Maryland Agriculture's Role and Progress toward the Chesapeake Bay Restoration

2018 Agricultural and Environmental Law Conference

Jason Keppler

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Outline

1. *How is the Bay Responding to our efforts?*
2. *What programs have brought us this far?*
3. *What are the remaining reductions needed and what is the gap?*
4. *How will Maryland develop the Phase III WIP and close any remaining pollution reduction gaps?*
5. *Agriculture Phase III Strategy*

How is the Bay Responding to our efforts?

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Living Resources are Recovering

Indicators for a healthy Bay and to important to Maryland's economy

Bay Grasses

Submerged aquatic vegetation recovery is linked to nutrient reductions.

Blue Crabs

Blue crab populations respond to fisheries management, habitat restoration, and SAV recovery

Oysters

Harris Creek, MD is the first fully restored oyster reef in Chesapeake Bay.

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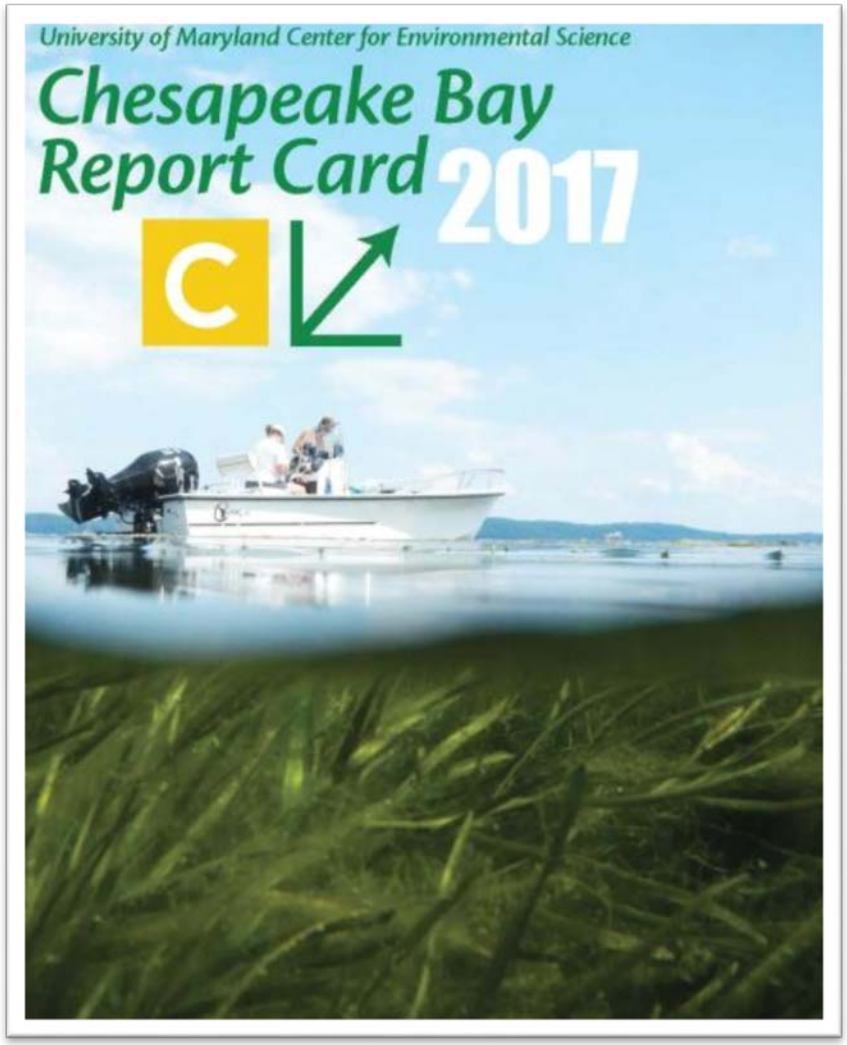

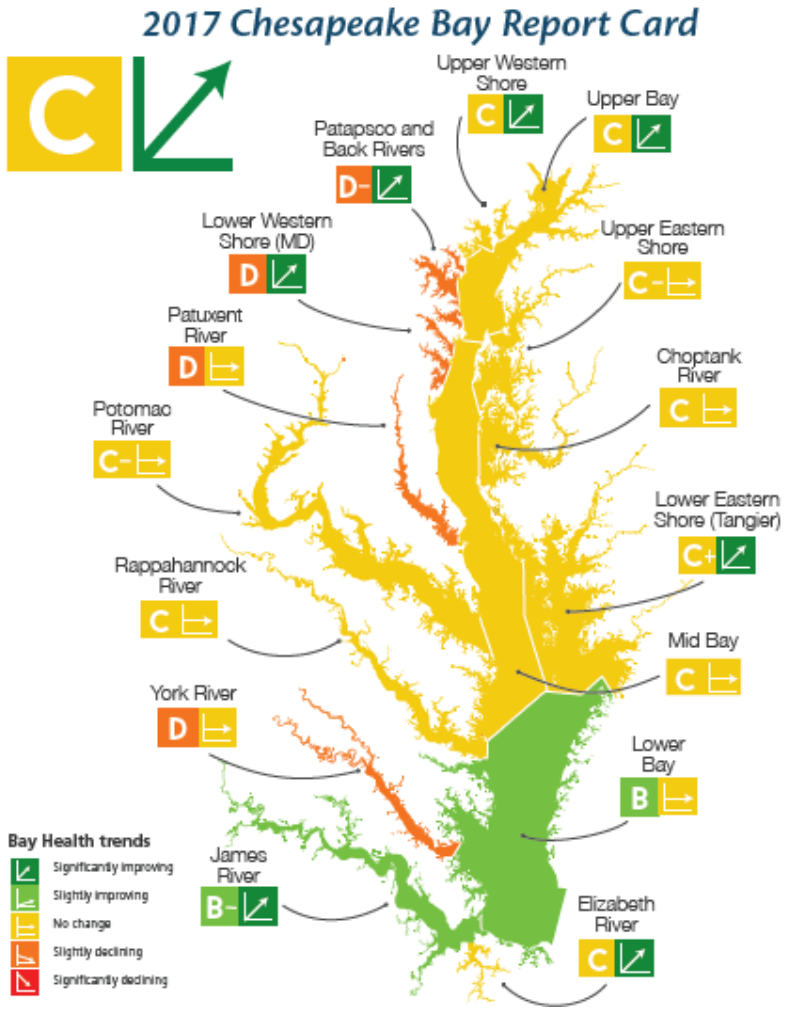

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What programs have brought us this far?

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Wastewater

- Dedicated Fund
- 67 Majors to ENR
- Economies of Scale
- Incentives
- Minors
- Septic Upgrades & Connections

Agriculture

- Cost Share
- Nutrient Management
- PMT
- Cover Crops
- CREP
- New technologies
- Locally Developed SCD Plans

Urban Stormwater

- New development stormwater standards
- MS4 Phase I
  - Local Restoration
  - Financial Assurance
  - P3
  - Compliance
  - Funding

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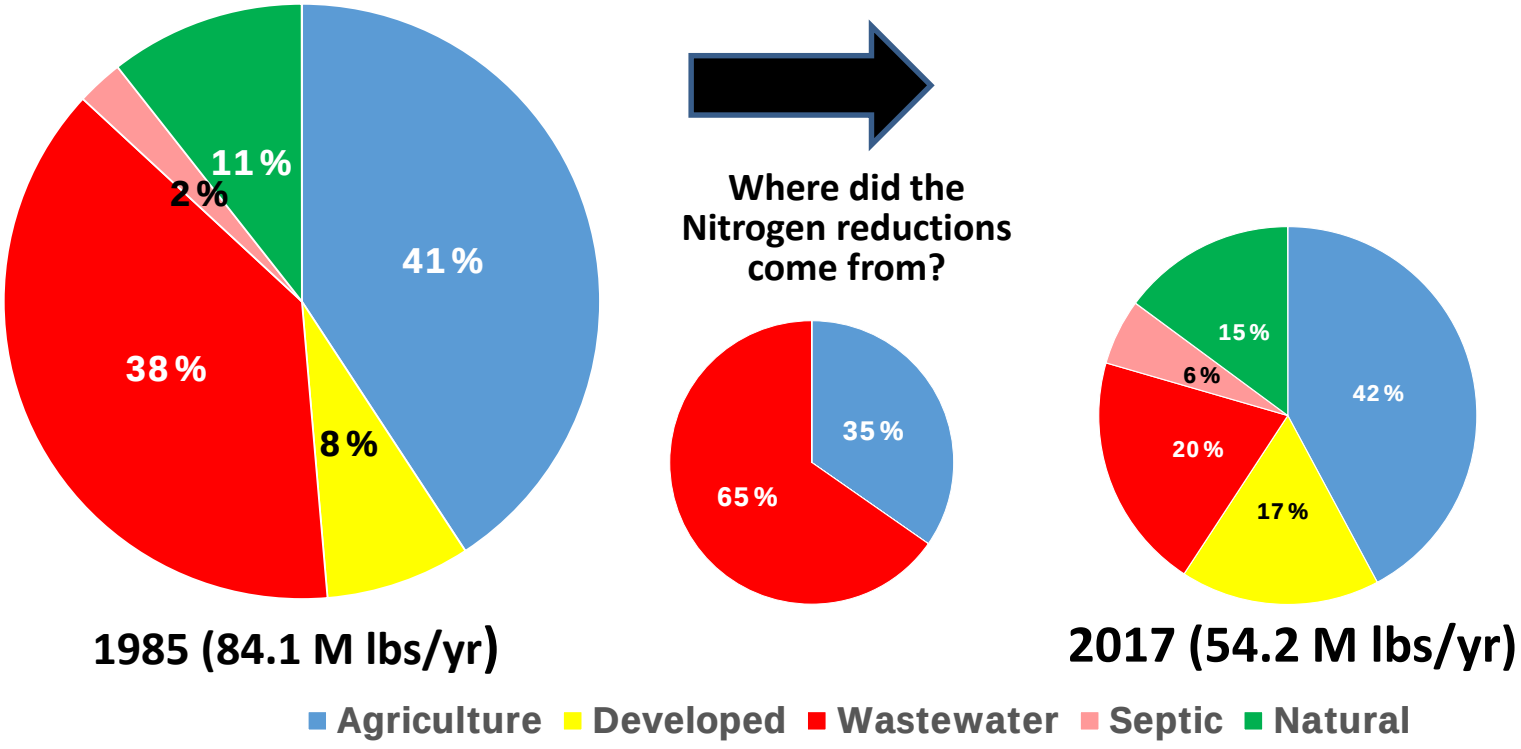
Maryland Nitrogen Loads (1985 – 2017)

Maryland has made the most progress in reducing nitrogen since 1985 compared to the other 6 Bay jurisdictions



Source: USEPA Chesapeake bay Program

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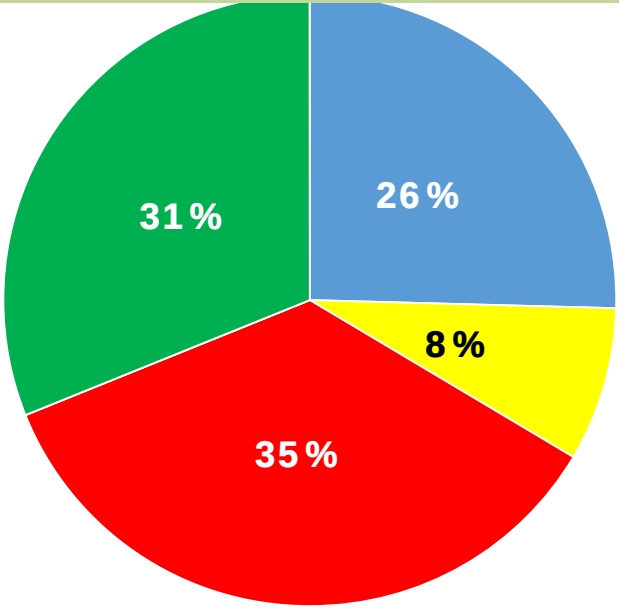
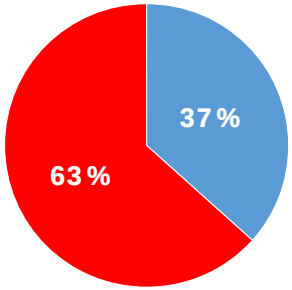
Maryland Phosphorus Loads (1985 – 2017)

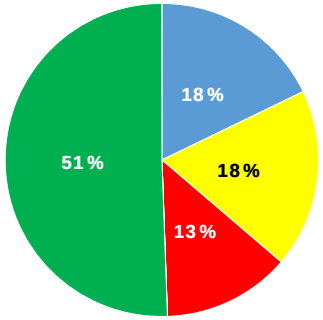
While Maryland has almost met its 2025 phosphorus reduction goals, managing phosphorus is still critically important for restoring local waters



1985 (7.42 M lbs/yr)

Where did the Phosphorus reductions come from?





2017 (3.67 M lbs/yr)

Agriculture Developed Wastewater Natural

Source: USEPA Chesapeake Bay Program

Agriculture WIPII Plan Goals

BMP	Unit	2013 Milestones	2017 Goal	2025 Goal
10' Fertilizer Setback	Acres	5,280	3168	5,280
Alternative Crops	Acres	200	498	830
Barnyard Runoff Control	Acres	168	219	1,180
CAFO Manure Application Setback	Acres	2,500	1500	2,500
Conservation Tillage	Acres	764,630	704,198	765,487
Cover Crop	Acres	355,000	424,086	424,086
Cropland Irrigation Management	Acres	92,000	119,728	119,728
Dairy Manure Incorporation	Acres	3,976	16,703	27,838
Decision Agriculture - Cropland	Acres	84,920	356,665	594,441
Enhanced Nutrient Management - Tier I	Acres	14,285	60,000	100,000
Enhanced Nutrient Management - Tier II	Acres	14,285	60,000	100,000
Enhanced Nutrient Management - Tier III	Acres	25,000	105,000	175,000
Forest Buffers	Acres	335	1,406	2,344
Grass Buffers; Vegetated Open Channel - Agriculture	Acres	538	2,258	3,763
Heavy Use Poultry Area Concrete Pads	Operations	19	81	136
Horse Pasture Management	Acres	712	2,994	4,990
Irrigation Water Capture Reuse	Acres	1,000	2,120	3,533
Land Retirement to hay without nutrients (HEL)	Acres	2,030	8,536	14,226
Land Retirement to pasture (HEL)	Acres	5,285	22,200	37,000
Loafing Lot Management	Acres	34	145	241

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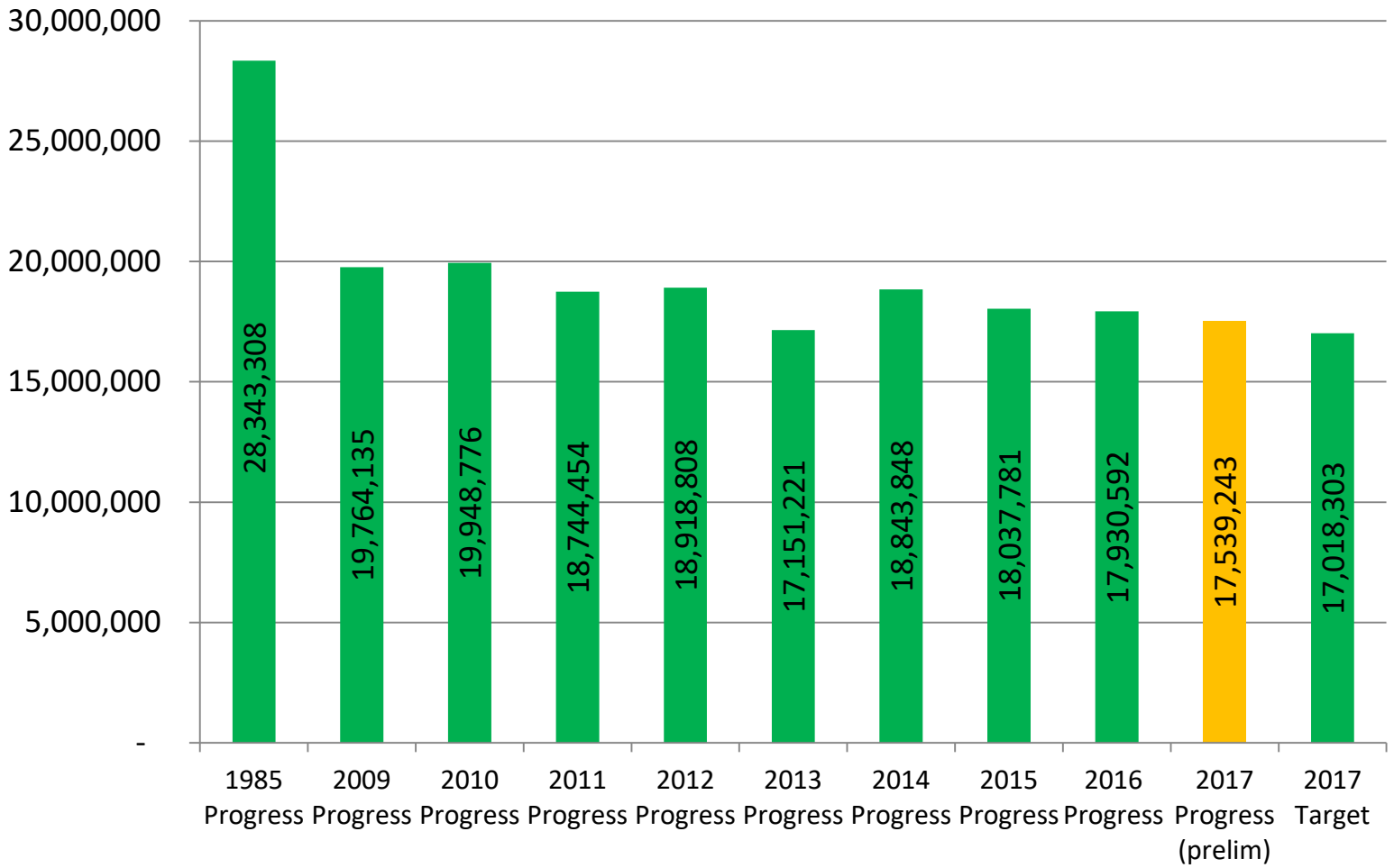
Agriculture WIPII Plan Goals

BMP	Unit	2013 Milestones	2017 Goal	2025 Goal
Manure Transport - Out of Watershed	Tons	37,000	51,000	85,000
Mortality Composters	Operations	20	87	145
Non Urban Stream Restoration	Linear Feet	6,919	29,061	48,435
Nutrient Management - Cropland	Acres	685,000	211,036	351,726
Nutrient Management - Hayland	Acres	75,000	11,207	18,679
Nutrient Management - Nursery	Acres	1,836	1,836	3,060
Off Stream Watering Without Fencing	Acres	655	2,500	4,167
Poultry Litter Incorporation	Acres	23,876	100,283	167,138
Poultry Litter Treatment	Operations	64	270	450
Precision Intensive Rotational Grazing	Acres	398	1,671	2,785
Prescribed Grazing	Acres	2,614	10,982	18,304
Shallow Wildlife Wetland Habitat Management	Acres	35	150	250
Shoreline Erosion Control	Linear Feet	3,649	15,326	25,543
Soil Conservation and Water Quality Plans	Acres	826,000	1,026,413	1,145,326
Sorbing Materials in Ag Ditches	Acres	737	3,097	5,162
Stream Access Control with Fencing	Acres	5,050	20,956	35,355
Tree Planting; Vegetative Environmental Buffers - Poultry	Acres	118	500	830
Water Control Structures	Acres	2,453	10,289	17,173
Wetland Restoration	Acres	502	2,110	3,516
Phytase	%	24%		
Poultry Waste Structures	Operations	7	31	5
Livestock Waste Structures	Operations	20	87	145

Pounds N Delivered to Bay: 2017



Phase 5.3.2

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Implementation Highlights

- Fiscal Year 2017
  - 924,000 acres under a Soil Conservation and Water Quality Plan
  - 827,000 acres in compliance with nutrient management regulations
  - 559,000 acres of winter cover crop
  - 794,000 acres of conservation tillage
- Programmatic Highlights
  - Phosphorus Management Tool (PMT) regulations
  - Animal Waste Technology Fund
  - Manure Matching Services
  - Soil Health and Climate Change Initiatives
  - Agricultural Certainty Program
  - Nutrient Trading

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What are the remaining reductions needed and what is the gap?

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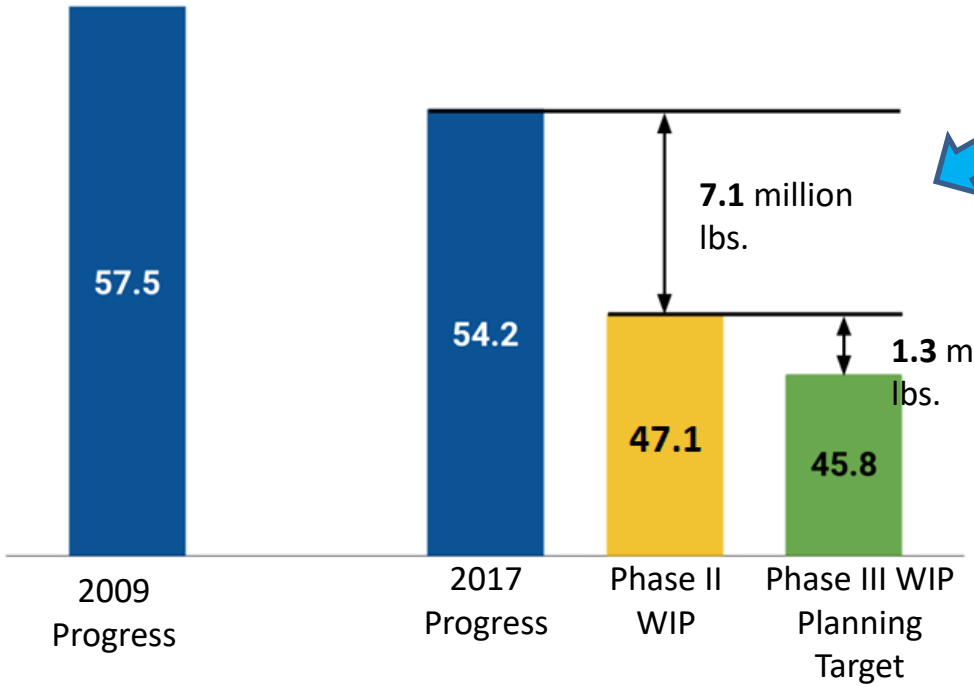
Where the Phase II WIP Level of Effort will Get Them in Terms of Nitrogen Load Reductions



Phase II WIP

Remaining Reductions to Achieve Phase III WIP Planning Target

About another ~1 – 1.5 million lbs to Offset Future Growth

Source: USEPA Chesapeake bay Program

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How will Maryland develop the Phase III WIP and close any remaining pollution reduction gaps?

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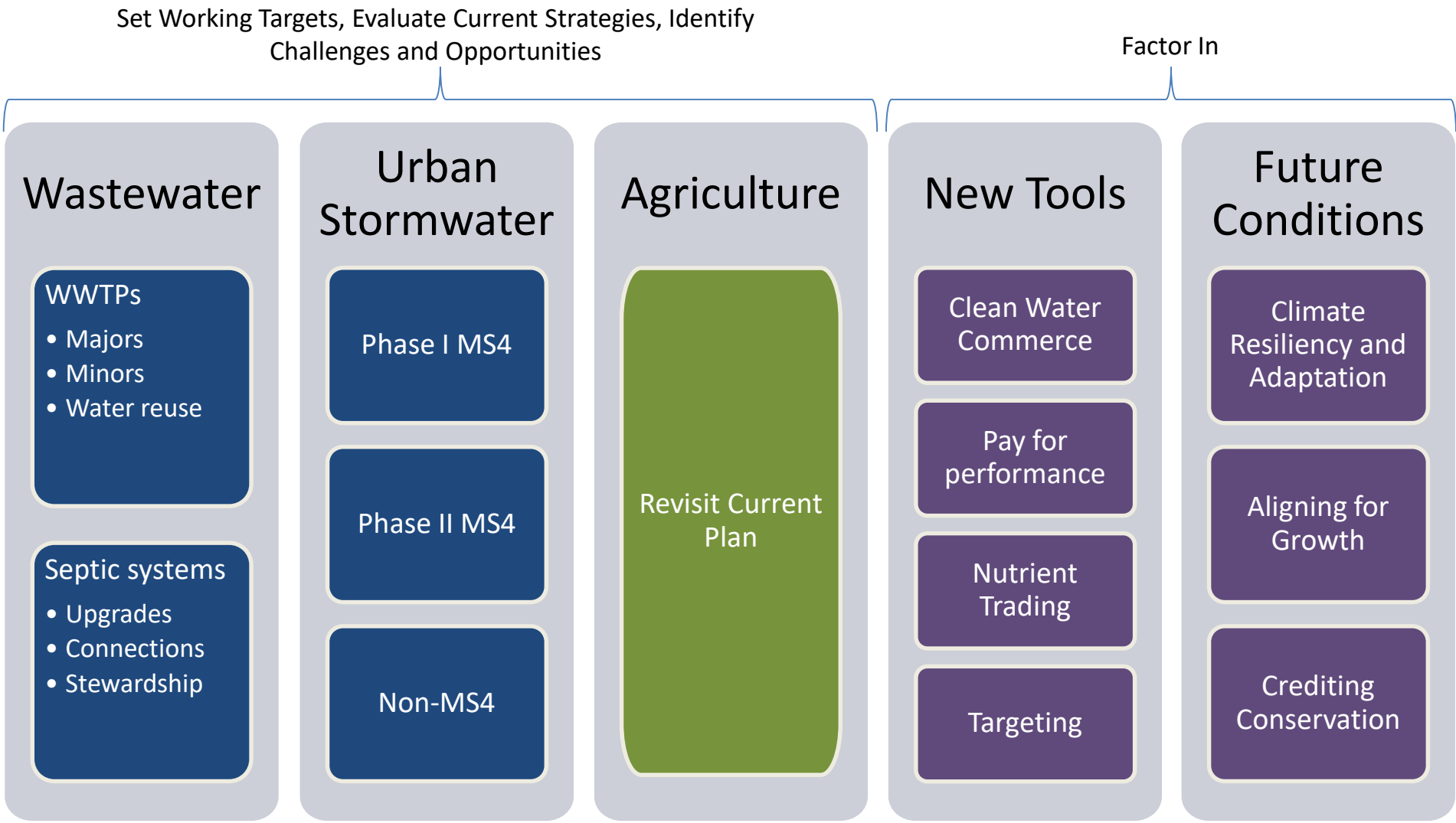
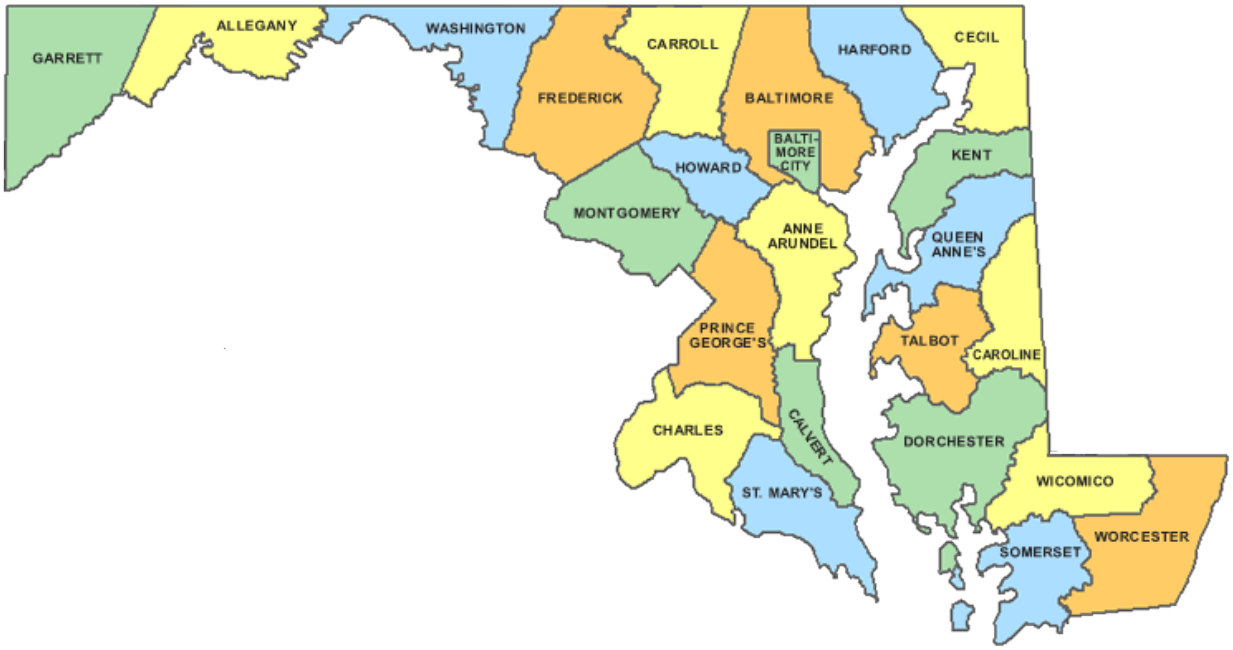

Set Working Targets, Evaluate Current Strategies, Identify Challenges and Opportunities
Factor In
Wastewater
WWTPs
• Majors
• Minors
• Water reuse
Septic systems
• Upgrades
• Connections
• Stewardship
Urban Stormwater
Phase I MS4
Phase II MS4
Non-MS4
Agriculture
Revisit Current Plan
New Tools
Clean Water Commerce
Pay for performance
Nutrient Trading
Targeting
Future Conditions
Climate Resiliency and Adaptation
Aligning for Growth
Crediting Conservation

Local Goals, Local Input & Local Benefits



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MD's Phase III WIP Approach

1. **Aug– Nov 2018: Work with Partners to**
   - compile county Inventory
   - evaluate Phase II WIP feasibility
   - inform the Phase III WIP

2. **Nov-Dec 2018: 6 Regional Workshops**
   - Review, Evaluate and refine Statewide and local Strategies
   - County WIP Summary

3. **Dec 2018 – Feb 2019: Bay Cabinet**
   - Cabinet Approval
   - Phase III WIP Sector targets
   - County Goals and Strategies
   - Phase III WIP Draft Report

4. **Apr 2019: 60 day Public Comment**
   - Informational meetings
   - Bay Cabinet – local elected official invitations

5. **Aug 2019: Final Report**

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Agriculture Sector Phase III

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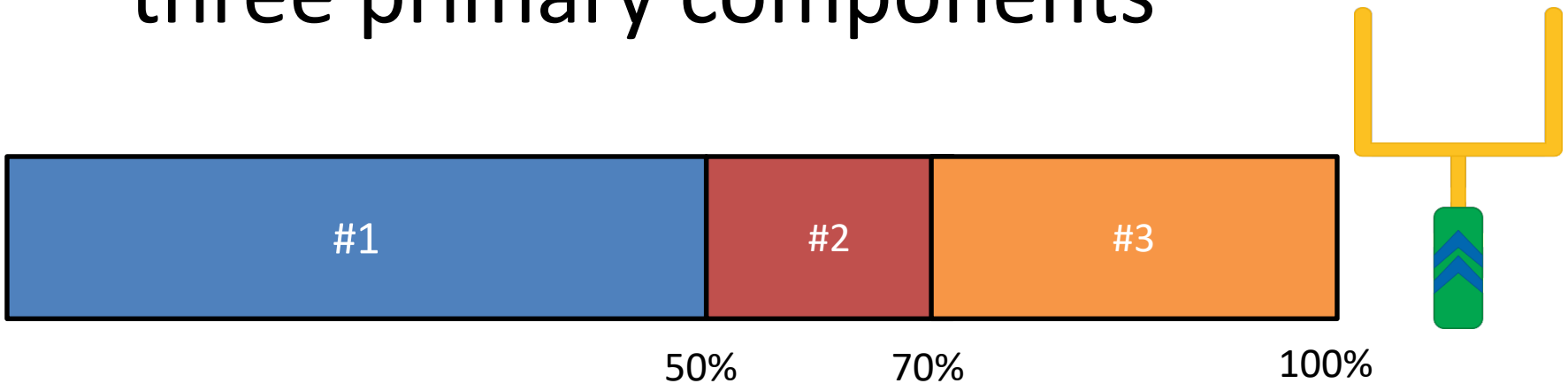
Reaching our 2025 WIP goal has three primary components



1. Progress toward WIP 2 goals
2. BMP re-verification
3. Maintaining progress and addressing any remaining gap

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Ensuring BMP Performance

- Since 2017, the Chesapeake Bay Program requires all states and sectors to provide enhanced verification of BMPs to receive WIP credit.

- 100% of BMPs have to be verified to receive initial “credit” and ~10% of BMPs will have to be re-verified annually to receive continued “credit”

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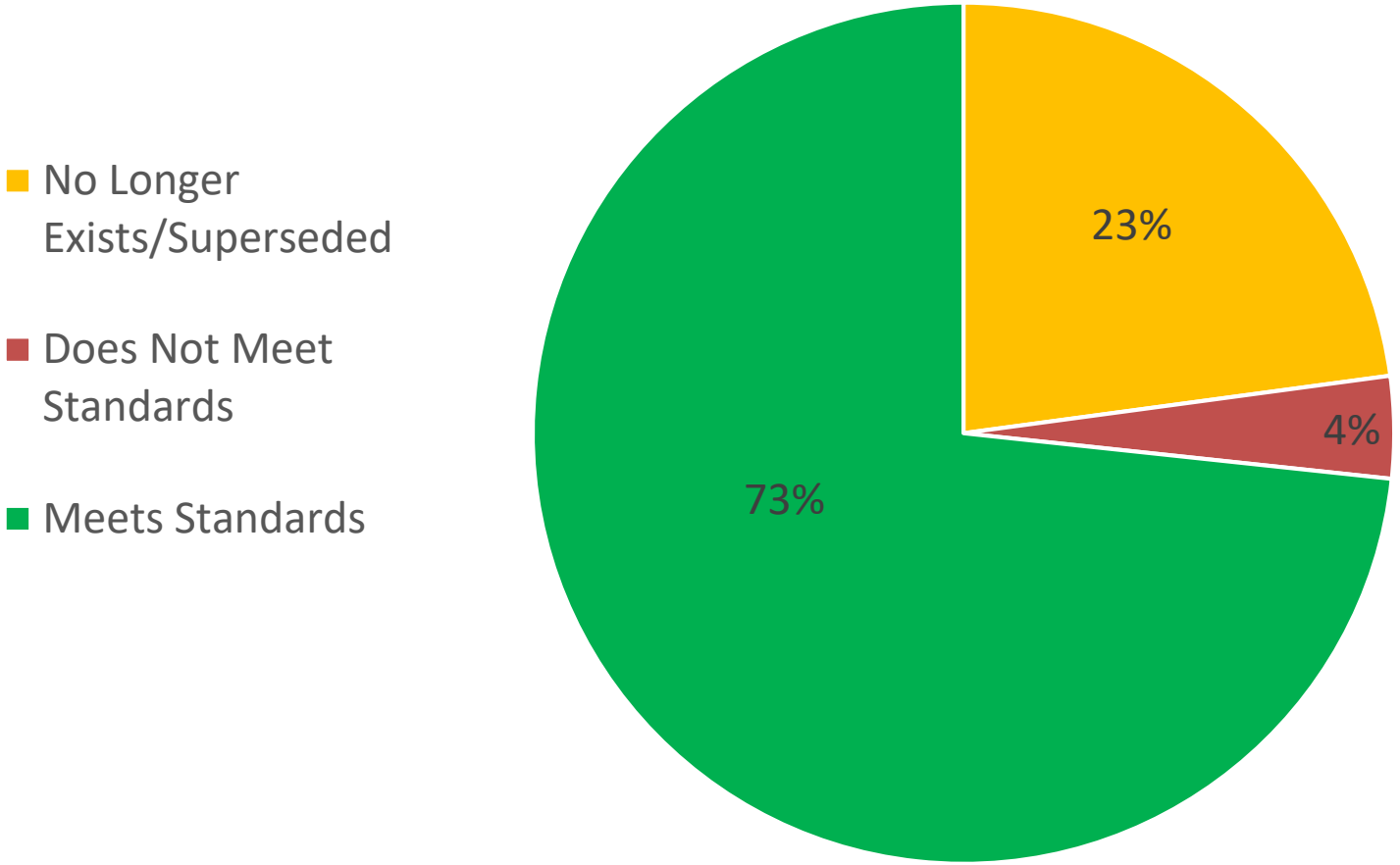
Verification Results

More than 10,000 agricultural BMPs reviewed since October 2016



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New BMPs in the "WIP III Toolbox"

- Cropland Irrigation Management
- Agricultural Stormwater Management
- Nursery/Greenhouse water capture and reuse
- Agricultural Drainage Management
- Manure Treatment Technologies
- Manure Incorporation

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Watershed Implementation Program Meetings
By County

Date	Time	County	Location
August 7, 2018	1:30-3:30 pm	Worcester	County Library, Snow Hill Branch Meeting Room 307 North Washington Street Snow Hill, Maryland 21863
August 8, 2018	9:30-11:30 am	Somerset	Somerset County Ag Building, Howard Anderson Ag Building 30730 Park Drive Princess Anne, Maryland 21853
August 8, 2018	1:30-3:30 pm	Wicomico	County UMD Extension office (multipurpose room) 28647 Old Quantico Rd Salisbury, MD 21802
August 9, 2018	9:30-11:30 am	Dorchester	Dorchester County Office Building Dorchester County Council Meeting Room (RM 110) 501 Court Lane Cambridge, MD 21613
August 9, 2018	1:30-3:30 pm	Talbot	Hog Neck Community Center, Wye Oak Room 10028 Ocean Gateway Easton, MD 21601
August 21, 2018	9:30-11:30 am	Caroline	4H Park, Williams Building 8230 Detour Rd Denton, MD 21629
August 21, 2018	1:30-3:30 pm	Queen Anne's	County Planning & Zoning (County Planning Commision Rm) 110 Vincit Street, Suite 104 Centreville, MD 21617
August 22, 2018	9:30-11:30 am	Cecil	County Admin Building (Elk room) 200 Chesapeake Blvd # 2100 Elkton, MD 21921
August 22, 2018	1:30-3:30 pm	Kent	UMD Extension 709 Morgnec Rd #202 Chestertown, MD 21620
August 23, 2018	9:30-11:30 am	Harford	Harford SCD 3525 Conowingo Rd Street, MD 21154
August 23, 2018	1:30-3:30 pm	Baltimore	Baltimore Co. SCD 1114 Shawan Road # 4 Cockeysville, MD 21030
August 28, 2018	9:30-11:30 am	Carroll	Maryland Cooperative Extension- Carroll County Office, RM A&D 700 Agricultural Center Dr Westminster, MD 21157

August 28, 2018	1:30-3:30 pm	Frederick	Frederick County Extension Office 300 Montevue Ln. Frederick, MD 21701
August 29, 2018	9:30-11:30 am	Howard	Lisbon Fire Hall 1330 Woodbine Rd Woodbine, MD 21797
August 29, 2018	1:30-3:30 pm	Montgomery	Montgomery Co. SCD, Multipurpose Rm 18410 Muncaster Road Derwood, MD 20855-1421
August 30, 2018	9:30-11:30 am	Prince George's	PG Co. SCD, Conference Rm 5301 Marlboro Race Track Road, Suite 100 Upper Marlboro, MD 20772
August 30, 2018	1:30-3:30 pm	Anne Arundel	Maryland Department of Agriculture, Room 114 50 Harry S. Truman Parkway Annapolis, MD 21401
September 5, 2018	1:30-3:30 pm	Garrett	UMD Extension, Service Meeting Room 1916 MD Highway Mt. Lake Park, MD 21550
September 6, 2018	9:30-11:30 am	Allegany	Allegany College of Maryland Continuing Education Building, Room 20 12401 Willowbrook Road Cumberland, MD 21502
September 6, 2018	1:30-3:30 pm	Washington	Washington County Division of Emergency Services 16232 Elliott Parkway Williamsport, MD 21795
September 12, 2018	1:30-3:30 pm	St. Mary's	SCD conference room at Ag Center 26737 Radio Station Way B Leonardtown, MD 20650
September 13, 2018	9:30-11:30 am	Charles	Charles Soil Conservation District 4200 Gardiner Road Waldorf, MD 20601
September 13, 2018	1:30-3:30 pm	Calvert	Harriett E. Brown Center, Room 113 901 Dares Beach Road Prince Frederick, MD 20678

Questions

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