

Sewer and Water Utilities Committee Meeting Minutes
Tuesday, September 9, 2025 at 1:00 P.M.
VIA Video Conference
(Approved Version)

1. Call Meeting to Order

The Sewer and Water Utilities Committee meeting was called to order on Tuesday, September 9, 2025, at 1:00 PM by Denise Bhirdo, Chair.

2. Roll Call

A roll call was conducted, with the following members present: Chairperson Denise Bhirdo and members Nate Bell, and Kurt Harff.

Staff present: Village Administrator Julie Schmelzer, Utilities Director Megan Barnes, Utilities Clerk Kara Kroll

Others: Chad Olsen from McMahon Associates and Laurel Harff

3. Approval of Agenda

A motion was made to approve the agenda as presented.

Motion by Harff, seconded by Bell. All in favor. Motion carried.

4. Approval of Minutes of the August 12, 2025 Meeting, as Published

Nate Bell requested a correction on page 3, line 47, noting that "his friend, Tim Wright" should be changed to "former coworker, Tim Wright."

Chairperson Bhirdo requested adding a statement after line 60 that "staff was not concerned with the issue because the vendor would be replaced in a couple of months." Mr. Bell disagreed with this characterization, stating that it wasn't fair to say they weren't going to try and fix an existing vendor issue because they knew a new vendor was coming. He emphasized that staff should try to work with existing vendors when problems arise. Chairperson Bhirdo clarified that the chain of command wasn't broken but rather had chosen not to reach out.

Utilities Clerk Kara Kroll asked for clarification on what to write, and it was agreed to add that staff was not concerned with the issue because the vendor would be replaced in a couple of months.

A motion was made to approve the minutes as amended per Bhirdo and Bell's request.

Motion by Harff, seconded by Bell. All in favor. Motion carried.

5. Comments, Correspondence and Concerns from the Public

No correspondence was received.

6. Discussion/Action Items

a. Wastewater Treatment Plant Operations Report

Utilities Director Megan Barnes presented a brief operations report to allow time for the main presentation. She mentioned that people were working on well testing and permitting updates as noted in the meeting materials.

Nate Bell inquired about the Programmable Logic Controllers (PLCs) that had failed during a recent storm. Barnes explained that these controllers are integral to automated operations of the wastewater treatment plant, with three PLCs at the plant and one at each well. They control set points and equipment operation, such as pumps activating when floats are triggered.

Barnes reported that the cause of the recent PLC failure was likely related to electrical issues from power surges during downtown line breaks. She commended the operators who had to manually operate the plant every hour until repairs could be made the following Monday. Mr. Bell acknowledged that Barnes had handled the situation well by providing remote guidance to staff despite being away at a wedding.

Bell also inquired about power conditioning systems for the PLCs, and Barnes noted she would check with their integrated process technician about protective measures. Bell observed that with electrical issues, it's rarely possible to identify a definitive cause, especially with integrated circuits.

Barnes clarified that the PLC failure affected the Variable Frequency Drives (VFDs) because the control system was out, requiring manual operation of equipment.

b. Facility Study Presentation

Chad Olson from McMahon Associates presented the Wastewater Treatment Facility Assessment and Feasibility Study. His presentation included current loadings, projected loadings, facility capacity, and analysis of specific infrastructure components.

Mr. Olson noted that for funding considerations, he was assuming Clean Water Fund loans, which currently offer attractive interest rates (1.485% for 20-year loans) and potential principal forgiveness of up to 60% with a cap of \$2,100,000. He explained that for 2027 funding, a notice of intent would need to be filed this year, and a facility plan with specifications submitted by September 30, 2026.

Current Facility Overview: Olson described the existing wastewater treatment plant, which receives flow from two force mains, has fine screen removal, an oxidation ditch, two final clarifiers, UV treatment, and an outfall. The solids handling system includes waste activated sludge, an aerobic digester, a thickener, and two holding tanks, with sludge currently hauled to Sturgeon Bay.

Current Loadings:

- Average flow: 200,000 gallons per day (28% of design capacity)
- BOD: 660 pounds per day (37% of design capacity)
- TSS: 720 pounds per day (50% of design capacity)

Mr. Bell expressed concern about TSS (Total Suspended Solids) reaching 145% of capacity on peak days. Olson explained that this primarily impacts sludge generation rather than permit compliance, and occasional peak days are manageable, though multiple consecutive peak days would be problematic.

Director Barnes confirmed that July 4th is typically their peak day and explained that their permit limits are based on monthly averages, so occasional peaks don't cause compliance issues as long as the monthly average remains in check.

Population Projections: Olson noted that the Wisconsin Department of Administration had updated population projections, showing higher numbers than previously anticipated. The 2020 census revealed a service population of 3,244 compared to the previously projected 2,680. Projections for 2050 are now 3,638 people, which is still within the plant's design capacity of 4,456 for summer conditions.

Projected 2050 Loadings:

- Flow: 227,000 gallons per day (32% of design capacity)
- BOD: 764 pounds per day (43% of design capacity)
- TSS: 820 pounds per day (57% of design capacity)

The design capacity varies between summer and winter conditions, with the plant configured to handle more capacity in summer by bringing another clarifier online.

Hauled-in Waste Receiving: Olson presented options for improving the hauled waste receiving tank, which currently has mixing and aeration issues when liquid levels drop:

- Add a second set of coarse bubble diffusers with a new blower: \$218,000
- Install a compressed gas mixing system that would work at all levels: \$300,000

Oxidation Ditch Aeration: The facility's oxidation ditch is currently aerated by disc aerators installed in 1990. Olson presented two options for replacement:

- Surface aerators: \$1,200,000 with annual operating costs of \$41,400
- Fine bubble diffusers with submersible mixers: \$2,100,000 with annual operating costs of \$18,500

Director Barnes indicated a preference for fine bubble diffusers as they would provide more efficient mixing and oxygen transfer.

Secondary Clarifiers: The facility has two 40-foot diameter secondary clarifiers, one covered and one uncovered. The uncovered clarifier cannot be used in winter due to freezing risks. Additionally, having only one waste activated sludge (WAS) pump limits the ability to operate both clarifiers simultaneously.

Olson recommended adding a second WAS pump (\$171,000) and potentially covering the uncovered clarifier (\$300,000).

Effluent Reuse System: The existing effluent reuse pump was installed in 1990 with a VFD added in 2020. Two pneumatic tanks from 1991 are also in place, with one leaking. Sizing of replacements would depend on decisions about sludge handling.

Sludge Handling: Olson presented three options for sludge handling:

- Continue hauling to Sturgeon Bay (current cost: \$107,400 annually)
- Install reed beds (\$3,100,000 capital cost; \$99,300 annual operating cost by 2050)
- Install a sludge dryer to create Class A biosolids (\$17,800,000 capital cost; \$200,000 annual operating cost)

Olson also explored the possibility of a regional sludge handling facility that could serve Sister Bay along with Bailey's Harbor, Ephraim, and Fish Creek.

PFAS Considerations: Per- and polyfluoroalkyl substances (PFAS) emerged as a significant concern. Sister Bay's sludge testing showed levels of 38-48 micrograms/kilogram, which puts them in a category where the DNR would recommend developing a source reduction plan and tracking application rates. Sturgeon Bay's results were below 20 micrograms/kilogram, considered "not impacted."

The committee discussed PFAS concerns related to land application, noting that even if sludge were dried to Class A standards, PFAS would still be present, potentially limiting disposal options regardless of the technology chosen.

Reed Bed Location: There was extensive discussion about potential locations for reed beds if that option were selected. Schmelzer noted that the location shown in the presentation would impact community gardens and areas designated as parkland in previous facility studies. Alternative locations were discussed, including the west side of the plant near the parks building.

- Cost Comparison (Annual Cost for Sister Bay Only, Year 2050):
 - Continue hauling to Sturgeon Bay: \$166,000
 - With Sturgeon Bay's potential new tank: \$227,000
 - Reed beds (without principal forgiveness): \$280,000
 - Reed beds (with 60% principal forgiveness): \$171,000
 - Sludge dryer (without principal forgiveness): \$1,200,000
 - Sludge dryer (with principal forgiveness capped at \$2.1M): \$1,000,000+
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- Cost Comparison (Annual Cost for With Other Communities, Year 2050):
 - Continue hauling to Sturgeon Bay: \$326,405
 - With Sturgeon Bay's potential new tank: \$448,509
 - Reed Beds (without principal forgiveness): \$423,000
 - Reed beds (with 60% principal forgiveness): \$301,000
 - Sludge dryer (without principal forgiveness): \$1,300,000
 - Sludge dryer (with principal forgiveness): \$1,200,000

Next Steps: Olson recommended visiting Egg Harbor to see their reed beds and mentioned that Rick from VCR would be presenting on dryers at the next meeting. He also offered to arrange a presentation with Reed Bed Systems later in the year.

For funding purposes, Olson noted that a notice of intent could be submitted by the end of October to preserve eligibility for Clean Water Fund loans in 2027, even if a final decision hadn't been made on which option to pursue.

7. Matters to be placed on a future agenda or referred to a committee, official, or employee

The next meeting was scheduled for October 14, 2025, at 1:00 PM, with a presentation about sludge drying systems.

8. Adjournment

A motion was made to adjourn the meeting.

Motion by Bhirdo, seconded by Harff. All in favor. to adjourn at 3:24 PM. Motion carried.

The meeting was adjourned at 3:24 PM.

Respectfully submitted,

Kara Kroll

Utilities Clerk