



COG WATER RESOURCES PROGRAM UPDATES CHESAPEAKE BAY PROGRAM (AS OF 3/15/17)

Summary of key CBP activities that COG staff are monitoring or actively involved in that have critical impacts or potential implications for COG's members & the RWQM Work Program.

Overall Chesapeake Bay Program

Bay TMDL and Mid-Point Assessment Activities:

COG Contact

Current Schedule

The Bay Program experienced delays in producing the **new high resolution land use data for the Phase 6 Watershed Model** (WSM). This is the primary reason why the schedule for **calibrating** the Watershed Model (WSM) and Water Quality and Sediment Transport Model (WQSTM), and **producing final model results has been delayed by about two months**. There also continue to be challenges in incorporating all the new data sets and layers that are part of the many changes that have been made as part of the **Phase 6 WSM upgrades**.

Currently, calibration of the new Phase 6 WSM is expected to be completed by May 30; with calibration of the WQSTM and review of that model's output scheduled to be completed by June 30.

Currently the Bay Program Partnership intends that analysis of those model outputs and results would be conducted as part of a **'Fatal Flaw Review'**. That review would occur during June and July 2017, and would attempt to identify substantive flaws in any of suite of the modeling tools' assumptions, calibrations, or outputs that would appear to have major impacts on overall Bay Partnership plans and decisions. The current schedule also assumes that resolution of such flaws can be accomplished in one month.

Thus, if the current end date of December 2018 is to be maintained for finalizing the final Phase III Watershed Implementation Plans (WIPs) – which are intended to quantify how the Bay TMDL goals will be met by 2025; then:

- a. The timeframes for reviewing and assessing the model calibrations and output will continue to be compressed (only 2 months) – with the ability to review the results often based on only partial/interim results; and
- b. Development of the Phase III WIPs with local stakeholders would need to be compressed significantly (to only 2 months).

Other key schedule milestones are that draft WIP Planning Targets would be approved around October 2017, and that final load allocation decisions regarding the Conowingo Dam/Susquehanna Watershed (most significant), Climate Change and Growth would occur in mid-December 2017. (see additional notes under modeling updates)

Note: There has been push-back from several Bay Partners to insist that **there needs to be at least 4 months in the schedule for development of the Phase 3 WIPs with local partners**; and that **the overall schedule – and the current December 2018 end date, will need to be revisited in late July/early August 2017** once the model calibrations and Fatal Flaw Review have been completed. There also appears to be increased emphasis by several Bay Partners that **any decisions about how to account for/allocate loads from the Conowingo Dam/Susquehanna Watershed**

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needs to be based not just on agreed upon policy principles – but also based on seeing the model output/actual load figures.

Implications & Recommendations

Technical – The scope of the changes to the WSM are significant, and the calibration of that model as well as of the WQSM are critical to ensuring that the data, tools and assumptions used to assess progress and determine the remaining level of effort to meet the Bay TMDL are ‘scientifically sound.’ There are potential questions about some model issues; which will need to be reviewed closely to determine their significance and potential implications for COG’s local governments and water utilities.

COG staff will continue to work with other local and regional government and water utility representatives, to **determine options and recommend the best course of action to evaluate the accuracy of the new modeling suite in comparison to the ones used during the development of the 2010 TMDL.**

Policy – Many of the Bay Program Partnership Mid-Point Assessment (MPA) decisions over the coming year may have important/significant implications for COG’s local governments and water utilities.

COG staff will continue to work with other local and regional government and water utility representatives to **regularly represent our members’ interests** within the various CBP committee and work group settings. In addition, COG staff will continue to make recommendations to the CBPC regarding issues **where and when formal input from the COG region would be most beneficial.** COG staff also propose to work closely with the CBPC Executive Committee (Chair and Vice Chairs) over the coming year in order to inform and provide input on behalf of the CBPC at critical junctures throughout this MPA process.

Watershed and Water Quality Models– Activities and Issues

COG Contact

Model Inputs

COG staff will continue to work with members to evaluate the accuracy of certain data sets used in the WSM, such as the boundaries for wastewater service areas, septic service areas, combined sewer areas and, MS4 permitted areas – as well as the load data for all those water sectors, as well as biosolids.

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Model Analysis

COG staff will work with member government staff to analyze nutrient and sediment loading information from the final Phase 6 WSM when it becomes available. The data will help inform the members as they work with the states in developing the Phase 3 WIPs.

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Susquehanna Watershed/Conowingo Dam Updates

The Bay Program is close to completing its technical analysis of how the changes in the settling characteristics of the dam have affected nutrient and sediment loads entering the Bay from the Susquehanna River. The analysis shows that because of the dynamic equilibrium of the material that captured behind these dams on the lower part of the river, the nutrient and sediment loads are higher than were estimated when the Bay TMDL was developed. The Bay Program models are being adjusted to account for this change, which creates the need for further nutrient and

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sediment reductions to offset the additional loads. The decision of which states and watersheds will need to assume responsibility for these additional load reductions is scheduled to be made by the Bay Partners this fall.

Attainment Assessment

The Bay Program uses a complex combination of monitoring and modeling information to determine what constitutes attainment of water quality goals under the TMDL. COG staff continues to track changes in the attainment methodology to ensure that it maintains equity among all the parties involved in the restoration effort. COG staff will evaluate options for conducting an independent scientific evaluation of this attainment approach.

Air Model

Deposition of various forms of airborne nitrogen emitted by vehicles, power plants and other sources onto the land and water surfaces of the Bay watershed is one of the major sources of nitrogen to the Bay. The Bay Program is updating its models for estimating these inputs, which COG water program staff will continue to track in conjunction with COG's air program staff.

Climate Change

COG staff continue to monitor the Bay Program's efforts to address climate change efforts – both quantitatively by evaluating modeling results as well as qualitatively by assessing which stormwater BMP practices appear most vulnerable or robust under potential future climate conditions. **A presentation on the Bay Program's climate impacts and planning efforts is planned for the July 28th CBPC meeting.**

COG staff will also be working to ensure that the climate inputs in the proposed UAACE Coastal Flooding Risk Study are comparable with those being used by the Bay Program as well as other formal studies.

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