

Modeling Workgroup Update to the WQGIT Phase 6 Review Process

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Key Points

- Modeling workgroup is committed to delivering a Phase 6 model by the end of this calendar year
- The Phase 6 model build upon the historic modeling within the Bay partnership and brings in new science where warranted
- 2016 is the year of review. There are many “dependencies” that impact the completion schedule so we need to map out the review process now, recognize the dependencies and ensure timelines are followed

Completing the Phase 6 Model

- **The development and application of Phase 6 is driven by**
 - the feedback of WQGIT members,
 - recommendations from STAC and
 - recent advancements and understanding of nutrient/sediment monitoring, research and modeling.
- **It is a partnership model. Because of this, the finalization of Phase 6 has**
 - peer and stakeholder reviews and also
 - many dependencies that must be factored into the next year and a half.

Beta Version to Final Version

- The similarity of the Jan 2016 model compared to the final model applied in the Phase III WIP is going to be largely dependent upon the following items
 - the STAC reviews
 - the extent of input information the WQGIT provides the modeling WG by Sept 2015
- Modeling versioning will likely be
 - Phase 6 Beta 1 - Jan 2016
 - Phase 6 Beta 2 – April 20156
 - Sept 30 – final deadline – ALL INPUT MUST BE IN!
 - Phase 6.0 Jan 2017

Major 2016 Model development dependencies

- **Dependencies**

- **Modeling WG**

- **STAC Workshops and Peer Reviews: 2016**
 - **Conowingo monitoring data: 2015 -16**
 - **Wetlands**
 - **Atmospheric deposition**

- **WQGIT**

- **Landuse: Sept 2016**
 - **Historic BMP information**
 - **BMP efficiencies**
 - **Poultry Litter Subcommittee - Manure application and mass balance**
 - **BMP verification**

Timelines¹ for Phase 6 BMP Expert Panels

Phase 6 BMP Expert Panel	Draft Report for Partnership Review	Anticipated Partnership Approval Date
Agriculture		
Manure Treatment Technologies	October 2015	January 2016
Animal Waste Management Systems	January 2016	April 2016
Nutrient Management	April 2016	August 2016
Cover Crops	April 2016	August 2016
Conservation Tillage	April 2016	August 2016
Manure Injection/Incorporation	April 2016	August 2016
Cropland Irrigation Management	TBD	TBD
Agricultural Stormwater Structures	TBD	TBD
Urban/Suburban Stormwater		
Street and Storm Drain Cleaning	October 2015	December 2015
Floating Treatment Wetlands	December 2015	March 2016
Urban Tree Canopy	October 2015	February 2016
Impervious Disconnection	April 2016	August 2016
New Bioretention Designs	TBD	TBD
Wastewater		
Onsite Treatment Systems II	October 2015	January 2016
Other		
Wetlands (restoration)	January 2016	April 2016
Wetlands (enhancement/creation)	May 2016	September 2016
Oyster Restoration/Aquaculture	May 2016	September 2016

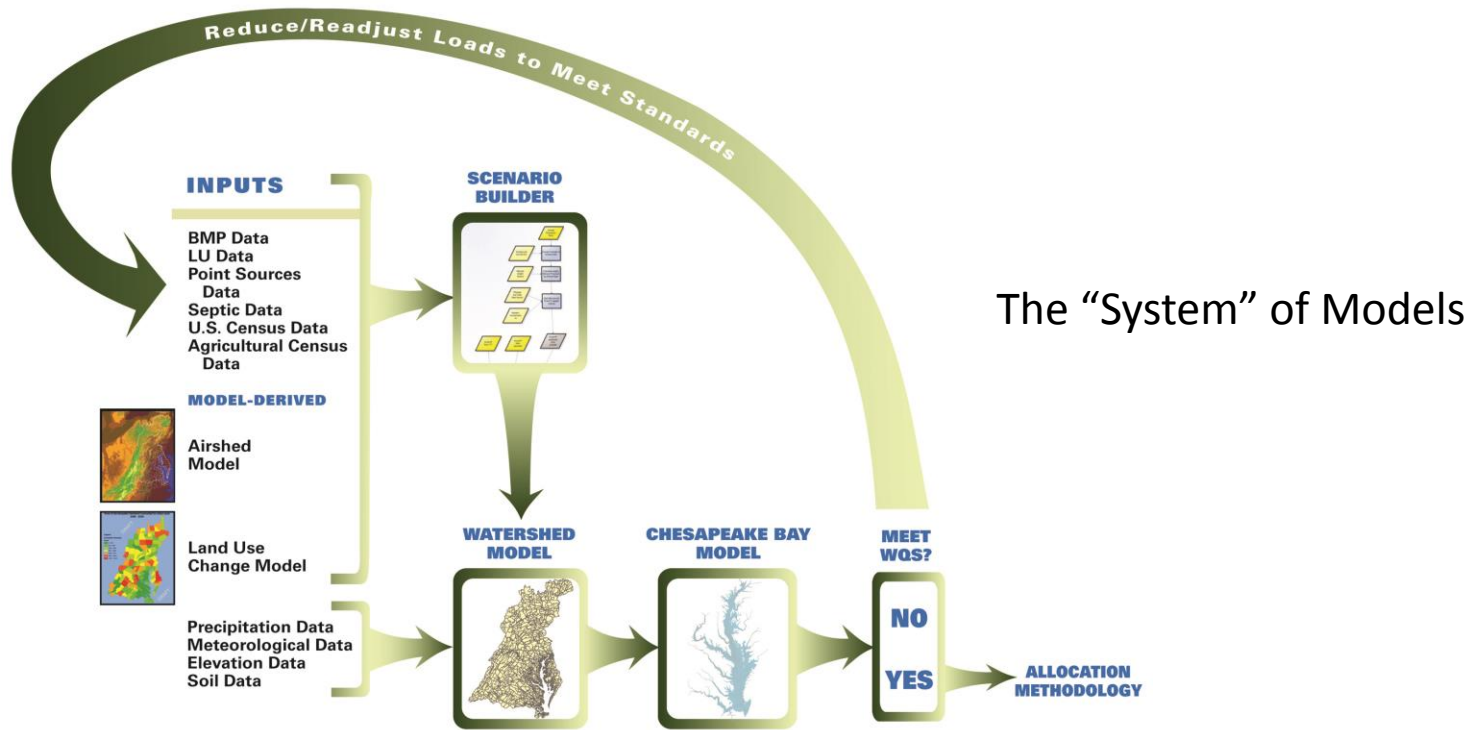
- **Key Points**

- **These dependencies must be factored into the schedule and we must be specific in communicating the impacts they may have through the review process**
 - **The modeling team is providing as much flexibility as possible, recognizing the need to have the best model possible. That said, contingencies will be applied where necessary for the modeling WG to meet the schedule**

Phase 6 Review Will Include

- **Guidance for comparing model versions**
- **Review materials**
- **Stakeholder review**
 - Modeling Workgroup
 - WQGIT, Management Board and PSC
- **Peer review**
 - Independent outside review
 - STAC – watershed model and water quality sediment transport model
- **Dependencies that impact review**

IMPORTANT: Comparing Versions of Models



A note on comparing Phase 6 to Phase 5. In comparing this version of the model to previous versions of the modeling tools, history has shown that a common question is to understand the level of effort required to meet water quality goals. It must be communicated that these models are a suite of models and ultimately must be applied as a complete system to answer this question.

Review Materials

- **Draft Model reports available in January 2016**
- **Calibration Metrics**
 - *Quality of calibration*
 - *Think about what summary information will be needed*
 - *What have we used before?*
- **April 2016 - Key Scenarios to be used for review**
 - *Calibration 1985-2014*
 - *All Forest*
 - *1985*
 - *2009*
 - *2014*
 - *WIP Phase II*
 - *No Action (2010)*

Modeling WG Review

- **The expectation is that consensus will be reached on key model development decision points by workgroup members by the end of CY 2015**
- **The 2016 review process will be:**
 - **1) Internal review by WG members**
 - **2) Seeking consensus that model can be applied by jurisdictions in Phase III WIP development**
 - **3) Developing STAC peer review questions,**

Stakeholder Review

- **WQGIT Review**
 - Schedule briefings throughout the year with the plan of reaching agreement to present to MB and the PSC toward the end of CY 2016 (See draft schedule)
 - After each STAC review and workshop report out to Modeling WG and WQGIT
- **Management Board and PSC**
 - As requested

STAC Peer Review and Workshops

- **What is the difference?**
 - **Peer Review** – Independent review on approach applied...
 - **Workshop** – bring together a diverse group of experts to review and advise on...
- **STAC Schedule**
 - **Feb 2016: Phase 6 watershed model peer review**
 - **Jan/Feb 2016: Uncertainty Approach workshop**
 - **Jan/Feb 2016: Climate Change Approach workshop**
 - **April 2016: Conowingo Modeling Approach workshop**
 - **June 2016: Water Quality Sediment Transport model peer review**

Planning for 2017

- **Scenarios as assigned for WQGIT decision making**
- **Additional climate scenarios**
- **Geographic Isolation Scenarios**
- **Uncertainty analysis**
- **Factors affecting trends**