Jordan Lake Targeted Watershed Study
Meeting Summary
Meeting #4
November 29, 2006

Attendees: Klaus Albertin, Will Autry, Rick Bailey, Keith Billy, Jennifer Brooks, Shari Bryant, Jim Caldwell, Mike Cusimano, Trish D'Arconte, Bob Dodson, Curt Fehn, Jay Frick, Rich Gannon, Martie Groome, Terry Hackett, Julie Henshaw, Chuck Hill, Ed Holland, Linda Holt, Cari Hopson, Cy Jones, Andy McDaniel, Sydney Miller, Bob Patterson, Marjan Peltier, David Phlegar, Scott Pickard, Lucas Sharkey, Roger Sheats, Ruth Swanek, Mike Templeton, Frank Thomas

Meeting Introduction — Jim Caldwell, MCCOG

The meeting was opened by Jim Caldwell, Executive Director of the Mid-Carolina Council of Governments (MCCOG). MCCOG was the recipient of the grant and will be performing all of the administrative duties associated with it. Syd Miller (TJCOG) provided an overview of the agenda, discussed meeting objectives, and facilitated the introduction of attendees. Each person received a set of handouts that included the meeting agenda and power point presentation.

A Word from Our Sponsor — Marjan Peltier and Curt Fehn, EPA Region 4

Marjan Peltier and Curt Fehn introduced themselves. Marjan is overseeing administration of the EPA grant and Curt is the Regional Trading Coordinator. Mr. Fehn talked about the ability of trading programs, when feasible, to provide economic alternatives. His group of 9 people at the EPA work on water quality trading mechanisms and have found them to be successful in saving money, bringing people together, and producing environmental benefits. However, he stated that successful trading is different everywhere, as everyone has different rules to adhere to. He specifically mentioned trading projects in Florida (state-wide policy) and Tennessee.

Pilot Subwatershed Trades — CH2M Hill

Progress Update - Ruth Swanek
Ruth reviewed the project structure and proceedings from the previous meeting. At that meeting, CH2M Hill presented an Excel-based trading tool, using the existing watershed model as a basis. Concerns were raised in the last meeting regarding the validity of the model. As a result, CH2M Hill decided to take a different approach through the use of hypothetical examples that will demonstrate the effectiveness of trading. Examples which included a variety of sources were selected for the Upper New Hope and mid-Haw River watersheds.

Objectives for this meeting were laid out:

- Obtain feedback from stakeholders on proposed approach
- Obtain input from stakeholders on types of examples to evaluate

Overview of Approach-Ruth Swanek

Ruth outlined the potential types of trades that could be carried out, in terms of buyer and seller:

- Point Source/Point Source
- Point Source/Agriculture
- Stormwater/Point Source
- Stormwater/Point Source or Agriculture
- Point Source/Point Source or Agriculture
- Stormwater/Agriculture
- NCDOT/NCDOT
- Stormwater/Stormwater

Question: Is Point Source Compliance within a group of governments addressed under the Point Source/Point Source category?
Answer: Yes

Question: Define Agricultural sources.
Answer: Row crops, animal operations, small farming operations. Individual landowners can be buyer or sellers.

Ruth outlined the process undertaken in the analysis of the example scenarios:

- Select the Watershed (trades can only take place within the same watershed)
- Identify Sources
- Identify and Quantify Credit Needs
- Identify and Quantify Credit Sources (credits based on loads as exerted at lake)

Ruth also identified the questions that must be asked when developing a trading scenario:

- How do you certify credits?
- How do you implement trades? - find a buyer vs. brokering
- How long is a trade good for?
- How do you institute permitting and tracking?

Demo of Pilot Projects - Lucas Sharkey and Cy Jones

Jordan Rules for New Development - Upper New Hope - 2.2 lbs/acre/year TN, 0.76 lbs/acre/year TP
Jordan Rules for New Development - Haw - 3.8 lbs/acre/year TN, 1.83 lbs/acre/year TP

Example 1
Buyer: Municipal Stormwater (Existing Development)
Seller: Developer (New Development)
Assume 50 acres with 6 houses per acre, buyer is purchasing excess treatment
Calculated 6 BMP scenarios

1. No BMPs
2. Wet Detention
3. Stormwater Wetland
4. Swale and Bioretention
5. Swale and Wet Detention
6. Swale, Biorention, Wetland

* New Development must get to 4 lbs/acre/year before they can buy or trade down to their nitrogen limits, examples showed dischargers met phosphorus limits when BMPs installed.
Only feasible scenarios are #4 (swale and bioretention) and #6 (swale, bioretention, wetland)

> *Question: Why is there a limit of 4 lbs/acre before you can buy or trade?*
> *Answer: The proposed rules are set up so that a discharger cannot buy down their entire allocation.*

> *Question for Rich Gannon (DWQ): Can you give an overview of the rule?*
> *Answer: The newly revised rules (September draft) require new development to meet loading rate targets for subwatersheds. These are onsite thresholds; once you go below the limits, you can go offsite to meet the development targets. To generate Nitrogen credits, a discharger must go below their loading rate target.*

Example 2
Buyer: Municipal Stormwater
Seller: Agriculture
Assume buyer will convert to forested land, already meeting targets so any additional action is generating credits
Current loading on 100 acres is: 1227 lbs/year TN, 200 lbs/year TP
Future loading (forest) is: 45 lbs/year TN, 10 lbs/year TP

Scenario will generate 1182 lbs/year TN, 190 lbs/year TP in credits

Cost: 100 acres of farmland in Alamance County valued at $265,000
Assuming no additional conversion costs
Cost per pound reduction: $224/lb TN, $1395/lb TP as a one-time payment for an indefinite period of credits

> *Question: Agriculture is treated as a group under the rules. Can an individual farmer sell credits?*
> *Answer from Rich Gannon (DWQ): Yes, once the subwatershed has met reduction goal, individual farmers can sell credits. Farmers can generate additional credits by meeting BMP standards on their operations only. This scenario still needs some working out to determine feasibility.*

> *Question: By taking agricultural land out of production and reforesting, can you really get 1200 lbs right away? This doesn't seem feasible.*
> *Answer: This is an assumption. Reforestation is likely to generate more credits in subsequent years.*

> *Question: What if you apply herbicides to the land?*
> *Answer: This example assumes that there was nothing additional in cost.*

This example was also examined in terms of new development buying credit from agriculture (assuming 50 acres with 6 houses/acre) and, as such, does not work in the Haw River watershed. Because the proposed rules require new development to meet the 4 lbs/ac/yr limit before trading can begin, a new single-family residential development

meets the required 3.8 lbs/ac/yr limit through the use of BMPs to meet the 4 lbs/ac/yr limit. This type of trade could work for new commercial or multi-family development, because their minimum treatment level is higher.

Question: Does the number of houses per acre affect the numbers?
Answer: Yes, it affects imperviousness, which goes into the model.

Example 3 - In Upper New Hope Subwatershed
Buyer: Municipal Stormwater (Town of Chapel Hill)
Seller: Point Source (OWASA Mason Farm WWTP)
Retrofit of existing 500 acre development with 6 houses/acre
Requires 35% reduction in TN load, 5% reduction in TP load
Existing loads: 8.22 lbs/acre/year TN, 1.32 lbs/acre/year TP (based on residential development scenario presented earlier)

Apply factors to percentages to get required reduction amounts
Required reductions: 1,439 lbs/year TN, 33 lbs/year TP

Apply delivery factor - 0.63 TN, 0.47 TP
Credits Needed: 993 lbs/year TN, 416 lbs/year TP

$50 million upgrade currently in progress at OWASA's Mason Farm WWTP
Will generate 40,000 lbs/year TN, 25,000 lbs/year TP
OWASA is in good shape to sell credits. Chapel Hill needs to buy credits to meet its stormwater reduction requirements.

Discussion Ruth Swanek (CH2M Hill, Syd Miller (TJCOG)

Syd posed this question to the attendees:
How do you feel about this approach (drilling down to specific cases and fleshing out scenarios)?

Comment: It's a good approach. I was skeptical at first but having a pilot project with real world examples helps stakeholders to make a more informed judgment.

Question from Syd Miller: Are there any skeptics of this new approach?
Comment: I'm skeptical about the economic price setting of credits and how that will take place.
Answer: Pricing will depend on whether there is a coordinated market for credits. You can either have a central authority setting prices or a wide-open market. This will be up to the stakeholders to decide.

Comment: A wealthy organization can buy up credits knowing others will need them and then turn around and sell them for more profit.

Comment: Price setting is fraught with difficulty. Should there be a pricing mechanism?

Comment from Rich Gannon (DWQ): Instituting state management of trades and prices will be a slow approach to take, as opposed to having an open market

system. Rules are currently set up with the Ecosystem Enhancement Program (EEP) receiving money and determining effectiveness of trading arrangements. The price is in flux with the last legislative session, which resulted in an open-ended trading rule with prices set by individuals, which is a huge undertaking.

Comment: Negotiation of transactions will be easy if the State rule supports this. The challenge is holding a seller to standards, especially if the seller is a non-point source. There will be a challenge in tracking and monitoring long-term compliance.
Comment: To solve liability issues, you have to go to an open-market system as prices will change daily, even hourly.

Question: How will we hold sellers accountable and make sure they are carrying their weight?
Answer: We haven't begun addressing that issue.

Question: Should a 25% factor be built in to add staff to DWQ? Or will these tasks fall on local governments?
Comment from Marjan Peltier (EPA): The NC representative says it is costing 1 FTE to staff Neuse. This employee serves as banker and keeper of accountability. There are a few options for staffing. You could come up with a regional entity to run a database and track credits. This would not be a regulatory entity. The bottom line would be monitoring stations set up to prove dischargers are reaching their reductions.

Question: Who is ultimately paying for the system to operate?
Answer: Consumer (citizen) is ultimately paying.

Question: How long will an organization that has the ability to buy credits have before they are forced to do their own improvements? With consumers paying the bill, who is putting pressure on people who buy credits to reach their goals? The system will be discriminatory with no policing.
Answer: The overall subwatershed goal has to be met. It is up to the individuals how they meet their portion. The rules also require minimum treatment levels.

Comment: You cannot retrofit an entire town. A municipality can buy credits from another organization to buy more time to finish upgrades.

Comment: There should be a limit on how long you can buy credits to avoid doing upgrades of your own.

Comment: Trading could go on indefinitely with no problem.

Comment: Trading is a way to help each other meet the designated use in the best possible and least expensive way.

Comment: No one here is in violation of their permit. Everyone is already meeting requirements but all will have to work together to meet these new rules. The problem is higher density and people are not going to move so we must deal with the resulting pollution in Jordan Lake. The rules are the same for each category

of user (e.g., industry) but limits are not the same as it depends on the body of water you are discharging to. It's not a question of anyone shirking their responsibility.

Comment: Monitoring is a form of long-term accounting but this will be hard for non-point sources. This will require a land-based assessment. These accounting costs will have to be absorbed into the cost of credits.

Comment: More options in monitoring will result in more affordability.

Comment from Syd Miller: Today's goal is to select case studies that will look at a variety of sources and explore options to get a sense of what will work where.

Question: Were the examples presented today thought to be realistic? Assumptions in example 2 were not realistic in terms of additional costs.
Answer: The examples presented during the meeting were to illustrate the process. The pilot studies will seek to utilize more realistic data.

Question from Syd Miller: What kinds of pilot studies would you like to see?

Summary of Responses

- Point Source/Point Source (Upper New Hope)
- OWASA/Carrboro/Chapel Hill (incorporating stormwater management for existing development)
- New Development/Existing Development
- NCDOT/NCDOT
- Point Source/Agricultural
- Point Source/New Development

Comment: New development with agriculture may be seen as the most feasible scenario.

Question: If new development decides to trade with someone outside of the municipality where they are located, how will that affect the municipality?
Answer: As stormwater credit will be hard to gain, it may not have a big impact. Some municipalities may require new development to overtreat so they can impose less stringent requirements on their existing development.
Question: When can a municipal stormwater program generate credit?
Answer: Adding BMPs will generate credit but in terms of redevelopment of existing, it's hard enough to spur redevelopment without adding restrictions.

Question: If a municipality requires new development to add BMPs, can't the developer gain the credit and then sell it back to the municipality?
Answer: It is currently undefined how these credits will be allocated.

Comment: We must prioritize among these projects as time is limited and money may be limited (Marjan looking into lifespan of grant). We could justify an extension of 6 months to 1 year as long as the money is still going to be available.

Comment from Marjan Peltier (EPA): The grant assumes that these pilot projects will be going into the ground. Consider projects carefully in light of this.

Comment from Ruth Swanek (CH2M Hill): We were thinking of conceptual projects. This will need to be ironed out.

Question: What will happen if one trading scenario pilot study is not done? Answer: The goal is to provide concrete examples of trades that are possible. If only 3 pilot projects are done, we are not limiting the trading program. However, if we capture all combinations, we can provide a more comprehensive framework for the trading program.

Results of Prioritization

- Point Source/Existing Development (OWASA/Chapel Hill/Carrboro case) - can tie comparison of point source/point source into this
- New Development/Existing Development
  Comment: Rules allow for overtreatment, which would essentially be a credit-less trade. Chapel Hill could require new development to overtreat in ordinance and not rely on trading. Incorporate this option into the study.
- DOT/DOT - will show how DOT could trade with others
- Point Source or Existing Development/Agriculture
- New Development/Agriculture
  Comment: Will new development be best buyer for agricultural credits?
- Point Source/New Development

Establishment of Stakeholder Contacts for Pilot Studies

- Ed Holland - Point Source in OWASA
- Andy McDaniel - DOT
- Trish D'Arconte - Chapel Hill
- Will Autry - Carrboro
- Julie Henshaw and Phil Ross - Agricultural representatives
- David Phlegar - Stormwater New and Existing Development in Greensboro; will get his input on trading scenarios developed in Upper New Hope with Chapel Hill and Carrboro to ensure they are appropriate for Greensboro area
- Frank Thomas - Developer contacts

Meeting Conclusion Ruth Swanek (CH2M Hill), Syd Miller (TJCOG)

Next Steps - Ruth Swanek

Ruth identified the next steps as selecting specific trading examples, working with pilot area local governments and DWQ to develop trading examples, and evaluating implementation options. CH2M Hill drafted a technical memorandum on the existing monitoring program to track compliance with the TMDL. Specific questions regarding monitoring include whether current monitoring is adequate and what types of changes may be needed.

Meeting Schedule - Syd Miller
The stakeholder group agreed to schedule additional meetings for February and March, 2007. The future meeting schedule is now:

- January 31, 2007
- February 28, 2007
- March 28, 2007
- June 20, 2007

All meetings would be held at the Mebane Arts and Community Center, unless otherwise indicated. If sufficient work cannot be completed in time for the January 31st meeting, the January meeting would be canceled.

Additional Items - Syd Miller
Introduction of Roger Sheats, the new president of the Cape Fear River Assembly and interim consulting manager.

Meeting Adjourned