



Lake St. Croix Total Maximum Daily Load

**Annual Report and Final Documentation
Submittal to the Wisconsin DNR for the
City of River Falls and UW-River Falls**

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Lake St. Croix Total Maximum Daily Load (TMDL) Requirements for the City of River Falls & UW-River Falls

This document is intended to fulfil the reporting requirements in the WPDES MS4 General Permit Section A.6. The City of River Falls is within the Lake St. Croix TMDL Watershed. All areas within the municipal boundary drain to the Kinnickinnic River and to Lake St. Croix. Additionally, the UW-River Falls main campus is within the City’s municipal boundary. The City and University have entered into an intergovernmental agreement in which the City provides stormwater management and assistance with MS4 compliance. The City and University stormwater BMPs have been combined to meet TMDL requirements.

The City previously submitted a report titled “Lake St. Croix TMDL – Total Phosphorus Analysis for the City of River Falls and UW-River Falls”, dated 1/23/2018. This report detailed the City’s modeling efforts and established the City’s and University’s compliance with the TMDL. Since that report was submitted, additional areas have been annexed into the City and are reflected in Table 1 below. As development occurs, the City’s ordinances require stormwater treatment. Several BMPs have been added to the previously submitted list, attached as Appendix A.

Table A3 in the WPDES MS4 General Permit lists the MS4 TP % Reduction from No Controls for the Lake St. Croix TMDL as 46%. Table 1 below was updated from the 2018 report and shows the modeled TP generation by various urban land use under No Controls. In the ‘no-controls’ scenario, the TP yield from the City is approximately 3,543 pounds annually. **In order to meet the TMDL, City BMPs must remove at least 1,629.7 pounds (46%) of TP on an annual basis.**

Table 1: City of River Falls Urban Land Use Classifications

Land Use	2018 Acreage	2018 Annual TP (lbs)	2023 Acreage	2023 Annual TP (lbs)
Commercial Land Use	187	198.1	108.34	114.77
Highway Land Use	160	117.5	228.82	168.04
Industrial Land Use	324	315.3	486.78	473.71
Institutional Land Use	473	499.0	545.40	575.38
Other Urban Land Use	1,351	514.2	1,393.44	530.35
Residential Land Use	1,677	1,440.1	1,957.05	1,680.59
Total	4,173	3,084.2	4,719.83	3,542.84

As part of the previously submitted report, more than 200 BMPs were modeled in more than 80 separate WinSLAMM models. Due to complexities associated with routing and sequence of BMPs, some of the WinSLAMM models contain only one BMP while other models encompass several subwatersheds and several BMPs. Noting this complexity, the City plans to complete updated modeling in 2025 as discussed below. As required by the DNR, these modeling results have been summarized in a table found in **Appendix A**. Several significant projects and their resulting BMPs have been constructed since the 2018 modeling was completed. The TP removal calculations for those projects were added to the table. Once adequate TP removal

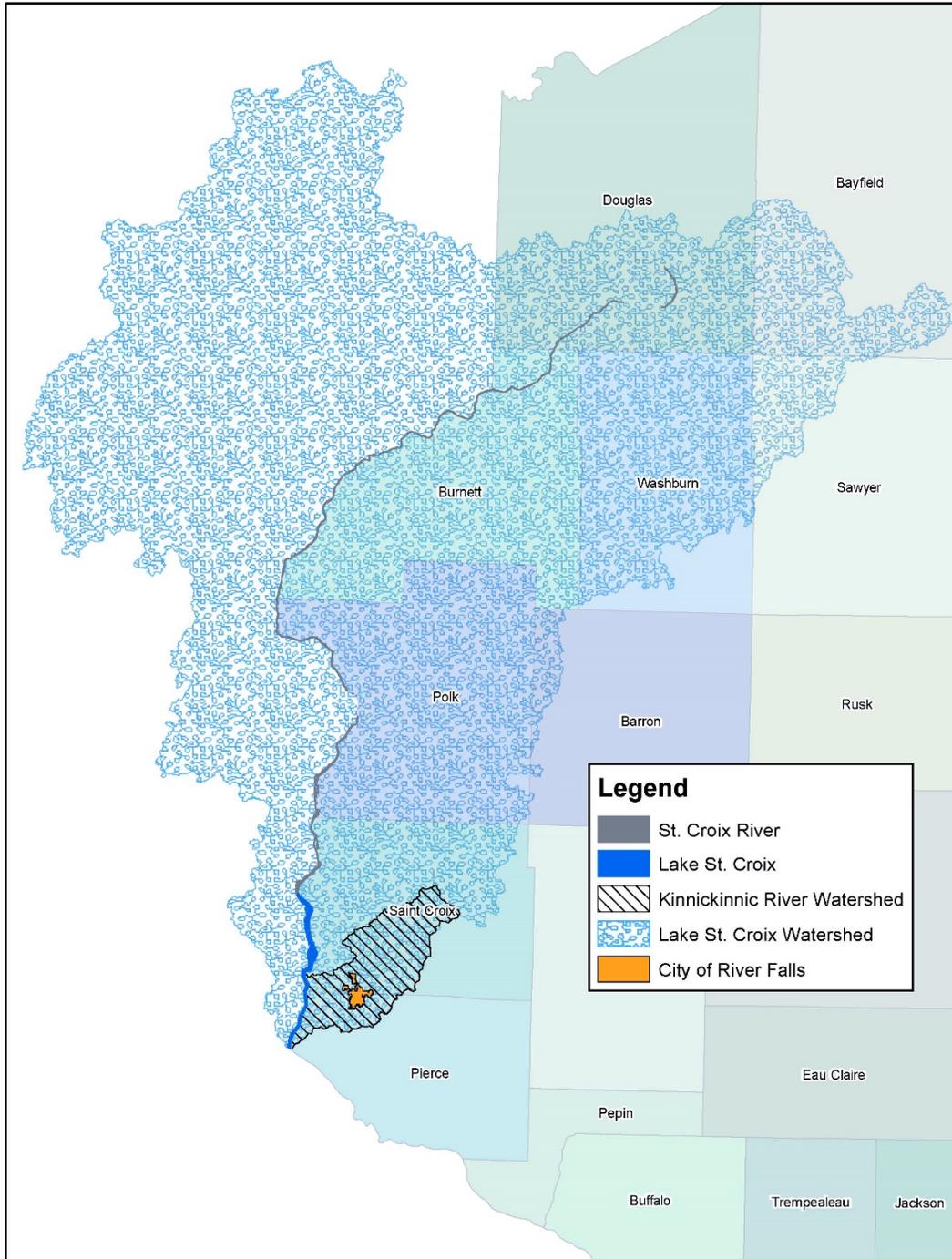
was demonstrated by the table, additional modeling/calculations were not performed and there are several additional functioning stormwater BMPs in the City that are not included in the table.

The updated results of the modeling and project calculations show that City's BMPs remove approximately 1,697 pounds of TP annually, or 47.9%. This surpasses the load allocation standards of the TMDL which require removal of 46% or 1,665 pounds of TP. **The existing stormwater BMPs in practice in the City provide adequate TP reduction to meet the Lake St. Croix TMDL.**

Appendix B contains updated MS4 boundary, reachshed, and stormsewer system maps.

The City has been awarded an Urban Nonpoint Source (UNPS) Stormwater Management Grant. The City intends to use a portion of the matching grant funds for a project to update the City's WinSLAMM model for TSS and TP. This updated model will combine the many existing separate models into one comprehensive model, and include as many BMPs as the City has information for. Another portion of the project will be determining potential sites and designs for future BMP installation for further removal of TSS and TP. The City has budgeted for this project to be completed in 2025.

Drainage Area Name	Description of BMP(s)	City Outfall Number	Outfall Description	TSS Removed Annually (lbs)	TP Removed Annually (lbs)	BMP Ownership	BMP Maint. Agreement?
Ames	Grass Swales, Biofilters		Surface Discharge Near Outfall 036	6440.4	19.5	Private	Y
Ball Field	Biofilter	050	Surface Discharge to Greenwood Detention Basin	847.9	3.9	Private	Y
Best Maid N	Biofilter	044	Discharge to Benson St Storm Sewer	1462.1	2.7	Private	Y
Best Maid SE	Wet Pond, Biofilter	044	Discharge to Troy St Storm Sewer	1592.0	9.2	Private	Y
Best Maid W	Grass Swale	044	Discharge to Troy St Storm Sewer	1598.4	2.8	Private	Y
Boulder Ridge C,D,F	Wet Ponds	050	Discharge to Yellowstone Drive Storm Sewer	8904.0	22.9	Public	N/A
Campusview Central	Biofilter		Surface Discharge to South Fork near Outfall 034	259.0	0.9	Private	Y
Campusview East	Biofilter		Surface Discharge to South Fork near Outfall 034	272.3	0.9	Private	Y
Centennial Way	Biofilter	056	Surface Discharge to Sorenson Court Swale	522.7	2.0	Public	N/A
City Hall	Grass Swales, Biofilters	009	Discharge to City Hall Storm Sewer	498.3	1.1	Public	N/A
Collinswood PUD	Biofilters		Surface Discharge to Kinnickinnic near Outfall 042	2876.0	11.3	Private - Public	N-N/A
Collinswood Swale	Grass Swale	042	Grassed Swale over Rugo Property	14766.0	48.4	Private	Y
CVTC	Infiltration Basin		Surface Discharge to E Cascade Ave Ditch	348.2	1.3	Private	N
Desantcis	Grass Swale, Biofilter		Surface Discharge west of City near Dry Run Road	16427.0	78.0	Public	N/A
Desantcis Townhomes	Swales, Infiltration Basin		Surface Discharge west of City near Dry Run Road	3057.3	4.5	Public	N/A
Downtown with Sweeping	Street Cleaning	023, 019, 020, 021, 011, 008, 007, 006, 004	Several Outfalls along Kinni and Lake George	8696.0	13.6	Public	N/A
Ecovillage	Biofilters	081	Discharge to Dry Detention then Outfall 081	507.6	1.7	Private	Y
Falcon Center	Wet Ponds, Grass Swales		Surface Discharge to South Fork near Outfall 078	15013.0	38.7	Private	Y
Falcon Center East Swale System	Grass Swale, Wet Pond		Surface Discharge to South Fork near Outfall 078	7308.8	19.9	Private	Y
Falcon Drive Swale	Grass Swale	050	Surface Discharge to Unnamed Tributary through City	1751.3	3.3	Private	Y
Foley United	Biofilter	052	Surface Discharge to Industrial Park pond	1345.2	2.3	Private	N
Foster Bartosh Swale	Grass Swale	040	Discharge to Storm Sewer to Kinnickinnic	4165.0	9.9	Public	N/A
Greenwood Infiltration	Biofilter	050	Surface Discharge to Unnamed Tributary through City	548.3	1.6	Private	Y
Greenwood Swale	Grass Swale	050	Surface Discharge to Unnamed Tributary through City	8769.0	26.9	Public	N/A
HighView A	Wet Pond, Biofilter	050	Surface Discharge to Unnamed Tributary through City	4935.0	17.1	Public	N/A
Highway Ditches 1-15	Grass Swales, Biofilters	50	Surface Discharge to Unnamed Tributary through Sterling Ponds	20318.5	86.0	DOT	N/A
Hamilton Rocky Devin	Wet Ponds, Biofilter	064	Discharge to Rocky Run	12832.0	40.6	Public	N/A
High School & Hockey & Other	Wet Ponds, Grass Swales		Discharge to South Fork	43923.0	134.7	Private - Public	N-N/A
Hospital	Biofilter, Wet Pond, Grass Swale	050	Surface Discharge to Unnamed Tributary through City	8917.0	22.7	Private	Y
Industrial Park	Grass Swales, Biofilter	044	Discharge to Quarry Rd Storm Sewer	15199.0	44.9	Public	N/A
Knollwood	Wet Pond, Biofilter		Discharge to South Fork	6432.0	21.7	Public	N/A
Kwik Trip North	Biofilters, Wet Pond	044	Discharge to Quarry Rd Storm Sewer	3327.0	5.8	Private	Y
Kwik Trip South	Wet Pond	040	Discharge to North Main Street Storm Sewer	1061.8	2.0	Private	Y
Lake George Lofts	Underground Infiltration		Discharge to Storm Sewer to Lake George	122.0	26.6	Private	Y
Mann Valley	Swales, Infiltration Basin		Surface Discharge to CTH M Ditch	79208.3	161.4	Public	N/A
Parkview Place	Biofilter	050	Discharge to Unnamed Tributary through City	814.9	3.0	Public	N/A
Paulson Road-McDonalds	Wet Pond	065	Discharge to Kinnickinnic	2458.0	4.8	Public	N/A
Public Works & St Croix Pond & Walgreens	Biofilter	052	Discharge to Benson St Storm Sewer	3463.0	6.2	Public	N/A
Quail Ridge South	Biofilter		Surface Discharge West of City	310.6	1.2	Public	N/A
Quail Ridge	Wet Pond, Grass Swale	063	Surface Discharge West of City	4138.0	12.0	Public	N/A
Renaissance Academy	Infiltration Basin		Surface Discharge to S Wasson Ln	135.3	0.8	Private	Y
River Oaks	Wet Pond, Grass Swale	041	Surface Discharge to Kinni	11874.0	45.4	Public	N/A
Riverside Drive	Wet Pond	046	Surface Discharge to Kinni	2724.0	7.0	Public	N/A
Rolling Hills N.	Wet Pond	068	Discharge to West Side Storm Sewer	1413.0	3.8	Public	N/A
Rolling Hills S.	Biofilter		Surface Discharge West of City	1554.3	5.8	Public	N/A
Royal Oaks Overall	Wet Ponds, Biofilter		Surface Discharge East of City	2162.0	92.7	Public	N/A
Sawdust City	Grass Swale, Biofilter	075	Discharge to Cascade Avenue Storm Sewer	397.2	1.3	Private	Y
ShopKo	Biofilters		Discharge to Highway Ditch 3	7373.3	23.2	Private	N
Soccer Fields	Grass Swales, Biofilter	050	Discharge to Unnamed Tributary through City	23027.0	99.8	Public	N/A
South Ridge Ranch N	Wet Pond		Discharge to Cemetery Rd Storm Sewer	1692.0	4.8	Public	N/A
South Ridge Ranch S.	Wet Pond	056	Surface Discharge to Sorenson Court Swale	763.5	2.1	Public	N/A
Spring Creek 1-3.1	Wet Ponds, Biofilter	057	Surface Discharge to Rocky Run	8319.5	32.3	Public	N/A
Spring Creek C-C1	Biofilter, Wet Pond	056	Surface Discharge to Rocky Run	15280.0	52.5	Public	N/A
Spring Creek 4	Wet Pond	055	Surface Discharge to Rocky Run	3307.0	8.6	Public	N/A
Spring Creek 8	Wet Pond, Biofilter	060	Surface Discharge South of City	4946.1	18.2	Public	N/A
Spring Creek 9	Biofilter		Surface Discharge to Rocky Run	522.5	2.0	Public	N/A
Sterling Corp A	Wet Pond, Biofilter	073	Surface Discharge to Unnamed Tributary through Sterling Ponds	29895.5	54.9	Public	N/A
Sterling Corp B	Wet Pond, Biofilter	084	Surface Discharge to Unnamed Tributary through Sterling Ponds	5042.3	8.9	Public	N/A
Sterling Corp C-D	Wet Ponds, Biofilter	082	Surface Discharge to Unnamed Tributary through Sterling Ponds	7615.0	25.0	Public	N/A
Sterling Ponds A	Wet Pond, Biofilter	072	Surface Discharge to Unnamed Tributary through Sterling Ponds	7109.3	31.6	Public	N/A
Sterling Ponds F	Wet Pond, Biofilter	070	Surface Discharge to Unnamed Tributary through Sterling Ponds	2063.0	9.3	Public	N/A
Sterling Ponds G-G1	Wet Ponds, Biofilter	071	Surface Discharge to Unnamed Tributary through Sterling Ponds	5658.0	23.1	Public	N/A
Sterling Ponds H	Wet Pond, Biofilter	085	Surface Discharge to Unnamed Tributary through Sterling Ponds	2115.0	6.3	Public	N/A
Super 8-Westconsin	Biofilters	069	Surface Discharge to Kinnickinnic	4463.2	9.3	Private - Private	Y - N
The Sycamore	Underground Detention, Filtration		Surface Discharge to Kinnickinnic	1646.0	2.2	Private	Y
Thompson Heights	Wet Pond, Infiltration Basin		Surface Discharge to Storm Sewer along Paulson Road	4208.7	39.2	Public	N/A
Tremont	Wet Pond, Biofilters, Grass Swale	050	Discharge to Storm Sewer along Division and into Boulder Ridge	5583.6	20.4	Private	
University Center	Grass Swale, Wet Ponds		Surface Discharge to South Fork near Outfall 050	1637.3	4.1	Private	Y
University Falls	Biofilters, Pervious Pavement	013	Storm Sewer discharge to Lake George	366.0	1.4	Private	Y
Walgreens	Biofilter	052	Discharge to St. Croix Street storm sewer	878.9	1.8	Private	Y
Wasson Swale	Grass Swale	050	Surface Discharge to Unnamed Tributary through City	1563.4	4.9	Public	N/A
Wasson Townhomes	Infiltration Basin		Surface Discharge to S Wasson Ln Stormsewer	253.7	1.3	Private	Y
Wasson Trail	Grass Swale, Biofilter	075	Surface Discharge to South Fork	675.9	2.1	Public	N/A
W Division Swale	Grass Swale		Surface Discharge to CTH M ditch	1067.4	4.1	Public	N/A
Whitetail Ridge N	Biofilter		Discharge to Highway Ditch 3	19643.0	47.5	Public	N/A
Whitetail Ridge S	Biofilters		Discharge to Highway Ditch 3	29743.0	81.3	Public	N/A
Total Pounds No-Controls				782,547.8	3542.8		
Total Pounds Removed				532,154.8	1697.0		
% Removal of Total City Discharge				68.0%	47.9%		



Lake St. Croix Watershed



River Falls Storm System Map



- DNR Phase 2 Facilities**
 - WPDES Permit Facilities
 - Municipal Facilities
 - Historical Property
 - Wetlands City Delineated
 - Outfall Sewersheds
 - Parks and Recreational Areas
 - Corporate Limits
- Structures**
 - Cleanout/Observation Well, City
 - Cleanout/Observation Well, Private
 - Inlet, City
 - Inlet, Private
 - Inlet, County
 - Inlet, State
 - Inlet, UWRF
 - Manhole, City
 - Manhole, Private
 - Manhole, State
 - Manhole, UWRF
 - Perforated Riser Pipe, City
 - Perforated Riser Pipe, Private
 - Valve, City
 - Valve, Private
- Outfalls**
 - Outfall
 - Major Outfall
- Aprons**
 - City
 - County
 - Private
 - State
 - UWRF
- Pond Outlet Structures**
 - Pond Outlet Structure
 - Overflow Weir
- Pipes**
 - City
 - County
 - Private
 - State
 - UWRF
- Channels**
 - Concrete
 - Grass
 - Rip Rap
- Ponds**
 - BioRetention Filtration
 - Detention - Dry
 - Detention - Wet
 - Grass Swale
 - Grass Swale over Rock Trench
 - Infiltration
 - Pervious Pavement
 - Rain Garden
 - Rock Trench

