

Jordan Lake Targeted Watershed Study Meeting Summary

Meeting #3
September 6, 2006

Attendees: Will Autry, Rick Bailey, David Beal, Shari Bryant, Elliott Cornell, John Cox, Mike Cusimano, Trish D'Arconte, Eric Davis, Bob Dodson, Lauren Elmore, Don Freeman, Rich Gannon, Tom Gerow, Terry Hackett, Chuck Hill, Ed Holland, Linda Holt, Cy Jones, Andy McDaniel, Sydney Miller, Emily Parisher, Bob Patterson, Norm Pearson, David Phlegar, Clarence Sell, Lucas Sharkey, Jill Slankas, Paula Sloneker, Ruth Swanek, Mike Templeton, David Williams

Meeting Introduction **Don Freeman, CFRA**

The meeting was opened by Don Freeman, Executive Director of the Cape Fear River Assembly (CFRA). Syd Miller (TJCOG) provided an overview of the agenda and discussed meeting objectives. Each person received a set of handouts that included the meeting agenda and power point presentations.

Agenda and Project Update: **Sydney Miller, TJCOG**

Syd reviewed the agenda with the attendees. The agenda was accepted as is.

Syd gave a brief update on the project website. The web address is www.cfra-nc.org/projact.html. The following materials and information are posted on the website:

- Project Charter
- Meeting schedule
- Agendas
- Meeting summaries
- Presentations and handouts
- Most recent iteration of the proposed Jordan Lake nutrient management rules

Selection of Pilot Subwatersheds **Lauren Elmore, CH2M HILL**

Project structure overview: Lauren reviewed the project structure, goals, and processes as outlined in the Project Charter.

Project components: Lauren gave an overview of the study area selection process, monitoring, design of BMPs, development of the Excel based trading tool, and implementation options.

Pilot watershed selection process: Lauren gave an overview of the pilot subwatershed selection process. The project goals established during chartering were used, in part, to identify the pilot subwatersheds. Other criteria included: access, availability of partners, diverse land uses (including agricultural and urban land, as well as other water supply watersheds). In addition, we wanted to see if the differences in loading targets between the Upper New Hope and the other two management areas would result in different trading benefits.

The pilot watersheds under study will be the Upper New Hope area and the Burlington/Graham/Mebane portion of the Haw Subbasin. A map of these targeted watersheds was available for review during the meeting.

- **Upper New Hope Study Area:** This watershed area was selected because of its diverse urban environment.

Possible trading scenarios, considerations, and options were presented to the stakeholder group. Considerations and options include asking developers to over-treat to offset other sources of nutrients.

- **Haw River Study Area (Burlington/Graham/Mebane area):** Eight HUC areas were identified as a possible focus for study. Further focus will be decided as the project continues. Land use in this watershed consists of a mix of agricultural and urban uses.

Monitoring

Lauren Elmore, CH2M HILL

Existing Monitoring: Lauren discussed the locations of known existing monitoring stations throughout the study areas.

Existing monitoring efforts are conducted by:

- UCFRBA
- DWQ
- USGS
- Local governments and other entities

Maps of these sampling station locations were available for review during the meeting.

Future Monitoring: Lauren explained that the current monitoring programs ongoing in the basin would be reviewed to determine whether they are adequate to evaluate the trading program. Based on our initial review, it appears that the existing monitoring may be sufficient in terms of locations and parameters. The preponderance of sampling data is collected during dry weather. These data may not represent nonpoint source loading conditions accurately, since conditions during rain events are not normally sampled. Data variability influences the number of samples needed to predict a trend or statistically represent changes in water quality. The data will be evaluated to see if the current sampling frequency provides enough data to statistically detect changes in water quality.

BMP Monitoring: Funding for this project includes 15%-30% design of up to 6 BMPs. BMPs will be evaluated for effectiveness at the sub watershed scale with recommendations for monitoring each BMP. It is too early in the project to determine how the BMPs will be monitored.

Trading Tool

Ruth Swanek, CH2M HILL

Ruth discussed the Excel based trading tool currently under development, covering design elements and tool capabilities. The spreadsheet based tool will help stakeholders evaluate various trading scenarios and BMP effectiveness. The tool may also help answer the question of feasibility for NPS reductions under the TMDL.

Various trading scenarios were considered while developing the tool, the tool's capabilities and its functionality. For each scenario, the tool should help evaluate whether reductions could be achieved through various trades and combinations of BMPs.

Trading Scenario One: Trading within one jurisdiction:

Options for this scenario might include:

- Acquire offsets within jurisdiction: WWTP upgrade reductions might be less costly than stormwater reductions, therefore credits may be generated to offset stormwater requirements.
- Require new development to exceed rule requirements to generate credits.
- Examine structural and non structural BMPs for effectiveness.
- Acquire offsets from other source such as agriculture.
Comment: Jordan Draft rules are more stringent than current stormwater regulations and have a greater impact on local governments, therefore compliance with Jordan rules should be the standard used in development of the tool.

Trading Scenario 2: Two or more jurisdictions act as one to implement stormwater requirements.

Options for this scenario include:

- Jointly funded structural and non-structural BMPs.
- Acquire offsets from agriculture or WWTP.
- Watershed stormwater permits vs. individual permits.

Comments: Watershed stormwater permit not ironed out and not clear if that would satisfy DWQ or EPA. Further exploration is needed.

Response: The project covers new ground requiring brainstorming, and openness to new ideas and possibilities. Implementation strategies for the trading program will be developed; new permitting methodologies could be set up. This will be further explored in future meetings and will be completed outside the trading tool.

Ruth noted that any trading program would be voluntary.

Key design elements of the Excel based trading tool:

- The tool will establish a framework so that individual sources could determine if participation in trading is worthwhile.
- CH2MHILL will build flexibility into the tool so stakeholders can incorporate new information.
- The tool will account for non point and urban stormwater uncertainty: this will be dealt with through trading ratios.
- Build on info and data from TMDL
- ID trading partners
- ID acceptable BMPS
- Define what a unit of credit is. Establish trading ratios. Are there areas in the watershed where trading is just not possible?

A Model Flow Chart which describes how the tool will be developed was made available to the attendees.

Discussion/Comments

Sydney Miller, TJCOG

Question: Can this tool determine reductions at the jurisdictional level?

Response: The tool aids in determining whether or not an overall reduction goal can be met and which options are most cost effective at the watershed level. If the existing watershed model is used without modification, it will not determine whether or not an individual jurisdiction's reduction goals can be met.

Comment: The tool would be more useful if it was able to make a distinction between jurisdictions.

Response: CH2M HILL had lengthy discussions internally on this subject without resolution. We will discuss this further and report back to the stakeholders.

Comment: Jordan Rules will assign load reductions by political jurisdictions; the data [load reductions assigned to political jurisdictions] will provide some means to determine reductions at the jurisdictional level. Until that time, data for jurisdictions is not available. It is possible that the tool could be designed to address the watershed level and jurisdictional levels, however, parameters for this option have not been determined. Further exploration and testing on a methodology will take place.

*Question: The tool will determine trading options based on a snapshot in time. How will this incorporate **changing** conditions (e.g., further development and increases at WWTPs)?*

Response: There are examples of other models that input projected data. Projections such as how land use changes over time and how it may impact the model are possible. At this time, compliance dates for NPDES reductions are indeterminate, therefore this model will include arbitrary selection of dates so preliminary scenarios can be evaluated.

Question: There is a lack of confidence in the existing watershed model. The current watershed model does not include roads and the land use categories are inconsistent with the Jordan watershed rules. Could a new model be developed and used?

Response: EPA wants to see improvements in water quality and indicated that this project should use existing tools.

Question: What data are being used to develop the trading tool?

Response: Data sources:

- *Hunt study on BMP cost effectiveness*
- *EPA studies*
- *NC DENR BMP manual.*
- *Agricultural data from Soil and Water Conservation*
- *Land use data is based on data in existing watershed model. Future land use may be more difficult to collect. CH2MHILL will work with each local government in the pilot areas to collect data, input and document assumptions*

Data Needs: The data that will be incorporated into the model will be selected carefully but will not be all inclusive. Too many inputs would overwhelm the model and produce diminishing returns.

Data and information for inputs will be obtained from literature reviews and studies with additional inputs from existing point source data, such as current loads, projected flows, and point source treatment optimization. Inputs will also include data such as a list of BMPs with lifespan, operation and maintenance costs, appropriate land uses for each BMP, and assumptions such as what percentage of land that can be treated with BMPS by land use type within a watershed.

Question: Time frame for trading – are we committed to trades?

Response: Short term trades are possible. A trade does not have to be permanent.

Question: What costs are considered?

Response: Opportunity costs, land value, and other cost considerations.

Comment: Bill Hunt's BMP costs do not include all of the land needed for a BMP, just the land needed for a BMP's pool.

Comment: Will the model consider commercial BMPs? Commercial BMPs are not necessarily designed to remove nitrogen.

Response: CH2M HILL will work with DWQ on the list of creditable BMPs. In addition, Bill Hunt, a recognized BMP authority will be consulted on the BMP list.

Next Steps:

- Stakeholders in pilot areas and DWQ to provide data for input to trading tool.
- Identify and define potential trading scenarios.
- Select the most appropriate or feasible trading scenarios.
- Evaluate implementation options.

Question: What level of effort is needed at local government level?

Response: CH2MHILL will work with local governments individually to work out some of these issues. Expect some local meetings and small work groups. Tentatively, demo trading tool will be available in November.

Concern: Trading tool is using the existing watershed model which is not useful in its current form, therefore local governments will generally not be confident in the use of the watershed model for the trading tool.

Response: CH2MHill will address this with EPA and DWQ to discuss the possibility of a new watershed model to support this effort.

Comment: NPDES stormwater permits do not mention nutrients or pollutant loads.

Response: CH2MHILL will utilize the Jordan rules requirements as the basis for evaluating trading versus NPDES requirements.

Discussion

Sydney Miller, TJCOG

Monitoring Issues:

The grant scope requires an evaluation of the current monitoring program, the development of a monitoring program to evaluate TMDL implementation, and trading or BMP implementation in the pilot subwatershed. Monitoring currently collected by the Upper Cape Fear River Basin Association and other entities was included as grant matching funds. Request to the group to provide information regarding any monitoring that is not captured on the map. Attendees responded with known or current monitoring not included on map.

Comment: Greensboro, Durham, and Chapel Hill monitor instream. Chapel Hill also monitors two sites in Carrboro. Carrboro also maintains two benthic monitoring sites.

Comment: NCDOT has completed BMP monitoring.

Comment: Chapel Hill is revising its monitoring program and may begin doing storm event sampling.

Comment: Durham currently monitors on a fixed monthly schedule. They would like to add a couple gages in partnership with USGS and begin monitoring storm events.

Question: Has DWQ established the statistical basis for judging compliance with the TMDL. This has not yet been completed.

Objectives of monitoring – To evaluate progress at the pilot level before and after BMP implementation and to evaluate effectiveness of trading program and TMDL.

Trading Tool Discussion:

Question: Request for clarification on trading ratios; does it place value on economic data? Is there flexibility?

Response: Two kinds of ratios

- *Environmental equivalence ratio (i.e., lbs vs. distance)*
- *Confidence ratio (i.e., one kind of source versus another) (e.g., 3 lbs. of agriculture credit to 1 lb. of urban)*

Question: Are the ratios transport based? Are they negotiable?

Response: Environmental equivalence ratios are based on what were used in the current model and are not negotiable. Confidence based ratios are more negotiable and based on BMP performance data and policy choices.

Question: Will the trading tool track the trading?

Response: No, this model will not track trading. However, methods for tracking trades will be developed later in the project.

Question: What is the plan for making a decision on the watershed model?

Response: Ruth will talk with DWQ, Cape Fear River Assembly, and EPA. The decision will be broadcasted to group and may have an effect on timetable for project.

Meeting Schedule:

- Nov. 29, 2006 – at Mebane Arts and Community Center
- Jan. 31, 2007 – location TBA
- June 20, 2007 – location TBA

Meeting Adjourned