

# Nutrient Scientific Advisory Board Meeting #13 Minutes

Friday, October 7, 2011

TJCOG - 4307 Emperor Blvd, Durham NC, 27703

9:30 am -12:00 pm

## Attendees

Members: Matt Flynn, Michael Layne, John Cox, David Phlegar, Trish D'Arconte, Bill Hunt (& Kathy Debusk, alt), Matt Lauffer (& Andy McDaniel, alt), Maggie Clary (alt for Grady McCallie).

Non-Members: Andy Sachs (facilitator), Jason Robinson (DWQ), Rich Gannon (DWQ), Kathy Stecker (DWQ), Adugna Kebede (DWQ), Fred Royal (Brown and Caldwell), Trevor Clements (TT), Josh Johnson (AWCK), Britt Stoddard (Wake Co), Jennifer Mitchell (Wake Co), Brian Jacobson (URS), Tom Davis (Orange Co)

## Agenda

- Follow-up discussion and clarification of criteria and options for remodeling the Jordan Watershed, per Section 3(d)(2)b
- Preliminary agreement on scope of work for remodel

## List of Materials

- September (#13) Minutes
- Watershed Remodel Draft RFP, dated 10/6/2011 in bottom left corner (attached)

## Convene

- Board members and guests introduced themselves
- The September minutes were approved

## Watershed Remodel Subcommittee Presentation and Group Discussion

Board member Trish D'Arconte presented a draft of language to be included in an RFP for watershed remodeling, as developed by the Watershed Remodel Subcommittee. *[editor's note: The subcommittee agreed at the August SAB meeting to develop this document working from the concepts presented there.]* This Subcommittee has been meeting for the last five months, and three times since the Board's August SAB meeting.

The Board spent much of the meeting receiving and discussing Trish's presentation. The subcommittee's recommendations were generally well-received with few substantive concerns. The following is a summary of key points raised during the presentation and ensuing discussion:

### Required Model Outputs

- "Hydrologic response areas" of the remodel should be at least as small as the 14-digit HU's in the original model, which were between 10,000 and 40,000 acres. To avoid confusing terminology, DWQ staff drew a distinction between the 14-digit "Hydrologic Response Units" developed in the original model, which deliberately aggregated areas of similar hydrologic response, and "hydrologic units" as discussed in this context, where the interest is in seeking the finest level of resolution feasible. The group agreed that our interest is in seeking the smallest reasonable size for units and they will be no larger than the USGS 12-digit HU's (which have replaced the 14-digit HU's in use during the original modeling).
- Matt Flynn raised the concern that the watershed model will in some cases give a different loading rate for the same land use in two different locations because of soils differences, while the

reduction credit method will give only one load reduction credit regardless of location. This concern did not appear to be shared by other Committee members, *[Editor's note: this point highlighting relative sophistication of load allocation method vs. credit method seems worth recognizing in discussing options for credit accounting. Soil types are factored into the current Jordan/Falls tool on a coarse level via differences in infiltration credit between Triassic and Piedmont]*, however other instructive points emerged:

- Local governments (LGs) located farther from the lake inherently have more potential to obtain cost-effective reductions from the standpoint that any given reduction measure implemented closer to the lake than a loading source would yield a greater delivered reduction than the same measure installed at the loading source (this “built-in” inequity may be somewhat mitigated by the relative benefits obtained from being located near the lake). *[Editor's note: the same principle can potentially be utilized to advantage by any LG that has developed land in more than one hydrologic unit]*
- Jordan new development will not be required to apply delivery factors as long as any offsite offsets are obtained within the same hydrologic unit as the development.
- *[Editor's note: an important basic principle bears full recognition. That is, a given distance and travel path from source to lake provides the same proportional attenuation to both load and load reduction. Thus it is not the case that a LG located at a different distance from the lake, either further or closer, than others will inherently have to do comparatively more to achieve a given increment of reduction credit than the others as a result of its different distance. As noted above, separation of load and load reduction is a variable that can provide relative advantage. One potential qualification to the principle stated here could emerge from the watershed modeling: loads and load reductions delivered under different flow regimes could potentially have somewhat different delivery efficiencies.]*

### **Future Model Use**

Trish explained that this section provides a list of questions that either the contractor should answer as part of its products or the model should be structured to allow end users to answer. Competing applicants would state and support their proposed approach on each question.

The point was made that the Board's questions need to be as specific as possible to avoid having to judge between responses that range e.g. from vague and rosy to specific and heavily qualified. The suggestion was also made that in the cost proposal, these questions need to be presented as line items. Contractors would provide cost estimates for each question that they could answer as part of their deliverables.

The point was also made that the RFP should ask potential contractors to address for each question not only whether the model has the ability to answer the question but the extent to which the input data and model design will provide reasonable answers ( that is, contractors should characterize the uncertainties associated with all 'yes' answers).

On #14, we should ask whether waterfowl impoundments simply store nutrients in spring and release them in winter.

### **Proposed Model Elements**

- Model Septic Systems Separately from Land Use – Add notation that the 1990 Census quantifies septic densities.
- Model Sanitary Sewer Discharges – Dry and Wet Weather – Discussion underscored that the loading from this source and the credits for improvement will be hard to quantify.

- Adding Monitoring Sites for Model Calibration and Validation – Clarify that such sites are not to be downstream of *major* WWTP's. When the RFP goes out, a notice needs to go out to local governments requesting any data they may have.
- Model Nutrient Generation and Delivery at multiple flows/discharges –It was suggested that “seasonal” be added to this element. The concern was raised that this makes sense at the catchment level but perhaps not at the watershed level. It was discussed whether this should be kept as a required element. No decision was reached to modify it.
- Include Atmospheric Deposition as a Model Input - The Subcommittee discovered from an EPA contractor at UNC that including this information in the remodel may be easier than first expected. There are existing models that could be used to contribute data to the remodel. Hence this is proposed as a required element. John noted that Durham has AD data that could be used in the model.
- Address Other Major Storage Impoundments - Subcommittee will recheck its intent on this item and clarify or drop.
- Include stormwater BMPs existing at time of baseline period – The concern was raised that this could be a very large and costly task. The group agreed to leave this item in as optional, see what the price may be from applicants, and then decide whether to keep it. The alternative would be that BMPs would be accounted for to adjust the baseline afterwards using the credit accounting tool.

#### **Develop 2001 Land Cover by Jurisdiction and Sub-watershed**

Trish explained that determining the definition of “existing development”, in terms of GIS land cover, was more difficult than first assumed. Examples are how to account for low density residential homes on farmlands, or in largely forested areas. These homes are probably not accounted for in the NLCD database. These will also be a problem when comparing the model to the accounting tool. The question was posed as to whether the model should use jurisdictional boundaries for 2001 or the most current ones. *[Editor’s note: DWQ will offer recommendations on this subject.]*

The group agreed with the recommendation that a subcommittee be formed to address this concern. The subcommittee will also consider other land cover issues such as determining the boundaries of the land it’s responsible for, including where they have police-powers (as stated in the Session Law) and how to account for annexations. Members of this GIS Land cover Subcommittee include: DWQ (Rich, Jason, Adugna, and Andy Painter), Durham (John Cox or alternate), Wake County (Jennifer Mitchell), Tom Davis (Orange Co) and Josh Johnson (Alley, Williams, Carmen and King).

#### **Other Items**

John Cox reminded the Board of an email he sent out about a Center for Watershed Protection webcast on gross solids. He feels that the data presented in this webcast may need to be included as an element in the RFP for the contractor to consider including in the model. The Watershed Remodel Subcommittee will discuss this, as there are concerns that this constituent is not reflected in the instream data that will support modeling.

#### **Potential Future Agenda Items**

The next meeting will include presentations from both the Watershed Remodel Subcommittee covering the remaining tasks in the draft scope and the newly formed GIS Land cover Subcommittee.

#### **Next Meeting**

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