

Saint Paul Regional Water Services Overview

May 22, 2024



Racquel Vaske
General Manager

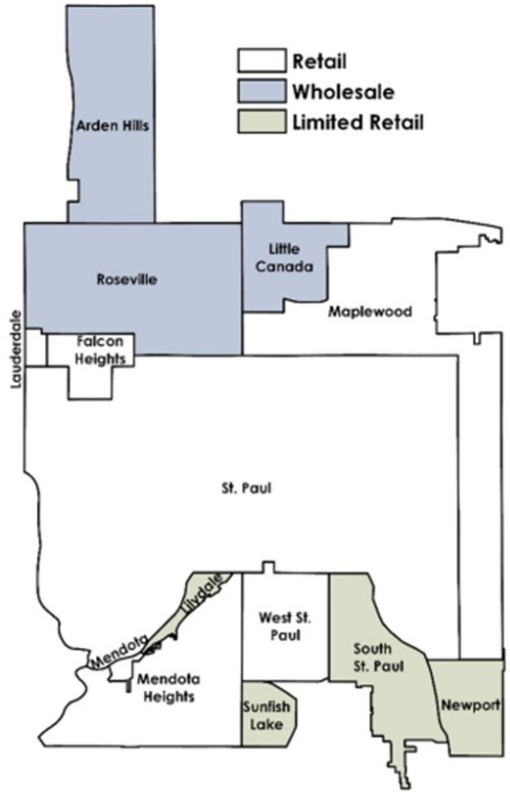
Rich Hibbard
Engineering Division Manager

CheFei Chen
Production Division Manager



Saint Paul Regional Water Services

Customers



Active Accounts
96,961

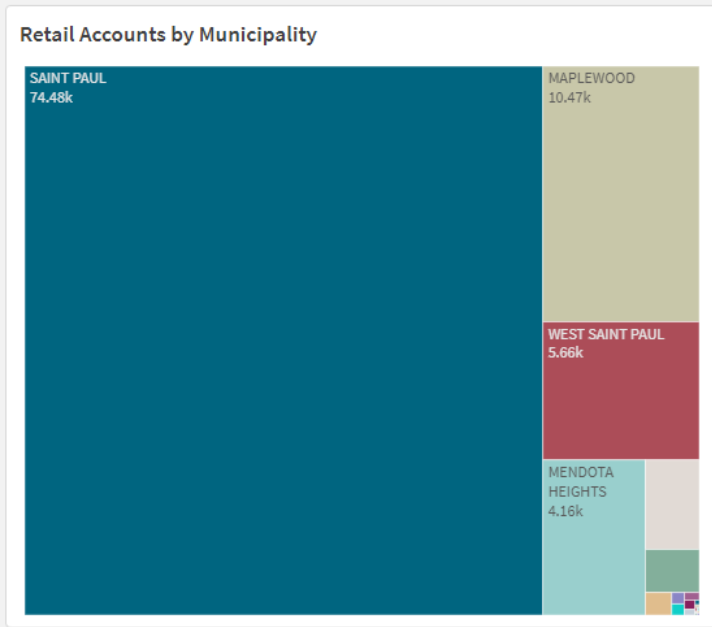
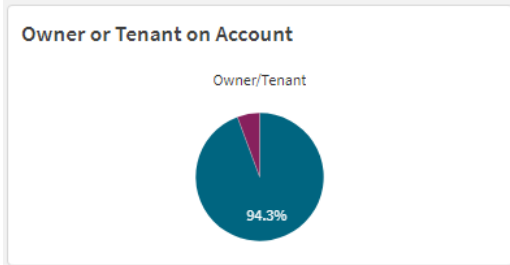
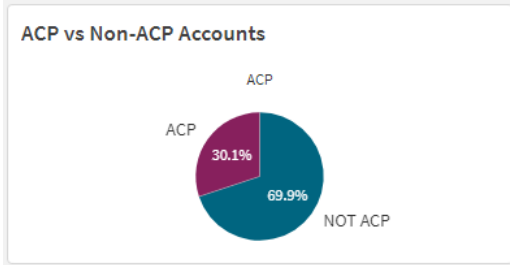
Population
441,350

Retail and Wholesale Only

MHI
\$74,831

Account Type

Account Type	Q	Count	Percent
Totals		96961	100%
Quarterly - Single Family		77326	80%
Quarterly-Non Sngl Family		12818	13%
Monthly-Non Single Family		4131	4%
Auto Fire		2303	2%
Monthly - Municipal		238	0%
Private Hydrants Only		56	0%
Quarterly - Municipal		38	0%
Monthly - Single Family		29	0%
Hydrant Meters		22	0%



Facts & Statistics

- Regional supplier of water and services to Saint Paul and surrounding suburban communities
- ~450,000 people served
- ~97,000 accounts
- Owned and operated by Board of Water Commissioners- 7 members.
 - 3 Members of Saint Paul City Council
 - 2 Saint Paul Residents
 - 2 Suburban Representatives



Supply System

Mississippi River Appropriations Permit:
Up to 109 MGD

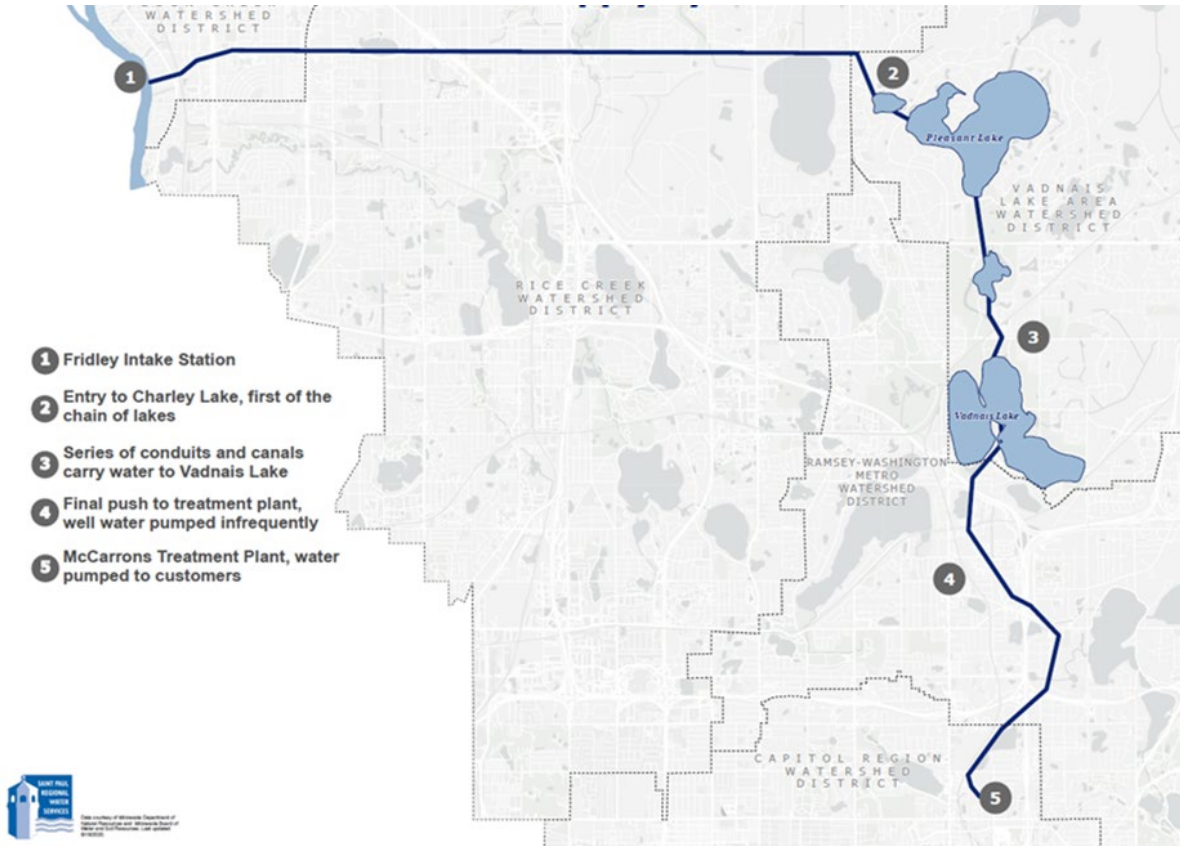
Treatment Capacity

Current Treatment Plant: Max ~ 120 MGD

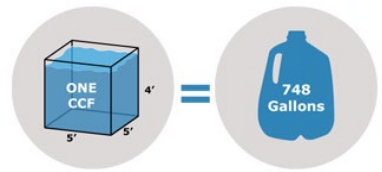
New Treatment Plant: Max ~112 MGD

Full Redundancy: ~ 84 MGD

We can build a 5th clarifier for an additional 28 MGD if deemed necessary in the future.



Current Rate Structures (2024)



Retails Rates

Consumption Based

Winter Rate: \$4.00/unit

Summer Rate: \$4.14/unit

Water Main Surcharge: \$0.24/unit

Water Service Base Fee:

\$7.25/month (5/8, 3/4, 1" Single Family)

Right-of-Way Recovery Fee:

\$1.50/month

Wholesale Rates

Rates (consumption + base) are calculated using a variety of factors including demand on SPRWS system infrastructure.

Wholesale study completed every 5 years as a group.
Next Study: 2028

Roseville (1,714 Million Gallons/Year)

Average: \$2.56/unit = \$3,421/Million Gallons
Volume Rate (60%)

Little Canada (354 Million Gallons/Year)

Average: \$2.61/unit = \$3,489/Million Gallons
Volume Rate (60%)

University of MN (117 Million Gallons/Year)

\$5.11/unit = \$6,829/Million Gallons
Volume Rate (92%)



Construction began in February 2022

Begin operations in Summer 2025

Proactively replacing 100-year-old infrastructure. Improvements to redundancy and removal of emerging contaminants of concern.

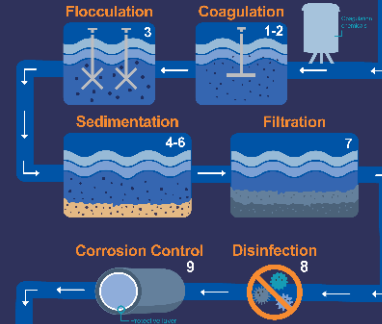
2/3 of existing facility being replaced with modern technology: batch slaking, softening clarifiers, recarbonation. Adding ozonation.





SPRWS System Overview

TREATMENT PLANT

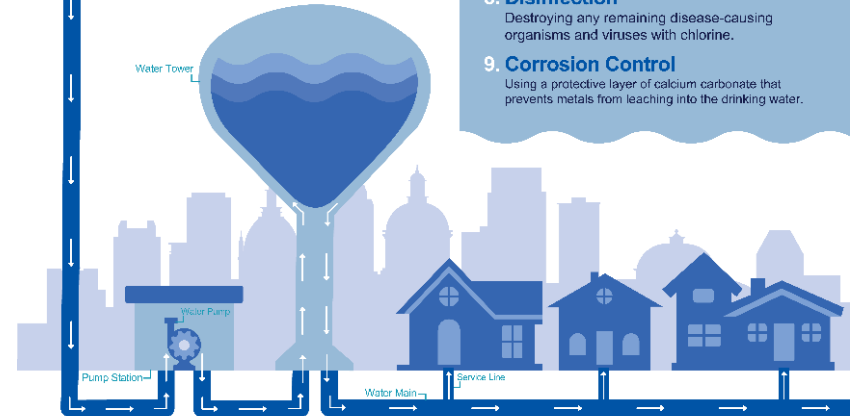


TREATMENT PROCESS

- 1. Coagulation**
Adding alum and ferric chloride to the water, which enables tiny particles of algae, plant matter, and silt to stick together creating larger particles.
- 2. Softening**
Reducing the water hardness by removing calcium and magnesium.
- 3. Flocculation**
Mixing slowly that encourages the particles created in coagulation to bump together creating even larger snowflake-like particles called "floc" that will settle out more easily.
- 4. Sedimentation**
Allowing the floc to settle and be removed, leaving behind clearer water.
- 5. Fluoridation**
Adding fluoride to prevent tooth decay.
- 6. Recarbonation**
Lowering the pH of the water with carbon dioxide. This returns it to a natural level and helps with filter efficiency and disinfection.
- 7. Filtration**
Filtering out particles, pathogens, and viruses.
- 8. Disinfection**
Destroying any remaining disease-causing organisms and viruses with chlorine.
- 9. Corrosion Control**
Using a protective layer of calcium carbonate that prevents metals from leaching into the drinking water.

DISTRIBUTION SYSTEM

SPRWS owns and operates water towers, reservoirs, and pump stations that all work together to provide storage and needed pressure.



Nearly 1,200 miles of water main • Approximately 100,000 service lines • About 450,000 customers

2023

Production Data

Lowest Day:

29 Million Gallons (January 31st)

Highest Day:

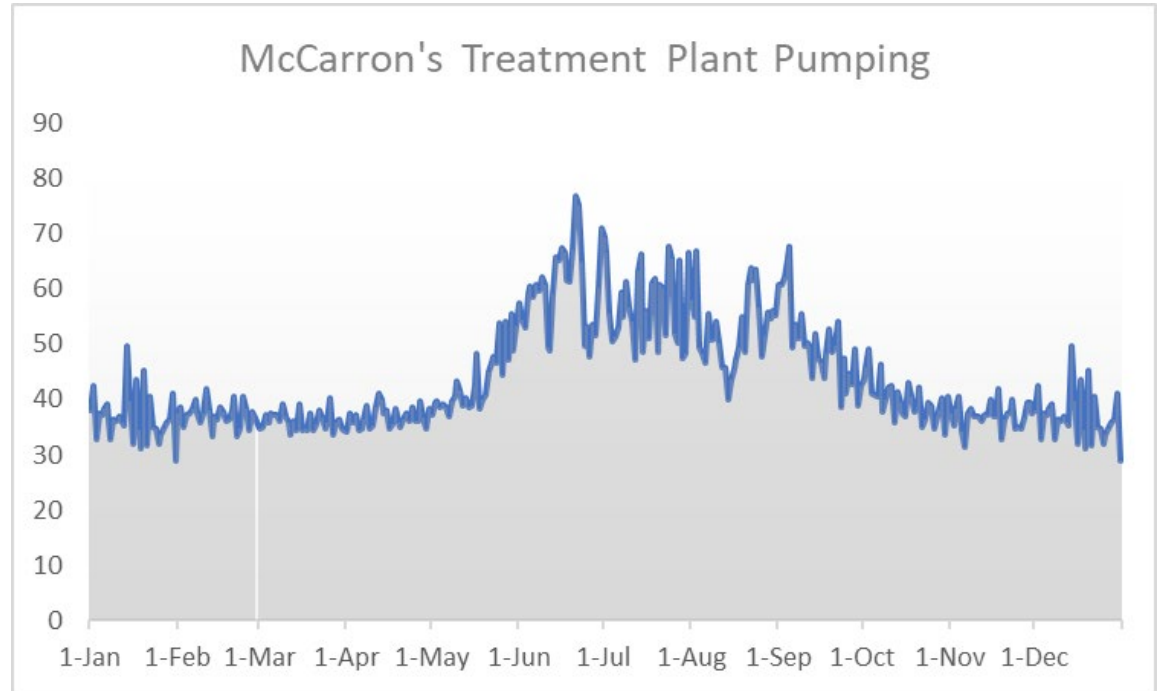
77 Million Gallons (June 21st)

Average Day:

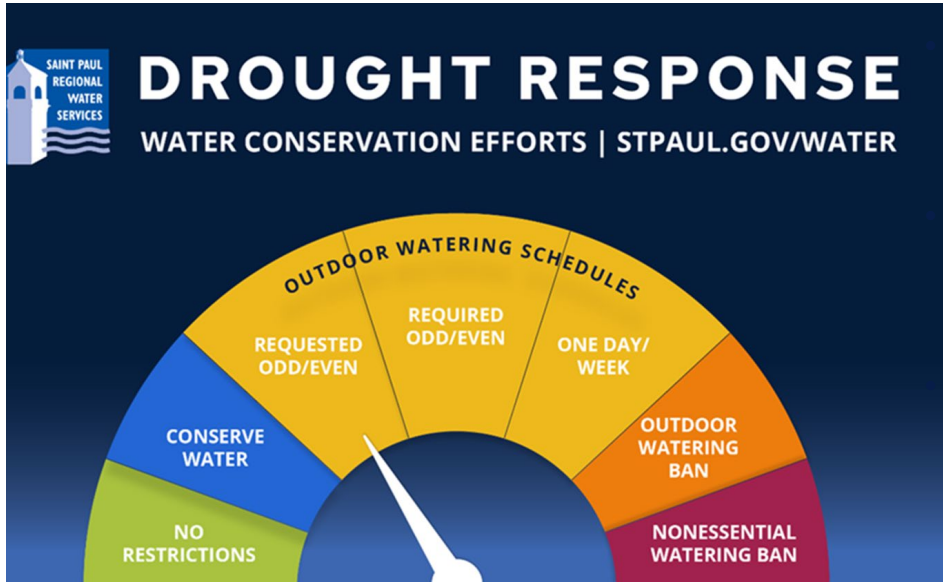
44 Million Gallons

Total Annual Production:

16 Billion Gallons



What About Droughts?



Drought Warning Phase

- Flow Rate < 2000 cfs for 5 consecutive days
- SPRWS Goal: Reduce to 50% above January levels:
 $35.595 * 1.5 = 53.4 \text{ MGD}$

Drought Restrictive Phase

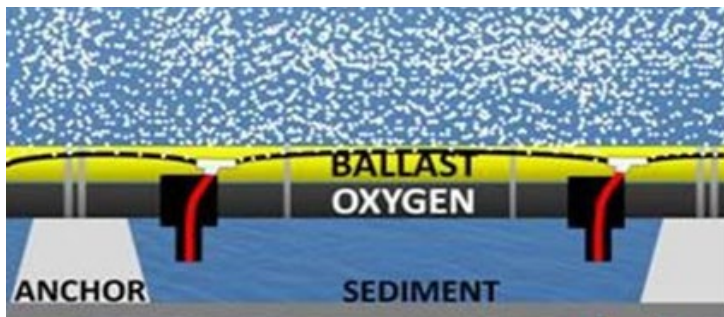
- Flow Rate < 1500 cfs for 5 consecutive days
- SPRWS Goal: Reduce to 25% above January levels:
 $35.595 * 1.25 = 44.25 \text{ MGD}$

Emergency Phase

- Flow Rate < 1000 cfs for 5 consecutive days
- Public water suppliers implement mandatory water use reduction actions with a goal of reducing water use to January levels.

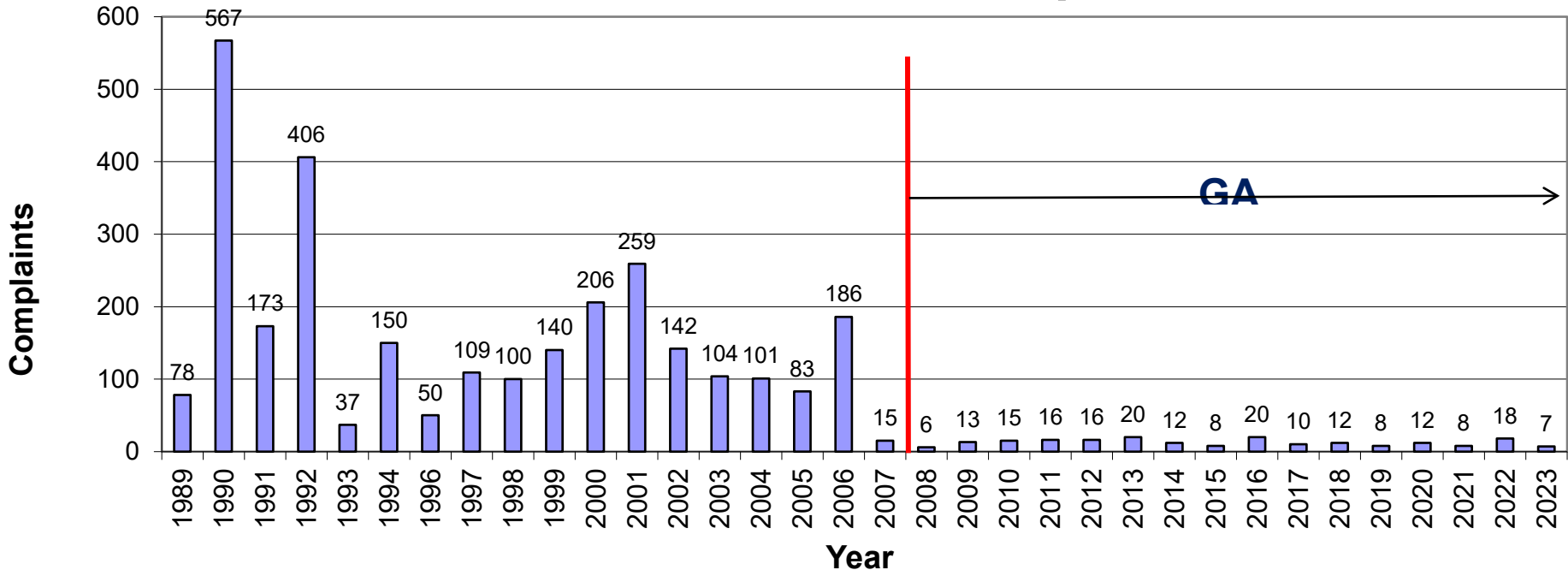
How Do You Control Taste and Odor?

- Control External Phosphorus Loading from Mississippi River Entry Into Lakes: Ferric Chloride Injection at Fridley Pump Station
- Control Internal Phosphorus Loading from Lakes Sediment Released under Anoxic/Reduced Condition:
 - Oxidize Pleasant and Vadnais Lake with Hypolimnetic Aeration treatment
 - Dose Ferric Chloride into Vadnais Lake



SPRWS Drinking Water Taste & Odor Complaints Trend

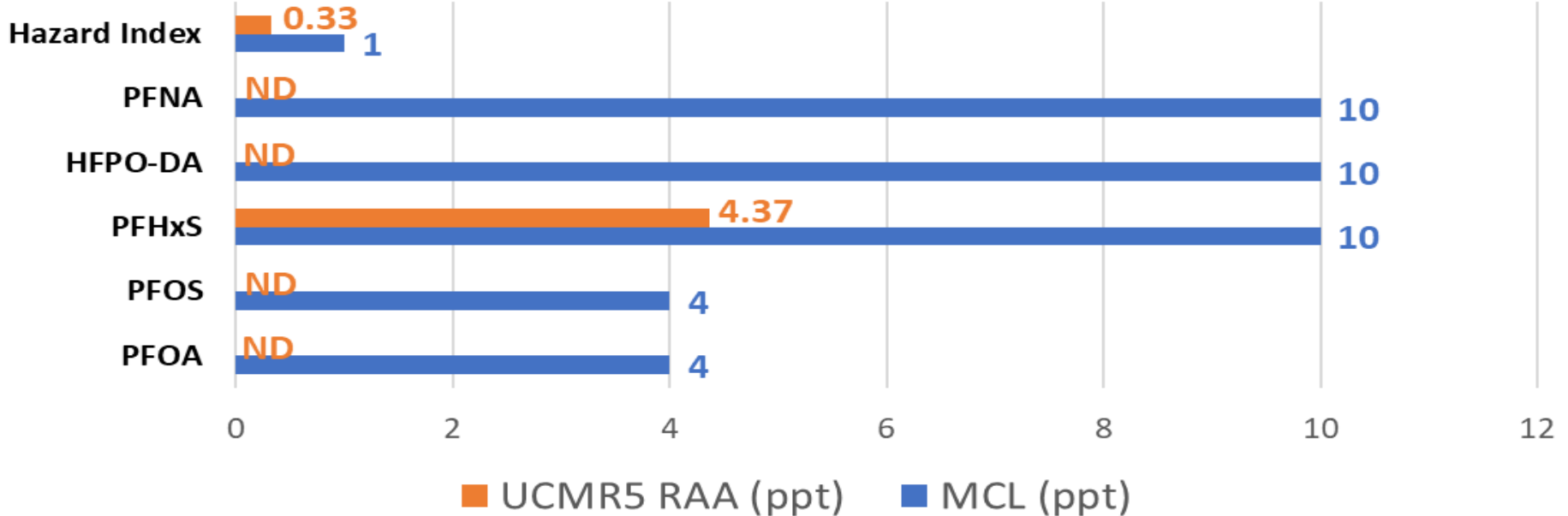
Taste and Odor Complaints



What Are You Doing About PFAs?

Overview of SPRWS PFAS Detection in Entry Point

PFAS Regulatory Compliance Status Using UCMR5 RAA Data
(Sept 2023, Dec 2023, Feb2024, Mar 2024)



PFAS Planning for Future

- ✓ Ongoing Monitoring of PFAS in Source Water and Drinking Water
- ✓ Work with stakeholders like MDH and MPCA to implement source water protection best practices:
 - Require pre-treatment for industrial facilities discharge that release PFAS into sewers and storm drains or off-gas treatment in stacks at manufacturing plants
- ✓ Validating treatment technologies through bench and pilot-scale testing
- ✓ Initiate engineering feasibility study to help SPRWS to select the best PFAS removal treatment technology if PFAS trend is rising
- ✓ Lining up funding options for 3 years planning in design for construction of new treatment system to remove PFAS approaching MCL level or Hazard Index trigger at 0.90
 - The Bipartisan Infrastructure Law set aside \$9 billion for PFAS-impacted drinking water systems
- ✓ Evaluating options for full-scale PFAS treatment
- ✓ Establishing strategic communication plan



Thank You

Questions?

www.stpaul.gov/water