



pennsylvania

DEPARTMENT OF ENVIRONMENTAL PROTECTION



Office of Water Management

Chesapeake Bay Updates

Agricultural Advisory Board

June 18, 2014

Andy Zemba – Interstate Waters Office

Updates

- **Total Maximum Daily Load (TMDL)**
- **Chesapeake Bay Watershed Agreement**

Chesapeake Bay TMDL Progress

- **December 2010:** Chesapeake Bay TMDL published by EPA
- **January 2011:** Phase 1 Watershed Implementation Plan (WIP)
- **2011:** EPA Revises Watershed Model – Issue revised TMDL allocations
- **March 2012:** Phase 2 WIP – Draft County Planning Targets

Chesapeake Bay TMDL Progress

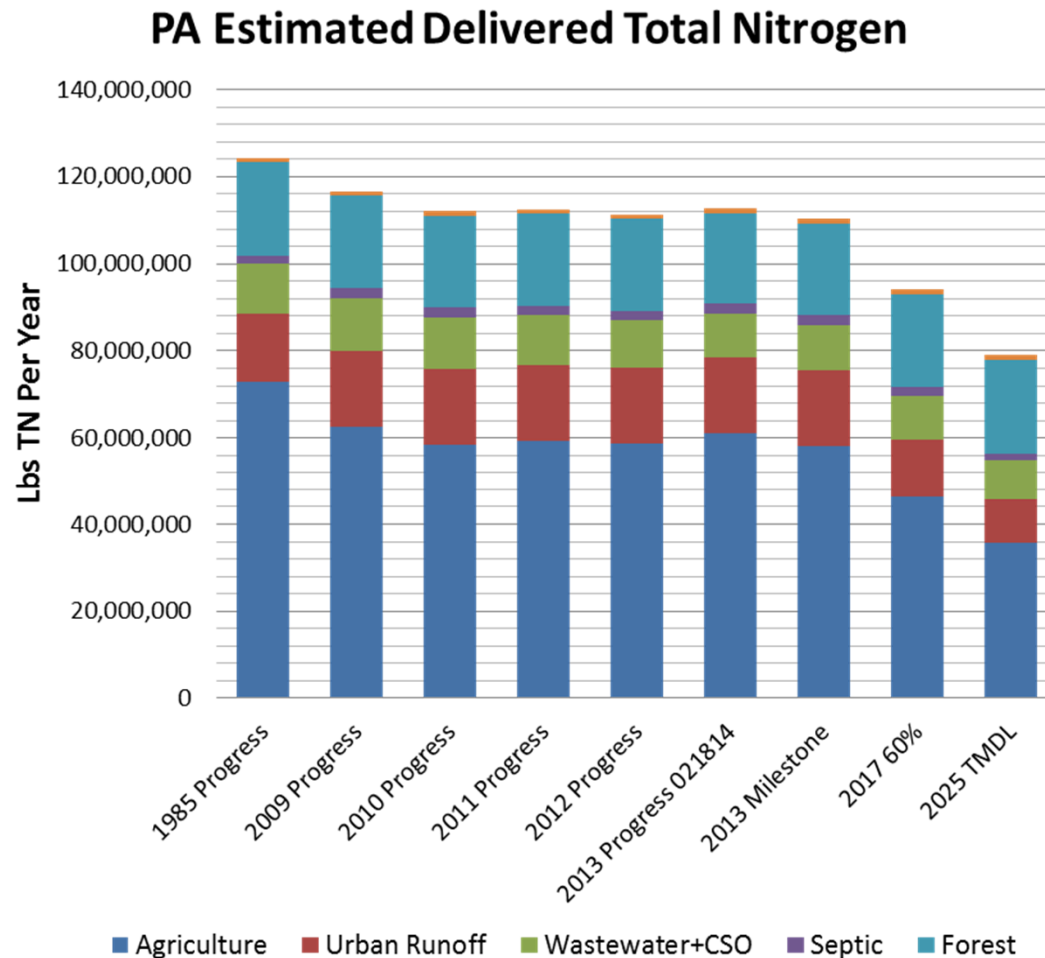
- **2017 Evaluation:** Have practices and controls in place that are expected to achieve 60 percent of load reductions necessary to achieve applicable water quality standards compared to 2009 levels.
- **2018:** Phase 3 WIP
- **2025:** Have all practices and controls installed by 2025 to achieve the Bay's DO, water clarity/SAV and chlorophyll-a standards.

Measuring Progress

- **Two – Year Milestones**
 - **Chesapeake Bay Watershed Model**
 - Best Management Practices (BMPs)
 - Loading (lb/yr) of Nitrogen, Phosphorous and Sediment
 - **Programmatic Milestones**
 - Regulatory
 - Grants, Projects and Partnerships
- **EPA Evaluation**

Chesapeake Bay TMDL Progress

Where we are:



Since 1985:

- Completed 27% of N reductions needed to meet the TMDL
- Additional 31.4 million pounds to be reduced by 2025
- Downward revisions made to 2010 FSA-supplied data

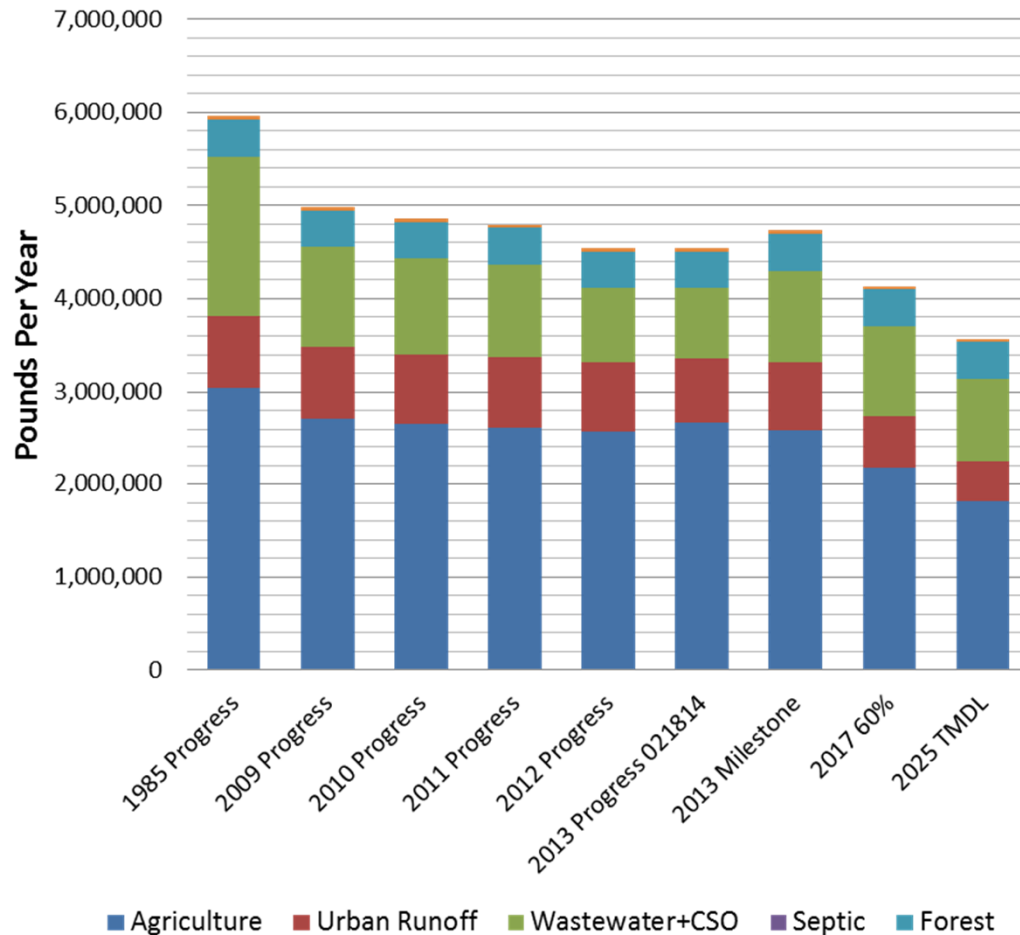
Chesapeake Bay TMDL Progress

Nitrogen Loads (Millions of Pounds/Yr)

	<u>1985</u>	<u>2012</u>	<u>2013</u>	<u>2017 Checkpoint (60% of WIP)</u>	<u>Reductions by 2017</u>
Total	124.28 %	111.36 %	112.71 %	102.52 %	10.19
Agriculture	72.79 59%	58.63 53%	61.20 54%	52.69 51%	8.51
Urban Runoff	15.66 13%	17.44 16%	17.18 15%	14.55 14%	2.63
Wastewater & CSO	11.64 9%	11.10 10%	10.21 9%	10.93 11%	-0.72
Septic	1.72 1%	2.07 2%	2.22 2%	2.09 2%	0.13
Forests	22.47 18%	21.08 19%	20.85 18%	21.84 21%	-0.99

Chesapeake Bay TMDL Progress

PA Estimated Delivered Total Phosphorus



Since 1985:

- Completed 58% of Phosphorus reductions needed to meet the TMDL
- Additional one million pounds needed by 2025
- 2013 results meet 2013 milestone goal
- WWTP Phosphorus loads met 2013 MS and on track for 2017 midpoint loads

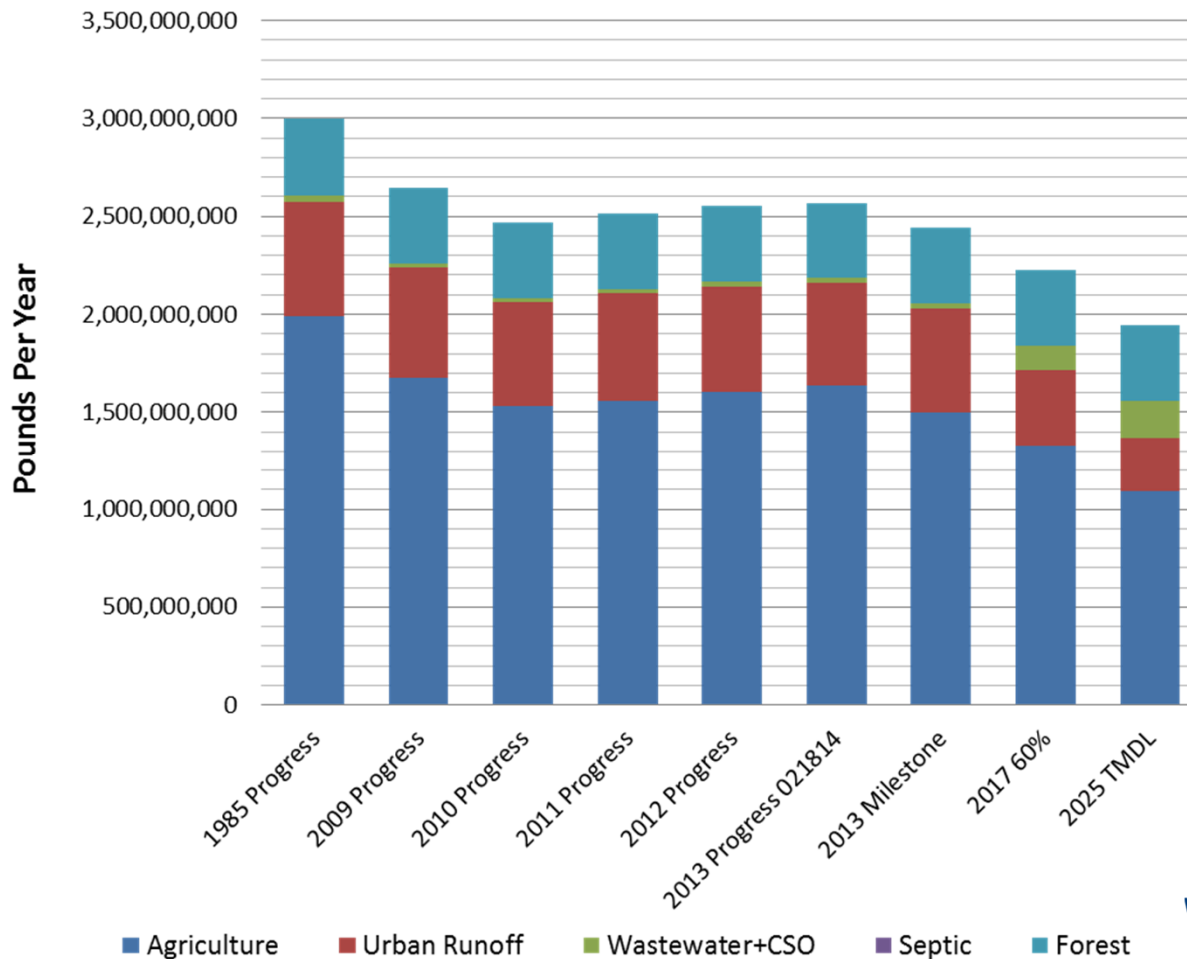
Chesapeake Bay TMDL Progress

Phosphorous Loads (Millions of Pounds/Yr)

	<u>1985</u>	<u>2012</u>	<u>2013</u>	<u>2017 Checkpoint</u>	<u>Reductions by 2017</u>
Total	5.957 %	4.541 %	4.541 %	4.400 %	0.141
Agriculture	3.045 51%	2.572 57%	2.663 59%	2.395 54%	0.268
Urban Runoff	0.764 13%	0.751 17%	0.689 15%	0.630 14%	0.059
Wastewater & CSO	1.715 29%	0.787 17%	0.767 17%	0.943 21%	-0.176
Forests	0.432 7%	0.394 9%	0.385 8%	0.418 9%	-0.033

Chesapeake Bay TMDL Progress

PA Estimated Delivered Total Suspended Solids



Since 1985:

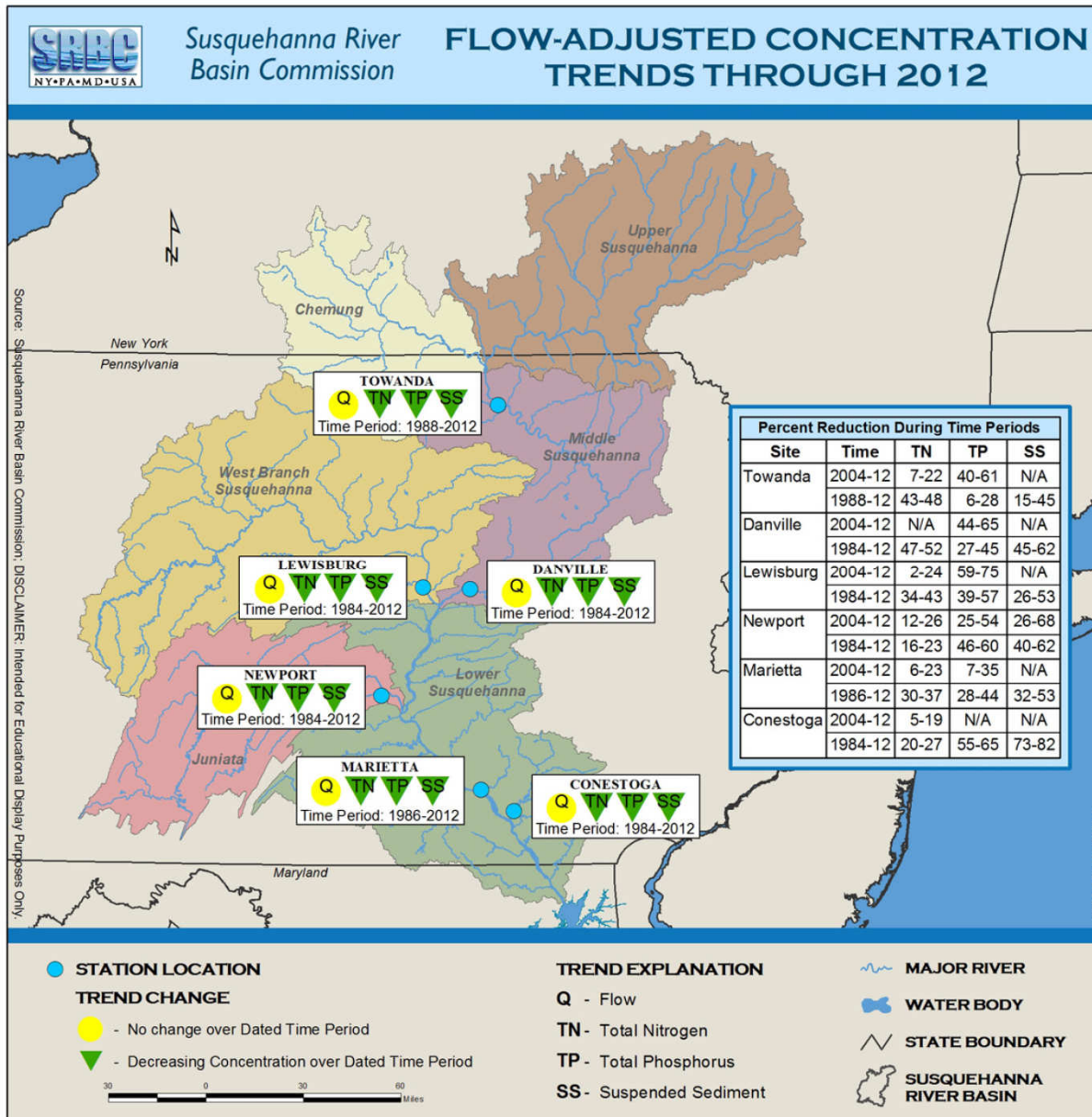
- Completed 40% of TSS reductions needed to meet the TMDL
- Additional 648 million pounds to be reduced by 2025
- Downward revisions made to 2010 FSA-supplied data

Chesapeake Bay TMDL Progress

Total Suspended Solids (Millions of Pounds/Yr)

	<u>1985</u>		<u>2012</u>		<u>2013</u>		<u>2017 Checkpoint</u>		<u>Reductions by 2017</u>
Total	2,998.8	%	2,553.6	%	2,565.0	%	2,353.1	%	211.9
Agriculture	1,990.4	66%	1,602.8	63%	1,636.4	64%	1,431.4	61%	205.0
Urban Runoff	580.6	19%	539.1	21%	526.9	20%	447.0	19%	79.9
Wastewater & CSO	35.1	1%	25.9	1%	24.3	1%	87.5	4%	-63.2
Forests	392.6	13%	385.9	15%	377.5	15%	387.2	16%	-9.7

Monitoring



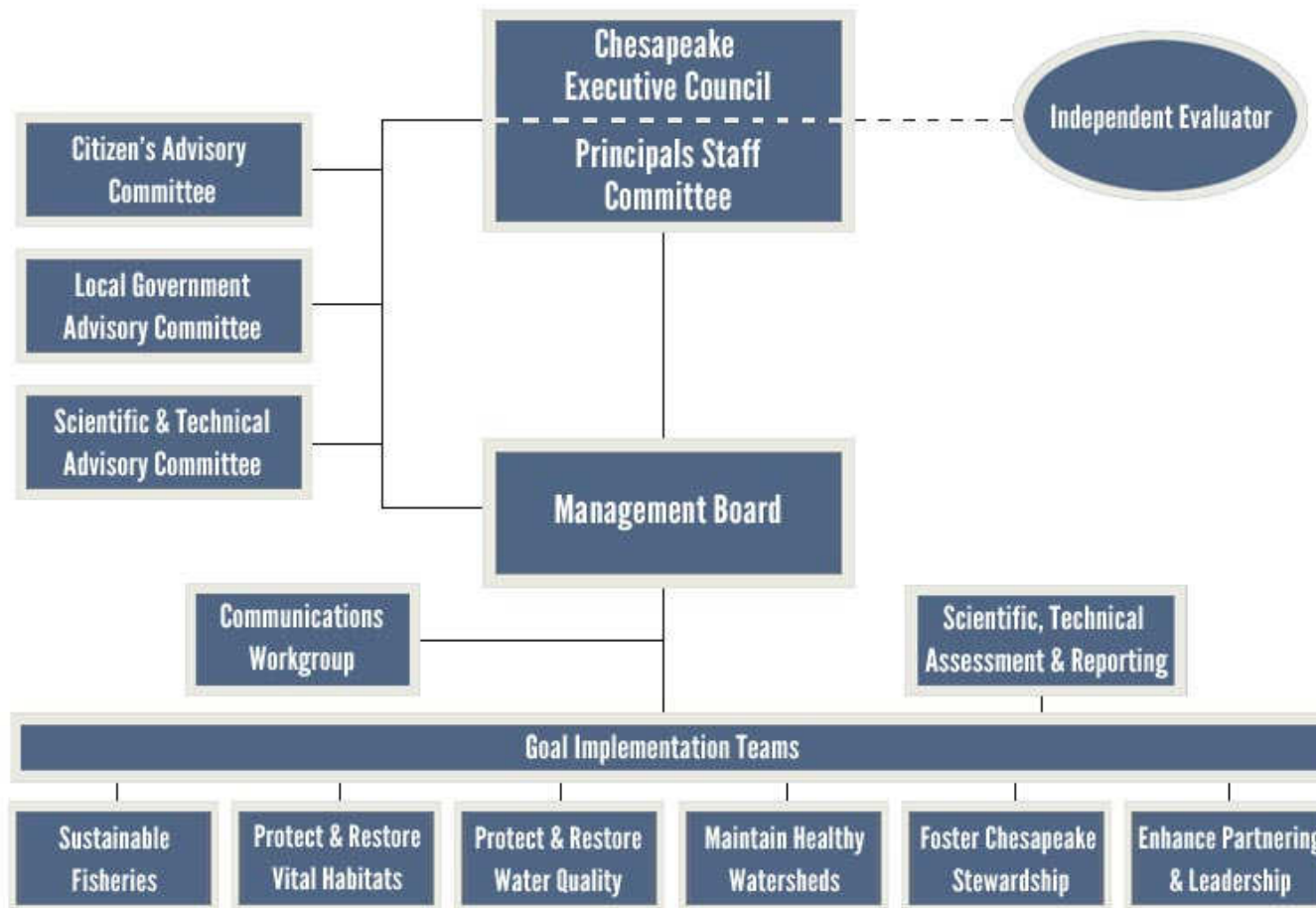
Chesapeake Bay TMDL Progress

- University of Maryland Center for Environmental Science annual report card
- Sectors have made steady progress
- Newly issued WWTP permit limits have reduced point-source phosphorus loads to below 2017 midpoint loading rates
- More aggressive implementation will be needed in other areas to meet 2017 goals



New Chesapeake Bay Watershed Agreement

Chesapeake Bay Program



▶ New Chesapeake Bay Watershed Agreement

Why Now?

- The Chesapeake 2000 Agreement is largely outdated
- Federal Agencies - Executive Order (EO) of 2009
- The Congressional General Accountability Office called for the “alignment” of the federal EO Chesapeake Bay Strategy goals and the Chesapeake Bay Program Agreement goals
- Process started in 2011
- Signatories eligible to receive funding

New Chesapeake Bay Watershed Agreement

What's New?

- “Headwater” states (NY, DE and WVA) are invited to sign for the first time
- This agreement is shorter than ones in the past
- Goals with focused outcomes
- Management Strategies will be developed for outcomes
- Jurisdictions have flexibility to choose level at which they will participate

▶ New Chesapeake Bay Watershed Agreement

Sustainable Fisheries Goal:

- Blue Crab Abundance Outcome
- Blue Crab Management Outcome
- Oyster Outcome
- Forage Fish Outcome
- Fish Habitat Outcome

▶ New Chesapeake Bay Watershed Agreement

Vital Habitats Goal:

- Wetlands Outcome
 - *Black Duck*
- Stream Health Outcome
 - *Brook Trout*
- Fish Passage Outcome
- Submerged Aquatic Vegetation (SAV) Outcome
- Forest Buffer Outcome
- Tree Canopy Outcome

▶ New Chesapeake Bay Watershed Agreement

Water Quality Goal:

- 2017 Watershed Implementation Plans (WIP) Outcome
- 2025 WIP Outcome
- Water Quality Standards Attainment and Monitoring Outcome

▶ New Chesapeake Bay Watershed Agreement

Toxic Contaminants Goal:

- Toxic Contaminants Research Outcome
- Toxic Contaminants Policy and Prevention Outcome

Healthy Watersheds Goal:

- Healthy Waters Outcome

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Stewardship Goal:

- Citizen Stewardship Outcome
- Local Leadership Outcome
- Diversity Outcome

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Land Conservation Goal:

- Protected Lands Outcome
- Land Use Methods and Metrics Development Outcome
- Land Use Options Evaluation Outcome

Public Access Goal:

- Public Access Site Development Outcome

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Environmental Literacy Goal:

- Student Outcome
- Sustainable Schools Outcome
- Environmental Literacy Planning Outcome

Climate Resiliency Goal:

- Monitoring and Assessment Outcome
- Adaptation Outcome

▶ New Chesapeake Bay Watershed Agreement

What's Next?

- Development of Management Strategies for Outcomes
- Implementation



Office of Water Management

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<http://www.chesapeakebay.net/chesapeakebaywatershedagreement/page>