Evaluation of Options for a Chesapeake Bay Modeling Laboratory

CB Management Board

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"Establishing a Chesapeake Bay modeling laboratory would ensure that the CBP would have access to a suite of models that are state-of-the-art and could be used to build credibility with the scientific, engineering, and management communities."

- Achieving Nutrient and Sediment Reduction Goals in the Chesapeake Bay: An Evaluation of Program Strategies and Implementation; National Research Council

Modeling Lab Action Team

- The action team's charge:
  - Evaluate of existing modeling laboratories and adaptive management programs that use modeling
  - Addressing how they function and how applicable they are to the Chesapeake Bay Program Partnership
  - Consider a range of options for a Chesapeake Bay modeling laboratory,
    - a virtual laboratory
    - a program reorganization to accomplish recommendations from the NRC, STAC, and the jurisdictions

Modeling Lab Action Team

- The action team's charge:
  - Develop options and recommendations for institutional sponsorship and laboratory function
  - Assess the possible range of costs and funding mechanisms

Modeling Lab Action Team (MLAT)

- Action Team membership
  - 7 jurisdiction members; Maryland, Virginia, Pennsylvania, New York, Delaware, Washington DC , and West Virginia
  - 8 academic members
  - 4 Federal agency members; USACE, USDA, NOAA, and USGS
  - Support to MLAT from the Modeling Team

Review of National Laboratories

Review of National Laboratories

Rationale for a Modeling Lab?

- Testing of the model/establishing uncertainty
- Assessing monitoring needs
- Enhancing credibility by involving more expert opinion
- Gaining buy-in from stakeholders
- Implementing adaptive management
- Communicating understanding

Rationale for a Modeling Lab?

- Modeling Team is not able to address all of the priorities/recommendations that it currently has
- Current list of 454 model issues identified by the Water Quality GIT; STAC recommendations
- Major issues such as:
  - Incorporating lag times
  - Including more BMPs
  - Adding shallow water modeling
  - Connecting water quality to living resources
  - model scale [what aspect of model scale?]

Modeling Laboratory Governance

- The Modeling Laboratory governing body or Board of Directors appointed by the Management Board.
- Appointees must have the authority to make the technical decisions related to modeling at the CBP.
- Appointees must also have the technical and scientific expertise in order to make those decisions.
- The Board would determine the work elements related to model development that would be incorporated into annual workplans.

Essential Functions of Models for the Chesapeake Bay Program

- Operations
- Operational Development
- Research-Oriented Development
- Research

Modeling Laboratory Functions

- Option 1: MLAT reached consensus that a Chesapeake Bay Modeling Laboratory should be established to take on research and research-oriented development.
- Option 2: In addition to the research components of the Modeling Laboratory, it was also suggested and highly recommended by the jurisdictions members that assembly and calibration of the models be part of the Modeling Laboratory.

Funding a Modeling Laboratory

- Funding must be sustainable; not grant funding.
- The governance board should work with the funding organization to develop a Request for Proposals or Services (RFP/RFS) that outlines the ML tasks.
- The Modeling Laboratory will require approximately $1.5M for the research component and an additional $0.5M for operational component.

Regardless

- Strengthen the Modeling WG
- Formalize communication

Questions?