Maryland
Department of
the Environment

MDE's Regulatory Perspectives, Needs, & Suggestions

Presentation to the
Criteria Assessment Protocols Workgroup

August 13, 2024

Matt Stover
Watershed Protection, Restoration, and Planning Program

A Preview…

Photo courtesy of Matt Rath, Chesapeake Bay Program

- Discuss MDE's process and timeline for producing and submitting the Integrated Report
- Provide MDE's perspectives and recommendations for the future direction of CAP and other related workgroups as it relates to General topics, WQS, Monitoring, and Assessment
- Provide MDE's needs for technical assistance from the Bay Program
- Meant to be thought provoking and to spark conversation

Background on the Integrated Report of Surface Water Quality

- Assessments in the IR provide the status of water quality
- Impairments identified by IR direct TMDL development/refinement and implementation through
  - NPDES permits (effluent limits, BMPs),
  - water quality certifications (Section 401), and
  - voluntary actions (e.g., Ag BMPs, septic upgrades, etc)
- States are not required to monitor every water body segment in the State every 2 years, Cycling strategies are permitted
- Must include all existing and readily available data (of sufficient quality) – States must provide explanation for excluding data
- Try to include the most up-to-date information possible
- Assess these data using documented and publicly reviewed Assessment Methodologies (AM)

The Timeline of MDE's IR Submission Working Backwards

- All States must submit IR to EPA by April 1 on every even-numbered year (2026, 2028…)
- Preceded by 30-45 day public comment period and Dept's responses to those comments (~January of even numbered year)
- Text of the report describes assessments (including the Bay assessments) – Written over 5-6 months prior to going out for public review (July – December)
- Assessment of water quality data typically occurs prior to report writing but can sometimes occur simultaneously. (February – July)
- **Would ideally have Bay DO stoplight assessments by July in odd-numbered year preceding IR submission**

General Topics
MDE's Perspectives and Needs

- The regulatory needs of the Bay states should be the highest priority for the CAP, BORG, Hypoxia Collaborative and Integrated Monitoring Networks workgroups as a whole

- Currently unable to comprehensively show measured (not modeled) progress in how nutrient reductions are impacting DO in the Bay. It is critically important to show some degree of success in our Bay restoration efforts as this helps us to keep momentum in driving restoration!

- <u>Assessing all applicable DO criteria in all designated uses in the Bay is the top priority for MDE.</u>

General Topic
Just a Suggestion…

- Lots of Bay Program workgroups with similar or overlapping purposes which can make partnership communications and meeting attendance confusing.
  - Suggestion #1: Have a discussion as to the purpose of each and consider consolidating or dissolving where possible
  - Suggestion #2: Make sure that the email lists and members listed on the website are up-to-date.
  - Suggestion #3: Organize workgroups/teams in STAR according to the steps in the CWA process (i.e., WQS, Monitoring, Assessment, TMDL/Modeling, Restoration/Implementation, etc.

Water Quality Standards Development
MDE's Perspective

Making revisions to the DO water quality criteria to address impacts from climate change

- It's important to understand how climate change is impacting our ability to achieve the current water quality criteria first.
- We also need to establish more detailed protocols for assessing those current criteria.
- Suggest we table the idea of revising Bay DO WQC for now until we've addressed the following issues with our assessment:
  - Establishing more specific assessment methodologies for all of our short duration criteria
  - Establishing the spatial and temporal coverage of monitoring that is adequate to assess a segment-designated use combination
  - Developing a plan to guide the placement of monitoring resources moving forward

Monitoring
MDE's Perspective

- Siting newly available (e.g., the DO arrays mentioned in the proposal) or even repositioning of existing monitoring assets should be decided by the States with regulatory assessment needs taking priority over other assessment goals (e.g. research).

- Where interests or desired monitoring locations align between different assessment goals (e.g., regulatory and research), it makes sense to select locations with co-benefits.

Monitoring
A Critical Need

- In line with the Hypoxia Collaborative funding proposal, we could use CBP's or a knowledgeable contractor's coordination assistance to help the states evaluate different logical ways to apportion ConMon resources to ensure we can assess all applicable DO criteria in a segment.
  - We agree with others that we don't want or need to come up with an individualized monitoring plan for all 92 segments!
  - We believe a logical framework could be developed and applied to different types of segments (main bay vs. bay tributary)

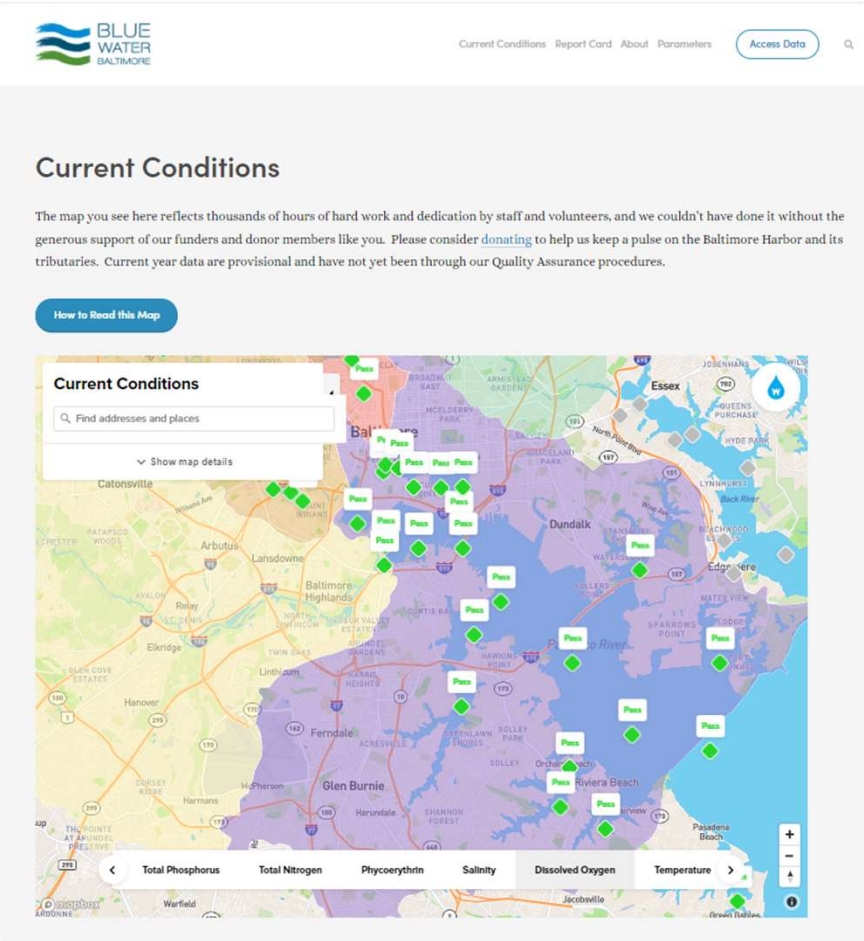
Assessment – The Basics
MDE's Needs

- We would still like to have CBP's technical assistance in running the 3D Interpolator for MD waters

	CBSEG_92	SPLIT SEGS	MSN	MSN ATTAINMENT	DO OWsum	Owsum ATTAINMENT	DO OW Other	OW OTHER ATTAINMENT	DO DW	DW ATTAINMENT	DO DC	D ATTAI
2	ANATF_DC				7.50%	0	0.00%	1				
3	ANATF_MD				9.88%	0	0.28%	0				
4	APPTF				0.00%	1	0.00%	1				
5	BACOH				0.00%	1	0.00%	1				
6	BIGMH				0.00%	1	0.00%	1				
7		BIGMH1										
8		BIGMH2										
9	BOHOH				0.00%	1	0.00%	1				
10	BSHOH				0.00%	1	0.00%	1				
11	C&DOH_DE				0.00%	1	0.00%	1				
12	C&DOH_MD				0.00%	1	0.00%	1				
13	CB1TF				0.00%	1	0.00%	1				
14		CB1TF1										
15		CB1TF2										
16	CB2OH				0.00%	0	0.00%	1				
17	CB3MH				0.00%	1	0.00%	1	3.89%	0	11.57%	
18	CB4MH				0.00%	1	1.52%	0	17.14%	0	45.48%	
19	CB5MH_MD				0.00%	1	0.00%	1	6.23%	0	13.56%	
20	CB5MH_VA				0.022%	0	0.000%	1	0.28%	0	2.68%	
21	CB6PH				0.02%	0	0.00%	1	0.00%	1		
22	CB7PH				2.40%	0	0.00%	1	0.00%	1		
23	CB8PH				0.00%	1	0.00%	1				

- Timing and dissemination of the DO Stoplight Assessments (3D Interpolator) for the Integrated Report
  - MDE would like to receive this assessment right after final QAQC.
  - MDE would like to receive the assessment by July 1 of odd-numbered years.
  - Currency of the assessments – Would like to have the most up to date possible

Assessment – The Basics
MDE's Needs



Blue Water Baltimore, Current Conditions Map, Accessed 8/11/24

- All Tier 3 quality data to be included in each assessment for each Bay segment whether we're using the 3D interpolator, an alternative method, or if we decide to use the 4D Interpolator.
  a) DNR long term fixed stations
  b) DNR ConMon installations which often, but not always (see FSBMH), occur on pilings/piers in shallow water areas
  c) DNR Dataflow (aka drunken sailor surveys)
  d) MDE's ~51 DO monitoring sites at shellfish stations throughout the Bay and tidal tribs
  e) CBIBs ConMon buoys
  f) NGO groups with Tier 3 status (e.g. Blue Water Baltimore, Nanticoke Watershed Alliance, Arundel Rivers, etc).

Assessment – 3D Interpolator
Need for Technical Assistance

- MD would also like CBP to run the data from Fishing Bay through the 3D Interpolator so that we can compare the results from the alternative assessment methods MD is developing.

- As part of this work, MDE would like to meet with CBP staff to better understand the decision rules in using the 3D Interpolator, how different datasets are included, and the limitations of this method.

Assessment – CAP WG Perspective and Needs

- Future Direction of the CAP (including the BORG and Hypoxia Collaborative)
  - Primary focus should be on developing more detailed assessment methodologies (AM) and supporting those AMs with monitoring resources
  - Questions to be answered in development of AM, some examples….Using measured and not modeled data…
    - How to interpret DO criteria (e.g., Does instant. min = never to exceed? One exceedance in 3 yrs? 10% exceedance? 1% exceedance?)
    - How should we calculate a 7-day mean?
    - What is the minimum spatial and temporal data threshold to be met to assess a segment-designated use combination?
    - What zones (e.g., trib of trib, shallow water, etc) within each designated use should have data for assessment?

Assessment Perspectives and Needs

- MDE would like CBP's assistance in addressing these fundamental criteria interpretation questions and helping us to develop and evaluate options for assessment methodologies including those that do not require the use of a model or synthesized data.

Assessment – 4D Interpolator
Some Concerns

(Based on our current understanding)

- There isn't an established assessment methodology for many of the short duration DO criteria and the 30-day mean DO criteria assessment could also use reconsideration. How can we develop a tool for assessment when we haven't laid the groundwork for how the assessment should be done?
  - Should we pause development of the 4D until we answer these fundamental questions?
- Rarifying ConMon data down to daily measurements reduces its temporal measurement advantage.
- Synthesizing the temporal aspect of the data rather than using high frequency monitoring data
- Difficulty understanding how it works and concerned that it will be too complex for States to understand, run, and to independently verify the results.

Assessment – 4D Interpolator Perspective

- MDE plans to explore alternative assessment methodologies to the 3D Interpolator and the 4D Interpolator – We'd like to consider simpler solutions than the 4D Interpolator

- Recommendation: We should pause development of the 4D Interpolator until we address fundamental questions with how to assess the DO criteria.

Photo taken by Matt Stover, Maryland Dept. of the Environment

Matt Stover
matthew.stover@maryland.gov

Water Quality Standards, & Analysis Division

Watershed Protection, Restoration, and Planning Program

Maryland Department of the Environment

1800 Washington Boulevard | Baltimore, MD 21230-1718
410-537-3000 | TTY Users: 1-800-735-2258
www.mde.state.md.us

Photo taken by Matt Stover, Maryland Dept. of the Environment