

Jordan Lake Targeted Watershed Study
Meeting Summary
Meeting #5
January 31, 2007

Attendees: Joe Albiston, Will Autry, Rick Bailey, Kathryn Benson, Jennifer Brooks, Shari Bryant, Elliott Cornell, John Cox, Trish D'Arconte, Nora Deamer, Rich Gannon, Leila Goodwin, Julie Henshaw, Ed Holland, Cari Hopson, Bobby Louque, Andy McDaniel, Sydney Miller, Brad Moore, Sharon Myers, Bob Patterson, Scott Pickard, Jason Robinson, Phil Ross, Clarence Sell, Roger Sheats, Steve Shoaf, David Stancil, Ruth Swanek, Mike Templeton, Frank Thomas

Meeting Introduction **Sydney Miller, TJCOG**

The meeting was opened by Sydney Miller of Triangle J Council of Governments. Syd 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.

Review of Last Meeting **Ruth Swanek, CH2M Hill**

Ruth presented a review of progress made at the last meeting. At that meeting, specific nutrient trading examples were developed, including:

- Point Source/Point Source (Upper New Hope arm)
- OWASA/Carrboro/Chapel Hill (existing development)
- New Development/Existing Development
- NCDOT/NCDOT
- Point Source/Agricultural
- Point Source/New Development

Representatives from EPA were present at the last meeting and indicated that they expected to see BMPs constructed as part of the project. In response to this directive, the Cape Fear River Assembly located a possible source of grant funding and CH2M Hill developed conceptual BMP designs.

BMP Conceptual Designs **Kathryn Benson, CH2M Hill**

Kathryn presented four conceptual designs. Sites were determined by reviewing EEP's Morgan/Little/Bolin Creek Local Watershed Plan and meeting with local governments to find problem areas on municipally owned land. Twenty-five sites were visited, with six sites selected for conceptual BMP designs. These sites are located in Carrboro, Chapel Hill, and Burlington.

Site 1: Wilson Park Stormwater Wetland (Upper New Hope arm)

This is a 0.7 acre site draining to Bolin Creek, with a drainage area of 26.8 acres. The site has existing stormwater infrastructure that can be used. The wetland is estimated to remove 40% Nitrogen and 35% Phosphorus. It would be placed where playground equipment is currently located, requiring a relocation of the playground. Benefits include educational opportunities and an existing cover of sand and grass, easing construction access.

Question: Will the primary purpose of the wetland be educational?

Answer: The educational component of the wetland is important; because drainage area is small, loading reduction to Jordan Lake is small, but these types of BMPs will be necessary to collectively meet Jordan loading targets.

Question: Will the wetland area need to be lined?

Answer: We have not yet done a geotechnical analysis to determine soil type and whether lining will be required.

Site 2: Burlington Public Works Bioretention and Wetland (Haw River arm)

This site is located on Burlington Public Works grounds, consisting of a large grassy area adjacent to the parking lot. Three outlets currently discharge directly to Willowbrook Creek; under the conceptual design, discharge would be directed to the bioretention area. Drainage area for the bioretention area is 2.5 acres, with 35% Nitrogen removal and 45% Phosphorus removal. Drainage area for the wetland is 12.7 acres, with 40% Nitrogen removal and 35% Phosphorus removal.

Question: Will DWQ credit full pollutant removal for bioretention areas with a 1 foot media depth?

Answer (Rich Gannon, DWQ): Credit would be assigned if the bioretention area is within the design specs of the BMP Design Manual.

Answer: The depth of the media may be 1 to 4 feet depending on potential utility conflicts.

Question: If a wetland is sited within Zone 1 of the floodplain buffer, what will floodwater inundation do to the wetland?

Answer: Assuming floodwaters will only stand for a few hours, the plants should not be killed.

Question: Is it allowable to mitigate the buffer under the Jordan Lake Rules?

Answer (Rich Gannon, DWQ): Existing on-going uses can continue. Mitigation will be allowable if open grassy land is converted to a wetland.

Site 3: Food Lion Dry Detention (Upper New Hope arm)

This site is an existing dry detention basin located in the parking lot of Food Lion, draining to Toms Creek. The site has a drainage area of 27.4 acres, with 10% Nitrogen removal and 10% Phosphorus removal. The current structure is malfunctioning, as it has not been adequately maintained. Significant blockage has occurred and terracing has resulted due to the flow. Under this design, the inlet and outlet pipes will be stabilized and collected sediment will be removed. The site will remain in its current location; it will not have to be relocated.

Site 4: Rainbow Soccer Fields Wet Pond (Upper New Hope arm)

This site is located on property of UNC-Chapel Hill and features a 4.8 acre pond. Conveyance infrastructure does exist, but it is currently bypassing the pond; this design involves rerouting the conveyance system infrastructure to the pond and fixing the control structure and malfunctioning riser by installing a new primary outlet structure. The pond could be converted to a wetland with a variety of depths in the future. The drainage area is 336.3 acres, with 40% Nitrogen removal and 35% Phosphorus removal.

Discussion

Question: Will the existing stormwater devices be maintained, rather than converted?

Answer: The issue is converting to a water quality use from a water quantity use (flood control).

Comment: It will be hard to credit existing structures based on their condition and maintenance, as we don't have a clear idea of what was there in 2001. We (City of Durham) only started inspecting BMPs a few years ago. However, if a BMP was originally designed only for quantity purposes, credit should be given for retrofitting.

Question: Where are we on the potential funding?

Answer: Roger Sheats (Cape Fear River Assembly) has located a funding source. His next step is to meet with the EPA to determine if the funding will satisfy EPA requirements.

Question: Could an outside organization (e.g., university) be a separate trading entity?

Answer: Yes, these organizations can deal directly with DWQ.

Question: In a BMP like the Rainbow Soccer Fields, who would get the credit (under town jurisdiction but on UNC-Chapel Hill property)?

Answer: The Rules allow for group permitting. UNC-Chapel Hill and the Town of Chapel Hill could combine their permits.

Implementation Discussion

Ruth Swanek (CH2M Hill)

Ruth introduced market types (singular vs. multiple) and market elements (relationships among trading parties, information analysis and dissemination, and cost basis and pricing) as key issues in the implementation of the nutrient trading model. Levels of market services were grouped into three types: Clearinghouse (decentralized), Facilitator, and Manager (centralized).

Clearinghouse

In a credit clearinghouse scenario, each buyer and seller must find the other on its own. The clearinghouse provides posting services and technical assistance. Benefits include the forging of bilateral partnerships and low investment costs for stakeholders. Drawbacks include the extensive time and effort to find buyers or sellers.

Market Facilitator

In this scenario, a facilitator prioritizes projects and credit trading possibilities. Facilitators provide active outreach and recruitment to buyers and sellers. They also track sales and potential opportunities for sales. A facilitated program may have a dual function, as a clearinghouse for those who want to work on their own and as a full service manager for those seeking assistance. Benefits include an active role in transactions and relatively low resource requirements. Drawbacks include voluntary adherence to requirements and limitations on influence.

Market Manager

In this scenario, a market manager guides the activity in a market. The manager is responsible for determining which projects will most effectively meet goals and

prioritizing projects accordingly. Managers must achieve collective goals and individual needs. Benefits of this approach include significant ability to direct resources to priorities, in-house technical support, and ability to implement and enforce trading policies. Drawbacks include significant funding and staffing needs.

Question: How would you describe the North Carolina Ecosystem Enhancement Program (EEP)?

Answer: EEP functions mainly as a facilitator, but does have some characteristics of the market manager model.

Key elements of the market framework were identified. Ruth focused on relationships among trading parties, information analysis and dissemination, and cost basis and pricing elements.

Relationships among Trading Parties

Relationships were characterized as four different types:

- Collaborative – proactively working together to reach consensus on entire goal
- Cooperative – working together on selected program elements
- Independent – making decisions without consultation or consideration of other parties, but in a neutral way
- Competitive – frequent behavior to ‘beat’ other parties to credits, market share, or pricing

A centralized market tends to be collaborative and cooperative for most aspects of the program. Trading partners have limited interaction, as the market manager decides who will be the buyer and seller and sets prices and method of prioritization. (Example: Connecticut Nitrogen Credit Advisory Board)

A facilitated market is generally collaborative and cooperative in terms of decision making, with each party having a role in scheduling and transacting credit trades and sales. (Example: Virginia Nutrient Credit Exchange Association)

A decentralized market can be cooperative in terms of program development and oversight. However, it is independent with respect to information and transactions. (Examples: Michigan Trading Rules and Pennsylvania Trading Policy)

Information Analysis and Dissemination

Different types of analyses were discussed, including:

- Quantification of supply and demand for credits
- Compliance costs and pricing structures
- Pre- and post-trade loading and water quality analysis
- Transactions

These analyses depend upon the following questions:

- Who conducts the analysis?
- Who keeps the results and records?
- Who shares the information and how?
- Who gains access to data?

In a centralized market, the market manager conducts or contracts most analyses, key information is readily available to trading participants, and the market manager takes the lead role in distributing the information.

In a facilitated market, the participants conduct their own analyses and provide results to the facilitator, who then distributes them.

In a decentralized market, participants conduct their own analyses, with a third party consolidating the information and disseminating results.

Cost Basis and Pricing

The cost and price of a credit are not the same. The cost basis is the total of the separate cost elements that are eligible for consideration in the pricing scheme, such as capital, operation and maintenance, and monitoring and reporting. The price is the amount paid per credit, which may be set by rule or formula, negotiated, or established through market bidding.

In a centralized market, the market manager sets the cost basis and rules for calculating prices. Prices may be fixed or vary over time. Administrative costs may be included.

In a facilitated market, participants have the discretion to set their own prices, with stakeholders cooperatively agreeing on the pricing scheme.

In a decentralized market, rules for cost basis may or may not exist. The market tends to be price-driven, with buyers and sellers making decisions based on individual price. Prices may be managed or allowed to fluctuate according to market forces.

Discussion

Comment: Administrative costs will be unavoidable unless DWQ manages the trading program, although any structure will have transaction costs.

Comment: EEP is in the position to be a market driver. Everyone would have to beat EEP in price, which would be difficult.

Comment: EEP implements projects as dictated by DOT construction, not where nutrient management is most needed, so the set price may not correspond to project implementation.

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

Next Steps - Ruth Swanek

CH2M Hill is drafting a technical memorandum to summarize the BMP conceptual designs and will continue to work with the pilot local governments to develop the trading examples and evaluate implementation options.

Meeting Schedule - Syd Miller

- February 28, 2007: Mark this as tentative. This meeting may be canceled if there is not enough progress to report.

- March 29, 2007: Date changed from March 28 (conflicted with WRRRI conference on March 28)
- June 20, 2007

All meetings will be held at the Mebane Arts and Community Center at 1:00 p.m.

Additional Items - Roger Sheats (Cape Fear River Assembly)

Roger encouraged people to attend the 34th Annual Meeting in Fayetteville on April 26-27, 2007.

Meeting Adjourned