



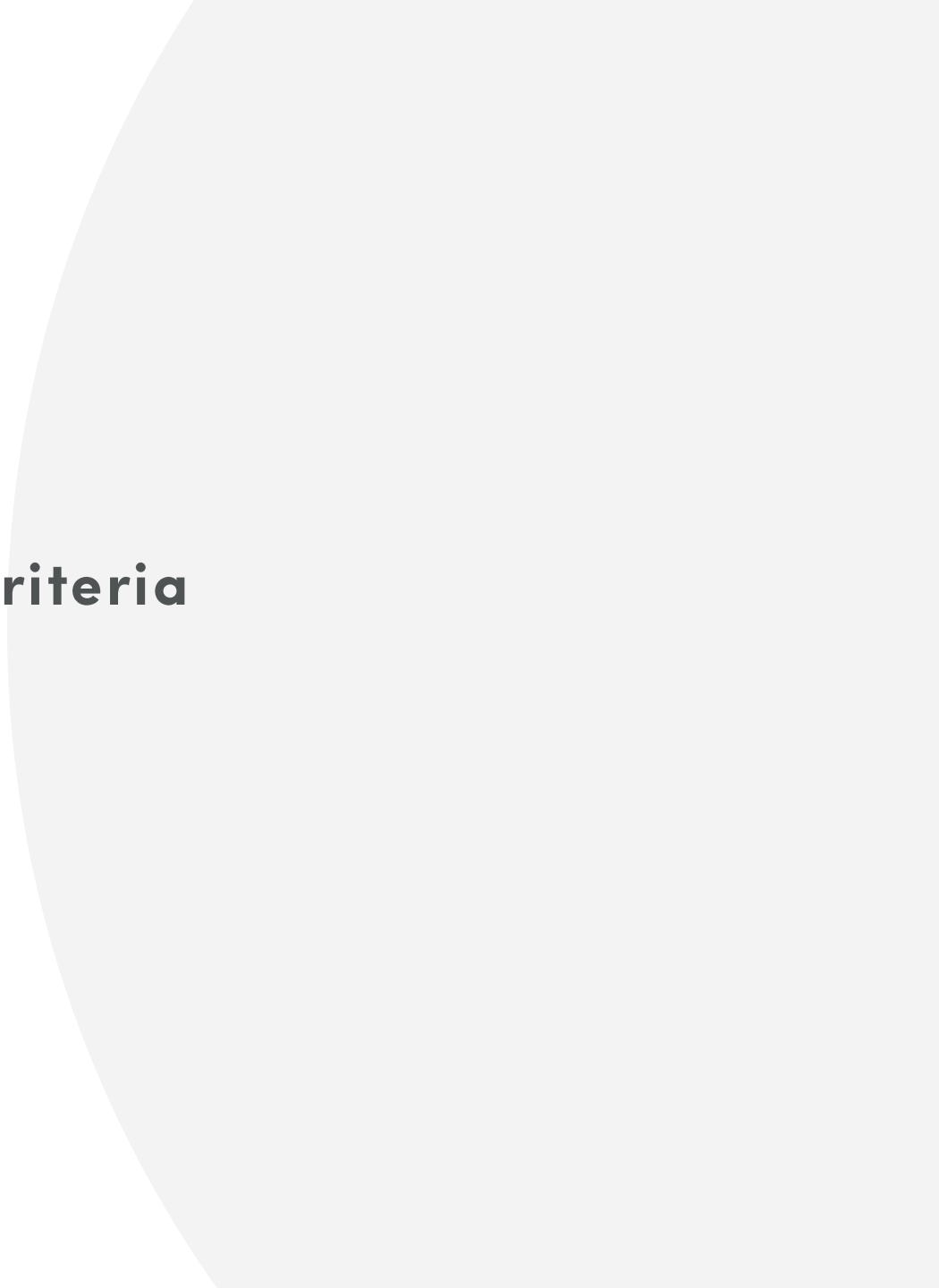
# Dane County Water Quality Plan Amendment

Revising the Point Discharge  
Locations of Treated Effluent from  
the *MMSD* Nine Springs  
Wastewater Treatment Plant

Staff Presentation - August 8, 2024



## **Presentation Overview**

- 1. Amendment Overview**
  - 2. Public Participation**
  - 3. Designated Uses & Water Quality Criteria**
  - 4. Summary of Impacts**
  - 5. Staff Recommendations**
- 

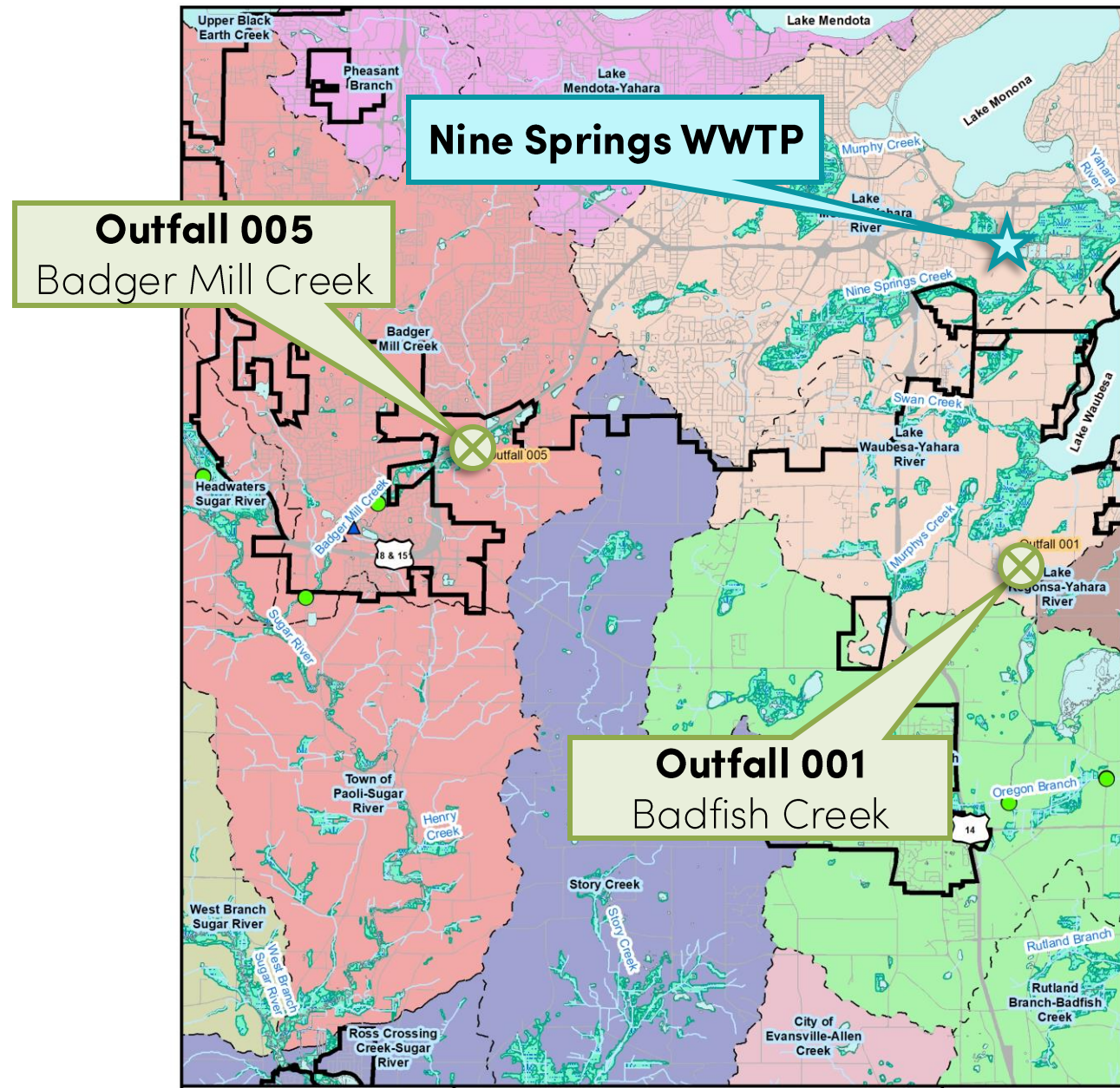
# Amendment Overview

## Nine Springs WWTP Effluent Revision

### Current Conditions:

Outfall 001 =  
Badfish Creek (92% of  
effluent)

Outfall 005 =  
Badger Mill Creek (8% of  
effluent)



# AMENDMENT OVERVIEW

## Phosphorus Requirements



### WPDES PERMIT

STATE OF WISCONSIN  
DEPARTMENT OF NATURAL RESOURCES  
PERMIT TO DISCHARGE UNDER THE WISCONSIN POLLUTANT DISCHARGE  
ELIMINATION SYSTEM

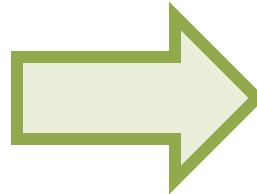
#### MADISON METROPOLITAN SEWERAGE DISTRICT

is permitted, under the authority of Chapter 283, Wisconsin Statutes, to discharge from a facility  
located at  
1610 Moorland Road

to  
BADFISH CREEK, FROM OUTFALL 001 (Lat: 42.97119° N / Lon: 89.35259° W) AND GROUNDWATER  
OF THE YAHARA RIVER AND LAKE MONONA WATERSHED, FROM OUTFALL 008, BOTH IN THE  
LOWER ROCK RIVER BASIN

AND TO  
BADGER MILL CREEK, FROM OUTFALL 005, (Lat: 42.99414° N / Lon: 89.50400° W) IN THE  
SUGAR-PECATONICA RIVER BASIN,  
ALL IN DANE COUNTY

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



Madison Metropolitan Sewerage District



Final Alternatives Assessment for Phosphorus  
Compliance  
Badger Mill Creek, Outfall 005  
Madison Metropolitan Sewerage District

Madison Metropolitan Sewerage District  
April 2023

AMENDMENT OVERVIEW

**Alternatives Considered by FCAP**

**01**

**Tertiary  
Treatment**

**02**

**Water Quality  
Trading**

**03**

**Adaptive  
Management**

**04**

**Discontinuation of  
Flow**

## AMENDMENT OVERVIEW

### **Trial Periods of Flow Cessation**

- **May 19 – June 3, 2021 (full)**
- **Feb 6 – April 17, 2023 (full)**
- **Feb 1 – Feb 23, 2023 (partial)**



# Public Participation

Public Comments Received & Public Hearing July 11, 2024

In Support



5

Neutral / Unknown



2

Against



37



# Water Quality Standards

## Designated Uses and Water Quality Criteria

“**Water quality standards** shall consist of the designated uses of the waters or portions thereof and the water quality criteria for those waters **based upon the designated use.**” [§ 281.15(1)]

Water Quality standards are contained in Wis. Admin. Code chapters NR 102 – 105.



## WATER QUALITY STANDARDS

### Designated Uses

01

**Fish & Other Aquatic  
Life (FAL\*)**

02

**Recreational**

03

**Wildlife**

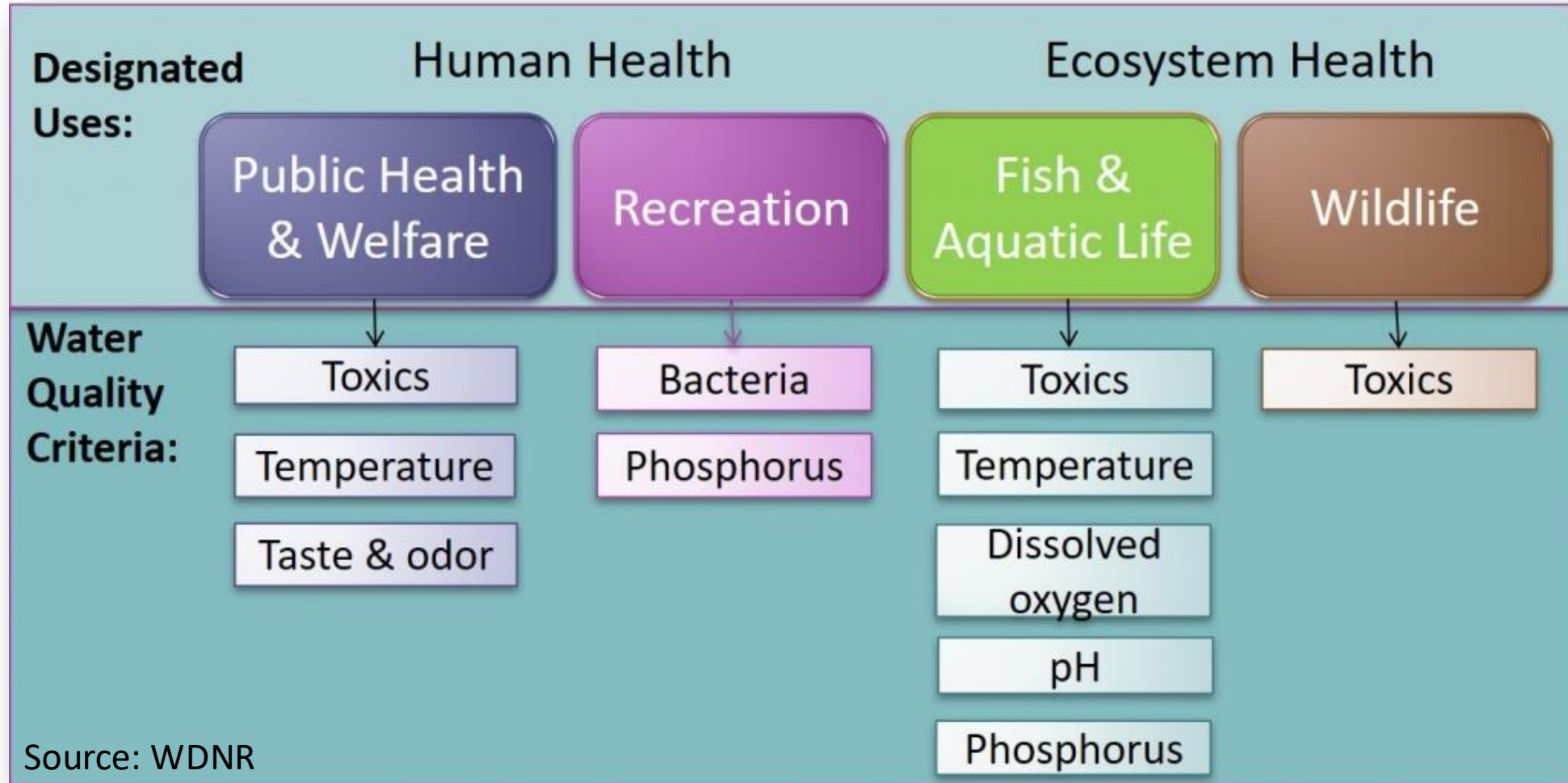
04

**Public Health &  
Welfare**

\*FAL Subcategories: cold water community, warm water sport fish community, warm water forage fish community, limited forage fish community, or limited aquatic life

# WATER QUALITY STANDARDS

## Water Quality Criteria



# Water Quality Impacts

Water Quality Criteria	Badger Mill Creek	Badfish Creek
Phosphorus	✓	✓
Dissolved Oxygen	?	✓
Temperature	✓	✓
Bacteria	✓	✓
pH	✓	✓
PFOS & PFOA	✓	✓
Toxics	✓	✓
Taste & Odor	✓	✓
Other General Criteria	✓	✓



## WATER QUALITY IMPACTS

### Summary

## Badger Mill Creek

- In most cases, loss of flow will remove offending constituent
- Limited data to assess impact
- For DO, effect of loss of flow is more complicated
- Possible change in FAL subcategory

***Likely Consistent***

## Badfish Creek

- Existing discharge will continue to be regulated through WPDES permit, which sets limits to comply with Water Quality Based Effluent Limits (WQBELs)
- Additional contributions to Yahara WINS

**Consistent**

# Conclusions

## Staff Water Quality Recommendations

It is CARPC staff's opinion that the proposed amendment is **likely consistent with water quality standards** under Wis. Stat. § 281.15.

Therefore, it is recommended that this proposed amendment be **accepted, subject to the following condition...**



## CONCLUSIONS

### Conditions of Recommendation (abbrev.)

1. The District shall do one of the following to demonstrate compliance with water quality standards under Wis. Stat. § 281.15 and not result in degradation of the stream:

#### **Flow Trials**

- a. Work with DNR to conduct additional trial periods of supplemental flow cessation.

#### **Analysis**

- b. Analysis using appropriate modeling or statistical techniques to predict dissolved oxygen and stream temperature without the supplemental flow.

## CONCLUSIONS

### Additional Recommended Actions (abbrev.)

1. Work with DNR, CARPC, and other stakeholders to **revisit adaptive management** as preferred alternative (including possibility of flow cessation in combination with adaptive management)
2. If effluent cessation is implemented, work with WGNHS to **recalibrate the model of Badger Mill Creek** to help identify opportunities for replacing lost baseflow.
3. If effluent cessation is implemented, continue working with **Badger Mill Creek Stakeholder Group** to refine and advance projects that mitigate adverse effects
4. If effluent cessation is implemented, conduct additional **public outreach and education** regarding additional effluent to Badfish Creek outfall

# Questions?

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