Beyond 2025, what's ahead for WIP?

MASCD

7.9.2024

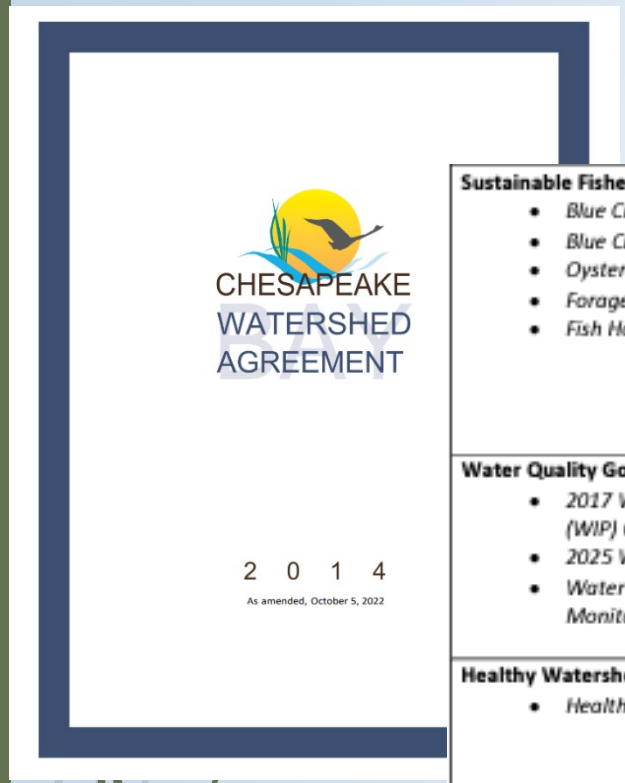
Elizabeth Hoffman

Watershed Implementation Plans



- Established in 2010 by the EPA, the Chesapeake Bay TMDL (Total Maximum Daily Load) set maximum limits of nitrogen, phosphorus, and sediment that can enter the Bay and water quality standards still be met.
- Pollutant allocations were divided across the seven jurisdictions - set using state of the art modeling tools, extensive monitoring data and peer reviewed science.
- Each jurisdiction prepared a WIP outlining specific and detailed steps to be taken by 2025, in order to reduce and address loads delivered to the Bay and meet their TMDL targets.
  - Phase I and II were developed and submitted to EPA in 2010 and 2012, setting targets for both 2017 and 2025.
  - Phase III (current) WIPs were developed in 2018 – outlining actions to be taken between 2019 and 2025.

History of Restoration Efforts



Sustainable Fisheries Goal:
• *Blue Crab Abundance Outcome*
• *Blue Crab Management Outcome*
• *Oyster Outcome*
• *Forage Fish Outcome*
• *Fish Habitat Outcome*
	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*

Water Quality Goal: • *2017 Watershed Implementation Plans (WIP) Outcome* • *2025 WIP Outcome* • *Water Quality Standards Attainment and Monitoring Outcome*	**Toxic Contaminants Goal:** • *Toxic Contaminants Research Outcome* • *Toxic Contaminants Policy and Prevention Outcome*
Healthy Watersheds Goal: • *Healthy Watersheds Outcome*	**Stewardship Goal:** • *Citizen Stewardship Outcome* • *Local Leadership Outcome* • *Diversity Outcome*
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*
Environmental Literacy Goal: • *Student Outcome* • *Sustainable Schools Outcome* • *Environmental Literacy Planning Outcome*	**Climate Resiliency Goal:** • *Monitoring and Assessment Outcome* • *Adaptation Outcome*

Chesapeake Bay Agreement Guiding document

10 goals and 31 outcomes - many by 2025

Signed by 6 states, Washington DC, US EPA and the Chesapeake Bay Commission

The Chesapeake Bay Partnership

Chesapeake Bay Watershed Agreement (2014)

Establishes goals and outcomes for the restoration of the Bay, its tributaries and the lands that surround them.

Consists of seven jurisdictions guided by the US EPA.

Many governing levels and goals.

- Executive Council
- Priority Steering Committee
- Water Quality Goal Implementation Team
- Source Sector and Technical Workgroups



Maryland's Phase 3 WIP

- Development – Summer 2018
  - Locally led planning
  - Informed by feasibility of Ph. 2 plan
- Regional Workshops – Winter 2018
- Bay Cabinet Approval – Feb 2019
- Final Report, after Public Comment Period – Aug 2019

WIP Tracking & Reporting

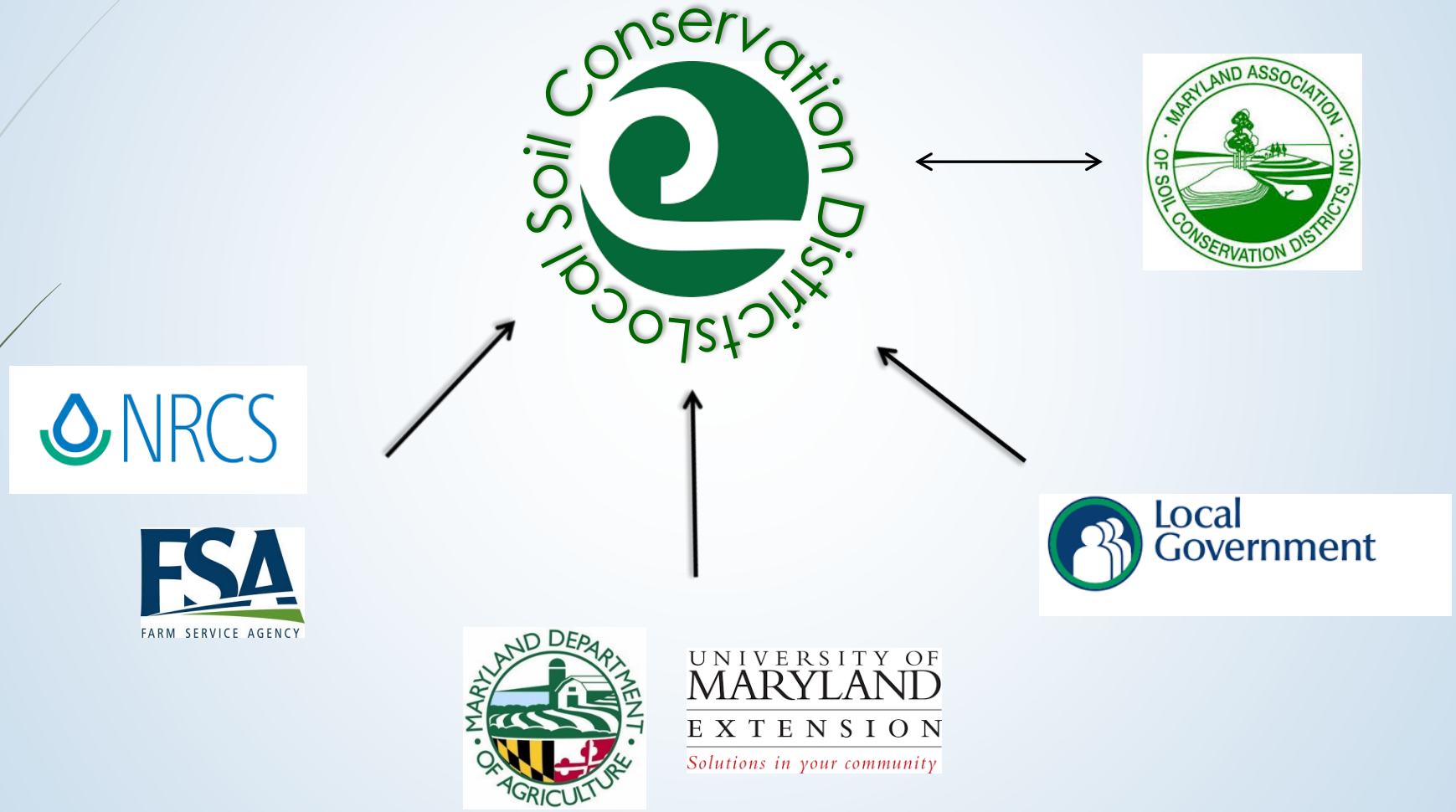
Phase 6.0 model

Sources of Data

- Conservation Tracker
- MACS database
- NM Database (AIR)

WIP Category	BMP Codes
Ag Stormwater Management	ASM - Agricultural Stormwater Management (Animal Facilities)
Ag Drainage Management	587 – Structure for Water Control RI 17 – Water Control Structure 604 – Saturated Buffer 605 – Denitrifying Bioreactor 606 - Subsurface Drain 620 - Underground Outlet 782 - P Removal System 554 - Drainage Mngmt Plan
Alternative Crops	RI 3 – Alternative Crop/Switchgrass
Animal Waste Management Systems	313 – Waste Storage Structure 359 – Waste Treatment Lagoon 425 – Waste Storage Pond RI 1 – Dry Waste Storage Structure
Barnyard Runoff Controls	558 – Roof Runoff Structure RI 16 – Barnyard Clean Water Diversion
Conservation Plans/SCWQP	382 (A-C) - Fencing RI 4a/b – Watercourse Access Control - narrow grass or trees RI 5/6 - Watercourse Access Control - grass or trees
Cover Crop	391 – Riparian Forest Buffer RI 9 – Forest Nutrient Exclusion Area RI 10 – Forest Buffer on Watercourse
Exclusion Fence w/ Grass or Forest Buffer Exclusion Fence w/ Narrow Grass or Forest Buffer	386 – Field Border 390 – Riparian Herbaceous Cover 393 – Filter Strip 412 – Grassed Waterway RI 7/8 - Grass Nutrient Exclusion /Grass Buffer on Watercourse
Forest Buffers	512 – Forage and Biomass Planting RI 13 /14– Conversion to Pasture or Hayland 327 – Conservation Cover 342 and 342A – Critical Area Planting LRS - Land Retirement to Solar
Grass Buffers	591 – Amendments for the Treatment of Ag Waste
Horse Pasture Management Land Retirement to Pasture or Open Space	561 – Heavy Use Area Protection (excl. poultry)
Litter Amendments (Poultry)	614 – Watering Facility RI 18 – Watering Trough
Loafing Lot Management	316 – Animal Mortality Facility RI 2 – Animal Compost Structure
Off-stream Watering w/o Fencing	528 – Prescribed Grazing RI 15 – Rotational Grazing
Manure Transport	580A/B – Streambank Protection or Shoreline Protection 584 – Channel Bed Stabilization
Mortality Composters	380 – Windbreak/Shelterbelt Establishment 612 – Tree/Shrub Establishment 422A/B – Hedgerow Planting RI 11/12– Veg. Buffer on Poultry – grass or trees
Precision/Rotational Grazing	
Stream Restoration Ag	
Tree Planting	
Wetland Restoration	657 – Wetland Restoration 658 – Wetland Creation
Nutrient Management Conservation Tillage & High Residue Management Cropland Irrigation Manure Incorporation or Injection Nursery Capture & Reuse	

Building a Delivery System



2023 Implementation Highlights

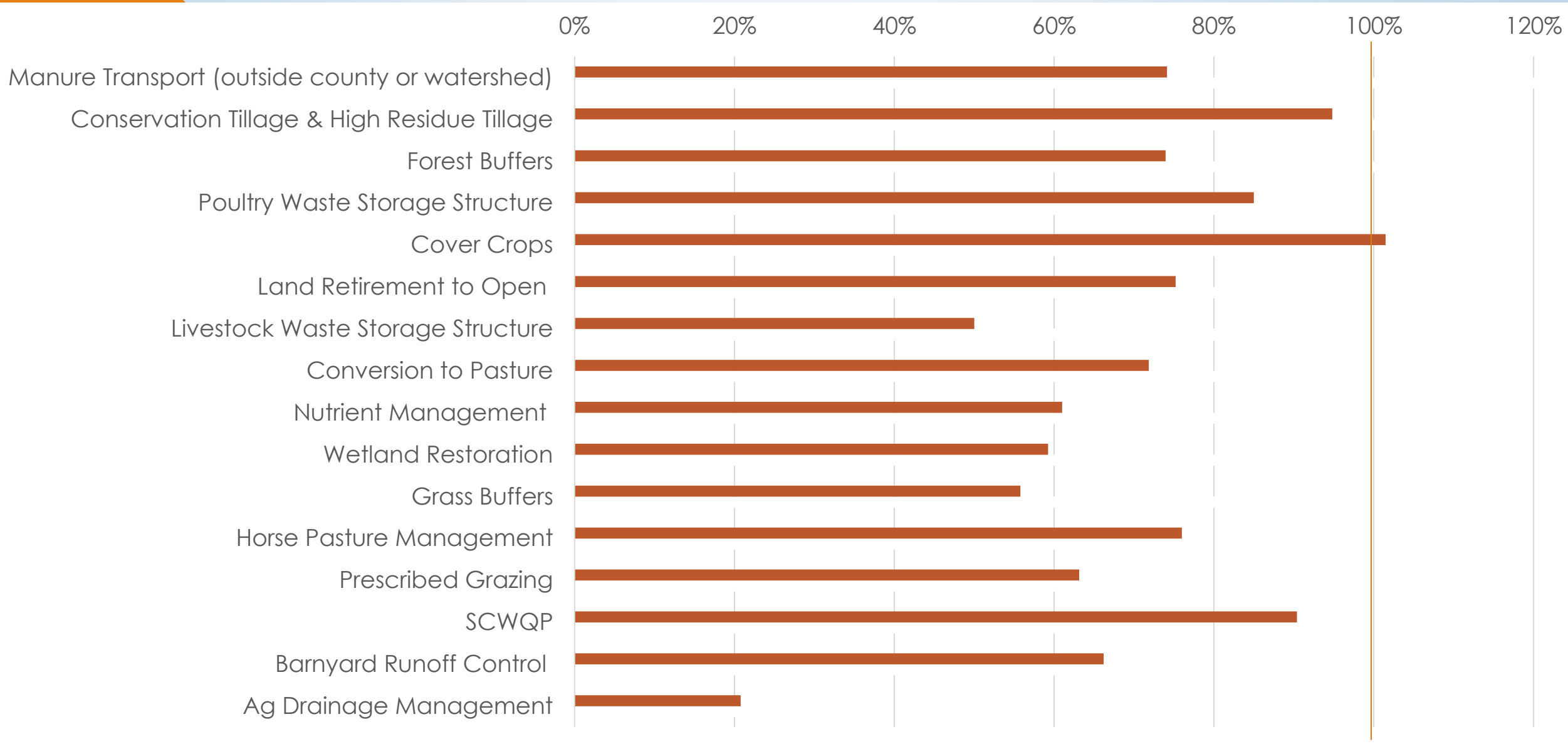
- Steady progress in the categories of – (new implementation and verified)
  - Exclusion Fencing (+233 acres of excluded buffer)
  - Forest Buffers (+ >2,000 acres)
  - Wetland Practices (>+2,000 acres)
  - Conversion to Pasture and Open Space (+4,221 acres)
  - Prescribed Grazing (+2,394 acres)
  - Ag Stormwater Management (+641 acres treated – exceeded our state goal)

- SCWQP – Record Year for Planned Acres (Over 100,000 WIP Acres planned)
  - Slowing rapid retirement of plans with new staff

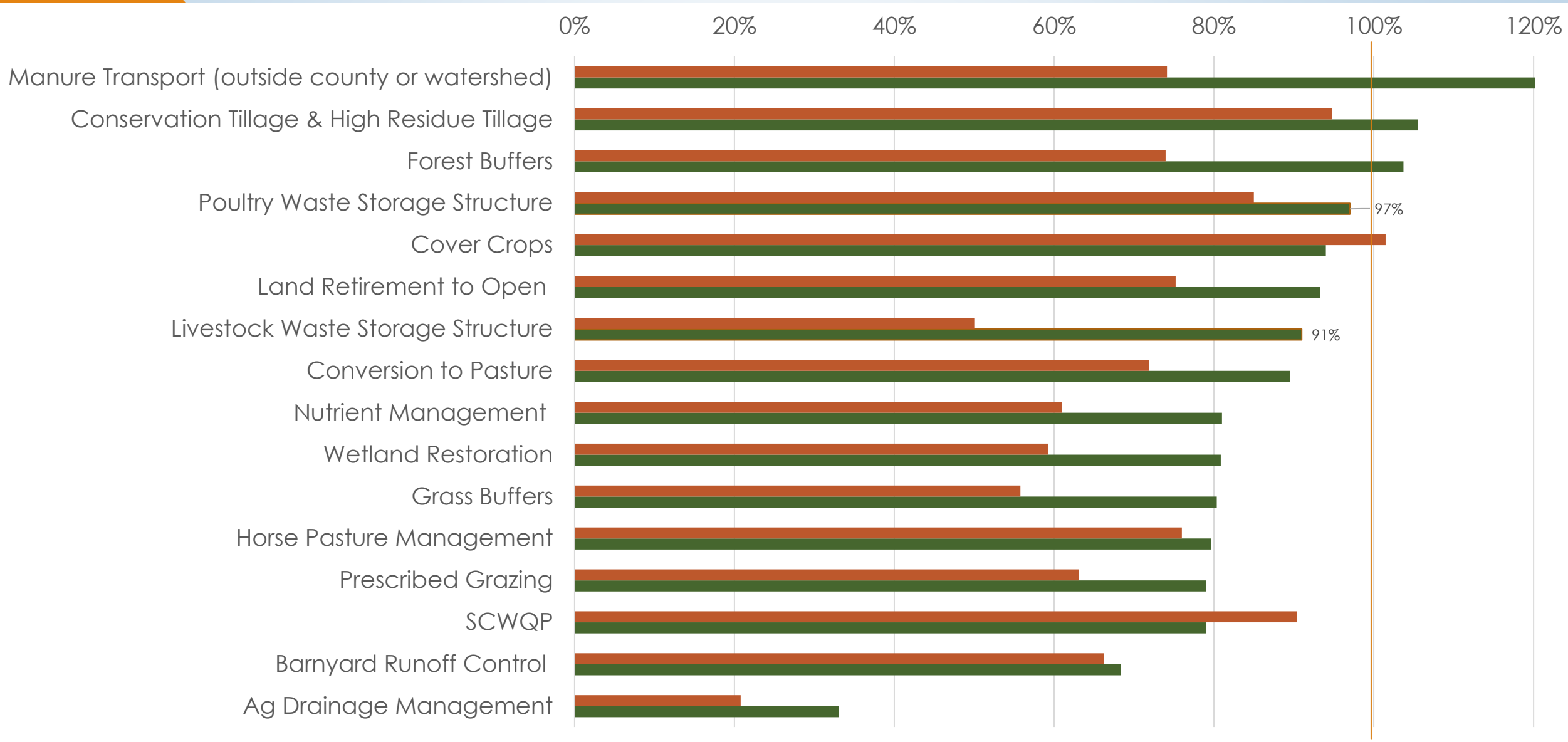
- Livestock Waste Management Systems (60% goal addressed to 90% goal addressed)
  - Capturing accurate AUs in Tracker
  - Verification of older structures

- Gaps to Continue to Close
  - Ag Drainage Management
  - Buffers, especially Grass Buffers
  - Exclusion Fencing

Growth Towards 2025 Targets since **2017 Progress**



Growth Towards 2025 Targets since **2017 Progress**



Verification Field Assessment Team

6 Regionally Based Field Staff

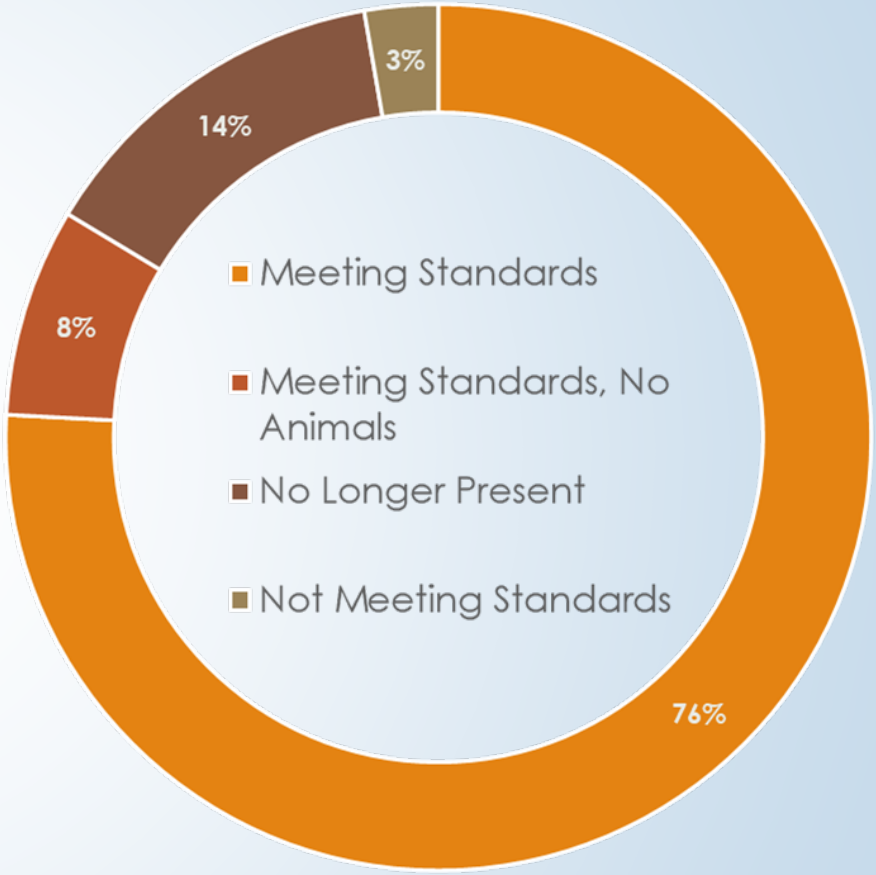
Reviews conservation plans, visits entire farm, while assessing and inventorying the current status and function of BMPs.

Any practices or areas needing attention are brought back to the attention of the SCD or eventually retired. We treat these as an educational moment:

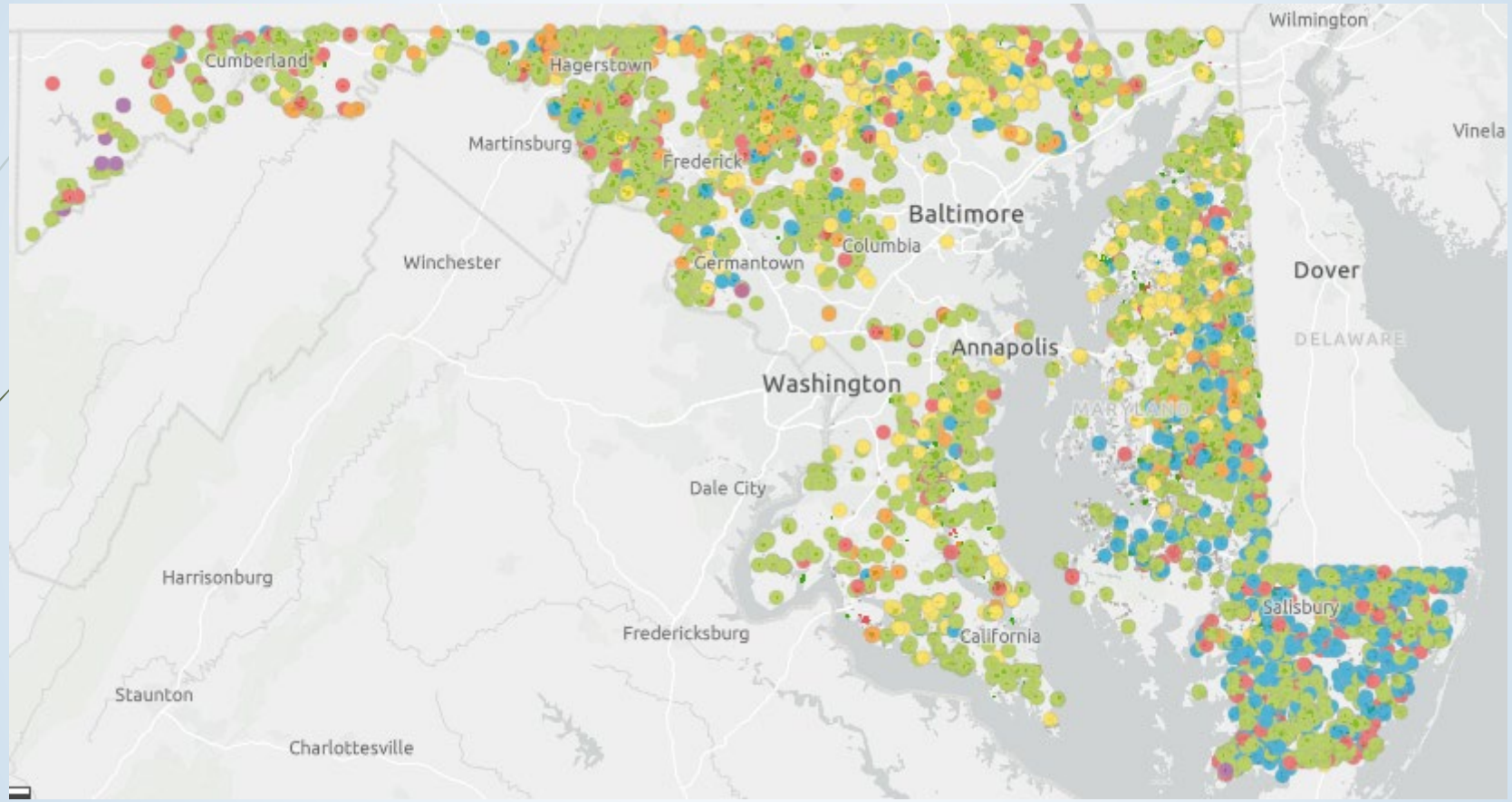
- ➔ to provide outreach,
- ➔ connect them with their local SCD,
- ➔ and promote our programs that help farmers put voluntary conservation measures on the ground.

Status of all WIP BMPs

Over 27,000 BMPs verified as of July 2024

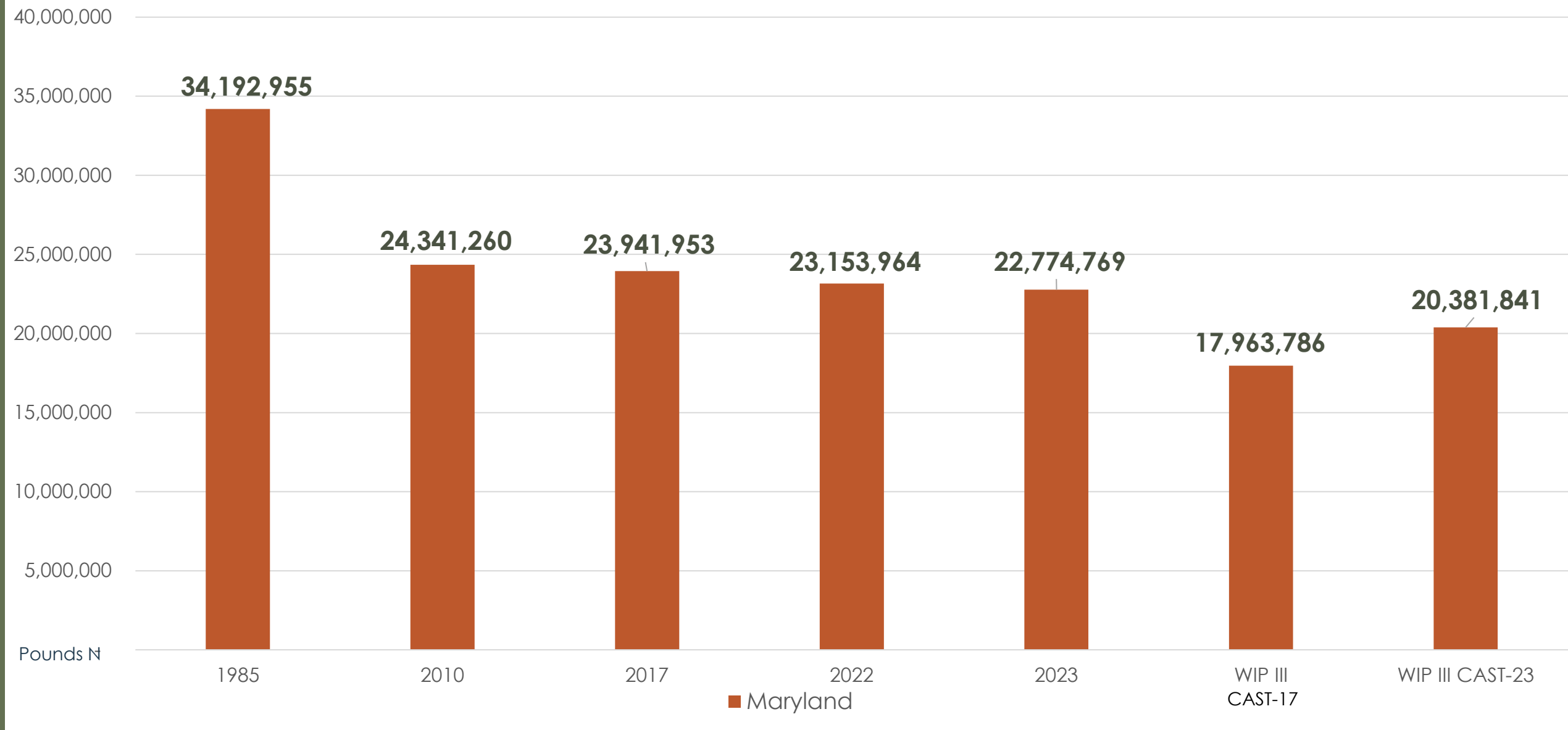


Field Assessment Team – Verification of BMPs

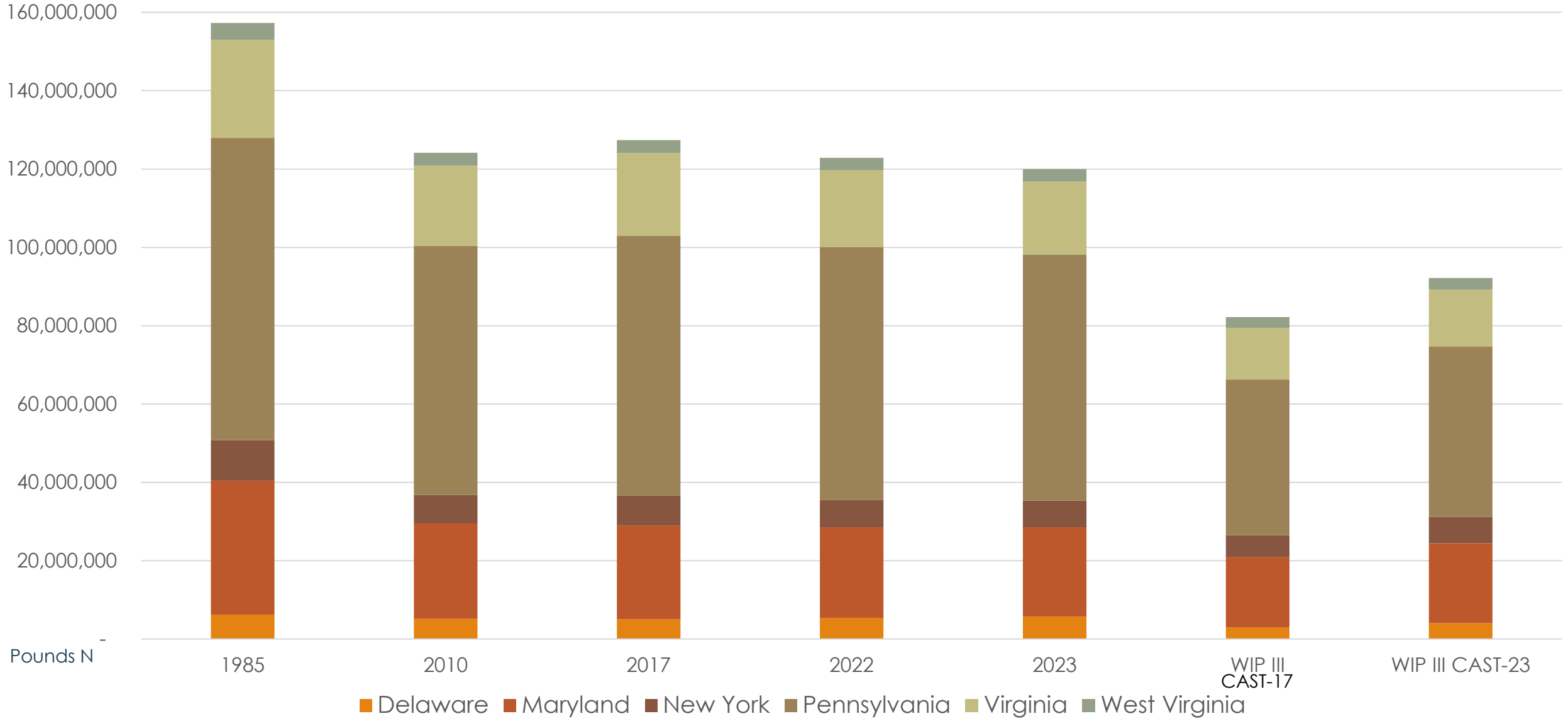


Over 80% of reported practices have been field verified and mapped – renewed credit duration in the model for those practices beyond their credit life AND created spatial inventory of practices that can be utilized for prioritization and focused implementation efforts.

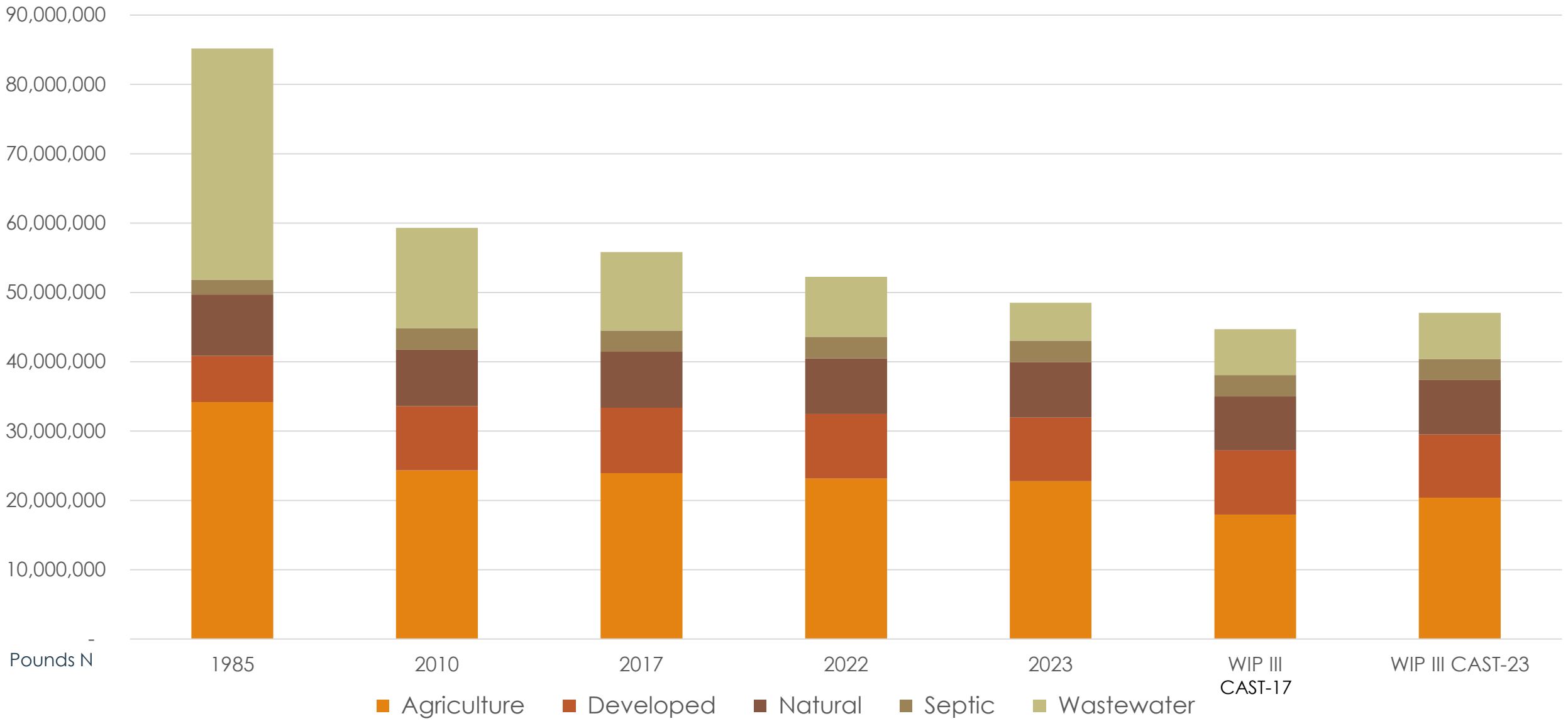
N, EOT Loads | Maryland | Ag Sector



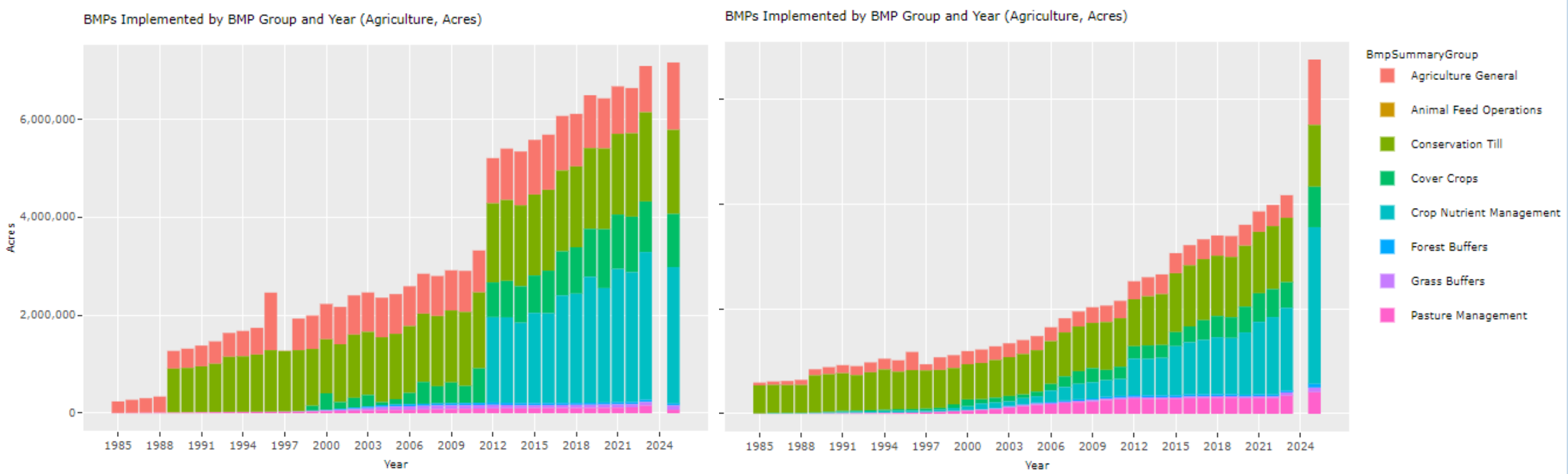
N, EOT Loads | All Jurisdictions | Ag Sectors



N, EOT Loads | Maryland | All Sectors



BMP Implementation towards Goals
Maryland, Ag Sector | Watershed, Ag Sectors



https://cast.chesapeakebay.net/EstuaryTrends/BMPs

2025 and Beyond (Outlook from Last Year)



- Better Science & Better Data
- Best Tools to Measure Progress?
  - No newly outlined metrics yet
  - Anticipate renewed focus on our stream networks and coastal zones
- Increased Focus on Co-Benefits
  - Our plan of conservation aligns closely already
  - Opportunity to further multiple partnerships and funding
  - Opportunity to highlight other services provided, as measures of success
    - Habitat Restoration
    - Flood Mitigation
    - Climate Adaptation
    - Soil Health

Success Stories

CHESAPEAKE PROGRESS



Blue Crab Population Remains Sustainable

Despite the population of female blue crabs decreasing 12.5%, it is still well above the threshold for sustainability.

Learn more about our progress



Forest Buffer Plantings Steadily Increase

In 2023, more miles of new forest buffers were planted than any year since 2016. The plantings reached 71.2% of the annual goal, which was only met in 2002.

Learn more about our progress



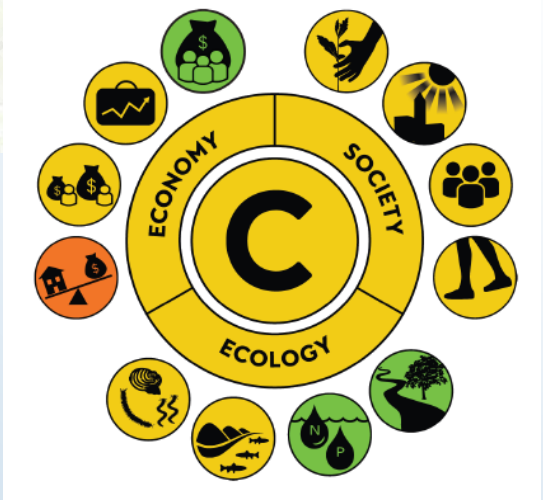
Most Tree Planting Since Tracking Began

The 2,577.4 aces of trees planted in 2023 is the highest reported since tracking via the National Environmental Information Exchange Network began in 2014.

Learn more about our progress

UMCES 2024 Chesapeake Bay and Watershed Report Card – Released July 9th 2024

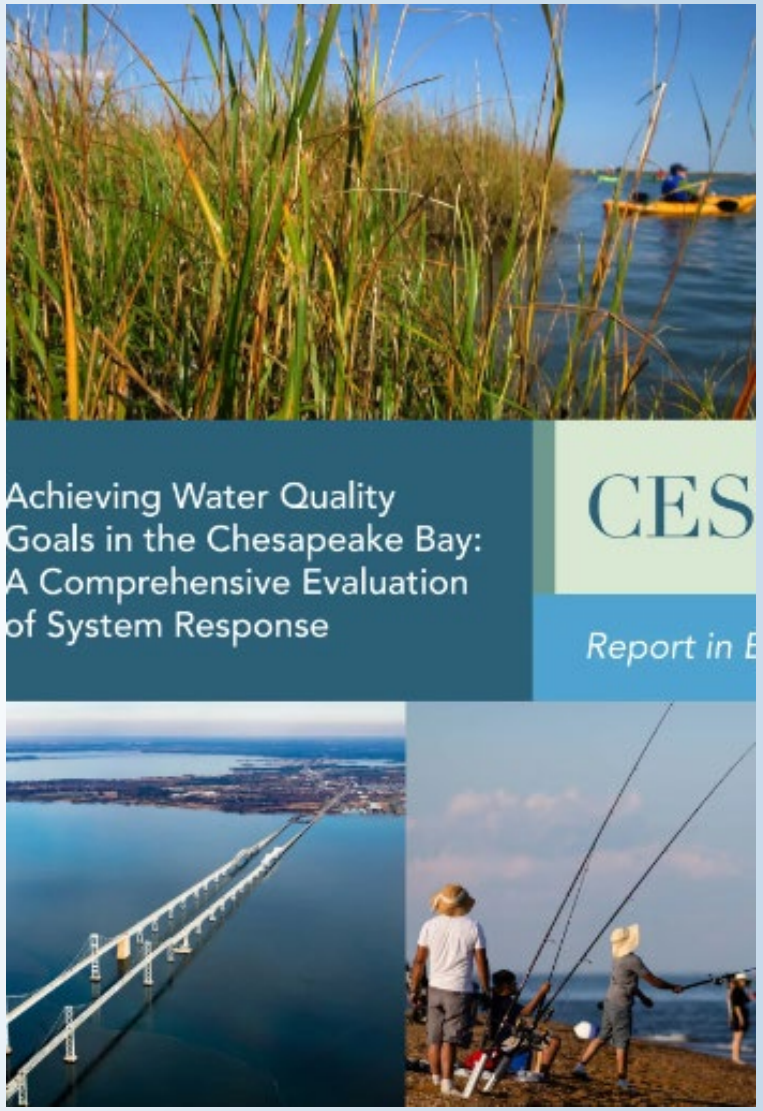




- Includes seven bay indicators and twelve watershed indicators. The bay indicators assess aquatic ecosystem conditions, while the watershed indicators cover ecological, societal, and economic aspects.
- ***The Chesapeake Bay has improved to C+ for the first time in over 20 years!***
- Scores for Dissolved Oxygen, Total N, Total P, and Aquatic Grasses have all improved.

How is the Bay responding? Are our efforts working?

- Yes and No – Progress towards conservation goals is going well, conservation practices are increasingly implemented, though water quality is not responding and improving how we thought it would, at the expected rate.
- How do we advance? Science-based approaches to waterway restoration efforts in a direct response to conclusions in the 2023 Comprehensive Evaluation of System Response (CESR) report.
  - CESR is a summation of a three year investigation into the 40 year effort to reduce nutrient loads to Chesapeake Bay.
- Also acknowledge that there is a disconnect between modeling and monitoring – Phase 7 model update running parallel, as well as effort to increase monitoring stations across the watershed.



Chesapeake Bay Agreement | Outcomes

OUTLOOK ON COURSE	OUTLOOK OFF COURSE
Blue Crab Abundance Outcome	Wetlands Outcome
Blue Crab Management Outcome (Complete)	Black Duck Outcome
Oysters Outcome	Brook Trout Outcome
Forage Fish Outcome	Submerged Aquatic Vegetation Outcome
Fish Habitat Outcome	Forest Buffers Outcome
Stream Health Outcome	Tree Canopy Outcome
2017 Watershed Implementation Plans (WIPs) Outcome (Complete)	2025 Watershed Implementation Plans (WIPS) Outcome
Fish Passage Outcome	Diversity Outcome
Water Quality Standards Attainment and Monitoring Outcome	Toxic Contaminants Policy and Prevention Outcome
Toxic Contaminants Research Outcome	Student Outcome
Local Leadership Outcome	Climate Adaptation Outcome
Protected Lands Outcome	
Land Use Methods and Metrics Development Outcome	
Land Use Options and Evaluations Outcome	
Public Access Outcome	
Sustainable Schools Outcome	
Environmental Literacy Planning Outcome	
Climate Monitoring and Assessment Outcome	

Outlook Uncertain:

The outlook of the Healthy Watersheds Outcome and the Stewardship Outcome are considered uncertain pending additional analysis.

In response to setbacks identified in CESR, a new committee named "Beyond 2025" was formed to work through adjusting the goals and timeline, and think through strategies to adapt restoration strategies as well as partnership structure.

Rather than write a new agreement, let's continue to use this one and optimize it.

- Adaptation Priorities:
  - Identify new and emerging scientific data and studies.
  - Enhance monitoring and reporting capabilities to improve our understanding of existing conditions and trends.
  - Identify opportunities to leverage action across multiple goals and outcomes of the Watershed Agreement.

Maryland's Path Forward

- The Phase 3 WIP remains the guidepost for the agricultural sector, even as new goals are being asked
- Prioritize Co-Benefits – across the many outcomes of the Chesapeake Bay Agreement
- Consider new ways to measure "progress" – including capturing BMPs that are innovative and new to the landscape
- Leverage partnerships and funding
- Prioritize key landscapes and stacking of BMPs



Whole Watershed Act

- Create a five-year pilot program targeting five Maryland watersheds that best represent the state's diverse land uses, geographies, and impairments.
- Deliver not only water quality improvements, but also specific co-benefits like increased public access to waterways, wildlife habitat, fisheries improvement, and climate change resiliency.
- Target watersheds will be selected by and in close collaboration with local stakeholders who will be critical in the design and implementation of restoration projects - overseen by a State Management Team,



MDA | Watershed Strategies | Beyond 2025

- Projects and practices currently happening, outside of WIP scope
  - Saltwater Intrusion | Sea Level Rise
    - Wetlands
    - Land Conversion
    - Salt tolerant crops
  - Enhancement Practices (Examples)
    - E327A | Conservation cover for pollinators and beneficial insects
    - E386D | Enhanced field borders to increase food for pollinators along the edge(s) of a field
    - E612D | Adding food-producing trees and shrubs to existing plantings
  - Wildlife Habitat | Quail Habitat, Duck Habitat, Partnerships?
    - 645 | Upland Wildlife Habitat Management
    - 644 | Wetland Wildlife Habitat Management
  - Agroforestry
    - 381 | Silvopasture
    - 379 | Forest Farming?
  - **Others?**
    - **PP&E – WIP wants to hear about them.**





PP&E | WIP

Reinvigorate, Rethink, Re-engage

Ag Re-engagement Roundtable

SCD 1:1

WIP Office Hours

MASCD

Ad Hoc Meetings as needed

Opportunity Assessment | PP&E Exercise

Maryland | Whole Watershed Act – State Team

MDA | Ag Commission Subcommittee – CoWS – Committee on Watershed Strategies

CBP | Ag Advisory Committee, moving ahead

Contact Information

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Follow Up Notes

- **Watershed Wide --**

What happens after 2025 is not solely a Maryland decision or agricultural sector decision - it is a partnership decision amongst all Bay states and jurisdictions. There is currently a committee working on reviewing progress of all outcomes in the Chesapeake Bay Agreement and making recommendations for the future of the partnership. A draft report is out for public comment and MDA has provided input. That draft report of recommendations will be presented to the Governor-level of the partnership in fall 2024 to set next steps. Any formal changes to state approaches would start after July 1, 2025. See MDA approach, below.

- **As a State --**

While the Bay partnership works through what is to come and how we plan for it, Maryland leadership has been proactive in recommitting to the agreement and looking to explore how all agencies can further focus our restoration efforts. One such example is the Whole Watershed Act and state management team, as mentioned at MASCD, that will identify watersheds of focus.

- **MDA approach --**

MDA remains committed to the plan of conservation as outlined in our Phase 3 WIP through July 1, 2025. We will continue to make strong strides towards implementation of BMPs and our goals. Your efforts to-date only puts us in a better place to plan for next steps once we know more as a state and participant in the Chesapeake Bay Partnership. **Our ETA may have changed, but our map has not.** PP&E-WIP will continue to update as we know more details and look forward to collaborative conversations. Any formal changes will include locally-led conversations.