

CHESAPEAKE BAY PROGRAM
BAY TMDL MIDPOINT ASSESSMENT

Key Decision Points & Opportunities for COG Input

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Chesapeake Bay and Water Resources Policy Committee - Webinar
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OVERVIEW

- Focus – CBP Midpoint Assessment
- Schedule – Upcoming Decisions
- Key Issues & Recommendations
  - Modeling Tools & Data
  - New Loads
  - Phase III Watershed Implementation Plans
- Member Guidance

FOCUS – CBP Midpoint Assessment

- What else needs to be accomplished in order to meet 100% implementation by 2025?
  - TMDL - Progress to-date + New loads = TMDL Gap
    (i.e., reductions that Phase III WIPs must achieve)
  - TMDL is regulatory requirement; Year 2025 goal is not
- Today's discussion:
  - Decisions & implications
  - Staff & WRTC's recommendations
  - What should CBPC communicate to the Bay Partnership, EPA & states?
- Recommendations based on COG Policy Principles

Schedule – Upcoming Decisions

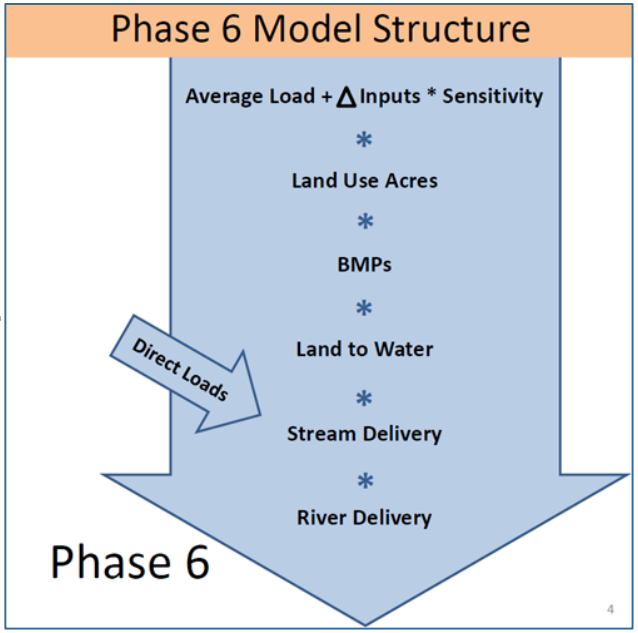
Midpoint Assessment Deliverable	Current Schedule
Final policy decisions on Conowingo, climate change and accounting for growth	**Late October 2017**
Approval of draft Phase III WIP Planning Targets	**Late October 2017**
Partnership's review of **draft** Phase III WIP Planning Targets	**November 2017** – February 2018
EPA releases final Phase III WIP expectations	November 2017
Any proposed changes to the draft Planning Targets,	February 2018
Release of final Phase III WIP Planning Targets	March 2018
Draft Phase III WIPs posted on jurisdictions' websites for public stakeholder review	December 2018
Public stakeholders' feedback on draft Phase III WIPs due to jurisdictions	February 2019
Final Phase III WIPs posted on jurisdictions' websites	April 2019

Key Issues

- Modeling Tools & Data – Science
- New Loads – Science, Equity, Holistic (feasible) & Implementation Flexibility
  - Loads not included in original TMDL allocations
    - Conowingo Dam (Susquehanna Basin)
    - Climate Change
    - Growth
- Phase III Watershed Implementation Plans (WIPs) – Science, Equity, Holistic (feasible), Implementation Flexibility & Voice

Modeling Tools & Data – Science

- Watershed Model (Phase 6)
  - Modified significantly
  - Using better data & science
    - Finer scale land use info.
    - More calibration stations
  - However, many inputs still regional or county-based
- Water Quality Model
  - Not modified significantly
  - Initial calibrations generally sound
  - However, final calibrations won't be done until <u>after</u> key decisions made



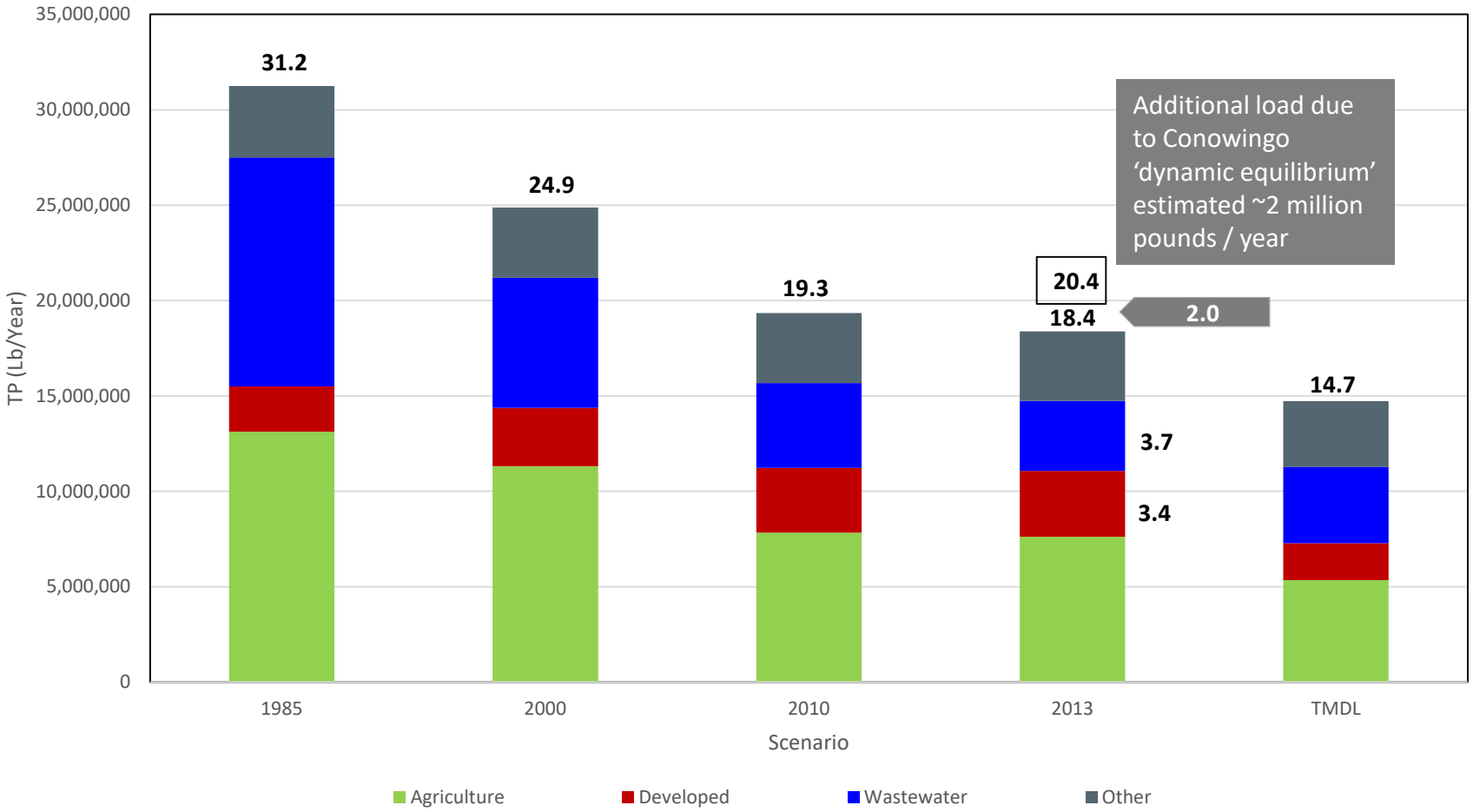
Modeling Tools & Data – Science

- Appropriate scale still an ongoing issue:
  - Model less accurate at local scale
  - Calibrations not as good for smaller watersheds
- **Recommendations:**
  - Agree that improvements are good/technically valid
  - However,
    - Emphasize limitations of Watershed Model (i.e., not to over-use output at local scale)
    - Emphasize need to re-evaluate model results if final calibrations not consistent with earlier results

Conowingo – Science, Equity & Holistic (feasible)

- Susquehanna Basin / Conowingo Dam:
  - Upstream nutrient & sediment loads are decreasing
  - However, additional load (mainly Phosphorus & Sediment) is now washing over - because Dam has reached "dynamic equilibrium"
  - Additional Phosphorus load estimated at ~2 M lb/year
  - Science clearly supports those findings/loads
- Policy questions:
  - **Who** should this added phosphorus load be allocated to?
  - **When** does that obligation need to be reflected in WIPs?
- Additional tools also being explored:
  - Bay Program "cost optimization" analysis – still under development, but flawed (e.g., old data, logic inconsistent)
  - Maryland to pilot a dredging/sediment reuse project (which is only a limited solution)

Conowingo – Science, Equity & Holistic (feasible)



Results from CBP Phase 6 Draft Watershed Model (w/out Conowingo dynamic equilibrium, etc.)

Conowingo Load Decision – Who?

Susquehanna Watershed Only

‘Source-only’ Option

Susquehanna + MD and VA

‘Most Benefit’ Option

Entire Watershed

TMDL Method

Illustrative increase in additional Phosphorus load reductions required under various options (expressed as a range of % increase)

NY:	10 - 21
PA:	12 - 25
MD:	1 - 1
VA:	0 - 0
DE:	0 - 0
DC:	0 - 0
WV:	0 - 0

NY:	6 - 11
PA:	7 - 14
MD:	7 - 16
VA:	4 - 9
DE:	0 - 0
DC:	0 - 0
WV:	0 - 0

NY:	5 - 10
PA:	7 - 14
MD:	6 - 14
VA:	4 - 8
DE:	9 - 20
DC:	1 - 3
WV:	5 - 11

Conowingo Load Decision – When?

Who?

Susquehanna Watershed Only

Susquehanna + MD and VA

Entire Watershed

When?

Address additional loads:

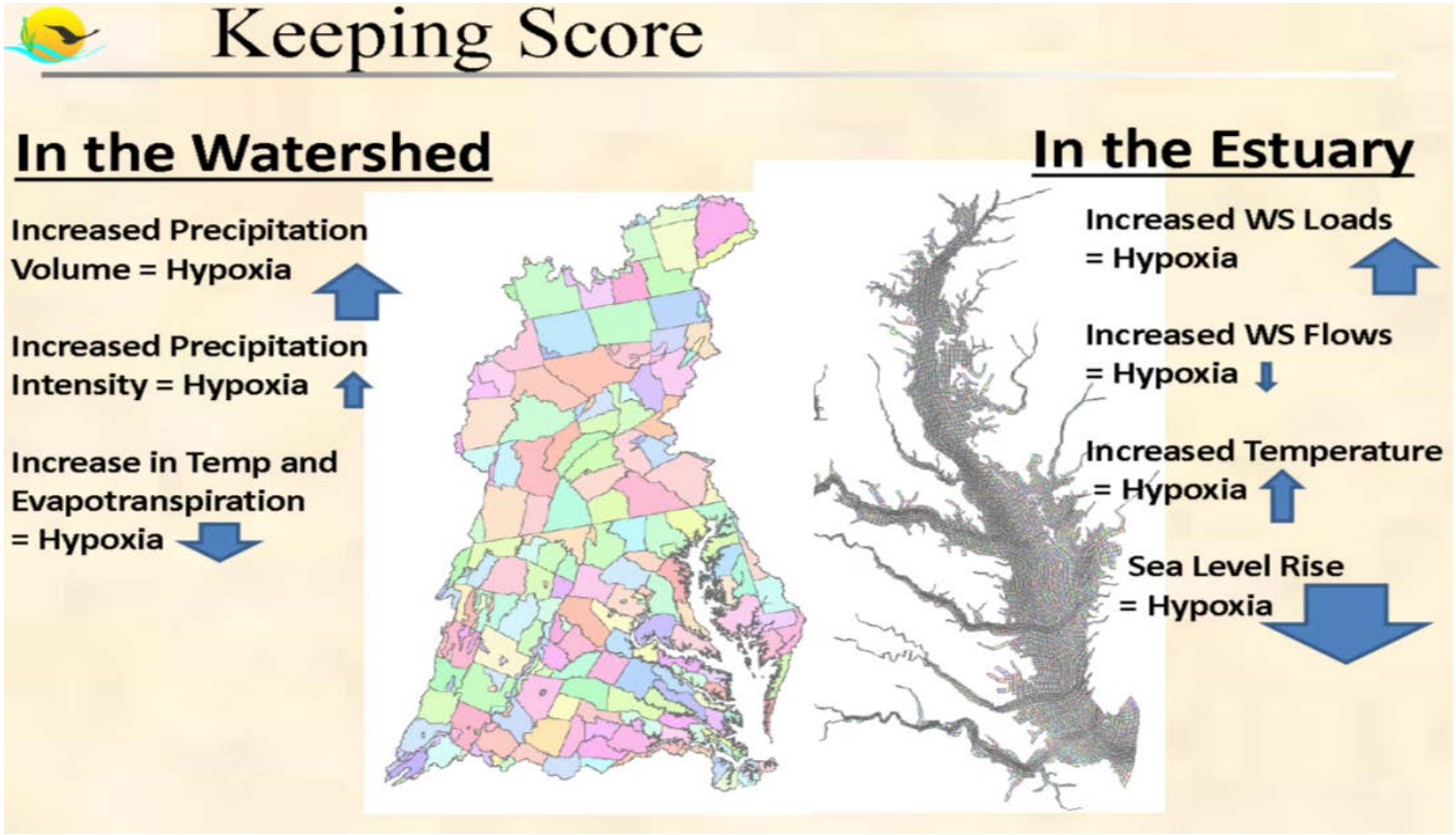
- By 2025 – as part of Phase III WIPs, OR
- Beyond 2025?

Conowingo – Science, Equity & Holistic (feasible)

- Allocating additional Phosphorus load (~2 M lb/yr):
  - Science regarding additional load appears valid
  - Allocation options are policy decisions
  - Use of other tools still uncertain
  - Feasibility of accomplishing those additional reductions in Phase III WIPs (i.e., within next 7-8 years is highly unlikely)
- **Recommendations:**
  - Support continued sound science to evaluate options
  - Support development of accurate cost-optimization options
  - Accept that new loads have to be addressed
  - However:
    - Don't incorporate major new loads into Phase III WIPs
    - Adaptively manage over time – e.g., Phase IV WIPs

Climate – Science, Equity & Holistic (feasible)

- Current model results: Climate impacts likely to improve water quality by 2025; but have negative impact by 2050



Definition: Hypoxia – Low Dissolved Oxygen

Slide from "Preliminary Estimate of Climate Change Influence on Chesapeake Water Quality Attainment," CBP Modeling Workgroup presentation 5/4/17

Climate – Science, Equity & Holistic (feasible)

- Science indicates climate impacts are already being detected (e.g., NOAA analysis of 114 years of monitoring data)
- Modeled climate load impacts est. ~350,000 lb/yr
- COG region and members have already established climate action plans and goals

- However, much uncertainty still exists regarding:
  - Climate impacts on local streams and tributaries;
  - Actual long-term impacts on Bay water quality; and
  - Implications of climate change on effectiveness/life-span of stormwater management practices/BMPs
    (e.g., STAC workshop on Climate & BMPs, Sept. 7th – 8th)

Climate – Science, Equity & Holistic (feasible)

- **Recommendations:**
  - Support continued use of sound science to define impacts – short & long-term
  - However, note uncertainty re: BMP practices' & ability to achieve/sustain reductions in face of climate impacts
  - Encourage continued R&D to determine effectiveness of management actions/BMPs and quantify co-benefits
  - Accept need to reflect climate impacts and address new loads; however:
    - Don't incorporate major new loads into Phase III WIPs
    - Adaptively manage over time – e.g., Phase IV WIPs

Growth – Science, Equity & Implementation Flexibility

- Per TMDL, 2011-2025 growth must be accounted for
- Issue - How best to reflect and account for growth?
- Years used to set Phase III WIP baseline and target
  - **2010**
    - Consistent with Bay TMDL
    - Would not grandfather in growth after 2010
    - Future growth would be estimated (accuracy varies)
  - **2012, 2017, or 2025** – Different rationale & impacts
    - Would not be consistent with Bay TMDL
    - Would incorporate some level of future growth
    - Some years would reflect better data for some sectors

Growth – Science, Equity & Implementation Flexibility

- Growth impacts 'on loads' likely not major for developed areas
  - COG Cooperative Forecast data was used by CBP
  - However, have not seen results yet
- And, loads associated with growth still uncertain (e.g., Growth could lower stormwater loads as new development implements more BMPs)
- Assumptions/risks re: wastewater:
  - Planned growth (i.e., 2025 flows/loads versus capacity at build-out)
  - Who 'owns' those loads? (i.e., desire by some to reallocate portion of loads related to 'unused' capacity - to meet shortfalls in other sectors)

Growth – Science, Equity & Implementation Flexibility

- **Recommendations:**
  - Emphasize need to validate growth and load assumptions locally before making decisions
  - Preserve wastewater's capacity load as planned growth
  - Ensure that localities retain flexibility to plan and manage their own growth

Phase III WIPs - Science, Equity, Holistic (feasible), Implementation Flexibility & Voice

- **State-Basin Planning Targets:**
  - Equitably distributes Bay-wide pollution reduction responsibilities to Bay states & District
  - Defines level of effort needed to meet Bay TMDL
  - However, total loads won't be known until after decisions made re: allocation of new loads
- **WIP Phase III:**
  - Must include actions/reduction measures (BMPs) to meet Planning Targets by 2025
    - Draft due: October 31, 2017
    - Final due: March 2018

Phase III WIPs - Science, Equity, Holistic (feasible), Implementation Flexibility & Voice

- **Local Area Planning Goals:**
  - EPA's "Expectations" include requirement to establish local "planning goals" at finer scale than State-Basin Planning Targets
  - Local Area Targets Task Force recommended:
    - Should be "goals" – not targets
    - Allow Bay jurisdictions the flexibility to determine the scale of local targets below the river basin scale
- However, Model is less accurate at local scale
- Meeting Bay TMDL goals is key part of MS4 permits
  - However, lagging progress in other sectors may result in push to 'reallocate' some WWTP loads related to 'unused' capacity – from other than local govt.'s/water utilities

Phase III WIPs - Science, Equity, Holistic (feasible), Implementation Flexibility & Voice

- **Recommendations:**
  - Emphasize limitations of Watershed Model (i.e., not to over-use output at local scale or directly in MS4 permits)
    - Endorse Task Force's recommendations
  - Sector equity – Don't penalize wastewater sector/protect local investments to address planned growth
  - Retain flexibility for localities to plan & define how best to achieve their Local Area Planning Goals
  - Engage local governments early & often in developing the Phase III processes
    - In particular, EPA/CBP previous agreement to work with COG region as-a-whole

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