Modeling Workgroup Conference Call

June 24th, 2014

http://www.chesapeakebay.net/calendar/event/21756/

NEXT MEETING

July Modeling Quarterly Review
Date: July 22nd and 23rd, 2014
Time: 10:00AM – 3:00PM
Location: Joe Macknis Memorial Conference Room (Fishshack) CBPO 410 Severn Avenue Annapolis, MD
Conference Line: 1-866-299-3188 code 410-267-5731
Adobe Connect: https://epa.connectsolutions.com/modeling (enter as guest)
Event webpage: http://www.chesapeakebay.net/calendar/event/21646

MINUTES

Announcements and Amendments to the Agenda – Montali-Currey

Setting Loading Rates in the Phase 6 Model – Shenk
Attachment A

Gary described a recommended approach to setting land use loading rates in the Phase 6 Watershed Model.

Discussion

- Will the Phase 6 Model have some type of "regional factors"? That is unknown at this time and will be determined by the Modeling Workgroup after the calibration processes. During the calibration of the model, we could get a reasonable calibration through modification of river processes and the land use targets would not have to change from what is decided through the partnership. We could also find that during the calibration some portions of the watershed are not in sufficient agreement with the water quality data. Then, we would review and change our assumptions or include regional factors again.

- The Phase 6 Model needs to be complete and ready for review January 2016.

- One of the difficulties with matching observed loads to model loads is lag times. Is there a priority to include lag times into the modeling effort? This is a complication that has been brought up to the Modeling WG before and it is an important issue that would affect the calibration as well as other areas of concern. There is some discussion of incorporating lag times into the model in the future. A grant was rewarded to Johns Hopkins and they are interested in working on the issue with the Modeling WG and Modeling Team at the Chesapeake Bay Program.

- Future presentations and documentation of this work should include short definitions of the models and how these models are going to be used in the Chesapeake Bay Program multiple model modeling efforts. As this work continues the presentations will most likely be given by Tetra Tech and other organizations that we are working closely with (i.e. SPARROW, APLE, etc.)

- Tetra Tech has completed a literature surveys for urban nutrient and sediment loading rates and is working on one for agriculture and both of these surveys will be used by the Chesapeake Bay Program. Tetra Tech is also coordinating a loading rate reevaluation through the Chesapeake Bay Program Partnership. TetraTech will be developing a report to describe how the loading rates were developed. This report will be included in the Phase 6 documentation.
    - **ACTION**: The Modeling WG requested that Tetra Tech give monthly updates on the progress of the loading targets work.

- **ACTION**: As the Modeling Team is working on the calibration and sensitivity analyses they are writing up the documentation, which will be an evolving document that will be provided to the Modeling WG for review.

- **ACTION**: Gary Shenk is working with the Modeling WG leadership to provide a document to the WQGIT describing what and when specific information is needed from the WQGIT workgroup. This document is essential to clearly communicate expectations and timing for a successful completion of the Phase 6 Model.

- **ACTION**: Gary Shenk and Lewis Linker will work on a schedule of activities for the three main projects (targets, sensitivities, and calibration).

- **ACTION**: An update on "Setting Loading Rates in the Phase 6 Model" will be given at the Modeling Quarterly Review in July 2014.
-

Phase 6 Prototype Update – Bhatt
Attachment B

Gopal described progress on the Phase 6 Watershed Model prototype. The Phase 6 Model is based on the HSPF PQUAL simulation and includes updated precipitation inputs, hydrology, and sediment simulations. The fully operational prototype Phase 6 Model will be presented at the July 22nd – 23rd, 2014 Modeling Quarterly Review.

Phase 6 Sensitivity Prototype Conclusions:
- Calibration run was de-trended to create a baseline scenario to be used for running management scenarios.
- Load responds proportionately to changes in PQUAL parameters.
- Sensitivity algorithm was developed to offer maximum flexibility.
- Sensitivity code was verified.

- Code offers ability to incorporate multiple sensitivity functions.

Discussion

- Are the sensitivities that are being used to inform PQUAL all linear? Interflow and ground water are quite linear because the load is equal to the input of concentration for the PQUAL parameter multiplied by the flow. Currently, the concentration has only changed year to year, but in the future we will have the option to include monthly or seasonal data (working with Ross Mandel at ICPRB on this). For the surface and absorbed portion there is some non-linearity because it involves exponential functions to calculate the relation to runoff and loading.

- **ACTION**: Gopal Bhatt will follow up on this work by expanding this testing and running the Phase 6 Prototype with the actual scenarios.

- **ACTION**: Updates of the Phase 6 Prototype will be presented to the Modeling WG monthly.

- **ACTION**: The Modeling Team will expand upon the slides that explain how multiple models will be used in the Phase 6 model. Explanation will include on how this empirical approach continues to capture the physical processes of AgChem.

- **ACTION**: The Modeling Team will continue to update the loading rate presentation to incude details of how TetraTech (Modeling Team) loading rates relate to information from WQGIT WGs (landuse, BMPs, etc.)

Shallow Water Multiple Model Site Selection – Linker
Attachment C

The Shallow Water Multiple Model Principle Investigator recommended site selection for the shallow water multiple model application was presented to the Modeling WG. The site selection process begin with the RFP and was discussed in conference calls between the PIs as well as presented and discussed at the Chesapeake Modeling Symposium.

- **DECISION**: The Modeling WG approved the site selection of the Chester River.

PARTICIPANTS

Last Name	First Name	Email	Affiliation
MEMBERS			
Currey	Lee	lcurrey@mde.state.md.us	MDE/Modeling WG Co-Chair
Montali	Dave	david.a.montali@wv.gov	WV DEP/Modeling WG Co-Chair
Linker	Lewis	linker.lewis@epa.gov	EPA/CBPO/Modeling WG Coord
Pruzinsky	Amanda	apruzinsky@chesapeakebay.net	CRC/CBPO/Modeling WG Staffer
Butt	Arthur	ajbutt@deq.virginia.gov	VA DEQ
Onyullo	George	george.onyullo@dc.gov	DDOE
Shenk	Gary	gshenk@chesapeakebay.net	EPA/CBPO
Tesler	Ted	thtesler@pa.gov	PA DEP
PARTICIPANTS			
Admin	Vimal	vamin@mde.state.md.us	MDE
Berger	Karl	kberger@mwcog.org	MWCOG
Bhatt	Gopal	gbhatt@chesapeakebay.net	Penn State/CBPO
Brosch	Chris	broschc@vt.edu	VT-VADCR
Busch	Greg	gbusch@mde.state.md.us	MDE
Dalmasy	Dinorah	dinorah.dalmasy@maryland.gov	MDE
Devereux	Olivia	olivia@devereuxconsulting.com	Devereux Consulting
Friedrichs	Carl	carl@VIMS.edu	VIMS
Goulet	Norm	ngoulet@novaregion.org	Northern VA Regional Commission
Johnston	Matt	mjohnston@chesapeakebay.net	UMD/CBPO
Koran	Dave	David.Koran@usace.army.mil	USACE
Mulkey	Alisha	asmulkey@umd.edu	UMD
Quinn	Sheryle	sheryle.quinn@navy.mil	US Dept of Navy
Schreiner	Steve	SSchreiner@versar.com	Versar, Inc.
Sellner	Kevin	sellnerk@si.edu	CRC/SERC/STAC
Shih	Jhih-Shyang	shih@rff.org	Resources for the Future
Sweeney	Jeff	jsweeney@chesapeakebay.net	EPA/CBPO
Tian	Richard	rtian@chesapeakebay.net	UMCES/CBPO
Wang	Ping	pwang@chesapeakebay.net	VIMS/CBPO
Yactayo	Guido	gyactayo@chesapeakebay.net	UMCES/CBPO