# White Bear Lake Area Comprehensive Plan Meeting #5

## Ranked Solutions for Individual Studies

METROPOLITAN COUNCIL

November 7, 2024

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metrocouncil.org

# Ranked potential solutions to evaluate (1/2)

## Problem Statement

*Ensure equitable access to sufficient, safe, and affordable water for communities in the North and East Metro areas to meet current and future needs while safeguarding the sustainability of surface water and groundwater resources.*

# Ranked potential solutions to evaluate (2/2)

## Past related studies

Feasibility Assessment of Approaches to Water Sustainability in the Northeast Metro – Metropolitan Council, December 2014

Report to the Minnesota State Legislature: Concept Cost Report for Augmentation of White Bear Lake with Surface Water – DNR, February 2016

Regional Groundwater Recharge and Stormwater Capture and Reuse Study – North and East Metro Study Area – Metropolitan Council, May 2016

Minnesota's PFAS Blueprint – MPCA, February 2021

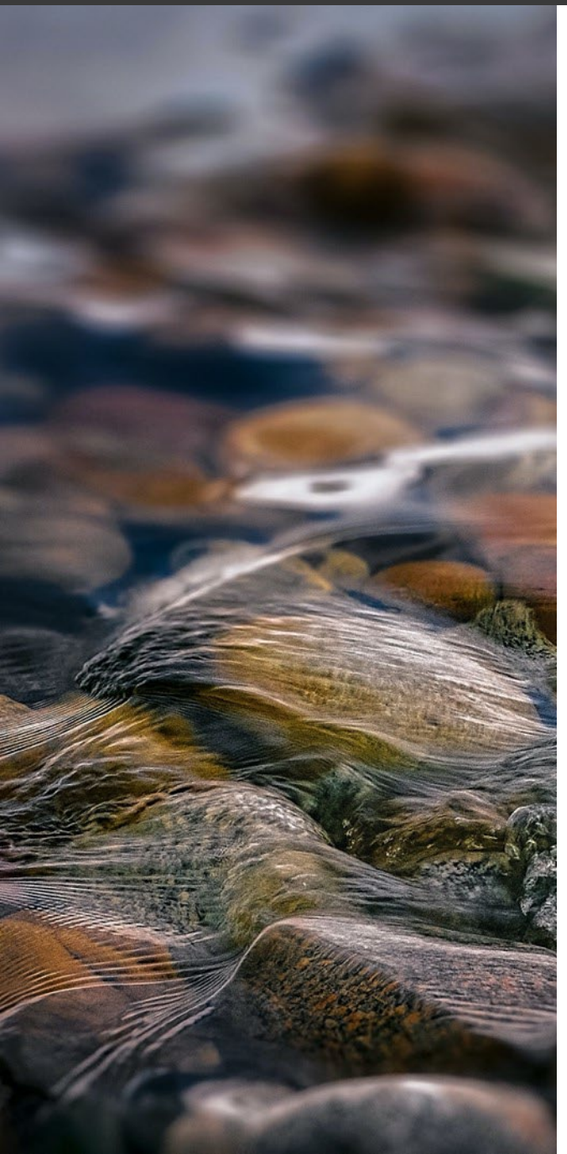
Conceptual Drinking Water Supply Plan for PFAS in the East Metro Area – MPCA, August 2021

Reuse of Stormwater and Rainwater in Minnesota – MDH, January 2022

Groundwater Modeling Analysis for White Bear Lake Court Case – DNR, June 2022

Ramsey County Stormwater Reuse Assessment – Ramsey County/Barr Engineering – December 2021

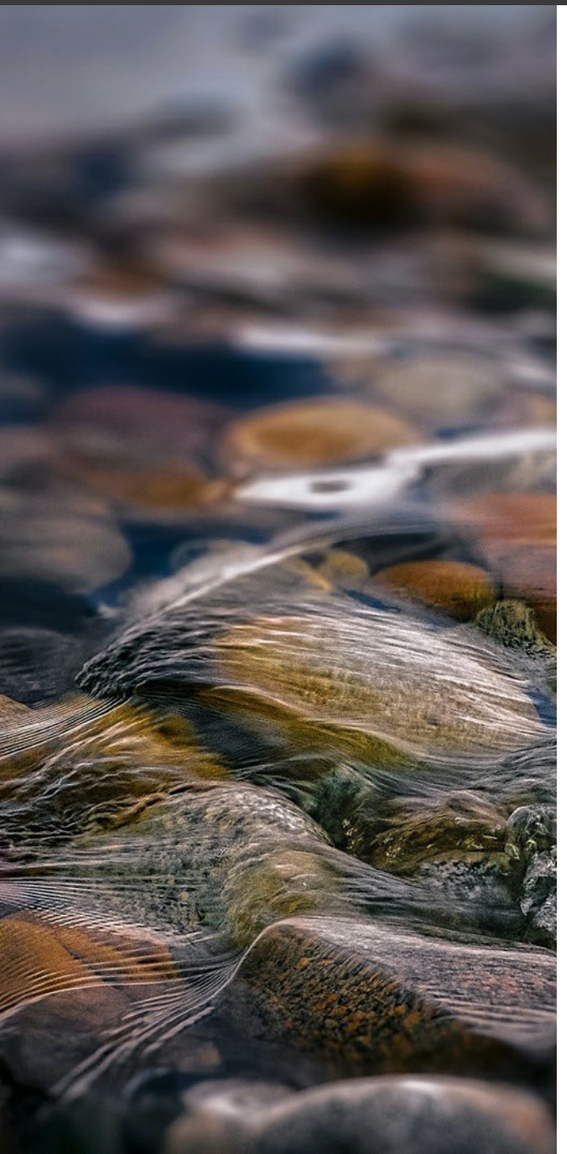
# Converting water supplies that are groundwater dependent to total or partial supplies from surface water (1/3)



## Sub-legislation for methods to conserve and recharge groundwater

1. Converting water supplies that are groundwater dependent to total or partial supplies from surface water
2. Reuse water, including water discharged from contaminated wells
3. Projects designed to increase groundwater recharge
4. Other methods for reducing groundwater use

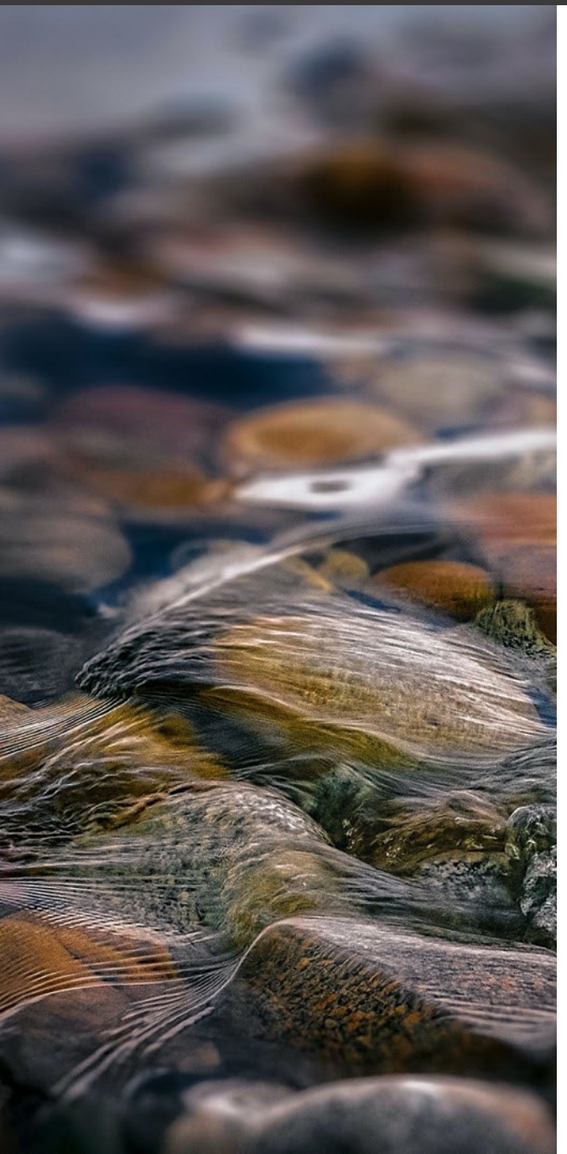
# Converting water supplies that are groundwater dependent to total or partial supplies from surface water (2/3)



## Potential solutions identified by work group

1. Convey treated surface water from St. Paul Regional Water Services to north and east communities.
2. Construct a regional surface water treatment plant near the chain of lakes in the north metro and convey treated surface water to north and east communities.
3. Construct a regional surface water treatment plant near the St. Croix River and convey treated surface water to north and east communities.
4. Redirect stormwater to augment White Bear Lake
5. Construct a closed loop system like Las Vegas
6. Construct a new Mississippi River source and regional water treatment plant separate from St. Paul Regional Water Services

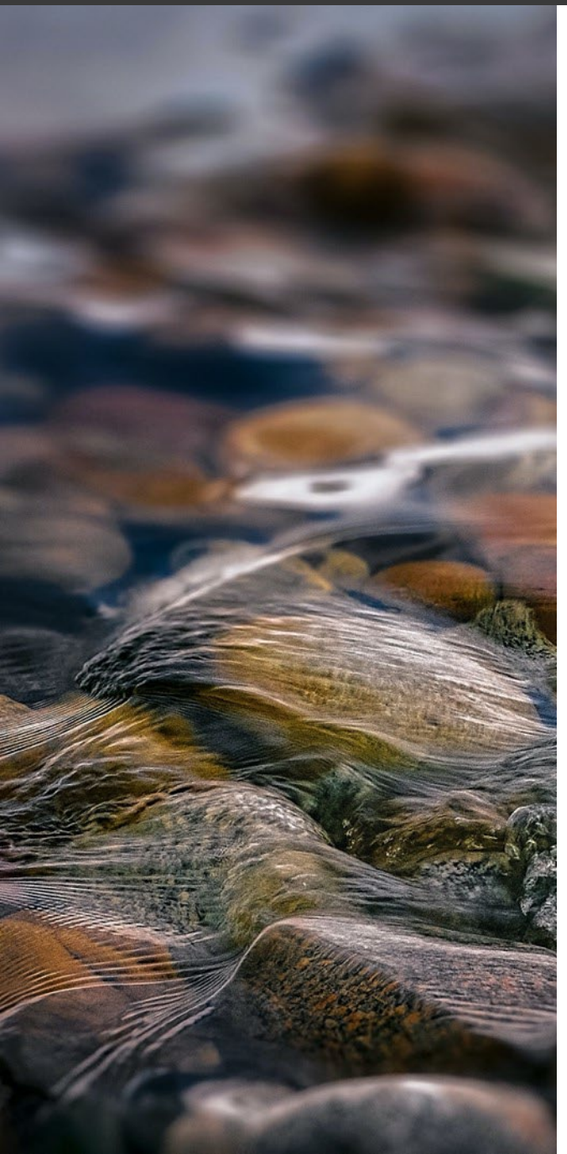
# Converting water supplies that are groundwater dependent to total or partial supplies from surface water (3/3)



## Top 3 ranked solutions to evaluate

1. Redirect stormwater to augment White Bear Lake – 13 votes
2. Convey treated surface water from St. Paul Regional Water Services to north and east communities – 12 votes
3. Construct a regional surface water treatment plant near the chain of lakes in the north metro and convey treated surface water to north and east communities – 8 votes

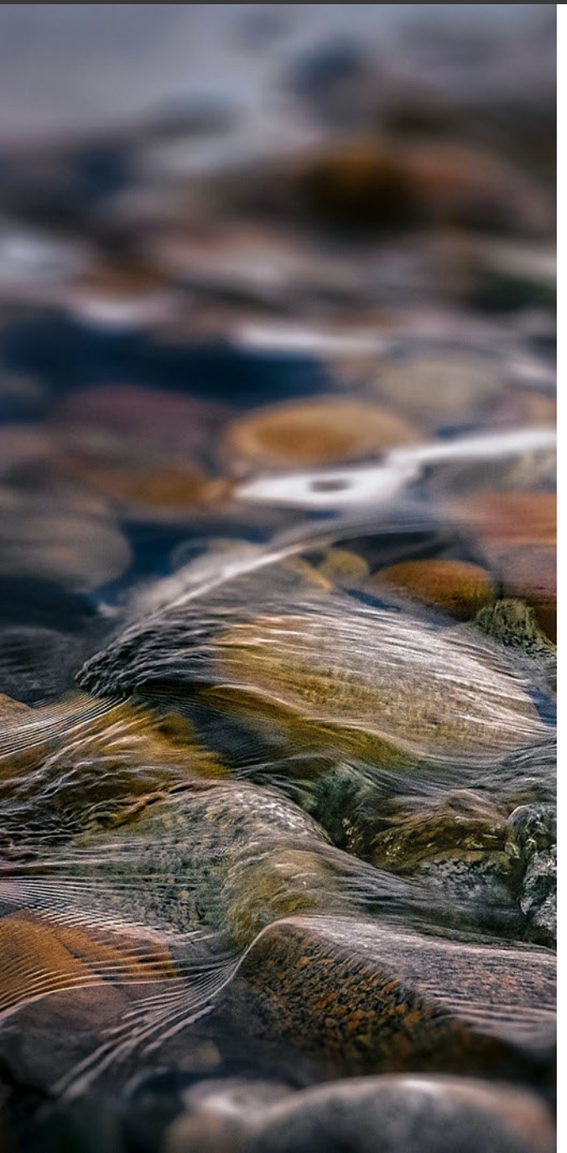
# Reuse water (1/2)



## Potential solutions identified by work group

1. Reuse of treated wastewater from local Met Council interceptors for industrial and agricultural users
2. Stormwater reuse for irrigation
3. Reuse water discharged from contaminated wells
4. Reuse of treated wastewater from local Met Council interceptors for flushing toilets and irrigation water
5. Use grey water to use in toilets (sink to toilet) overall citizen education and buy-in
6. Direct injection of treated wastewater/dewatering into aquifer
7. Commercial manufacturing cooling
8. Toilet to tap - Start thinking about treating effluent for potable use

# Reuse water (2/2)



## Top 3 ranked solutions to evaluate

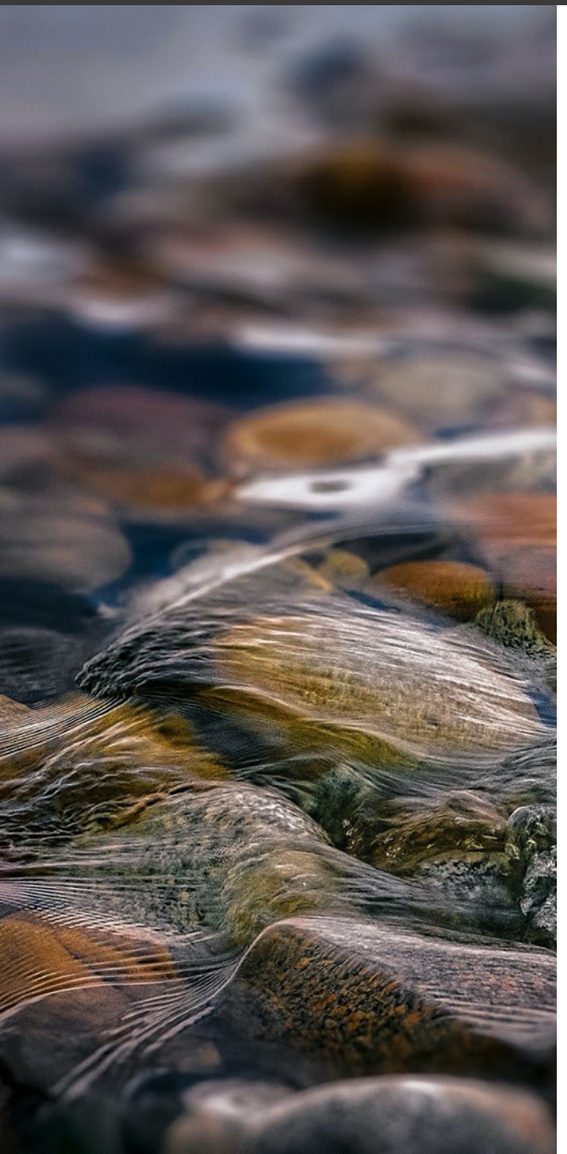
1. Reuse of treated wastewater from local Met Council interceptors for industrial and agricultural users – 12 votes

2. Stormwater reuse for irrigation – 9 votes

3. Reuse water discharged from contaminated wells – 7 votes

MPCA is completing a feasibility study for Project 1007 to treat PFAS and reuse the water from 12 groundwater wells for potable reuse.

# Projects designed to increase groundwater recharge (1/2)



## Potential solutions identified by work group

1. Lake augmentation by pumping treated surface water from the chain of lakes into White Bear Lake

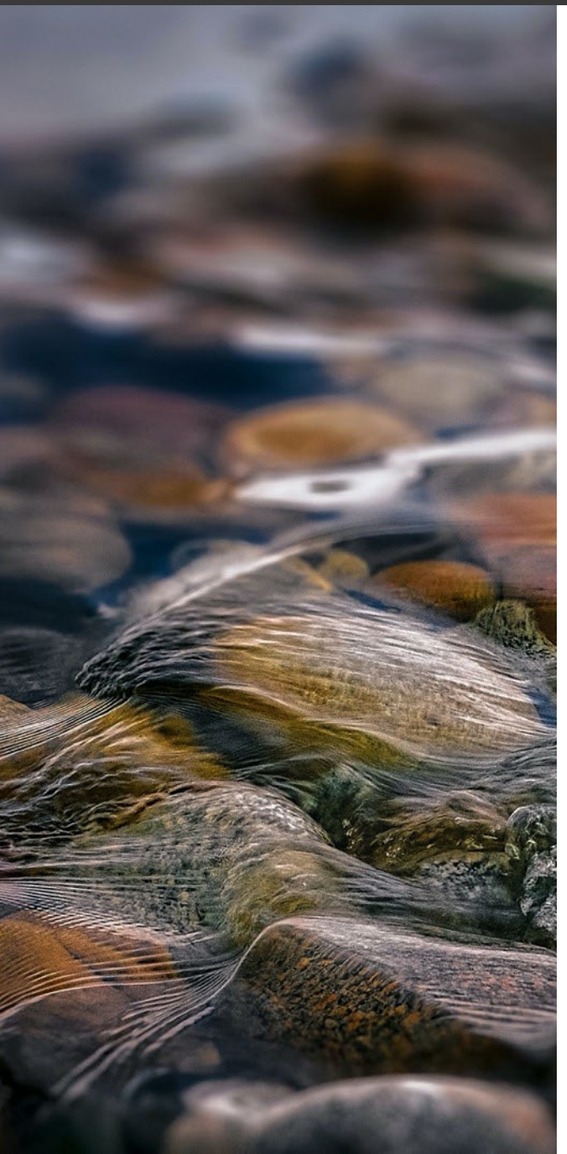
2. Treat wastewater from local Met Council interceptors and inject the treated wastewater into the aquifer to raise groundwater elevations.

3. Stormwater collection and infiltration to raise groundwater elevations.

4. Combination of lake augmentation and groundwater injection by treated wastewater

5. Lake augmentation by treating wastewater from local Met Council interceptors and pumping the treated wastewater into White Bear Lake
6. Augmentation of White Bear Lake or injection to groundwater from SPRWS treated water
7. Closed loop potable reuse - direct potable reuse

# Projects designed to increase groundwater recharge (2/2)



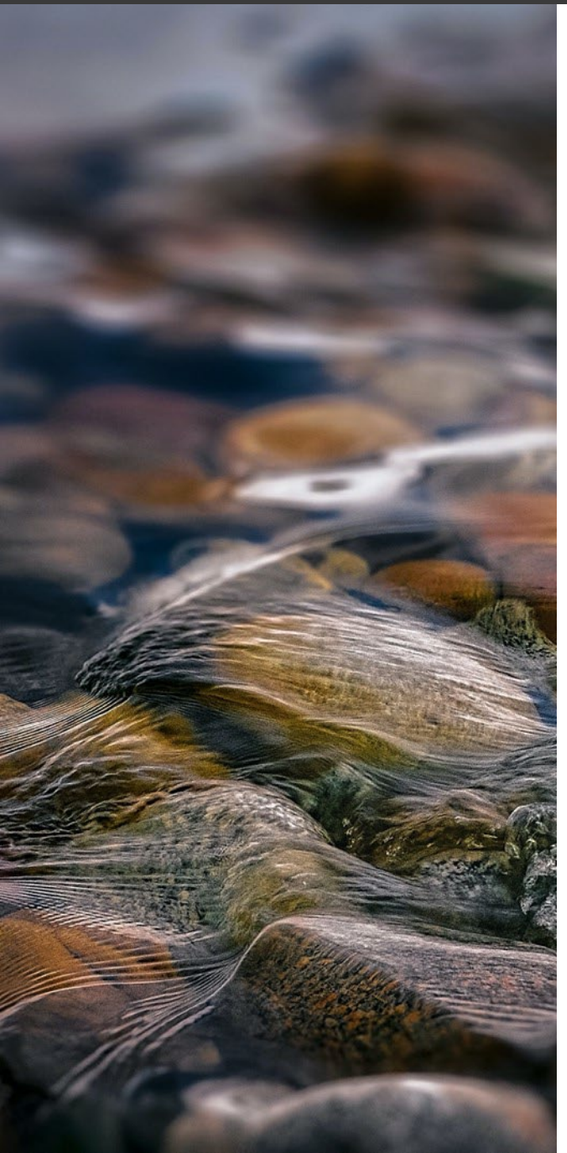
## Top 3 ranked solutions to evaluate

1. Lake augmentation by pumping treated surface water from the chain of lakes into White Bear Lake – 12 votes

2. Treat wastewater from local Met Council interceptors and inject the treated wastewater into the aquifer to raise groundwater elevations – 10 votes

3. Stormwater collection and infiltration to raise groundwater elevations – 8 votes

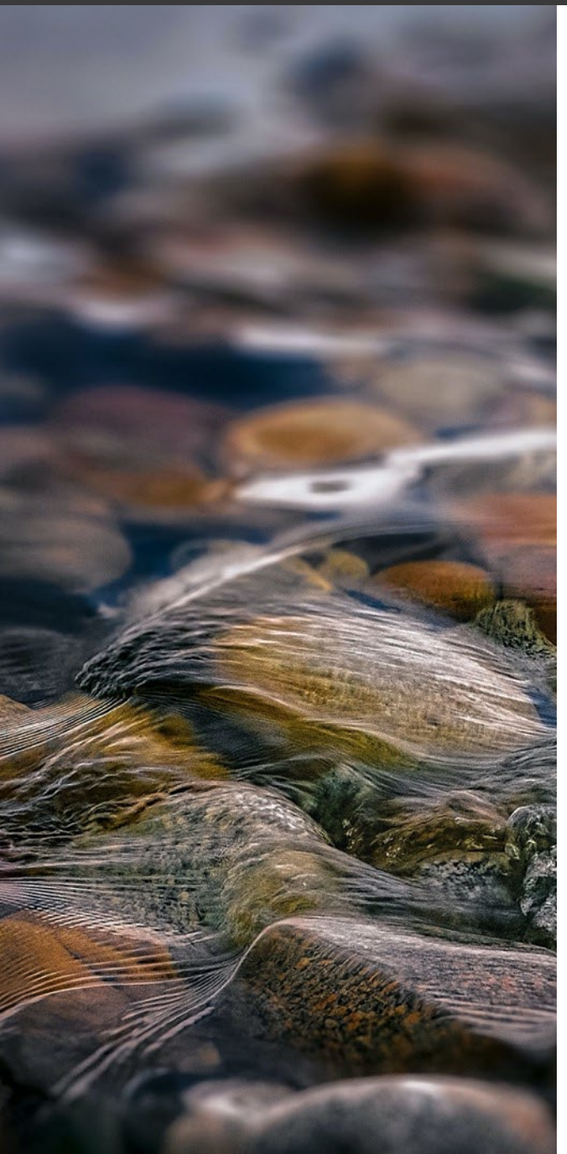
# Other methods for reducing groundwater use (1/4)



## Potential solutions identified by work group

1. Lawn watering restrictions (day of week and time)
2. Alternative turf grasses and landscaping
3. Tiered increasing block water utility rates
4. Leak detection and unaccounted for water audits
5. Smart irrigation control and rain sensor program
6. Education and outreach
7. Implement/require/encourage non- or less-potable water reuse for irrigation and process water
8. Enforcement of adopted water conservation policies

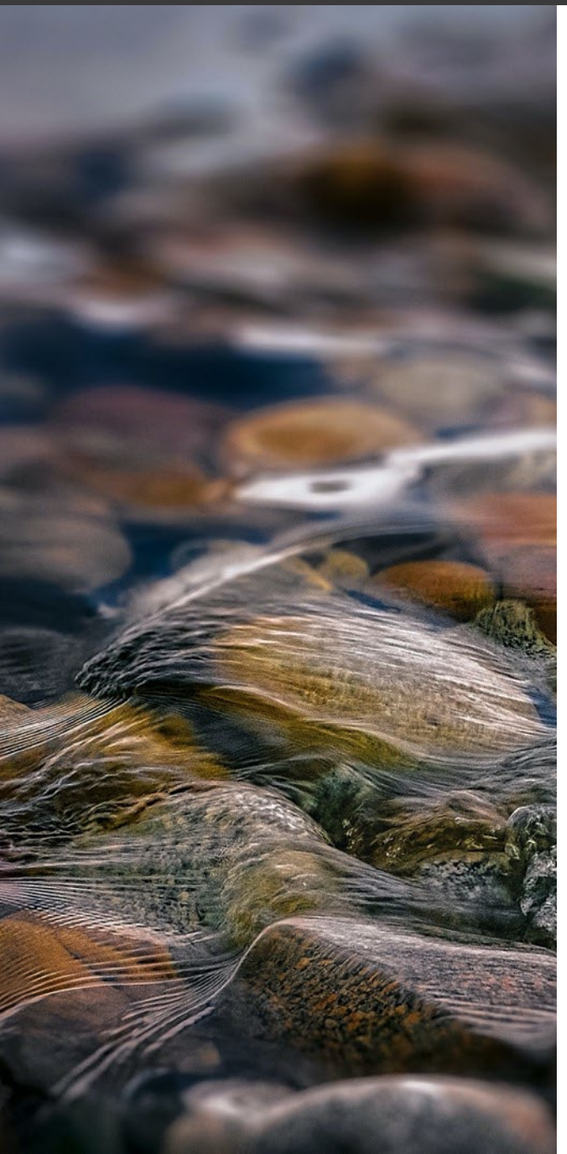
# Other methods for reducing groundwater use (2/4)



## Potential solutions identified by work group (cont.)

9. Commercial and homeowner association irrigation cost share program
10. Pressure regulation on plumbing systems
11. Appliances and plumbing fixture efficiency program Smart irrigation control and rain sensor program
12. Centralized water softening
13. Less manicured lawns "turf“
14. Require commercial accounts that utilize water for coding equipment to change to other methods for cooling
15. Incentify XERIscaping
16. Include conservation goals in water supply plans

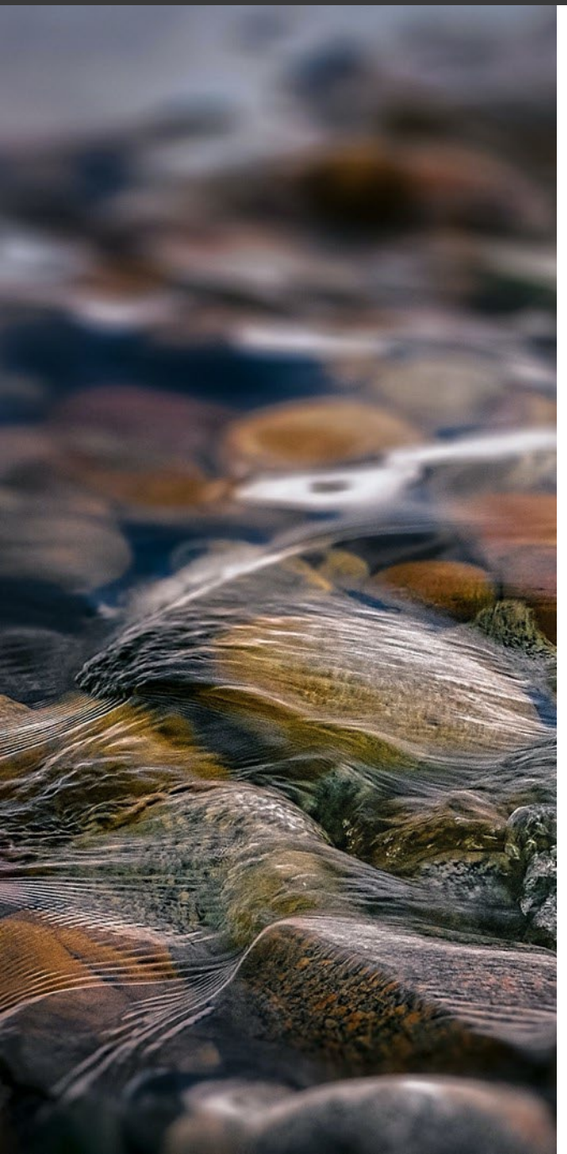
# Other methods for reducing groundwater use (3/4)



## Top 3 ranked solutions to evaluate

1. Lawn watering restrictions (day of week and time) – 10 votes
2. Implement/require/encourage non- or less-potable water reuse for irrigation and process water – 9 points
3. Tiered increasing block water utility rates – 6 points

# Other methods for reducing groundwater use (4/4)



## Alternative low input turf grasses

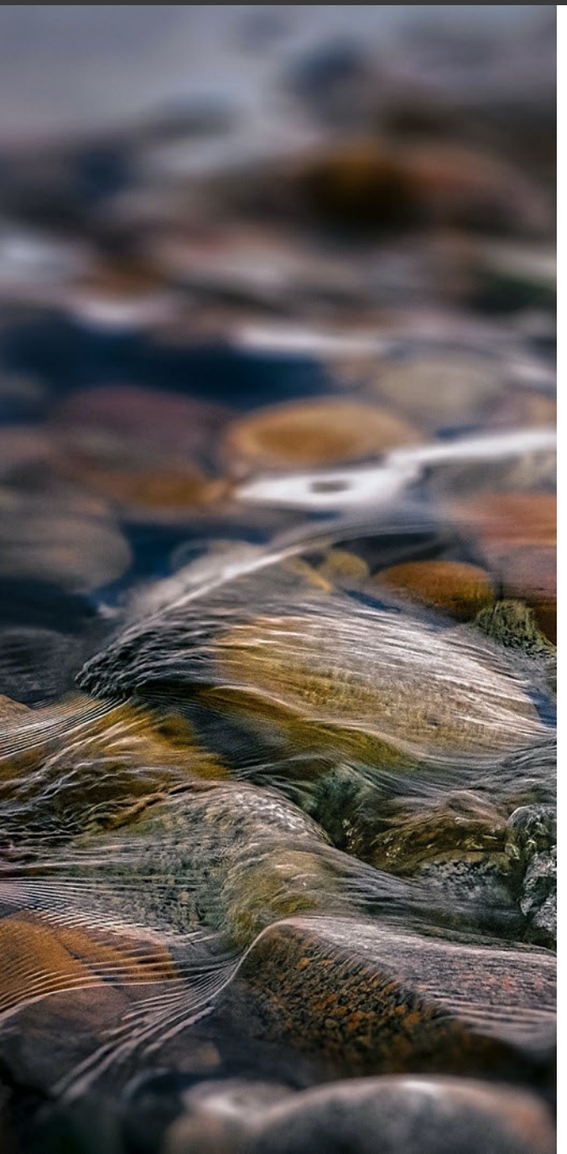
The University of Minnesota will complete a turfgrass species mixture trial at four possible Twin Cities metro area locations:

(1) St. Paul campus of the University of Minnesota
(2) Minnesota Landscape Arboretum in Chaska
(3) UMORE Park in Rosemount, MN
(4) A publicly accessible space in the eastern suburbs.

## Questions:

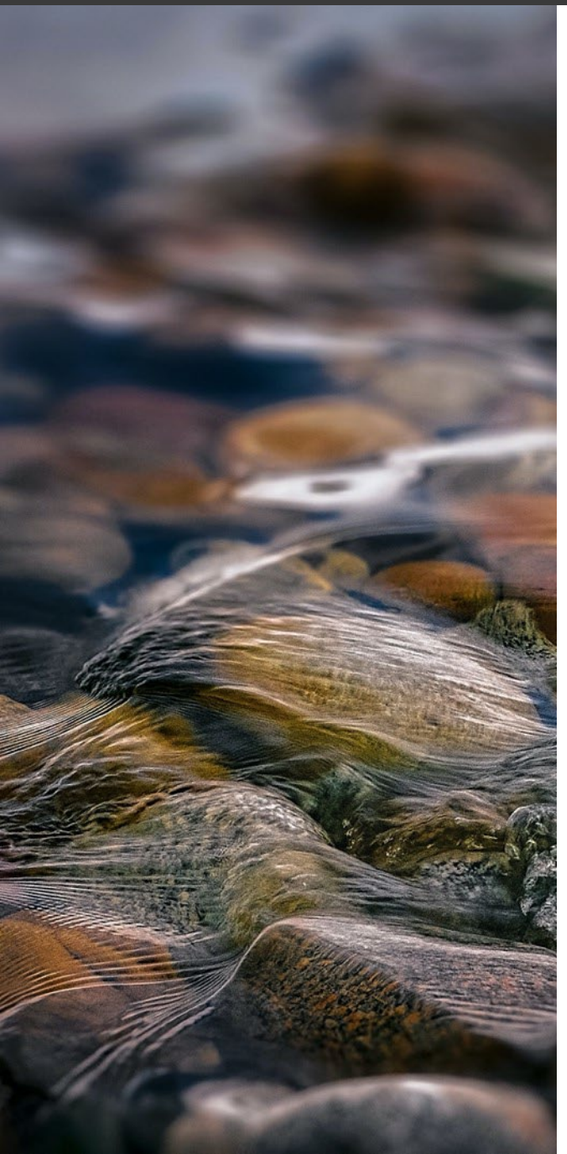
1. **Should we study these potential water savings?**
2. **Is there a community willing to provide public space for the east metro area seed mixture trial?**

# Other issues and potential solutions not ranked but should be considered (1/2)



1. Future PFAS impacts, treatment requirements, and long-term costs
2. Raising outflow elevation of White Bear Lake to increase storage capacity of lake
3. Maintain existing groundwater wells as a backup supply source to a potential surface water system and study the feasibility of using them as peaking wells

# Other issues and potential solutions not ranked but should be considered (2/2)



**Question – Are there other issues that we should be aware of as we proceed into the studies?**