



**MINNESOTA POLLUTION  
CONTROL AGENCY**

*2020 MS4 General Permit-  
TMDL Application Form  
South Metro Mississippi TSS TMDL*

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# MS4 Permit TMDL Application Form-South Metro Mississippi TSS TMDL

## Presentation Roadmap

South Metro Mississippi TSS TMDL  
Overview

Quick Vocab: What is a TMDL? WLA?

South Metro Miss TSS WLA

- Simple Estimator
- TMDL Application Form

Resources

Q & A



# South Metro Mississippi River TSS TMDL

## What's the problem?

- Total Suspended Solids/Turbidity – 1998

The drinkable

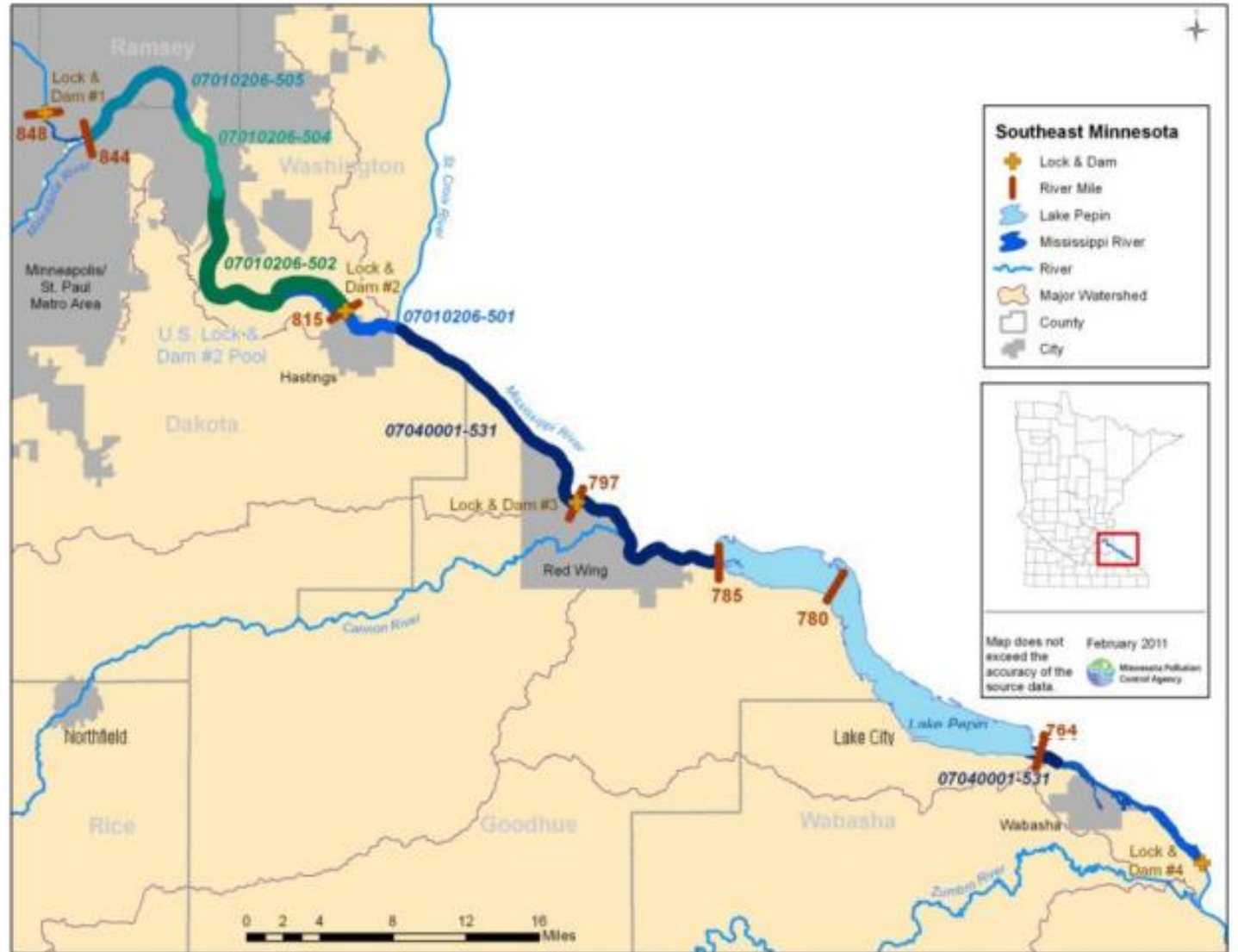
The goal

The average

The extreme



- Unhealthy for fish, aquatic bugs and plants



# Twin Cities Metropolitan Area Chloride Total Maximum Daily Load Study

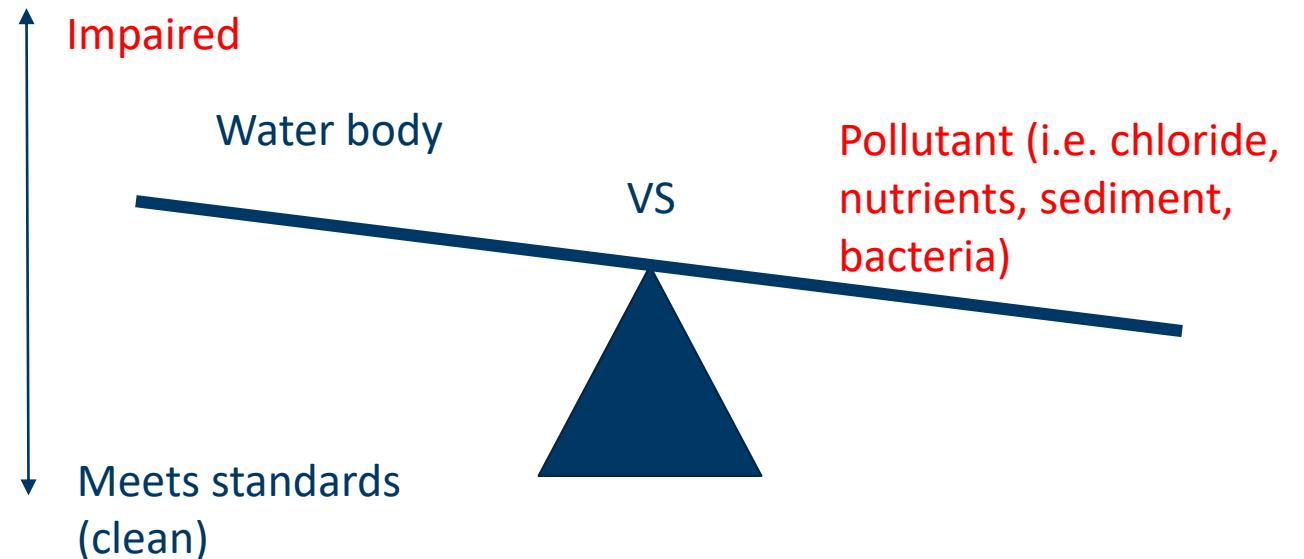


# TMDL Report

## What's a TMDL?

### -Total Maximum Daily Load

- An equation
- A report



# TMDL Equation

Table 4-17. Swan River (07010103-753) *E. coli* TMDL and allocations

Swan River 07010103-753 Load Component		Flow Regime				
		Very High	High	Mid	Low	Very Low
		<i>E. coli</i> (billion organisms per day)				
<b>Existing Load</b>		NA	160.8	349.9	33.7	NA
<b>Wasteload Allocations</b>	<i>Coleraine-Bovey WWTP (MN0053341)</i>	2.4	2.4	2.4	2.4	2.4
	<i>Keewatin WWTP (MN0022012)</i>	1.5	1.5	1.5	1.5	1.5
	<i>Marble WWTP (MN0020214)</i>	0.5	0.5	0.5	0.5	0.5
	<i>Nashwauk WWTP (MNG580184)</i>	14.8	14.8	14.8	14.8	14.8
	<i>Hibbing, MN MS4 (MS400270)</i>	93.7	34.1	16.3	9.0	3.5
	<b>Total WLA</b>	<b>112.9</b>	<b>53.3</b>	<b>35.5</b>	<b>28.2</b>	<b>22.7</b>
<b>Load Allocations</b>	<i>Watershed Runoff</i>	658.4	239.9	114.3	62.8	24.1
	<b>Total LA</b>	<b>658.4</b>	<b>239.9</b>	<b>114.3</b>	<b>62.8</b>	<b>24.1</b>
<b>10% MOS</b>		<b>85.7</b>	<b>32.6</b>	<b>16.6</b>	<b>10.1</b>	<b>5.2</b>
<b>Total Loading Capacity</b>		<b>857.0</b>	<b>325.8</b>	<b>166.4</b>	<b>101.1</b>	<b>52</b>

$$\text{TMDL} = \text{WLA} + \text{LA} + \text{MOS}$$

# South Metro Mississippi River TSS –TMDL Application Form

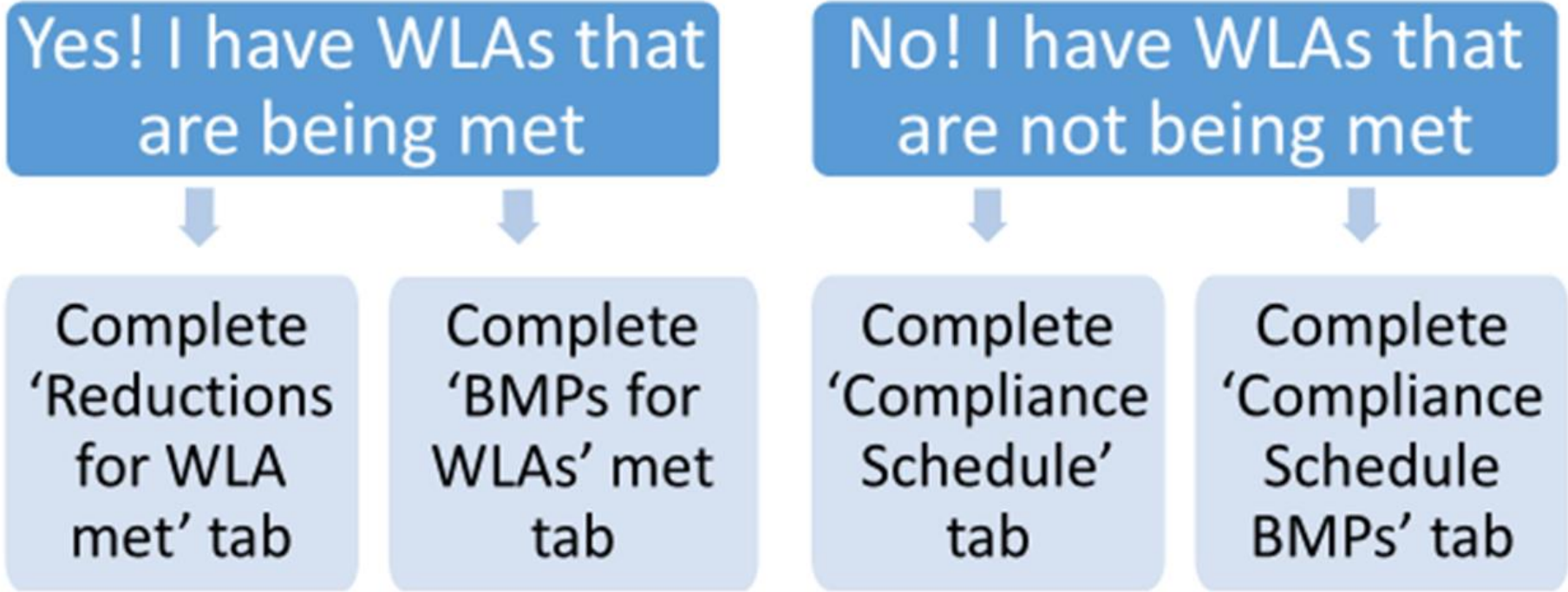
- Applicable WLAs Determination Tab

Applicable Oxygen Demand, Nitrate, TP and/or TSS WLA TMDLs-Waterbody-Pollutant	Meeting WLA? (Yes/No)
South Metro Mississippi TSS TMDL-Mississippi River-(07040001-531)-TSS	

TMDL Project - waterbody - pollutant	WLA type	Numeric WLA	Units	Flow Condition	Percent Reduction	Notes
South Metro Mississippi TSS TMDL-Mississippi River-(07040001-531)-TSS	Categorical	154.000	lbs/acre/year	Not Applicable	Not Available	(blank)

## Oxygen demand, nitrate, total suspended solids and total phosphorus

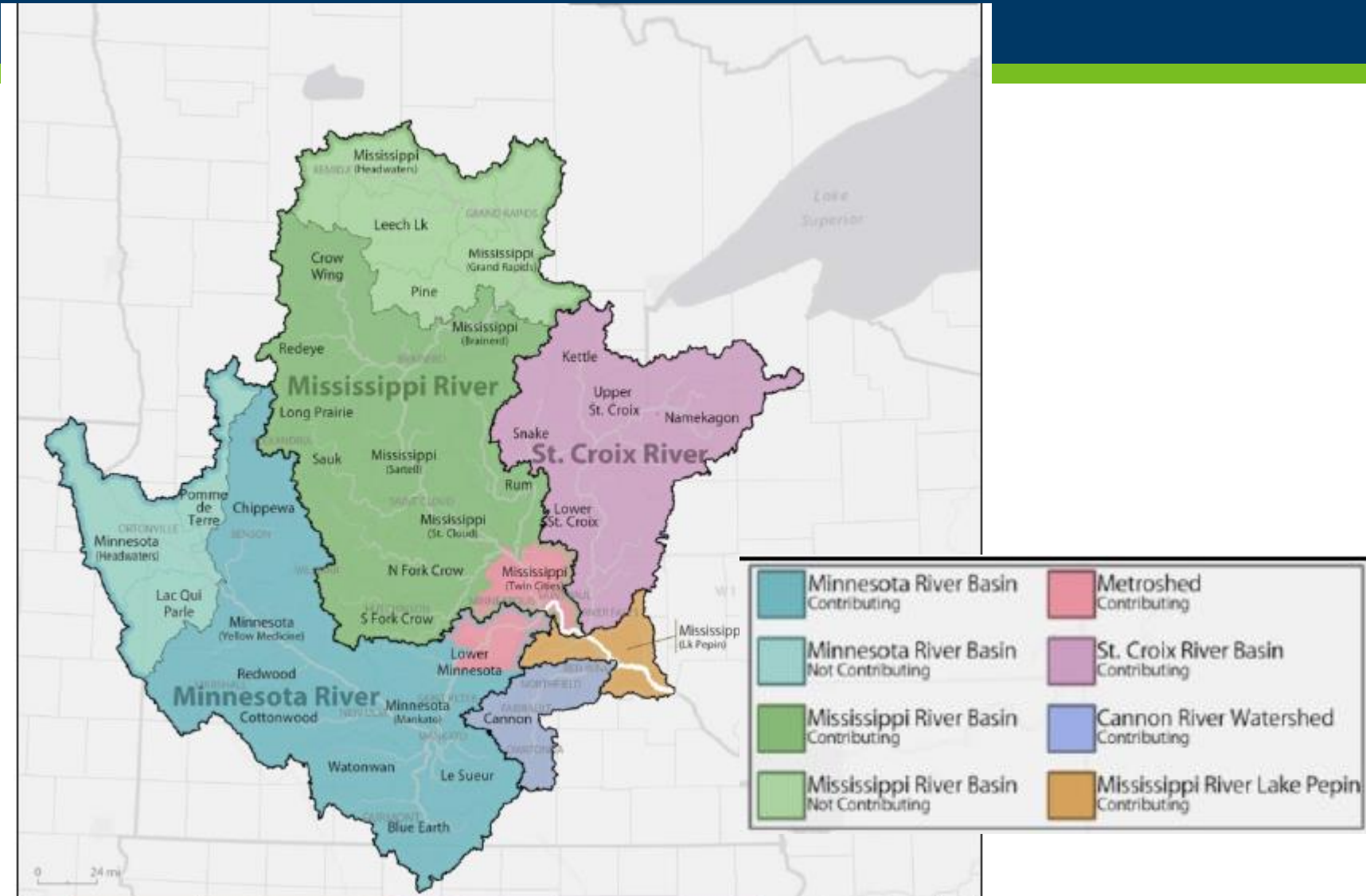
### TMDL Permit Application Form Completion



# South Metro Mississippi River TSS TMDL

## Large drainage area

- 30 million acres





# South Metro Mississippi River TSS TMDL table

Table 7: Annual allocations of TSS for average flow conditions of the South Metro Mississippi

Category	Miss R – Lake Pepin		Metro-shed	Upper Mississippi	Minnesota	St. Croix		Cannon	State Totals		Grand Total
	MN	WI				MN	WI		MN	WI	
Metric tons/year											
Stormwater* (Construction/Industrial)									1,189	34	1,223
Stormwater (MS4s)**	3,093	0	33,950	9,499	2,871	2,230	568	1,468	53,111	568	53,678
Wastewater Treatment Plants	673	84	23,033	9,838	4,751	2,143	758	1,040	41,477	841	42,318
Natural Background	271	232	1,416	8,646	58,403	1,383	1,651	4,559	74,677	1,884	76,561
LA											438,949
Internal Load (for Total) †	3,940	3,376	10,542	88,351	289,629	8,732	10,390	23,989	425,183	13,766	52,602
Wastewater Reserve Capacity††	0	4	0	44	2	0	37	1	47	41	88
Total Loading Capacity	7,976	3,696	68,942	116,377	355,656	14,487	13,404	31,057	595,684	17,134	612,818

# South Metro Mississippi River TSS TMDL

MS4s in Minnesota within the St. Croix River basin or above Lock and Dam 1 (except for the Crow River watershed) require no reduction for this TMDL.

Other MS4s can evaluate compliance status for the South Metro Mississippi River TSS TMDL via monitoring, modeling or other means approved by MPCA Stormwater Program staff, with a **target average loading of 154 pounds per acre per year for their MS4-regulated area.**

# South Metro Mississippi River TMDL-Determining Loading Rate

- [Guidance and examples for using the MPCA Estimator - Minnesota Stormwater Manual \(state.mn.us\)](https://state.mn.us)
- Put in your regulated area land use and check the 'Summary Sheet' tab to see what your loading rate is in lbs/ac/yr
- If you are not meeting 154 lb/ac/yr with your base land use, then you can add in **any currently installed and functioning BMPs** to see if that allows you to meet the loading rate.



# South Metro Mississippi River TMDL-Determining Loading Rate

- [Default TSS and TP loads for different land use scenarios using the MPCA Simple Estimator - Minnesota Stormwater Manual \(state.mn.us\)](#)
- If your landuse matches one of the three pre-set groups, you can use that to help determine your loading rate per acre.
- If you are not meeting 154 lb/ac/yr with your base land use, then you can add in **any currently installed and functioning BMPs** to see if that allows you to meet the loading rate.



# South Metro Mississippi River TSS –TMDL Application Form

- Applicable WLAs Determination Tab

Applicable Oxygen Demand, Nitrate, TP and/or TSS WLA TMDLs-Waterbody-Pollutant	Meeting WLA? (Yes/No)
South Metro Mississippi TSS TMDL-Mississippi River-(07040001-531)-TSS	

TMDL Project - waterbody - pollutant	WLA type	Numeric WLA	Units	Flow Condition	Percent Reduction	Notes
South Metro Mississippi TSS TMDL-Mississippi River-(07040001-531)-TSS	Categorical	154.000	lbs/acre/year	Not Applicable	Not Available	(blank)

# South Metro Mississippi River TMDL-Completing TMDL Application Form

	A	B	C	D	E	F	G	H	I	J
1	<b>Documentation for Waste load Allocations being met (permit item 12.10)</b>									
2	Fill in the following table for each applicable oxygen demand, nitrate, TSS and/or TP WLA you are claiming to meet using the MPCA-approved method. This should either demonstrate the cumulative estimated reductions from BMPs that serve to meet the MS4 WLA reductions included in the TMDL report OR demonstrates the MS4's existing load meets the WLA. For more guidance on completing this tab, see:									
3	<a href="https://stormwater.pca.state.mn.us/index.php?title=Guidance_for_completing_the_MS4_Permit_TMDL_Application_Form#12.10_Reductions_for_WLAs_met_tab">https://stormwater.pca.state.mn.us/index.php?title=Guidance_for_completing_the_MS4_Permit_TMDL_Application_Form#12.10_Reductions_for_WLAs_met_tab</a>									
4	<b>Required</b>	<b>Cumulative Estimated Reductions - Required</b>	<b>Required</b>	<b>Required if "other" selected in column D</b>	<b>Required</b>	<b>Required</b>	<b>Required if WLA is categorical</b>	<b>Required if WLA is categorical</b>	<b>Optional</b>	
5	<b>TMDL project name, waterbody and pollutant</b>	<b>Cumulative estimated reduction-How are you claiming to meet the WLA?</b>	<b>Cumulative estimated reduction (Enter value corresponding to units specified in Column B)</b>	<b>Method(s) used to calculate</b>	<b>Name of other model</b>	<b>Do you have the calculations available on file?</b>	<b>Is this part of a categorical WLA? (See Column E on Applicable WLAs determination tab)</b>	<b>If part of a Categorical WLA, how did you determine your portion of the WLA?</b>	<b>What is your portion of the categorical WLA? (Include units)</b>	<b>Notes</b>
6	South Metro Mississippi TSS TMDL-Mississippi River-(07040001-531)-TSS	Loading rate (lb/ac/yr)	Enter your calculated loading rate	MPCA Simple Estimator		Yes	Yes	Loading based on land use	Enter your calculated loading rate	Enter loading rate determined in TMDL or by MPCA.

If you are meeting a calculated loading rate, this is how you would note that on the TMDL Application. Example on the next slide.

# South Metro Mississippi River TMDL-Completing TMDL Application Form

	A	B	C	D	E	F	G	H	I	
1	<b>Documentation for Waste load Allocations being met (permit item 12.10)</b>									
2	Fill in the following table for each applicable oxygen demand, nitrate, TSS and/or TP WLA you are claiming to meet using the MPCA-approved method. This should either demonstrate the cumulative estimated reductions from BMPs that serve to meet the MS4 WLA reductions included in the TMDL report OR demonstrates the MS4's existing load meets the WLA. For more guidance on completing this tab, see:									
3	<a href="https://stormwater.pca.state.mn.us/index.php?title=Guidance%20for%20completing%20the%20MS4%20Permit%20TMDL%20Application%20Form#12.10%20Reductions%20for%20WLAs%20met%20tab">https://stormwater.pca.state.mn.us/index.php?title=Guidance for completing the MS4 Permit TMDL Application Form#12.10 Reductions for WLAs met tab</a>									
4	<b>Required</b>	<b>Cumulative Estimated Reductions - Required</b>		<b>Required</b>	<b>Required if "other" selected in column D</b>	<b>Required</b>	<b>Required</b>	<b>Required if WLA is categorical</b>	<b>Required if WLA is categorical</b>	<b>Optional</b>
5	<b>TMDL project name, waterbody and pollutant</b>	<b>Cumulative estimated reduction</b> How are you claiming to meet the WLA?	<b>Cumulative estimated reduction</b> (Enter value corresponding to units specified in Column B)	<b>Method(s) used to calculate</b>	<b>Name of other model</b>	<b>Do you have the calculations available on file?</b>	<b>Is this part of a categorical WLA?</b> (See Column E on Applicable WLAs determination tab)	<b>If part of a Categorical WLA, how did you determine your portion of the WLA?</b>	<b>What is your portion of the categorical WLA? (Include units)</b>	<b>Notes</b>
6	South Metro Mississippi TSS TMDL-Mississippi River-(07040001-531)-TSS	Loading rate (lb/ac/yr)	150 lb/ac/yr	MPCA Simple Estimator		Yes	Yes	Loading based on land use	150 lb/ac/yr	154 lb/ac/yr

If you used the Simple Estimator to calculate that your loading rate was 150 lb/ac/yr, this is what your 'Reductions for WLA met' tab would look like.

# Where is the TMDL Application Form?

Guidance: [Guidance for completing the MS4 Permit TMDL Application Form - Minnesota Stormwater Manual \(state.mn.us\)](#)

Overview page: [2020 MS4 General Permit TMDL Application - Minnesota Stormwater Manual \(state.mn.us\)](#)

TMDL Application Forms: [ShareBase by Hyland](#)



## Total Maximum Daily Loads (TMDLs) - Minnesota Stormwater Manual

### **TMDL MS4 permit guidance**

- [Summary of TMDL requirements in stormwater permits](#)
- [Guidance for completing the MS4 Permit TMDL Application Form](#)
- [Guidance for meeting chloride TMDL MS4 permit requirements](#)
- [Guidance for meeting bacteria TMDL MS4 permit requirements](#)
- [Guidance for meeting dissolved oxygen or oxygen demand TMDL MS4 permit requirements](#)
- [Guidance for meeting temperature TMDL MS4 permit requirements](#)
- [Guidance for categorical TMDLs](#)
- [List of Approved TMDLs with MS4 WLAs](#)
- [Forms, guidance, and resources for completing the TMDL annual report form](#)
- [Baseline year](#)
- [Interpreting wasteload allocations based on flow/load duration curves](#)

- [MS4 webinars and videos - Minnesota Stormwater Manual \(state.mn.us\)](#)
- [2020 MS4 general permit | Minnesota Pollution Control Agency \(state.mn.us\)](#)



Questions?  
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