

Water Quality Trading for Permitted MS4s

Waukesha County Stormwater Workshop
Tuesday-Wednesday - April 20, 21 2021
Hosted on Zoom by Wisconsin Land and Water



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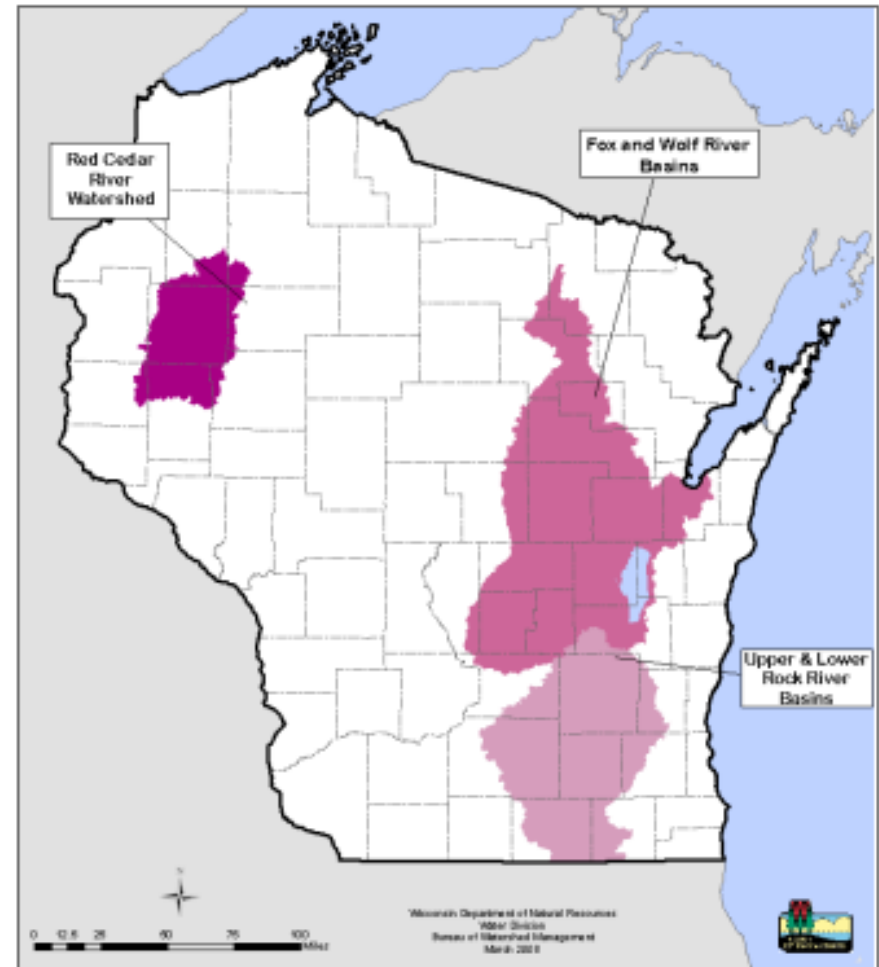


Agenda

1. History and Status of WQT in WI
2. Trading options for Permitted MS4s
3. Impact of TMDLs
4. Overview of Management Practices
5. Potential Trading Scenarios

Wisconsin's History with Trading

- In 1997, three water quality trading pilot areas were created by statute spurred by the adoption of a statewide 1 mg/L TBEL for TP.
- It proved more economical for facilities to conduct treatment upgrades. One trade between a small WWTF and some farms occurred in the Red Cedar Basin.
- With adoption of numeric water quality criteria for total phosphorus in December 2010, wastewater treatment plants faced more stringent effluent limits and the idea of water quality trading was resurrected. We had an economic driver!





Statute Updated: Section 283.84 Wis. Stats.

Actual language proposed by point source and environmental groups.
DNR provided informational testimony to the WI Legislature.

283.84 Trading of water pollution credits.

- (1) The department shall administer a program for the trading of water pollution credits that is consistent with the federal Water Pollution Control Act, 33 USC 1251 to 1387. Subject to sub. (1m), under the program the department may authorize a person required to obtain a permit to increase the discharge of pollutants above levels that would otherwise be authorized in the permit if the person does one of the following:
- (a) Reaches a binding, written agreement with another person who is required to obtain a permit under which the other person agrees to reduce the discharge of pollutants below the levels that would otherwise be authorized in the other person's permit.
 - (b) Reaches a binding, written agreement with another person who is not required to obtain a permit under which the other person agrees to reduce the amount of water pollution that it causes below the levels of water pollution that it causes when the agreement is reached.
 - (c) Reaches a binding, written agreement with the department or a local governmental unit, as defined in s. 16.97 (7), under which the person pays money to the department or local governmental unit and the department or local governmental unit uses the money to reduce water pollution or to provide cost-sharing, for the purposes of s. 281.16 (3) (e) or (4), for projects to reduce water pollution.
 - (d) Reaches a binding, written agreement with the department under which the person reduces the discharge of pollutants under another permit that the person holds below the levels that would otherwise be authorized in the other permit.
 - (e) Reaches a binding, written agreement with the department under which the person constructs a project or implements a plan that results in reducing the amount of water pollution from sources other than the source covered by the permit.
- (1m) Under the program, the department may authorize a person to increase a discharge of pollutants above levels that would otherwise be authorized in the permit only if all of the following apply:
- (a) The agreement under sub. (1) results in an improvement in water quality.
 - (b) The increase in pollutants and the reduction in pollutants provided for in the agreement under sub. (1) involve the same pollutant or the same water quality standard.
 - (d) The increase in pollutants and the reduction in pollutants occur within the same basin or portion of a basin, as determined by the department.
- (3m) A person engaged in mining, as defined in s. 293.01 (9) or 295.41 (26), prospecting, as defined in s. 293.01 (18), bulk sampling, as defined in s. 293.01 (2m) or 295.41 (7), or nonmetallic mining, as defined in s. 295.11 (3), may not enter into an agreement under sub. (1).
- (3r) The department shall include terms and conditions related to agreements under sub. (1) in new and reissued permits.
- (4) The department shall modify the permits of persons entering into agreements under sub. (1) to enable the agreements to be implemented and to include terms and conditions related to the agreements.
- (6) The department may promulgate rules for the administration of this section.

Agreement Structure


Trade results in a water quality improvement

Same Basin

No mining, prospecting, bulk sampling

Permits must reflect trades

Guidance Documents Created

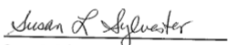


BUREAU OF WATER QUALITY
PROGRAM GUIDANCE

Guidance for Implementing Water Quality Trading in WPDES Permits


Guidance Number: 3800-2013-04
Wisconsin Department of Natural Resources
08/21/2013

This document is intended solely as guidance, and does not contain any mandatory requirements except where requirements found in statute or administrative rule are referenced. This guidance does not establish or effect legal rights or obligations, and is not finally determinative of any of the issues addressed. This guidance does not create any rights enforceable by any party in litigation with the State of Wisconsin Department of Natural Resources. Any regulatory decisions made by the Department of Natural Resources in any matter addressed by this guidance will be made by applying the governing statutes and administrative rules to the relevant facts.

APPROVED:

Susan L. Sylvester
Director, Bureau of Water Quality

8/21/13
Date

- The Department adopted two guidance documents in 2013.
- Reflects flexibilities negotiated with US EPA.
- Department started tracking potential concerns as we implemented the trading program to inform potential future guidance updates.

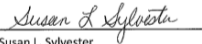


A Water Quality Trading How To Manual

Guidance on developing a water quality trading strategy based on protocols specified in "Guidance for Implementing Water Quality Trading in WPDES Permits"

Guidance Number: 3400-2013-03
Wisconsin Department of Natural Resources
09/09/2013

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APPROVED:

Susan L. Sylvester
Director, Bureau of Water Quality

9/9/13
Date

Implementation (Late 2019)

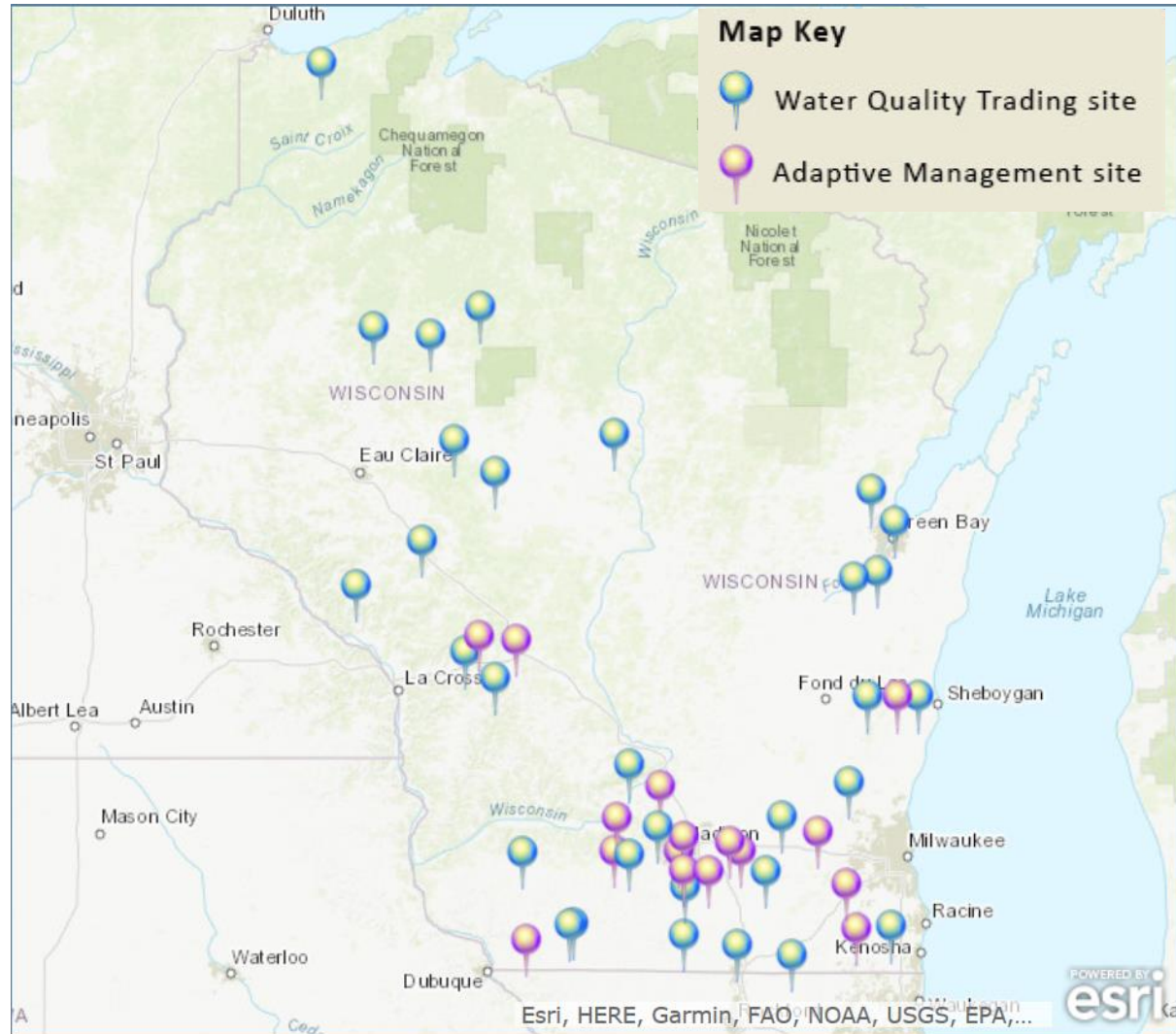
Water Quality Trading

- 44 facilities using trading
- Average Credit Need = 430 credits
- Average Project Size = 785 lb./yr.
- Average trade ratio = 1.8:1

Other Numbers by Facility:

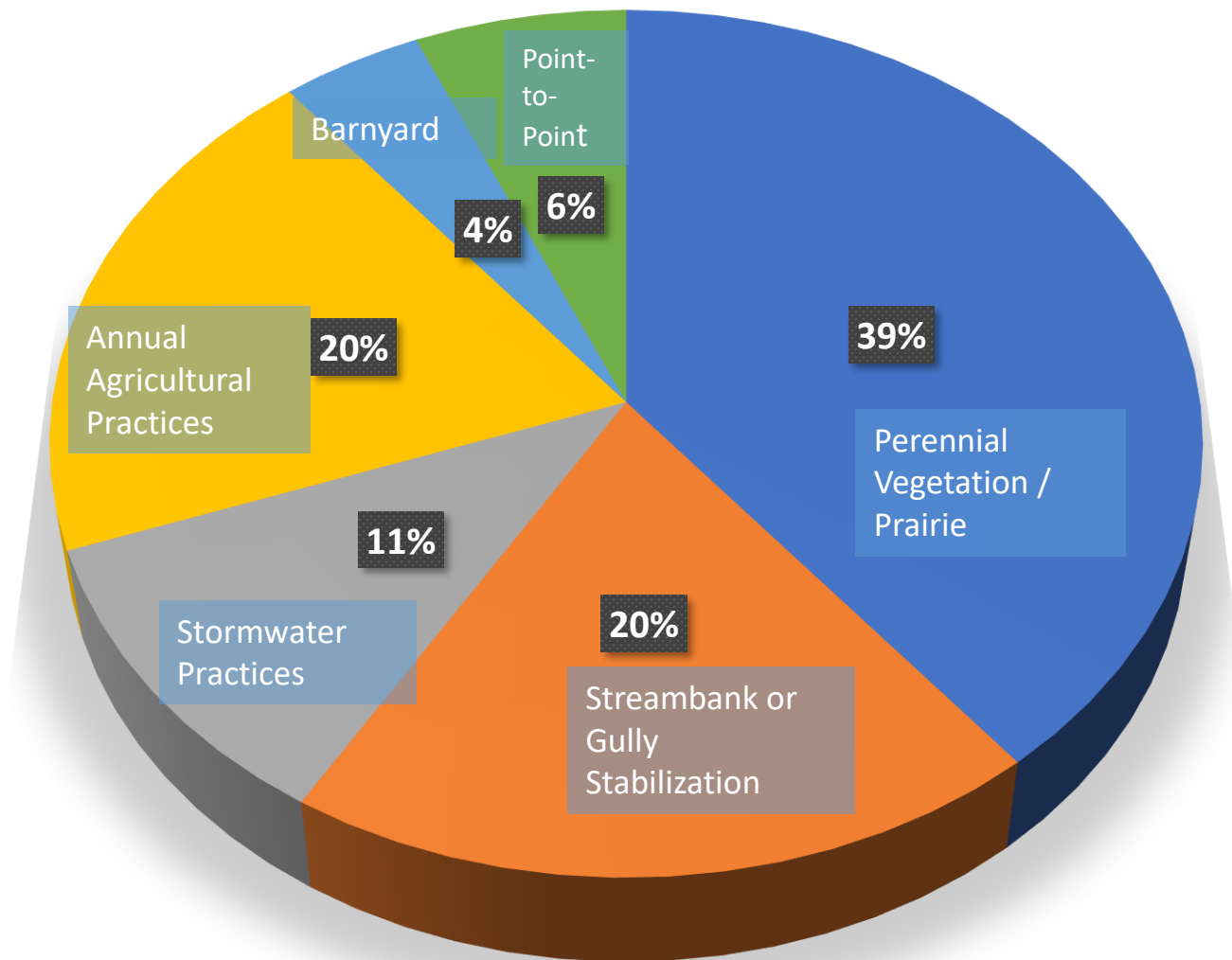
- 21 Adaptive Management
- 118 Multi-discharger variance
- 156 still in planning phase
- 42 individual variance
- 51 upgraded to meet limits
- 229 can meet current limits

Facilities in red, along with new or expanding dischargers, may still use WQT as a final compliance option. Permitted MS4s are also exploring WQT.



Compliance schedules and TMDL development schedules impact timing.

WQT Practices Statewide





2019 Guidance Update Process

- A stakeholder group was assembled to discuss these issues along with other potential concerns. The stakeholder group was comprised of consultants, dischargers and their representatives, agricultural groups, and environmental groups. We were able to draw from groups that had engaged in water quality trading or were considering it.
 - Site specific baseline
 - Credit threshold and interim floor (baseline)
 - Rotational averaging
 - Increase interim credit timeframe beyond 5-years
 - Eligible trading areas and geographic extent
- The guidance update process was initiated due to a Legislative mandate requiring the evaluation of all Department guidance documents.
- The process corresponded with the release of EPA's memo and draft policy guidance, which at times, dominated the conversations with stakeholders.



EPA Memo and Draft Policy Updates

- DNR's current framework was negotiated with EPA and already incorporates many of the concepts outlined in the EPA February memo and the September draft guidance. Final guidance has yet to be issued.
- Some dischargers interpreted the EPA documents as they did not need to use trade ratios, trading could occur anywhere upstream, downstream or in adjacent watersheds, that credits could be banked, and existing or previously installed agricultural practices could be used to generate credits.
- EPA's document used numerous catch phrases that negated much of this perceived flexibility:
 - “comply with all applicable water quality standards”
 - “be consistent with the assumptions and requirements of wasteload allocations in applicable EPA-approved TMDLs, consistent with 40 CFR 122.44(d)(1)(vii)”
 - “for facilities subject to permit conditions or other legal requirements, a program that uses current conditions as a baseline should require full compliance with legal requirements.”



Addressed Stakeholder Concerns

- Trading policy is too complex
 - Balancing between a flexible program and complexity.
- Trade ratios are too high
 - Projects to date have averaged 1.8:1.
 - Trades involving nonpoint can be as low as 1.2:1. Most reliable nonpoint practices have an uncertainty ratio of 1:1.
 - Trade ratios provide the flexibility and consistency in the program while ensuring water quality requirements are met.
- Credit Threshold too restrictive
 - We have interim credits good for 10 years and through rotational averaging have made the credit threshold easier to reach – and more accurately depicted.

Updated Guidance

- Stakeholder input used to draft updated guidance. After an additional 21-day comment period, it was adopted in June 2020.
- Built on existing guidance and framework.
- Addresses and balances stakeholder concerns.
- Builds on new EPA flexibilities within the required legal frameworks.
- Involved extensive stakeholder input.



Guidance for Implementing Water Quality Trading in WPDES Permits

Guidance Number: 3200-3400-3800-2020-03
Wisconsin Department of Natural Resources
6/1/2020
Edition: 2

This document is intended solely as guidance and does not contain any mandatory requirements except where requirements found in statute or administrative rule are referenced. Any regulatory decisions made by the Department of Natural Resources in any matter addressed by this guidance will be made by applying the governing statutes and administrative rules to the relevant facts.

APPROVED:
Adrian Stocks

Adrian Stocks
Director, Bureau of Water Quality
Wisconsin Department of Natural Resources

6/18/2020



WQT for Permitted MS4s

- WQT cannot be used for compliance to meet the requirements contained in NR 151.
- WQT can be utilized to meet TMDL reductions.

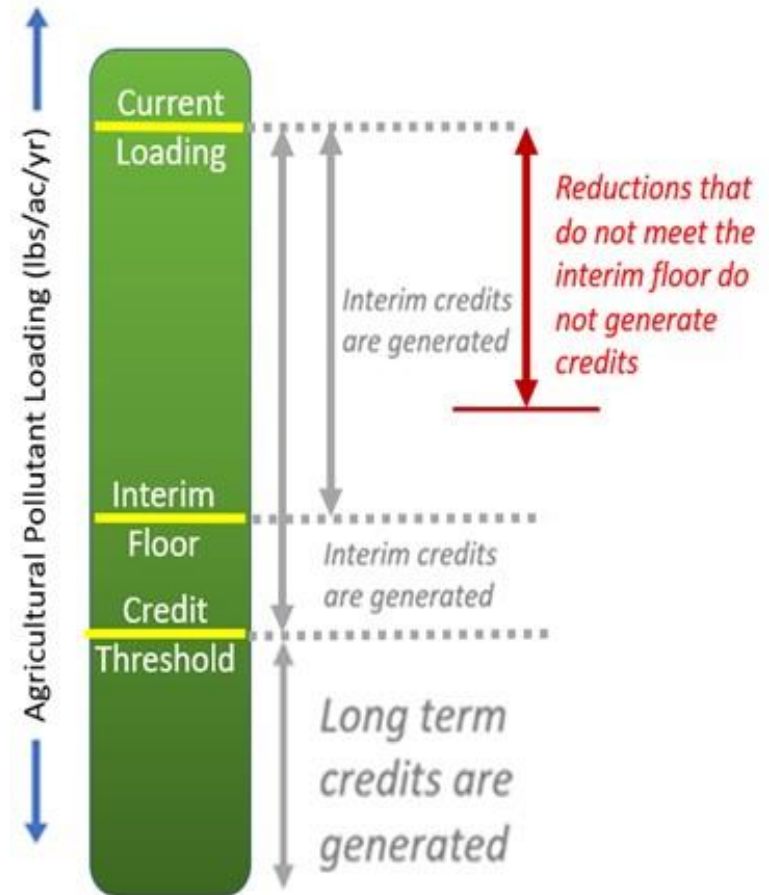
Note: Reductions obtained through a permittee's participation in a water quality trading project, in accordance with s. 283.84, Wis. Stats., and that has been reviewed and approved by the Department, may be counted toward credit in meeting the requirements stipulated under sections A.5.2.a and A.5.2.b. Additional information on water quality trading is available from the Department's Internet site at:

<https://dnr.wi.gov/topic/surfacewater/waterqualitytrading.html>

- To date, WQT has only been implemented through individual permits; permittees utilizing under a general permit may need to be switched to an individual permit.

WQT for Permitted MS4s

- WQT in watersheds requires the use of a credit threshold.
- Interim credits are good for 10-years and long-term credits are good for as long as the practices generating the credits are installed, maintained, and functioning.
- Permitted MS4s have an extended compliance schedule greater than the 5-9 years afforded wastewater dischargers so interim credits may have limited value.



Credit Thresholds

See DNR guidance for details on credit threshold and interim floor values. DNR guidance contains tables covering recently completed TMDLs.

Table 6. Wisconsin River Basin TMDL TP Summarized by TMDL Subbasin

WI River TMDL TP Parameters and Rounded Credit Threshold					Interim Floor Calculations		Feasibility Analysis
TMDL Subbasin	Baseline TP loss lb/ac/yr	TMDL % Reduction	TP Credit Threshold lb/ac/yr	Rounded TP Credit Threshold lb/ac/yr	Conservation Scenario 1 lb/ac/yr	Interim Floor lb/ac/yr	Conservation Scenario 2 lb/ac/yr
1	3.30	63%	1.19	1.50	0.99	NA	0.59
2	3.10	63%	1.14	1.50	0.80	NA	0.54
3	1.20	63%	0.45	0.50	0.37	NA	0.30
4	2.80	63%	1.02	1.00	0.96	NA	0.71
5	1.60	63%	0.58	0.50	0.72	0.72	0.50
6	3.10	63%	1.14	1.50	1.29	1.29	0.85
7	4.50	75%	1.10	1.50	1.32	1.32	0.81
8	1.90	63%	0.68	1.00	0.90	0.90	0.58
9	3.20	75%	0.81	1.00	1.36	1.36	0.85
10	5.20	77%	1.18	1.50	1.56	1.56	0.92
11	3.50	63%	1.28	1.50	1.28	1.28	0.85
12	3.90	78%	0.85	1.00	1.28	1.28	0.83

WQT Management Practices

Management Practice	Uncertainty Factor ¹	Applicable Technical Standard	Method for Calculating Pollutant Load Reductions	Notes
Agricultural Practices				
<u>Whole Field Management:</u> Requires an approved nutrient management plan, filter strips/buffer strips ³ , grassed waterways ⁴ , conservation or no till ⁵ , and cover crops. Additional practices as deemed by NRCS or county conservationist may be required to protect against mobilization and delivery of pollutants.	1	NRCS 590, 393, 332, 412, 345 329, 340 and 330	SnapPlus or equivalent model results compared to baseline	Requires an approved NRCS 590 nutrient management plan (NMP) that meets both the soil test-P and PI requirements. Requires a draw down strategy for nutrient concentrations that are above University of Wisconsin-Extension soil fertility recommendations. No application of manure, biosolids, or industrial wastes on snow covered or frozen ground or on fields with high groundwater or tile drainage. A crop or livestock producer engaged in a trade agreement must have all fields under an approved NMP, not just fields engaged in the trade.
Companion Crops (perennial vegetation)	1	NRCS 340	SnapPlus or equivalent model results compared to baseline Model as perennial cover	Companion crops must be established to provide continuous protection to soil surface and placed in support of Nutrient Management and supporting practices outlined below.
Conservation Easement	1	NRCS 327	SnapPlus or equivalent model results compared to baseline	Land in perennial vegetation.

WQT Management Practices

Management Practice	Uncertainty Factor ¹	Applicable Technical Standard	Method for Calculating Pollutant Load Reductions	Notes	
<u>Nutrient Management and supporting practices:</u>	2 (3)	NRCS 590	SnapPlus or equivalent model results compared to baseline	An approved NMP is required with any of the listed supporting practices. All supporting practices receive the same uncertainty factor as the NMP.	
Tillage Options ⁵				To receive an uncertainty factor of 2, a crop or livestock producer engaged in a trade agreement must have all fields under an approved NMP, not just fields engaged in the trade.	
Mulch Till	2 (3)	NRCS 345			
No Till	2 (3)	NRCS 329			
Riparian Filter Strip (edge of field)	2 (3)	NRCS 393			An uncertainty factor of 2, instead of (3), may be used when documentation can be provided through historic cropping records or soil testing that nutrient levels are stable or dropping, an indication of adherence to the NMP.
Grassed Waterway	See Notes	NRCS 412			An uncertainty factor of (3) is required if fields are not brought into compliance with ss. NR 151.02 and NR 151.04, Wis. Adm. Code.
Cover Crop	2 (3)	NRCS 340			An uncertainty factor of (3) is required if fields are managed without a NMP or with a NMP that does not meet the NRCS 590 standard. Current and historic field and farm information/cropping records must be described and captured within SnapPlus to allow DNR to verify phosphorus loss calculations are accurate and phosphorus loss is not shifted to other fields.
Other practices simulated in SnapPlus	2 (3)			No application of manure, biosolids or industrial wastes allowed on snow-covered or frozen ground or on fields with high groundwater or tile drainage. Establishing grassed waterways on fields in support of nutrient management and other supporting practices lowers the uncertainty factor to 1.5.	
<u>CAFO and Barnyard Production Area Practices</u>	2	NRCS 362	University of Wisconsin Barnyard Tool APLE or equivalent modeling method	While structural practices maybe attractive, greater reductions at a lower cost can often be achieved with field practices.	
Diversion	2	NRCS 558			
Roof Runoff Structure	4	NRCS 635			
Vegetated Treatment System	4	NRCS 656			
Constructed Wetland					
→ Sediment Control Basin	2	NRCS 350	RUSLE2	For agricultural runoff control.	

WQT Management Practices

Management Practice	Uncertainty Factor ¹	Applicable Technical Standard	Method for Calculating Pollutant Load Reductions	Notes
<u>Streambank Stabilization and Shoreline Protection</u>				
Without aquatic habitat adjustment	3	NRCS 580 NRCS 382	Appropriate methods include NRCS recession calculation. See Appendix F for detailed methods.	For livestock producers, streambank stabilization must be accompanied by riparian fencing or other controls to prevent destruction of streambanks.
With aquatic habitat adjustment	2	NRCS 580 NRCS 395		

Dredging, Lake Treatment and Wetland Restoration		Dredging is expensive, can have significant sediment disposal costs, and credit is only given for removal of the active phosphorus pool.		
<u>Lakes and Reservoirs</u>				
Dredging and removal of in-situ sediment and nutrients or treatment (i.e., alum)	3	NRCS 395	Load reductions calculated by determining seasonal flux rate.	Dredging must remove sediment to the original or native layer. Seasonal flux rate should be calculated based on a calibrated model and monitoring data. Annual load reductions are generated based on the calculated seasonal flux rate.
Dredging and removal of in-situ sediment and nutrients or treatment accompanied by aquatic habitat restoration.	2			
<u>Rivers or Streams</u>				
Dredging with stable stream banks, installation of appropriately wide buffer strips and supporting upland practices addressing pollutants of concern	2	NRCS 580	Load reductions are generated on a prorated annual basis until the flux rate returns to pre-dredging flux rate conditions.	Contact WDNR when developing monitoring plan.
Dredging without stabilized stream banks or without supporting upland practices	3			
Wetland Restoration	1	NRCS 657 NRCS 658	SnapPlus or equivalent model results compared to baseline	Load Reductions are generated for land placed out of production such as the conversion of agricultural land back to wetland. Credits may not be generated by using wetlands to treat runoff. See Appendix J – Wetland Restoration for more information.



WQT Management Practices

Management Practice	Uncertainty Factor ¹	Applicable Technical Standard	Method for Calculating Pollutant Load Reductions	Notes
Urban Practices				
Bioretention for Infiltration	2	DNR 1004	SLAMM, P8, or Recarga	Urban practices are not to be installed in wetlands, as they will be ineffective in hydric soils with a high water table.
Infiltration Basin	2	DNR 1003	SLAMM, P8, or Recarga	
Infiltration Trench	2	DNR 1007	SLAMM, P8, or Recarga	
Proprietary Storm Water Sedimentation Devices	2	DNR 1006	SLAMM	
Vegetated Infiltration Swales	2	DNR 1005	SLAMM or P8	
Wet Detention Pond	2	DNR 1001	SLAMM or P8	

- These are urban practices meant to treat urban runoff. Do **NOT** use urban practices to treat agricultural runoff.
- The high organic and sediment load will quickly lead to anoxic conditions in wet ponds and infiltration devices will fail due to sediment loadings.

WQT Scenarios for MS4s

If applicable, look at utilizing fields within the capture zone of your municipal supply wells.

These capture zones are mapped and available.



WQT Scenarios for MS4s



Do look for
conservation
easements along
floodplains

Avoid areas that
will be developed



New Effort: WQT Clearinghouse

- In response to the emphasis on market-based compliance options, the WI Legislature passed Act 151 during the 2020 legislative session creating an additional approach for buying and selling water quality pollution credits through a yet to-be-established central clearinghouse.
- The law requires the Dept. of Administration (DOA) to partner with DNR to solicit a third party to operate a single statewide clearinghouse. The solicitation process involves the following steps:
 1. Request for Information – **completed**
 2. Request for Proposals (draft notice period) - **ongoing**
 3. Request for Proposals (final).
 4. Evaluation of Proposals and Selection Process.
 5. DOA enters into a contract with the clearinghouse pursuant to s. 16.9685, Wis. Stats.



Questions

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<https://dnr.wisconsin.gov/topic/Wastewater/WaterQualityTrading.html>