

Nutrient Scientific Advisory Board Meeting #21 Minutes

Thursday, Aug 9th, 2012

TJCOG - 4307 Emperor Blvd, Durham NC, 27703

9:30 am -12:00 pm

Attendees

Members: Charles Brown (Matt Flynn's alt), John Cox (& Michelle Woolfolk, alt), David Phlegar, Trish D'Arconte, Kathy Debusk (Bill Hunt's alt), Andy McDaniel (Matt Lauffer's alt), Josh Johnson, Grady McCallie (& Maggie Monost, alt), Michael Layne

Non-Members: Andy Sachs (facilitator), Jason Robinson (DWQ), Rich Gannon (DWQ), John Huisman (DWQ), Adugna Kebede (DWQ), Heather Saunders (TJCOG), Terry Hackett (Orange Co), Sandra Wilbur (Durham), Haywood Phthisic (LNBA), Brian Jacobson (URS), Forrest Westall (UNRBA), Sally Hoyt (UNC), Brian Jacobson (URS), Ken Reckhow (CardnoEntrix)

Agenda

- **Watershed Model Process**
 - Remarks by Rich Gannon, Heather Saunders, and committee members, as needed, to set context
 - Presentation by Tetra Tech on draft scope of work
 - Questions and answers, as needed
 - Discussion/feedback to consultant, committee, and DWQ on scope of work

Material

- Draft Agenda for August Meeting
- Draft Minutes for June meeting
- Draft Minutes for July Meeting
- TetraTech's Review of Candidate Watershed Models
- Tt's Draft Cost Breakdown of Alternative 1A (dated 8-7-12)
- Tt's Draft cost Breakdown of Alternative 2 (dated 8-8-12)
- Tt's Summary of Alternative 2 Approach for the Jordan Watershed Model (8/9/12)
- Tt's Proposed Project Schedule for the Jordan WS Modeling Services Project (8-7-12 Alt 1A)

Convene

- Board members and guests introduced themselves.
- The minutes for June and July's meetings were approved and adopted.

Watershed Model Process

- Heather Saunders of TJCOG gave a brief update on the status of the Jordan Watershed Model contract.
- Trevor Clements and John Butcher of TetraTech, which was selected to develop the Jordan Watershed Model, presented a draft scope of work for the model, and fielded questions from the Board:
 - The Board was asked to look at the document “Review of Candidate Watershed Models”, which presents the capabilities of different candidate models in a *Consumer Report*-type table in relation to the Board’s needs for the project. Trevor went through the pros and cons of each candidate model and explained why they feel that the HSPF or LSPC models are the most appropriate for the needs and the funds available for this project. One of the main reasons for recommending these two models is their flexibility in being able to incorporate most of the desired components of the model for the funds available. They also have a more detailed calibration to in-stream water quality observations compared to some of the other models, have the capability of examining different flow regimes, and operate on a sub-daily time step. A few of the reasons several of the other models were not selected:
 - SWMM was not well-suited for non-urban lands, too costly and automatically eliminated.
 - WARMF lacks full-code availability, only works at a daily time-scale, and doesn’t have a strong calibration record to date.
 - GWLF was used to do the original model, and could possibly be cost-effectively enhanced. However, it works with large sub-basins, and can’t get down to the smaller hydrologic units that would be needed to accurately estimate jurisdictional loads. It also models BMP-performance poorly, relies on curve numbers and USLE, which results in a lower level of accuracy, and lacks transport mechanisms, requiring it to be paired with another model such as SPARROW.
 - SWAT – NCSU Department of Soil Science has a grant that is modeling the watershed using SWAT for agricultural purposes. However, NCSU model could not be used for the Board’s existing development purposes because the Hydrologic Response Units would have to be redone. Also, while this model had a good track-record at modeling rural and agricultural lands, it’s representation of urban land is shaky.
 - Trevor explained that their original scope of work that would address all the items listed in the Board’s RFQ was priced at \$313,214. However, DWQ and the SAB Scope Subcommittee explained that this amount of money was not available. Therefore, TetraTech went back and drafted an Alternative 2 scope to bring to this meeting that would still utilize the HSPF / LSLPC model. The handout “Summary of Alternative 2 Approach for the Jordan Watershed” explains the items that would be removed from the original scope to meet the \$220,000 budget. Among other things, the new scope eliminated much of the data collection and processing that was included in the original scope. As a result, incorporating these components in the model would rely on modelers making decisions based on best professional

judgment. If data is collected and compiled at a later date, it would be possible to go back and incorporate the data into the model.

- Overall, the Board and the subcommittee were pleased with the Alternative 2 draft scope. The landcover component was kept the same from the original scope, as it was seen to be the most important aspect of the model. The Board was concerned about the removal of the assembling and processing of on-site wastewater and stormwater BMP data. Later in the meeting, the Board decided to look into securing additional funds to include the on-site wastewater and BMP data collection and processing components of the model. The Board was also concerned about the removal of a formal sensitivity and uncertainty analysis. However, it was decided that this component could be included in the peer-review contract that is planned to occur after the model is completed. Another concern was the trimming of the flow-load analysis component of the model. It was recognized that this component of the model could be incorporated at a later time.
- Several Board members asked about detailed data, TMDLs and other models that have been done for areas in the watershed being incorporated into the model. TetraTech stated that this was possible, but the project time-constraints would need to be worked-out, and it would cost more to design the model to incorporate this information later.
- The Board was asked to vote in a straw-poll for either the original scope or Alternative 2. The Board unanimously voted for Alternative 2, which can be developed in the available budget. The Board then again repeated their desire to develop a hybrid of Alternative 2 that contains more model components, particularly incorporating on-site wastewater and existing BMP data into the model. There was discussion of how much it would cost to add these components, and how additional funds could be secured. Several local government representatives on the Board stated that their municipality may be able to contribute to this. Heather Saunders of TJCOG explained the contract administrative procedure that would be needed to do this. It was noted that the money would need to be secured quickly, since the contract is starting soon and these components are on the front-end of the project timeline. There was to be follow-up on this outside of the meeting. The Board also agreed that the on-site wastewater component should be the top priority.

Potential Future Agenda Items

- Subcommittee recommendations to Board on Alternate 2 Scope
- Update on additional Load Reducing Measures and associated accounting

Future Meeting Dates

- Friday, September 7th, 9:30-12:30 at TJCOG
- Unless specifically rescheduled, the first Friday of each month, 9:30 – 12:00 at TJCOG.