

Chesapeake Bay Program Mid-Point Assessment

James Davis-Martin
Department of Environmental Quality

Mid-Point Assessment Overview

- Revise Modeling System - 2012 through 2017
- Review, Assess and Accept Modeling System - 2016
- Strengthen Decision Support Tools - 2017
- Evaluate 2017 Progress – 2017/2018
- Develop 2018-2019 Milestones – 2017/2018
- Develop Phase 3 WIPs – 2016 through 2018
- Update TMDL – 2018/2019

Revise Modeling System

- Update Land Use
- Revise Model System Structure
- Improve Representation of the Hydrologic Network
 - Rainfall
 - Streams
 - Reservoirs
 - Groundwater Lag Time
 - Shoreline Nutrients
- Rework Manure Simulation
- Incorporate Verification Framework
- Study James River Chlorophyll-a
- Account for Conowingo Infill
- Consider the Effects of Climate Change
- Use Multiple Models for Shallow Water Simulation
- Improve the Model Calibration Process

Review, Assess & Accept Modeling System

- Review of Modeling System Begins in 2016
 - Q1 – Review model inputs and outputs to identify any fatal flaws and anomalies requiring further investigation
 - Q2 – Conduct Sensitivity Analysis to determine the relative effect of selected variables on loads and water quality
 - Update models to address any identified issues and to incorporate final land use and BMPs
 - Q3 and Q4 – Conduct Uncertainty Analysis to identify and understand the strengths and weaknesses of the modeling system
- Final Approval of v6.x Model in early 2017

Strengthen Decision Support Tools

- Modeling System Documentation and Transparency
 - NEIEN
 - Scenario Builder
 - Watershed Model(s)
 - Water Quality Model(s)
- Expand Use of Monitoring Trends Data
 - Tidal Monitoring Trends – University of Maryland CES
 - Non-Tidal Monitoring Trends - USGS
 - Integrated Trends Analysis Team
- ChesapeakeSTAT
- MAST/CAST/VAST/FAST
 - Update to reflect v6.0 Model
 - Include Scenario Scores for Bay Agreement Goals and Outcomes
- Optimization Module
 - Cost Effectiveness
 - Multiple Benefits to Bay Agreement Goals and Outcomes
 - Consider Modeled and Monitored Trends

Evaluate 2017 Progress

- December 1, 2017 – Report Implementation Progress
- January 2018 – Report on 2016-2017 Programmatic Milestones
- Simulate 2017 Progress using v5.3.2 Model
- EPA 2016-2017 Milestones Assessment
- EPA 2017 60% Reduction Goal Assessment
 - Implemented programmatic enhancements may justify shortfalls
 - Implemented capacity building activities may justify shortfalls
 - Future Milestones and WIP 3 must include shortfall make-up plan
- Simulate 2017 Progress using v6.x Model
 - Needed to inform WIP 3 development

Develop 2018-2019 Milestones

- Jurisdiction Milestone Development
 - Programmatic Milestones
 - Implementation Milestones
- Increased Federal Facilities Participation
- EPA Milestones Assessment
 - Targets Based on Straight Line from 2017 60% to 2025

Develop Phase 3 WIPs

- Develop Basin TMDL Targets
 - Use v6.x Model
- Establish WIP 3 Expectations
 - Interview of Stakeholders for Lessons Learned
 - Bounded by Model Limitations
- Jurisdictions Develop Phase 3 WIPs
- EPA Evaluation of Phase 3 WIPs

Revise TMDL Allocations

- EPA Decision TBD
- Changes in Models, Regulatory Requirements and WIPs are Likely to Necessitate Changes to Bay TMDL Allocations

Mid-Point Assessment Questions

James Davis-Martin; (804) 698 - 4298;
James.Davis-Martin@deq.virginia.gov