

CHESAPEAKE BAY PROGRAM: KEY ISSUES & IMPLICATIONS FOR LOCAL GOVERNMENTS & WATER UTILITIES

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Chesapeake Bay and Water Resources Policy Committee
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Overview

- **Review Key Issues**
 - Same major topics
 - New information &/or decisions since last update
 - Mix of Technical, Policy & Regulatory implications
- **Evolution of Issues:**
 - May 20th CBPC Briefing
 - Sept. 20th CBPC Bay & Water Quality Forum – w/ EPA & States
 - Ongoing CBP work group meetings/calls/webinars
 - Water Quality Goal Implementation Team (WQGIT)
 - Oct. 24th & 25th Face-to-Face Meeting
 - Most recent bi-weekly call – Nov. 14th
 - Management Board (MB) Meeting – Nov. 17th
 - Principle Staff Committee (PSC) Meeting – Dec. 13th – Pending
- **Overall Assumption** – Local Governments & Water Utilities will continue to need to meet Regulatory & Programmatic obligations for foreseeable future
- **Discussion** – Panel & CBPC Members
- **Next Steps**



KEY DEVELOPMENTS

- **SCIENCE**

- Many technical improvements being made to Bay Watershed Model (WSM) – i.e., tool used to generate nutrient/sediment loads from land to tributaries & Bay waters
- Changes include, but not limited to:
 - Improvements to Air Model/inputs
 - Better landuse data (local scale) – under review
 - Updated wastewater & biosolids data - verifying
 - Updated stormwater & agricultural management practices - incorporating
 - Conowingo Dam – general impacts known/analysis continues/how to allocate?
 - Climate Change implications – evolving/great uncertainty/significance?/but must address



KEY DEVELOPMENTS

- EQUITY
 - Phase III Watershed Implementation Plan (WIP)
“Planning Targets” Method
 - Fixes overall Wastewater Level of Effort first
 - Integral to original 2010 Bay TMDL process
 - Establishing Local Area ~~Targets~~ Planning Goals
 - Scale/features TBD – States have flexibility but EPA wants specificity
 - Accuracy relative to WSM output (?)
 - What do COG’s members need?
 - Local voice
 - COG staff
 - Norm Goulet (NVRC) – CBPC endorsed
 - Comparing model assumptions to monitoring data
 - Are Ag and Urban sector reductions accurate?



2017 Mid-Point Assessment (MPA)

- **SCHEDULE**

- But work is taking longer than originally anticipated
 - As a result, updates to WSM are delayed
 - WSM outputs (that convey ‘What more do we have to do?’) are also delayed
 - Those impacts alone add at least 3 more months to process
- 2017 Mid-Point Assessment Schedule
 - Now end dates range from Dec. 2018 to Feb. 2019
- Several technical & policy decisions will happen Fall of 2016 and Spring of 2017
 - Dec. 13, 2016 – PSC Meeting*
 - Late May 2017 – PSC Meeting*
 - Dec. 2017 – PSC Meeting*
- ** All preceded by WQGIT & MB meetings/calls*
- Reopening/Modifying Bay TMDL – Likely, but not until 2018/2019
- 2025 Bay Agreement Deadline – EPA not amenable to changing

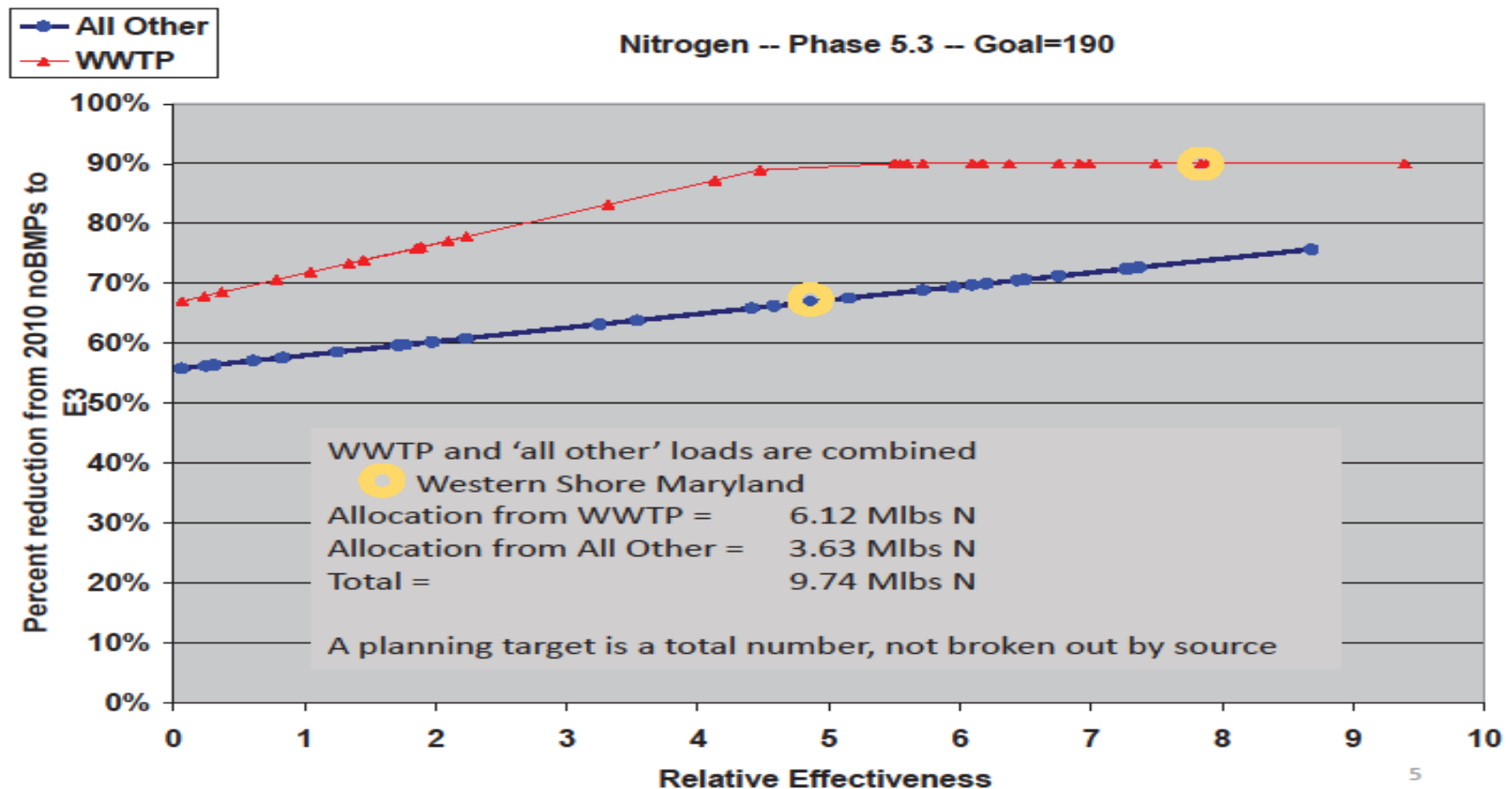


Phase III Watershed Implementation Plan (WIP)

“Planning Targets” Method - Changes

Issue:

- Fixes WWTP levels first – then determines other sectors’ obligations
- Original Bay TMDL allocation process/principles – **Now co-mingled w/ MPA**



Land Use & Data

Issue:

Use current land conditions in developing Phase 3 WIPs **OR** Use the Bay Program's 2025 land use forecast



- Phase 6 watershed model using more finely detailed land use data based upon local inputs, analysis of high-resolution imagery – **but does not result in greater accuracy of model output at local scale**
- Land use is back-casted to 1985 and forecasted to 2025 using updated methods
- Advocates for using 2025 land use in the WIPs believe it will more explicitly credit state and local government policies to conserve natural lands
- Use of 2025 land use in the WIPs would provide credits for local governments' smart growth initiatives
- COG staff working with members to verify accuracy of local inputs (e.g. biosolids application, wastewater and CSO service areas, etc.)

Susquehanna & Conowingo Loads

- Nutrients and sediment from the Susquehanna basin have a major impact on Chesapeake Bay water quality
- Pennsylvania accounts for about $\frac{3}{4}$ of the basin

| Susquehanna River Basin | |
|-------------------------|-------------------|
| State | Percent Watershed |
| MD | 1% |
| NY | 23% |
| PA | 76% |



Susquehanna accounts for:

- 41% of all nitrogen loads to the Bay, 25% of phosphorus, and 27% of sediment

- Trapping ability of the 3 dams on the lower Susquehanna is near zero (“dynamic equilibrium”)
- Dynamic equilibrium conditions emerged sooner than anticipated – now vs. post-2025
- 2010 Bay TMDL was developed with models that did not account for it
- Bay Program has been conducting monitoring and modeling studies to better estimate the dam system’s impact on nutrient and sediment loads

Susquehanna & Conowingo Loads

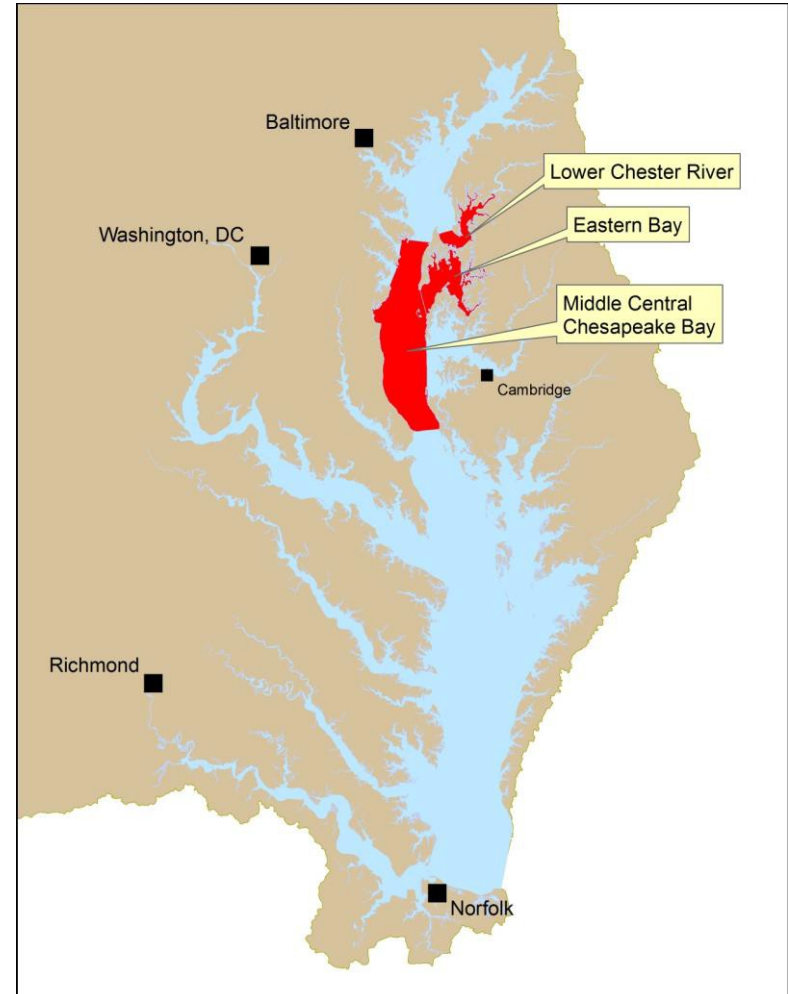
Nutrients Associated with Sediments No Longer Trapped in the Conowingo Reservoir are Influencing Bay Water Quality

- These nutrients (both nitrogen and phosphorus) make it more difficult for restoration efforts to reach water quality standards
 - particularly for dissolved oxygen (DO) in the deep channel of the Bay's mid-section
- Bay Program models estimate that the impact of these additional nutrients increase non-attainment of the DO standard by about 1 - 3%*
- Under the TMDL, this non-attainment gap must be closed

Issue:

- **How to allocate?**
 - **Just 3 upstream states (original TMDL rationale)**
 - **All jurisdictions – assume shared benefit/shared responsibility**
- **Cost optimization or standard approach?**

* Source: Lower Susquehanna River Watershed Assessment (2015)

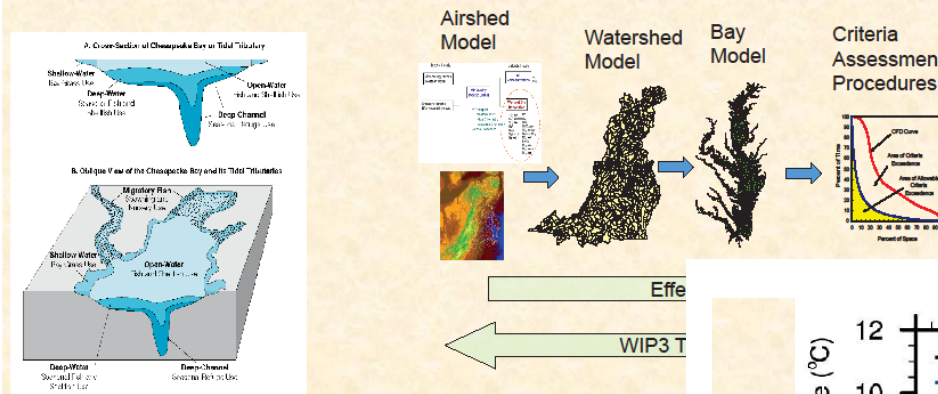


Climate Change Implications



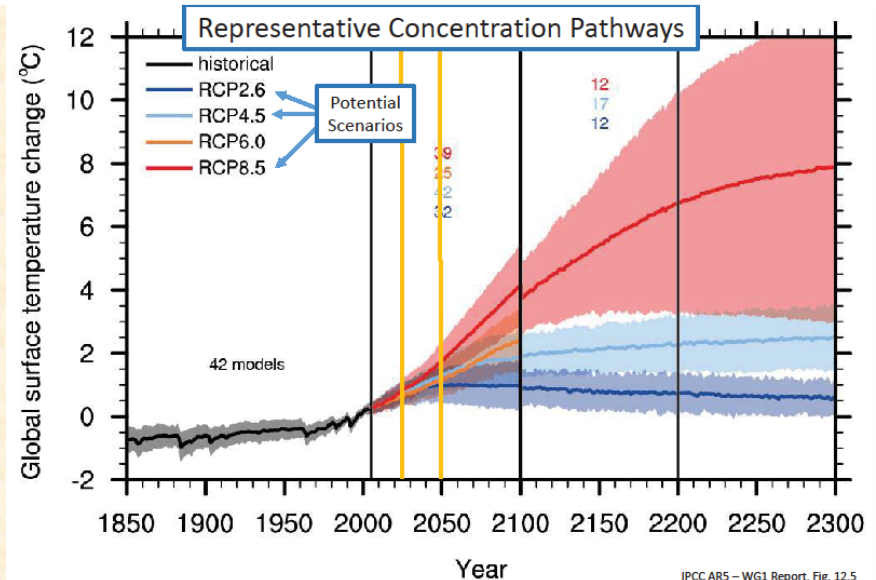
Proposed Climate Change Assessment Procedures

1. Use the same CBP assessment tools that were applied in the 2010 allocation.



- Use of best available science & climate tools
- Input of climate experts
- Use of with updated modeling tools
- Evaluate against Bay TDML/water quality standards

- Evaluating:
 - Increased Estuarine Temperature
 - Sea Level Rise
 - Watershed Hydrologic & Loading Changes
 - Ecological Changes
 - Changes in Airshed
- Acknowledge Uncertainty



Climate Change Implications

Initial observations:

- Influence of estimated 2050 temperature slight
- Influence of 2050 sea level rise estimated to be small & variable
 - Both positive & negative impacts on deep channel Dissolved Oxygen
- Estimated influence of changes in tidal wetlands small in 2025 & 2050
 - Because little change in overall tidal wetland area, but wetland type changes & tidal wetland loss estimated to increase beyond 2050
- Range of estimated 'future' watershed loads using observed (87 year) increase of precipitation volume & precipitation intensity **depends on the evapotranspiration method chosen** – **very critical local/stormwater issue**
- Estimated 2025 & 2050 range of nutrient (nitrogen & phosphorus) are 0% to 2% and 0% to 5%, respectively – **Significance? Accuracy?**

Issue:

- Accurate assessment? Same for local waters as with Bay/tributaries?
- How to relate global/national climate concerns with 'apparent' no significant Bay impacts notion?

Local Area ~~Targets~~ Planning Goals

Issue: ~~Determine whether to~~ **Establish** Local Area Planning Goals for nutrient load reductions at finer levels than the state tributary basin level used in the Phase II WIPs

- Bay Program's ad hoc Local Area Planning Goals Task Force recommended such targets, but would allow states flexibility in how to define "local" and how such goals should be expressed*
 - Pro -- local governments would like to have clear goals
 - Con -- level of uncertainty in watershed model results (increasing uncertainty at smaller scales) makes it problematic for local area goals to be turned into specific permit requirements
- **EPA's view – Wants much greater specificity & down-scaling of goals to individual entities to ensure accountability**

* Maryland already established de facto local targets at county scale in its Phase II WIPs



Discussion & Next Steps

- **Discussion**
 - Panel Members
 - CBPC
- **Next Steps**
 - Need for additional information/briefings?
 - Draft CBPC letter to PSC re: key policy issues/concerns
 - For Dec. 13th Meeting
 - May & Dec. 2017 Meetings

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