

**Chesapeake Bay Commission**  
**Follow-up Questions for Shawn M. Garvin**  
**Submitted November 17, 2011**

*The questions were submitted by individual members of the Chesapeake Bay Commission and staff for purposes of gathering information, and do not necessarily reflect a collective position or point of view of the Commission as whole. The answers are those of Regional Administrator Garvin, respectively, and should be attributed as such.*

- 1. Do you concur that the PAOneStop (the Penn State web-based, GIS farm mapping tool) is an effective program for engaging farmers in on farm conservation planning? If so, would EPA support utilization of PAOneStop as an effective technology to empower individual farmers to make good conservation decisions and meet TMDL water quality standards? Will this program be counted as part of the “reasonable assurance” framework in PA’s WIP?**

A: We agree that PAOneStop has the potential to be an effective tool for engaging farmers in on-farm conservation planning. The online tool can help educate farmers on state regulatory requirements for conservation and nutrient management planning and help farmers generate planning maps they need for Nutrient Balance Sheets, nutrient management plans and conservation plans. This tool could be quite effective when coupled with on-the-ground technical assistance to assist farmers in choosing the appropriate mix of water quality-based conservation practices and to verify that these practices are properly designed, installed, and maintained to ensure they are achieving the full nutrient/sediment reductions credited in the CBP Watershed Model. We understand that the Chesapeake Bay Commission is considering holding a webinar on the latest version of PAOneStop and we'd be very interested in participating and continuing discussions on how this tool can help advance implementation of the PA Watershed Implementation Plan.

- 2. Why not fix the Chesapeake Bay Program (CBP) watershed model now and why can't the issues identified in the matrix be addressed now/quicker?**

The CBP Watershed Model was developed specifically for the scale required to perform a Chesapeake TMDL (the 92 segment scale), using the best available information on a variety of scales. The CBP partnership has a long-standing process of refining our decision support tools to ensure they are informed by the best data available. The CBP model is a tool we use to help support such decisions and it is the data inputs to the model that we are addressing now, not the model itself.

The next full update of the Chesapeake Bay Program (CBP) watershed model will be completed by 2017, but we will continue to accept and use the best available input data for use in the Bay watershed model. The commitment to the 2017 midpoint model updates and Phase III Watershed Implementation Plans (WIPs) was part of the larger Chesapeake Bay Accountability Framework first outlined by EPA and agreed upon by the Principals' Staff Committee whose membership includes the state secretaries in 2008. This framework was further refined in 2009 and 2010 by EPA and the Bay partners.

On October 17, 2011, EPA's Chesapeake Bay Program Office (CBPO) outlined several near, medium, and longer term next steps for Partnership to address the modeling concerns raised by the jurisdictions. Some of these next steps include:

- a) Proposing interim BMPs for Phase II WIP planning immediately/any time
- b) Establish expert panels to evaluate BMP definitions and effectiveness estimates. Many of these new BMPs could be added to the model as soon as they receive full CBP approval.
- c) Credit verified BMPs that were implemented after the model calibration period (in 2006 or later) that states have not previously reported (i.e., non-cost share practices).
- d) Submit recommendations for modeling midpoint evaluation
- e) Both EPA and the jurisdictions agree on the need to place greater emphasis on increasing actions on the ground to restore the Bay and its local waterways.

Regardless of the issues with the CBP watershed model, we've known for over a decade what level of effort is necessary to restore the Bay. Models take and organize what we scientifically know about the environment to replicate what is occurring in the environment and to make future predictions of how the environment will respond to management actions. They are one of many tools designed to help us make informed decisions.

Slight variations in the CBP watershed model at the finer scale do not change the actions needed to meet our goals. Monitoring data will tell us when those water quality goals are met.

- a. **Is the CBP watershed model being adjusted prior to 2017 in response to the issues raised at the Secretaries meeting? If so will there continue to be opportunities to tweak the model as anomalies arise?**

The commitment to the 2017 midpoint model updates and Phase III WIPs was part of the larger Chesapeake Bay Accountability Framework first outlined by EPA and agreed upon by the Principals' Staff Committee whose membership includes the state secretaries in 2008. This framework was further refined in 2009 and 2010 by EPA and the Bay partners. The next full update of the CBP watershed model will be completed by 2017, but we will continue to accept and use the best available input data for use in the watershed model.

Bay jurisdictions, during the past few months, expressed concerns with assigning local area targets as expressed in terms of pounds of pollutant reductions by county, given questions they had about model results at the county scale. Many of the issues raised about the model have to do with input, not the model itself. EPA responded to these questions and concerns by providing *flexibility* for *how* states choose to explain localities' contribution to meeting the Bay TMDL allocations and implementing the states WIPs.

On October 17, EPA outlined several near, medium, and longer term next steps for the CBP partnership to address the modeling concerns raised by the jurisdictions.

Some of these next steps include:

- Proposing interim BMPs for Phase II WIP planning immediately/any time;
- Establish expert panels to evaluate BMP definitions;
- Submit recommendations for modeling midpoint evaluation; and
- Place greater emphasis on increasing actions on the ground to restore the Bay and its local waterways.

In addition, in June 2011, EPA and USDA developed a joint Chesapeake Conservation Data Collaboration workplan. The workplan outlines the actions we will be taking with USDA to continue our data collaboration. Implementation of this workplan will further refine our accounting of agricultural conservation practices throughout the Bay watershed, bolster the scientific defensibility of the benefits of agricultural conservation practices, and improve consistency of data used in our agencies' respective decision support tools.

EPA will continue to work with the states, USDA and conservation districts to incorporate the most accurate and up-to-date information on what conservation practices are on the ground and how the suite of Chesapeake Bay Program Partnership's models simulate the pollutant reductions associated with these practices. Some of this information can be used within the current version of the CBP models, and the remainder of this information will be considered in the next round of model updates, which will be complete in advance of the Phase III WIPs in 2017.

Examples of data that can be used within the current version of the CBP Watershed Model are previously un-reported verified BMPs that have been implemented after model calibration period (in 2006 or later) and many of the new BMPs that have been reviewed and approved by the CBP partnership for use in the model.

3. **Since your Oct 5, 2011 letter said that "there are limitations to the application of the Chesapeake Bay Watershed Model at a finer scale," how will submitting input decks at a major basin scale overcome these limitations?"**

Any watershed model has the most certainty at a larger, state or basin scale. While the same is true of the Chesapeake Bay Program (CBP) Partnership's Watershed Model, it is important to note that the model does simulate a decrease in loads at any scale when more conservation practices are applied.

EPA still expects jurisdictions to submit input decks with the location and number of types of practices states are committed to implementing so that EPA may assess whether these practices are sufficient to meet water quality planning targets. These targets are set at the scale of the major basin in each state, meaning that EPA will consider whether the practices at the state-basin scale are sufficient to achieve Bay water quality goals.

Jurisdictions can still choose to create input decks that focus on conservation practice inputs and pollution loading outputs at finer scales. In fact, EPA encourages jurisdictions to take into account historic implementation that has been reported at a local scale when creating WIP input decks. The October 5 letter is simply intended to give states flexibility in

expressing local targets. It does not mean that the Bay watershed model doesn't work at a local scale or that localities do not need to be involved in Phase II WIPs, it is just not as effective at that scale.

The Chesapeake Bay Program is working closely with jurisdictions' staff to help them better understand the suite of Bay models so they can create optimal input decks. And we are continuing to support jurisdictions in the development of Phase II WIPs through Senior Manager and staff-level interactions, technical analysis, and by providing financial and contractor assistance.

4. **Since local area targets are no longer required to be submitted as pounds of pollutant reductions at a county scale, can you provide some sector-specific examples of the types of implementation levels or actions you expect local governments to provide states to help them in meeting the WIP planning targets? Will this approach be fundamentally different from what has already been launched via the tributary strategies?**

Local targets should help partners understand their contribution toward meeting Chesapeake Bay TMDL allocations. Examples of ways to express local targets could include establishing implementation goals, such as: number of additional BMPs; number of acres receiving BMPs; and increasing the percentage of sources with BMPs. Sector examples of how local targets could be expressed as implementation goals include:

- Agriculture: State identified “priority practices” such as cover crops in MD, “five priority practices” in VA, and “core four” practices in PA to achieve the bulk of their agricultural nutrient and sediment reductions. These statewide commitments could be translated to conservation district scale. For example: cover crops on 10,000 acres in a county compared to 5,000 acres today; or cover crops on 25% of cropland acres in a county compared to 10% of cropland acres today.
- Urban: Stormwater management goals or specific performance objectives in their regulations or permits. For example: 750 acres of urban land in an MS4 locality are expected to be redeveloped to meet a 1% onsite retention standard by 2025; and 80% of acres of parkland, lawns or golf courses in a county are expected to comply with new regulations for fertilizer, compared to 0% of acres today.

Local targets may also be expressed in terms of programmatic actions. Sector examples include:

- Agriculture: number of compliance visits to farms by conservation district staff, creation of an Ag Certainty program to motivate agricultural community to increase BMP implementation in support of the WIP commitments.
- Urban: adoption of stormwater fees by localities. Adoption of model stormwater ordinance by MS4 and non-MS4 localities with provisions to help meet WIP commitments.

This approach is fundamentally different from the tributary strategies approach. The tributary strategies did not specify what localities or conservation districts were expected to do to implement their share of a major basin goal. The local targets ensure that this lack of understanding is not repeated in this next generation of clean up strategies.

**5. Is it true that the Chesapeake Bay Program (CBP) watershed model increases the amount of pollution coming from farmland when nutrient management plans are implemented?**

No, this is not true. When the percentage of cropland receiving nutrient management increases from 50% to 75% of available cropland, total pollution loads from agriculture decrease in 99% of counties in the Chesapeake Bay watershed. In the 1% of counties where pollution increases, these increases are caused when the amount of land under nutrient management increases to the point where there is more manure available than can be applied to cropland at agronomic rates and this manure is “disposed of” at rates that far exceed crop need. In both the real world and in the CBP watershed model, we know there are areas in the Bay watershed where more manure exists than can be applied to the land without harming water quality. These would be areas the jurisdictions should target for manure transport or manure to energy programs.

**6. Are recent reports in the media true that, according to the updated version of the Chesapeake Bay Program (CBP) model, some localities in Virginia could actually *increase* pollution loads and still meet the Bay TMDL?**

As indicated in EPA’s August 1 and October 5 letters to the state secretaries, EPA provided planning targets at the scale of the major basins in each jurisdiction, such as the James River in Virginia or the Susquehanna River in Pennsylvania. Some of the states' methods to distribute loads are creating results where some localities don't need to do anything. Specifically, some states are not taking into account historic levels of implementation that they have reported at a local level when setting statewide implementation goals. In these cases, states are submitting Watershed Implementation Plan (WIP) input decks with fewer BMPs on the ground in 2017 and 2025 in certain communities than the number of on-the-ground practices that the states reported implemented in those same localities in 2009 or 2010.

In these instances, EPA would advise that states refine their methods to take into account historic practice implementation data and work with local partners to set targets so that some communities are not "doing too much" while other communities "don't need to do anything." But again, it is up to the states how to divide loads to a local level. EPA has offered to help the states develop and refine their methods and answer questions so that the information provided to the localities is appropriate and accurate.

**7. Given the record-setting hypoxia in the Bay this year, is there any evidence that jurisdictions' efforts to reduce pollution are making a difference? Are further reductions worth the cost, given impact of large storm events like Hurricane Irene and Tropical Storm Lee?**

Yes, monitoring data tells us that we are on the right track and our efforts to reduce pollution are making a difference. Still, we have a long way to go before the Bay and its tributaries will be able to support fish and wildlife, as called for in states' Chesapeake Bay water quality standards.

Johns Hopkins University and the University of Maryland Center for Environmental Science (UMCES) released a report in November that evaluated 60 years worth of Bay water quality data. The study found that mid- to late-summer dead-zones in the Bay have decreased since the 1980s, when the Chesapeake Bay Program Partnership started. UMCES President Don Boesch, who reviewed the study, agreed that the report “shows that our regional efforts to limit nutrient pollution may be producing results [and] continuing nutrient reduction remains critically important for achieving bay restoration goals.”

Aerial survey images taken in November of this year of the vast grass-filled Susquehanna Flats, the circular area where the Susquehanna River meets the Bay show that the Bay's largest underwater Bay grass bed survived the fall's deluge of runoff and sediment from back to back hurricanes better than expected by Bay scientists. This grass bed, growing in size, density and species diversity over the same 30 years of the Partnership, is living proof that the Bay ecosystem can recover and still endure extreme events like we witnessed this fall.

There will continue to be record setting hot summers and droughts. There will be more heavy rainfall years and more extreme weather events. But continuing to work together as a partnership is the only way that we can reduce the nutrients and sediment entering the Bay in heavy rainfall events like what we experienced in September. It's the only way that we can build the resiliency of this ecosystem to bounce back after the bad years.

8. **As a result of your October 5, 2011 letter, has EPA significantly changed its expectations for the jurisdictions' development of their Phase II Watershed Implementation Plans (WIPs) from what was originally outlined in EPA's March 2011 Phase II WIP guide?**

No, EPA's expectations for the states have not changed. EPA never intended for EPA or the jurisdictions to establish local level allocations. The purpose of local area targets—which are not allocations—has always been to help conservation districts, local governments, planning commissions, utilities, watershed organizations, and others clearly understand their contribution toward meeting the Chesapeake Bay TMDL allocations. EPA still expects Bay jurisdictions to work with their local partners to develop local area targets in the Phase II WIPs.

The October 5 letter to the State Secretaries was meant to put the Chesapeake Bay Program Partnership's modeling tools in the appropriate context. It was in response to Bay jurisdictions' stated concerns with assigning local area targets as expressed in terms of pounds of pollutant reductions by county, given questions they had about model results at the county scale. Specifically, the letter provides *flexibility* for how states choose to explain localities' contribution to meeting the Bay TMDL allocations and implementing the states' WIPs. EPA is not requiring that local efforts be expressed as pounds reduced but now may be explained in terms of implementation levels or planning actions. EPA has offered to help the states develop and refine their methods.

**How are interim BMP's being evaluated? Are they being counted as reductions before they go through the complete BMP process or are they only being approved for planning purposes? How much margin of error are they assigned compared to an approved BMP?**

The Chesapeake Bay Program (CBP) Partnership, including the states, universities, and agriculture stakeholders, must approve BMPs before states can receive credit for them in annual assessments of implementation progress. All interim BMPs are slated for a full review by the Partnership, and EPA has invested hundreds of thousands of dollars to support the timely and transparent review of these practices.

EPA recognizes that this thorough and transparent vetting process takes time. Therefore, EPA allows states to propose "interim, placeholder" BMPs, along with supporting documentation. Chesapeake Bay Program's technical experts provide a shorter review and, based on the documentation submitted by the states as well as other documentation that is readily available, to grant full, partial, or no credit for these placeholder BMPs. The Chesapeake Bay Program Office then provides pollution reduction credits for these placeholder BMPs only for planning purposes, such as in WIP input decks and future milestone commitments. The BMPs must go through full Partnership review and approval before they can be credited in annual assessments of progress completed to date. We are also looking for ways to speed up the process and have put in additional funding for contractor support to assist with this effort.

The Chesapeake Bay Program does not estimate the margin of error associated with approved or placeholder BMPs. In general, approved BMPs are more likely to be accurate given that they have been subject to a full Partnership review.

**9. How will EPA judge progress as adequate for upcoming milestones if states' (Watershed Implementation Plans (WIPs) are more narrative and not specifically linked to submitted input decks and specific local goals? How will you determine if progress towards goals is sufficient to not result in EPA backstop actions?**

EPA will evaluate progress based on whether the amount of pollution from a sector, based on model analysis of submitted BMPs, is commensurate with what would be expected from the WIP narrative and programmatic milestones. EPA is evaluating the Phase II WIPs in four key areas: (1) whether the WIPs are achieving the necessary pollutant targets for all three pollutants in all major river basins; (2) whether the jurisdictions addressed EPA's key concerns for sectors in which EPA assigned backstop allocations, adjustments or enhanced oversight due to weak Phase I WIP strategies; (3) whether they are demonstrating reasonable assurance at least as strong as in the Phase I WIP with no backsliding; and (4) whether they demonstrated local partner engagement in development and future implementation of Phase

II WIP. The Phase II WIP is also the vehicle to remove backstops and enhanced oversight actions included in the December 2010 TMDL.