Modeling Workgroup Conference Call
June 11, 2015
1:00 PM – 4:30 PM
Event webpage: http://www.chesapeakebay.net/calendar/event/22739

Announcements and Amendments to the Agenda – Dave Montali, WVDEP-Lee Currey, MDE

- The meeting minutes from the April Modeling WG Quarterly Meeting have been posted to the meeting website.
- The next Modeling WG Conference Call is set for July 9, and the July Modeling WG Quarterly Meeting will be held on July 21-22.
- Attempts are still being made to set a date for a meeting between the Modeling WG leadership and the source sector workgroup chairs, which are expected to be held in late July or early August.
- The Modeling WG chairs have also discussed developing a very detailed schedule of key decision points for the next few years. The chairs and leadership will meet to develop this timeline and will provide it to the workgroup by the July Quarterly Meeting.
- The Modeling WG leadership is also looking to present a comprehensive and detailed Modeling WG schedule to the WQGIT in September.
- The first prototype of the WSM is to be presented at the July Quarterly meeting

CBP Model Peer Reviews – Gary Shenk, USGS/CBPO
Attachment A

- Lew presented a proposed schedule for STAC workshops, highlighting the review committee and review process.
- An additional review of the hydrology, which was already completed with Phase 5.3.2, will not be completed by STAC. Peer reviews will instead focus on newer aspects of the model.
    - There were questions raised concerning alterations to the precipitation model, adding years of flow record, which would then be adding new components of hydrology which should be examined. This will likely be examined by the Modeling WG.
- In beginning to address questions that will be brought to STAC for Phase 6, the questions that were provided for the last review of Phase 5.3.2 in 2010 will be sent out to the Modeling WG. Responses should be sent back to the workgroup leadership by the July quarterly review.

Final Land-Use for July Phase 6 Model Prototype – Peter Claggett, USGS
Attachment B

- Peter presented the land classes set to go into the model in July, which are a composite of land use and land cover data.
- Tree canopy has also been mapped over roads and non-road impervious land uses, with the hopes that an expert panel can potentially determine what decisions can be made in the future.
- Extractive land uses have been tabled for now, and will not be going into the July prototype model.
- At the moment, wetlands can be simulated based on the NWI dataset, e.g. if an upland load moves into a depression occupied by a wetland, it would be decremented.
- For the model prototype that is to be presented at the July quarterly, single-line streams have been assumed to be 15’ wide. Further modifications based on hydraulic geometry will be made for the model prototype to be presented at the October quarterly meeting.

- If the number of herbaceous agricultural acres are found to be insufficient in matching the ag census, the agricultural and modeling workgroups may need to meet and question some assumptions about how the agricultural census is used in model development.
    - In some counties (i.e. Lancaster and York), the agricultural census produced a number of acres that was too high for what was measured with the high resolution data. How accurate is the agricultural census data then?
- The jurisdictional review of land use data for will be a rolling process throughout this year and is expected to be completed before summer 2016.
    - Most of the county data received thus far is parcel data, meaning that those land uses will change significantly when the high resolution land use data is received. Jurisdictions will be notified when the land use team has finished ingesting the data the parcel data that has been provided. The jurisdictions can then review what work has been completed on the web with the Land Use Web Viewer. The land use team will contact jurisdictions next year when the high resolution dataset is complete. Jurisdictional review is especially needed when the final Phase 6 land use data is completed for that county.
    - How will this affect the partnership's ability to review the model over the next year?
- July 2016 is the optimistic timeframe to take all BMP reports from April 2016 and roll them into a model version, which involves adding new BMPs as well as moving from basin-wide to local land uses.

Phosphorus Sensitivities for July Phase 6 Model Prototype – Guido Yactayo, UMCES-CBPO
Attachment C

- Guido presented an update of phosphorus sensitivity work, reiterating the motivation for using APLE (STAC's recommendation), the objectives, and the decision points necessary to elect sensitivities that will be used in Phase 6.
- Mehlich phosphorus and fertilizer applications seem likely to be significant drivers of the simulation. Runoff and sediment may also be important factors, but further study is needed.
    - There is likely to be a significant change from this estimate to the Phase 6 model based on the application rate influences on Mehlich phosphorus.
- If you reduce the input, you also get a negative change in export
- Next steps include extending the simulation period to help better answer management questions. An assessment of potential modifications based on expert judgment may also be brought back to the modeling workgroup at the July quarterly meeting.
- For the July quarterly meeting, the tables presented will be final. The sensitivities will be used in the prototype as well, not the APLE model itself.

Final Land-Use Targets for July Phase 6 Model Prototype – Olivia Devereux, Devereux Consulting
Attachment D.1, *Attachment D.2*

- Olivia reviewed the purpose of targets, the data needed for development, and the process by which they have been developed.
- To review how multiple models are being used to develop the targets:
    - The global targets are developed using the average from CEAP, Phase 5.3.2, and SPARROW, except for urban which does not use CEAP.
    - In turn, these produce four categories outlined in the boxes: cropland, developed, natural, and pasture/hay.
    - The monitoring data is pulled from the indicators, and those produce the actual lbs/acre numbers that are used, not the lbs/acre outputs from the different models.

    - The relationship among the relative differences in the data for cropland, pasture/hay, and forested were examined for CEAP, Phase 5.3.2, and SPARROW. Determinations were made for the relative differences by cropland, which was some percentage greater than pasture, and some percentage greater than natural land uses. These comparisons were made for each of the models, and the relative differences for each model were averaged.
- Four questions that may be seen as actions for the workgroup to address:
    - In one slide can you visually explain the process that drives the targets?
    - How can we extract the most important points which include transparency, the strength of partnership, and the strength of multiple models?
    - How does the target process compare to Phase 5? Does it compare fairly well since Phase 5 is built into the multiple modeling approach?
    - The global multiple models all produce a range. Are we taking the average of that range? How can the range be taken into account and what does it really mean?
- Questions, concerns, and comments to help Olivia shape the presentation for multiple audiences should be sent to Kyle Hinson.

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