APPENDIX K. TRADING AND ADAPTIVE MANAGEMENT INFORMATION

1 INTRODUCTION

The purpose of this appendix is to provide additional information to support water quality trading (WQT) and adaptive management (AM). In many cases, the Upper Fox and Wolf Basins (UFWB) TMDL expands the geographic extent available for generating WQT credits from just the facility's subbasin to the entire drainage area of one of the lakes or reservoirs in the UFWB. In addition, instead of the downstream lakes and reservoirs being the point of standard compliance for AM plan which would eliminate the viability of AM, facilities can evaluate AM at a subbasin scale since subbasin allocations are set to meet the water quality standards of the downstream lakes/reservoirs. Throughout this appendix, the use of the word facility refers to individually permitted, wastewater dischargers.

2 WATER QUALITY TRADING, ADAPTIVE MANAGEMENT AND TMDLs

WQT may be used by Wisconsin Pollutant Discharge Elimination System permit holders to demonstrate compliance with water quality-based effluent limitations derived both through ch. NR 217, Wis. Adm. Code, and those derived from TMDL wasteload allocations. AM is another compliance option that allows point and nonpoint sources (e.g. agricultural producers, storm water utilities, developers) to work together to improve water quality in those waters not meeting phosphorus standards.

Both WQT and AM are designed to be used when it is economically preferable to control nonpoint sources or other point sources of a pollutant compared with upgrading a facility to achieve overall pollutant reduction. However, there are some key differences in how the two compliance options are implemented.

- Adaptive management and trading have different end goals: Adaptive management focuses on achieving water quality criteria for phosphorus and total suspended solids (TSS) in the surface water; trading focuses on offsetting phosphorus and TSS from a discharge to comply with a permit limit.
- Monitoring: Because adaptive management focuses on water quality improvements, in-stream monitoring is required under adaptive management; this is not required under trading.
- Timing: Practices used to generate reductions in a trading strategy must be established before the phosphorus or TSS limit takes affect; adaptive management is a watershed project that can be implemented throughout the permit term.
- Quantifying reductions needed: Trading requires trade ratios be used to quantify reductions used to offset a permit limit; the reductions needed for adaptive management are based on the receiving water, not the effluent, and trade ratios are not necessary in this calculation.
- Eligibility: Adaptive management and trading have different eligibility requirements.

More details regarding trading, adaptive management, and the multi-discharger variance can be found at: https://dnr.wi.gov/topic/surfacewater/phosphorus/

3 WATER QUALITY TRADING

3.1 Geographic Extent of Trades

In the UFWB, the geographic extent of trades varies based on the point of standards application used to develop the wasteload allocation. TMDLs assign wasteload allocations to point sources and load allocations to nonpoint sources so that the impaired water or a downstream impaired reservoir will meet water quality standards. These allocations are assigned to pollutant sources that contribute to the subbasin. Wasteload allocations and water quality based effluent limits are both intended to meet water quality standards at the point of standards application. For a TMDL, the point of standards application is

generally the bottom of the subbasin; however, in the UFWB TMDL, the point of standards application for a facility may be the bottom of their subbasin, if their allocations are driven by local water quality, a downstream lake or reservoir if more stringent allocations were required to meet water quality standards for the lakes, or a combination of both. In many cases it is a combination of both.

For the portion of a facility's allocation that is driven by local water quality, WQT can occur with other sources within or upstream of the facility's subbasin. For a facility which intends to trade phosphorus credits to offset their discharge, any credits generated to meet the local reduction must be generated upstream of or within the facility's subbasin in order not to be subject to a downstream trading factor[1]. Downstream trading can occur with the use of a downstream trading factor that compares the ratio of the facility's wasteload allocation to the total allocation for the applicable subbasin. When meeting the local wasteload allocation, downstream trades should be limited to trading partners located in the same 12-digit hydrological unit (HUC12) subwatershed.

If WQT is used to meet the portion of the wasteload allocation assigned due to a downstream lake or reservoir, the credits can be generated anywhere within the drainage area of the lake/reservoir identified for the facility or subbasin; however, there is a maximum number of downstream credits that can be generated to ensure local water quality is maintained. Please refer to Tables 1 and 2 for more information on the maximum number of downstream credits and the applicable downstream lake/reservoir for each facility and subbasin. Credits used to meet downstream reductions can be generated anywhere upstream of the identified lake/reservoir and are not subject to the downstream trading factor. If a facility does not have a downstream lake/reservoir identified, the allocations are driven only by local water quality and any downstream trades should occur between entities within the same subbasin or HUC12, with a downstream trading factor, as described in the paragraph above.

For example, a facility discharges 1,000 pounds per year (lbs./yr.) of phosphorus and their wasteload allocation to meet local water quality in their subbasin is 800 lbs./yr. (referred to as "local wasteload allocation" in Tables 1 and 2); however, their wasteload allocation based on meeting water quality standards for a downstream reservoir is 450 lbs./yr. (referred to as "wasteload allocation" in Tables 1 and 2). If the facility chooses trading as a compliance option, they will need to find 550 lbs./yr. in credits (1,000 minus 450) to meet their wasteload allocation. To ensure that the facility meets their local wasteload allocation, 200 lbs./yr. of credits needs to be generated in or upstream of their subbasin or downstream within their HUC12 with the appropriate downstream trading factor (1,000 minus 800). The remaining 350 lbs./yr. (550 minus 200) in credits can be generated anywhere within the contributory drainage basin of the downstream reservoir without requiring a downstream trading factor. Trades cannot occur downstream of the reservoir identified in Tables 1 and 2.

Delivery Factor

The delivery factor is a component of the overall trade ratio and accounts for the distance between trading partners and the impact that the various processes, that occur over this distance, has on the fate and transport of the traded pollutant in surface waters. If a credit generator and credit user are separated by a lake or reservoir, except when addressing phosphorus through Lake Winnebago or the Pool Lakes (see below), the SPARROW model should be used to calculate the impact that the lake or reservoir has on the delivery of pollutants. Apart from delivery factors calculated using SPARROW for lakes and reservoirs, additional delivery factors do not need to be applied in the UFWB because the allocations in the TMDL

[1] Additional factors may be applied in determining the final trade ratio.

implicitly account for the fate and transport mechanisms through the modeling and bias correction that was performed as part of the TMDL analysis.

For phosphorus, the reservoir modeling of Lake Winnebago and the Pool Lakes indicates that the delivery factor should be set to zero; the trade ratio does not need to be increased to account for delivery when the credit user and generator are separated by Lake Winnebago or the Pool Lakes. Both modeling and monitoring shows that on an annual basis there is no net loss of phosphorus through the system. This only applies for phosphorus and not TSS/sediment.

Additional information regarding trading with agricultural nonpoint sources can be found in Appendix J. See the department's water quality trading page for additional information on water quality trading: https://dnr.wi.gov/topic/SurfaceWater/WaterQualityTrading.html

4 ADAPTIVE MANAGEMENT

4.1 Point of Standards Application

Like TMDL implementation, AM focuses on meeting water quality criteria as the ultimate measure of success. TMDLs define the allowable loading that each segment can receive and still meet water quality standards thus informing AM plans on sources and needed reductions.

In the UFWB TMDL, the TMDL allocations have been set to meet water quality standards for downstream lakes and reservoirs. As with trading, the point of standards application is the bottom of the subbasin that generated the credit user's wasteload allocation; however, because the TMDL allocations are also set to meet water quality standards for downstream lakes and reservoirs a successful AM plan could demonstrate compliance with the resulting stream concentration for that subbasin. This stream concentration, summarized in Table 1 and 2 and labeled as "Adaptive Management Target", is the stream concentration that results from the implementation of reductions and meeting the overall loading capacity for the subbasin and contributory subbasins. During the TMDL development process, these allocations were converted to instream concentrations and directly linked to the May - October growing season median concentration needed in each TMDL subbasin to protect downstream lakes and reservoirs. This allows the AM compliance point to be applied at the bottom of the subbasin that the facility is in, rather than having to demonstrate that the water quality goals are met in the downstream lake or reservoir.

For an AM plan that has a downstream lake or reservoir, the concentration target for the facility's subbasin that meets both local and downstream lake/reservoir water quality criteria is listed as the "Adaptive Management Target" in Tables 1 and 2. In some cases, the "Adaptive Management Target" may be very low, reflecting the lack of nonpoint sources and other controllable sources of phosphorus and TSS in the subbasin or that the existing concentration is already below the criteria. In these cases, facilities may not be eligible for AM and should evaluate other compliance strategies or variances.

The "Adaptive Management Target" is expressed as a measured in-stream concentration, consistent with Wisconsin's Consolidated Assessment and Listing Methodology which can be found at: (https://dnr.wi.gov/topic/surfacewater/assessments.html) maybe lower than 40 µg/L. The reasons for this include:

(1) The stream concentration is assessed as the median of monthly samples collected over the growing season (May through October) and the lake concentration is assessed as the mean of monthly samples collected over the summer recreational period (June through September). As such, one cannot directly compare the two concentrations without also factoring in the

assessment period and method. The median tends to be lower than the mean and the months May and October tend to have lower observed concentrations.

(2) The internal load of Winnebago also factors into the calculation. The internal load drops as external load drops and we did drop internal load an additional 25% but the internal load still does factor into the overall allocations; it is not completely removed or set to zero.

(3) An equal percent reduction was applied to subbasins. In some cases where the controllable load was already low and hence the stream concentration was already likely low, any additional reduction in mass applied to those subbasins, even though it is a small mass reduction, will result in a lower resulting stream concentration.

Additional information regarding adaptive management can be found on the department's adaptive management page: https://dnr.wi.gov/topic/SurfaceWater/adaptivemanagement.html

Table 1. Allocations and reach phosphorus targets by permitted point source.

Facility Name	Permit Number	Outfall Number	TMDL Subbasin	TP Wasteload Allocation (lbs./year)	Local Wasteload Allocation (lbs./year)	Max Downstream Credits (lbs./year)	Downstream Waterbody	Adaptive Management Target (µg/L)
AGROPUR INC WEYAUWEGA PLANT	1449	1	66	80	383	303	Lake Winnebago	24
AMHERST WASTEWATER TREATMENT FACILITY	23213	1	66	93	446	353	Lake Winnebago	24
ARTESIAN TROUT FARM	PENDING	0	8	104	104	0	Lake Puckaway	21
BEAR CREEK WASTEWATER TREATMENT FACILITY	28061	1	64	52	185	133	Lake Winnebago	25
BERLIN WASTEWATER TREATMENT FACILITY	21229	1	28	779	4,570	3,791	Lake Winnebago	31
BIRNAMWOOD WASTEWATER TREATMENT FACILITY	22691	2	58	57	282	225	Lake Winnebago	26
BLACK CREEK WASTEWATER TREATMENT FACILITY	21041	1	89	174	656	482	Lake Winnebago	22
BONDUELLE USA - FAIRWATER	2666	10	12	4	4	0	Lake Puckaway	42
BOWLER WASTEWATER TREATMENT FACILITY	21237	1	59	17	83	65	Lake Winnebago	26
BUTTE DES MORTS CONSOLIDATED SD 1	32492	1	73	40	238	197	Lake Winnebago	26
CAROLINE SD 1 WASTEWATER TREATMENT FACILITY	22829	3	58	9	46	37	Lake Winnebago	26
CLINTONVILLE WASTEWATER TREATMENT FACILITY	21466	1	60	330	1,153	823	Lake Winnebago	29
DALE SANITARY DISTRICT NO 1 WWTF	30830	1	49	31	81	50	Lake Winnebago	34
DARLING INTERNATIONAL INC	38083	1	26	19	19	0	Lake Winnebago	17
EDEN WASTEWATER TREATMENT FACILITY	30716	1	39	96	313	217	Lake Winnebago	25
EMBARRASS CLOVERLEAF LAKES SD LAGOON SYSTEM	23949	1	59	88	418	330	Lake Winnebago	26
FAIRWATER WASTEWATER TREATMENT FACILITY	21440	4	12	27	49	23	Lake Puckaway	42
FOND DU LAC WATER POLLUTION CONTROL PLANT	23990	3	75	5,763	33,815	28,052	Lake Winnebago	32
FREMONT ORIHULA WOLF RIVER JOINT S C	26158	1	71	104	609	505	Lake Winnebago	27
FRIESLAND WASTEWATER TREATMENT FACILITY	31780	1	13	14	38	24	Lake Puckaway	33
GREAT LAKES KRAUT	50407	2	70	5	9	4	Lake Winnebago	27
GREEN LAKE SANITARY DISTRICT	36846	1	24	50	292	243	Lake Winnebago	28
GREEN LAKE WASTEWATER TREATMENT FACILITY	21776	1	25	260	1,320	1,061	Lake Winnebago	57
GRESHAM WASTEWATER TREATMENT FACILITY	22781	1	55	55	323	268	Lake Winnebago	26
HILLSHIRE BRANDS (a.k.a. SARA LEE FOODS - NEW LONDON)	23094	1	71	411	2,412	2,001	Lake Winnebago	27
HORTONVILLE WASTEWATER TREATMENT FACILITY	22896	1	69	260	1,523	1,264	Lake Winnebago	29
IOLA WASTEWATER TREATMENT FACILITY	21717	3	81	93	492	399	Lake Winnebago	25
KESHENA WASTEWATER TREATMENT FACILITY	71315	1	55	173	1,021	847	Lake Winnebago	26

Facility Name	Permit Number	Outfall Number	TMDL Subbasin	TP Wasteload Allocation (lbs./year)	Local Wasteload Allocation (lbs./year)	Max Downstream Credits (lbs./year)	Downstream Waterbody	Adaptive Management Target (µg/L)
KINGSTON WASTEWATER TREATMENT FACILITY	36421	1	14	10	58	47	Lake Puckaway	30
LARSEN WINCHESTER SD WWTF	31925	1	51	25	111	86	Lake Winnebago	17
LEACH FARMS - AURORAVILLE	52809	5	48	5	12	7	Lake Winnebago	18
LITTLE RAPIDS CORP SHAWANO SPECIALTY PAPERS	1341	2	67	1,038	6,093	5,054	Lake Winnebago	29
MANAWA WASTEWATER TREATMENT FACILITY	20869	1	81	106	560	454	Lake Winnebago	25
MAPLE LANE HEALTH CARE CENTER SHAWANO COUNTY UTILITIES WWTF	29718	1	57	79	116	37	Long Lake	71
MARION WASTEWATER TREATMENT FACILITY	20770	3	60	208	725	517	Lake Winnebago	29
MARKESAN WASTEWATER TREATMENT FACILITY	24619	1	12	189	351	162	Lake Puckaway	42
MENOMINEE TRIBAL ENTERPRISES	46868	1	55	7	13	6	Lake Winnebago	26
MENOMINEE TRIBAL ENTERPRISES	46868	3	55	0	0	0	Lake Winnebago	26
MONTELLO WASTEWATER TREATMENT FACILITY	24813	1	16	157	914	757	Lake Puckaway	21
NESHKORO WASTEWATER TREATMENT FACILITY	60666	2	23	23	133	110	Lake Winnebago	24
NEW LONDON WASTEWATER TREATMENT FACILITY	24929	1	71	1,038	6,093	5,054	Lake Winnebago	27
NICHOLS WASTEWATER TREATMENT FACILITY	20508	1	53	16	78	62	Lake Winnebago	22
NORTH LAKE POYGAN S D WWTF	36251	1	72	27	161	133	Lake Winnebago	27
OAKFIELD WASTEWATER TREATMENT FACILITY	24988	1	37	138	138	0	-	75
OMRO WASTEWATER TREATMENT FACILITY	25011	1	29	350	2,053	1,703	Lake Winnebago	31
OSHKOSH WASTEWATER TREATMENT PLANT	25038	1	74	10,384	60,928	50,544	Lake Winnebago	27
OXFORD WASTEWATER TREATMENT FACILITY	32077	1	1	23	195	172	Buffalo Lake	16
PACKWAUKEE SANITARY DISTRICT NO 1	60933	2	9	20	168	148	Buffalo Lake	20
POWER PACKAGING INC	69965	1	35	13	13	0	Lake Winnebago	63
POY SIPPI SD WASTEWATER TREATMENT FACILITY	31691	1	47	24	146	122	Lake Winnebago	21
POYGAN POYSIPPI SD 1 WWTF	35513	1	72	40	238	197	Lake Winnebago	27
PRINCETON WASTEWATER TREATMENT FACILITY	22055	1	24	135	792	657	Lake Winnebago	28
REDGRANITE WASTEWATER TREATMENT FACILITY	20729	1	48	167	981	814	Lake Winnebago	18
RIPON WASTEWATER TREATMENT FACILITY	21032	1	87	1,301	1,301	0	-	75
ROSENDALE WASTEWATER TREATMENT FACILITY	28428	1	35	112	136	24	Lake Winnebago	63
SAPUTO CHEESE USA FOND DU LAC (SCOTT ST)	56120	1	75	12	24	12	Lake Winnebago	32
SEYMOUR WASTEWATER TREATMENT FACILITY	21768	1	89	300	1,132	832	Lake Winnebago	22
SHIOCTON WASTEWATER TREATMENT FACILITY	28100	1	68	78	460	382	Lake Winnebago	28
SILVER LAKE SANITARY DISTRICT	61301	1	22	532	2,980	2,448	Lake Winnebago	23
SILVER MOON SPRINGS	64548	1	55	604	604	0	Lake Winnebago	26

Facility Name	Permit Number	Outfall Number	TMDL Subbasin	TP Wasteload Allocation (lbs./year)	Local Wasteload Allocation (lbs./year)	Max Downstream Credits (lbs./year)	Downstream Waterbody	Adaptive Management Target (µg/L)
SOKAOGON CHIPPEWA COMMUNITY WASTEWATER TREATMENT SYSTEM	71501	1	80	186	1,094	908	Lake Winnebago	30
STEPHENSVILLE SANITARY DISTRICT NO 1	32531	1	52	12	36	24	Lake Winnebago	28
STOCKBRIDGE WASTEWATER TREATMENT FACILITY	21393	1	46	59	156	97	Lake Winnebago	30
STOCKBRIDGE-MUNSEE COMMUNITY WASTEWATER PONDS	36188	10	55	36	213	177	Lake Winnebago	26
TIGERTON WASTEWATER TREATMENT FACILITY	22349	1	58	58	286	228	Lake Winnebago	26
WAUPACA FOUNDRY PLANT 1	26379	1	66	37	37	0	Lake Winnebago	24
WAUPACA WASTEWATER TREATMENT FACILITY	30490	1	66	779	3,716	2,938	Lake Winnebago	24
WESTFIELD WASTEWATER TREATMENT FACILITY	22250	1	8	130	762	632	Lake Puckaway	21
WEYAUWEGA STAR DAIRY	39527	1	66	13	13	0	Lake Winnebago	24
WEYAUWEGA WASTEWATER TREATMENT FACILITY	20923	1	66	439	2,096	1,657	Lake Winnebago	24
WI DNR WILD ROSE FISH HATCHERY	22756	1	47	175	175	0	Lake Winnebago	21
WI DNR WILD ROSE FISH HATCHERY	22756	18	47	271	271	0	Lake Winnebago	21
WILD ROSE WASTEWATER TREATMENT FACILITY	60071	2	47	60	356	297	Lake Winnebago	21
WINNECONNE WASTEWATER TREATMENT FACILITY	21938	1	73	403	2,367	1,964	Lake Winnebago	26
WISCONSIN VENEER AND PLYWOOD INC	47929	1	55	23	23	0	Lake Winnebago	26
WITTENBERG WASTEWATER TREATMENT FACILITY	28444	2	58	170	840	670	Lake Winnebago	26
WOLF RIVER RANCH WASTEWATER TREATMENT FACILITY	71307	1	55	34	198	164	Lake Winnebago	26
WOLF TREATMENT PLANT	28452	1	67	1,366	8,012	6,647	Lake Winnebago	29

Table 2. Allocations and reach total suspended solids (TSS) targets by permitted point source.

Facility Name	Permit Number	Outfall Number	TMDL Subbasin	TSS Wasteload Allocation (lbs./year)	Local Wasteload Allocation (lbs./year)	Max Downstream Credits (lbs./year)	Downstream Waterbody	Adaptive Management Target (mg/L)
AGROPUR INC WEYAUWEGA PLANT	1449	1	66	3,819	3,819	0	-	10.6
AMHERST WASTEWATER TREATMENT FACILITY	23213	1	66	10,653	12,235	1,582	Wolf River - Embarrass River to Lake Poygan	10.6
ARTESIAN TROUT FARM	PENDING	0	8	15,232	15,232	0	-	5.5
BEAR CREEK WASTEWATER TREATMENT FACILITY	28061	1	64	3,946	4,041	95	Wolf River - Embarrass River to Lake Poygan	11.7
BERLIN WASTEWATER TREATMENT FACILITY	21229	1	28	80,749	137,088	56,339	Fox River White River to Omro	12.0
BIRNAMWOOD WASTEWATER TREATMENT FACILITY	22691	2	58	4,340	6,702	2,362	Wolf River - Embarrass River to Lake Poygan	7.6
BLACK CREEK WASTEWATER TREATMENT FACILITY	21041	1	89	13,218	20,294	7,076	Wolf River - Embarrass River to Lake Poygan	7.8
BONDUELLE USA - FAIRWATER	2666	10	12	62	62	0	-	12.0
BOWLER WASTEWATER TREATMENT FACILITY	21237	1	59	1,989	2,165	176	Wolf River - Embarrass River to Lake Poygan	9.3
BUTTE DES MORTS CONSOLIDATED SD 1	32492	1	73	14,257	14,257	0	-	7.4
CAROLINE SD 1 WASTEWATER TREATMENT FACILITY	22829	3	58	2,131	3,290	1,159	Wolf River - Embarrass River to Lake Poygan	7.6
CLINTONVILLE WASTEWATER TREATMENT FACILITY	21466	1	60	33,878	33,878	0	-	12.0
DALE SANITARY DISTRICT NO 1 WWTF	30830	1	49	3,214	3,214	0	-	12.0
DARLING INTERNATIONAL INC	38083	1	26	7,866	7,866	0	-	6.0
EDEN WASTEWATER TREATMENT FACILITY	30716	1	39	6,726	6,726	0	-	12.0
EMBARRASS CLOVERLEAF LAKES SD LAGOON SYSTEM	23949	1	59	10,062	10,951	890	Wolf River - Embarrass River to Lake Poygan	9.3
FAIRWATER WASTEWATER TREATMENT FACILITY	21440	4	12	1,864	1,864	0	-	12.0
FOND DU LAC WATER POLLUTION CONTROL PLANT	23990	3	75	1,014,454	1,014,454	0	-	7.8

Facility Name	Permit Number	Outfall Number	TMDL Subbasin	TSS Wasteload Allocation (lbs./year)	Local Wasteload Allocation (lbs./year)	Max Downstream Credits (lbs./year)	Downstream Waterbody	Adaptive Management Target (mg/L)
FREMONT ORIHULA WOLF RIVER JOINT S C	26158	1	71	11,837	18,278	6,441	Wolf River - Embarrass River to Lake Poygan	12.0
FRIESLAND WASTEWATER TREATMENT FACILITY	31780	1	13	1,114	1,114	0	-	12.0
GREAT LAKES KRAUT	50407	2	70	64	64	0	-	10.1
GREEN LAKE SANITARY DISTRICT	36846	1	24	9,357	17,547	8,190	Fox River Downstream Lake Puckaway	12.0
GREEN LAKE WASTEWATER TREATMENT FACILITY	21776	1	25	26,916	45,696	18,780	Fox River White River to Omro	8.6
GRESHAM WASTEWATER TREATMENT FACILITY	22781	1	55	6,260	9,688	3,428	Wolf River - Embarrass River to Lake Poygan	1.7
HILLSHIRE BRANDS (a.k.a. SARA LEE FOODS - NEW LONDON)	23094	1	71	31,237	48,234	16,997	Wolf River - Embarrass River to Lake Poygan	12.0
HORTONVILLE WASTEWATER TREATMENT FACILITY	22896	1	69	29,594	39,196	9,602	Wolf River - Embarrass River to Lake Poygan	8.9
IOLA WASTEWATER TREATMENT FACILITY	21717	3	81	8,722	8,722	0	-	12.0
KESHENA WASTEWATER TREATMENT FACILITY	71315	1	55	19,783	30,616	10,834	Wolf River - Embarrass River to Lake Poygan	1.7
KINGSTON WASTEWATER TREATMENT FACILITY	36421	1	14	1,949	3,656	1,706	Fox River Downstream Lake Puckaway	9.1
LARSEN WINCHESTER SD WWTF	31925	1	51	2,940	2,940	0	-	12.0
LEACH FARMS - AURORAVILLE	52809	5	48	1,219	1,219	0	-	5.4
LITTLE RAPIDS CORP SHAWANO SPECIALTY PAPERS	1341	2	67	239,078	369,167	130,088	Wolf River - Embarrass River to Lake Poygan	6.4
MANAWA WASTEWATER TREATMENT FACILITY	20869	1	81	9,940	9,940	0	-	12.0
MAPLE LANE HEALTH CARE CENTER SHAWANO COUNTY UTILITIES WWTF	29718	1	57	1,499	2,229	730	Wolf River - Embarrass River to Lake Poygan	8.1
MARION WASTEWATER TREATMENT FACILITY	20770	3	60	14,623	14,623	0	-	12.0
MARKESAN WASTEWATER TREATMENT FACILITY	24619	1	12	13,234	13,234	0	-	12.0

Facility Name	Permit Number	Outfall Number	TMDL Subbasin	TSS Wasteload Allocation (lbs./year)	Local Wasteload Allocation (lbs./year)	Max Downstream Credits (lbs./year)	Downstream Waterbody	Adaptive Management Target (mg/L)
MENOMINEE TRIBAL ENTERPRISES	46868	1	55	1,732	2,681	949	Wolf River - Embarrass River to Lake Poygan	1.7
MENOMINEE TRIBAL ENTERPRISES	46868	3	55	530	821	291	Wolf River - Embarrass River to Lake Poygan	1.7
MONTELLO WASTEWATER TREATMENT FACILITY	24813	1	16	14,620	27,418	12,797	Fox River Downstream Lake Puckaway	7.3
NESHKORO WASTEWATER TREATMENT FACILITY	60666	2	23	2,422	4,113	1,690	Fox River White River to Omro	1.4
NEW LONDON WASTEWATER TREATMENT FACILITY	24929	1	71	118,374	182,784	64,410	Wolf River - Embarrass River to Lake Poygan	12.0
NICHOLS WASTEWATER TREATMENT FACILITY	20508	1	53	1,564	1,801	237	Wolf River - Embarrass River to Lake Poygan	9.7
NORTH LAKE POYGAN S D WWTF	36251	1	72	9,651	9,651	0	-	7.9
OAKFIELD WASTEWATER TREATMENT FACILITY	24988	1	37	11,150	11,150	0	-	12.0
OMRO WASTEWATER TREATMENT FACILITY	25011	1	29	43,422	61,598	18,177	Fox River Omro to Lake Butte de Morts	12.0
OSHKOSH WASTEWATER TREATMENT PLANT	25038	1	74	1,827,844	1,827,844	0	-	7.6
OXFORD WASTEWATER TREATMENT FACILITY	32077	1	1	3,119	5,849	2,730	Fox River Downstream Lake Puckaway	6.0
PACKWAUKEE SANITARY DISTRICT NO 1	60933	2	9	2,011	2,447	437	Fox River Downstream Lake Puckaway	8.5
POWER PACKAGING INC	69965	1	35	2,803	2,803	0	-	12.0
POY SIPPI SD WASTEWATER TREATMENT FACILITY	31691	1	47	8,774	8,774	0	-	1.7
POYGAN POYSIPPI SD 1 WWTF	35513	1	72	7,129	7,129	0	-	7.9
PRINCETON WASTEWATER TREATMENT FACILITY	22055	1	24	12,671	23,762	11,091	Fox River Downstream Lake Puckaway	12.0
REDGRANITE WASTEWATER TREATMENT FACILITY	20729	1	48	29,428	29,428	0	-	5.4
RIPON WASTEWATER TREATMENT FACILITY	21032	1	87	54,835	54,835	0	-	12.0

Facility Name	Permit Number	Outfall Number	TMDL Subbasin	TSS Wasteload Allocation (lbs./year)	Local Wasteload Allocation (lbs./year)	Max Downstream Credits (lbs./year)	Downstream Waterbody	Adaptive Management Target (mg/L)
ROSENDALE WASTEWATER TREATMENT FACILITY	28428	1	35	7,896	7,896	0	-	12.0
SAPUTO CHEESE USA FOND DU LAC (SCOTT ST)	56120	1	75	1,196	1,196	0	-	7.8
SEYMOUR WASTEWATER TREATMENT FACILITY	21768	1	89	22,807	35,015	12,208	Wolf River - Embarrass River to Lake Poygan	7.8
SHIOCTON WASTEWATER TREATMENT FACILITY	28100	1	68	8,937	13,800	4,863	Wolf River - Embarrass River to Lake Poygan	7.7
SILVER LAKE SANITARY DISTRICT	61301	1	22	55,179	93,677	38,499	Fox River White River to Omro	2.2
SILVER MOON SPRINGS	64548	1	55	123,166	123,166	0	-	1.7
SOKAOGON CHIPPEWA COMMUNITY WASTEWATER TREATMENT SYSTEM	71501	1	80	3,551	5,484	1,932	Wolf River - Embarrass River to Lake Poygan	2.4
STEPHENSVILLE SANITARY DISTRICT NO 1	32531	1	52	877	877	0	-	12.0
STOCKBRIDGE WASTEWATER TREATMENT FACILITY	21393	1	46	4,167	4,167	0	-	12.0
STOCKBRIDGE-MUNSEE COMMUNITY WASTEWATER PONDS	36188	10	55	4,606	7,129	2,522	Wolf River - Embarrass River to Lake Poygan	1.7
TIGERTON WASTEWATER TREATMENT FACILITY	22349	1	58	6,611	10,209	3,597	Wolf River - Embarrass River to Lake Poygan	7.6
WAUPACA FOUNDRY PLANT 1	26379	1	66	6,062	6,062	0	-	10.6
WAUPACA WASTEWATER TREATMENT FACILITY	30490	1	66	88,777	101,960	13,182	Wolf River - Embarrass River to Lake Poygan	10.6
WESTFIELD WASTEWATER TREATMENT FACILITY	22250	1	8	12,174	22,848	10,674	Fox River Downstream Lake Puckaway	5.5
WEYAUWEGA STAR DAIRY	39527	1	66	183	183	0	-	10.6
WEYAUWEGA WASTEWATER TREATMENT FACILITY	20923	1	66	50,070	57,505	7,435	Wolf River - Embarrass River to Lake Poygan	10.6
WI DNR WILD ROSE FISH HATCHERY	22756	1	47	64,888	64,888	0	-	1.7
WI DNR WILD ROSE FISH HATCHERY	22756	18	47	77,379	77,379	0	-	1.7
WILD ROSE WASTEWATER TREATMENT FACILITY	60071	2	47	21,386	21,386	0	-	1.7

Facility Name	Permit Number	Outfall Number	TMDL Subbasin	TSS Wasteload Allocation (lbs./year)	Local Wasteload Allocation (lbs./year)	Max Downstream Credits (lbs./year)	Downstream Waterbody	Adaptive Management Target (mg/L)
WINNECONNE WASTEWATER TREATMENT FACILITY	21938	1	73	71,012	71,012	0	-	7.4
WISCONSIN VENEER AND PLYWOOD INC	47929	1	55	5,066	5,066	0	-	1.7
WITTENBERG WASTEWATER TREATMENT FACILITY	28444	2	58	19,413	29,977	10,563	Wolf River - Embarrass River to Lake Poygan	7.6
WOLF RIVER RANCH WASTEWATER TREATMENT FACILITY	71307	1	55	2,559	3,960	1,401	Wolf River - Embarrass River to Lake Poygan	1.7
WOLF TREATMENT PLANT	28452	1	67	155,662	240,362	84,699	Wolf River - Embarrass River to Lake Poygan	6.4