Record of Modeling Workgroup Decisions

January 28, 2015

Use of NLDAS Rainfall for Phase 6

The change of XYZ precipitation input to NLDAS precipitation input provided quantifiable improvements to the Phase 6 hydrology calibration and was adopted by the Modeling Workgroup on April 1, 2015.

Supporting documentation and presentations:

Attachment K: Gopal Bhatt - Phase 6 Watershed Model Prototype - 20140723

Attachment D: Gopal Bhatt - Prototype Phase 6 Watershed Model 20140401

Improved Phase 6 Sediment Calibration Decision Rules

New sediment calibration rules were demonstrated to improve Phase 6 sediment calibration and were adopted on April 1, 2015.

Supporting documentation and presentations:

Attachment K: Gopal Bhatt - Phase 6 Watershed Model Prototype - 20140723

Attachment D: Gopal Bhatt - Prototype Phase 6 Watershed Model 20140401

Application of Nutrient Input Nutrient Load - Output Response Sensitivities for Nitrogen

Provisional decision to go forward with recommended Phase 6 nitrogen sensitivities was made on January 28, 2015. The decision was conditional based on a one week (to 2/4/15) "right to revoke". After February 4, 2015 the decision to go forward will be finalized, barring further objections.

Supporting documentation and presentations:

Attachment D: Guido Yactayo - PQUAL Sensitivity to Inputs - 20150128

Application of Nutrient Input Nutrient Load - Output Response Sensitivities for Phosphorus and Phase 6 Phosphorus Simulation Approach

TBD

Supporting documentation and presentations:

Attachment E.2: Gary Shenk and Guido Yactayo - Phase 6 Phosphorous Simulation: Role of APLE in Phosphorus Sensitivities - 20150128

Report: https://archive.chesapeakebay.net/Modeling/phase5/Phase532/Sensitivity/

Attachment G: Peter Kleinman - Phosphorus modeling and legacies in the Bay watershed - 20140930

Attachment F: Zachary Easton - Phosphorus Modeling with Variable Source Hydrology - 20140722

Attachment G: Ken Staver - STAC Review of CBP Watershed Model Phosphorus processes - 20140722

Attachment H: Alisha Mulkey - APLE Phosphorus Model - 20140722

Attachment I: Scott Ator - Spatial Estimates of Phosphorus Transport in the Chesapeake Bay Watershed - 20140722

Attachment L: Peter Kleinman - Phosphorus Modeling and Legacies in the Bay Watershed 20140402

Phase 6 Land Use Targets

TBD

Supporting documentation and presentations:

Attachment J: Olivia Devereux - Progress with Phase 6 Land Use Target Loads - 20150129

Final Phase 6 Land Uses

TBD

Supporting documentation and presentations:

Representation of Phase 6 Storage and Lag Times

TBD

Supporting documentation and presentations:

Attachment C: Ciaran Harman - Representation of Storage and Lag Times in the Chesapeake Watershed - 20150128

Attachment F: Gopal Bhatt - Phase 6 Development Progress - 20150128

Refined Phase 6 Segmentation to Better Represent Rainfall Patterns

TBD

Supporting documentation and presentations:

Attachment L: Howard Weinberg - Refinements to Phase 6 Land Segments - 20150129

Replacing Regional Factors

TBD

Supporting documentation and presentations:

Attachment K: Ross Mandel - Progress in Replacing Regional Factors: A Multiple Model Approach Based - 20150129

Improved Reservoir Impoundment Simulation Including Conowingo

TBD

Supporting documentation and presentations:

Attachment G: Jeff Cornwell - Conowingo Infill Studies - 20150114

Attachment F: Bruce Michael - Ongoing Conowingo Studies - 20150114

Representation of Climate Change Impacts on Chesapeake Water Quality

- Modeling Workgroup decision on January 15, 2015 to accept approach for the representation of 2050 sea level rise and estuary temperature increase (with the proviso that watershed inflows are also represented with estimated 2050 temperature increase).
- Modeling Workgroup decision on January 15, 2015 to accept approach for the representation of 2050 increased storm intensity.
- Other simulated climate change impacts TBD.

Supporting documentation and presentations:

Attachment I: Lewis Linker and Ping Wang - Impact of Warming and Sea Level Rise on Chesapeake Water Quality - 20150115

Attachment J: Gopal Bhatt - Representation of Climate Change in the Chesapeake Watershed - 20150115

Attachment K: Guido Yactayo - Representing Estimated Increased Storm Intensity in the 2050 Climate Change Simulation - 20150115

Attachment L: Venkataramana Sridhar and Choung Hyun Seong - Latest IPCC Downscaled Climate Change Scenarios - 20150115

Improved Representation of Phase 6 Atmospheric Deposition

Modeling Workgroup decision on January 15, 2015 to accept new CMAQ scenarios of 2002, 2010, 2018, and 2025 for application to Phase 6.

Supporting documentation and presentations:

Attachment H.1: Jesse Bash and Robin Dennis - CMAQ Air Scenarios - 20150115

Attachment H.2: Jesse Bash and Robin Dennis - CMAQ Air Scenarios - 20150115

Attachment H.3: Jesse Bash and Robin Dennis - CMAQ Air Scenarios - 20150115

Improved Assessment of Shallow Water Quality Criteria for DO and Clarity for the 20117 Midpoint Assessment

TBD

Supporting documentation and presentations:

Attachment B: Richard Zimmerman - Chester Shallow Water Work - 20150114

Attachment C: Richard Tian - Chester Shallow Water Work - 20150114

Attachment D: Carl Cerco - WQSTM Shallow Water Simulation - 20150114

Tian - Update on Chester River Shallow Water Simulation

Attachment O: Jeremy Testa - Biogeochemical Modeling in Shallow Estuarine Ecosystems - 20140723

Improving the Representation of Oyster Aquaculture and Sanctuaries

TBD

Supporting documentation and presentations:

Attachment L: Carl Cerco - Calculation of Oyster Benefits with a Bioenergetics Model of the Virginia Oyster - 20140723

Attachment A: Cornwell - Oyster Restoration, Aquaculture and Nitrogen Removal - A Biogeochemist's Perspective - 20140401

Attachment M: Carl Cerco - WQSTM Oyster Simulation 20140402

Assist Virginia in the Reassessment of James Chlorophyll Simulation and Criteria

TBD

Supporting documentation and presentations:

Attachment K: Arthur Butt - VA's James River Chlorophyll Study - 20140108

Attachment J: Andrew Parker - James River Watershed Modeling - 20140108

Refined and Updated Water Quality and Sediment Transport Model

TBD

Supporting documentation and presentations:

Attachment E.1: Carl Cerco - WQSTM WQM Progress - 20150114

Attachment E.2: Carl Cerco - WQSTM WQM Progress - 20150114

Attachment K: Carl Cerco - WQSTM Simulation from 1991 to 2011 - 20141001

Attachment L: Carl Cerco - Nutrient Loads from Tidal Shoreline Erosion - 20141001

Attachment M: Carl Cerco - Extension of the WQSTM to 2011 - 20140723