Hi David –

Per your request, below are some comments from the Chesapeake Bay Foundation on the draft report from the Nutrient Management expert panel (the Panel).
First of all, please pass along our sincere thanks to members of all the expert panels. We recognize these folks volunteer their time and expertise and we very much appreciate their willingness to do so. Their participation is critical to maintaining the scientific integrity associated with the Chesapeake Bay Watershed Model.

Our comments are offered in the spirit of maintaining this level of integrity as well as ensuring the process of revising BMP efficiencies is transparent. Specifically, the Panel proposed the existing NM approach be replaced by three tiers of management: (1) Crop Group Nutrient Application Management (CGNAM), (2) Field Level Nutrient Application Management (FLNAM), and (3) Adaptive Nutrient Management (ANM). And ultimately they made recommendations for efficiencies for both Tier 1 and 2 levels of management.

We have concerns about the adoption, at this time, of an efficiency for Tier 2. For one, documentation and support for this decision by the Panel is lacking from the public record. Since we have not been tracking the revisions to the nutrient management efficiencies closely, we reviewed the meeting notes of the Panel to get a sense of the discussions and scientific documentation. We note that there were a series of meetings of relevant subgroups in July 2014 that discussed various components that could be included in Tier 2 NM. From the reading of the meeting notes of most of these subgroups, however, there were no clear decisions or recommendations. Then, at the next publically documented meeting in October 2014, efficiencies for Tier 2 were adopted. We also note that in the summary of the current working draft of the Panel recommendations (p.4) that "The Panel did not estimate FLNAM and ANM effectiveness because of time constraints." From someone on the "outside" of this process, the recommendations for efficiencies for Tier 2 do not appear to be well supported, nor the decision-making, transparent.

It is our understanding that many states believe their current programs would justify claiming large amounts of cropland under Tier 2 NM. Once this occurs, nutrient reductions associated with nutrient management will increase dramatically – due to a change in accounting, not a true change in management. From the "public" perspective, this is problematic for several reasons. For one, this benefit does not jive with recent observations about the effectiveness of nutrient management in the Bay region. For example, the USDA CEAP report found that only 5% of cropland in the Bay watershed meets USDA's own criteria for appropriation N and P management. Application rates of commercial fertilizer and manure increased between 2006 and 2011 (the two CEAP time periods) and there was a decrease, between 2006 and 2011, in the amount of cropped acres that have appropriate nitrogen management, from 13 to 7%. Phosphorus management generally either improved or stayed the same between the two CEAP study time periods when looking at commercial and manure, combined. But when manure is looked at separately, appropriate application rates for all crops in rotation dropped by 8 percentage points, from 17 to 9 percent of manured cropped acres. Given these observations, estimating a large reduction from NM at this time, presents a distinct difference between documented behavior and modeled benefits. Communicating this disconnect to the "public" will be challenging.

We are also concerned about such a dramatic change in BMP efficiencies before the states have adopted verification protocols. In the future, unless states adopt acceptable verification approaches for a particular BMP, they will not be given credit for implementation. NM is probably one of, if not the,

most difficult BMPs to verify. Giving credit to Tier 2 NM now and then possibly having to remove some or all of the credit in the future will only add to confusion and suspicion about the validity of the model. Ideally, CBF was hoping that the adoption of the verification protocols would occur before the midpoint evaluation – because of the potential implications for verification for all BMPs and nutrient crediting. Unfortunately, the schedule for final adoption is not until 2018. **Consequently, we recommend that this change to the model not be included until the states adopt and finalize their verification protocols.** If states want to get credit for Tier 2 before 2018 (when the verification protocols are to be finalized and approved), we recommend they also have to provide robust verification of the implementation of this level of NM. Per the verification process, their verification plan should be reviewed by the Verification Expert Panel. As noted above, the CEAP report seems to demonstrate there is much room for NM improvement, so verification for claiming additional benefits at this time seems warranted.

Thanks for the opportunity to weigh in. I hope these comments are useful.

Beth
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