Modeling Workgroup Quarterly Review

October 8, 2019

CBPO Conference Room - The Fish Shack
410 Severn Avenue Annapolis, MD 21403

Event webpage:
https://www.chesapeakebay.net/what/event/modeling_workgroup_october_inperson_meeting
For Remote Access:
Zoom Link: https://zoom.us/j/571049275
Phone number: 929-205-6099 **Meeting ID:** 571-049-275
To enter the webinar, please open the webinar link first

10:00 Announcements and Amendments to the Agenda – Dave Montali, Tetra Tech and Mark Bennett, USGS

10:05 Phase 6 Climate Change Model Development – Gary Shenk, USGS-CBPO
Gary will review the plan and schedule for the 2019 Phase 6 development and simulation of future climate risk in the Chesapeake watershed and tidal Bay. The climate change presentations today and tomorrow will have an associated request for approval by the Modeling Workgroup for inclusion into the 2019 CBP climate change assessment. Gary will review (1) phosphorus loss in agricultural and natural lands, (2) BMP effectiveness changes, and (3) land to water and stream to river under climate change conditions and (4) estimated loads from tidal flood inundation.

10:30 Estimated Nitrogen Speciation Changes Under Future Climate Hydrology – Isabella Bertani, UMCES
Isabella will review an approach to estimate the response of nitrogen speciation, characterized as the ratio of NO_3/TN, to climate change driven changes in hydrology and TN loads.

11:00 Estimated Changes in Nitrogen Export Under Future Climate Hydrology – Isabella Bertani, UMCES
The multiple lines of evidence for the percent change in nitrogen delivery relative to percent change in flow will be reviewed.

11:30 Estimated Changes in Phosphorus Export from Developed Land Under Future Climate Hydrology – Isabella Bertani, UMCES
The influence of climate change-driven changes in hydrology on TP loads from developed land uses using both a literature review of small-scale studies that have simulated flow and TP loads under climate change scenarios in predominantly developed watersheds and an empirical analysis of data from the National Stormwater Quality Database will be examined.

12:00 Estimated Atmospheric Deposition Inputs for 2019 Climate Assessment – Gopal Bhatt, Penn State and Jesse Bash, EPA-ORD

The estimated changes in wet and dry deposition of nitrogen under future climate change conditions will be reviewed.

12:30 Blue Sky Flooding in Tidal Regions – Margaret Mulholland, Old Dominion University

The combination of sea level rise and sinking coastlines in Chesapeake tidewater regions contributes to frequent temporary inundations of low-lying developed areas during exceptionally high tide events. Efforts being initiated to quantify the nutrient loads associated with blue sky flooding will be discussed.

12:50 LUNCH

1:50 Scenario Optimization Tool for CAST – Daniel Kaufman, CRC

Danny will provide an update of the ongoing development and improvement of a CAST BMP optimization tool. A second Beta version of VICO will be reviewed and plans for a further Beta version in January 2020 will be discussed.

2:10 Evaluating the Impacts of BMPs on Water Quality Using Privacy-Protected USDA BMP Data in a SPARROW Model -- Olivia Devereux, Devereux Consulting and Andrew Sekellick, USGS

Olivia and Andrew will present preliminary results on the estimated influence of USDA BMPs on the water quality using the 2012 SPARROW Regional Model. The methods, results, and considerations for future work will be discussed

2:40 ADJOURN

Modeling Workgroup Quarterly Review

October 9, 2019

CBPO Conference Room - The Fish Shack
410 Severn Avenue Annapolis, MD 21403

Event webpage:
https://www.chesapeakebay.net/what/event/modeling_workgroup_october_inperson_meeting
For Remote Access:
Zoom Link: https://zoom.us/j/571049275
Phone number: 929-205-6099 **Meeting ID:** 571-049-275

10:00 Announcements and Amendments to the Agenda – Mark Bennett, USGS and Dave Montali, Tetra Tech

10:05 Estimated Tidal Wetland Loss with Future Sea Level Rise – Carl Cerco, Attain
The approach used to estimate the influence of tidal wetland loss with sea level rise on nutrient and sediment loads will be reviewed.

10:30 Impacts of Sea Level Rise on Chesapeake Hypoxia: A Multiple Model Intercomparison Project – Lew Linker, EPA-CBPO
Lew will summarize the work Pierre St-Laurent (VIMS) presented last meeting on a multiple model intercomparison project will be presented comparing the WQSTM results to the results of other models with equivalent sea level rise (SLR) projections, as well as to evaluate them relative to what would be expected with theory.

11:00 Tidal Water Column Response of Temperature Under Climate Change – Richard Tian, UMCES
The simulation of the response of water column temperature changes under estimated future climate conditions will be described.

11:30 IDF Curve – Tom Schueler and David Wood, Chesapeake Stormwater Network
Tom and Dave will provide an overview of work directed toward maintaining the resiliency of stormwater management and restoration practices with future climate change. The first year's work will lay the foundation for a multi-year effort by the Chesapeake Bay Partnership to develop engineering and management solutions to maintain and enhance the pollutant reductions from these practices.

12:00 LUNCH

1:00 Potomac Tributary Assessment – Jeni Keisman, USGS
An initial assessment of coastal plain nutrient and sediment loads and their influence on Potomac water quality will be presented.

1:30 Developing County Level Load Time Series – Robert Sabo and Emily Trentacoste, EPA, Qian Zhang, UMCES with Cuiyin Wu and Breck Sullivan, CRC
A project that will develop county level time series of nutrient and sediment loads for all counties of the Chesapeake watershed will be presented.

2:00 ADJOURN