Permit Fact Sheet

General Information

Permit Number	WI-0023400-11-0
Permittee Name and Address	VILLAGE OF BLOOMINGTON 453 Canal Street P.O. Box 156, Bloomington, WI 53804
Permitted Facility Name and Address	Bloomington Wastewater Treatment Facility 105 State Hwy 35, Bloomington, Wisconsin
Permit Term	January 01, 2027 to December 31, 2031
Discharge Location	105 STH 35 (SW ¼ of NW ¼ of Section 25, T5N, R5W) South of the Village of Bloomington
Receiving Water	Blake Fork in Middle Grant River Watershed of Grant - Platte River Basin in Grant County
Stream Flow ($Q_{7,10}$)	1.6 cfs
Stream Classification	Warm Water Sport Fish (WWSF), non-public water supply
Discharge Type	Existing, Continuous
Annual Average Design Flow (MGD)	0.092 MGD
Industrial or Commercial Contributors	None
Plant Classification	A1 - Suspended Growth Processes; B - Solids Separation; C - Biological Solids/Sludges; P - Total Phosphorus; D - Disinfection; SS - Sanitary Sewage Collection System
Approved Pretreatment Program?	N/A

Facility Description

The Village of Bloomington operates a wastewater treatment plant that treats a combination of domestic and some commercial wastewater with no industrial contributors. The Village has a population of approximately 700 and is served by a public water supply. Treatment units consist of a headworks with a manual coarse bar screen, activated sludge (extended aeration), secondary clarification and seasonal chlorination/dechlorination. A phosphorus chemical treatment upgrade was completed in July 2023and updated again for use of RE76. Sludge is aerobically digested and stored in holding tanks prior to land spreading in the on Department approved agricultural fields. Shaded cells indicate changes in monitoring or limitations.

Substantial Compliance Determination

Enforcement During Last Permit: There have been violations of the effluent limits, missed samples, and late reporting. The facility has completed all previously required actions as part of the enforcement process.

After a desk top review of all discharge monitoring reports, CMARs, land application reports, compliance schedule items, and a site visit on July 23, 2026, this facility has been found to be in substantial compliance with their current permit.

Compliance determination made by Caitlin O'Cconnell on July 23, 2026.

Sample Point Descriptions

Sample Point Designation		
Sample Point Number	**Discharge Flow, Units, and Averaging Period**	**Sample Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)**
701	N/A	Influent: 24-hr flow proportional sampler located after the bar screen.
001	0.05 MGD (2025)	Effluent: 24-hr flow proportional sampler and flow meter located after the final clarifier and grab samples after the chlorine contact tank, prior to discharge to Blake Fork.
003	4 dry US Ton (2026 permit application)	Aerobically digested, Class B. Representative sludge samples shall be collected from the aerobic digester or sludge storage as appropriate.

Permit Requirements

1 Influent – Monitoring Requirements

1.1 Sample Point Number: 701- INFLUENT

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
BOD5, Total		mg/L	2/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total		mg/L	2/Week	24-Hr Flow Prop Comp	

1.1.1 Changes from Previous Permit:

Influent limitations and monitoring requirements were evaluated for this permit term and no changes were required in this permit section.

1.1.2 Explanation of Limits and Monitoring Requirements

Monitoring of influent flow, BOD5 and total suspended solids is required by s. NR 210.04(2), Wis. Adm. Code, to assess wastewater strengths and volumes and to demonstrate the percent removal requirements in s. NR 210.05, Wis. Adm. Code, and in the Standard Requirements section of the permit.

2 Surface Water - Monitoring and Limitations

2.1 Sample Point Number: 001- Effluent

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Daily	Continuous	
BOD5, Total	Weekly Avg	45 mg/L	2/Week	24-Hr Flow Prop Comp	
BOD5, Total	Monthly Avg	30 mg/L	2/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total	Weekly Avg	45 mg/L	2/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total	Monthly Avg	30 mg/L	2/Week	24-Hr Flow Prop Comp	
pH Field	Daily Max	9.0 su	5/Week	Grab	
pH Field	Daily Min	6.0 su	5/Week	Grab	
Nitrogen, Ammonia (NH3-N) Total	Daily Max	17 mg/L	2/Week	24-Hr Flow Prop Comp	
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	17 mg/L	2/Week	24-Hr Flow Prop Comp	
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	13 mg/L	2/Week	24-Hr Flow Prop Comp	April
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	17 mg/L	2/Week	24-Hr Flow Prop Comp	May - March
E. coli	Geometric Mean - Monthly	126 #/100 ml	Weekly	Grab	Limit effective May - September.
E. coli	% Exceedance	10 Percent	Monthly	Calculated	Limit effective May - September. See the E. Coli Percent Limit section. Enter the result in the DMR on the last day of the month.
Chlorine, Total Residual	Daily Max	38 ug/L	Daily	Grab	May - September
Chlorine, Total Residual	Weekly Avg	28 ug/L	Daily	Grab	May - September
Chlorine, Total Residual	Monthly Avg	28 ug/L	Daily	Grab	May - September

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Chloride		mg/L	Monthly	24-Hr Flow Prop Comp	Monitoring only in 2030.
Phosphorus, Total	Monthly Avg	4.5 mg/L	2/Week	24-Hr Flow Prop Comp	Limit effective throughout the permit term, as it represents a minimum control level.
Phosphorus, Total		lbs/day	2/Week	Calculated	Report daily mass discharged using Equation 1a. in the Water Quality Trading (WQT) section.
WQT Credits Used (TP)		lbs/month	Monthly	Calculated	Report WQT TP Credits used per month using Equation 2c. in the Water Quality Trading (WQT) section. Available TP Credits are specified in Table 2 and in the approved Water Quality Trading Plan.
WQT Computed Compliance (TP)	Monthly Avg	0.225 mg/L	Monthly	Calculated	Report the WQT TP Computed Compliance value using Equation 3a. in the Water Quality Trading (WQT) section. Value entered on the last day of the month.
WQT Computed Compliance (TP)	6-Month Avg	0.075 mg/L	Monthly	Calculated	Compliance with the six-month average limit is evaluated at the end of the six-month period on June 30 and Dec 31. Compliance with the six-month average limit is evaluated at the end of the six-month period on June 30 and Dec 31.
WQT Computed Compliance (TP)	6-Month Avg	0.058 lbs/day	Monthly	Calculated	Report the WQT TP Computed Compliance value using Equation 3b. in the Water Quality Trading (WQT) section. Compliance with the six-month average limit is evaluated at the end of the

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
					six-month period on June 30 and Dec 31.
WQT Credits Used (TP)	Annual Total	171 lbs/yr	Annual	Calculated	The sum of total monthly credits used may not exceed Table 2 values listed.
Nitrogen, Total Kjeldahl		mg/L	See Listed Qtr(s)	24-Hr Flow Prop Comp	Annual in rotating quarters. See Nitrogen Series Monitoring section.
Nitrogen, Nitrite + Nitrate Total		mg/L	See Listed Qtr(s)	24-Hr Flow Prop Comp	Annual in rotating quarters. See Nitrogen Series Monitoring section.
Nitrogen, Total		mg/L	See Listed Qtr(s)	Calculated	Total Nitrogen shall be calculated as the sum of reported values for Total Kjeldahl Nitrogen and Total Nitrite + Nitrate Nitrogen.
Acute WET		TUa	See Listed Qtr(s)	24-Hr Flow Prop Comp	See WET section.
Chronic WET	Monthly Avg	3.8 TUc	See Listed Qtr(s)	24-Hr Flow Prop Comp	See WET section.

2.1.1 Changes from Previous Permit

Effluent limitations and monitoring requirements were evaluated for this permit term and the following changes were made from the previous permit. See additional explanation of limits under "Explanation of Limits and Monitoring Requirements" below.

- **pH**- Sampling frequency increased to 5/week.
- **Ammonia Nitrogen-** Daily maximum, weekly average and monthly average limits updated.
- **E. coli-** Fecal coliform monitoring and limits have been replaced with Escherichia coli (E. coli) monitoring and limits.
-

2.1.2 Explanation of Limits and Monitoring Requirements

Detailed discussions of limits and monitoring requirements can be found in the attached water quality-based effluent limits (WQBEL) memo dated **April 30, 2026**.

Monitoring Frequencies- The Monitoring Frequencies for Individual Wastewater Permits guidance (April 12, 2021) recommends that standard monitoring frequencies be included in individual wastewater permits based on the size and type of the facility, in order to characterize effluent quality and variability, to detect events of noncompliance, and to ensure consistency in permits issued across the state. Guidance and requirements in administrative code were considered when determining the appropriate monitoring frequencies for pollutants that have final effluent limits in effect during this permit term. The department evaluated sampling frequency and determined that the sampling frequency for pH should be

set at the minimum of 5/week. All other sampling frequencies were retrained as the permittee has shown compliance and does not have excessive variability of data.

Expression of Limits- In accordance with the federal regulation 40 CFR 122.45(d) and s. NR 205.065, Wis. Adm. Code, limits in this permit are to be expressed as weekly average and monthly average limits. whenever practicable. This rule impacts ammonia nitrogen and chlorine.

Ammonia – Ammonia limits were recalculated and reduced based on the reported pH data for the pervious permit term.

Phosphorus – Phosphorus requirements are based on the Phosphorus Rules that became effective December 1, 2010 as detailed in NR 102 Water Quality Standards and NR 217 Effluent Standards and Limitations for Phosphorus. Chapter NR 217 of the Wis. Adm. Code addresses point source dischargers of phosphorus to surface waters. Currently in NR 217 Wis. Adm. Code there are two methods used to determine if a phosphorus limit is needed: a technology based effluent limit (TBEL) and a water quality based effluent limit (WQBEL). Based on the size and classification of the stream, the water quality criteria for the Blake Fork is 75 ug/L. In this case, *the WQBEL is 0.225 mg/L (monthly average), 0.0750 mg/L & 0.058 lbs/day (6-month average).* For the reasons explained in the April 30, 2012 paper entitled 'Justification for Use of Monthly, Growing Season and Annual Average Periods for Expression of WPDES Permit Limits for Phosphorus Discharges in Wisconsin', WDNR has determined that it is impracticable to express the phosphorus WQBEL for the permittee as a maximum daily, weekly or monthly value. The final effluent limit for phosphorus is expressed as a six-month average. It is also expressed as a monthly average equal to three times the derived WQBEL (which equates to 0.3 mg/L). This final effluent limit was derived from and complies with the applicable water quality criterion.

The wastewater treatment facility is not able to meet the WQBEL. This permit authorizes the use of trading as a tool to demonstrate compliance with the phosphorus WQBELs. This permit includes terms and conditions related to the Water Quality Trading Plan (WQT-2018-0007) or approved amendments thereof. The total 'WQT TP Credits' available are designated in the approved WQT Plan. The village is implementing streambank stabilization management practices. The WQT Plan proposes the generation of 171 lbs/yr of phosphorus credits for the next five years. A phosphorus concentration limit is necessary to prevent backsliding during the term of the permit. The limit of 4.5 mg/L will be retained in the permit.

Additional WQT subsections in the permit provide information on compliance determinations, annual reporting and re-opening of the permit.

3 Land Application - Monitoring and Limitations

Municipal Sludge Description						
Sample Point	**Sludge Class (A or B)**	**Sludge Type (Liquid or Cake)**	**Pathogen Reduction Method**	**Vector Attraction Method**	**Reuse Option**	**Amount Reused/Disposed (Dry Tons/Year)**
003	B	Liquid	Fecal Coliform	Injection	Land Application	4
Does sludge management demonstrate compliance? **Yes**						
Is additional sludge storage required? **No**						
Is Radium-226 present in the water supply at a level greater than 2 pCi/liter? **No** If yes, special monitoring and recycling conditions will be included in the permit to track any potential problems in landapplying sludge from this facility						

Municipal Sludge Description						
Sample Point	**Sludge Class (A or B)**	**Sludge Type (Liquid or Cake)**	**Pathogen Reduction Method**	**Vector Attraction Method**	**Reuse Option**	**Amount Reused/Disposed (Dry Tons/Year)**
Is a priority pollutant scan required? **No** Priority pollutant scans are required once every 10 years at facilities with design flows between 5 MGD and 40 MGD, and once every 5 years if design flow is greater than 40 MGD.						

3.1 Sample Point Number: 003- SLUDGE

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Solids, Total		Percent	Annual	Composite	
Arsenic Dry Wt	Ceiling	75 mg/kg	Annual	Composite	
Arsenic Dry Wt	High Quality	41 mg/kg	Annual	Composite	
Cadmium Dry Wt	Ceiling	85 mg/kg	Annual	Composite	
Cadmium Dry Wt	High Quality	39 mg/kg	Annual	Composite	
Copper Dry Wt	Ceiling	4,300 mg/kg	Annual	Composite	
Copper Dry Wt	High Quality	1,500 mg/kg	Annual	Composite	
Lead Dry Wt	Ceiling	840 mg/kg	Annual	Composite	
Lead Dry Wt	High Quality	300 mg/kg	Annual	Composite	
Mercury Dry Wt	Ceiling	57 mg/kg	Annual	Composite	
Mercury Dry Wt	High Quality	17 mg/kg	Annual	Composite	
Molybdenum Dry Wt	Ceiling	75 mg/kg	Annual	Composite	
Nickel Dry Wt	Ceiling	420 mg/kg	Annual	Composite	
Nickel Dry Wt	High Quality	420 mg/kg	Annual	Composite	
Selenium Dry Wt	Ceiling	100 mg/kg	Annual	Composite	
Selenium Dry Wt	High Quality	100 mg/kg	Annual	Composite	
Zinc Dry Wt	Ceiling	7,500 mg/kg	Annual	Composite	
Zinc Dry Wt	High Quality	2,800 mg/kg	Annual	Composite	
Nitrogen, Total Kjeldahl		Percent	Annual	Composite	
Nitrogen, Ammonium (NH4-N) Total		Percent	Annual	Composite	

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Phosphorus, Total		Percent	Annual	Composite	
Phosphorus, Water Extractable		% of Tot P	Annual	Composite	
Potassium, Total Recoverable		Percent	Annual	Composite	
PCB Total Dry Wt	Ceiling	50 mg/kg	Once	Composite	Once in 2028.
PCB Total Dry Wt	High Quality	10 mg/kg	Once	Composite	Once in 2028.
PFOA + PFOS		ug/kg	Annual	Calculated	Report the sum of PFOA and PFOS. See PFAS Permit Sections for more information.
PFAS Dry Wt			Annual	Grab	Perfluoroalkyl and Polyfluoroalkyl Substances based on updated DNR PFAS List. See PFAS Permit Sections for more information.

3.1.1 Changes from Previous Permit:

Sludge limitations and monitoring requirements were evaluated for this permit term and the following changes were made from the previous permit. See additional explanation of limits under "Explanation of Limits and Monitoring Requirements" below.

PCB – Sampling year updated.

PFAS –Monitoring is required annually pursuant to s. NR 204.06(2)(b)9., Wis. Adm. Code.

3.1.2 Explanation of Limits and Monitoring Requirements

Requirements for disposal, including land application of municipal sludge, are determined in accordance with ch. NR 204, Wis. Adm. Code. Ceiling and high-quality limits for metals in sludge are specified in s. NR 204.07(5), Wis. Adm. Code. Requirements for pathogens are specified in s. NR 204.07(6) and in s. NR 204.07 (7). Wis. Adm. Code for vector attraction requirements. Limitations for PCBs are addressed in s. NR 204.07(3)(k), Wis. Adm. Code.

PFAS- The presence and fate of PFAS in municipal and industrial sludges is an emerging public health concern. EPA has developed a draft risk assessment to determine future land application rates and released this risk assessment in January of 2025. The department is evaluating this new information. Until a decision is made, the "Interim Strategy for Land Application of Biosolids and Industrial Sludges Containing PFAS" should be followed

Collecting sludge data on PFAS concentrations from a wide range of wastewater treatment facilities will help protect public health from exposure to elevated levels of PFAS and determine the department's implementation of EPA's recommendations. To quantitate this risk, PFAS sampling has been included in this WPDES permit pursuant to ss. NR 214.18(5)(b) and NR 204.06(2)(b)9., Wis. Adm. Code.

4 Schedules

4.1 Water Quality Trading (WQT) Annual Report

Required Action	Due Date
Annual WQT Report: Submit an annual WQT report that shall cover the first year of the permit term. The WQT Report shall include: The number of pollutant reduction credits (lbs/month) used each month of the previous year to demonstrate compliance; The source of each month's pollutant reduction credits by identifying the approved water quality trading plan that details the source; A summary of the annual inspection of each nonpoint source management practice that generated any of the pollutant reduction credits used during the previous year; and Identification of noncompliance or failure to implement any terms or conditions of this permit with respect to water quality trading that have not been reported in discharge monitoring reports.	01/31/2027
Annual WQT Report #2: Submit an annual WQT report that shall cover the previous year.	01/31/2028
Annual WQT Report #3: Submit an annual WQT report that shall cover the previous year.	01/31/2029
Annual WQT Report #4: Submit an annual WQT report that shall cover the previous year.	01/31/2030
Annual WQT Report #5: Submit the 4th annual WQT report. If the permittee wishes to continue to comply with phosphorus limits through WQT in subsequent permit terms, the permittee shall submit a revised WQT plan including a demonstration of credit need, compliance record of the existing WQT, and any additional practices needed to maintain compliance over time.	01/31/2031
Annual WQT Report Required After Permit Expiration: In the event that this permit is not reissued by the expiration date, the permittee shall continue to submit annual WQT reports by January 31 each year covering the total number of pollutant credits used, the source of the pollution reduction credits, a summary of annual inspection reports performed, and identification of noncompliance or failure to implement any terms or conditions of the approved water quality trading plan for the previous calendar year.	

4.1.1 Explanation of Schedule

Reports are required that include the following information:

- Verification that site inspections occurred;
- Summary of site inspection findings;
- Identification of noncompliance or failure to implement any terms or conditions of the permit or trading plan that have not been reported in discharge monitoring reports;
- Any applicable notices of termination or management practice registration; and
- A summary of credits used each month over the calendar year

4.2 Land Application Management Plan

A management plan is required for the land application system.

Required Action	Due Date
Land Application Management Plan Submittal: Submit an update to the management plan to optimize the land application system performance and demonstrate compliance with ch. NR 204, Wis. Adm. Code, by the Due Date. This management plan shall 1) specify information on pretreatment processes (if any); 2) identify land application sites; 3) describe site limitations; 4) address vegetative cover management and removal; 5) specify availability of storage; 6) describe the type of transporting and spreading vehicle(s); 7) specify monitoring procedures; 8) track site loading; 9) address contingency plans for adverse weather and odor/nuisance abatement; and 10) include any other pertinent information. Once approved, all landspreading activities shall be conducted in accordance with the plan. Any changes to the plan must be approved by the Department prior to implementing the changes.	01/31/2028

4.2.1 Explanation of Schedule

An up-to-date Land Application Management Plan is required that documents how the permittee will manage the land application of biosolids consistent with ch. NR 204, Wis. Adm. Code

Other Comments

None

Attachments

Water Quality Based Effluent Limits 4/30/2026

WQT Plan

WQT Conditional Approval Letter

Justification Of Any Waivers From Permit Application Requirements

No waivers requested or granted as part of this permit reissuance

Prepared By: Jennifer Jerich, Wastewater Specialist

Date: 10/1/2026

Date amended post Fact Check: 10/22/2026;

Date amended post Public Notice:

CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: April 30, 2026

TO: Jennifer Jerich – SCR/Horicon

FROM: Zainah Masri – WY/3

SUBJECT: Water Quality-Based Effluent Limitations for the Bloomington Wastewater Treatment Facility WPDES Permit No. WI-0023400-11-0

This is in response to your request for an evaluation of the need for water quality-based effluent limitations (WQBELs) using chapters NR 102, 104, 105, 106, 207, 210, 212, and 217 of the Wisconsin Administrative Code (where applicable) for the discharge from the Bloomington Wastewater Treatment Facility in Grant County. This municipal wastewater treatment facility (WWTF) discharges to the Blake Fork, located in the Middle Grant River Watershed (GP05) in the Grant – Platte River Basin. The evaluation of the permit recommendations is discussed in more detail in the attached report.

Based on our review, the following recommendations are made on a chemical-specific basis at Outfall 001:

Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Six-Month Average	Footnotes
Flow Rate						1,2
BOD_5			45 mg/L	30 mg/L		1
TSS			45 mg/L	30 mg/L		1
pH	9.0 s.u.	6.0 s.u.				1
Ammonia Nitrogen						3,4,5
April	17 mg/L		**17 mg/L**	13 mg/L		
May – October	17 mg/L		**17 mg/L**	**17 mg/L**		
November –March	17 mg/L		**17 mg/L**	**17 mg/L**		
Bacteria						6
Final Limit *E. coli*				126 #/100 mL geometric mean		
Residual Chlorine						4
May – September	38 µg/L		28 µg/L	**28 µg/L**		
Chloride						7
Phosphorus						8
WQT MCL				4.7 mg/L		
Final Limit				0.225 mg/L	0.075 mg/L	
Mass Limit					0.058 lbs/day	
TKN, Nitrite+Nitrate, and Total Nitrogen						9
Acute WET						10,12
Chronic WET				3.8 TUc		11,12

Footnotes:

1. No changes from the current permit.
2. Monitoring only.
3. The variable daily maximum ammonia nitrogen limit table corresponding to various effluent pH values may be included in the permit in place of the single limit. Bloomington Wastewater

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Treatment Facility shall notify the Department if the single limit or the variable limits based on effluent pH are preferred. These limits apply year-round.

Daily Maximum Ammonia Nitrogen Limits – WWSF

Effluent pH s.u.	Limit mg/L	Effluent pH s.u.	Limit mg/L	Effluent pH s.u.	Limit mg/L
6.0 ≤ pH ≤ 6.1	108	7.0 < pH ≤ 7.1	66	8.0 < pH ≤ 8.1	14
6.1 < pH ≤ 6.2	106	7.1 < pH ≤ 7.2	59	8.1 < pH ≤ 8.2	11
6.2 < pH ≤ 6.3	104	7.2 < pH ≤ 7.3	52	8.2 < pH ≤ 8.3	9.4
6.3 < pH ≤ 6.4	101	7.3 < pH ≤ 7.4	46	8.3 < pH ≤ 8.4	7.8
6.4 < pH ≤ 6.5	98	7.4 < pH ≤ 7.5	40	8.4 < pH ≤ 8.5	6.4
6.5 < pH ≤ 6.6	94	7.5 < pH ≤ 7.6	34	8.5 < pH ≤ 8.6	5.3
6.6 < pH ≤ 6.7	89	7.6 < pH ≤ 7.7	29	8.6 < pH ≤ 8.7	4.4
6.7 < pH ≤ 6.8	84	7.7 < pH ≤ 7.8	24	8.7 < pH ≤ 8.8	3.7
6.8 < pH ≤ 6.9	78	7.8 < pH ≤ 7.9	20	8.8 < pH ≤ 8.9	3.1
6.9 < pH ≤ 7.0	72	7.9 < pH ≤ 8.0	17	8.9 < pH ≤ 9.0	2.6

4. Additional limits to comply with the expression of limits requirements in ss. NR 106.07 and NR 205.065(7), Wis. Adm. Codes, are included in bold.
5. **If the variable daily maximum limit table is used in place of a single limit, the weekly and monthly average limits from the current permit term can be retained in the new permit.**

	Daily Maximum mg/L	Weekly Average mg/L	Monthly Average mg/L
April & May	Variable	24 mg/L	13 mg/L
June – September	Variable	31 mg/L	18 mg/L
October – March	Variable	**17 mg/L**	20 mg/L

6. Bacteria limits apply during the disinfection season of May through September. Additional final limit: No more than 10 percent of *E. coli* bacteria samples collected in any calendar month may exceed 410 count/100 mL.
7. Monitoring at a frequency to ensure that 11 samples are available at the next permit issuance.
8. This is a WQT MCL phosphorus limit.
9. As recommended in the Department's October 1, 2019 Guidance for Total Nitrogen Monitoring in Wastewater Permits, annual total nitrogen monitoring is recommended for all minor municipal permittees. Sections 283.37(5) and 283.55(1)(e), Wis. Stats, and ss. NR 200.065(1)(g) and NR 200.065(1)(h), Wis. Adm. Codes, provide the authority to request this monitoring during the permit term. Total Nitrogen is the sum of nitrite (NO_2), nitrate (NO_3), and total Kjeldahl nitrogen (TKN) (all expressed as N).
10. 2 acute WET tests are recommended throughout the permit term in the reissued permit. The primary control water used in acute WET tests conducted on Outfall 001 shall be a grab sample collected from Blake Fork.
11. Annual chronic WET tests are recommended in the reissued permit. The chronic WET limit shall be expressed as 3.8 TU_c. The Instream Waste Concentration (IWC) to assess chronic test results is 26 %. According to the *State of Wisconsin Aquatic Life Toxicity Testing Methods Manual* (s. NR 219.04, Table A, Wis. Adm. Code), chronic testing shall be performed using a dilution series of 100%, 30%, 10%, 3% & 1% if the IWC ≤ 30% or explain alternative. The primary control water used in chronic WET tests conducted on Outfall 001 shall be a grab sample collected from Blake Fork.

12. Sampling WET concurrently with any chemical-specific toxic substances is recommended. Tests should be done in rotating quarters, to collect seasonal information about this discharge. Chronic testing should continue after the permit expiration date (until the permit is reissued).

Please consult the attached report for details regarding the above recommendations. If there are any questions or comments, please contact Zainah Masri at Zainah.Masri@wisconsin.gov or Diane Figiel at Diane.Figiel@wisconsin.gov.

Attachments (4) – Narrative, Ammonia Nitrogen Calculations, Map and Thermal Table

PREPARED BY: Zainah Masri, Water Resources Engineer Zainah Masri

APPROVED BY: Diane Figiel Date: 04/30/2026
Diane Figiel, PE,
Water Resources Engineer

E-cc: Caitlin O'Connell, Wastewater Engineer – SCR/Fitchburg
Lisa Creegan, Regional Wastewater Supervisor – SCR/Fitchburg
Diane Figiel, Water Resources Engineer – WY/3
Nate Willis, Environmental Engineer Manager – WY/3
Kari Fleming, Natural Resources Program Manager – WY/3

Attachment #1

Water Quality-Based Effluent Limitations for
Bloomington Wastewater Treatment Facility

WPDES Permit No. WI-0023400-11-0

Prepared by: Zainah Masri – WY/3

PART 1 – BACKGROUND INFORMATION

Facility Description
The Village of Bloomington owns and operates a wastewater treatment facility that utilizes an extended aeration activated sludge system. Wastewater enters the WWTF by first passing through a comminutor. Wastewater then proceeds to the extended aeration activated sludge tank and the activated sludge is settled out in the final clarifier. Effluent is chlorinated/dechlorinated seasonally prior to discharge to the Blake Fork. Activated sludge is either returned to the head of the process for further treatment or wasted to aerobic sludge holding tanks, where it is digested and stored prior to land application on DNR-approved sites. Currently, alum is used at the WWTF for the removal of phosphorus. The WWTF has an average daily design flow of 0.092 MGD.

Attachment #3 is a map of the area showing the approximate location of Outfall 001.

Existing Permit Limitations
The current permit, expiring on March 31, 2026 includes the following effluent limitations and monitoring requirements.

Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Six-Month Average	Footnotes
Flow Rate						1
BOD_5			45 mg/L	30 mg/L		1,2
TSS			45 mg/L	30 mg/L		1,2
pH	9.0 s.u.	6.0 s.u.				1
Ammonia Nitrogen April May – October November – March	 34 mg/L 34 mg/L 34 mg/L		 24 mg/L 31 mg/L **34 mg/L**	 13 mg/L 18 mg/L 20 mg/L		3
Bacteria						4
Interim Limit Fecal Coliform				400 #/100 mL geometric mean		
Final Limit *E. coli*				126 #/100 mL geometric mean		
Residual Chlorine May – September	38 µg/L		28 µg/L	**28 µg/L**		5
Chloride						6
Phosphorus WQT Limit				4.5 mg/L		3,7

Attachment #1

Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Six-Month Average	Footnotes
Final				0.225 mg/L	0.075 mg/L 0.058 lbs/day	
TKN, Nitrite+Nitrate, and Total Nitrogen						8
Acute WET						9
Chronic WET					3.8 TU_c	10

Footnotes:

1. These limitations are not being evaluated as part of this review. Because the water quality criteria (WQC), reference effluent flow rates, and receiving water characteristics have not changed, limitations for these water quality characteristics do not need to be re-evaluated at this time.
2. These limits are based on the Warm Water Sport Fish (WWSF) community of the immediate receiving water as described in s. NR 210.05(1), Wis. Adm. Code
3. Additional limits to comply with the expression of limits requirements in ss. NR 106.07 and NR 205.065(7), Wis. Adm. Codes, are included in bold.
4. Bacteria limits apply during the disinfection season of May through September. The fecal coliform interim limit will apply until the end of the compliance schedule when *E. coli* limits take effect. Additional final limit: No more than 10 percent of *E. coli* bacteria samples collected in any calendar month may exceed 410 count/100 mL. A compliance schedule is in the current permit to meet the final E.coli WQBEL by April 30, 2026.
5. The limit is effective May – September or when dechlorinating.
6. Monitoring only in 2025.
7. This is a WQT limit. A compliance schedule is in the current permit to meet the final WQBEL by March 31, 2023.
8. As recommended in the Department's October 1, 2019 Guidance for Total Nitrogen Monitoring in Wastewater Permits, annual total nitrogen monitoring is recommended for all minor municipal permittees. Sections 283.37(5) and 283.55(1)(e), Wis. Stats, and ss. NR 200.065(1)(g) and NR 200.065(1)(h), Wis. Adm. Codes, provide the authority to request this monitoring during the permit term. Total Nitrogen is the sum of nitrite (NO_2), nitrate (NO_3), and total Kjeldahl nitrogen (TKN) (all expressed as N).
9. **Acute** tests shall be conducted twice per permit term in rotating quarters in order to collect seasonal information about the discharge.
    - **Acute:** April 1 - June 30, 2023; October 1 – December 31, 2025

    Acute WET testing shall continue after the permit expiration date (until the permit is reissued) in accordance with the WET requirements specified for the last full calendar year of this permit. For example, the next test would be required in October 1 – December 31, 2026.
10. The IWC for chronic WET was 26%. **Chronic** tests shall be conducted twice per permit term in rotating quarters in order to collect seasonal information about the discharge.

Receiving Water Information

- Name: Blake Fork
- Waterbody Identification Code (WBIC): 962000
- Classification used in accordance with chs. NR 102 and 104, Wis. Adm. Code: Warm Water Sport Fish (WWSF) community, non-public water supply and recreational use.

- Low flows used in accordance with chs. NR 106 and 217, Wis. Adm. Code: The following 7-Q_{10} and 7-Q_2 values are from USGS for Station GP10 at Bloomington, where Outfall 001 is located.
  7-Q_{10} = 1.6 cubic feet per second (cfs)
  7-Q_2 = 2.9 cfs
  Harmonic Mean Flow = 5.4 cfs using a drainage area of 17.9 mi^2
  The Harmonic Mean has been estimated based on average flow and the 7-Q_{10} using an equation from U.S. EPA's *Technical Support Document for Water Quality-Based Toxics Control* (March 1991, EPA/505/2-90-001, pgs. 88-89).
- Hardness = 365 mg/L as $CaCO_3$. This value represents the geometric mean of data from WET testing found in SWAMP in June 2018 to August 2024.
  - % of low flow used to calculate limits in accordance with s. NR 106.06(4)(c)5., Wis. Adm. Code: 25%
- Source of background concentration data: Metals data from the Grant River (SWIMS Station 223336 – Grant River at Burton CTH N) is used for this evaluation because there is no data available for Blake Fork. The Grant River is within the same ecological landscape so ambient water quality characteristics are expected to be similar. The numerical values are shown in the tables below. If no data is available, the background concentration is assumed to be negligible and a value of zero is used in the computations. Background data for calculating effluent limitations for ammonia nitrogen and phosphorus are described later.
- Multiple dischargers: None
- Impaired water status: Blake Fork is listed as impaired for total phosphorus (listed 4/1/2012) where Outfall 001 is located.

Effluent Information

- Design flow rate:
  Annual average = 0.092 million gallons per day (MGD)
  For reference, the actual average flow from December 2020 to December 2025 was 0.04 MGD.
- Hardness = 290 mg/L as $CaCO_3$. This value represents the geometric mean of four samples collected in December 2025 which were reported on the permit application.
- Acute dilution factor used in accordance with s. NR 106.06(3)(c), Wis. Adm. Code: Not applicable – this facility does not have an approved Zone of Initial Dilution (ZID).
- Water supply: Municipality waterworks and private wells.
- Additives: Bloomington Wastewater Treatment Facility has included 3 additives in the permit application that have the potential to be present in Outfall 001. These additives are listed below:
  - Aluminum Sulfate, Hawkins Chemical – Phosphorus Removal
  - Sodium Hypochlorite, Hawkins Chemical – Disinfection
  - Sodium Bisulfite, Hawkins Chemical – Dechlorination
  - An additive review is not necessary for any additives where either the toxicity is well documented and understood, can be controlled by a WQBEL, or are not believed to be present in the discharge. This is the case upon initial review of the listed additives, and the facility is not requesting increased dosages or use frequencies. Therefore, an additive review is not needed at this time.
- Effluent characterization: This facility is categorized as a minor municipality, so the permit application required effluent sample analyses for a limited number of common pollutants, as specified in s. NR 200.065, Table 1, Wis. Adm. Code, primarily metal substances plus ammonia, chloride, hardness and phosphorus.
- Effluent data for substances for which a single sample was analyzed is shown in the tables in Part 2,

in the column titled "MEAN EFFL. CONC.". Otherwise, substances with multiple effluent data are shown in the tables below or in their respective parts in this evaluation.

Copper Effluent Data

Sample Date	Copper (µg/L)	Sample Date	Copper (µg/L)	Sample Date	Copper (µg/L)
12/12/2025	7.0	12/24/2025	6.2	01/05/2026	5.4
12/15/2025	6.9	12/27/2025	5.1	01/08/2026	8.3
12/18/2025	6.4	12/30/2025	5.8	01/11/2026	5.6
12/21/2025	6.7	01/02/2026	5.2		
1-day P_{99} = 9.0 µg/L					
4-day P_{99} = 7.4 µg/L					

"<" means that the pollutant was not detected at the indicated limit of detection. The mean concentration was calculated using zero in place of the non-detected results.

Chloride Effluent Data

	Chloride (mg/L)
1-day P_{99}	336
4-day P_{99}	306
30-day P_{99}	288
Mean	278
Std	23
Sample size	48
Range	232 - 334

The following table presents the average concentrations and loadings at Outfall 001 from December 2020 to December 2025 for all parameters with limits in the current permit to meet the requirements of s. NR 201.03(6), Wis. Adm. Code:

Parameters with Effluent Limits

	Average Measurement	Average Mass Discharged
BOD_5	3.5 mg/L*	-
TSS	5.7 mg/L	-
pH field	7.4 s.u.	-
Ammonia Nitrogen	0.92 mg/L*	-
Fecal Coliform	801 #/100 mL**	-
E. coli	141 #/100 mL**	-
Residual Chlorine	0.26 ug/L	-
Phosphorus	1.6 mg/L	0.53 lbs/day
Chronic WET	1.7 TU_c	-

*Results below the limit of detection (LOD) were included as zeroes in calculation of average.
** The average measurement for bacteria is calculated as a geometric mean. Values reported below the LOD are replaced with a value of 1 for the calculation of the geometric mean.

PART 2 – WATER QUALITY-BASED EFFLUENT LIMITATIONS

Attachment #1

FOR TOXIC SUBSTANCES – EXCEPT AMMONIA NITROGEN

Permit limits for toxic substances are required whenever any of the following occur:

1. The maximum effluent concentration exceeds the calculated limit (s. NR 106.05(3), Wis. Adm. Code)
2. If 11 or more detected results are available in the effluent, the upper 99th percentile (or P_{99}) value exceeds the comparable calculated limit (s. NR 106.05(4), Wis. Adm. Code)
3. If fewer than 11 detected results are available, the mean effluent concentration exceeds 1/5 of the calculated limit (s. NR 106.05(6), Wis. Adm. Code)

Acute Limits based on 1-Q_{10}

Daily maximum effluent limitations for toxic substances are based on the acute toxicity criteria (ATC), listed in ch. NR 105, Wis. Adm. Code. Previously daily maximum limits for toxic substances were calculated as two times the ATC. However, changes to ch. NR 106, Wis. Adm. Code, (September 1, 2016) require the Department to calculate acute limitations using the same mass balance equation as used for other limits along with the 1-Q_{10} receiving water low flow to determine if more restrictive effluent limitations are needed to protect the receiving stream from discharges which may cause or contribute to an exceedance of the acute water quality standards. The mass balance equation is provided below.

$$\text{Limitation} = \frac{(WQC)\,(Qs + (1-f)\,Qe) - (Qs - f\,Qe)\,(Cs)}{Qe}$$

Where:

WQC =Acute toxicity criterion or secondary acute value according to ch. NR 105, Wis. Adm. Code.

Qs = average minimum 1-day flow which occurs once in 10 years (1-day Q_{10}) if the 1-day Q_{10} flow data is not available = 80% of the average minimum 7-day flow which occurs once in 10 years (7-day Q_{10}).

Qe = Effluent flow (in units of volume per unit time) as specified in s. NR 106.06(4)(d), Wis. Adm. Code.

f = Fraction of the effluent flow that is withdrawn from the receiving water, and

Cs = Background concentration of the substance (in units of mass per unit volume) as specified in s. NR 106.06(4)(e), Wis. Adm. Code.

If the receiving water is effluent dominated under low stream flow conditions, the 1-Q_{10} method of limit calculation produces the most stringent daily maximum limitations and should be used while making reasonable potential determinations. This is not the case for Bloomington Wastewater Treatment Facility, and the limits are set based on two times the acute toxicity criteria.

The following tables list the calculated WQBELs for this discharge along with the results of effluent sampling for all the detected substances. All concentrations are expressed in terms of micrograms per Liter (µg/L), except for hardness and chloride (mg/L).

Daily Maximum Limits based on Acute Toxicity Criteria (ATC)

RECEIVING WATER FLOW = 1.3 cfs, (1-Q_{10} (estimated as 80% of 7-Q_{10})), as specified in s. NR 106.06(3)(bm), Wis. Adm. Code.

Attachment #1

SUBSTANCE	REF. HARD.* mg/L	ATC	MAX. EFFL. LIMIT**	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.	1-day P_{99}	1-day MAX. CONC.
Chlorine		19	**38**		**0.26**		**100**
Arsenic		340	680	136	<1.1		
Cadmium	290	35	70	14	<0.17		
Chromium	290	4,312	8,625	1,725	<1.5		
Copper	290	42	85			9.0	8.3
Lead	290	299	598	1,120	<5.4		
Nickel	268	1,080	2,161	432	<4.7		
Zinc	290	305	311	122	33		
Chloride (mg/L)		757	1,514			336	334

* The indicated hardness may differ from the effluent hardness because the effluent hardness exceeded the maximum range in ch. NR 105, Wis. Adm. Code, over which the acute criteria are applicable. In that case, the maximum of the range is used to calculate the criterion.
* * The 2 × ATC method of limit calculation yields a more restrictive limit than consideration of ambient concentrations and 1-Q_{10} flow rates per the changes to s. NR 106.07(3), Wis. Adm. Code, effective 09/01/2016.

Weekly Average Limits based on Chronic Toxicity Criteria (CTC)
RECEIVING WATER FLOW = 0.40 cfs (¼ of the 7-Q_{10}), as specified in s. NR 106.06(4)(c), Wis. Adm. Code

SUBSTANCE	REF. HARD.* mg/L	CTC	MEAN BACK-GRD.	WEEKLY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.	4-day P_{99}
Chlorine		7.3	28	5.6		0.26	
Arsenic		152	2.0	574	115	<1.1	
Cadmium	175	3.8	0.11	14	2.8	<0.17	
Chromium	301	326	5.5	1,226	245	<1.5	
Copper	365	31	1.5	115	23		7.4
Lead	356	96		364	73	<5.4	
Nickel	268	120		458	92	<4.7	
Zinc	333	345		1,313	263	33	
Chloride (mg/L)		395	24.3	1,437	287		306

* The indicated hardness may differ from the receiving water hardness because the receiving water hardness exceeded the maximum range in ch. NR 105, Wis. Adm. Code, over which the chronic criteria are applicable. In that case, the maximum of the range is used to calculate the criterion.

Monthly Average Limits based on Wildlife Criteria (WC)
The effluent characterization did not include any effluent sampling results for substances for which Wildlife Criteria exist.

Monthly Average Limits based on Human Threshold Criteria (HTC)
RECEIVING WATER FLOW = 1.4 cfs (¼ of Harmonic Mean), as specified in s. NR 106.06(4), Wis. Adm. Code.

SUBSTANCE	HTC	MEAN BACK-GRD.	MO'LY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.
Cadmium	370	0.11	3,878	776	<0.17
Chromium (+3)	3,818,000	5.5	40,026,905	8,005,381	<1.5

Lead	140	-	1,468	294	<5.4
Nickel	43,000	-	450,801	90,160	<4.7

Monthly Average Limits based on Human Cancer Criteria (HCC)
RECEIVING WATER FLOW = 1.4 cfs (¼ of Harmonic Mean), as specified in s. NR 106.06(4), Wis. Adm. Code.

SUBSTANCE	HCC	MEAN BACK-GRD.	MO'LY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.
Arsenic	13	2.0	121	24	<1.1

Conclusions and Recommendations
Based on a comparison of the effluent data and calculated effluent limitations, effluent limitations are required for Total Residual Chlorine and monitoring is recommended for chloride. Limits and/or monitoring recommendations are made in the paragraphs below:

Total Residual Chlorine – Because chlorine is added as a disinfectant, effluent limitations are recommended to assure proper operation of the de-chlorination system. Section NR 210.06(2)(b), Wis. Adm. Code, states, "When chlorine is used for disinfection, the daily maximum total residual chlorine concentration of the discharge may not exceed 0.10 mg/L." Because the WQBELs are more restrictive, they are recommended instead. Specifically, a daily maximum limit of 38 µg/L is required. Due to revisions to s. NR 106.07(2), Wis. Adm. Code, mass limitations are no longer required.

Copper – Considering available effluent data in the current permit application from December 2025 to January 2026, the 1-day P_{99} concentration is 9 µg/L, with a maximum concentration of 8.3 µg/L. The maximum effluent concentration and the 1-day P_{99} of the effluent data did not exceed the calculated daily maximum limit, **therefore concentration and mass limits, as well as monthly monitoring, are not required.**

Chloride – Considering available effluent data from February 2025 to December 2025 the 1-day P_{99} chloride concentration is 336 mg/L, and the 4-day P_{99} of effluent data is 306 mg/L.

These effluent concentrations are below the calculated WQBELs for chloride; therefore, no effluent limits are needed. **Chloride monitoring is recommended to ensure that 11 sample results are available at the next permit issuance to meet the data requirements of s. NR 106.85, Wis. Adm. Code**.

Mercury – The permit application did not require monitoring for mercury because the Bloomington Wastewater Treatment Facility is categorized as a minor facility as defined in s. NR 200.02(8), Wis. Adm. Code. In accordance with s. NR 106.145(3)(a)3, Wis. Adm. Code, a minor municipal discharger shall monitor, and report results of influent and effluent mercury monitoring once every three months if, "there are two or more exceedances in the last five years of the high-quality sludge mercury concentration of 17 mg/kg specified in s. NR 204.07(5), Wis. Adm. Code." A review of the past five years of sludge characteristics data reveals that all the sample results are within expected analytical ranges and well below the 17 mg/kg level. The average concentration in the sludge from November 2021 to June 2025 was 1.0 mg/kg, with a maximum reported concentration of <6.8 mg/kg. **Therefore, no mercury monitoring is recommended at Outfall 001.**

PFOS and PFOA – The need for PFOS and PFOA monitoring is evaluated in accordance with s. NR 106.98(2), Wis. Adm. Code.

Available monitoring sample data from the Bloomington Waterworks (12200859) is provided in the table below:

Water Supply PFAS Data

Sample Date	Sample ID	Well #	PFOS (ng/L)	PFOA (ng/L)
06/14/2023	684070001	BF849	0	0
		Average =	0	0

The limited data above shows the municipal water supply is below 1/5th of the applicable PFOS and PFOA criteria. Based on the type of discharge, the effluent flow rate, and known levels of PFOS/PFOA in the source water **PFOS and PFOA monitoring is not recommended.**

The Department may re-evaluate the need for sampling at the next permit reissuance if new information becomes available that suggests PFOS or PFOA may be present in the discharge.

PART 3 – WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR AMMONIA NITROGEN

The State of Wisconsin promulgated revised water quality standards for ammonia nitrogen in ch. NR 105, Wis. Adm. Code, effective March 1, 2004 which includes criteria based on both acute and chronic toxicity to aquatic life. The current permit has daily maximum, weekly average and monthly average limits. These limits are re-evaluated at this time due to the following changes:

- Subchapter IV of ch. NR 106, Wis. Adm. Code allows limits based on available dilution instead of limits set to twice the acute criteria.
- The maximum expected effluent pH has changed

Daily Maximum Limits based on Acute Toxicity Criteria (ATC)

Daily maximum limitations are based on acute toxicity criteria in ch. NR 105, Wis. Adm. Code, which are a function of the effluent pH and the receiving water classification. The acute toxicity criterion (ATC) for ammonia is calculated using the following equation:

$$\text{ATC in mg/L} = [A \div (1 + 10^{(7.204 - pH)})] + [B \div (1 + 10^{(pH - 7.204)})]$$

Where:

A = 0.411 and B = 58.4 for a Warm Water Sport fishery, and
pH (s.u.) = that characteristic of the effluent.

The effluent pH data was examined as part of this evaluation. A total of 867 sample results were reported from December 2020 to December 2025. The maximum reported value was 8.3 s.u. (Standard pH Units). The effluent pH was 7.9 s.u. or less 99% of the time. The 1-day P_{99}, calculated in accordance with s. NR 106.05(5), Wis. Adm. Code, is 8.0 s.u. The mean plus the standard deviation multiplied by a factor of 2.326, an estimate of the upper ninety ninth percentile for a normally distributed dataset, is 8.0 s.u. Therefore, a value of 8.0 s.u. is believed to represent the maximum reasonably expected pH, and therefore

most appropriate for determining daily maximum limitations for ammonia nitrogen. Substituting a value of 8.0 s.u. into the equation above yields an ATC = 8.4 mg/L.

Daily Maximum Ammonia Nitrogen Effluent Limitations Calculation Method
In accordance with s. NR 106.32(2), Wis. Adm. Code daily maximum ammonia limitations are calculated using the 1-Q_{10} receiving water low flow if it is determined that the previous method of acute ammonia limit calculation (2×ATC) is not sufficiently protective of the fish and aquatic life. The more restrictive calculated limits shall apply.

The calculated daily maximum ammonia nitrogen effluent limits using the mass balance approach with the 1-Q_{10} (estimated as 80 % of 7-Q_{10}) and the 2×ATC approach are shown below.

Daily Maximum Ammonia Nitrogen Determination

	Ammonia Nitrogen Limit mg/L
2×ATC	17
1-Q_{10}	83

The 2×ATC method yields the most stringent limits for Bloomington Wastewater Treatment Facility.

Presented below is a table of daily maximum limitations corresponding to various effluent pH values. Use of this table is not necessarily recommended in the permit, but it is presented herein for informational purposes.

Daily Maximum Ammonia Nitrogen Limits – WWSF

Effluent pH s.u.	Limit mg/L	Effluent pH s.u.	Limit mg/L	Effluent pH s.u.	Limit mg/L
6.0 ≤ pH ≤ 6.1	108	7.0 < pH ≤ 7.1	66	8.0 < pH ≤ 8.1	14
6.1 < pH ≤ 6.2	106	7.1 < pH ≤ 7.2	59	8.1 < pH ≤ 8.2	11
6.2 < pH ≤ 6.3	104	7.2 < pH ≤ 7.3	52	8.2 < pH ≤ 8.3	9.4
6.3 < pH ≤ 6.4	101	7.3 < pH ≤ 7.4	46	8.3 < pH ≤ 8.4	7.8
6.4 < pH ≤ 6.5	98	7.4 < pH ≤ 7.5	40	8.4 < pH ≤ 8.5	6.4
6.5 < pH ≤ 6.6	94	7.5 < pH ≤ 7.6	34	8.5 < pH ≤ 8.6	5.3
6.6 < pH ≤ 6.7	89	7.6 < pH ≤ 7.7	29	8.6 < pH ≤ 8.7	4.4
6.7 < pH ≤ 6.8	84	7.7 < pH ≤ 7.8	24	8.7 < pH ≤ 8.8	3.7
6.8 < pH ≤ 6.9	78	7.8 < pH ≤ 7.9	20	8.8 < pH ≤ 8.9	3.1
6.9 < pH ≤ 7.0	72	7.9 < pH ≤ 8.0	17	8.9 < pH ≤ 9.0	2.6

Weekly and Monthly Average Limits based on Chronic Toxicity Criteria (CTC)
Weekly and monthly average limits are not included in the current permit but are being evaluated here due to changes to ch. NR 106, Wis. Adm. Code. **The weekly and monthly average ammonia nitrogen limits calculation from the previous memo do not change** because there have been no changes in the effluent and receiving water flow rates. The calculations from the previous WQBEL memo are shown in attachment #2.

Weekly average and monthly average limits for ammonia nitrogen are based on chronic toxicity criteria in ch. NR 105, Wis. Adm. Code.

The 30-day chronic toxicity criterion (CTC) for ammonia in waters classified as a Warm Water Sport Fish Community is calculated by the following equation, according to subchapter IV of NR 106, Wis. Adm. Code.

$$CTC = E \times \{[0.0676 \div (1 + 10^{(7.688 - pH)})] + [2.912 \div (1 + 10^{(pH - 7.688)})]\} \times C$$

Where:

pH = the pH (s.u.) of the receiving water,
E = 0.854,
C = the minimum of 2.85 or $1.45 \times 10^{(0.028 \times (25 - T))}$ – (Early Life Stages Present), or
C = $1.45 \times 10^{(0.028 \times (25 - T))}$ – (Early Life Stages Absent), and
T = the temperature (ºC) of the receiving water – (Early Life Stages Present), or
T = the maximum of the actual temperature (ºC) and 7 - (Early Life Stages Absent)

The 4-day criterion is equal to the 30-day criterion multiplied by 2.5. The 4-day criteria are used in a mass-balance equation with the 7-Q_{10} (4-Q_3, if available) to derive weekly average limitations. And the 30-day criteria are used with the 30-Q_5 (estimated as 85% of the 7-Q_2 if the 30-Q_5 is not available) to derive monthly average limitations. The stream flow value is further adjusted to temperature; 100% of the flow is used if the Temperature ≥ 16 ºC, 25% of the flow is used if the Temperature < 11 ºC, and 50% of the flow is used if the Temperature ≥ 11 ºC but < 16 ºC.

Effluent Data

The following table evaluates the statistics based upon ammonia data reported from December 2020 to December 2025.

Ammonia Nitrogen Effluent Data

	Ammonia Nitrogen mg/L
1-day P_{99}	16
4-day P_{99}	10
30-day P_{99}	4.2
Mean*	1.4
Std	4.4
Sample size	532
Range	0.05-31

*Values lower than the limit of detection were substituted with a zero

Ammonia Nitrogen mg/L	April	May - October	November - March
1-day P_{99}	0.8	23	5.5
4-day P_{99}	0.5	14	4.1
30-day P_{99}	0.26	5.9	1.9
Mean*	0.17	2.5	0.42
Std	0.17	5.8	2.1
Sample size	43	262	227
Range	<0.05 - 0.75	<0.05 - 30	<0.05 - 31

*Values lower than the limit of detection were substituted with a zero

Reasonable Potential

The permit currently has daily maximum limits year-round as well as weekly and monthly average limits year-round. Where there are existing ammonia nitrogen limits in the permit, the limits must be retained regardless of reasonable potential, consistent with s. NR 106.33(1)(b), Wis. Adm. Code:

> (b) If a permittee is subject to an ammonia limitation in an existing permit, the limitation shall be included in any reissued permit. Ammonia limitations shall be included in the permit if the permitted facility will be providing treatment for ammonia discharges.

Expression of Limits

Revisions to ch. NR 106, Wis. Adm. Code, in September 2016 aligned Wisconsin's WQBELs with 40 CFR § 122.45(d), which specifies that effluent limits for continuous dischargers must be expressed as weekly and monthly averages for publicly owned treatment works and as daily maximums and monthly averages for all other dischargers, unless shown to be impracticable. Because a daily maximum ammonia limit is necessary for [facility name], weekly and monthly average limits are also required under this code revision.

The methods for calculating limitations for municipal treatment facilities to conform to 40 CFR 122.45(d) are specified in s. NR 106.07(3), Wis. Adm. Code, and are as follows:

> Whenever a daily maximum limitation is determined necessary to protect water quality, a weekly and monthly average limitation shall also be included in the permit and set equal to the daily maximum limit unless a more restrictive limit is already determined necessary to protect water quality.

In this case, the recommended daily maximum limits vary with effluent pH, so additional limits should be set equal to the highest recommended limit. Therefore, **weekly average limits of 17 mg/L for the months of April – May and weekly and monthly averages for the months of June – September and October – March** are recommended in the permit.

If the variable daily maximum limit table is used in place of a single limit, the weekly and monthly average limits from the current permit term can be retained in the new permit.

Conclusions and Recommendations

In summary, after rounding to two significant figures, the following ammonia nitrogen limitations are recommended. No mass limitations are recommended in accordance with s. NR 106.32(5), Wis. Adm Code.

Final Ammonia Nitrogen Limits

Option 1: Limit with Single Limit

	Daily Maximum mg/L	Weekly Average mg/L	Monthly Average mg/L
April & May	17 mg/L	**17 mg/L**	13 mg/L
June – September	17 mg/L	**17 mg/L**	**17 mg/L**
October – March	17 mg/L	**17 mg/L**	**17 mg/L**

Option 2: Limit with Variable Daily Maximum Limit

	Daily Maximum mg/L	Weekly Average mg/L	Monthly Average mg/L
April & May	Variable	24 mg/L	13 mg/L
June – September	Variable	31 mg/L	18 mg/L
October – March	Variable	**17 mg/L**	20 mg/L

Additional limits to meet the requirements in s. NR 106.07, Wis. Adm Code, are denoted in bold text.

PART 4 – WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR BACTERIA

On May 1, 2020, revisions to chs. NR 102 and NR 210, Wis. Adm. Codes, became effective which replace fecal coliform limits with new *Escherichia coli* (*E. coli*) limits for protection of recreational uses. Section NR 210.06(2)(a)1, Wis. Adm. Code, includes two limits which must be included in permits for facilities which are required to disinfect:

1. The geometric mean of *E. coli* bacteria in effluent samples collected in any calendar month may not exceed 126 counts/100 mL.
2. No more than 10 percent of *E. coli* bacteria samples collected in any calendar month may exceed 410 counts/100 mL.

E. coli monitoring is recommended at the same frequency that fecal coliform monitoring is required in the current permit. Because Bloomington Wastewater Treatment Facility permit requires weekly monitoring, the 410 counts/100 mL limit will effectively function as a daily maximum limit unless the facility performs additional monitoring. Any additional monitoring beyond what is required by the permit must also be reported on the DMR as required in the standard requirements section of the permit.

These limits are required during May through September. No changes are recommended to the current recreational period and the required disinfection season.

Effluent Data

Bloomington Wastewater Treatment Facility has monitored effluent *E. coli* from July 2021 to September 2025 and a total of 109 results are available. A value of 126 counts/100 mL was exceeded 11 times, with a maximum monthly geometric mean of 3000 counts/100 mL. The majority of *E.coli* exceedances were caused by a chlorine pump failure by Bloomington Wastewater Treatment Facility's previous operator and has since been corrected by the replacement of the chlorine feed pump and a new operator. Based on this, it appears that the facility can meet the new *E. coli* limits. The facility had a compliance schedule in the previous permit term and is not eligible for one in the upcoming permit term.

PART 5 – PHOSPHORUS

Technology-Based Effluent Limit

Subchapter II of Chapter NR 217, Wis. Adm. Code, requires municipal wastewater treatment facilities that discharge greater than 150 pounds of total phosphorus per month to comply with a monthly average limit of 1.0 mg/L, or an approved alternative concentration limit.

Because Bloomington Wastewater Treatment Facility does not currently have an existing technology-based limit, the need for this limit in the reissued permit is evaluated. The data demonstrates that the annual monthly average phosphorus loading is less than 150 lbs/month, which is the threshold for municipalities in accordance to s. NR 217.04(1)(a)1, Wis. Adm. Code, and **therefore no technology-based limit is required.**

Annual Average Mass Total Phosphorus Loading

Month	Average Phosphorus Concentration (mg/L)	Total Effluent Flow (Million Gallons)	Calculated Mass (lbs/month)
January 2025	1.2	0.46	4.6
February 2025	1.0	0.47	3.9
March 2025	1.5	0.76	9.5
April 2025	2.0	0.61	10
May 2025	1.4	0.42	5.0
June 2025	1.3	0.78	8.3
July 2025	1.9	0.63	10
August 2025	2.0	0.67	11
September 2025	1.2	0.66	6.4
October 2025	1.1	0.85	7.8
November 2025	1.1	0.63	5.5
December 2025	1.1	0.40	3.8
Average			**62**

Total P (lbs/month) = Monthly average (mg/L) × total flow (MG/month) × 8.34 (lbs/gallon)
Where total flow is the sum of the actual flow (MGD) for that month

In addition, the need for a WQBEL for phosphorus must be considered.

Water Quality-Based Effluent Limits (WQBEL)

Section NR 102.06(3)(a), Wis. Adm. Code, specifically names river segments for which a phosphorus criterion of 0.100 mg/L applies. For other stream segments that are not specified in s. NR 102.06(3)(a), Wis. Adm. Code, s. NR 102.06(3)(b), Wis. Adm. Code, specifies a phosphorus criterion of 0.075 mg/L. The phosphorus criterion of 0.075 mg/L applies for Blake Fork.

The conservation of mass equation is described in s. NR 217.13(2)(a), Wis. Adm. Code, for phosphorus WQBELs and includes variables of water quality criterion (WQC), receiving water flow rate (Qs), effluent flow rate (Qe), and upstream phosphorus concentrations (Cs) provided below.

$$\text{Limitation} = [(WQC)(Qs+(1-f)\ Qe) - (Qs-f\ Qe)\ (Cs)]/Qe$$

Where:

WQC = 0.075 mg/L for Blake Fork.
Qs = 100% of the 7-Q_2 of 2.9 cfs
Cs = background concentration of phosphorus in the receiving water pursuant to s. NR 217.13(2)(d), Wis. Adm. Code
Qe = effluent flow rate = 0.092 MGD = 0.142 cfs
f = the fraction of effluent withdrawn from the receiving water = 0

Section NR 217.13(2)(d), Wis. Adm. Code, specifies that the background phosphorus concentration used in the limit calculation formula shall be calculated as a median using the procedures specified in s. NR 102.07(1)(b) to (c), Wis. Adm. Code. All representative data from the most recent 5 years shall be used, but data from the most recent 10 years may be used if representative of current conditions.

A previous evaluation resulted in a WQBEL of 0.075 mg/L using a background concentration of 0.155 mg/L. Section NR 217.13(2)(d), Wis. Adm. Code, states that the determination of upstream concentrations shall be evaluated at each permit reissuance. Additional data were considered in estimating the background phosphorus concentration.

A review of all available in stream total phosphorus data from May 2002 to October 2002 stored in the Surface Water Integrated Monitoring System database indicates the median background total phosphorus concentration in Blake Fork at Cemetery Road Near Bloomington WI (SWIMS station ID 223220) is 0.159 mg/L, just upstream from the point of discharge to Blake Fork. Please note that the change in median calculation methodology in ch NR 217 has changed the phosphorus median from the previous WQBEL memo.

SWIMS ID	223220
Station Name	Blakes Fork – Cemetery Rd Near Bloomington WI
Waterbody	Blake Fork
Sample Count	6
First Sample	05/21/2002
Last Sample	10/14/2002
Mean	0.160 mg/L
Median	0.159 mg/L

Substituting a background concentration above criteria into the limit calculation equation above would result in a calculated limit that is less than the applicable criterion of 0.075 mg/L. However, s. NR 217.13(7), Wis. Adm. Code, specifies that "if the WQBEL calculated pursuant to the procedures in this section is less than the phosphorus criterion specified in s. NR 102.06, Wis. Adm. Code, for the water body, the effluent limit shall be set equal to the criterion."

The impaired water listing of Blake Fork also points towards the notion that effluent phosphorus limits equal to the water quality criterion are needed to prevent the discharge from contributing to further impairment of the receiving water. *The Guidance for Implementing Wisconsin's Phosphorus Water Quality Standards for Point Source Discharges (2020)* suggests setting effluent limits equal to the criterion in the absence of an EPA approved total maximum daily load for discharges of phosphorus to phosphorus impaired waters.

Effluent Data

The following table summarizes effluent total phosphorus monitoring data from December 2020 to December 2025.

Attachment #1

Total Phosphorus Effluent Data

	Phosphorus mg/L
1-day P_{99}	6.6
4-day P_{99}	3.7
30-day P_{99}	2.2
Mean	1.6
Std	1.3
Sample size	532
Range	0.17 - 8.6

Reasonable Potential Determination
The discharge has reasonable potential to cause or contribute to an exceedance of the water quality criterion and is currently operating the treatment facility to remove phosphorus and meet the WQBELs. Therefore, **the WQBELs are required to continue in the reissued permit per ss. NR 217.15 and 205.067(5), Wis. Adm. Codes.**

Limit Expression
According to s. NR 217.14(2), Wis. Adm. Code, because the calculated WQBEL is less than or equal to 0.3 mg/L, the effluent limit of 0.075 mg/L may be expressed as a six-month average. If a concentration limitation expressed as a six-month average is included in the permit, a monthly average concentration limitation of 0.225 mg/L, equal to three times the WQBEL calculated under s. NR 217.13, Wis. Adm. Code shall also be included in the permit. The six-month average should be averaged during the months of May – October and November – April.

Mass Limits
A mass limit is also required, pursuant to s. NR 217.14(1)(a), Wis. Adm. Code, because the discharge is to a surface water that is phosphorus impaired. **This final mass limit shall be 0.075 mg/L × 8.34 × 0.092 MGD = 0.058 lbs/day expressed as a six-month average**.

Water Quality Trading Minimum Control Level
A WQT plan has been submitted as an alternative compliance option to offset any total phosphorus discharged from Outfall 001 that exceed the phosphorus WQBELs. The phosphorus WQBELs may be expressed as computed compliance limits, but a minimum control level (MCL) must be set as a limit not to be exceeded at the outfall location. **Therefore, the phosphorus MCL of 4.5 mg/L as a monthly average, which is the MCL in the current permit term.**

PART 6 – WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR THERMAL

Surface water quality standards for temperature took effect on October 1, 2010. These regulations are detailed in chs. NR 102 (Subchapter II – Water Quality Standards for Temperature) and NR 106 (Subchapter V – Effluent Limitations for Temperature) of the Wisconsin Administrative Code. Daily

maximum and weekly average temperature criteria are available for the 12 different months of the year depending on the receiving water classification.

In accordance with s. NR 106.53(2)(b), Wis. Adm. Code, the highest daily maximum flow rate for a calendar month is used to determine the acute (daily maximum) effluent limitation. In accordance with s. NR 106.53(2)(c), Wis. Adm. Code, the highest 7-day rolling average flow rate for a calendar month is used to determine the sub-lethal (weekly average) effluent limitation. These values were based off actual flow reported from December 2020 to December 2025.

The table below summarizes the maximum temperatures reported during monitoring from January 2019 to December 2019.

Monthly Temperature Effluent Data & Limits

Month	Representative Highest Monthly Effluent Temperature		Calculated Effluent Limit	
	Weekly Maximum (°F)	Daily Maximum (°F)	Weekly Average Effluent Limitation (°F)	Daily Maximum Effluent Limitation (°F)
JAN	41	41	NA	120
FEB	34	35	NA	120
MAR	40	40	97	120
APR	48	48	69	114
MAY	54	54	77	102
JUN	62	62	103	106
JUL	69	69	102	99
AUG	71	71	110	102
SEP	70	70	NA	120
OCT	69	69	105	120
NOV	47	47	77	120
DEC	46	46	119	120

* NA denotes “not applicable” when the calculated weekly average limit is greater than or equal to 120 °F.

Reasonable Potential

Permit limits for temperature are recommended based on the procedures in s. NR 106.56, Wis. Adm. Code.

- An acute limit for temperature is recommended for each month in which the representative daily maximum effluent temperature for that month exceeds the acute WQBEL. The representative daily maximum effluent temperature is the greater of the following:
  (a) The highest recorded representative daily maximum effluent temperature
  (b) The projected 99th percentile of all representative daily maximum effluent temperatures
- A sub−lethal limitation for temperature is recommended for each month in which the representative weekly average effluent temperature for that month exceeds the weekly average WQBEL. The representative weekly average effluent temperature is the greater of the following:

(a) The highest weekly average effluent temperature for the month.
(b) The projected 99th percentile of all representative weekly average effluent temperatures for the month

Based on the available effluent data **no effluent limits or monitoring are recommended for temperature**. The complete thermal table used for the limit calculation is in attachment #4.

PART 7 – WHOLE EFFLUENT TOXICITY (WET)

WET testing is used to measure, predict, and control the discharge of toxic materials that may be harmful to aquatic life. In WET tests, organisms are exposed to a series of effluent concentrations for a given time and effects are recorded. Decisions below related to the selection of representative data and the need for WET limits were made according to ss. NR 106.08 and 106.09, Wis. Adm. Code. WET monitoring frequency and toxicity reduction evaluation (TRE) recommendations were made using the best professional judgment of staff familiar with the discharge after consideration of the guidance in the *Whole Effluent Toxicity (WET) Program Guidance Document* (2022).

- Acute tests predict the concentration that causes lethality of aquatic organisms during a 48 to 96-hour exposure. To assure that a discharge is not acutely toxic to organisms in the receiving water, WET tests must produce a statistically valid LC_{50} (Lethal Concentration to 50% of the test organisms) greater than 100% effluent, according to s. NR 106.09(2)(b), Wis. Adm Code.

- Chronic tests predict the concentration that interferes with the growth or reproduction of test organisms during a seven-day exposure. To ensure that a discharge is not chronically toxic to organisms in the receiving water, WET tests must produce a statistically valid IC_{25} (Inhibition Concentration) greater than the instream waste concentration (IWC), according to s. NR 106.09(3)(b), Wis. Adm Code. The IWC is an estimate of the proportion of effluent to total volume of water (receiving water + effluent). The **IWC of 26%** shown in the WET Checklist summary below, was calculated according to the following equation, as specified in s. NR 106.03(6), Wis. Adm Code:

$$IWC\ (as\ \%) = Q_e \div \{(1 - f)\ Q_e + Q_s\} \times 100$$

Where:

Q_e = annual average flow = 0.092 MGD = 0.142 cfs

f = fraction of the Q_e withdrawn from the receiving water = 0
Q_s = ¼ of the 7-Q_{10} = 1.6 cfs ÷ 4 = 0.4 cfs

- According to the *State of Wisconsin Aquatic Life Toxicity Testing Methods Manual* (s. NR 219.04, Table A, Wis. Adm. Code), a synthetic (standard) laboratory water may be used as the dilution water and primary control in acute WET tests, unless the use of different dilution water is approved by the Department prior to use. The primary control water must be specified in the WPDES permit.

- According to the *State of Wisconsin Aquatic Life Toxicity Testing Methods Manual* (s. NR 219.04, Table A, Wis. Adm. Code), receiving water must be used as the dilution water and primary control in chronic WET tests, unless the use of different dilution water is approved by the Department prior to use. The dilution water used in WET tests conducted on Outfall 001 shall be a grab sample collected from the receiving water location, upstream and out of the influence of the mixing zone and any other known

discharge. The specific receiving water location must be specified in the WPDES permit.

- Shown below is a tabulation of all available WET data for Outfall 001. Efforts are made to ensure that decisions about WET monitoring and limits are made based on representative data, as specified in s. NR 106.08(3), Wis. Adm Code. Data which is not believed to be representative of the discharge was not included in reasonable potential calculations. The table below differentiates between tests used and not used when making WET determinations.

WET Data History

Date Test Initiated	Acute Results LC_{50} %				Chronic Results IC_{25} %				Footnotes or Comments
	C. dubia	Fathead minnow	Pass or Fail?	Used in RP?	*C. dubia*	Fathead Minnow	Pass or Fail?	Use in RP?	
09/09/1996	-	-	Pass	No	-	-	-	-	1
03/15/2017	>100	>100	Pass	Yes	-	-	-	-	-
06/19/2018	-	-	-	-	79	>100	Pass	Yes	-
08/21/2019	>100	>100	Pass	Yes	-	-	-	-	-
11/10/2020	-	-	-	-	>100	>100	Pass	Yes	-
02/08/2022	-	-	-	-	25.4	>100	Fail	Yes	-
03/15/2022	-	-	-	-	74	>100	Pass	Yes	-
10/31/2022	-	-	-	-	49.5	>100	Pass	Yes	-
01/17/2023	-	-	-	-	>100	>100	Pass	Yes	2
06/13/2023	>100	>100	Pass	Yes	90	>100	Pass	Yes	-
08/20/2024	-	-	-	-	>100	>100	Pass	Yes	-
10/28/2025	>100	>100	Pass	Yes	>100	>100	Pass	Yes	-

Footnotes:

1. *Data Not Representative.* Significant changes were made to WET test methods in 2004 and these changes were assumed to be fully implemented by certified labs by no later than June 2005. It may be appropriate to exclude data collected before July 1, 2005, unless 1) it shows repeated toxicity that was never resolved or 2) older data is all that is available, and no significant changes have occurred which obviously make it unrepresentative. Ammonia limits were added to the permit in 2005 based on updated water quality criteria.
2. There is a typo in SWAMP, where the test date input was 07/17/2023 but should be 01/17/2023 as indicated in the WET test report form

- According to s. NR 106.08, Wis. Adm. Code, WET reasonable potential is determined by multiplying the highest toxicity value that has been measured in the effluent by a safety factor, to predict the likelihood (95% probability) of toxicity occurring in the effluent above the applicable WET limit. The safety factor used in the equation changes based on the number of toxicity detects in the dataset. The fewer detects present, the higher the safety factor, because there is more uncertainty surrounding the predicted value. **WET limits must be given, according to s. NR 106.08(6), Wis. Adm. Code, whenever the applicable Reasonable Potential equation results in a value greater than 1.0.**

  Acute Reasonable Potential = [(TUa effluent) (B)(AMZ)]

  According to s. NR 106.08(6)(d), Wis. Adm. Code, TUa and TUc effluent values are equal to zero whenever toxicity is not detected (i.e. when the LC_{50}, IC_{25} or $IC_{50} \geq 100\%$).

Acute Reasonable Potential = 0 < 1.0, reasonable potential is not shown, and a limit is not required.

Chronic Reasonable Potential = [(TU_c effluent) (B)(IWC)]

Chronic WET Limit Parameters

TUc (maximum) $100/IC_{25}$	**B** (multiplication factor from s. NR 106.08(6)(c), Wis. Adm. Code, Table 4)	IWC
100/25.4 = 3.9 TU_c	2.3 Based on 5 detects	26%

[(TUc effluent) (B)(IWC)] =(3.9)(2.3)(.26) =2.3 > 1.0

Therefore, reasonable potential is shown for chronic WET limits using the procedures in s. NR 106.08(6), Wis. Adm. Code, and representative data from September 1996 – August 2024.

Expression of WET limits

Chronic WET limit = [100/26] TU_c = 3.8 TU_c expressed as a monthly average

The WET checklist was developed to help DNR staff make recommendations regarding WET limits, monitoring, and other related permit conditions. The checklist indicates whether acute and chronic WET limits are needed, based on requirements specified in s. NR 106.08, Wis. Adm. Code. The checklist steps the user through a series of questions, assesses points based on the potential for effluent toxicity, and suggests monitoring frequencies based on points accumulated during the checklist analysis. As toxicity potential increases, more points accumulate, and more monitoring is recommended to ensure that toxicity is not occurring. A summary of the WET checklist analysis completed for this permittee is shown in the table below. Staff recommendations based on best professional judgment are provided below the summary table. For guidance related to reasonable potential and the WET checklist, see Chapter 1.3 of the WET Guidance Document: https://dnr.wisconsin.gov/topic/Wastewater/WET.html.

WET Checklist Summary

	Acute	**Chronic**
AMZ/IWC	Not Applicable. **0 Points**	IWC = 26 %. **0 Points**
Historical Data	3 tests used to calculate RP. No tests failed. **0 Points**	8 tests used to calculate RP. 1 test failed. **0 Points**
Effluent Variability	Little variability, no violations or upsets, consistent WWTF operations. **0 Points**	Same as Acute. **0 Points**
Receiving Water Classification	WWSF or < 4 mi to non-variance **5 Points**	Same as Acute. **5 Points**

Attachment #1

	Acute	Chronic
Chemical-Specific Data	Reasonable potential for limits for Residual Chlorine based on ATC; Ammonia nitrogen limit carried over from the current permit. Copper, Chloride and Zinc detected. **8 Points**	Reasonable potential for limits for Residual Chlorine based on CTC; Ammonia nitrogen limit carried over from the current permit. Copper, Chloride and Zinc detected. **8 Points**
Additives	1 Biocide and 2 Water Quality Conditioners added. Permittee has proper P chemical SOPs in place **5 Points**	All additives used more than once per 4 days. **5 Points**
Discharge Category	No Industrial Contributors. **0 Points**	Same as Acute. **0 Points**
Wastewater Treatment	Secondary or Better **0 Points**	Same as Acute. **0 Points**
Downstream Impacts	No impacts known **0 Points**	Same as Acute. **0 Points**
Total Checklist Points:	**18 Points**	**18 Points**
Recommended Monitoring Frequency (from Checklist):	2 tests during permit term	1x yearly in rotating quarters due to chronic WET limit from WET test failures
Limit Required?	No	Yes Limit = 3.8 TU_c
TRE Recommended? (from Checklist)	No	No

- After consideration of the guidance provided in the Department's *WET Program Guidance Document* (2022) and other information described above**, 2 acute WET tests during the permit term and annual chronic WET tests are recommended in the reissued permit.** Sampling WET concurrently with any chemical-specific toxic substances is recommended. Tests should be done in rotating quarters, to collect seasonal information about this discharge. Chronic testing should continue after the permit expiration date (until the permit is reissued).

- According to the requirements specified in s. NR 106.08, Wis. Adm. Code, a chronic WET limit is required. The chronic WET limit shall be expressed as 3.8 TUc [=100/26] as a monthly average in the effluent limits table of the permit.

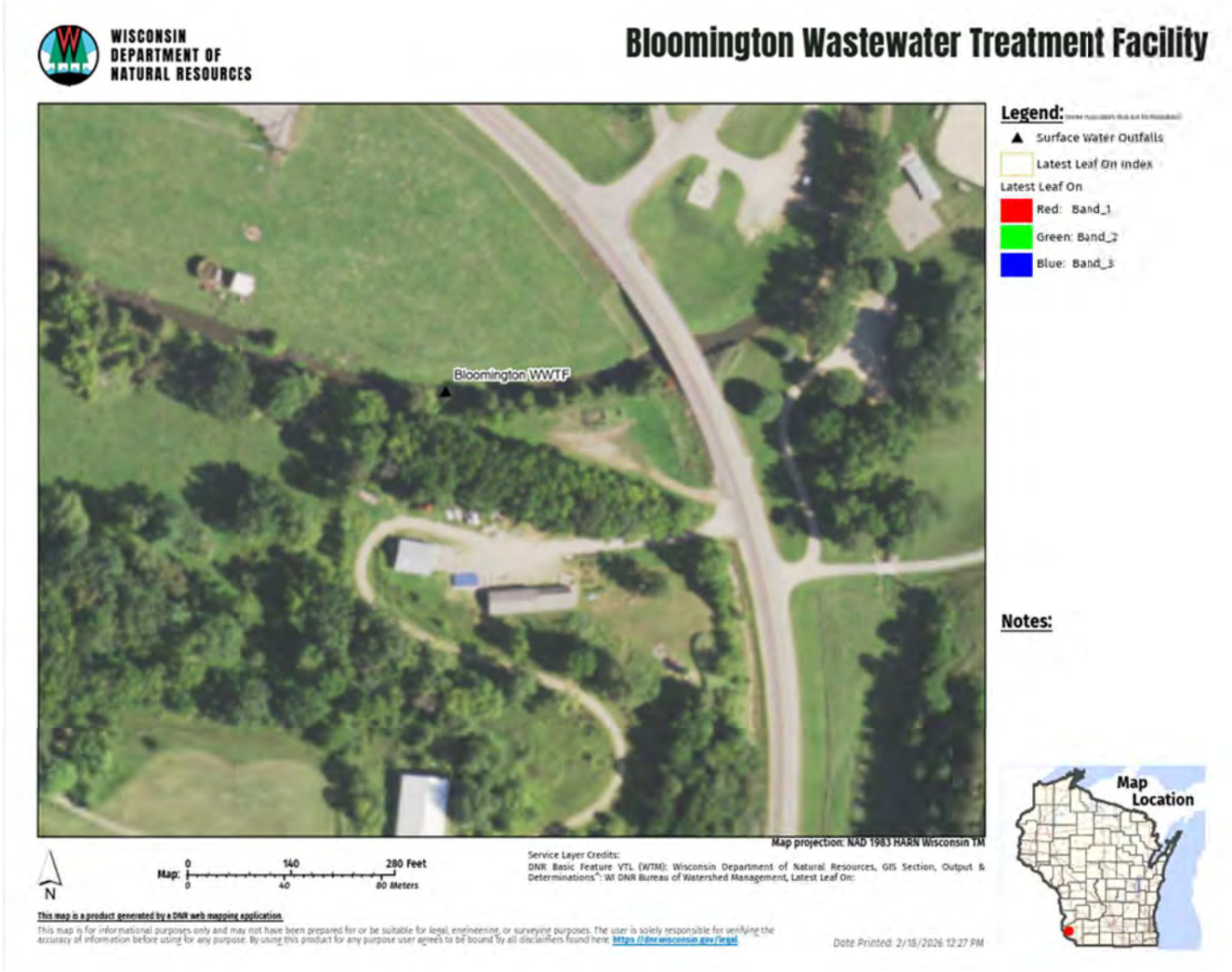
- A minimum of annual chronic monitoring is required because a chronic WET limit is required. Federal regulations in 40 CFR Part 122.44(i) require that monitoring occur at least once per year when a limit is present.

Attachment #1

Ammonia Nitrogen Calculations from WQBEL dated November 5, 2015

AMMONIA (as N) LIMITS				
CLASSIFICATION:		**WARMWATER SPORTFISH,**		
EFFLUENT FLOW (mgd):		0.092		
EFFLUENT FLOW (cfs):		0.142		
MAX. EFFLUENT pH (s.u.):		8.00		
BACKGROUND INFORMATION:		***Summer***	***Winter***	***April***
7Q10 (cfs)		1.6	1.6	1.6
7Q2 (cfs)		2.9	2.9	2.9
Ammonia (mg/L)		0.06	0.48	0.11
Temperature (deg C)		23	3	9
pH (std. units)		8.21	7.97	7.97
% of river flow used:		100	25	25
Reference weekly flow:		1.6	0.4	0.4
Reference monthly flow:		2.465	0.61625	0.61625
CRITERIA (in mg/L):				
4-day Chronic (@ backgrd. pH):				
early life stages present		2.55	6.35	6.35
early life stages absent		2.55	10.31	9.06
30-day Chronic (@ backgrd. pH)				
early life stages present		1.02	2.54	2.54
early life stages absent		1.02	4.12	3.63
EFFLUENT LIMITS (in mg/L):				
Weekly average				
early life stages present		30.58	22.85	23.89
early life stages absent			37.94	34.22
Monthly average				
early life stages present		17.67	11.46	13.06
early life stages absent			19.90	18.85

Site Map:


WISCONSIN DEPARTMENT OF NATURAL RESOURCES
Bloomington Wastewater Treatment Facility
Bloomington WWTF
Legend:
Surface Water Outfalls
Latest Leaf On Index
Latest Leaf On
Red: Band_1
Green: Band_2
Blue: Band_3
Notes:
Map Location
Map projection: NAD 1983 HARN Wisconsin TM
Map: 0 140 280 Feet
0 40 80 Meters
N
Service Layer Credits:
DNR Basic Feature VTL (WTM): Wisconsin Department of Natural Resources, GIS Section, Output & Determinations; WI DNR Bureau of Watershed Management, Latest Leaf On:
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Date Printed: 2/18/2026 12:27 PM

Thermal Table:

Temperature limits for receiving waters with unidirectional flow

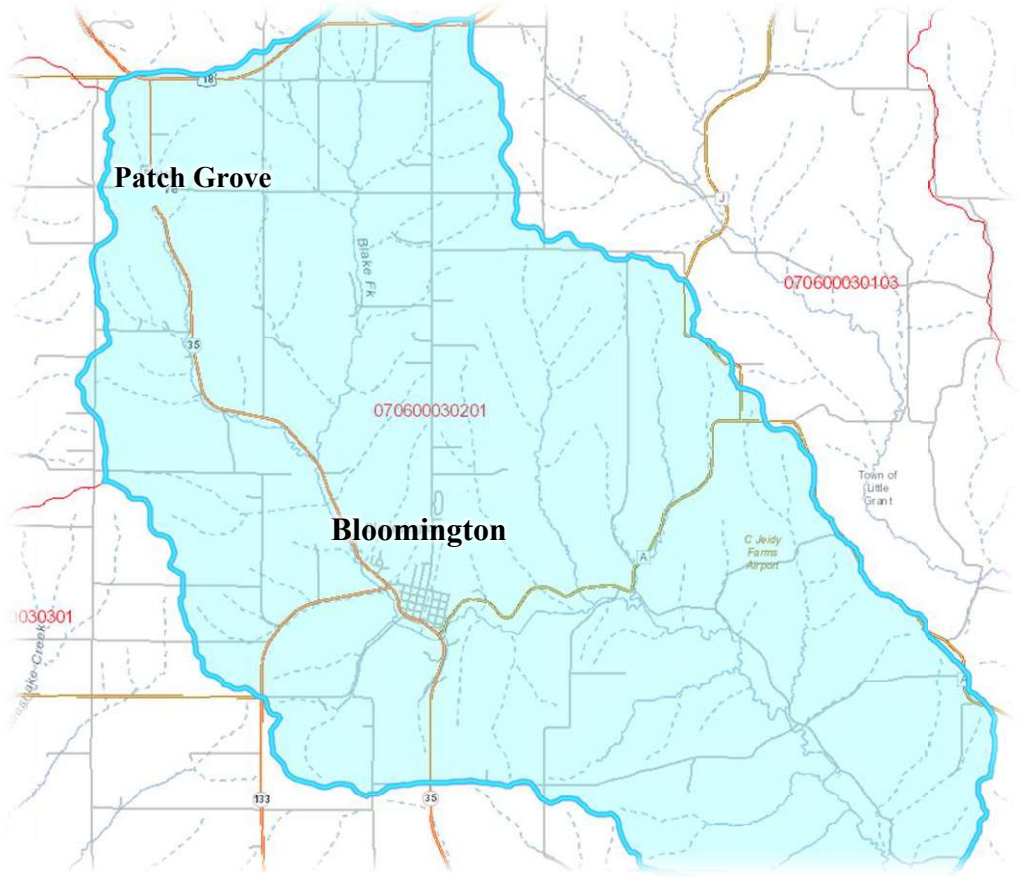
(calculation using default ambient temperature data)

						Temp Dates	Flow Dates
Facility:	Bloomington WWTF		**7-Q_{10}:**	1.60	cfs		
Outfall(s):	001		**Dilution:**	25%		**Start:**	01/00/00	12/01/20
Date Prepared:			**f:**	0		**End:**	01/00/00	12/31/25
Design Flow (Qe):	0.09	MGD	**Stream type:**	Small warm water sport or forage fish co			
Storm Sewer Dist.	0	ft	**Qs:Qe ratio:**	2.8	:1		
			Calculation Needed?	YES			

Month	Water Quality Criteria			Receiving Water Flow Rate (Qs)	Representative Highest Effluent Flow Rate (Qe)		f	Representative Highest Monthly Effluent Temperature		Calculated Effluent Limit		**Adjusted Thermal Limits**	
	Ta (default)	Sub-Lethal WQC	Acute WQC		7-day Rolling Average (Qesl)	Daily Maximum Flow Rate (Qea)		Weekly Average	Daily Maximum	Weekly Average Effluent Limitation	Daily Maximum Effluent Limitation	**Weekly Average**	**Daily Maximum**
	(°F)	(°F)	(°F)	(cfs)	(MGD)	(MGD)		(°F)	(°F)	(°F)	(°F)	(°F)	(°F)
JAN	33	49	76	1.60	0.056	0.087	0	41	41	NA	120		120.0
FEB	34	50	76	1.60	0.049	0.059	0	34	35	NA	120		120.0
MAR	38	52	77	1.60	0.080	0.130	0	40	40	97	120	97.0	120.0
APR	48	55	79	1.60	0.131	0.228	0	48	48	69	114	68.8	114.1
MAY	58	65	82	1.60	0.152	0.314	0	54	54	77	102	76.9	101.7
JUN	66	76	84	1.60	0.096	0.209	0	62	62	103	106	102.9	106.3
JUL	69	81	85	1.60	0.150	0.287	0	69	69	102	99	101.7	99.4
AUG	67	81	84	1.60	0.126	0.248	0	71	71	110	102	109.7	101.7
SEP	60	73	82	1.60	0.053	0.082	0	70	70	NA	120		120.0
OCT	50	61	80	1.60	0.065	0.106	0	69	69	105	120	104.7	120.0
NOV	40	49	77	1.60	0.082	0.148	0	47	47	77	120	77.2	120.0
DEC	35	49	76	1.60	0.052	0.111	0	46	46	119	120	118.8	120.0

WATER QUALITY TRADING PLAN

March 2, 2026



Village of Bloomington
Wastewater Treatment Facility

WPDES Permit No. WI-0023400-10-2
105 S.TH. '35'
Bloomington, Wisconsin 53804

Prepared by:

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DELTA 3
EVERY ANGLE COVERED

Project Number: D20-154

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2) Water Quality Trading Checklist
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5) Wastewater Treatment Facility Flow Schematic
6) HUC-12 Watershed Map
7) Water Quality Trading Agreements
8) Wetland Map
9) Soils Map and Testing Data
10) Current State of Eroding Streambanks Documentation
11) NRCS Streambank Erosion Estimator Report
12) Operation and Maintenance (O&M) Plan
13) WQT Plans and Specifications
14) Annual Water Quality Trading Reports 2023-2025

I. Executive Summary -

This Water Quality Trading Plan summarizes the Village of Bloomington's (Village) plan to utilize Water Quality Trading (WQT) for compliance with the final total phosphorus limit as provided in the Wisconsin Pollutant Discharge Elimination System (WPDES) Permit #WI 0023400-10-2. The Wastewater Treatment Facility (WWTF) treated an average of 0.048 MGD and had an average effluent Total Phosphorus (TP) concentration of 0.96 mg/L during this permit term. The WWTF is required to utilize WQT Credits to satisfy the final annual six-month average limit of 0.075 mg/L and a monthly average limit of 0.225 mg/L which became effective March 31, 2023.

NRCS Streambank Erosion modeling methods were used to calculate the total phosphorus credits that would be generated based on the installation of best management practices (BMPs). These credits will be used to demonstrate compliance with the final total phosphorus limit as proposed in the WPDES Permit. Modeling results are provided in Table 1.1.

Table 1.1 – Modeling Results

Reach	Lateral Recession Rate (ft/yr.)	Current Phosphorus Loading (lbs./yr.)	Proposed Phosphorus Loading (lbs./yr.)	Proposed Phosphorus Reductions (lbs./yr.)	Trade Ratio	Proposed Phosphorus Credits
1 (Right)	0.35	175	0	175	2:1	87
1 (Left)	0.35	26	0	26	2:1	13
2 (Right)	0.35	15	0	15	2:1	8
2 (Left)	0.35	22	0	22	2:1	11
3 (Right)	0.35	75	0	75	2.4:1	31
4 (Right)	0.50	48	0	48	2.4:1	20
					Total	**171**

NOTE:
Trade Ratio = (Delivery + Downstream + Equivalency + Uncertainty – Habitat Adjustment):1
Delivery = 0 (Trading within same HUC-12 Watershed)
Downstream = 0 (For trades upstream of Outfall 001)
Downstream = 0.4 (For trades downstream of Outfall 001)
Equivalency = 0 (Not necessary of Total Phosphorus)
Uncertainty: *Streambank Stabilization with Habitat Restoration* = 2

As demonstrated in Table 1.1, the WWTF had registered 171 credits. The implementation of this WQT Plan will provide WQT Credits to the WWTF for meeting final TP limits.

II. Background -

The purpose of this Water Quality Trading Plan (Plan) is to describe the Village's use of Water Quality Trading to comply with the total phosphorus limits as provided in the Village's WPDES Permit #WI-0023400-10-2. The Plan was developed following the Notice of Intent to Conduct Water Quality Trading, provided in Attachment #1, dated June 8, 2020. The Water Quality Trading Checklist Form 3400-208 is provided in Attachment #2.

The Village of Bloomington is located in Grant County along Wisconsin State Trunk Highways '35' and '133' in southwestern Wisconsin. The Village operates and maintains a Wastewater Treatment Facility (WWTF) which serves a population of approximately 735 residents.

The Village is comprised primarily of commercial and residential development and is situated along the Blake Fork. The area contains rolling hills with the grade typically sloping between 5% and 15%. Elevations in the area range from approximately 884' ± at the WWTF to 1,064'± at the water tower, which is located in the northern portion of Bloomington along Mill Street. The topography of the area is shown in Attachment #3.

The existing sanitary sewer collection consists of approximately 99 sanitary manholes; two (2) grinder pumps; 1,960 feet of six-inch (6") sanitary sewer; 22,720 feet of eight-inch (8") sanitary sewer; and 3,330 feet of 10" sanitary sewer. The gravity sanitary sewer main varies in composition between concrete, clay, and PVC. The manholes vary in composition between brick, block, and precast structures. Please refer to Attachment #4 – Sanitary Sewer Map for location of sanitary sewer collection system components.

The Village of Bloomington owns and operates a WWTF that utilizes an extended-aeration activated sludge system. Wastewater enters the WWTF by first passing through a comminutor. Wastewater then proceeds to the extended-aeration activated sludge tank. Activated sludge is settled out in the final clarifier. Effluent is chlorinated/dechlorinated seasonally prior to discharge to the Blake Fork. Activated sludge is either returned to the head of the process for further treatment or wasted to aerobic sludge holding tanks, where it is digested and stored prior to land application on DNR-approved sites. Alum is used at the treatment facility for the removal of Phosphorus. The current WWTF treats 0.048 MGD on an annual average with a design flow of 0.092 MGD. Please see Attachment #5 for the WWTF Flow Schematic. The Village of Bloomington's WWTF has one (1) receiving water and effluent discharge location, Outfall 001: Blake Fork (Middle Grant River Watershed, GP05 – Grant-Platte River Basin).

The monthly average influent and effluent flows and loadings at the WWTF for 2023 through 2025 are provided in Tables 2.1 through 2.3 respectively. An annual summary of average Phosphorus data is provided in Table 2.4.

Table 2.1 – 2023 Monthly Average Phosphorus Data

Month	Outfall	Effluent Avg. Flow (MGD)	Effluent Avg. TP Concentration (mg/L)	Effluent Avg. TP Mass (lbs/day)	WQT Credits Used
Jan. ('23)	001	0.031	2.16	0.60	-
Feb. ('23)	001	0.040	2.13	0.75	-
Mar. ('23)	001	0.040	1.02	0.37	-
Apr. ('23)	001	0.048	0.93	10.50	9.7
May ('23)	001	0.071	2.21	1.22	36.74
Jun. ('23)	001	0.047	3.73	1.42	43
Jul. ('23)	001	0.046	3.79	1.41	44.88
Aug. ('23)	001	0.043	1.23	0.43	12.72
Sept. ('23)	001	0.045	0.55	0.22	5.43
Oct. ('23)	001	0.046	0.37	0.12	3.44
Nov. ('23)	001	0.040	0.71	0.25	6.4
Dec. ('23)	001	0.039	0.58	0.24	5.17
	Average:	**0.045**	**1.62**	**1.46**	**18.61**

Table 2.2 – 2024 Monthly Average Phosphorus Data

Month	Outfall	Effluent Avg. Flow (MGD)	Effluent Avg. TP Concentration (mg/L)	Effluent Avg. TP Mass (lbs/day)	WQT Credits Used
Jan. ('24)	001	0.041	1.41	0.50	14.29
Feb. ('24)	001	0.042	0.47	0.15	4.04
Mar. ('24)	001	0.041	0.40	0.13	3.50
Apr. ('24)	001	0.051	0.47	0.21	5.03
May ('24)	001	0.080	0.66	0.61	17.01
Jun. ('24)	001	0.064	0.51	0.23	6.93
Jul. ('24)	001	0.075	0.93	0.65	18.16
Aug. ('24)	001	0.039	0.74	0.22	6.69
Sept. ('24)	001	0.038	0.72	0.22	6.21
Oct. ('24)	001	0.044	0.65	0.20	6.58
Nov. ('24)	001	0.077	0.95	0.76	21.06
Dec. ('24)	001	0.040	0.30	0.13	2.34
Total:		**0.053**	**0.68**	**0.33**	**9.32**

Table 2.3 – 2025 Monthly Average Phosphorus Data

Month	Outfall	Effluent Avg. Flow (MGD)	Effluent Avg. TP Concentration (mg/L)	Effluent Avg. TP Mass (lbs/day)	WQT Credits Used
Jan. ('25)	001	0.039	0.46	0.15	3.81
Feb. ('25)	001	0.036	0.47	0.13	3.32
Mar. ('25)	001	0.048	0.76	0.30	8.58
Apr. ('25)	001	0.067	0.61	0.26	8.93
May ('25)	001	0.046	0.42	0.18	4.15
Jun. ('25)	001	0.043	0.54	0.18	4.97
Jul. ('25)	001	0.062	0.63	0.27	8.85
Aug. ('25)	001	0.066	0.67	0.44	11.83
Sept. ('25)	001	0.039	0.66	0.22	5.63
Oct. ('25)	001	0.035	0.85	0.25	7.08
Nov. ('25)	001	0.035	0.63	0.16	4.86
Dec. ('25)	001	0.036	0.40	0.12	3.05
Total:		**0.046**	**0.59**	**0.22**	**6.26**

Table 2.4 – 2023-2025 Annual Average Phosphorus Data

Year	Effluent Avg. Flow (MGD)	Effluent Avg. TP Concentration (mg/L)	Effluent Avg. TP Mass (lbs./day)	Total WQT Credits Used
2023	0.045	1.62	1.46	167.48
2024	0.053	0.68	0.33	111.84
2025	0.046	0.59	0.22	75.06

To reduce effluent TP, the Village has made efforts to optimize TP reduction at the WWTF. The Village has also implemented source reduction measures such as investigating potential TP contributors. None of the businesses investigated were determined to be substantial contributors for TP. Furthermore, the Village has implemented chemical addition and evaluated Alum dosage rates to identify the optimal dosage. The Village had determined that Alum alone will not satisfy final Effluent TP Limits.

Additionally, the Village has investigated watershed compliance alternatives such as Water Quality Trading (WQT) and Adaptive Management (AM). Utilizing the results from PRESTO, the watershed of the WWTF has a nonpoint source ratio of 2:98 and is considered to be nonpoint-source dominated. Stream monitoring in 2013 confirmed that the Blake Fork was an impaired water due to TP. The background TP concentration is monitored from Station #223220 Blake Fork Creek in Grant County. As calculated in the Water Quality Based Effluent Limit (WQBEL) on November 5, 2015, the rolling median TP concentration was 0.155 mg/L. The median average was more than double the applicable Water Quality Standard (WQS) of 0.075 mg/L. In 2015, the Blake Fork was determined to have a degraded biological

community. Following discussion with the County and initial investigation, the Village elected to move forward with WQT. The Village intends to perform WQT projects within the Village's Hydrological Unit Code – 12 (HUC-12) watershed #070600030201 as provided in Attachment #6.

Flow and loading data from 2023 through 2025 was utilized to project if the Village will have sufficient WQT Credits for the next permit term.

1) The current annual Phosphorus loading discharged at the WWTF is calculated as follows:

Seasonal Average (2023-2025) Daily Flow (Q) = 0.048 MGD
Average Phosphorus concentration (2023-2025) = 0.96 mg/L

0.048 MGD x 0.96 mg/L x 8.34 x 365 days/yr. = 140 lbs./yr.

2) The allowable annual Phosphorus mass limit at the WWTF is calculated as follows:

Seasonal Average (2023-2025) Daily Flow (Q) = 0.048 MGD
Seasonal Phosphorus Concentration Limit = 0.075 mg/L

0.048 MGD x 0.075 mg/L x 8.34 x 365 days/yr. = 11 lbs./yr.

3) Reduction of Total Phosphorus required at WWTF:

140 lbs./yr. – 11 lbs./yr. = 129 lbs./yr.

The current required reduction of Total Phosphorus is approximately 129 lbs/yr which is 75% of the available 171 WQT Credits. Given the downward trend of effluent TP concentrations, the Village will have adequate WQT Credits to offset discharges for the next permit term.

III. Location and Description of Credit Generation Sites –

The Village discharges to the Blake Fork (Middle Grant River Watershed, GP05 – Grant-Platte River Basin) at Outfall 001. As mentioned previously, the Village intends to perform WQT projects within the Village's HUC-12 #070600030201. The Village plans to perform streambank stabilization which will utilize grading and/or riprap to prevent the erosion of sediment from the streambanks. Projects will occur on public and private property. Streambank stabilization will not only prevent sediment from entering the stream, but will also prevent phosphorus, nitrogen, and other pollutants from discharging to the Blake Fork. See Figures 3.1, 3.2, and 3.3 for additional project location information.

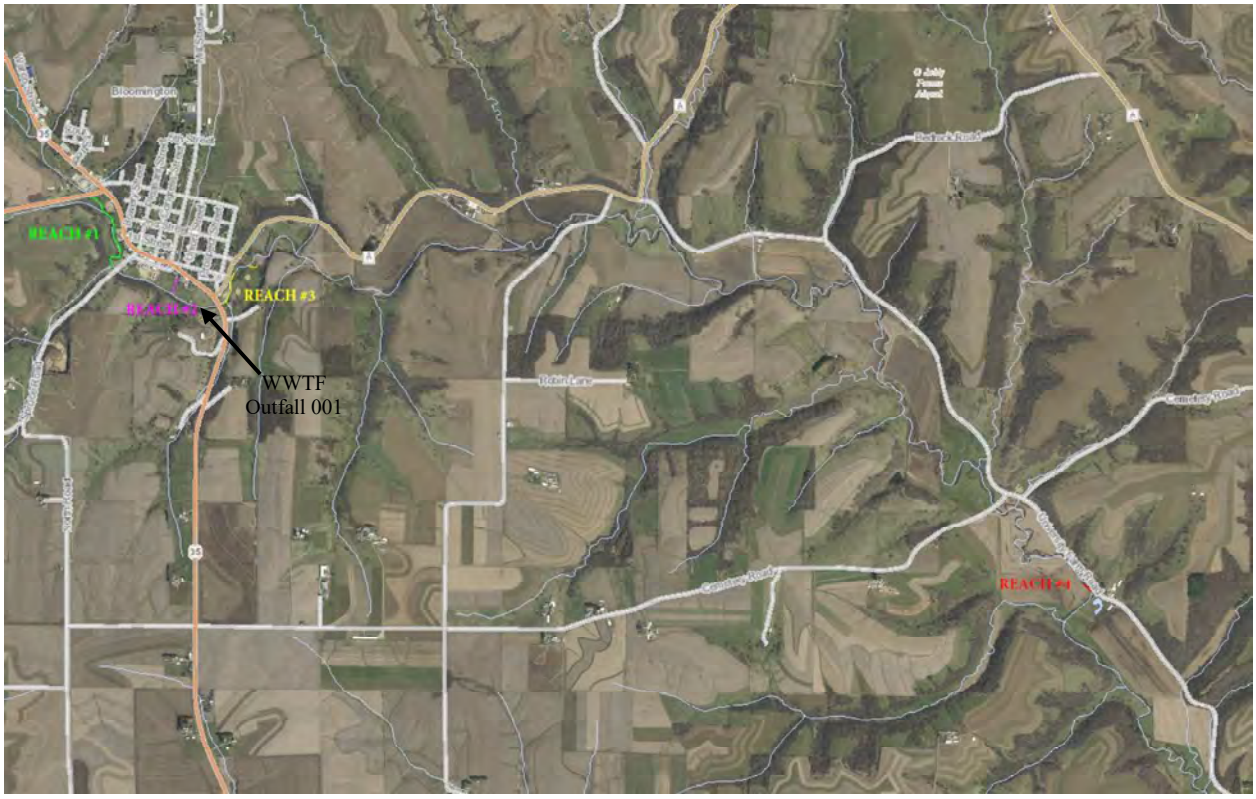


Figure 3.1 – Stream Reach locations in relation to Outfall 001



Figure 3.2 – Stream Reach #1, Reach #2, and Reach #3 locations



Figure 3.3 – Stream Reach #4 location

IV. Methods for Nonpoint Source Load Reduction –

The Plan identifies trading practices that have reduced TP runoff by more than 362 lbs. and will utilize a 2:1 trade ratio for upstream trades and a 2.4:1 trade ratio for downstream trades. Downstream trade ratios were determined by Table 4.1 as provided by the Wisconsin DNR.

Table 4.1 – Downstream Trading Factor

Percent Difference Between Credit User's Load and Total Load at the Point of the Credit User's Point of Standards Application	Downstream Trading Factor
<25%	0.1
<50%	0.2
<75%	0.4
≥75%	0.8

Percent Difference = (1- (Qe x Ce) / (Qe x Ce + Qs x Cs)) x 100 = 69%
69% < 75%
Downstream Trading Factor = 0.4

Qs = Receiving water flow (7Q2) = 2.9 cfs
Qe = Design Flow = 0.092 MGD = 0.14 cfs
Cs = Background concentration of TP = 0.155 mg/L
Ce = Effluent concentration of TP = 1.44 mg/L

A. Methods Used to Generate Load Reductions

For streambank stabilization, the Village is generating TP load reductions through streambank grading and/or riprapping of approximately 5,029 lineal feet of streambank.

Streambank Stabilization was performed as per NR 328 *Shore Erosion Control Structures in Navigable Waterways,* NRCS 580 *Streambank and Shoreline Protection*, and NRCS 395 *Stream Habitat Improvement and Management*. Streambank shaping and riprapping shall eliminate the discharge of sediment to the stream. The streambank stabilization project occurred within HUC-12 #070600030201 in order to generate TP credits. Standard Plans and Specifications for the Project Sites have been provided by a Professional Engineer. The Village acquired all permits and authorizations for the Projects.

To register credits, the Village has entered into trade agreements with Property Owners pursuant to *s. 283.84(1)(b), Wis. Stats*. The WQT Agreements are provided in Attachment #7.

B. History of Project Site

The Project Sites are located within the Middle Grant River Watershed along the Blake Fork and Unnamed Tributary WBIC 5037817. No mapped wetlands were impacted by the WQT Project as indicated in Attachment #8 – Wetland Maps.

Reach 1 is located on private property along Blake Fork. Land use consists of a mix of agricultural hay fields and urban development. The vegetative cover is primarily hay with scattered woodlots.

Reach 2 is located on private property along Unnamed Tributary WBIC 5037817. Land use consists of undeveloped land that has been occasionally used for livestock pasture. The vegetative cover is primarily grass with a few trees scattered along the streambank.

Reach 3 is located on public property along Blake Fork. Land use consists of urban development and Village Park. The vegetative cover is primarily manicured lawn with a few trees scattered along the streambank.

Reach 4 is located on private property along Blake Fork. Land use consists of agricultural row crops. The vegetative cover is corn/beans with no trees.

The streambanks had experienced significant erosion as the Blake Fork has been developed and cleared for agricultural and urban use. The banks were bare with slumps, rills and sever vegetative overhang throughout. Severe erosion indicators such as undercuts, slumps, tree roots, and fallen trees were readily visible throughout the sites. The erosion indicators demonstrate the lateral recession rate was Severe (0.3-0.5 ft/yr) based on the NRCS Recession Rate Table. Recession rates for each Reach were evaluated on a case-by-case basis.

C. Model Used to Derive Load Reductions

NRCS Streambank Erosion modeling methods were used to calculate the total phosphorus credits that would be generated based on the installation of BMPs. These credits are used to demonstrate compliance with the final total phosphorus limit as proposed in the WPDES Permit. Modeling results are provided in Table 4.2.

Table 4.2 – Modeling Results

Reach	Lateral Recession Rate (ft/yr.)	Current Phosphorus Loading (lbs./yr.)	Proposed Phosphorus Loading (lbs./yr.)	Proposed Phosphorus Reductions (lbs./yr.)	Trade Ratio	Proposed Phosphorus Credits
1 (Right)	0.35	175	0	175	2:1	87
1 (Left)	0.35	26	0	26	2:1	13
2 (Right)	0.35	15	0	15	2:1	8
2 (Left)	0.35	22	0	22	2:1	11
3 (Right)	0.35	75	0	75	2.4:1	31
4 (Right)	0.50	48	0	48	2.4:1	20
					Total	**171**

NOTE:

Trade Ratio = (Delivery + Downstream + Equivalency + Uncertainty – Habitat Adjustment):1

Delivery = 0 (Trading within same HUC-12 Watershed)
Downstream = 0 (For trades upstream of Outfall 001)
Downstream = 0.4 (For trades downstream of Outfall 001)
Equivalency = 0 (Not necessary of Total Phosphorus)
Uncertainty: *Streambank Stabilization with Habitat Restoration* = 2

Soil testing has been completed to determine TP concentrations within the soil. Soil sampling was performed every 100 feet and included the use of a soil sampler which pulled ¾" cores at 8" depth. Approximately six (6) cores were taken at each sampling location to provide a representative sample. Soils maps and soil testing data is provided in Attachment #9. An onsite evaluation has been conducted to estimate stream bank recession rate. The data, narrative, and photos documenting the current state of eroding stream banks are provided in Attachment #10.

With the collected data, the NRCS Streambank Erosion Estimator was used to calculate TP loss from each reach of the eroding streambank. The modeling data for the NRCS Streambank Erosion Estimator is available in Attachment #11. The streambank grading and riprap design will eliminate streambank recession thus eliminating TP inputs within the Project areas. The Village has implemented in-stream habitat improvements into the WQT Plan, the Village has worked with Bradd Sims (DNR Fisheries Biologist) to incorporate habitat improvements into the Project Plans.

Blake Fork and Unnamed Tributary WBIC 5037817 has experienced agricultural and urban development within the watershed and has issues caused by sedimentation which was included in Wisconsin DNR evaluation for *Platte River Region*. The watershed has also experienced reduction of large woody debris along the streambanks due to agricultural development which reduces available habitat and bank roughness. Streambank improvements will reduce sediment which was identified as the #1 reason for habitat degradation in the Blake Fork. The Project has implement in-stream habitat structures such as cross channel logs, single logs, and bed logs. These structures are intended to increase available cover for juvenile and adult fish. These structures have influenced stream hydrology by creating pools and riffles which are stream formations

essential to macroinvertebrates, fish, and other aquatic life. The quantity and location of habitat structures is provided in Table 4.3 below.

Table 4.3 – Habitat Structures

Reach	Single Bank Log	Bed Log	Cross Channel Log
1	4	2	-
2	-	-	1
3	1	2	-
4	-	-	-
Total	**5**	**4**	**1**

D. Operation and Maintenance

An Operation and Maintenance (O&M) Plan is provided in Attachment #12. The O&M plan describes how the Stream Stabilization Practices are operated and maintained. The O&M Plan also addresses response procedures for Practice Registration, Noncompliance Notification, and Notification of Trade Agreement Termination.

BMP Installation and Maintenance Standards:

- NR 328 *Shore Erosion Control Structures in Navigible Waterways*
- NRCS 580 *Streambank and Shoreline Protection*
- NRCS 395 *Stream Habitat Improvement and Management*

As previously mentioned, the Village is planning to perform streambank stabilization by implementing BMPs along the Blake Fork streambank. The stabilization practices will be installed and maintained per the Plans and Specifications as provided in Attachment #13. BMPs are to follow NR 328 *Shore Erosion Control Structures in Navigable Waterways* and NRCS 580 *Streambank and Shoreline Protection.*

Restoration landscaping and seeding were installed following construction of these Projects and have been closely monitored for two (2) growing seasons and will continue to be monitored to ensure the new seeding grows and erosion is not prevalent. The Village is also addressing weed and invasive vegetation growth when present as needed. The BMPs have and will continue to be inspected following heavy rain events at a minimum. Inspection will be used to determine appropriate actions in order to maintain the BMPs for continuous and ongoing streambank stabilization and TP credit generation.

The BMPs have and will continue to be inspected annually by a licensed Professional Engineer to ensure that the BMPs are functioning as intended in order to meet the requirements of this WQT Plan. Please see Attachment #14 – Annual WQT Reports for BMP inspections.

V. Trade Timeline –

Schedule for Installation of the above mentioned trading practices for Total Phosphorus Credit Generation for TP compliance is provided in Table 5.1 below.

Table 5.1 – Trade Timeline

Item	Completion Timeline
Site Investigation	Summer 2020
Conceptual Design	Fall 2020
Final Design	Summer 2021
Construction Permits	Fall 2021
DNR Review of Final Design	Fall 2021
Construction of BMPs	Fall 2021 – Fall 2022
Phosphorus Credit Registration	Fall 2022
Use of Phosphorus Credits by Village of Bloomington (Ongoing for Permit Compliance)	March 31, 2023

Credits have been used by the Village beginning March 31, 2023. Credits will continue as long as the trading practices are maintained as outlined in this WQT Plan.

VI. Inspection Reporting –

A. Tracking Procedures

The Village will continue to track credits used monthly and continue to report credit usage to the DNR on a monthly basis in the Discharge Monitoring Reports (DMRs). The annual report will summarize the 12 months of credit usage and credit generation. The Village will report to DNR any concern that they have that may result in a need to modify the trade agreement and/or this trade plan. For example, a need to generate additional credits based on discharge.

B. Inspection

Inspection of the BMPs have occurred during construction to ensure they were installed per the design and meet all applicable codes and permits. Inspections of the established BMPs shall occur each month at a minimum or following heavy rain events. A licensed professional engineer will perform an annual certification to ensure the practice is performing as designed and the Village remains in compliance.

The inspection reports will include:

i. Name and contact information of the inspector
ii. Inspection Date
iii. Relevant standards set forth in the Design Plan or Operation and Maintenance Plan
iv. Issues identified
v. When and how any issues identified were addressed
vi. When and how any issues identified will be addressed in the future
vii. Inspection photos of the BMPs (annually at a minimum)
viii. Vegetative and Structural Conditions

Inspection reports generated during each routine or after rain event inspection will be included with the Annual Water Quality Trading Report submitted by the Village to DNR. Annual inspections by a professional engineer will typically occur in April or May. This time of year is ideal for evaluating the condition of BMPs as it follows the freeze/thaw which poses the greatest potential for changes to the BMPs. Minimal vegetation cover will allow for adequate visual inspection.

C. Management Practice Registration Form

The Village had filed a completed registration form 3400-207 for Water Quality Trading Management Practice Registration separately from this Plan.

D. Annual Water Quality Trading Report Submittal

The following shall be submitted to the DNR by January 31 of each year:

i. The number of pollutant reduction credits (lbs./month) used each month of the previous year to demonstrate compliance;
ii. A summary of the annual inspection of the practice that generated any of the pollutant reduction credits used during the previous year, this

inspection shall be completed by a licensed Professional Engineer;

iii. All monthly inspection reports;
iv. Identification of noncompliance or failure to implement any terms or conditions of this permit with respect to water quality trading that have not been reported in discharge monitoring reports;
v. A list of all noncompliance and the correction measures and timing to address the issues throughout the year; and
vi. An updated WQT plan if management practices have or will change.

E. Monthly Certification of Management Practices

Each month, the Village will certify that the BMPs are maintained and operating in a manner consistent with this Water Quality Trading Plan or provide a statement noting noncompliance with this Plan. The monthly Discharge Monitoring Report (DMR) will include the following statement as a certification of compliance when the Credit Generating Practice is operating in a manner consistent with the Plan:

> "I certify that to the best of my knowledge that the management practices identified in the approved water quality trading plan as the source of phosphorus credits is installed, established and properly maintained."

F. Notification of Failure to Generate Credits

The Village will notify DNR by telephone call to DNR's regional wastewater compliance engineer within 24 hours or next business day of becoming aware that phosphorus credits used or intended for use by Village are not being generated as outlined in this Water Quality Trading Plan.

The Village will submit a written notification within five days after the Village recognizes that the phosphorus credits are not being generated as outlined in the Trading Plan. DNR may waive the requirement for submittal for a written notice within five days and instruct the Village to submit the written notice with the next regularly scheduled monitoring report required by Village's WPDES Permit.

The written notice will contain a description of how and why the TP credits are not being generated as outlined in the Water Quality Trading Plan, the steps taken or planned to prevent reoccurrence of the identified problems and the length of time anticipated it will take to address the issue.

The Village will work to rectify the problem as laid out in the Operation and Maintenance Plans.

G. Conditions under which Management Practices May Be Inspected

Any DNR authorized officer, employee, or representative has the right to access and inspect the credit generating practice so long as the Village's trade agreement with the property owner(s) and this Water Quality Trading Plan remain in effect.

VII. Certification –

The undersigned hereby certifies that this Water Quality Trading Plan is accurate and correct to the best of his knowledge.

Village of Bloomington Wastewater Treatment Facility

By: _____

Bob McLimans
Village President
Village of Bloomington
453 Canal Street
P.O. Box 156
Bloomington, WI 53804
Telephone: (608) 994-3851
Email: president.bloomingtonvillage@gmail.com

Attachment #1

State of Wisconsin
Department of Natural Resources
101 South Webster Street
Madison WI 53707-7921
dnr.wi.gov

Notice of Intent to Conduct Water Quality Trading

Form 3400-206 (1/14)

Notice: Pursuant to s. 283.84, Wis. Stats., and ch. NR 217 Wis. Adm. Code, this form must be completed by any WPDES permittee that is using water quality trading as a method of complying with a permit limitation. Failure to complete this form would not result in penalties. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records Law (ss. 19.31 - 19.39, Wis. Stats.).

Applicant Information

Permittee Name	Permit Number	Facility Site Number
Village of Bloomington	WI- 0023400	

Facility Address	City	State	ZIP Code
105 STH 35	Bloomington	WI	53804

Project Contact Name (if applicable)	Address	City	State	ZIP Code
Jordan Fure (Delta 3 Eng.)	875 South Chestnut Street	Platteville	WI	53818

Project Name
Proposed 2022 Stream Improvements - Blake Fork

Receiving Water Name	Parameter(s) being traded	HUC 12(s)
Blake Fork	Total Phosphorus	070600030201

Is the permittee in a point or nonpoint source dominated watershed? (See PRESTO results - http://dnr.wi.gov/topic/surfacewater/presto.html)
- ○ Point source dominated
- ◉ Nonpoint source dominated

Credit Generator Information

Credit generator type (select all that apply):
- ☐ Permitted Discharge (non-MS4/CAFO)
- ☐ Permitted MS4
- ☐ Permitted CAFO
- ☒ Urban nonpoint source discharge
- ☒ Agricultural nonpoint source discharge
- ☐ Other - Specify: _____

Are any of the credit generators in a different HUC 12 than the applicant?
- ○ Yes; HUC 12: _____
- ◉ No
- ○ Unsure

Are any of the credit generators downstream of the applicant?
- ○ Yes
- ◉ No
- ○ Unsure

Will a broker/exchange be used to facilitate trade?
- ○ Yes; Name: _____
- ◉ No
- ○ Unsure

Point to Point Trades (Traditional Municipal / Industrial Discharge, MS4, CAFO)

Discharge Type	Permit Number	Name	Contact Address	Is the point source credit generator currently in compliance with their permit requirements?
○ Traditional ○ MS4 ○ CAFO				○ Yes ○ No ○ Unsure
○ Traditional ○ MS4 ○ CAFO				○ Yes ○ No ○ Unsure
○ Traditional ○ MS4 ○ CAFO				○ Yes ○ No ○ Unsure
○ Traditional ○ MS4 ○ CAFO				○ Yes ○ No ○ Unsure
○ Traditional ○ MS4 ○ CAFO				○ Yes ○ No ○ Unsure

Point to Nonpoint Trades (Non-permitted Agricultural, Non-Permitted Urban, etc.)

List the practices that will be used to generate credits:

Streambank Stabilization

Method for quantifying credits generated:
- ☐ Monitoring
- ☒ Modeling, Names: NRCS Streambank Erosion Estimator
- ☐ Other: _____

Projected date credits will be available: 10/15/2022

The preparer certifies all of the following:

- I am familiar with the specifications submitted for this application, and I believe all applicable items in this checklist have been addressed.
- I have completed this document to the best of my knowledge and have not excluded pertinent information.

Signature of Preparer	Date Signed
Jordan Turner	6/5/2020

Authorized Representative Signature

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision. Based on my inquiry of those persons directly responsible for gathering and entering the information, the information is, to the best of my knowledge and belief, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Authorized Representative	Date Signed
Richard Wallace	6-8-2020

Attachment #2

State of Wisconsin
Department of Natural Resources
101 South Webster Street
Madison WI 53707-7921
dnr.wi.gov

Water Quality Trading Checklist

Form 3400-208 (1/14)

Notice: Pursuant to s. 283.84, Wis. Stats., this form must be completed by any WPDES permittee that intends to pursue pollutant trading as a method of complying with a permit limitation. Failure to complete this form would not result in penalties. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records Law (ss. 19.31 - 19.39, Wis. Stats.).

Applicant Information

Permittee Name	Permit Number	Facility Site Number
Village of Bloomington	WI- 0023400-09-0	

Facility Address	City	State	ZIP Code
105 State Trunk Highway '35'	Bloomington	WI	53804

Project Contact Name (if applicable)	Address	City	State	ZIP Code
Jordan Fure (Delta 3 Eng.)	875 South Chestnut Street	Platteville	WI	53818

Project Name
Bloomington WWTF WPDES Permit Compliance

Receiving Water Name	Parameter(s) being traded	HUC 12(s)
Blake Fork	Total Phosphorus	070600030201

Credit Generator Information

Credit generator type (select all that apply):
- ☐ Permitted Discharge (non-MS4CAFO)
- ☐ Permitted MS4
- ☐ Permitted CAFO
- ☐ Urban nonpoint source discharge
- ☒ Agricultural nonpoint source discharge
- ☐ Other - Specify: _____

Are any of the credit generators in a different HUC 12 than the applicant?
- ○ Yes; HUC 12: _____
- ◉ No

Are any of the credit generators downstream of the applicant?
- ◉ Yes
- ○ No

Will a broker/exchange be used to facilitate trade?
- ○ Yes *(include description and contact information in WQT plan)*
- ◉ No

Point to Point Trades (Traditional Municipal / Industrial, MS4, CAFO)

Are each of the point source credit generators identified in this section in compliance with their WDPES permit requirements?
- ○ Yes
- ○ No

Discharge Type	Permit Number	Name	Contact Information	Trade Agreement Number
○ Traditional ○ MS4 ○ CAFO				
○ Traditional ○ MS4 ○ CAFO				
○ Traditional ○ MS4 ○ CAFO				
○ Traditional ○ MS4 ○ CAFO				
○ Traditional ○ MS4 ○ CAFO				

Point to Point Trades (Traditional Municipal / Industrial, MS4, CAFO) *cont.*

Does plan have a narrative that describes:			Plan Section
a. Summary of discharge and existing treatment including optimization	○ Yes	○ No	
b. Amount of credit being generated	○ Yes	○ No	
c. Timeline for credits and agreements	○ Yes	○ No	
d. Method for quantifying credits	○ Yes	○ No	
e. Tracking and verification procedures	○ Yes	○ No	
f. Location of credit generator in proximity to receiving water and credit user	○ Yes	○ No	
g. Other: _____	○ Yes	○ No	

Point to Nonpoint Trades (Non-Permitted Urban, Agricultural, Other)

Discharge Type	Practices Used to Generate Credits	Method of Quantification	Trade Agreement Number	Have the practice(s) been formally registered?
○ Urban NPS ◉ Agricultural NPS ○ Other	Streambank Stabilization	NRCS Streambank Erosion Estimator		○ Yes ◉ No ○ Only in part
○ Urban NPS ○ Agricultural NPS ○ Other				○ Yes ○ No ○ Only in part
○ Urban NPS ○ Agricultural NPS ○ Other				○ Yes ○ No ○ Only in part
○ Urban NPS ○ Agricultural NPS ○ Other				○ Yes ○ No ○ Only in part
○ Urban NPS ○ Agricultural NPS ○ Other				○ Yes ○ No ○ Only in part
○ Urban NPS ○ Agricultural NPS ○ Other				○ Yes ○ No ○ Only in part
○ Urban NPS ○ Agricultural NPS ○ Other				○ Yes ○ No ○ Only in part
○ Urban NPS ○ Agricultural NPS ○ Other				○ Yes ○ No ○ Only in part

Does plan have a narrative that describes:			Plan Section
a. Description of existing land uses	◉ Yes	○ No	Section IV
b. Management practices used to generate credits	◉ Yes	○ No	Section IV
c. Amount of credit being generated	◉ Yes	○ No	Section IV
d. Description of applicable trade ratio per agreement/management practice	◉ Yes	○ No	Section IV
e. Location where credits will be generated	◉ Yes	○ No	Section III
f. Timeline for credits and agreements	◉ Yes	○ No	Section V
g. Method for quantifying credits	◉ Yes	○ No	Section IV

Does plan have a narrative that describes:			Plan Section
h. Tracking procedures	(●) Yes	( ) No	Section IV
i. Conditions under which the management practices may be inspected	(●) Yes	( ) No	Section VI
j. Reporting requirements should the management practice fail	(●) Yes	( ) No	Section VI
k. Operation and maintenance plan for each management practice	(●) Yes	( ) No	Section IV
l. Location of credit generator in proximity to receiving water and credit user	(●) Yes	( ) No	Section III
m. Practice registration documents, if available	( ) Yes	(●) No	
n. History of project site(s)	(●) Yes	( ) No	Section IV
o. Other: _____	( ) Yes	( ) No	

The preparer certifies all of the following:

- I am familiar with the specifications submitted for this application, and I believe all applicable items in this checklist have been addressed.
- I have completed this document to the best of my knowledge and have not excluded pertinent information.
- I certify that the information in this document is true to the best of my knowledge.

Signature of Preparer	Date Signed
Jordan Frame	1/6/2021

Authorized Representative Signature

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision. Based on my inquiry of those persons directly responsible for gathering and entering the information, the information is, to the best of my knowledge and belief, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Authorized Representative	Date Signed
Richard Wetherington	1-7-2021

Attachment #3

Location Map



Legend

- Municipality
- State Boundaries
- County Boundaries
- Major Roads
  - Interstate Highway
  - State Highway
  - US Highway
- County and Local Roads
  - County HWY
  - Local Road
- Railroads
- Tribal Lands
- Rivers and Streams
- Intermittent Streams
- Lakes and Open water
- Index to EN_Image_Basemap_Leaf_Off

Notes

Exhibit #1

0.5 0 0.25 0.5 Miles

NAD_1983_HARN_Wisconsin_TM

1: 15,840

DISCLAIMER: The information shown on these maps has been obtained from various sources, and are of varying age, reliability and resolution. These maps are not intended to be used for navigation, nor are these maps an authoritative source of information about legal land ownership or public access. No warranty, expressed or implied, is made regarding accuracy, applicability for a particular use, completeness, or legality of the information depicted on this map. For more information, see the DNR Legal Notices web page: http://dnr.wi.gov/legal/

Attachment #4

Village of Bloomington –

Sanitary Sewer System Map



Legend

- Existing Lateral
- Existing 6" Sanitary Sewer
- Existing 8" Sanitary Sewer
- Existing 10" Sanitary Sewer
- Existing Flow Direction
- 2008 Corporate Limits
- Mh 31 — Existing Sanitary Manhole

SCALE: 1"=300'

0 300' 600' 1200'

Exhibit #2

Drawn by: C.Coyier
Date: Sept. 22, 2015

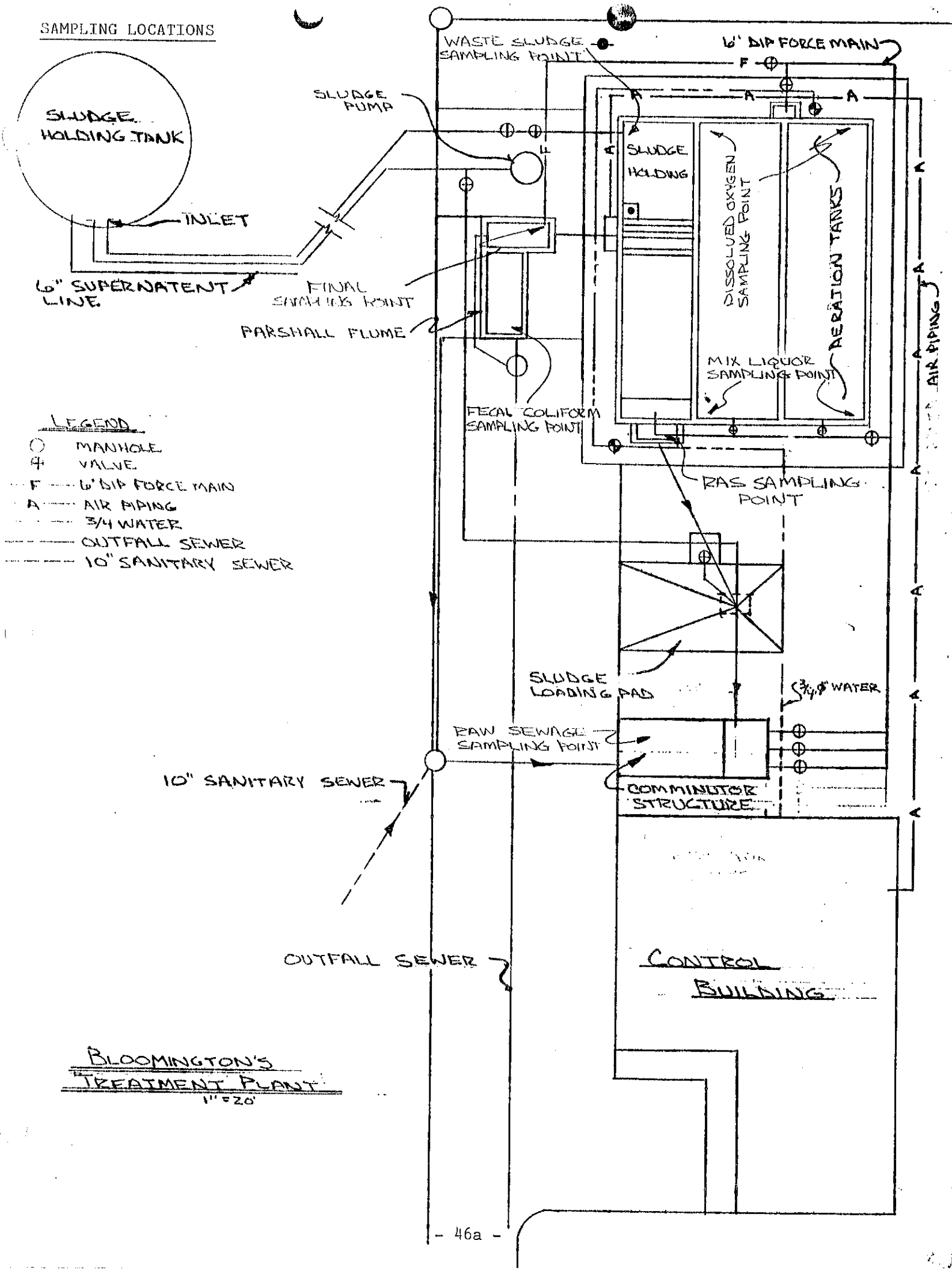
Revised by: M.Huebel
Date: Jan. 2, 2019

DELTA 3 ENGINEERING INC
PROFESSIONAL CIVIL-MUNICIPAL & STRUCTURAL ENGINEERING • ARCHITECTURE
GRANT WRITING • LAND DEVELOPMENT • PLANNING & CADD SERVICES
875 SOUTH CHESTNUT STREET
PLATTEVILLE, WISCONSIN 53818
PHONE: (608) 348-5353
FAX: (608) 348-5455

G:\Projects\Bloomington\CAD\Maps\Utilities_Sanitary.dwg

Attachment #5

SAMPLING LOCATIONS



LEGEND

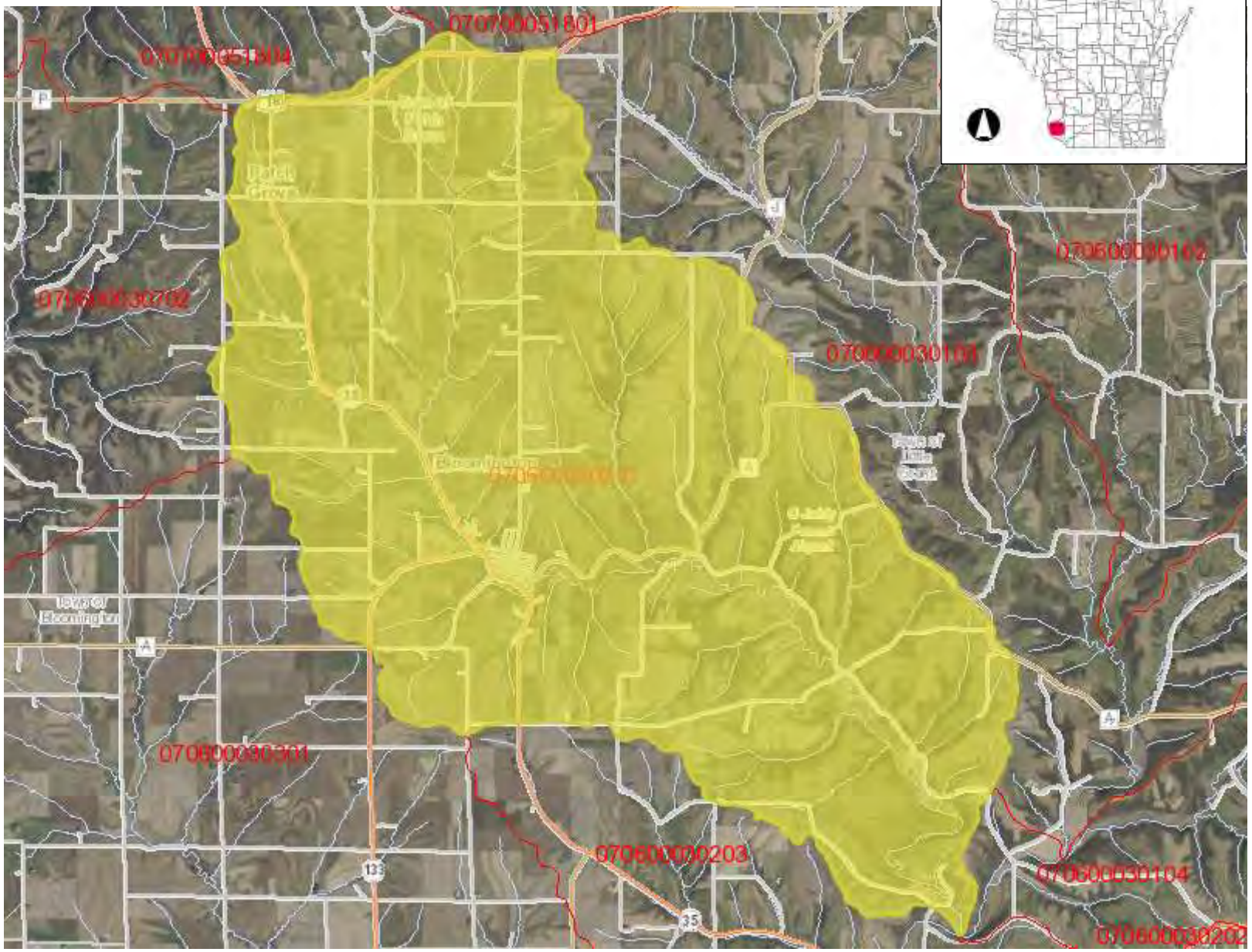
- ○ MANHOLE
- 4 VALVE
- F —— 6" DIP FORCE MAIN
- A —— AIR PIPING
- ——— 3/4 WATER
- ——— OUTFALL SEWER
- ——— 10" SANITARY SEWER

BLOOMINGTON'S TREATMENT PLANT

1" = 20'

Attachment #6

HUC-12 Watershed Map



Legend

- 12-digit HUCs (Subwatersheds)
- Municipality
- State Boundaries
- County Boundaries
- Major Roads
  - Interstate Highway
  - State Highway
  - US Highway
- County and Local Roads
  - County HWY
  - Local Road
- Railroads
- Tribal Lands
- Rivers and Streams
- Intermittent Streams
- Lakes and Open water
- Index to EN_Image_Basemap_Leaf_Off

Notes

3.0 0 1.50 3.0 Miles

NAD_1983_HARN_Wisconsin_TM

1: 95,040

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Attachment #7

828856
April 6 2022
Andrea Noethe
Register of Deeds
GRANT COUNTY WI
11:30 AM
Fee Pd:30.00
TransFee:0.00
Exempt:
Pgs:5

828856

Document Number

TRADE AGREEMENT FOR POINT TO NONPOINT SOURCE TRADES

Document Title

Recording Area

Name and Return Address

DELTA 3 ENGINEERING INC
875 S CHESTNUT ST
PLATTEVILLE WI 53818

Parcel Identification Number (PIN)

THIS PAGE IS PART OF THIS LEGAL DOCUMENT – DO NOT REMOVE.

This information must be completed by submitter: document title, name & return address, and PIN (if required). Other information such as the granting clause, legal description, etc., may be placed on this first page of the document or may be placed on additional pages of the document.
WRDA Rev. 12/22/2010

328856

Trade Agreement for Point to Nonpoint Source Trades

Permittee Information

Credit User Name (Permittee)	Permit Number
Village of Bloomington	WI-0023400-10-0

Credit User Address

453 Canal Street, Bloomington, WI 53804

Permittee/Broker/Exchange Name (if applicable)	Trade Agreement Number
	1

Permittee/Broker/Exchange Address (if applicable)

Street Address	Village	State	ZIP Code

Project Name

Proposed 2022 Stream Improvements – Blake Fork

Name of Credit Generator (Landowner/Operator) (Last, First, M.I.)

Kirschbaum, Alan
Kirschbaum, Ann

Street Address	Village	State	ZIP Code
10261 Spruce Road	Bloomington	WI	53804

Property Information

Name of Landowner(s) (if not Operator) (Last, First, M.I.)

Street Address	Village	State	ZIP Code

Legal Description of Property - Contiguous sites under the same ownership: (add additional sheets if necessary)

Alan J. and Ann Kirschbaum - Tracts: Parcel s# 107-0384-000 and 004-0218-0000

Parcel ID(s):

Site Locator for Construction Projects

County	Township	Range E / W	Section	Quarter/Quarter (e.g., NW ¼ of the NE ¼)
Grant	5 N	5W	26	SW 1/4 – NE 1/4
	N			
	N			
	N			

Agreement

The property described above is enrolled in a Water Quality Trade Agreement. Funds are provided to the landowner/ operator in return for the installation, operation and maintenance of best management practices (BMPs) designed to enhance water quality. This agreement commits the landowner/operator, their heirs, successors and assigns to fulfill the trade agreement until a satisfaction or release is filed by the grantee.

Appendices which describe the BMPs, costs, installation schedule, and conditions are hereby incorporated into this agreement and are on file with the grantee and may be given to Wisconsin DNR upon request by the Department.

Section A – General Requirements

1) Trade Agreement 1 (TA1) includes the following:
   a. Appendix 1: Village of Bloomington Water Quality Trading Plan
   b. Appendix 2: Proposed 2022 Stream Improvements – Blake Fork Plans and Specifications
   c. Appendix 3: Stream Improvements Construction Easements
2) This agreement may be amended by mutual agreement of either party, so long as the agreement has not yet expired.
3) Appendices which describe the BMPs, costs, installation schedule, and conditions are hereby incorporated into this agreement and are on file with the grantee and may be given to Wisconsin Department of Natural Resources (DNR) upon request by the DNR.
4) If the Landowner/Operator wishes to sell or lease all or portions of the properties described in the Appendices, TA1 will be binding to the new Landowner/Operator.
5) If a significant archeological or historical site is found, construction is to cease immediately and the BMP will be relocated, redesigned, or deleted to prevent damage to the archeological or historical site. The BMP may be deleted only if approved in writing by the DNR.
6) Standard inspections, maintenance, and repairs shall be performed by the Village of Bloomington or Authorized Representative of the Village of Bloomington. Standard inspections shall be performed on a monthly basis and following any event with potential to cause damage to the Project. Maintenance and repairs will be performed as needed according to inspection findings and recommendations.
7) This agreement will commence on the date of execution. The agreement will remain in place as long as Water Quality Trading Credits are still available for meeting Wisconsin Pollutant Discharge Elimination System (WPDES) Permit for the Wastewater Treatment Facility at the Village of Bloomington. If the trading credits are no longer applicable, TA1 will become null and void.

Section B – Landowner/Operator Shall:

1) Grant all Trading Credits generated by the Project to the Village of Bloomington.
2) Allow the Grantee, or Authorized Representative of the Grantee, access to the site for installation, operation, and maintenance.
   a. The DNR will be considered an Authorized Representative of the Grantee and will be allowed access to the Project site as required for Best Management Practice (BMP) installation inspection and Trading Credit validation.
   b. The Grantee or Authorized Representative shall be granted access to the described Permanent and Temporary Stream Improvements' Construction Easements as necessary for completing inspection, maintenance, and repairs.
3) Not be held liable for damages to life, limb, or property due to the installation, operation, and maintenance of the Project.
4) Not damage, disturb, prohibit, or otherwise interfere with the installation, operation, and maintenance of the Project.
5) Be allowed to perform maintenance to vegetation growing in and along the BMP at the expense of the Landowner/Operator.

Section C – Grantee Shall:

1) Obtain permits required for the installation, operation, and maintenance of the Project.
2) Meet all DNR requirements associated with the Project at the expense of the Village.
3) Design, install, operate, and maintain BMPs defined in Appendix 1 and Appendix 2 of this agreement at expense of the Village.
4) Not remove any rocks, trees, soils, or other properties, unless so agreed.
5) Repair access roads, fields, fences, landscaping, and any other areas disturbed by the installation, operation, and maintenance activities for the Project.
6) Coordinate construction activities with Landowner/Operator.
7) Perform maintenance to the BMPs as necessary to maintain Water Quality Trading Credits.

TA Number	Typed Name of Landowner/Operator	Initials of Landowner/Operator	Date
1	Alan Kirschbaum	A.K	2/2/22
TA Number	Typed Name of Landowner/Operator	Initials of Landowner/Operator	Date
1	Ann Kirschbaum	A.K	2/2/22

ACKNOWLEDGMENT

STATE OF WISCONSIN}ss GRANT COUNTY }

Personally came before me this 2 day of FEB, 2022, the above named ALAN KIRSCHBAUM and ANN KIRSCHBAUM to me known to be the persons who executed the foregoing instrument and acknowledge the same.

Sue Kaufman
* SUE KAUFMAN
Notary Public
Grant County, Wisconsin
My Commission expires : 2-27-22

SUE KAUFMAN NOTARY PUBLIC STATE OF WISCONSIN

STREAMBANK STABILIZATION EASEMENT

For good and valuable consideration, the receipt of which is acknowledged, Alan J. Kirschbaum and Ann Kirschbaum, husband and wife, ("Grantor") grants and conveys to the Village of Bloomington, Wisconsin, a municipal corporation ("Grantee"), a permanent non-exclusive Streambank Stabilization Easement on the Blake Fork, legally described in Addendum A and depicted on Exhibit A ("Easement Property").

1. Grantor hereby grants and conveys to Grantee a permanent non-exclusive Streambank Stabilization Easement to allow Grantee the installation and construction of improvements on the Blake Fork river bank and rip-rap located along Blake Fork, together with the right to enter upon the Easement Property as may be necessary for such purposes.

2. Grantee shall be responsible for the construction of the streambank stabilization project and all costs related to such construction shall be the responsibility of the Grantee. Grantor shall grant temporary access to Grantee over and upon its property for construction of the streambank stabilization project. Such temporary access shall expire upon completion of the construction activities.

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4. No building shall be permitted on or within the Easement Property, and no other use shall be made of the Easement Property that unreasonably interferes with the exercise of the Grantee's rights, however Grantor reserves the right to utilize the Easement Property for any purpose that will not materially interfere with the rights granted herein by Grantor to Grantee, including, without limitation, the use of the Easement Property for agricultural purposes, driveway, landscaped area, sign location, etc.

5. Following any entry upon the Easement Property by the Grantee or its contractors for the purposes set forth in Paragraph 1 above, Grantee agrees to promptly restore the surface to the condition existing immediately prior to such entry by the Grantee or its agents.

6. Grantor warrants that it has good title to the Easement Property and full right and authority to grant the foregoing easement.

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(Signature pages follow)

Dated this 2nd day of February, 2022.

GRANTOR:

Alan J. Kirschbaum

Ann Kirschbaum

GRANTEE:
VILLAGE OF BLOOMINGTON

Robert McLimans, President

Mary Culligan, Clerk/Treasurer

ACKNOWLEDGMENT

STATE OF WISCONSIN)
)ss.
Grant COUNTY)

Personally came before me on 2-2-2022
The above-named **Alan J. Kirschbaum, Ann Kirschbaum** to me known to be the person(s) who executed the foregoing instrument and acknowledged the same.

Sue Kaufman
* SUE KAUFMAN
Notary Public, State of Wisconsin
My commission is (permanent)
(expires: 2-27-22)

ACKNOWLEDGMENT

STATE OF WISCONSIN)
)ss.
Grant COUNTY)

Personally came before me on 2-3-22.
The above-named **Robert McLimans, Mary Culligan** to me known to be the person(s) who executed the foregoing instrument and acknowledged the same.

Sue Kaufman
* SUE KAUFMAN
Notary Public, State of Wisconsin
My commission is (permanent)
(expires: 2-27-22)

SUE KAUFMAN NOTARY PUBLIC STATE OF WISCONSIN

SUE KAUFMAN NOTARY PUBLIC STATE OF WISCONSIN

This instrument drafted by:
Attorney Benjamin R. Wood, Wood Law Firm, 1180 Jackson Street, Fennimore, WI 53809.

828856
April 6 2022
Andrea Noethe
Register of Deeds
GRANT COUNTY WI
11:30 AM
Fee Pd:30.00
TransFee:0.00
Exempt:
Pgs:5

828856

Document Number

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Name and Return Address

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1	Alan Kirschbaum	A.K	2/2/22
TA Number	Typed Name of Landowner/Operator	Initials of Landowner/Operator	Date
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ACKNOWLEDGMENT

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Sue Kaufman
* SUE KAUFMAN
Notary Public
Grant County, Wisconsin
My Commission expires : 2-27-22

SUE KAUFMAN NOTARY PUBLIC STATE OF WISCONSIN

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(Signature pages follow)

Dated this 2nd day of February, 2022.

GRANTOR:

Alan J. Kirschbaum

Ann Kirschbaum

GRANTEE:
VILLAGE OF BLOOMINGTON

Robert McLimans, President

Mary Culligan, Clerk/Treasurer

ACKNOWLEDGMENT

STATE OF WISCONSIN)
)ss.
Grant COUNTY)

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The above-named **Alan J. Kirschbaum, Ann Kirschbaum** to me known to be the person(s) who executed the foregoing instrument and acknowledged the same.

Sue Kaufman
* SUE KAUFMAN
Notary Public, State of Wisconsin
My commission is (permanent)
(expires: 2-27-22)

ACKNOWLEDGMENT

STATE OF WISCONSIN)
)ss.
Grant COUNTY)

Personally came before me on 2-3-22.
The above-named **Robert McLimans, Mary Culligan** to me known to be the person(s) who executed the foregoing instrument and acknowledged the same.

Sue Kaufman
* SUE KAUFMAN
Notary Public, State of Wisconsin
My commission is (permanent)
(expires: 2-27-22)

SUE KAUFMAN NOTARY PUBLIC STATE OF WISCONSIN

SUE KAUFMAN NOTARY PUBLIC STATE OF WISCONSIN

This instrument drafted by:
Attorney Benjamin R. Wood, Wood Law Firm, 1180 Jackson Street, Fennimore, WI 53809.

828854

TRADE AGREEMENT FOR POINT TO NONPOINT SOURCE TRADES

Document Number

Document Title

828854
April 6 2022
Andrea Noethe
Register of Deeds
GRANT COUNTY WI
11:30 AM
Fee Pd:30.00
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Exempt:
Pgs:5

Recording Area

Name and Return Address

DELTA 3 ENGINEERING INC
875 S CHESTNUT ST
PLATTEVILLE WI 53818

Parcel Identification Number (PIN)

THIS PAGE IS PART OF THIS LEGAL DOCUMENT – DO NOT REMOVE.

This information must be completed by submitter: document title, name & return address, and PIN (if required). Other information such as the granting clause, legal description, etc., may be placed on this first page of the document or may be placed on additional pages of the document.
WRDA Rev. 12/22/2010

Trade Agreement for Point to Nonpoint Source Trades

Permittee Information

Credit User Name (Permittee)	Permit Number
Village of Bloomington	WI-0023400-10-0

Credit User Address

453 Canal Street, Bloomington, WI 53804

Permittee/Broker/Exchange Name (if applicable)	Trade Agreement Number
	3

Permittee/Broker/Exchange Address (if applicable)

Street Address	Village	State	ZIP Code

Project Name

Proposed 2022 Stream Improvements – Blake Fork

Name of Credit Generator (Landowner/Operator) (Last, First, M.I.)

Mumm, Larry
Mumm, Elaine

Street Address	Village	State	ZIP Code
9862 University Farm Road	Bloomington	WI	53804

Property Information

Name of Landowner(s) (if not Operator) (Last, First, M.I.)

Street Address	Village	State	ZIP Code

Legal Description of Property - Contiguous sites under the same ownership: (add additional sheets if necessary)

Larry & Elaine Mumm - Tract: Parcel # 032-00643-0000

Parcel ID(s):

Site Locator for Construction Projects

County	Township	Range E / W	Section	Quarter/Quarter (e.g., NW ¼ of the NE ¼)
Grant	5 N	4W	33	NW 1/4 – SE 1/4
	N			
	N			
	N			

Agreement

The property described above is enrolled in a Water Quality Trade Agreement. Funds are provided to the landowner/ operator in return for the installation, operation and maintenance of best management practices (BMPs) designed to enhance water quality. This agreement commits the landowner/operator, their heirs, successors and assigns to fulfill the trade agreement until a satisfaction or release is filed by the grantee.

Appendices which describe the BMPs, costs, installation schedule, and conditions are hereby incorporated into this agreement and are on file with the grantee and may be given to Wisconsin DNR upon request by the Department.

Section A – General Requirements

1) Trade Agreement 3 (TA3) includes the following:
   a. Appendix 1: Village of Bloomington Water Quality Trading Plan
   b. Appendix 2: Proposed 2022 Stream Improvements – Blake Fork Plans and Specifications
   c. Appendix 3: Stream Improvements Construction Easements
2) This agreement may be amended by mutual agreement of either party, so long as the agreement has not yet expired.
3) Appendices which describe the BMPs, costs, installation schedule, and conditions are hereby incorporated into this agreement and are on file with the grantee and may be given to Wisconsin Department of Natural Resources (DNR) upon request by the DNR.
4) If the Landowner/Operator wishes to sell or lease all or portions of the properties described in the Appendices, TA3 will be binding to the new Landowner/Operator.
5) If a significant archeological or historical site is found, construction is to cease immediately and the BMP will be relocated, redesigned, or deleted to prevent damage to the archeological or historical site. The BMP may be deleted only if approved in writing by the DNR.
6) Standard inspections, maintenance, and repairs shall be performed by the Village of Bloomington or Authorized Representative of the Village of Bloomington. Standard inspections shall be performed on a monthly basis and following any event with potential to cause damage to the Project. Maintenance and repairs will be performed as needed according to inspection findings and recommendations.
7) This agreement will commence on the date of execution. The agreement will remain in place as long as Water Quality Trading Credits are still available for meeting Wisconsin Pollutant Discharge Elimination System (WPDES) Permit for the Wastewater Treatment Facility at the Village of Bloomington. If the trading credits are no longer applicable, TA3 will become null and void.

Section B – Landowner/Operator Shall:

1) Grant all Trading Credits generated by the Project to the Village of Bloomington.
2) Allow the Grantee, or Authorized Representative of the Grantee, access to the site for installation, operation, and maintenance.
   a. The DNR will be considered an Authorized Representative of the Grantee and will be allowed access to the Project site as required for Best Management Practice (BMP) installation inspection and Trading Credit validation.
   b. The Grantee or Authorized Representative shall be granted access to the described Permanent and Temporary Stream Improvements' Construction Easements as necessary for completing inspection, maintenance, and repairs.
3) Not be held liable for damages to life, limb, or property due to the installation, operation, and maintenance of the Project.
4) Not damage, disturb, prohibit, or otherwise interfere with the installation, operation, and maintenance of the Project.
5) Be allowed to perform maintenance to vegetation growing in and along the BMP at the expense of the Landowner/Operator.

Section C – Grantee Shall:

1) Obtain permits required for the installation, operation, and maintenance of the Project.
2) Meet all DNR requirements associated with the Project at the expense of the Village.
3) Design, install, operate, and maintain BMPs defined in Appendix 1 and Appendix 2 of this agreement at expense of the Village.
4) Not remove any rocks, trees, soils, or other properties, unless so agreed.
5) Repair access roads, fields, fences, landscaping, and any other areas disturbed by the installation, operation, and maintenance activities for the Project.
6) Coordinate construction activities with Landowner/Operator.
7) Perform maintenance to the BMPs as necessary to maintain Water Quality Trading Credits.

TA Number	Typed Name of Landowner/Operator	Initials of Landowner/Operator	Date
3	Larry Mumm	LM	2/2/22
TA Number	Typed Name of Landowner/Operator	Initials of Landowner/Operator	Date
3	Elaine Mumm	EM	2/2/22

ACKNOWLEDGMENT

STATE OF WISCONSIN}ss GRANT COUNTY }

Personally came before me this 2 day of FEB, 2022, the above named LARRY MUMM and ELAINE MUMM to me known to be the persons who executed the foregoing instrument and acknowledge the same.

SUE KAUFMAN NOTARY PUBLIC STATE OF WISCONSIN

Sue Kaufman
* SUE KAUFMAN
Notary Public
Grant County, Wisconsin
My Commission expires : 2-27-22

STREAMBANK STABILIZATION ACCESS AND PROPERTY EASEMENT

For good and valuable consideration, the receipt of which is acknowledged, Larry Mumm and Elaine Mumm, husband and wife, ("Grantor") grants and conveys to the Village of Bloomington, Wisconsin, a municipal corporation ("Grantee"), a permanent non-exclusive Access and Streambank Stabilization Easement on the Blake Fork, legally described in Addendum A and depicted on Exhibit A ("Easement Property").

1. Grantor hereby grants and conveys to Grantee a permanent non-exclusive Access and Streambank Stabilization Easement to allow Grantee the installation and construction of improvements on the Blake Fork river bank and rip-rap located along Blake Fork, together with the right to enter upon the Easement Property as may be necessary for such purposes.

2. Grantee shall be responsible for the construction of the streambank stabilization project and all costs related to such construction shall be the responsibility of the Grantee. Grantor shall grant temporary access to Grantee over and upon its property for construction of the streambank stabilization project. Such temporary access shall expire upon completion of the construction activities.

3. The property described is enrolled in a Water Quality Trade Agreement. This agreement commits the landowner/operator, their heirs, successors and assigns to fulfill the trade agreement until a satisfaction or release is filed by the Grantee.

4. No building shall be permitted on or within the Easement Property, and no other use shall be made of the Easement Property that unreasonably interferes with the exercise of the Grantee's rights, however Grantor reserves the right to utilize the Easement Property for any purpose that will not materially interfere with the rights granted herein by Grantor to Grantee, including, without limitation, the use of the Easement Property for agricultural purposes, driveway, landscaped area, sign location, etc.

5. Following any entry upon the Easement Property by the Grantee or its contractors for the purposes set forth in Paragraph 1 above, Grantee agrees to promptly restore the surface to the condition existing immediately prior to such entry by the Grantee or its agents.

6. Grantor warrants that it has good title to the Easement Property and full right and authority to grant the foregoing easement.

7. This Streambank Stabilization Access and Easement shall run with the land and be binding on, and inure to the benefit of, the assigns and successors in interest of Grantor and Grantee.

(Signature pages follow)

Dated this 2 day of February, 2022.

GRANTOR:

Larry Mumm

Larry Mumm

Elaine C Mumm

Elaine Mumm

GRANTEE:
VILLAGE OF BLOOMINGTON

Robert McLimans, President

Mary A Culligan

Mary Culligan, Clerk/Treasurer

ACKNOWLEDGMENT

STATE OF WISCONSIN)
)ss.
Grant COUNTY)

Personally came before me on 2.2.2022.
The above-named **Larry Mumm, Elaine Mumm** to me known to be the person(s) who executed the foregoing instrument and acknowledged the same.

Sue Kaufman

* SUE KAUFMAN

Notary Public, State of Wisconsin
My commission is (permanent)
(expires: 2.27.22)

SUE KAUFMAN NOTARY PUBLIC STATE OF WISCONSIN

ACKNOWLEDGMENT

STATE OF WISCONSIN)
)ss.
Grant COUNTY)

Personally came before me on 2-3-22.
The above-named **Robert McLimans, Mary Culligan** to me known to be the person(s) who executed the foregoing instrument and acknowledged the same.

Sue Kaufman

* SUE KAUFMAN

Notary Public, State of Wisconsin
My commission is (permanent)
(expires: 2-27-22)

SUE KAUFMAN NOTARY PUBLIC STATE OF WISCONSIN

This instrument drafted by:
Attorney Benjamin R. Wood, Wood Law Firm, 1180 Jackson Street, Fennimore, WI 53809.

Water Quality Trade Agreement between
Village of Bloomington and Wisconsin Department of Natural Resources

This Water Quality Trade Agreement (this "Agreement") is made by and between Village of Bloomington ("Village") and the Wisconsin Department of Natural Resources ("the Department") and together "the Parties".

1. Recitals

a. Water quality trading is an alternative compliance option for Wisconsin Permit Discharge Elimination System ("WPDES") Permit holders and is authorized by Wis. Stat. § 283.84.

b. Wis. Stat. § 283.84(l)(e) provides that, "the [the Department] may authorize a person required to obtain a permit to increase the discharge of pollutants above levels that would otherwise be authorized in the permit if the person . . . reaches a binding, written agreement with [the Department] under which the person constructs a project or implements a plan that results in reducing the amount of water pollution from sources other than the source covered by the permit."

c. The Department has issued guidance regarding water quality trading, including:

1) Guidance for Implementing Wisconsin's Phosphorus Water Quality Standards for Point Source Discharges, No. 3400-2020-12, (Edition 3, June 1, 2020);

2) Guidance for Implementing Water Quality Trading in WPDES Permits, No. 3200-3400-3800-2020-03 (June 1, 2020).

d. The Village submitted a Permit application for issuance of a WPDES Permit on January 22, 2026. The Permit is for a wastewater discharge from its facility located in Bloomington, Wisconsin.

e. The WPDES Permit will contain phosphorus water quality based effluent limits ("WQBELs") for Outfall 001, which is located in HUC-12 subwatershed 070600030201.

f. The Village owns and will implement streambank stabilization practices and habitat features within the same hydrologic region as Outfall 001.

g. The descriptions of the lands that include streambank stabilization and habitat features are on private property and property owned by the Village of Bloomington at the following locations:

- Private Property – Blake Fork
  - Parcel #004-00217-0000
  - Parcel #004-00218-0000
  - Parcel #107-00384-0000
- Village of Bloomington – Blake Fork
  - Parcel #107-00410-0000
- Private Property – Blake Fork
  - Parcel #107-00400-0000
  - Parcel #004-00220-0000
- Private Property – Blake Fork
  - Parcel #032-00643-0000

The Village submitted to the Department a Water Quality Trading Plan (WQT Plan) under which the Village will install streambank stabilization and habitat features to reduce pollution to surface waters of the State.

h. The management practices will be installed and maintained relative to the NRCS Conservation Practice Standard listed below in Table One:

Table One – Conservation Practice Standards

NRCS Conservation Practice Standard	Number
Streambank and Shoreline Protection	580
Stream Habitat Improvement and Management	395

i. The WQT Plan includes an Establishment Plan and an Operation and Maintenance Plan for the streambank stabilization and habitat features.

2. Agreement Terms

a. The Village shall establish streambank stabilization and habitat features consistent with the requirements in the approved WQT Plan (including the Establishment Plan, and the Operation and Maintenance Plan).

b. The Department will propose to reissue the WPDES Permit to allow the Village to use water quality trading as a compliance option, in accordance with the WQT Plan as approved by the Department.

c. Subject to the terms of this Agreement and the terms of the WPDES Permit issued to the Village, the Department shall allow the Village to utilize Total Phosphorus credits in the amount set forth in the approved WQT Plan to demonstrate compliance with phosphorus WQBELs in the WPDES Permit, provided the Village implements the approved WQT Plan and complies with the related trading terms of the Permit.

d. Any duly authorized officer, employee or representative of the Department shall have the right to access and inspect the streambank stabilization and habitat features' locations pursuant to Wis. Stat. § 283.55(2) so long as this Agreement remains in effect.

e. The Agreement shall become effective on the later date of the completion of the following conditions: i.) the Department approves a WQT plan that is consistent with this Agreement; and ii.) The WPDES Permit includes trading terms that are consistent with both the approved WQT Plan and the terms of this Agreement.

f. The Agreement applies and is effective for the term of the issued Permit unless, subject to this section the Permit is modified, terminated or revoked and reissued by the Department to eliminate the trade or to revise the trading terms in a manner that is inconsistent with this Agreement. If the trade is removed or revised through a Permit action, this Agreement is terminated. In accordance with Wis. Stat. § 227.51(2), if the trade has not been eliminated or modified through a Permit action, and if the Village files a timely application for the reissuance of the Permit, the terms of the Agreement will continue until the later of the following: 1.) the application has been finally acted upon by the Department, 2.) the last day for seeking review of the agency's decision or 3.) a later date fixed by a reviewing court. The Agreement may extend into a subsequent reissued Permit upon approval of the Department.

g. The Parties may terminate this Agreement by written mutual agreement at any time.

h. The Village may terminate this Agreement by providing at least sixty (60) days written notice to the Department of the Village's intent to terminate the Agreement.

i. In accordance with paragraph (2j) and the procedures and requirements of Wis. Stat. § 283.53(2) and Wis. Admin. Code §§ NR 203.135 and 203.136, the Department may terminate this Agreement and modify or remove the terms of the Permit related to the trade if any one of the following occur:

1) The Village fails to implement the WQT Plan as approved by the Department;

2) The Village fails to comply with WPDES Permit terms and conditions related to water quality trading;

3) New information becomes available that causes the Department to determine that water quality trading is no longer an acceptable option, including an objection or disapproval of the trade by USEPA.

j. Any action by the Department to terminate this Agreement or otherwise to reduce or eliminate the number of phosphorus credits in the reissued WPDES

Permit and approved WQT Plan shall be implemented through a modification, revocation and reissuance or reissuance of the W PDES Permit. Prior to termination of this agreement, the Department shall notify the Village of its intent to terminate the trading agreement and shall provide an opportunity for the Village to discuss the proposed termination with the Department. If appropriate and feasible, the Department shall provide the Village with a reasonable time period to correct the grounds for the proposed termination.

k. This Agreement may be amended only by a further written document signed by each of the Parties. The WQT Plan, Agreement and Permit terms may be revised as part of a future Permit reissuance or modification.

l. This Agreement shall be interpreted pursuant to the laws of the State of Wisconsin.

m. This Agreement may be executed in one or more counterparts, and all such executed counterparts shall constitute the same agreement. A signed copy of this Agreement transmitted by facsimile or email shall be treated as an original and shall be binding against the party whose signature appears on such copy.

n. If any provision of this Agreement is held invalid or unenforceable, the invalidity or unenforceability shall be limited to the particular provision involved and shall not affect the validity or enforceability of the remaining provisions. The Parties shall work together in good faith to modify this Agreement if necessary to preserve its original intent.

o. In no event shall the Department be liable to any party under this Agreement or to any third party in contract, tort or otherwise for incidental or consequential damages of any kind, including, without limitation, punitive or economic damages or lost profits, except as provided under federal or state laws.

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the day and year entered below.

VILLAGE OF BLOOMINGTON	**WISCONSIN DEPARTMENT OF NATURAL RESOURCES**
By: _____	By: _____
Title: Village President	Title: _____
Date: 3/2/2026	Date: _____

Attachment #8

Wetland Map (Reach #1)



Legend

- Wetland Identifications and Confirmations
- Wetland Class Points
  - Dammed pond
  - Excavated pond
  - Filled excavated pond
  - Filled/drained wetland
  - Wetland too small to delineate
- Filled Points
- Wetland Class Areas
  - Wetland
  - Upland
- Filled Areas
- Wetland Class Points
  - Dammed pond
  - Excavated pond
  - Filled excavated pond
  - Filled/drained wetland
  - Wetland too small to delineate
- Filled Points
- Wetland Class Areas
  - Wetland
  - Upland
- Filled Areas
- Municipality
- State Boundaries
- County Boundaries
- Major Roads
  - Interstate Highway
  - State Highway
  - US Highway
- County and Local Roads
  - County HWY
  - Local Road
- Railroads

Notes

0.1 0 0.06 0.1 Miles

NAD_1983_HARN_Wisconsin_TM

1: 3,960

DISCLAIMER: The information shown on these maps has been obtained from various sources, and are of varying age, reliability and resolution. These maps are not intended to be used for navigation, nor are these maps an authoritative source of information about legal land ownership or public access. No warranty, expressed or implied, is made regarding accuracy, applicability for a particular use, completeness, or legality of the information depicted on this map. For more information, see the DNR Legal Notices web page: http://dnr.wi.gov/legal/

Wetland Map (Reaches #2 & #3)



Legend

- Wetland Identifications and Confirmations
- Wetland Class Points
  - Dammed pond
  - Excavated pond
  - Filled excavated pond
  - Filled/drained wetland
  - Wetland too small to delineate
- Filled Points
- Wetland Class Areas
  - Wetland
  - Upland
- Filled Areas
- Wetland Class Points
  - Dammed pond
  - Excavated pond
  - Filled excavated pond
  - Filled/drained wetland
  - Wetland too small to delineate
- Filled Points
- Wetland Class Areas
  - Wetland
  - Upland
- Filled Areas
- Municipality
- State Boundaries
- County Boundaries
- Major Roads
  - Interstate Highway
  - State Highway
  - US Highway
- County and Local Roads
  - County HWY
  - Local Road
- Railroads

Notes

0.1 0 0.06 0.1 Miles

NAD_1983_HARN_Wisconsin_TM

1: 3,960

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Wetland Map (Reach #4)



Legend

- Wetland Identifications and Confirmations
- Wetland Class Points
  - Dammed pond
  - Excavated pond
  - Filled excavated pond
  - Filled/drained wetland
  - Wetland too small to delineate
- Filled Points
- Wetland Class Areas
  - Wetland
  - Upland
- Filled Areas
- Wetland Class Points
  - Dammed pond
  - Excavated pond
  - Filled excavated pond
  - Filled/drained wetland
  - Wetland too small to delineate
- Filled Points
- Wetland Class Areas
  - Wetland
  - Upland
- Filled Areas
- Municipality
- State Boundaries
- County Boundaries
- Major Roads
  - Interstate Highway
  - State Highway
  - US Highway
- County and Local Roads
  - County HWY
  - Local Road
- Railroads

Notes

0.1 0 0.06 0.1 Miles

NAD_1983_HARN_Wisconsin_TM

1: 3,960

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Attachment #9



Map Scale: 1:7,900 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 100 200 400 600

Feet: 0 350 700 1400 2100

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 15N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Grant County, Wisconsin
Survey Area Data: Version 15, Jun 8, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

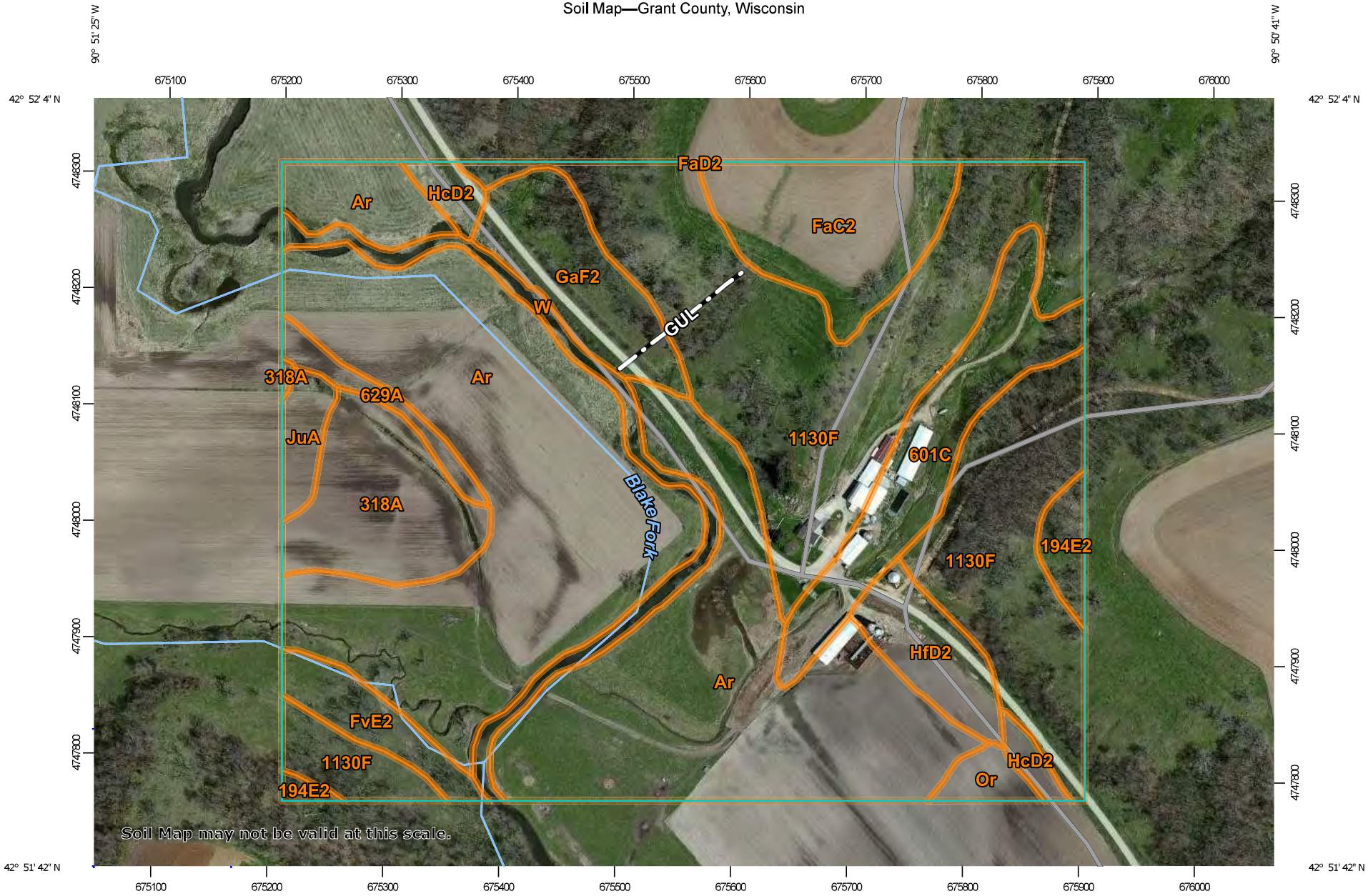
Date(s) aerial images were photographed: May 2, 2011—Aug 21, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
175C2	Palsgrove silt loam, 6 to 12 percent slopes, moderately eroded	0.5	0.2%
175D2	Palsgrove silt loam, 12 to 20 percent slopes, moderately eroded	24.3	7.9%
194C2	Newglarus silt loam, moderately deep, 6 to 12 percent slopes, moderately eroded	6.2	2.0%
194D2	Newglarus silt loam, moderately deep, 12 to 20 percent slopes, moderately eroded	64.1	20.8%
194E2	Newglarus silt loam, moderately deep, 20 to 30 percent slopes, moderately eroded	14.8	4.8%
601C	Beavercreek cobbly fine sandy loam, 3 to 12 percent slopes, occasionally flooded	13.8	4.5%
1130F	Lacrescent-Dunbarton complex, very stony, 30 to 60 percent slopes	24.0	7.8%
Ar	Arenzville silt loam, 0 to 3 percent slopes, occasionally flooded	43.8	14.2%
ChB	Chaseburg silt loam, moderately well drained, 2 to 6 percent slopes	4.0	1.3%
DvC2	Dubuque soils, deep, 6 to 10 percent slopes, moderately eroded	4.3	1.4%
DvD2	Dubuque soils, deep, 10 to 15 percent slopes, moderately eroded	22.9	7.4%
FaB2	Fayette silt loam, 2 to 6 percent slopes, moderately eroded	0.5	0.2%
FaC2	Fayette silt loam, 6 to 12 percent slopes, moderately eroded	58.5	19.0%
FaD2	Fayette silt loam, 12 to 20 percent slopes, moderately eroded	2.0	0.6%
JuA	Judson silt loam, 0 to 3 percent slopes	1.5	0.5%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Or	Orion silt loam, 0 to 3 percent slopes, occasionally flooded	18.4	6.0%
W	Water	4.7	1.5%
Totals for Area of Interest		**308.4**	**100.0%**



Map Scale: 1:4,650 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 15N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

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Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Grant County, Wisconsin
Survey Area Data: Version 15, Jun 8, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 2, 2011—Aug 21, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
194E2	Newglarus silt loam, moderately deep, 20 to 30 percent slopes, moderately eroded	1.1	1.2%
318A	Bearpen silt loam, 0 to 3 percent slopes, rarely flooded	4.8	5.1%
601C	Beavercreek cobbly fine sandy loam, 3 to 12 percent slopes, occasionally flooded	5.4	5.7%
629A	Ettrick silt loam, 0 to 2 percent slopes, frequently flooded	1.0	1.0%
1130F	Lacrescent-Dunbarton complex, very stony, 30 to 60 percent slopes	25.8	27.3%
Ar	Arenzville silt loam, 0 to 3 percent slopes, occasionally flooded	37.4	39.6%
FaC2	Fayette silt loam, 6 to 12 percent slopes, moderately eroded	5.3	5.7%
FaD2	Fayette silt loam, 12 to 20 percent slopes, moderately eroded	0.0	0.0%
FvE2	Fayette silt loam, valleys, 20 to 30 percent slopes, moderately eroded	1.8	1.9%
GaF2	Gale silt loam, 20 to 30 percent slopes, moderately eroded	3.9	4.1%
HcD2	Hesch fine sandy loam, 10 to 15 percent slopes, moderately eroded	1.1	1.2%
HfD2	Hixton fine sandy loam, 10 to 15 percent slopes, moderately eroded	2.4	2.5%
JuA	Judson silt loam, 0 to 3 percent slopes	1.0	1.1%
Or	Orion silt loam, 0 to 3 percent slopes, occasionally flooded	0.7	0.8%
W	Water	2.7	2.8%
Totals for Area of Interest		**94.4**	**100.0%**

Delta3 Engineering Total P

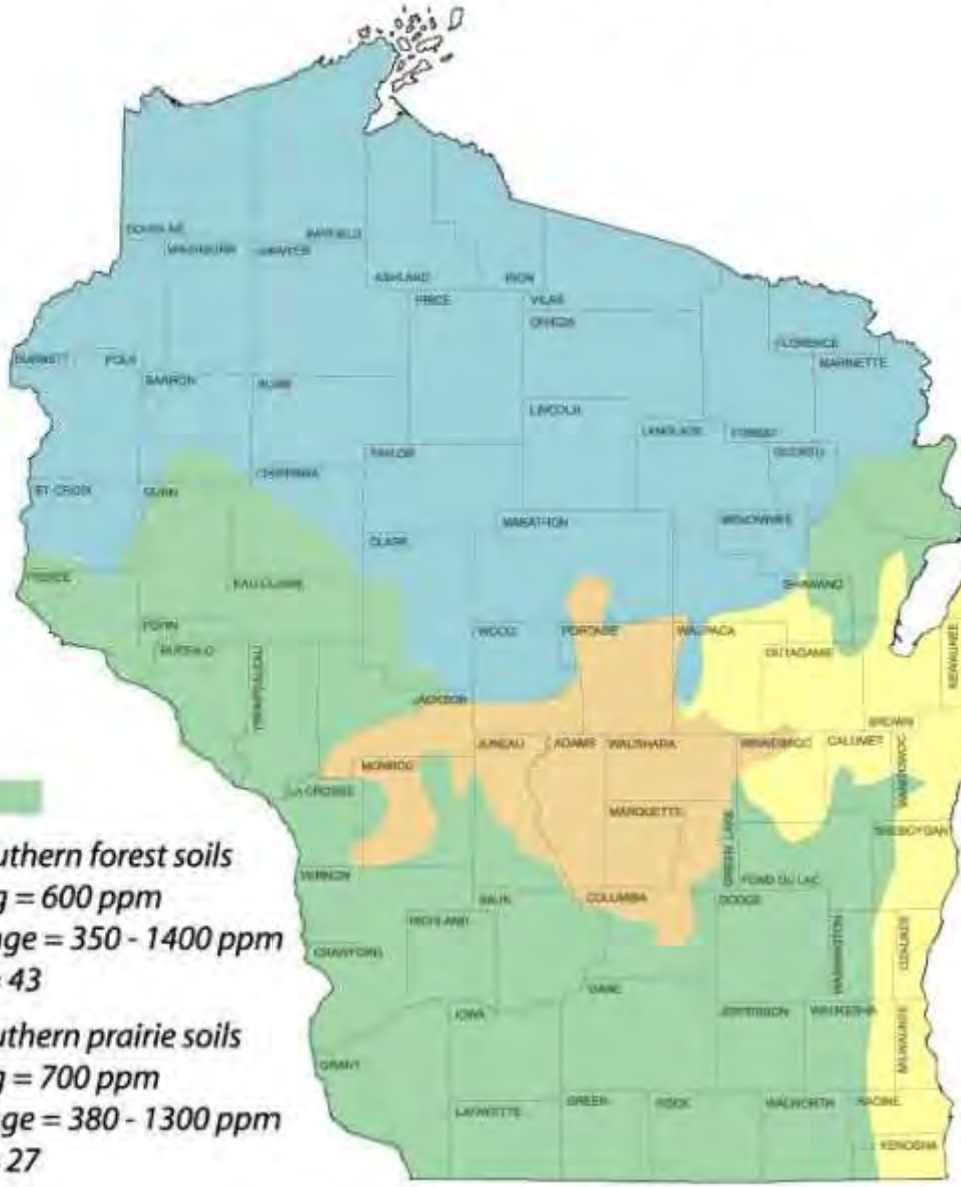
Box 1		
Field ID	Sample ID	Total P (ppm)
Bloom	65E	724.2
Bloom	71E	360.7
Bloom	72W	933.4
Bloom	73E	548.7
Bloom	74W	366.6
Bloom	75E	708.7
Bloom	76E	767.5
Bloom	77E	517.6
Bloom	78W	671.5
Bloom	79E	504.1
Bloom	80W	780.2
Bloom	81E	497.1
Bloom	82W	700.5
Bloom	83E	673.4
Bloom	84W	450.4
Bloom	86W	746.6
Bloom	87E	398.1
Bloom	88W	580.4
Bloom	89E	439.3
Bloom	90W	684.8
Bloom	91E	552.4
Bloom	92W	462.7
Bloom	93E	484.5
Bloom	94W	752.5
Bloom	95E	788.2
Bloom	96W	767.1
Bloom	98W	597.9
Bloom	99E	494.6
Bloom	100W End	1010

Box 2		
Field ID	Sample ID	Total P (ppm)
Bloom	17E	748
Bloom	18E	648.1
Bloom	19W	605.2
Bloom	20E	358.6
Bloom	21W	665.6
Bloom	22W	554.7
Bloom	23W	528.3
Bloom	24W	450.9
Bloom	25W	487.6
Bloom	26W	612.1
Bloom	27W	437.3
Bloom	28W	575.8
Bloom	29W	797.5
Bloom	30W	771.9
Bloom	31W	599.3
Bloom	32W	659.8
Bloom	33W	744.2
Bloom	34W	592.5
Bloom	35W	565
Bloom	36W	696.7
Bloom	37N	401.3
Bloom	38S	443.1
Bloom	39N	507.1
Bloom	40E	420.9
Bloom	41W	484.3
Bloom	42E	553.2
Bloom	43W	641.7
Bloom	44E	615.9
Bloom	45W	634.4
Bloom	46E	587.6
Bloom	62W	619
Bloom	63E	447.5
Bloom	64W	422.2
Bloom	66W	704.8
Bloom	67E	453.2
Bloom	68W	548.6
Bloom	69E	839.1
Bloom	70W	704.9
Bloom	85E	643
Bloom	97E	509.7

Delta3 Engineering Total P

Box 3		
Field ID	Sample ID	Total P (ppm)
Bloom	1	515.4
Bloom	2	668.4
Bloom	3	592.9
Bloom	4	404
Bloom	5	656.1
Bloom	6	496.2
Bloom	7	602.6
Bloom	8	626
Bloom	9	402.4
Bloom	10	556.3
Bloom	11	706
Bloom	12E	599.8
Bloom	12W	790.8
Bloom	13E	593.8
Bloom	13W	612.6
Bloom	14E	556.4
Bloom	14W	474.9
Bloom	15E	765.4
Bloom	15W	700.4
Bloom	16E	588.4
Bloom	16W	405.1
Bloom	47E	401.3
Bloom	48W	578.9
Bloom	49E	357.7
Bloom	50W	441.8
Bloom	51E	620.6
Bloom	52W	373.5
Bloom	53E	424.3
Bloom	54W	647.6
Bloom	55E	588.3
Bloom	56W	566.9
Bloom	57E	527.1
Bloom	58W	424.8
Bloom	59E	641.5
Bloom	60W	341.5
Bloom	61E	337.9
Village of Bloomington	LM #1	309.4
Village of Bloomington	LM#2	324.2

Soil Total P



Northern loamy soils
avg = 540 ppm
range = 480-580 ppm
n = 4

Southern forest soils
avg = 600 ppm
range = 350 - 1400 ppm
n = 43

Southern prairie soils
avg = 700 ppm
range = 380 - 1300 ppm
n = 27

Eastern red soils
avg = 950 ppm
range = 430 - 2820 ppm
n = 12

Sandy soils
range = 250 - 400 ppm
n = 2

Organic soils: range = 1330 - 1350 ppm, n = 2

Attachment #10

ATTACHEMENT #9
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I. Introduction

The lateral recession rate of the eroding bank is a critical component for the NRCS Streambank Erosion Estimator. The following documentation provides the justification for the lateral recession rates used in the NRCS Streambank Erosin Estimator. Lateral recession rate was estimated based on the photos provided, description, and on site evaluation. The following includes representative photos of Project Reaches to be stabilized through installation of Best Management Practices (BMPs).

II. Reach 1



Image 1 – Reach 1: Severe undercut with vegetative overhang



Image 2 – Reach 1: Severe undercut with slump and vegetative overhang



Image 3 – Reach 1: Severe undercut with vegetative overhang



Image 4 – Reach 1: Severe undercut with slump, fallen trees, exposed tree roots, and vegetative overhang



Image 5 – Reach 1: Severe undercut with vegetative overhang.



Image 6 – Reach 1: Severe undercut with vegetative overhang and trees on the verge of falling in



Image 7 – Reach 1: Undercut with vegetative overhang

III. Reach 2



Image 8 – Reach 2: Severe undercut with slump and vegetative overhang



Image 9 – Reach 2: Severe undercut with slump and vegetative overhang



Image 10 – Reach 2: Severe undercut with slump and vegetative overhang



Image 11 – Reach 2: Severe undercut with slump and vegetative overhang



Image 12 – Reach 2: Severe undercut with slump and vegetative overhang



Image 13 – Reach 2: Severe undercut with slump and vegetative overhang

IV. Reach 3



Image 14 – Reach 3: Severe undercut with slump and vegetative overhang.



Image 15 – Reach 3: Severe undercut with slump and vegetative overhang.



Image 16 – Reach 3: Severe slump.



Image 17 – Reach 3: Severe undercut with slump and vegetative overhang.

V. Reach 4



Image 18 – Reach 4: Severe undercut with slump and vegetative overhang.

Attachment #11

NRCS Excel Workbook Estimating 'Other' Erosion Types June 2006

Annual soil loss predictions for conservation planning purposes are made with current soil loss prediction technology (RUSLE2). RUSLE2 estimates sheet, rill and interrill erosion. Erosion that is seasonal in nature and caused by concentrated flow, however, is not predicted by RUSLE2.

This workbook provides conservation planners with simple tools and processes to help estimate the amount of erosion occurring in ephemeral gullies, classic gullies and on streambank erosion sites.

Definitions:

Rill Erosion: consists of the removal of soil by concentrated water running through little streamlets, or headcuts. Detachment in a rill occurs if the sediment in the flow is below the amount the load can transport and if the flow exceeds the soil's resistance to detachment. As detachment continues or flow increases, rills will become wider and deeper. Rills may be of any size but are usually less than four inches deep. Rills are:

<> generally parallel on the slope, but may converge,
<> generally of uniform spacing and dimension,
<> generally appear at different locations on the landscape from year to year,
<> generally shorter than ephemeral cropland gullies,
<> usually end at a concentrated flow channel, or an area where the slope flattens and deposition occurs,
<> are on the same portion of the slope that is used to determine the length of slope (L) for RUSLE2,
<> many small, but conspicuous channels running in the direction of slope gradient

Rill erosion is considered in the RUSLE2 calculations.

Ephemeral Gully Erosion: Small erosion channels formed on crop fields as a result of concentrated flow of runoff water. These channels are routinely eliminated by tillage of the field but return following subsequent runoff events. Ephemeral Gullies are small enough to be eliminated (temporarily) with the use of typical farm tillage equipment and they:

<> recur in the same area of concentrated flow each time they form,
<> frequently form in well-defined depressions in natural drainage ways,
<> are generally wider, deeper, and longer than the rills in the field,

Ephemeral Gullies are **not** calculated by the RUSLE2 program.

Gully Erosion: Permanent gullies are formed when channel development has progressed to the point where the gully is too wide and too deep to be tilled across. These channels carry large amounts of water after rains and deposit eroded material at the foot of the gully. They disfigure landscape and make the land unfit for growing crops. Gullies:

<> may grow or enlarge from year to year by head cutting and lateral enlarging,
<> often occur in depressions or natural drainage ways,
<> may begin as ephemeral gullies that were left in the field untreated,
<> may, over time, become partially stabilized by grass, weeds or woody vegetation,

Gully erosion is not calculated by the RUSLE2 program.

Streambank Erosion: The wearing away of streambanks by flowing water. The removal of soil from streambanks is typically caused by the direct action of stream flow and/or wind/wave action, typically occurring during periods of high flow. Streambank erosion:

<> is a natural process that generally increases when unprotected streambanks (e.g. no woody vegetation) are subject to the actions of flowing water and ice damage.

<> is a common occurrence on many Vermont river channels that are experiencing geomorphic adjustments

---

The soil loss from ephemeral gullies, gullies and streambank erosion areas can be estimated by calculating the volume of soil removed by erosion processes. The volume of soil loss can be multiplied by the typical unit weight of the soil (based on soil texture) which is eroded. Approximate soil unit weights are expressed below[1]:

Soil Texture	Estimated Dry Density lb/ft^3
Gravel	110
Sand	105
Loamy Sand	100
Sandy Loam	100
Fine Sandy Loam	100
Sandy Clay Loam	90
Silt Loam	85
Silty Clay Loam	85
Silty Clay	85
Clay Loam	85
Organic	22

Procedure for estimating Ephemeral Soil Erosion:

The following formula will be used to calculate annual estimated ephemeral gully erosion:

$$\frac{\text{Ephemeral Gully } \mathbf{Length} \times \text{Gully Average } \mathbf{Width} \times \text{Gully Average } \mathbf{Depth}}{2000} \times \text{Soil Weight (lbs/ft}^3\text{)} \times \text{Occurrences per Year} = \mathbf{Estimated} \text{ Soil Loss (Tons per Year)}$$

* Ephemeral gully erosion may reform multiple times per year, and under certain conditions it may not form in a given year. The voided volume which would be calculated after a runoff event is not necessarily representative of an annual rate, but is representative of only the specific event. This erosion can be calculated for individual storms and can be summed for a yearly estimate.

1 Data from published soil surveys, laboratory data, and soil interpretation record are to be used where available. Parent materials, soil consistency, soil structure, pore space, soil texture, and coarse fragments all influence unit weight.

Procedure for estimating Gully Soil Erosion:

The following formula will be used to calculate annual estimated classic gully erosion:

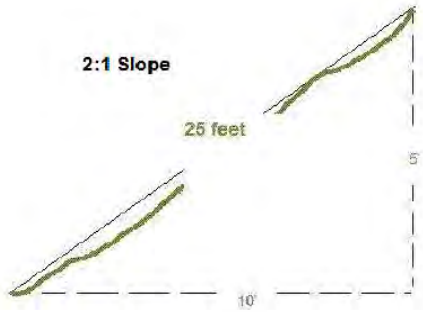
$$\frac{\text{Gully } \textbf{Length} \text{ X (Average } \textbf{Width} \text{ X Average } \textbf{Depth} \text{ X 0.5) X } \textbf{Soil Weight} \text{ (lbs/ft3)}}{2000} \Big/ \text{ Formation Years} = \textbf{Estimated} \text{ Soil Loss Per Year (Tons)}$$

Procedure for estimating Streambank Soil Erosion (Direct Volume Method):

The following formula will be used to calculate annual estimated streambank erosion unless a field measurement procedure[2] is used:

$$\frac{\text{ing Bank } \textbf{Length} \text{ X Eroding Bank Height X Lateral Recession Rate (FT/YR) X Soil Weight (lb}}{2000} = \textbf{Estimated} \text{ Soil Loss Per Year (Tons)}$$

** Eroding bank height is measured along the bank, not the vertical height of bank. Example: if vertical height of an eroding streambank is 5 feet, and the bank is on a 2:1 slope, the total eroding bank distance is 25 feet -- 1/2 (Base X Height).



***The average annual recession rate is the thickness of soil eroded from a bank surface (perpendicular to the face) in an average year.

Stream bank erosion sometimes presents itself as a major occurance in a given year, whereas the same bank may not erode significantly for a period of years if no major runoff events occur. Recession rates need to be calculated as an average of years when erosion does and does not occur. Recession rate is not calculated as the erosion occurring after a single event.

Use available resources to assist in the estimation of recession rate: use past and present aerial photography, old survey records, and any other information that helps to determine the bank condition at known times in the past. When such information is lacking or insufficient, field observations and professional judgement are needed to estimate recession rates.
It is often not possible to directly measure recession rates in the field. Therefore, the following table has been included which relates recession rates to narrative descriptions of banks eroding at different rates (Table from NRCS Wisconsin guidance).

Lateral Recession Rate (ft/yr)	Category	Description
0.01-0.05	Slight	Some bare bank but active erosion not readily apparent. Some rills but no vegetative overhang. No exposed tree roots.
0.06-0.2	Moderate	Bank is predominantly bare with some rills and vegetative overhang. Some exposed tree roots but no slumps or slips.
0.3-0.5	Severe	Bank is bare with rills and severe vegetative overhang. Many exposed tree roots and some fallen trees and slumps or slips. Some changes in cultural features such as fence corners missing and realignment of roads or trails. Channel cross section becomes U-shaped as opposed to V-shaped.
0.5+	Very Severe	Bank is bare with gullies and severe vegetative overhang. Many fallen trees, drains and culverts eroding out and changes in cultural features as above. Massive slips or washouts common. Channel cross section is U-shaped and stream course may be meandering.

2 The best way to quantify streambank erosion is to measure it directly in the field. The basic procedure in measuring streambank erosion is to survey, flag, or in some way fix a "before" image of the channel you are evaluating in order to establish the baseline condition. Changes due to erosion can then be monitored over time by going back to the study area and re-measuring from the fixed reference points.
Channel cross-sections can be surveyed and plotted on a periodic basis to monitor change. Stakes or pins can be driven into channel banks flush with the surface. The amount of stake or pin exposed due to erosion is the amount of change at the streambank erosion site between your times of observation.
The time required to monitor a site often precludes this method of data collection. The Direct Volume Method can be used to estimate streambank erosion at your site.

Acknowledgements: This Excel workbook was created as a planning tool for use by conservation planners. The basic format and content of the tool is a compilation of various similar tools, processes and procedures employed by NRCS in several states including: Indiana, Iowa, Kansas, Maryland, Michigan, Missouri, Nebraska, Oklahoma, South Dakota and Wisconsin. Some of the terminology in the 'Definitions' section of this Readme document closely mirrors these sources.

NRCS Streambank and Irrigation Ditch Erosion Estimator (Direct Volume Method)

Farmer / Cooperator Name:	Village of Bloomington	Evaluated By:	J. Fure
Tract Number:	Varies	Evaluation Date:	December 8, 2020

Field Number	Eroding Strmbnk Reach #; or Ditch Side/Bottom	Eroding Bank or Ditch Length (Feet)	Eroding Bank Height; or Ditch Bottom Width* (Feet)	Area of Eroding Strmbank or Ditch (FT^2)	Lateral or Ditch Bottom Recession Rate (Estimated) (FT / Year)	Estimated Volume (FT^3) Eroded Annually	Soil Texture	Approximate Pounds of Soil per FT^3	Estimated Soil Loss (Tons/Year)	Soil Total Phosphorus (ppm)	Estimated Phosphorus Loss (Pounds/Year)
Kirschbaum	1 (Right)	2,312	4.2	9,710	0.35	3,398.6	Silt Loam	85	144.4	605	175
Kirschbaum	1 (Left)	490	3.0	1,470	0.35	514.5	Silt Loam	85	21.9	605	26
Senn	2 (Right)	450	1.9	855	0.35	299.3	Silt Loam	85	12.7	609	15
Senn	2 (Left)	450	2.7	1,215	0.35	425.3	Silt Loam	85	18.1	609	22
Village Park	3 (Right)	933	4.8	4,478	0.35	1,567.4	Silt Loam	85	66.6	566	75
Mumm	4 (Right)	394	9.0	3,546	0.50	1,773.0	Silt Loam	85	75.4	317	48
				TOTAL		4579.4			194.6		**362**

Attachment #12

Water Quality Trading
Operation and Maintenance Plan

Introduction:
The Water Quality Trading (WQT) Operation and Maintenance (O&M) Plan is meant to be a working document and should be updated as new trading practices are implemented. Currently, the Operation and Maintenance Plan revolves around the Best Management Practice (BMP) construction along the Blake Fork and Unnamed Tributary WBIC 5037817. The attached *BMP Inspection Form* should be completed during annual inspections of BMPs and following major storm events. Inspection forms shall be retained for at least five (5) years to ensure compliance with the WQT Plan.

Publicly Owned BMP:
Village representative to complete inspection form annually and following major storm events. The form will then be provided to the Maintenance Supervisor following inspection. The Village will address maintenance issues identified during inspection within 30 days. Substantial maintenance issues may require an extended timeframe for generation of plans, specifications, and a public bid process to perform the work. Inspections and O&M activities shall be reported in the annual WQT Report sent to the DNR.

Privately Owned BMP:
Village representative to complete inspection form annually and following major storm events. The form will then be provided to the Maintenance Supervisor following inspection. The Village will address maintenance issues identified during inspection within 30 days. Substantial maintenance issues may require an extended timeframe for generation of plans, specifications, and a public bid process to perform the work. Maintenance expenses will be incurred by either by the Village or Private Property Owner depending on agreement with the Village. The Private Property Owner will be allowed to perform maintenance activities at the expense of the Private Property Owner. Inspections and O&M activities shall be reported in the annual WQT Report sent to the DNR.

Quality Assurance:
Riprap gradation and composition shall be provided for each source of material. Streambank shaping and riprap shall be installed per the Grant County Land Conservation Department and NRCS Standards. Contractors to supply rock that is approved by the NRCS and meets criteria in Wisconsin Construction Spec.9.

Installation:
- Staking provided by the Engineer.
- Do not place riprap over frozen or spongy subgrade surfaces.
- Place riprap as indicated on Construction Plans. Do not dump rip-rap over the bank.
- Blend riprap with existing bank.
- Spread spoil out in a layer of less than 6” and seed down. Do not spread soil in wetlands.
- All disturbed areas and spoil must be seeded and mulched.
- Install habitat structures per Plans and Specifications.

Practice Registration:
The purpose of the “Water Quality Trading Management Practice Registration” form is to report to DNR that a management practice identified in the trading plan has been properly installed and is established

and effective. This information will be used to track implementation progress, verify compliance and perform audits, as necessary. A registration form should be submitted for every management practice that has been identified in the trading plan. If practices are established prior to trading plan submittal, registration forms may be submitted with the trading plan. Otherwise, registration forms should be submitted during the permit term as practices become effective or with the annual report. A blank *Water Quality Trading Management Practice Registration Form 3400-207* is attached and should be submitted following implementation of the trading practice.

Tracking Procedures:
The Village will track credits used monthly. The Village will report credit usage to the DNR on a monthly basis in the Discharge Monitoring Reports (DMRs). The annual report will summarize the 12 months of credit usage and credit generation. The Village will report to DNR any concern that they have that may result in a need to modify the trade agreement and/or this trade plan. For example, a need to generate additional credits based on discharge.

Inspections/Maintenance Considerations:

- A *BMP Inspection Form* is attached.
    - Site: As noted on Construction Plans
    - Condition of BMP: Excellent; Good; Fair; or Poor
    - Required Maintenance: Provide a description of maintenance required for the BMP.
    - Maintenance Estimate: Provide an estimate for how long the maintenance will take to complete or a dollar value for completion. This will help determine if the Village will perform the work or if the Village will hire another entity to perform the work.
    - Date Completed: Following completion of the required maintenance, input the date of completion.
    - Comments: Provide the required maintenance activity along with any other useful information. If the cell provided is not large enough for Comments, write "See Back of Sheet" and provide comments on the reverse side of the Form.
    - Photos Taken: The inspector shall take photographic evidence to represent and archiv3e the condition of each BMP.
- Following installation, inspect the disturbed areas closely over the next few months to ensure that seeding grows.
- BMPs may settle or shift especially after flooding events or freeze/thaw.
- May need to control weed and brush growth.
- Inspect stabilized areas as needed.
- At a minimum, inspect after major storm events.
- If a BMP has been damaged, repair it promptly to prevent a progressive failure.
- If repairs are needed repeatedly at a location, evaluate the site to determine if the original design conditions have changed.

Routine Maintenance Items that can be performed by Village:

- Evaluate BMP condition
    - Reconstruct/replace BMPs that have settled, shifted, or washed out.
- Manage Vegetation
    - Remove invasive/noxious plants.

    - Reseed areas as necessary
- Manage Garbage
    - Remove garbage and other debris that could otherwise impair the streambank stability.

Monthly Certification:
Each month, the Village will certify that the BMPs are maintained and operating in a manner consistent with this Water Quality Trading Plan or provide a statement noting noncompliance with this Plan. The monthly Discharge Monitoring Report (DMR) will include the following statement as a certification of compliance when the Credit Generating Practice is operating in a manner consistent with the Plan:

> "I certify that to the best of my knowledge that the management practices identified in the approved water quality trading plan as the source of phosphorus credits is installed, established and properly maintained."

Annual Inspection:
An annual inspection of the BMPs will be performed by a licensed Professional Engineer to ensure that the BMPs are functioning as intended in order to meet the requirements of the WQT Plan.

Noncompliance:
The Village will notify DNR by telephone call to DNR's regional wastewater compliance engineer within 24 hours or next business day of becoming aware that phosphorus credits used or intended for use by Village are not being generated as outlined in this Water Quality Trading Plan.

The Village will submit a written notification within five days after the Village recognizes that the phosphorus credits are not being generated as outlined in the Trading Plan. DNR may waive the requirement for submittal for a written notice within five days and instruct the Village to submit the written notice with the next regularly scheduled monitoring report required by Village's WPDES Permit.

The written notification should include:

- Description of noncompliance and cause.
- Period of noncompliance including dates and times.
- Schedule for attaining compliance including time and steps toward compliance.
- Plan to prevent reoccurrence of the noncompliance.

Notification of Trade Agreement Termination:
If a trade agreement or the trading plan needs to be terminated during the permit term, the permittee should submit a Notice of Termination to the wastewater engineer/specialist to inform DNR of the termination. DNR staff should use this information to determine if a permit modification is required due to the termination, the termination will result in non-compliance, or other permit actions are required due to the termination. When credits are reduced or eliminated for any reason, the permittee is still required to meet their WQBELs without any grace period. To prevent noncompliance with WQBELs, changes to trading plans must be addressed before credits are lost. Modifying the permit/trading plan will require at least 180 days. A blank *Notification of Water Trade Agreement Termination Form 3400-209* is attached and should be submitted to DNR prior to practice termination, no later than the submittal date of the annual report.

DELTA 3
Platteville, Wisconsin
Dubuque, Iowa
P 608.348.5355
P 563.542.9005
E mail@delta3eng.biz
W www.delta3eng.biz

Streambank BMP Inspection Form

Date & Time:	
Inspector/Title:	
Weather:	
Reason for Inspection:	Monthly ☐ Precipitation Event ☐ Annual P.E. ☐ Other ☐:
Last Inspection Photos Date*:	

* inspection photos should be taken annually at minimum

Site	Vegetative Condition	Structural Condition	Habitat Structure Condition	Required Maintenance	Maintenance Estimate (Time and/or Cost)	Date Maintenance Completed	Comments

Photos Taken? ☐ Yes ☐ No

State of Wisconsin
Department of Natural Resources
101 South Webster Street
Madison WI 53707-7921
dnr.wi.gov

Water Quality Trading Management Practice Registration

Form 3400-207 (R 1/14)

Notice: Pursuant to s. 283.84, Wis. Stats., this form must be completed by any WPDES permittee that is using water quality trading as a method of complying with a permit limitation. Failure to complete this form would not result in penalties. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records Law (ss. 19.31 - 19.39, Wis. Stats.).

Applicant Information

Permittee Name	Permit Number WI-	Facility Site Number

Facility Address	City	State	ZIP Code

Project Contact Name (if applicable)	Address	City	State	ZIP Code

Project Name

Broker/Exchange Information (if applicable)

Was a broker/exchange be used to facilitate trade? ◯ Yes ◯ No

Broker/Exchange Organization Name	Contact Name

Address	Phone Number	Email

Trade Registration Information (Use a separate form for each trade agreement)

Type	Trade Agreement Number	Practices Used to Generate Credits	Anticipated Load Reduction	Trade Ratio	Method of Quantification
◯ Urban NPS ◯ Agricultural NPS ◯ Other					

County	Closest Receiving Water Name	Land Parcel ID(s)	Parameter(s) being traded

The preparer certifies all of the following:

- I have completed this document to the best of my knowledge and have not excluded pertinent information.
- I certify that the information in this document is true to the best of my knowledge.

Signature of Preparer	Date Signed

Authorized Representative Signature

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision. Based on my inquiry of those persons directly responsible for gathering and entering the information, the information is, to the best of my knowledge and belief, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Authorized Representative	Date Signed

Leave Blank – For Department Use Only

Date Received		Trade Docket Number
Entered in Tracking System ☐ Yes	Date Entered	Name of Department Reviewer

State of Wisconsin
Department of Natural Resources
101 South Webster Street
Madison WI 53707-7921
dnr.wi.gov

Notification of Water Trade Agreement Termination

Form 3400-209 (1/14)

Notice: Pursuant to s. 283.84, Wis. Stats., and ch. NR 217 Wis. Adm. Code, this form must be completed by any WPDES permittee that is using water quality trading as a method of complying with a permit limitation. Failure to complete this form would not result in penalties. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records Law (ss. 19.31 - 19.39, Wis. Stats.).

Applicant Information

Permittee Name	Permit Number WI-	Facility Site Number

Facility Address	City	State	ZIP Code

Project Contact Name (if applicable)	Address	City	State	ZIP Code

Project Name

Credit Generator Information

Credit generator type (select all that apply):

- ☐ Permitted Discharge (non-MS4/CAFO)
- ☐ Permitted MS4
- ☐ Permitted CAFO
- ☐ Urban nonpoint source discharge
- ☐ Agricultural nonpoint source discharge
- ☐ Other - Specify:

Trade Agreement number(s) to be terminated including affected land parcel ID(s):

Amount of trading credit being terminated	Effective date of termination

Reason for termination

Is this agreement being updated or replaced?

- ◯ Yes
- ◯ No
- ◯ Unsure

Will this termination result in non-compliance with the effective limit or other permit requirements?

- ◯ Yes; Name: _____
- ◯ No
- ◯ Unsure

The preparer certifies all of the following:

- I am familiar with the specifications submitted for this application, and I believe all applicable items in this checklist have been addressed.
- I have completed this document to the best of my knowledge and have not excluded pertinent information.

Signature of Preparer	Date Signed

Authorized Representative Signature

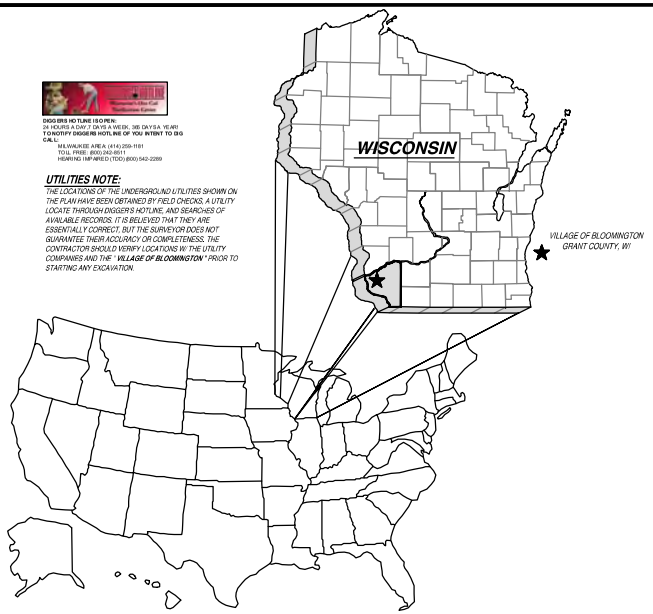
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision. Based on my inquiry of those persons directly responsible for gathering and entering the information, the information is, to the best of my knowledge and belief, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Authorized Representative	Date Signed

Attachment #13

PROPOSED 2021 STREAM IMPROVEMENTS - BLAKE FORK

OWNER: VILLAGE OF BLOOMINGTON



DIGGERS HOTLINE IS O MEN:
24 HOURS A DAY 7 DAYS A WEEK, 365 DAYS A YEAR!
TO NOTIFY DIGGERS HOTLINE OF YOU INTENT TO DIG CALL:
MILWAUKEE AREA (414) 259-1181
TOLL FREE: (800) 242-8511
HEARING IMPAIRED (TDD) (800) 542-2289

UTILITIES NOTE:

*THE LOCATIONS OF THE UNDERGROUND UTILITIES SHOWN ON THE PLAN HAVE BEEN OBTAINED BY FIELD CHECKS, A UTILITY LOCATE THROUGH DIGGER'S HOTLINE, AND SEARCHES OF AVAILABLE RECORDS. IT IS BELIEVED THAT THEY ARE ESSENTIALLY CORRECT, BUT THE SURVEYOR DOES NOT GUARANTEE THEIR ACCURACY OR COMPLETENESS. THE CONTRACTOR SHOULD VERIFY LOCATIONS W THE UTILITY COMPANIES AND THE "**VILLAGE OF BLOOMINGTON**" PRIOR TO STARTING ANY EXCAVATION.*

SHEET INDEX:

SHEET TITLE:	SHEET DESCRIPTION:	DATE OF ISSUE:	DATE OF REVISION:
G000	TITLE SHEET & PROJECT LOCATION MAP	DECEMBER 31, 2020	-
G001	LEGEND & GENERAL NOTES	DECEMBER 31, 2020	-
C101-C103	PLAN VIEW - BLAKE FORK CREEK	DECEMBER 31, 2020	-
C104	PLAN VIEW - SMALL CREEK	DECEMBER 31, 2020	-
C201	DETAILS - EROSION CONTROL & NOTES	DECEMBER 31, 2020	-
C202	DETAILS - STREAM BANK	DECEMBER 31, 2020	-



PROJECT LOCATION MAP
SCALE: N.T.S.

PROJECT INFORMATION:

OWNER:
VILLAGE OF BLOOMINGTON
MR. RICHARD UDELHOFEN
VILLAGE PRESIDENT
453 CANAL STREET
BLOOMINGTON, WI 53804
(608) 994-2401

CABLE TELEVISION:
CHARTER COMMUNICATIONS
MR. STEVE HEGGE
2701 DANIELS ST.
MADISON, WI 53813
(608) 576-2613 (OFFICE)

STREET AND PUBLIC UTILITIES:
VILLAGE OF BLOOMINGTON
MR. RONNIE MUMM
DIRECTOR OF PUBLIC WORKS
453 CANAL STREET
BLOOMINGTON, WI 53804
(608) 994-2531

TELEPHONE & CABLE TELEVISION:
TDS TELECOM
MR. KEN KLASS
140 N. MONROE ST.
LANCASTER, WI 53813
(608) 732-3633 (OFFICE)
(608) 732-5486 (CELL)

NATURAL GAS UTILITIES:
WE ENERGIES
MR. ADAM MARING
245 W. ELM STREET
LANCASTER, WI 53813
(608) 426-1715 (CELL)
(608) 328-5679

WE ENERGIES
PAVING COORDINATOR
500 S. 116TH STREET
WEST ALLIS, WI 53214
(800) 242-9137

ELECTRICAL UTILITIES:
ALLIANT ENERGY
MR. ALLAN MUMM
2300 E. CAMPION BLVD.
PRAIRIE DU CHIEN, WI 53821
(608) 326-9481 (OFFICE)
(608) 732-7925 (CELL)

ENGINEER:
DELTA 3 ENGINEERING LLC
PROFESSIONAL CIVIL, PLANNING, & STRUCTURAL ENGINEERING PROJECTS
SMART SOLUTIONS, AND TRUE SERVICE SINCE 1 (800) 3DELTA3
PLATTEVILLE, WI 53818 (608) 348-5355
JUNEAU, WI 53039 (920) 386-3500

FOR QUESTIONS REGARDING THIS PROJECT, PLEASE CONTACT:

MR. BART NIES, P.E.
DELTA 3 ENGINEERING, INC.
TELEPHONE: (608) 348-5355

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PROPOSED 2021 STREAM IMPROVEMENTS - BLAKE FORK

VILLAGE OF BLOOMINGTON

PROJECT LOCATION: GRANT COUNTY, WISCONSIN

OWNER: VILLAGE OF BLOOMINGTON, 453 CANAL ST., BLOOMINGTON, WI 53804

REVISIONS:

NO.	DATE	DESCRIPTION

AS-BUILT: BY:

PRELIMINARY

PROJECT NUMBER	D20-154
SHEET SCALE	NOT TO SCALE
DRAWN BY	C.COYIER
DATE ISSUED	DECEMBER 31, 2020
SHEET DESC.	TITLE SHEET & PROJECT LOCATION MAP

SHEET TITLE: G000

SHEET NUMBER # 01 of ###

LEGEND

EX. CON. MANHOLE
EX. ECC. MANHOLE
EX. LIFT STATION
EX. CLEAN OUT
EX. FIRE HYDRANT
EX. WATER SERVICE
EX. WATER VALVE
EX. YARD HYDRANT
EX. CATCH BASIN
EX. STORM INLET
EX. NATURAL GAS VALVE
EX. NATURAL GAS METER
EX. POWER POLE
EX. LIGHT POLE
EX. WARNING SIREN
EX. TEL. PEDESTAL
EX. MAILBOX
EX. LP TANK
EX. SATELLITE DISH
EX. POST OR POLE
EX. STREET SIGN
EX. EVERGREEN TREE
EX. DECIDUOUS TREE
EX. TREE STUMP
EX. BUSH/SHRUB
EX. TREE/BRUSH LINE
EX. WINDMILL
EX. PARK BENCH
EX. BENCHMARK
SURVEY CONTROL POINT
EX. PROPERTY PIN
RIGHT-OF-WAY
PROPERTY LINE
EASEMENT
EX. SAN. S. LATERAL
EX. 6" SAN. S. MAIN
EX. 8" SAN. S. MAIN
EX. 10" SAN. S. MAIN
EX. 12" SAN. S. MAIN
EX. 15" SAN. S. MAIN
EX. FLOW DIRECTION
EX. CAPPED SERVICE
EX. WATER SERVICE
EX. 4" WATER MAIN
EX. 6" WATER MAIN
EX. 8" WATER MAIN
EX. 10" WATER MAIN
EX. 12" WATER MAIN
EX. <12" STORM SEWER
EX. 12" STORM SEWER
EX. 15" STORM SEWER
EX. 18" STORM SEWER
EX. 24" STORM SEWER
EX. 27" STORM SEWER
EX. 30" STORM SEWER
EX. 36" STORM SEWER
EX. 42" STORM SEWER
EX. 48" STORM SEWER
EX. CURB AND GUTTER
EX. U.GRD N. GAS UTILITY
EX. U.GRD ELECTRIC UTILITY
EX. U.GRD CABLE TV UTILITY
EX. U.GRD TELEPHONE UTILITY
EX. U.GRD FIBER OPTIC UTILITY
EX. OVERHEAD ELECTRIC
EX. FENCE
EX. RAILROAD TRACKS
EX. CONTOUR
EX. DRAINAGE SWALE

PROP. SANITARY SEWER LATERAL
PROP. <6" SANITARY SEWER MAIN
PROP. 6" SANITARY SEWER MAIN
PROP. 8" SANITARY SEWER MAIN
PROP. 10" SANITARY SEWER MAIN
PROP. 12" SANITARY SEWER MAIN
PROP. 15" SANITARY SEWER MAIN
PROP. 18" SANITARY SEWER MAIN
PROP. CIPP LINER
PROP. FLOW DIRECTION
PROP. WATER SERVICE
PROP. <4" WATER MAIN
PROP. 4" WATER MAIN
PROP. 6" WATER MAIN
PROP. 8" WATER MAIN
PROP. 10" WATER MAIN
PROP. 12" WATER MAIN
PROP. 15" WATER MAIN
PROP. <12" STORM SEWER
PROP. 12" STORM SEWER
PROP. 15" STORM SEWER
PROP. 18" STORM SEWER
PROP. 24" STORM SEWER
PROP. 30" STORM SEWER
PROP. 36" STORM SEWER
PROP. 48" STORM SEWER
PROP. CURB AND GUTTER
PROP. CURB BACK OPENING
PROP. U.GRD GAS UTILITY
PROP. U.GRD ELECTRIC UTILITY
PROP. U.GRD CABLE TV UTILITY
PROP. U.GRD TELEPHONE UTILITY
PROP. U.GRD FIBER OPTIC UTILITY
PROP. OVERHEAD ELECTRIC
PROP. CROSSING OF N. GAS UTILITY
PROP. UTILITY POLE
PROP. LIGHT POLE
PROP. FENCE
TEMPORARY EASEMENT
CONSTRUCTION EASEMENT
ESTIMATED DISTURBANCE LIMITS
PROP. CONTOUR
PROP. DRAINAGE SWALE
PROP. SILT FENCE
PROP. EROSION CONTROL SEDIMENT LOG
PROP. PAVEMENT MARKING
PAINTED TRAFFIC ARROW
ADA PARKING DESIGNATION
PARKING STALL COUNT
RADIUS POINT/SIZE STA. ON CENTERLINE
PROP. HANDICAP RAMP WITH DETECTABLE WARNING FIELD
SOIL BORING LOCATION
RIVER FLOW DIRECTION
PROP. 4' DIA. SANITARY MANHOLE
PROP. 5' DIA. SANITARY MANHOLE
PROP. MANHOLE CHIMNEY REHABILITATION / TOP ADJUSTMENT
PROP. SANITARY LIFT STATION

PROP. TYPE "X" CURB & GUTTER
PROP. REVERSE-PITCH CURB & GUTTER
PROP. HOT MIX ASPHALT PAVEMENT (DRIVEWAY)
PROP. 4" CONCRETE SIDEWALK
PROP. 6" CONCRETE PAVEMENT
PROP. 8" CONCRETE PAVEMENT
PROP. GRAVEL / GRASSED GRAVEL SHOULDER / DRIVEWAY
EROSION MATTING (MILD SLOPES)
EROSION MATTING (STEEP SLOPES)
PROP. REGRADING AND LANDSCAPING
PROP. RIP-RAP
PROP. STORM STRUCTURES - PROFILE
PROP. STORM PIPE(RCP) - PROFILE
PROP. STORM PIPE(CMP OR HDPE) - PROFILE
PROP. SANITARY STRUCTURE - PROFILE
PROP. WATER MAIN PIPE - PROFILE
PROP. CLAY LINER - PROFILE
PROP. SANITARY SEWER FORCE MAIN - PROFILE
PROP. SPOT REPAIR - PROFILE / PLAN VIEW
PROP. CASING PIPE - PROFILE
PROP. CLEARING AND GRUBBING
PROP. BUILDING REMOVAL
PROP. SIDEWALK REMOVAL

PROP. PRESSURE-REDUCING VALVE STATION
PROP. FIRE HYDRANT
PROP. WATER SERVICE
PROP. WATER SERVICE WITH VALVE BOX SLEEVE
PROP. WATER VALVE
PROP. WATER BEND - HORIZONTAL
PROP. WATER BEND - VERTICAL
PROP. WATER BEND <5°
PROP. WATER TEE
PROP. WATER CROSS
PROP. WATER REDUCER
PROP. MJ PLUG
PROP. 4' DIA. STORM MANHOLE
PROP. 5' DIA. STORM MANHOLE
PROP. 30" DIA. INLET
PROP. 4' DIA. INLET
PROP. 6' DIA. INLET
PROP. 4' DIA. CATCH BASIN- W/ 2'X3' CASTING
PROP. 5' DIA. CATCH BASIN- W/ 2'X3' CASTING
PROP. 6' DIA. CATCH BASIN- W/ 2'X3' CASTING
PROP. 4'X6' CATCH BASIN W/2'X3' CASTING
PROP. CURB OPENING CASTING
PROP. 2'X3' CATCH BASIN
PROP. ADJUSTED CATCH BASIN TOP
PROP. WISDOT TYPE 8 INLET
PROP. WISDOT TYPE 9 INLET
PROP. CMP ENDWALL
PROP. RCP ENDWALL

KEY NOTES (100) :

100 PROPOSED SILT FENCE FOR EROSION CONTROL.
101 PROPOSED SEDIMENT LOG FOR EROSION CONTROL.
102 PROPOSED TRACKING PAD FOR EROSION CONTROL.
103 RE-GRADE YARD/DITCH LINE (MIN. SLOPE 1.0%).
104 PROPOSED EROSION MAT CLASS I, TYPE 'B'.
105 INSTALL TYPE 'D' INLET PROTECTION.
106 PROPOSED MAIL BOX RELOCATION.
107 ITEM TO REMAIN.
108 CONTRACTOR TO REMOVE ITEM.
200 PROPOSED SANITARY SEWER [SIZE].
201 NEW SANITARY SEWER LATERAL [SIZE].
202 REPLACE EXISTING SANITARY SEWER LATERAL.
203 RECONNECT EXISTING SANITARY SEWER LATERAL.
204 CONNECTION TO EXISTING SANITARY SEWER PIPE/STRUCTURE.
205 REMOVE EXISTING SANITARY SEWER PIPE /STRUCTURE.
206 REHABILITATE SANITARY MANHOLE; SEE TABLE 'B'.
207 SANITARY SEWER SPOT REPAIR.
208 ABANDON AND CAP EXISTING SANITARY SEWER.
209 ABANDON EXISTING SANITARY SEWER LATERAL.
210 CONTRACTOR TO FIELD VERIFY SANITARY SEWER LATERAL LOCATION/ACTIVITY AND REPLACE ACCORDING TO ENGINEER.
300 PROPOSED WATER MAIN [SIZE].
301 NEW WATER SERVICE [SIZE].
302 REPLACE EXISTING WATER SERVICE WITH 1" WATER SERVICE.
303 RECONNECT EXISTING WATER SERVICE.
304 DIRECTIONAL DRILL PROPOSED WATER SERVICE.
305 CONNECTION TO EXISTING WATER MAIN.
306 EXISTING HYDRANT TO BE REMOVED AND SALVAGED TO OWNER.
307 REMOVE EXISTING WATER MAIN VALVE BOX/STRUCTURE.
308 ADJUST EXISTING WATER MAIN VALVE BOX.
309 ABANDON, DRAIN, & CAP EXISTING WATER MAIN.
310 ABANDON EXISTING WATER SERVICE.
311 CONTRACTOR TO FIELD VERIFY WATER SERVICE LOCATION/ACTIVITY AND REPLACE ACCORDING TO ENGINEER.
400 PROPOSED STORM SEWER [SIZE].
401 CONNECT EXISTING ROOF DRAIN TO CURB OPENING
402 CONNECTION TO EXISTING STORM SEWER PIPE/STRUCTURE.
403 REMOVE EXISTING STORM SEWER PIPE/STRUCTURE.
404 ABANDON & CAP EXISTING STORM SEWER.
405 ADJUST EXISTING STORM STRUCTURE.
500 TREE & STUMP TO BE REMOVED (LESS THEN 12")
501 TREE & STUMP TO BE REMOVED (12" & GREATER)
502 SHRUB TO BE REMOVED.
503 CLEAR AND GRUB BRUSH LINE AS NECESSARY TO COMPLETE CONSTRUCTION. ALL CLEARING TO BE VERIFIED BY PROJECT ENGINEER.
504 REMOVE AND REINSTALL/REPLACE EXISTING LANDSCAPING, FENCE, RETAINING WALL, ETC. (IF NECESSARY).
505 REMOVE EXISTING LANDSCAPING, FENCE, RETAINING WALL, ETC.
506 POLE/PEDESTAL TO BE SECURED BY UTILITY COMPANY DURING CONSTRUCTION.
507 POLE TO BE RELOCATED BY UTILITY COMPANY.
508 GUY WIRE TO BE RELOCATED BY UTILITY COMPANY.
509 PEDESTAL TO BE RELOCATED BY UTILITY COMPANY.
510 UTILITY CONFLICT - TO BE RELOCATED/ADJUSTED BY UTILITY COMPANY.
511 POTENTIAL UTILITY CONFLICT - VERIFY WITH UTILITY COMPANY.
512 **CAUTION!** - UTILITY CROSSING.
600 REMOVE EXISTING CURB & GUTTER.
601 PROPOSED 24" CONCRETE CURB & GUTTER.
602 PROPOSED 30" CONCRETE CURB & GUTTER.
603 PROPOSED 36" CONCRETE CURB & GUTTER.
604 MATCH TO EXISTING CURB & GUTTER.
605 PROVIDE TYPE 'X' CURB.
606 PROVIDE REVERSE-PITCH CURB & GUTTER.
607 PROVIDE CURB TAPER.
608 REMOVE ASPHALT/CONCRETE/WALL/STEPS.
609 PROPOSED 4" CONCRETE SIDEWALK.
610 PROPOSED 6" CONCRETE SIDEWALK/DRIVEWAY.
611 PROPOSED 6" CONCRETE PAVEMENT.
612 PROPOSED 8" CONCRETE PAVEMENT.
613 PROPOSED CONCRETE STEPS. STEP RISE HEIGHT AND STEP TREAD DEPTH SHALL MEET APPLICABLE BUILDING CODES. CONTRACTOR SHALL CONFIRM REQUIRED NUMBER OF STEPS WITH PROJECT ENGINEER PRIOR TO INSTALL.
614 PROPOSED 2' GRAVEL SHOULDER.
615 REGRADE EXISTING GRAVEL.
616 PROPOSED GRAVEL DRIVEWAY.
617 REMOVE & REPLACE GRAVEL DRIVEWAY.
618 REMOVE GRAVEL DRIVEWAY & REPLACE WITH BITUMINOUS DRIVEWAY/APRON.
619 REMOVE & REPLACE HMA PAVEMENT.
620 REMOVE & REPLACE HMA PAVEMENT DRIVEWAY.
621 PROPOSED HMA PAVEMENT.
622 MATCH TO EXISTING EDGE PAVEMENT.
623 PROPOSED RESIDENTIAL HMA PAVEMENT DRIVEWAY.
624 PROPOSED COMMERCIAL HMA PAVEMENT DRIVEWAY.
625 REMOVE & REPLACE 4" CONCRETE SIDEWALK.
626 REMOVE & REPLACE 6" CONCRETE SIDEWALK/DRIVEWAY.
627 PROPOSED HANDICAP RAMP WITH - D. WARN. FIELD [S.F.].
628 SAW CUT PCC PAVEMENT.
629 SAW CUT HMA PAVEMENT.
630 PROPOSED BITUMINOUS WEDGE CURB.

NOTES:

TRAFFIC CONTROL NOTE:
ALL CONTRACTORS MUST CONFORM TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND THE REQUIREMENTS OF THE WISCONSIN DEPARTMENT OF TRANSPORTATION. ONE LANE OF TRAFFIC MUST REMAIN OPEN DURING AND AFTER ALL CONSTRUCTION ACTIVITIES FOR EMERGENCY VEHICLE ACCESS.

STREET SIGN NOTE:
CONTRACTOR WILL BE RESPONSIBLE FOR REMOVING, STORING, AND RESETTING ALL PERMANENT SIGNS. CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING SIGNS UNTIL REMOVED. CONTRACTOR IS RESPONSIBLE FOR ANY AND ALL TEMPORARY SIGNS THAT MAY BE REQUIRED.

TRAFFIC SIGN NOTE:
CONTRACTOR TO PROVIDE TEMPORARY TRAFFIC SIGNS FOR ANY TRAFFIC SIGNS DISTURBED DURING CONSTRUCTION. ALL DISTURBED TRAFFIC SIGNS MUST BE REPLACED AND INSTALLED AS PER LOCAL REGULATIONS AT THE COMPLETION OF THE PROJECT.

EROSION CONTROL NOTE:
CONTRACTOR TO INSTALL BACKFILL MATERIAL INTO THE EXCAVATED TRENCH AS SOON AS POSSIBLE TO IMPLEMENT EROSION CONTROL.

PROPERTY LINE AND RIGHT-OF-WAY NOTE:
ALL RIGHT-OF-WAYS AND PROPERTY LINES SHOWN ARE APPROXIMATE AND FOR ILLUSTRATIVE PURPOSES ONLY. A PROPERTY SURVEY PERFORMED BY A PROFESSIONAL LAND SURVEYOR SHOULD BE COMPLETED TO DETERMINE THE ACTUAL PROPERTY LINE AND RIGHT-OF-WAY LOCATIONS.

MAILBOX RELOCATION NOTE:
CONTRACTOR TO RELOCATE EXISTING MAILBOXES DURING CONSTRUCTION (COORDINATE AND VERIFY WITH LOCAL POSTAL SERVICE ON LOCATION). RESET BEHIND CURB AND GUTTER OR SHOULDER ACCORDING TO THE REQUIREMENTS OF THE LOCAL POSTMASTER UPON COMPLETION OF STREET CONSTRUCTION.

TREE TRIMMING NOTE:
CONTRACTOR TO PROPERLY TRIM ALL TREE BRANCHES, ROOTS, AND BUSHES DISTURBED DUE TO SANITARY SEWER, WATER SYSTEM, STORM SEWER, AND STREET CONSTRUCTION.

TREE REMOVAL NOTE:
CONTRACTOR TO CONTACT ENGINEER OR **VILLAGE OF BLOOMINGTON** FOR VERIFICATION PRIOR TO ANY TREE REMOVAL.

SAW CUT NOTE:
CONTRACTOR TO PROVIDE FULL DEPTH SAW CUTS AND REPLACE PAVEMENT.

UTILITIES' NOTE:
THE LOCATIONS OF THE UNDERGROUND UTILITIES SHOWN ON THE PLAN HAVE BEEN OBTAINED BY FIELD CHECKS, A UTILITY LOCATE, AND SEARCHES OF AVAILABLE RECORDS. IT IS BELIEVED THAT THEY ARE ESSENTIALLY CORRECT, BUT THE SURVEYOR DOES NOT GUARANTEE THEIR ACCURACY OR COMPLETENESS. THE CONTRACTOR SHOULD VERIFY LOCATIONS W/ THE UTILITY COMPANIES AND **VILLAGE OF BLOOMINGTON** PRIOR TO STARTING ANY EXCAVATION.

SANITARY SEWER LATERAL NOTE:
THE LOCATION OF EXISTING SANITARY SEWER LATERALS ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY THE LOCATION AND STATUS OF EACH SANITARY SEWER LATERAL ENCOUNTERED. ONLY ACTIVE SANITARY SEWER LATERALS SHALL BE CONNECTED TO THE NEW SANITARY SEWER MAIN.

CASTING NOTE:
ALL EXISTING MANHOLE CASTINGS AND STORM SEWER CASTINGS TO BE REMOVED AND/OR REPLACED SHALL BE SALVAGED TO THE **VILLAGE OF BLOOMINGTON**.

TRACER WIRE NOTE:
TRACER WIRE (12 GAUGE) TO BE INSTALLED WITH ALL POLYVINYL CHLORIDE (PVC).

SITE RESTORATION NOTE:
CONTRACTOR WILL BE RESPONSIBLE FOR REPLACEMENT OF ALL DISTURBED PROJECT AREA COMPONENTS INCLUDING, BUT NOT LIMITED TO, EXISTING CONCRETE, BITUMINOUS PAVEMENT, GRAVEL, CULVERTS, WATER AND SANITARY SEWER SYSTEM COMPONENTS, STORM SEWER SYSTEM COMPONENTS, TREES, LAWN ORNAMENTS, FENCING, YARD LANDSCAPING, RETAINING WALLS, MAILBOXES, AND LANDSCAPE AREAS.

PROPERTY DAMAGES:
THE CONTRACTOR IS RESPONSIBLE FOR THE PRESERVATION OF ADJACENT PROPERTY AND FOR ANY DAMAGE TO THE SITE OR TO ADJACENT PROPERTY INCIDENTAL TO THE CONSTRUCTION ACTIVITIES. AFTER THE COMPLETION OF CONSTRUCTION, ANY AREAS ADJACENT TO THE CONSTRUCTION SITE DAMAGED BY THE CONTRACTOR DURING EXECUTION OF THE CONTRACT SHALL BE RESTORED TO MATCH THE PRECONSTRUCTION CONDITIONS.

DISCIPLINE	DESIGNATION
REMOVAL	R
GENERAL	G
CIVIL	C
LANDSCAPE	L
AQUATIC	AQ
ARCHITECTURAL	A
STRUCTURAL	S
ELECTRICAL	E
INSTRUMENTATION/CONTROLS	N
PROCESS	D
PLUMBING	P
HVAC /MECHANICAL	M

DISCIPLINE DESIGNATORS

TYPE	DESIGNATION
NOTES & SCHEDULES	0
PLANS	1
ELEVATIONS & DETAILS	2
CROSS-SECTIONS	3
DIAGRAMS	4

DRAWING SHEET DESIGNATION

C102
- DRAWING NUMBER
- DRAWING SHEET DESIGNATION
- DISCIPLINE DESIGNATION (MAY HAVE MULTIPLE)

SHEET NUMBER IDENTIFICATION

ENGINEER:
DELTA 3 ENGINEERING LLC
PROFESSIONAL CIVIL, PLANNING, & STRUCTURAL ENGINEERING AND SURVEYING
3047 WESTERN AVE SUITE 3 | PLATTEVILLE, WISCONSIN 53818 | (608) 348-5355

FOR QUESTIONS REGARDING THIS PROJECT, PLEASE CONTACT:

MR. BART NIES, P.E.
DELTA 3 ENGINEERING, INC.
TELEPHONE: (608) 348-5355

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PROPOSED 2021 STREAM IMPROVEMENTS - BLAKE-FORK -- VILLAGE OF BLOOMINGTON

PROJECT LOCATION: GRANT COUNTY, WISCONSIN
OWNER: VILLAGE OF BLOOMINGTON. 453 CANAL ST. BLOOMINGTON, WI 53804

REVISIONS:		
NO.	DATE	DESCRIPTION
AS-BUILT:		BY:

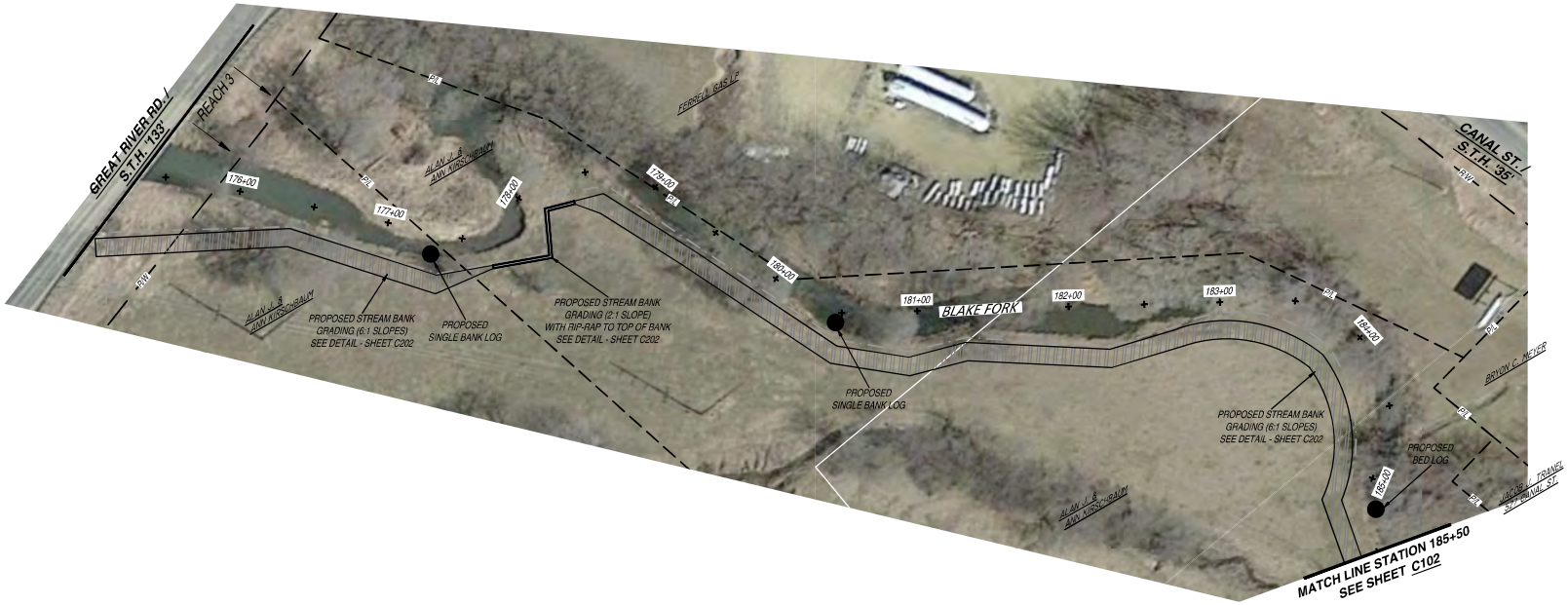
PRELIMINARY

PROJECT NUMBER	D20-154
SHEET SCALE	NOT TO SCALE
DRAWN BY	C.COYIER
DATE ISSUED	DECEMBER 31, 2020
SHEET DESC.	LEGEND & GENERAL NOTES

SHEET TITLE:
G001

SHEET NUMBER # 02 of ###

*AERIAL IMAGES
FROM 2015





ENGINEER:
DELTA 3
EARTH ANGEL CORNERS
PROFESSIONAL CIVIL, MUNICIPAL, & STRUCTURAL ENGINEERING • ARCHITECTURE
SURVEYING • LAND DEVELOPMENT • PLANNING & CAD SERVICES
675 SOUTH CHESTNUT STREET
PLATTEVILLE, WISCONSIN 53818
PHONE: (608) 348-5355
598 JACKSON STREET
DUBUQUE, IOWA 52001
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FOR QUESTIONS REGARDING THIS PROJECT, PLEASE CONTACT:

MR. BART NIES, P.E.
DELTA 3 ENGINEERING, INC.
TELEPHONE: (608) 348-5355

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PROPOSED 2021 STREAM IMPROVEMENTS - BLAKE FORK

VILLAGE OF BLOOMINGTON

PROJECT LOCATION: GRANT COUNTY, WISCONSIN

OWNER: VILLAGE OF BLOOMINGTON; 453 CANAL ST, BLOOMINGTON, WI 53804

REVISIONS:		
NO.	DATE	DESCRIPTION
AS-BUILT:		BY:

PRELIMINARY	
PROJECT NUMBER	D20-154
SHEET SCALE	SEE BAR SCALE
DRAWN BY	JORDAN FURE
DATE ISSUED	DECEMBER 31, 2020
SHEET DESC.	DESCRIPTION

SHEET TITLE:

C101

SHEET NUMBER # 03 of ###

*AERIAL IMAGES
FROM 2015



SCALE: 1"=40' (11"x17")
0 10 20 30

ENGINEER:

DELTA 3
EARTH ANGEL COURIER

PROFESSIONAL CIVIL, MUNICIPAL & STRUCTURAL ENGINEERING • ARCHITECTURE
ENVIRONMENTAL • LAND DEVELOPMENT • PLANNING & CAD SERVICES

675 SOUTH CHESTNUT STREET
PLATTEVILLE, WISCONSIN 53818
PHONE: (608) 348-5355

908 JACKSON STREET
DUBUQUE, IOWA 52001
PHONE: (563) 542-4055

FOR QUESTIONS
REGARDING THIS PROJECT,
PLEASE CONTACT:

MR. BART NIES, P.E.
DELTA 3 ENGINEERING, INC.
TELEPHONE: (608) 348-5355

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PROPOSED 2021 STREAM IMPROVEMENTS - BLAKE FORK

VILLAGE OF BLOOMINGTON

PROJECT LOCATION: GRANT COUNTY, WISCONSIN

OWNER: VILLAGE OF BLOOMINGTON; 453 CANAL ST. BLOOMINGTON, WI 53804

REVISIONS:		
NO.	DATE	DESCRIPTION
AS-BUILT:		BY:

PRELIMINARY	
PROJECT NUMBER	D20-154
SHEET SCALE	SEE BAR SCALE
DRAWN BY	JORDAN FURE
DATE ISSUED	DECEMBER 31, 2020
SHEET DESC.	DESCRIPTION

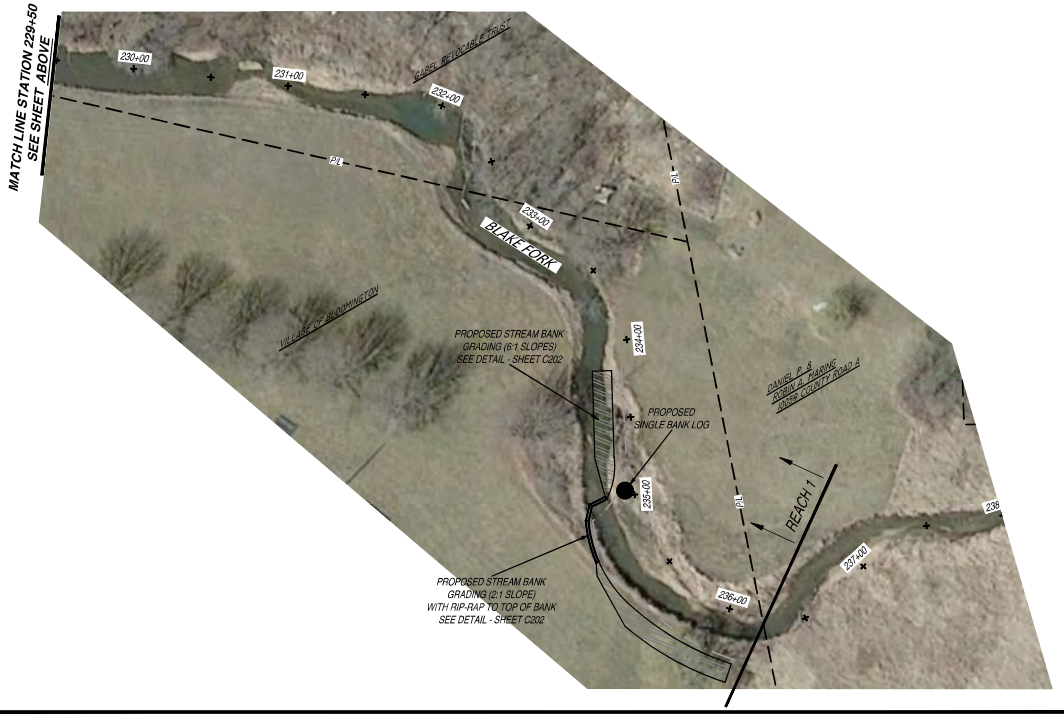
SHEET TITLE:

C102

SHEET NUMBER # 04 of ###

*AERIAL IMAGES FROM 2015





SCALE: 1"=40' (11"x17")
0 10 20 30

ENGINEER:
DELTA 3
EARTH ANGEL COURSES
PROFESSIONAL CIVIL, MUNICIPAL, & STRUCTURAL ENGINEERING • ARCHITECTURE
LAND SURVEYING • LAND DEVELOPMENT • PLANNING & CADD SERVICES
675 SOUTH CHESTNUT STREET PHONE: (608) 348-5355
PLATTEVILLE, WISCONSIN 53818
888 JACKSON STREET PHONE: (563) 582-4005
DUBUQUE, IOWA 52001

FOR QUESTIONS REGARDING THIS PROJECT, PLEASE CONTACT:
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DELTA 3 ENGINEERING, INC.
TELEPHONE: (608) 348-5355

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PROPOSED 2021 STREAM IMPROVEMENTS - BLAKE FORK

VILLAGE OF BLOOMINGTON

PROJECT LOCATION: GRANT COUNTY, WISCONSIN

OWNER: VILLAGE OF BLOOMINGTON; 453 CANAL ST, BLOOMINGTON, WI 53804

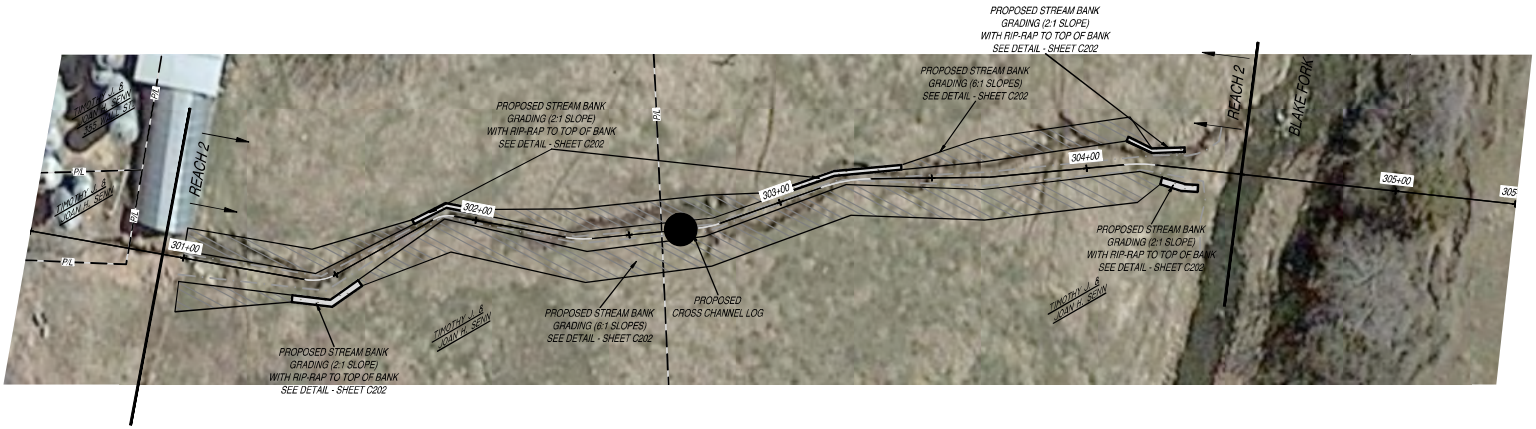
REVISIONS:		
NO.	DATE	DESCRIPTION
AS-BUILT:		BY:

PRELIMINARY	
PROJECT NUMBER	D20-154
SHEET SCALE	SEE BAR SCALE
DRAWN BY	JORDAN FURE
DATE ISSUED	DECEMBER 31, 2020
SHEET DESC.	DESCRIPTION

SHEET TITLE:
C103

SHEET NUMBER # 05 of ###

*AERIAL IMAGES
FROM 2015



SCALE: 1"=20' (24"x36")
0 10 20 30

ENGINEER:
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PLATTEVILLE, WISCONSIN 53818
PHONE: (608) 348-5355
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PHONE: (563) 542-4095

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DELTA 3 ENGINEERING, INC.
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PROPOSED 2021 STREAM IMPROVEMENTS - BLAKE FORK

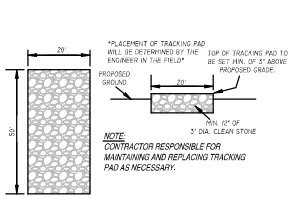
VILLAGE OF BLOOMINGTON

PROJECT LOCATION: GRANT COUNTY, WISCONSIN

OWNER: VILLAGE OF BLOOMINGTON; 453 CANAL ST, BLOOMINGTON, WI 53804

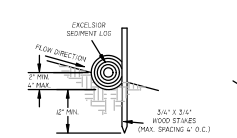
REVISIONS:

NO.	DATE	DESCRIPTION

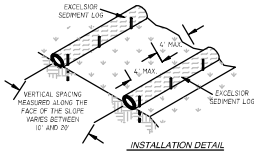


NOTE:
CONTRACTOR RESPONSIBLE FOR MAINTAINING AND REPLACING TRACKING PAD AS NECESSARY.

TRACKING PAD DETAIL
SCALE: N.T.S.



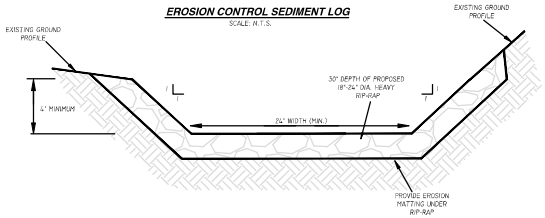
TRENCH DETAIL
SCALE: N.T.S.



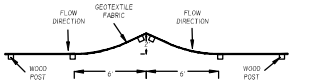
INSTALLATION DETAIL
SCALE: N.T.S.

TYPE 1 = 20" ROLL (HEAVY DUTY CONCENTRATED FLOW)
TYPE 2 = 12" ROLL (HEAVY CONCENTRATED FLOW)
TYPE 3 = 9" ROLL (MILD CONCENTRATED FLOW)
TYPE 4 = 6" ROLL (LOW CONCENTRATED FLOW)

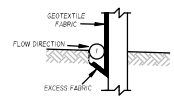
EROSION CONTROL SEDIMENT LOG
SCALE: N.T.S.



DRAINAGE DITCH DETAIL B-B
SCALE: N.T.S.



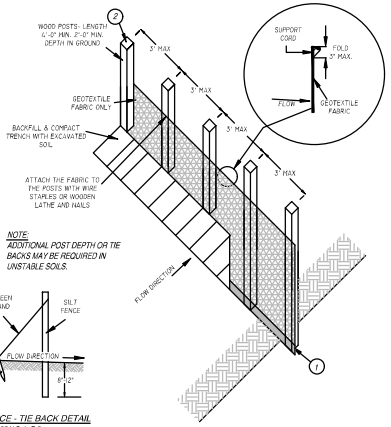
SILT FENCE - JOINING TWO LENGTHS DETAIL
SCALE: N.T.S.



SILT FENCE - TRENCH DETAIL
SCALE: N.T.S.

GENERAL NOTES: SILT FENCE:
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE WISDOT STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION (MOST CURRENT EDITION) AND THE APPLICABLE SPECIAL PROVISIONS.

1. TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
2. WOOD POST SHALL BE A MINIMUM SIZE OF 1-1/8" X 1-1/8" OF OAK OR HICKORY.

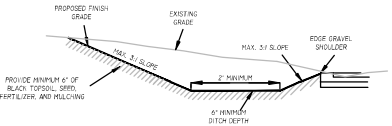


NOTE:
ADDITIONAL POST DEPTH OR TIE BACKS MAY BE REQUIRED IN UNSTABLE SOILS.

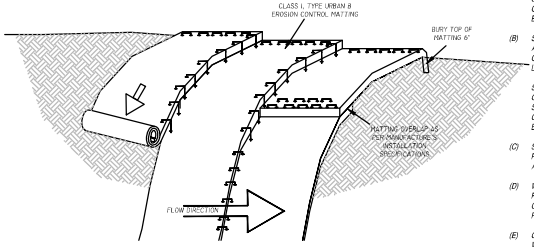
SILT FENCE INSTALLATION DETAIL
SCALE: N.T.S.

SILT FENCE - TIE BACK DETAIL
SCALE: N.T.S.

SILT FENCE DETAILS
SCALE: N.T.S.



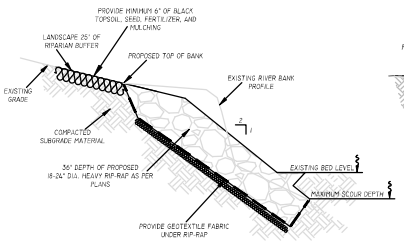
REGRADED DITCH DETAIL
SCALE: N.T.S.



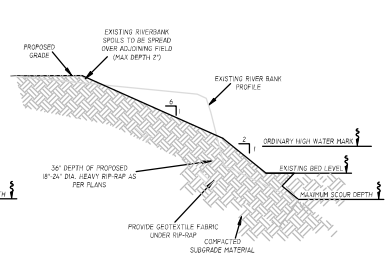
EROSION MATTING NOTES:

1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING APPLICATION OF FERTILIZER AND MULCH AND SEED.
2. BEGIN AT THE TOP OF THE SHOULDER (OR CHANNEL) BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
3. ROLL THE BLANKETS DOWN (STARTING AT DOWNSTREAM PROCEEDING UPSTREAM) HORIZONTALLY ACROSS THE SLOPE.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH MANUFACTURE'S RECOMENDED OVERLAP.
5. WHEN BLANKETS MUST BE SPLICED DOWN THE SLOPE, PLACE BLANKETS END OVER END (SHINGLE STYLE) WITH AN OVERLAP. USE A DOUBLE ROW OF STAGGERED STAPLES 4" APART TO SECURE BLANKETS.
6. IN HIGH CHANNEL APPLICATIONS, A STAPLE SLOT IS RECOMMENDED AT 30 TO 40 FOOT INTERVALS. USE A ROW OF STAPLES 4" APART OVER THE ENTIRE WIDTH OF THE CHANNEL. PLACE A SECOND ROW 4" BELOW THE FIRST ROW IN A STAGERED PATTERN.
7. THE TERMINAL END OF THE BLANKETS MUST BE ANCHORED IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.

EROSION MATTING - SLOPE INSTALLATION DETAIL
SCALE: N.T.S.



STREAM BANK GRADING WITH RIP-RAP TO TOP OF BANK DETAIL
SCALE: N.T.S.



STREAM BANK GRADING DETAIL
SCALE: N.T.S.

EROSION CONTROL NOTES:

1. GENERAL EROSION NOTES AND MAINTENANCE MEASURES ARE ILLUSTRATED ON THE PLAN SHEETS. AFTER AWARD OF THE CONTRACT, THE GENERAL CONTRACTOR SHALL INSTALL ALL BEST MANAGEMENT PRACTICES AS SHOWN ON THE PLAN SHEETS. ONCE INSTALLED, THE GENERAL CONTRACTOR SHALL CONTACT DELTA 3 ENGINEERING, INC. (608-348-5355). ONCE NOTIFIED DELTA 3 ENGINEERING INC. WILL VISIT THE SITE WITHIN 5 DAYS TO REVIEW THE SITE WITH THE GENERAL CONTRACTORS SUPERINTENDENT. UPON VISITING THE SITE, THE CONSULTING ENGINEER AND THE GENERAL CONTRACTORS SUPERINTENDENT WILL REVIEW THE SITE FOR COMPLIANCE WITH THE EROSION CONTROL MEASURES. IF AND WHEN ALL BEST MANAGEMENT PRACTICES REQUIRED TO COMMENCE SITE CONSTRUCTION ARE IN PLACE, THE CONSULTING ENGINEER AND PROJECT SUPERINTENDENT WILL SIGN AND CERTIFY THIS FACT. THIS REVIEW AND CERTIFICATION SHALL TAKE PLACE PRIOR TO THE REQUIRED PRE-CONSTRUCTION MEETING. THE SITE SUPERINTENDENT SHALL MAINTAIN AN AS-BUILT COPY OF THE EROSION CONTROL MEASURES ON SITE AT ALL TIMES. ANY ACTIVITIES INVOLVING INSTALLATION OF BEST MANAGEMENT PRACTICES SHALL BE INDICATED ON THE AS-BUILT PLAN WITH AN INSTALLED TIME AND DATE. RECORDED INFORMATION SHALL BE PERMANENTLY PLACED ON THE SITE MAP INCLUDING ANY CHANGES MADE TO THE BEST MANAGEMENT PRACTICES. IF THE SITE MAP BECOMES HARD TO READ, THE INITIAL DRAWING SHALL BE SAVED AND A CLEAN COPY SHALL BE ISSUED IN ORDER TO CONTINUE RECORDING ANY ON-SITE EROSION CONTROL ACTIVITY.
2. A COMPLETE COPY OF ALL INSPECTION REPORTS, PLAN REVISIONS, ETC., MUST BE RETAINED AT THE PROJECT SITE AT ALL TIMES DURING DURATION OF THE PROJECT AND KEPT IN THE PERMANENT PROJECT RECORDS FOR AT LEAST FIVE YEARS FOLLOWING SUBMISSION OF THE NOTICE OF TERMINATION (NOT).
3. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR INSURING THAT ALL SUB-CONTRACTORS INVOLVED IN GROUND DISTURBING ACTIVITY COMPLY WITH THE EROSION CONTROL REQUIREMENTS.
4. DAILY INSPECTIONS BY THE PROJECT SUPERINTENDENT AND MONTHLY INSPECTIONS BY THE OWNER'S CONSTRUCTION MANAGER MUST BE MADE TO DETERMINE THE EFFECTIVENESS OF THE EROSION CONTROL MEASURES. THE GENERAL CONTRACTOR IS TO INSPECT EROSION AND SEDIMENT CONTROLS WITHIN 24 HOURS AFTER A RAINFALL EVENT OF 0.5 INCHES OR GREATER. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE TO REPAIR OR REPLACE EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES AS NECESSARY WITHIN 24 HOURS OF INSPECTION.
5. ONCE THE SITE REACHES FINAL STABILIZATION, ALL PERMANENT EROSION AND SEDIMENTATION CONTROLS ARE INSTALLED AND ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS ARE REMOVED, THE GENERAL CONTRACTOR AND OWNER MUST COMPLETE A FINAL SITE INSPECTION. UPON APPROVAL BY OWNER, THE OWNER AND GENERAL CONTRACTOR, AS APPLICABLE, MUST COMPLETE AND SUBMIT A NOTICE OF TERMINATION (NOT) FORM TO BE SUBMITTED TO THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES.
6. A RECORD OF THE DATES WHEN MAJOR GROUND-DISTURBING ACTIVITIES OCCUR, WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON A PORTION OF THE SITE, AND WHEN STABILIZATION MEASURES ARE INITIATED MUST BE MAINTAINED UNTIL THE NOT IS FILED. CONTROLS MUST BE IN PLACE DOWN GRADIENT OF GROUND-DISTURBING ACTIVITIES PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
7. A LOG OF ALL INSPECTIONS BY FEDERAL, STATE, OR LOCAL STORM WATER OR OTHER ENVIRONMENTAL AGENCIES SHALL BE KEPT BY THE GENERAL CONTRACTOR. THE LOG SHALL INCLUDE THE DATE AND TIME OF VISIT AND WHETHER A REPORT WAS ISSUED OR WILL BE ISSUED AS A RESULT OF THE INSPECTION. ANY REPORTS ISSUED SHALL BE FAXED TO THE DELTA 3 ENGINEERING INC. 608-348-5355 (FAX).
8. SOIL STABILIZATION - THE PURPOSE OF SOIL STABILIZATION IS TO PREVENT SOIL FROM LEAVING THE SITE. IN THE NATURAL CONDITION, SOIL IS STABILIZED BY NATIVE VEGETATION. THE PRIMARY TECHNIQUE TO BE USED AT THIS PROJECT FOR STABILIZING SITE SOIL WILL BE TO PROVIDE A PROTECTIVE COVER OF TURF GRASS OR PAVEMENT.
   (A) TEMPORARY SEEDING OR STABILIZATION - AREAS MAY BE STABILIZED TEMPORARILY WITH THE USE OF FAST-GERMINATING ANNUAL SEED, STRAW MULCH, WOOD CELLULOSE FIBERS, TACKIFIERS, NETTING OR BLANKET. WHERE CONDITIONS ARE FAVORABLE, AREAS SHALL BE TEMPORARILY STABILIZED WITHIN 7 DAYS AFTER CONSTRUCTION ACTIVITY CEASES. ALL DISTURBED GROUND WHERE THERE WILL NOT BE CONSTRUCTION FOR LONGER THAN 14 DAYS MUST BE SEEDED OR OTHERWISE STABILIZED.
   (B) PERMANENT SEEDING OR SOD - ALL AREAS AT FINAL GRADE MUST BE SEEDED OR SODDED WITHIN 3 DAYS AFTER COMPLETION OF THE MAJOR CONSTRUCTION ACTIVITY. EXCEPT FOR SMALL LEVEL SPOTS, SEEDED AREAS SHOULD GENERALLY BE PROTECTED WITH MULCH. ALL AREAS TO BE SEEDED WILL ALSO HAVE TOPSOIL AND OTHER AMENDMENTS AS STATED IN WISDOT SPECIFICATION SECTION 02900-PLANTING.
   (C) MULCHING - ALL AREAS THAT ARE TEMPORARY OR PERMANENT SEEDED SHALL BE MULCHED ACCORDING TO SECTION 627 - MULCHING OF THE WISDOT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION. ALL MULCH IS TO BE ANCHORED UTILIZING METHOD A, B, OR C.
   (D) EROSION CONTROL MATTING - FOR ANY SLOPES GREATER THAN 3:1, EROSION MATTING IS REQUIRED.
9. STRUCTURAL CONTROLS - BEFORE ANY MAJOR GRADING ACTIVITIES, THE FOLLOWING BEST MANAGEMENT PRACTICES SHALL BE INSTALLED ON THE PROPOSED SITE - SILT FENCE, TEMPORARY TRACKING PAD, AND STORM SEWER INLET PROTECTION.
   (A) SILT FENCE - SILT FENCE IS A SYNTHETIC PERMEABLE WOVEN OR NON-WOVEN FABRIC TYPICALLY INCORPORATING WOODEN OR METAL SUPPORT STAKES AT INTERVALS SUFFICIENT TO SUPPORT THE FENCE, WATER, AND SEDIMENT RETAINED BY THE FENCE. SILT FENCE CAN ALSO BE INSTALLED WITH A WIRE FENCE BACKING. THE FENCE IS DESIGNED TO RETAIN SEDIMENT-LADEN WATER AND ALLOW SETTLEMENT OF SUSPENDED SOILS BEFORE THE STORM WATER FLOWS THROUGH THE FABRIC FOR DISCHARGE DOWNSTREAM. SILT FENCE SHALL BE LOCATED AS SHOWN ON THE PLAN SHEETS. THE SILT FENCE TO BE INCLUDED FOR THIS PROJECT SHALL BE CONSTRUCTED PER WISCONSIN DNR TECHNICAL STANDARDS FOR SILT FENCE (CODE 1056).
   (B) TEMPORARY TRACKING PAD - ALL ACCESS POINTS FROM THE PUBLIC STREET INTO THE CONSTRUCTION SITE SHALL INCLUDE A TRACKING PAD COMPOSED OF COURSE STONE TO THE DIMENSIONS SHOWN ON DETAIL SHEET (C201). ANY SEDIMENT REACHING A PUBLIC OR PRIVATE ROAD SHALL BE REMOVED BY STREET CLEANING (NOT FLUSHING) BEFORE THE END OF EACH WORKDAY.
   (C) STORM SEWER INLET PROTECTION - CURB AND GRATED INLETS ARE PROTECTED FROM THE INTRUSION OF SILT AND SEDIMENT THROUGH A VARIETY OF SEDIMENT CONTROL PRACTICES TO ALLOW SETTLEMENT OF SUSPENDED SOILS BEFORE DISCHARGING INTO THE STORM SEWER. GRATED INLETS TYPICALLY INCLUDE A STURDY FRAME WRAPPED IN GEOTEXTILE FABRIC OR SEDIMENT LOG PERIMETER TO SLOW THE FLOW OF WATER AND ALLOW PONDING WHERE SEDIMENT MAY SETTLE OUT. CURB INLETS TYPICALLY INCLUDE SEDIMENT LOG BARRIERS HELD IN PLACE WITH GEOTEXTILE FABRIC. OTHER MANUFACTURED PRODUCTS ARE ALSO AVAILABLE. ALL STORM DRAINS SHALL BE PROTECTED BY USING STRAW BALES, SEDIMENT LOGS, FABRIC, OR EQUIVALENT BARRIER.

   FINAL SITE STABILIZATION IS ACHIEVED WHEN TURF GRASS COVER PROVIDES PERMANENT STABILIZATION FOR AT LEAST 70 PERCENT OF THE DISTURBED SOIL SURFACE, EXCLUSIVE OF AREAS THAT HAVE BEEN PAVED.
10. OTHER POLLUTANT CONTROLS
   (A) DUST CONTROL - CONSTRUCTION TRAFFIC MUST ENTER AND EXIT THE SITE AT THE STABILIZED CONSTRUCTION EXIT. THE PURPOSE IS TO TRAP DUST AND MUD THAT WOULD OTHERWISE BE CARRIED OFF-SITE BY CONSTRUCTION EQUIPMENT.

   WATER TRUCKS OR OTHER DUST CONTROL AGENTS WILL BE USED AS NEEDED DURING CONSTRUCTION TO REDUCE DUST GENERATED ON THE SITE. DUST CONTROL MUST BE PROVIDED BY THE GENERAL CONTRACTOR TO A DEGREE THAT IS ACCEPTABLE TO THE OWNER'S CONSTRUCTION MANAGER, AND IN COMPLIANCE WITH APPLICABLE LOCAL AND STATE DUST CONTROL REGULATIONS. AFTER CONSTRUCTION, THE SITE WILL BE STABILIZED (AS DESCRIBED ELSEWHERE), WHICH WILL REDUCE THE POTENTIAL FOR DUST GENERATION.
   (B) SOLID WASTE DISPOSAL - NO SOLID MATERIALS, INCLUDING BUILDING MATERIALS, ARE ALLOWED TO BE DISCHARGED FROM THE SITE WITH STORM WATER. ALL SOLID WASTE, INCLUDING DISPOSABLE MATERIALS INCIDENTAL TO THE MAJOR CONSTRUCTION ACTIVITIES, MUST BE COLLECTED AND PLACED IN CONTAINERS. THE CONTAINERS WILL BE EMPTIED AS NECESSARY BY A CONTRACT TRASH DISPOSAL SERVICE AND HAULED AWAY FROM THE SITE. THE LOCATION OF SOLID WASTE RECEPTACLES SHALL BE SHOWN AND APPROVED BY THE OWNER.

   SUBSTANCES THAT HAVE THE POTENTIAL FOR POLLUTING SURFACE AND/OR GROUNDWATER MUST BE CONTROLLED BY WHATEVER MEANS NECESSARY IN ORDER TO ENSURE THAT THEY DO NOT DISCHARGE FROM THE SITE. FOR EXAMPLE, SPECIAL CARE MUST BE EXERCISED DURING EQUIPMENT FUELING AND SERVICING OPERATIONS. IF A SPILL OCCURS, IT MUST BE CONTAINED AND DISPOSED SO THAT IT WILL NOT FLOW FROM THE SITE OR ENTER GROUNDWATER, EVEN IF THIS REQUIRES REMOVAL, TREATMENT, AND DISPOSAL OF SOIL. IN THIS REGARD, POTENTIALLY POLLUTING SUBSTANCES SHOULD BE HANDLED IN A MANNER CONSISTENT WITH THE IMPACT THEY REPRESENT.
   (C) SANITARY FACILITIES - ALL PERSONNEL INVOLVED WITH CONSTRUCTION ACTIVITIES MUST COMPLY WITH STATE AND LOCAL SANITARY OR SEPTIC SYSTEM REGULATIONS. TEMPORARY SANITARY FACILITIES MUST BE PROVIDED AT THE SITE THROUGHOUT THE CONSTRUCTION PHASE. THEY MUST BE UTILIZED BY ALL CONSTRUCTION PERSONNEL AND MUST BE SERVICED BY A COMMERCIAL OPERATOR.
   (D) WATER SOURCE - NON-STORM WATER COMPONENTS OF SITE DISCHARGE MUST BE CLEAN WATER. WATER USED FOR CONSTRUCTION WHICH DISCHARGES FROM THE SITE MUST ORIGINATE FROM A PUBLIC WATER SUPPLIER, OR PRIVATE WELL APPROVED BY THE STATE HEALTH DEPARTMENT. WATER USED FOR CONSTRUCTION THAT DOES NOT ORIGINATE FROM AN APPROVED PUBLIC SUPPLY MUST NOT DISCHARGE FROM THE SITE. IT CAN BE RETAINED IN THE PONDS UNTIL IT INFILTRATES AND EVAPORATES.
   (E) CONCRETE WASTE FROM CONCRETE READY-MIX TRUCKS - DISCHARGE OF EXCESS OR WASTE CONCRETE AND/OR WASH WATER FROM CONCRETE TRUCKS WILL BE ALLOWED ON THE CONSTRUCTION SITE, BUT ONLY IN SPECIFICALLY DESIGNATED DIKED AREAS PREPARED TO PREVENT CONTACT BETWEEN THE CONCRETE AND/OR WASH WATER AND STORM WATER THAT WILL BE DISCHARGED FROM THE SITE. ALTERNATIVELY, WASTE CONCRETE CAN BE PLACED INTO FORMS TO MAKE RIP-RAP OR OTHER USEFUL CONCRETE PRODUCTS. THE CURED RESIDUE FROM THE CONCRETE WASHOUT DIKED AREAS SHALL BE DISPOSED IN ACCORDANCE WITH APPLICABLE STATE AND FEDERAL REGULATIONS. THE JOB SITE SUPERINTENDENT IS RESPONSIBLE FOR ASSURING THAT THESE PROCEDURES ARE FOLLOWED.
   (F) FUEL TANKS - TEMPORARY ON-SITE FUEL TANKS FOR CONSTRUCTION VEHICLES SHALL MEET ALL STATE AND FEDERAL REGULATIONS. TANKS SHALL HAVE APPROVED SPILL CONTAINMENT WITH THE CAPACITY REQUIRED BY THE APPLICABLE REGULATIONS. THE TANK SHALL BE IN SOUND CONDITION FREE OF RUST OR OTHER DAMAGE WHICH MIGHT COMPROMISE CONTAINMENT. HOSES, VALVES, FITTINGS, CAPS, FILLER NOZZLES, AND ASSOCIATED HARDWARE SHALL BE MAINTAINED IN PROPER WORKING CONDITION AT ALL TIMES.
11. MINIMIZING EROSION AND RUNOFF DURING TRENCH OPERATIONS
   (A) EXCAVATED TRENCH MATERIALS SHALL BE PLACED ON THE UPPER SIDE OF THE TRENCH WHILE THE TRENCH IS OPEN.
   (B) EXCAVATED TRENCH MATERIAL, UPON COMPLETING WORK IN TRENCH, SHALL BE PLACED BACK IN THE TRENCH OR HAULED AWAY TO A PROPER SPOIL SITE. THE TRENCH SHALL BE BACKFILLED AND STABILIZED AT THE END OF EACH WORKING DAY.

ENGINEER:
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ENGINEERING
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875 SOUTH OAKCREST STREET, PLATTEVILLE, WISCONSIN 53818 PHONE: (608) 348-5355
800 JACKSON STREET, DUBUQUE, IOWA 52001 PHONE: (563) 542-4005

FOR QUESTIONS REGARDING THIS PROJECT, PLEASE CONTACT:
MR. BART NIES, P.E.
DELTA 3 ENGINEERING, INC.
TELEPHONE: (608) 348-5355

CONSENT STATEMENT
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PROPOSED 2021 STREAM IMPROVEMENTS - VILLAGE OF BLOOMINGTON BLAKE FORK

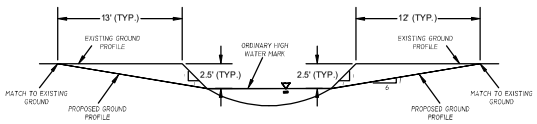
PROJECT LOCATION: GRANT COUNTY, WISCONSIN
OWNER: VILLAGE OF BLOOMINGTON, 453 CANAL ST., BLOOMINGTON, WI 53804

REVISIONS:		
NO.	DATE	DESCRIPTION
AS-BUILT:		BY:

PRELIMINARY	
PROJECT NUMBER	D20-154
SHEET SCALE	NOT TO SCALE
DRAWN BY	C.COYIER
DATE ISSUED	DECEMBER 31, 2020
SHEET DESC.	DETAILS - EROSION CONTROL & NOTES

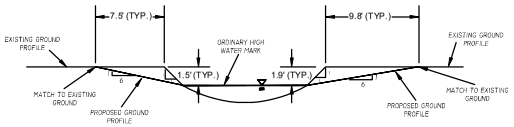
SHEET TITLE:
C201

SHEET NUMBER # 07 of ###



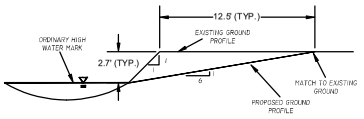
TYPICAL CROSS SECTION DETAIL - REACH 1

SCALE: N.T.S.



TYPICAL CROSS SECTION DETAIL - REACH 2

SCALE: N.T.S.



TYPICAL CROSS SECTION DETAIL - REACH 3

SCALE: N.T.S.

*SEE NRCS PLANS AND SPECIFICATION FOR REACH 4

ENGINEER:

DELTA 3
EARTH WELL ENGINEERING

PROFESSIONAL ENGINEERING, MUNICIPAL, & STRUCTURAL ENGINEERING • ARCHITECTURE
GRANT WATERSHED • LAND DEVELOPMENT • PLANNING & CAD SERVICES

875 SOUTH CHESTNUT STREET PHONE: (608) 348-5355
PLATTEVILLE, WISCONSIN 53818

505 JACKSON STREET PHONE: (563) 542-4005
DUBUQUE, IOWA 52001

FOR QUESTIONS REGARDING THIS PROJECT, PLEASE CONTACT:

MR. BART NIES, P.E.
DELTA 3 ENGINEERING, INC.
TELEPHONE: (608) 348-5355

CONSENT STATEMENT

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PROPOSED 2021 STREAM IMPROVEMENTS - BLAKE FORK

VILLAGE OF BLOOMINGTON

PROJECT LOCATION: GRANT COUNTY, WISCONSIN

OWNER: VILLAGE OF BLOOMINGTON, 463 CANAL ST, BLOOMINGTON, WI 53804

REVISIONS:		
NO.	DATE	DESCRIPTION
AS-BUILT:		BY:

PRELIMINARY	
PROJECT NUMBER	D20-154
SHEET SCALE	NOT TO SCALE
DRAWN BY	C.COYIER
DATE ISSUED	DECEMBER 31, 2020
SHEET DESC.	DETAILS - EROSION CONTROL & NOTES

SHEET TITLE:

C202

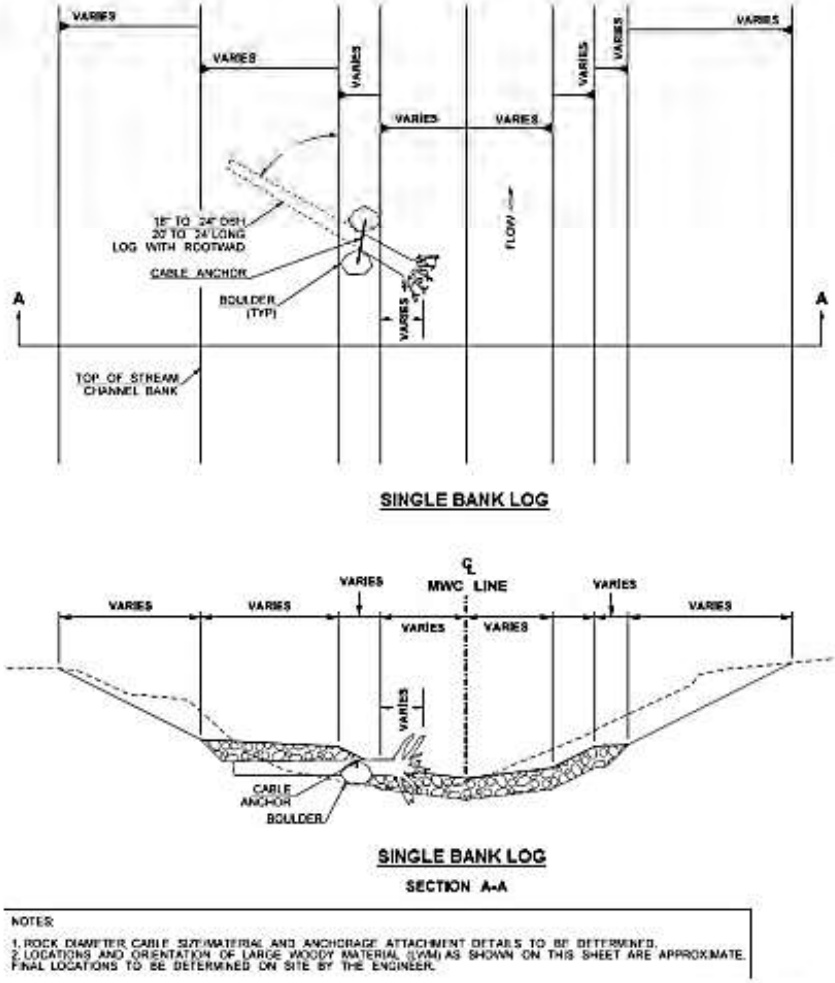
SHEET NUMBER # **08 of ###**

Typical In-Stream Habitat Improvement Details:

Single Bank Log

This is the simplest and generally most stable type of LWM placement, consisting of a single log with the stem buried in the bank and the root wad partially embedded in the streambed. This type of placement creates localized pool habitat, cover, and woody substrate on the margins of the channel while having minimal impacts on channel hydraulics and erosion. With sufficient overburden this type of placement may not require additional anchoring, but boulder anchors can be used to increase stability in situations with shallow burial depths.

Figure 10C-1 Single Bank Log



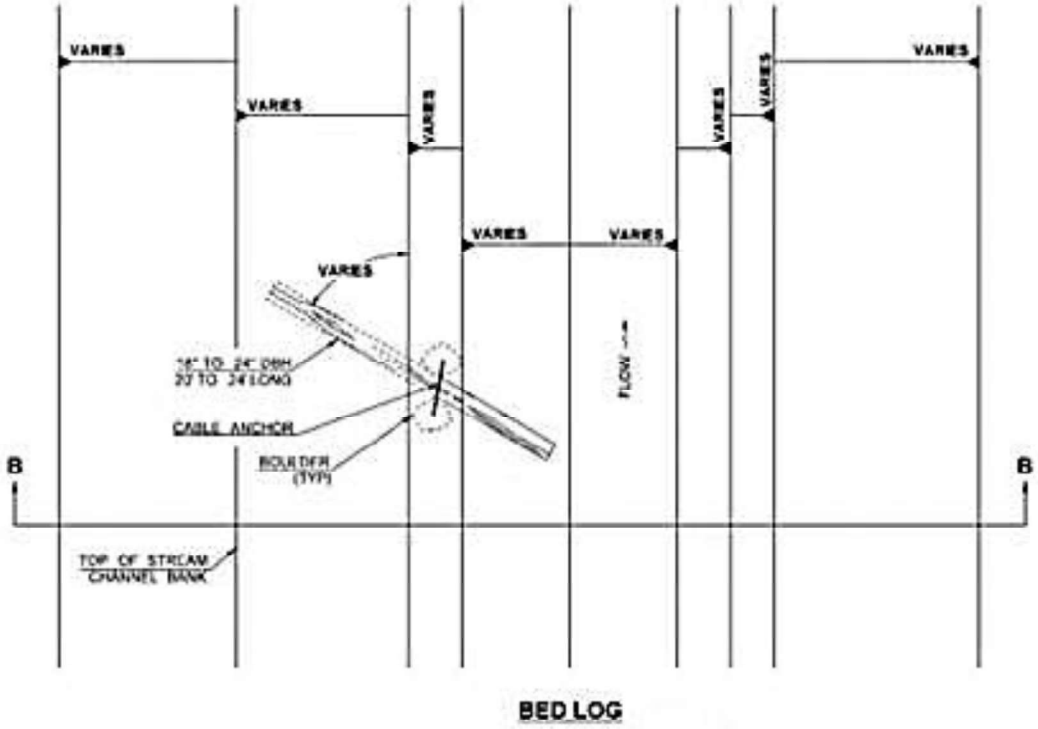
NOTES:

1. ROCK DIAMETER, CABLE SIZE/MATERIAL AND ANCHORAGE ATTACHMENT DETAILS TO BE DETERMINED.
2. LOCATIONS AND ORIENTATION OF LARGE WOODY MATERIAL (LWM) AS SHOWN ON THIS SHEET ARE APPROXIMATE. FINAL LOCATIONS TO BE DETERMINED ON SITE BY THE ENGINEER.

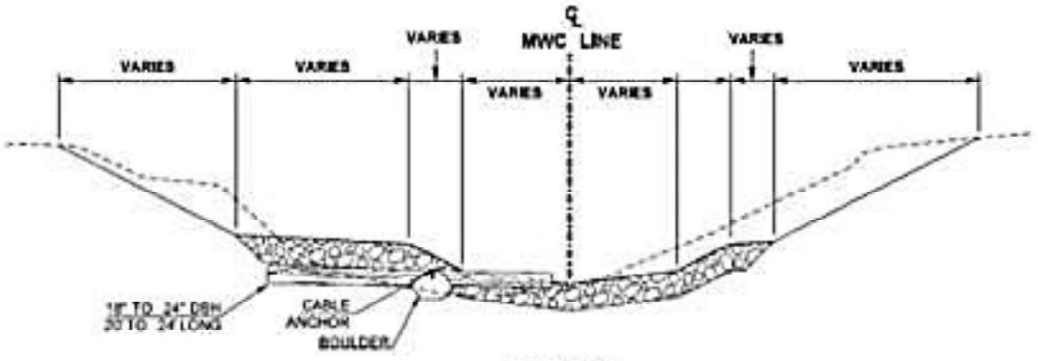
Bed Log

This type of placement consists of a log without roots partially buried in the bed and extending out to the center of the channel. This low-profile placement of logs mimics tip-first delivery of logs to the stream by windthrow. These logs have high contact with the streambed and enhance streambed stability by encouraging sediment accumulation on the upstream side and flow deflection towards the center of the channel. A localized plunge pool may form on the downstream side of the log. The bed log is anchored by stem burial and boulders as needed.

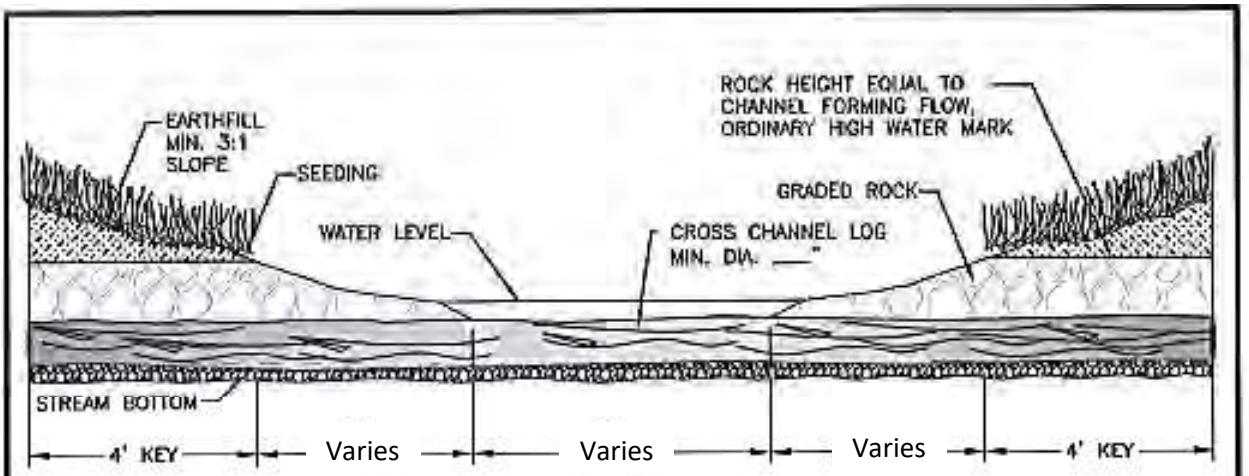
Figure 10C-3 Bed Log



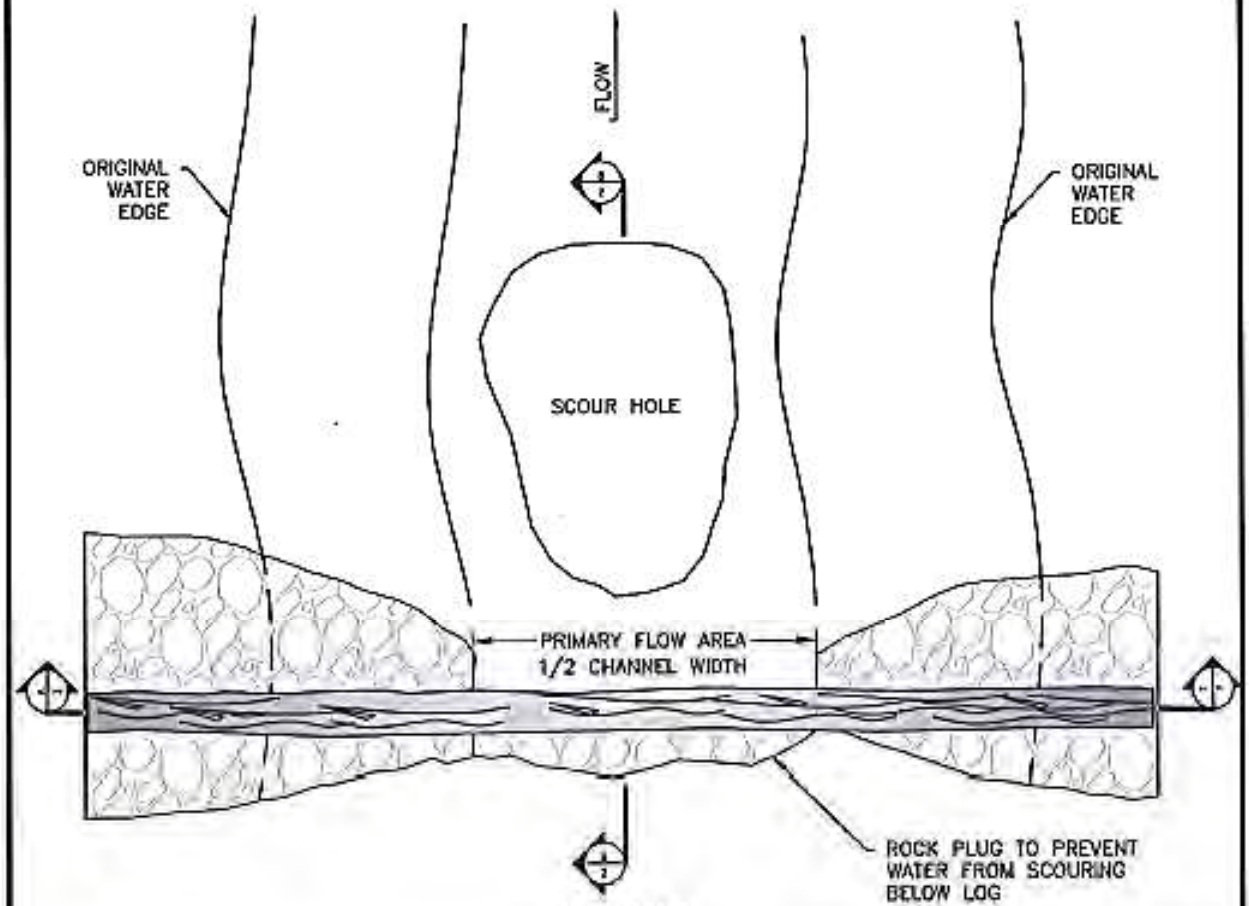
BED LOG



BED LOG
SECTION B-B



CROSS SECTION A–A



PLAN VIEW

Contractors Copy

USDA United States Department of Agriculture
Natural Resources Conservation Service

WISCONSIN STANDARD
DRAWING NO. WI-001C 08/14

CONSTRUCTION PLAN

PRACTICE BACK WATER REFUGE (REQUIRED BY DNR PERMIT)

LANDOWNER LARRY MUMM

ADDRESS 9862 UNIVERSITY FARM ROAD, BLOOMINGTON, WI. 53804

LANDOWNER PHONE NO. 994-2272 COUNTY GRANT

TOWNSHIP LITTLE GRANT T 5 N, R 4 W, Sec. 33

FIELD OFFICE LANCASTER TELEPHONE NO. 608-723-6377 EXT. 3

DIGGERS HOTLINE

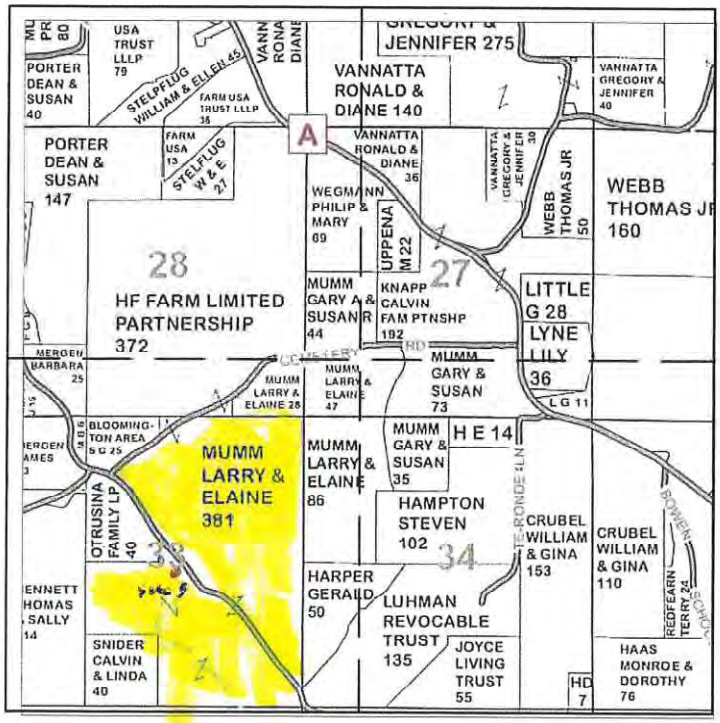
Call 3 Work Days
Before You Dig!

Nationwide
811

Toll Free
1-800-242-8511

TDD
1-800-542-2289

Website
www.diggershotline.com



N

Not to Scale

LOCATION MAP

SEE SHEET 2 FOR LOCATION MAP OF BACK WATER REFUGE SITE

NOTICE TO LANDOWNERS AND EXCAVATORS

Any representation made by the USDA, Natural Resources Conservation Service, or the GRANT County LCD, as to the approximate location or nonexistence of above or under ground hazards does not relieve the owner of the property or the excavator that is hired to complete construction, from notifying Diggers Hotline of the pending construction. You will be liable for damages resulting from construction activities. Call Diggers Hotline! Ticket Number _____

CONSTRUCTION DRAWINGS AND SPECIFICATIONS ACCEPTANCE

I have reviewed and understand the construction plans and specifications and agree to complete the work accordingly. Failure to meet these plans and specifications may jeopardize any continued NRCS technical assistance or program cost sharing applied for. I understand that it is my responsibility to secure all necessary permits and licenses, and to complete the work in accordance with all local, state, and federal laws. Modification of these construction plans or specifications must be approved by the NRCS before installation. I assume all responsibility for negotiations and contract agreements with the construction contractors.

Signed: X _____ Date: X _____

Designed by: DAVE MOURS Date: 02/2017

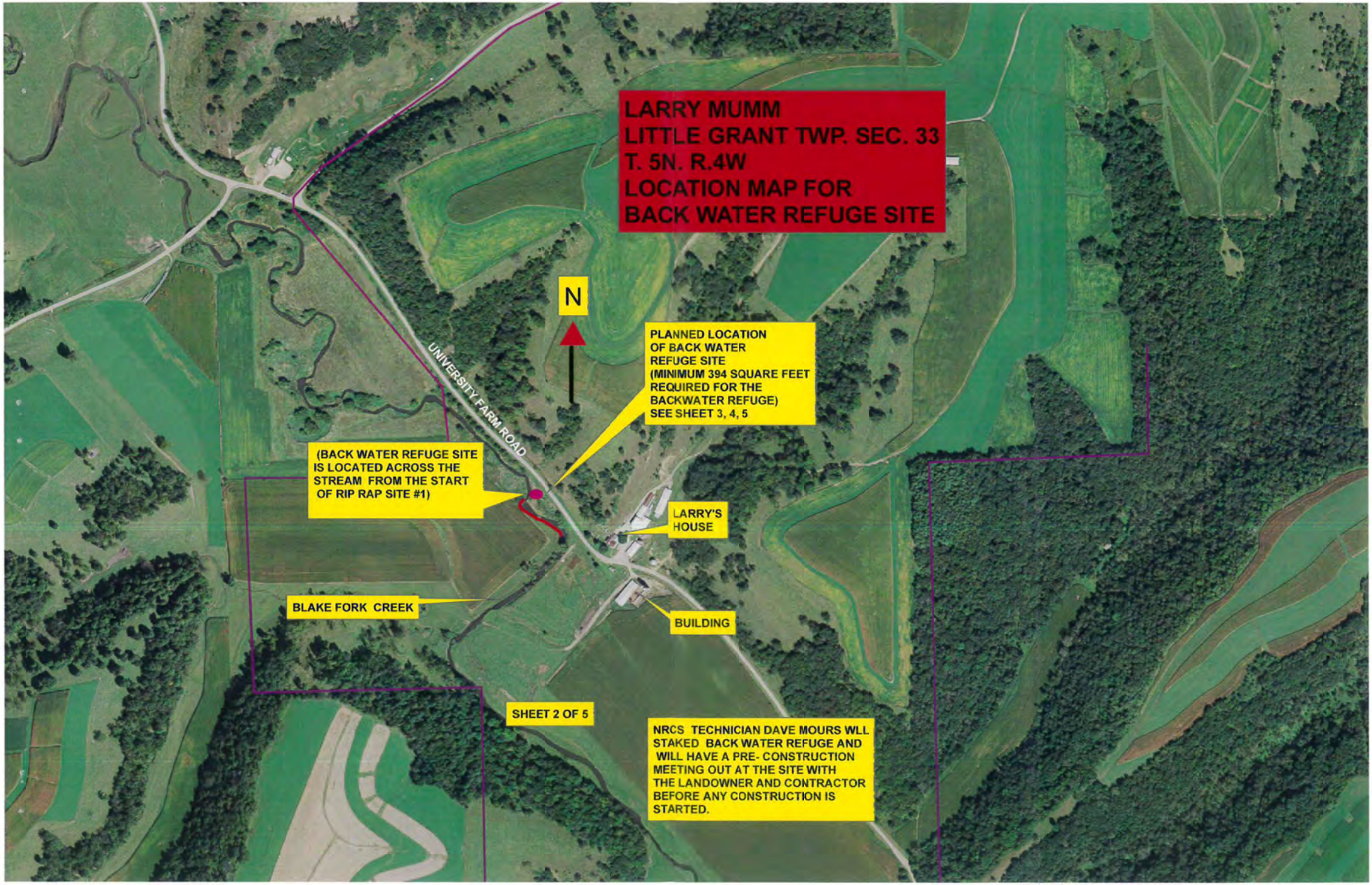
Checked by: Lesie Braka Date: 2/17

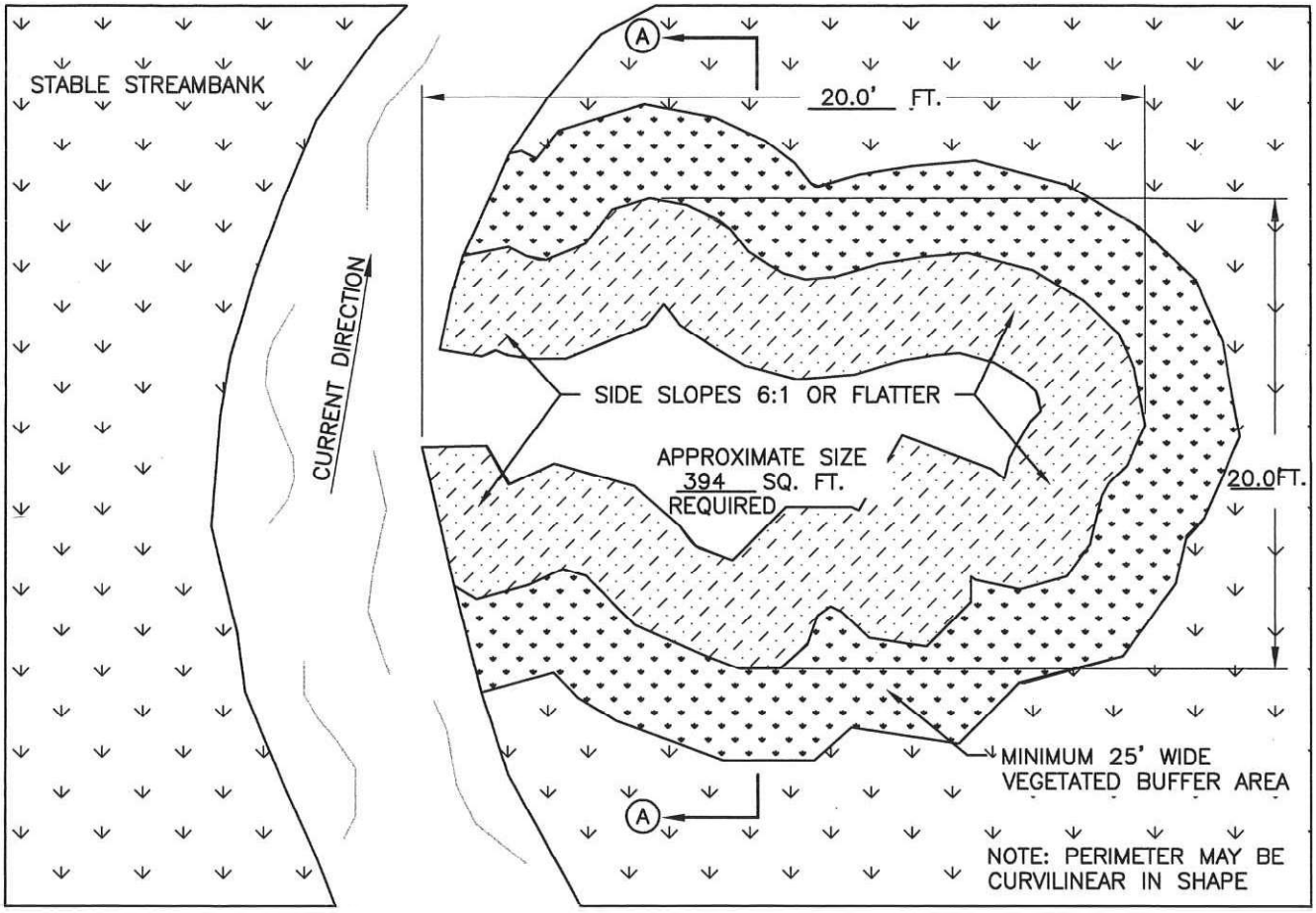
Approved by: DAVE MOURS Date: 2/17/17

The installed practices comply with applicable NRCS technical standards and specifications. The "redlined" construction plans (as-built drawings) reflect changes made during construction.

Construction Approved by: _____ Date: _____

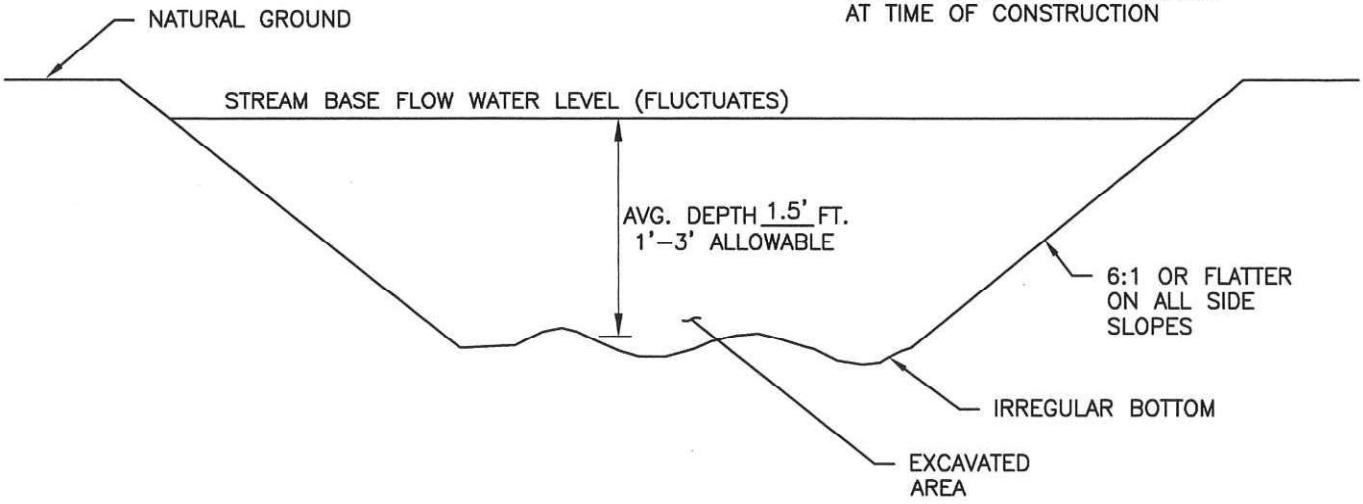
Job Approval Class 1


LARRY MUMM
LITTLE GRANT TWP. SEC. 33
T. 5N. R.4W
LOCATION MAP FOR
BACK WATER REFUGE SITE
N
UNIVERSITY FARM ROAD
PLANNED LOCATION
OF BACK WATER
REFUGE SITE
(MINIMUM 394 SQUARE FEET
REQUIRED FOR THE
BACKWATER REFUGE)
SEE SHEET 3, 4, 5
(BACK WATER REFUGE SITE
IS LOCATED ACROSS THE
STREAM FROM THE START
OF RIP RAP SITE #1)
LARRY'S
HOUSE
BLAKE FORK CREEK
BUILDING
SHEET 2 OF 5
NRCS TECHNICIAN DAVE MOURS WLL
STAKED BACK WATER REFUGE AND
WILL HAVE A PRE- CONSTRUCTION
MEETING OUT AT THE SITE WITH
THE LANDOWNER AND CONTRACTOR
BEFORE ANY CONSTRUCTION IS
STARTED.



PLAN VIEW

SEE SHEET 2 FOR LOCATION OF BACK WATER REFUGE WHICH WILL BE STAKED BY TECHNICIAN AT TIME OF CONSTRUCTION



TYPICAL CROSS SECTION A–A

USDA United States Department of Agriculture Natural Resources Conservation Service	BACKWATER REFUGE CLIENT: LARRY MUMM COUNTY: GRANT	Designed DJM Date 2/2017 Drawn Checked LAG 2/17 Approved DJM 2/17	File Name WI-931 Date 08/14 Sheet 3 of 5

CONSTRUCTION NOTES FOR BACKWATER REFUGE

1. BACKWATER REFUGE MAY BE IRREGULAR IN SHAPE WHEN COMPLETED. WHEEL RUTS ARE ALLOWED AND DESIRED. THE REFUGE NEEDS TO BE CONSTRUCTED TO THE APPROXIMATE SURFACE AREA, DEPTH AND IRREGULARITY AS WHAT IS FLAGGED BY TECHNICIAN.

2. ALL EXCAVATION SHALL BE IN ACCORDANCE WITH WISCONSIN CONSTRUCTION SPECIFICATION #2.

3. RE-TOPSOILING MAY BE NEEDED. IF NEEDED A MINIMUM OF 4" OF TOPSOIL WILL BE REMOVED FROM REFUGE SITE AND STOCKPILED FOR RE-SPREADING. BEFORE TOPSOIL IS RE-SPREAD THE DEPTH AND SLOPES MUST BE CHECKED. SEEDING SHOULD BE COMPLETED PER DRAWING WI-710 FOR INTRODUCED SPECIES.

4. THE FINISHED SIDE SLOPES ARE TO BE 6:1 OR FLATTER.

5. EXCAVATED SPOIL FROM THE REFUGE SHALL BE:
   a. REMOVED FROM THE REFUGE/FLOODPLAIN AREAS AND PLACED AS INDICATED ON THE PLAN VIEW.
   b. PLACED BELOW THE PLANNED NORMAL WATER ELEVATION OF THE POOL FOR REFUGE MICROTOPOGRAPHY.
   c. SPREAD ABOVE THE PLANNED NORMAL WATER ELEVATION IN A LAYER AVERAGING NO MORE THAN 3-6 INCHES THICK. SPREAD IN THE LOCATIONS INDICATED ON THE PLAN VIEW FOR THIS PROJECT. NO FILL SHALL BE PLACED IN AN EXISTING WETLAND.

6. BASKING AREAS MAY BE ADDED AS APPROVED BY TECHNICIAN. THESE AREAS CAN CONSIST OF LOGS/WOODY DEBRIS OR PILES OF STONE ADDED TO THE REFUGE. THESE ADDITIONS SHOULD BE PLACED A MINIMUM OF 3-4 FEET FROM THE EDGE OF THE REFUGE TO ACT AS A BASKING AREA AND BE FAR ENOUGH INTO REFUGE TO MINIMIZE PREDATION.

7. BUFFER SEED MIXES SHOULD BE STRONGER IN FORB AND SHORT GRASS COMPONENTS. THIS WILL CREATE MORE INTERSTITIAL SPACE, AIDING IN REPTILE/AMPIBIAN MOVEMENT AND BASKING PER WI-710 OR WI-711.

SEEDING DATES

TIME PERIOD	DATES			TYPE OF SEEDING
Spring	APRIL 1	through	MAY 15	Permanent
Summer	MAY 16	through	AUGUST 6	Temporary *
Late Summer	AUGUST 7	through	AUGUST 29	Permanent
Fall	AUGUST 30	through	OCTOBER 15	Temporary *
Late Fall	NOVEMBER 1	through	snow cover	Dormant
Winter	snow cover	through	Spring Seeding	Frost Seed Not Allowed

MATERIALS

If no soil test is available, apply a minimum of 150 pounds of 20–10–10 fertilizer per acre. This is equivalent to 30 pounds nitrogen (N), 15 pounds phosphate (P205), and 15 pounds potash (K20) per acre. Apply two tons of 80–89 lime or equivalent.

* Seed a temporary cover crop of OATS at a rate of 64 pounds/acre. (1 Bushels/acre)
A permanent seeding shall be completed during the next acceptable time period following a temporary seeding.

MINIMUM PURE LIVE SEED (PLS)[1] RATE PER ACRE AND TOTAL POUNDS OF SEED NEEDED

SEEDING MIX DNR REQUIRED MIXTURE		LOCATION DISTURBED AREAS ACRES 0.1		SEEDING MIX		LOCATION ACRES	
SPECIES		RATE	AMOUNT	SPECIES		RATE	AMOUNT
CREEPING RED FESCUE		5 LBS/AC	0.5 LBS	OATS AS COVER CROP		64 LBS/AC	7 LBS
SIDE OATS GRAMMA		1 LBS/AC	0.1LBS				
BLACK EYE SUSAN		1 OZ/AC	0.1 OZ				
PURPLE PRAIRIE CLOVER		1 OZ/AC	0.1 OZ				
BERGMAENT		0.5 OZ/AC	0.5 OZ				
**							

1. PLS = (% Germination X % Purity)
** Companion Crop

THE ABOVE DNR SEEDING MIXTURE MUST BE USED FOR THE RIP RAP PROJECT

Seed mixture shall meet all requirements of the WI weed laws.
Species identified as restricted or prohibited by law shall not be planted.
Certified seed shall be used, and the seeding rates will be based on pure live seed.
For dormant seedings, increase the seeds per square foot by 15%.

SEEDBED PREPARATION

Seedbed preparation shall immediately follow construction activities.
Prepare a fine, firm seedbed to a minimum depth of three inches. A seedbed is considered firm when a footprint penetrates 1/4 to 1/2 inch deep.

SEEDING

Inoculate legumes with the specific inoculum for the species in accordance with the manufacturer's recommendations. When using a hydroseeder, five times the recommended rate of inoculant shall be added to the hydroseeder. Inoculant shall not be mixed with liquid fertilizer.

Seed may be broadcast or drilled as appropriate to the site.
Seed, fertilize, and lime as soon as possible after construction.
Seeding perpendicular to direction of flow is required to limit erosion.
Seed grasses and legumes no more than 1/4 inch deep.

Consider seeding at a lower rate and making 2 passes to ensure more uniform distribution.

USDA United States Department of Agriculture Natural Resources Conservation Service	INTRODUCED SPECIES SEEDING ESTABLISHMENT CLIENT: LARRY MUMM COUNTY: GRANT	Designed DJM Date 2/2017 Drawn Checked LAS 2/17 Approved DJM 2/17	File Name WI–710 Date 07/14 Sheet 5 of 5

TEMPORARY SEEDING OPTIONS

Select one of the following species for temporary cover if:

1) The required seeds or plant stock are not available or
   the normal permanent seeding period for the species has passed
   - Forage Sorghum – 1/2 bushel per acre (May 15–July 15)
   - Sorghum – Sudangrass Hybrid – 1 bushel per acre (May 15–July 15)
   - Sudangrass – 1 bushel per acre (May 15–July 15)
   - Winter Wheat – 2 bushels per acre (Aug 1–Oct 1)
   - Winter Cereal Rye – 2 bushels per acre (Aug 1–Oct 15)
   - Oats – 2 bushels per acre (Apr 1–Sept 1)
   - Annual Ryegrass – 20 Pounds per acre (Apr 1–Sept 1)

2) Triazine herbicide carryover will not allow establishment of permanent cover immediately.
   - Forage Sorghum – 1/2 Bushel per acre (May 15–July 15)
   - Sorghum – Sudangrass Hybrid – 1 Bushel per acre (May 15–July 15)
   - Sudangrass – 1 Bushel per acre (May 15–July 15)

DORMANT SEEDING

Seed is broadcast and incorporated, no–tilled, or drilled into the seedbed.
Seedbed preparations and conditions are similar to conventional seeding.

MULCHING (Mulching is required.)

Mulching shall be done immediately after seedbed preparation and seeding.
Mulch shall be applied immediately after final grading for areas seeded at a later date.

Mulch material shall be relatively free of disease, pesticides, chemicals, noxious weed seeds, and other pests and pathogens.

Spread straw and hay mulch uniformly and at the rate of 1.5–2.0 tons per acre (60–70 bales). This application results in a layer of 6 to 7 stems, 1 to 2 inches thick, and provides a minimum 70% ground cover. Some soil surface can be seen after the application. Crimping (disking), wood cellulose fiber, tackifiers, netting, pinning, or other acceptable methods of anchoring will be used if needed to hold the mulch in place.

If other mulch materials are used, the rate of application shall meet the manufacturer's recommendations.

Attachment #14

DELTA 3
Platteville, Wisconsin
Dubuque, Iowa
P 608.348.5355
P 563.542.9005
E mail@delta3eng.biz
W www.delta3eng.biz

January 31, 2024

Ms. Caitlin O'Connell
Wisconsin Department of Natural Resources
1500 N. Johns Street
Dodgeville, WI 53533

Re: Annual Water Quality Trading Report
Village of Bloomington, WI

Dear Caitlin:

As requested and required by Schedule 4.3 Annual Water Quality Trading (WQT) Report of the Village's Wisconsin Pollutant Discharge Elimination System (WPDES) Permit #WI-0023400-10-1, below, please find the Annual WQT Report for the Village of Bloomington's Wastewater Treatment Facility. Please review for approval.

I. WQT Credit Use

Table 1 provides a summary of Total Phosphorus (TP) Credits used each month in 2023.

Table 1 – 2023 Monthly TP Credits Used

Month	Credits Used
Jan. ('23)	-
Feb. ('23)	-
Mar. ('23)	-
Apr. ('23)	9.7
May ('23)	36.74
Jun. ('23)	43
Jul. ('23)	44.88
Aug. ('23)	12.72
Sept. ('23)	5.43
Oct. ('23)	3.44
Nov. ('23)	6.4
Dec. ('23)	5.17
Total:	**167.48**

II. Source of Credits

The Village of Bloomington's WQT Plan (WQT-2021-0004) was approved on 3-4-2021. The Village is currently using TP Credits to comply with the WWTF's Effluent TP Limit. The WQT Plan approved **128.3 lbs./yr.** of TP Credits for 2023 which were included in the latest WPDES Permit. Construction of the WQT Project was completed in Fall 2022 and credits were registered on 1-17-2023. The Village exceeded the available credits by 39.18 lbs for 2023. Due to the former WWTF Operator retiring in 2023, the Alum addition for Phosphorus reduction was not maintained during this turnover. The interim Operator resumed Alum addition in August 2023 as demonstrated by the results in Table 1. Based on data during the months which included Alum addition, the WWTF will satisfy the future credit limit of 171 lbs/year in 2024.

III. Annual Inspection

Annual inspection was completed in April 2023 with no major deficiencies identified. Vegetation has been well established since completion of construction. Monthly inspections also identified no deficiencies. Annual inspections will continue to be performed in the Spring of each year to ensure the trading practices remain in place and satisfy the WQT Plan. The Village of Bloomington has operated and will continue to operate in accordance with the terms and conditions of its WPDES Permit and WQT Plan.

If you have any questions, please feel free to contact me at (608) 348-5355. Thank you.

Sincerely,
DELTA 3 Engineering, Inc.

Logan Hoppman

Logan Hoppman, E.I.T.
Civil/Environmental Engineer

LMH:lh

Cc: Jordan Fure – Delta 3 Engineering, Inc.
Larry Gates – Utility Director

DELTA 3
Platteville, Wisconsin
Dubuque, Iowa
P 608.348.5355
P 563.542.9005
E mail@delta3eng.biz
W www.delta3eng.biz

January 31, 2025

Ms. Caitlin O'Connell
Wisconsin Department of Natural Resources
1500 N. Johns Street
Dodgeville, WI 53533

Re: Annual Water Quality Trading Report #2
Village of Bloomington, WI

Dear Caitlin:

As requested and required by Schedule 4.3 Annual Water Quality Trading (WQT) Report of the Village's Wisconsin Pollutant Discharge Elimination System (WPDES) Permit #WI-0023400-10-2, below, please find the Annual WQT Report for the Village of Bloomington's Wastewater Treatment Facility. Please review for approval.

I. WQT Credit Use

Table 1 provides a summary of Total Phosphorus (TP) Credits used each month in 2024. Table 2 provides a summary of annual TP Credits Used since 2023. Credit usage in 2023 is not characteristic of the WWTF due to Alum addition for Phosphorus reduction not being maintained during operator turnover. In 2024, the operator optimized Alum usage for TP treatment and did not exceed available WQT Credits.

Table 1 – 2023 Monthly TP Credits Used

Month	Credits Used
Jan. ('24)	14.29
Feb. ('24)	4.04
Mar. ('24)	3.50
Apr. ('24)	5.03
May ('24)	17.01
Jun. ('24)	6.93
Jul. ('24)	18.16
Aug. ('24)	6.69
Sept. ('24)	6.21
Oct. ('24)	6.58
Nov. ('24)	21.06
Dec. ('24)	2.34
Total:	**111.84**

Table 2 – Summary of Annual TP Credits Used

Year	Credits Used
2023	167.48
2024	111.84

II. Source of Credits

The Village of Bloomington's WQT Plan (WQT-2021-0004) was approved on 3-4-2021. TP Credits were generated from a streambank stabilization project as described in the Village's WQT Plan. The WQT Plan approved 128.9lbs./yr. of TP Credits for 2023 and **171 lbs./yr.** of TP Credits annually for 2024 through 2026 which were included in the latest WPDES Permit. Construction of the WQT Project was completed in Fall 2022 and credits were registered on 1-17-2023. The Village is currently using TP Credits to comply with the WWTF's Effluent TP Limit.

III. Annual Inspection

Annual inspection was completed in May 2024 with no major deficiencies identified. Vegetation has been well established since completion of construction. Monthly inspections also identified no deficiencies. Please see Appendix A for the Streambank Inspection Forms for 2024. Photos are provided in Appendix B. Annual inspections will continue to be performed in the Spring of each year to ensure the trading practices remain in place and satisfy the WQT Plan. The Village of Bloomington has operated and will continue to operate in accordance with the terms and conditions of its WPDES Permit and WQT Plan.

If you have any questions, please feel free to contact me at (608) 348-5355. Thank you.

Sincerely,
DELTA 3 Engineering, Inc.

Logan Hoppman

Logan Hoppman, P.E.
Civil/Environmental Engineer

LMH:lh

Cc: Jordan Fure – Delta 3 Engineering, Inc.
Keith Leitzinger – Public Works Director

EVERY ANGLE COVERED

Appendix A

Streambank Inspection Forms

BMP Inspection Form

Date____1-30-2024_____

Inspector_____Joseph Walsh_____

Reason for Inspection _____Monthy_____

Reach	Condition of BMP	Required Maintenance	Maintenance Estimate (Time or Cost)	Date Completed	Comments
1 (Right)	Ok	None		1-30-24	
1 (Left)	Ok	None		1-30-24	
2 (Right)	Ok	None		1-30-24	
2 (Left)	Ok	None		1-30-24	
3 (Right)	Ok	None		1-30-24	
4 (Right)	Ok	None		1-30-24	

BMP Inspection Form

Date_____2/29/2024_____

Inspector_____Joseph Walsh_____

Reason for Inspection _____Monthly_____

Reach	Condition of BMP	Required Maintenance	Maintenance Estimate (Time or Cost)	Date Completed	Comments
1 (Right)	ok	None		2/29/2024	
1 (Left)	ok	None		2/29/2024	
2 (Right)	ok	None		2/29/2024	
2 (Left)	ok	None		2/29/2024	
3 (Right)	ok	None		2/29/2024	
4 (Right)	ok	None		2/29/2024	

BMP Inspection Form

Date_____3/29/2024_____

Inspector___Joseph Walsh_____

Reason for Inspection ____Monthy_____

Reach	Condition of BMP	Required Maintenance	Maintenance Estimate (Time or Cost)	Date Completed	Comments
1 (Right)	Ok	NONE		3-29-3024	
1 (Left)	ok	NONE		3-29-3024	
2 (Right)	ok	NONE		3-29-3024	
2 (Left)	ok	NONE		3-29-3024	
3 (Right)	ok	NONE		3-29-3024	
4 (Right)	ok	NONE		3-29-3024	

BMP Inspection Form

Date___4-24-2024_____

Inspector_____Joseph Walsh_____

Reason for Inspection _____Monthly_____

Reach	Condition of BMP	Required Maintenance	Maintenance Estimate (Time or Cost)	Date Completed	Comments
1 (Right)	GOOD	NONE		4/24/2024	
1 (Left)	GOOD	NONE		4/24/2024	
2 (Right)	GOOD	NONE		4/24/2024	
2 (Left)	GOOD	NONE		4/24/2024	
3 (Right)	GOOD	NONE		4/24/2024	
4 (Right)	DOOD	NONE		4/24/2024	

BMP Inspection Form

Date: 5/7/24

Inspector: Jordan Fure, P.E.

Reason for Inspection: Annual Inspection

Reach	Condition of BMP	Required Maintenance	Maintenance Estimate (Time or Cost)	Date Completed	Comments
1 (Right)	Good	No	N/A	5/7/24	A few spotty areas; Areas that received rock outwash from the flooding have limited cover but are naturally armored
1 (Left)	Good	No	N/A	5/7/24	A few spotty areas; Areas that received rock outwash from the flooding have limited cover but are naturally armored
2 (Right)	Good	No	N/A	5/7/24	A few spotty areas
2 (Left)	Good	No	N/A	5/7/24	A few spotty areas
3 (Right)	Fair	Yes	N/A	5/7/24	A few spotty areas; Corner at Sta. 235+00 scoured again (approx. 15 feet) and needs repair.
4 (Right)	Good	No	N/A	5/7/24	Grass is well established. Minor muskrat run forming toward the middle of the Reach

*Contractor to overseed again to ensure vegetation establishes in spotty areas.

BMP Inspection Form

Date___5-29-2024_____

Inspector_____Joseph Walsh_____

Reason for Inspection _____monthly_____

Reach	Condition of BMP	Required Maintenance	Maintenance Estimate (Time or Cost)	Date Completed	Comments
1 (Right)	Good	None		5/29/2024	
1 (Left)	Good	None		5/29/2024	
2 (Right)	Good	None		5/29/2024	
2 (Left)	Good	None		5/29/2024	
3 (Right)	Good	None		5/29/2024	
4 (Right)	Good	None		5/29/2024	

BMP Inspection Form

Date_____6-26-2024_____

Inspector_Joseph Walsh_____

Reason for Inspection _monthy_____

Reach	Condition of BMP	Required Maintenance	Maintenance Estimate (Time or Cost)	Date Completed	Comments
1 (Right)	Good	None		6/26/2024	
1 (Left)	Good	None		6/26/2024	
2 (Right)	Good	None		6/26/2024	
2 (Left)	Good	None		6/26/2024	
3 (Right)	Good	None		6/26/2024	
4 (Right)	Good	None		6/26/2024	

BMP Inspection Form

Date_____7-30-24_____

Inspector mark moris_____

Reason for Inspection __monthly_____

Reach	Condition of BMP	Required Maintenance	Maintenance Estimate (Time or Cost)	Date Completed	Comments
1 (Right)	Ok	No		7 30 24	
1 (Left)	Ok	No		7 30 24	
2 (Right)	Ok	No		7 30 24	
2 (Left)	Ok	No		7 30 24	
3 (Right)	Fair	May		7 30 24	end of the park cutting bank
4 (Right)	Fair	May		7 30 24	Starting to cut the bank

BMP Inspection Form

Date_____8-30-24_____

Inspector Mark Moris_____

Reason for Inspection __ monthly_____

Reach	Condition of BMP	Required Maintenance	Maintenance Estimate (Time or Cost)	Date Completed	Comments
1 (Right)	Ok	No		8-30-24	
1 (Left)	Ok	No		8-30-24	
2 (Right)	Ok	No		8-30-24	
2 (Left)	Ok	No		8-30-24	
3 (Right)	Fair	May		8-30-24	end of the park cutting bank
4 (Right)	Fair	May		8-30-24	Stating to cut into the bank

BMP Inspection Form

Date_____9-11-24_____

Inspector__ Mark Moris__

Reason for Inspection _____Monthly_____

Reach	Condition of BMP	Required Maintenance	Maintenance Estimate (Time or Cost)	Date Completed	Comments
1 (Right)	ok	No		9-11-24	
1 (Left)	ok	No		9-11-24	
2 (Right)	ok	No		9-11-24	
2 (Left)	ok	No		9-11-24	
3 (Right)	Fair	May		9-11-24	My need work cutting
4 (Right)	Fair	May		9-11-24	My need work cutting

BMP Inspection Form

Date_____10-18-24_____

Inspector__ Keith W. Leitzinger__

Reason for Inspection _____Monthly_____

Reach	Condition of BMP	Required Maintenance	Maintenance Estimate (Time or Cost)	Date Completed	Comments
1 (Right)	ok				
1 (Left)	ok				
2 (Right)	ok				
2 (Left)	ok				
3 (Right)	Fair				My need work cutting
4 (Right)	Fair				My need work cutting

BMP Inspection Form

Date_____11-20-24_____

Inspector__ Keith W. Leitzinger__

Reason for Inspection _____Monthly_____

Reach	Condition of BMP	Required Maintenance	Maintenance Estimate (Time or Cost)	Date Completed	Comments
1 (Right)	ok	No		11-20-24	
1 (Left)	ok	No		11-20-24	
2 (Right)	ok	No		11-20-24	
2 (Left)	ok	No		11-20-24	
3 (Right)	Fair	May		11-20-24	My need work cutting north side of park
4 (Right)	Fair	May		11-20-24	My need work cutting

BMP Inspection Form

Date_____12-16-24_____

Inspector__ Keith W. Leitzinger__

Reason for Inspection _____Monthly_____

Reach	Condition of BMP	Required Maintenance	Maintenance Estimate (Time or Cost)	Date Completed	Comments
1 (Right)	ok	No		12-16-24	
1 (Left)	ok	No		12-16-24	
2 (Right)	ok	No		12-16-24	
2 (Left)	ok	No		12-16-24	
3 (Right)	Fair	May		12-16-24	My need work cutting north side of park
4 (Right)	Fair	May		12-16-24	My need work cutting

Appendix B

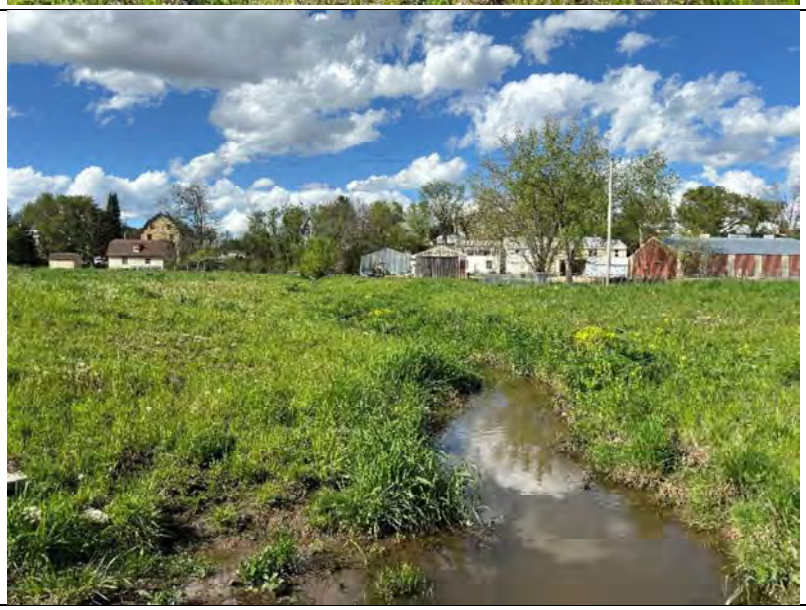
Inspection Photos

Photo Number	Site Photo	Comments
1.		Reach 4 – Blake Fork Direction: Southwest Date Taken: 5/7/24 Comments: None
2.		Reach 4 – Blake Fork Direction: Southwest Date Taken: 5/7/24 Comments: Grass is well established. Minor muskrat run in the middle.
3.		Reach 4 – Blake Fork Direction: West Date Taken: 5/7/24 Comments: None

4.		Reach 4 – Blake Fork Direction: Southwest Date Taken: 5/7/24 Comments: None
5.		Reach 3 – Blake Fork Direction: Southeast Date Taken: 5/7/24 Comments: None
6.		Reach 3 – Blake Fork Direction: East Date Taken: 5/7/24 Comments: None

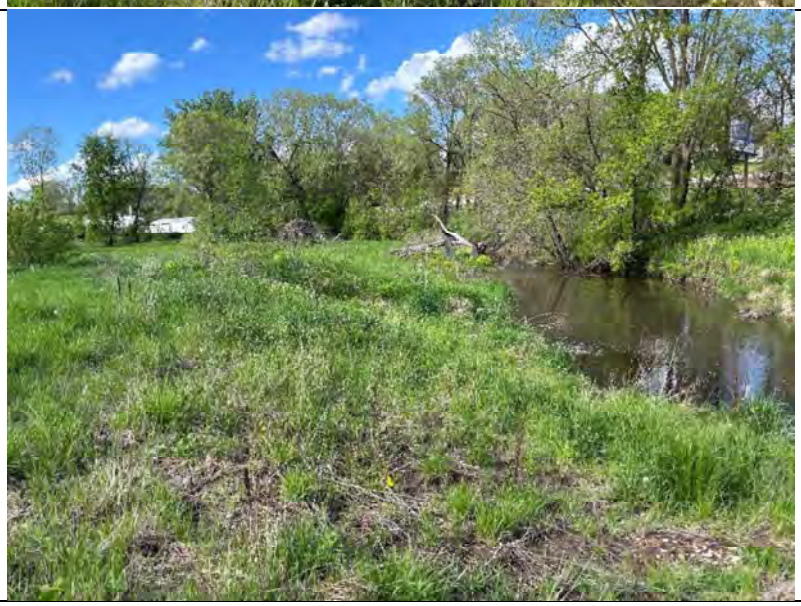
7.		Reach 3 – Blake Fork Direction: West Date Taken: 5/7/24 Comments: None
8.		Reach 3 – Blake Fork Direction: West Date Taken: 5/7/24 Comments: None
9.		Reach 3 – Blake Fork Direction: West Date Taken: 5/7/24 Comments: Minor patches which may require reseeding if further patching occurs.

10.		Reach 3 – Blake Fork Direction: West Date Taken: 5/7/24 Comments: Corner at Sta. 235+00 scoured again (approx. 15 feet) and needs repair.
11.		Reach 2 – Unnamed Tributary (WBIC 5037817) Direction: South Date Taken: 5/7/24 Comments: None
12.		Reach 2 – WBIC 5037817 Direction: South Date Taken: 5/7/24 Comments: A few spotty areas

13.		Reach 2 – WBIC 5037817 Direction: South Date Taken: 5/7/24 Comments: A few spotty areas
14.		Reach 2 – WBIC 5037817 Direction: South Date Taken: 5/7/24 Comments: None
15.		Reach 2 – WBIC 5037817 Direction: North Date Taken: 5/7/24 Comments: None

16.		Reach 1 – Blake Fork Direction: North Date Taken: 5/7/24 Comments: North of Spruce Road. A few spotty areas; Areas that received rock outwash from the flooding have limited cover but are naturally armored
17.		Reach 1 – Blake Fork Direction: North Date Taken: 5/7/24 Comments: A few spotty areas; Areas that received rock outwash from the flooding have limited cover but are naturally armored
18.		Reach 1 – Blake Fork Direction: North Date Taken: 5/7/24 Comments: A few spotty areas; Areas that received rock outwash from the flooding have limited cover but are naturally armored

19.		Reach 1 – Blake Fork Direction: Northeast Date Taken: 5/7/24 Comments: A few spotty areas; Areas that received rock outwash from the flooding have limited cover but are naturally armored
20.		Reach 1 – Blake Fork Direction: North Date Taken: 5/7/24 Comments: None
21.		Reach 1 – Blake Fork Direction: North Date Taken: 5/7/24 Comments: A few spotty areas; Areas that received rock outwash from the flooding have limited cover but are naturally armored

22.		Reach 1 – Blake Fork Direction: Northwest Date Taken: 5/7/24 Comments: A few spotty areas; Areas that received rock outwash from the flooding have limited cover but are naturally armored
23.		Reach 1 – Blake Fork Direction: North Date Taken: 5/7/24 Comments: A few spotty areas; Areas that received rock outwash from the flooding have limited cover but are naturally armored
24.		Reach 1 – Blake Fork Direction: Northeast Date Taken: 5/7/24 Comments: A few spotty areas; Areas that received rock outwash from the flooding have limited cover but are naturally armored

25.		Reach 1 – Blake Fork Direction: North Date Taken: 5/7/24 Comments: None
26.		Reach 1 – Blake Fork Direction: Northwest Date Taken: 5/7/24 Comments: None
27.		Reach 1 – Blake Fork Direction: North Date Taken: 5/7/24 Comments: None

28.		Reach 1 – Blake Fork Direction: North Date Taken: 5/7/24 Comments: None
29.		Reach 1 – Blake Fork Direction: West Date Taken: 5/7/24 Comments: None
30.		Reach 1 – Blake Fork Direction: Northwest Date Taken: 5/7/24 Comments: None

31.		Reach 1 – Blake Fork Direction: Northwest Date Taken: 5/7/24 Comments: A few spotty areas; Areas that received rock outwash from the flooding have limited cover but are naturally armored

DELTA 3
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W www.delta3eng.biz

January 31, 2026

Ms. Caitlin O'Connell
Wisconsin Department of Natural Resources
1500 N. Johns Street
Dodgeville, WI 53533

Re: Annual Water Quality Trading Report #3
Village of Bloomington, WI

Dear Caitlin:

As requested and required by Schedule 4.3 Annual Water Quality Trading (WQT) Report of the Village's Wisconsin Pollutant Discharge Elimination System (WPDES) Permit #WI-0023400-10-2, below, please find the Annual WQT Report for the Village of Bloomington's Wastewater Treatment Facility. Please review for approval.

I. WQT Credit Use

Table 1 provides a summary of Total Phosphorus (TP) Credits used each month in 2025. Credits were calculated using the formulas in Section 2.2.1.4 of the Village's WPDES Permit. Table 2 provides a summary of annual TP Credits Used since 2023. Credit usage in 2023 is not characteristic of the WWTF due to Alum addition for Phosphorus reduction not being maintained during operator turnover. In 2024, the operator optimized Alum usage for TP treatment and has not exceed available WQT Credits since.

Table 1 – 2025 Monthly Average Phosphorus Data

Month	Outfall	Effluent Avg. Flow (MGD)	Effluent Avg. TP Concentration (mg/L)	Effluent Avg. TP Mass (lbs./day)	WQT Credits Used
Jan. ('25)	001	0.039	0.46	0.15	3.81
Feb. ('25)	001	0.036	0.47	0.13	3.32
Mar. ('25)	001	0.048	0.76	0.30	8.58
Apr. ('25)	001	0.067	0.61	0.26	8.93
May ('25)	001	0.046	0.42	0.18	4.15
Jun. ('25)	001	0.043	0.54	0.18	4.97
Jul. ('25)	001	0.062	0.63	0.27	8.85
Aug. ('25)	001	0.066	0.67	0.44	11.83
Sept. ('25)	001	0.039	0.66	0.22	5.63
Oct. ('25)	001	0.035	0.85	0.25	7.08
Nov. ('25)	001	0.035	0.63	0.16	4.86
Dec. ('25)	001	0.036	0.40	0.12	3.05
	Average:	**0.046**	**0.59**	**0.22**	**6.26**

Table 2 – Summary of Annual TP Credits Used

Year	Effluent Avg. Flow (MGD)	Effluent Avg. TP Concentration (mg/L)	Effluent Avg. TP Mass (lbs./day)	Total WQT Credits Used
2023	0.045	1.62	1.46	167.48
2024	0.053	0.68	0.33	111.84
2025	0.046	0.59	0.22	75.06

II. Source of Credits

The Village of Bloomington's WQT Plan (WQT-2021-0004) was approved on March 4, 2021. TP Credits were generated from a streambank stabilization project as described in the Village's WQT Plan. The WQT Plan approved 128.9lbs./yr. of TP Credits for 2023 and **171 lbs./yr.** of TP Credits annually for 2024 through 2026 which were included in the latest WPDES Permit. Construction of the WQT Project was completed in Fall 2022 and credits were registered on January 17, 2023. The Village is currently using TP Credits to comply with the WWTF's Effluent TP Limit.

III. Annual Inspection

Annual inspection was completed in April 2025 with no major deficiencies identified. Vegetation has been well established since completion of construction. Monthly inspections also identified no deficiencies. Please see **Appendix A** for the Streambank Inspection Forms. Annual inspections will continue to be performed in the Spring of each year to ensure the trading practices remain in place and satisfy the WQT Plan. The Village of Bloomington has operated and will continue to operate in accordance with the terms and conditions of its WPDES Permit and WQT Plan.

If you have any questions, please feel free to contact me at (608) 348-5355. Thank you.

Sincerely,
DELTA 3 Engineering, Inc.

Logan Hoppman

Logan Hoppman, P.E.
Civil-Environmental Engineer

LMH:lh

Cc: Jordan Fure – Delta 3 Engineering, Inc.
Bart Nies – Delta 3 Engineering, Inc.
Bob McLimans – Village President
Shawna Atterbury – Village Clerk-Treasurer
Keith Leitzinger – Public Works Director

Appendix A

Streambank Inspection Forms

BMP Inspection Form

Date_____1-20-25_____

Inspector__ Keith W. Leitzinger__

Reason for Inspection _____Monthly_____

Reach	Condition of BMP	Required Maintenance	Maintenance Estimate (Time or Cost)	Date Completed	Comments
1 (Right)	ok	No		1-20-25	
1 (Left)	ok	No		1-20-25	
2 (Right)	ok	No		1-20-25	
2 (Left)	ok	No		1-20-25	
3 (Right)	Fair	May		1-20-25	My need work cutting north side of park
4 (Right)	Fair	May		1-20-25	My need work cutting

BMP Inspection Form

Date_____2-20-25_____

Inspector__ Keith W. Leitzinger__

Reason for Inspection _____Monthly_____

Reach	Condition of BMP	Required Maintenance	Maintenance Estimate (Time or Cost)	Date Completed	Comments
1 (Right)	ok	No		2-20-25	
1 (Left)	ok	No		2-20-25	
2 (Right)	ok	No		2-20-25	
2 (Left)	ok	No		2-20-25	
3 (Right)	Fair	May		2-20-25	My need work cutting north side of park
4 (Right)	Fair	May		2-20-25	My need work cutting

BMP Inspection Form

Date_____3-21-25_____

Inspector__ Keith W. Leitzinger__

Reason for Inspection _____Monthly_____

Reach	Condition of BMP	Required Maintenance	Maintenance Estimate (Time or Cost)	Date Completed	Comments
1 (Right)	ok	No		3-21-25	
1 (Left)	ok	No		3-21-25	
2 (Right)	ok	No		3-21-25	
2 (Left)	ok	No		3-21-25	
3 (Right)	Fair	May		3-21-25	My need work cutting north side of park
4 (Right)	Fair	May		3-21-25	My need work cutting

BMP Inspection Form

Date_____4-23-25_____

Inspector__ Keith W. Leitzinger__

Reason for Inspection _____Monthly_____

Reach	Condition of BMP	Required Maintenance	Maintenance Estimate (Time or Cost)	Date Completed	Comments
1 (Right)	ok	No		4-23-25	
1 (Left)	ok	No		4-23-25	
2 (Right)	ok	No		4-23-25	
2 (Left)	ok	No		4-23-25	
3 (Right)	Fair	May		4-23-25	My need work cutting north side of park
4 (Right)	Fair	May		4-23-25	My need work cutting

BMP Inspection Form

Date: 4/29/25

Inspector: Jordan Fure, P.E.

Reason for Inspection: Annual Inspection

Reach	Condition of BMP	Required Maintenance	Maintenance Estimate (Time or Cost)	Date Completed	Comments
1 (Right)	Good	No	N/A	4/29/25	A few spotty areas; Areas that received rock outwash from the flooding have limited cover but are naturally armored
1 (Left)	Good	No	N/A	4/29/25	A few spotty areas; Areas that received rock outwash from the flooding have limited cover but are naturally armored
2 (Right)	Good	No	N/A	4/29/25	
2 (Left)	Good	No	N/A	4/29/25	
3 (Right)	Good	No	N/A	4/29/25	
4 (Right)	Good	No	N/A	4/29/25	

Streambank BMP Inspection Photos
April 2025 Annual Inspection
Village of Bloomington

Photo Number	Site Photo	Comments
1.		Reach 1: Blake Fork Station: 197+00 Viewing Direction: Upstream Date Taken: 4/29/25 Comments: None
2.		Reach 1: Blake Fork Station: 196+00 Viewing Direction: Upstream Date Taken: 4/29/25 Comments: None

Streambank BMP Inspection Photos
April 2025 Annual Inspection
Village of Bloomington

Photo Number	Site Photo	Comments
3.		Reach 1: Blake Fork Station: 195+00 Viewing Direction: Upstream Date Taken: 4/29/25 Comments: A few spotty areas; Areas that received rock outwash from the flooding have limited cover but are naturally armored
4.		Reach 1: Blake Fork Station:195+25 Viewing Direction: Upstream Date Taken: 4/29/25 Comments: A few spotty areas; Areas that received rock outwash from the flooding have limited cover but are naturally armored

Streambank BMP Inspection Photos
April 2025 Annual Inspection
Village of Bloomington

Photo Number	Site Photo	Comments
5.		Reach 1: Blake Fork Station: 192+50 Viewing Direction: Upstream Date Taken: 4/29/25 Comments: None
6.		Reach 1: Blake Fork Station: 193+75 Viewing Direction: Upstream Date Taken: 4/29/25 Comments: None

Streambank BMP Inspection Photos
April 2025 Annual Inspection
Village of Bloomington

Photo Number	Site Photo	Comments
7.		Reach 1: Blake Fork Station: 191+25 Viewing Direction: Upstream Date Taken: 4/29/25 Comments: None
8.		Reach 1: Blake Fork Station: 189+00 Viewing Direction: Upstream Date Taken: 4/29/25 Comments: A few spotty areas; Areas that received rock outwash from the flooding have limited cover but are naturally armored

Streambank BMP Inspection Photos
April 2025 Annual Inspection
Village of Bloomington

Photo Number	Site Photo	Comments
9.		Reach 1: Blake Fork Station: 186+50 Viewing Direction: Upstream Date Taken: 4/29/25 Comments: A few spotty areas; Areas that received rock outwash from the flooding have limited cover but are naturally armored
10.		Reach 1: Blake Fork Station: 184+50 Viewing Direction: Upstream Date Taken: 4/29/25 Comments: None

Streambank BMP Inspection Photos
April 2025 Annual Inspection
Village of Bloomington

Photo Number	Site Photo	Comments
11.		Reach 1: Blake Fork Station: 183+00 Viewing Direction: Upstream Date Taken: 4/29/25 Comments: None
12.		Reach 1: Blake Fork Station: 181+00 Viewing Direction: Upstream Date Taken: 4/29/25 Comments: None

Streambank BMP Inspection Photos
April 2025 Annual Inspection
Village of Bloomington

Photo Number	Site Photo	Comments
13.		Reach 1: Blake Fork Station: 179+50 Viewing Direction: Upstream Date Taken: 4/29/25 Comments: None
14.		Reach 1: Blake Fork Station: 178+00 Viewing Direction: Upstream Date Taken: 4/29/25 Comments: None

Streambank BMP Inspection Photos
April 2025 Annual Inspection
Village of Bloomington

Photo Number	Site Photo	Comments
15.		Reach 1: Blake Fork Station: 178+75 Viewing Direction: Upstream Date Taken: 4/29/25 Comments: A few spotty areas; Areas that received rock outwash from the flooding have limited cover but are naturally armored.
16.		Reach 1: Blake Fork Station: 177+75 Viewing Direction: Upstream Date Taken: 4/29/25 Comments: None

BMP Inspection Form

Date_____5-18-25_____

Inspector__ Keith W. Leitzinger__

Reason for Inspection _____Monthly_____

Reach	Condition of BMP	Required Maintenance	Maintenance Estimate (Time or Cost)	Date Completed	Comments
1 (Right)	ok	No		5-18-25	
1 (Left)	ok	No		5-18-25	
2 (Right)	ok	No		5-18-25	
2 (Left)	ok	No		5-18-25	
3 (Right)	Fair	May		5-18-25	My need work cutting north side of park
4 (Right)	Fair	May		5-18-25	My need work cutting

BMP Inspection Form

Date_____6-13-25_____

Inspector__ Keith W. Leitzinger__

Reason for Inspection _____Monthly_____

Reach	Condition of BMP	Required Maintenance	Maintenance Estimate (Time or Cost)	Date Completed	Comments
1 (Right)	ok	No		6-13-25	
1 (Left)	ok	No		6-13-25	
2 (Right)	ok	No		6-13-25	
2 (Left)	ok	No		6-13-25	
3 (Right)	Fair	May		6-13-25	My need work cutting north side of park
4 (Right)	Fair	May		6-13-25	My need work cutting

BMP Inspection Form

Date_____7-16-25_____

Inspector__ Keith W. Leitzinger__

Reason for Inspection _____Monthly_____

Reach	Condition of BMP	Required Maintenance	Maintenance Estimate (Time or Cost)	Date Completed	Comments
1 (Right)	ok	No		7-16-25	
1 (Left)	ok	No		7-16-25	
2 (Right)	ok	No		7-16-25	
2 (Left)	ok	No		7-16-25	
3 (Right)	Fair	May		7-16-25	My need work cutting north side of park
4 (Right)	Fair	May		7-16-25	My need work cutting

BMP Inspection Form

Date_____8-22-25_____

Inspector__ Keith W. Leitzinger__

Reason for Inspection _____Monthly_____

Reach	Condition of BMP	Required Maintenance	Maintenance Estimate (Time or Cost)	Date Completed	Comments
1 (Right)	ok	No		8-22-25	
1 (Left)	ok	No		8-22-25	
2 (Right)	ok	No		8-22-25	
2 (Left)	ok	No		8-22-25	
3 (Right)	Fair	May		8-22-25	My need work cutting north side of park
4 (Right)	Fair	May		8-22-25	My need work cutting

BMP Inspection Form

Date_____9-19-25_____

Inspector__ Keith W. Leitzinger__

Reason for Inspection _____Monthly_____

Reach	Condition of BMP	Required Maintenance	Maintenance Estimate (Time or Cost)	Date Completed	Comments
1 (Right)	ok	No		9-19-25	
1 (Left)	ok	No		9-19-25	
2 (Right)	ok	No		9-19-25	
2 (Left)	ok	No		9-19-25	
3 (Right)	Fair	May		9-19-25	My need work cutting north side of park
4 (Right)	Fair	May		9-19-25	My need work cutting

BMP Inspection Form

Date_____10-17-25_____

Inspector__ Keith W. Leitzinger__

Reason for Inspection _____Monthly_____

Reach	Condition of BMP	Required Maintenance	Maintenance Estimate (Time or Cost)	Date Completed	Comments
1 (Right)	ok	No		10-17-25	
1 (Left)	ok	No		10-17-25	
2 (Right)	ok	No		10-17-25	
2 (Left)	ok	No		10-17-25	
3 (Right)	Fair	May		10-17-25	My need work cutting north side of park
4 (Right)	Fair	May		10-17-25	My need work cutting

BMP Inspection Form

Date_____11-11-25_____

Inspector__ Keith W. Leitzinger__

Reason for Inspection _____Monthly_____

Reach	Condition of BMP	Required Maintenance	Maintenance Estimate (Time or Cost)	Date Completed	Comments
1 (Right)	ok	No		11-11-25	
1 (Left)	ok	No		11-11-25	
2 (Right)	ok	No		11-11-25	
2 (Left)	ok	No		11-11-25	
3 (Right)	Fair	May		11-11-25	My need work cutting north side of park
4 (Right)	Fair	May		11-11-25	My need work cutting

BMP Inspection Form

Date_____12-12-25_____

Inspector__ Keith W. Leitzinger__

Reason for Inspection _____Monthly_____

Reach	Condition of BMP	Required Maintenance	Maintenance Estimate (Time or Cost)	Date Completed	Comments
1 (Right)	ok	No		12-12-25	
1 (Left)	ok	No		12-12-25	
2 (Right)	ok	No		12-12-25	
2 (Left)	ok	No		12-12-25	
3 (Right)	Fair	May		12-12-25	My need work cutting north side of park
4 (Right)	Fair	May		12-12-25	My need work cutting

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
GEF 2 Central Office
101 S. Webster Street
Madison, WI 53707

Tony Evers, Governor
Karen Hyun, Ph.D., Secretary
Telephone 608-266-2621
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9/25/2026

Robert McLimans
453 Canal Street
Bloomington, WI 53804

Subject: Bloomington Wastewater Treatment Facility - WPDES Permit WI- 0023400
Water Quality Trading Plan – CONDITIONAL APPROVAL

Dear Mr. McLimans:

The Department recently received a water quality trading plan (WQT plan) for compliance with phosphorus effluent limits at the Bloomington Wastewater Treatment Facility. The updated WQT plan for a second permit term of water quality trading was received in March of 2026. Based on WDNR review, the WQT Plan (dated March 2, 2026) is in general conformance with the WDNR Water Quality Trading Guidance and Section 283.84 of the Wisconsin Statutes. The WQT plan proposes ongoing use of streambank stabilization projects to generate phosphorus credits. Credits generated from approved practices result in available credit quantities shown in Table 1. These credits will be incorporated into the draft WPDES permit.

Please note that this WQT plan approval is not to be construed as approval to commence work regulated under other state or local authorities, such as Chapter 30 waterways and wetlands permitting, floodplain, or construction activities.

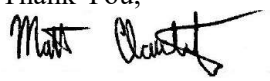
Table 1: Total Phosphorus Credits Available per WQT-2026-0024

Year	Available Credits (lbs/yr) – Total Phosphorus
2027	171
2028	171
2029	171
2030	171
2031	171
2032	171

The Department conditionally approves the WQT Plan as a basis for water quality trading during the next WPDES permit term. The Department has assigned the WQT plan a tracking number of WQT-2026-0024 and will be referenced as such in the draft WPDES permit. The final WQT plan will be included as part of the public notice package for permit reissuance. The draft WPDES permit will include a requirement for an annual trading report and effluent monitoring for total phosphorus.

If you have any questions or comments, please contact me at (608) 400-5596 or at matthew.claucherty@wisconsin.gov

Thank You,



Matt Claucherty
Water Resources Management Specialist
Wisconsin Department of Natural Resources

e-CC:

Larry Gates, City of Prairie Du Chien
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