2010 Bay Barometer Communication Challenges for the Water Quality GIT Part 2

Presentation to WQGIT

October 25, 2010

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Purpose of Today's Discussions

- Updates on previous recommendations from WQGIT related to Bay Barometer
- Final recommendations related to "2-yr milestone progress reporting": WHAT to report
  - Recommendations to be provided to STAR and CWG
  - Final recommendations (from STAR, CWG and WQGIT) provided to MB for their decision in November or December, 2010
- Discuss other communication challenges for the WQGIT related to 2010 Bay Barometer

Updates on Previous Recommendations from WQGIT Related to Bay Barometer

- MB presenting recommendation to PSC regarding HOW to report progress on 2-yr milestones:
  - Use ChesapeakeStat (not Bay Barometer)
  - Develop printed document, summarizing key information, for use at EC meeting
- STAR agreed with WQGIT recommendations related to Reducing Pollution Indices and Indicators
  - Recommendations from WQGIT, STAR and CWG provided to MB for their decision in November or December, 2010

Challenge II revisited: 2-yr Milestone Progress Reporting: WHAT to Report

- Reporting on actions or load reductions or both?
  - Jurisdictions made commitments for both actions and load reductions
- Timeframe?
  - What is the "reporting window"
- Converting 4.3 to 5.3
  - If we report load reduction progress, how do we account for commitments made using phase 4.3 now that we are using phase 5.3 for BB reporting?

Actions/Loads/Both?
Suggested Options

- For 2010 BB, to be released March 2011 (or via Chesapeake*Stat* and summary document for EC's 2011 mtg, pending PSC decision),
  1. Report *actions* taken in relation to commitments made May 2009.
  2. Report *load reductions* in relation to commitments made May 2009.
  3. Report both
- For 2011 BB, to be released March 2012, (or via Chesapeake*Stat* and summary document for EC's 2011 mtg, pending PSC decision),
  1. Report *actions* taken in relation to commitments made May 2009.
  2. Report *load reductions* in relation to commitments made May 2009.
  3. Report both

Timeframe
Suggested Options (Loads)

- If we report "load" reductions, need to use phase 5.3 model
- Progress runs currently use reported actions taken July through June and submitted in December

1. Compare 2009 and 2011 progress runs
   - 2009 based on actions from July 2008-June 2009
   - 2011 based on July 2010-June 2011
2. Compare 2010 progress run to 2011 progress run
   - 2010 based on actions from July 2009-June 2010
   - 2011 based on July 2010-June 2011

1b. or 2b. Extend 2011 progress run reporting window through Dec 2011 to account for the end of 2-year milestone period

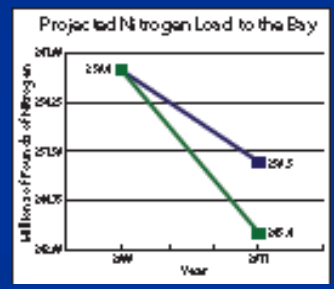
Timeframe
Suggested Options (Actions)

- If we report actions, jurisdictions can track this without using watershed model. However, need to agree on timeframe.
  1. Align w/ Milestone document: May 2009-Dec 2011 (2 yrs, 7 months)
  2. Align w/current progress run reporting windows:
     a. July 2009-June 2011 (2 years)
     b. July 2008-June 2011 (3 years)
  3. Align w/revised progress run reporting windows:
     a. July 2009-Dec 2011 (2 yrs 5 months)
     b. July 2008-Dec 2011 (3yrs 5 months)

How do we account for commitments made using phase 4.3 now that we are using phase 5.3 for Bay Barometer reporting? Suggested Option

- This is an issue if we report "load" reductions

1. Compare the slope of the lines in the published Milestone document charts (based on phase 4.3) to the slope of lines generated for a similar time period using phase 5.3 progress runs
   - Slopes would be converted to percent reductions
   - Percent reduction commitments (using 4.3) would be compared to the percent reductions achieved (using 5.3)



- This option compares % reductions (not simulated load reductions)

Recommendations for WHAT to Report

WQGIT will finalize recommendations on Oct 25th

- Actions/Loads/Both
  - 2010 BB/ChesStat: option 1, 2 or 3
  - 2011 BB/ChesStat: option 1, 2 or 3
- Timeframe (Reporting Window)
  - Loads: option 1, 2, 1b or 2b
  - Actions: option 1, 2a, 2b, 3a or 3b
- Converting 4.3 to 5.3
  - Option 1

Other Water Quality Restoration Communication Challenges

- Clearly communicating pollution concentrations and loads to the bay
- Conflicting expectations about what will be achieved by 2025, in terms of Bay restoration

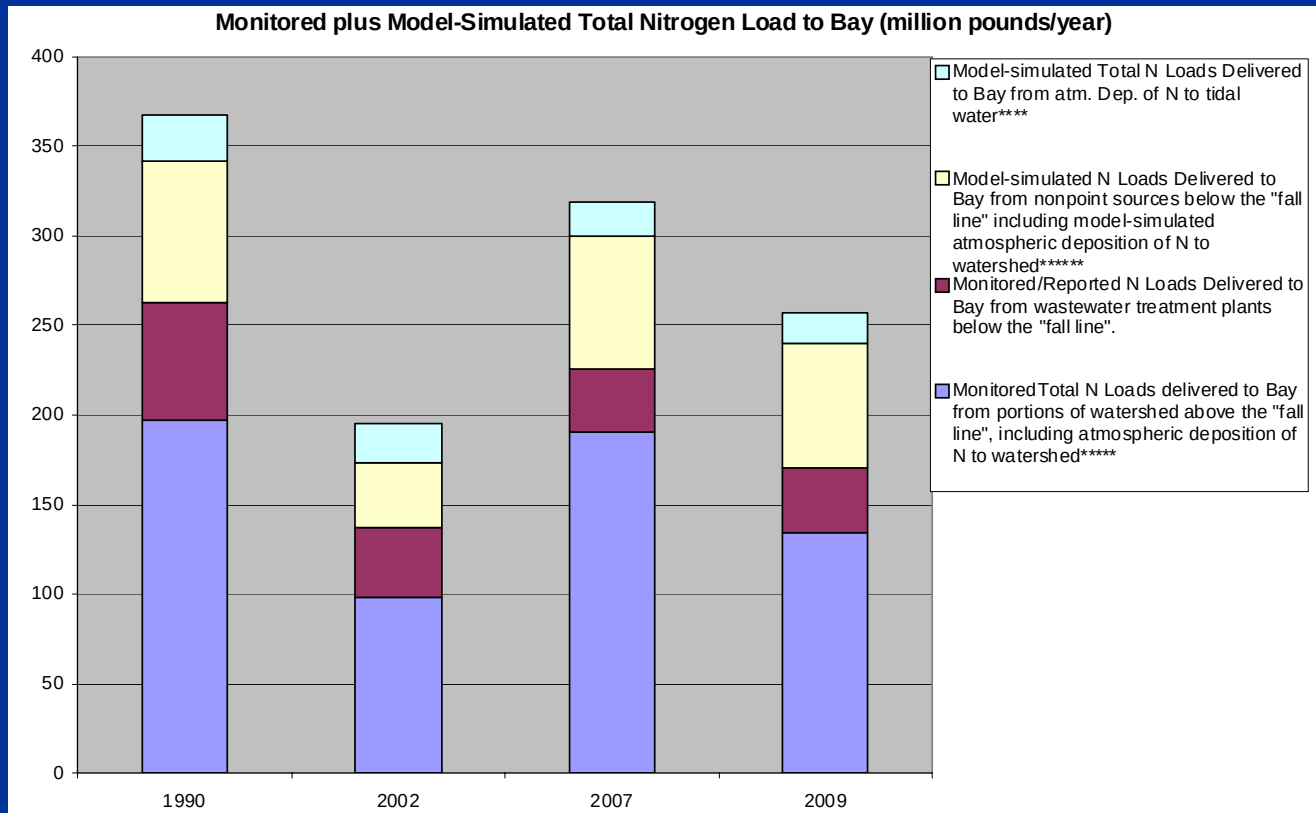
Challenge III: Clearly Communicating Pollution Concentrations and Loads to The Bay

- Why people are confused when we report "load" info:
  - Based on model simulations or annual monitoring data?
  - Model simulations of loads, including atmospheric deposition of nitrogen to watershed (or not)?
  - Model simulations of loads, including atmospheric deposition of nitrogen to tidal waters (or not)?
  - Calculated loads based on monitoring data at the fall-line only (or adding in monitored below-fall-line wastewater loads and simulations of the below-fall-line nonpoint source loads and atmospheric deposition of nitrogen to tidal waters)?
  - Loads or concentrations?

Addressing Confusion:

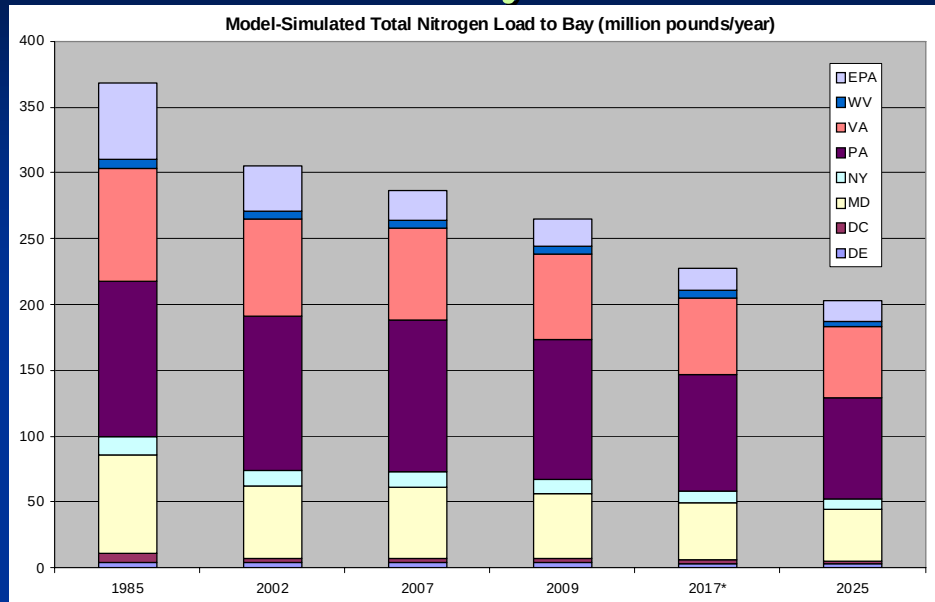
Monitored plus Model-Simulated Loads to the Bay

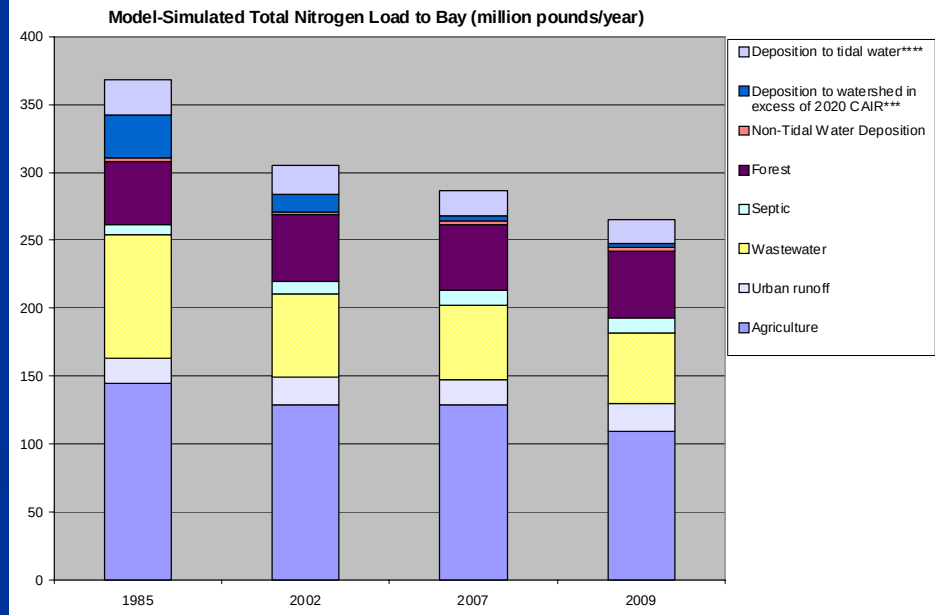
- "Factors Impacting Bay and Watershed Health" section of BB will continue to report loads to the Bay
- Plan to use a split bar chart to show portions based on annual monitoring data and model simulations
- Simulated loads due to atmospheric dep. of nitrogen to tidal waters will be included
- Will report 1990-2010 data for N and P



Addressing Confusion: Model-Simulated Loads to the Bay

- "Restoration Efforts" section of BB will report indicators showing ***model-simulated*** loads to Bay since 1985
- References to "percent of goal achieved" will be calculated using 2009 baseline (for comparing to 60% by 2017 and 100% by 2025).
- Will report additional progress run years (e.g. 2003-2008, 2010)
- Will report for N, P and Sed.

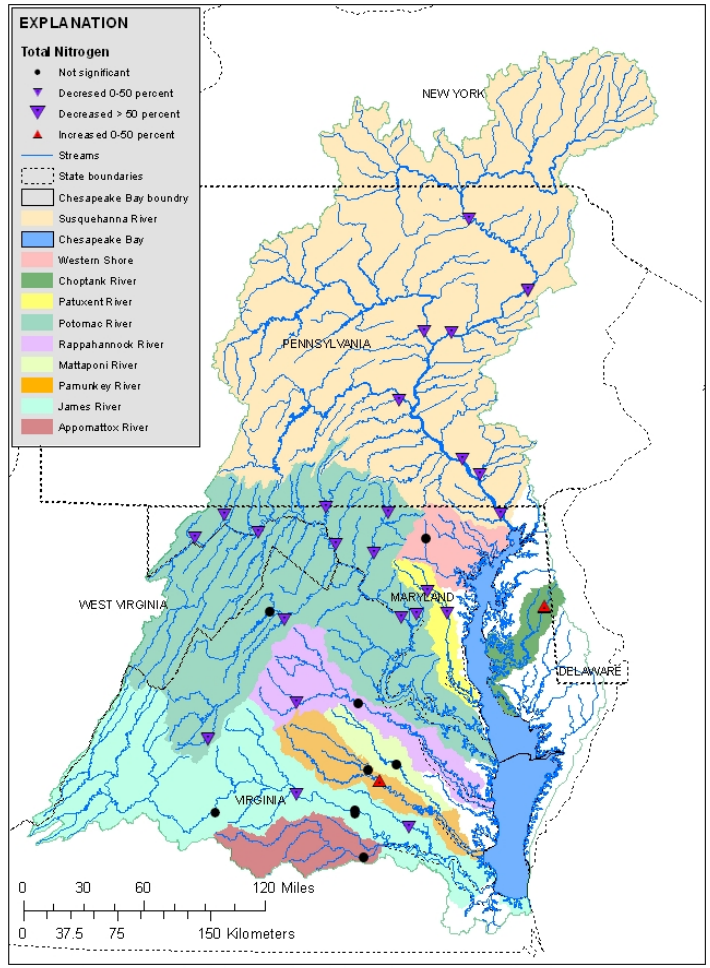




Addressing Confusion:

Pollutant Concentration Trends

- "Watershed Health" section of BB will continue to report flow adjusted concentration (FAC) trends
  - River flow and concentrations of nutrients/sediment are monitored in non-tidal portions of rivers throughout the watershed.
  - FAC trends are calculated from those data



Flow-adjusted trends for total nitrogen for 34 sites in the Chesapeke Bay Watershed, 1985-2008.

Challenge IV: Conflicting expectations about what will be achieved by 2025, in Terms of Bay Restoration

- "…implementation plans that will put in place all necessary actions, by no later than 2025, to fully restore the Bay and tidal rivers…" (Shawn Garvin, 7/1/2010)
- "...limits represent the first major step toward putting the bay states on a "pollution diet" aimed at restoring the Chesapeake's water quality by 2025." (Tim Wheeler, 7/1/2010)
- "2025 deadline to get it [the Bay] in shape" (Karl Blankenship, July/August 2010)
- "…EPA has ramped up its tough talk to convince people that its new cleanup plan, known as a Total Maximum Daily Load, will finally achieve the clean Bay goal, albeit not until 2025." (Karl Blankenship, February 2010)
- "The new goal is to take all actions needed to achieve the elusive clean Bay goal by 2025" (Karl Blankenship, January 2010)
- "Meet water quality standards for dissolved oxygen, clarity/ underwater grasses and chlorophyll-a in the Bay and tidal tributaries by implementing 100 percent of pollution reduction actions for nitrogen, phosphorus and sediment no later than 2025, with 60 percent of segments attaining water quality standards by 2025." (Federal Leadership Committee, May 2010)

Addressing Confusion: What to Expect by 2025

What to Expect by 2025:

- 100% of nitrogen, phosphorus and sediment pollution reduction actions expected to be in place, necessary to fully restore the Bay and tidal rivers.
- Simulated loads in 2025 expected to equal the TMDL allocations
- 60% of Bay tidal water segments expected to attain water quality standards.

What NOT to Expect:

- Bay will likely not be "in shape" and we will likely not achieve a "clean Bay goal" or water quality standards by 2025
  - (it will take time for the ecosystem to respond and for all water quality standards to be attained in all segments of the Bay)

Other Water Quality Restoration Communication Challenges

- Is WQGIT in agreement with recommendations for addressing:
  - Confusion about pollution concentrations and loads to the Bay?
  - Confusion about what to expect by 2025, in terms of Bay restoration?
- Recommendations will be provided to STAR and CWG