Modeling Quarterly Review Meeting
Airshed and Watershed Modeling

February 14, 2017
CBPO Conference Room - The Fish Shack
410 Severn Avenue Annapolis, MD 21403

For Remote Access:
Adobe Connect: https://epawebconferencing.acms.com/modeling (enter as guest)
Conference Line: (866)-299-3188 Code: 267-985-6222
Event webpage: http://www.chesapeakebay.net/calendar/event/24718/

10:00 Announcements and Amendments to the Agenda – Dave Montali, WVDEP and Lee Currey, MDE

10:05 Phase 6 Fatal Flaw Review Briefing –Dave Montali, WVDEP and Gary Shenk, USGS-CBPO
Outcomes of the WQGIT discussion on the process for conducting the fatal flaw review of the suite of Phase 6 modeling tools will be discussed and consensus will be sought.

10:20 Modeling Workgroup Schedule Update – Lew Linker, EPA-CBPO
An updated Phase 6 development schedule will be presented with major milestones getting to the April 2017 release of the CBP models.

10:40 Summary of Phase 6 Progress Over Last Quarter – Gary Shenk, USGS-CBPO and Gopal Bhatt, PSU
The overall progress of the Phase 6 Model will be discussed.

11:10 Analysis of Conowingo Sediment Pool Model Output – Qian Zhang, UMCES
Analysis of the SS, TP, and TN outputs from the Conowingo Pool Model (CPM) will be presented including a comparison of concentration and flow evolution among observations, WRTDS, and the CPM. In addition, a comparison of storm events, i.e., Sep 2004, Jun 2006, Mar 2011, and Sep 2011 flux among observations, WRTDS, and CPM will be presented.

11:45 Understanding Phase 6 Loads from Non-Forest Land Uses That Are Lower Than Forest Loads– Olivia Devereux, Devereux Consulting
Loads from land uses other than forest sometimes are lower than forest loads. The circumstances that cause this to arise and the frequency of occurrences will be discussed.

12:00 LUNCH

12:30 Update on WEP and the History of Soil P Andrew Sommerlot, UMCES
Application of Phase 6 changes to accommodate Water Extractable Phosphorus (WEP) sensitivity as well as the combined use of APLE and observed data to derive a history of soil P for each land use and county will be presented

12:45 Initiation of CAST Optimization Tool – Bill Ball, CRC
Plans for developing the CAST optimization tool for the CBP partnership in support of the 2017 Bay TMDL Midpoint Assessment and ongoing support of the partnership's ability to develop and revise implementation plans will be discussed.

1:00 James River Chlorophyll Model – Jian Shen, VIMS
A modeling initiative that will provide a detailed James River Model of chlorophyll in the CBP suite of models will be introduced. The CBP Modeling Workgroup will assist DEQ and VIM in getting the model set up with watershed, airshed, and Bay/James boundary conditions and will also provide scenario operations for the James watershed with the Phase 6 Model. A challenge will be the development of draft nutrient reduction targets (including James R.) by June 2017 and final nutrient reduction targets (including James R.) by the close of 2017. (By September 2018, the draft Phase III Watershed Implementation Plans for the James watershed will be due and all the WIPs will finalized in January 2019.)

1:45 Projected 2050 Model Simulations for the Chesapeake Bay Program – Jesse Bash, EPA – Computation Exposure Division
Progress to date and plans for the dynamically downscaled historic and 2050 CMAQ scenarios will be described. The CMAQ scenario estimates will be used to inform the 2017 Chesapeake Bay Midpoint Assessment. The modifications to the modeling system to support dynamically downscaled meteorology and CMAQ scenarios with a focus on deposition will be presented. Progress on the 2011, 2017, 2025, and 2030 simulations will be discussed.

2:20 ADJOURN

Modeling Quarterly Review Meeting
Estuarine & Ecosystem Modeling

February 15, 2017
CBPO Conference Room - The Fish Shack
410 Severn Avenue Annapolis, MD 21403

For Remote Access:
Adobe Connect: https://epawebconferencing.acms.com/modeling (enter as guest)
Conference Line: (866)-299-3188 Code: 410-267-5731
Event webpage: http://www.chesapeakebay.net/calendar/event/24718/

10:00 Announcements and Amendments to the Agenda – Lee Currey, MDE and Dave Montali, WVDEP

10:05 WQSTM Calibration to Phase 6 *Beta* 4 Loads – Carl Cerco, U.S. CoE ERDC (Ret.)
Carl will review the WQSTM calibration to the Phase 6 Beta 4 loads.

10:45 Oyster Scoping Scenarios of Aquaculture, Sanctuaries, and Natural Bars – Carl Cerco, U.S. CoE ERDC (Ret.)
An initial scoping assessment of the influence oysters have on Chesapeake water quality will be presented. The oyster biomass will be differentiated by an aquaculture biomass which will be limited to depths of no more than 12 feet and salinities of 7 ppt or greater. Oyster biomass in sanctuaries and wild populations will also be differentiated. A simulated 10-fold increase in the 2016 estimated biomass will be used examine an extreme case of aquaculture buildout.

11:30 Water Quality Sediment Transport Model (WQSTM) Accuracy Assessment – Greg Busch and Guido Yactayo, MDE
Initial results from a review of the Chesapeake Bay Model framework in order to evaluate the appropriateness of the framework for fulfilling Maryland's responsibilities under Section 303(d) of the Clean Water Act will be presented. Maryland uses elements of the framework to address impairments in both the Chesapeake Bay and the State's non-tidal waters. The final findings of the review will recommend improvements to the framework for Phase 6 and subsequent model iterations.

12:00 LUNCH

12:30 Development of Fine Scale Land Use for the Phase 6 Model – Peter Claggett, USGS
Development and application of the one meter fine scale land use [amazing!] to CBP management support will be presented.

1:30 2025 and 2050 Climate Change Analysis – Richard Tian, UMCES
The WQSTM Beta 4 assessment of water quality attainments under 2025 & 2050 climate change results will be presented.

1:50 Outline of climate change analysis – Kyle Hinson, CRC
During the summer of 2017 the analysis of the effect climate change has on water quality using different Representative Concentration Pathways (RCPs), i.e., different climate model forcing based on potential future socio-economic and natural scenarios, will be examined. The plan for the expanded examination of RCP 4.5, RCP 2.6, and RCP 8.5 scenarios using estimates for the 10th and 90th percentiles of precipitation and temperature will be presented.

2:05 Chester River Shallow Water Model – Jeremy Testa, UMCES
Jeremy will present the findings of a shallow water modeling project that included an analysis of long-term biogeochemical data which revealed two opposing trends in chlorophyll-a, including a long-term decline in the upper estuary and a long-term increase in the lower estuary. The underlying reasons for these trends as well as other findings of the model regarding benthic algae dynamics in shallow water will be discussed.

2:30 CHAMP: Chesapeake Hypoxia Analysis and Modeling Program – Marjorie Friedrichs (VIMS)
Marjy will describe the initiation of the CHAMP Project which is a five-year development of a multiple model framework for managing Chesapeake nutrient reductions in the face of a changing climate. The two overarching goals of the proposed work are to quantitatively predict: (1) the impacts of future changes in climate and anthropogenic nutrient inputs on the spatial and temporal extent of hypoxia in the Chesapeake Bay and (2) the impacts of climate change on the effectiveness of various alternative management actions designed to reduce hypoxia and improve water quality.

2:45 ADJOURN