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Stormwater Quality Management Plan Update

Town of Cedarburg

June 7, 2023

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Overview

- Introduction
- Milwaukee River Basin TMDL
- Current/Updated Stormwater Program
- Stormwater Quality Modeling
- Alternatives Analysis
- Recommendations

TMDL Introduction

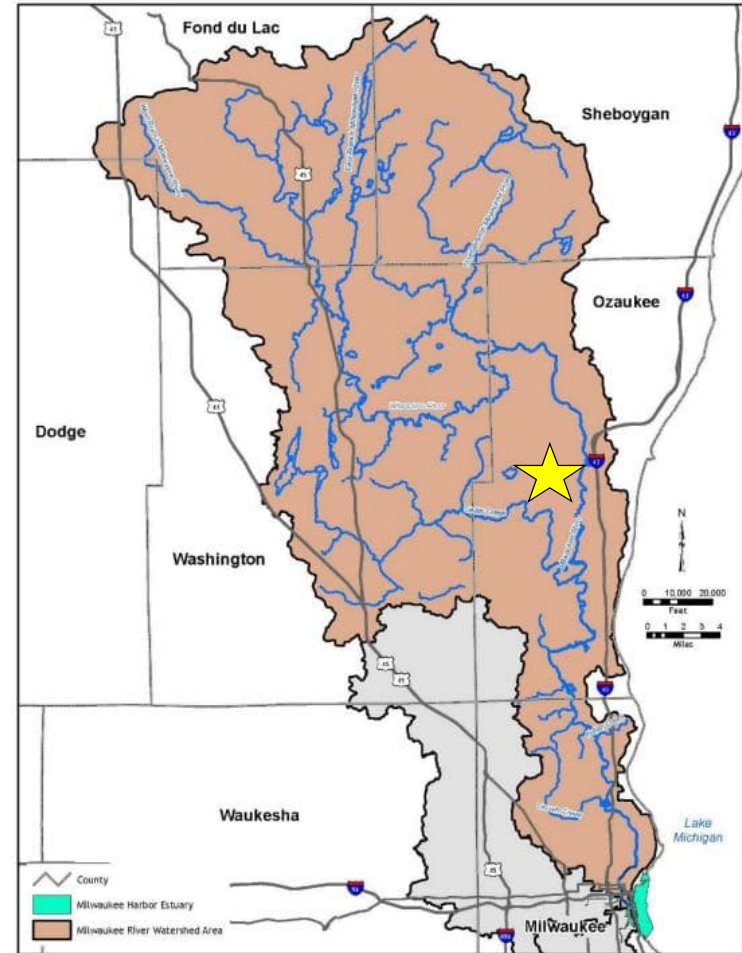
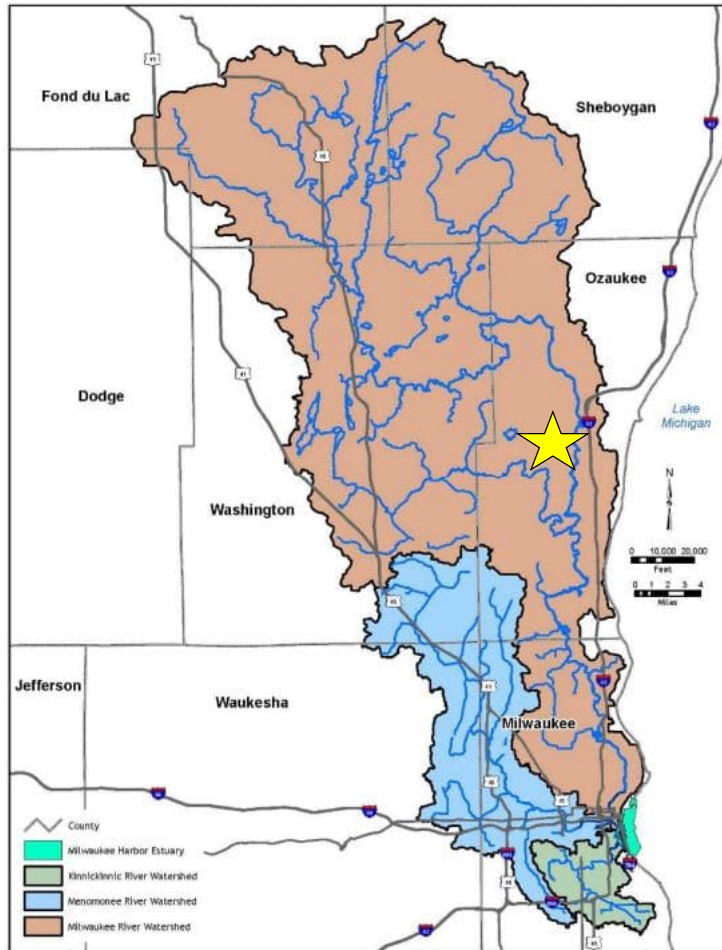
- Wisconsin Pollutant Discharge Elimination System (WPDES) Permitted Municipally Separate Storm Sewer Systems (MS4)
- Previous Town Stormwater Plans: 2008 Stormwater Management Plan
- Milwaukee River Basin TMDL Requirements

	Milwaukee River Basin TMDL	
<u>Reach</u>	<u>TSS Reduction (%)</u>	<u>TP Reduction (%)</u>
(MI-22) Cedar Creek	76.8%	54.8%
(MI-24) North Branch Cedar Creek/Cedar Creek	73.6%	79.6%
(MI-26) Pigeon Creek	90.4%	88.5%
(MI-17) Milwaukee River	76.0%	83.1%

TSS = Total Suspended Solids (Sediment)
TP = Total Phosphorus

- Updated plan prepared to address TMDL requirements and existing conditions TSS & TP removals in the Town

Milwaukee River Basin TMDL



Approved by EPA on March 9, 2018

WI DNR Urban Nonpoint Source & Stormwater Grant

Project Cost	State Share (50%)	Local Share (50%)
\$109,500	\$54,750	\$54,750

WPDES Permit-Required Stormwater Program Updates

Page 1 of 62
WPDES Permit No. WI-S050075-3



**STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES**

**GENERAL PERMIT TO DISCHARGE UNDER THE WISCONSIN
POLLUTANT DISCHARGE ELIMINATION SYSTEM
WPDES PERMIT NO. WI-S050075-3**

In compliance with the provisions of ch. 283 Wis. Stats., and chs. NR 151 and 216, Wis. Adm. Code, owners and operators of municipal separate storm sewer systems are permitted to discharge storm water from all portions of the

MUNICIPAL SEPARATE STORM SEWER SYSTEM

owned or operated by the municipality to waters of the state in accordance with the conditions set forth in this permit.

With written authorization by the Department, this permit will be used to cover a municipal separate storm sewer system initially covered under a previous version of a municipal separate storm sewer system general permit. The **Start Date** of coverage under this permit is the date of the Department letter sent to the municipality authorizing coverage under this permit. The Department is required to charge an annual permit fee to owners and operators authorized to discharge under this permit in accordance with s. 283.33(9), Wis. Stats., and s. NR 216.08, Wis. Adm. Code.

State of Wisconsin Department of Natural Resources
For the Secretary

By


Michael C. Thompson, Director
Bureau of Watershed Management
External Services Division

5/1/19

Date Permit Signed

PERMIT EFFECTIVE DATE: May 1, 2019

EXPIRATION DATE: April 30, 2024

Updated Programs Included in Report

Public Education/Outreach

Public Involvement/Participation

Illicit Discharge Detection & Elimination

Construction Site Pollutant Control (Erosion Control)

Post-Construction Stormwater Management

Pollution Prevention-Municipal Operations

Stormwater Quality Management

Storm Sewer System Map

Annual Report

Updated Stormwater Program

- **Public Education/Outreach Involvement/Participation**
 - Southeastern Wisconsin Watersheds Trust, Inc. (SWWT)
 - Updated Activities and Measurable Goals

Table 3.02-1 Public Information and Education Plan and Measurable Goals

	Activity	Measurable Goal	Delivery Mechanism	Target Audience	Responsible Party	Anticipated Completion Date
1	Complete one presentation to the Town Board and interested citizens upon completion of this Plan discussing the plan contents.	One meeting.	A/I	General Public, Public Employees	Town Administrator/Strand	January 2023
2	Annually, dedicate a portion of one Town Board meeting to the discussion of the Annual Report submitted for the previous year's permit compliance activities. Address each topic area in discussion.	One meeting each year, starting in 2023.	A/I	General Public, Public Employees	Town Administrator	April or May, annually
3	The Town will have stormwater management-related materials prepared by organizations such as WDNR, University of Wisconsin-Extension, and SWWT available at the Town Hall and track their usage related to the following eight topic areas: IDDE, household hazards waste disposal and pet waste management, vehicle washing, yard waste management/pesticide and fertilizer application, stream and shoreline management, residential infiltration, construction sites and postconstruction stormwater management, pollution prevention, and green infrastructure/low impact development.	Provide efforts to address the eight topic areas once per permit term, a minimum of six topics per year, using a minimum of two active/interactive mechanisms per year from Table 2 of the MS4 permit, including identification of target audience.	P	General Public, Residents, Businesses, Contractors, Developers, Industries	Town Administrator	Ongoing
4	Continue Providing information on the MS4 permit, Annual Report, and Stormwater Management Ordinance on the Town Web site.	Evaluate updating the Town Web site to include additional links.	P	General Public, Residents, Businesses, Contractors, Developers, Industries	Town Staff	Ongoing
5	The Town will publish periodic articles in a Town newsletter/publication to promote detection of illicit discharges, promote proper management of lawn and garden waste, waste oil, pet waste, and household waste. It will also include promotion of good streambank and shoreline management, infiltration of stormwater runoff where feasible, and general stormwater pollution prevention techniques.	One Stormwater Management article each year starting in 2023.	P	General Public, Residents	Town Administrator	Complete by December 31 of each year
6	Develop a stormwater or erosion control-related article for publishing on the Town's website.	One article each year starting in 2023.	P	General Public, Residents	Town Administrator	Complete by May 1 of each year
7	During concept plan review, the Town will continue to promote environmentally sensitive land development designs by developers and designers.	On as-needed basis as development occurs.	A/I	Developers, Industries	Director of Public Works	On as-needed basis as development occurs
8	Track public education and outreach activities for annual reporting to the WDNR. Tracking should include amount of materials distributed and related information regarding the items above.	Once each year.	P	Public Employees	Town Administrator	Once each year
9	Participate in Joint Public Education Programs and joint activities with SWWT	Once each year.	A/I	General Public, Residents	Town Staff, SWWT	Once each year

Notes: A/I=Active/Interactive; P=Passive

Table 3.02-2 Public Involvement and Participation Plan and Measurable Goals

	Activity	Measurable Goal	Delivery Mechanism	Target Audience	Responsible Party	Anticipated Completion Date
1	Continue to public notice all public meetings.	Ongoing.	A/I	General Public	Town Administrator	Ongoing
2	Continue to establish policy for receiving and addressing stormwater management issues. This includes providing a standard form to residents with stormwater concerns, performing a stormwater review based on the submitted form, and responding within a reasonable time frame. Stormwater complaint forms will be maintained in a file at Town Hall.	Ongoing.	A/I	Residents	Director of Public Works	Ongoing.
3	Hold an annual meeting to update Town officials, residents, regulatory agencies, local contractors, and interested stakeholders on progress of the Town's stormwater program and MS4 Annual Report. Distribute Town's MS4 Annual Report to Town Board Members.	One meeting each year, starting in 2023; held in conjunction with annual meeting described in Table 2.02-1 Public Education and Outreach.	A/I	Public Employees, Residents, Businesses, Contractors, Developers, Industries, General Public	Town Administrator	Complete by June 1, annually.
4	Track public involvement and participation activities for annual reporting to WDNR.	Once each year.	A/I	Public Employees	Town Administrator	Once each year.
5	Distribute Town's MS4 Annual Report to local interest groups.	Once each year.	A/I	Local interest groups	Town of Cedarburg	Completed by May 31, annually.
6	Participate in annual volunteer activities organized by SWWT.	Once each year.	A/I	General Public, Residents	Town Staff/SWWT	Once each year.
7	Implement a volunteer activity from the following: group BMP installation or maintenance, storm drain stenciling, planting community garden, clean up even, stream monitoring, citizen committee meeting, public workshop, presentation of stormwater information, or other hands on event.	Once each year.	A/I	Residents	Town of Cedarburg	December, Annually.

Updated Stormwater Program

- **Illicit Discharge Detection and Elimination (IDDE)**
 - Updated Outfall Screening Schedule and Procedures
 - Updated Ordinance

Table 3.02-7 Town Outfall Screening Schedule

Outfall ID	Type	Category ¹	Priority ²	Reason for Priority	Size (in)	Location	Contributing Subbasin	Drainage Area (ac)	Predominant Land Use	TMDL Reach	Recommended Screening Frequency	Future Screening Schedule						
												2023	2024	2025	2026	2027	2028	2029
4024-1	Swale	Major	Yes	Industrial	--	South end of Hilltop Drive, west side	4024, 40240	16.20	Light Industrial	MI-24	Annually	X	X	X	X	X	X	
4024-2	Swale	Major	Yes	Industrial	--	South end of Hilltop Drive, east side	4024, 40240, 40241, 40242	7.58	Light Industrial	MI-24	Annually	X	X	X	X	X	X	
4027	Swale	Major	Yes	Industrial and strip commercial	--	Across the street from 7240 Sycamore Drive	4028, 40281, 40282	24.68	Light Industrial	MI-24	Annually	X	X	X	X	X	X	
4029	Swale	Minor	Yes	Industrial and strip commercial	--	200 feet southeast of 1123 Washington Avenue	4029, 40290, 40291, 40292, 40293, 40294	11.39	Strip Commercial	MI-24	Annually	X	X	X	X	X	X	
4069-1	Swale	Major	Yes	Industrial and strip commercial	--	200 feet south of 155 Green Bay Road	4069, 4068, 40680	96.18	Strip Commercial	MI-24	Annually	X	X	X	X	X	X	
4007	Swale	Major	No		--	Between 7494 and 7482 Devonshire Drive	4007, 40070, 4004	84.18	Low Density Residential	MI-24	Once every 5 years	X					X	
4012-2	Swale	Major	No		--	175 feet west of 5517 West Cedar Creek Road	4012, 4011	73.00	Suburban	MI-24	Once every 5 years	X					X	
4014-2	Swale	Major	No		--	Across the street from 1629 Swallow Drive	4014, 40140	68.27	Suburban	MI-24	Once every 5 years	X					X	
4016	Swale	Major	No		--	100 feet south of 1510 Cedar Creek Parkway	4015, 4016, 40160, 40181, 40182	202.79	Agriculture	MI-24	Once every 5 years	X					X	
4017	Swale	Major	No		--	Between 1424 and 1412 Cedar Creek Parkway	4017, 4019, 4018, 40180, 40181, 40182	125.06	Agriculture	MI-24	Once every 5 years	X					X	
4057	Swale	Major	No		--	252 Green Bay Road	4057, 40570, 40571, 40572, 40573, 4055	79.77	Low Density Residential	MI-24	Once every 5 years	X					X	
80029	Culvert	Major	No		N/A	450 feet west of 7218 Pioneer Road	80029, 6003, 6001, 60010	116.45	Agriculture	MI-26	Once every 5 years	X					X	
7003-1	Swale	Major	No		--	Northwest of Maple Road and West Cedar Creek Road intersection	7004, 70040, 70031, 70030	74.52	Low Density Residential	MI-17	Once every 5 years	X					X	

FIELD SCREENING—VISUAL OBSERVATION

NAME		WEATHER	
DATE		TIME	
OUTFALL # <small>(Type this # in GPS Unit)</small>		LOCATION	
WISDOT # <small>(leave blank unless structure plate is present)</small>			

Outfall Type (Circle One)

Swale Pipe Box Culvert Elliptical Buried Sewer Other: _____

If Outfall includes pipe: Pipe Size _____ Material: _____

Major or Minor? (Major is any outfall which is greater than 36". Use best guess when you can't determine pipe sizes.)

Describe below how storm water flows to Outfall and where it goes.

SPILL AND ILLICIT DISCHARGE REPORTING FORM

NAME		WEATHER	
DATE		TIME	
WISDOT # <small>(leave blank unless structure plate is present)</small>		LOCATION	

SPILL

Describe material spilled:

ILLICIT DISCHARGE

Outfall Type (Pick One)

Swale Pipe Box Culvert Elliptical Buried Sewer Other: _____

If Outfall includes pipe: Pipe Size _____ Material: _____

Updated Stormwater Program

- **Construction Site Pollutant Control**
 - Ordinances/Admin: *Erosion Control and Stormwater Reference Guide (ECSWRG)*
 - *Appendix A: Construction Site Erosion Control Ordinance Revisions*
 - *Appendix D: Construction Site Inspections and Enforcement Procedures/Program*
 - Revisions necessary due to NR 151 updates
- **Postconstruction Stormwater Management**
 - Ordinances/Admin: *Erosion Control and Stormwater Reference Guide (ECSWRG)*
 - *Appendix B: Postconstruction Stormwater Management Ordinance Revisions*
 - *Appendix G: Postconstruction Stormwater Management Facilities: Long-Term Maintenance, Inspection, and Enforcement Procedures*
 - Revisions necessary due to NR 151 updates

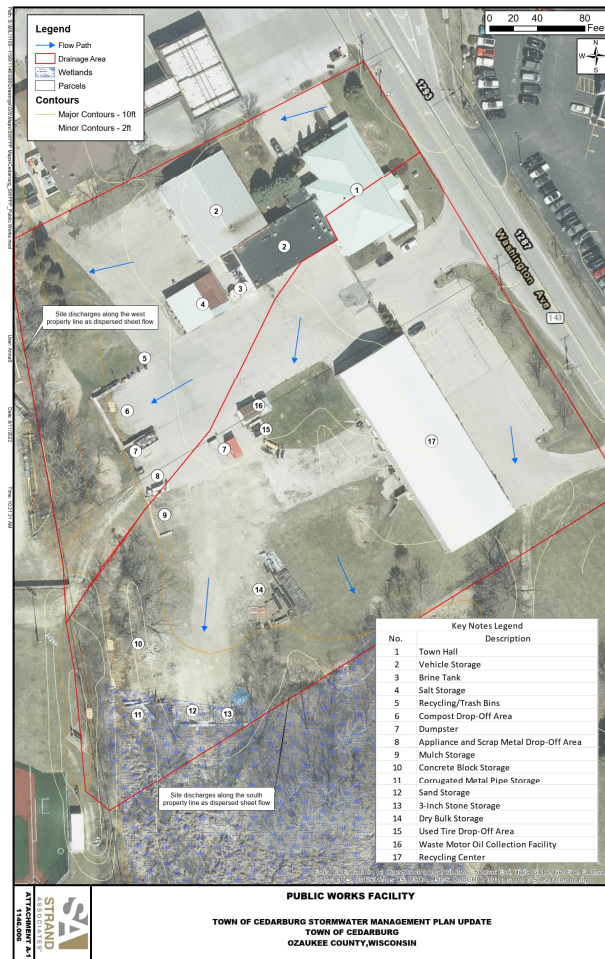
	Activity	Measurable Goal	Responsible Party	Anticipated Completion Date
1	Continue administration and enforcement of existing Erosion Control and Stormwater Management Ordinance guided by the Town's <i>Erosion Control and Stormwater Management Reference Guide</i> document that includes Construction Site Inspections and Enforcement Procedures (Reference Guide Appendix D).	Ongoing	DPW	Ongoing
2	Adopt the Town's <i>Erosion Control and Stormwater Management Reference Guide</i> document that includes updates to the Construction Site Erosion and Sediment Control Ordinance (Reference Guide Appendix A).	See Table 3.02-9	DPW	July 2023
3	Continue documenting the number of erosion control permits issued each year.	Ongoing	DPW	Ongoing
4	Document the number and nature of inspections and enforcement actions conducted to ensure compliance with the erosion control ordinance as described in the Town's <i>Erosion Control and Stormwater Management Reference Guide</i> document that includes Construction Site Inspections and Enforcement Procedures (Reference Guide Appendix D).	Ongoing	DPW	Ongoing
5	Consider obtaining Soil Erosion Inspector certification.	Obtain certification	DPW	December 2023

Table 3.02-10 Construction Site Pollution Control Plan and Measurable Goals



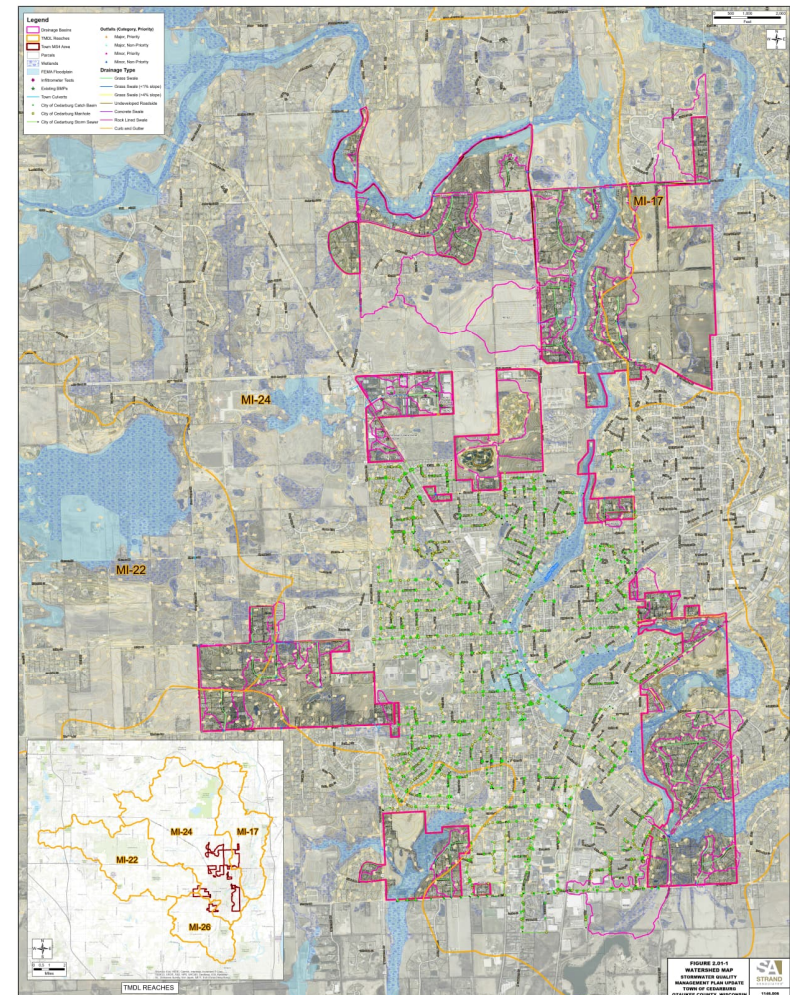
Updated Stormwater Program

- **Pollution Prevention – Municipal Operations**
 - Maintenance of municipally-owned stormwater BMPs
 - Track quantities deicer/anti-icing and staff training
 - Stormwater Pollution Prevention Plans (SWPPP)

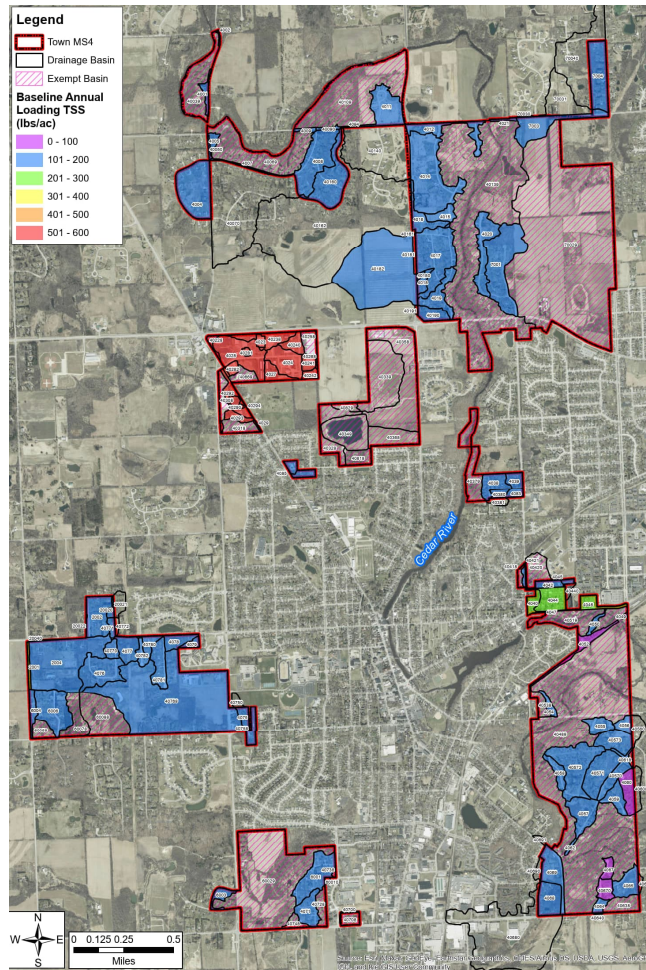


Updated Stormwater Program

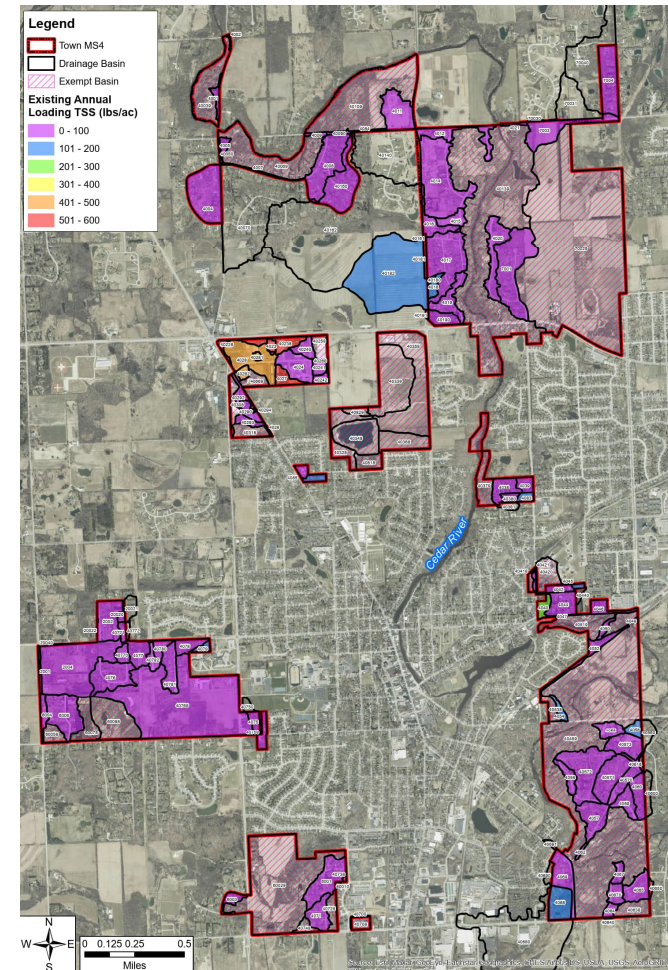
- **Stormwater Quality Management**
 - WinSLAMM Modeling and Alternatives Analysis
- **Storm Sewer System Map**
 - Update annually
- **Annual Report – March 31, annually**



Stormwater Quality Modeling – Total Suspended Solids

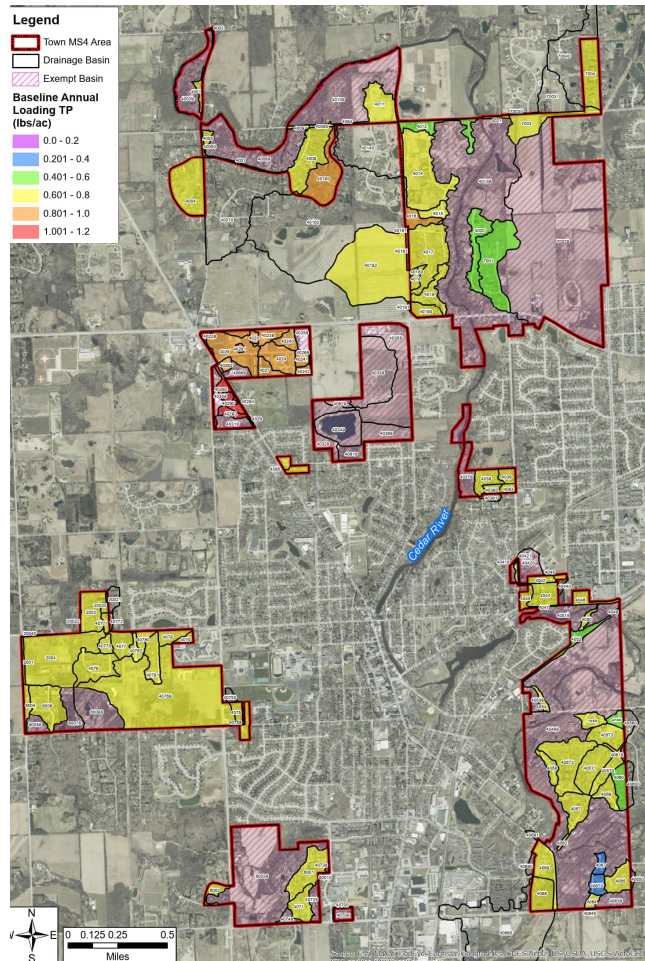


Baseline Conditions/No Controls

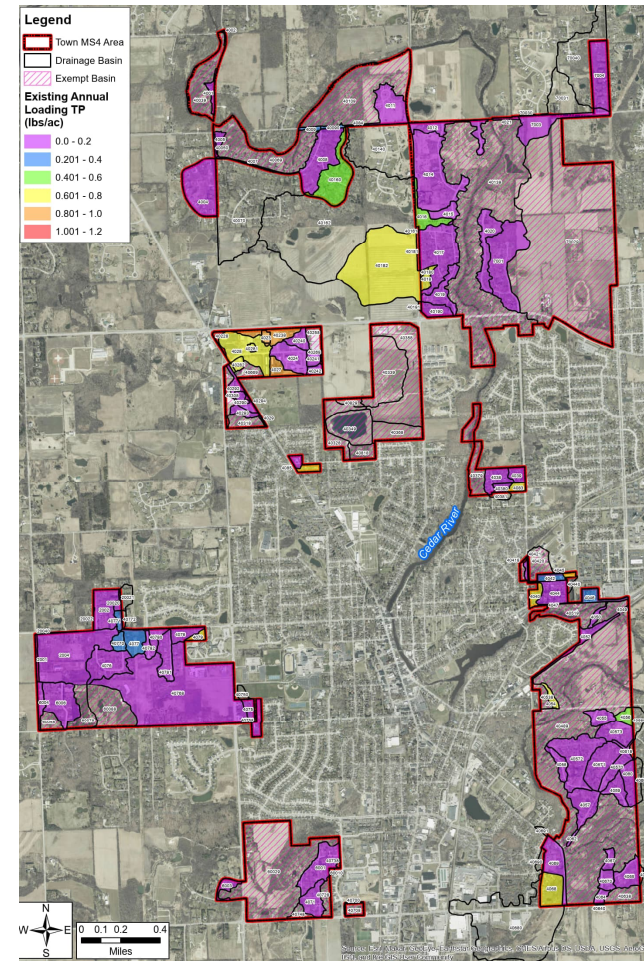


Existing Conditions/With Controls

Stormwater Quality Modeling – Total Phosphorus



Baseline Conditions/No Controls



Existing Conditions/With Controls

Stormwater Quality Modeling

- Existing conditions stormwater quality modeling shows that additional BMPs are required to meet TMDL reduction targets.

Pollutant	TMDL Reach	MS4 Permit Required Reductions	Milwaukee River TMDL Required Reductions (%)	Existing Conditions Percent Reduction (%)	TMDL Pollutant Reduction Gap (%)
TSS	MI-22 (Cedar Creek)	20%	76.8	90.07	(13.3) Excess
	MI-24 (North Branch Cedar Creek/Cedar Creek)		73.6	76.02	(2.4) Excess
	MI-26 (Pigeon Creek)		90.4	94.91	(4.5) Excess
	MI-17 (Milwaukee River)		76.0	88.14	(12.1) Excess
TP	MI-22 (Cedar Creek)	NA	54.8	87.87	(33.1) Excess
	MI-24 (North Branch Cedar Creek/Cedar Creek)		79.6	79.53	0.07
	MI-26 (Pigeon Creek)		88.5	93.68	(5.2) Excess
	MI-17 (Milwaukee River)		83.1	85.43	(2.3) Excess

Table 4.06-5 MS4 Permit and Milwaukee River Basin TMDL Average Annual Percent Pollutant Reductions and Pollutant Reduction Gap Per Reach

Alternatives Analysis

- Two alternatives were analyzed for closing the TMDL Reduction Gap.
- Alternative 2 determined to be best option – includes ditch check along Cedar Creek Road.

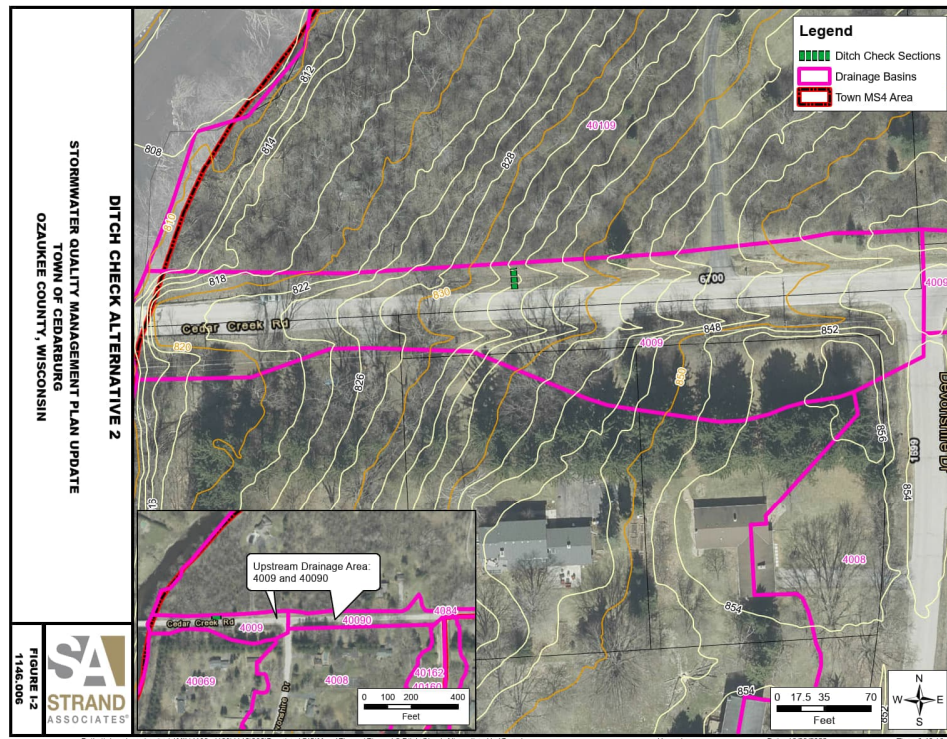
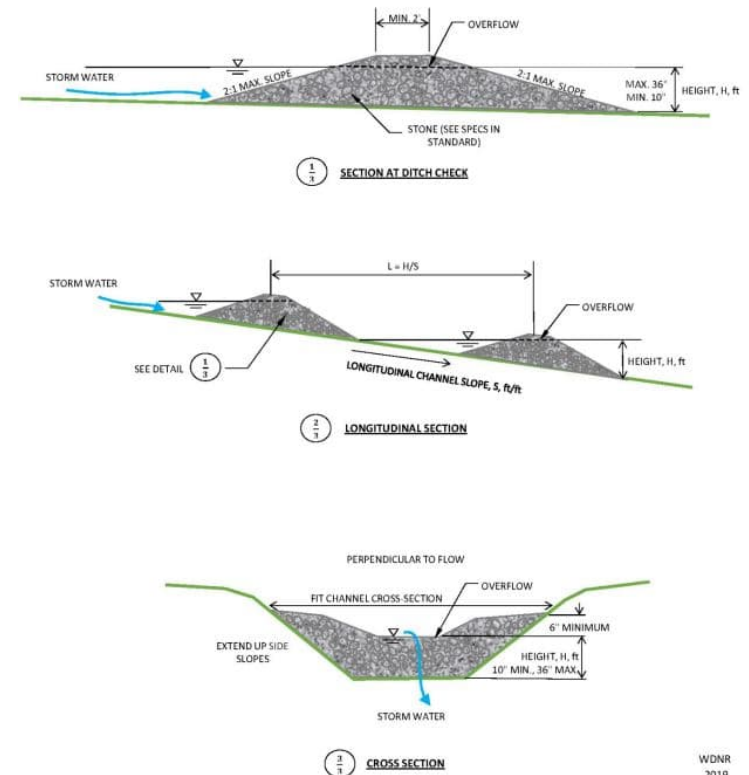


Figure 2:
Stone Ditch Checks



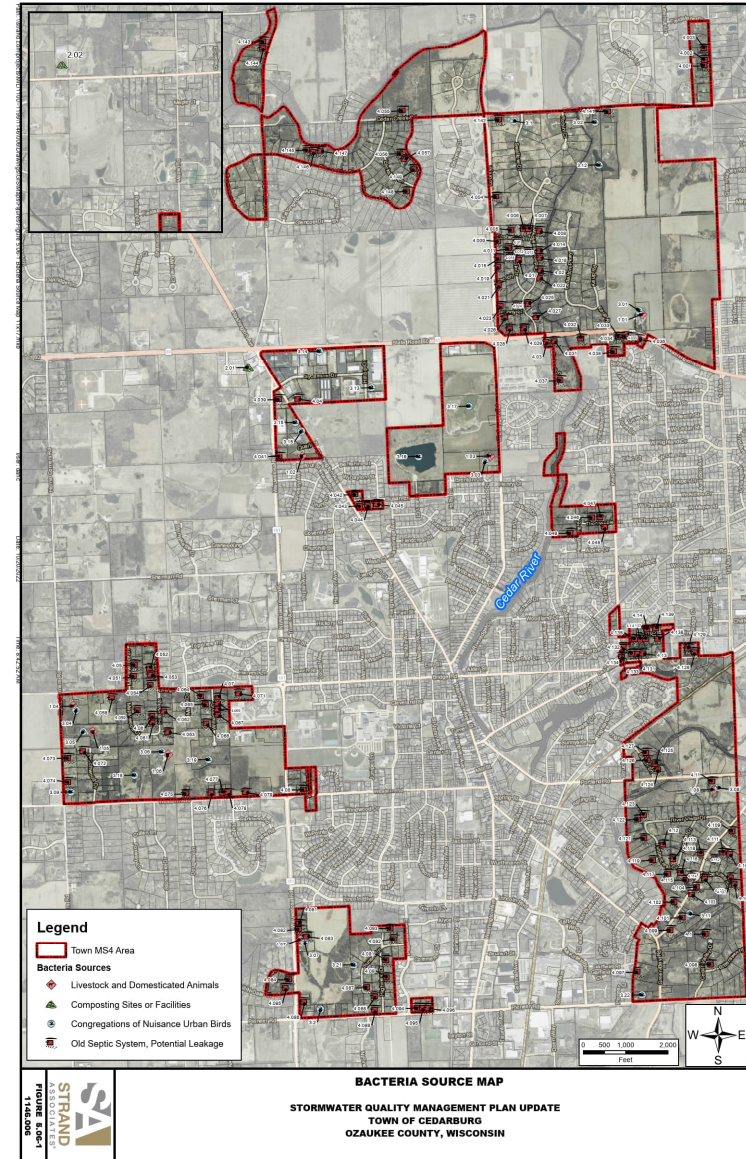
Bacteria Source Elimination Plan

Town of Cedarburg, Wisconsin
Stormwater Quality Management Plan Update

Section 5-Alternatives Analysis

Table 5.06-1 Bacteria Source Inventory

Label Code	Source Type	Address or Location Description	Description	Public or Private?
1.01	Livestock and Domesticated Animals	4912 WI-60 Trunk, Grafton, WI 53024	Several barns	Private
1.02	Livestock and Domesticated Animals	1123 Washington Avenue, Cedarburg, WI 53012	Animal shelter and fenced area	Private
1.03	Livestock and Domesticated Animals	W60N1085 Sheboygan Road, Cedarburg, WI 53012	Barn and fenced area	Private
1.04	Livestock and Domesticated Animals	9009 Bridge Road, Cedarburg, WI 53012	Barn and fenced area	Private
1.05	Livestock and Domesticated Animals	640 Horns Corners Road, Cedarburg, WI 53012	Barn and fenced area	Private
1.06	Livestock and Domesticated Animals	8496 Western Road, Cedarburg, WI 53012	Barn and fenced area	Private
1.07	Livestock and Domesticated Animals	232 North Wauwatosa Road, Cedarburg, WI 53012	Barn and fenced area	Private
1.08	Livestock and Domesticated Animals	4433 Lakefield Road, Cedarburg, WI 53012	Barn and fenced area	Private
2.01	Composting Sites or Facilities	1293 Washington Avenue, Cedarburg, WI 53012	Compost drop off site	Public
2.02	Composting Sites or Facilities	4708 West Pleasant Valley Road, Grafton, WI 53024	Main composting site	Public
3.01	Congregations of Nuisance Urban Birds	4912 WI-60 Trunk, Grafton, WI 53024	Barns	Private
3.02	Congregations of Nuisance Urban Birds	5205 West Cedar Creek Road, Grafton, WI 53024	Barns	Private
3.03	Congregations of Nuisance Urban Birds	W60N1085 Sheboygan Road, Cedarburg, WI 53012	Barns	Private
3.04	Congregations of Nuisance Urban Birds	9009 Bridge Street, Cedarburg, WI 53012	Barns	Private
3.05	Congregations of Nuisance Urban Birds	640 Horns Corners Road, Cedarburg, WI 53012	Barns	Private
3.06	Congregations of Nuisance Urban Birds	8496 Western Road, Cedarburg, WI 53012	Barns	Private
3.07	Congregations of Nuisance Urban Birds	232 North Wauwatosa Road, Cedarburg, WI 53012	Barns	Private
3.08	Congregations of Nuisance Urban Birds	4433 Lakefield Road, Cedarburg, WI 53012	Barns	Private
3.09	Congregations of Nuisance Urban Birds	9030 Western Road, Cedarburg, WI 53012	Barns	Private
3.10	Congregations of Nuisance Urban Birds	5825 Cedar Creek Road, Grafton, WI 53024	Barns	Private
3.11	Congregations of Nuisance Urban Birds	280 Green Bay Road, Cedarburg, WI 53012	Barns	Private
3.12	Congregations of Nuisance Urban Birds	Pond(s) behind 5205 West Cedar Creek Road	Wet ponds and large open spaces	Private
3.13	Congregations of Nuisance Urban Birds	6809 WI-60 Trunk, Cedarburg, WI 53012	Ataco Steel wet pond and field	Private
3.14	Congregations of Nuisance Urban Birds	7101 WI-60 Trunk, Cedarburg, WI 53012	5 Corners Storage wet pond	Private
3.15	Congregations of Nuisance Urban Birds	1167 Washington Avenue, Cedarburg, WI 53012	Eernisse wet ponds	Private
3.16	Congregations of Nuisance Urban Birds	6660 Susan Lane, Cedarburg, WI 53012	Water filled quarry	Private
3.17	Congregations of Nuisance Urban Birds	1040 County Hwy I, Cedarburg, WI 53012	Remediation and Redevelopment (R&R) fill site with standing water and large open areas	Private
3.18	Congregations of Nuisance Urban Birds	8664 Western Avenue, Cedarburg, WI 53012	Large pond and open spaces	Private
3.19	Congregations of Nuisance Urban Birds	589 Williams Drive, Cedarburg, WI 53012	Large pond	Private
3.20	Congregations of Nuisance Urban Birds	7218 Pioneer Road, Cedarburg, WI 53012	Large pond to the west of the Cedar Club building	Private
3.21	Congregations of Nuisance Urban Birds	175 Sunset Lane, Cedarburg, WI 53012	Large pond	Private





Recommendations

- **MS4 Programs:** Continue existing and initiate updates to Stormwater Programs discussed in Section 3.
 - Generally increased documentation for annual reporting
 - Work toward measurable goals
 - Implement modified IDDE screening at outfalls
 - New IDDE ordinance
 - New erosion control and stormwater ordinances
- **Stormwater Quality:**
 - Install ditch check on Cedar Creek Road
 - Bacteria source elimination





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