2026 Modification to Sunrise River Watershed Total Maximum Daily Load Report

GENERAL INFORMATION

TMDL project name	Sunrise River Watershed Total Maximum Daily Load Study (2013)
Date of original EPA TMDL approval	April 28, 2014
TMDL Modification Public Notice Dates	January 5, 2026- February 4, 2026
TMDL Assessment Unit Identification (AUID) and pollutants that require modification	02-0026-00 – total phosphorus (TP) 13-0048-00 – total phosphorus (TP) 07030005-529 – total phosphorus (TP)
TMDL tables being modified	Table 27. Linwood Lake Phosphorus TMDL and Allocations. Table 30. White Stone Lake Phosphorus TMDL and Allocations. Table 31. Sunrise River West Branch (07030005-529) TMDL and Allocations.

EXPLANATION OF MODIFICATION

What is being changed from the final Total Maximum Daily Load (TMDL) to the modified TMDL?

The Minnesota Pollution Control Agency (MPCA) is making adjustments to Municipal Separate Storm Sewer Systems (MS4s) wasteload allocations (WLAs) to account for three new permittees within the TMDL project area. The adjustments will not change the approved overall total loading capacities of the TMDLs.

Given the modification described, are there any changes to Stormwater Pollution Prevention Programs (SWPPPs) to account for the modified WLAs? When will the SWPPPS be updated?

Permitted MS4s (Table 2) with assigned WLAs will be required to account for the TP impaired Linwood Lake, White Stone Lake, and West Branch Sunrise River reach (Table 1) in their SWPPPs when the MS4 General Permit is reissued.

- Chisago City and Linwood Township MS4s will be required to submit SWPPPs when they apply for permit coverage (expected in 2027).
- Current MS4 permittees will be required to submit updated SWPPPs when they apply for permit coverage under the reissued MS4 General Permit (expected in 2026).

Table 1. Water bodies and impairments requiring modification.

AUID	Reach/ Water body name	Impairment	Baseline year
02-0026-00	Linwood Lake	TP	2006
13-0048-00	White Stone Lake	TP	2008
07030005-529	West Branch Sunrise River	TP	2007

Table 2. Regulated MS4s and permit numbers within the TMDL Subwatersheds. Additions underlined.

Regulated MS4	MS4 Permit #	TMDL subwatersheds		
		02-0026-00	13-0048-00	07030005-529
Chisago City MS4	MS400339*		X	
East Bethel City MS4	MS400087	X		
Linwood Township MS4	MS400342*	X		X
Wyoming City MS4	MS400294		X	

*Proposed permit number

Explanation of modifications:

There are three newly regulated MS4s: Wyoming City (MS400294), Chisago City (proposed permit number MS400339), and Linwood Township (proposed permit number MS400342) (Table 2). When the TMDLs were approved on April 28, 2014, any stormwater contributions from Chisago City, Wyoming City and Linwood Township were considered unregulated stormwater and were covered under the load allocations (LAs) as they were not designated as MS4s. Wyoming City became a regulated MS4 in 2017 and it has been determined that Chisago City and Linwood Township will be regulated MS4s under the next MS4 General Permit. Therefore, a portion of the LA is being reallocated to WLAs for the Chisago City MS4, Wyoming City MS4, and the Linwood Township MS4.

Transfer Methodology and rates

- The transfer rate for Linwood Lake (Table 3) was calculated as the sum of the watershed LA and any MS4 WLAs divided by the watershed area. WLAs were calculated by multiplying the jurisdictional area within the TMDL subwatershed by the transfer rate.
- For White Stone Lake - the entire TMDL subwatershed is within Chisago and Wyoming City (Figure 2). Therefore, the entire watershed LA was transferred to Chisago City and Wyoming City MS4 WLAs, based on the percent jurisdictional area of each city within the TMDL subwatershed.
- Table 26 of the TMDL report provided the transfer rate for each flow zone of the West Branch Sunrise River. WLAs were calculated by multiplying the jurisdictional area within the TMDL subwatershed by the transfer rate.

Table 3. Transfer rates for WLA modifications.

AUID	Reach/ Water Body Name	Pollutant	Rate	Units
02-0026-00	Linwood Lake	TP	0.00033	lb/ac/day
07030005-529	West Branch Sunrise River	TP	See Table 26 in TMDL report	lb/ac/day

The MPCA is proposing the following modifications:

Linwood Lake, AUID 02-0026-00

The MPCA is shifting 2.088 lb/day of TP from the Watershed LA to the MS4 permittees' WLAs (Modified Table 27).

White Stone Lake, AUID 13-0048-00

The MPCA is shifting all 0.0214 lb/day of TP from the Watershed LA to the MS4 permittees' WLAs (Modified Table 30).

West Branch Sunrise River, AUID 07030005-529

The MPCA is shifting between 1.47 and 14.7 lb/day of TP depending on the flow zone from the Watershed runoff LAs to the MS4 permittees' WLAs (Modified Table 31).

MAPS

Figure 1. Linwood Lake (AUID 02-0026-00) TP TMDL Subwatershed and Regulated MS4 Areas.

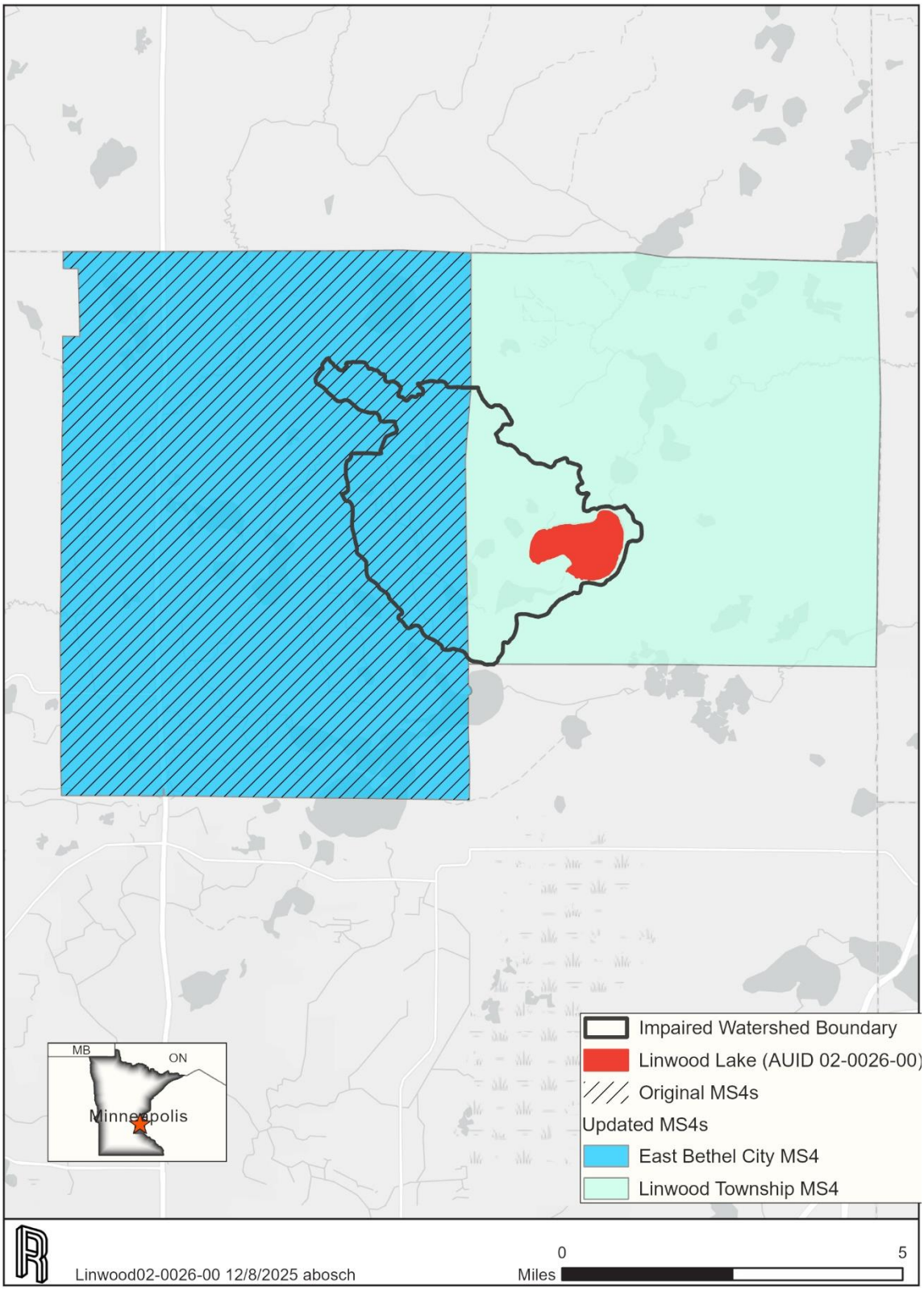


Figure 2. White Stone Lake (AUID 13-0048-00) TP TMDL Subwatershed and regulated MS4 areas.

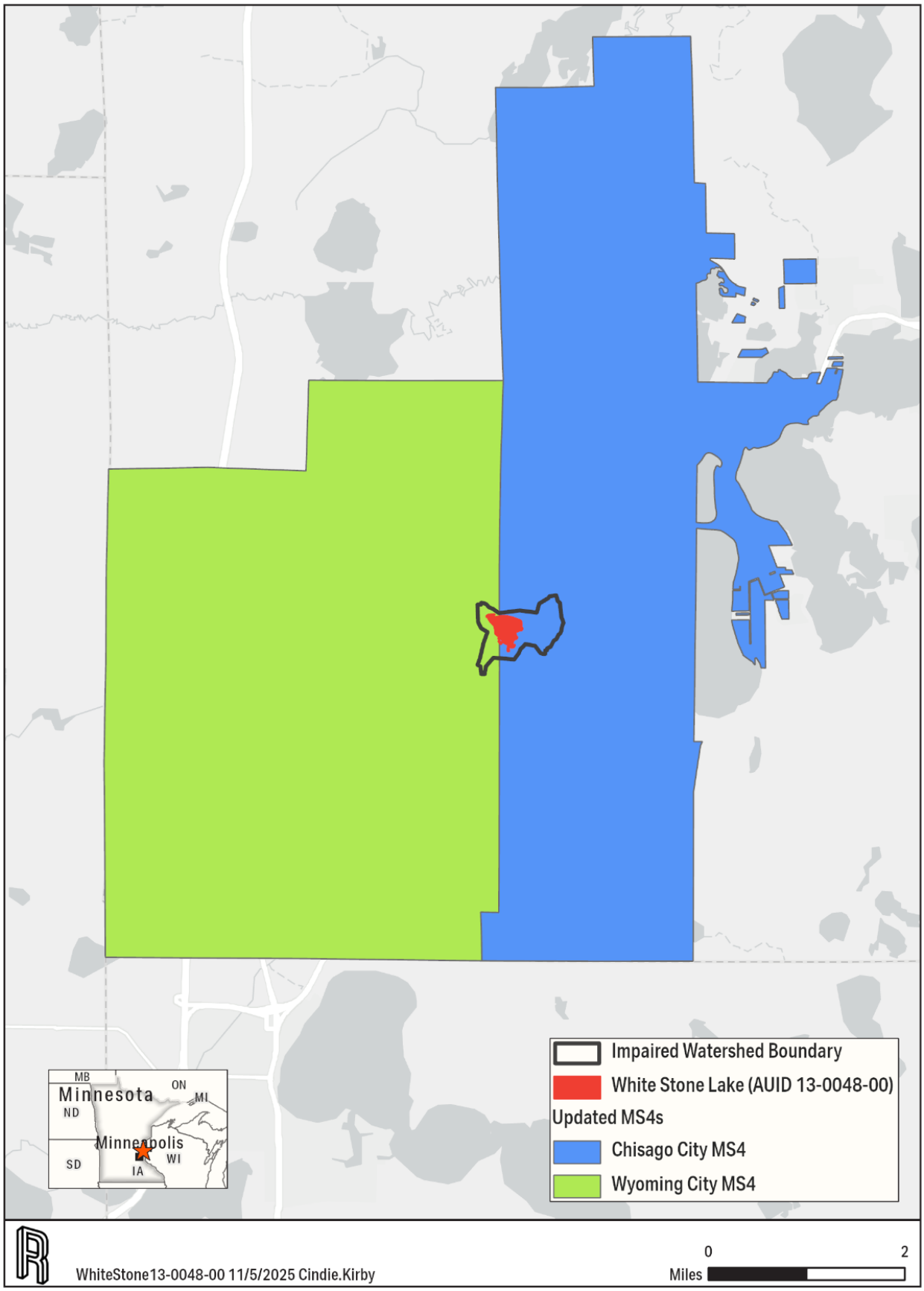
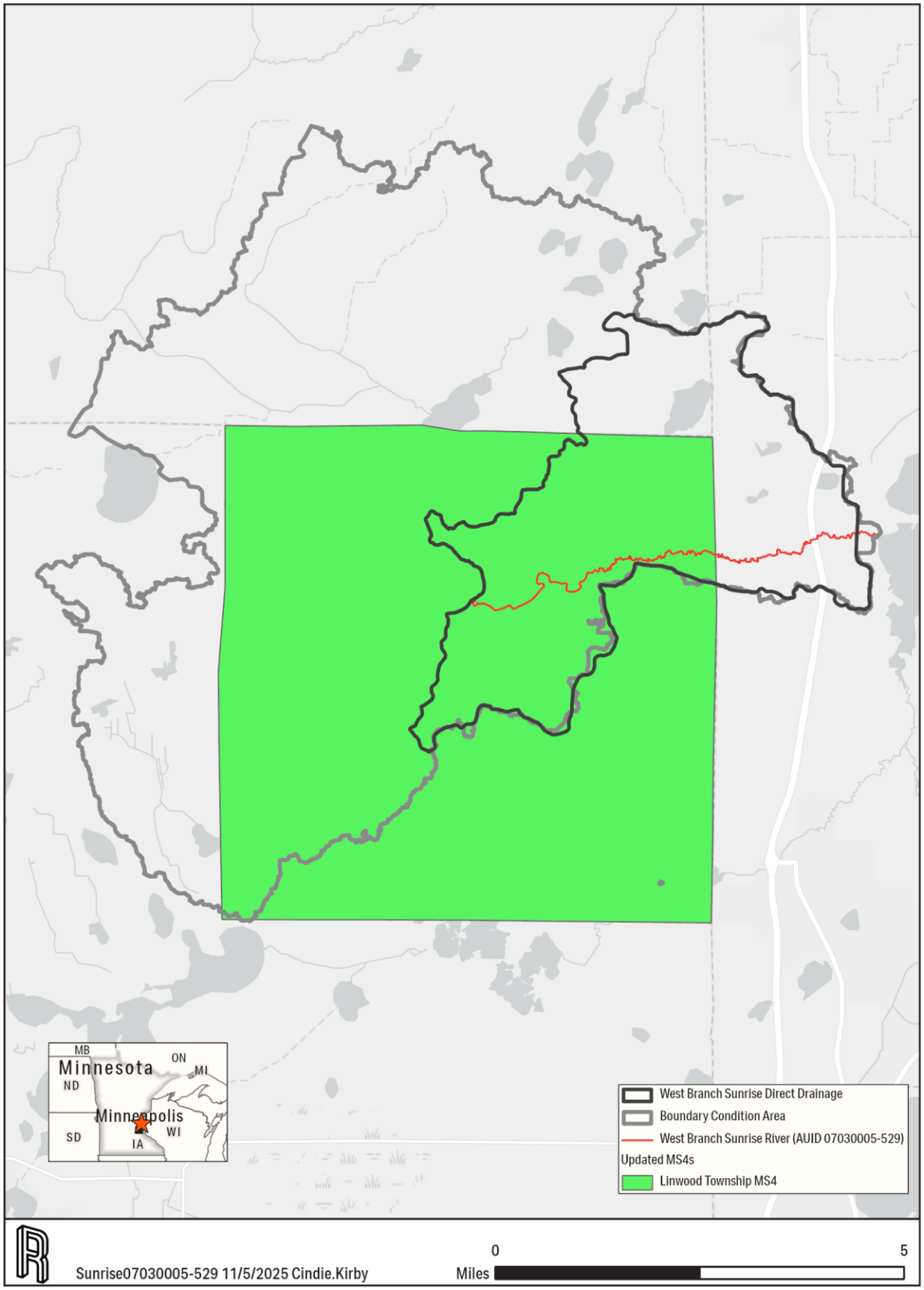


Figure 3. West Branch Sunrise River (AUID 07030005-529) TP TMDL Subwatershed and regulated MS4 areas.



TABLES

Original Table 27. Linwood Lake Phosphorus TMDL and Allocations (Page 61 of TMDL report).

Linwood Lake Load Component		Existing	TMDL Goal		Reduction	
		(lb/yr)	(lb/yr)	(lb/day)	(lb/yr)	(%)
Wasteload Allocations	City of East Bethel (MS400087)	21.3	21.3	0.058	0.0	0%
	Construction stormwater (MNR100001)	3.7	3.7	0.010	0.0	0%
	Industrial stormwater (MNR50000)	3.7	3.7	0.010	0.0	0%
	Total WLA	**28.7**	**28.7**	**0.078**	**0.0**	
Load Allocations*	*Watershed*	*1,050.3*	*762.0*	*2.088*	*288.3*	*27%*
	Internal/Unknown	*307.0*	*277.9*	*0.761*	*29.1*	*9%*
	SSTS	*110.3*	*86.4*	*0.237*	*23.9*	*22%*
	Total Watershed/In-lake	1,467.6	1,126.3	3.086	341.3	23%
	Atmospheric	152.3	152.3	0.417	0.0	0%
	Total LA	**1,619.9**	**1,278.6**	**3.503**	**341.3**	
MOS			**145.3**	**0.398**		
TOTAL		**1,648.6**	**1,452.6**	**3.979**		

* LA components are broken down for guidance in implementation planning; loading goals for these components may change through the adaptive implementation process.

Modified Table 27. Linwood Lake Phosphorus TMDL and Allocations (modifications highlighted in yellow).

Linwood Lake Load Component		TMDL Goal	
		(lb/yr)	(lb/day)
Wasteload Allocations	City of East Bethel (MS400087)	438.76	1.202
	Linwood Township MS4	344.47	0.944
	Construction stormwater (MNR100001)	3.7	0.010
	Industrial stormwater (MNR50000)	3.7	0.010
	Total WLA	**790.6**	**2.166**
Load Allocations*	*Watershed*	*0.1*	*0.0002*
	Internal/Unknown	*277.9*	*0.761*
	SSTS	*86.4*	*0.237*
	Total Watershed/In-lake	364.4	0.998
	Atmospheric	152.3	0.417
	Total LA	**516.7**	**1.415**
MOS		**145.3**	**0.398**
TOTAL		**1,452.6**	**3.979**

* LA components are broken down for guidance in implementation planning; loading goals for these components may change through the adaptive implementation process.

Original Table 30. White Stone Lake Phosphorus TMDL and Allocations (Page 64 of TMDL report).

White Stone Lake Load Component		Existing	TMDL Goal		Reduction	
		(lb/yr)	(lb/yr)	(lb/day)	(lb/yr)	(%)
Wasteload Allocations	Construction stormwater (MNR100001)	0.03	0.03	0.0001	0.00	0%
	Industrial stormwater (MNR50000)	0.03	0.03	0.0001	0.00	0%
	Total WLA	**0.06**	**0.06**	**0.0002**	**0.00**	
Load Allocations*	*Watershed*	*40.9*	*7.7*	*0.0214*	*33.2*	*81%*
	Internal/Unknown	*63.5*	*23.9*	*0.0650*	*39.6*	*62%*
	SSTS	*17.2*	*10.0*	*0.0270*	*7.2*	*42%*
	Total Watershed/In-lake	121.6	41.6	0.1140	80.0	66%
	Atmospheric	13.0	13.0	0.036	0.0	0%
	Total LA	**134.6**	**54.6**	**0.150**	**80.0**	
MOS			**6.1**	**0.017**		
TOTAL		**134.7**	**60.8**	**0.167**		

* LA components are broken down for guidance in implementation planning; loading goals for these components may change through the adaptive implementation process.

Modified Table 30. White Stone Lake Phosphorus TMDL and Allocations (modifications highlighted in yellow).

White Stone Lake Load Component		TMDL Goal	
		(lb/yr)	(lb/day)
Wasteload Allocations	Construction stormwater (MNR100001)	0.03	0.0001
	Industrial stormwater (MNR50000)	0.03	0.0001
	Wyoming City (MS400294)	2.31	0.0064
	Chisago City MS4	5.39	0.0150
	Total WLA	**7.76**	**0.0216**
Load Allocations*	*Watershed*	*0.0*	*0.0000*
	Internal/Unknown	*23.9*	*0.0650*
	SSTS	*10.0*	*0.0270*
	Total Watershed/In-lake	33.9	0.0920
	Atmospheric	13.0	0.036
	Total LA	**46.9**	**0.128**
MOS		**6.1**	**0.017**
TOTAL		**60.8**	**0.167**

* LA components are broken down for guidance in implementation planning; loading goals for these components may change through the adaptive implementation process.

Original Table 31. Sunrise River West Branch (07030005-529) TMDL and Allocations (Page 65 of TMDL report).

Sunrise River West Branch (07030005-529) Load Component		Original Flow Regime				
		High	Wet	Mid	Dry	Low
		(lb/day)				
Existing Load		**60**	**55**	**25.3**	**17.1**	**5.7**
Modified Existing Load*		**58.6**	**12.6**	**21**	**13.1**	**2.9**
Wasteload Allocations	*Construction stormwater (MNR100001)*	*4.1*	*1.79*	*0.99*	*0.58*	*0.37*
	Industrial stormwater (MNR50000)	*4.1*	*1.79*	*0.99*	*0.58*	*0.37*
	Total WLA**	**8.2**	**3.58**	**1.98**	**1.16**	**0.74**
Load Allocations	*Watershed runoff*	*26*	*11.3*	*6.33*	*3.64*	*2.33*
	*Upstream lake (Martin Lake)****	*34.2*	*15*	*8.27*	*4.83*	*3.07*
	Total LA	**60.2**	**26.3**	**14.6**	**8.47**	**5.4**
MOS		**7.6**	**3.32**	**1.84**	**1.07**	**0.68**
Total Loading Capacity		**76**	**33.2**	**18.4**	**10.7**	**6.82**
Estimated Load Reduction		**0%**	**0%**	**12%**	**18%**	**0%**

* The modified existing load accounts for future load reductions as part of the Martin Lake TMDL.

** No WWTF, NPDES Permitted Feedlots or Communities Subject to MS4 NPDES requirements are located in the watershed.

*** A TMDL for excess phosphorous has been completed for Martin Lake and includes a WLA, LA and MOS for its drainage area. The load allocation presented here applies only to the -529 drainage area downstream of Martin Lake.

Modified Table 31. Sunrise River West Branch (07030005-529) TMDL and Allocations (modifications highlighted in yellow).

Sunrise River West Branch (07030005-529) Load Component		Original Flow Regime				
		High	Wet	Mid	Dry	Low
		(lb/day)				
Wasteload Allocations	*Construction stormwater (MNR100001)*	*4.1*	*1.79*	*0.99*	*0.58*	*0.37*
	Industrial stormwater (MNR50000)	*4.1*	*1.79*	*0.99*	*0.58*	*0.37*
	Linwood Township MS4	*14.7*	*4.90*	*3.43*	*1.96*	*1.47*
	Total WLA~~~~**	**22.9**	**8.48**	**5.41**	**3.12**	**2.21**
Load Allocations	*Watershed runoff*	*11.3*	*6.41*	*2.90*	*1.68*	*0.86*
	*Upstream lake (Martin Lake)****	*34.2*	*15*	*8.27*	*4.83*	*3.07*
	Total LA	**45.5**	**21.4**	**11.17**	**6.51**	**3.93**
MOS		**7.6**	**3.32**	**1.84**	**1.07**	**0.68**
Total Loading Capacity		**76**	**33.2**	**18.4**	**10.7**	**6.82**

~~* The modified existing load accounts for future load reductions as part of the Martin Lake TMDL.~~

~~** No WWTF, NPDES Permitted Feedlots or Communities Subject to MS4 NPDES requirements are located in the watershed.~~

*** A TMDL for excess phosphorous has been completed for Martin Lake and includes a WLA, LA and MOS for its drainage area. The load allocation presented here applies only to the -529 drainage area downstream of Martin Lake.

Reasonable Assurance

The MPCA is responsible for applying federal and state regulations to protect and enhance water quality in Minnesota. The MPCA oversees stormwater management accounting activities for all permitted MS4 entities listed in this TMDL modification. The MS4 General Permit requires regulated municipalities to implement best management practices (BMPs) that reduce pollutants in stormwater to the maximum extent practicable. A critical component of permit compliance is the requirement for the owners or operators of a permitted MS4 conveyance to develop a SWPPP. The SWPPP addresses all permit requirements, including the following six measures:

- Public education and outreach
- Public participation
- Illicit discharge detection and elimination program
- Construction site runoff controls
- Post-construction runoff controls
- Pollution prevention and municipal good housekeeping measures

A SWPPP is a management plan that describes the MS4 permittee's activities for managing stormwater within their regulated area. The TMDL report and this modification assign WLAs to permitted MS4s in

the study area. The MS4 permit requires applicants to submit information at the time of application on applicable WLAs. They must document how they will make progress on performance-based WLAs (bacteria, chloride, temperature), demonstrate they are currently meeting their numerical WLAs (oxygen demand, nitrate, TP, or TSS), or develop a compliance schedule for those numerical WLAs that are not being met. A compliance schedule includes BMPs that will be implemented over the permit term, a timeline for their implementation, and a long-term strategy for continuing progress towards assigned WLAs. The MPCA requires MS4 owners or operators to submit their application and corresponding SWPPP document to the MPCA for review. Once the application and SWPPP are deemed complete by the MPCA, all application materials are placed on 30-day public notice, allowing the public an opportunity to review and comment on the prospective program.

Progress on BMP implementation must be reported annually. For WLAs being met at the time of permit application, the same level of treatment must be maintained in the future. Regardless of WLA attainment, all permitted MS4s are still required to reduce pollutant loadings to the maximum extent practicable.

The MPCA's stormwater program and its National Pollutant Discharge Elimination System (NPDES)/State Disposal System (SDS) permit program are regulatory activities providing reasonable assurance that implementation activities are initiated, maintained, and consistent with WLAs assigned in this study.

Several nonpermitted reduction programs exist to support implementation of nonpoint source reduction BMPs in the Lower St Croix River Watershed. Per the spending for water quality implementation projects website (data compiled by MPCA: Spending for water quality implementation projects), 75 million dollars in state and federal grants, loans, local government and landowner cost share match have been spent on nonpoint source projects since 2004. Efforts to reduce nonpoint source pollution loading will continue.

Implementation

This TMDL modification assigns new applicable TP WLAs to Chisago City MS4, Linwood Township MS4 and Wyoming City MS4. It also adjusts the existing WLA for East Bethel City MS4. This will result in permit requirements for all of the listed permittees.

When evaluating TP WLA attainment during permit application, permittees should evaluate the areas draining to stormwater conveyance within the impairment subwatershed within their jurisdictional boundary (Figure 1 and Figure 2). Any wasteload reducing BMPS implemented since the baseline year (Table 1) in those areas can be counted toward WLA attainment. The permittees can measure their progress against a loading rate of 0.19 lb/ac/yr TP for all the TMDLs in this modification. See Making WLA determinations | Minnesota Stormwater Manual.

Prior to implementation, permitted MS4s are encouraged to compare their sewersheds (e.g., catchments, pipesheds, etc.) with the drainage areas for each impaired water body to ensure appropriate BMP crediting. If a permitted MS4 sewershed is different from what is defined as the drainage area in this report, the sewershed should be considered part of the MS4 contribution to the impaired water if sufficient evidence of the appropriate sewershed area is provided to the MPCA. With Agency approval, any wasteload-reducing BMP implemented since the TMDL baseline year within the sewershed of the impaired waterbody will be creditable towards an MS4's load reduction for purposes of annual reporting and demonstrating progress towards meeting the WLA(s).

Projects undertaken recently may take a few years to influence water quality. Any wasteload-reducing BMP implemented after the baseline years noted in Table 1 will be creditable toward the MS4's load reductions. If a BMP was implemented during or just prior to the baseline year, the MPCA is open to presentation of evidence by the MS4 permit holder to demonstrate that it should be considered as a credit.