

**Sweet Water
Water Quality Trading Subcommittee*
And
Policy Committee**
Consensus Policy Recommendations (3-29-10; revised 4-14-10)**
Melissa Scanlan, Trading Subcommittee Chair
Peter McAvoy, Policy Committee Chair

I. Overview of Committee Work

Over the past year, the Sweet Water Policy Committee's Water Quality Trading Subcommittee invited speakers representing the Wisconsin DNR, environmental groups, and municipal groups to teach three seminars that provided an overview on water quality trading.¹ From these presentations, we gained an understanding of the history of water quality trading in Wisconsin, which is summarized below. We also learned about a variety of policy issues that require analysis and sound decisions in order to create cost-effective trading programs that will have measurable improvements in water quality. We have identified those issues below, and where possible, provided a policy recommendation for any future trading programs within Sweet Water's watersheds of concern.

II. Wisconsin's Experience with Water Quality Trading

In 1997, Wisconsin's Legislature created Act 27, which allowed water quality trading through a DNR-administered pilot project.² This state law needed to be consistent with the Federal Clean Water Act in a variety of ways; the DNR determined the program should include:

- The trading area must be restricted to the watershed;
- Nutrients (N and P) and sediment and other oxygen-related pollutants are the preferred pollutants for trading;
- Credits can only be generated for reductions greater than regulation or TMDL baselines;³

The state law set up a DNR pilot project that allows a WPDES permittee to discharge pollutants above regulated levels if it reached an agreement with a point or non point source to reduce pollution in another part of the watershed. The trade would need a broker to facilitate and monitor the trade. The trade would also need to be limited to the same pollutant or water quality standard, improve water quality, have a contract term

¹ Mary Anne Loundes presented for the Wisconsin Department of Natural Resources, Jamie Saul presented for Midwest Environmental Advocates, and Paul Kent presented for the Municipal Environmental Group.

² S. 283.84, Wis. Stats.

³ Mary Anne Loundes, WDNR, powerpoint presentation, April 2009.

that did not exceed five years, and involve a watershed that is impaired and includes both agricultural and municipal point and non point sources.⁴

Three pilot study areas emerged in the Red Cedar River Watershed, the Fox and Wolf River Basins, and the Upper and Lower Rock River Basins. From these pilot areas, only one trade occurred between a single POTW and agricultural non-point source in the Red Cedar River. In this situation, the POTW paid a clearly-economical \$1.84 for each pound of phosphorus removed by No-Till planting and Conservation Tillage, two methods that are easy to verify with drive-by monitoring by the local Land Conservation Department.⁵

Despite the lack of trades, the DNR and its study groups learned about the impediments and drivers to water quality trading, and the DNR has developed the following findings:

1. Most wastewater treatment plants can more economically meet an effluent limit of 1 mg/l phosphorus through plant upgrades than through trading.
2. For trading to be effective, a broker, such as the County Land Conservation Department or the Department, should assume the administrative costs. The broker will need a source of funds to function in this capacity.
3. Trading is more likely to be economical if the phosphorus load to be traded is relatively small.
4. The effluent limit of 1 mg/l phosphorus is not an adequate driver to support trading in most instances. A TMDL, performance standard or water quality based limit is needed to elicit interest based primarily on cost considerations.
5. An agreed-upon set of tools is needed to quantify phosphorus reduction loads from nonpoint sources.⁶

Given the change in phosphorus regulations that are imminent, we see a potential new regulatory driver that will place greater emphasis on using trading as a tool for achieving cost-effective pollution reductions.

III. Recommendations for Overall Goals of a Water Quality Trading Program

The Water Quality Trading Subcommittee has developed a framework for water quality trading that was approved by the Policy Committee on March 29, 2010. While water quality trading is only intended to be an optional program, if and when trading occurs in the Sweet Water watersheds of concern, the Committee has discussed and reached a consensus on the overall goals and specific policy recommendations. The overall goals of any water quality trading program should include the following three elements:

1. Effectiveness

⁴ S. 283.84, Wis. Stats.

⁵ <http://dnr.wi.gov/runoff/pt/>. The WDNR reports that this trade cost \$58,000, and removed 31,500 pounds of phosphorus.

⁶ <http://dnr.wi.gov/runoff/pt/>.

- Measurable water quality improvement over time. Improvements should be at least as great as with the status quo, and account for uncertainty as well as secondary benefits

2. *Transparency*

- Trading agreement containing essential information, such as credit ratios and trade partners, is completed and made available for public comment prior to DNR approval, either as part of the WPDES permit when the draft permit is released for public comment or as part of a draft modified permit
- Water quality data is collected and made publicly available

3. *Enforceability*

- WPDES Permittees retain enforceable permits with binding effluent limitations and other conditions that reflect the trade
- Faithfulness to the overall CWA structure is assured (compliance with water quality standards is still the goal; no backsliding on water quality based effluent limits; no degradation of high-quality waters)

IV. Water Quality Trading Policy Recommendations

In addition to incorporating the overall goals (above) into a trading program, the Water Quality Trading Subcommittee recommends the following policies should be considered in development of a water quality trading program in the watersheds of concern for the Sweet Water:

1. ***Trading Area*** - The trading area must be defined, and would be restricted to the watershed or area with an approved TMDL.⁷ Watershed should be defined by DNR rules to be an area that is sufficiently large enough to supply trading partners, but sufficiently small enough to ensure the trades are having a quantifiable water quality impact.
2. ***Pollutants of Choice*** - Nutrients (N and P) and sediment and other oxygen-related pollutants are the preferred pollutants for trading because these pollutants have less localized toxic effects.⁸
3. ***Same Pollutants*** – Trades would generally only be allowed for the same pollutants or water quality standards; an exception would be where adequate scientific information exists to establish and correlate impacts on water quality between different oxygen-related pollutants.⁹

⁷ “Water quality trading is intended to provide opportunities for efficiently achieving and maintaining water quality standards within watersheds, as opposed to cleaning up one watershed at the expense of another.” EPA’s 2007 Water Quality Trading Toolkit for Permit Writers, pages 12-14.

⁸ EPA’s 2007 Water Quality Trading Toolkit for Permit Writers, pages 10-11.

⁹ EPA’s 2007 Water Quality Trading Toolkit for Permit Writers, page 11; Wis. Stats. s. 283.84(1m)(b)(requiring trading of same pollutant without exception).

4. **Trade duration** – The goal should be to establish duration of trade agreements and individual credits that reflect the best science and fit the administrative structure. Current law, *i.e.*, the Wisconsin pilot program statute, sec. 283.84, Wis. Stats., limits the duration to 5 years, which follows the 5 year duration of a WPDES permit.¹⁰ The trade duration could be extended for practices that require renewable rental fees (*i.e.*, stream buffers or other changes in land use), high capital costs, or maintenance costs (*i.e.*, repairing sediment basins) and where water quality improvements have been made that would justify extending the practice/credit.
5. **Monitoring Water Quality** – An inherent risk of trading is that water quality improvements will be overstated or never attained. There are three levels of calculating nutrient reductions. Going from most accurate and costly to least, these are: direct water quality measurements, site specific calculations entered into acceptable computer models, and pre-determined nutrient reductions for practices regardless of site-specific characteristics. Given the level of monitoring that is already going on and the potential for expansion in the Sweet Water watersheds of concern, we recommend a combination of field monitoring and site specific calculations to measure success.
6. **Enforcement and Permit Terms**- Ensure that the WPDES Permit includes clear terms holding Permittee liable for BMP-derived water quality improvements;¹¹ Identify in permit document what is required for Permit compliance –given in clear metrics, such as quantity of pollutant intended to be removed through BMPs, number of linear feet of buffer, etc.¹²
7. **Baseline for Credits** - Credits can only be generated for reductions greater than regulation or TMDL baselines.¹³

¹⁰ Wis. Stats. s. 283.84(1m)(c)

¹¹ EPA’s January 13, 2003 Water Quality Trading Policy at page 8. Among the items the EPA says should be in a “credible” trading program, are “incorporating provisions for trading into NPDES permits” and expressing trades in clearly defined “rates or mass per unit time as appropriate to be consistent with the time periods that are used to determine compliance with NPDES permit limitations or other regulatory requirements.” *Id.* at pars. 1 & 2. Additionally, “[m]echanisms for determining and ensuring compliance are essential for all trades and trading programs.” EPA’s January 13, 2003 Water Quality Trading Policy at page 10. “In the event of default by another source generating credits, an NPDES permittee using those credits is responsible for complying with the effluent limitations that would apply if the trade had not occurred. *Id.*

¹² EPA’s January 13, 2003 Water Quality Trading Policy at pages 6-7.

¹³ EPA’s January 13, 2003 Water Quality Trading Policy at page 5:

The term pollution reduction credits (“credits”), as used in this policy, means pollutant reductions greater than those required by a regulatory requirement or established under a TMDL.

a. ***Greater than regulation – related to agriculture:***

Credits for agricultural BMPs should only be given if those BMPs are not already required by law; there is debate about what specific pollutant is controlled by a given BMP, and the specific facts of each situation would be considered in the trading process. In Wisconsin, an agricultural BMP is not required by law if there are no cost-share dollars available to the farmer. In the absence of cost-share dollars, trading could be used to pay for implementation of agricultural BMPs. The subcommittee agreed that this would be a favorable outcome.

There was not agreement as to whether farms wanting to participate need to undertake certain practices in order to participate in trading, such as completing a nutrient management plan.

b. ***Greater than TMDL baselines***

For trading purposes, in a TMDL situation, it is understood that the Waste Load Allocation (WLA) for the point source gets put into the WPDES permit as the limit the point source needs to meet. Then the point source would be allowed to: 1) trade with other point sources that generated credits by making reductions beyond the WLA or permit limit applicable to that source, or 2) trade with non point sources that generate credits by undertaking activities to reduce water pollution.

There was not agreement on where this baseline should be for agriculture. The EPA's policy is that the baseline should be set at the Load Allocation (LA) and that an agricultural source cannot generate tradable credits until the source gets to the LA.¹⁴ By

¹⁴ EPA's January 13, 2003 Water Quality Trading Policy at page 5; *see also* EPA's 2007 Water Quality Trading Toolkit for Permit Writers, pages 132-133 of the PDF:

Nonpoint Source Baseline Derived from TMDL Load Allocations

An LA established under a TMDL defines the nonpoint source load reductions necessary to achieve water quality standards. EPA would not support a trading program that allows nonpoint sources to sell credits if the discharge is contributing to water quality impairment; therefore, nonpoint sources should meet their portion of the LA before generating credits to sell on the trading market.

See also, EPA's January 13, 2003 Water Quality Trading Policy at page 5:

The term pollution reduction credits ("credits"), as used in this policy, means pollutant reductions greater than those required by a regulatory requirement or established under a TMDL.

contrast, the Municipal Environmental Group and MMSD propose that credits should be generated when an agricultural source makes reductions below the existing impaired water quality conditions.

V. Issues that Require Further Discussion and Refinement

The Trading Subcommittee left several issues for future discussions and recommendations, not because they were too controversial, but simply because we ran out of time. These are outlined below:

- 1. Credit ratios** – How many pounds of pollutant reduction (credit) must be purchased to offset one pound of pollutant reduction from on-site treatment? The larger the trade ratio the faster the water quality improvements, however, the ratio should not be set so high as to discourage trades that would improve water quality. How should credit ratios be determined? Should the credit ratio be adjusted to reflect whether an agricultural practice is required by law but unfunded by cost-share?
- 2. Credit Adjustment based on monitored result** -Some subcommittee members stated that ongoing water quality monitoring is a key element of an effective restoration program and should be done throughout the restoration period for the watershed so that pollutant reduction efforts, including credit adjustment, could be refined as the process moves forward.
- 3. Monitoring** - Frequency of monitoring, where it is done, who does it, and who pays for it. Use of a combination of field monitoring and site specific calculations to determine credits.
- 4. Written Agreements and Transparency** – Prior to the DNR approving a trade, there must be a written agreement between the buyer and the seller containing all essential terms that is made available for public comment. The agreement should be attached to the WPDES permit and referenced within.
- 5. Pollutant Dead Zones** – With trading there is a potential for localized, permanent impairments due to (a) geographic factors (i.e., distance between trading partners or trading beyond the watershed) or (b) pollutant factors (trades that inappropriately allow for “hypoxic” or “dead zones”)

Possible solutions:

For example, where a TMDL has been approved or established by EPA, the applicable point source waste load allocation or nonpoint source load allocation would establish the baselines for generating credits.

- Identify where the WQ gains are to be realized (at the point source? Further downstream?) and monitor the water quality *between* trading partners
- Specify which pollutants may be traded under what circumstances
- Set a baseline for water quality that must be attained and don't allow a trade to allow more pollution than that into the water.¹⁵

6. Banking/Insurance – What examples exist of banking or insurance pools of Best Management Practices to protect the purchaser of credits when a seller fails to implement the practice or the practice fails to achieve the intended pollution reductions? What can we learn from wetland banking?

7. Tools to Determine Phosphorous Reductions – During DNR's pilot projects, it identified a need for an agreed-upon set of tools to quantify phosphorus reduction loads from nonpoint sources.¹⁶ What tools exist and should be used to identify potential trading partners and calculate potential reductions?

8. Feasibility - What is the feasibility of creating an adequate trading base to overcome the obstacles and develop adequate efficiencies of scale?

*** Members of Sweetwater Trust Water Quality Trading Subcommittee as of 3-9-10:**

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Susan Anthony	Milwaukee Metropolitan Sewerage District
James Fratrack	WI DNR--SE WI Regional Headquarters
Susan Greenfield	Root-Pike Watershed Initiative Network
Dennis Grzezinski	Midwest Environmental Advocates
Mike Hahn	SE Wisconsin Regional Planning Commission
Paul Kent	Anderson & Kent , S.C.
Bruce Keyes	Foley & Lardner
Gail Epping Overholt	UW-Extension
Melissa Malott	Clean Wisconsin
Scott Mathie	Metropolitan Builders Association
Peter McAvoy	Sixteenth Street Community Health Center
Ezra Meyer	Clean Wisconsin
Cheryl Nenn	Milwaukee Riverkeeper
Jamie Saul	Midwest Environmental Advocates
John Siepmann	Siepmann Realty
Kevin Shafer	Milwaukee Metropolitan Sewerage District

¹⁵ “NPDES permits must not incorporate trades that would cause impairment of a designated use (CWA 301(b)(1)(C); 40 CFR 122.44(d)(1)(vii)(A)).” EPA’s 2007 Water Quality Trading Toolkit for Permit Writers, page 28.

¹⁶ <http://dnr.wi.gov/runoff/pt/>.

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Andy Holschbach	Ozaukee County
Steve Keith	Milwaukee County
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