

City of Watertown

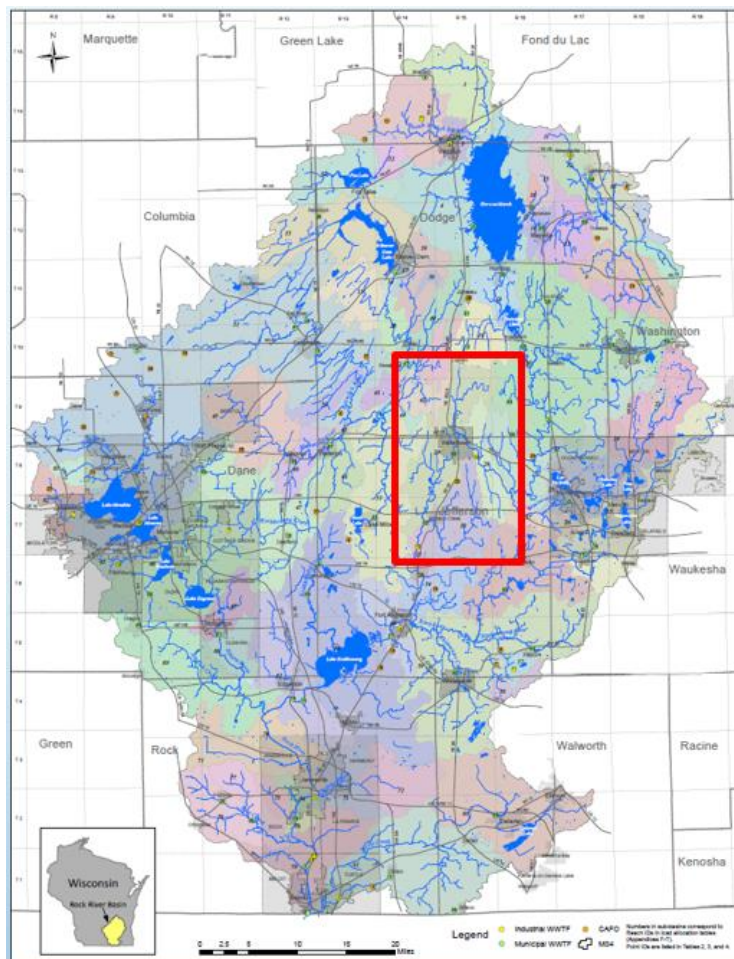
Water Quality Trading

Overview

Background

The Wisconsin Department of Natural Resources (WDNR) and the United States Environmental Protection Agency (EPA) approved a Total Maximum Daily Load (TMDL) study for the Rock River Basin in September 2011. The TMDL studied how much Total Suspended Solids (TSS) and Phosphorus would need to be prevented from entering the Rock River and its tributaries each year to return to healthy, fishable, swimmable conditions that meet water quality standards.

The Municipal Separate Storm Sewer System (MS4) Permit requires the City to reduce the amount of TSS and Phosphorus reaching local waterways per the pollutant reductions listed in the TMDL. The City's 2014 Storm Water Quality Master Plan estimated the cost of compliance with the TMDL at well over \$13 million dollars (in 2014 dollars) unless an alternative approach was used. Since then, the City has determined that a Water Quality Trading program implemented within two local subwatersheds would be the best option for a more cost effective way to meet the TMDL pollutant reductions as compared to strictly using traditional stormwater management practices.



Rock River Basin TMDL
Subwatersheds

(Three City of Watertown
Subwatersheds shown in
red box)

Water Quality Trading

Water Quality Trading typically involves a permitted entity looking for a more cost-effective way to meet pollution control requirements of a permit. When pollution controls are installed in areas that are not *required* to reduce pollution, the benefits of this pollution control can be traded with an entity that needs to show additional pollution reductions.

The City's MS4 Permit requires TSS and Phosphorus reductions in three separate subwatersheds. The cost of installing a pollution control practice in a rural area is much cheaper than the cost of a practice to capture the same amount of pollution in an urban area.

Examples of Rural Pollution Control Practices	
Grassed Waterways	Cover Crops
Buffer Strips	Barnyard Management
Streambank Stabilization	Wetland Restoration

The cost of Water Quality Trading will depend largely on the market price of Phosphorus per pound. TMDL compliance is measured in pounds of TSS and Phosphorus. The amount that a property owner wants to charge per pound of phosphorus has been estimated to be \$35 - \$250 per pound (per discussions with WDNR and consultants, 2019-2021). A typical rural pollution control practice may be between \$5,000 and \$20,000, while an urban stormwater best management practice (BMP) may range from \$50,000 to over \$3,000,000 (engineering, land acquisition, construction, etc.) (per recommendations in the 2014 Storm Water Quality Master Plan, December 2014).

Engineering Division staff began working with the Jefferson County Land & Water Conservation Department (County) and the Rock River Coalition (RRC) early in 2022 to develop a Water Quality Trading program to meet the City's TMDL requirements of the MS4 Permit. This partnership will lean heavily on the vast expertise and experience of both the County staff and the RRC regarding nonpoint source runoff best management practices, in-field assessments and site conditions, modeling, documentation, outreach, communications and more. Funds were approved in the 2023 Stormwater Utility budget to begin Water Quality Trading in 2023, and an Intergovernmental Agreement has been drafted and reviewed by staff and both the County and City attorneys, and has been approved by the Public Works Commission.

Overall TMDL Implementation Approach

The City's long-term TMDL compliance approach to meet the MS4 Permit will continue to include a variety of options, with Water Quality Trading and strategic stormwater BMP installations being the primary means of MS4 Permit compliance.

Total Suspended Solids (TSS): Pollutant Reductions				
	2014	2021	2022	TMDL Goal
Subwatershed 28	12.56%	15.3%	15.3%	40.0%
Subwatershed 29	17.05%	19.5%	19.5%	44.2%
Subwatershed 30	9.93%	15.2%	15.2%	40.0%

Total Phosphorus Pollutant Reductions				
	2014	2021	2022	TMDL Goal
Subwatershed 28	8.09%	11.2%	15.74%	27.7%
Subwatershed 29	11.53%	15.5%	18.01%	64.2%
Subwatershed 30	7.13%	10.8%	10.93%	27.0%

City of Watertown TMDL Implementation Actions To Date	
2014	Completed WinSLAMM Analysis for TMDL
2016	Updated Ch. 288, Stormwater Ordinance
2017	Submitted Water Quality Trading Option to WDNR
2019	Completed Water Quality Trading Analysis
2019	Completed Stormwater Utility Rate Study
2020	Re-Joined Rock River Stormwater Group
2020	Implemented Stormwater Utility Rate Increase
2020	Hired Stormwater Project Manager
2021	Received WDNR Approval for Water Quality Trading
2021	Re-Energized Stormwater Utility Credit Program
2022	Updated/Refined TMDL WinSLAMM Results
2022	Developed iWorQ TMDL Management System
2022	Completed Leaf Collection/Phosphorus Reduction Analysis
2022	Began Discussions with Jefferson County & Rock River Coalition re: a Water Quality Trading Program to meet TMDL Requirements