Fw: CARPC comment re: MMSD proposal to divert treated wastewater effluent from the Sugar River Watershed to the Rock River Watershed.

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From: Robert Bohanan <rbrtbohanan52@gmail.com>
Sent: Wednesday, July 10, 2024 9:45 AM
To: Tanya Sime <tanyas@capitalarearpc.org>
Subject: CARPC comment re: MMSD proposal to divert treated wastewater effluent from the Sugar River Watershed to the Rock River Watershed.

CARPC comment re: MMSD proposal to divert treated wastewater effluent from the Sugar River Watershed to the Rock River Watershed.

Robert E. Bohanan, Ph.D.
UW Madison (retired)

10 July 2024

I am Robert Bohanan, a retired freshwater ecologist from UW Madison. Currently, I serve as the President of the Upper Sugar River Watershed Association. Over the past year, I have been involved in a stakeholder group examining various factors related to the proposal to redirect treated wastewater effluent from Madison Metropolitan Sewerage District solely to Badfish Creek instead of returning it to Badger Mill Creek. I share the concerns raised by the Friends of Badger Mill Creek Environmental Corridor and Southwest Trout Unlimited.

Based on my personal perspective and my own research on Badger Mill Creek since 2007, a range of studies, including assessments of dissolved oxygen, water temperature, macroinvertebrates, particularly aquatic insects, and habitats, have been conducted by both students and myself over several years. Recent habitat assessments were carried out in the fall of 2023 and early summer of 2024. Based on these studies and additional observations, it is evident that Badger Mill Creek is a distinct ecological asset in Dane County, southern Wisconsin, and the Midwest as a whole. This is attributed to the stream's passage through and connects to diverse habitat types, land uses, and the presence of reaches designated as Class II trout streams.

One aspect that has not received sufficient attention before you is the proposed shift of treated wastewater effluent return from Badger Mill Creek to Badfish Creek, seemingly shifts the water balance between the Sugar River Watershed and the Rock River Watershed. To date all of the potential projects under consideration to mitigate base flow do not consider the shift in water balance between watersheds. At minimum, this should be noted in your consideration of the proposal before you.

The stakeholder group has conducted a considerable evaluation, given the time and resources available, of different solutions with varying potential to address the potential loss of base flow if wastewater effluent is redirected from Badger Mill Creek to Badfish Creek as per the current MMSD proposal. As an ecologist, I have maintained a strong interest and cautiously optimistic perspective in assessing projects aimed at mitigating the loss of base flow. However, none of the individual projects or combinations of projects have shown both the feasibility within the next

few years and the effectiveness needed to counteract the expected impacts. The primary concern is the potential adverse effects on the stream's resilience and its ability to handle the inevitable variations in climate, particularly precipitation, due to the reduced base flow contribution from treated wastewater return. The interaction of base flow, discharge, and dissolved oxygen will be significantly disrupted, affecting fish and various aquatic insects, thereby impacting not only aquatic food webs but also terrestrial food webs.

The years 2023 and 2024 experienced significant weather events, including drought and increased precipitation leading to substantial water levels and local flooding. Similar fluctuations have been observed since 2000, with sustained periods of drought followed by heavy rains resulting in local flooding. The foreseeable future is expected to bring about even greater variability. The consistent and reliable contribution to base flow from treated wastewater return since the late 1990s has been crucial to improvements in several aspects of water quality and ecosystem services, as well as encouraging substantial investment in public and privately funded restoration projects, and the overall aesthetic value to the community.

It is conceivable that projects or combinations thereof aimed at reconnecting or connecting wetlands and other groundwater sources may be feasible. However, the timeline for their completion and the financial aspects remain pivotal concerns. The present MMSD proposal raises more questions than it provides answers, particularly regarding the lack of firm commitments to specific projects within a reasonable timeline that minimizes the anticipated negative impacts. Several proposals within the stakeholder group stress a minimum two-year planning phase to evaluate the efficacy of projects with implementation even farther removed from the decisions you're being asked to make today. Over the past year, the stakeholder group has benefitted from insightful presentations covering fisheries, hydrology, flood mitigation, and potential engineering opportunities. However, these presentations, to date, have also posed more questions than they have answered, underscoring the need for thorough and systematic consideration. The prudent and responsible approach is to devote the necessary time for addressing these questions, as this is fundamental to sound decision-making.

Respectfully submitted,
Robert Bohanan

Sent from my iPad