PSC Review Update and Discussion

Peter Tango and Breck Sullivan
USGS

Nontidal Network WG

1/19/2022

PSC Report Outline

- **Section 1** of the report provides **a summary of the monitoring recommendations** needed to address the improvement of the CBP monitoring networks.
  - High level funding recommendations.

- **Section 2** of the report provides **network portfolios of existing CBP monitoring networks** to highlight the status, vulnerabilities, monitoring gaps, enhancements, and available cost estimates to support resource need.
  - More detailed funding recommendations dissecting the high level funding numbers

- **Section 3** of the report contains a more in-depth assessment of the review process, potential future activities to address the needs, and **emphasizes the monitoring needs for all the outcomes in the *Chesapeake Bay Watershed Agreement***.

- **Appendix. Answers to the original 8 questions** the community has addressed on the networks.

3 themes addressed in the review

1. Unassessed water quality criteria and standards
2. Explaining change in response to management actions
3. Accountability to the 2014 Watershed Agreement 31 outcomes

Activity	Primary Themes in Monitoring		
	Unassessed Tidal Bay Water Quality Criteria	Explaining response to management actions	2014 Bay Agreement Goals and Outcomes
How we work	*Long term WQ Monitoring *SAV annual survey *Benthic annual survey *Community Science	Nontidal Network Land Use/Cover	Chemical, physical, biological, social change monitoring programs
What we do	Assess dissolved oxygen, water clarity, chlorophyll criteria and benthic macroinvertebrates for WQ standards attainment	Evaluate spatial status and trends in land, air, and water conditions Create understanding of management influence and targeting for restoration	Assess progress towards 10 goals and 31 outcomes
What we invest in monitoring	**"$X Million annually	**$Y Million annually	***No specific synthesis available
What we need	• Sustaining existing foundations of monitoring programming • Strategic growth addressing gaps in space and time for monitoring needs • Address costs and cost effectiveness of programming		
Investment to address needs	+200,000 building to 600,000 annually in next 5 years: Maintain long term monitoring program +800,000 one-time cost: new hypoxia network 11 sensor arrays for short duration DO criteria +250,000 annually – operate and maintain hypoxia network +50,000 annually – benthic monitoring +200,000 annually for 3 years: SAV satellite monitoring design and algorithm development "200,000 (every year?) Nutrient limitation evaluation +100,000 annually next 4 years: develop, test, and maintain new 4D interpolator	+300,000 annually: Maintain long term network (243K PA, 45K station loss support) "+500,000" one-time cost: improve River Input Monitoring network with continuous sensors (455K) "+150,000" annually operate and maintain new RIM network (180K) "+1M" annually for watershed-wide imagery tracking land use/cover	$200K Toxics Other outcomes developing designs, indicators and funding needs

Fundamental funding recommendations for the Nontidal network:

- Maintain the existing NTN network: Addressing grant needs and near annual station risk issues
- Propose advanced monitoring at all RIM sites plus one (or two)
  - RIM proposal is estimated with inclusion of NO x sensors and their added O&M

			Year 1	Year 2	Year 3	Year 4	Year 5
Nontidal Network	Infrastructure	7 RIM Con-Mon sensor packages	455,000				
	O&M	RIM ConMon network	180,000	183,600	187,272	191,017	194,838
		PADEP funded through EPA	233,000	233,000	233,000	233,000	233,000
	Infrastructure &/or O&M	Station loss backfill annual risks coverage	45,000	45,000	45,000	45,000	45,000

Discussion

- Funding items
- Funding levels
- 7 or 8 ConMons
- NO x or no NO x (sensor costs +25K to the 5 sensor set up and +5K O&M)