NEENAH-MENASHA SEWERAGE COMMISSION

Public Hearing & Regular Meeting

Tuesday, September 23, 2025 – 8:00 A.M.

101 Garfield Avenue, Menasha, WI 54952

AGENDA

1. **ROLL CALL**
2. **PUBLIC HEARING TO RECEIVE COMMENTS ON THE 2026 NMSC BUDGET PROPOSED.**
   A. Comments and Discussion on Proposed 2026 NMSC Budget
   B. Motion to adjourn the Public Hearing and reconvene into open session
3. **PUBLIC FORUM**
4. **APPROVAL OF MINUTES**
   A. August 26, 2025, Regular Meeting
   B. September 16, 2025, Special Meeting
5. **CORRESPONDENCE**
   A. September 2025, email from Troy Huebner, Sonoco/U.S. Paper Mills to Paul Much, Plant Manager RE: August Update - Sonoco Pretreatment Project
6. **OLD BUSINESS**
   A. Discussion on electrical feed replacements for the Digester and RAS buildings with potential action to be taken based on discussion held
   B. Discussion on the Plant Drain building hot water loop replacement with potential action to be taken based on discussion held
   C. Discussion on the proposed Administrative Compliance Order for Galloway Co. with potential action to be taken based on discussion held
7. **NEW BUSINESS**

- ***Operations, engineering matters*** -

A. McMahon Associates Report – Update and discussion on the following projects with potential action to be taken based on discussions held:
   1. Phosphorus Removal & UV Disinfection Equipment

B. Discussion of potential water quality trading to meet future Phosphorus limits with potential action(s) to be taken on matters discussed.

C. McMahon Invoice(s)

#939989	Facilities Plan Amendment	$4,620.00
#940353	Facilities Plan Amendment	$3,850.00

D. Operating Report for August 2025
   1. Operating Report
   2. Equipment and Grounds Report

- ***Budget, finance matters*** -

E. Accounting Report for August 2025
   1. Financial Statements
   2. Cash & Investment Report

F. Update and discussion on contract renewal for the Wastewater Service Agreement between Sonoco/U.S. Paper Mills and the NMSC; with potential action(s) to be taken on matters discussed.

G. MCO Invoices.

#32091	October 2025 Contract Operations	$ 151,757.34
#32142	Use of MCO Vehicles – August	$ 478.80

H. Vouchers – Operating and Payroll Vouchers #141208 thru #141253 in the amount of $537,607.45 for the month of August 2025

I. Proposed 2026 NMSC Budget – Discussion on and potential action for approval

8. **ADJOURNMENT**

NEENAH-MENASHA SEWERAGE COMMISSION

Regular Meeting

Tuesday, August 26, 2025

Meeting was called to order by Commission President Mach at 8:00 a.m.

Present: Commissioners Brandon Barlow, Steve Coburn, Corey Gordon, Anthony Mach, Greg Weyenberg, Raymond Zielinski; Manager Paul Much; Accounting Clerk Melissa Starr.

Also Present: Kevin Beauchamp (Galloway); Troy Beyer (Galloway); Rob Franck (MCO); Emily Franklin (MCO); Anthony Kappell (McMahon); Troy Youngbauer (Galloway)

Excused: Dale Youngquist

Public Forum
No one was in attendance for the Public Forum.

Minutes
Meeting minutes. Motion made/seconded by Commissioners Gordon/Zielinski to approve the minutes from the July 22, 2025, Regular Meeting. Motion carried unanimously.

Correspondence
The following correspondence was discussed:
- August 20, 2025, email from Troy Huebner, Sonoco/U.S. Paper Mills to Paul Much, Plant Manager.
  RE: July Update – Sonoco Pretreatment Project

Old Business
There was no old business to be discussed.

New Business

Operations, Engineering, Planning

Potential Financing Options for the Plant Upgrade. President Mach shared that Brad Viegut was unable to attend as planned and asked for a motion to remove from the agenda. Motion made/seconded by Commissioners Weyenberg/Coburn to remove item A from the agenda. Motion carried unanimously.

Galloway's Existing BOD and TSS Pretreatment Limits and Steps to Meet Them. A motion to discuss was made/seconded by Commissioners Coburn/Gordon. Manager Much reported that he and President Mach had met with Galloway representatives regarding their limits and let them know their request for a change in their existing BOD and TSS limits would require Commission approval. Galloway representatives were in attendance and shared initiatives they are implementing to help meet limits, and areas in which they are experiencing setbacks. They explained that they are looking at expanding which would increase their loading, and they are looking for leniency while they work to effectively manage and treat their waste water for the short and long-term. Manager Much and Pretreatment Coordinator Franklin met with DNR

representatives to determine options for such a situation. DNR representatives stated a compliance schedule would need to be established to avoid stepping up enforcement on the industry. Manager Much shared that the plant is at design capacity, so Galloway needs to work with an engineer to determine what increase of their existing limits is needed which will then be presented to the Commission for discussion. Discussion followed. After discussion, a motion was made/seconded by Commissioners Coburn/Weyenberg to allow a 3-month compliance schedule period and then come back and determine next steps. Motion carried unanimously.

McMahon Associates Report. Phosphorus Removal/UV Disinfection Project – Tony Kappell shared the current cost estimate for the Phosphorus Removal/UV Disinfection Project is $35 million. The cloth disc filter system is recommended based on lower cost and less maintenance. He explained the costs have increased since the last estimate, and a draft will be available for the next meeting.

Sewer Extension Requests.

Forest Ridge located in the Village of Harrison – Manager Much recommended approval of the sewer extension request for Forest Ridge. Motion made/seconded by Commissioner Barlow/Weyenberg to approve the sewer extension request for Forest Ridge located in the Village of Harrison. Motion carried unanimously.

Homestead Acres a Condominium located in the Town of Neenah – Manager Much recommended approval of the sewer extension request for Homestead Acres a Condominium. Motion made/seconded by Commissioner Weyenberg/Coburn to approve the sewer extension request for Homestead Acres, a Condominium located in the Town of Neenah. Motion carried unanimously.

HACH Filtrax/Phosphax Analyzer Service Agreement Renewal. Rob Franck reported how Hach does four visits a year to service the analyzer and how important the process and data are for the upcoming project. He also noted that the cost did not increase. After discussion, a motion was made/seconded by Commissioners Weyenberg/Coburn to approve renewal of the HACH Filtrax/Phosphax Analyzer Service Agreement. Motion carried unanimously.

Budgeted Electrical Feeds. A motion to discuss was made/seconded by Commissioners Coburn/Zielinski. Rob Franck reported the conduits between the Plant Drain and Digester buildings need to be replaced, which was budgeted for 2025 ($180,000). He explained estimates were received from competing contractors to determine the 2025 budget amount. However, the area where the conduits enter the Digester building are encased in concrete and there is no separation between the building and the trench concrete. Both contractors were contacted for follow-up proposals and only one responded. Peiper Electric's proposal ($168,450) includes: providing temporary feeds to the digester and RAS buildings, installing new conduits in the digester building basement to the MCC areas of the digester building, installing new conduits to the west end of the digester building for the RAS building feeds, removal of existing conductors, and installation of new conductors. After discussion, a motion to proceed with the budgeted replacement of the Digester & RAS building power feeds was made/second by Commissioners Coburn/Weyenberg. Motion carried unanimously.

Equipment Summary. A motion to discuss was made/seconded by Commissioners Coburn/Weyenberg. Rob Franck explained that several budgeted and unbudgeted issues arose since the last meeting which prompted him to create a list summarizing the larger items that need to be addressed. He reported the following:

- Unbudgeted failure of Screw Pump #4: The failure occurred on July 31st and was identical to the failure of Screw Pump #2 which occurred back in 2012. The repair cost ($152,731) that was provided by Crane Engineering, which was tentatively approved by President Mach due to the 6–8-week lead time. Once Screw Pump #4 is repaired, there are two remaining screw pumps that could potentially experience the same stub shaft failures. Given the 6–8-week lead time, spare upper and lower assemblies could be purchased for the two remaining pumps ($80,235 for both plus freight) which would allow for a shorter repair timeframe upon failure of either pump.

- Unbudgeted Centrate Manhole Repair ($6,895): The condition of the concrete degraded substantially from last year. Completed per President Mach's approval to align with the contractor's schedule and the SE digester being out of service which allowed for suspension of Centrate flow to the manhole

- Unbudgeted Service Building air conditioner failure ($14,000): The coil in the rooftop condenser unit of the Service building had a leak and attempts to repair it were unsuccessful. There was a 3-week lead time so President Mach approved its replacement which should be completed 8/26

- Unbudgeted Aeration Basin #1: Main valve actuator failure repair cost ($3,271) vs. replacement cost ($8,128), seeking approval for repair of main valve actuator

- Unbudgeted Diffuser Replacements: Replacements for basins 1,2, and 3 went very well, and there is a potential for completing two more basins this year ($11,796 total)

- Budgeted for 2025: Influent Submersible Pump replacement ($335,000). The Flygt influent submersible pump was installed in the late 1980s and rebuilt in 2012 and 2018. The pump is now 35 years old, and parts are no longer available. Lead time is estimated at 24 weeks and would likely require up-front payment, with installation occurring around late spring 2026.

- Unbudgeted Electric Heater for Odor Control Building ($2,000): There is a 3" gas line section that is routed underground between buildings. A section of this line was open during an excavation and found to be corroding. As a single unit heater in the Odor Control building is the only load on this 3" gas line, it is more feasible to replace the unit heater rather than excavate that long distance for a new line. The old gas line will be abandoned.

- Digester Cover: the insulation and protective coating of the two south digesters is deteriorating, and both have areas open to the elements. Estimates were provided to either repair the areas of failed insulation ($27,050) or completely remove the insulation and re-install new foam to the covers ($58,130). Rob recommends completing the entire

cover to allow us to visually evaluate the condition of the covers. If budgeted for 2026, costs will need to be adjusted up (estimate $61,000).

After discussion, a motion was made/seconded by Commissioners Coburn/Weyenberg to approve the following: Centrate manhole repair in the amount of $6,895; Service Building Air Conditioner Coil in the amount of $14,000; Aeration Basin #1 Main Valve Actuator repair in the amount of $3,271; Diffuser replacements for two Aeration Basins in the amount of $11,796; Influent Submersible Pump replacement in the amount of $335,000; Electric Heater for Odor Control Building in the amount of $2,000, and to approve the following items be added to the 2026 budget: Upper and lower assemblies for two remaining screw pumps in the amount of $80,235 plus freight, and Digester Cover removal and re-installation of foam in the amount of $61,000. Motion carried unanimously.

Operating Report. Manager Much reported the plant influent Mercury is elevated. Inspections of dental offices has been completed for the year, and we continue to speak with area businesses.

Equipment & Grounds Report – Rob Franck provided additional details on; Extended overnight operations on 7/17-7/18 due to 2.25" of rain in 4 hours. SE Digester cleaning has been completed by FSO. They ran into many rags which resulted in extra time and cleaning. He mentioned that fine screens may need to be addressed during the upgrade to help with rags. The final clarifier inspections are ongoing, and the first of four is now complete.

Budget, Finance, Personnel

Financial Statements. Accounting Clerk Starr reported on the July financial statements; the month of July is showing a net operating income and MCO generated approximately $6,800 in additional revenue for the Commission. Interest rates remained consistent for the month of July at 4.36% for the LGIP and ICS CDARS accounts. Commissioner Barlow asked about the year-to-date net operating income and whether rates will be adjusted. Clerk Starr stated it is likely the rates will be reduced like last year, however, she will take a closer look and have a recommendation for the next meeting.

Wastewater Service Agreement between Sonoco/U.S. Paper Mills and the NMSC. Manager Much reported that Attorney Wishart is currently reviewing the agreement.

MCO Invoices. A motion was made/seconded by Commissioners Coburn/Zielinski to approve for payment MCO invoice #32006, and #32052 in the amounts of $151,757.34, and $321.30, respectively with payment to be made after August 1, 2025. Motion carried unanimously.

Vouchers. A motion was made/seconded by Commissioners Coburn/Zielinski to approve Operating and Payroll Vouchers #141166 through #141207 in the amount of $341,399.69 for the month of July 2025. Motion carried unanimously.

NMSC Draft 2026 Budget. A motion to discuss was made/seconded by Commissioners Gordon/Coburn. President Mach began the discussion by reiterating that the Upper and lower assemblies for the two remaining screw pumps in the amount of $80,235 plus freight, and the Digester Cover removal and re-installation of foam in the amount of $61,000 would be added to the 2026 budget. He also asked about Security Services and whether those funds could be better

utilized. Rob Franck explained the previous Commissions preferred to have someone on site 24/7, and it was more cost effective to hire a security firm versus staffing with certified operators or full-time staff. President Mach asked Manager Much to check with the Commission's insurance representative to determine whether there is a discount for having security or penalty for not having it, which will help with budgeting for next year. It was further discussed that review of SCADA and security measures would need to be completed to determine what changes or added equipment may be needed to effectively monitor the plant if no one is on site. These changes could be addressed during the upcoming project. After discussion, the motion/second made by Commissioners Gordon/Coburn carried unanimously to approve the draft budget as adjusted and to schedule a Public Hearing on September 23, 2025, at 8:00 am to receive comment on the 2026 Proposed Budget immediately prior to the Regular Meeting.

Adjournment

Motion made/seconded by Commissioners Coburn/Weyenberg to adjourn the meeting. Motion carried unanimously. Meeting adjourned at 10:00 a.m.

President

Secretary

NEENAH-MENASHA SEWERAGE COMMISSION

Special Meeting

Tuesday, September 16, 2025

Special Meeting was called to order by Commission President Mach at 8:01 a.m.

Present: Commissioners Brandon Barlow, Steve Coburn, Corey Gordon, Anthony Mach, Greg Weyenberg, Dale Youngquist, Raymond Zielinski; Manager Paul Much; Accounting Clerk Melissa Starr.

Also Present: Andy Kahl (Neenah), Gerry Kaiser (Neenah), Dawn Merlin (McMahon), Chad Olsen (McMahon), Chad Pelishek (Harrison), Jeremy Searl (Fox Crossing), Alissa Van Eperen (Harrison), Brad Viegut (Baird), Roger Voigt (MCO)

President Mach thanked everyone for attending and introductions were made.

Brad Viegut of Baird presented two financing scenarios he put together for the commission based on the information provided. He went through each scenario and shared insight as to how it may impact the project and considerations to bear in mind as we move forward. Chad Olsen and Dawn Merlin shared the information they put together regarding the Clean Water Fund (CWF) loan, and steps to take to determine eligibility for the funds. Engineer Olsen anticipates construction to begin around the third quarter of 2027; therefore, communities must have the Intent to Apply paperwork submitted by this October. Discussion followed. After discussion, President Mach asked commissioners to take time to review and discuss the information with their community members and be prepared to take action at next month's meeting.

Motion made/seconded by Commissioners Weyenberg/Coburn to adjourn the meeting. Motion carried unanimously. Meeting adjourned at 8:51 a.m.

_____ _____

President Secretary

Melissa Starr

From: Troy Huebner <troy.huebner@sonoco.com>
Sent: Tuesday, September 16, 2025 9:59 AM
To: Allen Paul; Melissa Starr
Subject: Menasha August update

Hi Paul,

August 2025 Update

- ETP Construction meeting once/week with all parties (Sonoco, CRM, AW, VM, Citrine)
- 3D models with ETP (Effluent Treatment Plant) building, Equipment and Tank layout - design phase is 100% complete.
- Tank pad concrete work scheduled for 9/19
- Tank erection scheduled for 10/13/25
- East Wall of building scheduled to be completed by 10/1
- Bulk chemical storage containment complete
- VM equipment is continuing to arrive - settlers are on site
- Mill water and biogas tie ins completed
- Main floor poured
- Final air permit received
- Transformer delivered and located

Best regards,
Troy Huebner

Neenah Menasha Sewerage Commission

Compliance Order Issued to Galloway Company

Delivery via Hand Delivery

Date of Service:_____

Signature:_____

Title:_____

In the Matter of:

Galloway Company
Attention: Troy Beyer
Sr. Director of Process Improvement
601 S Commercial Street
Neenah, WI 54957

Pursuant to Section 10.4 of the Neenah Menasha Sewerage Commission ("NMSC") Pretreatment Rules and Regulations, Ordinance No. 2020-1 ("Pretreatment Ordinance"), NMSC is issuing the following Compliance Order to Galloway Company ("Galloway").

Legal Authority:

The following findings are made and Order issued pursuant to the authority vested in the NMSC under Section 10.4 of the Pretreatment Ordinance. Section 10.4 of the Pretreatment Ordinance provides that NMSC "may issue an order" requiring a Significant Industrial User to come into compliance within a specified time if NMSC finds that the User "has violated, or continues to violate, any provision of [the Pretreatment Ordinance], an individual wastewater discharge permit, … or any other Pretreatment Standard or Requirement." As further explained below, this Order is based on NMSC's findings that Galloway has violated the Pretreatment Ordinance and its Industrial User Permit by: (1) exceeding the limitations for BOD and TSS in its Industrial User Permit; and (2) failing to provide NMSC with accurate and timely information regarding production increases and/or changes to its operations or systems that have resulted and will result in the future in increased loadings to the NMSC wastewater treatment plant.

Section 4.2 of the Pretreatment Ordinance prohibits any Significant Industrial User from discharging wastewater to the NMSC wastewater treatment plant without first obtaining an individual or general permit from NMSC for such discharge. This section further provides that

"[a]ny violation of the terms and conditions of an individual wastewater discharge permit ... shall be deemed a violation of [the Pretreatment Ordinance] and subjects the wastewater discharge permittee to the sanctions set out in Sections 10 through 12 of [the Pretreatment Ordinance]." In addition, Section 6.5 of the Pretreatment Ordinance mandates that Galloway must notify NMSC of "any significant changes to [its] operations or system which might alter the nature, quality, or volume of its wastewater at least 30 days before the change."

Part 5.D.1. of Galloway's Industrial User Permit requires Galloway to give notice to NMSC at least 90 days prior to any "production increase, or process modification that is likely to result in any new or substantially increased discharge or change in the nature of the discharge." Part 5.D.2. further provides that Galloway "shall give advance notice to the NMSC of any planned change in the permitted facility or activity which may result in noncompliance with permit requirements." In addition, Part 1.B.2. of the Industrial User Permit imposes effluent limitations on Galloway's wastewater of 7,000 lbs/day as a daily maximum and 5,000 lbs/day as a monthly average for BOD and 1,625 lbs/day as a daily maximum and 1,300 lbs/day as a monthly average for TSS.

Findings:

1. Galloway discharges nondomestic wastewater containing pollutants into the sanitary sewer system of the City of Neenah.
2. The City of Neenah's wastewater, including wastewater discharged from Galloway, is treated at the NMSC wastewater treatment plant.
3. Galloway Company is a "Significant Industrial User" as defined by Section 1.4 of the Pretreatment Ordinance.
4. Galloway was issued a wastewater discharge permit, NMSC-010-12, on June 15, 2025, which contains prohibitions, restrictions, and other limitations on the quality of the wastewater Galloway is permitted to discharge to the sanitary sewer.
5. Parts 2.A. and 3.A. of the Industrial User Permit include requirements to routinely collect and submit data and monitoring reports on wastewater characteristics to NMSC.
6. Part 1.B.2. of the Industrial User Permit imposes effluent limitations on Galloway's wastewater of 7,000 lbs/day as a daily maximum and 5,000 lbs/day as a monthly average for BOD and 1,625 lbs/day as a daily maximum and 1,300 lbs/day as a monthly average for TSS.
7. Data that Galloway has submitted to NMSC shows that Galloway has violated the effluent limitations in Part 1.B.2. for BOD and TSS eight times since the issuance of the Industrial User Permit.
8. Parts 5.D.1 and 5.D.2. of the Industrial User Permit require Galloway to give notice to NMSC prior to any "production increase, or process modification that is likely to result in any new or substantially increased discharge or change in the nature of the

discharge," and advance notice "of any planned change in the permitted facility or activity which may result in noncompliance with permit requirements."

9. Galloway has failed to provide accurate and timely information to NMSC regarding production increases and/or changes to its operations or systems that have resulted and will result in the future in increased loadings to the NMSC wastewater treatment plant, including increased loadings of BOD and TSS that have resulted in violations of Galloway's Industrial User Permit limitations.

Order:

THEREFORE, BASED ON THE ABOVE FINDINGS, GALLOWAY COMPANY IS HEREBY ORDERED AS FOLLOWS:

1. Within 30 days of the date of service of this Order, Galloway must submit to the NMSC confirmation that Galloway has hired a certified wastewater engineer to work with Galloway on its wastewater parameter data collection and projection of future loadings.
2. Within 60 days of the date of service of this Order, Galloway must submit to the NMSC a report compiled by the certified wastewater engineer that includes: (1) data and analysis describing in detail the expected future loadings of Galloway for BOD, TSS, soluble BOD, soluble Total Phosphorus, TKN, and flow; (2) a detailed plan by which Galloway will work toward elimination of slug discharges and/or high strength wastewater loads to the NMSC wastewater treatment plant.
3. Within 90 days of the date of service of this Order, Galloway must submit to the NMSC a report describing implementation of the plan referenced in the above Section 2 and including data showing a decreasing trend in BOD and TSS loadings to the sanitary sewer system.
4. Following the submittal of the report under the above Section 3, Galloway must submit a report by the last day of each month to NMSC describing the measures Galloway has implemented over the month to continue to reduce loadings of BOD and TSS.

This Order is entered on this _____ day of September, 2025 and shall be effective upon service to Galloway Company.

Signed: _____

Paul Much
General Manager
Neenah Menasha Sewerage Commission
101 Garfield Avenue
Menasha, WI 54952

FACILITY PLAN AMENDMENT

TERTIARY TREATMENT, UV DISINFECTION, & EFFLUENT FLOW MONITORING

FOR THE

NEENAH-MENASHA SEWERAGE COMMISSION

WINNEBAGO COUNTY, WISCONSIN

SEPTEMBER 15, 2025

McMAHON ASSOCIATES, INC.
1445 McMAHON DRIVE NEENAH, WI 54956 Mailing: PO BOX 1025 NEENAH, WI 54957-1025 PH 920.751.4200 MCMGRP.COM
McM. No. N0008-092400790.02 CTO:jlh

TERTIARY TREATMENT, UV DISINFECTION, & EFFLUENT FLOW MONITORING

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CHAPTER I
BACKGROUND

The Neenah Menasha Sewerage Commission (NMSC) owns and operates a Wastewater Treatment Facility (WWTF) that serves the City of Neenah, City of Menasha, Village of Fox Crossing Sanitary, Harrison Utilities, Town of Neenah Sanitary District #2, and Sonoco. The WWTF went through a significant rehabilitation project in 2012. The project included a Wastewater Facilities Plan dated December 9, 2010. This report is an Amendment to the 2010 Wastewater Facilities Plan.

The Commission's Wisconsin Pollution Discharge Elimination System (WPDES) Permit was re-issued by the Wisconsin Department of Natural Resources (DNR) on January 1, 2025. The re-issued Permit includes future limits for effluent Total Phosphorus (P) and requires the Commission to install a continuous flow recording device on their effluent.

The purpose of this Facilities Plan Amendment is to address the upcoming Total P effluent limits and to address the need to provide effluent flow monitoring. NMSC did submit a Final Compliance Alternatives Plan for Phosphorus in September 2020. The Facilities Plan Amendment is required in the Commission's re-issued WPDES Permit.

CHAPTER II
WASTEWATER TREATMENT FACILITY DESCRIPTION

A. GENERAL

The NMSC WWTF includes the following major unit processes:

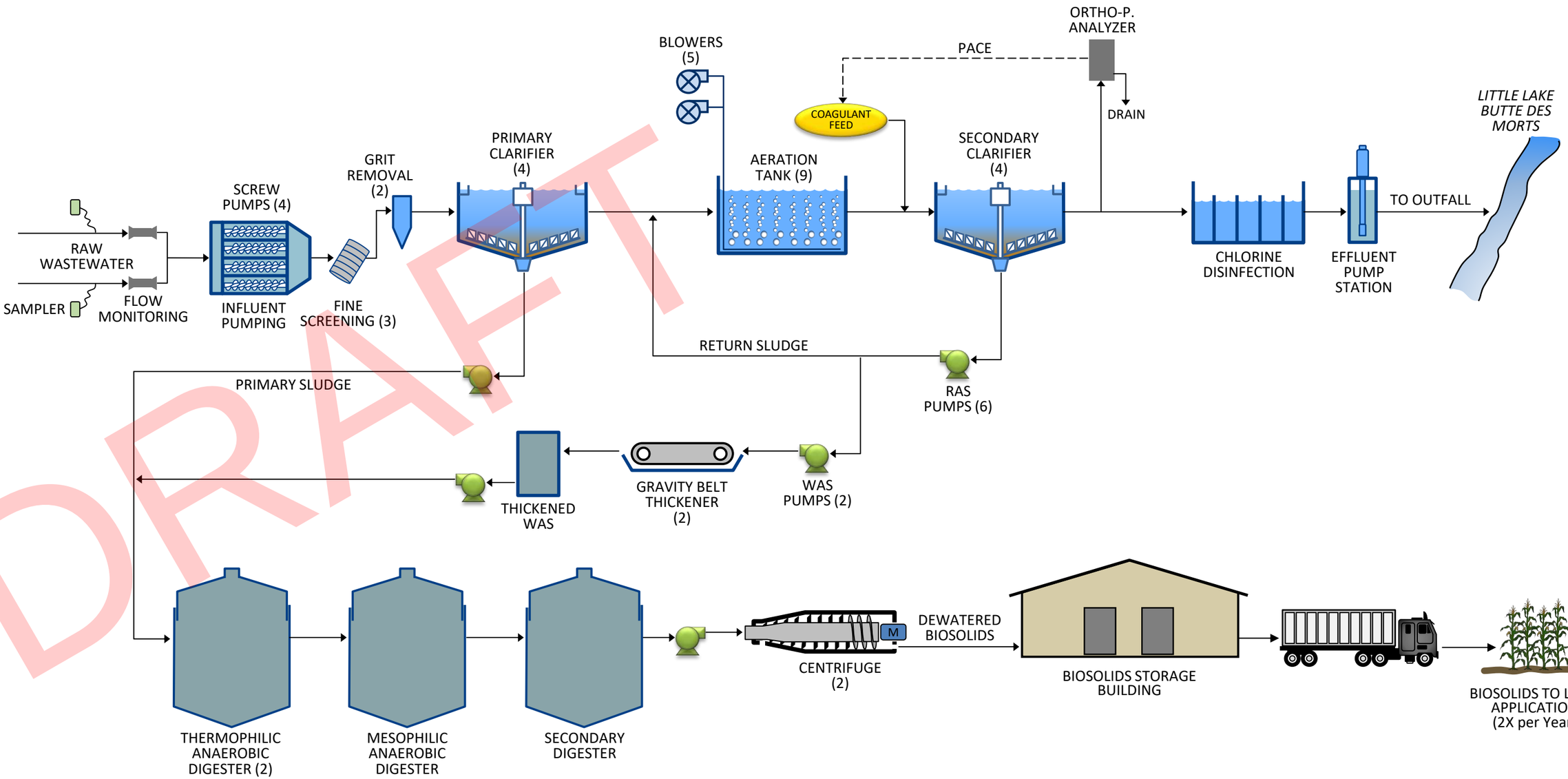
- Raw Sewage Pumping
- Fine Screening
- Grit Removal
- Primary Clarification
- Conventional Activated Sludge
- Secondary Clarification
- Chlorine Disinfection
- Peak Flow Bypass (Flows > 43 MGD)
- Final Effluent Pumping
- Sludge Thickening with Gravity Belt Thickeners
- Temperature Phase Anaerobic Digestion (TPAD)
- Sludge Dewatering with Centrifuges
- Off-Site Biosolids Storage

A process flow schematic of the WWTF is included in Figure I-1. A site plan of the WWTF is included in Figure I-2. Design criteria for the WWTF is included in Appendix A. A description of the facilities follows.

B. LIQUID TREATMENT PROCESS

Raw wastewater at the NMSC WWTF arrives to the Facility in a 60-inch interceptor from the City of Neenah and a 60-inch interceptor from the City of Menasha. The two flows are metered in separate Parshall flumes. Both flow streams are sampled through flow proportional samplers.

Four 96-inch diameter screw pumps lift the wastewater approximately 32-feet, where it where it flows by gravity through disinfection. Each screw pump has a capacity of 21.8 million gallons per day (MGD) for a firm capacity of 65.3 MGD. The screw pumps were rehabilitated in 2012. In 1991, a 15,000 gpm submersible pump was added to the screw pump wet well as backup



McMAHON ENGINEERS ARCHITECTS

FIGURE I-1

WASTEWATER TREATMENT FACILITY SCHEMATIC

TERTIARY TREATMENT, UV DISINFECTION OF EFFLUENT FLOW MONITORING FACILITIES PLAN AMENDMENT

NEENAH-MENASHA SEWERAGE COMMISSION

McM #N0008-09-24-00790 02 9/12/25

ID: PPT\2025\MCM WIS\NMSC FACILITIES PLAN AMEND FIGS11X17.PPTX CTO:jmk

3 PHASE POWER POLE

OHE

WEST ODOR CONTROL TANK (1000)

ODOR CONTROL BLDG. (1020)

SLUDGE HOLDING TANK (1001)

SOUTH BLOWER BUILDING (520)

AERATION TANKS (500)

SPLITTER BOX TANKS 1-6 (510)

RAS SPLITTER BOX TANKS 7, 8, 9 (510)

PE SPLITTER BOX TANKS 7, 8, 9 (510)

GAS HANDLING BUILDING (1120)

MLSS CHANNEL (540)

SECONDARY TUNNEL (630)

DIGESTER BUILDING (820)

DIGESTERS (800)

FINAL CLARIFIER NO. 1

FINAL CLARIFIER NO. 4

FINAL CLARIFIERS (600)

SPLITTER BOX (610)

SECONDARY TUNNEL ACCESS BUILDING (620)

FINAL CLARIFIER NO. 2

FINAL CLARIFIER NO. 3

PLANT DRAIN BUILDING (521)

ENGINE GENERATOR

E-W TUNNEL (830)

CHLORINE CONTACT TANK (700)

LIMITS OF DISTURBANCE

PRIMARY CLARIFIER NO. 3

PRIMARY CLARIFIER NO. 2

PRIMARY CLARIFIERS (400)

PRIMARY CLARIFIER NO. 1

PRIMARY CLARIFIER NO. 4

PRIMARY TUNNEL ACCESS BUILDING (420)

PRIMARY TUNNEL (430)

PRIMARY SPLITTER BOX (410)

SERVICE BUILDING (920)

HEADWORKS BUILDING (320)

RIVER ST.

MADISON ST.

MATHEWSON ST.

GARFIELD AVE.

NOTES:

(1) BUILDING 521 FORMERLY KNOWN AS THE EAST BLOWER BUILDING.

LEGEND

- = LIMITS OF DISTURBANCE
- x——x = CHAIN LINK FENCE
- = CONC. SIDEWALK
- = CONC. PAVING
- = ASPHALT PAVEMENT
- = STRUCTURES
- = UNDERGROUND STRUCTURES
- = PROPERTY LINE

SITE PLAN

SCALE: 1" = 40'-0"

NORTH

40 20 0 40

SCALE – FEET

FIGURE I-2
SITE PLAN
TERTIARY TREATMENT, UV DISINFECTION, & EFFLUENT FLOW MONITORING FACILITY PLAN AMENDMENT

to the screw pumps during high flow events. This pump discharges into the screw pump discharge channel.

After pumping, the flow passes through three fine screens. These screens were installed in 2012. Each screen has ¼-inch openings and each can pass up to 25 MGD. Screenings removed are washed, compacted, and landfilled. Flow in excess of the screen's capacity will flow over a weir through a manually cleaned bar rack and then to grit removal.

After screening, the flow proceeds to two vortex grit removal units, each capable of treating 30 MGD. Settled grit is pumped to a grit classifier, washed, and augured to a dumpster for landfill disposal.

After grit removal, the flow proceeds to the primary clarifier splitter box via a 60-inch pipe. The Headworks includes a primary clarifier bypass line that may be manually actuated to divert flows over 43 MGD directly to chlorine contact tank. Although the design peak flow of the plant is 65 MGD, the primary and secondary systems have a design capacity limit of 43 MGD.

Following grit removal, the wastewater flows to four 75-feet diameter primary clarifiers with a sidewater depth of 8-feet for primary treatment. The primary clarifier drives and scum collection equipment were replaced in 2012. Primary effluent flows to a splitter box, where it is distributed to nine aeration basins for secondary treatment. The fine bubble diffused aeration systems in the aeration basins were replaced in 2012. Five high-speed turbo blowers provide air to the basins. The blowers were installed in 2017.

Mixed liquor from the aeration basins flows through an aerated channel to the final clarifier splitter box, which divides flow amongst four 120-foot diameter by 16-foot sidewater depth clarifiers. Each clarifier is provided with a full width ducking skimmer, mechanical flocculation center well, and rapid sludge removal mechanism.

After clarification, the flow proceeds to the chlorine contact tank. Two chlorine contact tanks are provided with a combined HRT of 60-minutes at 13 MGD. Since 2000, an on-site sodium hypochlorite generation system with an equivalent chlorine capacity of 800 lbs./day has been utilized for disinfection. The existing hypo generation system was installed in 2012. Main components of the system include the following:

- DC Rectifier
- Electrolytic Cells
- Hypo Storage Tanks (two at 11,000 gallons/each)
- Hypo Metering Pumps

The operation of the hypo generation system has been problematic. The electrolytic cells have been failing prematurely. The cells are stated to have a life of 7 to 10 years, but they typically have been lasting approximately 3 or 4 years. In addition, PVC on the generation skid has been prone to melting.

Liquid sodium bisulfite is added after chlorination for dechlorination.

Four vertical mixed flow pumps with a combined capacity of 65 MGD are provided to pump the effluent into the outfall at high river levels. The flow is normally discharged from the WWTF by gravity.

A coagulant (aluminum sulfate) is added to the mixed liquor flowing to the secondary clarifiers for Total P removal.

C. SOLIDS HANDLING PROCESS

NMSC processes solids generated at the WWTF through four 70-foot diameter anaerobic digesters. The digester are operated as a TPAD system. TPAD consists of operating two anaerobic digesters in series, the first at the thermophilic temperature of 131°F, and the second at the mesophilic temperature of 98°F. The NMSC digestion system includes two thermophilic digesters, one mesophilic digester and one secondary digester that is not heated.

Primary sludge and primary scum are pumped directly to the anaerobic digestion system. Waste activated sludge (WAS) is gravity belt thickened with two 2-meter units to about 5% solids before being pumped to the digestion process.

The feed/withdrawal of the thermophilic digesters is staged to meet Class A pathogen reduction requirements. The staging provides a minimum rest period of 3-hours prior to a withdrawal. This system is based on an Environmental Protection Agency (EPA) site specific Process to Further Reduce Pathogens (PFRP) equivalency granted to the Belmont Plant in Indianapolis, Indiana. Prior to transferring from the thermo to the meso digester, a 3-hour rest period is implemented, where no sludge is fed or withdrawn from the thermo digester. After the rest period, the transfer takes place. During the transfer, no raw sludge is fed to the digester. After the transfer, the raw sludge feed to the thermo digester can resume.

Following digestion, the digested solids are dewatered with centrifuges and hauled to an off-site enclosed storage facility. The stored solids are eventually land applied by a contract hauler when fields are available.

CHAPTER III
TOTAL PHOSPHORUS LIMITATIONS

The Commission's re-issued WPDES Permit includes an interim effluent Total P limit of 0.8 mg/L. A copy of the permit is included in Appendix B.

On December 1, 2010, the DNR updated Wisconsin Administrative Code NR 102 and NR 217, as the Rules pertain to Total P. The updated Rules established a Total P criterion of 0.1 mg/L for rivers. Little Lake Butte des Morts is classified as a River. NR 217 allows the DNR to utilize Total Maximum Daily Load (TMDL) allocations in lieu of the criteria in NR 102 when establishing effluent limitations in WPDES permits.

On May 18, 2012, the U.S. EPA approved the TMDL and Watershed Management Plan for the Lower Fox River Basin and Lower Green Bay. The TMDL targets reductions throughout the watershed with the goal of the achieving the 0.1 mg/L Total P criteria in the Lower Fox River.

For NMSC, the TMDL provides a Total P allocation of 6,275 pounds/year, or 17.2 pounds/day. This allocation was used by the DNR to calculate the following effluent limitations for Total P:

- Monthly Average..... 58 pounds/day
- 6-Month Average ..... 19 pounds/day

At the design average flow of 13 MGD, the WWTF would need to achieve an effluent Total P concentration of 0.17 mg/L.

The WPDES Permit includes a compliance date of April 1, 2027, for achieving the new limit. Compliance with the new P limits was delayed due to ongoing negotiations with a contract industrial user. During the permit reissuance period, the Commission met with DNR Staff and provided an alternate compliance schedule. The alternate schedule is included in Appendix C.

CHAPTER IV
WASTEWATER TREATMENT FACILITY PERFORMANCE

Wastewater Treatment Facility flows, loads and performance from 2022 through 2024 are included in Tables IV-1, IV-2, and IV-3.

WWTF performance over that period, overall, has been excellent, with effluent biochemical oxygen demand (BOD) concentrations averaging less than 6 mg/L and total suspended solids (TSS) concentrations averaging less than 7 mg/L. Six-month average effluent Total P results, as compared to the future TMDL limit of 19 lbs./day, are shown below.

	Avg. Flow	**Avg. Effluent Phosphorus**		**Achieve TMDL**
Time Period	million gallons/day	pounds/day	mg/L	**Mass Allocation?**
May 22 - Oct 22	9.54	30	0.38	No
Nov 22- Apr 23	12.62	19	0.20	No
May 23 - Oct 23	8.41	25	0.39	No
Nov 23 - Apr 24	9.83	18	0.21	Yes
May 24 - Oct 24	12.24	31	0.33	No

Effluent P results show the Neenah-Menasha WWTF will not be able to consistently meet the future P limits with their current facilities.

Table IV-1

PLANT INFLUENT & EFFLUENT DATA 2022

TERTIARY TREATMENT, UV DISINFECTION, & EFFLUENT FLOW MONITORING

FACILITY PLAN AMENDMENT

Neenah-Menasha Sewerage Commission | Winnebago County, Wisconsin

Month	Flow		INFLUENT								EFFLUENT															
			BOD				TSS				BOD				TSS				Total P				NH3-N		Fecal Coliform		E. Coli	
	MGD		mg/L		lbs./day		mg/L		lbs./day		mg/L		lbs./day		mg/L		lbs./day		mg/L		lbs./day		mg/L		#/100mL		#/100mL	
	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max
Jan	6.56	7.23	507	689	27,702	38,675	281	372	15,366	19,772	4.7	6.7	256	366	4.5	7.2	247	396	0.17	0.20	9	11	0.14	1.11	-	-	-	-
Feb	6.14	6.69	486	756	24,935	39,305	275	480	14,055	22,857	5.6	8.3	289	450	5.3	7.2	273	391	0.25	0.48	13	24	0.09	0.38	-	-	-	-
Mar	12.09	30.51	319	499	27,718	46,346	222	602	21,322	78,048	5.6	13.6	602	3,461	5.0	10.2	531	2,595	0.16	0.26	16	57	0.96	3.49	-	-	-	-
Apr	16.52	29.30	181	348	23,314	32,374	135	467	17,029	37,975	8.0	13.7	1,035	1,912	7.7	12.8	983	1,537	0.18	0.30	24	31	2.04	6.26	-	-	-	-
May	10.42	18.29	286	406	24,306	45,366	196	559	17,764	85,177	4.6	8.2	400	941	3.8	5.2	336	793	0.20	0.38	17	30	0.32	1.76	11	34	40	137
Jun	11.61	19.67	264	362	24,568	36,266	190	272	17,757	26,131	4.2	6.8	413	834	5.8	10.0	578	1,378	0.58	0.94	57	111	0.08	0.18	45	106	153	730
Jul	8.17	10.78	339	443	22,869	27,711	235	309	15,890	22,473	3.6	5.5	243	383	4.1	6.2	276	504	0.24	0.51	17	33	0.07	0.11	88	176	24	48
Aug	9.35	21.16	323	469	24,521	61,911	250	598	20,172	105,457	3.5	14.5	272	922	4.5	25.7	336	1,635	0.48	1.06	33	67	0.06	0.09	19	40	27	42
Sep	10.30	24.50	304	419	23,954	42,164	219	471	18,265	61,029	2.6	6.1	218	652	4.4	14.0	392	1,471	0.37	0.83	29	78	0.04	0.07	20	40	26	49
Oct	7.52	8.68	390	515	24,526	32,589	263	369	16,451	22,994	5.1	17.4	322	1,141	10.1	55.3	639	3,626	0.42	0.83	26	51	0.06	0.08	-	-	-	-
Nov	10.21	24.48	327	528	26,036	35,863	215	568	17,811	46,006	5.0	9.3	440	1,386	10.3	38.0	840	3,514	0.32	0.82	28	89	0.11	0.77	-	-	-	-
Dec	8.56	11.89	338	565	23,687	33,572	235	356	16,658	25,538	6.6	12.2	468	811	15.6	95.7	1,079	6,364	0.27	0.54	19	36	0.08	0.61	-	-	-	-
Avg	9.79		338		24,848		226		17,402		4.8		400		6.5		523		0.30		24		0.34		36		77	
Max	16.52	30.51	507	756	27,718	61,911	281	602	21,322	105,457	8.0	17.4	1,035	3,461	15.6	95.7	1,079	6,364	0.58	1.06	57	111	2.04	6.26	88	176	153	730

Table IV-2

PLANT INFLUENT & EFFLUENT DATA 2023

TERTIARY TREATMENT, UV DISINFECTION, & EFFLUENT FLOW MONITORING

FACILITY PLAN AMENDMENT

Neenah-Menasha Sewerage Commission | Winnebago County, Wisconsin

Month	Flow		INFLUENT								EFFLUENT															
			BOD				TSS				BOD				TSS				Total P				NH3-N		Fecal Coliform		E. Coli	
	MGD		mg/L		lbs./day		mg/L		lbs./day		mg/L		lbs./day		mg/L		lbs./day		mg/L		lbs./day		mg/L		#/100mL		#/100mL	
	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max
Jan	10.10	12.03	321	424	26,899	32,640	184	251	15,391	20,375	7.0	19.7	602	1,836	8.0	35.5	697	3,309	0.22	0.67	19	63	0.68	2.63	-	-	-	-
Feb	9.58	20.88	344	464	26,434	32,955	227	382	17,445	28,135	5.3	8.0	420	1,118	4.4	6.4	347	768	0.16	0.19	12	24	1.14	4.41	-	-	-	-
Mar	19.50	44.80	160	212	25,550	45,602	107	172	17,628	57,450	6.4	8.5	1,022	1,766	4.6	7.0	742	1,633	0.13	0.17	20	37	3.45	12.10	-	-	-	-
Apr	17.54	42.08	189	324	24,349	32,484	127	260	16,562	41,210	6.6	10.3	925	3,256	4.1	8.6	627	2,709	0.11	0.17	17	54	4.80	11.70	-	-	-	-
May	11.09	25.27	249	383	22,151	41,835	182	287	16,449	52,248	6.2	12.3	616	2,593	4.6	7.6	433	1,602	0.29	1.01	26	75	1.73	7.62	265	1,200	91	245
Jun	7.99	11.77	360	460	23,778	28,977	229	290	15,191	22,610	5.9	16.6	404	1,201	5.0	11.3	332	718	0.32	0.63	21	43	2.50	16.60	19	31	36	115
Jul	7.14	10.36	401	537	23,742	31,301	247	402	14,644	29,833	3.4	5.5	204	337	4.6	7.0	270	421	0.29	0.70	16	36	0.19	1.25	35	90	70	191
Aug	8.17	14.95	355	458	23,922	40,419	243	484	16,950	60,323	2.6	4.2	178	374	2.9	4.6	200	574	0.28	0.78	18	50	0.07	0.10	36	117	49	81
Sep	6.48	7.80	395	485	21,290	28,186	283	466	15,283	30,357	3.8	7.4	207	429	6.9	23.3	379	1,233	0.66	1.12	35	60	0.06	0.18	75	213	69	152
Oct	9.53	20.63	361	632	26,265	45,257	252	415	19,806	71,435	4.6	9.6	366	1,080	6.9	26.3	547	1,812	0.54	0.88	35	67	0.24	1.61	-	-	-	-
Nov	8.79	11.62	340	482	24,566	32,727	246	457	17,833	30,969	4.0	5.1	305	407	6.0	8.0	451	601	0.23	0.53	17	40	0.09	0.33	-	-	-	-
Dec	7.54	10.56	369	526	23,092	30,267	247	340	15,426	20,602	5.7	8.0	353	587	7.8	10.0	487	727	0.36	0.73	23	65	0.08	0.19	-	-	-	-
Avg	10.30		320		24,329		214		16,547		5.0		444		5.4		441		0.30		22		1.25		94		61	
Max	19.50	44.80	401	632	26,899	45,602	283	484	19,806	71,435	7.0	19.7	1,022	3,256	8.0	35.5	742	3,309	0.66	1.12	35	75	4.80	16.60	265	1,200	91	245

Table IV-3

PLANT INFLUENT & EFFLUENT DATA 2024

TERTIARY TREATMENT, UV DISINFECTION, & EFFLUENT FLOW MONITORING

FACILITY PLAN AMENDMENT

Neenah-Menasha Sewerage Commission | Winnebago County, Wisconsin

Month	Flow		INFLUENT								EFFLUENT															
			BOD				TSS				BOD				TSS				Total P				NH3-N		Fecal Coliform		E. Coli	
	MGD		mg/L		lbs./day		mg/L		lbs./day		mg/L		lbs./day		mg/L		lbs./day		mg/L		lbs./day		mg/L		#/100mL		#/100mL	
	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max
Jan	9.14	12.87	394	703	29,085	44,067	218	272	16,414	22,889	5.3	8.3	387	619	8.2	14.3	587	1,068	0.24	0.38	18	29	0.09	0.35	-	-	-	-
Feb	9.42	13.06	346	565	26,589	40,028	200	331	15,034	21,199	3.2	4.5	257	495	3.8	8.2	303	638	0.13	0.25	11	20	0.28	2.38	-	-	-	-
Mar	9.29	19.82	375	494	28,001	45,744	211	323	16,418	53,315	3.1	6.5	257	1,078	4.2	10.0	361	1,653	0.15	0.27	12	43	0.37	2.72	-	-	-	-
Apr	14.91	35.85	248	374	27,380	47,781	156	262	17,833	61,428	5.8	16.7	855	4,540	7.3	21.3	1,113	6,368	0.18	0.41	28	123	0.21	2.82	20	20	56	56
May	12.51	25.74	279	522	27,472	54,797	190	334	19,496	48,950	4.8	8.8	520	1,771	5.3	9.4	566	1,804	0.19	0.38	21	73	0.19	2.71	85	239	117	544
Jun	15.86	37.54	257	463	32,587	98,298	170	283	21,660	52,206	17.9	254	4,208	78,934	28.7	492	7,035	152,896	0.20	0.60	31	142	0.39	2.44	54	123	29	98
Jul	18.24	37.19	225	367	30,812	72,621	151	275	22,244	85,217	5.6	31.8	1,098	9,864	7.2	39.6	1,421	12,283	0.19	0.55	31	162	0.36	4.30	162	429	60	204
Aug	12.37	23.32	267	383	26,107	40,377	178	380	17,817	38,176	3.6	5.1	362	583	5.2	8.0	526	1,033	0.42	0.73	44	79	0.10	0.67	157	484	31	48
Sep	7.80	11.44	384	535	24,776	34,235	232	472	14,938	28,949	2.7	5.1	180	343	4.5	7.2	298	513	0.48	0.62	31	56	0.16	0.70	35	74	10	17
Oct	6.64	13.65	455	552	24,633	31,605	273	513	15,316	41,240	3.5	7.5	196	506	5.8	15.3	322	782	0.48	0.72	28	58	0.07	0.36	-	-	-	-
Nov	13.00	24.26	247	476	25,504	40,701	169	267	17,913	39,680	5.2	6.7	586	1,026	6.0	9.0	685	1,149	0.21	0.32	24	47	0.14	0.94	-	-	-	-
Dec	8.95	14.47	345	454	25,119	30,516	217	324	15,931	33,332	3.6	7.0	271	570	5.7	9.4	419	852	0.16	0.30	12	23	0.07	0.24	-	-	-	-
Avg	11.51		319		27,341		197		17,593		5.5		820		7.9		1,228		0.26		24		0.20		96		61	
Max	18.24	37.54	455	703	32,587	98,298	273	513	22,244	85,217	17.9	254	4,208	78,934	28.7	492	7,035	152,896	0.48	0.73	44	162	0.39	4.30	162	484	117	544
January 2022 through November 2024																												
Avg	10.53		326		25,507		213		17,181		5.1		557		6.6		734		0.29		23		0.59		76		67	
Max	19.50	44.80	507	756	32,587	98,298	283	602	22,244	105,457	17.9	254	4,208	78,934	28.7	492	7,035	152,896	0.66	1.12	57	162	4.80	16.60	265	1,200	153	730

CHAPTER V
FUTURE CONDITIONS

A. INTRODUCTION

To evaluate and size facilities for a wastewater management system, future population, wastewater flows, and pollutant loadings must be estimated for the planning area. Wastewater flows and loadings are a function of sewered population, per capita water use, commercial and industrial discharges, public authority flows, and infiltration/inflow (I/I).

This chapter defines the planning period, estimates future population, and estimates flow and loadings anticipated from within the planning area.

B. PLANNING PERIOD

The planning period is the time period over which a wastewater management system is evaluated for cost effectiveness. According to EPA and Wisconsin DNR regulation, the planning period for a Facilities Plan shall be 20 years [NR 110.09(1)] from when the plan is implemented. For purposes of this Facilities Plan Amendment, the planning period will be to the year 2049.

C. DESIGN PERIOD

The design period is the time period during which a wastewater management system is expected to reach design capacity. For wastewater treatment facilities, three alternative staging periods of 10, 15 and 20 years should be analyzed for cost effectiveness, and the least costly period selected [NR 110.09(2)(j)4]. A method of determining the staging period is based upon the following table, contained in NR 110:

Flow Growth	Minimum Initial Staging Period
Design Flow Less Than 1.3-Times Initial Flow	20-years
Design Flow 1.3 to 1.8-Times Initial Flow	15-years
Design Flow Greater Than 1.8-Times Initial Flow	10-years

The estimates of flows and loadings developed in this chapter will be used to determine the staging period for the WWTF.

D. POPULATION ESTIMATES

1. 2010 Wastewater Facilities Plan Projections

The 2010 Wastewater Facilities Plan included the following population projections developed by the East Central Wisconsin Regional Planning Commission (ECWRPC) for the Neenah-Menasha Service Area (SSA).

Year	Population
2005	60,807
2010	62,898
2015	64,919
2020	67,447
2025	70,178
2030	72,758

Population projections for the Neenah-Menasha SSA, prepared by the ECWRPC, utilized in the 2010 Facilities Plan are summarized below.

Jurisdiction	ECWRPC 2005	ECWRPC 2010	ECWRPC 2015	ECWRPC 2020	ECWRPC 2025	ECWRPC 2030
City of Menasha (Calumet County, pt.)	1,225	1,661	2,133	2,655	3,208	3,789
City of Menasha (Winnebago County, pt.)	15,763	15,782	15,779	15,805	15,882	15,887
Waverly Sanitary District	3,997	4,797	5,641	6,563	7,521	8,506
Town of Menasha Utility District (east of Fox River only)	7,161	7,475	7,796	8,150	8,553	8,942
City of Neenah	25,439	25,845	26,121	26,695	27,271	27,754
Town of Neenah S.D. #2	7,223	7,338	7,449	7,579	7,743	7,880
Total of NM SSA	**60,807**	**62,898**	**64,919**	**67,447**	**70,178**	**72,758**
+10% of 'x-'05' Increase For SSA Planning	N/A	63,107	65,330	68,110	71,115	73,953

The 2010 Facilities Plan included the following from ECWRPC: *"Moderate growth has been projected for the Neenah/Menasha area, with the population estimated to increase from 60,807 persons in 2005 to 72,758 by 2030; an increase of 11,951 persons. For SSA planning purposes, an additional 1,195 persons (10% of the projected increase) has been added to the base projection for facility design and sizing purposes, bringing the total planning population increase to 13,146."*

Therefore, a year 2030 population figure of 60,807 + 13,146 = 73,953 was used for the 2010 Facility Plan.

2. Updated Population Projections

ECWRPC updated the SSA for the Fox Cities in 2023. A copy of the SSA map for the Neenah-Menasha WWTF is included in Figure V-1. The 2040 projected population for the Neenah-Menasha WWTF included in the SSA was 69,691, which is less than the projected 2030 population in the 2010 Facilities Plan. A copy of the 2040 SSA population projections are included in Appendix D.

Updated Wisconsin DOA population projections based on 2020 census data were released in January 2025. The DOA projections were used to estimate service populations for the Neenah-Menasha WWTF to year 2050. The updated population projections for the member communities are included in the table below.

	2020	2030	2040	2050
City of Neenah	27,319	27,849	28,137	28,069
City of Menasha	18,268	18,406	18,317	17,835
Village of Fox Crossing	18,974	18,980	18,841	18,488
Village of Harrison	12,418	16,591	19,851	21,675
Town of Neenah	3,702	3,716	3,701	3,643
Town of Vinland	1,769	1,700	1,623	1,531
Total	**82,450**	**87,242**	**90,470**	**91,241**

Only portions of the population of the Village of Fox Crossing, Village of Harrison, Town of Neenah, and Town of Vinland are served by the Neenah-Menasha WWTF. The Town of Neenah Sanitary District #2 includes portions of the Town of Neenah and the Town of Vinland. The project service population for the WWTF is included below.

	2020	2030	2040	2050
City of Neenah	27,319	27,849	28,137	28,069
City of Menasha	18,268	18,406	18,317	17,835
Village of Fox Crossing	8,007	8,010	7,951	7,802
Village of Harrison	5,923	7,914	9,469	10,339
Town of Neenah S.D. #2	2,400	2,784	2,784	2,784
Total	**61,917**	**64,962**	**66,658**	**66,829**

For the purposes of this Facilities Plan Amendment, it will be assumed that the 2049 projected population will be equal to the year 2050 projected population. Note that the year 2050 population is less than the 2030 projected population in the 2010 Facilities Plan. One of the primary differences is the projected population for the Town of Neenah Sanitary District #2. The projected year 2020 population for the District was 7,579 residents. The actual population based on the number of connections is closer to 2,400 residents.

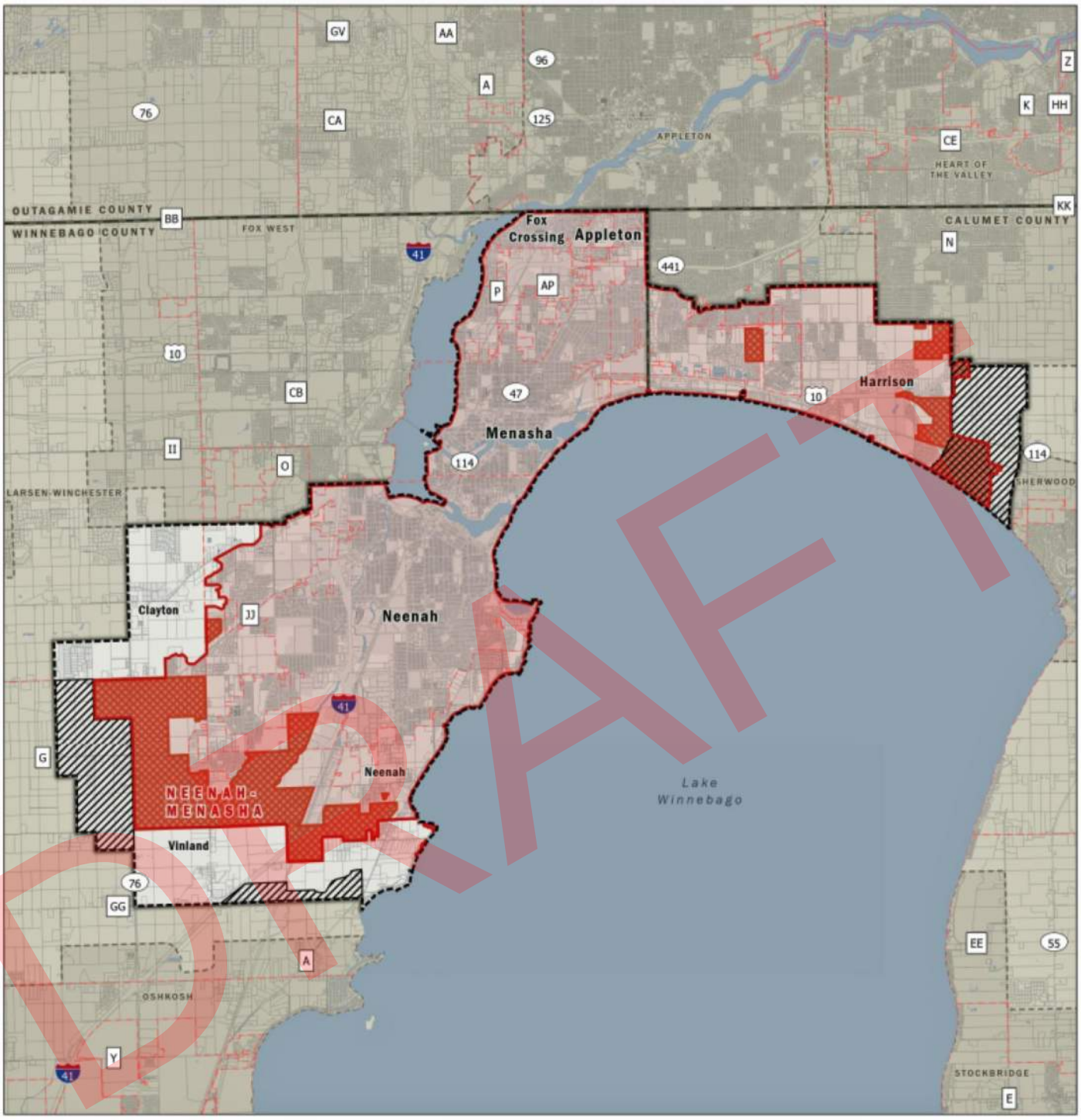


FIGURE V-1

SEWER SERVICE 2040 AREA - NEENAH-MENASHA WWTF

TERTIARY TREATMENT, UV DISINFECTION OF EFFLUENT FLOW MONITORING FACILITIES PLAN AMENDMENT

NEENAH-MENASHA SEWERAGE COMMISSION

McM #N0008-09-24-00790 02 9/12/25

ID: 2025\MCM WIS\NMSC FACILITIES PLAN AMEND FIGS8X11.PPTX CTO:jmk

McMAHON ENGINEERS ARCHITECTS

A description of each community's population projection follows.

- City of Neenah – It was assumed that the entire population would be served by the Neenah-Menasha WWTF.
- City of Menasha – It was assumed that the entire population would be served by the Neenah-Menasha WWTF.
- Village of Fox Crossing – It was assumed that 42.2% of the population would be served by the Neenah-Menasha WWTF. This percentage is consistent with ECWRPC projections from 2005 to 2030.
- Village of Harrison - It was assumed that 47.7% of the population would be served by the Neenah-Menasha WWTF. This percentage is consistent with ECWRPC projections from 2005 to 2030.
- Town of Neenah Sanitary District #2 – The District stated that they have about 1,000 residential sanitary sewer connections. Assuming 2.4 residents per household, the estimated current population of the District is 2,400. The District further stated that there is a 40-unit condominium development planned for 2025 and there is interest in pursuing a 100 - 120 single family development sometime in the near future. Other than that, they don't expect to see a lot of growth. The District stated that there isn't a lot of large acres of land left except for the family farms which probably won't develop. Therefore, assuming 160 new connections, the estimated population increase for the Town of Neenah Sanitary District #2 is 384 new residents at 2.4 residents per household.

The service population for year 2024 is 62,195, assuming straight line growth from 2020 to 2030. The year 2050 population is 66,829, providing a nominal growth of 4,634 residents. To be consistent with the 2010 Facilities Plan, an additional 10% will be added to the increase, or another 463 residents. This provides a design year 2050 population of 67,292.

E. FUTURE FLOWS & LOADINGS

1. General

The average flows and loadings for 2022 through 2024 are shown below.

	Ave Loading	Plant Design (Annual Ave)
Flow	10.5 MGD	13 MGD
BOD	25,507 lbs./day	24,573 lbs./day
TSS	17,181 lbs./day	21,952 lbs./day

The current average BOD loading exceeds the average BOD loading of the WWTF by approximately 1,000 lbs./day

The projected future flows and loadings are based on increases from population projections and changes to industrial loadings. Major industrial contributors include Sonoco US Paper Mills, Galloway Company, and Horseshoe Beverage Company. A description of projected loadings from the three companies follows.

a. Sonoco

Sonoco is a contract user of the Neenah-Menasha WWTF. Sonoco produces recycled paperboard at its mill in Menasha. Wastewater from Sonoco is processed through a pair of dissolved air floatation (DAF) units for solids removal prior to discharge to the sanitary sewer. Wastewater from Sonoco enters the Neenah-Menasha WWTF through the City of Menasha's interceptor.

Sonoco loadings have increased substantially since the 2010 Facilities Plan. Flows and loadings from Sonoco from 2022 through 2024 are included in Table V-1. The average loadings versus the allocated loadings in 2010 Facilities Pan are summarized as follows:

	2022 – 2024	**Allocated**
Average Flow	0.299 MGD	0.249 MGD
Average BOD	10,068 lbs./day	4,665 lbs./day
Average TSS	2,001 lbs./day	1,239 lbs./day

NMSC established the following limits for Sonoco in 2025.

- Monthly Average Wastewater Flow..... 0.350 MGD
- Maximum Daily Wastewater Flow..... 0.500 MGD
- Monthly Average BOD..... 5,000 lbs./day
- Daily Maximum BOD..... 7,000 lbs./day
- Monthly Average TSS ..... 1,300 lbs./day
- Daily Maximum TSS..... 1,625 lbs./day

Sonoco plans on installing a pretreatment facility to comply with the new limits. The facility should be operational in 2026. Loadings from Sonoco should decrease during the planning period as follows:

- Average BOD .....10,068 lbs./day – 5,000 lbs./day = 5,068 lbs./day
- Average TSS .....2,001 lbs./day – 1,300 lbs./day = 701 lbs./day

Table V-1

SONOCO WASTEWATER FLOWS & LOADINGS 2022 - 2024

TERTIARY TREATMENT, UV DISINFECTION, & EFFLUENT FLOW MONITORING

FACILITY PLAN AMENDMENT

Neenah-Menasha Sewerage Commission / Winnebago County, Wisconsin

	Flow		BOD		TSS	
	Avg	**Max**	**Avg**	**Max**	**Avg**	**Max**
Jan-22	0.260	0.320	9,946	15,287	1,254	2,386
Feb-22	0.256	0.336	10,029	16,388	1,157	1,821
Mar-22	0.271	0.313	9,975	12,593	1,085	1,827
Apr-22	0.280	0.321	10,365	12,093	1,293	1,952
May-22	0.276	0.354	10,073	13,024	1,299	2,908
Jun-22	0.258	0.284	9,669	11,701	697	1,397
Jul-22	0.264	0.308	10,295	15,868	1,139	2,039
Aug-22	0.282	0.411	10,736	18,938	1,722	5,964
Sep-22	0.300	0.360	10,526	13,815	2,290	9,165
Oct-22	0.313	0.769	8,801	18,977	2,108	6,350
Nov-22	0.319	0.380	11,272	14,081	2,226	5,021
Dec-22	0.341	0.557	9,111	18,580	2,073	4,986
Avg	0.285		10,062		1,531	
Max	0.341	0.769	11,272	18,977	2,290	9,165
Jan-23	0.313	0.396	10,226	13,713	2,226	7,623
Feb-23	0.296	0.345	10,553	11,818	1,767	3,256
Mar-23	0.336	0.471	11,218	16,669	2,206	4,542
Apr-23	0.319	0.387	9,596	12,183	2,111	5,245
May-23	0.310	0.539	9,987	29,218	2,111	6,953
Jun-23	0.319	0.474	8,779	12,749	2,580	4,888
Jul-23	0.282	0.396	8,935	14,640	2,847	19,618
Aug-23	0.297	0.384	9,666	11,506	2,472	6,097
Sep-23	0.297	0.349	8,101	12,586	1,997	6,550
Oct-23	0.340	0.463	9,820	13,071	2,226	4,750
Nov-23	0.306	0.426	9,282	13,874	2,259	8,590
Dec-23	0.315	0.431	9,141	16,804	2,435	6,650
Avg	0.311		9,608		2,274	
Max	0.340	0.539	11,218	29,218	2,847	19,618
Jan-24	0.332	0.566	10,801	13,762	2,882	9,346
Feb-24	0.316	0.359	11,914	13,495	2,137	3,807
Mar-24	0.302	0.445	10,355	14,982	1,685	4,374
Apr-24	0.311	0.399	10,629	14,159	1,835	3,815
May-24	0.351	0.436	11,171	13,885	2,187	3,491
Jun-24	0.359	0.630	10,160	20,007	3,855	12,047
Jul-24	0.355	0.507	11,251	16,250	2,757	5,835
Aug-24	0.309	0.404	11,302	14,475	2,085	5,422
Sep-24	0.250	0.318	9,955	12,940	1,315	3,373
Oct-24	0.267	0.420	10,364	12,723	1,924	4,238
Nov-24	0.325	0.496	10,871	14,413	3,953	9,643
Dec-24	0.285	0.368	9,913	13,038	2,416	6,776
Avg	0.314		10,721		2,417	
Max	0.359	0.630	11,914	20,007	3,953	12,047
2022 - 2024						
Avg	0.299		10,068		2,001	
Max	0.359	0.769	11,914	29,218	3,953	19,618

b. Galloway Company

Galloway Company produces dairy ingredients at its production facility in the City of Neenah. Flows and loadings from Galloway from 2022 through 2024 are included in Table V-2 and summarized as follows.

- Average Flow ..... 0.355 MGD
- Average BOD ..... 4,477 lbs./day
- Average TSS ..... 595 lbs./day

Galloway is planning on expanding production. Galloway provided an initial estimate of an additional 50,000 gpd of flow. NMSC has established a 5,000 lbs./day monthly average BOD limit in Galloway's discharges, similar to Sonoco.

With the new permit, loadings from Galloway could increase slightly during the planning period as follows:

- Average Flow .....50,000 gpd
- Average BOD .....5,000 lbs./day (limit) – 4,477 lbs./day = 523 lbs./day
- Average TSS .....(0.05 MGD/0.355 MGD) * 595 = 84 lbs./day

c. Horseshoe Beverage

Horseshoe Beverage produces ready to drink beverages at its facility in the City of Neenah. Flows and loadings from Horseshoe Beverage from 2022 through 2024 are included in Table V-3 and summarized below.

- Average Flow ..... 0.138 MGD
- Average BOD ..... 996 lbs./day

Horseshoe Beverage has a pretreatment facility at its production facility. Based on conversations in 2023, Horseshoe Beverage is planning on 35% to 40% production increases. Horseshoe Beverage is also planning on upgrading its pretreatment facility. Therefore, for the purposes of this study, it will be assumed that loadings from Horseshoe Beverage will not change during the planning period. It is assumed the average flow will increase by 40%.

Table V-2

GALLOWAY COMPANY WASTEWATER FLOWS & LOADINGS 2022 - 2024

TERTIARY TREATMENT, UV DISINFECTION, & EFFLUENT FLOW MONITORING

FACILITY PLAN AMENDMENT

Neenah-Menasha Sewerage Commission | Winnebago County, Wisconsin

Year	Flow (MGD)			BOD (lbs./day)			TSS (lbs./day)		
	Avg Day	Max Month	Max Day	Avg Day	Max Month	Max Day	Avg Day	Max Month	Max Day
2022	0.310	0.354	0.515	3,809	5,824	32,207	575	878	4,095
2023	0.384	0.570	0.856	4,286	6,126	33,523	599	1,001	4,100
2024	0.369	0.431	0.728	5,294	9,345	22,705	610	1,074	3,451
Avg	0.355			4,477			595		
Max	0.384	0.570	0.856	5,294	9,345	33,523	610	1,074	4,100

Table V-3

HORSESHOE BEVERAGE WASTEWATER FLOWS & LOADINGS 2022 - 2024

TERTIARY TREATMENT, UV DISINFECTION, & EFFLUENT FLOW MONITORING

FACILITY PLAN AMENDMENT

Neenah-Menasha Sewerage Commission | Winnebago County, Wisconsin

Month	Flow MGD		BOD lbs./day		Total P lbs./day	
	Avg	Max	Avg	Max	Avg	Max
Jan-22	0.133	0.194	798	2,229	7.9	25.0
Feb-22	0.112	0.160	309	604	3.0	4.0
Mar-22	0.107	0.137	1,036	3,281	7.5	29.5
Apr-22	0.097	0.117	572	1,279	6.4	12.7
May-22	0.107	0.119	543	1,348	6.0	17.9
Jun-22	0.110	0.156	585	2,038	5.7	7.3
Jul-22	0.098	0.128	473	1,927	1.8	3.0
Aug-22	0.128	0.156	855	3,011	5.9	8.1
Sep-22	0.121	0.165	1,077	3,487	5.4	6.8
Oct-22	0.151	0.192	1,375	2,549	7.6	13.3
Nov-22	0.167	0.250	1,073	2,121	12.2	19.9
Dec-22	0.143	0.175	1,098	2,081	8.8	16.7
Avg	0.123		813		7.0	
Max	0.167	0.250	1,375	3,487	12.2	29.5
Jan-23	0.140	0.164	858	1,625	5.5	6.0
Feb-23	0.096	0.141	362	679	6.1	11.2
Mar-23	0.083	0.119	332	864	2.4	3.6
Apr-23	0.143	0.196	589	1,164	7.5	10.5
May-23	0.168	0.177	557	1,180	8.0	8.7
Jun-23	0.156	0.191	547	806	3.4	3.5
Jul-23	0.147	0.184	605	1,157	11.9	18.6
Aug-23	0.166	0.193	616	1,300	5.7	7.0
Sep-23	0.146	0.177	563	1,098	5.7	6.4
Oct-23	0.174	0.234	698	1,418	6.8	7.5
Nov-23	0.159	0.194	1,136	2,589	10.6	11.7
Dec-23	0.148	0.200	1,111	1,332	9.6	12.4
Avg	0.141		638		7.2	
Max	0.174	0.234	1,136	2,589	11.9	18.6
Jan-24	0.157	0.203	1,075	1,862	8.3	9.4
Feb-24	0.149	0.181	1,385	3,044	11.0	16.7
Mar-24	0.163	0.245	1,216	1,616	8.2	11.8
Apr-24	0.126	0.161	1,006	1,728	7.1	7.9
May-24	0.122	0.172	1,048	1,540	4.8	5.6
Jun-24	0.136	0.154	1,186	2,268	8.2	20.2
Jul-24	0.146	0.198	1,260	2,094	5.4	8.2
Aug-24	0.157	0.189	1,269	2,044	10.5	20.0
Sep-24	0.156	0.180	1,593	2,431	13.2	18.4
Oct-24	0.146	0.163	2,130	3,187	14.4	18.2
Nov-24	0.162	0.203	1,830	3,199	11.1	14.7
Dec-24	0.171	0.222	1,581	2,077	13.7	21.1
Avg	0.149		1374		10.6	
Max	0.171	0.245	2,130	3,199	14.4	21.1
2022 through 2024						
Avg	0.138		946		8.5	
Max	0.174	0.250	2,130	3,487	14.4	29.5

2. Domestic Loadings

The service population for the WWTF for year 2024 is estimated at 62,195. The design year population is 67,292, providing an increase of 5,097 residents. The projected additional flows and loadings for the population increase are estimated below.

- Flow .....5,097 residents * 80 gpcd = 407,760 gpd
- BOD .....5,097 residents * 0.22 lbs./day/capita = 1,121 lbs./day
- TSS .....5,097 residents * 0.25 lbs./day/capita = 1,274 lbs./day

3. Projected Design Year Flows & Loadings

The total average change in flows and loadings due to population increases and changes in industrial contributions are as follows.

	Domestic	Sonoco	Galloway	Horseshoe	Total
Flow, gpd	407,790	0	50,000	50,000	**507,790**
BOD, lbs./day	1,121	-5,068	523	0	**-3,424**
TSS, lbs./day	1,274	-761	84	0	**597**

Projected year 2049 average flows and loadings are as follows:

	Ave Loading	Change	Design Year
Flow	10.5 MGD	+0.51 MGD	11.01 MGD
BOD	25,507 lbs./day	-3,424 lbs./day	22,083 lbs./day
TSS	17,181 lbs./day	+597 lbs./day	17,778 lbs./day

The projected design year average flows and loadings are less than the current design capacity of the WWTF. For the purposes of this Facilities Plan Amendment, the design criteria in the 2010 Facilities Plan will continue to be utilized. Due to the fact that the design flows are not changing, this Facilities Plan Amendment will utilize a 20 year staging period.

The 2010 Facilities Plan includes a peak hour design flow of 65 MGD. It can be challenging to accurately measure influent flows when they reach this level. Staff believe they have observed flows in excess of 65 MGD. To be conservative, the disinfection facilities, effluent flow monitoring, and existing outfall will be evaluated so they can hydraulically handle a peak hour flow of 80 MGD.

CHAPTER VI
ALTERNATIVES EVALUATION

A. GENERAL

This chapter evaluates and summarizes planning level alternatives for complying with upcoming effluent Total P limitations and effluent flow monitoring. A preliminary screening is undertaken to identify those alternatives that are applicable to the NMSC facilities. Those alternatives surviving the screening process are evaluated for cost effectiveness.

Alternatives for complying with the upcoming Total P limits were evaluated based on the following design criteria.

- Annual Ave ..... 13 MGD
- Max Month ..... 20 MGD
- Max Day ..... 43 MGD
- Peak Hour ..... 65 MGD
- Max Secondary Effluent TSS ..... 30 mg/L
- Secondary Effluent Total P ..... 0.35 mg/L
- Tertiary Treatment Effluent Total P ..... 0.10 mg/L
- Final Effluent Total P Limit (six-month ave) ..... 19 lbs./day

B. ADAPTIVE MANAGEMENT

Adaptive Management as a compliance tool for meeting the future P limits that requires the permitee to perform tasks in the watershed to reduce the Total P in the receiving stream to so that P criteria in the stream is met after the point of discharge. For Neenah-Menasha, this would require lowering sources of Total P in the watershed so that the Total P concentration of the Fox River is 0.1 mg/L or less downstream of their outfall.

Adaptive Management was evaluated when the new P rules came into effect. NMSC participated in an Adaptive Management Study with NEW Water (Green Bay Metropolitan Sewerage District (GBMSD), Heart of the Valley Metropolitan Sewerage District (HOVMSD), City of Appleton Wastewater Treatment Facility, and the Fox West Regional Sewerage Commission. All of the five entities contributed funds to the Fox-Wolf Watershed Alliance (FWWA) to assist with an initial investigation of the Adaptive Management option identified in Wisconsin Administrative Code NR 217.

The Evaluation investigated the feasibility of the five entities working together to meet the 0.10 mg/L Total P criteria in the Lower Fox River through Adaptive Management within a 15 to 20 year period. The Study evaluated P and TSS reductions from the following sources:

- WWTFs through optimization and/or installing tertiary treatment
- Urban storm water
- Agriculture

Work on the Evaluation began in April 2012 and included the following tasks:

1) Identify and initiate contact with other potential stakeholders.
2) Request opinions of probable costs from the five municipal WWTFs for upgrading their Plants to comply with various phosphorus effluent limits.
3) Review regulations, guidance documents, white papers, and previous studies.
4) Initiate contact and collaborate with other entities that are evaluating and/or pursuing the Adaptive Management option within Wisconsin.
5) Meet with Wisconsin DNR representatives to discuss technical issues, implementation challenges, policies, and regulations that may influence the fiscal analysis.
6) Establish an Agricultural Team consisting of representatives from each County Land Conservation Department, US Department of Agriculture Natural Resource Conservation Service (NRCS), and the Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP).
7) Initiate contact and collaborate with scientists from the University of Wisconsin - Green Bay, University of Wisconsin - Sea Grant Institute, University of Wisconsin - Extension, US Geological Survey, and Wisconsin DNR.
8) Perform data analysis and prepare an economic analysis.
9) Prepare White Paper and present findings.

The Study investigated the feasibility, costs and risks associated with the Adaptive Management Alternative. Two scenarios for achieving the Total P and TSS criteria were presented in a White Paper.

Noted risks of the Adaptive Management approach include the following:

- Costs vs. benefits
- Voluntary vs. regulated compliance
- Regulatory barriers and legal challenges (schedule, legacy phosphorus)
- Anticipated WWTF performance vs. agricultural/urban BMP performance
- Scientific research vs. actual water body response
- In future, municipal WWTF inflow loads will likely increase (growth)

If Adaptive Management was not successful in 15 to 20 years in obtaining the water quality criteria in the Lower Fox River, the participating entities would be required to meet either the TMDL mass limit or the water quality-based limit of 0.1 mg/L for the river. Therefore, significant capital could be invested in implementing Adaptive Management and NMSC could still be required to meet the future limit at the outfall of the WWTF.

The White Paper prepared by FWWA provided the following opinion of costs for Adaptive Management in 2013 dollars that ranged from $167,000,000 to $832,000,000, depending on the amount of cost sharing provided to agriculture by the WWTFs.

Based on the costs, risks, and scale of Adaptive Management, NMSC decided not to pursue this option further.

C. WATER QUALITY TRADING

Water Quality Trading (WQT) may be used by permit holders to demonstrate compliance with water quality-based effluent limitations (WQBELs). Generally, WQT involves a point source facing relatively high pollutant reduction costs compensating another party to achieve less costly pollutant reduction with the same or greater water quality benefit. In other words, WQT provides point sources with the flexibility to acquire pollutant reductions from other sources in the watershed to offset their point source load so that they will comply with their own permit requirements.

NMSC and the Fox West Sewerage Commission jointly hired the FWWA in March 2017 to determine the feasibility and potential costs of WQT to meet the future P limits. The Trading boundaries at the time were expanded from the Appleton Middle Dam to the De Pere Dam based on conversations with the DNR. The FWWA contracted with the Outagamie County and Brown County Land Conservation Departments (LCDs) to model real farm scenarios using SNAP Plus (the model required to be used for trading by DNR). The LCDs are working with agricultural producers to develop real costs for installing practices and any other costs that the producer may need to be reimbursed for (loss of crop, uncertainty, etc.).

For the purposes of the Water Quality Trading Study, NMSC provided an optimized six-month effluent Total P concentration of 0.40 mg/L. With a six-month effluent limit of 19 lbs./day, NMSC would need the following P offset, not including trade ratios:

- Design Flow (13.0 MGD).....8,895 lbs./year

FWWA modeled multiple scenarios to provide options that include interim credits (at that time credits were good for 5 years) and long-term credits (credits good for the life of the practice; up to 15 years and beyond with maintenance).

A report was provided to the NMSC on August 17, 2018. The Executive Director of the FWWA stated that to guarantee of the amount of credits required comes at a cost that is way beyond anything that would be open for consideration. The Director further stated that many

discussions were had about how to lower the costs but there is still a lot of uncertainty around trading/contracts and effectiveness of practices installed on the landscape.

In a follow-up meeting with FWWA, it was indicated that interim credits can only be applied if the TMDL threshold for the watershed is met. In many instances, the only way to obtain interim credits is to convert active farmland to prairie land. Based on the amount of land required and projected costs, NMSC decided that WQT is not feasible at this time.

Since the time of the FWWA Study, the DNR has relaxed some requirements for WQT. Interim credits are now good for 10 years (instead of 5 years).

In 2023 the State of Wisconsin started a statewide Clearinghouse, operated by Wisconsin Clearinghouse, LLC. The clearing facilitates trades by connecting buyers (permittees needing to reduce pollution) with sellers (landowners and agricultural producers implementing best management practices). The clearinghouse was contacted regarding credits needed for the Neenah-Menasha WWTF. The amount required exceeded the amount they could acquire.

D. TERTIARY TREATMENT AT THE WASTEWATER TREATMENT FACILITY

1. General

The following tertiary treatment options were evaluated for achieving the future six-month average effluent P limit of 19 lbs./day at the WWTF.

- Chemically Enhanced Continuously Backwashed Sand Filters
- Polyester Disc Filters
- Cloth Disk Filters

All three options would be installed after secondary clarification and prior to disinfection. An average secondary effluent Total P concentration of 0.35 mg/L was used for sizing the tertiary treatment options.

Each tertiary treatment option was designed to handle a maximum month secondary effluent flow of 20 MGD with one unit out of service. Flows above the capacity of the tertiary treatment process would bypass the filters and be blended with tertiary effluent before disinfection. Plant flows from May 2022 through October 2024 were modeled assuming a tertiary treatment capacity of 20 MGD, a secondary effluent Total P of 0.35 mg/L and a filter effluent Total P of 0.1 mg/L. 10% was added to the flows during this period to account for future flow increases. Six-month average Total P results are shown in Table VI-1. The model shows that NMSC should be able to consistently meet the six-month average limits treating up to maximum month flows.

The systems are being laid out with adequate space for future filters to treat the max day flow of 43 MGD in the event NMSC has to meet an effluent Total P limit of 0.1 mg/L

Table VI-1

PROJECTED 6-MONTH AVERAGE EFFLUENT P LOADING
TERTIARY TREATMENT SIZED FOR MAX MONTH FLOW
TERTIARY TREATMENT, UV DISINFECTION, & EFFLUENT FLOW MONITORING
FACILITY PLAN AMENDMENT
Neenah-Menasha Sewerage Commission | Winnebago County, Wisconsin

Time Period	Avg Effluent Total P		Capacity Remaining
	mg/L	lbs./day	lbs./day
May 2022 - Oct 2022	0.10	8.94	10.06
Nov 2022 - Apr 2023	0.11	13.55	5.45
May 2023 - Oct 2023	0.10	7.87	11.13
Nov 2023 - Apr 2024	0.10	9.65	9.35
May 2024 - Oct 2024	0.11	13.51	5.49

Filter Effluent P, mg/L:	0.10
Secondary Effluent P, mg/L:	0.35
Filter Capacity, MGD:	20
Six-Month Limit, lbs./day:	19

***with 10% additional influent flow**

in the future. This could occur if the TMDL is not effective at lowering P levels in the Fox River.

The new tertiary treatment systems need to be constructed within their existing property. NMSC is not allowed to encroach on the park to the north of the plant.

2. Chemically Enhanced Continuously Backwashed Sand Filters

The first tertiary treatment option evaluated to achieve an effluent Total P of 0.1 mg/L is chemically enhanced continuously backwashed upflow sand filters. At the Neenah-Menasha WWTF, secondary effluent would be pumped to the filters. The tertiary effluent would then flow to the chlorine contact chamber for disinfection. The filters would be installed in a new building, south of the existing final clarifiers. A flow diagram of the proposed system is included in Figure VI-1.

In a continuously backwashed sand filter, the wastewater (secondary effluent) and sand travel in opposite directions. A schematic of a filter is included in Figure VI-2. The secondary effluent is pumped to the top of the filter and flows downward through the annular section of the filter and into the bottom of the sand bed through a series of slotted lateral feed pipes. Suspended solids are captured by the downward moving sand as the effluent flows upward through the bed, exiting at the top of the filter over a weir. The sand bed is drawn downward into the center of the filter and into the airlift pipe, where the sand is scoured to dislodge any attached solid particles. The sand slurry is pushed to the top of the airlift and into a reject compartment, where the heavier sand falls into the sand washer and the lighter solids are carried over the reject weir and out the reject pipe. A small amount of the polished effluent moves upward through the sand washer carrying out the remaining reject solids as the cleaned sand is deposited back on the top of the sand bed.

Nexom provided budgetary sizing and pricing information for a continuously backwashed sand filter installation for the Neenah-Menasha WWTF in 2018/2019 during compliance alternatives planning. To handle 20 MGD, with one unit out of service, Nexom recommended eight filter cells, each with eight filters for a total of 64 filters. The filters have a large footprint and would need to be constructed along the shoreline. A Preliminary Site Plan is included in Figure VI-3. During compliance alternatives planning it was found that continuously backwashed sand filtration had the highest opinion of capital and present worth costs.

Due to its footprint and costs, chemically enhanced continuously backwashed sand filtration will not be considered further.

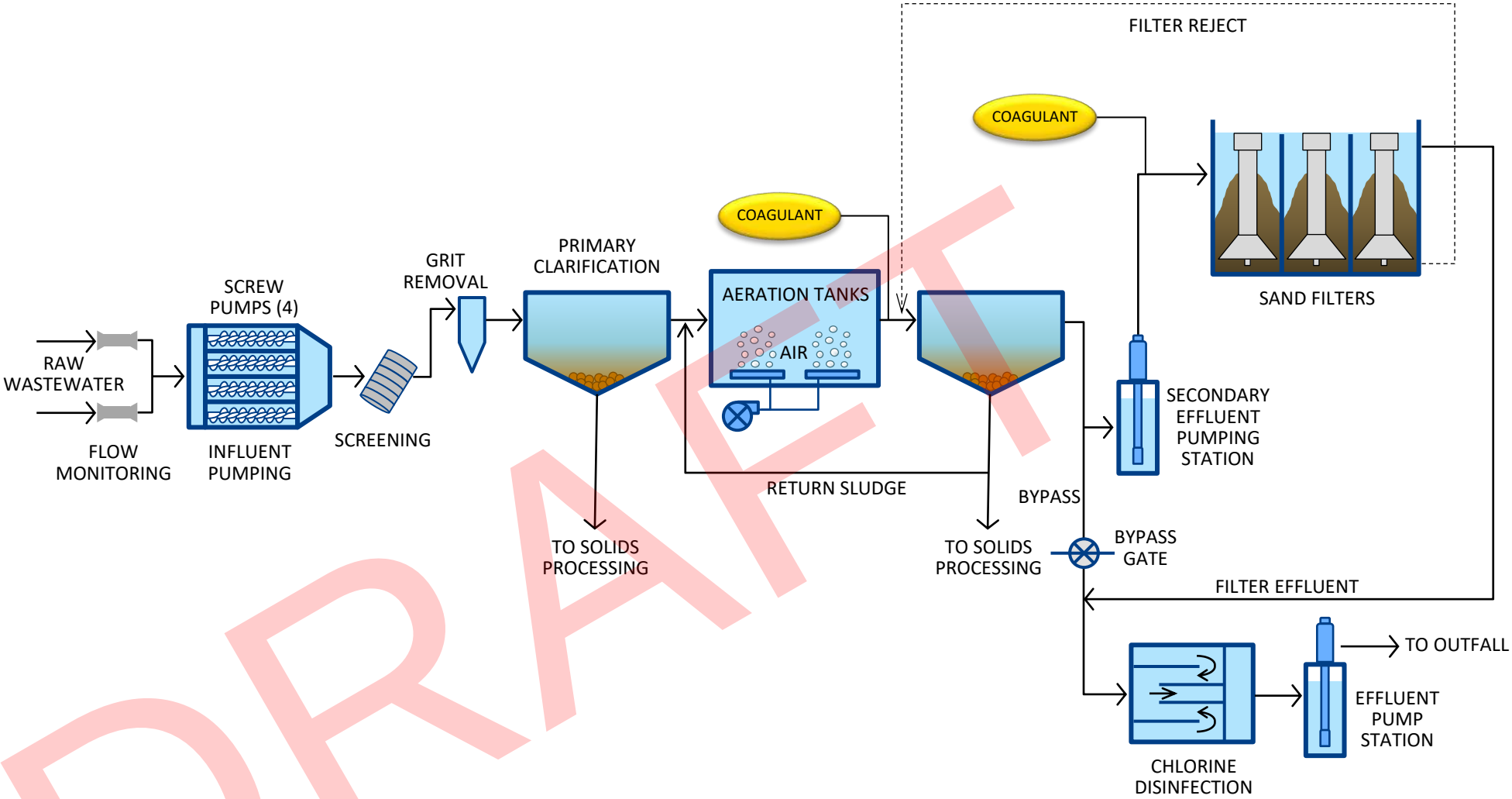


FIGURE VI-1

SAND FILTER OPTION FLOW SCHEMATIC

TERTIARY TREATMENT, UV DISINFECTION OF EFFLUENT FLOW MONITORING FACILITIES PLAN AMENDMENT

NEENAH-MENASHA SEWERAGE COMMISSION

McM #N0008-09-24-00790 02 9/12/25

ID: 2025\MCM WIS\NMSC FACILITIES PLAN AMEND FIGS8X11H.PPTX CTO:jmk

McMAHON ENGINEERS ARCHITECTS

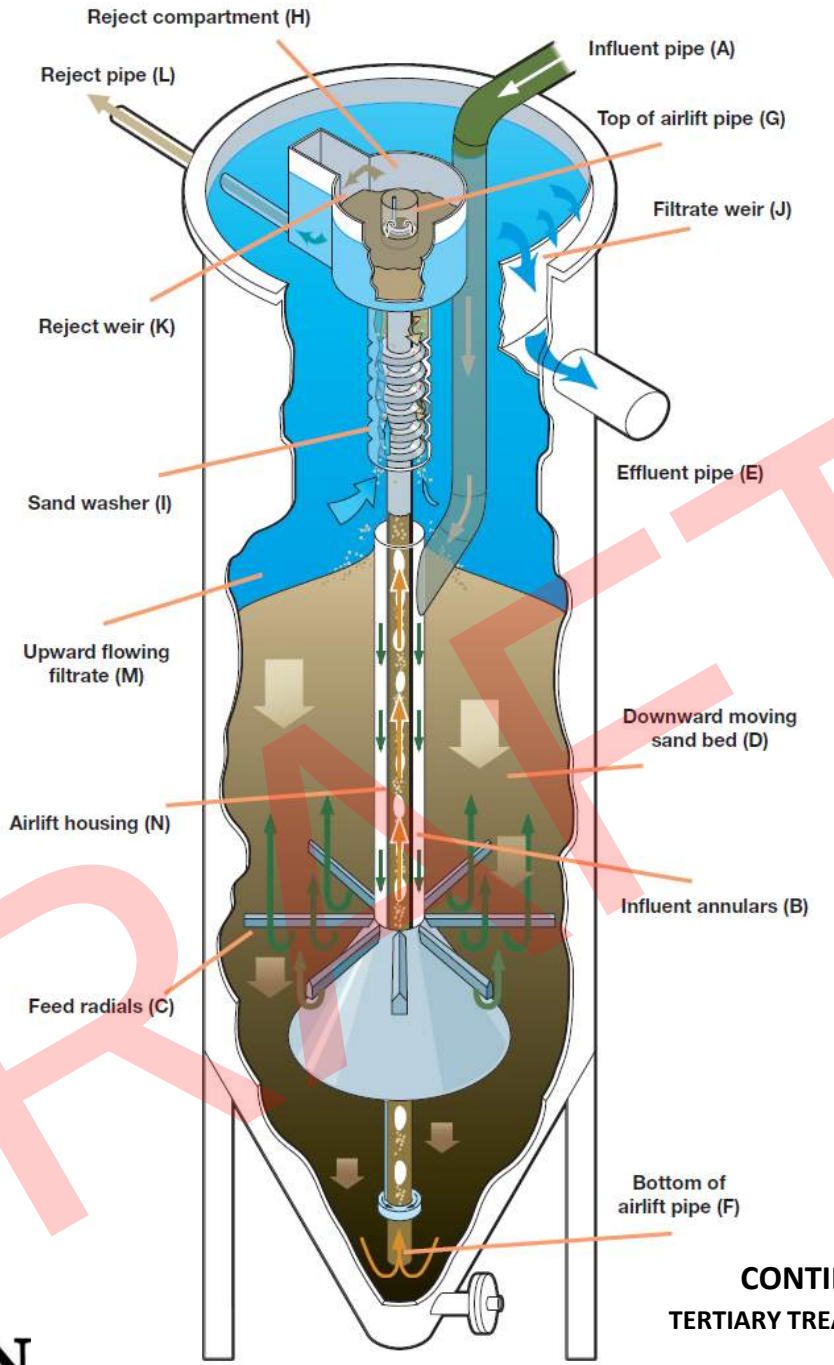


FIGURE VI-2

CONTINUOUS BACKWASH SAND FILTER SCHEMATIC

TERTIARY TREATMENT, UV DISINFECTION OF EFFLUENT FLOW MONITORING FACILITIES PLAN AMENDMENT

NEENAH-MENASHA SEWERAGE COMMISSION

McM #N0008-09-24-00790 02 9/12/25

ID: 2025\MCM WIS\NMSC FACILITIES PLAN AMEND FIGS8X11H.PPTX CTO:jmk

McMAHON ENGINEERS ARCHITECTS

CONTINUOUSLY BACKWASHED SAND FILTERS

GAS HANDLING BUILDING (1120)

FINAL CLARIFIER NO. 1

FINAL CLARIFIER NO. 4

FINAL CLARIFIERS (600)

SPLITTER BOX (610)

MLSS CHANNEL (540)

SECONDARY TUNNEL (630)

SECONDARY TUNNEL ACCESS BUILDING (620)

ER BOX
9

R BOX
9

DIGESTER BUILDING (820)

DIGESTERS (800)

FINAL CLARIFIER NO. 2

FINAL CLARIFIER NO. 3

EXACT LOCATION UNKNOWN

LIFT STATION

ENGINE GENERATOR

E-W TUNNEL (830)

FIGURE VI–3
SAND FILTER SITE PLAN
TERTIARY TREATMENT, UV DISINFECTION,
& EFFLUENT FLOW MONITORING FACILITY
PLAN AMENDMENT

3. Polyester Disc Filters

The second tertiary treatment option evaluated to achieve an effluent Total P of 0.1 mg/L is polyester disc filters. As with the sand filter option, the disc filters would be installed after the secondary clarifiers, treating secondary effluent before it flows to disinfection. A flow diagram of the proposed system is included in Figure VI-4.

The disc filters under consideration are stainless steel units installed in a prepared concrete tank. A schematic of a disc filter is included in Figure VI-5. Secondary effluent from flows into the filter segments from the center drum. Solids are separated from the water by polyethylene filter panels mounted on the two sides of the disc segments. The solids are retained within the filter discs while the clean water flows to the outside of the discs into the collection tank. During normal operation, the discs remain static until the water level in the inlet channel rises to a high level, indicating increasing headloss due to solids on the panels. When this occurs, the backwash cycle is automatically initiated. Filtered effluent in the collection tank is utilized as the backwash water. The clean effluent is pumped to a spray header and nozzles which sprays high pressure water onto the exterior of the filter panels. The collected solids that are removed with the spray wash are discharged into a collection trough as the discs rotate.

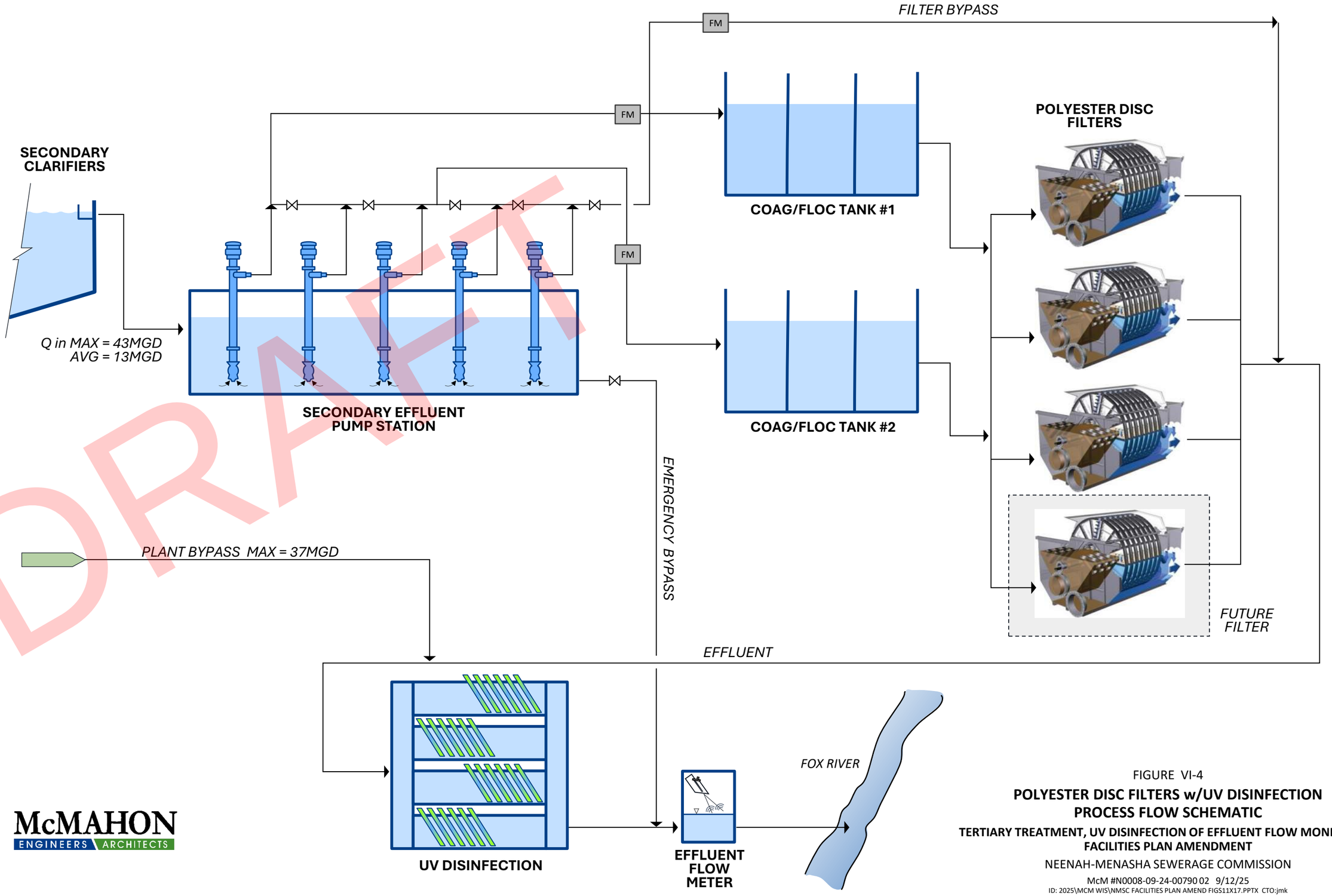
In normal operation, the disc filter is approximately 60% submerged and the head loss across the filter is between 2 to 8-inches.

To accommodate Total P removal, the following mix tanks will be provided upstream of the filters for the addition of a coagulant and polymer for the formation of a stable floc.

Tank	Design HRT @ Peak Flow
Rapid Mix (coagulant feed)	30 seconds
Coagulation Zone	4 – 5 minutes
Flocculation Zone (poly)	4 – 5 minutes

The backwash rate for each filter is 367 gpm. This is the pumped rate that will be sprayed on the outside of the filter media. For rough estimations, approximately 60% of the flow will penetrate the media and be realized as waste. This translates to reject or waste flow of approximately 220 gpm. The remainder will be deflected off of the media and drop back down into the filtered water compartment. The backwash cycle takes approximately 20 seconds. Kruger estimates that for P removal applications, approximately 2 - 4% of forward flow would be backwash to be sent back to the WWTF. Assuming a 3% waste rate, the average backwash flow would be approximately 270 gpm at the design average flow of 13 MGD.

The proposed disc filter system for NMSC consists of three filters with room for a fourth. Each filter has a maximum hydraulic capacity of 11 MGD. This would allow the



McMAHON ENGINEERS ARCHITECTS

FIGURE VI-4

POLYESTER DISC FILTERS w/UV DISINFECTION PROCESS FLOW SCHEMATIC

TERTIARY TREATMENT, UV DISINFECTION OF EFFLUENT FLOW MONITORING FACILITIES PLAN AMENDMENT

NEENAH-MENASHA SEWERAGE COMMISSION

McM #N0008-09-24-00790 02 9/12/25

ID: 2025\MCM WIS\NMSC FACILITIES PLAN AMEND FIGS11X17.PPTX CTO:jmk

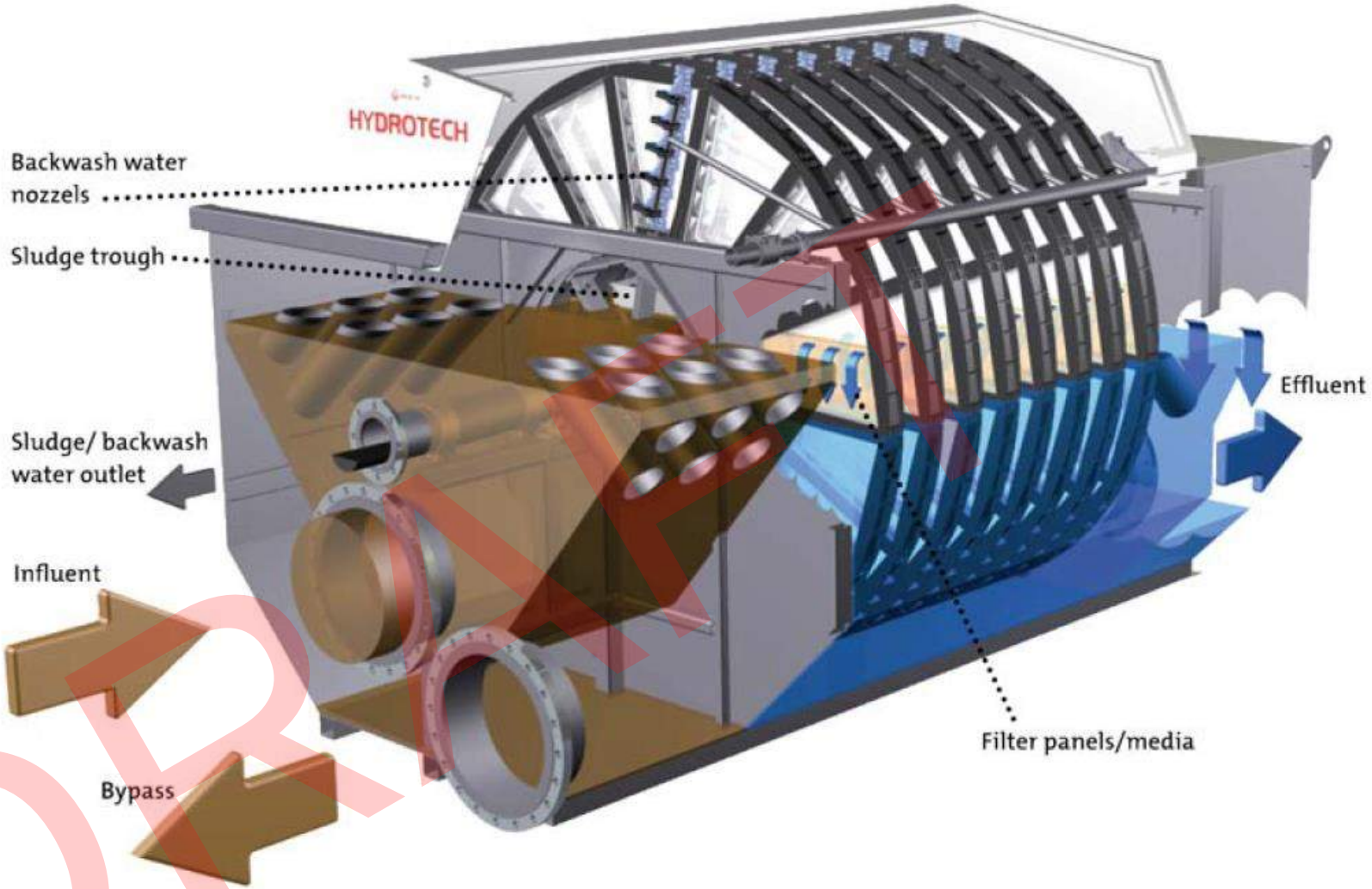


FIGURE VI-5

POLYESTER DISC FILTER SCHEMATIC

TERTIARY TREATMENT, UV DISINFECTION OF EFFLUENT FLOW MONITORING FACILITIES PLAN AMENDMENT

NEENAH-MENASHA SEWERAGE COMMISSION

McM #N0008-09-24-00790 02 9/12/25

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McMAHON ENGINEERS ARCHITECTS

facility to handle the maximum month flow of 20 MGD with one unit out of service, or up to 33 MGD with all three units operating.

The installation would include two sets of rapid mix, coagulation and flocculation tanks. The tanks would have top mounted mixers and would be sized to accommodate the future flow of 43 MGD. The secondary effluent would flow through the rapid mix, coagulation, and flocculation tanks to form a filterable floc prior to entering the filters. A coagulant would be added prior to the rapid mix tank and a polymer would be added to the coagulation tank. The flocculated wastewater would normally flow to two of the three disc filters. The backwash from the disc filters would be piped back to the head of the plant.

A preliminary layout of the proposed Filter Building is included in Figure VI-6. A preliminary site plan is included in Figure VI-7. Due to site constraints on the north end of the WWTF, the filters and the rapid mix, coagulation and flocculation tanks would be constructed within existing chlorine contact chamber. The chlorine disinfection system would be replaced by a new ultraviolet (UV) disinfection system east of the chlorine contact tank.

The installation includes a new secondary effluent pumping station west of the chlorine contact tank. The secondary effluent pump station would pump all the secondary effluent. The effluent from the station would be sent to either of the rapid mix tanks or bypass the filters to UV disinfection. Hydraulically, the UV system would be set at an elevation that eliminates the need for final effluent pumping.

The existing 36-inch plant bypass line from Headworks would be replaced with a new 48-inch line to handle up to 37 MGD of flow (80 MGD – 43 MGD) and to account for the higher hydraulic grade line at disinfection.

The facility would also include a new 1,500 KW diesel generator to power the secondary effluent pump station, filter facility, and UV disinfection system during a power outage.

4. Cloth Disk Filters

The third tertiary treatment option evaluated to achieve an effluent Total P of 0.1 mg/L is cloth disk filters. As with the other options, the filters would be installed after the secondary clarifiers, treating secondary effluent before it flows to disinfection. A flow diagram of the proposed system is included in Figure VI-8.

The cloth disk filters under consideration are units that would be installed in a concrete tank/basin. A schematic of a cloth disk filter is included in Figure VI-9. The cloth disk filters are completely submerged units. With being completely submerged, the secondary effluent flows from the outside of the filter panels into the center of the unit. The previously discussed polyester disc filters are the opposite where the water

RAPID MIX TANK

COAG TANK

FLOC TANK

COAG TANK

FLOC TANK

RAPID MIX TANK

UP

POLY DISC FILTERS

BYPASS CHANNEL

UV DISINFECTION

FUTURE FILTER

CHLORINE CONTACT TANK

EFFLUENT CHANNEL

48" BYPASS

0 2'-0" 4'-0" 8'-0"

SCALE – FEET

NORTH

FIGURE VI–6
POLY DISC FILTERS
PRELIMINARY LAYOUT
TERTIARY TREATMENT, UV DISINFECTION,
& EFFLUENT FLOW MONITORING FACILITY
PLAN AMENDMENT

RAS SPLITTER BOX
TANKS 7, 8, 9
(510)

PE SPLITTER BOX
TANKS 7, 8, 9
(510)

8" D.I. PROCESS DRAIN

AIR

8" SST AIR MAIN

4" NPW

DIGESTER BUILDING (820)

3" NAT. GAS

3" SERVICE GAS

6" & 1 1/2" HWS

6" & 1 1/2" HWR

DIGESTERS (800)

FINAL CLARIFIER NO. 2

FINAL CLARIFIER NO. 3

42" RCP

LIFT STATION

8" STO

ENGINE GENERATOR

E-W TUNNEL (830)

COAG/FLOC TANKS

6" D.I. PRIMARY CLARIFIER DRAIN

PRIMARY CLARIFIER NO. 2

PRIMARY EFFLUENT

6" D.I. PRIMARY CLARIFIER DRAIN

PRIMARY CLARIFIER NO. 1

EMERGENCY BYPASS

POLY DISC FILTERS

PRIMARY CLARIFIERS (400)

12" DR 18 PVC

UV DISINFECTION

60" RCP FINAL EFFLUENT

PRIMARY TUNNEL ACCESS BUILDING (420)

PRIMARY TUNNEL (430)

8" D.I. EFFLUENT REUSE LINE

12" SDR 18 PVC EFFLUENT REUSE

6" D.I. HEAT PUMP SUCTION

6" CL2 CONTACT TANK DRAIN DISCHARGE

8" D.I. EFFLUENT REUSE SUCTION

6" D.I. HEAT PUMP RETURN

EFFLUENT FLOW METER M.H.

4" CONDUIT W/ HCI GAS LINE

2" PVC CHLORINATED EFFL. SAMPLE SUCTION

36" RCP BYPASS

48" INFLUENT

PRIMARY SPLITTER BOX (410)

2" PVC CHLORINE SOLUTION

NEW EFFLUENT

SERVICE BUILDING (920)

NEW 48" BYPASS

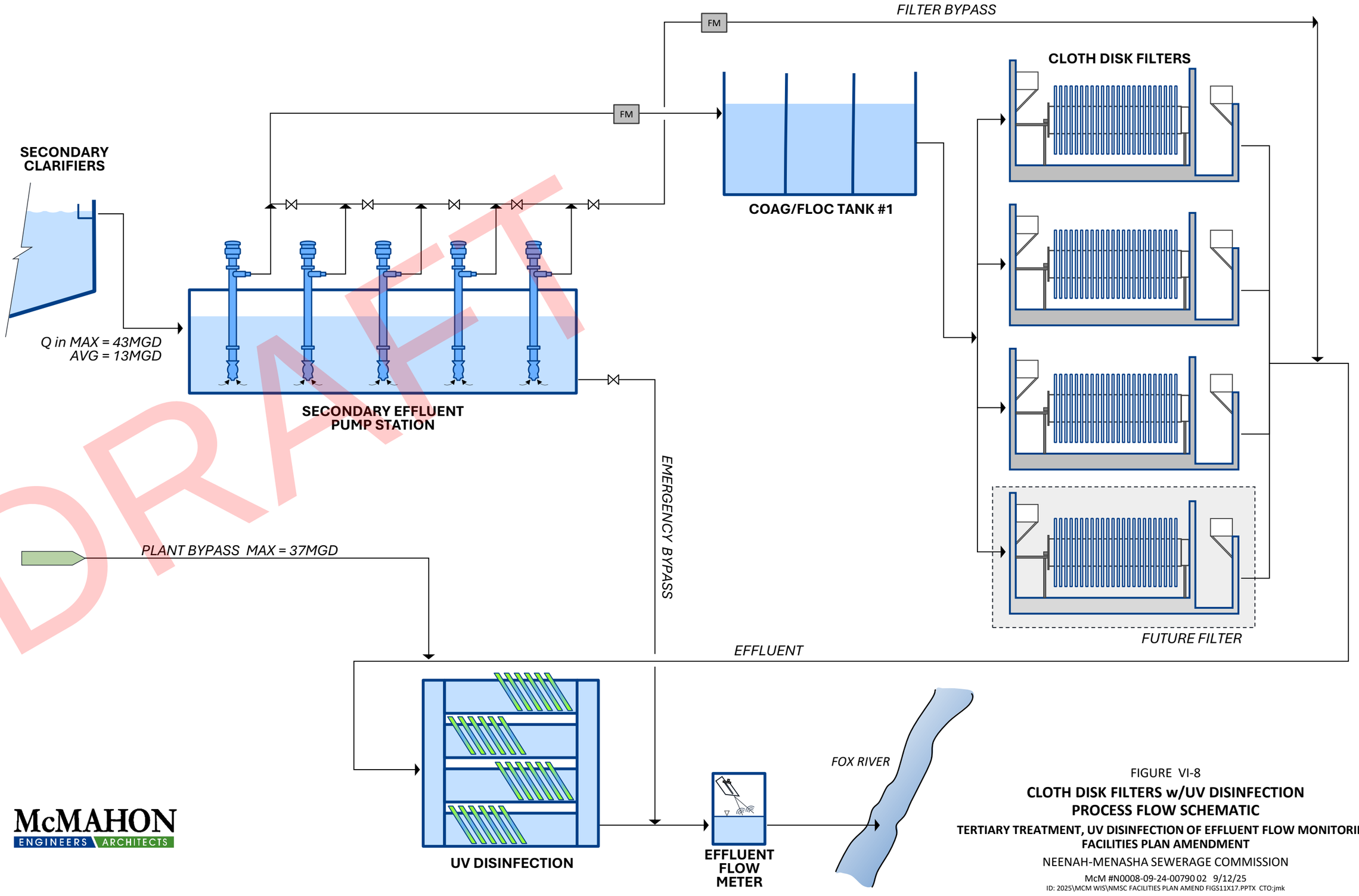
60" INFLUENT

3" PREINSUL. STL. HWS/HWR

6" STORM

MATHEWSON

FIGURE VI-7
POLY DISC FILTERS
PRELIMINARY SITE PLAN
TERTIARY TREATMENT, UV DISINFECTION,
& EFFLUENT FLOW MONITORING FACILITY
PLAN AMENDMENT



McMAHON ENGINEERS ARCHITECTS

FIGURE VI-8

CLOTH DISK FILTERS w/UV DISINFECTION PROCESS FLOW SCHEMATIC

TERTIARY TREATMENT, UV DISINFECTION OF EFFLUENT FLOW MONITORING FACILITIES PLAN AMENDMENT

NEENAH-MENASHA SEWERAGE COMMISSION

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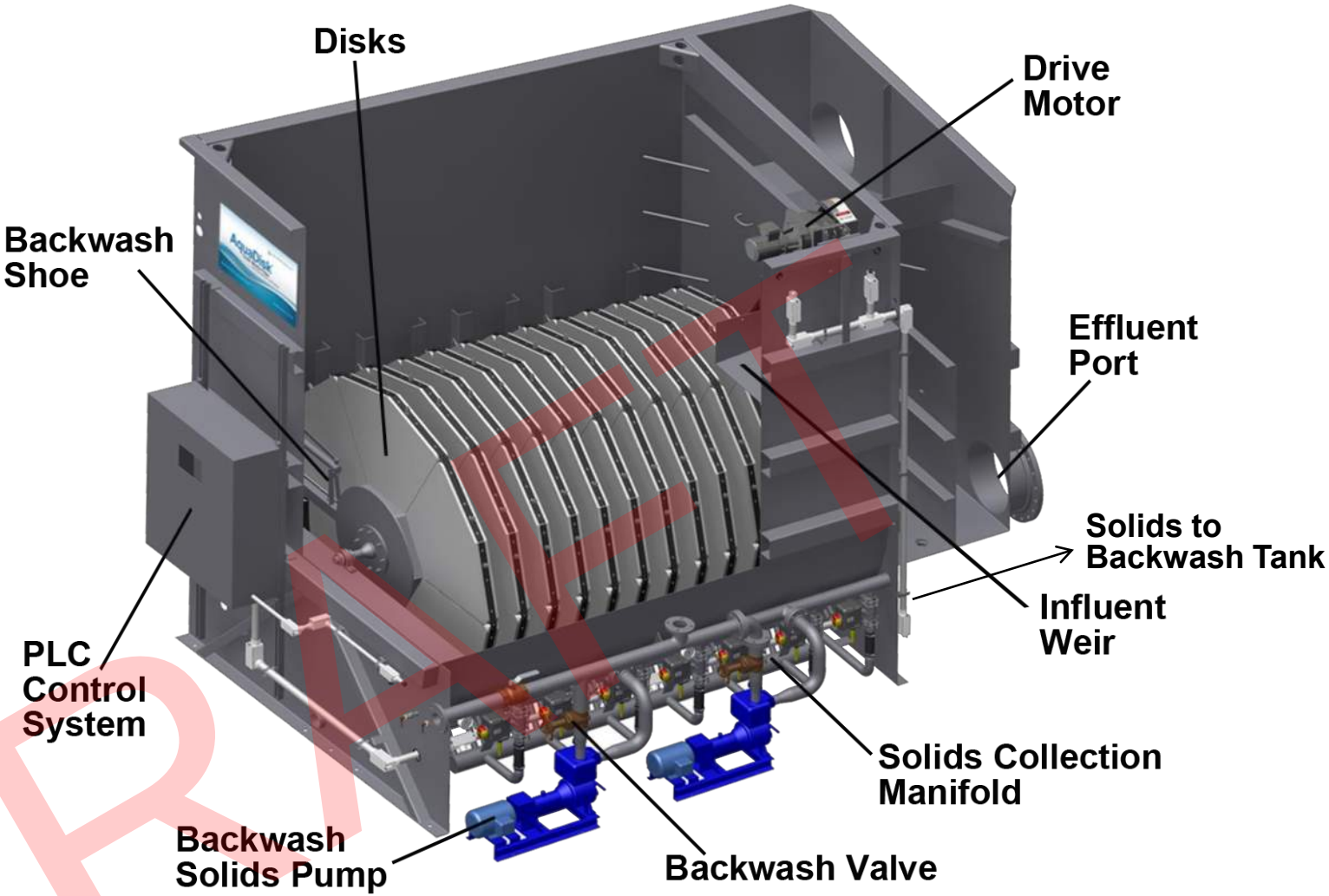

FIGURE VI-9

CLOTH DISK FILTER SCHEMATIC

TERTIARY TREATMENT, UV DISINFECTION OF EFFLUENT FLOW MONITORING FACILITIES PLAN AMENDMENT

NEENAH-MENASHA SEWERAGE COMMISSION

McM #N0008-09-24-00790 02 9/12/25

ID: 2025\MCM WIS\NMSC FACILITIES PLAN AMEND FIGS8X11H.PPTX CTO:jmk

McMAHON ENGINEERS ARCHITECTS

flows from the center of the unit out the filter panels. The disks are typically stationary. Solids collect on the exterior of the cloth media, forming a mat as filtrate flows through the cloth media. In addition, heavier solids settle to the bottom of the tank.

A backwash is initiated when the mat of solids on the cloth filter increases the headloss through the unit and causes the liquid level in the tank to rise. During a backwash, the cloth disks are rotated slowly by a chain gear drive. Backwash shoes contact the cloth media directly and solids are removed by the vacuum pressure of the backwash pump. In addition, heavier solids on the bottom of the tank are removed by a sludge pump on an intermittent basis. The backwash would be piped to the head of the plant.

To accommodate Total P removal, the following mix tanks will be provided upstream of the filters for the addition of a coagulant and polymer for the formation of a stable floc.

Tank	Design HRT @ Peak Flow
Rapid Mix (coagulant feed)	30 seconds
Coagulation/Floc Zone (total)	5 minutes

The proposed cloth disk filter system for NMSC consists of three Aqua Aerobic MegaDisk Cloth Media Filters each with a peak hydraulic capacity of 11 MGD. This would allow the facility to handle the maximum month flow of 20 MGD with one unit out of service, or 33 MGD with all three units. Room would be provided in the concrete filter chambers to allow for the installation of additional filter panels to each filter to increase their capacity.

The installation would include a rapid mix, coagulation, and flocculation tanks. The tanks would have top mounted mixers and would be sized to accommodate the future flow of 43 MGD. The secondary effluent would flow through the rapid mix, coagulation, and flocculation tanks to form a filterable floc prior to entering the filters. A coagulant would be added prior to the rapid mix tank and a polymer would be added to the coagulation tank. The flocculated wastewater would normally flow to two of the three cloth disk filters. The backwash from the cloth disk filters would be piped back to the head of the plant.

A preliminary layout of the proposed Filter Building is included in Figure VI-10. A preliminary site plan is included in Figure VI-11. Due to site constraints on the north end of the site, the filters and the rapid mix, coagulation, and flocculation tanks would be constructed within the existing chlorine contact chamber. The chlorine disinfection system would be replaced by a new UV disinfection system.

The installation includes a new secondary effluent pumping station that would also be constructed within the chlorine contact tank. The secondary effluent pump station would pump all the secondary effluent. The effluent from the station would be sent to

COAG TANK

FLOC TANK

RAPID MIX TANK

DOWN

BACKWASH PUMPS

FUTURE PUMP

CLOTH DISK FILTERS

OPEN TO BELOW

FUTURE FILTER

UV DISINFECTION

CHLORINE CONTACT TANK

SECONDARY EFFLUENT PUMPS

EFFLUENT CHANNEL

48" BYPASS

0 2'–0" 4'–0" 8'–0"

SCALE – FEET

NORTH

FIGURE VI–10
CLOTH DISK FILTERS
PRELIMINARY LAYOUT
TERTIARY TREATMENT, UV DISINFECTION,
& EFFLUENT FLOW MONITORING FACILITY
PLAN AMENDMENT

RAS SPLITTER BOX
TANKS 7, 8, 9
(510)

PE SPLITTER BOX
TANKS 7, 8, 9
(510)

8" D.I. PROCESS
DRAIN

) AIR

8" SST AIR MAIN
4" NPW

RAIN
G

DIGESTER
BUILDING
(820)

DIGESTERS
(800)

3" NAT. GAS
3" SERVICE GAS
6" & 1 1/2" HWS
6" & 1 1/2" HWR

FINAL CLARIFIER
NO. 2

FINAL CLARIFIER
NO. 3

42" RCP

8" STO

ENGINE
GENERATOR

E-W
TUNNEL
(830)

COAG/FLOC
TANKS

6" D.I. PRIMARY
CLARIFIER DRAIN

PRIMARY CLARIFIER
NO. 2

PRIMARY
EFFLUENT

6" D.I. PRIMARY
CLARIFIER DRAIN

PRIMARY CLARIFIER
NO. 1

EMERGENCY
BYPASS

CLOTH DISK
FILTERS

PRIMARY
CLARIFIERS
(400)

12" DR 18 PVC

UV DISINFECTION

60" RCP FINAL EFFLUENT

PRIMARY TUNNEL
ACCESS BUILDING
(420)

PRIMARY TUNNEL
(430)

12" SDR 18 PVC
EFFLUENT REUSE

8" D.I. EFFLUENT
REUSE LINE

6" D.I. HEAT
PUMP SUCTION

6" CL2 CONTACT TANK
DRAIN DISCHARGE

8" D.I. EFFLUENT
REUSE SUCTION

6" D.I. HEAT
PUMP RETURN

EFFLUENT FLOW
METER M.H.

4" CONDUIT W/
HCI GAS LINE

2" PVC CHLORINATED
EFFL. SAMPLE SUCTION

36" RCP BYPASS

48" INFLUENT

PRIMARY
SPLITTER BOX
(410)

2" PVC CHLORINE
SOLUTION

NEW EFFLUENT

SERVICE
BUILDING
(920)

NEW 48"
BYPASS

60" INFLUENT

3" PREINSUL.
STL. HWS/HWR

6" STORM

MATHEWSON

FIGURE VI-11
CLOTH DISK FILTERS
PRELIMINARY SITE PLAN
TERTIARY TREATMENT, UV DISINFECTION,
& EFFLUENT FLOW MONITORING FACILITY
PLAN AMENDMENT

the rapid mix tank or bypass the filters to UV disinfection. Hydraulically, the UV system would be set at an elevation that eliminates the need for final effluent pumping.

The existing 36-inch plant bypass line from Headworks would be replaced with a new 48-inch line to handle up to 37 MGD of flow (80 MGD – 43 MGD) and to account for the higher hydraulic grade line at disinfection.

The facility would also include a new 1,500 KW diesel generator to power the secondary effluent pump station, filter facility, and UV disinfection system during a power outage.

E. UV DISINFECTION

The Neenah-Menasha WWTF is required to meet a geometric mean E. Coli limit of 126#/100 ml from May 1st to September 30th. Limits are currently met through chlorine disinfection. Both tertiary treatment options considered are constructed within the footprint of the existing chlorine contact tank. Both options include the addition of UV disinfection.

UV disinfection options available include open channel systems and enclosed systems installed in a stainless steel vessel. If the UV disinfection system was only treating tertiary effluent, an enclosed UV system could be considered. Due to the fact that the system will also need to treat unfiltered secondary effluent and bypassed wastewater directly from Headworks, open channel UV disinfection systems are recommended.

UV disinfection systems of this size typically use low pressure, high intensity lamps with variable output. Based on their experience at other wastewater treatment facilities with bypass flows, Trojan Technologies recommended a design UV dose of 55 mJ/cm^2 MS2 RED UV to provide appropriate disinfection during times of peak flow bypass from Headworks. The typical dose for secondary effluent is 30 mJ/cm^2 MS2 RED.

The UV system would be constructed in four concrete channels east of the new filter facility. A pre-engineered metal canopy would be installed over the UV system to keep the system out of the elements.

As stated earlier, the UV system would receive back-up power from the proposed 1,500 KW diesel generator.

F. EFFLUENT FLOW MONITORING

The compliance schedule in the NMSC WPDES Permit includes a compliance schedule for a continuous flow recording device. The following options were considered for monitoring the effluent flow at the Neenah-Menasha WWTF. The flow meter needs to be able to measure flows from a minimum of approximately 4.0 MGD to a maximum of 80 MGD.

- Parshall Flume
- Magnetic Flow Meter
- An ISCO LaserFlow® Meter

A Parshall flume would not work with the hydraulic grade line of the plant at the range of flows required to monitor. A very large 84-inch Parshall flume, for example, would require over 2.5-feet of loss at a flow of 80 MGD.

A 60-inch magnetic flow meter could be used to measure the effluent flow after disinfection. The meter itself would cost approximately $60,000. The meter would have to be installed in a vault for access. The flow meter would also need to be installed in a siphon to keep the entire unit submerged at all times. The siphon could be susceptible to solids deposition, especially during low flows. The size of the meter would make it very difficult to service or maintain. Due to its difficulty to maintain and the need for a siphon, a magnetic flow meter will not be considered further.

The last option considered is an ISCO LaserFlow® flow meter. The flow meter remotely measures water flow in open channels using a non-contact laser doppler velocity sensor and a non-contact ultrasonic level sensor. The meter measures water flow velocity with a laser beam sending a pulse signal at single or multiple points below the surface of various liquids.

The water flow sensor uses an ultrasonic level sensor to measure the level of water flow and determines a subsurface point to measure velocity. The flow sensor then focuses its laser beam at this point and measures the frequency shift of the returned light.

The LaserFlow flow meter would be installed in a new 10-foot diameter flow metering manhole downstream of the UV disinfection system. The meter would be installed above the water line and would be readily accessible.

CHAPTER VII
COST EFFECTIVE ANALYSIS

A. INTRODUCTION

Justification for selection of wastewater treatment alternatives is based upon a Cost Effective Analysis. Cost effectiveness takes into consideration both monetary and non-monetary factors. Monetary factors include capital (first costs) and operation and maintenance costs over the entire planning period. Non-monetary factors include such items as primary and secondary environmental effects, implementation capability (social and institutional), operability, performance, reliability, and flexibility.

B. COST ESTIMATING PROCEDURES

Capital construction cost items used in the Cost Effective Analysis include the following:

- Equipment costs.
- Construction and installation costs, including contractor's overhead and profit.
- Cost of engineering, design, field exploration, construction management, on-site field representative, and start-up services.
- Cost of administration and legal services, including costs of bond sales.
- Interest during construction.

Prices of components and installation are estimated on the basis of market prices as of 2025, with no allowance for inflation of wages or prices.

Preliminary opinions of probable capital costs were developed for each tertiary treatment option for comparison and planning purposes. Opinions of probable capital costs include equipment costs and construction/installation costs. Construction costs include the following assumed costs.

- Concrete Costs
  - Footing Costs ..... $600 per cu.yd.
  - Slabs on Grade ..... $800 per cu.yd.
  - Walls..... $1,200 per cu.yd.
  - Elevated Slab..... $1,600 per cu.yd.

- Excavation & Hauling..... $25 per cu.yd.
- Underground Piping (6" or less)..... $200 per ft.
- Underground Piping (8" to 24")..... $250 per ft.
- Underground Piping (24" or larger)..... $1,000 - $2,000 per ft.

Vendor quotations or pricing from past projects were used for equipment capital costs. Mechanical installation is estimated at approximately 30% to 40% of the equipment capital costs. Electrical and controls costs are estimated at approximately 15% to 20% of the total project cost. Contractor general conditions costs (project management, bonding, insurance, temporary facilities, etc.) are estimated as 5% of total construction costs.

Additional project costs (engineering, contingencies, legal, fiscal, and administrative) are estimated at 30% of capital costs; which includes 15% contingencies, and 15% for engineering, legal, fiscal, administrative, and interest costs.

Since the Cost Effective Analysis is computed on a present worth basis, the salvage value of structure and equipment are computed on a straight-line depreciation basis, if there is a use for the structure at the end of the design period and it can be demonstrated that the item can be reused. The design period over which the Cost Effective Analysis occurs is 20-years. Future replacement costs for equipment with a life expectancy of less than 20-years is also included in the analysis. The useful life of the various structures and equipment is estimated according to the following:

Item	Useful Life
Land	Permanent
Wastewater Conveyance Structures (i.e., pipes, interceptors)	40-years
Structures, Tankage, Basins	40-years
Process Equipment	10 – 20-years
Auxiliary Equipment	1 – 15-years

Preliminary opinions of probable annual operation & maintenance (O&M) costs were also developed for comparison and planning purposes. O&M costs include all annual costs (operation and maintenance, labor, equipment parts, repairs and supply costs, chemical power and fuel costs) necessary to operate and maintain the treatment facility. The costs utilized include:

- Electrical Cost ..... $0.102 per KWH
- Polymer Cost ..... $2.25 per pound
- Alum..... $1.06 per gallon

Opinions of probable annual costs are calculated based on the average design loadings. The analysis at this time assumes labor costs will not increase with the addition of tertiary treatment. For the purpose of this exercise, additional solids disposal costs were not

considered. The costs are assumed to be equal for options and the quantity of solids generated are not expected to be considerably higher than current quantities.

Options are evaluated based on a simplified 20-year Present Worth Analysis, using the discount rate of 2.5%. This rate was established by the WI DNR for facility planning purposes.

C. ALTERNATIVE ANALYSIS

Based upon the preliminary screening process, the following alternatives will be subject to a Cost Effective Analysis:

- Polyester Disc Filters
- Cloth Disc Filters

1. Polyester Disc Filters

The proposed disc filter system for NMSC consists of three filters with room for a fourth. Each filter has a hydraulic capacity of 11 MGD. The installation includes two sets of rapid mix, coagulation, and flocculation tanks. Secondary effluent would flow through the rapid mix, coagulation, and flocculation tanks to form a filterable floc prior to entering the filters. A coagulant would be added prior to the rapid mix tank and a polymer would be added to the coagulation tank. The flocculated wastewater would normally flow to two of the three disc filters.

The installation includes a new secondary effluent pumping station east of the chlorine contact tank. The secondary effluent pump station would pump all the secondary effluent. The effluent from the station would be sent to either of the rapid mix tanks or bypass the filters to UV disinfection. Hydraulically, the UV system would be set at an elevation that eliminates the need for final effluent pumping.

Annual costs for this option include the following:

- The cost for additional alum feed to the secondary effluent in the rapid mix tank. It is assumed that an alum dose of 4.5 mg/L as Al will be required.
- The cost for polymer. Polymer dose is assumed to be 1.0 mg/L.
- Power for pumping secondary effluent.
- Power for the mixers, filter drives, and backwash pumps.
- Chemicals for chemically cleaning the filters.
- The cost to replace the filter panels. The manufacturer states that the panels have a life expectancy of over 15 years.

The opinion of probable capital cost for the polyester disc filters is $27,915,000 with a present worth cost of $24,780,000 as summarized in Table VII-1. The opinion of probable cost does not include UV disinfection, which is common for both options.

The opinion of probable annual costs for this option is $730,000 as summarized in Table VII-2.

2. Cloth Disk Filters

The proposed cloth disk filter system for NMSC consists of three Aqua Aerobic MegaDisk Cloth Media Filters each with a peak hydraulic capacity of 11 MGD. The installation includes a rapid mix, coagulation, and flocculation tank. The secondary effluent would flow through the rapid mix, coagulation, and flocculation tanks to form a filterable floc prior to entering the filters. A coagulant would be added prior to the rapid mix tank and a polymer would be added to the coagulation tank. The flocculated wastewater would normally flow to two of the three cloth disk filters.

The installation includes a new secondary effluent pumping station constructed within the chlorine contact tank. The secondary effluent pump station would pump all the secondary effluent. The effluent from the station would be sent to the rapid mix tank or bypass the filters to UV disinfection. Hydraulically, the UV system would be set at an elevation that eliminates the need for final effluent pumping.

Annual costs for the cloth disk filters include the following:

- The cost for additional alum feed to the secondary effluent in the rapids mix tank. It is assumed that an alum dose of 3.5 mg/L as Al will be required.
- The cost for polymer. Polymer dose is assumed to be 1.5 mg/L.
- Power for secondary effluent pumping.
- Power for the mixers, filter drives, and backwash/sludge pumps.
- The cost to replace the filter panels. The manufacturer estimates the panels will need to be replaced every 7 to 10 years.

The opinion of probable capital cost for the cloth disk filters is $21,609,000 with a present worth cost of $19,240,000 as summarized in Table VII-3. The opinion of probable cost does not include UV disinfection, which is common for both options.

The opinion of probable annual costs for this option is $676,000 as summarized in Table VII-4.

Table VII-1

POLY DISC FILTERS
OPINION OF PROBABLE CAPITAL COST & PRESENT WORTH
TERTIARY TREATMENT, UV DISINFECTION, & EFFLUENT FLOW MONITORING
FACILITY PLAN AMENDMENT
Neenah-Menasha Sewerage Commission | Winnebago County, Wisconsin

	Opinion of Probable Cost	Service Life	Replacement Cost	Salvage Value
Site Work				
Miscellaneous Site Work	$65,000	40		$32,500
Effluent Piping	$410,000	40		$205,000
Storm Piping Modifications	$50,000	40		$25,000
Subtotal	**$525,000**			**$262,500**
Secondary Effluent Pump Station				
Excavation & Fill	$40,000	40		$20,000
Temporary Piping/Pumping	$100,000			
Concrete Foundation & Wet Well	$486,000	40		$243,000
Building (2,500 sq. ft.)	$2,000,000	40		$1,000,000
Pumps (5)	$730,000	20		
Large Butterfly Valves (5)	$375,000	20		
Pump Isolation Valves	$375,000	20		
Mechanical Piping (Interior)	$200,000	20		
Slide Gates	$65,000	20		
Sampler	$10,000	20		
Flow Meters (3)	$92,000	20		
Exterior Overhead Piping	$430,000	40		$215,000
Mechanical Install	$494,100	20		
Electrical & Controls	$400,000	20		
Subtotal	**$5,797,100**			**$1,478,000**
Poly Disc Filters				
CL2 Tank Internal Structure Demo	$150,000			
CL2 Tank Mechanical Demo	$40,000			
Site Grading	$40,000	40		$20,000
New Building	$5,300,000	40		$2,650,000
Rapid/Coag/Floc Tank Concrete	$1,004,000	40		$502,000
Filter, Channel & Misc Concrete	$425,000	40		$212,500
Stairs	$70,000	40		
Tank & Channel Coating	$456,000	20		
Tank & Channel Grating	$51,000	20		
Railing	$30,000	40		$15,000
Gates	$140,000	20		
Poly Disc Filters	$3,400,000	20		
Mixers	$220,000	20		
Channel Mixers	$50,000	20		
Polymer Feed Equipment	$200,000	20		
Backwash Piping	$100,000	40		$50,000
Alum Piping	$26,000	40		$13,000
P & Turbidity Instrumentation	$50,000	10	$50,000	
Mechanical Install	$1,403,500	20		
Electrical & Controls	$1,200,000	20		
Subtotal	**$14,355,500**		**$50,000**	**$3,462,500**
Subtotal	**$20,677,600**		**$50,000**	**$5,203,000**
Engineering & Contingencies (30%)	$6,203,280			
Contractor General Conditions (5%)	$1,033,880			
Total Opinion of Probable Cost	**$27,914,760**		**$50,000**	**$5,203,000**
Total Present Worth	**$24,779,980**		**$39,050**	**$3,173,830**

Table VII-2

POLYESTER DISC FILTERS
PRELIMINARY OPINION OF PROBABLE ANNUAL COST (COMPARATIVE)
TERTIARY TREATMENT, UV DISINFECTION, & EFFLUENT FLOW MONITORING
FACILITY PLAN AMENDMENT
Neenah-Menasha Sewerage Commission | Winnebago County, Wisconsin

Description	Opinion of Probable Annual Cost
Alum @ 4.5 mg/L as Al	$385,000
Polymer @ 1.0 mg/L (emulsion)	$223,000
Electrical/Power	$79,000
Replace Disc Filters (assume replace on average every 15 yrs)	$43,000
Total	**$730,000**

Table VII-3

CLOTH DISK FILTERS
OPINION OF PROBABLE CAPITAL COST & PRESENT WORTH
TERTIARY TREATMENT, UV DISINFECTION, & EFFLUENT FLOW MONITORING
FACILITY PLAN AMENDMENT
Neenah-Menasha Sewerage Commission | Winnebago County, Wisconsin

	Opinion of Probable Cost	Service Life	Replacement Cost	Salvage Value
Site Work				
Miscellaneous Site Work	$50,000	40		$25,000
Effluent Piping	$449,000	40		$224,500
Storm Piping Modifications	$25,000	40		$12,500
Subtotal	**$524,000**			**$262,000**
Secondary Effluent Pump Station In Chlorine Contact Tank				
Granular Fill	$40,000	40		$20,000
Temporary Structure/Heat	$150,000			
Temporary Piping	$50,000			
Temporary Pumping	$25,000			
Concrete Foundation & Wet Well	$225,000	40		$112,500
Pumps (4)	$700,000	20		
Large Butterfly Valves (5)	$225,000	20		
Pump Isolation Valves	$300,000	20		
Mechanical Piping (Interior)	$250,000	20		
Slide Gates	$35,000	20		
Sampler	$10,000	20		
Flow Meters (2)	$70,000	20		
Mechanical Install	$402,000	20		
Electrical & Controls	$450,000	20		
Subtotal	**$2,932,000**			**$132,500**
Cloth Media Filters				
CL2 Tank Internal Structure Demo	$175,000			
CL2 Tank Mechanical Demo	$40,000			
New Building (7,373 sq. ft.)	$5,600,000	40		$2,800,000
Rapid/Coag/Floc Tank Concrete	$580,000	40		$290,000
Filter Bay Concrete	$332,000	40		$166,000
Other Concrete/Foundations	$357,000	40		$178,500
Stairs	$60,000	40		$30,000
Tank Coating	$325,000	20		
Tank & Channel Grating	$100,000	20		
Railing	$50,000	40		$25,000
Gates	$234,000	20		
Cloth Disk Media Filters	$2,175,000	20		
Mixers	$110,000	20		
Channel Mixers	$50,000	20		
Polymer Feed Equipment	$200,000	20		
Backwash Piping	$100,000	40		$50,000
Alum Piping	$26,000	40		$13,000
P & Turbidity Instrumentation	$50,000	10	$50,000	
Mechanical Install	$986,650	20		
Electrical & Controls	$1,000,000	20		
Subtotal	**$12,550,650**		**$50,000**	**$3,552,500**
Subtotal	**$16,006,650**		**$50,000**	**$3,947,000**
Engineering & Contingencies (30%)	$4,801,995			
Contractor General Conditions (5%)	$800,333			
Total Opinion of Probable Cost	**$21,608,978**		**$50,000**	**$3,947,000**
Total Present Worth	**$19,240,358**		**$39,050**	**$2,407,670**

Table VII-4

CLOTH DISK FILTERS
PRELIMINARY OPINION OF PROBABLE ANNUAL COST (COMPARATIVE)
TERTIARY TREATMENT, UV DISINFECTION, & EFFLUENT FLOW MONITORING
FACILITY PLAN AMENDMENT
Neenah-Menasha Sewerage Commission | Winnebago County, Wisconsin

Description	Opinion of Probable Annual Cost
Alum @ 3.5 mg/L as Al	$300,000
Polymer @ 1.5 mg/L (emulsion)	$278,000
Electrical/Power	$79,000
Cloth Media Replacement (assume 1x per 10 yrs)	$19,000
Total	**$676,000**

3. Economic Summary of Tertiary Treatment Options

The two treatment options for achieving a tertiary effluent of 0.1 mg/L Total P were evaluated based on a simplified 20-year Present Worth Analysis using a discount rate of 2.5%. This is the current WI DNR discount rate for facilities planning purposes.

	Polyester Disc Filters	Cloth Disk Filters
Opinion of Probable Capital Cost (Present Worth)	$24,780,000	$19,240,000
Comparative Opinion of Probable Annual Cost	$730,000	$676,000
Present Worth Annual Cost	$11,380,000	$10,538,000
Present Worth Cost	$36,160,000	$29,778,000

The Preliminary Simplified Present Worth Analysis shows that cloth disk filters are the most cost effective tertiary treatment method for meeting the new Total P limits.

D. UV DISINFECTION SYSTEM OPINIONS OF PROBABLE COSTS

Both tertiary treatment options include a new UV disinfection system east of the new Filter Building. The proposed system consists of banks of low-pressure, high intensity lamps with variable output installed in four concrete channels. The UV disinfection system would be designed to handle filtered secondary effluent, non-filtered secondary effluent and bypassed wastewater from Headworks. A pre-engineered metal canopy would be installed over the UV system to keep the system out of the elements.

The opinion of probable capital cost for the UV disinfection system is $11,570,000 as summarized in Table VII-5.

The opinion of probable annual costs for this option is $69,000 as summarized in Table VII-6. The opinion of probable cost assumes a conservative UV transmittance of 55%. NMSC monitored the UV transmittance of their effluent in June 2024. Results are included in Appendix E.

Table VII-5

UV DISINFECTION
OPINION OF PROBABLE CAPITAL COST
TERTIARY TREATMENT, UV DISINFECTION, & EFFLUENT FLOW MONITORING
FACILITY PLAN AMENDMENT
Neenah-Menasha Sewerage Commission | Winnebago County, Wisconsin

Site Work	
Miscellaneous Site Work	$25,000
New Parking	$75,000
Storm Piping Modifications	$35,000
Subtotal	**$135,000**

Generator	
Base Slab	$33,000
Generator & Transfer Switch	$903,000
Install	$150,000
Subtotal	**$1,086,000**

UV Disinfection	
Excavation & Fill	$55,000
Concrete	$373,000
Channel Painting	$123,000
Aluminum Grating	$350,000
Railings	$17,000
Canopy	$400,000
UV Disinfection System	$3,690,000
Gates (4)	$180,000
Mechanical Install	$1,161,000
Electrical & Controls	$1,000,000
Subtotal	**$7,349,000**

Subtotal	**$8,570,000**
Engineering & Contingencies (30%)	$2,571,000
Contractor General Conditions (5%)	$428,500
Total Opinion of Probable Cost	**$11,569,500**

Table VII-6

UV DISINFECTION
OPINION OF PROBABLE ANNUAL COST
TERTIARY TREATMENT, UV DISINFECTION, & EFFLUENT FLOW MONITORING
FACILITY PLAN AMENDMENT
Neenah-Menasha Sewerage Commission | Winnebago County, Wisconsin

Description	Opinion of Probable Annual Cost
Power	$20,000
Wipers	$1,000
Lamps	$24,000
Ballast	$24,000
Total	**$69,000**

CHAPTER VIII
ENVIRONMENTAL ANALYSIS

The potential environmental impacts associated with the upgrades for the Neenah-Menasha Sewerage Commission WWTF are discussed below.

The proposed construction project will be confined to the site of the existing WWTF. Access to the site is from Garfield Avenue. Potential environmental impacts will be confined to the treatment plant site.

The proposed project consists of installing a new UV disinfection system, effluent flow monitoring, constructing a new filter building over the existing chlorine contact tank, site piping, and modifications to the existing east parking lot. Environmental impacts from the routine operation and maintenance of these processes are not expected.

A. NOISE, ODOR, & AESTHETICS

Construction related to the proposed project may generate a small amount of dust. Due to the location of the facilities and the amount of work to be done, the impact should be minimal.

B. EROSION & SEDIMENTATION

Excavation will be needed for the construction of the concrete slab and foundation for the UV system, a portion of the filter building, site piping, and parking lot modifications. Erosion will be mitigated by best management construction methods for erosion control, if needed.

C. SURFACE WATER

Erosion control will be provided, as necessary, to protect nearby surface water from sedimentation due to runoff during construction. Little Lake Butte Des Mortes is located approximately 350-feet west from the filter building.

D. WETLANDS & FLOODPLAINS

Figures VIII-1 and VIII-2 show the Wisconsin DNR-mapped wetlands and FEMA-mapped floodplains in relation to the WWTF site. No mapped wetlands or wetland indicator soil types are present within the vicinity of the WWTF, therefore, the proposed project is not expected to impact wetland areas.

The proposed project is located adjacent to mapped 100-year and 500-year floodplains. As such, construction within the floodplains will need to be accordance with local ordinances and Wisconsin DNR requirements.

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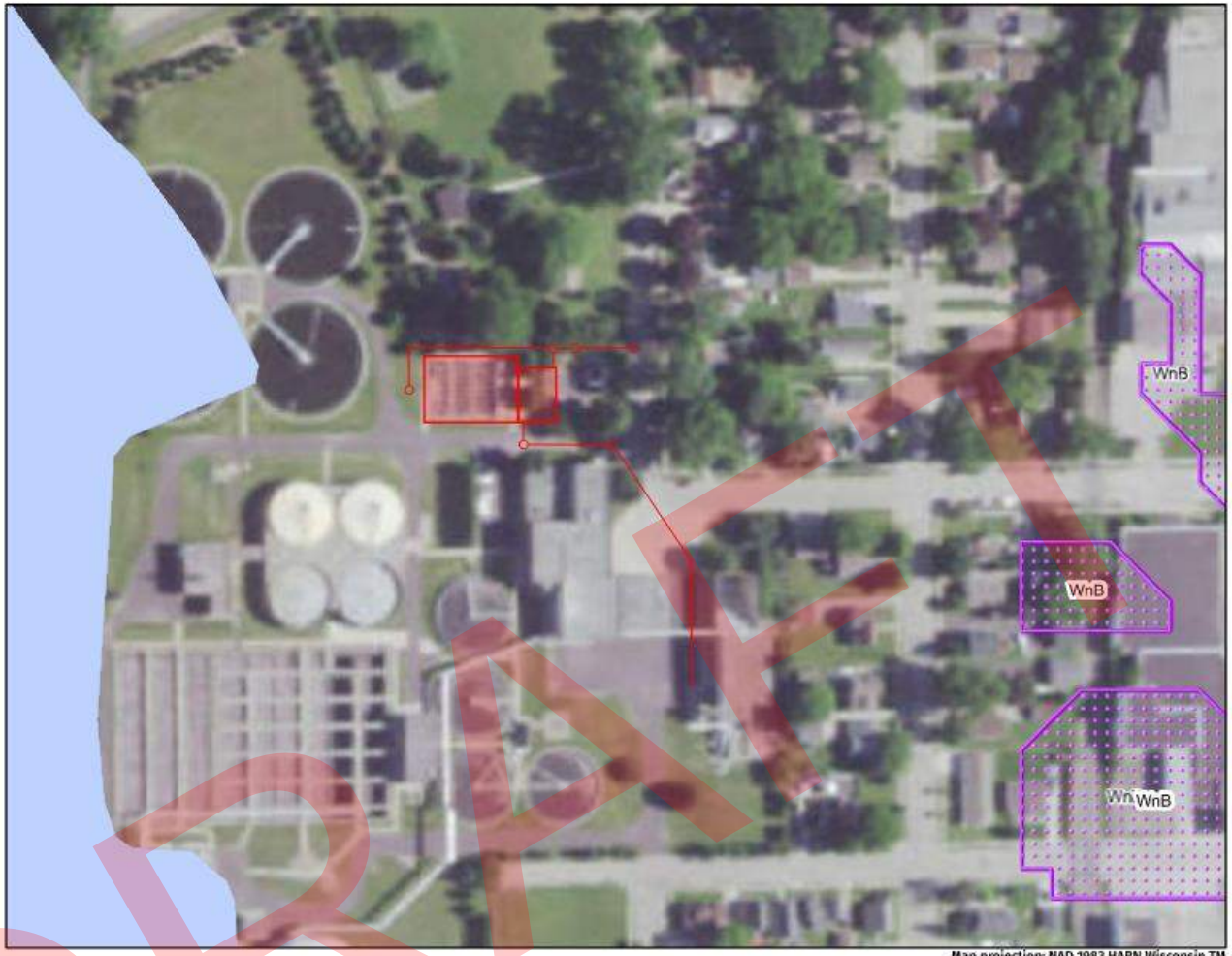

Legend: (Some map layers may not be displayed)

- Wetland Indicators
- Wetland Indicators
- Open Water
- 24K Lakes and Open Water
- Latest Leaf On Index
- Latest Leaf On Imagery

Notes:

Map projection: NAD 1983 HARN Wisconsin TM

N

Map: 0 150 300 Feet
0 40 80 Meters

Service Layer Credits:
Wetland Indicators & Soils^: Surface Water Data Viewer Team, Latest Leaf On: , DNR Basic Feature Vector Tile Layer WTM: , Surface Water (Cached): WiDNR, USGS, and other data, Wetland Inventory NWI (Dynamic): Calvin Lawrence, Dennis Weise, Nina Rihn

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FIGURE VIII-1

WWTF WETLANDS MAP

TERTIARY TREATMENT, UV DISINFECTION OF EFFLUENT FLOW MONITORING FACILITIES PLAN AMENDMENT

NEENAH-MENASHA SEWERAGE COMMISSION

McM #N0008-09-24-00790 02 9/12/25

ID: 2025\MCM WIS\NMSC FACILITIES PLAN AMEND FIGS8X11H.PPTX CTO:esl

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

Legend: (some map layers may not be displayed)

- FIRM Panels
- Cross-Sections

Flood Hazard Boundaries

- SFHA / Flood Zone Boundary

Flood Hazard Zones

- 1% Annual Chance Flood Hazard
- 0.2% Annual Chance Flood Hazard
- Open Water
- 24K Lakes and Open Water
- Latest Leaf On Index
- Latest Leaf On Imagery

Notes:

N

Map: 0 150 300 Feet
0 40 80 Meters

Map projection: NAD 1983 HARN Wisconsin TM

Service Layer Credits:
Digitial FEMA Floodplains (National Flood Hazard Layer)*: , Latest Leaf On: , DNR Basic Feature Vector Tile Layer WTM: , Surface Water (Cached): WiDNR, USGS, and other data

This map is a product generated by a DNR web mapping application.

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FIGURE VIII-2

WWTF FLOODPLAINS MAP

TERTIARY TREATMENT, UV DISINFECTION OF EFFLUENT FLOW MONITORING FACILITIES PLAN AMENDMENT

NEENAH-MENASHA SEWERAGE COMMISSION

McM #N0008-09-24-00790 02 9/12/25

ID: 2025\MCM WIS\NMSC FACILITIES PLAN AMEND FIGS8X11H.PPTX CTO:esl

McMAHON ENGINEERS ARCHITECTS

E. AGRICULTURAL LANDS

The proposed project is not expected to impact agricultural lands.

F. TRANSPORTATION

The proposed project is not expected to significantly impact short-term or long-term transportation. The chemical feed facility will require approximately 20 more truckloads of alum per year and additional loads of polymer. The addition of the coagulant should generate more solids, which will required a couple more truckloads of solids to be hauled out each year.

G. ECONOMICS

The proposed project is not expected to significantly impact economics of the community.

H. CULTURAL RESOURCES

The Wisconsin Historical Society files were reviewed by the Wisconsin DNR Archaeologist. From that review, it was determined that the proposed project will not impact known archaeological sites or historical structures. Correspondence regarding this review is included in Appendix F.

I. AFFECTED ENVIRONMENT

1. Physical

The proposed project is not expected to impact lakes, streams, shore lands, floodplains, groundwater, soils, or topography. Erosion control measures may be required to reduce potential impacts. Changes in land use resulting from the proposed project are expected to have negligible impacts.

2. Biological

An "Endangered Resources Preliminary Assessment" was conducted. From this assessment, it was determined that no further actions are needed, no records of pertinent endangered resources are present in the area, and that an Endangered Resources Review is not needed for this project. Specifically, the Department determined that this project is covered by Activity 2-A1 of the Broad Incidental Take Permit/Authorization (BITP/A) for No/Low Impact activities, since the project will be performed entirely within urban/residential areas, manicured lawn, or other artificial/paved surfaces. The results of this assessment are also included in Appendix G.

3. Cultural

The proposed project is not expected to impact zoning or land use, ethnic or cultural groups, or archaeological or historical resources.

4. Other Resource Features

The proposed project is not expected to impact parks, natural areas, or prime agricultural land.

J. UNAVOIDABLE ADVERSE IMPACTS

Some impacts associated with the proposed project cannot be avoided. The proposed project has the possibility for the following adverse impacts:

- Short-term construction dust, noise, and traffic.
- Minor erosion during construction.

K. MITIGATION OF IMPACTS

1. Mitigation of Construction Impacts

Construction related impacts are primarily short-term effects resulting from construction activities. Mitigation measures for these impacts are the responsibilities of the contractor and will be governed by requirements in the project drawings and specifications and appropriate regulations.

Erosion and sediment control measures will be required by the project specifications. The specifications will require the contractor provide an erosion and sediment control program consisting of a schedule for land clearing and grading, along with a description of measures to be used during construction for erosion and sediment control. Adherence to the required plan will minimize adverse impacts from erosion and sedimentation.

The specifications will also require the contractor to provide dust control measures. These measures generally consist of periodic watering of the construction area.

2. Mitigation of Operational Impacts

Proper operation and maintenance of the WWTF will improve the reliability of the system, leading to the discharge of high-quality effluent. The proposed project will be constructed with minimum disruption of the existing treatment system.

3. Mitigation of Secondary Impacts

Secondary impacts are principally associated with induced development associated with the improvements to the wastewater treatment system. The proposed project is not anticipated to impact growth in the service area.

CHAPTER IX
RECOMMENDED PLAN

A. PROJECT DESCRIPTION

The NMSC owns and operates a WWTF that serves the City of Neenah, City of Menasha, Village of Fox Crossing Sanitary District, Harrison Utilities, Town of Neenah Sanitary District #2, and Sonoco. The NMSC's WPDES Permit was re-issued on January 1, 2025. The re-issued Permit includes the following future limits for effluent Total P.

- Monthly Average.....58 pounds/day
- 6-Month Average .....19 pounds/day

NMSC plans to utilize cloth disk filters to achieve the upcoming Total P limit. The filters would be installed after the secondary clarifiers, treating secondary effluent before it flows to disinfection. The filters will be designed to produce a filtered effluent P concentration of 0.1 mg/L and would be sized to handle a maximum month secondary effluent flow of 20 MGD with one unit out of service. Flows above the capacity of the tertiary treatment process will bypass the filters and be blended with tertiary effluent before disinfection.

The proposed cloth disk filter system for NMSC consists of three Aqua Aerobic MegaDisk Cloth Media Filters each with a peak hydraulic capacity of 11 MGD. This would allow the facility to handle the maximum month flow of 20 MGD with one unit out of service, or 33 MGD with all three units. Space will be provided for a fourth filter to treat the maximum day flow of 43 MGD in the event NMSC has to meet an effluent Total P limit of 0.1 mg/L in the future. This could occur if the TMDL is not effective at lowering P levels in the Fox River.

To accommodate Total P removal, the following mix tanks will be provided upstream of the filters for the addition of a coagulant and polymer for the formation of a stable floc.

Tank	Design HRT
Rapid Mix (coagulant feed)	30 seconds
Coagulation/Floc Zone (total)	5 minutes

The filters and the rapid mix, coagulation, and flocculation tanks would be constructed within the existing chlorine contact chamber. The chlorine disinfection system would be replaced by a new UV disinfection system. The project includes a new secondary effluent pumping station constructed within the chlorine contact tank. The secondary effluent pump station would pump all the secondary effluent. The effluent from the station would be sent to the rapid mix tank or bypass the filters to UV disinfection. Hydraulically, the UV system would be set at an elevation that eliminates the need for final effluent pumping.

The existing 36-inch plant bypass line from Headworks would be replaced with a new 48-inch line to handle up to 37 MGD of flow (80 MGD – 43 MGD) and to account for the higher hydraulic grade line at disinfection.

The chlorine disinfection system will be replaced by a low-pressure high intensity lamp, open channel UV disinfection system. The UV disinfection system will be designed for a relatively high UV dose of 55 mJ/cm^2 MS2 RED UV to provide appropriate disinfection during times of peak flow bypass from Headworks. The typical dose for secondary effluent is 30 mJ/cm^2 MS2 RED.

The UV system would be constructed in four concrete channels east of the new filter facility. A pre-engineered metal canopy would be installed over the UV system to keep the system out of the elements.

Effluent flows from the WWTF will be monitored by an ISCO LaserFlow® flow meter installed in a 10-foot diameter monitoring manhole. The flow meter remotely measures water flow in open channels using a non-contact laser doppler velocity sensor and a non-contact ultrasonic level sensor.

Backup power would be provided to the secondary effluent pump station, filter facility, and UV disinfection system and effluent flow meter by a new 1,500 KW diesel generator installed in a weatherproof, sound attenuating enclosure.

B. Opinion of Probable Costs

The opinion of probable capital cost for the proposed project is $35,000,000 as summarized in Table IX-1. The opinion of probable Operation and Maintenance Costs for the facility is $745,000.

Rate impacts will not be known until decisions are made on how the project will be financed.

C. SCHEDULE

The Neenah-Menasha Sewerage Commission intends to implement the Tertiary Treatment, UV Disinfection and Effluent Flow Monitoring project based on the following schedule:

- Submit Facilities Plan .....September 30, 2025
- Receive Facilities Plan Approval.....December 31, 2025
- Submit Plans & Specifications to DNR .....December 31, 2026
- Receive Plans & Specifications Approval .....March 31, 2027
- Bid Project .....May 2027
- Initiate Construction .....June 2027
- Complete Construction.....December 31, 2029

Table IX-1

CLOTH DISK FILTERS & UV DISINFECTION
OPINION OF PROBABLE COST
TERTIARY TREATMENT, UV DISINFECTION, & EFFLUENT FLOW MONITORING
FACILITY PLAN AMENDMENT
Neenah-Menasha Sewerage Commission | Winnebago County, Wisconsin

Site Work	
Miscellaneous Site Work	$50,000
New Parking	$75,000
48" Bypass Line	$1,230,000
Effluent Piping	$449,000
Effluent Flow Meter	$40,000
Storm Piping Modifications	$60,000
Subtotal	**$1,904,000**

Generator	
Base Slab	$33,000
Generator & Transfer Switch	$903,000
Install	$150,000
Subtotal	**$1,086,000**

Secondary Effluent Pump Station In Chlorine Contact Tank	
Granular Fill	$40,000
Temporary Structure/Heat	$150,000
Temporary Piping	$50,000
Temporary Pumping	$25,000
Concrete Foundation & Wet Well	$225,000
Pumps (4)	$700,000
Large Butterfly Valves (5)	$225,000
Pump Isolation Valves	$300,000
Mechanical Piping (Interior)	$250,000
Slide Gates	$35,000
Sampler	$10,000
Flow Meters (2)	$70,000
Mechanical Install	$402,000
Electrical & Controls	$450,000
Subtotal	**$2,932,000**

Cloth Media Filters	
CL2 Tank Internal Structure Demo	$175,000
CL2 Tank Mechanical Demo	$40,000
New Building (7,373 sq. ft.)	$5,600,000
Rapid/Coag/Floc Tank Concrete	$580,000
Filter Bay Concrete	$332,000
Other Concrete/Foundations	$357,000
Stairs	$60,000
Tank Coating	$325,000
Tank & Channel Grating	$100,000
Railing	$50,000
Gates	$234,000
Cloth Disk Media Filters	$2,175,000
Mixers	$110,000
Channel Mixers	$50,000
Polymer Feed Equipment	$200,000
Backwash Piping	$100,000
Alum Piping	$26,000
P & Turbidity Instrumentation	$50,000
Mechanical Install	$986,650
Electrical & Controls	$1,000,000
Subtotal	**$12,550,650**

UV Disinfection	
Excavation & Fill	$55,000
Concrete	$373,000
Channel Painting	$123,000
Aluminum Grating	$350,000
Railings	$17,000
Canopy	$400,000
UV Disinfection System	$3,690,000
Gates (4)	$180,000
Mechanical Install	$1,161,000
Electrical & Controls	$1,000,000
Subtotal	**$7,349,000**

Subtotal	**$25,821,650**
Engineering & Contingencies (30%)	$7,746,495
Contractor General Conditions (5%)	$1,291,083
Total Opinion of Probable Cost	**$34,859,228**

APPENDIX A

WWTF Design Criteria
2010 Wastewater Facilities Plan

Table IX-1

Wastewater Treatment Facilities
RECOMMENDED PLAN UNIT PROCESS DESIGN CRITERIA

NEENAH-MENASHA SEWERAGE COMMISSION
Wastewater Facilities Plan

	Current Design	Proposed Design
DESIGN YEAR	**2020**	**2030**
POPULATION	57,858 / Year 2005	73,953
FLOW (mgd)		
▶ Average Annual Flow	13	13
▶ Maximum 24-Hour Flow	43	43
▶ Peak Hour Flow	65	65
▶ Maximum 7-Day Flow	35.5	35.5
▶ Maximum 30-Day	20	20
BOD (lbs./day)		
▶ Average Daily	24,573	24,573
▶ Maximum Daily	46,689 (1.9:1)	46,689 (1.9:1)
▶ Maximum 7-Day	36,860 (1.5:1)	36,860 (1.5:1)
▶ Maximum 30-Day	29,321	29,321
SS (lbs./day)		
▶ Average Daily	18,564	21,952
▶ Maximum Day	37,128 (2:1)	43,904
▶ Maximum 7-Day	27,846 (1.5:1)	32,928
▶ Maximum 30-Day	24,117 (1.3:1)	28,538
P (lbs./day)		
▶ Average Daily	320	320
▶ Maximum Daily	640 (2:1)	640 (2:1)
▶ Maximum 30-Day	384 (1.2:1)	384 (1.2:1)
TKN (lbs./day)		
▶ Average Daily	2,664	2,664
▶ Maximum Daily	3,996	3,996
▶ Maximum 7-Day	3,197	3,197
▶ Maximum 30-Day	2,930	2,930

Table IX-1
(continued)
Wastewater Treatment Facilities
EFFLUENT LIMITATIONS

NEENAH-MENASHA SEWERAGE COMMISSION
Wastewater Facilities Plan

Parameter	Limit Type	Limit & Units	Sample Frequency	Sample Type	Notes
BOD_5, Total (WLA Also Apply May - October)	Weekly Avg.	45 mg/l	5/Week	24-Hr Flow Prop. Comp.	Applies Nov. 1 thru April 30, each year
	Monthly Avg.	30 mg/l			
	Weekly Avg.	45 mg/l	Daily		Applies May 1 thru Oct. 31, each year
	Monthly Avg.	30 mg/l			
SS, Total	Weekly Avg.	45 mg/l	5/Week	24-Hr Flow Prop. Comp.	
	Monthly Avg.	30 mg/l			
Nitrogen, Ammonia (NH_3-N), Total	Daily Max.	34 mg/l	5/Week	24-Hr Flow Prop. Comp.	Applies Nov. 1 thru April 30, each year
	Weekly Avg.	28 mg/l			Applies Jan. 1 thru March 31, each year
		28 mg/l			Applies April 1 thru April 30, each year
		11 mg/l			Applies June 1 thru Sept. 30, each year
	Monthly Avg.	10 mg/l			Applies Jan. 1 thru March 31, each year
		11 mg/l			Applies April 1 thru May 31, each year
		4.4 mg/l			Applies June 1 thru Sept. 30, each year
		18 mg/l			Applies Oct. 1 thru Dec. 31, each year
pH Field	Daily Min.	6.0 su	5/Week	Grab	
	Daily Max.	9.0 su			
Phosphorus, Total	Monthly Avg.	1.0 mg/l	5/Week	24-Hr Flow Prop. Comp.	Likely To Change To 0.2 mg/l
Chlorine, Total Residual	Daily Max.	38 ug/l	5/Week	Grab	Applies May 1 thru Sept. 30, each year; and whenever chlorination equipment is in use.
	Weekly Avg.	37 ug/l			
Fecal Coliform	Geometric Mean	400# /100 ml	Weekly	Grab	Applies May 1 thru Sept. 30, each year
Mercury, Total Recoverable	Daily Max.	6.0 ug/l	Quarterly	Grab	Alternative Effluent Limitation. Refer To Section 5.1 For Pollutant Minimization Program Implementation Requirements.

Table IX-1
(continued)
Wastewater Treatment Facilities
RECOMMENDED PLAN UNIT PROCESS DESIGN CRITERIA

NEENAH-MENASHA SEWERAGE COMMISSION
Wastewater Facilities Plan

	Proposed Design 2030
INFLUENT PUMPING	
▶ Number of Pumps	5
▶ Capacity, each pump, gpm	15,115
▶ Station Firm Capacity, mgd	87.1
▶ Type of Pump	4 - Helical Screw 1 - Submersible
SCREENING	
▶ Number of Units	3
▶ Type	Mechanically Cleaned
▶ Capacity, each unit, mgd	25
▶ Bar Spacing, inch	¼
GRIT REMOVAL	
▶ Type of Unit	Induced Vortex
▶ Number of Units	2
▶ Capacity, each unit, mgd	30
PRIMARY CLARIFIERS	
▶ Number of Units	4
▶ Diameter, each unit, feet	75
▶ Sidewater Depth, each unit, feet	8
▶ Surface Overflow Rate, gpd/sq. ft.	
▪ Average Flow, 13 mgd	736
▪ Maximum Flow, 43 mgd	2,435
▶ Weir Loading Rate, gpd/foot	
▪ Average Flow, 13 mgd	13,793
▪ Maximum Flow, 43 mgd	45,624
▶ Detention Time, hours	
▪ Average Flow, 13 mgd	1.95
▪ Maximum Flow, 43 mgd	0.60
▶ Removal Efficiencies	
▪ BOD, %	30
▪ SS, %	60
▪ TKN	0
▶ Primary Sludge, lbs./day	
▪ Average Day	13,171
▪ Maximum Day	26,342
▪ Maximum 7-Day	19,757
▪ Maximum 30-Day	17,123
▶ Volatile Sludge, lbs./day	
▪ Average Day (75% Vol.)	9,878
▪ Maximum Day (70% Vol.)	18,439
▪ Maximum 7-Day (75% Vol.)	14,818
▪ Maximum 30-Day (75% Vol.)	12,842
▶ Primary Sludge, gpd @ x% solids	4%
▪ Average Day	39,481
▪ Maximum Day	78,963
▪ Maximum 7-Day	59,224
▪ Maximum 30-Day	51,328

Table IX-1
(continued)
Wastewater Treatment Facilities
RECOMMENDED PLAN UNIT PROCESS DESIGN CRITERIA

	Proposed Design 2030
SECONDARY TREATMENT SYSTEM	
▶ Design Loadings to Secondary, lbs./day	
▪ BOD:	
Average Day	21,938
Maximum Day	43,316
Maximum 7-Day	27,423
Maximum 30-Day	26,326
▪ TKN:	
Average Day	2,664
Maximum Day	3,996
Maximum 7-Day	3,197
Maximum 30-Day	2,930
▶ Number of Aeration Tanks	9
▶ Size, Aeration Tanks, cu. ft.	812,333
▶ Sidewater Depth, feet	16
▶ BOD Loading, lbs./1,000 cu. ft.	
▪ Average Day	27.0
▪ Maximum 7-Day	33.8
▪ Maximum 30-Day	32.4
▶ Detention Time, hours	
▪ Average Flow, 13 mgd	11.2
▪ Maximum Flow, 40 mgd	3.6
▶ Design MLSS, mg/l	3,000
▶ Design F:M	
▪ Average	0.14
▪ Maximum 7-Day	0.18
▪ Maximum 30-Day	0.17
▶ Design SRT, days	12
▶ Volatile Solids, %	80
▶ Total Sludge Production, lb. SS/lb. BOD	0.5
▶ Secondary Sludge, lbs./day	
▪ Average	10,969
▪ Maximum 30-Day	13,163
▶ Oxygen Requirements, lbs./day @ 1.1 lb. O_2/lb. BOD Applied & 4.6 lb. O_2/lb. TKN Applied	
▪ Average Day	36,386
▪ Maximum Day	66,645
▪ Maximum 7-Day	44,869
▪ Maximum Month	43,663
▶ Air Requirements, scfm	
▪ Average Day	13,887
▪ Maximum Day	29,073
▪ Maximum 7-Day	17,848
▪ Maximum Month	16,664
▪ Channel Aeration	1,200
▶ Blowers	
▪ Number Of Units	10
▪ Operating Pressure	8 psig
▪ Capacity, each unit: scfm	2,955
▪ Firm Capacity	26,592

Table IX-1
(continued)
Wastewater Treatment Facilities
RECOMMENDED PLAN UNIT PROCESS DESIGN CRITERIA

	Proposed Design 2030
PHOSPHORUS REMOVAL	
▶ Precipitation Chemical	Alum
▶ Chemical Requirements, gpd	
▪ Average Day	617
▪ Maximum Day	1,234
▪ Maximum 30-Day	740
▶ Chemical Storage, days	21
▶ Number of Storage Tanks	2
▶ Capacity, each tank, gallon	8,000
▶ Chemical Sludge, lbs./day	
▪ Average Day	2,898
▪ Maximum Day	6,437
▪ Maximum 30-Day	3,650
SECONDARY CLARIFIERS	
▶ Number of Units	4
▶ Diameter, feet	120
▶ Sidewater Depth, feet	16
▶ Surface Overflow Rate, gpd/sq. ft.	
▪ Average Flow, 13 mgd	288
▪ Maximum Flow, 43 mgd	951
▶ Weir Loading, gpd/ft.	
▪ Average Flow, 13 mgd	8,621
▪ Maximum Flow, 43 mgd	28,517
▶ Detention Time, hours	
▪ Average Flow, 13 mgd	8.7
▪ Maximum Flow, 43 mgd	2.67
▶ Solids Loading, lbs./day/sq.ft. @ MLSS = 3,000 mg/l & 13 mgd RAS	
▪ Average Flow, 13 mgd	14.3
▪ Maximum Flow, 43 mgd	31
CHLORINATION SYSTEM	
▶ Chlorine Requirements, lbs./day @ 3 mg/l per Dosage	
▪ Average Flow, 13 mgd	325
▪ Maximum Flow, 43 mgd	1,076
▪ Peak Flow, 65 mgd	1,626
▶ Chlorine Requirements for Filamentous Growth	500 lbs./day
▶ Peak Chlorine Demand	2,162 lbs./day
▶ Number of Hypochlorite Cells	2
▪ Capacity, ppd/cell	400
▪ Sodium Hypochlorite Concentration	0.8%
▪ Number Of Hypo Storage Tanks	3
▪ Volume Per Storage Tank, gal.	7,800
▶ Chlorine Contact Tank Volume, cu.ft.	72,500
▶ Detention Time, minutes	
▪ Average Flow	60 minutes
▪ Peak Flow (65 mgd)	12 minutes
▶ Sodium Bisulfite Dose, mg/l	1.6
▶ Sodium Bisulfite Use, day	
▪ @ 13 mgd	174
▪ @ 65 mgd	867
▶ Gallons Needed/Day (38% solution)(4.25 lbs./gal. @ 13 mgd)	62

Table IX-1
(continued)
Wastewater Treatment Facilities
RECOMMENDED PLAN UNIT PROCESS DESIGN CRITERIA

	Proposed Design 2030	
SLUDGE THICKENING		
▶ Waste Secondary Sludge Quantities	lbs./day	gpd
▪ Average Day	13,867	162,201
▪ Maximum 30-Day	16,813	201,595
▶ Gravity Belt Thickener		
▪ Number of Units	2	
▪ Belt Width/Unit, meters	2	
▪ Feed Rate/Unit	200 gpm	
▶ Sludge Thickness, %	5	
▶ Sludge From GBT, gpd		
▪ Average	33,254	
▪ Maximum 30-Day	40,320	
▶ Sludge to Digestion		
▪ Average, lbs./day:		
Primary	13,171	
Secondary	13,867	
Total	27,038	
Volatiles	20,972	
GPD	72,736	
▪ Maximum Month, lbs./day:		
Primary	17,123	
Secondary	16,813	
Total	33,936	
Volatiles	26,292	
gpd	91,647	
SLUDGE STABILIZATION - TPAD		
▶ Number Of Thermophilic Digesters	1	
▶ Number Of Mesophilic Digesters	2	
▶ Diameter, feet	70	
▶ Max. Sidewater Depth, feet	25	
▶ Min. Sidewater Depth, feet	19.75	
▶ Max. Volume Per Digester, gal.	748,500	
▶ Min. Volume Per Digester, gal.	597,300	
▶ Mixing System - Thermo, Meso #1	Mechanical Draft Tube	
▶ Cover Type - Thermo, Meso #1	Floating, Scum Submergence	
▶ Mixing System - Meso #2	Linear Motion	
▶ Cover Type - Meso #2	Spiral Guided Gas Holder	
▶ HRT Per Digester, days	10	
▶ Max. VSS Loading, lbs. VSS/cu.ft.	0.11	
▶ VSS Destruction	50%	
▶ Digester Processing Capacity, gpd	91,647	
▶ Min. Heat Exchanger Processing Capacity, gpd	91,647	
▶ Number Of Secondary Digesters	1	
▪ Diameter, feet	70	
▪ Max. Sidewater Depth, feet	25	
▪ Max. Volume Per Digester, gal.	748,500	
▪ Mixing System	Linear Motion	
▪ Cover Type	Spiral Guided Gas Holder	
▶ Avg. Sludge To Press, lbs./day	16,552	
▶ Max. Sludge To Press, lbs./day	20,790	
▶ Avg. Sludge To Press, gpd	66,155	

Table IX-1
(continued)
Wastewater Treatment Facilities
RECOMMENDED PLAN UNIT PROCESS DESIGN CRITERIA

	Proposed Design 2030
EFFLUENT PUMPING	
▶ Type Of Units	Vertical Propeller
▶ Number of Units	4
▶ Capacity, each unit, gpm	11,300
▶ Total Dynamic Head, feet	10
▶ Total Capacity, mgd	65
SLUDGE DEWATERING	
▶ Number of Units	2
▶ Type	Centrifuge
▶ Feed Rate @ 3%	200 gpm
▶ Hours Operation/Day	10
▶ Days/Week Operation	4
▶ Sludge Dewatered, lbs./hour./unit	3,002
▶ Cake Solids, %	25
▶ Cubic Yards/Year	14,344
SLUDGE STORAGE BUILDING	
▶ Size, sq.ft.	35,500
▶ Storage Height @ 180-days, ft.	6

APPENDIX B

WPDES Permit

WPDES PERMIT

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

PERMIT TO DISCHARGE UNDER THE WISCONSIN POLLUTANT DISCHARGE ELIMINATION SYSTEM

Neenah-Menasha Sewerage Commission

is permitted, under the authority of Chapter 283, Wisconsin Statutes, to discharge from a facility located at
101 Garfield Avenue, Menasha, Wisconsin
to
the Menasha Channel of the Fox River (WBIC 129800), in the Little Lake Butte des Morts Watershed (LF06), in the Lower Fox River Basin, in Winnebago County
and
Land application in Winnebago County

in accordance with the effluent limitations, monitoring requirements and other conditions set forth in this permit.

The permittee shall not discharge after the date of expiration. If the permittee wishes to continue to discharge after this expiration date an application shall be filed for reissuance of this permit, according to Chapter NR 200, Wis. Adm. Code, at least 180 days prior to the expiration date given below.

State of Wisconsin Department of Natural Resources
For the Secretary

By _____
Heidi Schmitt Marquez
Wastewater Field Supervisor

December 12, 2024
Date Permit Signed/Issued

PERMIT TERM: EFFECTIVE DATE – January 1, 2025 **EXPIRATION DATE – December 31, 2029**

TABLE OF CONTENTS

1 Influent Requirements

1.1 Sampling Point(s)

Sampling Point Designation	
Sampling Point Number	**Sampling Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)**
701	INFLUENT - At Sampling Point 701, the permittee shall collect representative samples of the influent from the automatic composite samplers drawing 24-hour flow proportional composite samples from each of the Neenah and Menasha influent channels in the head works (before sidestreams). The permittee shall measure the total combined influent flow rate using continuous flow recording devices on the Neenah and Menasha influent channels in the head works (before sidestreams).

1.2 Monitoring Requirements

The permittee shall comply with the following monitoring requirements.

1.2.1 Sampling Point 701 - INFLUENT

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Daily	Continuous	
BOD_5, Total		mg/L	5/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total		mg/L	5/Week	24-Hr Flow Prop Comp	
Cadmium, Total Recoverable		µg/L	Monthly	24-Hr Flow Prop Comp	
Chromium, Total Recoverable		µg/L	Monthly	24-Hr Flow Prop Comp	
Copper, Total Recoverable		µg/L	Monthly	24-Hr Flow Prop Comp	
Lead, Total Recoverable		µg/L	Monthly	24-Hr Flow Prop Comp	
Nickel, Total Recoverable		µg/L	Monthly	24-Hr Flow Prop Comp	
Zinc, Total Recoverable		µg/L	Monthly	24-Hr Flow Prop Comp	
Mercury, Total Recoverable		ng/L	Quarterly	24-Hr Flow Prop Comp	

1.2.1.1 Total Metals Analyses

Measurements of total metals and total recoverable metals shall be considered as equivalent.

1.2.1.2 Sample Analysis

Samples shall be analyzed using a method which provides adequate sensitivity so that results can be quantified at a level of quantitation below the calculated/potential effluent limit, unless not possible using the most sensitive approved method.

1.2.1.3 Mercury Monitoring

The permittee shall collect and analyze all mercury samples according to the data quality requirements of ss. NR 106.145(9) and (10), Wisconsin Administrative Code. The limit of quantitation (LOQ) used for the effluent and field blank shall be less than 1.3 ng/L, unless the samples are quantified at levels above 1.3 ng/L. The permittee shall collect at least one mercury field blank for each set of mercury samples (a set of samples may include combinations of intake, influent, effluent or other samples all collected on the same day). The permittee shall report results of samples and field blanks to the Department on Discharge Monitoring Reports.

2 In-Plant Requirements

2.1 Sampling Point(s)

Sampling Point Designation	
Sampling Point Number	**Sampling Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)**
112	FIELD BLANK - At Sampling Point 112, the permittee shall collect a field blank for each day a mercury sample is collected. The permittee shall report the field blank concentrations when reporting mercury sample results for Total Recoverable Mercury at sample points 701 and 001.
113	BLENDING - At Sampling Point 113, the permittee shall report the diverted flow which bypasses the primary, biological and secondary treatment processes prior to disinfection during high flow events when blending occurs. The permittee shall notify the department when blending occurs. See Blending requirements in the Standard Requirements section of the permit.

2.2 Monitoring Requirements and Limitations

The permittee shall comply with the following monitoring requirements and limitations.

2.2.1 Sampling Point 112 - FIELD BLANK

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Mercury, Total Recoverable		ng/L	Quarterly	Blank	

2.2.1.1 Mercury Monitoring

The permittee shall collect and analyze all mercury samples according to the data quality requirements of ss. NR 106.145(9) and (10), Wisconsin Administrative Code. The limit of quantitation (LOQ) used for the effluent and field blank shall be less than 1.3 ng/L, unless the samples are quantified at levels above 1.3 ng/L. The permittee shall collect at least one mercury field blank for each set of mercury samples (a set of samples may include combinations of intake, influent, effluent or other samples all collected on the same day). The permittee shall report results of samples and field blanks to the Department on Discharge Monitoring Reports.

2.2.2 Sampling Point 113 – BLENDING

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Per Occurrence	Continuous	See Blending Flow permit section.
Time		hours	Per Occurrence	Calculated	Report the total duration of blending within a given day (12:00am - 11:59pm) in which blending occurs. See

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
					Blending Flow permit section.

2.2.2.1 Blending Flow

Flow measurement shall start at the commencement of blending operations and shall be maintained for the duration of the blending operation. Measure flow in daily increments until operation ends and report daily flow on the eDMR. The permittee shall report the volume of wastewater that is diverted around the primary, biological and secondary treatment processes whenever in-plant diversion (blending) occurs. See “Blending” requirements in the Standard Requirements section for additional requirements.

3 Surface Water Requirements

3.1 Sampling Point(s)

Sampling Point Designation	
Sampling Point Number	**Sampling Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)**
001	EFFLUENT - At Sampling Point 001, the permittee shall collect representative samples of effluent samples from the automatic composite sampler drawing 24-hour flow proportional composites from the channel between the final clarifiers and the chlorine contact tank except that grab samples for pH, total residual chlorine, fecal coliform, E. coli shall be collected from the discharge chamber of the chlorine contact tank prior to being discharged to the Menasha Channel of the Fox River via Outfall 001. The permittee shall collect representative samples for whole effluent toxicity testing from the automatic composite sampler drawing 24-hour flow proportional composites from the discharge chamber of the chlorine contact tank prior to being discharged to the Menasha Channel of the Fox River via Outfall 001. During blending events, the permittee shall collect representative samples of effluent samples from the automatic composite sampler drawing 24-hour flow proportional composites from the discharge chamber of the chlorine contact tank prior to being discharged to the Menasha Channel of the Fox River via Outfall 001. Starting on January 1, 2030, the permittee shall measure the effluent flow rate using a continuous flow recording device prior to the disinfection system.
601	RIVER MONITORING - At Sampling Point 601, The permittee shall collect Lower Fox River data at the Appleton Lutz Park-USGS/ACOE Gauge Station as reported by the Lower Fox River Discharger's Association to be used in the determination of the daily BOD5 wasteload allocation.
005	BOD5 WLA COMPLIANCE - At Sampling Point 005, the permittee shall calculate and report the BOD wasteload values as specified based on daily effluent BOD mass discharged from Sampling Point 001 and river monitoring data from Sampling Point 601 to determinate compliance with the daily maximum variable BOD5 wasteload allocations. These requirements are applicable from May 1 through October 31, each year. This is a compliance evaluation sampling point and it is not a discharge outfall to the Menasha Channel of the Fox River.

3.2 Monitoring Requirements and Effluent Limitations

The permittee shall comply with the following monitoring requirements and limitations.

3.2.1 Sampling Point (Outfall) 001 - EFFLUENT

Monitoring Requirements and Effluent Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Daily	Continuous	The Flow Rate shall be reported starting January 1, 2030. See the Install Continuous Flow Recording Device Schedule.

Monitoring Requirements and Effluent Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
BOD_5, Total	Weekly Avg	45 mg/L	5/Week	24-Hr Flow Prop Comp	Sample frequency applies November 1st through April 30th, each year.
BOD_5, Total	Monthly Avg	30 mg/L	5/Week	24-Hr Flow Prop Comp	Sample frequency applies November 1st through April 30th, each year.
BOD_5, Total	Weekly Avg	45 mg/L	Daily	24-Hr Flow Prop Comp	Sample frequency applies May 1st through October 31st, each year.
BOD_5, Total	Monthly Avg	30 mg/L	Daily	24-Hr Flow Prop Comp	Sample frequency applies May 1st through October 31st, each year.
pH Field	Daily Max	9.0 su	5/Week	Grab	
pH Field	Daily Min	6.0 su	5/Week	Grab	
E. coli	Geometric Mean - Monthly	126 #/100 ml	Weekly	Grab	Monitoring and limit effective May 1st through September 30th each year.
E. coli	% Exceedance	10 Percent	Monthly	Calculated	Monitoring and limit effective May 1st through September 30th each year. See the E. coli Percent Limit section below. Enter the result in the DMR on the last day of the month.
Chlorine, Total Residual	Daily Max	38 µg/L	5/Week	Grab	Monitoring and limit applies May 1st through September 30th each year.
Chlorine, Total Residual	Weekly Avg	38 µg/L	5/Week	Grab	Monitoring and limit applies May 1st through September 30th each year.
Chlorine, Total Residual	Monthly Avg	38 µg/L	5/Week	Grab	Monitoring and limit applies May 1st through September 30th each year.
Suspended Solids, Total	Weekly Avg	45 mg/L	5/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total	Monthly Avg	30 mg/L	5/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total	Weekly Avg	2,524 lbs/day	5/Week	Calculated	See the TMDL Limitations section below.
Suspended Solids, Total	Monthly Avg	1,373 lbs/day	5/Week	Calculated	See the TMDL Limitations section below.
Suspended Solids, Total		lbs/month	Monthly	Calculated	Calculate and report the total monthly mass of TSS discharged in lbs/month on the last day of the month on the eDMR.

Monitoring Requirements and Effluent Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Suspended Solids, Total		lbs/yr	Monthly	Calculated	Calculate and report the 12-month rolling sum of the total monthly mass of TSS on the last day of the month on the eDMR.
Phosphorus, Total	Monthly Avg	0.8 mg/L	5/Week	24-Hr Flow Prop Comp	
Phosphorus, Total		lbs/day	5/Week	Calculated	Monitoring only until March 31, 2027. See the TMDL Limitations section below.
Phosphorus, Total	Monthly Avg	58 lbs/day	5/Week	Calculated	Limit effective on April 1, 2027. See the TMDL Limitations section below and Total Phosphorus - TMDL Derived WQBELs for TP compliance schedule.
Phosphorus, Total	6-Monthly Avg	19 lbs/day	5/Week	Calculated	Limit effective on May 1, 2027. See the TMDL Limitations section below and Total Phosphorus - TMDL Derived WQBELs for TP compliance schedule.
Phosphorus, Total		lbs/month	Monthly	Calculated	Calculate and report the total monthly mass of TP discharged in lbs/month on the last day of the month on the eDMR.
Phosphorus, Total		lbs/yr	Monthly	Calculated	Calculate and report the 12-month rolling sum of the total monthly mass of TP on the last day of the month on the eDMR.
Nitrogen, Ammonia (NH_3-N) Total	Daily Max	27 mg/L	5/Week	24-Hr Flow Prop Comp	Limit applies November 1st through April 30th each year.
Nitrogen, Ammonia (NH_3-N) Total	Weekly Avg	27 mg/L	5/Week	24-Hr Flow Prop Comp	Limit applies November 1st through April 30th each year.
Nitrogen, Ammonia (NH_3-N) Total	Weekly Avg	29 mg/L	5/Week	24-Hr Flow Prop Comp	Limit applies May 1st through May 30th each year.
Nitrogen, Ammonia (NH_3-N) Total	Weekly Avg	11 mg/L	5/Week	24-Hr Flow Prop Comp	Limit applies June 1st through September 30th each year.

Monitoring Requirements and Effluent Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Nitrogen, Ammonia (NH_3-N) Total	Weekly Avg	47 mg/L	5/Week	24-Hr Flow Prop Comp	Limit applies October 1st through October 31st each year.
Nitrogen, Ammonia (NH_3-N) Total	Monthly Avg	10 mg/L	5/Week	24-Hr Flow Prop Comp	Limit applies January 1st through March 31st each year.
Nitrogen, Ammonia (NH_3-N) Total	Monthly Avg	11 mg/L	5/Week	24-Hr Flow Prop Comp	Limit applies April 1st through May 30th each year.
Nitrogen, Ammonia (NH_3-N) Total	Monthly Avg	4.4 mg/L	5/Week	24-Hr Flow Prop Comp	Limit applies June 1st through September 30th each year.
Nitrogen, Ammonia (NH_3-N) Total	Monthly Avg	18 mg/L	5/Week	24-Hr Flow Prop Comp	Limit applies October 1st through December 31st each year.
Temperature Maximum		deg F	Daily	Continuous	Monitoring only required from January 1st, 2027 to December 31st, 2027. See the Effluent Temperature Monitoring section below.
Cadmium, Total Recoverable		µg/L	Monthly	24-Hr Flow Prop Comp	
Chromium, Total Recoverable		µg/L	Monthly	24-Hr Flow Prop Comp	
Copper, Total Recoverable		µg/L	Monthly	24-Hr Flow Prop Comp	
Lead, Total Recoverable		µg/L	Monthly	24-Hr Flow Prop Comp	
Nickel, Total Recoverable		µg/L	Monthly	24-Hr Flow Prop Comp	
Zinc, Total Recoverable		µg/L	Monthly	24-Hr Flow Prop Comp	
Mercury, Total Recoverable		ng/L	Quarterly	Grab	See Mercury Monitoring and Mercury Continued Implementation of Pollutant Minimization Program sections below.
Nitrogen, Total Kjeldahl		mg/L	Quarterly	24-Hr Flow Prop Comp	See Nitrogen Series Monitoring section below.
Nitrogen, Nitrite + Nitrate Total		mg/L	Quarterly	24-Hr Flow Prop Comp	See Nitrogen Series Monitoring section below.
Nitrogen, Total		mg/L	Quarterly	Calculated	See Nitrogen Series Monitoring section below. Total Nitrogen = Total Kjeldahl Nitrogen (mg/L) + Total (Nitrite + Nitrate) Nitrogen (mg/L).

Monitoring Requirements and Effluent Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
PFOS		ng/L	Monthly	Grab	Monitoring only. See PFOS/PFOA Sampling and Reporting Requirements section below and PFOS/PFOA Minimization Plan Determination of Need section below and compliance schedule.
PFOA		ng/L	Monthly	Grab	Monitoring only. See PFOS/PFOA Sampling and Reporting Requirements section below and PFOS/PFOA Minimization Plan Determination of Need section below and compliance schedule.
Acute WET		TU_a	See Listed Qtr(s)	24-Hr Flow Prop Comp	See the Whole Effluent Toxicity Testing section below.
Chronic WET	Monthly Avg	6.7 TUc	See Listed Qtr(s)	24-Hr Flow Prop Comp	See the Whole Effluent Toxicity Testing section below.

3.2.1.1 Annual Average Design Flow

The annual average design flow of the permittee's wastewater treatment facility is 13 MGD.

3.2.1.2 *E. coli* Percent Limit

No more than 10 percent of *E. coli* bacteria samples collected in any calendar month may exceed 410 #/100 ml. Bacteria samples may be collected more frequently than required. All samples shall be reported on the monthly discharge monitoring reports (DMRs). The following calculation should be used to calculate percent exceedances.

$$\frac{\textbf{\# of Samples greater than 410 \#/100}}{\textbf{Total \# of samples}} \times \mathbf{100} = \%\ \textbf{Exceedance}$$

3.2.1.3 Total Maximum Daily Load (TMDL) Limitations

Approved TMDL: The Lower Fox River TMDL Waste Load Allocation (WLA) for Total Phosphorus and Total Suspended Solids was approved by the U.S. Environmental Protection Agency on May 18, 2012. The approved TMDL WLA limits are listed in the subsections below. TMDL total lbs/month and lbs/yr effluent results shall be calculated as follows:

Total Monthly Discharge (lbs/month) = monthly average concentration (mg/L) x total flow for the month (MG/month) x 8.34.

12-Month Rolling Sum of Total Monthly Discharge (lbs/yr) = the sum of the most recent 12 consecutive months of Total Monthly Discharges.

3.2.1.3.1 TMDL Limitations for Total Phosphorus

The approved TMDL phosphorus WLA for this permittee is 295 lbs/year and results in calculated phosphorus mass limits of 58 lbs/day as a monthly average and 19 lbs/day as a six-month average which go into effect pursuant to the Total Phosphorus - TMDL Derived WQBELs for TP compliance schedule. The 6-month average limit is expressed as a seasonal average with averaging periods occurring from May through October and November through April. Compliance with the 6-month average limit is evaluated at the end of each 6-month period on April 30th and October 31st annually. The 12-month rolling sum of total monthly phosphorus (lbs/yr) shall be reported each month for direct comparison to the facility's WLA.

3.2.1.3.2 TMDL Limitations for Total Suspended Solids

The approved TMDL TSS WLA for this permittee is 180,258 lbs/yr and results in calculated TSS mass limits of 2,524 lbs/day as a weekly average and 1,373 lbs/day as a monthly average. The 12-month rolling sum of total monthly TSS (lbs/yr) shall be reported each month for direct comparison to the facility's WLA.

3.2.1.4 Effluent Temperature Monitoring

For monitoring temperature continuously, the permittee shall collect measurements in accordance with s. NR 218.04(13), Wis. Adm Code. This means that the permittee shall record discrete measurements at intervals of not more than 15 minutes during the 24-hour period. The permittee shall report the maximum temperature measured during the day on the DMR.

3.2.1.5 Sample Analysis

Samples shall be analyzed using a method which provides adequate sensitivity so that results can be quantified at a level of quantitation below the calculated/potential effluent limit, unless not possible using the most sensitive approved method.

3.2.1.6 Mercury Monitoring

The permittee shall collect and analyze all mercury samples according to the data quality requirements of ss. NR 106.145(9) and (10), Wis. Adm. Code. The limit of quantitation (LOQ) used for the effluent and field blank shall be less than 1.3 ng/L, unless the samples are quantified at levels above 1.3 ng/L. The permittee shall collect at least one mercury field blank for each set of mercury samples (a set of samples may include combinations of intake, influent, effluent or other samples all collected on the same day). The permittee shall report results of samples and field blanks to the Department on Discharge Monitoring Reports.

3.2.1.7 Mercury – Continued Implementation of Pollutant Minimization Program

The permittee shall continue to monitor the effluent for total recoverable mercury and maintain effluent quality at or below the water quality standards for mercury and implement the mercury pollutant minimization measures as a part of the pollutant minimization program.

3.2.1.8 Nitrogen Series Monitoring

Monitoring for Total Kjeldahl Nitrogen (TKN), Nitrite + Nitrate Nitrogen, and Total Nitrogen shall be conducted quarterly. Monitoring shall be performed during normal operating conditions. Permittees are not allowed to turn off or otherwise modify treatment systems, production processes, or change other operating or treatment conditions during testing.

3.2.1.9 PFOS/PFOA Sampling and Reporting Requirements

For grab samples, as defined per s. NR 218.04(10), Wis. Adm. Code, a single sample at a location as defined by the sample point description shall be taken during the time of the day most representative to capture all potential discharges. If extra equipment besides the sample bottle is used to collect the sample, it is recommended that a one-

time equipment blank is collected with the first sample. An equipment blank would be collected by passing laboratory-verified PFAS-free water over or through field sampling equipment before the collection of a grab sample to evaluate potential contamination from the equipment used during sample.

If any equipment blanks are performed, these results shall be reported in the comments section of the eDMR and shall also documented in the reports submitted as part of the PFOS/PFOA Minimization Plan Determination of Need schedule of the permit.

3.2.1.10 PFOS/PFOA Minimization Plan Determination of Need

The permittee shall monitor PFOS and PFOA as specified in the table above and report on the effluent concentrations including trends in monthly and annual average PFOS and PFOA concentrations as specified in the PFOS/PFOA Minimization Plan Determination of Need Schedule.

If, after reviewing the data, the Department determines that a minimization plan for PFOS and PFOA is necessary based on the procedures in s. NR 106.98(4), Wis. Adm. Code, the Department will notify the permittee in writing that a PFOS and PFOA minimization plan that satisfies the requirements in s. NR 106.99, Wis. Adm. Code, is required. The permittee shall submit an initial plan for Department approval no later than 90 days after written notification was sent from the Department in accordance with s. NR 106.985(2)(a), Wis. Adm. Code. Pursuant to s. NR 106.985(2)(b), Wis. Adm. Code, as soon as possible after Department approval of the PFOS and PFOA minimization plan, the Department will modify or revoke and reissue the permit in accordance with public notice procedures under ch. 283, Wis. Stats., and ch. NR 203, Wis. Adm. Code, to include the PFOS and PFOA minimization plan and other related terms and condition.

If, however, the Department determines that a PFOS and PFOA minimization plan is unnecessary based on the procedures in s. NR 106.98(4), Wis. Adm. Code, the Department shall notify the permittee that no further action is required. Per s. NR 106.98(3)(a), Wis. Adm. Code, the Department may reduce monitoring frequency to once every 3 months (quarterly) on a case-by-case basis, but only after at least 12 representative results have been generated. If the permittee requests a reduction in monitoring and the Department agrees a reduction would be appropriate, the permit may be modified in accordance with public notice procedures under ch. 283, Wis. Stats., and ch. NR 203, Wis. Adm. Code, to incorporate this change.

3.2.1.11 Whole Effluent Toxicity (WET) Testing

Primary Control Water: Grab samples collected from the Fox River upstream of the discharge from Outfall 001 and outside the mixing zone and out of the influence from any other known discharges unless the use of a different control water source is approved by the department prior to use.

Instream Waste Concentration (IWC): 15%

Dilution series: At least five effluent concentrations and dual controls must be included in each test.

- **Acute:** 100, 50, 25, 12.5, 6.25% and any additional selected by the permittee.
- **Chronic:** 100, 30, 10, 3, 1% and any additional selected by the permittee.

WET Testing Frequency:

Acute and chronic tests shall be conducted once each year in rotating quarters in order to collect seasonal information about the discharge. Acute and chronic tests are required during the following quarters:

- **1st Quarter (January to March) 2025**
- **4th Quarter (October to December) 2026**
- **3rd Quarter (July to September) 2027**

- **2nd Quarter (April to June) 2028**
- **1st Quarter (January to March) 2029**
- Acute and chronic 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 **2nd Quarter (April to June) 2030.**

Testing: WET testing shall be performed during normal operating conditions. Permittees are not allowed to turn off or otherwise modify treatment systems, production processes, or change other operating or treatment conditions during WET tests.

Reporting: The permittee shall report test results on the Discharge Monitoring Report form, and also complete the "Whole Effluent Toxicity Test Report Form" (Section 6, "*State of Wisconsin Aquatic Life Toxicity Testing Methods Manual, 2nd Edition*"), for each test. The original, complete, signed version of the Whole Effluent Toxicity Test Report Form shall be sent to the Biomonitoring Coordinator, Bureau of Water Quality, 101 S. Webster St., P.O. Box 7921, Madison, WI 53707-7921, within 45 days of test completion. The Discharge Monitoring Report (DMR) form shall be submitted electronically by the required deadline.

Determination of Positive Results: An acute toxicity test shall be considered positive if the Toxic Unit - Acute (TU_a) is greater than 1.0 for either species (fathead minnow (Pimephales promelas) and waterflea (Ceriodaphnia dubia)). The TU_a shall be calculated as follows: $TU_a = 100 \div LC_{50}$. A chronic toxicity test shall be considered positive if the Toxic Unit - Chronic (TU_c) is greater than 6.7 for either species. The TU_c shall be calculated as follows: $TU_c = 100 \div IC_{25}$.

Additional Testing Requirements: Within 90 days of a test which showed positive results, the permittee shall submit the results of at least 2 retests to the Biomonitoring Coordinator on "Whole Effluent Toxicity Test Report Forms". The 90-day reporting period shall begin the day after the test which showed a positive result. The retests shall be completed using the same species and test methods specified for the original test (see the Standard Requirements section herein).

3.2.2 Sampling Point 601 - RIVER MONITORING FOR BOD WLA

Monitoring Requirements and Effluent Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
WLA Previous Day River Temp		deg F	Daily	Measure	Monitoring applies May 1st through October 31st each year.
WLA Previous Day River Flow		cfs	Daily	Gauge Station	Monitoring applies May 1st through October 31st each year.
WLA Previous 4 Day Avg River Flow		cfs	Daily	Gauge Station	Monitoring applies May 1st through October 31st each year.

3.2.3 Sampling Point (Outfall) 005 - BOD5 WLA COMPLIANCE

Monitoring Requirements and Effluent Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
WLA BOD_5 Value		lbs/day	Daily	See Table	Monitoring applies May 1st through October 31st each year.
WLA Adjusted Value		lbs/day	Daily	Calculated	Monitoring applies May 1st through October 31st each year.
WLA BOD_5 Discharged	Daily Max - Variable	lbs/day	Daily	Calculated	Monitoring and limits apply May 1st through October 31st each year.
WLA 7 Day Sum Of WLA Values		lbs/day	Daily	Calculated	Monitoring applies May 1st through October 31st each year.
WLA 7 Day Sum Of BOD_5 Discharged	Daily Max - Variable	lbs/day	Daily	Calculated	Monitoring and limits apply May 1st through October 31st each year.

3.2.3.1 Waste Load Allocation Requirements

3.2.3.1.1 Definitions:

- BOD5 Allocation: The NMSC allocation of BOD5 (pounds per day BOD5), as listed in Tables 1 through 5, represent water quality related effluent limitations. The flow and temperature conditions used to determine the BOD5 allocation for a given day are defined below.
- Flow: A representative measurement of flow is the previous four-days average flow value derived daily from continuous river flow monitoring data for the Fox River measured at Appleton Lutz Park- USGS/ACOE Gauge Station and reported by the Lower Fox River Dischargers Association.
- Temperature: A representative measurement of temperature is the daily average temperature value of the previous day derived from continuous river temperature monitoring data for the Fox River measured at Appleton Lutz Park, as reported by the Lower Fox River Dischargers Association.

3.2.3.1.2 Determination of Effluent Limitation:

For purposes of determining compliance with the wasteload allocated water quality related BOD_5 effluent limitations, the following conditions shall be met:

- The sum of the actual daily discharges of BOD_5 for any 7-consecutive-day period may not exceed the sum of the daily BOD_5 allocation values from Tables 1 through 5 for the same 7-consecutive day period.
- For any one-day period, the actual discharge of BOD_5 shall not exceed 1.38 times the BOD_5 allocation value from Tables 1 through 5 for that day.

3.2.3.1.3 Monitoring Requirements:

Effluent sampling (including flow) and river flow and temperature values shall be from the same 24-hour period.

3.2.3.1.4 Reporting Requirements:

During the months of May through October inclusive the permittee shall report, the following information:

- The daily average river temperature value (°F);
- The average of the previous 4 days river flow values (cfs);
- The daily BOD_5 allocation value (lbs. BOD_5 per day) from Tables 1 through 5;
- The actual discharge value of BOD_5 (lbs/BOD_5 per day);
- The sum of the actual daily discharge values of BOD_5 (lbs/day BOD_5) for each 7-consecutive-day period (present day discharge plus the 6 previous days discharge);
- The sum of the daily BOD_5 allocation values (lbs/day BOD_5) for each 7-consecutive-day period (present day allocation plus the 6 previous day's allocation);
- The daily adjusted BOD_5 allocation value (1.38 x daily BOD_5 allocation value); and
- If there is no lbs/day BOD_5 value available, but there was a discharge, for one or more days of the seven consecutive days, add the values from the table only from those days corresponding to days actual measured values are available. If there is no discharge, use a zero for that day. For all days on which there is no measured value the permittee shall submit a written explanation to the department.

3.2.3.2 Wasteload Allocation Tables 1 – 5

Table 1 – Point Source Wasteload Allocated Values (pounds per day of BOD_5)
(River Mile 40.0 to 32.4)
MAY - JUNE

River Temperature (previous day average in °F)	Flow at Appleton Lutz Park (previous four-day average in cfs)														
	750 OR LESS	751 TO 1000	1001 TO 1250	1251 TO 1500	1501 TO 1750	1751 TO 2000	2001 TO 2250	2251 TO 2500	2501 TO 2750	2751 TO 3000	3001 TO 3500	3501 TO 4000	4001 TO 5000	5001 TO 8000	8001 OR MORE
86 OR MORE	3004	3175	3421	3635	3838	4044	4283	4553	4891	5276	5842	6200	6758	9824	11798
82 TO 85	3223	3429	3704	3953	4206	4489	4817	5194	5621	5760	6046	6339	7486	10676	13054
78 TO 81	3570	3811	4121	4429	4782	5192	5514	5609	5795	6021	6219	6766	8784	12233	13126
74 TO 77	3915	4179	4531	4933	5420	5504	5614	5909	6028	6175	6463	7803	9881	13126	13126
70 TO 73	4253	4536	4978	5447	5467	5576	5887	6003	6177	6388	7148	8978	10971	13126	13126
66 TO 69	4598	4926	5465	5447	5532	5854	5991	6170	6423	6969	8221	10264	12307	13126	13126
62 TO 65	5018	5470	5422	5477	5817	5976	6197	6485	7282	8206	10033	11605	13126	13126	13126
58 TO 61	5539	5408	5417	5777	5971	6267	6790	7793	8903	10385	11654	13126	13126	13126	13126
54 TO 57	5363	5340	5728	5991	6401	7421	8665	10438	11458	12516	13126	13126	13126	13126	13126
50 TO 53	5281	5477	6018	6694	8265	9881	11788	13082	13126	13126	13126	13126	13126	13126	13126
46 TO 49	5489	6031	7287	9363	12069	13126	13126	13126	13126	13126	13126	13126	13126	13126	13126
42 TO 45	6262	7823	10659	13126	13126	13126	13126	13126	13126	13126	13126	13126	13126	13126	13126
41 OR LESS	9159	11979	13126	13126	13126	13126	13126	13126	13126	13126	13126	13126	13126	13126	13126

Table 2 – Point Source Wasteload Allocated Values (pounds per day of BOD_5)
(River Mile 40.0 to 32.4)
JULY

River Temperature (previous day average in °F)	Flow at Appleton Lutz Park (previous four-day average in cfs)														
	750 OR LESS	751 TO 1000	1001 TO 1250	1251 TO 1500	1501 TO 1750	1751 TO 2000	2001 TO 2250	2251 TO 2500	2501 TO 2750	2751 TO 3000	3001 TO 3500	3501 TO 4000	4001 TO 5000	5001 TO 8000	8001 OR MORE
86 OR MORE	2955	2955	2955	2955	2955	2955	3354	3861	4486	5169	5569	5621	5857	6704	8625
82 TO 85	2955	2955	2955	2955	3064	3560	4121	4737	5475	5591	5633	5825	6083	7808	10088
78 TO 81	2955	2955	2955	3389	3963	4608	5331	5666	5730	5743	5892	6108	6507	9790	12548
74 TO 77	2955	3054	3563	4186	4921	5393	5723	5807	5825	5969	6147	6465	7784	11917	13126
70 TO 73	3218	3598	4270	5072	5380	5475	5797	5921	6078	6222	6475	7491	9261	13126	13126
66 TO 69	3712	4211	5067	5385	5462	5795	5931	6113	6358	6557	7473	8831	10929	13126	13126
62 TO 65	4320	4990	5380	5425	5782	5946	6177	6478	7086	7796	8878	10510	12975	13126	13126
61 OR LESS	5149	5383	5380	5763	5971	6286	6902	7726	8583	9445	10800	12806	13126	13126	13126

Table 3 – Point Source Wasteload Allocated Values (pounds per day of BOD_5)
(River Mile 40.0 to 32.4)
AUGUST

River Temperature (previous day average in °F)	Flow at Appleton Lutz Park (previous four-day average in cfs)														
	750 OR LESS	751 TO 1000	1001 TO 1250	1251 TO 1500	1501 TO 1750	1751 TO 2000	2001 TO 2250	2251 TO 2500	2501 TO 2750	2751 TO 3000	3001 TO 3500	3501 TO 4000	4001 TO 5000	5001 TO 8000	8001 OR MORE
86 OR MORE	2955	2955	2955	2955	2955	2955	2955	2974	3431	3955	4797	5624	5802	6398	7605
82 TO 85	2955	2955	2955	2955	2955	2955	3339	3786	4355	4995	5638	5780	6008	7121	8963
78 TO 81	2955	2955	2955	2999	3416	3898	4454	5065	5388	5646	5844	6036	6363	8864	11341
74 TO 77	2955	2955	3257	3727	4293	4936	5298	5415	5696	5800	6065	6331	7198	10837	13126
70 TO 73	3091	3387	3905	4536	5239	5303	5624	5710	5844	6031	6331	6932	8481	12973	13126
66 TO 69	3563	3955	4638	5261	5303	5628	5738	5887	6113	6378	6920	8156	10065	13126	13126
62 TO 65	4126	4673	5271	5283	5621	5755	5951	6214	6562	7235	8223	9725	12064	13126	13126
61 OR LESS	4899	5291	5251	5599	5772	6048	6416	7203	7987	8789	10038	11952	13126	13126	13126

Table 4 – Point Source Wasteload Allocated Values (pounds per day of BOD_5)
(River Mile 40.0 to 32.4)
SEPTEMBER

River Temperature (previous day average in °F)	Flow at Appleton Lutz Park (previous four-day average in cfs)														
	750 OR LESS	751 TO 1000	1001 TO 1250	1251 TO 1500	1501 TO 1750	1751 TO 2000	2001 TO 2250	2251 TO 2500	2501 TO 2750	2751 TO 3000	3001 TO 3500	3501 TO 4000	4001 TO 5000	5001 TO 8000	8001 OR MORE
86 OR MORE	2955	2955	2955	2955	2955	2955	2955	2955	2955	3153	3823	4827	5847	6411	7672
82 TO 85	2955	2955	2955	2955	2955	2955	2955	3200	3640	4154	5020	5681	6013	7088	8970

River Temperature (previous day average in °F)	Flow at Appleton Lutz Park (previous four-day average in cfs)														
	750 OR LESS	751 TO 1000	1001 TO 1250	1251 TO 1500	1501 TO 1750	1751 TO 2000	2001 TO 2250	2251 TO 2500	2501 TO 2750	2751 TO 3000	3001 TO 3500	3501 TO 4000	4001 TO 5000	5001 TO 8000	8001 OR MORE
78 TO 81	2955	2955	2955	2955	3106	3449	3873	4372	5020	5470	5614	5944	6314	8697	11341
74 TO 77	2955	2955	3126	3444	3871	4392	5015	5432	5502	5604	5830	6247	6929	10636	13126
70 TO 73	3126	3300	3657	4144	4767	5142	5432	5499	5631	5810	6147	6567	8099	12779	13126
66 TO 69	3501	3769	4300	4995	5147	5437	5527	5663	5879	6142	6535	7731	9633	13126	13126
62 TO 65	3967	4395	5154	5132	5427	5537	5718	5964	6309	6748	7736	9253	11677	13126	13126
58 TO 61	4635	5182	5102	5400	5542	5795	6142	6604	7461	8255	9507	11473	13126	13126	13126
54 TO 57	5154	5057	5350	5554	5914	6425	7486	8429	9447	10507	12205	13126	13126	13126	13126
50 TO 53	4995	5283	5561	6103	7168	8598	9834	11143	12575	13126	13126	13126	13126	13126	13126
46 TO 49	5246	5544	6348	8263	10135	11840	13126	13126	13126	13126	13126	13126	13126	13126	13126
42 TO4 5	5698	6607	9494	12228	13126	13126	13126	13126	13126	13126	13126	13126	13126	13126	13126
41 OR LESS	7823	10691	13126	13126	13126	13126	13126	13126	13126	13126	13126	13126	13126	13126	13126

Table 5 – Point Source Wasteload Allocated Values (pounds per day of BOD_5) (River Mile 40.0 to 32.4)

OCTOBER

River Temperature (previous day average in °F)	Flow at Appleton Lutz Park (previous four-day average in cfs)														
	750 OR LESS	751 TO 1000	1001 TO 1250	1251 TO 1500	1501 TO 1750	1751 TO 2000	2001 TO 2250	2251 TO 2500	2501 TO 2750	2751 TO 3000	3001 TO 3500	3501 TO 4000	4001 TO 5000	5001 TO 8000	8001 OR MORE
66 OR MORE	3200	3379	3806	4422	5194	5214	5283	5408	5624	5892	6413	7478	9586	13126	13126
62 TO 65	3573	3920	4628	5196	5206	5288	5457	5688	6038	6453	7391	9022	11597	13126	13126
58 TO 61	4151	4767	5177	5174	5278	5509	5842	6276	7031	7856	9171	11242	13126	13126	13126
54 TO 57	5013	4869	5110	5266	5594	6080	6860	7950	9003	10095	11865	13126	13126	13126	13126
50 TO 53	4784	5020	5236	5730	6468	8024	9293	10626	12101	13126	13126	13126	13126	13126	13126
46 TO 49	4941	5172	5902	7386	9457	11197	13072	13126	13126	13126	13126	13126	13126	13126	13126
42 TO 45	5241	6043	8469	11406	13126	13126	13126	13126	13126	13126	13126	13126	13126	13126	13126
41 OR LESS	6609	9447	13126	13126	13126	13126	13126	13126	13126	13126	13126	13126	13126	13126	13126

4 Land Application Requirements

4.1 Sampling Point(s)

The discharge(s) shall be limited to land application of the waste type(s) designated for the listed sampling point(s) on Department approved land spreading sites or by hauling to another facility.

Sampling Point Designation	
Sampling Point Number	**Sampling Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)**
002	CAKE SLUDGE - Class B cake sludge from the treatment of primary sludge, gravity thickened waste activated sludge, and high strength food waste that is anaerobically digested, centrifuged, and loaded onto trucks and then stored off-site. At Sampling Point 002, the permittee shall collect representative grab and/or composite samples of cake sludge prior to being loaded onto trucks and either sent to off-site cake storage, land applied on department approved sites via Outfall 002, or hauled to another permitted facility.

4.2 Monitoring Requirements and Limitations

The permittee shall comply with the following monitoring requirements and limitations.

4.2.1 Sampling Point (Outfall) 002 - CAKE SLUDGE

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

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Nitrogen, Ammonium (NH_4-N) Total		Percent	1/ 2 Months	Composite	
Phosphorus, Total		Percent	1/ 2 Months	Composite	
Phosphorus, Water Extractable		% of Tot P	1/ 2 Months	Composite	
Potassium, Total Recoverable		Percent	1/ 2 Months	Composite	
PCB Total Dry Wt	Ceiling	50 mg/kg	Once	Composite	Monitoring required once in 2026.
PCB Total Dry Wt	High Quality	10 mg/kg	Once	Composite	
PFOA + PFOS		µg/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.

Other Sludge Requirements	
Sludge Requirements	**Sample Frequency**
List 3 Requirements – Pathogen Control: The requirements in List 3 shall be met prior to land application of sludge.	**Bimonthly**
List 4 Requirements – Vector Attraction Reduction: The vector attraction reduction shall be satisfied prior to, or at the time of land application as specified in List 4.	**Bimonthly**

4.2.1.1 List 2 Analysis

If the monitoring frequency for List 2 parameters is more frequent than "Annual" then the sludge may be analyzed for the List 2 parameters just prior to each land application season rather than at the more frequent interval specified.

4.2.1.2 Changes in Feed Sludge Characteristics

If a change in feed sludge characteristics, treatment process, or operational procedures occurs which may result in a significant shift in sludge characteristics, the permittee shall reanalyze the sludge for List 1, 2, 3 and 4 parameters each time such change occurs.

4.2.1.3 Multiple Sludge Sample Points (Outfalls)

If there are multiple sludge sample points (outfalls), but the sludges are not subject to different sludge treatment processes, then a separate List 2 analysis shall be conducted for each sludge type which is land applied, just prior to land application, and the application rate shall be calculated for each sludge type. In this case, List 1, 3, and 4 and PCBs need only be analyzed on a single sludge type, at the specified frequency. If there are multiple sludge sample

points (outfalls), due to multiple treatment processes, List 1, 2, 3 and 4 and PCBs shall be analyzed for each sludge type at the specified frequency.

4.2.1.4 Sludge Which Exceeds the High-Quality Limit

Cumulative pollutant loading records shall be kept for all bulk land application of sludge which does not meet the high-quality limit for any parameter. This requirement applies for the entire calendar year in which any exceedance of Table 3 of s. NR 204.07(5)(c), is experienced. Such loading records shall be kept for all List 1 parameters for each site land applied in that calendar year. The formula to be used for calculating cumulative loading is as follows:

[(Pollutant concentration (mg/kg) x dry tons applied/ac) ÷ 500] + previous loading (lbs/acre) = cumulative lbs pollutant per acre

When a site reaches 90% of the allowable cumulative loading for any metal established in Table 2 of s. NR 204.07(5)(b), the Department shall be so notified through letter or in the comment section of the annual land application report (3400-55).

4.2.1.5 Sludge Analysis for PCBs

The permittee shall analyze the sludge for Total PCBs one time during **2026.** The results shall be reported as "PCB Total Dry Wt". Either congener-specific analysis or Aroclor analysis shall be used to determine the PCB concentration. The permittee may determine whether Aroclor or congener specific analysis is performed. Analyses shall be performed in accordance with Table EM in s. NR 219.04, Wis. Adm. Code and the conditions specified in Standard Requirements of this permit. PCB results shall be submitted by January 31, following the specified year of analysis.

4.2.1.6 Lists 1, 2, 3, and 4

List 1 **TOTAL SOLIDS AND METALS** See the Monitoring Requirements and Limitations table above for monitoring frequency and limitations for the List 1 parameters
Solids, Total (percent)
Arsenic, mg/kg (dry weight)
Cadmium, mg/kg (dry weight)
Copper, mg/kg (dry weight)
Lead, mg/kg (dry weight)
Mercury, mg/kg (dry weight)
Molybdenum, mg/kg (dry weight)
Nickel, mg/kg (dry weight)
Selenium, mg/kg (dry weight)
Zinc, mg/kg (dry weight)

List 2 **NUTRIENTS** See the Monitoring Requirements and Limitations table above for monitoring frequency for the List 2 parameters
Solids, Total (percent)
Nitrogen Total Kjeldahl (percent)
Nitrogen Ammonium (NH4-N) Total (percent)
Phosphorus Total as P (percent)
Phosphorus, Water Extractable (as percent of Total P)
Potassium Total Recoverable (percent)

List 3
PATHOGEN CONTROL FOR CLASS B SLUDGE

The permittee shall implement pathogen control as listed in List 3. The Department shall be notified of the pathogen control utilized and shall be notified when the permittee decides to utilize alternative pathogen control.

The following requirements shall be met prior to land application of sludge.

Parameter	Unit	Limit
Fecal Coliform*	MPN/gTS or CFU/gTS	2,000,000
OR, ONE OF THE FOLLOWING PROCESS OPTIONS		
Aerobic Digestion	Air Drying	
Anaerobic Digestion	Composting	
Alkaline Stabilization	PSRP Equivalent Process	

* The Fecal Coliform limit shall be reported as the geometric mean of 7 discrete samples on a dry weight basis.

List 4
VECTOR ATTRACTION REDUCTION

The permittee shall implement any one of the vector attraction reduction options specified in List 4. The Department shall be notified of the option utilized and shall be notified when the permittee decides to utilize an alternative option.

One of the following shall be satisfied prior to, or at the time of land application as specified in List 4.

Option	Limit	Where/When it Shall be Met
Volatile Solids Reduction	≥38%	Across the process
Specific Oxygen Uptake Rate	≤1.5 mg O_2/hr/g TS	On aerobic stabilized sludge
Anaerobic bench-scale test	<17 % VS reduction	On anaerobic digested sludge
Aerobic bench-scale test	<15 % VS reduction	On aerobic digested sludge
Aerobic Process	>14 days, Temp >40°C and Avg. Temp > 45°C	On composted sludge
pH adjustment	>12 S.U. (for 2 hours) and >11.5 (for an additional 22 hours)	During the process
Drying without primary solids	>75 % TS	When applied or bagged
Drying with primary solids	>90 % TS	When applied or bagged
Equivalent Process	Approved by the Department	Varies with process
Injection	-	When applied
Incorporation	-	Within 6 hours of application

4.2.1.7 Daily Land Application Log

Daily Land Application Log		
Discharge Monitoring Requirements and Limitations The permittee shall maintain a daily land application log for biosolids land applied each day when land application occurs. The following minimum records must be kept, in addition to all analytical results for the biosolids land applied. The log book records shall form the basis for the annual land application report requirements.		
Parameters	**Units**	**Sample Frequency**
DNR Site Number(s)	Number	Daily as used
Outfall number applied	Number	Daily as used
Acres applied	Acres	Daily as used
Amount applied	As appropriate * /day	Daily as used
Application rate per acre	unit */acre	Daily as used
Nitrogen applied per acre	lb/acre	Daily as used
Method of Application	Injection, Incorporation, or surface applied	Daily as used

*gallons, cubic yards, dry US Tons or dry Metric Tons

4.2.1.8 Sludge Monitoring for PFAS

Sampling shall occur for perfluoroalkyl and polyfluoroalkyl compounds (PFAS) listed in the table below and as indicated in sampling point sections above. Monitoring shall occur at each sample point when sludge is generated regardless of the end use (i.e. land applied, hauled to another facility, landfilled).

PERFLUOROALKYLCARBOXILIC Acids (PFCAs)	
PFBA	Perfluorobutanoic acid
PFPeA	Perfluroropentanoic acid
PFHxA	Perfluorohexanoic acid
PFHpA	Perfluoroheptanoic acid
PFOA	Perfluorooctanoic acid
PFNA	Perfluorononanoic acid
PFDA	Perfluorodecanoic acid
PFUnA	Perfluroroundecanoic acid
PFDoA	Perfluorododecanoic acid
PFTriA	Perfluorotridecanoic acid
PFTeDA	Perfluorotetradecanoic acid
PERFLUOROALKYLSULFONIC Acids (PFSAs)	
PFBS	Perfluorobutane sulfonic acid
PFPeS	Perfluroropentane sulfonic acid
PFHxS	Perfluorohexane sulfonic acid
PFHpS	Perfluoroheptane sulfonic acid
PFOS	Perfluorooctane sulfonic acid

PFNS	Perfluorononane sulfonic acid
PFDS	Perfluorodecane sulfonic acid
PFDoS	Perfluorododecane sulfonic acid
TELOMER SULFONIC Acids	
4:2 FTSA	4:2 fluorotelomersulfonic acid
6:2 FTSA	6:2 fluorotelomersulfonic acid
8:2 FTSA	8:2 fluorotelomersulfonic acid
PERFLUOROOCTANCESULFONAMIDES (FOSAs)	
PFOSA	Perfluroroctane sulfonamide
N-MeFOSA	N-Methyl perfluoroocatane sulfonamide
N-EtFOSA	N-Ethyl perfluorooctane sulfonamide
PERFLUOROOCTANCESULFONAMIDOACETIC Acids	
N-MeFOSAA	N-Methyl perfluoroocatane sulfonamidoacetic acid
N-EtFOSAA	N-Ethyl perfluorooctane sulfonamidoacetic acid
NATIVE PERFLUOROOCTANCESULFONAMIDOETHANOLS (FOSEs)	
N-MeFOSE	N-Methyl perfluorooctane sulfonamideoethanol
N-EtFOSE	N-Ethyl perfluorooctane sulfonamidoethanol
PERFLUOROALKYLETHERCARBOXYLIC Acids (PFECAs)	
HFPO-DA	Hexafluoropropylene oxide dimer acid
DONA	4,8-dioxa-3H-perfluorononanoic acid
CHLORO-PERFLUOROALKYLSULFONATE	
F-53B Major	9-chloroehexadecafluoro-3-oxanone-1-sulfonic acid
F-53B Minor	11-chloroelcosafluoro-3-oxaundecane-1-sulfonic acid

Note: If WDNR Lab Certification removes a particular compound from the reporting list above and upon receiving written communication from the department, reporting for that compound is no longer required.

4.2.1.9 Sampling and Reporting Sludge Samples for PFAS

Representative sludge samples shall be collected at each sample point as listed. At minimum, liquid sludge storage/digesters should be thoroughly mixed prior to sampling. Cake sludge samples should consist of seven equal size discrete samples and be collected from different areas and depths then composited into one sample for laboratory analysis.

Note: If additional equipment is used for collecting sludge samples (i.e., shovels, compositing buckets, bottles, etc.), then a one-time equipment blank is recommended to be collected with the first sample. An equipment blank sample is collected by passing laboratory verified PFAS-free water over or through field sampling equipment before the collection of a representative sludge sample. The equipment blank result shall be reported on the annual Sludge Characteristics Form (3400-049) in the comment section when reporting PFAS concentrations in the sludge.

The permittee shall report each of the PFAS sludge monitoring results on the annual Sludge Characteristics and Monitoring Form (3400-049) as provided by the department. The permittee shall also report the summation of PFOS and PFOA on this same form. All results shall be reported in dry weight. The annual Sludge Characteristics and Monitoring Form (3400-049) are due January 31, of the year following the collection of the sludge samples.

The laboratory performing the analysis on any samples shall be certified for the applicable PFAS compounds in the solids matrix by the Wisconsin Laboratory Certification Program established under s. 299.11, Wis. Stats., and in accordance with s. NR 149.41, Wis. Adm. Code. If the EPA Office of Water publishes a 1600 series isotope dilution

method for the analysis of PFAS in solids, the department recommends the use of the EPA method. The department may reject any sample results if results are produced by a laboratory that is not in compliance with certification requirements under ch. NR 149, Wis. Adm. Code.

4.2.1.10 PFAS Land Application Requirements

The department recommends the landspreading and/or land application of sludge be done in a manner consistent with the most recent version of the “Interim Strategy for Land Application of Biosolids and Industrial Sludges containing PFAS”.

5 Schedules

5.1 Install Continuous Flow Recording Device

The permittee shall install a continuous flow recording device at Sampling Point (Outfall) 001 in accordance with the following schedule.

Required Action	Due Date
Submit Facility Plan: The permittee shall submit a Facility Plan per s. NR 110.09, Wis. Adm. Code for installing a continuous flow recording device at Sampling Point (Outfall) 001.	12/31/2025
Final Plans and Specifications: Submit plans and specifications per ch. NR 108, Wis. Adm. Code, for installing a continuous flow recording device at Sampling Point (Outfall) 001.	12/31/2027
Complete Installation: The permittee shall complete installation of the continuous flow recording device at Sampling Point (Outfall) 001.	12/31/2029

5.2 Total Phosphorus - TMDL Derived WQBELs for TP

The permittee shall comply with the TMDL (Total Maximum Daily Load) derived effluent limitations for TP as specified.

Required Action	Due Date
Submit Facility Plan: The permittee shall submit a Facility Plan per s. NR 110.09, Wis. Adm. Code for complying with the final TMDL derived effluent limitations for total phosphorus.	04/30/2025
Progress Report on Plans & Specifications: Submit progress report regarding the progress of preparing final plans and specifications. Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.	09/30/2025
Final Plans and Specifications: Unless the permit has been modified, revoked and reissued, or reissued to include Adaptive Management or Water Quality Trading measures or to include a revised schedule based on factors in s. NR 217.17, Wis. Adm. Code, the permittee shall submit final construction plans to the Department for approval pursuant to s. 281.41, Stats., specifying treatment plant upgrades that must be constructed to achieve compliance with final phosphorus WQBELs, and a schedule for completing construction of the upgrades by the complete construction date specified below. (Note: Permit modification, revocation and reissuance, and reissuance are subject to s. 283.53(2), Stats.) Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.	03/31/2026
Treatment Plant Upgrade to Meet WQBELs: The permittee shall initiate construction of the upgrades. The permittee shall obtain approval of the final construction plans and schedule from the Department pursuant to s. 281.41. Stats. Upon approval of the final construction plans and schedule by the Department pursuant to s. 281.41, Stats., the permittee shall construct the treatment plant upgrades in accordance with the approved plans and specifications. Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.	09/30/2026
Construction Upgrade Progress Report #1: The permittee shall submit a progress report on construction upgrades. Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.	12/31/2026

Required Action	Due Date
Complete Construction: The permittee shall complete construction of wastewater treatment system upgrades. Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.	03/31/2027
Achieve Compliance: The permittee shall achieve compliance with final phosphorus WQBELs. Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.	04/01/2027

5.3 PFOS/PFOA Minimization Plan Determination of Need

Required Action	Due Date
Report on Effluent Discharge: Submit a report on effluent PFOS and PFOA concentrations and include an analysis of trends in monthly and annual average PFOS and PFOA concentrations. This analysis should also include a comparison to the applicable narrative standard in s. NR 102.04(8)(d), Wis. Adm. Code. This report shall include all additional PFOS and PFOA data that may be collected including any influent, intake, in-plant, collection system sampling, and blank sample results.	12/31/2025
Report on Effluent Discharge and Evaluation of Need: Submit a final report on effluent PFOS and PFOA concentrations and include an analysis of trends in monthly and annual average PFOS and PFOA concentrations of data collected over the last 24 months. The report shall also provide a comparison on the likelihood of the facility needing to develop a PFOS/PFOA minimization plan. This report shall include all additional PFOS and PFOA data that may be collected including any influent, intake, in-plant, collection system sampling, and blank sample results. The permittee shall also submit a request to the department to evaluate the need for a PFOS/PFOA minimization plan. If the Department determines a PFOS/PFOA minimization plan is needed based on a reasonable potential evaluation, the permittee will be required to develop a minimization plan for Department approval no later than 90 days after written notification was sent from the Department. The Department will modify or revoke and reissue the permit to include PFOS/PFOA minimization plan reporting requirements along with a schedule of compliance to meet WQBELs. Effluent monitoring of PFOS and PFOA shall continue as specified in the permit until the modified permit is issued. If, however, the Department determines there is no reasonable potential for the facility to discharge PFOS or PFOA above the narrative standard in s. NR 102.04(8)(d), Wis. Adm. Code, no further action is required and effluent monitoring of PFOS and PFOA shall continue as specified in the permit.	12/31/2026

5.4 Sludge Management Plan

A management plan is required for the land application system.

Required Action	Due Date
Sludge Management Plan Submittal: Submit an update to the sludge 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 sludge management 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.	12/31/2025

6 Standard Requirements

Chapter NR 205, Wisconsin Administrative Code: The conditions in ss. NR 205.07(1) and NR 205.07(2), Wis. Adm. Code, are included by reference in this permit. The permittee shall comply with all of these requirements. Some of these requirements are outlined in the Standard Requirements section of this permit. Requirements not specifically outlined in the Standard Requirement section of this permit can be found in ss. NR 205.07(1) and NR 205.07(2), Wis. Adm. Code.

6.1 Reporting and Monitoring Requirements

6.1.1 Monitoring Results

Monitoring results obtained during the previous month shall be summarized and reported on a Department Wastewater Discharge Monitoring Report. The report may require reporting of any or all of the information specified below under 'Recording of Results'. This report is to be returned to the Department no later than the date indicated on the form. A copy of the Wastewater Discharge Monitoring Report Form or an electronic file of the report shall be retained by the permittee.

Monitoring results shall be reported on an electronic discharge monitoring report (eDMR). The eDMR shall be certified electronically by a responsible executive or municipal officer, manager, partner or proprietor as specified in s. 283.37(3), Wis. Stats., or a duly authorized representative of the officer, manager, partner or proprietor that has been delegated signature authority pursuant to s. NR 205.07(1)(g)2, Wis. Adm. Code. The 'eReport Certify' page certifies that the electronic report form is true, accurate and complete.

If the permittee monitors any pollutant more frequently than required by this permit, the results of such monitoring shall be included on the Wastewater Discharge Monitoring Report.

The permittee shall comply with all limits for each parameter regardless of monitoring frequency. For example, monthly, weekly, and/or daily limits shall be met even with monthly monitoring. The permittee may monitor more frequently than required for any parameter.

6.1.2 Sampling and Testing Procedures

Sampling and laboratory testing procedures shall be performed in accordance with Chapters NR 218 and NR 219, Wis. Adm. Code, and completed by a laboratory certified or registered in accordance with the requirements of ch. NR 149, Wis. Adm. Code. Groundwater sampling shall be performed in accordance with procedures contained in s. NR 140.16, Wis. Adm. Code, and the WDNR publications, Groundwater Sampling Desk Reference (PUBL-DG-037-96) and Groundwater Sampling Field Manual (PUBL-DG-038-96). The analytical methodologies used shall enable the laboratory to quantitate all substances for which monitoring is required at levels below the effluent limitation and/or groundwater standard. If the required level cannot be met by any of the methods available in ch. NR 219, Wis. Adm. Code, then the method with the lowest limit of detection shall be selected. Additional test procedures may be specified in this permit.

6.1.3 Pretreatment Sampling Requirements

Sampling for pretreatment parameters (cadmium, chromium, copper, lead, nickel, zinc, and mercury) shall be done during a day each month when industrial discharges are occurring at normal to maximum levels. The sampling of the influent and effluent for these parameters shall be coordinated. All 24 hour composite samples shall be flow proportional.

6.1.4 Recording of Results

The permittee shall maintain records which provide the following information for each effluent measurement or sample taken:

- the date, exact place, method and time of sampling or measurements;
- the individual who performed the sampling or measurements;

- the date the analysis was performed;
- the individual who performed the analysis;
- the analytical techniques or methods used; and
- the results of the analysis.

6.1.5 Reporting of Monitoring Results

The permittee shall use the following conventions when reporting effluent monitoring results:

- Pollutant concentrations less than the limit of detection shall be reported as < (less than) the value of the limit of detection. For example, if a substance is not detected at a detection limit of 0.1 mg/L, report the pollutant concentration as < 0.1 mg/L.
- Pollutant concentrations equal to or greater than the limit of detection, but less than the limit of quantitation, shall be reported and the limit of quantitation shall be specified.
- For purposes of calculating fees under ch. NR 101, Wis. Adm. Code, a reporting limit of 2.0 mg/L for BOD_5 and 2.5 mg/L Total Suspended Solids shall be considered to be limits of quantitation.
- For the purposes of reporting a calculated result, average or a mass discharge value, the permittee may substitute a "0" (zero) for any pollutant concentration that is less than the limit of detection. However, if the effluent limitation is less than the limit of detection, the department may substitute a value other than zero for results less than the limit of detection, after considering the number of monitoring results that are greater than the limit of detection and if warranted when applying appropriate statistical techniques.
- If no discharge occurs through an outfall, flow related parameters (e.g. flow rate, hydraulic application rate, volume, etc.) should be reported as "0" (zero) at the required sample frequency specified for the outfall. For example: if the sample frequency is daily, "0" would be reported for any day during the month that no discharge occurred.

6.1.6 Compliance Maintenance Annual Reports

Compliance Maintenance Annual Reports (CMAR) shall be completed using information obtained over each calendar year regarding the wastewater conveyance and treatment system. The CMAR shall be submitted and certified by the permittee in accordance with ch. NR 208, Wis. Adm. Code, by June 30, each year on an electronic report form provided by the Department.

In the case of a publicly owned treatment works, a resolution shall be passed by the governing body and submitted as part of the CMAR, verifying its review of the report and providing responses as required. Private owners of wastewater treatment works are not required to pass a resolution; but they must provide an Owner Statement and responses as required, as part of the CMAR submittal.

The CMAR shall be certified electronically by a responsible executive or municipal officer, manager, partner or proprietor as specified in s. 283.37(3), Wis. Stats., or a duly authorized representative of the officer, manager, partner or proprietor that has been delegated signature authority pursuant to s. NR 205.07(1)(g)2, Wis. Adm. Code. The certification verifies that the electronic report is true, accurate and complete.

6.1.7 Records Retention

The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings or electronic data records for continuous monitoring instrumentation, copies of all reports required by the permit, and records of all data used to complete the application for the permit for a period of at least 3 years from the date of the sample, measurement, report or application. All pertinent sludge information, including permit application information and other documents specified in this permit or s. NR 204.06(9), Wis. Adm. Code shall be retained for a minimum of 5 years.

6.1.8 Other Information

Where the permittee becomes aware that it failed to submit any relevant facts in a permit application or submitted incorrect information in a permit application or in any report to the Department, it shall promptly submit such facts or correct information to the Department.

6.1.9 Reporting Requirements – Alterations or Additions

The permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is only required when:

- The alteration or addition to the permitted facility may meet one of the criteria for determining whether a facility is a new source.
- The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification requirement applies to pollutants which are not subject to effluent limitations in the existing permit.
- The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use of disposal sites not reported during the permit application process nor reported pursuant to an approved land application plan. Additional sites may not be used for the land application of sludge until department approval is received.

6.2 System Operating Requirements

6.2.1 Noncompliance Reporting

Sanitary sewer overflows and sewage treatment facility overflows shall be reported according to the 'Sanitary Sewer Overflows and Sewage Treatment Facility Overflows' section of this permit.
The permittee shall report the following types of noncompliance by a telephone call to the Department's regional office within 24 hours after becoming aware of the noncompliance:

- any noncompliance which may endanger health or the environment;
- any violation of an effluent limitation resulting from a bypass;
- any violation of an effluent limitation resulting from an upset; and
- any violation of a maximum discharge limitation for any of the pollutants listed by the Department in the permit, either for effluent or sludge.

A written report describing the noncompliance shall also be submitted to the Department's regional office within 5 days after the permittee becomes aware of the noncompliance. On a case-by-case basis, the Department may waive the requirement for submittal of a written report within 5 days and instruct the permittee to submit the written report with the next regularly scheduled monitoring report. In either case, the written report shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times; the steps taken or planned to reduce, eliminate and prevent reoccurrence of the noncompliance; and if the noncompliance has not been corrected, the length of time it is expected to continue.
A scheduled bypass approved by the Department under the 'Scheduled Bypass' section of this permit shall not be subject to the reporting required under this section.
NOTE: Section 292.11(2)(a), Wisconsin Statutes, requires any person who possesses or controls a hazardous substance or who causes the discharge of a hazardous substance to notify the Department of Natural Resources immediately of any discharge not authorized by the permit. **The discharge of a hazardous substance that is not authorized by this permit or that violates this permit may be a hazardous substance spill. To report a hazardous substance spill, call DNR's 24-hour HOTLINE at 1-800-943-0003.**

6.2.2 Flow Meters

Flow meters shall be calibrated annually, as per s. NR 218.06, Wis. Adm. Code.

6.2.3 Raw Grit and Screenings

All raw grit and screenings shall be disposed of at a properly licensed solid waste facility or picked up by a licensed waste hauler. If the facility or hauler are located in Wisconsin, then they shall be licensed under chs. NR 500-555, Wis. Adm. Code.

6.2.4 Sludge Management

All sludge management activities shall be conducted in compliance with ch. NR 204 "Domestic Sewage Sludge Management", Wis. Adm. Code.

6.2.5 Prohibited Wastes

Under no circumstances may the introduction of wastes prohibited by s. NR 211.10, Wis. Adm. Code, be allowed into the waste treatment system. Prohibited wastes include those:

- which create a fire or explosion hazard in the treatment work;
- which will cause corrosive structural damage to the treatment work;
- solid or viscous substances in amounts which cause obstructions to the flow in sewers or interference with the proper operation of the treatment work;
- wastewaters at a flow rate or pollutant loading which are excessive over relatively short time periods so as to cause a loss of treatment efficiency; and
- changes in discharge volume or composition from contributing industries which overload the treatment works or cause a loss of treatment efficiency.

6.2.6 Bypass

This condition applies only to bypassing at a sewage treatment facility that is not a scheduled bypass, approved blending as a specific condition of this permit, a sewage treatment facility overflow or a controlled diversion as provided in the sections titled 'Scheduled Bypass', 'Blending' (if approved), 'SSO's and Sewage Treatment Facility Overflows' and 'Controlled Diversions' of this permit. Any other bypass at the sewage treatment facility is prohibited and the Department may take enforcement action against a permittee for such occurrences under s. 283.89, Wis. Stats. The Department may approve a bypass if the permittee demonstrates all the following conditions apply:

- The bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
- There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities or adequate back-up equipment, retention of untreated wastes, reduction of inflow and infiltration, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance. When evaluating feasibility of alternatives, the department may consider factors such as technical achievability, costs and affordability of implementation and risks to public health, the environment and, where the permittee is a municipality, the welfare of the community served; and
- The bypass was reported in accordance with the Noncompliance Reporting section of this permit.

6.2.7 Scheduled Bypass

Whenever the permittee anticipates the need to bypass for purposes of efficient operations and maintenance and the permittee may not meet the conditions for controlled diversions in the 'Controlled Diversions' section of this permit, the permittee shall obtain prior written approval from the Department for the scheduled bypass. A permittee's written request for Department approval of a scheduled bypass shall demonstrate that the conditions for bypassing specified in the above section titled 'Bypass' are met and include the proposed date and reason for the bypass, estimated volume and duration of the bypass, alternatives to bypassing and measures to mitigate environmental harm caused by the bypass. The department may require the permittee to provide public notification for a scheduled bypass if it is

determined there is significant public interest in the proposed action and may recommend mitigation measures to minimize the impact of such bypass.

6.2.8 Controlled Diversions

Controlled diversions are allowed only when necessary for essential maintenance to assure efficient operation. Sewage treatment facilities that have multiple treatment units to treat variable or seasonal loading conditions may shut down redundant treatment units when necessary for efficient operation. The following requirements shall be met during controlled diversions:

- Effluent from the sewage treatment facility shall meet the effluent limitations established in the permit. Wastewater that is diverted around a treatment unit or treatment process during a controlled diversion shall be recombined with wastewater that is not diverted prior to the effluent sampling location and prior to effluent discharge;
- A controlled diversion does not include blending as defined in s. NR 210.03(2e), Wis. Adm. Code, and as may only be approved under s. NR 210.12, Wis. Adm. Code. A controlled diversion may not occur during periods of excessive flow or other abnormal wastewater characteristics;
- A controlled diversion may not result in a wastewater treatment facility overflow; and
- All instances of controlled diversions shall be documented in sewage treatment facility records and such records shall be available to the department on request.

6.2.9 Blending

The Department has determined that blending as defined in s. NR 210.03(2e), Wis. Adm. Code, may occur at this sewage treatment facility. The following requirements shall apply whenever blending operations are in effect:

- Blending may occur temporarily only during wet weather or other high flow conditions when peak wastewater flow to the sewage treatment facility exceeds the maximum design and operating capacity of the biological treatment processes and when necessary to avoid severe property damage to the sewage treatment facility as described in NR 210.12, Wis. Adm. Code.;
- Untreated, or partially treated wastewater that is routed around the biological treatment process, or a portion of a biological treatment process, shall be recombined with the biologically treated wastewater and the combined flow shall be disinfected, if required by this permit, prior to discharge;
- Effluent from the sewage treatment facility shall be monitored to include all wastewater that is discharged from the facility, including those wastewaters that are diverted around the biological treatment process. Final discharged effluent shall meet the effluent limitations for outfalls included in this permit; and
- Blending under this section and the circumstances that lead to blending shall be reported to the Department by telephone or email no later than 24 hours from the time each blending operation ceases at the sewage treatment facility. Permittees shall also report the time, duration and volume of wastewater routed around the biological treatment process on the wastewater Discharge Monitoring Report (DMR) forms.

6.2.10 Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training as required in ch. NR 114, Wis. Adm. Code, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit.

6.2.11 Operator Certification

The wastewater treatment facility shall be under the direct supervision of a state certified operator. In accordance with s. NR 114.53, Wis. Adm. Code, every WPDES permitted treatment plant shall have a designated operator-in-charge holding a current and valid certificate. The designated operator-in-charge shall be certified at the level and in all subclasses of the treatment plant, except laboratory. Treatment plant owners shall notify the department of any changes in the operator-in-charge within 30 days. Note that s. NR 114.52(22), Wis. Adm. Code, lists types of facilities that are excluded from operator certification requirements (i.e. private sewage systems, pretreatment facilities discharging to public sewers, industrial wastewater treatment that consists solely of land disposal, agricultural digesters and concentrated aquatic production facilities with no biological treatment).

6.3 Sewage Collection Systems

6.3.1 Sanitary Sewage Overflows and Sewage Treatment Facility Overflows

6.3.1.1 Overflows Prohibited

Any overflow or discharge of wastewater from the sewage collection system or at the sewage treatment facility, other than from permitted outfalls, is prohibited. The permittee shall provide information on whether any of the following conditions existed when an overflow occurred:

- The sanitary sewer overflow or sewage treatment facility overflow was unavoidable to prevent loss of life, personal injury or severe property damage;
- There were no feasible alternatives to the sanitary sewer overflow or sewage treatment facility overflow such as the use of auxiliary treatment facilities or adequate back-up equipment, retention of untreated wastes, reduction of inflow and infiltration, or preventive maintenance activities;
- The sanitary sewer overflow or the sewage treatment facility overflow was caused by unusual or severe weather-related conditions such as large or successive precipitation events, snowmelt, saturated soil conditions, or severe weather occurring in the area served by the sewage collection system or sewage treatment facility; and
- The sanitary sewer overflow or the sewage treatment facility overflow was unintentional, temporary, and caused by an accident or other factors beyond the reasonable control of the permittee.

6.3.1.2 Permittee Response to Overflows

Whenever a sanitary sewer overflow or sewage treatment facility overflow occurs, the permittee shall take all feasible steps to control or limit the volume of untreated or partially treated wastewater discharged, and terminate the discharge as soon as practicable. Remedial actions, including those in s. NR 210.21 (3), Wis. Adm. Code, shall be implemented consistent with an emergency response plan developed under the CMOM program.

6.3.1.3 Permittee Reporting

Permittees shall report all sanitary sewer overflows and sewage treatment overflows as follows:

- The permittee shall notify the department by telephone, fax or email as soon as practicable, but no later than 24 hours from the time the permittee becomes aware of the overflow;
- The permittee shall, no later than five days from the time the permittee becomes aware of the overflow, provide to the department the information identified in this paragraph using department form number 3400-184. If an overflow lasts for more than five days, an initial report shall be submitted within 5 days as required in this paragraph and an updated report submitted following cessation of the overflow. At a minimum, the following information shall be included in the report:
    - The date and location of the overflow;
    - The surface water to which the discharge occurred, if any;
    - The duration of the overflow and an estimate of the volume of the overflow;

- A description of the sewer system or treatment facility component from which the discharge occurred such as manhole, lift station, constructed overflow pipe, or crack or other opening in a pipe;
- The estimated date and time when the overflow began and stopped or will be stopped;
- The cause or suspected cause of the overflow including, if appropriate, precipitation, runoff conditions, areas of flooding, soil moisture and other relevant information;
- Steps taken or planned to reduce, eliminate and prevent reoccurrence of the overflow and a schedule of major milestones for those steps;
- A description of the actual or potential for human exposure and contact with the wastewater from the overflow;
- Steps taken or planned to mitigate the impacts of the overflow and a schedule of major milestones for those steps;
- To the extent known at the time of reporting, the number and location of building backups caused by excessive flow or other hydraulic constraints in the sewage collection system that occurred concurrently with the sanitary sewer overflow and that were within the same area of the sewage collection system as the sanitary sewer overflow; and
- The reason the overflow occurred or explanation of other contributing circumstances that resulted in the overflow event. This includes any information available including whether the overflow was unavoidable to prevent loss of life, personal injury, or severe property damage and whether there were feasible alternatives to the overflow.

NOTE: A copy of form 3400-184 for reporting sanitary sewer overflows and sewage treatment facility overflows may be obtained from the department or accessed on the department's web site at http://dnr.wi.gov/topic/wastewater/SSOreport.html. As indicated on the form, additional information may be submitted to supplement the information required by the form.

- The permittee shall identify each specific location and each day on which a sanitary sewer overflow or sewage treatment facility overflow occurs as a discrete sanitary sewer overflow or sewage treatment facility overflow occurrence. An occurrence may be more than one day if the circumstances causing the sanitary sewer overflow or sewage treatment facility overflow results in a discharge duration of greater than 24 hours. If there is a stop and restart of the overflow at the same location within 24 hours and the overflow is caused by the same circumstance, it may be reported as one occurrence. Sanitary sewer overflow occurrences at a specific location that are separated by more than 24 hours shall be reported as separate occurrences; and
- A permittee that is required to submit wastewater discharge monitoring reports under s. NR 205.07 (1) (r), Wis. Adm. Code, shall also report all sanitary sewer overflows and sewage treatment facility overflows on that report.

6.3.1.4 Public Notification

The permittee shall notify the public of any sanitary sewer and sewage treatment facility overflows consistent with its emergency response plan required under the CMOM (Capacity, Management, Operation and Maintenance) section of this permit and s. NR 210.23 (4) (f), Wis. Adm. Code. Such public notification shall occur promptly following any overflow event using the most effective and efficient communications available in the community. At minimum, a daily newspaper of general circulation in the county(s) and municipality whose waters may be affected by the overflow shall be notified by written or electronic communication.

6.3.2 Capacity, Management, Operation and Maintenance (CMOM) Program

- The permittee shall have written documentation of the Capacity, Management, Operation and Maintenance (CMOM) program components in accordance with s. NR 210.23(4), Wis. Adm. Code. Such documentation shall be available for Department review upon request. The Department may request that the permittee provide this documentation or prepare a summary of the permittee's CMOM program at the time of application for reissuance of the WPDES permit.

- The permittee shall implement a CMOM program in accordance with s. NR 210.23, Wis. Adm. Code.
- The permittee shall at least annually conduct a self-audit of activities conducted under the permittee's CMOM program to ensure CMOM components are being implemented as necessary to meet the general standards of s. NR 210.23(3), Wis. Adm. Code.

6.3.3 Sewer Cleaning Debris and Materials

All debris and material removed from cleaning sanitary sewers shall be managed to prevent nuisances, run-off, ground infiltration or prohibited discharges.

- Debris and solid waste shall be dewatered, dried and then disposed of at a licensed solid waste facility.
- Liquid waste from the cleaning and dewatering operations shall be collected and disposed of at a permitted wastewater treatment facility.
- Combination waste including liquid waste along with debris and solid waste may be disposed of at a licensed solid waste facility or wastewater treatment facility willing to accept the waste.

6.4 Surface Water Requirements

6.4.1 Permittee-Determined Limit of Quantitation Incorporated into this Permit

For pollutants with water quality-based effluent limits below the Limit of Quantitation (LOQ) in this permit, the LOQ calculated by the permittee and reported on the Discharge Monitoring Reports (DMRs) is incorporated by reference into this permit. The LOQ shall be reported on the DMRs, shall be the lowest quantifiable level practicable, and shall be no greater than the minimum level (ML) specified in or approved under 40 CFR Part 136 for the pollutant at the time this permit was issued, unless this permit specifies a higher LOQ.

6.4.2 Appropriate Formulas for Effluent Calculations

The permittee shall use the following formulas for calculating effluent results to determine compliance with average concentration limits and mass limits and total load limits:

Weekly/Monthly/Six-Month/Annual Average Concentration = the sum of all daily results for that week/month/six-month/year, divided by the number of results during that time period. [Note: When a six-month average effluent limit is specified for Total Phosphorus the applicable periods are May through October and November through April, except in cases of Water Quality Trading, wherein the applicable periods are January through June and July through December.]

Weekly Average Mass Discharge (lbs/day): Daily mass = daily concentration (mg/L) x daily flow (MGD) x 8.34, then average the daily mass values for the week.

Monthly Average Mass Discharge (lbs/day): Daily mass = daily concentration (mg/L) x daily flow (MGD) x 8.34, then average the daily mass values for the month.

Six-Month Average Mass Discharge (lbs/day): Daily mass = daily concentration (mg/L) x daily flow (MGD) x 8.34, then average the daily mass values for the six-month period. [Note: When a six-month average effluent limit is specified for Total Phosphorus the applicable periods are May through October and November through April.]

Annual Average Mass Discharge (lbs/day): Daily mass = daily concentration (mg/L) x daily flow (MGD) x 8.34, then average the daily mass values for the entire year.

Total Monthly Discharge: = monthly average concentration (mg/L) x total flow for the month (MG/month) x 8.34.

Total Annual Discharge: = sum of total monthly discharges for the calendar year.

12-Month Rolling Sum of Total Monthly Discharge: = the sum of the most recent 12 consecutive months of Total Monthly Discharges.

6.4.3 Effluent Temperature Requirements

Weekly Average Temperature – If temperature limits are included in this permit, Weekly Average Temperature shall be calculated as the sum of all daily maximum results for that week divided by the number of daily maximum results during that time period.

Cold Shock Standard – Water temperatures of the discharge shall be controlled in a manner as to protect fish and aquatic life uses from the deleterious effects of cold shock pursuant to Wis. Adm. Code, s. NR 102.28. 'Cold Shock' means exposure of aquatic organisms to a rapid decrease in temperature and a sustained exposure to low temperature that induces abnormal behavior or physiological performance and may lead to death.

Rate of Temperature Change Standard – Temperature of a water of the state or discharge to a water of the state may not be artificially raised or lowered at such a rate that it causes detrimental health or reproductive effects to fish or aquatic life of the water of the state pursuant to Wis. Adm. Code, s. NR 102.29.

6.4.4 Visible Foam or Floating Solids

There shall be no discharge of floating solids or visible foam in other than trace amounts.

6.4.5 Surface Water Uses and Criteria

In accordance with NR 102.04, Wis. Adm. Code, surface water uses and criteria are established to govern water management decisions. Practices attributable to municipal, industrial, commercial, domestic, agricultural, land development or other activities shall be controlled so that all surface waters including the mixing zone meet the following conditions at all times and under all flow and water level conditions:

a) Substances that will cause objectionable deposits on the shore or in the bed of a body of water, shall not be present in such amounts as to interfere with public rights in waters of the state.

b) Floating or submerged debris, oil, scum or other material shall not be present in such amounts as to interfere with public rights in waters of the state.

c) Materials producing color, odor, taste or unsightliness shall not be present in such amounts as to interfere with public rights in waters of the state.

d) Substances in concentrations or in combinations which are toxic or harmful to humans shall not be present in amounts found to be of public health significance, nor shall substances be present in amounts which are acutely harmful to animal, plant or aquatic life.

6.4.6 Percent Removal

During any 30 consecutive days, the average effluent concentrations of BOD_5 and of total suspended solids shall not exceed 15% of the average influent concentrations, respectively. This requirement does not apply to removal of total suspended solids if the permittee operates a lagoon system and has received a variance for suspended solids granted under NR 210.07(2), Wis. Adm. Code.

6.4.7 *E. coli*

The monthly limit for *E. coli* shall be expressed as a geometric mean. In calculating the geometric mean, a value of 1 is used for any result of 0.

6.4.8 Seasonal Disinfection

Disinfection shall be provided from May 1 through September 30 of each year. Monitoring requirements and the limitations for *E. coli* apply only during the period in which disinfection is required. Whenever chlorine is used for disinfection or other uses, the limitations and monitoring requirements for residual chlorine shall apply. A dechlorination process shall be in operation whenever chlorine is used.

6.4.9 Total Residual Chlorine Requirements

When total residual chlorine (TRC) limit(s) or monitoring are included in a permit, the permittee shall comply with the following conditions:

a) The permittee shall perform TRC monitoring required in this permit using an approved method from ch. NR 219, Wis. Adm. Code, which produces a detection limit that is less than or equal to the permitted limit or produces the lowest economically feasible detection limit if the approved methods cannot meet the permit limit. If the facility cannot achieve a detection limit less than or equal to the permit limit using the approved methods, contact the laboratory accreditation program for guidance.

b) The permittee shall determine the limit of detection (LOD) as specified in s. NR 149.48 (2)(b), Wis. Adm. Code, or the permittee shall contact the laboratory accreditation program for information on how to determine a verified detection limit allowed just for TRC. If the verified detection limit is determined using the special procedure, then the LOD and limit of quantitation (LOQ) shall be set to be equal to the verified detection limit determined from this special procedure.

c) The permittee shall determine compliance with the TRC limit(s) as follows:

1. If the facility determines a statistical LOD as specified in s. NR 149.48 (2)(b), Wis. Adm. Code, and the measured TRC levels are less than the LOD, the permittee shall report the results as less than the LOD (<LOD). For this situation the LOQ shall be established at 3.33 times the LOD or at the concentration of the lowest standard in the calibration curve. TRC levels that are < LOD are in compliance with the TRC limit.

2. If the facility determines the verified detection limit using the laboratory accreditation program special procedure, this verified detection limit shall be reported as the LOD and LOQ. If the measured TRC levels are less than the LOD, the permittee shall report the results as < LOD. TRC levels that are < LOD are in compliance with the TRC limit.

3. If the facility determines the statistical LOD as specified in s. NR 149.48 (2)(b), Wis. Adm. Code, and the measured TRC levels are greater than the statistical LOD but less than the LOQ, TRC levels are in compliance with the TRC limit - except when the measured levels are consistently reported between the LOD and LOQ. When the measured TRC levels are consistently reported between the LOD and LOQ, the facility shall take action to determine the reliability of detected results (such as resampling and/or re-calculating dosages) and shall adjust the chemical feed system if necessary to reduce the chances of detecting levels between the statistical LOD and LOQ.

4. If the facility determines the statistical LOQ as specified in s. NR 149.48 (2)(b), Wis. Adm. Code, or determines the verified detection limit using the laboratory accreditation program special procedure, TRC measured levels that are greater than the statistical LOQ and the TRC limit, are not in compliance with the TRC limit. The permittee shall report the level as a limit exceedance.

5. If the facility determines the statistical LOD as specified in s. NR 149.48 (2)(b), Wis. Adm. Code, and the measured level is < LOD, then a "0" (zero) value may be substituted for any test result less than the statistical LOD when calculating the average or mass discharge values. Calculated values shall then be compared directly to the average or mass limits to determine compliance.

6. If the facility determines the verified detection limit using the laboratory accreditation program special procedure and the measured level is < LOD (set equal to the verified detection limit), then a "0" (zero) value may be substituted for any test result less than the LOD when calculating the average or mass discharge values. Calculated values shall then be compared directly to the average or mass limits to determine compliance.

6.4.10 Whole Effluent Toxicity (WET) Monitoring Requirements

In order to determine the potential impact of the discharge on aquatic organisms, static-renewal toxicity tests shall be performed on the effluent in accordance with the procedures specified in the *"State of Wisconsin Aquatic Life Toxicity Testing Methods Manual, 2nd Edition" (PUB-WT-797*, November 2004) as required by NR 219.04, Table A, Wis. Adm. Code). All of the WET tests required in this permit, including any required retests, shall be conducted on the *Ceriodaphnia dubia* and fathead minnow species. Receiving water samples shall not be collected from any point in contact with the permittee's mixing zone and every attempt shall be made to avoid contact with any other discharge's mixing zone.

6.4.11 Whole Effluent Toxicity (WET) Identification and Reduction

Within 60 days of a retest which showed positive results, the permittee shall submit a written report to the Biomonitoring Coordinator, Bureau of Water Quality, 101 S. Webster St., PO Box 7921, Madison, WI 53707-7921, which details the following:

- A description of actions the permittee has taken or will take to remove toxicity and to prevent the recurrence of toxicity;
- A description of toxicity reduction evaluation (TRE) investigations that have been or will be done to identify potential sources of toxicity, including the following actions:
    a) Evaluate the performance of the treatment system to identify deficiencies contributing to effluent toxicity (e.g., operational problems, chemical additives, incomplete treatment)
    b) Identify the compound(s) causing toxicity. Conduct toxicity screening tests on the effluent at a minimum of once per month for six months to determine if toxicity recurs. Screening tests are WET tests using fewer effluent concentrations conducted on the most sensitive species. If any of the screening tests contain toxicity, conduct a toxicity identification evaluation (TIE) to determine the cause. TIE methods are available from USEPA "Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures (EPA/600/6-91/003) and "Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I" (EPA/600/6-91/005F).
    c) Trace the compound(s) causing toxicity to their sources (e.g., industrial, commercial, domestic)
    d) Evaluate, select, and implement methods or technologies to control effluent toxicity (e.g., in-plant or pretreatment controls, source reduction or removal)
- Where corrective actions including a TRE have not been completed, an expeditious schedule under which corrective actions will be implemented;
- If no actions have been taken, the reason for not taking action.

The permittee may also request approval from the Department to postpone additional retests in order to investigate the source(s) of toxicity. Postponed retests must be completed after toxicity is believed to have been removed.

6.4.12 PFOS and PFOA Requirements

The laboratory performing the analysis on any samples shall be certified for the applicable PFAS compounds in the aqueous matrix by the Wisconsin Laboratory Certification Program established under s. 299.11, Wis. Stats., in accordance with s. NR 149.41, Wis. Adm. Code. If the EPA Office of Water publishes a 1600 series isotope dilution method for the analysis of PFAS in wastewater, the department recommends the use of the EPA method.
The Department may reject any sample results if results are produced by a laboratory that is not in compliance with certification requirements under ch. NR 149, Wis. Adm. Code.

6.5 Pretreatment Program Requirements

The permittee is required to operate an industrial pretreatment program as described in the program initially approved by the Department of Natural Resources including any subsequent program modifications approved by the Department, and including commitments to program implementation activities provided in the permittee's annual

pretreatment program report, and that complies with the requirements set forth in 40 CFR Part 403 and ch. NR 211, Wis. Adm. Code. To ensure that the program is operated in accordance with these requirements, the following general conditions and requirements are hereby established:

6.5.1 Inventories

The permittee shall implement methods to maintain a current inventory of the general character and volume of wastewater that industrial users discharge to the treatment works and shall provide an updated industrial user listing annually and report any changes in the listing to the Department by March 31 of each year as part of the annual pretreatment program report required herein.

6.5.2 Regulation of Industrial Users

6.5.2.1 Limitations for Industrial Users:

The permittee shall develop, maintain, enforce and revise as necessary local limits to implement the general and specific prohibitions of the state and federal General Pretreatment Regulations.

6.5.2.2 Control Documents for Industrial Users (IUs)

The permittee shall control the discharge from each significant industrial user through individual discharge permits as required by s. NR 211.235, Wis. Adm. Code and in accordance with the approved pretreatment program procedures and the permittee's sewer use ordinance. The discharge permits shall be modified in a timely manner during the stated term of the discharge permits according to the sewer use ordinance as conditions warrant. The discharge permits shall include at a minimum the elements found in s. NR 211.235(1), Wis. Adm. Code and references to the approved pretreatment program procedures and the sewer use ordinance.

6.5.2.3 Review of Industrial User Reports, Inspections and Compliance Monitoring

The permittee shall require the submission of, receive, and review self-monitoring reports and other notices from industrial users in accordance with the approved pretreatment program procedures. The permittee shall randomly sample and analyze industrial user discharges and conduct surveillance activities to determine independent of information supplied by the industrial users, whether the industrial users are in compliance with pretreatment standards and requirements. The inspections and monitoring shall also be conducted to maintain accurate knowledge of local industrial processes, including changes in the discharge, pretreatment equipment operation, spill prevention control plans, slug control plans, and implementation of solvent management plans.

The permittee shall inspect and sample the discharge from each significant industrial user as specified in the permittee's approved pretreatment program or as specified in NR 211.235(3). The permittee shall evaluate whether industrial users identified as significant need a slug control plan according to the requirements of NR 211.235(4). If a slug control plan is needed, the plan shall contain at a minimum the elements specified in s. NR 211.235(4)(b), Wis. Adm. Code.

6.5.2.4 Enforcement and Industrial User Compliance Evaluation & Violation Reports

The permittee shall enforce the industrial pretreatment requirements including the industrial user discharge limitations of the permittee's sewer use ordinance. The permittee shall investigate instances of noncompliance by collecting and analyzing samples and collecting other information with sufficient care to produce evidence admissible in enforcement proceedings or in judicial actions. Investigation and response to instances of noncompliance shall be in accordance with the permittee's sewer use ordinance and approved Enforcement Response Plan.

The permittee shall make a semiannual report on forms provided or approved by the Department. The semiannual report shall include an analysis of industrial user significant noncompliance (i.e. the Industrial User Compliance Evaluation, also known as the SNC Analysis) as outlined in s.NR 211.23(1)(j), Wis. Adm. Code, and a summary of the permittee's response to all industrial noncompliance (i.e. the Industrial User Violation Report). The Industrial User Compliance Evaluation Report shall include monitoring results received from industrial users pursuant to s. NR 211.15(1)-(5), Wis. Adm. Code. The Industrial User Violation Report shall include copies of all notices of

noncompliance, notices of violation and other enforcement correspondence sent by the permittee to industrial users, together with the industrial user's response. The Industrial User Compliance Evaluation and Violation Reports for the period January through June shall be provided to the Department by September 30 of each year and for the period July through December shall be provided to the Department by March 31 of the succeeding year, unless alternate submittal dates are approved.

6.5.2.5 Publication of Violations

The permittee shall publish a list of industrial users that have significantly violated the municipal sewer use ordinance during the calendar year, in the largest daily newspaper in the area by March 31 of the following year pursuant to s. NR 211.23(1)(j), Wis. Adm. Code. A copy of the newspaper publication shall be provided as part of the annual pretreatment report specified herein.

6.5.2.6 Multijurisdictional Agreements

The permittee shall establish agreements with all contributing jurisdictions as necessary to ensure compliance with pretreatment standards and requirements by all industrial users discharging to the permittee's wastewater treatment system. Any such agreement shall identify who will be responsible for maintaining the industrial user inventory, issuance of industrial user control mechanisms, inspections and sampling, pretreatment program implementation, and enforcement.

6.5.3 Annual Pretreatment Program Report

The permittee shall evaluate the pretreatment program, and submit the Pretreatment Program Report to the Department on forms provided or approved by the Department by March 31 annually, unless an alternate submittal date is approved. The report shall include a brief summary of the work performed during the preceding calendar year, including the numbers of discharge permits issued and in effect, pollution prevention activities, number of inspections and monitoring surveys conducted, budget and personnel assigned to the program, a general discussion of program progress in meeting the objectives of the permittee's pretreatment program together with summary comments and recommendations.

6.5.4 Pretreatment Program Modifications

- Future Modifications: The permittee shall within one year of any revisions to federal or state General Pretreatment Regulations submit an application to the Department in duplicate to modify and update its approved pretreatment program to incorporate such regulatory changes as applicable to the permittee. Additionally, the Department or the permittee may request an application for program modification at any time where necessary to improve program effectiveness based on program experience to date.
- Modifications Subject to Department Approval: The permittee shall submit all proposed pretreatment program modifications to the Department for determination of significance and opportunity for comment in accordance with the requirements and conditions of s. NR 211.27, Wis. Adm. Code. Any substantial proposed program modification shall be subject to Department public noticing and formal approval prior to implementation. A substantial program modification includes, but is not limited to, changes in enabling legal authority to administer and enforce pretreatment conditions and requirements; significant changes in program administrative or operational procedures; significant reductions in monitoring frequencies; significant reductions in program resources including personnel commitments, equipment, and funding levels; changes (including any relaxation) in the local limitations for substances enforced and applied to users of the sewerage treatment works; changes in treatment works sludge disposal or management practices which impact the pretreatment program; or program modifications which increase pollutant loadings to the treatment works. The Department shall use the procedures outlined in s. NR 211.30, Wis. Adm. Code for review and approval/denial of proposed pretreatment program modifications. The permittee shall comply with local public participation requirements when implementing the pretreatment program.

6.5.5 Program Resources

The permittee shall have sufficient resources and qualified personnel to carry out the pretreatment program responsibilities as listed in ss. NR 211.22 and NR 211.23, Wis. Adm. Code.

6.6 Land Application Requirements

6.6.1 Sludge Management Program Standards And Requirements Based Upon Federally Promulgated Regulations

In the event that new federal sewage sludge standards or regulations are promulgated, the permittee shall comply with the new sewage sludge requirements by the dates established in the regulations, if required by federal law, even if the permit has not yet been modified to incorporate the new federal regulations.

6.6.2 General Sludge Management Information

The General Sludge Management Form 3400-48 shall be completed and submitted prior to any significant sludge management changes.

6.6.3 Sludge Samples

All sludge samples shall be collected at a point and in a manner which will yield sample results which are representative of the sludge being tested, and collected at the time which is appropriate for the specific test.

6.6.4 Land Application Characteristic Report

Each report shall consist of a Characteristic Form 3400-49 and Lab Report. The Characteristic Report Form 3400-49 shall be submitted electronically by January 31 following each year of analysis.

Following submittal of the electronic Characteristic Report Form 3400-49, this form shall be certified electronically via the 'eReport Certify' page by a responsible executive or municipal officer, manager, partner or proprietor as specified in s. 283.37(3), Wis. Stats., or a duly authorized representative of the officer, manager, partner or proprietor that has been delegated signature authority pursuant to s. NR 205.07(1)(g)2, Wis. Adm. Code. The 'eReport Certify' page certifies that the electronic report is true, accurate and complete. The Lab Report must be sent directly to the facility's DNR sludge representative or basin engineer unless approval for not submitting the lab reports has been given.

The permittee shall use the following convention when reporting sludge monitoring results: Pollutant concentrations less than the limit of detection shall be reported as < (less than) the value of the limit of detection. For example, if a substance is not detected at a detection limit of 1.0 mg/kg, report the pollutant concentration as < 1.0 mg/kg .

All results shall be reported on a dry weight basis.

6.6.5 Calculation of Water Extractable Phosphorus

When sludge analysis for Water Extractable Phosphorus is required by this permit, the permittee shall use the following formula to calculate and report Water Extractable Phosphorus:
Water Extractable Phosphorus (% of Total P) =
[Water Extractable Phosphorus (mg/kg, dry wt) ÷ Total Phosphorus (mg/kg, dry wt)] x 100

6.6.6 Monitoring and Calculating PCB Concentrations in Sludge

When sludge analysis for "PCB, Total Dry Wt" is required by this permit, the PCB concentration in the sludge shall be determined using either congener-specific analysis or Aroclor analysis. The permittee may decide which of these analyses is performed. Analyses shall be performed in accordance with the following provisions and Table EM in s. NR 219.04, Wis. Adm. Code:

- If congener-specific analysis is employed: All PCB congeners shall be delineated. Non-detects shall be treated as zero. The values that are between the limit of detection (LOD) and the limit of quantitation shall be used when calculating the total value of all congeners. All results shall be added together and the total PCB concentration by dry weight reported.
- If Aroclor analysis is employed, reporting protocols, consistent with s. NR 106.07(6)(e), should be as follows: If all Aroclors are less than the LOD, then the Total PCB Dry Wt result should be reported as less than the highest LOD. If a single Aroclor is detected, then that is what should be reported for the Total PCB result. If multiple Aroclors are detected, they should be summed and reported as Total PCBs. If the LOD cannot be achieved after using the appropriate clean up techniques, a reporting limit that is achievable for the Aroclors or each congener for the sample shall be determined. This reporting limit shall be reported and qualified indicating the presence of an interference.

6.6.7 Annual Land Application Report

Land Application Report Form 3400-55 shall be submitted electronically by January 31, each year whether or not non-exceptional quality sludge is land applied. Non-exceptional quality sludge is defined in s. NR 204.07(4), Wis. Adm. Code. Following submittal of the electronic Annual Land Application Report Form 3400-55, this form shall be certified electronically via the 'eReport Certify' page by a responsible executive or municipal officer, manager, partner or proprietor as specified in s. 283.37(3), Wis. Stats., or a duly authorized representative of the officer, manager, partner or proprietor that has been delegated signature authority pursuant to s. NR 205.07(1)(g)2, Wis. Adm. Code. The 'eReport Certify' page certifies that the electronic report form is true, accurate and complete.

6.6.8 Other Methods of Disposal or Distribution Report

The permittee shall submit electronically the Other Methods of Disposal or Distribution Report Form 3400-52 by January 31, each year whether or not sludge is hauled, landfilled, incinerated, or exceptional quality sludge is distributed or land applied. Following submittal of the electronic Report Form 3400-52, this form shall be certified electronically via the 'eReport Certify' page by a responsible executive or municipal officer, manager, partner or proprietor as specified in s. 283.37(3), Wis. Stats., or a duly authorized representative of the officer, manager, partner or proprietor that has been delegated signature authority pursuant to s. NR 205.07(1)(g)2, Wis. Adm. Code. The 'eReport Certify' page certifies that the electronic report form is true, accurate and complete.

6.6.9 Approval to Land Apply

Bulk non-exceptional quality sludge as defined in s. NR 204.07(4), Wis. Adm. Code, may not be applied to land without a written approval letter or Form 3400-122 from the Department unless the Permittee has obtained permission from the Department to self-approve sites in accordance with s. NR 204.06(6), Wis. Adm. Code. Analysis of sludge characteristics is required prior to land application. Application on frozen or snow-covered ground is restricted to the extent specified in s. NR 204.07(3)(l), Wis. Adm. Code.

6.6.10 Soil Analysis Requirements

Each site requested for approval for land application must have the soil tested prior to use. Each approved site used for land application must subsequently be soil tested such that there is at least one valid soil test in the four years prior to land application. All soil sampling and submittal of information to the testing laboratory shall be done in accordance with UW Extension Bulletin A-2100. The testing shall be done by the UW Soils Lab in Madison or Marshfield, WI or at a lab approved by UW. The test results including the crop recommendations shall be submitted to the DNR contact listed for this permit, as they are available. Application rates shall be determined based on the crop nitrogen recommendations and with consideration for other sources of nitrogen applied to the site.

6.6.11 Land Application Site Evaluation

For non-exceptional quality sludge, as defined in s. NR 204.07(4), Wis. Adm. Code, a Land Application Site Request Form 3400-053 shall be submitted to the Department for the proposed land application site. The Department will

evaluate the proposed site for acceptability and will either approve or deny use of the proposed site. The permittee may obtain permission to approve their own sites in accordance with s. NR 204.06(6), Wis. Adm. Code.

6.6.12 Class B Sludge: Fecal Coliform Limitation

Compliance with the fecal coliform limitation for Class B sludge shall be demonstrated by calculating the geometric mean of at least 7 separate samples. (Note that a Total Solids analysis must be done on each sample). The geometric mean shall be less than 2,000,000 MPN or CFU/g TS. Calculation of the geometric mean can be done using one of the following 2 methods.

Method 1:

Geometric Mean = $(X_1 \times X_2 \times X_3 \ldots \times X_n)^{1/n}$

Where X = Coliform Density value of the sludge sample, and where n = number of samples (at least 7)

Method 2:

Geometric Mean = $\text{antilog}[(X_1 + X_2 + X_3 \ldots + X_n) \div n]$

Where X = $\log_{10}$ of Coliform Density value of the sludge sample, and where n = number of samples (at least 7)

Example for Method 2

Sample Number	Coliform Density of Sludge Sample	$\log_{10}$
1	6.0×10^5	5.78
2	4.2×10^6	6.62
3	1.6×10^6	6.20
4	9.0×10^5	5.95
5	4.0×10^5	5.60
6	1.0×10^6	6.00
7	5.1×10^5	5.71

The geometric mean for the seven samples is determined by averaging the $\log_{10}$ values of the coliform density and taking the antilog of that value.

$(5.78 + 6.62 + 6.20 + 5.95 + 5.60 + 6.00 + 5.71) \div 7 = 5.98$

The antilog of $5.98 = 9.5 \times 10^5$

6.6.13 Class B Sludge: Anaerobic Digestion

Treat the sludge in the absence of air for a specific mean cell residence time at a specific temperature. Values for the mean cell residence time and temperature shall be between 15 days at 35° C to 55° C and 60 days at 20° C. Straight-line interpolation to calculate mean cell residence time is allowable when the temperature falls between 35° C and 20° C.

6.6.14 Vector Control: Volatile Solids Reduction

The mass of volatile solids in the sludge shall be reduced by a minimum of 38% between the time the sludge enters the digestion process and the time it either exits the digester or a storage facility. For calculation of volatile solids reduction, the permittee shall use the Van Kleeck equation or one of the other methods described in "Determination of Volatile Solids Reduction in Digestion" by J.B. Farrell, which is Appendix C of EPA's *Control of Pathogens in Municipal Wastewater Sludge* (EPA/625/R-92/013). The Van Kleeck equation is:

$$VSR\% = \frac{VS_{IN} - VS_{OUT}}{VS_{IN} - (VS_{OUT} \times VS_{IN})} \times 100$$

Where: VS_{IN} = Volatile Solids in Feed Sludge (g VS/g TS)

VS_{OUT} = Volatile Solids in Final Sludge (g VS/g TS)

VSR% = Volatile Solids Reduction, (Percent)

6.6.15 Class B Sludge - Vector Control: Injection

No significant amount of the sewage sludge shall be present on the land surface within one hour after the sludge is injected.

6.6.16 Class B Sludge - Vector Control: Incorporation

Class B sludge shall be incorporated within 6 hours of surface application, or as approved by the Department.

6.6.17 Landfilling of Sludge

General: Sewage sludge may not be disposed of in a municipal solid waste landfill unless the landfill meets the requirements of chs. NR 500 to 536, Wis. Adm. Code, and is an approved facility as defined in s. 289.01(3), Wis. Stats. Any facility accepting sewage sludge shall be approved by the Department in writing to accept sewage sludge. Disposal of sewage sludge in a municipal solid waste landfill shall be in accordance with ss. NR 506.13 and 506.14. Sewage sludge may not be disposed of in a surface disposal unit as defined in s. NR 204.03(62).

Approval: The permittee shall obtain approval from the Department prior to the disposal of sludge at a Wisconsin licensed landfill.

6.6.18 Sludge Landfilling Reports

The permittee shall report the volume of sludge disposed of at any landfill facility on Form 3400-52. The permittee shall include the name and address of the landfill, the Department license number or other state's designation or license number for all landfills used during the report period and a letter of acceptability from the landfill owner. In addition, any permittee utilizing landfills as a disposal method shall submit to the Department any test results used to indicate acceptability of the sludge at a landfill. Form 3400-52 shall be submitted annually by January 31, each year whether or not sludge is landfilled.

6.6.19 Sludge Hauling

The permittee is required to submit Form 3400-52 to the Department. If sludge is hauled to another facility, information shall include the quantity of sludge hauled, the name, address, phone number, contact person, and permit number of the receiving facility. Form 3400-52 shall be submitted annually by January 31 each year whether or not sludge is hauled.

7 Summary of Reports Due

FOR INFORMATIONAL PURPOSES ONLY

Description	Date	Page
Install Continuous Flow Recording Device -Submit Facility Plan	December 31, 2025	24
Install Continuous Flow Recording Device -Final Plans and Specifications	December 31, 2027	24
Install Continuous Flow Recording Device -Complete Installation	December 31, 2029	24
Total Phosphorus - TMDL Derived WQBELs for TP -Submit Facility Plan	April 30, 2025	24
Total Phosphorus - TMDL Derived WQBELs for TP -Progress Report on Plans & Specifications	September 30, 2025	24
Total Phosphorus - TMDL Derived WQBELs for TP -Final Plans and Specifications	March 31, 2026	24
Total Phosphorus - TMDL Derived WQBELs for TP -Treatment Plant Upgrade to Meet WQBELs	September 30, 2026	24
Total Phosphorus - TMDL Derived WQBELs for TP -Construction Upgrade Progress Report #1	December 31, 2026	24
Total Phosphorus - TMDL Derived WQBELs for TP -Complete Construction	March 31, 2027	25
Total Phosphorus - TMDL Derived WQBELs for TP -Achieve Compliance	April 1, 2027	25
PFOS/PFOA Minimization Plan Determination of Need -Report on Effluent Discharge	December 31, 2025	25
PFOS/PFOA Minimization Plan Determination of Need -Report on Effluent Discharge and Evaluation of Need	December 31, 2026	25
Sludge Management Plan -Sludge Management Plan Submittal	December 31, 2025	26
Compliance Maintenance Annual Reports (CMAR)	by June 30, each year	28
Industrial User Compliance Evaluation and Violation Reports	Semiannual	39
Pretreatment Program Report	Annually	39
General Sludge Management Form 3400-48	prior to any significant sludge management changes	40
Characteristic Form 3400-49 and Lab Report	by January 31 following each year of analysis	40
Land Application Report Form 3400-55	by January 31, each year whether or not non-exceptional quality sludge is land applied	41

Description	Date	Page
Other Methods of Disposal or Distribution Report Form 3400-52	by January 31, each year whether or not sludge is hauled, landfilled, incinerated, or exceptional quality sludge is distributed or land applied	41
Wastewater Discharge Monitoring Report	no later than the date indicated on the form	27

Report forms shall be submitted electronically in accordance with the reporting requirements herein. Any facility plans or plans and specifications for municipal, industrial, industrial pretreatment and non-industrial wastewater systems shall be submitted to the Bureau of Water Quality, P.O. Box 7921, Madison, WI 53707-7921. All other submittals required by this permit shall be submitted to:
Northeast Region - Oshkosh, 625 E Cty Rd Y, Suite 700, Oshkosh, WI 54901

APPENDIX C

Alternate Compliance Schedule

McMAHON
ENGINEERS ARCHITECTS

November 18, 2024

Mr. Trevor Moen, Wastewater Engineer
Wisconsin Dept of Natural Resources
625 E County Road Y, Suite 700
Oshkosh, WI 54901

Re: Neenah-Menasha Sewerage Commission
Draft WPDES Permit
N0008-09-21-00527.02

Dear Trevor,

The following is on behalf of the Neenah-Menasha Sewerage Commission (NMSC) in regards to their draft WPDES Permit that was public noticed on November 4, 2024.

As the Wisconsin Department of Natural Resources (DNR) is aware, the NMSC has been working with a major industry within their sewer service area. Organic loadings from the industry have increased substantially since the last Plant Rehabilitation Project. NMSC was in discussion with the industry as to whether NMSC would expand the Wastewater Treatment Facility (WWTF) to accommodate the loadings or if the industry would install a pretreatment system.

If NMSC expanded the WWTF, the concept discussed with the DNR was that a single project increasing the organic capacity of the WWTF and addressing the new total phosphorus (P) limits would be implemented. This discussion has not only delayed the Permit reissuance, but it also delayed the P removal project as well. The industry has recently decided to install a pretreatment system.

NMSC will not be able to comply with the proposed compliance dates for Total P in the public noticed WPDES Permit. NMSC's current approach for meeting the new P limits is to install tertiary filters over the existing chlorine contact chamber and install a new UV Disinfection system.

Attached are suggested dates for the Compliance Schedule for Total P. The proposed compliance schedule includes a 2.5-year construction duration due to the requirements of project staging. The following will need to be in place before the filters can be installed above the chlorine contact chambers.

- Secondary Effluent Pump Station
- UV Disinfection System
- Back-Up Power

Feel free to contact me with any questions you may have.

Respectfully,

McMahon Associates, Inc.

Chad T. Olsen, P.E., BCEES
Vice President / Senior Water & Wastewater Project Manager

CTO:jlh

Attachment: Permit Compliance Schedule Proposed Dates

cc: Mr. Dale Youngquist – Neenah Menasha Sewerage Commission
Mr. Mark Stanek – Wisconsin Department of Natural Resources
Mr. Paul Much – Midwest Contract Operations

5.1 Total Phosphorus - TMDL Derived WQBELs for TP

The permittee shall comply with the TMDL (Total Maximum Daily Load) derived effluent limitations for TP as specified.

Required Action	Due Date
Submit Facility Plan: The permittee shall submit a Facility Plan per s. NR 110.09, Wis. Adm. Code for complying with the final TMDL derived effluent limitations for total phosphorus.	~~04/30/2025~~ 9/30/2025
Progress Report on Plans & Specifications: Submit progress report regarding the progress of preparing final plans and specifications. Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.	~~09/30/2025~~ 6/30/2026
Final Plans and Specifications: Unless the permit has been modified, revoked and reissued, or reissued to include Adaptive Management or Water Quality Trading measures or to include a revised schedule based on factors in s. NR 217.17, Wis. Adm. Code, the permittee shall submit final construction plans to the Department for approval pursuant to s. 281.41, Stats., specifying treatment plant upgrades that must be constructed to achieve compliance with final phosphorus WQBELs, and a schedule for completing construction of the upgrades by the complete construction date specified below. (Note: Permit modification, revocation and reissuance, and reissuance are subject to s. 283.53(2), Stats.) Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.	~~03/31/2026~~ 12/31/2026
Treatment Plant Upgrade to Meet WQBELs: The permittee shall initiate construction of the upgrades. The permittee shall obtain approval of the final construction plans and schedule from the Department pursuant to s. 281.41. Stats. Upon approval of the final construction plans and schedule by the Department pursuant to s. 281.41, Stats., the permittee shall construct the treatment plant upgrades in accordance with the approved plans and specifications. Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.	~~09/30/2026~~ 6/30/2027
Construction Upgrade Progress Report #1: The permittee shall submit a progress report on construction upgrades. Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.	~~12/31/2026~~ 12/31/2027
Construction Upgrade Progress Report #2: The permittee shall submit a progress report on construction upgrades. Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.	12/31/2028
Complete Construction: The permittee shall complete construction of wastewater treatment system upgrades. Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.	~~03/31/2027~~ 12/30/2029
Achieve Compliance: The permittee shall achieve compliance with final phosphorus WQBELs. Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.	~~04/01/2027~~ 12/31/2029

APPENDIX D

2040 SSA Population Projections

Wastewater Flow Projections

Projected wastewater treatment plan flows and loadings for 2040 were calculated using existing flows, existing BOD loadings, and population projections for each WWTF. **Table 18** displays the estimated sewered population for each SSA. The estimates were calculated with the 2022 ESRI Business Analyst data using the 2030 SSA boundaries. **Table 19** displays the residential wastewater flow and BOD additional loadings for each SSA. The additional loadings are then applied to the existing average flows in **Table 20**. There is available flow capacity at each WWTF after subtracting the projected peak flow in 2040 from the existing design flow. Therefore, it is expected that the current WWTF in each SSA will likely be able to handle the additional flow from the projected residential growth in the year 2040.

Table 21 shows the projected BOD loadings for each WWTF after the proposed addition to the sewer service area. There is adequate available capacity at the Appleton WWTP after the projected BOD loadings. However, the total BOD loadings are approaching the current plant capacity for the Fox West WWTP, and they exceed the Neenah-Menasha and HOV WWTF BOD design capacity.

The projected sewered population is displayed in **Table 19**. This was calculated by applying an additional 12 percent increase, reflecting the average rate increase using the DOA's municipal population projections (from Table 5). The projected sewered population is different than the projected population described in Chapter 5. The Growth Chapter 5 identified the broader population increase across the entire planning area and development pressures. In contrast, this Chapter has a more focused view of the individual WWTF service area and capacity. This means that the projected sewered population is less than the projected population of the planning area. As with all projections, it is assumed that the conditions of the past will continue. It does not take in consideration a significant change in the rate of growth or future WWTF upgrades. Many conditions can change in the future which could adjust the trajectory of the projections outlined below.

Representatives from the Neenah-Menasha, Fox West, and Heart of the Valley WWTFs have all indicated that they are considering a Facilities Plan update in the near future. This SSA Plan recommends that the aforementioned parties continue in their efforts to undergo Facilities Plan updates to re-evaluate the capacities of the three WWTFs and consider opportunities for growth. The WWTFs may not be able to accommodate the additional population if growth continues at the current rate. WWTFs and the member communities will need to discuss Facilities Planning in the near future to accommodate the population growth. A detailed review of the WWTFs and residential wastewater flow is described in the sections below.

Table 18. Estimated Sewered Population of Each Sewer Service Area

Sewer Service Area by WWTF	**Estimated Population,** *ESRI Business Analyst, 2022*
Neenah-Menasha	62,021
Fox West	39,915
Appleton	77,333
Heart of the Valley	52,491

Table 19: Projected Residential Wastewater Flow and BOD Additional Loadings

SSA	2021 Estimated Population Serviced	2040 Projected Population*	Additional Projected Population (2021 - 2040)	Projected Additional Flows (80 gpd/capita)**		Additional BOD (0.22 lbs/day per capita)****
				Gallons per Day (gpd)	Millions of Gallons per Day (mgd)	lbs/day
Neenah-Menasha	62,021	69,691	7,670	613,611	0.61	1,687
Fox West	39,915	44,851	4,936	394,903	0.39	1,086
Appleton	77,333	86,897	9,564	765,102	0.77	2,104
Heart of the Valley	52,491	58,983	6,492	519,325	0.52	1,428

** See Table 18*

***Average percent change across all SSAs from 2020 census to DOA 2040 Population Projections (12.367%)*

[F] Wisconsin Admin. Code NR 110.13(1)(b)3

[P] Wisconsin Admin. Code NR 110.13(1)(c)1

[B] Wisconsin Admin. Code NR 110.15(4)(b)2

Table 20: Projected Wastewater Flows and Available WWTF Capacity

SSA	Existing Annual Average Design Monthly Flows (mgd)	2021 Annual Average Flows (mgd)	Projected Average Flow in 2040 (existing average flow + projected additional flows)	Available WWTF Capacity (mgd) based on 2040 Average Flows (annual average design flows-estiamted 2040 flows)
Neenah-Menasha	13.0	9.6	10.21	2.79
Fox West	8.2	5.5	5.89	2.31
Appleton	15.5	10.6	11.37	4.13
Heart of the Valley	8.5	5.5	6.02	2.48

Sources: WWTP 2021 Compliance Maintenance Annual Report, ECWRPC Projections

**Projected average flow = existing average flow + projected additional flows (from Table 19)*

*** Projected peak flow = existing average flow + projected peak flow (from Table 19)*

Table 21: Projected BOD Loadings and Available WWTF Capacity

SSA	Existing Annual Average BOD Design	2021 Annual Average BOD Landings	Additional BOD (0.22 lbs/day per capita)	Projected BOD Loadings in 2040 (existing BOD loadings + projected additional BOD)	Available WWTF Capacity (lbs/day) based on 2040 BOD Loadings (annual average BOD design loading-estimated 2040 BOD loading)
Neenah-Menasha	24,573	25,876	1,687	27,563	-2,990
Fox West	13,700	10,280	1,086	11,366	2,334
Appleton	40,900	22,264	2,104	24,368	16,532
Heart of the Valley	12,209	13,997	1,428	15,425	-3,216

Sources: WWTP 2021 Compliance Maintenance Annual Report, ECWRPC Projections

** Projected BOD loadings = existing BOD average loadings (Table 21) + projected additional BOD (Table 19)*

APPENDIX E

UV Transmittance Results

NMSC UVT

Date	Time	Weather	Location of the Sample	UVT Result	TSS	Plant Flow	
6/6/24	9:45am	sunny	Final #1	62.5	4.00	14.25	
6/7/24	8:25am	sunny	Final #1	61.4	4.00	12.16	
6/7/24	1:35pm	sunny	Final Sampler	61.9	↓	12.36	
6/10/24	9:15am	sunny	Final Sampler	63.0	4.00	11.62	
6/10/24	12:35pm	sunny	Final #1	62.6	↓	11.03	
6/11/24	11:13A	Sunny	Final #1	59.6	4.00	10.98	
6/11/24	2:40p	cloudy	Final Sampler	60.6	↓	10.52	
6/12/24	8:50am	sunny	Final Sampler	60.9	4.40	9.51	
6/12/24	2:35pm	cloudy	Final #1	60.0	↓	9.68	
6/13/24	9:05am	sunny/After Rain	Final #1	57.4	4.00	11.81	sample was dirty
6/13/24	2:00pm	sunny	Final Sampler	57.9	↓	10.90	
6/14/24	8:54am	sunny	Final Sampler	58.6	4.20	10.10	
6/14/24	12:53pm	sunny	Final #1	58.2	↓	11.65	
6/17/24	10:00am	cloudy/humid	Final #1	59.6	5.40	11.30	
6/17/24	2:53pm	sunny cloudy/humid	Final Sampler	57.9	↓	10.96	
6/18/24	9:10am	sunny/hot	Final Sampler	56.4	5.60	10.56	
6/18/24	1:50pm	sunny/hot	Final #1	57.2	↓	10.79	
6/19/24	10:00am	sunny	Final #1	63.3	12.5	10.78	
6/19/24	2:00pm	cloudy	Final Sampler	64.0	↓	10.56	
6/20/24	~~9:15am~~ 9:15am	Raining	Final Sampler	64.0	6.60	12.56	
6/20/24	2:30pm	cloudy	Final #1	65.4	↓	12.77	
6/21/24	9:15am	cloudy	Final #1	67.2	10.0	12.35	
6/21/24	2:16pm	cloudy/rain	Final Sampler	67.4	↓	19.99	
6/24/24	10:10am	sunny/flows	Final Sampler	53.8		24.58	
6/24/24	3:15pm	sunny/↑flows	Final #1	57.4		22.53	

APPENDIX F

Cultural Resources Correspondence

Ethan Lang

From: Stencil, Zachary R - DNR <zachary.stencil@wisconsin.gov>
Sent: Friday, September 12, 2025 9:59 AM
To: Ethan Lang
Cc: Kubicek, Richard H - DNR
Subject: WN-20-17-22...WQ...NMSC Facility Plan Amendment - Cultural Resources Review
Attachments: 2025-09-12 DNR.pdf

Ethan – good to go for state-level cultural resource compliance.

-Z

DNR has completed a cultural resource review of the above project.

No recorded historic properties are reported to occur within or adjacent to the proposed project location.

Note, if federal funds are used for the proposed project, including CWF or SDWLP, additional evaluation may be necessary to comply with federal processes.

Zachary R. Stencil
Departmental Historic Preservation Officer/Archaeologist

Cell Phone: 608-225-3604
Email: Zachary.Stencil@Wisconsin.gov

Our core values include professionalism, integrity, and customer service.
Please visit our survey to provide feedback on your experience interacting with any DNR employee.

From: Ethan Lang <ELang@mcmgrp.com>
Sent: Friday, September 12, 2025 9:50 AM
To: Kubicek, Richard H - DNR <richard.kubicek@wisconsin.gov>; Stencil, Zachary R - DNR <zachary.stencil@wisconsin.gov>
Subject: NMSC Facility Plan Amendment - Cultural Resources Review

Richard and Zac,

Please see attached. We are conducting a Facilities Plan Amendment for the Neenah-Menasha Sewerage Commission. Can you review State records for potential cultural, archaeological, and historic resources in the project area?

Feel free to contact me if there are any questions or if additional information is needed.

Thank you,

Ethan S. Lang, EIT, CDT
Water & Wastewater Engineer

McMAHON
ENGINEERS | ARCHITECTS

1445 McMahon Dr | Neenah, WI 54956
O:920.751.4200 x332 | C:920.841.3947

website | facebook | linkedin | instagram

McMAHON
ENGINEERS ARCHITECTS

September 12, 2025

Mr. Richard Kubicek, Departmental Archaeologist
Wisconsin Department of Natural Resources, Central Office
PO Box 7921
Madison, WI 53707

RE: Neenah-Menasha Sewerage Commission
Total P, Disinfection, and Effluent Flow Recording Facilities Plan Amendment
McM. No. N0008-09-24-00790

Dear Mr. Kubicek,

McMahon Associates, Inc. is preparing a Wastewater Treatment Facilities Plan Amendment for the Neenah-Menasha Sewerage Commission (NMSC), Winnebago County, Wisconsin. The proposed project consists of the construction of a new tertiary disc filter treatment system, Ultraviolet (UV) disinfection, and effluent flow monitoring at the existing wastewater treatment facility. The project also includes excavation for new site piping and manholes.

Enclosed is a USGS map showing the location of the existing wastewater treatment facility as well as the approximate area of the proposed project area. Also enclosed is a preliminary aerial site plan and preliminary civil site plan sheets showing the extent of the proposed project area.

The NMSC wastewater treatment facility is located as follows:

101 Garfield Avenue
Menasha, WI 54952
Winnebago County
SW1/4 of NW1/4 of Section 22 T20N R17E

Please review State records for potential cultural, archaeological, and historic resources in the project area. Feel free to contact me if there are questions or if additional information is needed.

Respectfully,
McMahon Associates, Inc.

Ethan S. Lang, EIT, CDT
Water & Wastewater Engineer

Enclosures: USGS Topographic Map
Preliminary Aerial Site Plan
Preliminary Civil Site Plan

U.S. DEPARTMENT OF THE INTERIOR
U. S. GEOLOGICAL SURVEY

USGS science for a changing world

The National Map US Topo

NEENAH QUADRANGLE
WISCONSIN
7.5-MINUTE SERIES

Proposed Project Area

Neenah Menasha Sewerage Commission
Wastewater Treatment Facility

Produced by the United States Geological Survey

North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and 1 000-meter grid: Universal Transverse Mercator, Zone 16T
10 000-foot ticks: Wisconsin Coordinate System of 1983 (south and central zones)

Imagery.....NAIP, July 2010
Roads.....©2006-2012 TomTom
Names.....GNIS, 2013
Hydrography.....National Hydrography Dataset, 2010
Contours.....National Elevation Dataset, 1999
Boundaries.....Census, IBWC, IBC, USGS, 1972 - 2012

UTM GRID AND 2013 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000-m Square ID: CQ / CP
Grid Zone Designation: 16T

SCALE 1:24 000

1 0.5 0 KILOMETERS 1 2
1000 500 0 METERS 1000 2000
1 0.5 0 1 MILES
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 FEET

CONTOUR INTERVAL 20 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the National Geospatial Program US Topo Product Standard, 2011.
A metadata file associated with this product is draft version 0.6.12

QUADRANGLE LOCATION

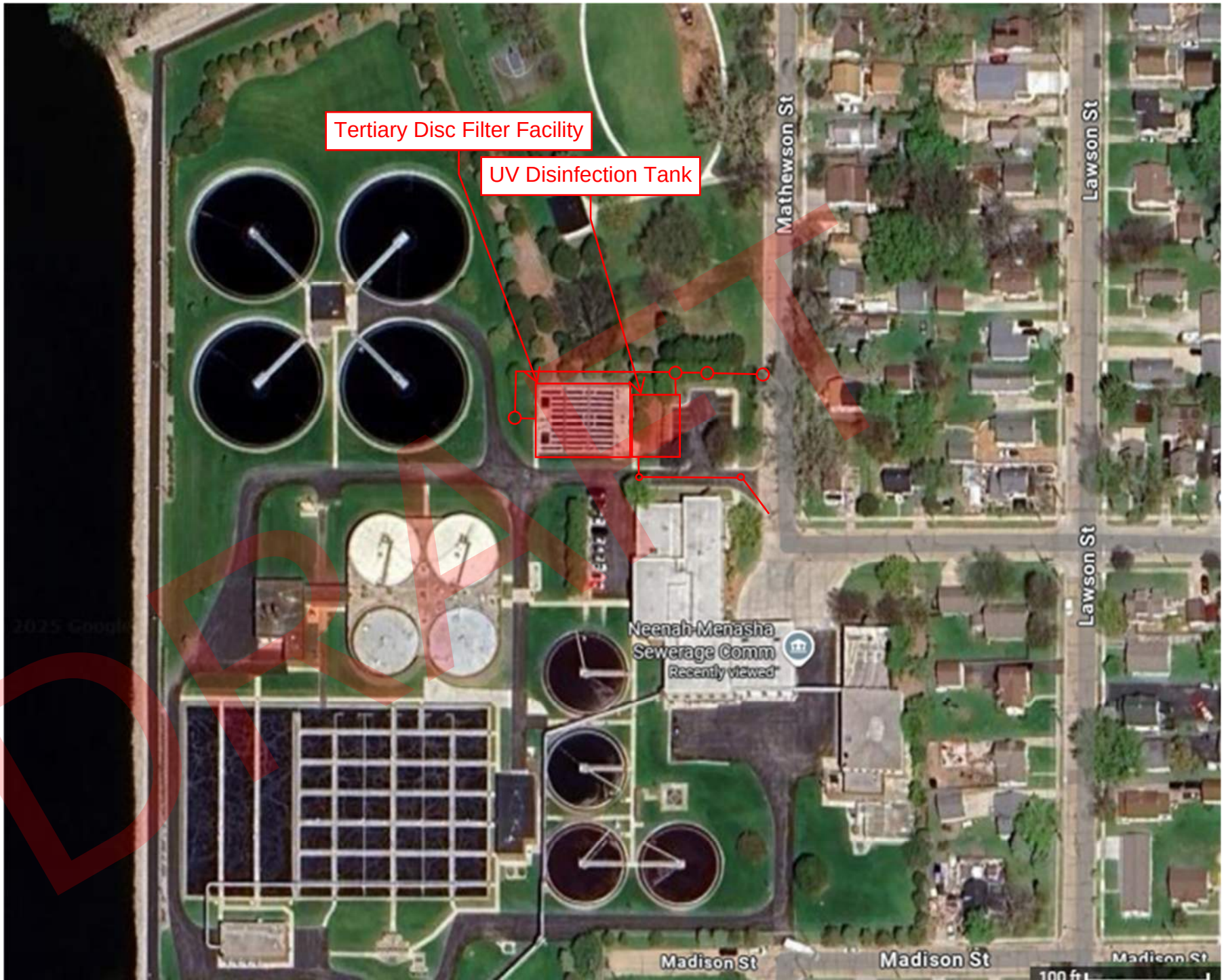
Greenville	Appleton	Kaukauna
Oshkosh NE	Neenah	Sherwood
Oshkosh	Indian Point	Stockbridge

ADJOINING 7.5' QUADRANGLES

ROAD CLASSIFICATION

Expressway — Local Connector
Secondary Hwy — Local Road
Ramp — 4WD
Interstate Route — US Route — State Route

NEENAH, WI
2013


Tertiary Disc Filter Facility
UV Disinfection Tank
Mathewson St
Lawson St
Lawson St
Neenah-Menasha Sewerage Comm
Recently viewed
Madison St
Madison St
Madison St
2023 Google

RAS SPLITTER BOX
TANKS 7, 8, 9
(510)

PE SPLITTER BOX
TANKS 7, 8, 9
(510)

8" D.I. PROCESS DRAIN

) AIR

8" SST AIR MAIN
4" NPW

RAIN
G

DIGESTER BUILDING (820)

DIGESTERS (800)

3" NAT. GAS
3" SERVICE GAS
6" & 1 1/2" HWS
6" & 1 1/2" HWR

FINAL CLARIFIER NO. 2

FINAL CLARIFIER NO. 3

42" RCP

8" STO

ENGINE GENERATOR

E-W TUNNEL (830)

COAG/FLOC TANKS

EMERGENCY BYPASS

CLOTH DISC FILTERS

UV DISINFECTION

60" RCP FINAL EFFLUENT

6" CL2 CONTACT TANK DRAIN DISCHARGE

EFFLUENT FLOW METER M.H.

48" INFLUENT

NEW EFFLUENT

6" D.I. PRIMARY CLARIFIER DRAIN

PRIMARY CLARIFIER NO. 2

PRIMARY CLARIFIERS (400)

PRIMARY EFFLUENT

6" D.I. PRIMARY CLARIFIER DRAIN

PRIMARY CLARIFIER NO. 1

12" DR 18 PVC

PRIMARY TUNNEL ACCESS BUILDING (420)

PRIMARY TUNNEL (430)

4" CONDUIT W/ HCI GAS LINE

PRIMARY SPLITTER BOX (410)

8" D.I. EFFLUENT REUSE LINE

8" D.I. EFFLUENT REUSE SUCTION

2" PVC CHLORINATED EFFL. SAMPLE SUCTION

2" PVC CHLORINE SOLUTION

12" SDR 18 PVC EFFLUENT REUSE

6" D.I. HEAT PUMP SUCTION

6" D.I. HEAT PUMP RETURN

36" RCP BYPASS

NEW 48" BYPASS

SERVICE BUILDING (920)

60" INFLUENT

3" PREINSUL. STL. HWS/HWR

6" STORM

MATHEWSON

FIGURE 7A

PRELIMINARY SITE PLAN
NEENAH-MENASHA
SEWERAGE COMMISSION

McM #N0008-92400790 8/22/25

APPENDIX G

Endangered Resources Preliminary Assessment

Ethan Lang

From: DNR ER Review <DNRERReview@wisconsin.gov>
Sent: Saturday, September 13, 2025 6:17 PM
To: Ethan Lang
Cc: Chad Olsen; Paul Much; Rossler, Anna C - DNR
Subject: RE: NMSC WWTF Facility Plan Amendment - Endangered Resources Review Request
Attachments: verificationform1700-079.pdf

Hi Ethan,

The **NMSC WWTF Tertiary Treatment Facility Plan Amendment project** is covered by Table 2 of the Broad Incidental Take Permit/Authorization for No/Low Impact Activities (No/Low BITP/A), a formal ER Review letter is not needed and there are no actions that need to be taken to comply with state endangered species laws. Any take that may result from the proposed project is permitted/authorized, and the ER Review fee is waived.

Specifically, the project is covered by Activity 2-A1, Any activity performed entirely within in urban/residential areas, manicured lawn or other artificial/paved surface. *Please note, Table 2 is for use by DNR Staff and ER Certified Reviewers only, therefore, the table is not available online*. The no/low BITP/A covers projects that the DNR has determined will have no impact or a minimal impact to endangered and threatened species in the state.

Attached is an ER Review Verification Form for you to keep on file and submit with any other necessary DNR permit applications to indicate that ER requirements have been met. This notice only addresses endangered resources issues. This notice does not constitute DNR authorization of the proposed project and does not exempt the project from securing necessary permits and approvals from the DNR and/or other permitting authorities.

Please contact me if you have any questions.

Thanks,
Angela

Angela White
Phone: 608-266-5241
angelal.white@wisconsin.gov

Our core values include professionalism, integrity, and customer service.
Please visit our survey to provide feedback on your experience interacting with any DNR employee.

From: Ethan Lang <ELang@mcmgrp.com>
Sent: Friday, September 12, 2025 11:20 AM
To: DNR ER Review <DNRERReview@wisconsin.gov>
Cc: Chad Olsen <colsen@mcmgrp.com>; Paul Much <pmuch@mco-us.com>; Rossler, Anna C - DNR <Anna.Rossler@wisconsin.gov>
Subject: NMSC WWTF Facility Plan Amendment - Endangered Resources Review Request

To Whom It May Concern,

Please see attached. We are requesting an Endangered Resources (ER) Review due to the results received from the Endangered Resources Preliminary Assessment. Note that tree and shrub removal will be required as part of this project.

Please invoice the Sewerage Commission for the review fee.

Feel free to contact me if there are any questions or if additional information is needed.

Thank you,

Ethan S. Lang, EIT, CDT
Water & Wastewater Engineer

McMAHON
ENGINEERS ARCHITECTS

1445 McMahon Dr | Neenah, WI 54956
O:920.751.4200 x332 | C:920.841.3947

website | facebook | linkedin | instagram

Note: In order to fill and save this form electronically, it must be opened using Adobe Reader or Acrobat software. Save a copy of the file, open Adobe Reader, select File > Open and browse for the file you saved.

State of Wisconsin
Department of Natural Resources
Bureau of Natural Heritage Conservation
Endangered Resources Review Program
PO Box 7921, Madison WI 53707-7921
https://dnr.wi.gov/topic/ERReview/
DNRERReview@wisconsin.gov

Endangered Resources (ER) Review Verification

Broad Incidental Take Permit/Authorization for No/Low Impact Activities

Form 1700-079 (R 05/2024)

Notice: This form is authorized by s. 29.604, Wis. Stats. This completed signed form, once submitted to **DNRERReview@wi.gov** using the Submit by Email button at the bottom of the form, fulfills the requirement of an Endangered Resources Review and should be attached to other permits requiring an ER Review to show that Endangered Resources requirements have been met. Personal information collected on this form will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Public Records law [ss. 19.31-19.39, Wis. Stats.].

Instructions: **Complete this form if your project is covered under the Broad Incidental Take Permit/Authorization for No/Low Impact Activities and therefore does not require an Endangered Resources Review.**

Section 1: Applicant and Project Information

Requester Name	Organization or Agency Name
Ethan S. Lang	McMahon Associates, Inc.

Project Name	County	Township	Range	Section
NMSC WWTF Tertiary Treatment Facility Plan Amendmen	Winnebago	20 N	17 (E)	22

DPS Project # (if applicable)	Telephone Number	Email Address
	(920) 751-4200	ELang@mcmgrp.com

Project Description
The proposed project consists of the construction of a new tertiary disc filter treatment system, UV disinfection, and effluent flow monitoring at the existing wastewater treatment facility. The project also include new site piping and manholes.

Indicate who you are completing this form as:

- (●) DNR Staff
- ( ) Certified Reviewer
- ( ) Other:

Section 2: Broad Incidental Take Permit/Authorization Coverage Information

How is your project covered under the Broad Incidental Take Permit/Authorization for No/Low Impact Activities?

- [ ] It is included in the list of activities in Table 1 – No/Low Impact Table for All Species at All Times of the Year.
- [x] It is included in the list of activities in Table 2 – No/Low Impact Table by Taxa Group for DNR Staff and ER Certified Reviewers Only and the Taxa groups for the species of concern are covered.
- [ ] It is included in the list of activities in Table 2 – No/Low Impact Table by Taxa Group for DNR Staff ER Certified Reviewers Only and the species of concern are covered by the Avoidance Measures document.

Activity Number(s)
2-A1, Any activity performed entirely within in urban/residential areas, manicured lawn or other artificial/paved surface.

Section 3: Applicant Certification

By my signature below, I certify that to the best of my knowledge, the information stated above is complete and accurate.

Angela White	9/13/2025	Angela White
Signature	Date Signed	Requester/Submitter Name (please print)

Leave Blank – DNR Use Only Approve/Deny Form [ ]

(●) Approved ( ) Denied

DNR Reviewer Name	DNR Reviewer Date
Melissa Tumbleson	09/13/2025

State of Wisconsin
Department of Natural Resources
Bureau of Natural Heritage Conservation
Attn: Endangered Resources Review Program
PO Box 7921, Madison WI 53707-7921
dnr.wi.gov

Endangered Resources Review Request

Form 1700-047 (R 9/22)

Notice: Pursuant to s. 23.27(3)(b), Wis. Stats., this form must be completed and submitted to the Department of Natural Resources (DNR) to request an Endangered Resources (ER) Review of proposed development, management, planning or similar type of project. An ER Review provides the requester with information from Wisconsin's Natural Heritage Inventory (NHI) database and other sources on rare plants and animals, high quality natural communities, and other endangered resources that may be impacted by the proposed project. The ER Review will also include specific recommendations and requirements to help projects comply with Wisconsin's Endangered Species Law (s. 29.604, Wis. Stats.) and other laws and regulations protecting endangered resources. 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.).

Instructions: The following materials are required to process this request. Submit all materials by mail to the address above or email (DNRERReview@wisconsin.gov). Do not include payment with this form.

- ☒ Completed, signed form
- ☒ Map(s) delineating the project area, preferably an aerial photo

Submission of the following materials are strongly encouraged and will facilitate review of your project:

- ☒ NHI Public Portal Preliminary Assessment Printout
- ☐ Photographs that clearly show the project area, including natural features and vegetation present on site
- ☐ Additional relevant information and reports (e.g., detailed project and habitat descriptions, wetland delineation, and site plans)

Section 1: Requester Information (ER Review, correspondence and invoice will be sent to this person)

Name	Organization		
Ethan S Lang	McMahon Associates, Inc.		
Mailing Address	**City**	**State**	**ZIP Code**
1445 McMahon Drive	Neenah	WI	54956
Telephone Number	**Email Address**		
(920) 751-4100	elang@mcmgrp.com		

Section 2: Landowner Information (if different than Section 1)

Name	Organization		
Paul Much	Neenah Menasha Sewerage Commission		
Mailing Address	**City**	**State**	**ZIP Code**
101 Garfield Avenue	Menasha	WI	54952
Telephone Number	**Email Address**		
(920) 475-0054	pmuch@mco-us.com		

Section 3: Project Information

Project Name	Project Address *(if applicable)*
NMSC WWTF Tertiary Treatment Facility Plan Amendment	101 Garfield Ave, Menasha, WI 54952

Project Types:
◯ Residential ◯ Commercial ◯ Industrial ◉ Utility/Energy ◯ Transportation (roads, railroads, trails, harbors, airports)
◯ NRCS ◯ Other: _____

PSC Approval (Utility/Energy only)	DOT or FHWA Administered
◯ Yes ⊗ No ◯ Unknown	◯ Yes ⊗ No ◯ Unknown

Start Date (on-site disturbance)	End Date (on-site disturbance)	Federal Land, Funding or Permit
TBD - likely 2027	TBD - likely 2029	◯ Yes ◯ No ◉ Unknown

County		Land Types (Select all that apply)
Winnebago	◉ City ◯ Town ◯ Village of: Menasha	☐ Private ☒ Public (e.g. road ROWs, schools, city/county land, etc.)

Township	Range	Direction	Section	Additional Comments on TRS Location *(attach additional information if necessary)*
20 N	17	◉ E ◯ W	22	SW1/4 of NW1/4
N		◯ E ◯ W		

Section 3: Project Information, *continued*

Provide a detailed description of the proposed project and associated disturbance, including acres to be disturbed. Attach additional pages as needed.

The proposed project consists of the construction of a new tertiary disc filter treatment system, Ultraviolet (UV) disinfection, and effluent flow monitoring at the existing wastewater treatment facility. The project also includes new site piping and manholes. The estimated area of disturbance approximately 0.45 acres.

Provide a detailed description of the habitat types and current land use within the limits of the project area (e.g., 50% in active agriculture-currently corn, 20% floodplain forest, 15% industrial area, 10% hardwood swamp dominated by black ash, 5% fallow field - in active agriculture until one year ago). Attach additional pages as needed.

The majority of the proposed project area will occur within the bounds of the existing chlorine contact tank and paved surfaces at the existing wastewater treatment facility. The remaining project area consists of manicured lawn and landscaping trees/shrubs. It is estimated that less than 20 trees will need to be removed.

Project area is estimated as follows: 0.15 acres of disturbance within the existing chlorine contact tank, 0.15 acres of disturbance within paved surfaces, and 0.15 acres of disturbance within manicured lawn and trees/shrubs.

List all wetlands and waterbodies (e.g., rivers, intermittent streams, lakes, marshes) within or adjacent to the project area. List any known or suspected impacts of the proposed project to these wetlands and waterbodies. Indicate the location(s) of any point source discharge(s) into wetlands or waterbodies.

No wetlands, wetland indicator soils, or surface waters are located within or immediately adjacent to the proposed project area. The proposed project area is located immediately adjacent to FEMA's mapped 100-year flood plain. A very minor portion of the project area appears to fall within FEMA's mapped 500-year flood plain.

List any reports or correspondence concerning endangered resources or habitat that may be impacted by the proposed project (e.g., wetland delineation, endangered resources reviews, habitat assessments, and rare species surveys). Attach copies if available.

An Endangered Resources Preliminary Assessment was completed on September 12, 2025, on the Wisconsin DNR's Natural Heritage Inventory Public Portal for the project area. On September 12, 2025, a request was made of the DNR archaeologist to determine if any archaeological or historic sites/structures are present within the vicinity of the project area. The DNR archaeologist stated that no recorded historic properties are reported to occur within or adjacent to the proposed project area.

Section 4: Related Permits, Licenses or Regulatory Approvals (DNR or other state/federal agency)

Permit, License or Approval	Permitting Agency Contact Person	Status
Wastewater System Approval Request	WI DNR	☒ will be applying for ☐ have applied for ☐ have received
		☐ will be applying for ☐ have applied for ☐ have received

Section 5: Terms and Conditions

The requested ER Review may contain NHI data and information (including specific locations of endangered resources) which are considered sensitive and are not subject to Wisconsin's Open Records Law (per s. 23.27, Wis. Stats.). The information contained in the ER Review is solely for planning and implementation of the proposed project. As such, the information contained in the ER Review shall only be shared with individuals who need this information to carry out specific roles in the planning, permitting, and implementation of the proposed project. The requester must agree to not reproduce or disseminate the ER Review or the specific locations of endangered resources contained in the ER Review to any other parties or individuals without prior written permission from the DNR Bureau of Natural Heritage Conservation. (Contact the Endangered Resources Review Program at 608-419-2755 if you have any questions about sharing information contained in the ER Review.)

Section 6: Certification by Requester

I agree to pay, within 30 days of receipt of an invoice, the $75/hour fee charged by the Department per s. NR 29.04(1), Wis. Adm. Code, for this ER review. I am the owner, authorized representative of the owner, or utility representative of the property for which I am requesting an Endangered Resources (ER) Review. I accept the terms and conditions outlined in Section 5 (above). To the best of my knowledge, the information I have provided is complete and accurate.

Signature of Requester	Date Signed	Printed Name
[signature]	9/12/25	Ethan Lang

Endangered Resources Preliminary Assessment

Created on **9/12/2025**. This report is good for one year after the created date.

DNR staff will be reviewing the ER Preliminary Assessments to verify the results provided by the Public Portal. ER Preliminary Assessments are only valid if the project habitat and waterway-related questions are answered accurately based on current site conditions. If an assessment is deemed invalid, a full ER review may be required even if the assessment indicated otherwise.

Results

A search was conducted of the NHI Portal within a 1-mile buffer (for terrestrial and wetland species) and a 2-mile buffer (for aquatic species) of the project area. Based on these search results, below are your follow-up actions.

Further actions are required to ensure compliance with Wisconsin's Endangered Species Law (s. 29.604 Wis. Stats.) and the Federal Endangered Species Act (16 USC ss 1531-43).

At least one of the following situations apply (likely not all):

- The species recorded are state or federal threatened or endangered animals or the project is within a range or zone.
- The species recorded are state threatened or endangered plants on public land.
- The species recorded are federal threatened or endangered plants on federal land or involve federal funds or a federal permit.

Therefore you should request an Endangered Resources Review https://dnr.wi.gov/topic/ERReview/Review.html. An ER Review is the mechanism to ensure compliance with Wisconsin's Endangered Species Law (s. 29.604 Wis. Stats.) and the Federal Endangered Species Act (16 USC ss 1531-43). The ER Review will list the endangered resources that have been recorded within the vicinity of the project area and follow-up actions may be necessary.

A copy of this document can be kept on file and submitted with any other necessary DNR permit applications to show that the need for an ER Review has been met. This notice only addresses endangered resources issues. This notice does not constitute DNR authorization of the proposed project and does not exempt the project from securing necessary permits and approvals from the DNR and/or other permitting authorities.

Project Information

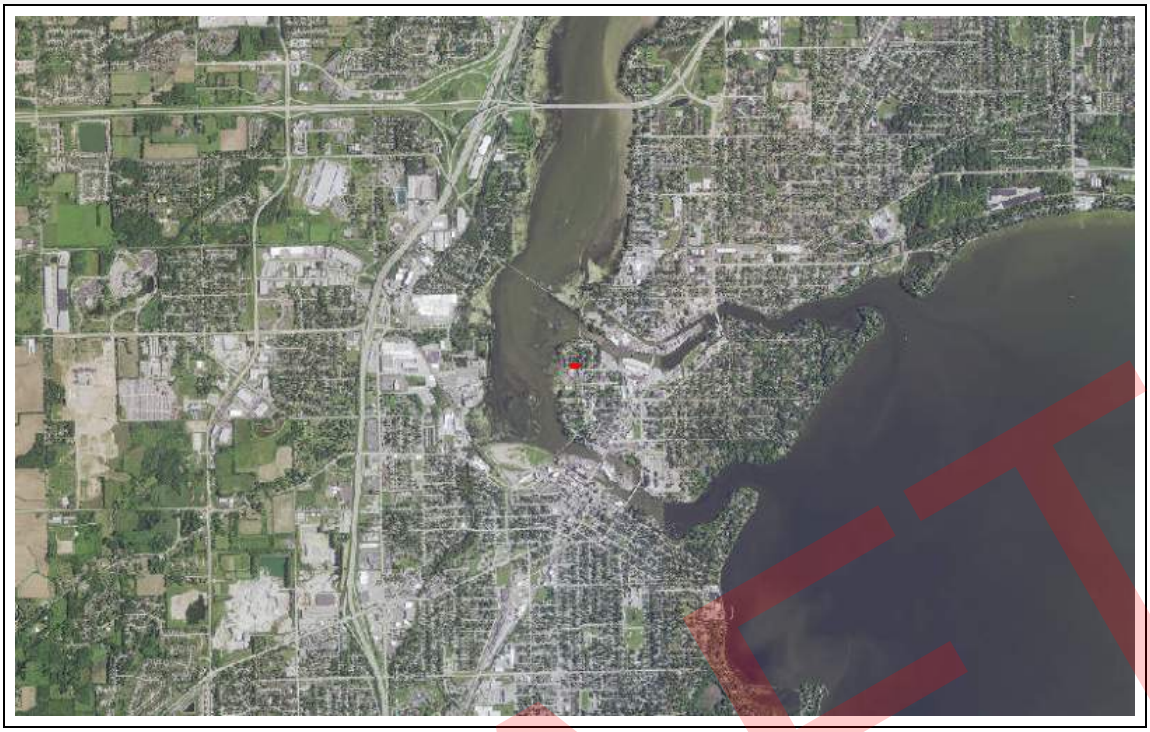
Landowner name	**Neenah Menasha Sewerage Commission**
Project address	**Neenah Menasha Sewerage Commission Wastewater Treatment Plant** **101 Garfield Ave, Menasha, WI 54952** **SW1/4 of NW1/4 of Sec 22 T20N R17E**
Project description	**Constructing a new tertiary treatment filter and UV disinfection facility at the existing WWTF, along with new site manholes and piping.** **Tree and shrub removal is required.**

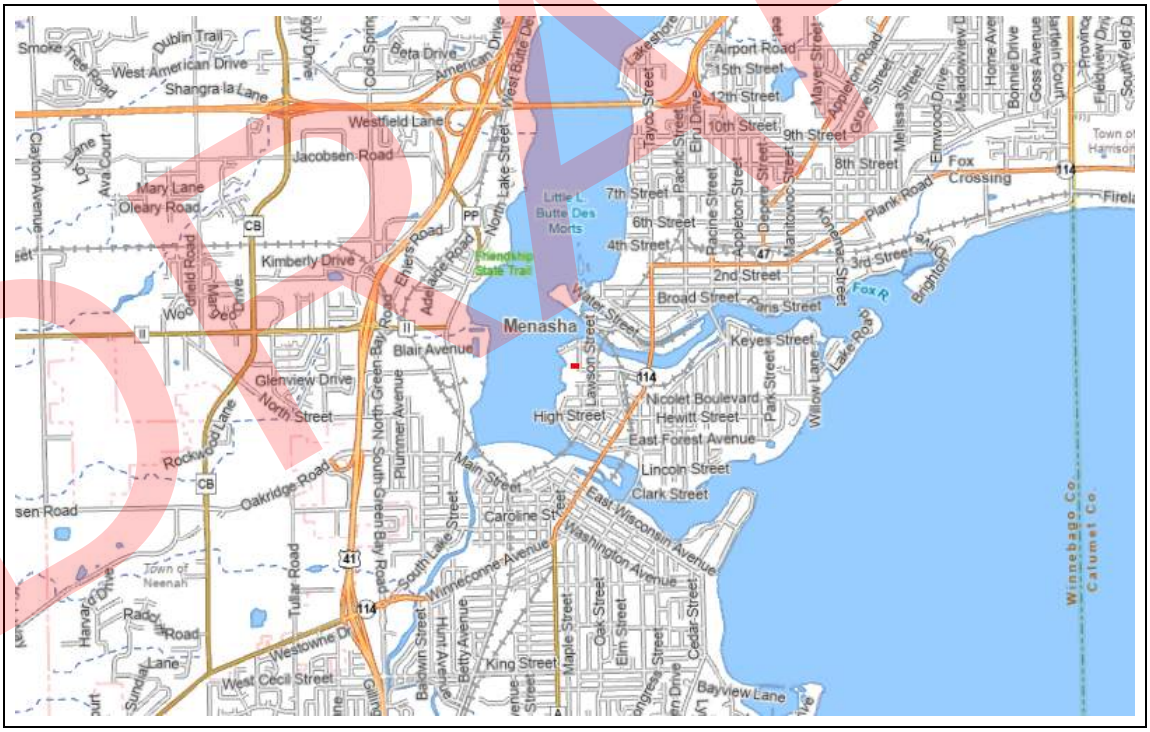
Project Questions

Does the project involve a public property?	**Yes**
Is there any federal involvement with the project?	**Yes**
Is the project a utility, agricultural, forestry or bulk sampling (associated with mining) project?	**Yes**
Is the project property in Managed Forest Law or Managed Forest Tax Law?	**No**

Project involves tree or shrub removal?	**Yes**
Is project near (within 300 ft) a waterbody or a shoreline?	**No**
Is project within a waterbody or along the shoreline?	**No**

Project Area Maps





Ethan Lang

From: Stencil, Zachary R - DNR <zachary.stencil@wisconsin.gov>
Sent: Friday, September 12, 2025 9:59 AM
To: Ethan Lang
Cc: Kubicek, Richard H - DNR
Subject: WN-20-17-22...WQ...NMSC Facility Plan Amendment - Cultural Resources Review
Attachments: 2025-09-12 DNR.pdf

Ethan – good to go for state-level cultural resource compliance.

-Z

DNR has completed a cultural resource review of the above project.

No recorded historic properties are reported to occur within or adjacent to the proposed project location.

Note, if federal funds are used for the proposed project, including CWF or SDWLP, additional evaluation may be necessary to comply with federal processes.

Zachary R. Stencil
Departmental Historic Preservation Officer/Archaeologist

Cell Phone: 608-225-3604
Email: Zachary.Stencil@Wisconsin.gov

Our core values include professionalism, integrity, and customer service.
Please visit our survey to provide feedback on your experience interacting with any DNR employee.

From: Ethan Lang <ELang@mcmgrp.com>
Sent: Friday, September 12, 2025 9:50 AM
To: Kubicek, Richard H - DNR <richard.kubicek@wisconsin.gov>; Stencil, Zachary R - DNR <zachary.stencil@wisconsin.gov>
Subject: NMSC Facility Plan Amendment - Cultural Resources Review

Richard and Zac,

Please see attached. We are conducting a Facilities Plan Amendment for the Neenah-Menasha Sewerage Commission. Can you review State records for potential cultural, archaeological, and historic resources in the project area?

Feel free to contact me if there are any questions or if additional information is needed.

Thank you,

Ethan S. Lang, EIT, CDT
Water & Wastewater Engineer

McMAHON
ENGINEERS | ARCHITECTS

1445 McMahon Dr | Neenah, WI 54956
O:920.751.4200 x332 | C:920.841.3947

website | facebook | linkedin | instagram

McMAHON
ENGINEERS ARCHITECTS

September 12, 2025

Mr. Richard Kubicek, Departmental Archaeologist
Wisconsin Department of Natural Resources, Central Office
PO Box 7921
Madison, WI 53707

RE: Neenah-Menasha Sewerage Commission
Total P, Disinfection, and Effluent Flow Recording Facilities Plan Amendment
McM. No. N0008-09-24-00790

Dear Mr. Kubicek,

McMahon Associates, Inc. is preparing a Wastewater Treatment Facilities Plan Amendment for the Neenah-Menasha Sewerage Commission (NMSC), Winnebago County, Wisconsin. The proposed project consists of the construction of a new tertiary disc filter treatment system, Ultraviolet (UV) disinfection, and effluent flow monitoring at the existing wastewater treatment facility. The project also includes excavation for new site piping and manholes.

Enclosed is a USGS map showing the location of the existing wastewater treatment facility as well as the approximate area of the proposed project area. Also enclosed is a preliminary aerial site plan and preliminary civil site plan sheets showing the extent of the proposed project area.

The NMSC wastewater treatment facility is located as follows:

101 Garfield Avenue
Menasha, WI 54952
Winnebago County
SW1/4 of NW1/4 of Section 22 T20N R17E

Please review State records for potential cultural, archaeological, and historic resources in the project area. Feel free to contact me if there are questions or if additional information is needed.

Respectfully,
McMahon Associates, Inc.

Ethan S. Lang, EIT, CDT
Water & Wastewater Engineer

Enclosures: USGS Topographic Map
Preliminary Aerial Site Plan
Preliminary Civil Site Plan

U.S. DEPARTMENT OF THE INTERIOR
U. S. GEOLOGICAL SURVEY

USGS science for a changing world

The National Map US Topo

NEENAH QUADRANGLE
WISCONSIN
7.5-MINUTE SERIES

Proposed Project Area

Neenah Menasha Sewerage Commission
Wastewater Treatment Facility

Produced by the United States Geological Survey

North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and 1 000-meter grid: Universal Transverse Mercator, Zone 16T
10 000-foot ticks: Wisconsin Coordinate System of 1983 (south and central zones)

Imagery.....NAIP, July 2010
Roads.....©2006-2012 TomTom
Names.....GNIS, 2013
Hydrography.....National Hydrography Dataset, 2010
Contours.....National Elevation Dataset, 1999
Boundaries.....Census, IBWC, IBC, USGS, 1972 - 2012

UTM GRID AND 2013 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000-m Square ID: CQ / CP
Grid Zone Designation: 16T

SCALE 1:24 000

1 0.5 0 KILOMETERS 1 2
1000 500 0 METERS 1000 2000
1 0.5 0 1 MILES
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 FEET

CONTOUR INTERVAL 20 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the National Geospatial Program US Topo Product Standard, 2011.
A metadata file associated with this product is draft version 0.6.12

QUADRANGLE LOCATION

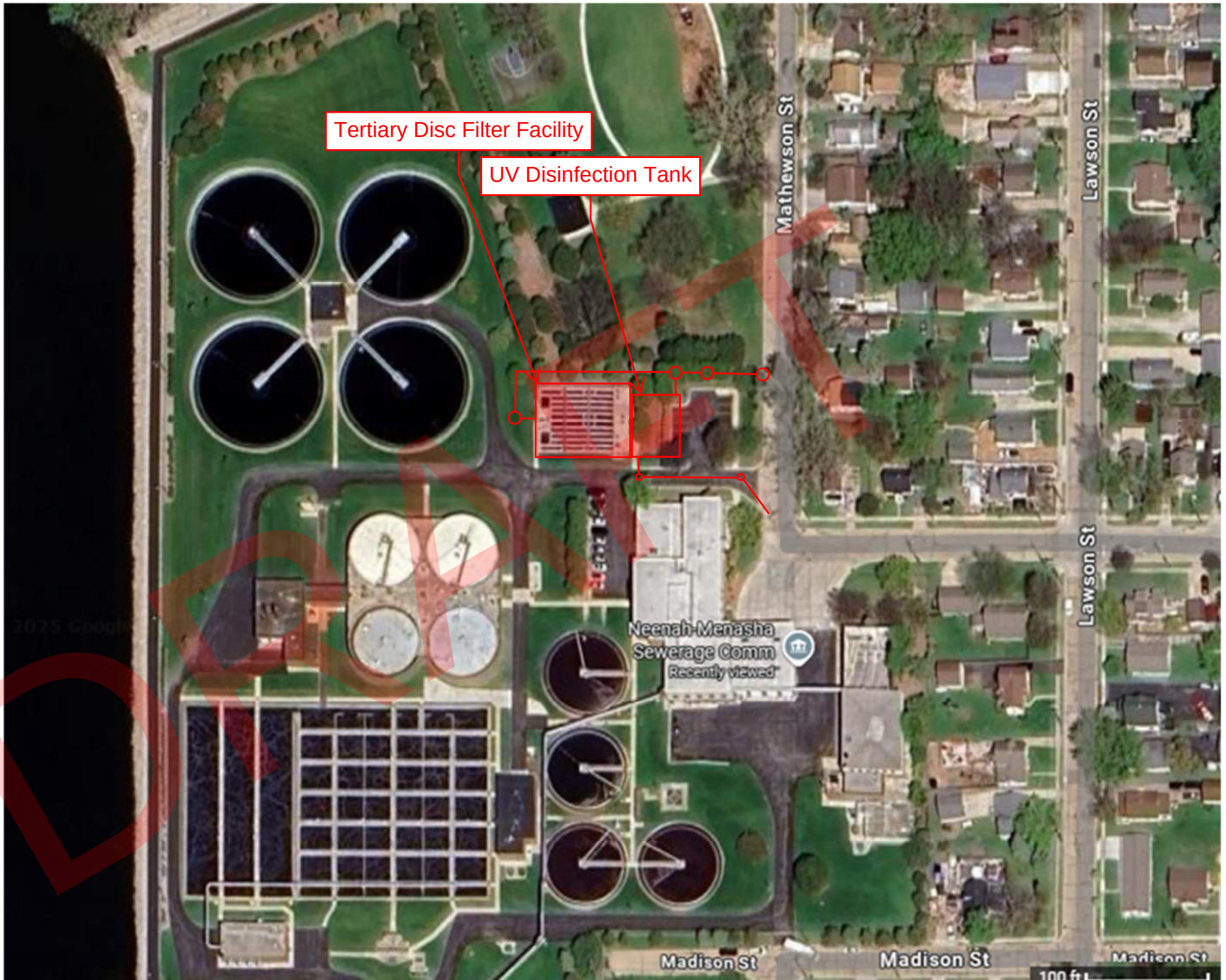
Greenville	Appleton	Kaukauna
Oshkosh NE	Neenah	Sherwood
Oshkosh	Indian Point	Stockbridge

ADJOINING 7.5' QUADRANGLES

ROAD CLASSIFICATION

Expressway — Local Connector
Secondary Hwy — Local Road
Ramp — 4WD
Interstate Route — US Route — State Route

NEENAH, WI
2013


Tertiary Disc Filter Facility
UV Disinfection Tank
Mathewson St
Lawson St
Lawson St
Neenah-Menasha Sewerage Comm
Recently viewed
Madison St
Madison St
Madison St
2023 Google

RAS SPLITTER BOX
TANKS 7, 8, 9
(510)

PE SPLITTER BOX
TANKS 7, 8, 9
(510)

8" D.I. PROCESS DRAIN

) AIR

8" SST AIR MAIN
4" NPW

RAIN
G

DIGESTER BUILDING (820)

DIGESTERS (800)

3" NAT. GAS
3" SERVICE GAS
6" & 1 1/2" HWS
6" & 1 1/2" HWR

FINAL CLARIFIER NO. 2

FINAL CLARIFIER NO. 3

42" RCP

8" STO

ENGINE GENERATOR

E-W TUNNEL (830)

COAG/FLOC TANKS

EMERGENCY BYPASS

CLOTH DISC FILTERS

UV DISINFECTION

60" RCP FINAL EFFLUENT

6" CL2 CONTACT TANK DRAIN DISCHARGE

EFFLUENT FLOW METER M.H.

48" INFLUENT

NEW EFFLUENT

6" D.I. PRIMARY CLARIFIER DRAIN

PRIMARY CLARIFIER NO. 2

PRIMARY CLARIFIERS (400)

PRIMARY EFFLUENT

6" D.I. PRIMARY CLARIFIER DRAIN

PRIMARY CLARIFIER NO. 1

12" DR 18 PVC

PRIMARY TUNNEL ACCESS BUILDING (420)

PRIMARY TUNNEL (430)

4" CONDUIT W/ HCI GAS LINE

PRIMARY SPLITTER BOX (410)

8" D.I. EFFLUENT REUSE LINE

8" D.I. EFFLUENT REUSE SUCTION

2" PVC CHLORINATED EFFL. SAMPLE SUCTION

2" PVC CHLORINE SOLUTION

12" SDR 18 PVC EFFLUENT REUSE

6" D.I. HEAT PUMP SUCTION

6" D.I. HEAT PUMP RETURN

36" RCP BYPASS

NEW 48" BYPASS

SERVICE BUILDING (920)

60" INFLUENT

3" PREINSUL. STL. HWS/HWR

6" STORM

MATHEWSON

FIGURE 7A

PRELIMINARY SITE PLAN
NEENAH-MENASHA
SEWERAGE COMMISSION

McM #N0008-92400790 8/22/25

McMAHON
ENGINEERS \ ARCHITECTS

INVOICE

McMAHON ASSOCIATES, INC.
1445 McMAHON DRIVE NEENAH, WI 54956
Mailing P.O. Box 1025 NEENAH, WI 54957-1025
PH 920.751.4200 FAX 920.751.4284
WWW.MCMGRP.COM
EIN NO. 39-0735791

July 31, 2025
Invoice No: 00939989

Neenah-Menasha Sewerage Commission
101 Garfield Avenue
Menasha, WI 54952-3397

Invoice Total $4,620.00

Client No. N0008

Project 09-24-00790 Total Phosphorus, UV Disinfection & Effluent Flow Recording Project

Professional Services from June 01, 2025 to June 28, 2025

Phase 02 Facilities Plan Amendment

Fee

Total Fee	38,500.00			
Percent Complete	40.00	Total Earned	15,400.00	
		Previous Fee Billing	10,780.00	
		Current Fee Billing	4,620.00	
		Total Fee		**4,620.00**
			Phase Total	**$4,620.00**
			Invoice Total	**$4,620.00**

Thank you for your business

Authorized
By:

Chad Olsen

Terms Net 30. ACH payment is preferred but not required. Contact Lisa at Ltiseling@mcmgrp.com for ACH instructions.

McMAHON
ENGINEERS \ ARCHITECTS

INVOICE

McMAHON ASSOCIATES, INC.
1445 McMAHON DRIVE NEENAH, WI 54956
Mailing P.O. Box 1025 NEENAH, WI 54957-1025
PH 920.751.4200 FAX 920.751.4284
WWW.MCMGRP.COM
EIN NO. 39-0735791

August 29, 2025
Invoice No: 00940353

Neenah-Menasha Sewerage Commission
101 Garfield Avenue
Menasha, WI 54952-3397

Invoice Total $3,850.00

Client No. N0008

Project 09-24-00790 Total Phosphorus, UV Disinfection & Effluent Flow Recording Project

Professional Services from June 29, 2025 to August 02, 2025

Phase 02 Facilities Plan Amendment

Fee

Total Fee	38,500.00			
Percent Complete	50.00	Total Earned	19,250.00	
		Previous Fee Billing	15,400.00	
		Current Fee Billing	3,850.00	
		Total Fee		**3,850.00**
			Phase Total	**$3,850.00**
			Invoice Total	**$3,850.00**

Thank you for your business

Authorized By: _____

Chad Olsen

Terms Net 30. ACH payment is preferred but not required. Contact Lisa at Ltiseling@mcmgrp.com for ACH instructions.

NEENAH-MENASHA SEWERAGE COMMISSION
STATUS OF CURRENT CONTRACTED ENGINEERING PROJECTS

CURRENT PROJECTS	CONTRACT DATE	CONTRACT AMOUNT	CONTRACT AMOUNT COMPLETED	CONTRACT AMOUNT REMAINING	LAST DATE PAYMENT WAS MADE ON CONTRACT	COMPLETION DATE PER CONTRACT TERMS	OTHER NOTES
Facilities Plan Amdendment - Total Phos, UV Disinfection & Effluent Flow	12/12/2024	38,500	19,250	$19,250	8/5/2025	9/30/2025	
RECENTLY COMPLETED							
COMPLETED, BUT WITH NOTATIONS							
EQUIPMENT CONTRACTS							

N M S C OPERATIONS REPORT

FOR CALENDAR YEAR 2025

		JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	2025 YEARLY TOTAL/AVE		2024 YEARLY TOTAL/AVE	2023 YEARLY AVE
1. PLANT LOADINGS														(A) = AVERAGE (T) = TOTAL			
NEENAH (net)	TOTAL FLOW (MG)	132.602	114.191	248.606	252.157	205.292	151.969	171.917	145.630					1,422.364	(T)	2,253.118	1,975.082
	AVE. FLOW (MGD)	4.277	4.078	8.020	8.405	6.622	5.066	5.546	4.698					5.839	(A)	6.160	5.406
	PEAK FLOW (MGD)	5.666	5.682	14.866	18.970	13.179	6.684	11.100	7.418					18.97	(MAX)	20.872	23.329
	BOD (LBS)	393,325	350,143	398,068	334,583	314,406	326,211	349,187	320,687					2,786,610	(T)	4,246,913	3,412,159
	S.S. (LBS)	230,620	232,532	221,419	248,022	233,269	272,311	285,361	271,115					1,994,649	(T)	2,597,481	2,415,880
	TOTAL MONTHLY CHARGE	$196,161	$181,726	$232,413	$228,553	$204,437	$201,375	$216,711	$197,779								
MENASHA (net)	TOTAL FLOW (MG)	51.042	44.018	94.242	95.580	90.680	69.649	78.478	61.074					584.763	(T)	966.153	857.048
	AVE. FLOW (MGD)	1.647	1.572	3.040	3.186	2.925	2.322	2.532	1.970					2.399	(A)	2.639	2.347
	PEAK FLOW (MGD)	2.057	2.350	6.345	8.208	6.094	3.284	4.235	3.331					8.208	(MAX)	10.778	12.755
	BOD (LBS)	91,184	61,589	66,266	58,935	45,645	74,332	18,288	37,374					453,613	(T)	543,248	712,688
	S.S. (LBS)	58,195	78,974	216,122	126,760	90,689	113,158	146,084	169,249					999,231	(T)	1,477,384	1,351,570
	TOTAL MONTHLY CHARGE	$53,596	$51,519	$111,116	$82,580	$67,127	$73,087	$74,449	$79,818								
S.D. 2	TOTAL FLOW (MG)	2.566	2.246	3.099	3.085	2.781	2.585	2.720	2.569					21.651	(T)	37.955	38.225
	AVE. FLOW (MGD)	0.083	0.080	0.100	0.103	0.090	0.086	0.088	0.083					0.089	(A)	0.104	0.105
	PEAK FLOW (MGD)	0.095	0.085	0.126	0.170	0.112	0.105	0.106	0.090					0.17	(MAX)	0.244	0.271
	BOD (LBS)	5,792	4,709	5,350	5,216	4,895	5,159	6,179	5,858					43,158	(T)	74,013	72,987
	S.S. (LBS)	6,563	5,337	6,619	6,777	6,083	6,739	7,711	7,426					53,255	(T)	91,613	81,852
	TOTAL MONTHLY CHARGE	$4,063	$3,357	$4,163	$4,179	$3,800	$3,992	$4,547	$4,343								
FOX CROSSING (net)	TOTAL FLOW (MG)	40.391	33.977	78.461	70.478	59.948	42.746	42.299	36.932					405.232	(T)	660.659	609.196
	AVE. FLOW (MGD)	1.303	1.213	2.531	2.349	1.934	1.425	1.364	1.191					1.664	(A)	1.806	1.668
	PEAK FLOW (MGD)	1.772	2.055	5.760	6.239	5.165	2.188	2.745	2.483					6.239	(MAX)	6.283	8.089
	BOD (LBS)	72,639	60,433	81,339	63,301	51,406	52,069	53,908	47,759					482,854	(T)	765,762	750,132
	S.S. (LBS)	85,102	85,002	70,475	90,438	74,078	60,240	52,022	69,019					586,376	(T)	1,000,370	980,346
	TOTAL MONTHLY CHARGE	$54,508	$49,834	$64,324	$64,086	$53,129	$43,368	$41,078	$43,259								
HARRISON	TOTAL FLOW (MG)	14.617	12.588	16.811	15.583	15.346	14.267	14.690	14.201					118.103	(T)	178.458	170.118
	AVE. FLOW (MGD)	0.472	0.450	0.542	0.519	0.495	0.476	0.474	0.458					0.486	(A)	0.488	0.466
	PEAK FLOW (MGD)	0.548	0.514	0.772	0.735	0.645	0.521	0.650	0.578					0.772	(MAX)	0.862	0.951
	BOD (LBS)	37,980	32,788	34,941	35,771	35,584	35,915	37,436	37,388					287,803	(T)	450,896	441,878
	S.S. (LBS)	33,553	30,001	32,376	32,026	32,855	35,211	34,293	35,382					265,697	(T)	395,423	388,783
	TOTAL MONTHLY CHARGE	$23,003	$20,167	$22,730	$22,392	$22,530	$22,969	$23,142	$23,305								
SONOCO	TOTAL FLOW (MG)	8.205	8.047	8.332	8.489	9.542	9.551	11.134	11.050					74.350	(T)	115.011	113.684
	AVE. FLOW (MGD)	0.265	0.287	0.269	0.283	0.308	0.318	0.359	0.356					0.272	(A)	0.290	0.285
	PEAK FLOW (MGD)	0.325	0.398	0.398	0.430	0.390	0.493	0.405	0.454					0.493	(MAX)	0.630	0.539
	BOD (LBS)	300,093	251,240	277,608	272,258	287,154	220,759	318,423	333,456					2,260,991	(T)	3,930,086	3,513,633
	S.S. (LBS)	96,449	61,870	38,963	63,680	71,592	79,429	83,738	89,678					585,399	(T)	886,714	832,037
	TOTAL MONTHLY CHARGE	$94,712	$73,881	$72,420	$78,952	$84,825	$73,433	$95,580	$100,503								
TOTAL PLANT	TOTAL FLOW (MG)	249.423	215.067	449.551	445.371	383.588	290.767	321.238	271.456					2,626.461	(T)	4,211.352	3,763.352
	AVE. FLOW (MGD)	8.046	7.681	14.502	14.846	12.374	9.692	10.363	8.757					10.783	(A)	11.510	10.303
	BOD (LBS)	901,013	760,902	863,572	770,064	739,090	701,356	783,421	782,522					6,301,940	(T)	10,010,918	8,903,477
	S.S. (LBS)	510,482	493,716	585,974	567,703	508,566	567,088	609,209	641,869					4,484,607	(T)	6,448,985	6,050,468
	TOTAL MONTHLY CHARGE	$426,043	$380,484	$507,166	$480,742	$435,848	$415,502	$455,507	$449,007					3,550,299	(T)	5,021,016	4,492,704
	MONTHLY BUDGETED INCOME	$425,671	$425,671	$425,671	$425,671	$425,671	$425,671	$425,671	$425,671	$425,671	$425,671	$425,671	$425,671	$5,108,052	(T)	4,147,760	$4,248,016
	FOR OPERATIONS / REPLACE / DEPR	March Income	April Income	May Income	June Income	July Income	August Income	September Income	October Income	November Income	December Income	January 2025 Income	February 2025 Income				
2. PLANT EFFLUENT																	
	BOD (MG/L)	5.33	4.92	4.03	5.89	3.76	2.65	3.01	2.83					4.05	(A)	5.46	5.13
	% BOD REMOVAL	98.8%	98.9%	98.4%	97.3%	98.4%	99.1%	99.0%	99.2%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	(A)	98.1%	98.2%
	S.S. (MG/L)	6.22	5.99	3.80	5.70	4.54	4.08	4.25	4.25					4.85375	(A)	7.65	5.49777
	% S.S. REMOVAL	99.9%	99.9%	99.9%	99.9%	99.7%	99.8%	99.8%	99.9%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	(A)	99.9%	99.9%
	PHOS (MG/L)	0.180	0.190	0.110	0.210	0.490	0.480	0.477	0.360					0.31	(A)	0.25	0.30
3. MERCURY																	
	NEENAH INFLUENT (ng/l)	35.50	40.10	19.50	2.69	7.64	66.70	99.00	64.70					41.98	(A)	44.86	70.92
	MENASHA INFLUENT (ng/l)	53.90	20.20	20.00	0.77	32.10	30.70	86.90	39.80					35.55	(A)	34.51	58.98
	INFLUENT AVERAGE (ng/l)	43.51	31.25	19.72	1.92	18.48	50.34	92.77	52.42					38.80	(A)	39.48	66.56
	EFFLUENT (ng/l) - Limit 6.0	0.753	0.718	0.619	1.070	2.490	1.680	0.917	0.902					1.14	(A)	1.16	2.62
	% REMOVAL	98.27%	97.70%	96.86%	44.27%	86.53%	96.66%	99.01%	98.28%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	(A)	96.63%	94.04%

v = violation

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NEENAH-MENASHA SEWERAGE COMMISSION

NMSC Equipment & Grounds Summary
Updated 9/17/2025

Completed Projects

- Primary Scum Pump 2 air valve repaired
- Hach Phosphax quarterly (4/4) completed on 8/14
- Cooling HEX cleaned
- Annual aeration basin inspections
- SE Thermo HEX cleaned
- Annual RPZ testing completed by Ogden Plumbing- all were ok
- Scum wells cleaned by Speedy Clean
- Centrate manhole rehabbed by Great Lakes TV & Seal
- Service Building A/C condenser coil replaced by AWS
- Gas Handling Building garage O2 sensor replaced
- Sludge loader annual maintenance completed by CAT
- Bi-annual fine screen steam cleaning completed
- Portable gas detector calibrated
- W. Digester Building basement H2S sensor replaced
- SE Digester back in service

Current/Ongoing Projects

- WIN-911 alarm program improvements
- RAS room painting- the proposal from SDS Painting came back just above the budget estimate, and well below a competing proposal. Will be completed by yearend.
- Blower 2- the new bearing controller was installed. The bearing core was removed and sent to Belgium.
- Aeration basin diffuser replacement- Sanitaire/Xylem extended warranty agreement- Basins 1, 2, & 3 completed. Diffusers for Basins 4 & 5 have arrived. In process of coordinating for the installation.

The following three items are related based upon a common excavation to access the piping runs

- Electrical feeder replacement between Plant Drain, Digester, and RAS Buildings- in process. The conduits in the Digester Building lower level are being installed. It is still unknown whether all the underground conductors between buildings will be able to be pulled out for ~~reuse of the four in~~dividual conduits. We disconnected one of the feeds and were able to move the conductors, but they cannot all be verified until each feed is disconnected after the temporary power is connected.
- Hot water loop replacement between Plant Drain and Digester Buildings- the temporary lines were removed and the larger piping was televised to ensure we could use those larger pipes for routing the permanent piping. Waiting on estimate for the installation of permanent insulated supply and return lines.
- Eliminating 3" underground NG line- the electric unit heaters arrived and will be installed by MCO. The gas line will be disconnected and capped.
- Service door replacements / electrical room code compliant door hardware
- Centrifuge Feed Pump 3 rebuild
- Final clarifier inspections- 3 of 4 completed
- Screw Pump 4 repair- parts expected to arrive by the end of the month
- Headworks electrical room roof replacement- Budgeted for 2025
- Enercon annual transfer switch maintenance
- Influent submersible pump replacement

Future Projects

- Primary Clarifier 2 & 3 pit & sidewall valve replacements
- Primary Clarifiers 3 & 4- painting
- Final Clarifier 3- painting
- Replacement of feeder conductors for the Service Building
- GBT rebuilds- Budgeted for 2026
- RAS line assessment
- Reuse water strainer replacement- Budgeted for 2026
- Clean and assess the line coming into the primary clarifier splitter box
- Digester insulation repair or replacement- Budgeted for 2026
- Spare screw pump upper and lower bearing assemblies- Budgeted for 2026

CASH & INVESTMENT REPORT

AUGUST, 2025

INVESTMENTS

On August 31, 2025 the NMSC had funds invested in the following:

	RATE	TERM			
Nicolet National Bank - **ICS CDARS** -	4.34%	daily	$867,178	Repl	(Jul- 4.36%)
Nicolet National Bank - **ICS CDARS** -	4.34%	daily	$121,294	Depr	(Jul- 4.36%)
Nicolet National Bank - **ICS CDARS** -	4.34%	daily	$74,807	Op	(Jul- 4.36%)
Nicolet National Bank - **ICS CDARS** -	4.34%	daily	$2,494	CWF-Int	(Jul- 4.36%)
Nicolet National Bank - **ICS CDARS** -	4.34%	daily	$1,178	CWF-Debt	(Jul- 4.36%)
Nicolet - Money Market (Operations) -	0.01%	daily	$1,001	(Jul = 0.01%)	
Nicolet - Money Market (Depreciation) -	0.01%	daily	$1,001	(Jul = 0.01%)	
Nicolet - Money Market (Replacement) -	0.01%	daily	$1,443	(Jul = 0.01%)	
Nicolet - Money Market (CWF Debt) -	0.01%	daily	$1,001	(Jul = 0.01%)	
Nicolet - Money Market (Plant Upgrade) -	0.01%	daily	$1,011	(Jul = 0.01%)	
Nicolet - Plant Construction Checking -	0.00%	daily	$1,000	Surplus	
Nicolet-Menasha - Checking -	0.70%	daily	$960,567	(Jul = 0.70%)	
State of Wisconsin Investment Pool -	4.36%	daily	$7,665,999	(Jul = 4.36%)	
Petty Cash on Hand -			$100		
TOTAL INVESTMENTS			**$9,700,075**		

RESTRICTED CASH BALANCES

On August 31, 2025 the NMSC had Restricted Cash Balances of:

	AUG 2025	AUG 2024	CHANGE
Replacement Fund (gl #125-40)	$8,364,253	$7,524,580	$839,673
Depreciation Fund (gl #125-60)	$380,852	$238,413	$142,439
Funds for Debt payment (prin. & int.)	$599,130	$590,405	$8,725
Surplus Fund (gl #125-90)	$87,494	$60,698	$26,796
TOTAL RESTRICTED CASH	**$9,431,729**	**$8,414,096**	**$1,017,633**

UNRESTRICTED CASH BALANCES

On August 31, 2025 the NMSC had Unrestricted Cash Balances of:

	AUG 2025	AUG 2024	CHANGE
Plant Operations (gl #131-00)	$268,246	$278,526	($10,280)
Petty Cash (gl #131-10)	$100	$100	$0
TOTAL UNRESTRICTED CASH	**$268,346**	**$278,626**	**($10,280)**
TOTAL CASH (Restricted & Unrestricted)	**$9,700,075**	**$8,692,722**	**$1,007,353**

MCO GENERATED INCOME TO THE NMSC

	AUG	2025 YR-TO-DATE	2024 YR-TO-DATE
Lab testing	$4,804.25	$40,454.12	$10,773.34
Neenah sampling program	$1,335.00	$9,690.00	$8,635.00
Other Income Generated	$360.00	$2,256.00	$2,124.00
TOTAL ESTIMATED INCOME	**$6,499.25**	**$52,400.12**	**$21,532.34**

Thru July, the Commission has received $45,900.87 in reimbursement from MCO for the above listed income.

NEENAH-MENASHA SEWERAGE COMMISSION

Summary Income Statement

For the period of 8/1/2025 Through 8/31/2025

	Current Period			Year To Date			2025 Budget
	2025	2024	Variance	Actual	Budget	Variance	
Income Statement							
Operating Revenues from Contract Users	$336,720.72	$344,170.50	($7,449.78)	$2,853,478.47	$2,753,364.00	$100,114.47	$4,130,046.00
Total Operating Expenses	$404,630.40	$346,813.95	($57,816.45)	$2,718,464.19	$2,854,008.56	$135,544.37	$4,229,761.00
Other Operating Income (Expense)	$12,623.24	$8,309.58	$4,313.66	$104,426.12	$66,476.64	$37,949.48	$99,715.00
Net Operating Income	**($55,286.44)**	**$5,666.13**	**($60,952.57)**	**$239,440.40**	**($34,167.92)**	**$273,608.32**	**$0.00**
Other (Income) Expense	$25,386.19	$531.74	($24,854.45)	($356,732.22)	$8,582.92	$365,315.14	($104,624.95)
Net Income (Loss)	**($80,672.63)**	**$5,134.39**	**($85,807.02)**	**$596,172.62**	**($42,750.84)**	**$638,923.46**	**$104,624.95**

NEENAH-MENASHA SEWERAGE COMMISSION

Summary Balance Sheet (Comparative)

As of 8/31/2025

	2025	2024
Cash	$268,346.03	$278,625.52
Restricted Cash	$9,431,728.67	$8,414,096.24
Receivable from Users/Others	$128,250.19	$51,109.54
Prepaid Expenses	$182,236.34	$157,307.22
Total Current Assets	$10,010,561.23	$8,901,138.52
Fixed Assets (Net of depreciation)	$14,671,270.70	$16,106,152.82
Other Assets	$0.00	$0.00
TOTAL ASSETS	**$24,681,831.93**	**$25,007,291.34**
Current Liabilities	$547,715.02	$434,772.78
Long-term Liabilities	$11,315,132.16	$12,761,881.57
Equity from Users	$12,208,735.07	$10,918,327.39
Retained Earnings - Prior Year	$14,077.06	$14,077.06
Retained Earnings - Current Year	$596,172.62	$878,232.54
TOTAL LIABILITIES & EQUITY	**$24,681,831.93**	**$25,007,291.34**

NEENAH-MENASHA SEWERAGE COMMISSION

Income Statement

For the period of 8/1/2025 Through 8/31/2025

	Current Period				Year To Date				2025 Budget
	2025	2024	Variance	%	Actual	Budget	Variance	%	
Revenues									
O & M SERVICES - NEENAH	161,634.27	148,506.58	13,127.69	8.8	1,331,391.06	1,188,052.64	143,338.42	12.1	1,782,079.00
O & M SERVICES - MENASHA	58,227.40	56,312.83	1,914.57	3.4	429,703.02	450,502.64	(20,799.62)	(4.6)	675,754.00
O & M SERVICES - TN NEENAH SD	3,235.62	3,709.17	(473.55)	(12.8)	26,208.57	29,673.36	(3,464.79)	(11.7)	44,510.00
O & M SERVICES - FOX CROSSING	34,415.36	44,628.17	(10,212.79)	(22.9)	355,985.87	357,025.36	(1,039.49)	(0.3)	535,538.00
O & M SERVICES - HARRISON	18,607.40	18,088.58	518.82	2.9	147,224.23	144,708.64	2,515.59	1.7	217,063.00
O & M SERVICES - SONOCO/US MILLS	60,600.65	72,925.17	(12,324.52)	(16.9)	562,965.72	583,401.36	(20,435.64)	(3.5)	875,102.00
Total Operating Revenues from Contract Users	**$336,720.72**	**$344,170.50**	**$(7,449.78)**	**(2.2)**	**$2,853,478.47**	**$2,753,364.00**	**$100,114.47**	**3.6**	**$4,130,046.00**
Operating Expenses									
PROFESSIONAL FEES	168,686.95	175,853.08	7,166.13	4.1	1,368,867.93	1,417,824.64	48,956.71	3.5	2,121,237.00
SOCIAL SECURITY EXPENSE	0.00	61.17	61.17	100.0	183.60	489.36	305.76	62.5	734.00
ADMINISTRATIVE EXPENSES	0.00	1,133.33	1,133.33	100.0	42,811.66	57,066.64	14,254.98	25.0	61,600.00
TELEPHONE	324.15	275.00	(49.15)	(17.9)	2,430.90	2,200.00	(230.90)	(10.5)	3,300.00
INSURANCE (LIFE, PROPERTY, LIABILITY)	8,081.75	10,282.42	2,200.67	21.4	64,654.00	82,259.36	17,605.36	21.4	123,389.00
ELECTRIC, WATER, NATURAL GAS	67,391.95	57,568.75	(9,823.20)	(17.1)	439,192.41	460,550.00	21,357.59	4.6	690,825.00
INDUSTRIAL METERING & SAMPLING EXPENSES	191.98	216.67	24.69	11.4	1,573.44	1,733.36	159.92	9.2	2,600.00
SLUDGE HAULING/TESTING/OTHER	60,363.35	37,416.67	(22,946.68)	(61.3)	326,014.99	299,333.36	(26,681.63)	(8.9)	449,000.00
CHEMICALS	81,438.60	33,197.67	(48,240.93)	(145.3)	253,623.90	254,078.32	454.42	0.2	375,366.00
EQUIPMENT MAINTENANCE/REPAIRS	4,794.54	10,456.34	5,663.80	54.2	83,293.88	83,666.72	372.84	0.4	125,500.00
OFFICE/LAB/BUILDING/GROUNDS/SHOP	13,357.13	20,350.85	6,993.72	34.4	135,817.48	194,806.80	58,989.32	30.3	276,210.00
Total Operating Expenses	**$404,630.40**	**$346,813.95**	**($57,816.45)**	**(16.7)**	**$2,718,464.19**	**$2,854,008.56**	**$135,544.37**	**4.7**	**$4,229,761.00**
Income from Operations	**($67,909.68)**	**($2,643.45)**	**($65,266.23)**	**2,469.0**	**$135,014.28**	**($100,644.56)**	**$235,658.84**	**(234.1)**	**($99,715.00)**
Other Operating Income (Expense)									
AP DISCOUNTS	0.00	1.25	(1.25)	(100.0)	0.00	10.00	(10.00)	(100.0)	15.00
MCO INCOME SHARING	6,891.50	2,500.00	4,391.50	175.7	51,788.62	20,000.00	31,788.62	158.9	30,000.00
MISC. OPERATING REVENUE	0.00	25.00	(25.00)	(100.0)	352.70	200.00	152.70	76.4	300.00
INDUSTRIAL METERING/ADMINISTRATIVE FEES	648.00	683.33	(35.33)	(5.2)	6,955.67	5,466.64	1,489.03	27.2	8,200.00
WPPI STANBY SERVICE	4,768.00	4,766.67	1.33	0.0	38,345.75	38,133.36	212.39	0.6	57,200.00
INTEREST INCOME - O & M	315.74	333.33	(17.59)	(5.3)	6,983.38	2,666.64	4,316.74	161.9	4,000.00
Total Other Operating Income (Expense)	**$12,623.24**	**$8,309.58**	**$4,313.66**	**51.9**	**$104,426.12**	**$66,476.64**	**$37,949.48**	**57.1**	**$99,715.00**
Net Operating Income	**($55,286.44)**	**$5,666.13**	**($60,952.57)**	**(1075.7)**	**$239,440.40**	**($34,167.92)**	**$273,608.32**	**(800.8)**	**$0.00**

NEENAH-MENASHA SEWERAGE COMMISSION

Income Statement

For the period of 8/1/2025 Through 8/31/2025

	Current Period				Year To Date				2025 Budget
	2025	2024	Variance	%	Actual	Budget	Variance	%	
Other (Income) Expense									
CAPITAL CHARGES / CAPITAL INCOME	(152,315.00)	(152,312.67)	2.33	(0.0)	(1,218,510.00)	(1,218,501.36)	8.64	(0.0)	(1,827,752.00)
DEPRECIATION INCOME	(17,719.36)	(16,666.59)	1,052.79	(6.3)	(141,968.16)	(133,332.72)	8,605.44	(6.5)	(200,000.00)
REPLACEMENT INCOME	(94,334.86)	(64,833.25)	29,501.61	(45.5)	(748,542.98)	(518,666.00)	229,876.98	(44.3)	(778,000.00)
INTEREST INCOME - CAPITAL	(4,701.98)	0.00	4,701.98	(100.0)	(24,471.83)	0.00	24,471.83	(100.0)	(7,000.00)
INTERCEPTOR MAINT. - REIMBURSE INCOME	0.00	(1,666.66)	(1,666.66)	100.0	0.00	(13,333.28)	(13,333.28)	100.0	(25,000.00)
INTERCEPTOR MAINT. - MANHOLE REPAIR	0.00	1,666.67	1,666.67	100.0	0.00	13,333.36	13,333.36	100.0	25,000.00
EQUIPMENT REPLACEMENT EXPENSE	13,004.25	50,533.33	37,529.08	74.3	207,824.62	404,266.64	196,442.02	48.6	606,400.00
DEPRECIATION FUND EXPENSE	116,602.01	18,183.33	(98,418.68)	(541.3)	133,286.01	145,466.64	12,180.63	8.4	218,200.00
EQUIPMENT & PLANT DEPRECIATION	134,648.05	135,770.75	1,122.70	0.8	1,077,184.40	1,086,166.00	8,981.60	0.8	1,629,249.05
INTEREST ON CWF DEBT	30,203.10	29,856.83	(346.27)	(1.2)	358,435.72	243,183.64	(115,252.08)	(47.4)	254,278.00
Total Other (Income) Expense	$25,386.19	$531.74	($24,854.45)	(4674.2)	($356,732.22)	$8,582.92	$365,315.14	4256.3	($104,624.95)
Net Income (Loss)	($80,672.63)	$5,134.39	($85,807.02)	(1671.2)	$596,172.62	($42,750.84)	$638,923.46	(1494.5)	$104,624.95

NEENAH-MENASHA SEWERAGE COMMISSION

Balance Sheet (Comparative)

As of 8/31/2025

	2025	2024	Change
Assets			
Current Assets			
FUNDS FOR DEBT SERVICE	$599,129.70	$590,405.17	$8,724.53
EQUIPMENT REPLACEMENT FUND	$8,364,252.58	$7,524,579.99	$839,672.59
DEPRECIATION FUND	$380,852.07	$238,413.13	$142,438.94
SURPLUS FUND	$87,494.32	$60,697.95	$26,796.37
CASH / MONEY MARKET FUNDS	$268,346.03	$278,625.52	($10,279.49)
DUE FROM USERS	$0.00	$0.00	$0.00
OTHER ACCOUNTS RECEIVABLE	$128,250.19	$51,109.54	$77,140.65
PREPAID EXPENSES	$182,236.34	$157,307.22	$24,929.12
Total Current Assets	$10,010,561.23	$8,901,138.52	$1,109,422.71
Property, Plant & Equipment			
LAND & LAND RIGHTS	$216,214.55	$216,214.55	$0.00
LEASEHOLD RIGHTS - LAND/BUILDINGS	$160,156.85	$160,156.85	$0.00
INTERCEPTOR MAINS/ACCESSORIES	$2,204,375.88	$2,204,375.88	$0.00
STRUCTURES / IMPROVEMENTS / EQUIPMENT	$52,440,139.73	$52,158,315.04	$281,824.69
CONSTRUCTION WORK-IN-PROGRESS	$0.00	$0.00	$0.00
ACCUMULATED DEPRECIATION	($40,349,616.31)	($38,632,909.50)	($1,716,706.81)
Total Property, Plant & Equipment	$14,671,270.70	$16,106,152.82	($1,434,882.12)
Other Assets			
OTHER CURRENT & ACCRUED ASSETS (Interest Income Accrual)	$0.00	$0.00	$0.00
OTHER DEFERRED DEBITS	$0.00	$0.00	$0.00
Total Other Assets	$0.00	$0.00	$0.00
Total Assets	**$24,681,831.93**	**$25,007,291.34**	**($325,459.41)**

NEENAH-MENASHA SEWERAGE COMMISSION

Balance Sheet (Comparative)

As of 8/31/2025

	2025	2024	Change
		Liabilities and Equity	
Current Liabilities			
ACCOUNTS PAYABLE	$313,557.16	$290,216.83	$23,340.33
PAYABLE TO USERS	$4,996.70	$2,498.35	$2,498.35
ACCRUED INTEREST EXPENSE	$229,221.76	$142,037.60	$87,184.16
OTHER CURRENT & ACCRUED LIAB.	$0.00	$0.00	$0.00
ACCRUED PAYROLL/FED/STATE TAX LIABILITY	($60.60)	$20.00	($80.60)
OTHER DEFERRED CREDITS	$0.00	$0.00	$0.00
Total Current Liabilities	$547,715.02	$434,772.78	$112,942.24
Long Term Liabilities			
BONDS - C.W.F. SERIES 2013	$9,215,145.36	$10,399,396.42	($1,184,251.06)
NOTE PAYABLE: 2024 STORAGE BUILDING	$2,080,000.00	$2,340,000.00	($260,000.00)
S.D. 2 PREPAYMENT - SONOCO PORTION	$19,986.80	$22,485.15	($2,498.35)
Total Long Term Liabilities	$11,315,132.16	$12,761,881.57	($1,446,749.41)
Total Liabilities	**$11,862,847.18**	**$13,196,654.35**	**($1,333,807.17)**
Equity			
REPLACEMENT FUND EQUITY	$10,438,138.51	$9,343,641.63	$1,094,496.88
DEPRECIATION FUND EQUITY	$1,741,688.43	$1,559,465.32	$182,223.11
CAPITAL EQUITY & 2013 S.D.2 PREPAYMENT	$28,908.13	$15,220.44	$13,687.69
RETAINED EARNINGS	$14,077.06	$14,077.06	$0.00
Current Year Retained Earnings	$596,172.62	$878,232.54	($282,059.92)
Total Equity	**$12,818,984.75**	**$11,810,636.99**	**$1,008,347.76**
Total Liabilities and Equity	**$24,681,831.93**	**$25,007,291.34**	**($325,459.41)**

NEENAH-MENASHA SEWERAGE COMMISSION

AP Vendor Aging by Invoice Date (Summary)

Report Date: 8/31/25

Vendor ID	VendorName	Days Old 0 - 31	32 - 62	63 - 93	94 - 124	125 and Over	Balance
ALLI29	ALLIED UNIVERSAL SECURITY	$8,351.40	$0.00	$0.00	$0.00	$0.00	$8,351.40
AQUA15	AQUACHEM OF AMERICA INC.	$52,030.00	$0.00	$0.00	$0.00	$0.00	$52,030.00
ATT05	AT-T	$271.83	$0.00	$0.00	$0.00	$0.00	$271.83
AUGU55	AUGUST WINTER & SONS, INC.	$5,427.00	$0.00	$0.00	$0.00	$0.00	$5,427.00
BAD35	BADGER LAB & ENGINEERING	$72.00	$0.00	$0.00	$0.00	$0.00	$72.00
BRA90	BRAZEE ACE HARDWARE	$132.93	$0.00	$0.00	$0.00	$0.00	$132.93
CHEM70	CHEMTRADE CHEMICALS US LLC	$8,913.55	$0.00	$0.00	$0.00	$0.00	$8,913.55
CRA55	CRANE ENGINEERING SALES INC	$1,320.90	$0.00	$0.00	$0.00	$0.00	$1,320.90
GFL040	GFL ENVIRONMENTAL	$2,257.47	$0.00	$0.00	$0.00	$0.00	$2,257.47
HAWK35	HAWKINS, INC.	$9,088.80	$0.00	$0.00	$0.00	$0.00	$9,088.80
JDOG30	J.D. OGDEN PLUMBING & HEATING	$1,014.73	$0.00	$0.00	$0.00	$0.00	$1,014.73
JFAH15	J.F. AHERN CO.	$1,338.56	$0.00	$0.00	$0.00	$0.00	$1,338.56
JHCO60	J & H CONTROLS, INC.	$445.00	$0.00	$0.00	$0.00	$0.00	$445.00
LIBE60	LIBERTY PROCESS EQUIPMENT, INC	$0.00	$1,881.20	$0.00	$0.00	$0.00	$1,881.20
MCM05	MCMAHON	$3,850.00	$0.00	$0.00	$0.00	$0.00	$3,850.00
MEN05	CITY OF MENASHA	$312.00	$0.00	$0.00	$0.00	$0.00	$312.00
MEN08	MENASHA ELECTRIC/WATER UTILITY	$60,868.50	$0.00	$0.00	$0.00	$0.00	$60,868.50
MID85	MIDWEST CONTRACT OPERATIONS	$152,078.64	$0.00	$0.00	$0.00	$0.00	$152,078.64
PACE05	PACE ANALYTICAL SERVICES, INC.	$1,440.80	$0.00	$0.00	$0.00	$0.00	$1,440.80
SPEE15	SPEEDY CLEAN, INC.	$630.00	$0.00	$0.00	$0.00	$0.00	$630.00
TTM24	T&T MANAGEMENT LLC	$1,680.00	$0.00	$0.00	$0.00	$0.00	$1,680.00
USCE45	U.S. CELLULAR	$52.32	$0.00	$0.00	$0.00	$0.00	$52.32
WIS34	WISCONSIN PUBLIC SERVICE	$99.53	$0.00	$0.00	$0.00	$0.00	$99.53
	AGING TOTALS:	**$311,675.96**	**$1,881.20**	**$0.00**	**$0.00**	**$0.00**	**$313,557.16**
	AGING PERCENTAGES:	**99.40%**	**0.60%**	**0.00%**	**0.00%**	**0.00%**	

NEENAH-MENASHA SEWERAGE COMMISSION

AR Customer Aging by Invoice Date (Summary)

Report Date: 08/31/2025

Cust ID	Customer Name	Days Old 0 - 30 08/01 - 08/31	31 - 60 07/02 - 07/31	61 - 90 06/02 - 07/01	91 - 120 05/03 - 06/01	121 + all prior - 05/02	Balance	Unapplied	Net Due
GEO001	GEORGIA PACIFIC-NEENAH TEC	$324.00	$0.00	$0.00	$0.00	$0.00	$324.00	$0.00	$324.00
ITU001	ITU ABSORBTECH, INC.	$324.00	$0.00	$0.00	$0.00	$0.00	$324.00	$0.00	$324.00
MIDW01	MIDWEST CONTRACT OPERATI	$6,891.50	$0.00	$0.00	$0.00	$0.00	$6,891.50	$0.00	$6,891.50
USP001	U.S. PAPER MILLS CORP.	$0.00	$0.00	$120,710.69	$0.00	$0.00	$120,710.69	$0.00	$120,710.69
	AGING TOTALS:	**$7,539.50**	**$0.00**	**$120,710.69**	**$0.00**	**$0.00**	**$128,250.19**	**$0.00**	**$128,250.19**
	AGING PERCENTAGES:	5.88%	0.00%	94.12%	0.00%	0.00%	100.00%		

TOTAL AGING BALANCE:	$128,250.19
TOTAL PAYMENTS ON ACCOUNT:	$0.00
LEDGER BALANCE:	**$128,250.19**
TOTAL DEPOSITS WITH ORDER:	$0.00
REPORT BALANCE:	**$128,250.19**

MCO
Midwest Contract Operations

INVOICE

MIDWEST CONTRACT OPERATIONS, INC.
PO BOX 50 LITTLE CHUTE, WI 54140
PH FAX
WWW.MCO-US.COM
EIN NO 39-1601232

BILL TO: **NEENAH-MENASHA SEWERAGE COMMISSION**
101 GARFIELD AVENUE
MENASHA, WI 54952

Invoice Number: INV32091
Date: 09/01/2025
Amount Due: 151,757.34

PURCHASE ORDER	DUE DATE	TERMS
	10/01/2025	First of Month
Scope of Work: CONTRACT SERVICES		
Professional Services for the period ending: 10/31/2025		

Description	Contract Amount	Contract Term	Current Billed
1/01/2025 to 12/31/2025 SERVICES	1,530,823.25	1/01/2025 to 12/31/2025 SERVICES	127,568.60
Health Insurance			22,510.20
Liability Insurance			1,678.54
		Subtotal	**$151,757.34**
		Total	**$151,757.34**

Approved by

Paul Much

A 3.62% Convenience Fee is added to all credit card payments

MCO
Midwest Contract Operations

INVOICE

MIDWEST CONTRACT OPERATIONS, INC.
PO BOX 50 LITTLE CHUTE, WI 54140
PH FAX
WWW.MCO-US.COM
EIN NO 39-1601232

BILL TO: **NEENAH-MENASHA SEWERAGE COMMISSION**
101 GARFIELD AVENUE
MENASHA, WI 54952

Invoice Number: **INV32142**
Date: **09/10/2025**

CONTRACT #	CLIENT ID	PURCHASE ORDER	PAYMENT TERMS	DUE DATE
1108-0306	N001		Net 30	10/10/2025
CONTRACT:	B/S-Billable Mileage			
SCOPE OF WORK:	NMSC 2025 USE OF MCO VEHICLES			
August 2025, Monthly Services				

ACTIVITY	MEMO	HOURS/QTY	RATE	AMOUNT
Mileage		684.00	0.70	478.80
			Subtotal	**$478.80**
			Total	**$478.80**

Approved by

Paul Much

A 3.62% Convenience Fee is added to all credit card payments

NEENAH-MENASHA SEWERAGE COMMISSION

AP Check Register (Current by Bank)

Check Dates: 8/1/2025 to 8/31/2025

Check No.	Date	Status*	Vendor ID	Payee Name	Amount
BANK ID: NNB-OP - NICOLET NATIONAL BANK					131-0000
141208	08/05/25	P	ALLI29	ALLIED UNIVERSAL SECURITY	$8,857.02
141209	08/05/25	P	BAD35	BADGER LAB & ENGINEERING	$643.40
141210	08/05/25	P	BADG70	BADGER SCALE INC	$625.00
141211	08/05/25	P	BRA90	BRAZEE ACE HARDWARE	$267.62
141212	08/05/25	P	CHEM70	CHEMTRADE CHEMICALS US LLC	$4,452.49
141213	08/05/25	P	CINT05	CINTAS CORPORATION #2	$672.73
141214	08/05/25	P	CORM25	CORE & MAIN	$595.34
141215	08/05/25	P	DORN25	DORN'S TREESCAPING LLC	$5,000.00
141216	08/05/25	P	ENER40	ENERGENECS, INC	$7,439.94
141217	08/05/25	P	GFL040	GFL ENVIRONMENTAL	$2,252.22
141218	08/05/25	P	HAWK35	HAWKINS, INC.	$7,612.62
141219	08/05/25	P	JHCO60	J & H CONTROLS, INC.	$444.00
141220	08/05/25	P	MCM05	MCMAHON ASSOCIATES, INC	$3,080.00
141221	08/05/25	P	MID85	MIDWEST CONTRACT OPERATIONS	$152,315.24
141222	08/05/25	P	PACE05	PACE ANALYTICAL SERVICES, INC.	$2,703.40
141223	08/05/25	P	PREM25	PREMIUM WATERS, INC	$67.99
141224	08/05/25	P	USCE45	U.S. CELLULAR	$52.32
141225	08/05/25	P	WIS34	WISCONSIN PUBLIC SERVICE	$11.39
141226	08/05/25	P	XYLEM	XYLEM WATER SOLUTIONS USA INC.	$19,351.50
141227	08/05/25	P	ATT05	AT-T	$271.87
141228	08/26/25	P	ALFA50	ALFA LAVAL, INC.	$545.32
141229	08/26/25	P	ALLI29	ALLIED UNIVERSAL SECURITY	$5,600.61
141230	08/26/25	P	AUGU55	AUGUST WINTER & SONS, INC.	$12,110.00
141231	08/26/25	P	BAD35	BADGER LAB & ENGINEERING	$536.60
141232	08/26/25	P	BRA90	BRAZEE ACE HARDWARE	$189.33
141233	08/26/25	P	CARG35	CARGILL INC - SALT DIVISION	$6,952.20
141234	08/26/25	P	CENT75	CENTRAL TEMPERATURE	$1,965.00
141235	08/26/25	P	CHEM70	CHEMTRADE CHEMICALS US LLC	$4,454.05
141236	08/26/25	P	CINT05	CINTAS CORPORATION #2	$751.23
141237	08/26/25	P	DORN50	DORNER COMPANY	$244.39
141238	08/26/25	P	EQU060	EQUIPMENT DPOT WISCONSIN, INC.	$824.75
141239	08/26/25	P	FSOM23	FSO MANAGEMENT	$167,761.57
141240	08/26/25	P	HAWK35	HAWKINS, INC.	$5,076.77
141241	08/26/25	P	INT28	INTEGRATED SOLUTIONS, INC.	$1,101.00
141242	08/26/25	P	LEE70	LEE'S CONTRACTING/FABRICATING	$2,694.26
141243	08/26/25	P	MCM05	MCMAHON ASSOCIATES, INC	$4,620.00
141244	08/26/25	P	MEN08	MENASHA ELECTRIC/WATER UTILITY	$70,717.65
141245	08/26/25	P	MOR75	MORTON SAFETY	$232.50
141246	08/26/25	P	NICO40	NICOLET NATIONAL BANK	$2,037.38
141247	08/26/25	P	PREM25	PREMIUM WATERS, INC	$87.99
141248	08/26/25	P	ROBJ75	ROBERT J IMMEL EXCAVATING	$1,595.00
141249	08/26/25	P	SAM65	SAM'S CLUB	$167.60
141250	08/26/25	P	SPEE15	SPEEDY CLEAN, INC.	$3,135.00
141251	08/26/25	P	UGSI24	UGSI CHEMICAL FEED	$13,004.25
141252	08/26/25	P	VWR60	VWR INTERNATIONAL INC	$7,878.12
141253	08/26/25	P	WEEN15	WE ENERGIES	$6,608.79
				BANK NNB-OP REGISTER TOTAL:	$537,607.45
				GRAND TOTAL :	$537,607.45

* Check Status Types: "P" - Printed ; "M" - Manual ; "V" - Void (Void Date); "A" - Application; "E" - EFT
** Denotes broken check sequence.

NEENAH-MENASHA
SEWERAGE COMMISSION

PROPOSED NMSC 2026 BUDGET

TO BE PRESENTED

ON

September 23, 2025

Prepared - August 2025

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NMSC 2026 Budget

NEENAH-MENASHA SEWERAGE COMMISSION

Comparison of Actual Costs and Overall % Change Since 2022

ASSUMUMPTION = 2.0% annual increases in OPERATIONS/MAINTENANCE BUDGET IN 2027-2028

	2022 ACTUAL	2023 ACTUAL	2024 ACTUAL	2025 APPROVED BUDGET	2026 PROPOSED BUDGET	2027 Estimated BUDGET	2028 Estimated BUDGET
Operations & Maintenance	$3,327,054	$3,453,020	$3,857,611	$4,130,046	$4,200,580	$4,284,592	$4,370,283
Replacement	$778,003	$778,003	$778,003	$778,000	$778,000	$800,000	$800,000
Depreciation	$200,001	$200,001	$200,001	$200,000	$200,000	$200,000	$200,000
Capital - 2015 CWF Loan Repayment	$1,459,419	$1,459,419	$1,459,419	$1,459,419	$1,489,195	$1,459,419	$1,459,419
Capital - 2024 Biosolids Loan	- - - -	- - - -	$0	$368,333	$355,333	$355,333	$342,333
Interceptor Maintenance	$0	$0	$9,882	$25,000	$5,000	T.B.D.	T.B.D.
TOTAL	$5,764,477	$5,890,443	$6,304,916	$6,960,798	$7,028,108	$7,099,344	$7,172,035

CALCULATION OF UNIT OPERATION, MAINTENANCE, REPLACEMENT & DEPRECIATION COSTS

NEENAH-MENASHA SEWERAGE COMMISSION

1st QUARTER - 2026 (Jan - Mar)

	VOLUME	B.O.D.	S.S.	P (2026 -?)	TOTAL
OPERATIONAL COSTS	$921,481	$1,629,867	$1,649,232		$4,200,580
	(21.937%)	(38.801%)	(39.262%)	t.b.d.	
EQUIPMENT REPLACEMENT FUND COSTS	$306,765	$242,503	$228,732		$778,000
	(39.43%)	(31.17%)	(29.40%)	t.b.d.	
DEPRECIATION FUND COSTS	$44,000	$80,800	$75,200		$200,000
	(22.00%)	(40.40%)	(37.60%)	t.b.d.	
TOTAL OPERATIONS, REPLACEMENT, & DEPRECIATION COSTS	**$1,272,247**	**$1,953,170**	**$1,953,164**		**$5,178,580**
	24.57%	37.72%	37.72%	t.b.d.	
CAPITAL (DEBT) COSTS - Clean Water Fund Loan	$326,134	$615,038	$548,024		$1,489,195
	(21.9%)	(41.3%)	(36.8%)	t.b.d.	
CAPITAL (DEBT) COSTS - Storage Building Loan	0.00	213,200	142,133		$355,333
	(0%)	(60%)	(40%)		
TOTAL CAPITAL COSTS	$326,134	$828,238	$690,157		$1,844,528
TOTAL ANNUAL COSTS	**$1,598,380**	**$2,781,407**	**$2,643,321**		**$7,023,109**
2026 Estimated Budgeted Loadings	3,856.564	9,584,268	6,379,461		
UNIT COSTS - OPERATIONS, REPLACEMENT, & DEPRECIATION (Based on 2026 Estimated Budget Loadings)	**$329.89** per MG	**$0.2038** per lb.	**$0.3062** per lb.		**APPROVED O/R/D**
UNIT COSTS - WITH CAPITAL	**$415.25 per MG**	**$0.2908 per lb.**	**$0.4158 per lb.**		**APPROVED BUDGET**

NEENAH-MENASHA SEWERAGE COMMISSION
2026 BUDGET SUMMARY - EXPENSES

	2024 ACTUAL	2025 6 MONTH ACTUAL	2025 6 MONTH ESTIMATE	2025 12 MONTH ESTIMATE	2025 BUDGET	**2026 BUDGET**	% CHANGE
		OPERATING BUDGET					
I - OPERATIONS							
SERVICES							
512 - SALARIES & WAGES	$0	$0	$0	$0	$0	**$0**	0.0%
514 - PROFESSIONAL FEES	$1,984,030	$1,025,096	$1,039,640	$2,064,736	$2,121,237	**$2,174,148**	2.5%
517 - SOCIAL SECURITY	$520	$99	$635	$734	$734	**$1,000**	36.2%
520 - ADMINISTRATIVE	$49,644	$41,712	$7,575	$49,287	$61,600	**$53,000**	-14.0%
521 - TELEPHONE	$2,885	$1,783	$1,017	$2,800	$3,300	**$3,300**	0.0%
522 - INSURANCE	$107,493	$48,491	$51,291	$99,781	$123,389	**$104,753**	-15.1%
TOTAL SERVICES	$2,144,572	$1,117,180	$1,100,158	$2,217,338	$2,310,260	**$2,336,201**	1.1%
UTILITIES							
531 - ELECTRICITY	$518,700	$262,877	$324,923	$587,800	$600,000	**$623,100**	3.9%
532 - WATER	$20,542	$10,925	$9,783	$20,708	$16,500	**$20,898**	26.7%
533 - STORM WATER UTILITY FEES	$8,638	$4,527	$4,527	$9,054	$8,400	**$9,054**	7.8%
534 - NATURAL GAS	$39,276	$14,152	$21,390	$35,542	$60,375	**$66,815**	10.7%
535 - FIRE PROTECTION FEES	$5,218	$2,796	$2,796	$5,592	$5,550	**$5,592**	0.8%
TOTAL UTILITIES	$592,374	$295,277	$363,419	$658,696	$690,825	**$725,459**	5.0%
536 - INDUSTRIAL METERING/SAMPLING	$3,746	$1,381	$1,219	$2,600	$2,600	**$5,900**	126.9%
SLUDGE HAULING							
546 - HAUL & DISPOSE	$388,733	$236,898	$175,182	$412,080	$396,000	**$427,231**	7.9%
547 - SLUDGE BUILDING	$54,065	$22,579	$22,421	$45,000	$50,000	**$46,100**	0.0%
548 - SOIL TESTING CHARGES	$0	$0	$0	$0	$0	**$0**	
549 - FUEL & EQUIPMENT COSTS	$680	$163	$437	$600	$3,000	**$1,000**	-66.7%
TOTAL SLUDGE HAULING	$443,478	$259,640	$198,040	$457,680	$449,000	**$474,331**	5.6%
TOTAL OPERATIONS	$3,184,170	$1,673,479	$1,662,835	$3,336,314	$3,452,685	**$3,541,891**	2.6%
II - CHEMICALS							
552 - POLYMER	$169,380	$48,061	$52,031	$100,091	$162,000	**$154,132**	-4.9%
553 - SODIUM BISULFITE	$47,853	$26,614	$22,003	$48,617	$52,981	**$61,566**	16.2%
554 - CHLORINE	$37,355	$0	$0	$0	$0	**$0**	
555 - SALT	$25,452	$13,156	$12,683	$25,839	$20,600	**$32,500**	57.8%
556 - ALUMINUM SULFATE	$113,989	$57,951	$71,220	$129,170	$130,410	**$126,381**	-3.1%
558 - COAGULANT (start in 2023)	$3,125	$0	$0	$0	$9,375	**$9,825**	4.8%
TOTAL CHEMICALS	$410,773	$145,781	$157,936	$303,717	$375,366	**$384,404**	2.4%
III - REPAIRS & MAINTENANCE							
SEWERAGE							
561 - PRE-PRIMARY TREATMENT	$40,189	$25,878	$19,122	$45,000	$45,000	**$45,000**	0.0%
562 - PRIMARY TREATMENT	$9,049	$7,258	$342	$7,600	$7,000	**$7,500**	7.1%
563 - SECONDARY	$7,321	$1,385	$3,615	$5,000	$5,000	**$5,000**	0.0%
564 - OUTFALL	$8,519	$1,864	$6,736	$8,600	$14,000	**$13,000**	-7.1%
565 - ODOR CONTROL BLDG	$0	$73	$227	$300	$500	**$500**	0.0%
566 - FILTER BELT PRESS/ CENTRIFUGE	$5,040	$5,752	$2,748	$8,500	$12,000	**$9,000**	-25.0%
567 - INSTRUMENTATION	$5,549	$208	$2,292	$2,500	$4,000	**$4,500**	12.5%
568 - DIGESTORS	$30,312	$22,917	$7,083	$30,000	$30,000	**$30,000**	0.0%
569 - GRAVITY BELT THICKENERS	$59	$5,289	$1,211	$6,500	$4,500	**$6,000**	33.3%
570 - SAMPLERS	$1,939	$1,650	$1,650	$3,300	$3,500	**$3,500**	0.0%
TOTAL SEWERAGE	$107,977	$72,275	$45,025	$117,300	$125,500	**$124,000**	-1.2%

NEENAH-MENASHA SEWERAGE COMMISSION
2026 BUDGET SUMMARY - EXPENSES

	2024 ACTUAL	2025 6 MONTH ACTUAL	2025 6 MONTH ESTIMATE	2025 12 MONTH ESTIMATE	2025 BUDGET	**2026 BUDGET**	% CHANGE
BUILDING & GROUNDS							
591 - OFFICE SUPPLIES	$36,995	$11,069	$12,331	$23,400	$24,500	**$33,200**	35.5%
592 - LABORATORY SUPPLIES	$22,453	$14,302	$8,598	$22,900	$23,500	**$27,000**	14.9%
593 - TRANSPORTATION	$6,042	$2,366	$3,534	$5,900	$5,900	**$6,000**	1.7%
594 - ELECTRICAL SUPPLIES	$2,932	$1,593	$1,707	$3,300	$3,500	**$3,500**	0.0%
595 - PERSONNEL SUPPLIES	$3,518	$1,738	$2,562	$4,300	$7,500	**$7,600**	1.3%
596 - CLEANING SUPPLIES	$10,768	$5,108	$3,281	$8,389	$8,000	**$9,100**	13.8%
597 - PHYSICAL PLANT REPAIR / MAINT	$160,205	$55,621	$98,651	$154,272	$192,110	**$195,500**	1.8%
598 - HARDWARE SUPPLIES	$1,629	$378	$622	$1,000	$1,500	**$1,500**	0.0%
599 - SHOP SUPPLIES	$2,311	$1,105	$1,395	$2,500	$3,200	**$2,900**	-9.4%
600 - LUBRICANTS	$7,697	$2,572	$2,928	$5,500	$6,500	**$6,500**	0.0%
TOTAL BUILDING & GROUNDS	$254,549	$95,849	$135,612	$231,461	$276,210	**$292,800**	6.0%
TOTAL REPAIRS & MAINTENANCE	$362,526	$168,125	$180,636	$348,761	$401,710	**$416,800**	3.8%
INTERCEPTORS							
480 - CLEAN & INSPECT	$9,882	$0	$0	$0	$5,000	**$5,000**	0.0%
TOTAL INTERCEPTOR REPAIR/MAINT.	$9,882	$0	$0	$0	$25,000	**$5,000**	-80.0%

	BUDGET SUMMARY - OPERATIONS						
I - OPERATIONS	$3,184,170	$1,673,479	$1,662,835	$3,336,314	$3,452,685	**$3,541,891**	2.6%
II - CHEMICALS	$410,773	$145,781	$157,936	$303,717	$375,366	**$384,404**	2.4%
III - REPAIRS/MAINTENANCE	$362,526	$168,125	$180,636	$348,761	$401,710	**$416,800**	3.8%
SUBTOTAL	$3,957,469	$1,987,385	$2,001,407	$3,988,792	$4,229,761	**$4,343,095**	2.7%
INTERCEPTOR REPAIRS/MAINT.	$9,882	$0	$0	$0	$25,000	**$5,000**	-80.0%
MISC. REVENUES	99,858	$57,775	$41,294	$99,069	$99,715	**$142,515**	42.9%
OPERATING BUDGET w/INTERCEPTOR	$3,867,493	$1,929,610	$1,960,113	$3,889,723	$4,155,046	**$4,205,580**	1.2%

	BUDGET SUMMARY - TOTAL BUDGET						
NET OPERATING BUDGET	3,857,611	1,929,610	1,960,113	3,889,723	4,130,046	**$4,200,580**	1.7%
INTERCEPTOR MAINTENANCE	9,882	0	0	0	25,000	**$5,000**	-80.0%
REPLACEMENT FUND	778,003	453,840	324,160	778,000	778,000	**$778,000**	0.0%
DEPRECIATION FUND	200,001	116,670	83,330	200,000	200,000	**$200,000**	0.0%
CAPITAL BUDGET	1,459,419	913,882	898,202	1,812,084	1,827,752	**$1,844,528**	0.9%
TOTAL EXPENDITURES	6,304,916	3,414,002	3,265,805	6,679,807	6,960,798	**$7,028,109**	1.0%

SUMMARY OF BUDGET EXPENSES

	2024 ACTUAL	2025 ESTIMATE	2025 BUDGET	**2026 BUDGET**	% CHANGE
OPERATIONS & MAINTENANCE BUDGET					
The Operations & Maintenance Budget is for the day-to-day operations associated with running the Wastewater Treatment Facility.	3,857,611	3,889,723	4,130,046	**$4,200,580**	**1.7%**
INTERCEPTOR MAINTENANCE					
The Interceptor Maintenance is established to cover expenditures for the costs to televise, clean and repair the NMSC Interceptor. The costs are billed to the community based on their % of use of the Interceptor.	9,882	0	25,000	**$5,000**	**-80.0%**
REPLACEMENT FUND BUDGET					
The Replacement Fund was established to cover expenditures for the replacement of mechanical equipment necessary to maintain the plant design capacity and performance. This fund is mandated by Federal/State Regulations.	778,003	778,000	778,000	**$778,000**	**0.0%**
DEPRECIATION FUND BUDGET					
The Depreciation Fund was established in 1997 to cover expenditures for the replacement of mechanical equipment not covered under the Replacement Fund, for the maintenance/repair of current structures that deteriorate over time, and for modifications to structures and/or equipment that will benefit the plants operating efficiency.	200,001	200,000	200,000	**$200,000**	**0.0%**
CAPITAL BUDGET					
CLEAN WATER FUND - Interest	315,609	259,500	254,278	**$252,166**	**-0.8%**
CLEAN WATER FUND - Principal	1,143,810	1,184,251	1,205,141	**$1,237,029**	**2.6%**
2024 FINANCING FOR SLUDGE STORAGE BUILDING	0	368,333	368,333	**$355,333**	**-3.5%**
	$1,459,419	$1,812,084	$1,827,752	**$1,844,528**	**0.9%**
	$6,304,916	$6,679,807	$6,960,798	**$7,028,109**	**1.0%**

SUMMARY OF BUDGET INCOME

	2024 ACTUAL	2025 ESTIMATE	2025 BUDGET	**2026 BUDGET**	% CHANGE
CITY OF NEENAH	2,994,951	2,948,190	3,008,850	**3,108,016**	**3.3%**
CITY OF MENASHA	1,161,302	919,529	1,144,295	**1,157,529**	**1.2%**
TOWN OF NEENAH S.D. #2	58,189	48,149	58,688	**56,349**	**-4.0%**
VILLAGE OF FOX CROSSING	873,624	815,138	907,978	**881,436**	**-2.9%**
HARRISON UTILITIES	354,273	324,324	365,034	**366,185**	**0.3%**
SONOCO/U.S. MILLS	1,486,540	1,271,815	1,475,951	**1,458,595**	**-1.2%**
	$6,928,879	$6,327,145	$6,960,796	**$7,028,109**	**1.0%**

2025 BUDGET SUMMARY - INCOME

	2024 ACTUAL	2025 6 MONTH ACTUAL	2025 6 MONTH ESTIMATE	2025 12 MONTH ESTIMATE	2025 BUDGET	**2026 BUDGET**	% CHANGE
OPERATING BUDGET	$3,970,212	$2,162,844	$1,726,879	$3,889,723	$3,999,309	**$4,200,580**	5.0%
INTERCEPTOR MAINT.	$9,882	$0	$0	$0	$19,200	**$5,000**	-74.0%
REPLACEMENT FUND	$778,011	$389,002	$388,998	$778,000	$778,000	**$778,000**	0.0%
DEPRECIATION FUND	$200,000	$100,002	$99,998	$200,000	$200,000	**$200,000**	0.0%
CAPITAL BUDGET	$1,970,775	$913,882	$545,538	$1,459,420	$1,970,753	**$1,844,528**	-6.4%
TOTAL INCOME	$6,928,880	$3,565,730	$2,761,413	$6,327,143	$6,967,262	**$7,028,109**	0.9%
ESTIMATED REVENUES							
NEENAH:							
OPERATING	$1,714,537	$1,004,044	$801,658	$1,805,702	$1,782,079	**$1,850,366**	3.8%
REPLACEMENT	$351,765	$187,338	$187,336	$374,674	$353,470	**$358,674**	1.5%
DEPRECIATION	$86,141	$46,358	$46,356	$92,714	$86,529	**$88,151**	1.9%
CAPITAL	$842,508	$422,744	$252,355	$675,099	$786,772	**$810,825**	3.1%
TOTAL	$2,994,951	$1,660,484	$1,287,706	$2,948,190	$3,008,850	**$3,108,016**	3.3%
MENASHA:							
OPERATING	$673,073	$317,441	$253,454	$570,895	$675,754	**$694,486**	2.8%
INTERCEPTOR	$4,973	$0	$0	$0	$13,371	**$2,517**	-81.2%
REPLACEMENT	$139,172	$60,989	$60,988	$121,977	$137,161	**$137,758**	0.4%
DEPRECIATION	$33,101	$14,167	$14,166	$28,333	$32,391	**$32,567**	0.5%
CAPITAL	$310,983	$124,189	$74,134	$198,323	$285,597	**$290,201**	1.6%
TOTAL	$1,161,302	$516,786	$402,743	$919,529	$1,144,294	**$1,157,529**	1.2%
TOWN NEENAH SD #2:							
OPERATING	$42,429	$20,298	$16,207	$36,505	$44,510	**$43,053**	-3.3%
REPLACEMENT	$8,263	$3,560	$3,560	$7,120	$8,252	**$7,761**	-6.0%
DEPRECIATION	$2,157	$931	$931	$1,862	$2,135	**$2,029**	-4.9%
CAPITAL	$5,340	$1,667	$995	$2,662	$3,792	**$3,506**	0.0%
TOTAL	$58,189	$26,456	$21,693	$48,149	$58,689	**$56,349**	-4.0%
FOX CROSSING							
OPERATING	$495,736	$278,572	$222,420	$500,993	$535,538	**$526,967**	-1.6%
INTERCEPTOR	$4,183	$0	$0	$0	$9,910	**$2,117**	-78.6%
REPLACEMENT	$105,054	$52,966	$52,965	$105,931	$105,782	**$102,988**	-2.6%
DEPRECIATION	$25,422	$12,792	$12,791	$25,583	$25,764	**$24,855**	-3.5%
CAPITAL	$243,229	$114,362	$68,268	$182,630	$230,984	**$224,509**	-2.8%
TOTAL	$873,624	$458,692	$356,445	$815,138	$907,978	**$881,436**	-2.9%
HARRISON UTILITIES							
OPERATING	$200,129	$110,190	$87,979	$198,168	$217,063	**$219,430**	1.1%
INTERCEPTOR	$725	$0	$0	$0	$1,719	**$367**	-78.7%
REPLACEMENT	$39,640	$19,811	$19,811	$39,622	$39,376	**$39,277**	-0.3%
DEPRECIATION	$10,414	$5,190	$5,190	$10,380	$10,443	**$10,395**	-0.5%
CAPITAL	$103,365	$47,687	$28,467	$76,154	$96,433	**$96,716**	0.3%
TOTAL	$354,273	$182,878	$141,446	$324,324	$365,034	**$366,185**	0.3%
SONOCO/U.S. MILLS							
OPERATING	$844,308	$432,299	$345,161	$777,460	$875,102	**$866,279**	-1.0%
REPLACEMENT	$134,117	$64,338	$64,337	$128,675	$133,938	**$131,542**	-1.8%
DEPRECIATION	$42,765	$20,564	$20,563	$41,127	$42,737	**$42,003**	-1.7%
CAPITAL	$465,350	$203,233	$121,319	$324,552	$424,174	**$418,771**	-1.3%
TOTAL	$1,486,540	$720,434	$551,380	$1,271,815	$1,475,951	**$1,458,595**	-1.2%
TOTAL REVENUES							
OPERATING	$3,970,212	$2,162,844	$1,726,879	$3,889,723	$4,130,046	**$4,200,580**	1.7%
INTERCEPTOR	$9,882	$0	$0	$0	$25,000	**$5,000**	-80.0%
REPLACEMENT	$778,011	$389,002	$388,998	$778,000	$778,000	**$778,000**	0.0%
DEPRECIATION	$200,000	$100,002	$99,998	$200,000	$200,000	**$200,000**	0.0%
CAPITAL	$1,970,775	$913,882	$545,538	$1,459,420	$1,827,752	**$1,844,528**	0.9%
TOTAL	$6,928,880	$3,565,730	$2,761,413	$6,327,143	$6,960,798	**$7,028,109**	1.0%

Account Nos. 512 - 549 - OPERATIONS

Account No. 512 - Salaries & Wages

Estimated wages for seasonal help that will be paid in 2026.

Account No 512.4 - Wages

YEAR	TOTAL COST
2022	$5,054
2023	$4,966
2024	$0
2025-EST	$0
2025 - Budget	$0
2026 - EST	$0

TOTAL SALARIES AND WAGES (accts 512.1-512.6) **$0**

Account No. 514 - Professional Fees

Account No. 514.1 - Attorney

YEAR	TOTAL COST	
2022	$8,155	
2023	$10,934	
2024	$19,815	
2025-EST	$5,971	
2025 - Budget	$22,000	
2026 - EST	$15,000	$15,000

Account No. 514.2 - Auditor

YEAR	TOTAL COST	
2022	$7,849	
2023	$8,505	
2024	$10,883	
2025-EST	$11,261	
2025 - Budget	$11,000	
2026 - EST	$12,500	$12,500

Account No. 514.4 - Private Lab Fees

YEAR	TOTAL COST	
2022	$15,390	
2023	$18,345	
2024	$30,699	
2025-EST	$51,000	
2025 - Budget	$51,000	
2026 - EST	$70,100	$70,100

Account No. 514.5 - Contract Management

YEAR	TOTAL COST	
2022	$1,643,897	
2023	$1,708,410	
2024	$1,777,675	
2025-EST	$1,821,088	
2025 - Budget	$1,847,737	
2026 - EST	$1,890,379	$1,890,379

Account No. 514.6 - Other Consultants, Engineering Services, misc.

YEAR	TOTAL COST	
2022	$28,682	
2023	$53,197	
2024	$26,195	
2025-EST	$22,758	
2025 - Budget	$35,000	
2026 - EST	$30,000	$30,000

Account No. 514.7 - Security Services

YEAR	TOTAL COST	
2022	$131,388	
2023	$138,185	
2024	$145,762	
2025-EST	$152,658	
2025 - Budget	$154,500	
2026 - EST	$156,169	$156,169

TOTAL PROFESSIONAL FEES(accts 514.1-514.7) **$2,174,148**

Account No. 517 - Social Security

YEAR	TOTAL COST	
2022	$861	
2023	$1,007	
2024	$520	
2025-EST	$734	
2025 - Budget	$734	
2026 - EST	$1,000	$1,000

Account No. 520 - Administration

Account No. 520.4 - Commission Meetings

YEAR	TOTAL COST	
2022	$6,200	
2023	$8,200	
2024	$6,800	
2025-EST	$6,800	
2025 - Budget	$9,600	
2026 - EST	$6,000	$6,000

Account No. 520.5 - Leases, Legal Notices, State Registrations,NMSC memberships, fees, Other Misc

YEAR	TOTAL COST	
2022	$3,506	
2023	$3,917	
2024	$3,429	
2025-EST	$3,000	
2025 - Budget	$4,000	
2026 - EST	$4,000	$4,000

Account No. 520.6 - DNR Administrative Fees

YEAR	TOTAL COST	
2022	$41,835	
2023	$41,105	
2024	$39,416	
2025-EST	$39,487	
2025 - Budget	$48,000	
2026 - EST	$43,000	$43,000

TOTAL ADMINISTRATIVE COSTS (accts 520.1-520.6) **$53,000**

Account No. 521 - Telephone/Cellular/Flow Recording Data Transfer

YEAR	TOTAL COST	
2022	$19,737	
2023	$3,013	
2024	$2,885	
2025-EST	$2,800	
2025 - Budget	$3,300	
2026 - EST	$3,300	$3,300

Account No. 522 - Insurance

The following is a list of insurance categories and premium estimates for 2026:

Account No. 522.2 - Property Insurance

YEAR	TOTAL COST	
2022	$54,521	
2023	$62,371	
2024	$83,789	
2025-EST	$80,637	
2025 - Budget	$92,145	
2026 - EST	$88,700	$83,993

Account No. 522.3 - General Liability

YEAR	TOTAL COST	
2022	$14,307	
2023	$15,080	
2024	$14,400	
2025-EST	$15,550	
2025 - Budget	$19,007	
2026 - EST	$14,000	$14,000

Account No. 522.4 - Automobile

YEAR	TOTAL COST	
2022	$308	
2023	$308	
2024	$479	
2025-EST	$420	
2025 - Budget	$494	
2026 - EST	$440	$440

Account No. 522.5 - Crime

YEAR	TOTAL COST	
2022	$663	
2023	$663	
2024	$758	
2025-EST	$500	
2025 - Budget	$780	
2026 - EST	$520	$520

Account No. 522.7 - Worker's Compensation

YEAR	TOTAL COST	
2022	$672	
2023	$638	
2024	$720	
2025-EST	$549	
2025 - Budget	$720	
2026 - EST	$600	$600

Account No. 522.8 - Umbrella Liability

YEAR	TOTAL COST	
2022	$4,868	
2023	$3,693	
2024	$4,849	
2025-EST	$0	
2025 - Budget	$7,765	
2026 - EST	$3,000	$3,000

Account No. 522.9 - Public Officials

YEAR	TOTAL COST	
2022	$2,850	
2023	$2,825	
2024	$2,498	
2025-EST	$2,125	
2025 - Budget	$2,478	
2026 - EST	$2,200	$2,200

TOTAL INSURANCE (accts 522.1-522.9) **$104,753**

Account No. 530 - UTILITIES

Account No 531 - Electricity

YEAR	TOTAL KWHr	COST $/KWHr	TOTAL COST	
2022	6,126,105	$0.084	$513,988	
2023	6,014,243	$0.079	$477,436	
2024	6,615,734	$0.078	$517,082	
2025-EST	6,670,000	$0.088	$587,800	
2025 - Budget	6,760,000	$0.089	$600,000	
2026 - EST	6,700,000	$0.093	$623,100	
				$623,100

Account No 532 - Water Usage

YEAR	GALLONS (1000's)	UNIT COST $/1000	TOTAL COST	
2022	2,243	$7.381	$16,555	
2023	2,052	$7.581	$15,556	
2024	2,339	$8.782	$20,542	
2025-EST	2,358	$8.782	$20,708	
2025 - Budget	2,200	$7.500	$16,500	
2026 - EST	2,380	$8.782	$20,898	
				$20,898

Account No 533 - Storm Water Utility

YEAR	TOTAL COST	
2022	$8,222	
2023	$8,222	
2024	$8,638	
2025-EST	$9,054	
2025 - Budget	$8,400	
2026 - EST	$9,054	$9,054

Account No 534 - Natural Gas

YEAR	THERMS	UNIT COST $/THERM	TOTAL COST	
2022	101,816	$0.792	$80,648	
2023	65,909	$0.661	$43,591	
2024	82,874	$0.474	$39,276	
2025-EST	65,000	$0.547	$35,542	
2025 - Budget	75,000	$0.805	$60,375	
2026 - EST	83,000	$0.805	$66,815	
				$66,815

Account No 535 - Fire Protection Fees

YEAR	TOTAL COST	
2022	$4,631	
2023	$4,704	
2024	$5,218	
2025-EST	$5,592	
2025 - Budget	$5,550	
2026 - EST	$5,592	$5,592

TOTAL UTILITIES (accts. 531 - 534) **$725,459**

Account No 536 - Industrial Metering and Sampling

Charges to this account result from out-of-pocket expenses such as outside laboratory fees, charts, and maintenance of metering and sampling stations. Other in-house expenses are included in other operating accounts.

YEAR	TOTAL COST	
2022	$2,539	
2023	$2,356	
2024	$3,746	
2025-EST	$2,600	
2025 - Budget	$2,600	
2026 - EST	$5,900	$5,900

ACCOUNT No. 545 - SLUDGE DISPOSAL

Account No 546 - Sludge Haul & Dispose

YEAR	VOLUME TONS	UNIT COST $/TON	TOTAL COST	
2022	7,646	$25.10	$191,956	
2023	7,520	$26.00	$195,523	
2024	8,389	$46.34	$388,733	
2025-EST	8,000	$51.51	$412,080	
2025 - Budget	8,000	$49.50	$396,000	
2026 - EST	8,100	$51.51	$427,231	
				$427,231

Account No 547 - Sludge Building

YEAR	TOTAL COST	
2022	$0	
2023	$0	
2024	$54,065	
2025-EST	$45,000	
2025 - Budget	$50,000	
2026 - EST	$46,100	$46,100

Account No 549 - Fuel & Equipment Charges

YEAR	TOTAL COST	
2022	$2,708	
2023	$4,724	
2024	$680	
2025-EST	$600	
2025 - Budget	$3,000	
2026 - EST	$1,000	$1,000

TOTAL SLUDGE DISPOSAL (Accts. 546 - 549) **$474,331**

TOTAL OPERATIONS (Accts. 512 - 549) **$3,541,891**

Account No. 550 - Chemicals

Account No 552 - Polymer

YEAR	LBS.	UNIT COST $/LB	COST	
2022	84,200	$1.90	$159,952	
2023	66,000	$2.35	$155,100	
2024	75,400	$2.25	$169,380	
2025-EST	46,650	$2.15	$100,091	
2025 - Budget	70,434	$2.30	$162,000	
2026 - EST	68,200	$2.26	$154,132	
				$154,132

Account No 553 - Sodium Bisulfite

YEAR	GALLONS	UNIT COST $/GAL	COST	
2022	11,950	$2.912	$34,801	
2023	12,760	$3.032	$38,684	
2024	15,823	$3.024	$47,853	
2025-EST	16,077	$3.024	$48,617	
2025 - Budget	16,006	$3.310	$52,981	
2026 - EST	18,600	$3.310	$61,566	
				$61,566

Account No 554 - Chlorine

	YEAR	QUANTITY (gals)	UNIT COST $/TON	TOTAL COST	
	2022	0	$0.00	$0	
liquid	2023	0	$0.00	$0	
	2024	14,868	$2.51	$37,355	
liquid	2025-EST	0	$0.00	$0	
liquid	2025 - Budget	0	$0.00	$0	
liquid	2026 - EST	0	$0.00	$0	
					$0

Account No 555 - Salt

YEAR	TONS	UNIT COST $/ton	TOTAL COST	
2022	76	$258.48	$19,533	
2023	50	$256.86	$12,930	
2024	97	$263.26	$25,452	
2025-EST	98	$263.26	$25,839	
2025 - Budget	75	$274.67	$20,600	
2026 - EST	124	$262.40	$32,500	
				$32,500

Account No 556 - Aluminum Sulfate

YEAR	TONS	UNIT COST $/Ton	TOTAL COST	
2022	171.5	$324.50	$55,656	
2023	551.1	$176.35	$97,196	
2024	647.3	$176.11	$113,989	
2025-EST	318.9	$405.00	$129,170	
2025 - Budget	322.0	$405.00	$130,410	
2026 - EST	309.0	$409.00	$126,381	
				$126,381

Account No 557 - Miscellaneous Chemicals

YEAR	CHEMICALS	TOTAL COST	
2022		$0	
2023	Defoamer	$3,209	
2024	Sodium Bicarbinate, Defoamer	$13,619	
2025-EST	0	$0	
2025 - Budget		$0	
2026 - EST		$0	
			$0

Account No 558 - Coagulant

YEAR	LBS	UNIT COST $/lbs	TOTAL COST	
2022	5000	$1.25	$6,250	
2023	12275	$1.25	$15,344	
2024	2500	$1.25	$3,125	
2025-EST	0	$0.00	$0	
2025 - Budget	7500	$1.25	$9,375	
2026 - EST	7500	$1.31	$9,825	
				$9,825

TOTAL CHEMICALS (Accts. 551 - 559) **$384,404**

Account No 560 - Sewerage

This account, under the general category of Repairs & Maintenance estimates costs for matinenance which are somewhat predictable, and for repairs which are usually unpredictable.

Account No 561 - Pre-Primary Treatment

YEAR	TOTAL COST	
2022	$45,186	
2023	$40,264	
2024	$40,189	
2025-EST	$45,000	
2025 - Budget	$45,000	
2026 - EST	$45,000	$45,000

Account No 562 - Primary Treatment

YEAR	TOTAL COST	
2022	$1,642	
2023	$14,751	
2024	$9,049	
2025-EST	$7,600	
2025 - Budget	$7,000	
2026 - EST	$7,500	$7,500

Account No 563 - Secondary Treatment

YEAR	TOTAL COST	
2022	$6,475	
2023	$2,420	
2024	$7,321	
2025-EST	$5,000	
2025 - Budget	$5,000	
2026 - EST	$5,000	$5,000

Account No 564 - Outfall

YEAR	TOTAL COST	
2022	$16,015	
2023	$30,200	
2024	$8,519	
2025-EST	$8,600	
2025 - Budget	$14,000	
2026 - EST	$13,000	$13,000

Account No 565 - Odor Control System

YEAR	TOTAL COST	
2022	$285	
2023	$0	
2024	$0	
2025-EST	$300	
2025 - Budget	$500	
2026 - EST	$500	$500

Account No 566 - Centrifuge (2014)

YEAR	TOTAL COST	
2022	$6,504	
2023	$12,775	
2024	$5,040	
2025-EST	$8,500	
2025 - Budget	$8,500	
2026 - EST	$9,000	$9,000

Account No 567 - Instrumentation

YEAR	TOTAL COST	
2022	$3,839	
2023	$2,121	
2024	$5,549	
2025-EST	$2,500	
2025 - Budget	$4,000	
2026 - EST	$4,500	$4,500

Account No 568 - Digestors

YEAR	TOTAL COST	
2022	$24,477	
2023	$27,228	
2024	$30,312	
2025-EST	$30,000	
2025 - Budget	$30,000	
2026 - EST	$30,000	$30,000

Account No 569 - Gravity Belt Thickeners

YEAR	TOTAL COST	
2022	$3,223	
2023	$8,272	
2024	$59	
2025-EST	$6,500	
2025 - Budget	$4,500	
2026 - EST	$6,000	$6,000

Account No 570 - Samplers

YEAR	TOTAL COST	
2022	$2,499	
2023	$5,803	
2024	$1,939	
2025-EST	$3,300	
2025 - Budget	$3,500	
2026 - EST	$3,500	$3,500

TOTAL SEWERAGE (Accts. 561 - 570) **$124,000**

Account Nos. 590 - 600 - Building & Grounds

Account No. 591 - Office Supplies

Account No. 591.1 - General Supplies

YEAR	TOTAL COST	
2022	$3,586	
2023	$3,488	
2024	$3,265	
2025-EST	$3,100	
2025 - Budget	$3,200	
2026 - EST	$3,200	$3,200

Account No 591.2 - Office Equipment Maintenance/Agreements

YEAR	TOTAL COST	
2022	$13,880	
2023	$34,737	
2024	$33,000	
2025-EST	$27,601	
2025 - Budget	$18,800	
2026 - EST	$28,000	$28,000

Account No 591.3 - Computer Supplies

YEAR	TOTAL COST	
2022	$1,926	
2023	$1,564	
2024	$730	
2025-EST	$1,500	
2025 - Budget	$2,500	
2026 - EST	$2,000	$2,000

TOTAL OFFICE SUPPLIES (accts 591.1-591.4) **$33,200**

Account No 592 - Laboratory Supplies

Account No 592.1 - Chemicals

YEAR	TOTAL COST	
2022	$12,718	
2023	$12,106	
2024	$6,881	
2025-EST	$7,500	
2025 - Budget	$10,000	
2026 - EST	$10,000	$10,000

Account No 592.2 - Plastic/Glassware

YEAR	TOTAL COST	
2022	$1,428	
2023	$1,078	
2024	$503	
2025-EST	$1,200	
2025 - Budget	$1,000	
2026 - EST	$1,500	$1,500

Account No 592.3 - Filter Papers

YEAR	TOTAL COST	
2022	$5,230	
2023	$4,361	
2024	$6,768	
2025-EST	$6,500	
2025 - Budget	$5,000	
2026 - EST	$8,000	$8,000

Account No 592.4 - Minor Instruments

YEAR	TOTAL COST	
2022	$9,089	
2023	$3,639	
2024	$5,402	
2025-EST	$5,000	
2025 - Budget	$5,000	
2026 - EST	$5,000	$5,000

Account No 592.5 - Thermometers/Recertification, Other Misc

YEAR	TOTAL COST	
2022	$4,886	
2023	$1,822	
2024	$2,899	
2025-EST	$2,700	
2025 - Budget	$2,500	
2026 - EST	$2,500	$2,500

TOTAL LABORATORY SUPPLIES (accts 592.1-592.5) **$27,000**

Account No. 593 - Transportation

Account No. 593.1 - Truck Lease

YEAR	TOTAL COST	
2022	$4,417	
2023	$5,160	
2024	$6,042	
2025-EST	$5,900	
2025 - Budget	$5,900	
2026 - EST	$6,000	$6,000

Account No. 594 - Electrical Supplies

YEAR	TOTAL COST	
2022	$2,826	
2023	$3,818	
2024	$2,932	
2025-EST	$3,300	
2025 - Budget	$3,500	
2026 - EST	$3,500	$3,500

Account No 595 - Personnel Supplies

Account No 595.1 - Office - Internet Services, Bottled Water, Misc.

YEAR	TOTAL COST	
2022	$1,919	
2023	$2,024	
2024	$1,613	
2025-EST	$1,800	
2025 - Budget	$2,000	
2026 - EST	$2,100	$2,100

Account No 595.2 - Plant - Personnel/Safety Supplies

YEAR	TOTAL COST	
2022	$2,955	
2023	$7,387	
2024	$1,905	
2025-EST	$2,500	
2025 - Budget	$5,500	
2026 - EST	$5,500	$5,500

TOTAL PERSONNEL SUPPLIES (accts 595.1-595.2) **$7,600**

Account No 596 - Cleaning Supplies

Account No 596.2 - Towel/Rug Service

YEAR	TOTAL COST	
2022	$5,140	
2023	$6,636	
2024	$8,205	
2025-EST	$6,389	
2025 - Budget	$5,500	
2026 - EST	$6,600	$6,600

Account No 596.3 - Cleaning Supplies, Hand Towels, Other Misc

YEAR	TOTAL COST	
2022	$2,055	
2023	$1,532	
2024	$2,563	
2025-EST	$2,000	
2025 - Budget	$2,500	
2026 - EST	$2,500	$2,500

TOTAL CLEANING SUPPLIES (accts 596.1-596.3) **$9,100**

Account No 597 - Physical Plant Repairs/Maintenance

Account No 597.1 - Lawn Maintenance

YEAR	TOTAL COST	
2022	$7,585	
2023	$7,001	
2024	$7,558	
2025-EST	$7,000	
2025 - Budget	$7,000	
2026 - EST	$7,000	$7,000

Account No 597.2 - Snow Removal

YEAR	TOTAL COST	
2022	$2,973	
2023	$5,693	
2024	$2,440	
2025-EST	$4,500	
2025 - Budget	$4,500	
2026 - EST	$4,500	$4,500

Account No 597.3 - Building Repairs, Refuse Collection, Other Misc

YEAR	TOTAL COST	
2022	$31,548	
2023	$31,767	
2024	$39,978	
2025-EST	$30,000	
2025 - Budget	$35,000	
2026 - EST	$35,000	$35,000

Account No 597.4 - Facility Painting

YEAR	TOTAL COST	
2022	$20,000	
2023	$0	
2024	$0	
2025-EST	$0	
2025 - Budget	$30,000	
2026 - EST	$30,000	$30,000

Account No 597.5 - Facility Maintenance Agreements

YEAR	TOTAL COST	
2022	$93,919	
2023	$103,360	
2024	$110,229	
2025-EST	$112,772	
2025 - Budget	$115,610	
2026 - EST	$119,000	$119,000

TOTAL PHYSICAL PLANT REPAIRS(accts 597.1-597.5) **$195,500**

Account No 598 - Hardware Supplies

YEAR	TOTAL COST	
2022	$1,029	
2023	$536	
2024	$1,629	
2025-EST	$1,000	
2025 - Budget	$1,500	
2026 - EST	$1,500	$1,500

Account No 599 - Shop Supplies

Account No 599.1 - Tools

YEAR	TOTAL COST	
2022	$1,805	
2023	$1,184	
2024	$1,557	
2025-EST	$1,300	
2025 - Budget	$2,000	
2026 - EST	$1,600	$1,600

Account No 599.2 - Other Misc. Non-Tool Items

YEAR	TOTAL COST	
2022	$635	
2023	$1,284	
2024	$754	
2025-EST	$1,200	
2025 - Budget	$1,200	
2026 - EST	$1,300	$1,300

TOTAL SHOP SUPPLIES(accts 599.1-599.2) **$2,900**

Account No 600 - Lubricants

YEAR	TOTAL COST	
2022	$5,532	
2023	$4,945	
2024	$7,697	
2025-EST	$5,500	
2025 - Budget	$6,500	
2026 - EST	$6,500	$6,500

TOTAL BUILDINGS & GROUNDS (ACCTS 591 - 600) **$292,800**

2026 ESTIMATED INTERCEPTOR MAINTENANCE & REPAIRS

Account No. 480 - Interceptor Maintenance

YEAR	TOTAL COST	Menasha	Fox Crossing	Harrison Utilities
2022	$0	$0	$0	$0
2023	$0	$0	$0	$0
2024	$9,882	$4,973	$4,183	$725
2025 - Budget	$5,000	$2,517	$2,117	$367
2026-EST	**$5,000**	$2,517	$2,117	$367

LISTED BELOW ARE LOCATIONS OF THE NMSC INTERCEPTOR AND % OF RESPONSIBILITY TOWARD THE MAINTENANCE AND REPAIR OF THE INTERCEPTOR AS AGREED UPON BY THE COMMUNITIES SERVED BY THE INTERCEPTOR

2024 BREAKDOWN OF CHARGES

MATHEWSON STREET INTERCEPTOR (SECTION E)
Lock St/Broad St to NMSC Plant

		Menasha 55.77%	Fox Crossing 37.69%	Harrison 6.54%
CLEANING & TELEVISING	**$3,920**	$2,186	$1,478	$256
TOTAL	**$3,920**	$2,186	$1,478	$256

TAYCO STREET INTERCEPTOR: (SECTION F)
6th St to Lock St/Broad St

		Menasha 51.20%	Fox Crossing 41.59%	Harrison 7.21%
CLEANING & TELEVISING	**$4,804**	$2,460	$1,998	$346
TOTAL	**$4,804**	$2,460	$1,998	$346

TAYCO STREET INTERCEPTOR: (SECTION G-1)
6th St to Lock St/Broad St

		Menasha 28.27%	Fox Crossing 61.13%	Harrison 10.60%
CLEANING & TELEVISING	**$1,158**	$327	$708	$123
TOTAL	**$1,158**	$327	$708	$123

GARFIELD AVENUE INTERCEPTOR

(from Menasha Water Plant/Broad St to NMSC Plant)

Ownership of the Garfield Avenue Interceptor from the Menasha Water Plant/Broad St to the NMSC Plant was transferred to the City of Menasha in 2021.

LAKESHORE INTERCEPTOR

(from 9th St/Emily St to Lock St/Broad St)

Ownership of the Lakeshore Interceptor from 9th St/Emily St to Lock St/Broad St was transferred to the City of Menasha in 2021.

WATER STREET INTERCEPTOR

Ownership of the Water Street Interceptor was transferred to the City of Menasha in 2021.

TAYCO STREET INTERCEPTOR

(from Airport Rd to 6th St)

Ownership of the Tayco Street Interceptor from Airport Road to 6th was transferred to the Village of Fox Crossing in 2020.

2026 ESTIMATED MISCELLANEOUS OPERATING REVENUES

Account No. 408.0 - AP Discounts Taken

YEAR	TOTAL INCOME
2022	$19
2023	$0
2024	$0
2025-EST	$10
2025 - Budget	$20
2026 - EST	$15
	$15

Account No. 409.0 - MCO Income Sharing

YEAR	TOTAL INCOME
2022	$35,938
2023	$30,405
2024	$33,040
2025-EST	$69,897
2025 - Budget	$29,000
2026 - EST	$72,000
	$72,000

Account No. 411.0 - Miscellaneous Operating Income

YEAR	TOTAL INCOME
2022	$271
2023	$2,646
2024	$37,432
2025-EST	$100
2025 - Budget	$300
2026 - EST	$300
	$300

Account No. 412.0 - Industrial Metering Testing Reimbursement Income

YEAR	TOTAL INCOME
2022	$3,316
2023	$3,122
2024	$3,517
2025-EST	$2,995
2025 - Budget	$3,000
2026 - EST	$3,200
	$3,200

Account No. 413.0 - Pretreatment Administrative Fees Income

YEAR	TOTAL INCOME
2022	$4,950
2023	$4,725
2024	$4,725
2025-EST	$4,050
2025 - Budget	$4,500
2026 - EST	$4,200

$4,200

Account No. 414.0 - Pretreatment Permit Fee Income

YEAR	TOTAL INCOME
2022	$0
2023	$400
2024	$27,700
2025-EST	$38,200
2025 - Budget	$1,000
2026 - EST	$1,000

$1,000

Account No. 416.0 - WPPI Standby Service Income

YEAR	TOTAL INCOME
2022	$57,000
2023	$57,594
2024	$57,347
2025-EST	$57,418
2025 - Budget	$57,200
2026 - EST	$57,300

$57,300

Account No. 419.1 - O & M Interest Income

YEAR	TOTAL INCOME
2022	$832
2023	$4,920
2024	$5,094
2025-EST	$4,491
2025 - Budget	$4,000
2026 - EST	$4,500

$4,500

TOTAL ESTIMATED 2026 MISCELLANEOUS REVENUES $142,515

2026 EQUIPMENT REPLACEMENT FUND

YEAR	$'s RECEIVED FROM USERS	CUMULATIVE TOTAL + CURRENT YEAR RECEIPTS	INTEREST EARNED ON CUMULATIVE	TOTAL CUMULATIVE + INTEREST	PAYMENTS MADE FROM FUND	INTERNAL BORROWING MADE FROM FUND	YEAR-END FUND BALANCE
2022	$778,003	$6,606,221	$95,583	$6,701,804	$204,286		$6,497,518
2023	$778,013	$7,275,531	$318,916	$7,594,447	$585,058		$7,009,389
2024	$778,011	$7,787,400	$377,306	$8,164,706	$332,071		$7,832,635
2025	$778,000 -est	$8,610,635 -est	$341,902 -est	$8,952,537 -est	$780,372 -est		$8,172,165 -est
2026	$778,000 -est	$8,950,165 -est	$350,000 -est	$9,300,165 -est	$314,967 -est		$8,985,198 -est

The Replacement Fund was established in 1987 to cover expenditures for replacement of mechanical equipment, accessories, and appertenances necessary to maintain the plant design capacity and performance for the life of the treatment works (20 years).

The EQUIPMENT REPLACEMENT FUND is mandated by Federal/State regulations.

Wis. Adm. Code NR 162.003(61) defines "Replacement" as: "obtaining and installing equipment, accessories or appurtenances that are necessary during the useful life of the treatment works or structural urban best management practice (BMP) to maintain the capacity and performance for which the treatment works or structural urban BMP were designed and constructed." The NMSC uses an itemized schedule list of equipment to determine an amount to be deposited into the Equipment Replacement Fund.

2026 - BUDGETED REPLACEMENT FUND PROJECTS:

- West Grit Pump	$40,000
- GBT Rebuild: Tensioning arm, Rollers, Bearings	$40,000
- Exterior Door /Frame/Latch	$20,000
- Effluent Reuse Strainer	$30,000
- Replace & Relocate Computer Server	$15,000
- Aeration Diffuser Basins 4 & 5	$11,796
- Aeration Diffuser Basins 6, 7, 8, & 9	$27,936
- Upper & Lower Assemblies for Screw Pumps	$80,235
- Unknown/Unplanned/Misc	$50,000
Estimated 2026 Budget	**$314,967**

2025 - BUDGETED REPLACEMENT FUND PROJECTS:

- Digester bld. Electrical feeder wires	$180,000
- Influent Submersible Pump	$335,000
- West Grit Pump	$23,000
- Exterior Door Frame/Latch	$18,000
- Headworks Electrical Room Roof	$13,500
- Dedicated Computer Server Room	$3,820
- Unknown/Unplanned/Misc	$20,000
Estimated 2025 Budget	$593,320

ACTUAL & ESTIMATED REPLACEMENT FUND PROJECTS TO BE COMPLETED IN 2025

- Digester bld. Electrical feeder wires	$180,000
- Influent Submersible Pump	$335,000
- West Grit Pump	$23,000
- Exterior Door Frame/Latch	$18,000
- Dedicated Computer Server Room	
- GBT Polymer System Rehab	$124,889

- Unknown/misc or unplanned replacements	
- Explosion-Proff Hot Water UH	$6,860
- Basin 1-3 Membrane	$19,352
- Transformer 6	$73,272
2025 estimated spending:	**$780,372**

2027 - ESTIMATED REPLACEMENT FUND PROJECTS:

- Unknown/misc or unplanned replacements	$50,000
	$50,000

2028 - ESTIMATED REPLACEMENT FUND PROJECTS:

- Unknown/misc or unplanned replacements	$50,000
	$50,000

2029 - ESTIMATED REPLACEMENT FUND PROJECTS:

- Unknown/misc or unplanned replacements	$50,000
	$50,000

2030 - ESTIMATED REPLACEMENT FUND PROJECTS:

- Unknown/misc or unplanned replacements	$50,000
	$50,000

2031 - ESTIMATED REPLACEMENT FUND PROJECTS:

- Unknown/misc or unplanned replacements	$50,000
	$50,000

2032 - ESTIMATED REPLACEMENT FUND PROJECTS:

- Unknown/misc or unplanned replacements	$50,000
	$50,000

2026 DEPRECIATION FUND

YEAR	$'s RECEIVED FROM USERS	CUMULATIVE TOTAL + CURRENT YEAR RECEIPTS	INTEREST EARNED ON CUMULATIVE	TOTAL CUMULATIVE + INTEREST	PAYMENTS MADE FROM FUND	INTERNAL BORROWING MADE FROM FUND	YEAR-END FUND BALANCE
2022	$200,001	$385,739	$4,099	$389,837	$270,616		$119,221
2023	$200,011	$319,232	$6,769	$326,002	$137,138		$188,864
2024	$200,000	$388,864	$11,492	$400,356	$28,457		$371,899
2025	$200,000 -est	$571,899 -est	$12,968 -est	$584,867 -est	$228,187 -est		$356,680 - est
2026	$200,000 -est	$556,680 -est	$12,000 -est	$568,680 -est	$443,500 -est		$125,180 - est

The Depreciation Fund was established in 1997 to cover expenditures for the replacement of mechanical equipment not covered under the Replacement Fund; for the maintenance and/or repair of current structures that deteriorate over time; and for the modifications to structures and/or equipment that will benefit the wastewater treatment plants operating efficiency.
In 2013, work was completed on reviewing and revising the User Charge System to accommodate the inclusion of additional equipment and buildings in the plant update. In addition, equipment items originally in the Depreciation fund were transferred to the Replacement Fund and non-equipment items were transferred to the Depreciation Fund.

- 2026 ESTIMATED DEPRECIATION FUND

- NE Digester Takedown/Assessment	$60,000
- Clean/Inspect Primary Effluent Line Splitter Box	$58,000
- Borger Sludge Pump	$12,000
- Auxiliary Boiler Recirc. Pumps	$6,500
- Full Generator Radiator Service	$20,000
- SCADA Maintenance & Upgrade	$8,000
- Spare Screw Pump Stub Shaft, Bearings, Coupling	$128,000
- Primary Clarifier Drain Valves	$40,000
- Digester Cover Demo & Foam	$61,000
- Unknown or unplanned for items	$50,000
Estimated 2026 Budget	**$443,500**

- 2025 ESTIMATED DEPRECIATION FUND

- SE Digester Takedown/Assessment	$90,000
- Screw Pump Assessment	$20,000
- Clean/Inspect Primary Influent Line to Splitter Box	$52,000
- Lab Ceiling	$20,000
- Blacktop Sealing & Coating	$8,700
- Continued SCADA Maintenance & Upgrade	$7,500
- Unknown or unplanned for items	$20,000
Estimated 2025 Budget	$218,200

ACTUAL & ESTIMATED DEPRECIATION FUND ITEMS TO BE COMPLETED IN 2025:

- SE Digester Takedown/Assessment	$109,178
- Screw Pump Assessment	$20,000
- Clean/Inspect Primary Influent Line to Splitter Box	$52,000
- Lab Ceiling	$20,000
- Blacktop Sealing Coating & Line Striping	$20,650
- Continued SCADA Maintenance & Upgrade	$2,140
- Unknown or unplanned for items:	
'9th St. Monitoring Station Roof	$4,219
Estimated 2024 Spending	**$228,187**

2027 ESTIMATED DEPRECIATION FUND PROJECT/ITEMS:

- Clarifier Rehab & Painting	TBD
- Headworks Bldg. Main Roof	TBD
- Unknown or unplanned for items	$50,000
	$50,000

2028 ESTIMATED DEPRECIATION FUND PROJECT/ITEMS:

- Unknown or unplanned for items	$50,000
	$50,000

2029 ESTIMATED DEPRECIATION FUND PROJECT/ITEMS:

- Unknown or unplanned for items	$50,000
	$50,000

2030 ESTIMATED DEPRECIATION FUND PROJECT/ITEMS:

- Unknown or unplanned for items	$50,000
	$50,000

2031 ESTIMATED DEPRECIATION FUND PROJECT/ITEMS:

- Unknown or unplanned for items	$50,000
	$50,000

2032 ESTIMATED DEPRECIATION FUND PROJECT/ITEMS:

- Unknown or unplanned for items	$50,000
	$50,000

CAPITAL PROJECTS

The 2026 capital projects budget will consist of the following items:

CLEAN WATER FUND PAYMENT for 2026:

INTEREST payments: Total of 5/1/26 & 11/1/26	$227,751	
LESS: 2-months of 5/1/2026 payment (collected in 2025)	($40,639)	
ADD: 2-months of 5/1/2027 Interest Payment	$65,054	
Net Interest to Collect		$252,166
PRINCIPAL due 5/1/2026	$1,215,586	
LESS: 8-months of 5/1/2026 payment (collected in 2025)	($810,391)	
ADD: 8-months of 5/1/2027 Principal Payment	$831,834	
Net Principal to Collect		$1,237,029

SLUDGE STORAGE BUILDING LOAN PAYMENT for 2026:

4 months of 5/1/2026 Principal & Interest Payment	$121,333	
ADD 8-months of 5/1/2027 Principal & Interest Payment	$234,000	
Net Principal & Interest to Collect		$355,333

The total Capital Project Budget for 2026 will be: **$1,844,528**

2027: PLANT REMODEL/UPDATE - CLEAN WATER FUND LOAN

2013 CWF Loan	INTEREST	$213,785	PRINCIPAL	$1,269,761	$1,483,546
2024 Sludge Bldg. Loan	INTEREST	$82,333	PRINCIPAL	$260,000	$342,333
			ESTIMATED 2027 CAPITAL		$1,825,879

2028: PLANT REMODEL/UPDATE - CLEAN WATER FUND LOAN

2013 CWF Loan	INTEREST	$156,060	PRINCIPAL	$1,303,359	$1,459,419
2024 Sludge Bldg. Loan	INTEREST	$69,333	PRINCIPAL	$260,000	$329,333
			ESTIMATED 2028 CAPITAL		$1,788,752

ESTIMATED FUTURE CAPITAL EXPENDITURES:

2029: PLANT REMODEL/UPDATE - CLEAN WATER FUND LOAN

2013 CWF Loan	INTEREST	$121,573	PRINCIPAL	$1,337,846	$1,459,419
2024 Sludge Bldg. Loan	INTEREST	$56,333	PRINCIPAL	$260,000	$316,333
2028 Phos & Expansion Loan/Bond - EST	INTEREST	TBD	PRINCIPAL	TBD	TBD
				ESTIMATED 2029 CAPITAL	$1,775,752

2030: PLANT REMODEL/UPDATE - CLEAN WATER FUND LOAN

2013 CWF Loan	INTEREST	$86,174	PRINCIPAL	$1,373,245	$1,459,419
2024 Sludge Bldg. Loan	INTEREST	$43,333	PRINCIPAL	$260,000	$303,333
2028 Phos & Expansion Loan/Bond - EST	INTEREST	TBD	PRINCIPAL	TBD	TBD
				ESTIMATED 2030 CAPITAL	$1,762,752

2031: PLANT REMODEL/UPDATE - CLEAN WATER FUND LOAN

2013 CWF Loan	INTEREST	$86,573	PRINCIPAL	$1,372,846	$1,459,419
2024 Sludge Bldg. Loan	INTEREST	$30,333	PRINCIPAL	$260,000	$290,333
2028 Phos & Expansion Loan/Bond - EST	INTEREST	TBD	PRINCIPAL	TBD	TBD
				ESTIMATED 2031 CAPITAL	$1,749,752

2032: PLANT REMODEL/UPDATE - CLEAN WATER FUND LOAN

2013 CWF Loan	INTEREST	$51,174	PRINCIPAL	$1,408,245	$1,459,419
2024 Sludge Bldg. Loan	INTEREST	$17,333	PRINCIPAL	$260,000	$277,333
2028 Phos & Expansion Loan/Bond - EST	INTEREST	TBD	PRINCIPAL	TBD	TBD
				ESTIMATED 2032 CAPITAL	$1,736,752

ESTIMATED 2026 REVENUES BY INDIVIDUAL USERS

(Based on 2-year average loadings from July 2023 - June 2025)

CITY OF NEENAH:

EST 2026 LOADINGS

FLOW	2,049.910 MG
BOD	4,030,013 LBS
SS	2,611,898 LBS

O & M - CHARGES		
FLOW	$489,802	
BOD	$685,330	
SS	$675,233	
TOTAL-O & M		$1,850,366

REPLACEMENT FUND		
FLOW	$163,057	
BOD	$101,968	
SS	$93,648	
TOTAL-REPLACEMENT		$358,674

DEPRECIATION FUND		
FLOW	$23,388	
BOD	$33,975	
SS	$30,789	
TOTAL-DEPRECIATION		$88,151

CAPITAL CHARGES		
FLOW	$174,984	
BOD	$350,178	
SS	$285,663	
TOTAL-CAPITAL		$810,825

TOTAL NEENAH CHARGES **$3,108,016**

ESTIMATED 2026 REVENUES BY INDIVIDUAL USERS

(Based on 2-year average loadings from July 2023 - June 2025)

CITY OF MENASHA:

EST 2026 LOADINGS

FLOW	868.147	MG
BOD	671,824	LBS
SS	1,442,058	LBS

O & M - CHARGES

FLOW	$207,434	
BOD	$114,248	
SS	$372,804	
TOTAL-O & M		$694,486
INTERCEPTOR MAINTENANCE		$2,517

REPLACEMENT CHARGES

FLOW	$69,056	
BOD	$16,999	
SS	$51,704	
TOTAL-REPLACEMENT		$137,758

DEPRECIATION CHARGES

FLOW	$9,905	
BOD	$5,664	
SS	$16,999	
TOTAL-DEPRECIATION		$32,567

CAPITAL CHARGES

FLOW	$74,106	
BOD	$58,377	
SS	$157,718	
TOTAL-CAPITAL		$290,201

TOTAL MENASHA CHARGES **$1.157,529**

ESTIMATED 2026 REVENUES BY INDIVIDUAL USERS

(Based on 2-year average loadings from July 2023 - June 2025)

TOWN OF NEENAH S.D. 2

EST 2026 LOADINGS

FLOW	35.953 MG
BOD	70,601 LBS
SS	86,864 LBS

O & M - CHARGES		
FLOW	$8,591	
BOD	$12,006	
SS	$22,456	
TOTAL-O & M		$43,053
REPLACEMENT CHARGES		
FLOW	$2,860	
BOD	$1,786	
SS	$3,114	
TOTAL-REPLACEMENT		$7,761
DEPRECIATION CHARGES		
FLOW	$410	
BOD	$595	
SS	$1,024	
TOTAL-DEPRECIATION		$2,029
CAPITAL CHARGES		
FLOW	$0	
BOD	$1,571	
SS	$1,935	
TOTAL-CAPITAL		$3,506

TOTAL TOWN NEENAH S.D. 2 CHARGES **$56,349**

ESTIMATED 2026 REVENUES BY INDIVIDUAL USERS

(Based on 2-year average loadings from July 2023 - June 2025)

VILLAGE OF FOX CROSSING

EST 2026 LOADINGS			
	FLOW	616.509 MG	
	BOD	753,550 LBS	
	SS	972,889 LBS	
O & M - CHARGES			
	FLOW	$147,308	
	BOD	$128,146	
	SS	$251,513	
TOTAL-O & M			$526,967
INTERCEPTOR MAINTENANCE			$2,117
REPLACEMENT CHARGES			
	FLOW	$49,039	
	BOD	$19,066	
	SS	$34,882	
TOTAL-REPLACEMENT			$102,988
DEPRECIATION CHARGES			
	FLOW	$7,034	
	BOD	$6,353	
	SS	$11,468	
TOTAL-DEPRECIATION			$24,855
CAPITAL CHARGES			
	FLOW	$52,626	
	BOD	$65,478	
	SS	$106,405	
TOTAL-CAPITAL			$224,509
TOTAL FOX CROSSING CHARGES			**$881,436**

ESTIMATED 2026 REVENUES BY INDIVIDUAL USERS

(Based on 2-year average loadings from July 2023 - June 2025)

HARRISON SANITARY DISTRICT

EST 2026 LOADINGS			
	FLOW	174.194 MG	
	BOD	443,091 LBS	
	SS	396,320 LBS	
O & M - CHARGES			
	FLOW	$41,622	
	BOD	$75,351	
	SS	$102,457	
TOTAL-O & M			$219,430
INTERCEPTOR MAINTENANCE			$367
REPLACEMENT CHARGES			
	FLOW	$13,856	
	BOD	$11,211	
	SS	$14,210	
TOTAL-REPLACEMENT			$39,277
DEPRECIATION CHARGES			
	FLOW	$1,987	
	BOD	$3,735	
	SS	$4,672	
TOTAL-DEPRECIATION			$10,395
CAPITAL CHARGES			
	FLOW	$14,869	
	BOD	$38,501	
	SS	$43,346	
TOTAL-CAPITAL			$96,716
TOTAL HARRISON CHARGES			**$366,185**

ESTIMATED 2026 REVENUES BY INDIVIDUAL USERS

(Based on 2-year average loadings from July 2023 - June 2025)

SONOCO/U.S. MILLS:

EST 2026	LOADINGS		
	FLOW	111.851 MG	
	BOD	3,615,189 LBS	
	SS	869,432 LBS	
O & M - CHARGES			
	FLOW	$26,726	
	BOD	$614,786	
	SS	$224,767	
TOTAL-O & M			$866,279
REPLACEMENT CHARGES			
	FLOW	$8,897	
	BOD	$91,472	
	SS	$31,173	
TOTAL-REPLACEMENT			$131,542
DEPRECIATION CHARGES			
	FLOW	$1,276	
	BOD	$30,478	
	SS	$10,249	
TOTAL-DEPRECIATION			$42,003
CAPITAL CHARGES			
	FLOW	$9,548	
	BOD	$314,133	
	SS	$95,090	
TOTAL-CAPITAL			$418,771
TOTAL SONOCO/U.S.MILLS CHARGES			**$1,458,595**

ESTIMATED 2026 REVENUES BY INDIVIDUAL USERS

(Based on 2-year average loadings from July 2023 - June 2025)

TOTALS:

EST 2026 LOADINGS		
	FLOW	3856.564 MG
	BOD	9,584,268 LBS
	SS	6,379,461 LBS

O & M - CHARGES			
21.937%	FLOW	$921,481	
38.801%	BOD	$1,629,867	
39.262%	SS	$1,649,232	
TOTAL-O & M			$4,200,580

INTERCEPTOR MAINTENANCE			$5,000

REPLACEMENT CHARGES			
39.43%	FLOW	$306,765	
31.17%	BOD	$242,503	
29.40%	SS	$228,732	
TOTAL-REPLACEMENT			$778,000

DEPRECIATION CHARGES			
22.0%	FLOW	$44,000	
40.4%	BOD	$80,800	
37.6%	SS	$75,200	
TOTAL-DEPRECIATION			$200,000

CAPITAL CHARGES				
CWF	Storage Bldg.			
21.9%	0.0%	$326,134	FLOW	
41.3%	60.0%	$828,238	BOD	
36.8%	40.0%	$690,157	SS	
TOTAL-CAPITAL				$1,844,528

TOTAL CHARGES	**$7,028,109**