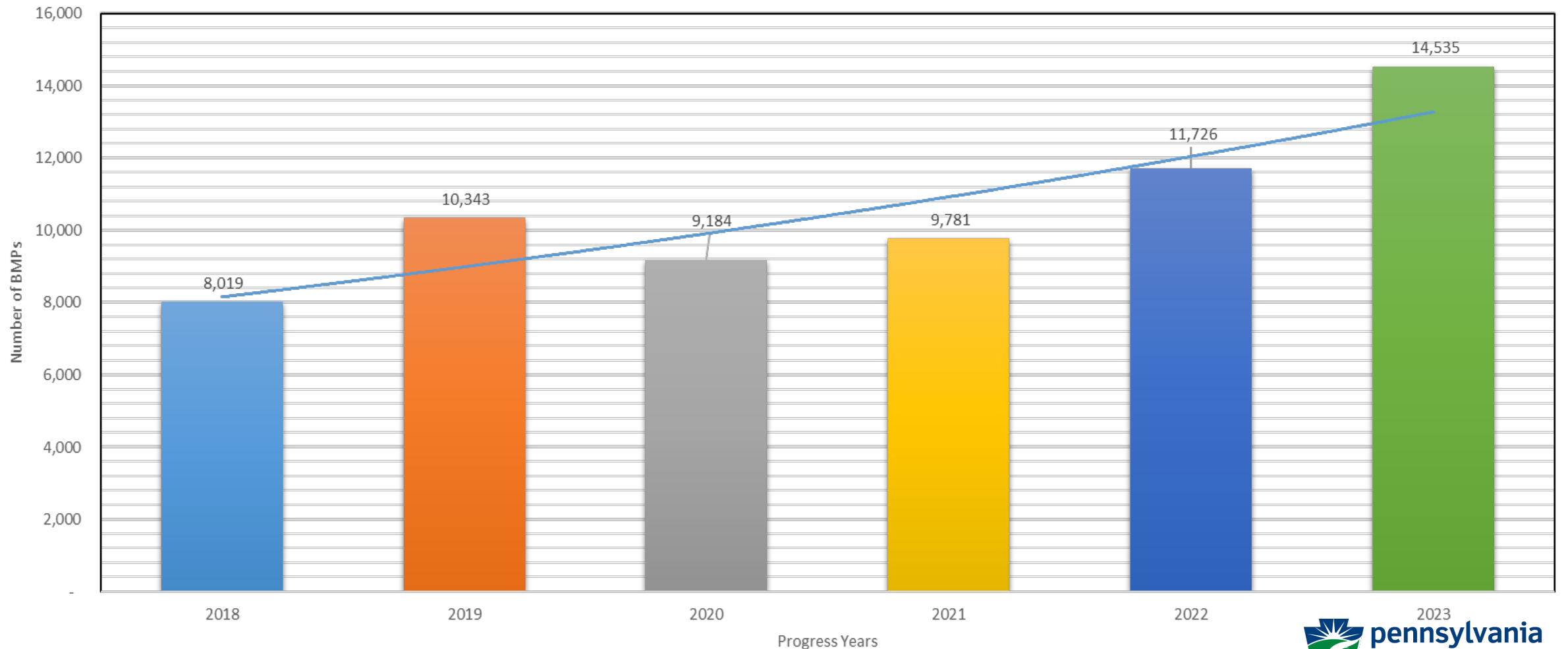
BMP Reporters

Number of BMPs Reported by BMP Source for 2023 Progress Year



BMP Implementation Trending Up

Number of BMPs Submitted to NEIEN Per Year



Pennsylvania Modeled Annual Load Reductions

CAST-19

ChesapeakeProgress

2023 Annual Load Reductions – All Sectors
(Edge of Tide – Delivered to the Chesapeake Bay):

Nitrogen: 3.62 million pounds

Phosphorus: 80,000 pounds

Sediment: 102 million pounds

Modeled Annual Load Reductions

CAST-19

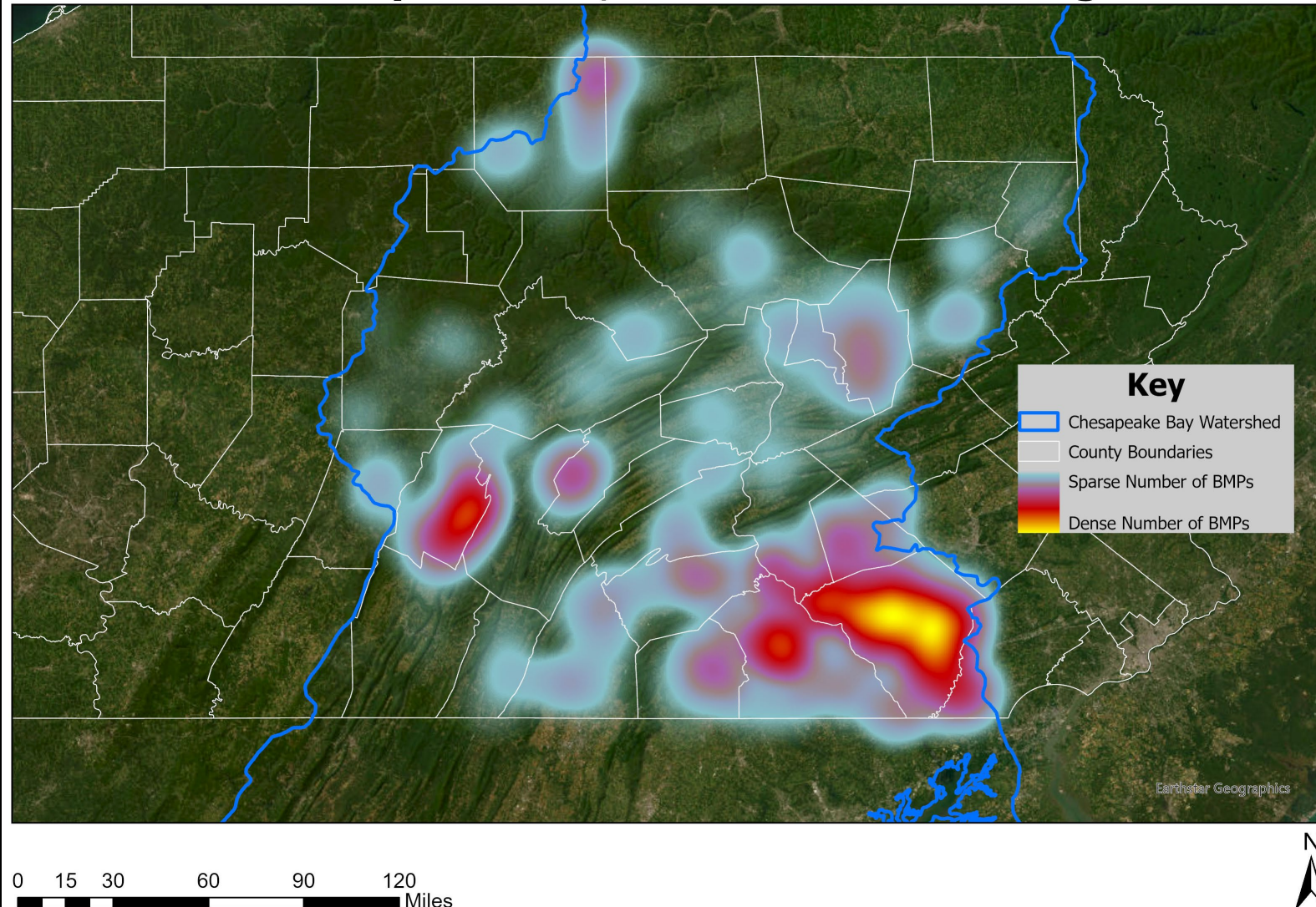
2023 annual numeric progress marks the second greatest nitrogen reduction from agriculture since 2009.

Accelerated Implementation:

- More than 5 million pounds of nitrogen pollution to the Chesapeake Bay was reduced from agriculture since 2019 - five times greater than the previous 10-year period.
- More than 135,000 pounds of phosphorus pollution to the Chesapeake Bay was reduced from agriculture since 2019 – more than 2.5 times greater than the previous 10-year period.
- More than 140 million pounds of sediment pollution to the Chesapeake Bay was reduced from agriculture since 2019 – more than 70% of the previous 10-year period.

BMP Implementation 2023

Heat Density of over 8,000 BMPs w/Lat & Longs





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DEPARTMENT OF AGRICULTURE



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DEPARTMENT OF CONSERVATION
AND NATURAL RESOURCES



PennState Extension



NRCS Natural Resources
Conservation Service



pennsylvania
FISH & BOAT COMMISSION



PENNVEST
PENNSYLVANIA INFRASTRUCTURE INVESTMENT AUTHORITY



pennsylvania
GAME COMMISSION



pennsylvania
DEPARTMENT OF TRANSPORTATION



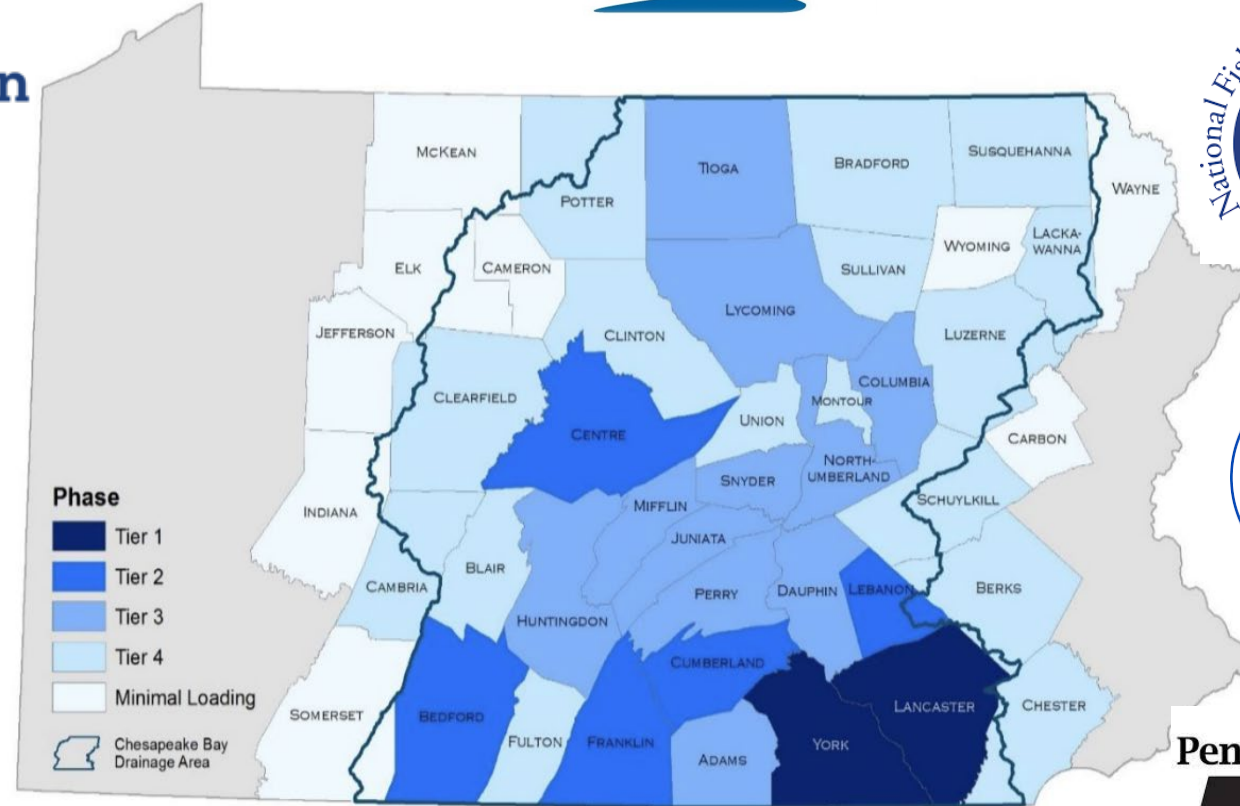
PACD
PENNSYLVANIA ASSOCIATION OF
CONSERVATION DISTRICTS, INC.



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The Authorities
PENNSYLVANIA MUNICIPAL AUTHORITIES ASSOCIATION



SRBC
SUSQUEHANNA RIVER
BASIN COMMISSION
NY ■ PA ■ MD ■ USA



CCAP
COUNTY COMMISSIONERS
Association of Pennsylvania

FSA
FARM SERVICE AGENCY

Pennsylvania
Farm Bureau

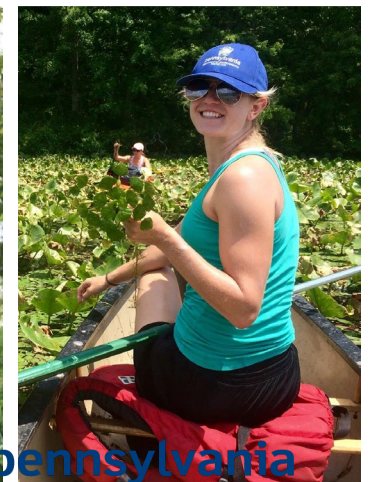


How We're Working Together to Succeed

- Core Team of **40+** Bureau of Watershed Restoration and Nonpoint Source Management staff covering statewide and Chesapeake Bay nonpoint source management and watershed restoration efforts
- **34** counties with **30** Countywide Action Plans
- **500+** people on countywide implementation teams with **18** Clean Water Coordinators
- Private and public entities represented with **20+** serving as Statewide Action Leaders supporting Phase 3 WIP Implementation and our local CAP Implementation Teams
- **37+** Data Reporting Entities – Federal, State, Local, and Non-Profit

Why “Countywide?”

- Counties are in the best position to make a difference at the local level.
- County governments are already doing a lot of work and have plans to do more.
- County efforts are already collaborative, and they generally know all the relevant stakeholders.
- Participation can help you reach current goals and plan for next steps.
- Participation can help you track, and get credit for, your current and planned efforts.



Countywide Action Plan Co-Benefits

It's a catalyst. Water pollution comes from many sources. Clean water is the end result of efforts to reduce and clean up pollution.

Agriculture



Forestry



Stormwater



Wastewater



Air Quality



Brownfield Cleanup & Redevelopment



Mining, Monitoring & Regulation



Oil & Gas



Countywide Action Plan Co-Benefits

It's a catalyst. Cleaner land and water means increased local economic, public health and social benefits.

Increased Property Values



Cleaner Drinking Water



Less Flooding and More Flood Resilience



Ecotourism Opportunities



Higher Quality of Life



Aesthetic Value



Recreation Opportunities



Community Gardens and Parks



How We're Working Together to Succeed

“A big benefit of the CAP has been the communication with the other entities. We were all working in our own little bubbles. Conservation District over here, MS4s over there. Nonprofits somewhere else. The CAP process has spurred much better communication and collaboration on projects. We have to work together to clean the water, we can't get there by doing our own thing.”

*—Julie Cheyney, Director, Lebanon County
Planning Department*



Role of the Clean Water Coordinator

The role of the Clean Water Coordinator is exclusively to focus on leading and supporting the work of developing and implementing the Countywide Action Plan for their respective county.

Responsibilities

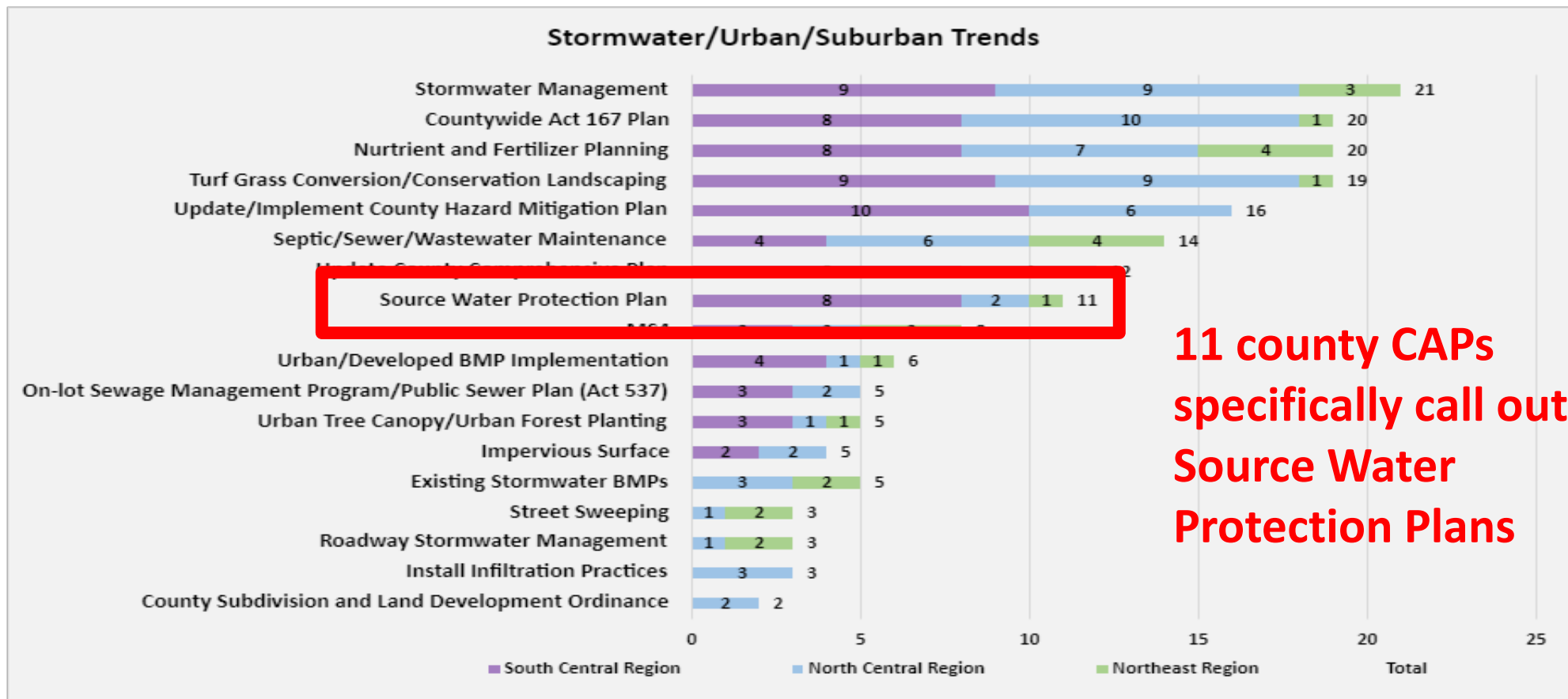
- Forging strong relationships and building coalitions to broaden and build support for the CAP and PA's Phase 3 WIP.
- Identifying challenges and seeking resources (financial, human, etc.) to support county efforts (grants, partnerships, etc.).

CAP Coordinator Contact: [Countywide Action Plans \(pa.gov\)](https://www.pa.gov/countywide-action-plans)



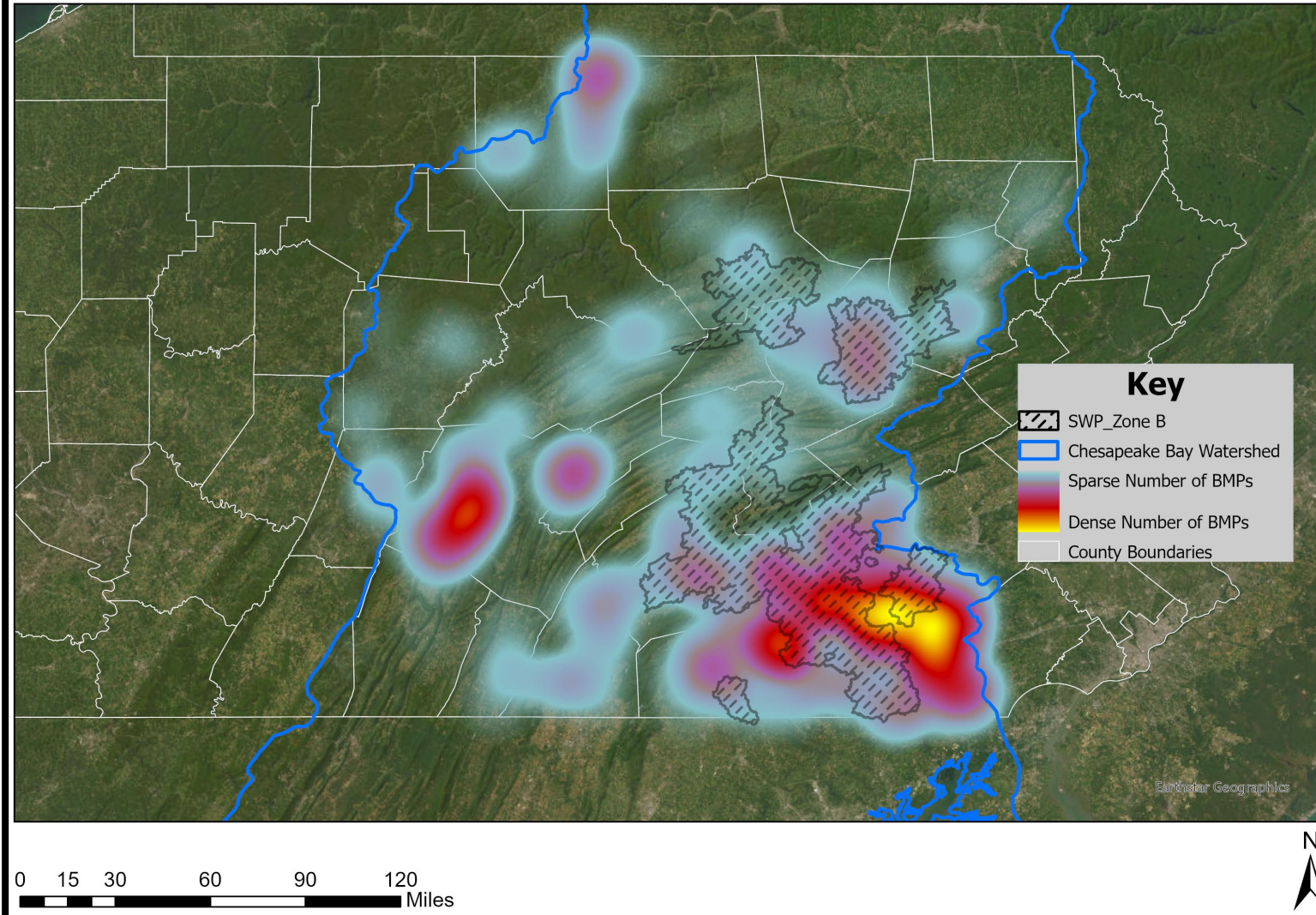
CAP Priorities

- Nitrogen, Phosphorus, and Sediment Reductions
- Improved local water quality



BMPs & Source Water Protection

PA CBWS 2023 Lat & Long BMPs: Source Water Protection Area Zone B

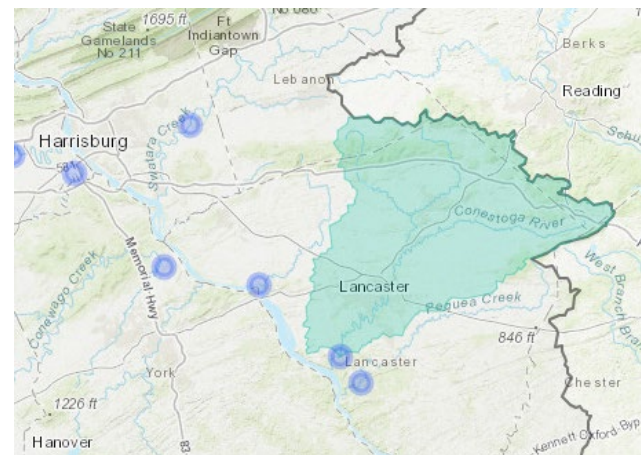
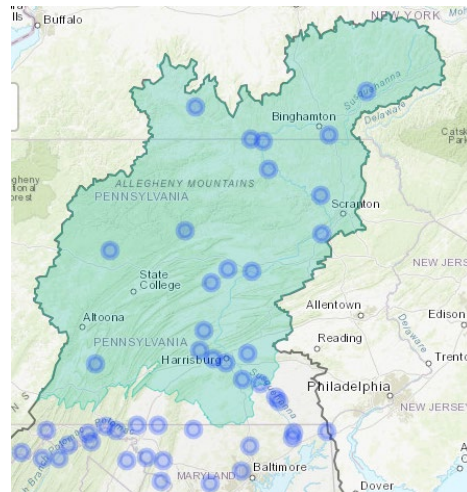


Pennsylvania's Progress

Monitored and Expected Total Reduction Indicator for the Chesapeake [\(METRIC\)](#)

Compares anticipated modeled results from CAST with water quality monitoring data using the USGS WRTDS Flow-Normalization Method

Demonstrates reductions in nitrogen, phosphorus, and sediment
Marietta and Conestoga Non-tidal Network (NTN) stations,
along with other stations throughout Pennsylvania



Monitored Progress

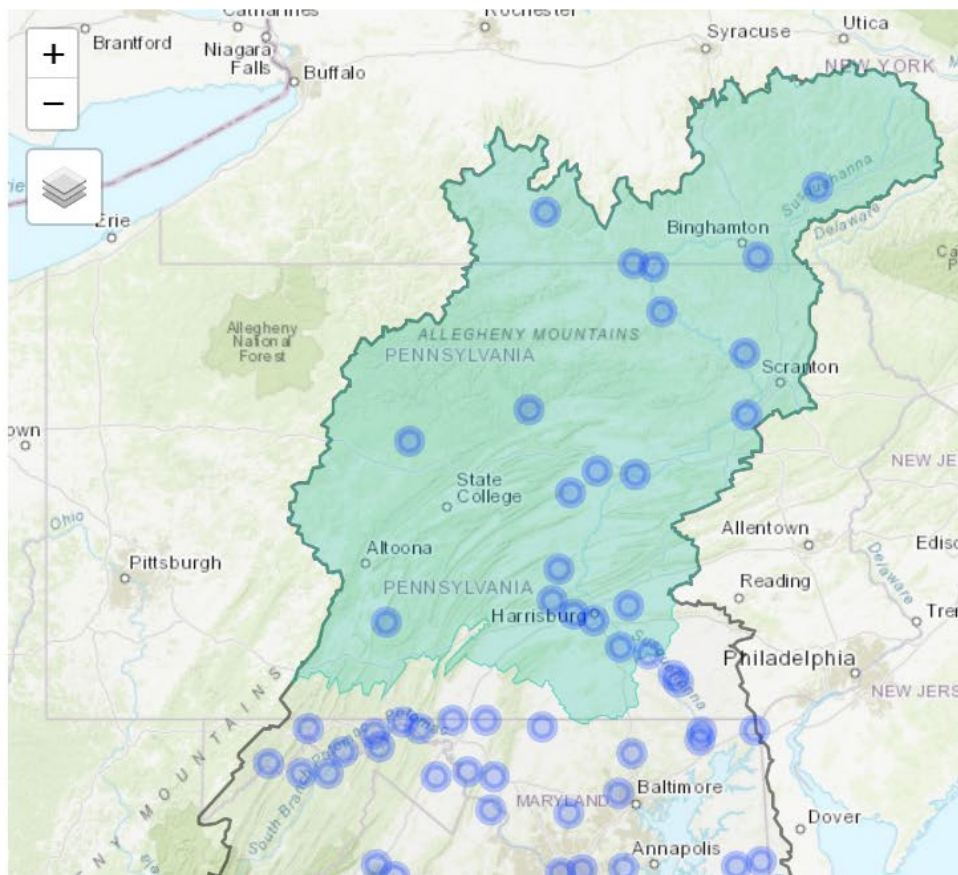
Step 1: Select the water-quality parameter:

☒ Total Nitrogen ☐ Total Phosphorus ☐ Suspended Sediment

Step 2: Select the monitoring station by clicking either Map or Table:

Map [Data Table](#)

Tip: Move mouse cursor to any circle marker to show the station name.



[About](#)

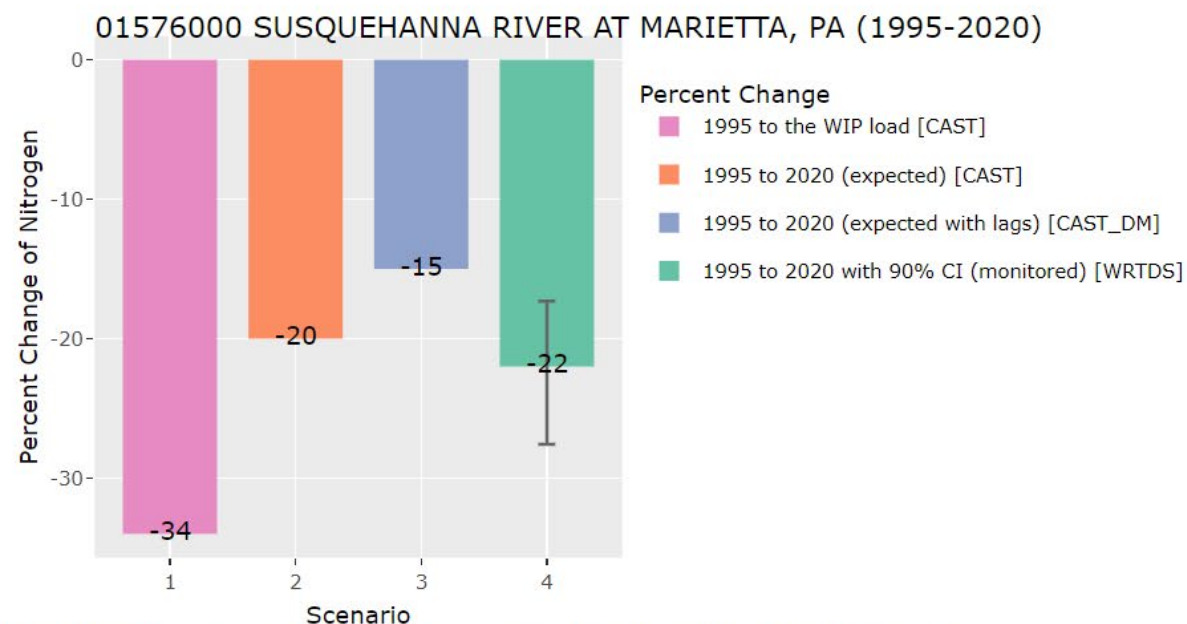
[Timeseries](#)

[WIP Load](#)

[Progress](#)

[Download](#)

Interactive Plot



(Note 1: Negative values indicate load reductions; positive values indicate load increases.)

(Note 2: To obtain values in million pounds (Mlbs), multiply the percent change shown in this plot by the CAST load in the first year of the assessment period, which is available in the Data Table under the About tab.)

Data Type

WRTDS: Monitored load - computed using the USGS WRTDS flow-normalization method ([source](#)).

CAST: Expected load in the long term - computed using the Chesapeake Bay Program Watershed Model ([source](#)).

CAST_DM: Expected load with lags - computed using the Chesapeake Bay Program Watershed Model ([source](#)).

Supporting Local Action Through Funding

- **Funding for Watershed Restoration and Agricultural BMPs**
 - **DEP Countywide Action Plan (CAP) Implementation and Clean Water Coordinators:**
 - A total of \$19.6 million was awarded for County Coordinators and CAP Implementation Grants. This included EPA Most Effective Basin (MEB), Infrastructure Investments and Jobs Act (IIJA), and Local Government Implementation (LGI) funding.
 - 226 projects were approved for funding and are estimated to reduce more than 170,000 lbs per year of nitrogen, 122,000 lbs per year of phosphorus, and more than 18,000 tons per year of sediment.
 - **Pennsylvania 2019 Farm Bill (new)**
 - [Conservation Excellence Grant \(CEG\)](#) - \$2.5 million initially awarded to Tier 1 counties; \$2 million annually plus additional funds from other state and federal partners
 - **Pennsylvania 2022-2023 State Budget identifies a new “Clean Streams Fund” funded by COVID-ARPA**
 - [Agricultural Conservation Assistance Program \(ACAP\)](#) (new) - \$154 million – State Conservation Commission
 - [Nutrient Management Fund](#) (existing) - \$22 million – State Conservation Commission joint administration with DEP
 - Clean Water Procurement Program** (new) - \$22 million – PENNVEST joint administration with DEP
 - [Keystone Tree Fund](#) (new) - \$8.8 million – Department of Conservation and Natural Resources
 - Stormwater Management Reimbursement Program** (new) - \$8.8 million - DEP
 - Acid Mine Drainage (AMD) Treatment** (existing) - \$4.4 million – DEP
- Additional funds for [H2OPA and Small Sewer Projects](#) allocated to Department of Community and Economic Development
- Additional federal funds from EPA for the **Clean Water State Revolving Fund (CWSRF)** have been awarded to PENNVEST, with joint administration with DEP

Accelerate Implementation through Funding

“We've definitely had success already with on-the-ground project implementation. The funding that DEP gave us for CAP implementation, the flexibility of those dollars has been extremely helpful, and we appreciate being able to get that to the projects on the ground quickly and be responsive to the local decision making.”

— *Allyson Gibson, Coordinator
Lancaster Clean Water Partners*



Supporting CAPs and Local Action

- Updated [Bureau of Watershed Restoration and Nonpoint Source Management website](#)
- [Healthy Watersheds, Healthy Communities](#) story map: 3,000+ views
- [Clean Water Academy](#): Web-based training modules
- [Tracking Pennsylvania's Progress](#): Adding public transparency for milestone commitments and progress
- [Healthy Waters](#) monthly e-newsletter: Increasing subscribers
- CAP Action Items for the Week: weekly email sharing relevant updates, tools, and training opportunities
- Materials and training to support county teams' local outreach needs

[DEP > Businesses > Water > Watershed Restoration and Nonpoint Source Management > Chesapeake Bay Watershed Restoration Division > PA's Phase 3 WIP > Newsletter](#)



HEALTHY WATERS

Pennsylvania. Partnership. Progress

The Department of Environmental Protection Bureau of Watershed Restoration and Nonpoint Source Management, Chesapeake Bay Watershed Restoration Division produces a monthly newsletter to showcase progress and updates on the statewide Phase 3 Watershed Implementation Plan and our local partners' Countywide Action Plans. Our newsletter will highlight activities from the Division and our partnering counties, agencies, and action team leaders; reporting and data tools; funding and grant opportunities; and major announcements.

[Sign up for the newsletter](#) 

Clean Water Gathering



Clean water:
Great for PA
Good for the Bay

PA Clean Water Gathering Summary and Next Steps

Progress Through Partnerships

On October 11, 2023, DEP's Bureau of Watershed Restoration and Nonpoint Source Management (BWRNSM) hosted the first Clean Water Gathering of State Program Action Leaders and Countywide Action Planning (CAP) leaders. Over 80 partners, representing county, state and federal organizations, came together to celebrate successes and discuss high level needs, issues and challenges to continued progress. BWRNSM's Chesapeake Bay Watershed Restoration Division is using the recommendations from this meeting to build collaborative county/state partner Progress Teams that focus on "Strategies for Success" that address challenges and build on successes from Phase 3 WIP and CAP efforts.



In Their Own Words

"CAP planning brings additional funding to leverage for projects and helps build relationships with landowners and other county agencies." - Potter County

"The SCC provides funding, support and resources for County Conservation Districts." - State Conservation Commission

"Consulting capacity keeps projects moving. Predictable funding helps farmers stay interested in doing projects." - Perry County



Value of Implementing Countywide Action Planning

Countywide action planning and implementation adds tremendous value to county and local partners. As the CAP process matures and expands, BWRNSM and State Program Action Leaders are committed to continuing support and growth of this continually adaptive and evolving process. The Clean Water Gathering confirmed that Program Action Leaders and county partners are willing and ready to collaborate and further support this effort as it evolves.

County Leaders' Perspectives

- Funding and resources
- Water quality improvements
- Local involvement
- Identity, organization
- Having a strong voice
- Collaboration and partnerships

Program Leaders' Perspectives

- Funding and resources
- Technical assistance
- Training
- Connections
- Program integration



Partners - Projects - Progress



PA Clean Water Gathering Summary and Next Steps



Clean Water Gathering Outcomes

The meeting gave attendees the chance to celebrate partnership-facilitated clean water successes. Each partner reaffirmed that the foundations of success are: commitment, communication, and collaboration. The partners agree that by working together they can overcome the clean water challenges that still exist.

Together the partners:

- Agreed to a common list of five challenges that keeps PA from leveraging all available resources for implementation of the Phase 3 WIP and CAPs.
- Expressed interest and need to work together collaboratively to resolve these challenges and be able to continue expanding on PA's progress.
- Began conversations to identify strategies to overcome these challenges.

Progress Teams

The five agreed-upon challenges discussed at the Clean Water Gathering were condensed into three focused challenge areas that hinder or prevent Pennsylvania from being more successful. Three Progress Teams, composed of state and county partners, were created to develop "Strategies for Success" focused on addressing these issues that will lead to positive change and progress on these challenge areas. The three key challenge areas identified are:

1. Technical & Administrative Assistance
2. Staff Building / Staff Retention
3. Funding / Multi-Grant Coordination



"Improving water quality and creating partnerships benefits our communities." - Franklin County

Next Steps

1. County, state and federal partners will continue the conversation in 2024, ensuring ongoing progress by:
 - Engaging, collaborating and building on the foundation of success
 - Participating with and/or supporting Progress Teams in developing "Strategies for Success" for positive, effective change and progress in challenge areas.
2. Three Progress Teams collaborate to address ongoing challenges:
 - What can be proposed to ensure effective change?
 - Who is needed to make change happen?
 - How do we go about getting the change that we want?
 - When is the best time to engage additional partners, propose change, etc.?
3. DEP's BWRNSM Chesapeake Bay Watershed Restoration Division staff will coordinate and facilitate Progress Team meetings, in support of county and state leader efforts.

"We have more projects than funding and will do what it takes to finish these projects." - Snyder County

Partners - Projects - Progress



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What Success Looks Like



Conyngham Farm project – Luzerne County

- Project included: 32'x32' roofed waste storage facility, heavy use area, and barnyard runoff controls
- Project will result in reducing 130 lbs. of nitrogen, 5.29 lbs. of phosphorus, and 175 lbs. of sediment
- Funded through DEPs CAP Implementation Grant

What Success Looks Like



North Branch Little Aughwick Creek Stream Restoration, Huntingdon County

- The North Branch Little Aughwick Creek is a high-quality, coldwater fishery and a popular trout fishing stream
- Project included 1,030 feet of in-stream erosion control and fish habitat structures; 600 feet of new streambank fencing; one new off-stream water system; and a 3-acre riparian forest buffer consisting of 450 native trees and shrubs
- Partners include: Huntingdon County Conservation District, U.S. Fish and Wildlife Service, and PA DEP

What Success Looks Like

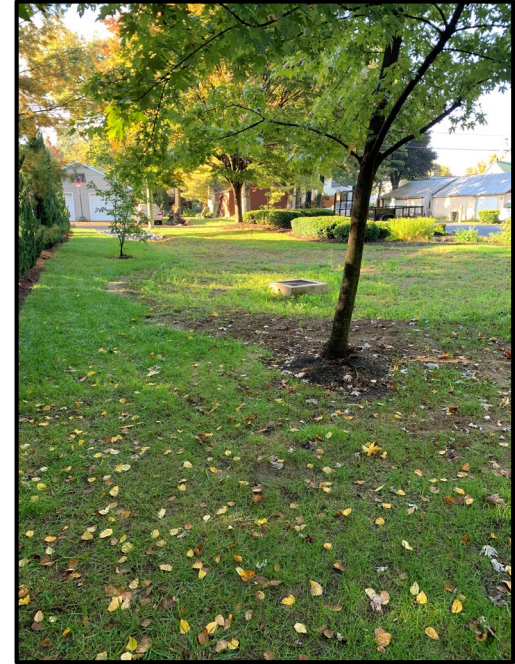


Middle Creek Buffer Project, Adams County – Project funded by a DEP CAP Implementation Grant Fund

- Buffer planting covers nearly 6 acres and consists of over 1,600 native trees and shrubs
- Partnered with the Alliance for the Chesapeake Bay



What Success Looks Like



North Lane Rain Garden – Lancaster County

- The project is a combination of a rain garden and vegetated swale which will take excess water from North Lane, filter it while reducing the ponding on the roadway, and then discharging the clean water to nearby Lititz Run.
- Funded through the Lancaster Clean Water Fund

Collaborative Partnerships Lead to Clean Water

[Shapiro Administration and Partners Celebrate Turtle Creek Watershed](#) Stream Restoration, Investments, and Water Quality Improvements – Stream delisting highlights the importance of strong partnerships in restoring the Chesapeake Bay Watershed.



[2022 Turtle Creek Watershed NPS Success Story](#)

- [Turtle Creek Watershed Delisting Event](#) – Video from Chesapeake Conservancy
- In the last four years, **more than 100 stream miles have been restored** to water quality standards in Pennsylvania's Chesapeake Bay Watershed.
- PA DEP [2024 Integrated Water Quality Report](#) – PA was the first state in the nation to submit the final report and receive approval from EPA.

Summary

- Pennsylvania’s “bottom-up” approach to the development and implementation of our Phase 3 Watershed Implementation Plan is proving to be the most effective way to improve, protect, and restore local waters and the Chesapeake Bay.
- Our approach to focus on local waters – “Great for PA, Good for the Bay” – and continuous collaboration and connection with local, state, and federal partners has led to innovative program implementation and delivery of more resources to support local partners and priorities.
- We continue to expand our reporting and data collection systems to better demonstrate the practices that are in place to improve water quality.
- Chesapeake Bay Edge of Tide (EOT) modeled load reductions demonstrate accelerated implementation in the agriculture sector over the last five years.
- Communication with CAP Coordinators provides an opportunity for Source Water Protection Efforts to join the conversation



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**Chesapeake Bay Watershed Restoration
Division**