

From: [Kathy Lake](#)
To: [Amanda Wegner](#)
Subject: FW: ASSISTANCE REQUESTED: Madison Met Final Compliance Alternatives Report for Badger Mill Creek Phosphorus Compliance
Date: Monday, April 24, 2023 9:03:36 AM
Attachments: [image001.png](#)
[image002.png](#)
[image003.png](#)
[image004.png](#)
[image005.png](#)
[image006.png](#)
[image007.png](#)
[image008.png](#)

From: Claucherty, Matthew L - DNR <Matthew.Claucherty@wisconsin.gov>
Sent: Tuesday, March 21, 2023 11:55 AM
To: Martin Griffin <marting@madsewer.org>; Brechlin, Ashley J - DNR <ashley.brechlin@wisconsin.gov>; Bauman, Thomas S - DNR <Thomas.Bauman@wisconsin.gov>
Cc: Spencer, Sean R - DNR <Sean.Spencer@wisconsin.gov>; Kathy Lake <kathyl@madsewer.org>
Subject: RE: ASSISTANCE REQUESTED: Madison Met Final Compliance Alternatives Report for Badger Mill Creek Phosphorus Compliance

You don't often get email from matthew.claucherty@wisconsin.gov. [Learn why this is important](#)

Martye-

I can answer your questions regarding trading and adaptive management for Badger Mill Creek.

1. Undertaking adaptive management for Badger Mill Creek (either Badger Mill only or in combination with the Upper Sugar) would require specific phosphorus reductions from the Badger Mill Creek HUC 12. The extent of reductions would be defined in the adaptive management plan. The amount of reductions proposed would need to be sufficient for Badger Mill Creek to meet the phosphorus water quality criterion just above its confluence with the Upper Sugar River.

2. For water quality trading, the point of compliance is where the stream receives the discharge. Reductions above that would be considered an "upstream trade" and reductions put in place below that point would be considered a "downstream trade"

a. The water quality trading guidance document defines how delivery is evaluated (for upstream trades) and a downstream factor (for downstream trades).

Delivery factor: Based on the SPARROW model, there would be a very small delivery factor. The discharge's SPARROW catchment is 0.85 for a delivery fraction and there are a couple of upstream basins with 0.79 delivery fractions. The delivery factor would add less than 0.1 to the trade ratio in this case. More on the calculation [here](#).



Downstream factor: As part of the downstream trading policy which allows credits to be obtained anywhere downstream in the HUC 12 watershed, a downstream factor is used. The percentage of in-stream phosphorus contributed by the point source (at the point of discharge) is what determines the downstream factor. Using the numbers from DNR's PRESTO analysis, I am seeing 844 nonpoint and 3060 point. That puts outfall 005 at 78% point source, so just barely into the 0.8 category. We could look at more up-to-date numbers if those are available. As of now, it looks like anything downstream of the outfall would have 0.8 added to the trade ratio.

Table 2. Downstream Trading Factor

Credit User's Load as a Percentage of Total In-Stream Load	Downstream Trading Factor
<25%	0.1
<50%	0.2
<75%	0.4
≥75%	0.8

Let us know if you have any more questions. Thanks!
-Matt

We are committed to service excellence.

Visit our survey at <http://dnr.wi.gov/customersurvey> to evaluate how I did.

Matt Claucherty

Phone: (608) 400-5596

Matthew.Claucherty@wisconsin.gov

From: Martin Griffin <marting@madsewer.org>

Sent: Friday, March 17, 2023 3:53 PM

To: Brechlin, Ashley J - DNR <ashley.brechlin@wisconsin.gov>; Bauman, Thomas S - DNR <Thomas.Bauman@wisconsin.gov>

Cc: Claucherty, Matthew L - DNR <Matthew.Claucherty@wisconsin.gov>; Spencer, Sean R - DNR <Sean.Spencer@wisconsin.gov>; Kathy Lake <kathyl@madsewer.org>

Subject: ASSISTANCE REQUESTED: Madison Met Final Compliance Alternatives Report for Badger Mill Creek Phosphorus Compliance

Importance: High

CAUTION: This email originated from outside the organization.

Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Ashely,

We are preparing the final compliance alternatives report per our permit and we have a couple questions for you and your team around the watershed options for compliance that we are evaluating as part of the final options being considered. We feel that obtaining answers to these questions from you is necessary to help us make sure our assessments are as complete as possible. Considering the deadline for the final report we would appreciate any answers you can give us as quickly as you can.

The three questions are as follows:

1. If MMSD were to undertake an **adaptive management** project for TP compliance for outfall 005 that would include both the Upper Sugar River Watershed above the confluence with Badger Mill Creek as well as Badger Mill Creek, would specific pound reductions be required in the Badger Mill Creek HUC 12. If so, to what extent?
2. IF MMSD were to undertake a **water quality trading** program for the Badger Mill Creek HUC 12 for TP compliance for outfall 005, would the point of compliance be the downstream end of the HUC 12?
 - a. Specifically, would there be any downstream or delivery factors needed when determining water quality trades from our effluent return location to the lower end of the Badger Mill Creek HUC 12?

Thanks in advance for your answers to these questions and please feel free to reach out directly if you need any additional clarifying information.

Thanks

~M

Martye Griffin

Director of Ecosystem Services

Madison Metropolitan Sewerage District

1610 Moorland Road • Madison, WI 53713-3398

P: 608-709-1813 • General: 608-222-1201

Email: MartinG@madsewer.org • madsewer.org



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF:
WP-16J

June 17, 2022

Wade Strickland, Chief
Permits Section
Water Quality Bureau
Wisconsin Department of Natural Resources
101 South Webster Street
Post Office Box 7921
Madison, Wisconsin 63707-7921

Re: Geographic Extent of Water Quality Trading for Badger Mill Creek, Dane County, Wis.

Dear Mr. Strickland:

The U.S. Environmental Protection Agency has reviewed your May 24, 2022, letter (submitted electronically) regarding the geographic extent of water quality trading for Badger Mill Creek, Dane County, Wisconsin. Your inquiry is in response to issues raised by the Madison Metropolitan Sewerage District (MMSD), which is currently evaluating compliance options for its discharge to Badger Mill Creek. You wrote that MMSD is proposing a water quality trading program to offset discharges from its facility with nonpoint source partners from the Upper Sugar River Watershed, which is adjacent to the Badger Mill Creek Watershed.

As the issue is described in your letter, we concur with the Wisconsin Department of Natural Resources that MMSD's proposed approach does not conform to EPA water quality trading guidance, as set forth in EPA's 2003 Water Quality Trading Policy and 2009 Water Quality Trading Toolkit for Permit Writers. The Policy and Toolkit provide that water quality trading may not cause or contribute to localized water quality impairment, or "hot spots", and must comply with the CWA, EPA's implementing regulations, and EPA-approved water quality standards.

Regarding the geographic extent of trading, the Policy and Toolkit provide that water quality trading programs should occur between sources within the same watershed. More specifically, trading should occur only within a hydrological unit that is appropriately defined to ensure that trades will achieve and maintain water quality standards within that unit as well as within downstream and contiguous waters. Further, the appropriate trading area should be based on hydrologic conditions, fate and transport of pollutants, ecological parameters, the location of

dischargers, and distance between trading partners, etc. Given WDNR's experience on using the HUC 12 as the maximum geographic extent, we believe that trading within this area is appropriate when it achieves the above goals of EPA water quality trading policy and guidance.

Sincerely,

STEPHEN Digitally signed by
JANN STEPHEN JANN
Date: 2022.06.17
12:04:39 -05'00'

Stephen M. Jann
Manager, Permits Branch
Water Division

cc: Phillip Spranger, WDNR, phillip.spranger@wisconsin.gov



December 2, 2022

D. Michael Mucha
1610 Moorland Road
Madison WI 53713

Subject: Phosphorus Preliminary Compliance Alternatives Plan – DNR Response
Madison Metropolitan Sewerage District
WPDES Permit No: WI-0024597-09-1

Dear Mr. Mucha:

Thank you for submitting the Preliminary Compliance Alternatives Plan (PCAP) for the Madison Metropolitan Sewerage District that was required as part of the “Water Quality Based Effluent Limits (WQBELs) for Total Phosphorus (Outfall 005)” compliance schedule (Section 6.4 of the WPDES permit). The PCAP was received on April 13, 2022. The Department has reviewed your submittal and determined that a new alternative must be selected in the Final Compliance Alternatives Plan, due May 31, 2023.

The selected option in the PCAP is to pursue Water Quality Trading in the Sugar River Watershed (HUC 070900040202). However, the point of compliance for Outfall 005 is within the Badger Mill Creek Watershed (HUC 070900040201). Water Quality Trading credits generated further downstream or in different watersheds are not able to be used by MMSD because those credits do not aid in meeting water quality standards within MMSD’s receiving water and would not be consistent with s. 283.31(3)(d)1. Wis. Stats. Therefore, trading in the Sugar River Watershed is not an available compliance option. I have also attached a letter from the Environmental Protection Agency (EPA) dated June 17, 2022, that states the proposed compliance option does not conform to the EPA water quality trading policy and guidance. EPA policy and guidance provide that water quality trading may not cause or contribute to localized water quality impairment and must comply with the Clean Water Act, EPA’s implementing regulations, and EPA approved water quality standards.

Since WQT in the Sugar River Watershed is not a viable compliance alternative, MMSD will need to evaluate a different compliance alternative to comply with the WQBELs for Phosphorus. The next compliance schedule action required by May 31, 2023 is a Final Facilities Plan or a Compliance Alternatives Plan. This report should contain all the relevant and supplemental information for how MMSD will comply with the future phosphorus limits for Badger Mill Creek and select a viable compliance option. Potential other compliance options include water quality trading within the Badger Mill Creek HUC12, adaptive management within the Badger Mill HUC 12, adaptive management within the combined Badger Mill and Upper Sugar River HUC 12s, tertiary treatment of the Badger Mill Creek discharge or discontinuing diversion in Badger Mill Creek.

Please see department comments below if Discontinuing Diversion to Badger Mill Creek will be the selected phosphorus compliance alternative:

- MMSD will need to provide more documentation about stream flow in Badger Mill Creek and Badfish Creek if discontinuing the diversion to Badger Mill Creek is the selected compliance option. This documentation will need to demonstrate that the addition of the Badger Mill Creek discharge to the Badfish Creek will not result in a lowering of water quality in either Badger Mill Creek or Badfish Creek.

- MMSD currently has water quality standard variances for chloride and mercury at both the Badger Mill Creek and Badfish Creek Outfalls. In order to justify the renewal of these variances for the Bad Fish Creek following discontinuation of the Badger Mill Creek discharge, MMSD may need to complete extensive in stream monitoring reflective of current conditions and perform a mass balance analysis that shows the statistical significance of the increased flow and pollutant loading. MMSD should reach out to the Statewide Variance Coordinator, Laura Dietrich (Laura.Dietrich@wisconsin.gov), to discuss further.
- An evaluation showing that MMSD's waste load allocations contained in the EPA approved "Total Maximum Daily Loads for Total Phosphorus and Total Suspended Solids in the Rock River Basin" are sufficient to offset the increased mass loads of total phosphorus (TP) and total suspended solids (TSS) associated with returning MMSD's Badger Mill Creek discharge to Badfish Creek. If there is not sufficient waste load allocation to cover the increased mass load of TP or TSS attributed to the Badger Mill Creek discharge, the difference between MMSD's mass discharge and MMSD's Badfish Creek current waste load allocations for TP and TSS must off-set. This off-set can be made using alternative compliance options such as water quality trading.
- An update to the Yahara WINS Adaptive Management Plan demonstrating that compliance with water quality standards can still be achieved with the inclusion of the Badger Mill Creek. MMSD should reach out to the Phosphorus Implementation Coordinator, Matt Claucherty (Matthew.Claucherty@wisconsin.gov), to discuss further.

If you have any questions or comments on this letter or moving forward, please contact me at (608) 438-9930 or at Ashley.brechlin@wisconsin.gov.

Thank you,



Ashley Brechlin
Wastewater Engineer
Wisconsin Department of Natural Resources

CC (email copy): Martye Griffin
Thomas Bauman
Matt Claucherty
Laura Dietrich

Director of Ecosystem Services, MMSD
South Central Wastewater Supervisor, DNR
Statewide Phosphorus Implementation Coordinator, DNR
Statewide Variance Coordinator, DNR

Attachments:
EPA Letter dated June 17, 2022