

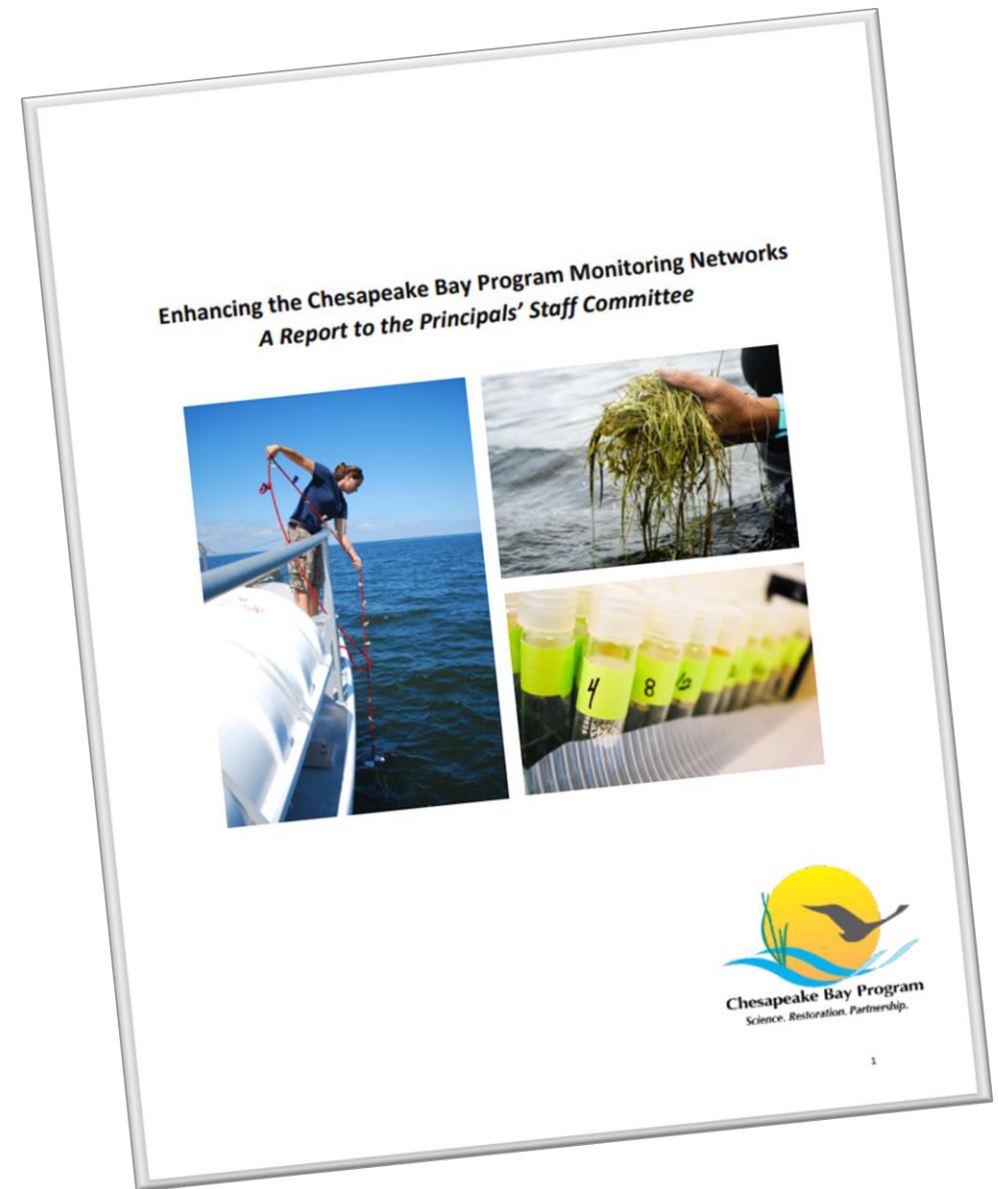
# Enhancing CBP Partnership Monitoring Networks: Update

6/25/24

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Presentation: Lee McDonnell (EPA)

Team: Peter Tango (USGS), Breck Sullivan (USGS), Ken Hyer (USGS), Mark Nardi (USGS), Lee McDonnell (EPA), Kaylyn Gootman (EPA), Denice Wardrop (CRC), August Goldfischer (CRC)





**Successfully supported 28 out of 31 recommendations**



**Support is based on 5-year Infrastructure funding**



**Beyond 2025 findings emphasizes the need for more monitoring**



**We have a 2.5-year window to protect these investments**

**The Bottom Line**

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**CBP Monitoring**





**Successfully supported 28 out of 31 recommendations**



**Support is based on 5-year Infrastructure funding**



**Beyond 2025 findings emphasizes the need for more monitoring**

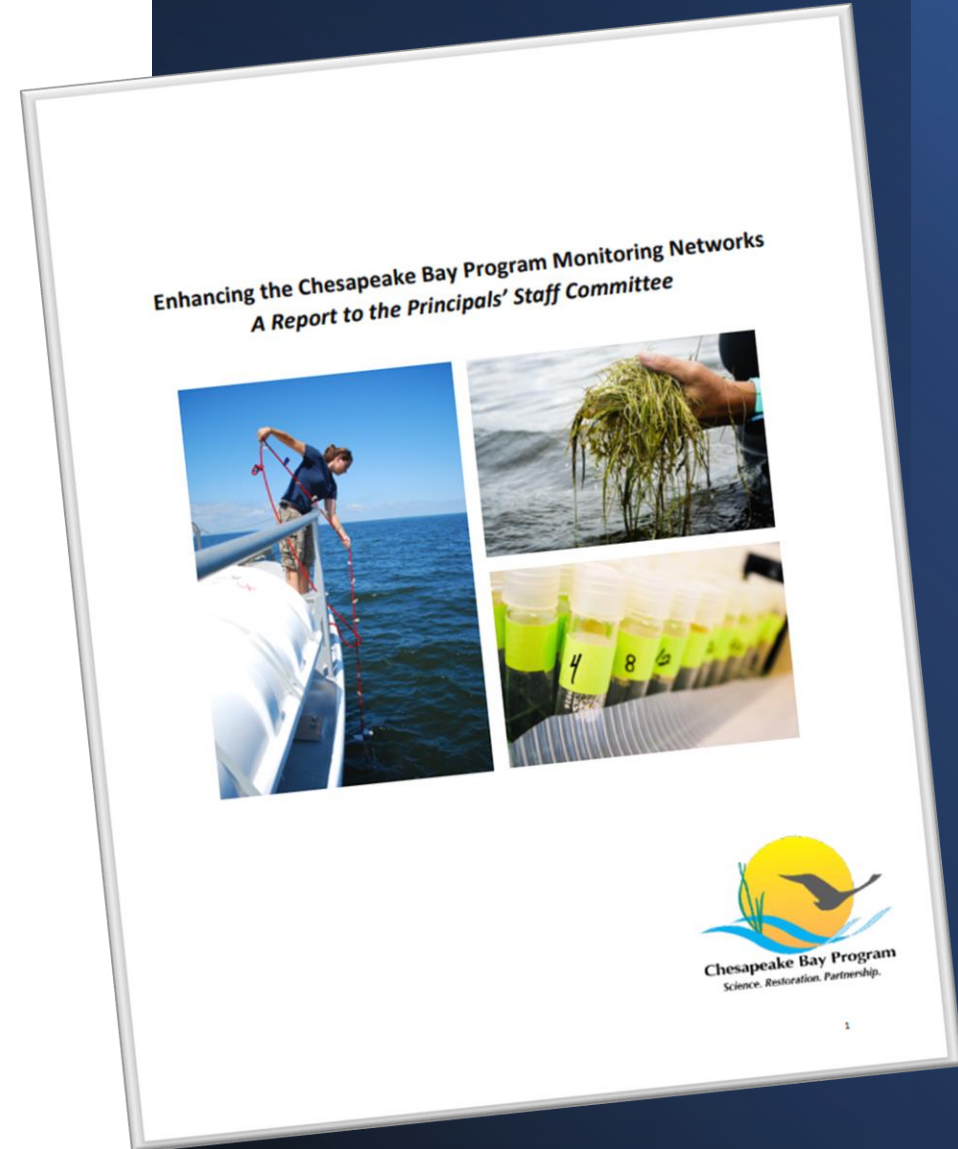


**We have a 2.5-year window to protect these investments**

***Ask For the PSC:  
Assign a team to develop a  
Phase II funding strategy***

# Monitoring Success Story

- Since the report publication, over 90% of the recommended support was committed for core monitoring programs
  - Supported 28/31 recommendations
- Investments are being used to acquire equipment, deploy in appropriate locations, maintain and manage fundamental and new network operations
- Infrastructure funding provided bulk of new financial support
  - Additional support needed post-Infrastructure





# Monitoring Enhancements: Tidal Water Quality



High-Resolution Spatial  
& Temporal Data

Water Quality Criteria  
Attainment Assessment

Hypoxia Collaborative



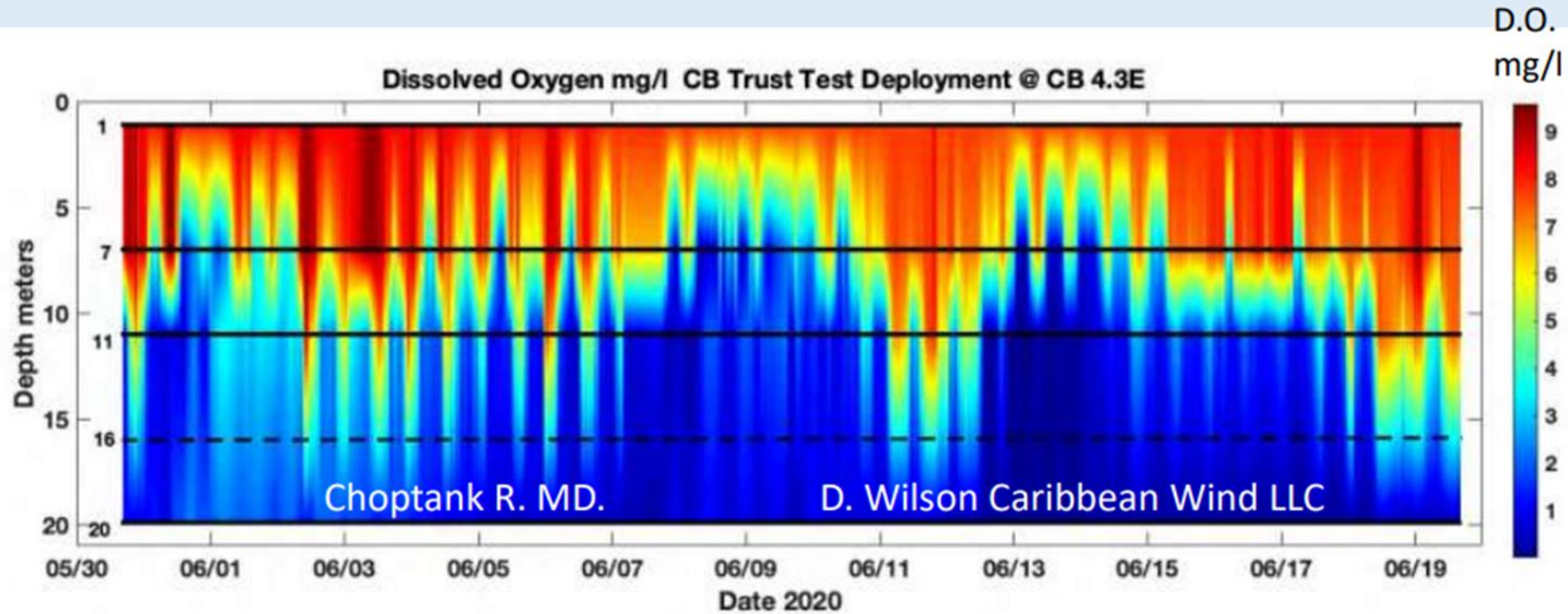
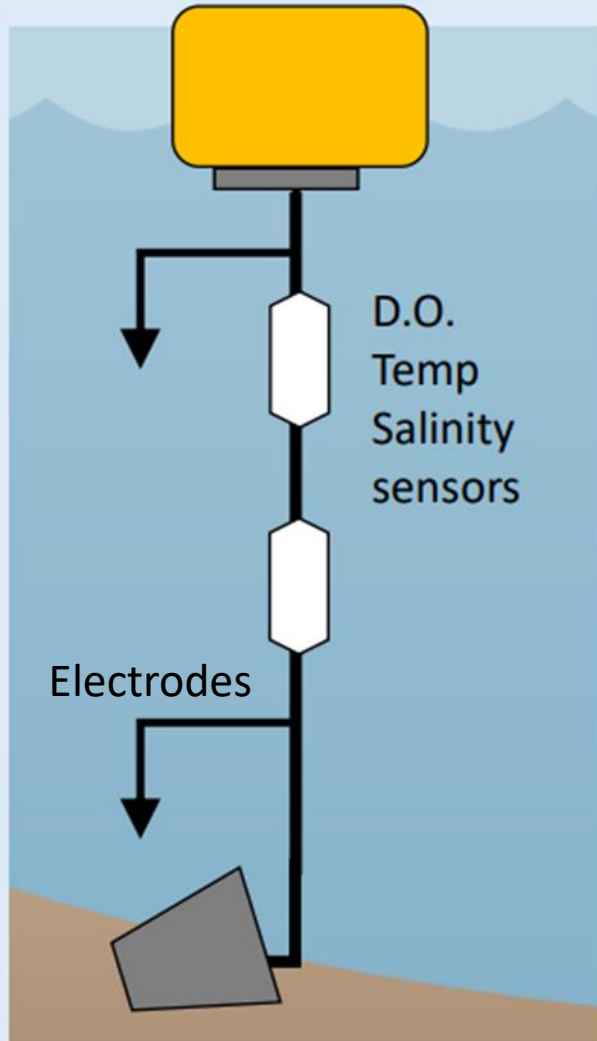
## Investments

- 8 new sites for vertical sensor arrays packages
  - O&M
- 4D water quality interpolator development support
- Nutrient limitation request for applications competed and awarded to UMCES
- Sustain existing programming
- VA DEQ COLA

# Open Water Habitat: New vertical sampling arrays

Decision-support needs: Address gaps in water quality criteria attainment assessments

Use in model calibration and verification



- Dissolved oxygen, **10 minute water column data**.
- 1 month in 2020, 20-meter water column depth
- **Hypoxia Collaborative** established in 2020 to build out network (NOAA, EPA, USGS led)

# Monitoring Enhancements: Nontidal Water Quality



High-Frequency  
Temporal Data

Reduced Uncertainty  
In Load Estimation

Small-Scale Agricultural  
Monitoring

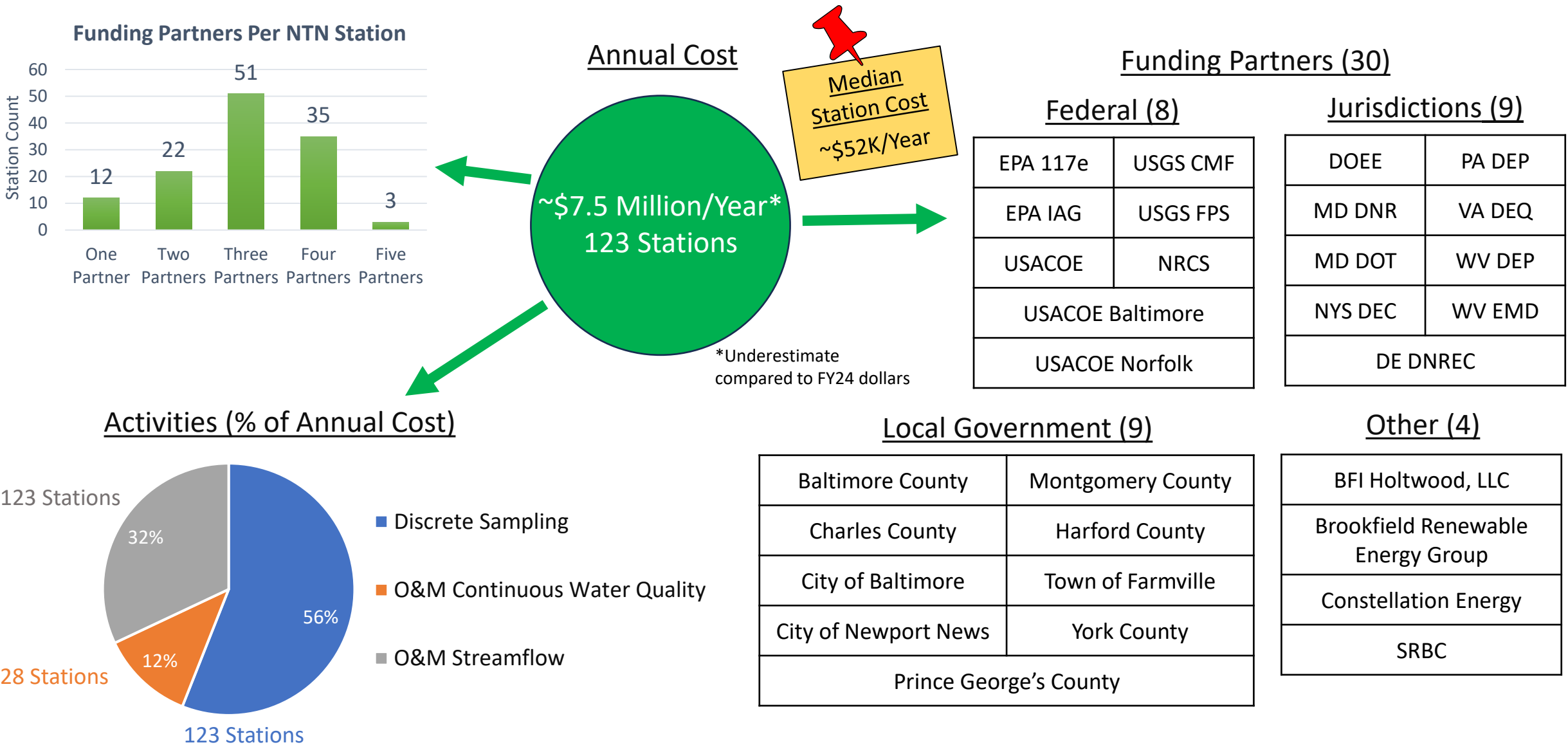


## Investments

- Con-Mons at 7 RIM stations completes all 9 with Con-Mons; O&M
- 5 new small Ag watershed locations outfitted with Con-Mons; O&M
- 3 lower Susquehanna Reservoir input Con-Mons (PA USGS cost basis)
- Station loss backfill annual risks coverage
- Funding for PA DEP



# Nontidal Network Funding Analysis (FY22/FY23 Dollars)





# Small Agricultural Watershed Monitoring Program

The USGS, NRCS, and EPA are planning a new water-quality monitoring effort with Chesapeake Bay partners in small agricultural watersheds, to better connect conservation practice implementation with observed water-quality responses. This effort includes partnership with land-owners and NGOs.

## The objectives of this effort are to:

1. Develop new collaborative, outreach, and educational opportunities among agricultural, conservation, scientific, and academic communities.
2. Increase our understanding about nutrient and sediment loads and trends in agricultural watersheds.

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# Monitoring Enhancements: Community Science



Enhance Existing  
Monitoring Networks

Expanded Spatial &  
Temporal Coverage

Fosters Stewardship,  
Engagement, Education,  
& Discovery



## Investments

- RFA with Chesapeake Monitoring Cooperative, EPA funded, 2023-2028
- Monitoring equipment for underrepresented monitoring groups
- Nitrate monitoring program

*\*Some SAV-related recommendations have garnered support/progress through partnership activities and investments beyond specific EPA funds. Targeted investments plans toward the Community Science-focused monitoring support are being updated given recent partnership activities.*



# Monitoring Enhancements: SAV



New Technology  
Integration

Enhanced Habitat  
Estimates

Improved Ecosystem  
Assessments



## Investments

- Satellite imagery
- RFA with Old Dominion University to leverage artificial intelligence-aided interpretation of high-resolution satellite imagery
- O&M
- COLA



# Additional Monitoring Enhancements: LULC



Land Use & Land Cover  
Characterization (1 m)

Land-Change Trends  
& Forecasting

Hyper-Resolution  
Stream Delineation



## Investments

- Supported with funds from EPA annual appropriation
- RFA with the Chesapeake Conservancy, EPA funded, 2018-2024
- Notice of Funding Opportunity went live on 5/17/24
- Grant webinar scheduled for 6/25/24, 3pm

# Protecting Our Investments



1. Funding
  - Ending Infrastructure support
  - Since FY22, over \$1.8M backfill for tidal and non-tidal monitoring programs
2. Core Monitoring Networks
  - Toxic Contaminants
  - Zooplankton
3. Increasing Service Costs
  - COLA
  - Inflation
4. Support for Other Outcomes
  - Development of monitoring programs and indicators

# What's Next?



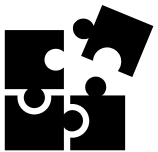
We have a 2.5-year window to protect these significant investments

- We need additional partner support to 1) sustain existing networks, 2) address additional gaps, AND 3) adapt priorities to address Beyond 2025 guidance



Beyond 2025 findings emphasizes the need for more monitoring

- If monitoring is a priority, we all need to make it a priority with financial support now and in the future

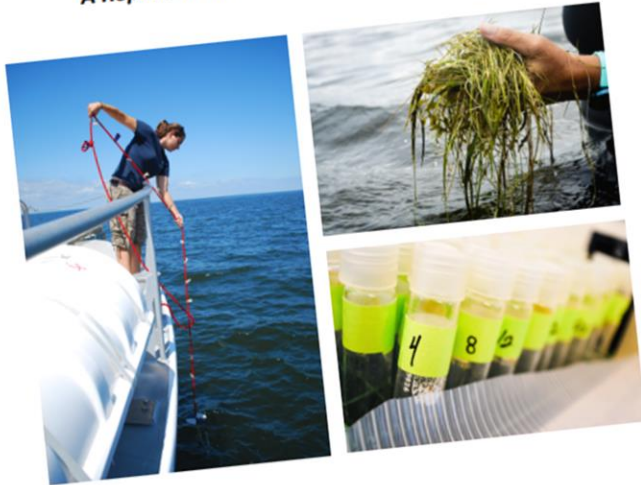


Ask for the PSC

- Assign a team to develop a Phase II funding strategy that addresses vulnerabilities and protects investments in CBP monitoring networks, through assessment and partner coordination



Enhancing the Chesapeake Bay Program Monitoring Networks  
*A Report to the Principals' Staff Committee*



# Thank You!

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