

Jordan Lake Targeted Watershed Study
Meeting Summary
Meeting #7
March 29, 2007

Attendees: Sydney Miller, David Welch, Julie Henshaw, Bob Dodson, Mike Herrmann, Kathryn Benson, Ruth Swanek, Lauren Elmore, Lucas Sharkey, Joe Pearce, Phil Ross, Terry Hackett, Shari Bryant, Rich Gannon, Jason Robinson, Bob Patterson, Frank Thomas, Robin Watson, Trish D'Arconte, Linda Holt, Scott Pickard, David Lawson, Steve Shoaf, Kelly Williams, Sharon Myers, Trish McGuire

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.

Project Update

Ruth Swanek, CH2M HILL

A presentation by Ruth Swanek highlighted the need to obtain feedback from stakeholders on proposed trading entities and operating assumptions. Agreement needs to be obtained on:

- Specific site examples
- Quantifying loads and reductions
- Cost methodology and assumptions
- How to quantify credit generation need

NRCS suggested agricultural sites for use and local government provided stormwater sites. Data used in this project has been obtained from DWQ data used in TMDL development.

Trading scenarios will cover three areas: Point source trading, non point source trading, and agricultural trading.

Point source trading scenarios

1. Upper New Hope dischargers - point source compliance group
2. Combining WWTP and NPDES permit into single permit for Burlington
3. Point source group or individual WWTP provides credits for stormwater program.
Could they provide credits for stormwater?

Agricultural Trading: Possible BMPs

1. Credits from poultry farming – add dry stack compost (Alamance Co.)
Problem: how to quantify nutrient reductions
2. Credits generated from fencing cattle from streams. What is pollutant loading?
How much of a reduction is obtained by fencing cattle?

3. Cost sharing for both BMPs

Stormwater Trading

Pollutant loads are based on EMC (event mean concentration) related to percent impervious surface. Issue of cost methodology inconsistency is unresolved. It is likely that stormwater will not be able to generate credits; instead will have to buy credits.

Scenarios under review are obtaining credits from:

1. New development
2. Existing development

Ruth discussed two possible tools for determining pollutant load reductions:

1. Upper Neuse site evaluation tool
2. Tar Pamlico tool

It is important to settle on an estimation tool. Differences noted between the two tools are:

- Rainfall was different in both
- Different types of land uses
- Different EMC values for the land uses

SCHEDULE

- March 29 – to provide status of trading examples and continue to work on assumptions in small groups
- April meeting – work with small groups on assumptions
- May – document examples; develop example trades; evaluate various market mechanisms
- **Next small group meeting: May 16 at 1:30 (if necessary)**
- **Next full meeting: June 20 at 1:30**

Since it was likely that the three breakout groups would not finish at the same time, the groups would not reconvene after the breakout.

BREAKOUT SESSIONS

Stormwater Breakout Group

Kathryn Benson, CH2M HILL

Goal of discussions:

1. Quantify nutrient reductions
2. Decide which EMC method should be used
3. Determine cost methodology

Discussion on quantifying nutrient reductions: Proximity to the lake makes a difference in load reduction credits. Those near the lake have a greater reduction credit generated than those entities located at the top of the watershed.

The BMP manual nutrient reductions are a starting point for quantifying reductions, but revisions occur resulting in changes in reduction levels.

Question: Can we use landscape conversion as a BMP? Conversion of grass to vegetation (trees, shrubs, mulch), thereby eliminating fertilizer use.

Landscape conversion can be credited if put under a conservation easement. Without conservation easement, it is just a change in land use. It may be possible to obtain credit for land conversion without easement under certain conditions.

Discussion on EMC methodology: Discussed removal efficiency.

Treatment train removal efficiency: Removal efficiencies are not the same when you stack the BMPs. Efficiency is reduced with each successive BMP. Therefore, treatment trains should be limited. Cisterns are not part of treatment trains.

Suggestion put forth to check with Bill Hunt regarding removal efficiencies for BMPs in a series. Want to encourage BMPs in series, but define efficiencies.

The simple method uses EMC values to determine the pollutant load generated by the proposed land use change. CH2M HILL calculated EMC values by determining site percent imperviousness and applying equations developed for the DENR BMP manual.

Cost Calculations: Discussion on what cost methodology to use for the trades. It was suggested that at least two methodologies need to be used: one for urban situations; one for rural areas.

Questions were raised concerning relation of the runoff rate and contributing watershed area. An additional column of data addressing the relationship of watershed area with BMP cost is needed.

BMP costs per acre-foot of runoff or costs per cubic foot.

- EPA uses costs per cubic foot. Using costs per cubic foot, the EPA cost estimates are higher.
- Jordan lake fiscal note is cost per BMP, not cost per cubic foot.

Discussion: Costs will be variable, and a calculation will not suffice for all circumstances. Costs may need to be considered on a case-by-case basis.

Frank will confirm and provide some actual BMPs costs. Differences between rural and urban land costs will be considered. CH2M HILL will use EPA costs as a default with an escalation factor applied. Land values influence BMP cost. Local governments will provide land values for BMP sites. To compare the costs of implementing different BMPs it is necessary to identify the cost per pound of pollutant removed.

Overall, initial analysis indicates that the TP stormwater removal requirements will be easier to meet than the TN removal requirements. New development may be able to

generate TP credits, but there may not be buyers for these credits if there is a significant excess of TP credits. It will be very difficult for new development to meet the TN reduction target and it is unlikely that credits can be generated through additional BMP implementation.

Discussion ensued on effects of the Jordan Lake Rules on future development.

Agriculture Breakout Group

Ruth Swanek, CH2M HILL

Discussion

Dairy Farm – Fencing Cattle Out of Streams Example

- Agreed with overall approach; need to account for areal loading from pasture.
- Phosphorus Loss Assessment Tool may provide some useful information.
- Life of fencing is 10 years (state) and 15 years (federal).

Poultry – Dry Stack and Composting Facility

- Load reduction – NRCS does have certain removal efficiencies they assume; Phil Ross can provide further information.
- Not all litter goes in to dry stack; if soil conditions are favorable, will land apply from barn to avoid moving litter twice.
- EQIP – must maintain for 15 years; DSWC – must maintain for 10 years; facilities can last a long time.

Other Discussion

- Group would like to see other BMPs credited besides animal waste. Discussed grassed field borders, long-term no-till (cost share only lasts 5 years), and cropland conversion from row crop to forest or to cover crop.
- No-till
 - Neuse gives no TN credit, but no-till does reduce TN loading; will work with DWQ to see if can apply credit in Jordan Lake watershed.
 - Other benefits – holds water better; in drought years, no-till fields have higher yields.
 - Tax credit on no-till equipment; conservative estimate of price of no-till drill is \$15-20K; some programs have loaner equipment, but all farmers need to get in fields at same time.
- Conservation
 - CREP – they provide \$1500 per acre for conservation which is not competitive; if trading could supplement, this could be an alternative funding option from EEP.
 - Conservation Security Program – NRCS program which pays farmers for good conservation practices, but funding is very competitive – paid at national level.
- Cropland conversion – if convert row crop to hay and harvest the hay, can remove 180 lb/ac-yr TN plus get some TP removal.

- Julie will provide information from DSWC that will be useful in evaluating agricultural practices.

Point Source Breakout Group

Lauren Elmore, CH2M HILL

Steve Shoaf, Bob Dodson, Linda Holt, David Lawson and Scott Pickard were present representing Burlington, City of Durham, Mebane, and Graham. Each facility representative was provided with graphs illustrating the projected loads for TN and TP for his/her facility. Each loading graph showed the projected loading with and without an upgrade. In addition, another graph was provided that illustrated the number of TN and TP credits generated or required by a facility under existing (no upgrade unless it is currently in progress) conditions. Each facility also received a list of assumptions that were made when estimating future loads.

Lauren discussed the assumptions and data with each facility representative present and asked for clarification regarding potential trading scenarios they want to see investigated. Pilot participants agreed to look over the nutrient projections spreadsheets and see if they agreed with the way the data projections were calculated and to see if the projected concentrations and flows look reasonable.

Lauren agreed to email each facility its spreadsheet for review. Pilot participants that were not present will also receive their loading spreadsheets in electronic format for review. CH2M HILL will investigate the utility of a Burlington Area group trading program and Burlington combining their WWTP permits and MS4 permit into a single watershed or bubble permit. CH2M HILL will also evaluate how an upgrade could be used to supply long term credits for helping to meet a municipality's existing development nutrient reduction requirements.

Once CH2M HILL has heard back from the participants and made any requested adjustments, CH2M HILL will begin looking at the possible group and individual trading examples within the Pilot areas.

Lauren will send out these files the Week of April 2nd and ask for feedback from all facilities by April 16th.