Chesapeake Bay Program Partnership

Midpoint Assessment Master Schedule – High and Low Priorities

Level of WQGIT Priority	Title & Level of Priority	Lead Partner/ Supporting Partner(s)	Deliverable(s)	Start Date	Completion Date
High	Model data processing	**AgWG** / Modeling Workgroup, STAR, WQGIT	• MPA modeling workshop – recommendations of prioritization of improved model data processing • Development of prioritized model data processing methods	• Early 2013 • Spring 2013	• Spring 2013 • Prior to 2016 recalibration of Phase 6
High	Modeling baseline/input data assumptions	**AgWG** / Modeling Workgroup, STAR, WQGIT	• MPA modeling workshop – (1) identification of existing datasets and (2) recommendation of the development of new datasets to support enhanced analyses and decisions	• Early 2013 Bring before the WQGIT in November 2013	• Prior to 2016 recalibration of Phase 6
High	Improve spatial, temporal, and categorical representation of urban, ag, federal, and natural land uses and assign separate loading rates	**LUWG** / AgWG, Forestry WG, USWG, WTWG, WQGIT	• Inventory local LULC across Bay watershed, 1980-present • Explore issues and develop protocol for using local LULC • Explore methods for developing probabilistic estimates of LULC • Explore backcasting and forecasting options (1984 – 2017) • Explore forecasting options for 2015	• January 2013 • January 2013 • June 2013 • June 2013 • December 2013 • January 2013	• March 2013 • December 2013 • December 2013 • June 2014 • December 2014 • March 2013

			• Compile suggested changes to LULC classes • Develop categorical crosswalk between local and CBP LULC • Explore feasibility of assigning loading rates to potential new LULC classes • Develop/implement methods and evaluate data of mapping new LULC classes • Develop protocol for reconciling local LULC with Census Ag • Develop impervious surface and tree canopy coefficients for relevant LULC classes • Evaluate land use generalizations, assumptions, and scenarios • Review results of applying new data/methods to CBP models and compare with local models • Finalize land use dataset and submit to WQGIT for approval	• March 2013 • March 2013 • March 2013 • April 2013 • March 2013 • March 2013 • April 2014 • January 2015	• July 2013 • March 2014 • December 2014 • July 2013 • July 2014 • July 2014 • December 2014 • April 2015
High	Revise watershed modeling system structure. The detailed Phase 6 Watershed Model Workplan can be found in Appendix A.	**Modeling Workgroup** / CBP Modeling Team, WTWG, Sector WGs, WQGIT	• Make copy of current Phase 5.3.2 Model and convert all AGCHEM modules into PQUAL modules • Sensitivities of P5.3.2 land use nutrient exports to input nutrient loading will be derived for all land uses in all land-segments • Key scenarios to be run with prototype Phase 6 model so it matches Phase 5.3.2 model	• December 2012 • November 2012 • October 2013 Task will be initiated after	• Completed • Completed • November 2013

				refinements to input-output sensitivities and extension of P6 Prototype to 1991-2000 hydrology.	
			• Preparation of documentation of functions describing the sensitivities	Documentation of Phase 5.3.2 sensitivities complete in BaseCamp and Mod WG presentations. Documentation of SPARROW and SWAT sensitivities underway.	• Ongoing
High	Revisit Watershed Model calibration methods, including regional factors; and revise Airshed and WQSTM	**Modeling Workgroup** / CBPO Modeling Team, WTWG, Source Sector Workgroups, WQGIT	• Develop/apply/calibrate data set for Phase 6 simulation period (1985-2011)	• Prototype Phase 6 completed for 2002-2011 simulation period	• Prototype Completed
			• Apply/calibrate new calibration stations	• Ongoing	• Ongoing. Completion date dependant on Phase 6 segmentation decisions.
			• Assessment in changes to change	• March 2013	• Completed. New

			in hydrology from previous two deliverables will be quantified and documented		NLDAS hydrology demonstrably improved calibration
			• Adjustments to input load/export sensitivities, changes in regional factors, and other changes will be made to examine practicality of providing more rational approach to regional factors. This task is being completed with assistance from ICPRB/MDE.	• April 2013	• January 2015
			• Complete documentation of input load/export sensitivities, changes in regional factors, and other changes	• Ongoing	• January 2015
			• Presentation of refined prototype Phase 6 model for review and approval by Modeling WG and WQGIT	Review ongoing by Modeling WG and anticipated review of Phase 6 Prototype scheduled for January 2014.	• January 2014
High	Midpoint Assessment and Phase III WIP schedule	**EPA and Modeling WG** / PSC, MB, WQGIT, WQGIT WGs,	• WQGIT recommends schedule for MB and PSC • WQGIT approves presentation on midpoint assessment and schedule, submits to MB and PSC • MB approves presentation and schedule for submission to PSC		• October 2012 • November 2012 • November 2012

			• Presentation of midpoint assessment recommendations and schedule to PSC for concurrence		• December 2012
High	Trapping capacity behind dams , esp. Susquehanna, and greater capture of local impoundments and reservoirs	**STAR** / USACE, CBPO Modeling Team, USGS, USWG, AgWG, MDE, DNR, other Bay jurisdictions	• USACE Lower Susquehanna River watershed study • Use results and new models from USACE study to address any remaining issues about Conowingo • Analysis of sediment and nutrient trends at selected upstream sites of the Lower Susquehanna Reservoir System • Analysis of changes in the upper bay related to water quality standards • Communication of how large events impact the Bay • USGS to work with CBPO modeling team to test significance of trapping sediment and associated phosphorus by the increased number of reservoirs using Watershed Model and SPARROW model • Consider approaches to better represent stormwater and farm ponds as BMPs in the Watershed Model	• September 2011 • 2013 • 2013 • 2013 • 2013 • 2013 • 2014	• December 2014 • 2015 • 2015 • 2015 • 2015 • 2016 • TBD
High	Improved modeling accuracy of land use characteristics,	**USWG** / LUWG	• Improve characterization of urban land use with	• 2013	• 2015

	phosphorus, and sediment		differentiating loading rates		
Low	How to credit 60% by 2017, including programmatic progress and timing of assessment	**EPA** / Milestones WG, WQGIT	• None	• N/A	Complete
Low	Timeline for establishing EPA's expectations for Phase III WIP	**EPA / CBP Partnership**	• Evaluate progress through 2017 and attainment of the "60% by 2017" goal • Refine decision-support tools, as appropriate, to enhance the evaluation of progress and crediting of actions on the ground • EPA presents preliminary expectations and seeks initial input from WQGIT and its workgroups on expectations for Phase III WIPs • EPA presents preliminary expectations and seeks input from Management Board on expectations for Phase III WIPs • Calibrate "proposed final" modeling updates • EPA presents preliminary expectations and seeks input from PSC on expectations for Phase III WIPs • EPA presents preliminary expectations and seeks input from PSC on expectations for Phase III WIPs • EPA presents updated	• Fall 2016 (for all)	• March 2018 • September 2016 • October 2016 • December 2016 • December 2016 • Winter 2017 • Winter 2017 • March/April

			expectations and seeks input from WQGIT and Management Board on expectations for Phase III WIPs • EPA presents updated expectations and seeks input from PSC Board on expectations for Phase III WIPs • Test any refinements and, to the extent possible, assess model certainty and scope for using modeling tools within the WIP and milestone process • Based on input from the Partnership, EPA provides expectations for scope and content of Phase III WIPs • Make any final modifications in response to Step 7 testing and set Phase III WIP planning targets • Develop 2018-2019 Milestones • Develop draft and final Phase III WIPs based on criteria for scope and content that may vary across jurisdictions due to implementation progress		2017 • May 2017 • June 2017 • June 2017 • December 2017 • Early 2018 • June 2018 and December 2018
Low	Improve communication about the role of forests in attenuating the nutrient loads to Bay tidal waters from air deposition, esp. of nitrogen compounds	**Forestry WG** / CBP modeling team and communication team	• Revised CBP website presentation on air pollution to incorporate subject of forest attenuation	• February 2013	• July 2013

Low	Review and refine modeled assumptions about forests	**Forestry WG** / State forestry agencies, Modeling Workgroup	• Complete Verification Protocol with state-specific documentation of current and planned future methods to track, report and verify forest harvest BMP practices • Work with Modeling Team on basic data criteria for jurisdictions to report actual acres of forest harvest • Call with state reporting leads for forest harvest BMPs to begin review data sources • Get workgroup recommendations for BMP expert panel members and key literature • Convene BMP expert panel and develop recommendations • Work with jurisdictions and Modeling Team on decisions regarding what forest harvest data sources, % rates will be used in future years	• February 2013	• March 2013 • March 2013 • December 2013 • September 2013 • September 2014 • December 2014
Low	Enhanced use and explanation of monitoring data for the TMDL midpoint assessment	**STAR** / USGS, CBP modeling and monitoring teams	• USGS report on flow-normalized trends in nutrient and sediment loads • Annual update of water-quality trends in watershed and Bay (Bay Barometer and supporting indicators • Lessons learned on BMPs implementation and water-	• October 2012	• January 2013 • January 2013 • Spring 2013

			quality improvements • Factors affecting nutrient trends in nontidal waters on the Eastern Shore (USGS, Dec. 2013) • Factors affecting nutrient and sediment trends in nontidal watershed in the Potomac basin • Factors affecting nutrient and sediment trends in nontidal watershed in VA Rivers • Response of tidal waters in selected estuaries (ones listed for USGS/CBP reports)		• December 2013 • 2016/2017 • 2016/2017 • TBD
Low	Establishment and update of BMP definition and efficiencies	**AgWG** / Modeling Workgroup, STAR, and WQGIT	• Evaluation of Partnership prioritized BMPs • BMP definition and effectiveness value recommendations	• Ongoing • Ongoing	• Prior to 2016 recalibration of Phase 6 (for both deliverables)
Low	Bay TMDL Modification (if determined necessary	**EPA** / Chesapeake Bay Program	• Modifies TMDL in prep for public notice • Releases draft modified TMDL for public notice • Revises TMDL based on public comments • Establishes final TMDL	• Early 2019 • Summer 2019 • Late 2019	• Early 2020
Low	Algal Turf Scrubbers BMP Panel	**WTWG** / Chesapeake Bay Program	• Draft Report submitted to source sector workgroups for review • Draft Report submitted to WQGIT for review	• July 2013 • September 2013	
Low	Accurate representation of federal land boundaries and land uses within those boundaries	**LUWG** / CBP Federal Facilities Team & Modeling Workgroup	• Discussion of data requirements • Discussion of data collection options • Develop mechanisms to collect	• February 2013 • February 2013	• February 2015 • February 2015

			and refine data	• February 2013	• February 2015
Low	Accounting for trades and offsets in BayTAS	**EPA** / Bay jurisdictions, TOWG, and WWTWG	• Design of trading/offset tracking features in BayTAS	• 2013	• 2014
Low	Determine delivery factor changes impact on jurisdictions' trading and offset programs	**TOWG** / Bay jurisdictions and Modeling Workgroup	TBD	• 2013	• 2017
Low	Use growth projections to estimate offset demand	**TOWG** / LUWG and Bay jurisdictions planning & economic development offices	TBD	• 2013	• 2014
Low, but a required task described in the 2010 TMDL documentation (Chesapeake Bay TMDL, 2010. Section 10.5).	Influence of climate change on WQS and the Bay TMDL	**Modeling Workgroup** / EPA Global Change Research Program, Penn State, UMD, and USGS	• Results from the Robust Decision Making (RDM) Analysis • Results of Penn State analysis of climate change • Results of UMD analysis of climate change impacts on Patuxent watershed and estuary • Results of USGS analysis of Chesapeake watershed hydrology under future climate change conditions	• January 2012 Ongoing support for 7 separate PIs from EPA, Penn State, UMD, USGS, JHU, UVA	• December 2017. CBP decisions on the influence of climate change on CB TMDL scheduled for 2017 Midpoint Assessment.
Low	Develop Trading and Offset Technical Memorandum	**EPA (Region 3 & CBPO)** / EPA HQ, USDA, STAC, Bay jurisdictions, WQGIT Workgroups, BMP Verification Panel	TBD	• July 2012	TBD
Low, but a required task described in the 2010 TMDL documentation (Chesapeake Bay TMDL,	Affects of Conowingo infill on Chesapeake Bay WQS	**Modeling Workgroup** / USACE and STAR	• Lower Susquehanna River Watershed Assessment study • STAC workgroup proposal • Land use characterization of small impoundments and associated drainage area	• 2013 initiate a series of CBP model runs in support of LSRWA analysis of Conowingo infill.	• Lower Susquehanna River Watershed Assessment (LSRWA) report released to public in March

2010. Section 10.6).				• CBP decisions on the influence of Conowingo infill on CB TMDL scheduled for 2017 Midpoint Assessment.	2014. • Modeling support for CBP decision on Conowingo infill until December 2017
Low, but a required task described in the 2010 TMDL documentation (Chesapeake Bay TMDL, 2010. Section 10.7).	Influence of oyster filter feeders on water quality, with increased aquaculture and sanctuary development	**Modeling Workgroup**	• Oyster analysis • Mapping of current/projected data on biomass distribution and abundance • Revisions to oyster model	Work will begin on this task in 2014 to estimate water quality benefits of increased oyster biomass due to sanctuaries and expanded aquaculture	The analysis is expected to continue through 2014 and will provide the quantitative foundation for further evaluations of filter feeders influence on water quality, as directed by CBP decision makers, during the 2017 Midpoint Assessment
Low, but a required task described in the 2010 TMDL documentation (Chesapeake Bay TMDL, 2010. Section 6.5.4).	Refinement of shallow water simulation for improved assessment of open water DO and SAV/clarity standards	**Modeling Workgroup** / STAC	• Comparison of different models applied to shallow-water systems by different teams • Model representation of shallow-water regions in WQSTM	August 2013 Status: Funding has been identified for multiple shallow water modeling and an RFP is being prepared. Work on improved simulation of the shallow water regions has begun	Ongoing task of the Modeling Workgroup that will be completed with final delivery of the WQSTM in December 2015

				with an extension of the WQSTM to 2011 and the first comparison of shallow water monitoring observations and model simulations.	
Low but a required task described in the 2010 TMDL documentation (Chesapeake Bay TMDL, 2010. Section 10.3)	Review James River chlorophyll criteria and James River TMDL allocations	**Modeling Workgroup** / VADEQ	The EPA CB Modeling Workgroup will provide ongoing technical support for the VADEQ modeling effort coordinated though regular update reports at Modeling Quarterly Reviews as well as through other meetings and coordination forums as required.	The work was initiated in 2012 and will be an ongoing task.	The James chlorophyll modeling will be completed in December 2015 with TMDL allocations and chlorophyll criteria review conducted during 2016.