MODELING LAB ACTION TEAM CONFERENCE CALL MINUTES
JULY 23TH, 2012
12:30PM – 2PM

Conference Line 1-866-299-3188 code 4102675731
Adobe Connect https://epa.connectsolutions.com/modsc/

http://www.chesapeakebay.net/calendar/event/18503/

Participants

Mark Bennett – USGS	Lewis Linker – EPA/CBPO	Gary Shenk – EPA/CBPO	David Montali – WV DEP	Howard Townsend – NOAA
William Keeling – VA	Larry Band – NC	Lee Currey – MDE	Raleigh Hood – UMCES/CRC	Theo Dillaha – VA Tech
Kevin Sellner – CRC/STAC	Rick Luettich – UNC	Marjy Friedrichs – VIMS	Matt Johnston – CRC/STAC	Kevin McIlhany – USNA
Amanda Pruzinsky – CRC/CBPO				

Action Items

- The next Modeling Lab Action Team meeting is Tuesday August 28th, 2012 10am – 3pm at the Virginia Institute of Marine Science (VIMS)

- Send any other possible agenda topics to Mark, Lewis, and Gary

Minutes

The meeting consisted of a free ranging discussion of the current modeling system. Below is a summary of the discussion points.

- [Bill Keeling] In the current modeling system, there is no need to create a new building. Therefore, there is less cost associated with it compared to a bricks and mortar Modeling Lab

- [Bill Keeling] The Modeling Team should focus more on the Watershed Model and not just use it as an input into the Estuarine Model

- [Bill Keeling] The current modeling system is viewed as Maryland centric. A non-Maryland (maybe even non-Chesapeake Bay Watershed) location should be considered for the Modeling Lab (VA position)
- [Bill Keeling] The current model seems to be "one size fits all." There should be more focus on small scale issues
    - [Lee Currey] If it is a "one size fits all" model, that is not necessarily a product of the location of the building

- [Lee Currey] CBP is putting out progress runs and tracking, but where is the research and development?
    - For the research that is done, there isn't a centralized location where it can be found

- [Lee Currey] The current modeling system is not separated from the accountability framework
    - [Howard Townsend] Since these are not decupled it slows the rate of development
    - [Lee Currey] The Modeling Workgoup needs to determine who has control over changing the model

- [Bill Keeling] Need to include investigation and model testing
    - [Rick Luettich] – Who would conduct the investigation?
        - [Bill Keeling] – Could be a task for the Modeling Lab

- [Lee Currey] Would like to have an understanding of the Watershed Model and the way it's reacting to BMPs. The Modeling Quarterly Review Meeting presentation on the effects of wind and the Estuarine Model is an example of the type of research that could be done for the Watershed Model

- [Larry Band] The new modeling system should not limit the people working on the model to a building
    - Core Modeling Team with accessible data to people on the outside – need continuity but also good to have people in remote locations
        - This would need better cyber informatics and maybe a remote cloud server
- [Bill Keeling] VA would like there to be more involvement from universities and other community members. The lab needs to be more transparent
- [Gary Shenk] Many efforts have been done to include people from the outside
    - Issues: Learning curve, downloading
- [Larry Band] Must have central resources that people can easily access
    - Governing agent to release information, data, documentation, code, etc.
- [Bill Keeling] If changes are made to the model, then the new model must be distributed to everyone and older versions must be stored. This is much easier with central location
- [Marjy Friedrichs] ROMS is an example

- [David Montali] The Watershed Model has a great influence on management, so if there are issues with the science of the model, CBP should be putting a great deal of effort into researching solutions to those issues
    - The WIPs that are being created now are based on the models. What happens if issues with the model hinder the states and districts from reaching reduction goals?

- [Larry Band] CMAQ is a good organizational example
    - Community model
    - Active training for people that are at the state level who are going to run the model
    - Suggestion: Web training to help bring in people in remote locations

- [Gary Shenk] Changes are constantly made to the Watershed Model (example, creating new BMPs for the WIPs). Does the organizational structure of CMAQ allow for those types of quick changes?
    - **ACTION**: Larry Band is going to determine how the community suggests changes and how those changes go through a governance until there is an official release
    - [Larry Band] Research model vs. Operational model
        - When people are satisfied with the research model it is transitioned to the operational model
        - Need a stable model that has periodic changes and documented releases

- [Larry Band] Examples, WARF, WIRADA (Australian)
- [Howard Townsend] Example, Weather Service

- [Bill Keeling] Scenario builder is not available to the community
    - Many feel that the land use in the model does not appear to reflect the land use in their locality and would like the opportunity to change that
    - [Larry Band] Could have scenario builder code available as a cloud resource
        - Centralized
        - Security to maintain the code
        - Use a data base system to track all of the data going in
    - [Gary Shenk] Partners develop their inputs and send to CBP, scenario builder creates the inputs to the Watershed Model. The code is on the web, but it is difficult to operate

- [Lewis Linker] A detailed comparison of the CBP and CMAQ organizational structures would be informative
    - [Gary Shenk] A CMAQ organizational structure would slow the turnaround rate. This makes sense from a modeling standpoint, but it could delay implementing BMPs
        - [Bill Keeling] Those BMPs can only be used for the "what ifs," but not for progress runs/regulatory model
        - [Gary Shenk] With the current set up, the interim BMPs could become final after the Expert Panel follows through, but a CMAQ type of organizational structure would definitely delay these changes
        - [Bill Keeling] Slowing things down and testing could be beneficial
        - [Lewis Linker] The current modeling system is efficient and set to meet deadlines. A CMAQ like organizational structure would be centralized and have more community involvement, which could allow for more localized input data. But then it would have to be vetted and testing, which would increase timelines and also involve greater training. The Modeling Workgroup must consider the trade off

- [Lee Currey] The current modeling structure tries to work as a Modeling Lab, but seems resource constrained

- [Lee Currey] Need better communication of model refinements, how the model works, how the Modeling Team is organized, and who is responsible for decision making
    - [Gary Shenk] Many different groups want to make recommendations and want those recommendations to be followed. How and how quickly can the Modeling Workgroup

translate that into a research agenda that can be accomplished by a virtual or a bricks and mortar Modeling Lab?
        - [Lee Currey] Make the modeling its own structure with its own organization
            - Make that organizational structure clear
            - [Gary Shenk] One of the suggestions is to conduct engineering research at the Modeling Lab, but then keep operations at CBP

- [Larry Band] There is power in community development. Community contributions are made during the annual workshop for the CMAQ
    - [Lewis Linker] Through CBP, there is a community of states that are implementing best management practices at great costs and these BMPs are being tracked and assessed, so the stakeholders should have confidence in the model
- [Kevin Sellner] What is the source of funding for CMAQ for community development?
    - [Larry Band] It is a community model with an open source code
        - If organizations are working on the code for research purposes or regulatory purposes, the funding comes from their individual organizations or grants
        - Annual conference which fund particular projects
        - Occasionally if there is a particular issue that needs to be worked on, their institute creates a contract with EPA and will write a work assignment
        - Contributors: NOAA, EPA, and distributed around the community
        - [Kevin Sellner] Much of funding is non-EPA funded because of the community development aspect

- [Rick Luettich] Since CBP is considering a multiple model approach, modeling operations will involve more than just the maintenance of one operational model and one community model
    - [Kevin Sellner] The idea behind the Modeling Lab is research and development of priority management issues. If multiple models are developed for research that is a huge advantage globally, but the primary goal of the Modeling Lab in this case would be for inspection and testing of the model or multiple models for management needs with any other research as a plus

- [Kevin Sellner] Since the Modeling Lab would be focusing on the management needs, research projects outside of that could be tracked and limited through a RFP process
    - [Larry Band] The Modeling Lab would need to have a strong governance to accomplish this

- [Gary Shenk] There are many processes that happen in atmospheric and estuarine modeling that are difficult to translate to the Watershed Model. Many of the issues are data related. Are there examples of watershed model centers that are focused on decision making models?
    - [Larry Band] Australia model, WIRADA – Development of the database referred to as the Geofabric
        - What is available? Is it adequate? If not, what needs to be developed to support the model? How can the Modeling Lab make those things available?
        - Need to have a way to verify the quality of the data and if there is a need for new monitoring or data collection

- [Gary Shenk] CBP has formed a new land use workgroup
    - The modeling structure could be a back and forth method. If so, how will the current modeling system manage it? Or how can CBP change its structure so that all of the different groups that work on the model work together efficiently? Must create a structure that will allow for continuous improvement in the modeling and data collection
    - [Mark Bennett] The model structure can change the data needs, but different data can also change the model structure
- [Matt Johnston] CBP could accomplish this if keep the regulatory model is kept constant, but allow for continued development or a research model in the background

- [Raleigh Hood] Choice of modeling code could leverage research and development
    - [Kevin Sellner] Would still need to fund management

- [Rick Luettich] Is the purpose of the Modeling Lab to cover problems that current Modeling Team does not have the resources to solve?
    - [Mark Bennett] Also, model credibility and the ability to operate multiple models
    - [Rick Luettich] Modeling Lab could work on research and development

- [Larry Band] Need to better consider groundwater
    - [Kevin Sellner] There is an upcoming STAC workshop for groundwater modeling

Possible topics for Next Meeting

- [Raleigh Hood] Expanding user base

- [Kevin McIlhany] Scope of the Modeling Lab

- [Raleigh Hood] Can a Modeling Lab solve the very different issues of both the Estuarine Model and Watershed Model?

- [Gary Shenk] Would like to see detailed presentations of the organizational structure and funding of CMAQ and CSIRO (and others)
    - [Rick Luettich] Possible presentation on the Weather Service. How much funding does the Weather Service put into research and development compared to operational needs?

- [Bill Keeling] Pro and con session on all the possible lab configurations. One for virtual only, one for a single brick and mortar building, one for a combination of the two, one for regional brick and mortar and combination of regional brick and mortar plus virtual, and one for a lab outside the watershed. This should include discussions on possible costs for all the potential options