2015 WATER SUCCESS STORY

Bureau of Water Quality

Cost-Effective Phosphorus Compliance Options Provide Flexibility*

Phosphorous Compliance Options

Phosphorus has long been recognized as the fuel for excessive plant and algae growth in waterbodies. Approximately 39% percent of Wisconsin waters identified as "impaired" is due to total phosphorus levels—see Figure 1. Wisconsin became one of the first states in the country to adopt phosphorus water quality standards in December 2010 for lakes, reservoirs, rivers and streams. The DNR is implementing these standards in Wisconsin Pollutant Discharge Elimination System (WPDES) permits and developing management tools for cost-effective compliance.

Adaptive management is a compliance option that allows municipalities, industries, agricultural producers, storm water utilities, developers and other to work together to achieve a cost-effective watershed approach for meeting phosphorus water quality standards. Water quality trading is another compliance option where a permittee, facing high costs to reduce phosphorus, can compensate another party to achieve the same or greater water quality benefit using a less costly phosphorus reduction method.

Webinars and Guidance Development

The DNR offered a webinar series in 2015 to help stakeholders understand these water quality trading and/or adaptive management tools. See: http://dnr.wi.gov/topic/SurfaceWater/atlas.html. Agricultural producers are important stakeholders in watershed projects because reducing phosphorus inputs from cropland to waterways is often cheaper than adding additional phosphorus removal processes to a wastewater treatment plant.

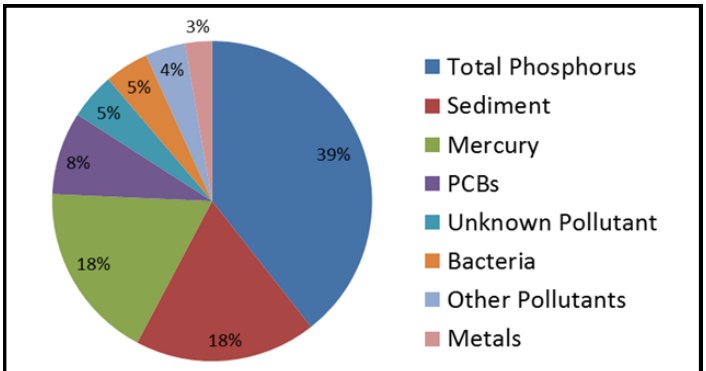

***Figure 1**: Based on Wisconsin's draft 2014 Impaired Waters List. Causes and percent of impairment (or pollutants) for waters included on Wisconsin's draft 2014 CWA Section 303(d) list of waters not meeting water quality standards. ("Unknown Pollutant" listings are biological or physical habitat impairments where the pollutant is not known.)*

DNR staff also developed draft guidance entitled, "Agricultural Nonpoint Source Implementation Handbook for Adaptive Management and Water Quality Trading." The guidance lays out factors to consider when partnering with a permittee and developing an adaptive management or water quality trading plan.

DNR Approved-Projects

The DNR approved three water quality trading/adaptive management projects in Wisconsin and are working with several other permittees to develop water quality trading or adaptive management plans. Site-specific project information is available at: http://dnr.wi.gov/topic/SurfaceWater/AmWqtMap.html.

The department also continues to support the development of water quality trading and adaptive management projects such as the Fox Phosphorus Trading Project, which is exploring the potential for water quality trading in the Lower Fox Basin. The Great Lakes Commission,

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(exit DNR), the U.S. Department of Agriculture Natural Resources Conservation Service, and the DNR are partnering in this effort to alleviate high nutrient levels and algal blooms in Wisconsin's Lower Fox River Watershed.

Phosphorus is a nutrient that is applied to agricultural soils to promote crop production. Reducing soil erosion and associated phosphorus from agricultural sources in the Lower Fox River/Duck Creek will help prevent excessive sediment loadings shown below into Green Bay.

Excessive sediment runoff in Green Bay. DNR Photo.

The goal of the project is to establish a phosphorus credit trading program in the watershed with a market-based approach to enable the most economical solution to achieving water quality and environmental goals. This project will work with agricultural sectors and others to control soil erosion which is less costly than installing advanced phosphorus removal technology in wastewater treatment facilities.

Multi-Discharger Variance Options

Industrial and municipal WPDES permittees may have another tool in 2016 to comply with phosphorus regulations – the multi-discharger variance. Wisconsin's Legislature authorized the concept of the multi-discharger variance in April 2014 through the approval of Act 378. Since passage of the state law, the Department of Administration (DOA) and the DNR have been working to quantify the economic impacts that would occur without flexibility in implementing phosphorus reduction efforts in WPDES permits.

Under federal rules, the widespread social and economic impacts of compliance with rules can be considered when granting variances. The DOA's economic impact analysis concluded that compliance with Wisconsin's phosphorus standards would cause substantial and widespread social and economic impacts to Wisconsin. Conclusions from this determination are available at: http://dnr.wi.gov/topic/surfacewater/phosphorus/statewidevariance.html

A proposed multi-discharger variance would extend the timeline for WPDES permittees to comply with low-level phosphorus limits. In exchange, wastewater permit holders commit to:

1) step-wise reductions of phosphorus in their effluent; and
2) implementing a watershed project to help reduce phosphorus from farm fields or other phosphorus pollution contributors.

The variance evaluation recommends a two-step approach to determine whether individual permit holders qualify for the proposed multi-discharger variance. If a point source qualifies, this compliance option can be compared to other existing compliance options, such as facility upgrades, water quality trading, adaptive management and individual economic variances, to help point sources select the most affordable compliance option practicable.

A public hearing on the proposed multi-discharger variance was held on December 9, 2015, in the Wisconsin Dells.

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