



COG WATER RESOURCES PROGRAM UPDATES

(AS OF 3/17/16)

Chesapeake Bay Program:

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

Bay TMDL – Overall Program

COG Contact

Supreme Court Upholds the Chesapeake Bay TMDL

The Supreme Court declined to hear the appeal by the American Farm Bureau Federation and other industry groups to revisit the legality of the Chesapeake Bay cleanup plan. In doing so, the Supreme Court has upheld that EPA acted within its authority when it established the Chesapeake Bay Total Maximum Daily Load (TMDL) in December 2010. This ensures that nutrient and sediment load allocations to upstream states and non-point sources continue to be part of the overall Bay TMDL; and that the current Watershed Implementation Plans (WIPs) can continue to be used. The net impact is that there is now greater certainty that the entire Bay TMDL/WIP processes can continue as planned. This also ensures greater equity among sectors – as all nutrient and sediment sources are accounted for, assigned load allocations, and expected to work toward achieving their load reduction goals.

Chesapeake Bay Program Mid-Point Assessment

The year 2016 will be the final year of preparation of the tools the Bay Program will use in its mid-point assessment of progress under the Bay TMDL and the development of the third iteration of watershed implementation plans (Phase 3 WIPs) by the Bay states and the District of Columbia. The plans are expected to provide more detail on how the Bay partner jurisdictions will achieve by 2025 the nutrient and sediment reductions deemed necessary to eventually meet water quality standards in the Bay.

Much of the work to be done and decisions to be taken during the year involve highly technical issues regarding updates to the Bay Program's suite of models and its framework for assessing the impact of reduction measures on achieving water quality standards. Currently the focus is on summarizing all of the changes to the various models as well as changes to the input data, and developing an overall timeline for the review process of the Phase 6 Watershed Model. COG staff is a member of the Water Quality Goal Implementation Team (WQGIT) and the WQGIT Phase 6 Model Review Strategy Team to help ensure that the review process includes adequate time for local reviews and input.

An abbreviated list of key developments includes:

- Review and comment on beta versions of a new watershed model; final decisions on model inputs and processes – **Beta 1 version issued for review**
- Inclusion of new/expanded/update loading data (e.g., land applied biosolids, septic/on-site systems, and CSOs) - **Underway**
- Various modeling workshops and peer review of the models by the Bay Program's Scientific and Technical Advisory Committee - **Underway**
- Decision on whether the Phase III WIPs should be set using forecasted values for 2025 land use, animal numbers and other model inputs – **Pending** • Local government review of new land use for the model (**March – June??**) – **Significant Delays**

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To read the full Bay Journal article [click here](#).

- **Decisions on how to address the impact of changing flow dynamics in the dams on the lower Susquehanna River, climate change and chlorophyll-a levels in the James River on attainment of Bay water quality standards - Ongoing**

By the end of the year, the Bay Program expects to have completed its model revisions and other updates to the attainment framework. The Phase III WIPs should be developed in 2017-18. **The WQGIT Phase 6 Model Review Task Force is working to develop a detailed comprehensive schedule for this entire process – including defining when reviews will take place. This is critical to ensure that there are clear opportunities for local input and adequate time for local review of all of these elements.**

Watershed Model – Activities and Issues

COG Contact

Land Use

The Bay Program is incorporating both local land use information and data from high resolution imagery into its updated land use data layer for the Phase 6 watershed model currently under development. Local governments will have the opportunity to review and comment on the updated land use starting in **March**. **However, delays in processing data from high resolution imagery will pose challenges for the Bay Program to maintain its schedule for completing the Phase 6 Watershed Model. COG staff is working with its local government members to ensure the accuracy of local land use data, and to advocate for adequate time for local government staff to review land use data for the model.**

NOTE: COG staff presented these technical points to the WRTC on Oct. 29th. With WRTC support, COG staff is now evaluating how to obtain **specialized consultant support to supplement staff’s ongoing technical work on these issues**. Some of this work would involve technical work similar to work COG lead during the development of the Bay TMDL. **However, because of the expansion of the issues and modeling tools being used, there are many more issues that will need to be considered during the Bay TMDL 2017 Mid-Point Assessment process.**

Model Inputs

COG and NVRC staff are continuing to monitor the data that the states supply to the Bay Program on wastewater discharges, nutrient pollution from septic systems, biosolids and fertilizer application, and stormwater BMP implementation. This data, which the Bay Program estimates back in time (1985) as well as in the present, is the key component of measuring progress toward meeting the TMDL goals. COG staff will continue to work with COG’s members to ensure that this data is accurate and assumptions are scientifically sound.

Key policy issues related to these CBP activities will be presented at **the May 20, 2016 CBPC meeting**.

COG staff are also leading efforts to ensure that the data and technical model assumptions related to land application of biosolids are accurate Bay-wide; and coordinating efforts to ensure that CSO, septic, and wastewater data is accurate for the COG region. **COG staff have helped to organize a task force of biosolids experts to help inform these issues.**

Load Estimates / Target Loads

The Bay Program is using a new approach for setting the basic rates of nutrient and sediment loading from the major sources of these constituents to the Bay – which are agriculture, urban land and forests – and for determining the geographic variation in these loads. COG staff will evaluate options for conducting an independent scientific evaluation of these key model components.

In addition, representation is being sought for the Local Area Targets Task Force – which will address the extent to which the Bay Watershed Model output can/should be used for establishing Local Area Targets for purposes of the Phase 3 WIPs. COG staff recommends local representation on the Task Force.

Overall Program Effort

Reservoirs

The Bay Program is simulating the water quality impacts of thousands of small impoundments not currently simulated in the model. This has the potential to provide local governments with new credits for nutrient and sediment reduction,

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but there are several accounting issues to settle under the new approach. COG staff will work with our members to ensure the accuracy of this data.

Lag Time

For the first time, the Bay Program will explicitly incorporate estimates of the lag time between when nutrients run off the surface of the land or leach into groundwater and when they emerge into surface waters into its models. This is expected to improve the agreement between modeled and monitored estimates of loads and provide scientific support for the Bay TMDL's expectation that improvements in water quality will lag behind the expected impact of installing BMPs. COG staff will evaluate options for conducting an independent scientific evaluation of these model assumptions.

Scale/Applicability

Despite the many improvements the Bay Program is making to the watershed model, its accuracy will continue to vary at different scales - which has major policy implications, especially for COG members' MS4 stormwater permits. COG staff will evaluate options for conducting an independent scientific evaluation of model accuracy at different geographic scales.

Modeling/Landuse Issues

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Water Quality Sediment Transport Model & Others - Activities & Issues

COG Contact

Conowingo Dam

The Bay Program and other parties are updating the scientific understanding of the changing dynamics of nutrient and sediment flows through the three reservoirs on the lower Susquehanna River and the impact of those changes on the attainment of the TMDL's water quality goals. The update is likely to result in a major policy decision regarding who has the responsibility for additional nutrient and sediment reductions beyond those currently required by the TMDL -- which could have clear policy implications for COG's members. COG staff will continue to monitor this issue and seek CBPC input on any regional policy positions to be taken.

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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.

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See related Note: in section above for proposed technical work.

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.

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Climate Change

The Bay Program has begun to incorporate estimates of future changes in temperature, rainfall and other factors likely to result from climate change into its modeling framework. COG staff will continue to track how these changes could affect the attainment of water quality goals under the TMDL. COG staff will also evaluate options for conducting an independent scientific evaluation of the model's climate-based assumptions. COG staff also participates in the Climate Workgroup, which is tasked with identifying how climate changes may influence the ability of various management strategies to restore the Bay.

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Other – Activities & Issues	COG Contact
<u>Advocacy Opportunities</u> The Virginia's General Assembly passed the <i>Chesapeake Bay Appreciation Week</i> bill, and it is awaiting Governor McAuliffe's signature. The Maryland General Assembly will be reviewing a similar bill and COG staff will update members on the status of its passage in Maryland.	Heidi Bonnaffon (202) 962-3216 hbonnaffon@mwcog.org