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DEPARTMENT OF ENVIRONMENTAL
PROTECTION



Chesapeake Bay Program Office

Pennsylvania's Phase III Watershed Implementation Plan

Informational Meeting

Pennsylvania House and Senate Agriculture and Rural Affairs Committees

August 16, 2017



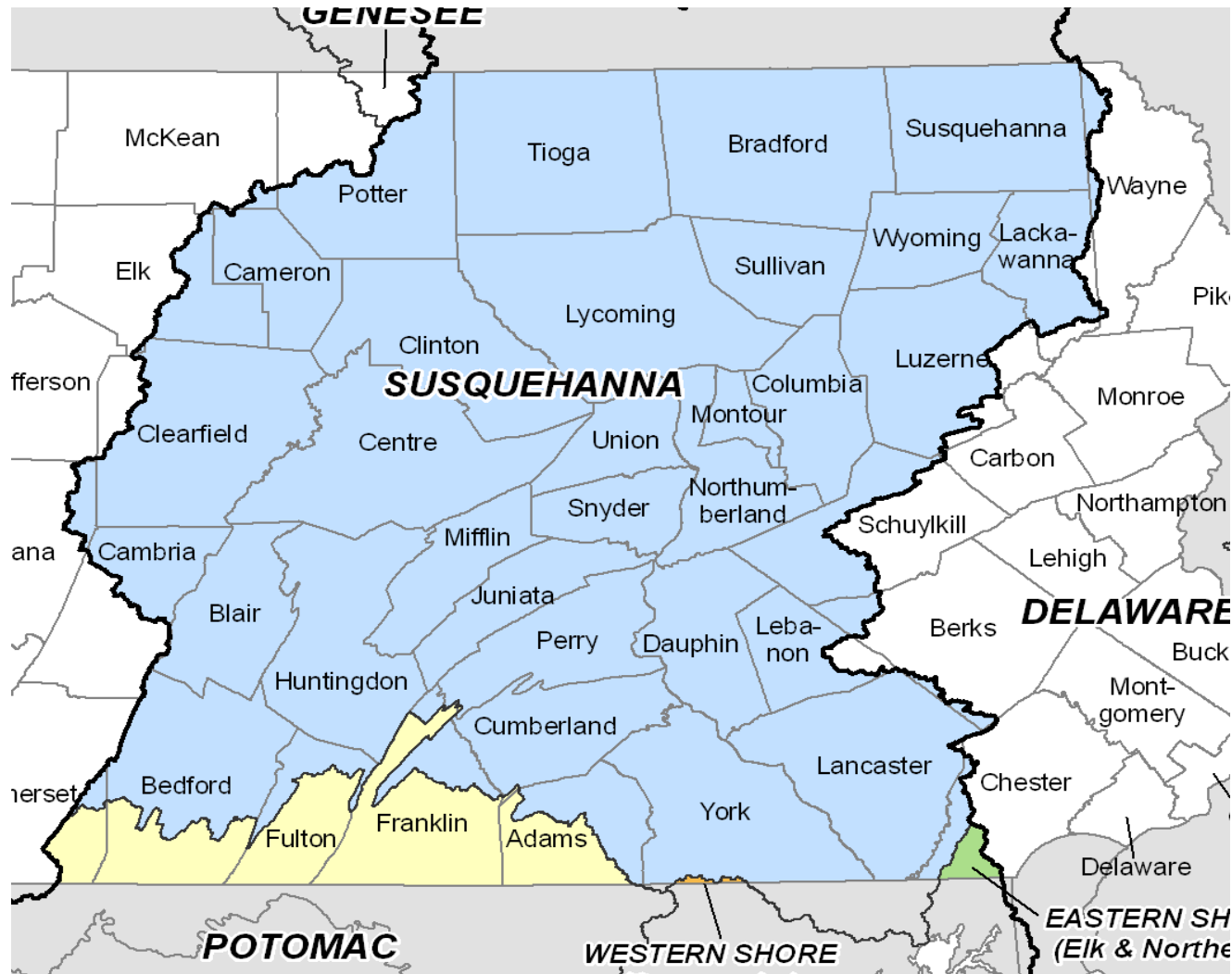
Agenda

- Why Are We Doing This?
- Progress Made and the Job Ahead of Us
 - Need Your Engagement to Move Forward
- Midpoint Assessment
 - Allocations
 - Issues
 - Schedule
- EPA Expectations
 - Baywide
 - PA Specific
- Phase 3 WIP Game Plan

Why Are We Doing This?

- Federal Clean Water Act, Federal court orders and regulations
 - 2010 Chesapeake Bay Total Maximum Daily Load (TMDL) requires annual loading reductions of nitrogen, phosphorus and sediment
 - Requires the return of Chesapeake Bay waters to Maryland state water quality standards by 2025
- Pennsylvania's Clean Stream Law
- Article 1, Section 27, Pennsylvania Constitution
 - The people have the right to clean air, pure water, and to the preservation of the natural, scenic, historic and esthetic values of the environment.
 - As trustee of these resources, the Commonwealth shall conserve and maintain them for the benefit of all the people.

PA's Portion of the Bay Watershed



- PA encompasses 35.2% of the Bay watershed -- that's 14,358,159 acres.
- 49% of the State in the Bay Watershed
- Four PA watersheds
 - Susquehanna River (13,298,520 acres, 32.6%)
 - Potomac River (1,012,222 acres, 2.5%)
 - Eastern Shore (40,262 acres, 0.1%)
 - Western Shore (7,155 acres, 0.02%)



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- What is a Sector?
- In the TMDL, pollutant sources were divided to efficiently reach facilities with similar operations, processes or practices
 - Point Sources = *Wastewater* (Treatment Plants, Combined Sewer Overflows)
 - Nonpoint Sources = Pollution from rainfall and stormwater runoff
 - *Agriculture* – farms or ranches that grow and harvest crops and animals for production
 - *Urban Runoff* – land area that has been developed, or is planned for development (ex. streets and parking lots)
 - *Forest* – areas covered in trees



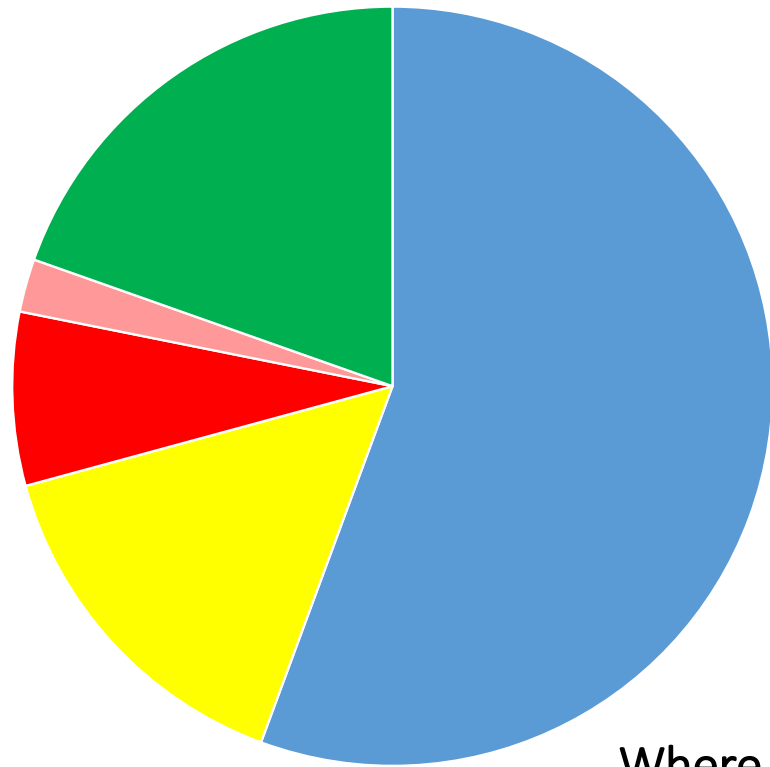
Clean water:
Great for PA
Good for the Bay

Pennsylvania Nitrogen Loads: 2015-2025

■ Agriculture ■ Urban Runoff ■ Wastewater+CSO ■ Septic ■ Forest+

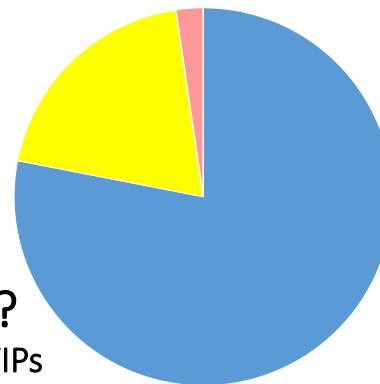
113 M lbs.

(11 M lbs. reduced 1985-2015)



2015

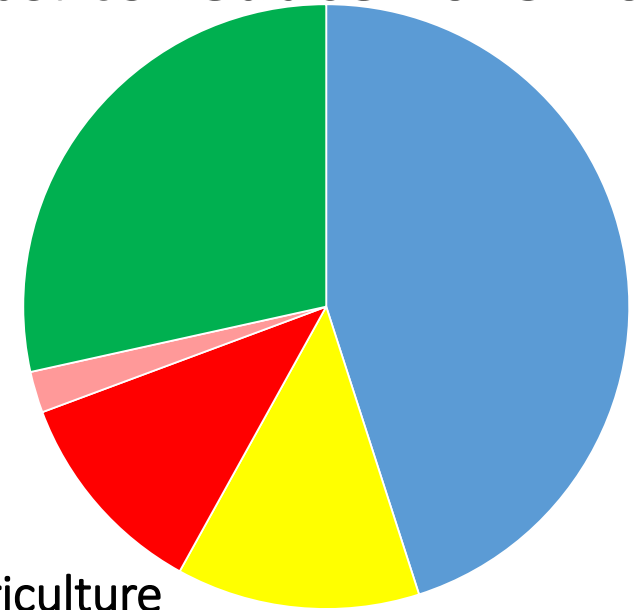
Where will the remaining Nitrogen reductions* come from?
*Based on jurisdictions' Phase II WIPs



78% Agriculture
20% Urban
2% Septic

79 M lbs.

(34 M lbs. to reduce 2015-2025)

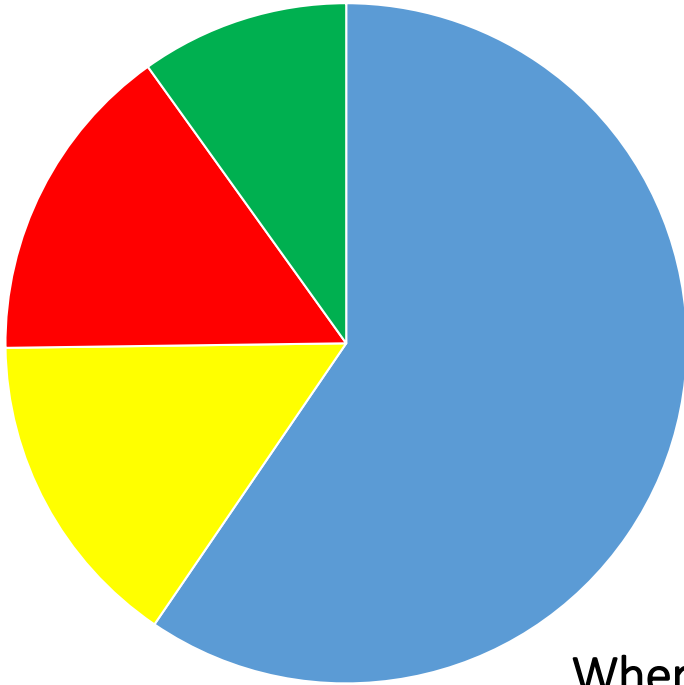


2025

Pennsylvania Phosphorus Loads: 2015-2025

■ Agriculture ■ Urban Runoff ■ Wastewater+CSO ■ Forest+

4.3 M lbs.
(1.7 M lbs. reduced 1985-2015)

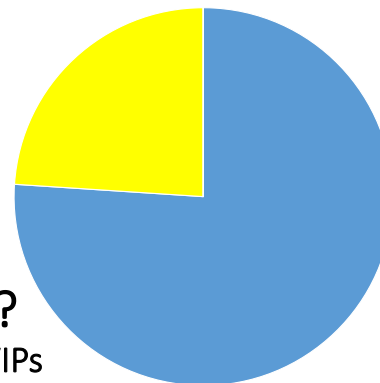


2015

Where will the remaining Phosphorus reductions* come from?
*Based on jurisdictions' Phase II WIPs



3.6 M lbs.
(0.7 M lbs. to reduce 2015-2025)



76% Agriculture
24% Urban

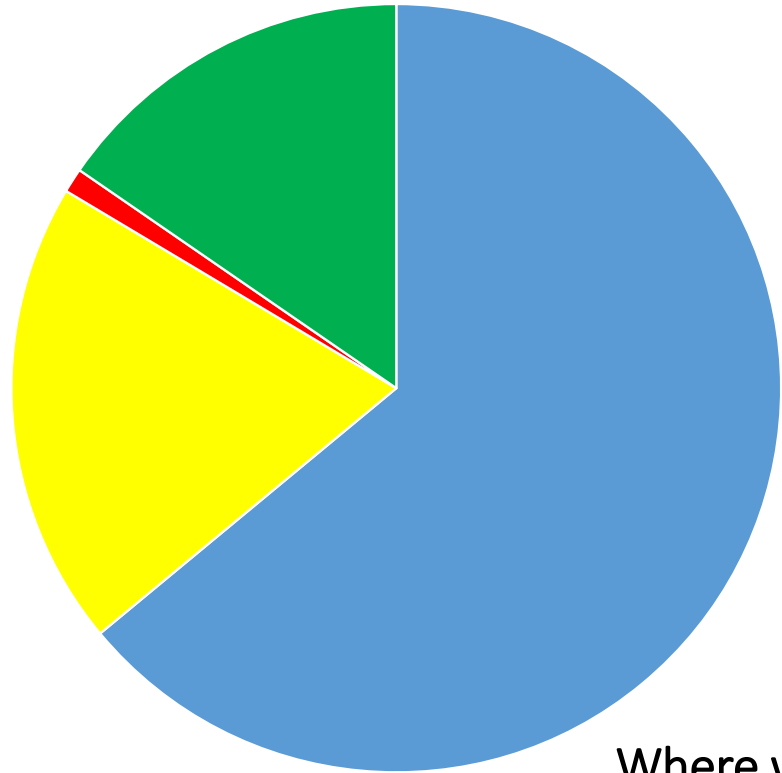
2025

Pennsylvania Sediment Loads: 2015-2025

■ Agriculture ■ Urban Runoff ■ Wastewater+CSO ■ Forest+

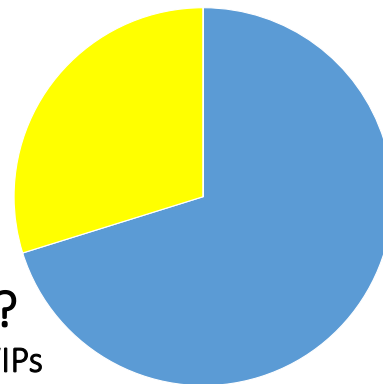
2,477 M lbs.

(540 M lbs. reduced 1985-2015)



2015

Where will the remaining Sediment reductions* come from?
*Based on jurisdictions' Phase II WIPs



70% Agriculture
30% Urban

2025

1,946 M lbs.

(531 M lbs. to reduce 2015-2025)

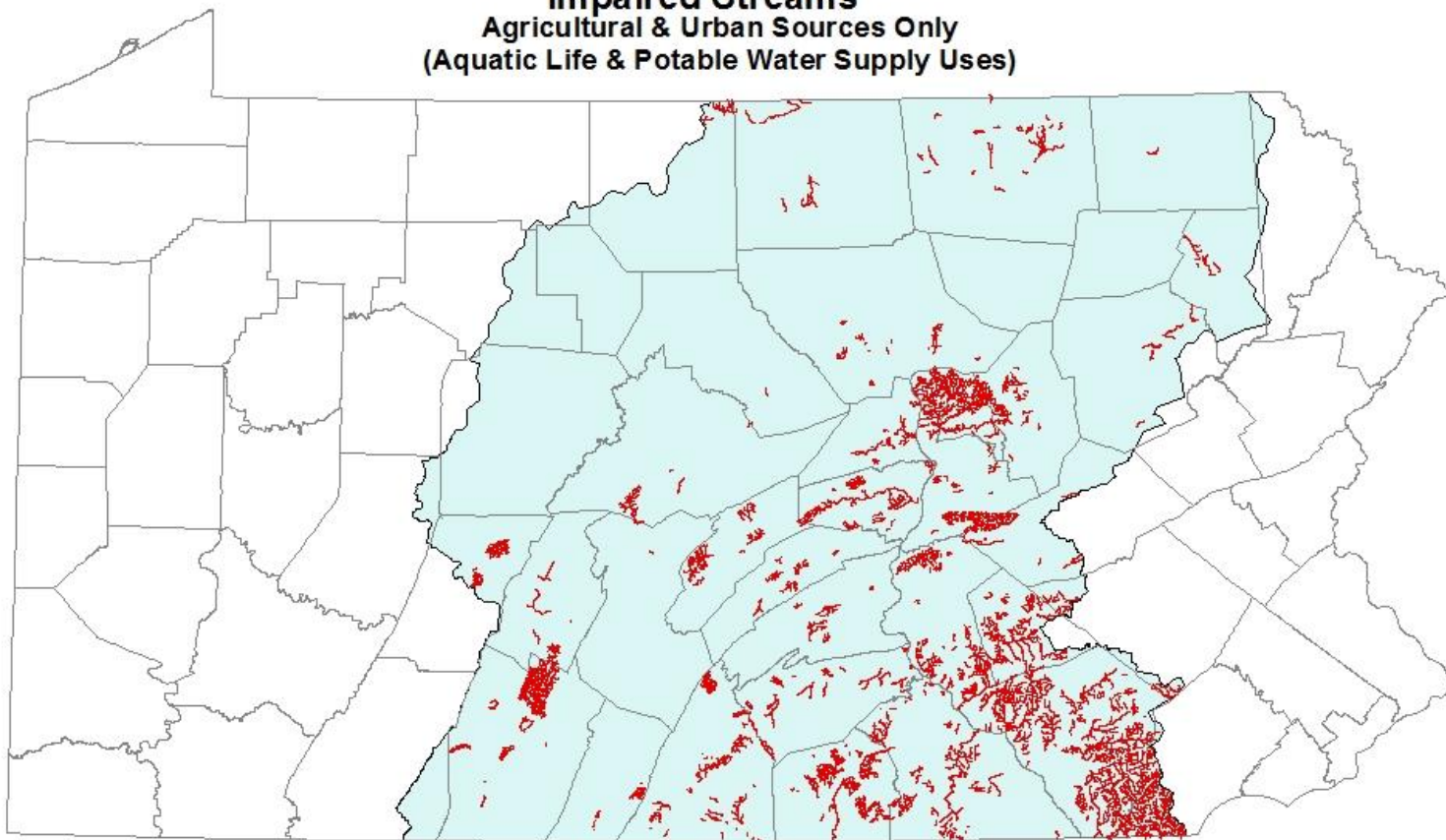


Pennsylvania's Source Sector Challenges

- Needs to reduce 19 million lbs. nitrogen by 2017 and a total of 34 million lbs. by 2025
- **Responsible for 69 percent of remaining basinwide nitrogen load reductions by 2025**
- **Agriculture will likely be responsible for more than 80 percent of these nitrogen reductions by 2025**
- *How do we put the technical assistance/compliance infrastructure and cost share funding in place to deliver on these needed reductions*

Chesapeake Bay Watershed Impaired Streams

Agricultural & Urban Sources Only
(Aquatic Life & Potable Water Supply Uses)



Legend:

- Impaired Streams
- Counties
- Chesapeake Bay Watershed - PA

Number of Miles Impaired:

Aquatic Life Use - Agricultural Source: 3500 mi.
Aquatic Life Use - Urban Source: 727 mi.
Aquatic Life Use - Total Impaired: 3906 mi.

Potable Water Supply Use - Agricultural Source: 30 mi.



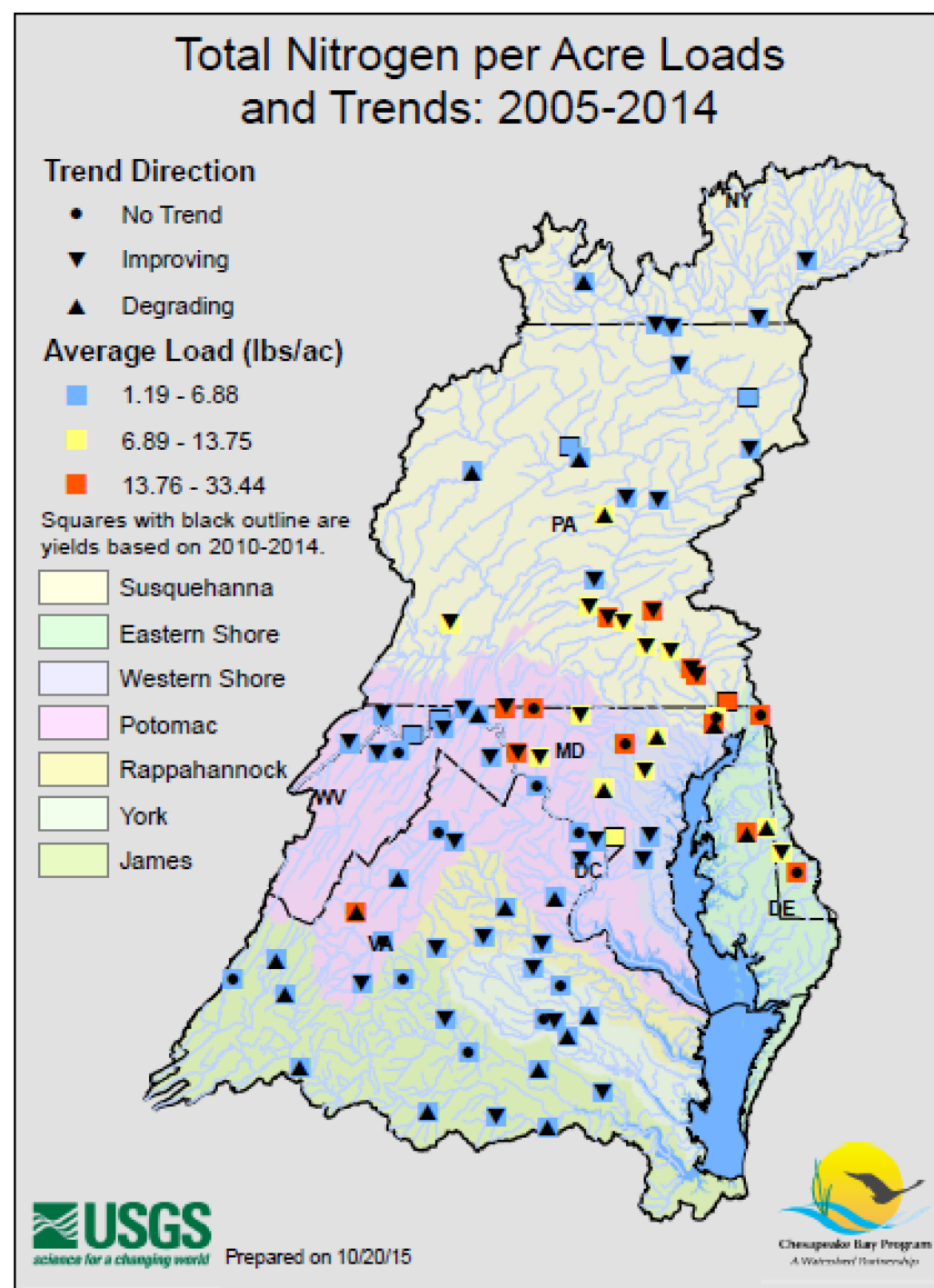
Total Nitrogen per Acre Loads and Trends: 2005-2014

Chesapeake Watershed

- Improving Trends: 54%
- Degrading Trends: 27%
- No Trend: 19%

PA: Majority improving

- Improving: 14
- Degrading: 3
- No change: 1



Total Phosphorus per Acre Loads and Trends: 2005-2014

Loads per acre

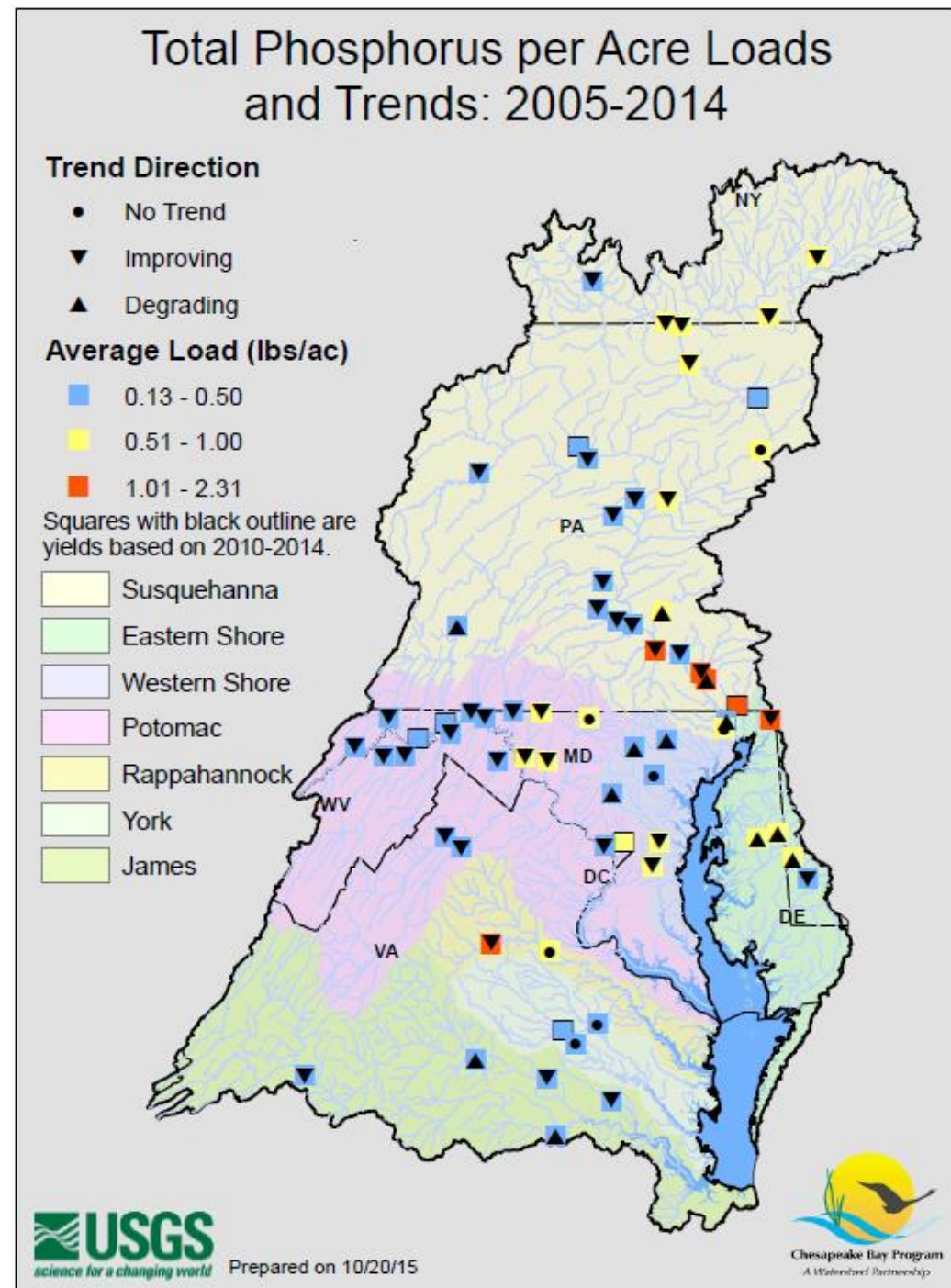
- Above average in PA
- Eastern part of basin

Bay Watershed trends:

- Improving Trends : 68%
- Degrading Trends : 20%
- No Trend : 12%

PA trends: Majority improving

- Improving: 14
- Degrading: 3
- No change: 1



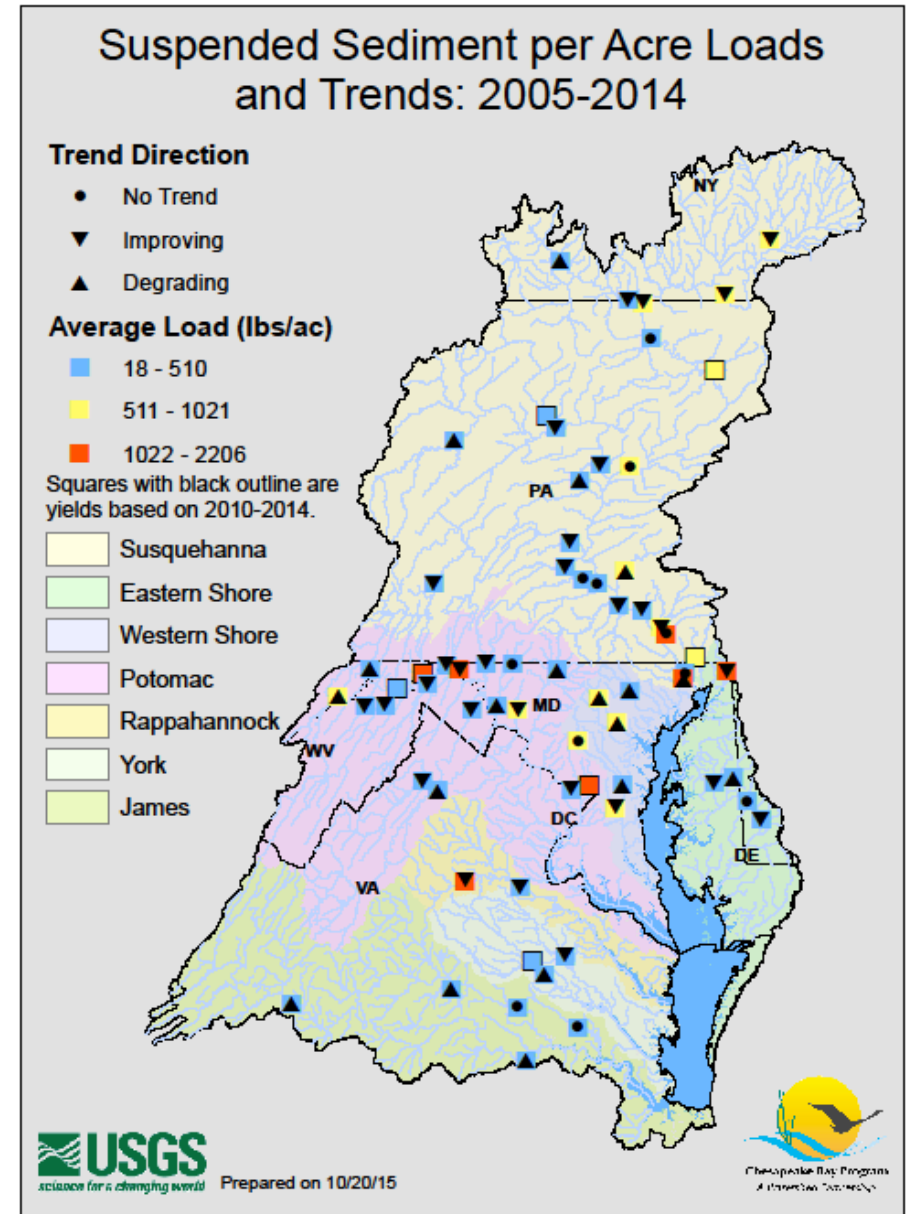
Total Suspended Sediment per Acre Loads and Trends: 2005-2014

Bay Watershed trends:

- Improving Trends : 47%
- Degrading Trends : 30%
- No Trend : 23%

PA trends: Majority improving

- Improving: 9
- Degrading: 3
- No change: 6



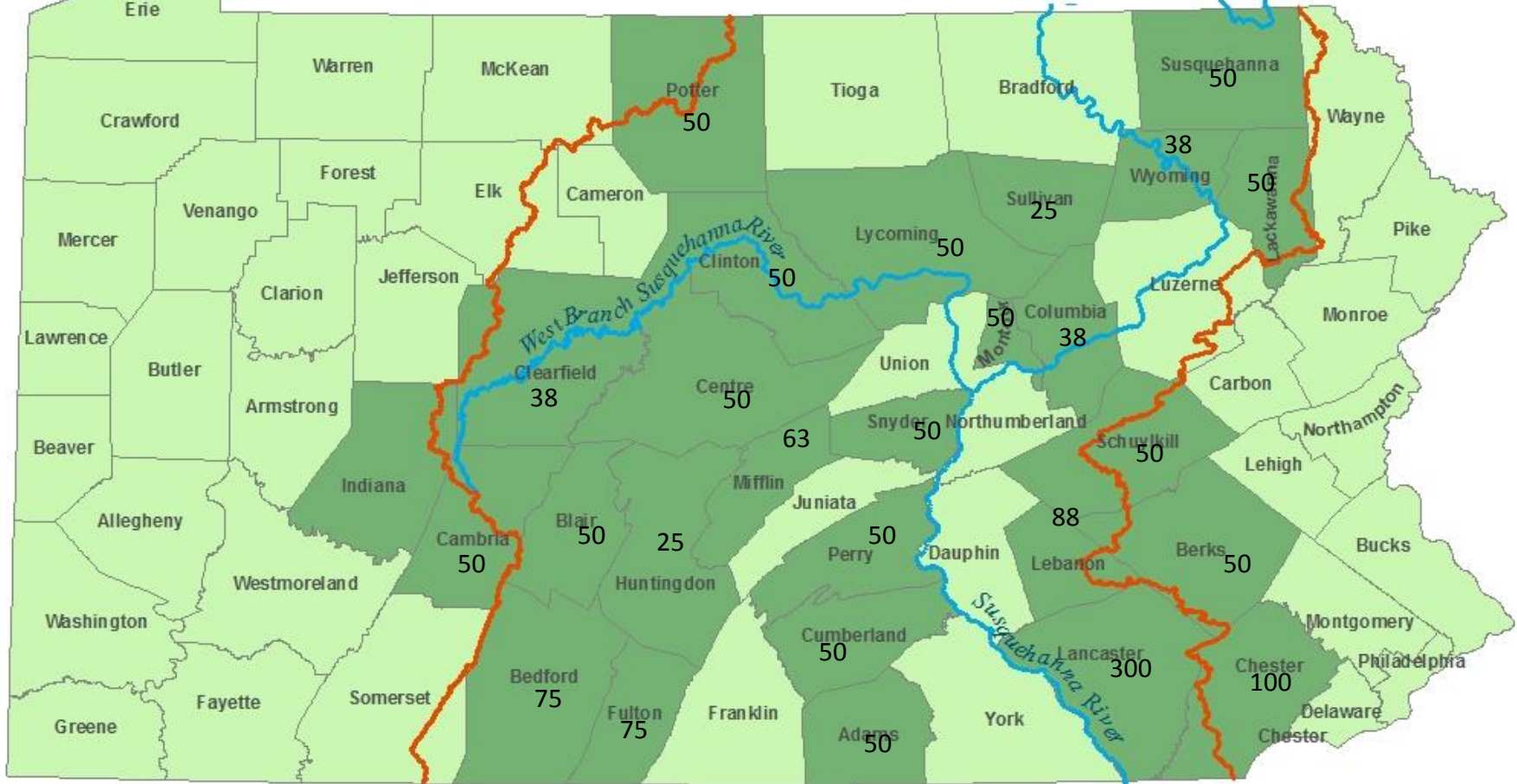
➤ Restoration Strategy: Six Elements

- 1) Address Pollutant Reduction
- 2) Quantify & Multiply BMPs
- 3) Improve Record-keeping
- 4) Identify Needed Changes
- 5) Establish a DEP Chesapeake Bay Office
- 6) Seek New Resources

➤ Agricultural Inspection Initiative

- DEP began inspections **August 29, 2016**
- Districts began inspections **October 3, 2016**
- Successfully completed the first year
 - Over 1125 Inspections Completed
 - Over 1572 by Conservation Districts
 - Over 508 by DEP
 - Results of inspections to date
 - Total Acres Covered – 245,664 acres

Counties Participating in Chesapeake Bay Watershed Farm Inspection Program



Legend

- County Conservation Districts participating in the farm inspection program.
- Chesapeake Bay Watershed



Clean water:
Great for PA
Good for the Bay

Data Management Initiatives

- **Penn State Farmer Self-Reporting Survey Results (6700 surveys returned!)**
 - **475,800 acres** of nutrient/manure management; **97,562 acres** of enhanced nutrient management;
 - **2,164** animal-waste storage units; **2,106** barnyard runoff-control systems;
 - **55,073 acres** of agricultural erosion and sedimentation control plans; **228,264 acres** of conservation plans;
 - More than **1.3 million linear feet** of stream-bank fencing; **1,757 acres** of grass riparian buffers; and **5,808 acres** of forested riparian buffers.
 - **Total estimated reductions:**
 - **Nitrogen -- 1,047,704 lbs/year**
 - **Phosphorus -- 79,620 lbs/year**
 - **Sediment -- 10,395,906 lbs/year**
- **NRCS Potomac Watershed Remote Sensing Project**
 - Collected data on 26 conservation BMPs using a grid approach
 - Field verification “spot checks” were done by experienced NRCS staff using the standard USDA quality assurance/quality control sample

Data Management Initiatives

- Worldview Development
 - Used the existing database design that was created for five Pennsylvania county conservation districts and Virginia Department of Environmental Quality
 - Submitted 2016 Progress Data Using the new Database Software
- PracticeKeeper Software Launch to ALL Districts in July, 2017
 - 6 Modules – Nutrient Management, E & S Planning, Watershed Projects, Complaints and BMPs
 - DEP staff and 9 Districts pilot testing starting now
- Hardware for PracticeKeeper
 - Funding Distributed for tablets for in-the-field data collection

Urban Stormwater Cost Share Program

- Municipalities, MS4 Communities in Blair, Cumberland, Dauphin, Franklin, Lackawanna, Lancaster, Lebanon, Luzerne, Lycoming and York Counties
- \$200,000 maximum per grantee
- Round #1 (Awarded July, 2016)
 - Over \$2.2 million awarded to 19 projects
- Round #2 (Announced June 29, 2016)
 - Awarded \$2.2 million for 17 projects:
 - Stream Restoration and Buffers, Retention Basin Retrofits and Bio-retention Basins, Rain Gardens, Permeable Pavement
 - Estimated reduction of 2,800 pounds of nitrogen, 396 pounds of phosphorus and 798,500 pounds of sediment

Agriculture BMP Special Projects

- Support Implementation of the Restoration Strategy
 - BMP Implementation Projects in areas identified as part of the Agricultural Inspection Strategies
 - In impaired watersheds or priority watersheds identified by the County in their Implementation Plans
 - BMP verification and tracking, including the further documentation of voluntary practices
- Awarded \$2.9 million to conservation districts for 46 projects (2 years funding)
 - Streambank fencing and crossings, barnyard runoff controls and heavy use area protection, manure storage, rotational grazing, cover crops and no-till planting promotion
 - Estimated reduction of 84,000 pounds of nitrogen, 2400 pounds of phosphorus, and 3.5 million pounds of sediment
- Extending completion date to **September 30, 2019.**



EPA Baywide Expectations—Top 4

- Programmatic and numeric implementation commitments for 2018-2025
- Strategies for engagement of local, regional and federal partners in implementation
- Account for changed conditions: climate change, Conowingo Dam infill, growth
- Develop, implement local planning goals below the state-major basin scales

EPA Pennsylvania Expectations

- Programmatic, policy, legislative and regulatory changes needed
- Demonstration of the staff, partnerships and financial resources needed
- A dedicated and targeted annual state cost-share program
- Next steps as we move forward:
 - Evaluate the expectations and define how the Commonwealth can meet these expectations or
 - Define a viable alternative to their expectations that achieves the same end result.
- EPA Actions
 - Continue to target federal compliance and enforcement actions
 - Direct or withhold federal funding
 - Establish finer scale load allocations through a Pennsylvania-specific amendment to the TMDL
 - Require additional reductions from point sources
 - Promulgate nitrogen and phosphorus numeric water quality standards for Pennsylvania streams and rivers

Midpoint Assessment

- Data Collection & Analysis
 - Water Quality Monitoring and Trend Analysis
 - Conowingo Dam
 - Climate Change
 - Sector Growth
- Policy and Methodology Decisions – Planning Targets
 - By state, basin
 - Equity vs Cost-effectiveness
- Model Calibration
 - Expert Panel Reports – BMP Efficiencies
 - Historical Data Cleanup

Midpoint Assessment Schedule

- June-July: 2017: Partnership's review of models
- October 2017: Draft Phase III WIP planning targets
 - Resolution of Issues around Conowingo, Climate Change, Sector Growth
- October - Feb 2018: Partnership review of targets
- Feb 2018: Final Phase III WIP planning targets
- Dec 2018: Draft Phase III WIPs shared for partner, stakeholder review
- Mar 2019: Final Phase III WIPs due

Phase 3 Watershed Implementation Plan

- Stakeholder Input and Outreach
 - Steering Committee/Workgroups
 - Website: www.dep.pa.gov/chesapeakebay/phase3
 - Communications Strategy:
 - Builds on One-Day Kick-Off Conference, Listening Sessions, Public Comment
- Planning Targets & Implementation
 - Sector Specific
 - Local Area Goals
 - Priority Areas/Watersheds
- Measurable Outputs, Milestones
- Emphasis on Local Water Quality, Local Goals, Local Benefits

Local Planning Goals

- Jurisdictional Boundaries (County, Township, Borough, Conservation District)
- Federal or State Facilities
- Regional Entity Boundaries (River Basin Commission, Planning Commission)
- Watershed or sub-watershed
- “Segment-shed” as defined in the TMDL
- Area with a defined need for pollutant reduction (ex. MS4s)
- Targeted area with high pollutant loadings

Phase 3 WIP Schedule

- April, May, 2017 – Form Steering Committee and Workgroups
- June 5, 2017 – Phase 3 WIP Kick-Off Conference, Radisson Harrisburg
- June 3 – July 7, 2017 – Follow-up Written Comment Response to Conference
- **July 2017 through October 2017**
 - Bay Program Partnership Works Through Issues
 - Workgroups Formed, Convened
 - Comments Compiled, Additional Information and Data Compiled
- **October 2017 through May 2018**
 - Workgroups and Steering Committee develop the WIP
 - Additional Outreach Around Development of Local Planning Goals/Sector Specific Plans
- **August/September 2018** – Public Comment Period of Draft Phase 3 WIP
- **December 2018** – Submit to EPA for Partnership Review
- **January 2019** – Revise in Response to Partnership Review
- **March 2019** – Submit Final Phase 3 WIP

Public Comment

- What key elements need to be included for this effort to be a success? What priority issues **MUST** be addressed in the Phase 3 WIP for me to agree the plan would be implementable?
- Is there a particular initiative, action, partnership, training that would aid this effort?
- When 2025 arrives, what measurable outcome does Pennsylvania need to achieve that would make you agree that this effort was a success?
- Are there possibilities for continuing and enhancing current projects or initiatives?



Public Comment

- 240+ Attendees at Kick-Off Listening Session
- Have First Draft of Summary Report
- Received Comments from 16 People through eComment and 40 through Facebook
- Input from:
 - Individuals
 - Conservation Districts
 - Local, State and Federal Government
 - Environmental Groups, Nonprofit Organizations, Industry Associations
 - Private Consultants, Engineering and Industry Representatives

Other Resources

- Chesapeake Bay Program Website
 - <http://www.chesapeakebay.net>
- Chesapeake Bay Assessment Scenario Tool - CAST
 - <http://www.casttool.org> – County level scenario calculator
- Chesapeake Bay Facility Assessment Scenario Tool - BayFAST
 - <http://www.bayfast.org> – Facility level scenario calculator
- Phase 6 Model Data Visualization Tool – New Beta 4 Run
 - <https://mpa.chesapeakebay.net/Phase6DataVisualization.html>



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Contact Information:

Veronica Kasi

vbkasi@pa.gov

717-772-4053

DEP Chesapeake Bay Program Website:

<http://www.dep.pa.gov/ChesapeakeBay>

Phase 3 WIP Website:

www.dep.pa.gov/chesapeakebay/phase3