



Chesapeake Bay Program
Science. Restoration. Partnership.

Tiered Implementation Discussion

Clean Water Goal Team Meeting
September 29, 2026

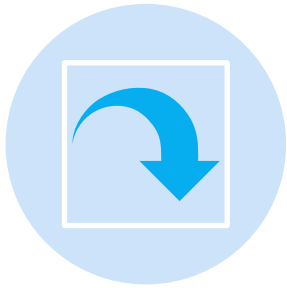
Dr. Kaylyn S. Gootman, EPA @ CBPO

Goal for Today

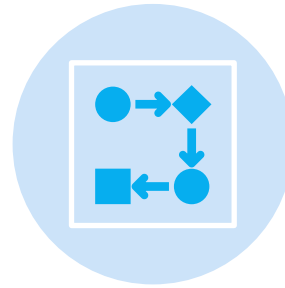


- Focus on the process of how we get to planning targets and Watershed Implementation Plans (WIPs)
- Discuss the exploration of Tiered Implementation

Guiding Questions



What are the things we want to make sure we address or accomplish that have the biggest impact for reducing loads to the Bay?



How do we improve our planning process to make sure that we get there?

A Conceptual
Model to
Consider



Tiered Implementation
can be thought of as a
way to shape the
journey

Path to Planning Targets with New Opportunities*

1) Establishment of relative effectiveness of each state basin on tidal segment WQS achievement

2) Evaluate the hockey stick allocation method

*3) Check new results based on evaluation of all DO criteria

- Do we have areas that don't meet DO criteria if we execute some scenario where DW/DC are satisfied?

*4) Layer on Habitat Suitability

- More on this shortly

*5) Determine what options are available for planning targets

*6) Watershed Implementation Plans

- Tiered Implementation

**Note, each of the steps needs a technical review the Modelling Workgroup and a management/policy review by the Clean Water Goal Team.*



Tiered Implementation

What We (Still) Want to Achieve



Cleaner water across the
Chesapeake Bay



Healthier habitats for
fish, wildlife, and people



Better dissolved oxygen,
water clarity, and lower
pollutant levels



Demonstration of
progress across the 92
Chesapeake Bay
segments

Putting It All Together

- Discussed a variety of definition at the meeting with several similarities and some differences
- Overall, the responses agree tiered implementation is about ***targeted, staged, and data-driven implementation*** that ***accelerates progress*** towards ***water quality goals*** and ***further ecological benefits***



How Will Tiered Implementation Work?

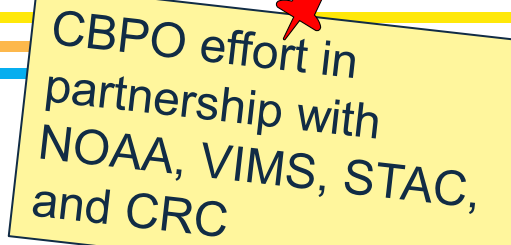
Sequence pollutant-reduction efforts in locations that offer water quality benefits and the greatest immediate lift for living resources

Use monitoring and model insights to guide where actions will matter most

Align information to target actions effectively and prioritize work in specific tidal areas

Goal: target efforts in specific areas to reduce pollutants, meet water-quality standards, *and* support living resources

Specific Use Case Definition



CBPO effort in partnership with NOAA, VIMS, STAC, and CRC



Tiered implementation is a targeted strategy within the Chesapeake Bay Program, in response to the partnership ask, designed to accelerate attainment of water quality standards by directing resources toward the places where they can make the greatest immediate impact.

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Rather than attempting to advance all Chesapeake Bay segments uniformly, this approach focuses on specific tidal segment–habitat combinations where targeted actions are most likely to yield measurable water quality improvements and meaningful benefits for living resources.

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By using monitoring data, habitat suitability information, and an improved understanding of how segments respond differently to management actions (i.e., improved by new modeling and assessment tools), tiered implementation enables more precise prioritization and flexible resource allocation.

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This ensures progress toward final water quality goals while optimizing near term gains through refined, locally responsive



Introducing the Habitat Suitability Effort

Key CESR Insights

- Some habitats respond faster to water quality improvements than others
- We can help fish and habitats even before all water goals are met
- Focus on areas where restoration gives the quickest benefits



-Maryland Sea Grant

Living Resource Habitat Factors That Matter

Water Quality

Managed by Bay Water Quality Standards

- Dissolved Oxygen
- Water Clarity
- Chlorophyll-a

Generally Unmanaged and Impacted by Changing Environmental Conditions

- Temperature
- pH
- Salinity

Physical Habitat Aspects

Underwater Grasses

Wetlands

Shorelines

Access

Bottom Condition

External Factors

Fishing Pressures

Etc.

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Specific Use Case: Steps

Tiered Implementation: From Concept to Application

1. Conduct habitat suitability analysis
2. Assess living resource habitat improvement potential of various segment/habitat combinations (dials) (local conditions to response to stressors reductions)
3. Identify relative contribution of upstream and estuarine N, P and sediment on segment-habitat nutrient levels
4. Set interim N, P, and S targets based on 1-3 (policy decision).
5. A future WIP planning process that includes consideration of other factors that impact living resource habitat and that includes incentives to adapt to observable outcomes (stressor-response)



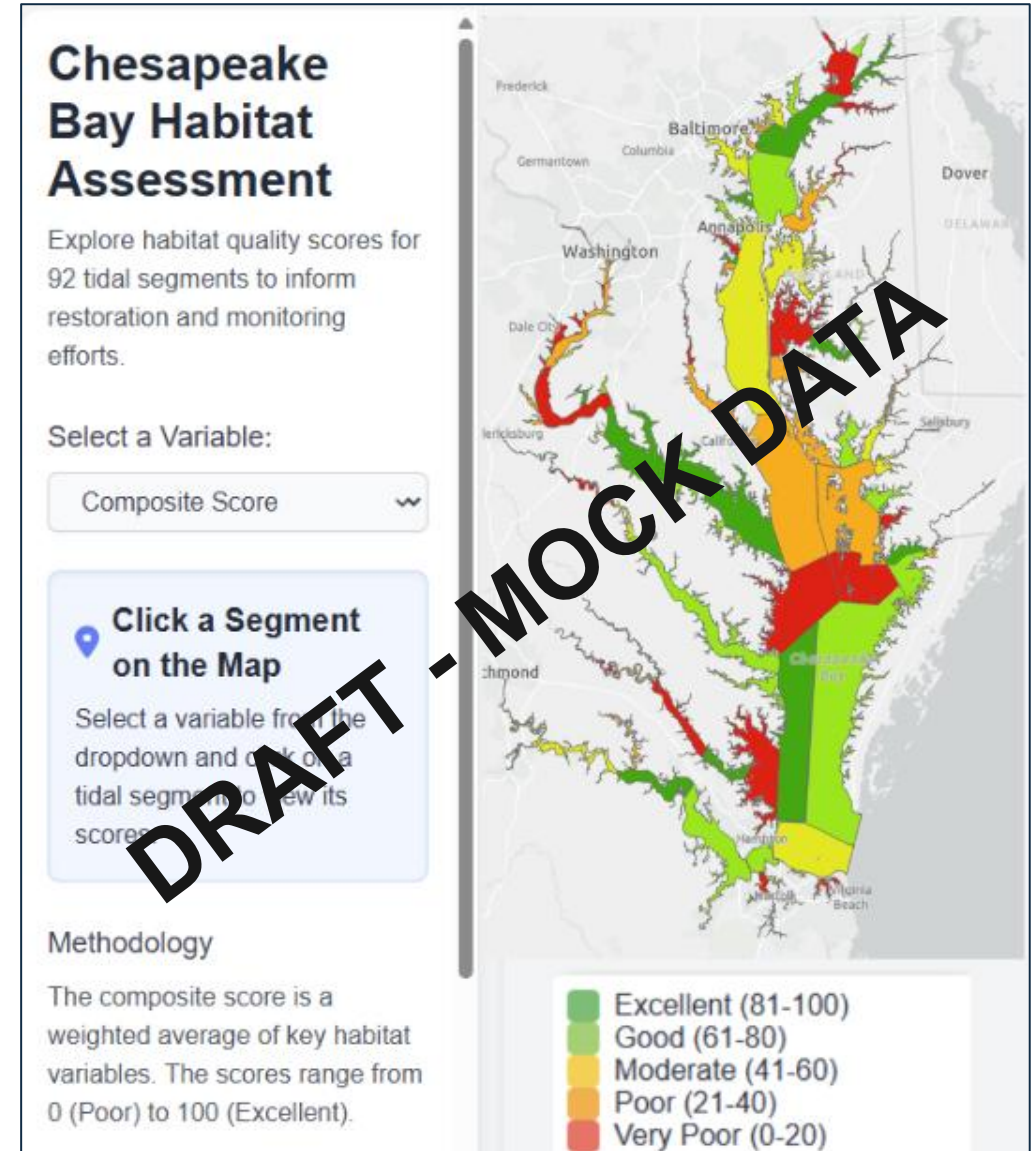
How We Are Identifying Priority Areas



- Use water quality monitoring data, habitat information, and fish data
- Build a Habitat Suitability Index for 92 Bay segments
- Fill data gaps using scientific models
- Identify where small improvements create big ecological gains

Expected Habitat Suitability Analysis Outcomes

- Clear maps showing high-priority restoration areas
- Understanding of where could we get the biggest lift for living resources
- Better-targeted investments
- Support for future planning and habitat restoration
- Target locations for improved water quality *and* living resources



**Note, this graphic shows an example of what a visualization might look like and includes made-up data for the mockup.*



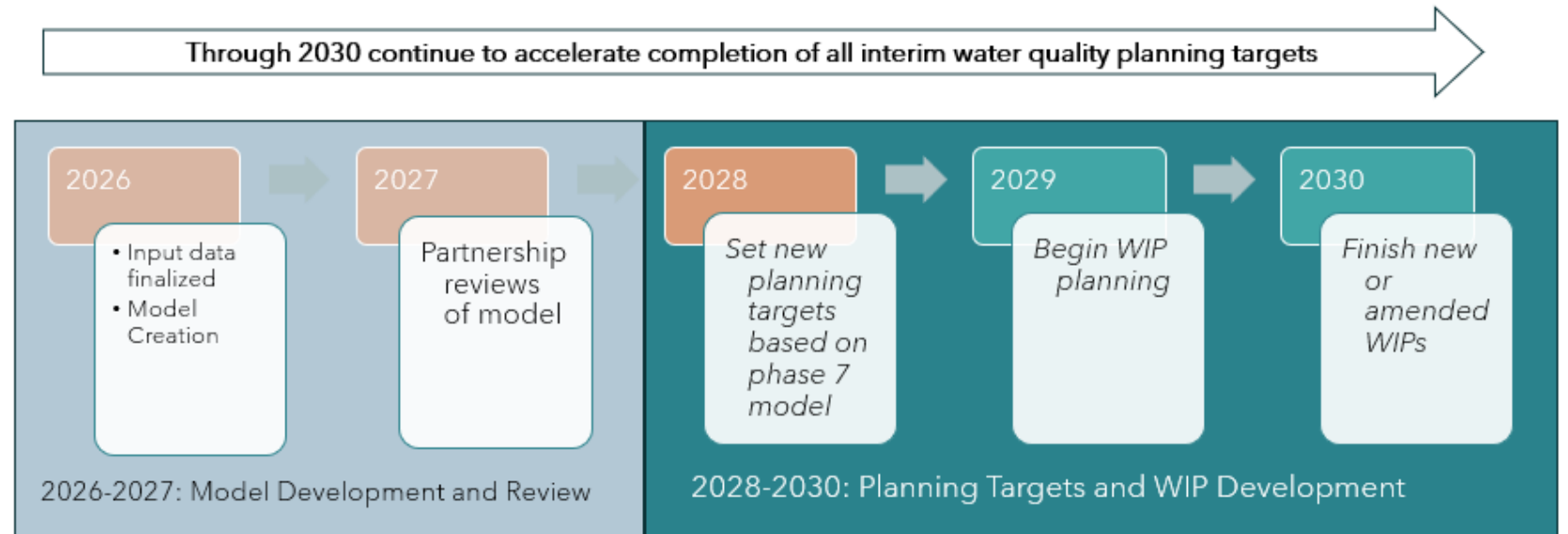
How will Tiered Implementation work with the partnership's established planning target and WIP process?

Integrating Tiered Implementation

- Starting with results of the habitat suitability work, figure out where could we get the biggest lift for living resources
- Then layer on tiered implementation piece in WIPs to figure out “best” places to target that improve WQS and support living resources
 - Which segments do we achieve WQS as we move along load line with tiered targeting?
- Pathway to get us there, alongside the established method
 - Utilize new datasets, insights, and tools (e.g., [Connecting Watersheds to Tidal Water Quality Tool](#))
- Ultimately, may result in a menu of choices may expand for meeting load reductions in WIPs

Applying Tiered Implementation to Planning Targets

- 2027 : Taking in new information, including habitat suitability work, and figuring out how to build in optional pieces for prioritization via tiered implementation in the planning target process
- 2028: Detailed decisions on planning targets are not expected until 2028
 - Make decisions on the available option(s)



A Possible Framework



Dr. Kurt Stephenson
(VA Tech)



Dr. Joe Wood
(CBF)

30-Minute Breakout Group Focus

- Process/Journey
 - Tiered Implementation and Planning Targets
 - Foundational Principles for Allocating Responsibility
- Strategic Direction:
 - Balancing Near-Term vs. Long-Term Goals
- Confidence, Evidence, and Adaptive Management
- Implementation Tools for Achieving Reductions
- Outcomes, Target Setting, and Defining Success for 2030

**Acknowledging that we may not get to all of the questions in the time we have*

Breakout Questions: Tiered Implementation

- What clarifying question do you have/What question needs to be answered in your mind?
- What is the biggest challenge or problem with the approach described?
- What do you see is the biggest opportunity/advantage of this approach?

Breakout Questions: Planning Targets

- What principles should guide the allocation of nutrient reduction responsibilities among jurisdictions when pollution sources and water-quality impacts extend across watershed and state boundaries?
- What level and type of evidence would stakeholders need to see in order to conclude that a revised target-setting framework improves environmental outcomes rather than simply changing how progress is measured or reported?

Breakout Questions: Planning Targets

- Given that agricultural and urban nonpoint-source pollution remain significant challenges, what combination of incentives, regulatory tools, funding mechanisms, and implementation strategies is most likely to achieve meaningful reductions over the next decade?
- What outcomes should the Chesapeake Bay Partnership prioritize when setting 2030 targets, and how should success be measured to ensure those outcomes are both scientifically defensible and broadly supported by stakeholders?

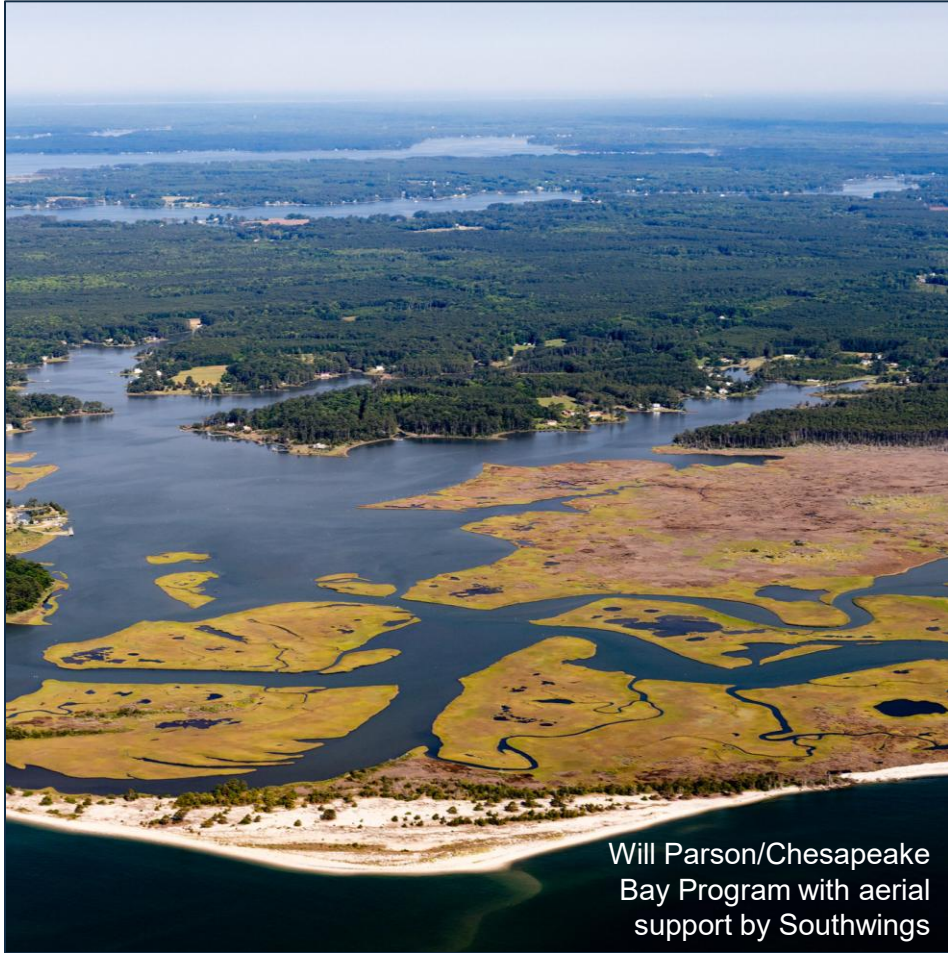
Full Group Discussion

- Quick highlights from each group
- Is there something about either topic that has been discussed (Tiered Implementation or Planning Targets) that concerns you?
- Is there anything from either topic you see as a new opportunity ?



More thoughts or ideas on the breakout questions?

*Please send your responses via email to Kaylyn
(gootman.kaylyn@epa.gov) by October 13.*



Will Parson/Chesapeake
Bay Program with aerial
support by Southwings

Thank You!

Dr. Kaylyn S. Gootman

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