ROCHESTER
PUBLIC UTILITIES
WE PLEDGE, WE DELIVER™

Engineering and Operations Report
Water Division

Rochester Public Utilities Board Meeting
June 23, 2025

Definitions | Levels of Service

Levels of Service (LOS) defines the performance and service expectations that RPU commits to delivering to its **customers.**

Key Performance Indicators (KPIs) are the metrics used to measure **progress** toward meeting established Levels of Service. Selection should be balanced and unbiased.

Performance Management is a structured process combining these two elements to determine performance challenges, identify planning and budget priorities, and promote accountability and efficiency.

Levels of Service and KPIs | Regulatory & Industry Standards

Strategic Framework and LOS Categories

American Water Works Association

Effective Utility Management Program

Key Performance Measures

EPA

DEPARTMENT OF HEALTH

PARTNERSHIP FOR SAFE WATER

Standards and Benchmarks

SDWA

US Safe Drinking Water Act

Ten States Standards

Great Lakes, Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers, Standards for Water Works

AWWA Utility Benchmarking

Performance Management for Water and Wastewater

Levels of Service | Water Division

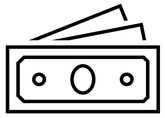
LOS Categories

Water Quality
&
Public Health

Pressure
Flow
&
Water Supply

Asset
Management
&
Preventative
Maintenance

Service
Reliability
&
Conservation



Financial
Stability
&
Affordability

Levels of Service | Water Quality and Public Health

Category	Measure	Strategic Measure	Benchmark	2024 RPU	Status
Water Quality & Public Health 	1.1 Uniform Disinfectant Residual Compliance	Responsibility	>90%	92.6%	
	1.2 Total Coliform Rule Testing Compliance	Responsibility	>95% negative	99.9%	
	1.3 SDWA Primary Drinking Water Standards	Responsibility	100%<MCL^{90}	100%<MCL^{90}	
	1.4 SDWA Secondary Drinking Water Standards	Responsibility	0>SMCL^{90}	2>SMCL^{90}	
	1.5 Unregulated Contaminant Monitoring	Responsibility	0>Comparison Value	2>Comparison Value	
	1.6 Water Quality Customer Complaint Rate	Reputation	<1.1 per 1000 accounts	3.25 per 1000 accounts	
	1.7 Routine Flushing Program Implementation	Responsibility	>35% of system miles	39% of system miles	
	1.8 Backflow and Cross-Connection Compliance	Responsibility	100%	76%	

Water Quality and Public Health | Primary Standards

Contaminant Tested	MCL US EPA	2024 Sampling Result	Results Less than 90% of MCL Compliance
Organic Compounds Solvents & Pesticides			
cis-1,2-Dichloroethene	70 ug/L	2.00 ug/L	Yes
Heptachlor Epoxide	0.2 ug/L	0.0 - 0.02 ug/L	Yes
Inorganic & Radionuclides			
Combined Radium	5 pCi/L	0.0 - 3.8 pCi/L	Yes
Radium-226		0.78 - 2.31 pCi/L	-
Radium-228		0.50 - 1.59 pCi/L	-
Gross Alpha in Water	15 pCi/L	0.0 - 7.2 pCi/L	Yes
Fluoride, Total	4mg/L	0.67 - 0.71 mg/L	Yes
Nitrate	10 mg/L	0.0 - 0.65 mg/L	Yes
Nitrate + Nitrite Nitrogen, Total	10 mg/L	0.06 - 0.25 mg/L	Yes
PFAS			
Perfluorohexanesulfonic Acid (PFHxS)	10 ppt	3.0 - 3.9 ppt	Yes
Disinfection Byproducts			
Total Tri-Halomethanes (TTHM)	80 ug/L	4.9-21.5 ug/L	Yes
Bromodichloromethane		1.20 - 4.60 ug/L	-
Chlorodibromomethane		0.60- 2.50 ug/L	-
Chloroform		3.30 - 15.00 ug/L	-
Total Haloacetic Acids (HHA)	60 ug/L	1.4 - 6.9 ug/L	Yes
Dichloroacetic Acid		1.30 - 4.50 ug/L	-
Trichloroacetic Acid		1.30 - 1.80 ug/L	-
Trichloroacetic Acid		1.30 - 1.80 ug/L	-

Water Quality and Public Health | Secondary Standards and UCMR

Secondary Standards

Contaminant Tested	SMCL US EPA	Results (mg/L)	Results Less than 90% of MCL Compliance
Aluminum	0.05 to 0.2 mg/L	0.005	Yes
Chloride	250 mg/L	4.67	Yes
Color	15 color units	N/A	-
Copper	1.0 mg/L	0.13	Yes
Corrosivity	Non-corrosive	N/A	-
Fluoride	2.0 mg/L	0.67 - 0.71	Yes
Foaming Agents	0.5 mg/L	N/A	-
Iron	0.3 mg/L	0.28 – 0.59	No
Manganese	0.05 mg/L	0.06	No
Odor	3 TON	N/A	-
pH	6.5 to 8.5	7.0-8.10	Yes
Silver	0.1 mg/L	N/A	-
Sulfate	250 mg/L	11.40-47.60 mg/L	Yes
Total Dissolved Solids	500 mg/L	330.00	Yes
Zinc	5 mg/L	N/A	-

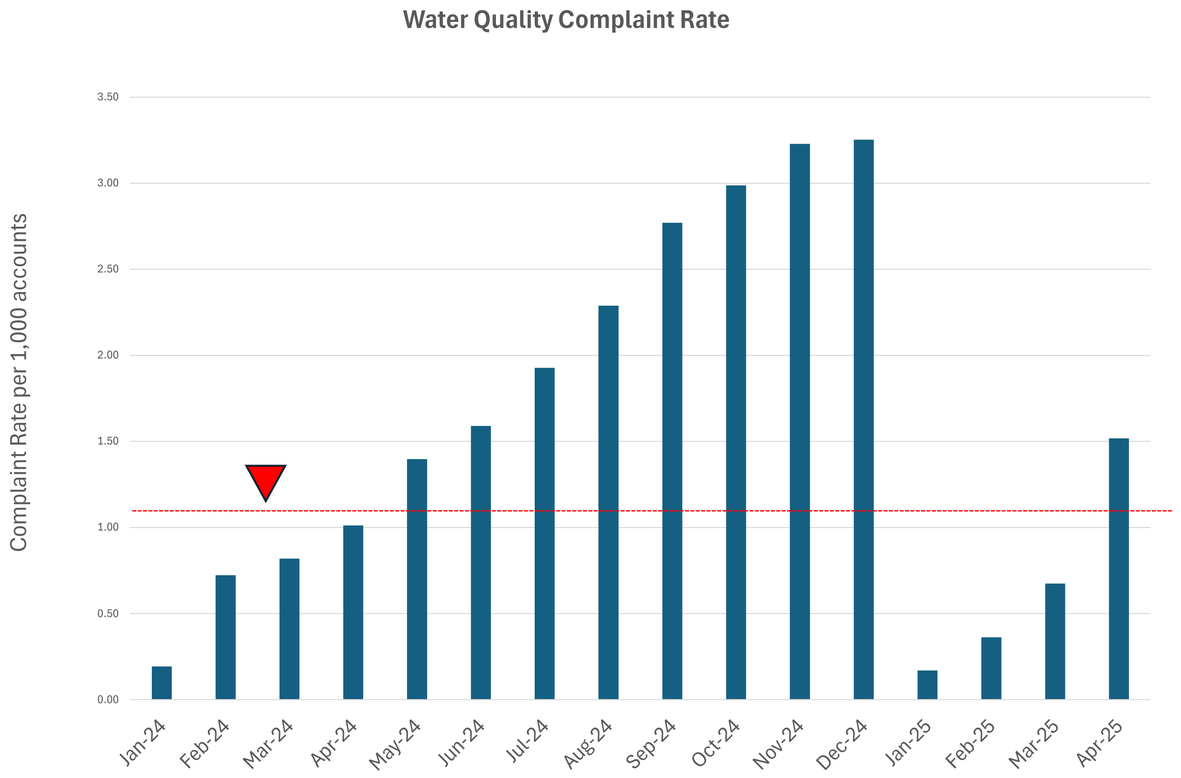
Unregulated Contaminants UCMR

Contaminant Tested	Comparison Value	Sampling Result	Results Less than Comparison Value
Sodium *	20 ppm	1.89 - 20.00 ppm	No
Lithium (2023)	10 ppb	9 - 10.8 ppb	No
1H, 1H, 2H, 2H-Perfluoroctane sulfonic acid	N/A	1.2 ppt	Yes
Perfluorobutanoic acid	7000 ppt	2.8 ppt	Yes
Perfluorooctane sulfonate (PFOS)	2.3 ppt	1.7 ppt	Yes
Perfluorohexane sulfonate (PFHxS)	47 ppt	2.99 ppt	Yes

* Sodium was not a component of UCMR but data was included in MDH reporting.

Water Quality and Public Health | Customer Complaint Rate

	2024 Complaints		2025 Complaints	
Month	**Number of Water Quality Complaints**	**Complaint Rate**	**Number of Water Quality Complaints**	**Complaint Rate**
January	8	0.19	7	0.17
February	22	0.53	8	0.19
March	4	0.10	13	0.31
April	8	0.19	35	0.84
May	16	0.39		
June	8	0.19		
July	14	0.34		
August	15	0.36		
September	20	0.48		
October	9	0.22		
November	10	0.24		
December	1	0.02		
TOTAL	**135**	**3.25**		

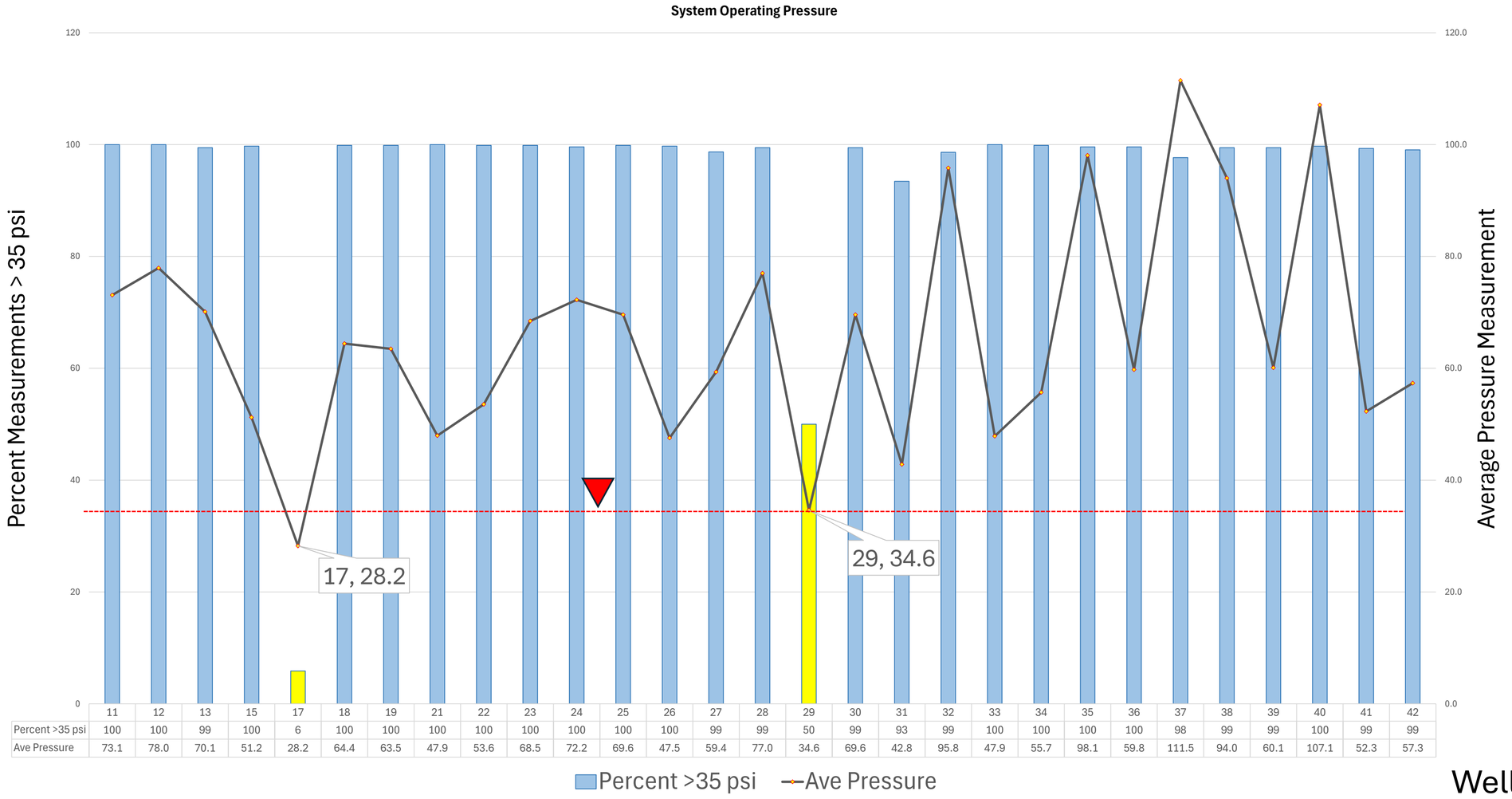


Ferrous iron (Fe^{2+}) is converted to **Ferric iron** (Fe^{3+}) **+** $3H_2O \rightarrow$ **$Fe(OH)_3$** + $3H^+$ [iron hydroxides]

Levels of Service | Pressure, Flow and Water Supply

Category	Measure	Strategic Measure	Benchmark	2024 RPU	Status
Pressure, Flow Water Supply 	2.1 Minimum Regulatory System Pressure (1)	Responsibility	100% > 20 psi	100% > 20 psi	
	2.2 Average System Operating Pressure (1)	Responsibility	100% > 35 psi	93% > 35 psi	
	2.3 Pressure/Flow Customer Complaint Rate	Reputation	<1.1 per 1000 accounts	2.05 per 1000 accounts	
	2.4 Capacity Margin for Water Appropriation (2)	Reliability	>400 MG	588 MG	

Pressure and Flow | Average System Pressure

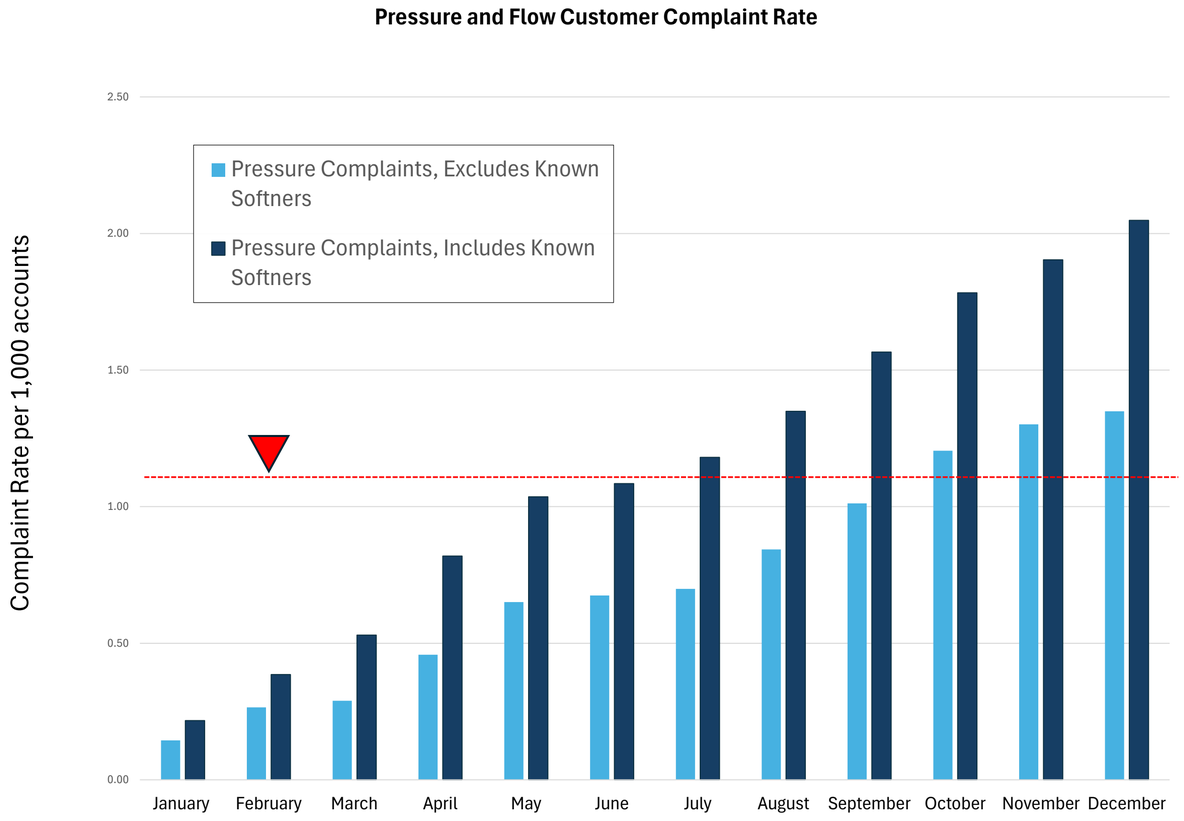


	11	12	13	15	17	18	19	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
Percent >35 psi	100	100	99	100	6	100	100	100	100	100	100	100	100	99	99	50	99	93	99	100	100	100	100	98	99	99	100	99	99
Ave Pressure	73.1	78.0	70.1	51.2	28.2	64.4	63.5	47.9	53.6	68.5	72.2	69.6	47.5	59.4	77.0	34.6	69.6	42.8	95.8	47.9	55.7	98.1	59.8	111.5	94.0	60.1	107.1	52.3	57.3

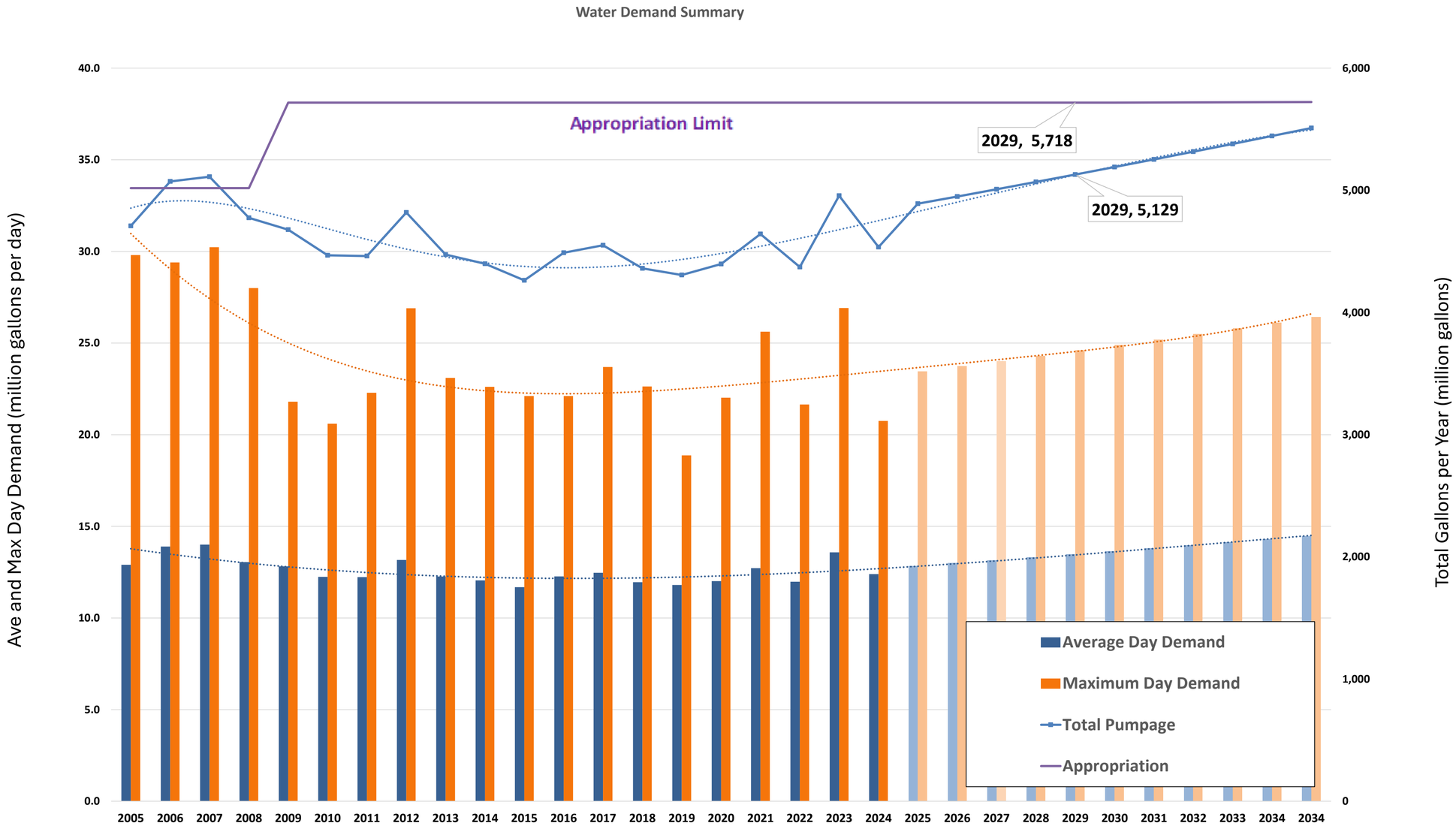
Well 17 & 29

Pressure and Flow | Customer Complaints

	2024 Complaints EXCLUDES Known Water Softeners		2024 Complaints INCLUDES Likely Water Softeners	
Month	**Number of Water Quality Complaints**	**Complaint Rate**	**Number of Water Quality Complaints**	**Complaint Rate**
January	6	0.14	9	0.2
February	5	0.12	7	0.2
March	1	0.02	6	0.1
April	7	0.17	12	0.3
May	8	0.19	9	0.2
June	1	0.02	2	0.0
July	1	0.02	4	0.1
August	6	0.14	7	0.2
September	7	0.17	9	0.2
October	8	0.19	9	0.2
November	4	0.10	5	0.1
December	2	0.05	6	0.1
TOTAL	**56**	**1.35**	**85**	**2.05**



Water Supply | Capacity Margin



Water Supply | Department of Natural Resources Requirements

Rochester's water use expansion is predicted to impact water levels in calcareous fens and streams in the Rochester area if the current water supply approach continues.

Monitoring Plan is required to ensure DNR water appropriation amendment authorizations are consistent with the Minnesota's groundwater appropriations sustainability standard

Rochester Public Utilities (RPU) is prohibited to construct new water supply wells using the Jordan Aquifer unless RPU demonstrates, and DNR concurs, that alternative sources of water, such as from different aquifers or from surface water sources, are not available for Rochester's municipal water supply.

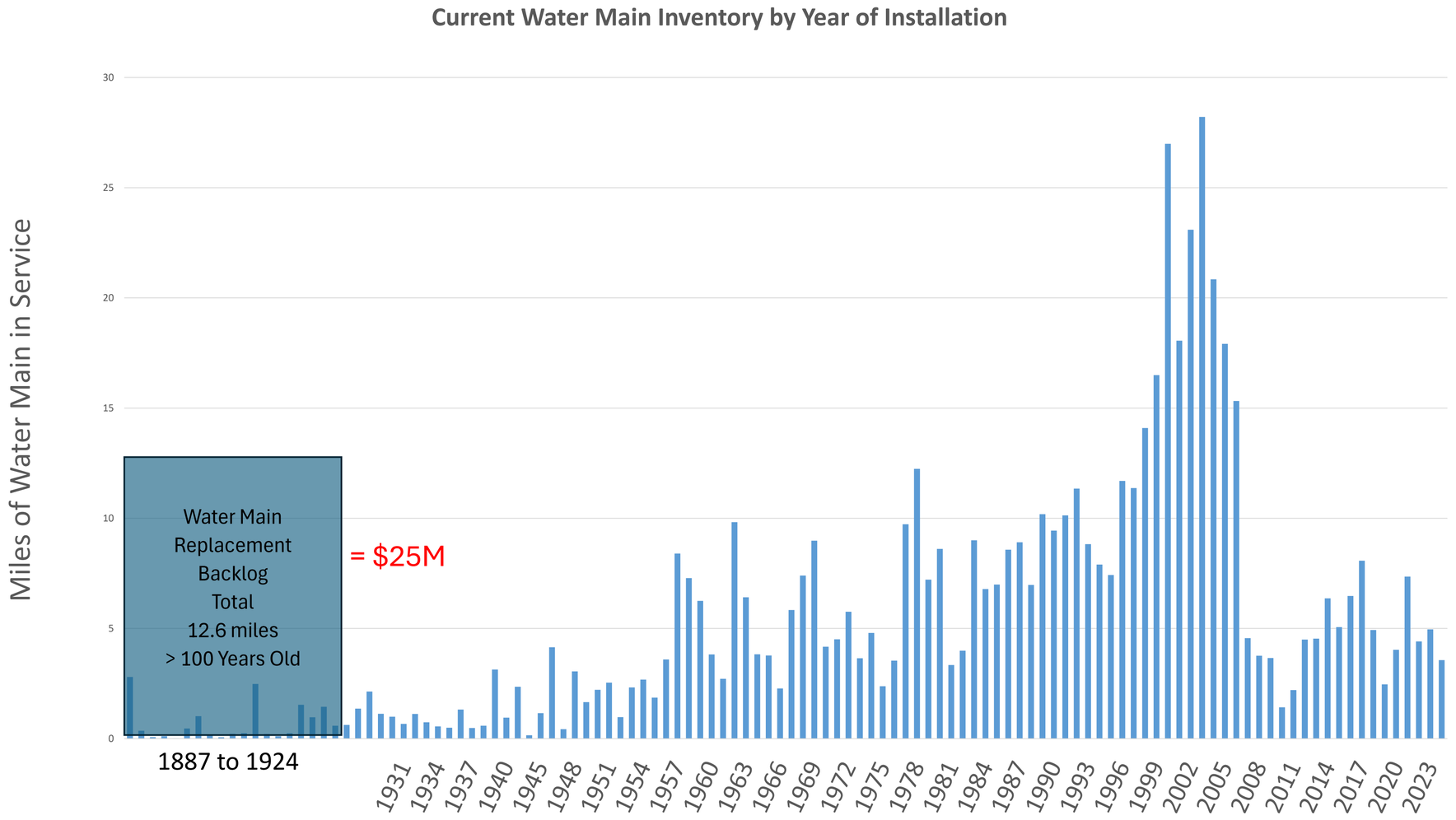
Levels of Service | Asset Management & Preventative Maintenance

Category	Measure	Strategic Measure	Benchmark	2024 RPU	Status
Asset Management & Preventative Maintenance 	3.1 Hydrant Inspection Rate	Reliability	> 50%	52%	
	3.2 Out-of-Service Hydrant Rate	Reliability	< 0.8%	0.66%	
	3.3 Main Line Valve Inspection Rate	Reliability	> 40%	41%	
	3.4 Storage Facility Inspection Rate	Reliability	100%	100%	
	3.5 Water Storage Rehabilitation Rate Backlog	Reliability	0	6 Sites	
	3.6 Water Main Replacement Backlog Growth	Reliability	<0	12.6 mi	

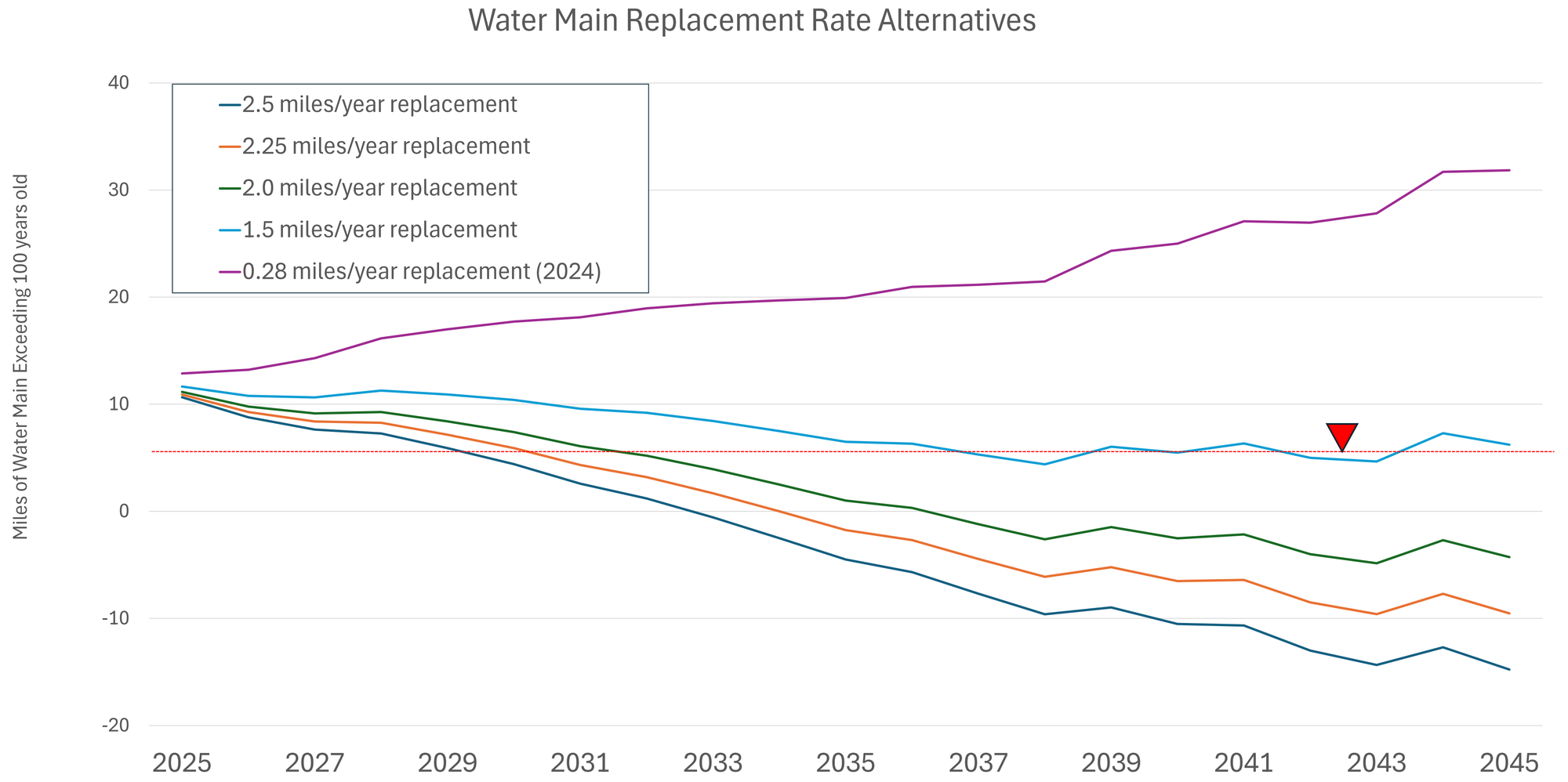
Assets and PMs | Water Storage Rehabilitation Backlog

Site #	Site Name	Year Build	Year Interior Rehab	Year Exterior Rehab	Year Interior Rehab Due	Year Exterior Rehab Due
83	John Adams Tower	1958	2024	2017	2039	2037
95	Willow Heights Reservoir	1987	1987	1987	Glass Lined	Glass Lined
87	Apache Tower	1969	2016	2005	2031	**2025**
90	Bandel Reservoir	1979	2018	2018	2033	2038
84	CCM Standpipe	1959	2021	2021	2036	2041
86	SE Tower	1962	2010	2010	**2025**	2030
100	Morris Hills	2008	2008	2008	**2023**	2028
102	St. Marys Reservoir	2013	Concrete Structure		Concrete - No Painting Required	
91	Golden Hill Tower	1983	2014	2014	2029	2034
92	Baihly Tower	1985	2015	2015	2030	2035
88	Arnold's Tower	1973	2013	2013	2028	2033
85	Northern Hts Standpipe	1959	2020	2020	2035	2040
89	CCM Tower	1978	2009	2009	**2024**	2029
94	Willow Heights Tower	1987	2012	2013	2027	2033
96	Airport Tower	1994	2007	2007	**2022**	2027
97	Northpark Tower	1995	2011	2011	2026	2031
98	Viola Tower	1997	2014	2014	2029	2034
99	Rose Harbor Tower	2001	2019	2019	2034	2039
101	50th Ave NW Hydropillar	2010	2010	2010	**2025**	2030
103	St. Bridget Intermediate Tower	2015	2016	2016	2031	2036

Assets and PMs | Water Main Replacement Backlog



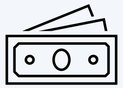
Financial Stability | Water Main Replacement Rate



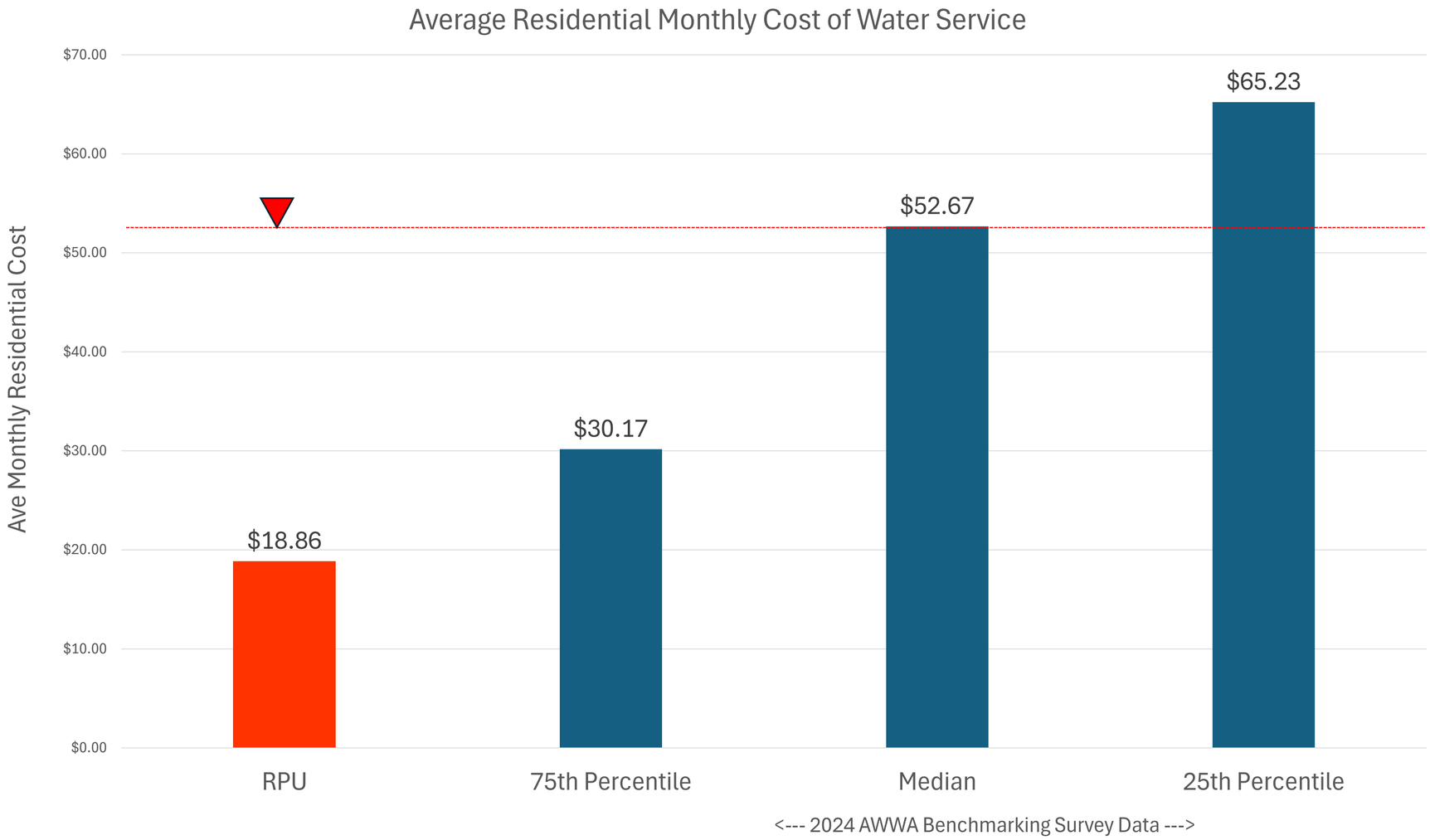
Levels of Service | Reliability and Conservation

Category	Measure	Strategic Measure	Benchmark	2024 RPU	Status
Service Reliability and Conservation 	4.1 System Ave Interruption Duration Index (SAIDI)	Reliability	<6.5 minutes	5.0 minutes	
	4.2 Customer Ave Interruption Duration Index (CAIDI)	Reliability	<170 minutes	145.7 minutes	
	4.3 Water Main Break and Leak Rate	Reliability	<10.2	5.6	
	4.4 Water Loss Rate	Reputation	10%	5.4%	
	4.5 Water Conservation Demand Reduction	Reputation	3,500,000	3,996,000	

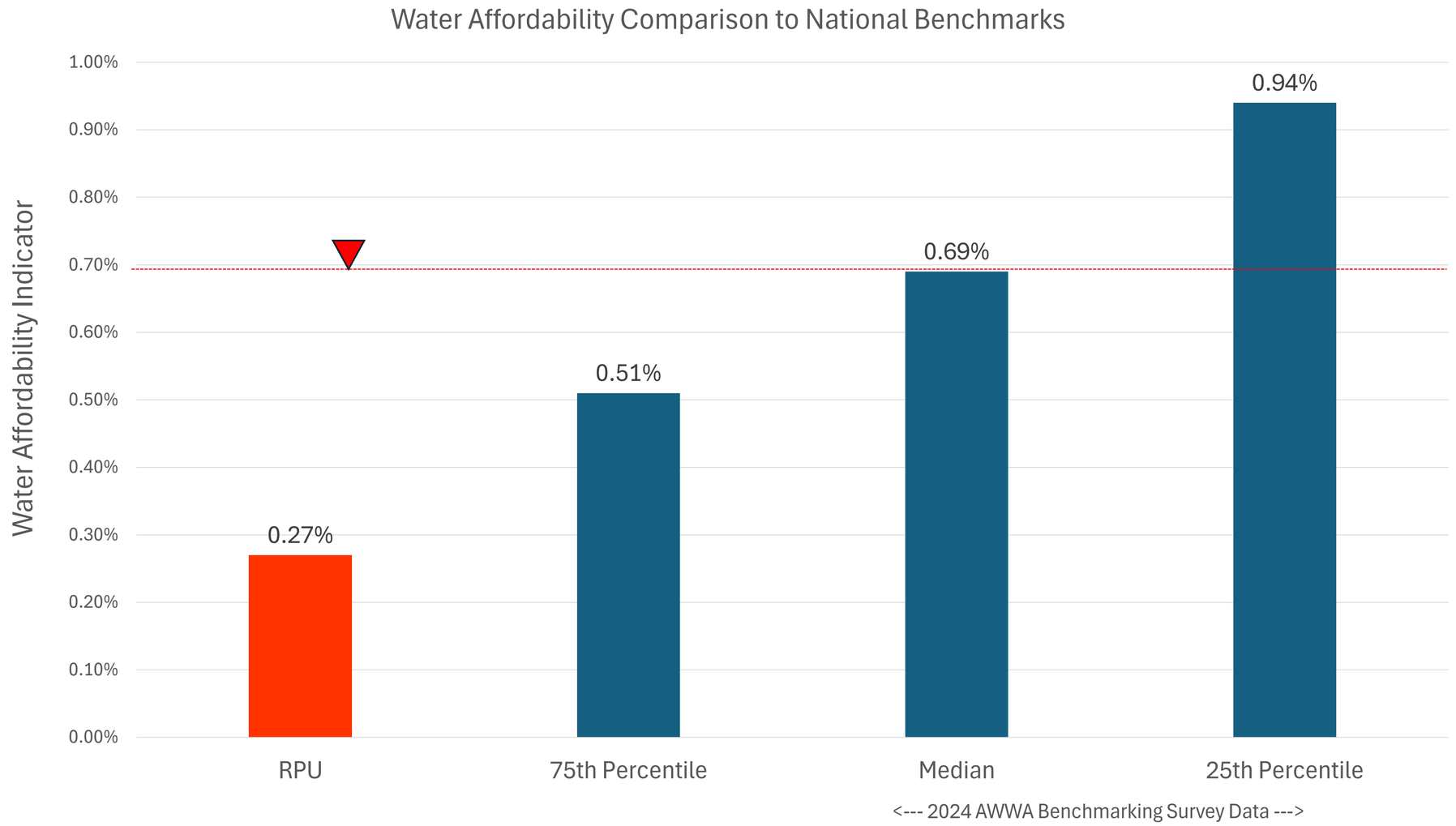
Levels of Service | Financial Stability and Affordability

Category	Measure	Strategic Measure	Benchmark	2024 RPU	Status
Financial Stability & Affordability 	5.1 Residential Cost of Water Service	Rates	< National Median Value $52.16	$18.86	
	5.2 Water Service Affordability Index	Rates	< National Median Value 0.69%	0.27%	
	5.3 Hosehold Burden Indicator	Rates	<National Median Value 2.0%	0.59%	
	5.4 Operating Ratio	Rates	< National Median Value 0.65	0.58	
	5.5 Capital Investment Rate	Rates	1.5 mi / yr	0.28	

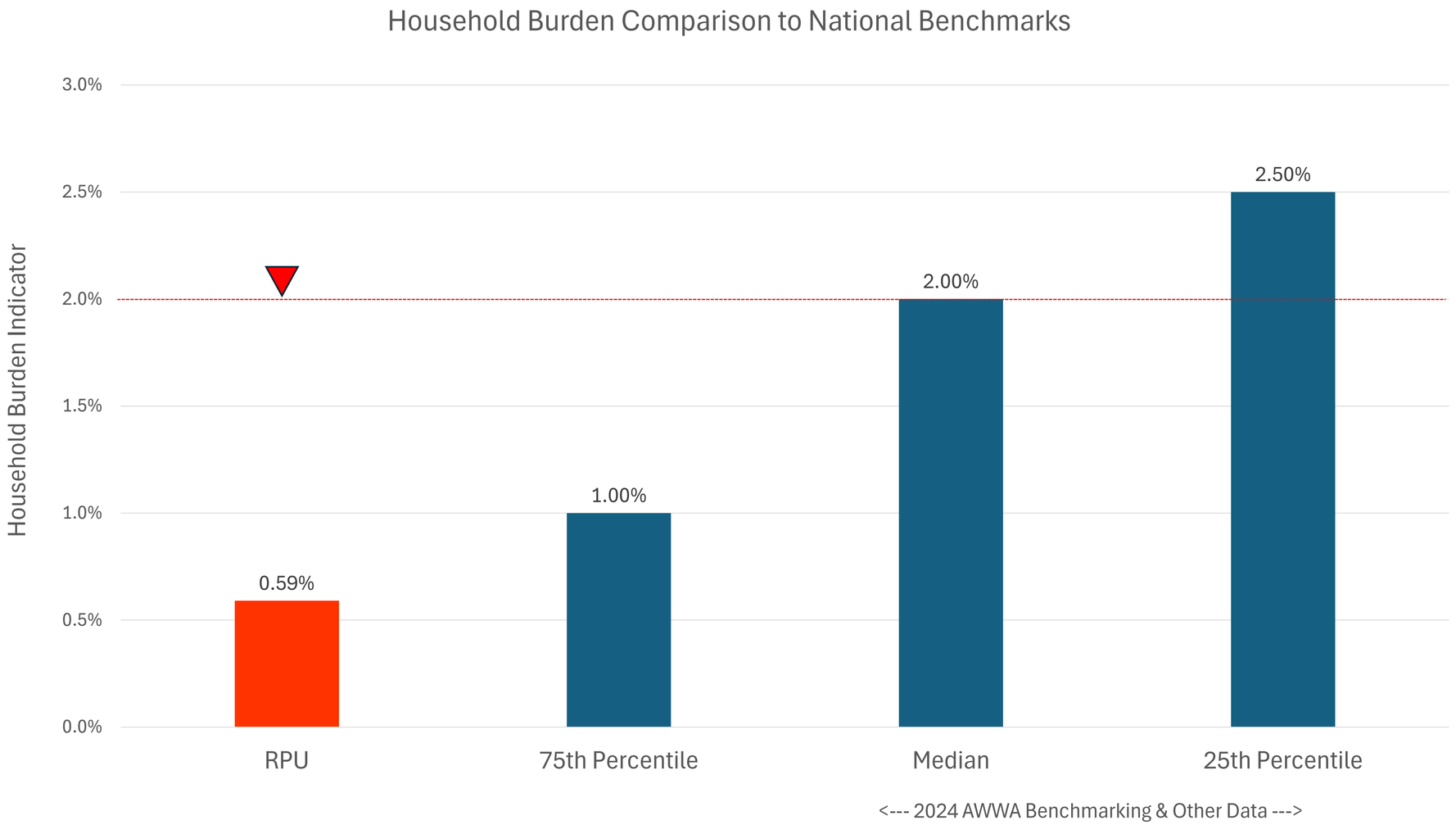
Finance and Affordability | Residential Average Service Cost



Finance and Affordability | Affordability Index



Finance and Affordability | Household Burden



2024 Summary Section

Water Division Strengths

- Source water meets basic Primary Drinking Water Standards
- Preventative maintenance remains proactive and effective
- Service reliability remains at high levels
- Water rates are well below national averages

Water Division Challenges

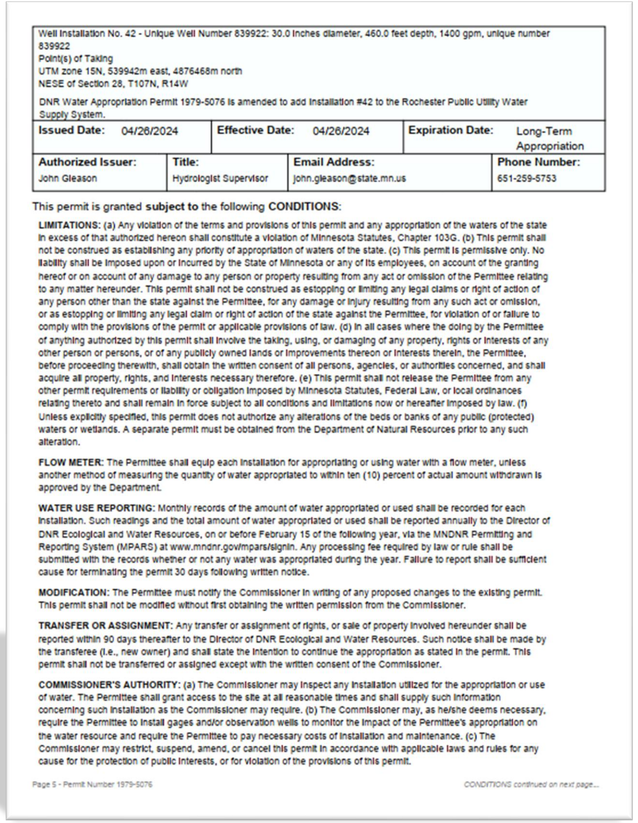
- Firm limits on available water supply and regulatory appropriations, with evolving water quality challenges and customer concerns
- Growing backlog of capital replacement needs due to shortage of revenue
- Employee staffing to address regulatory requirements, AMI and lead service replacements

Summary Recommendations | Priorities and Budget Development

1. Water System Master Planning

- Develop a comprehensive master plan to guide water supply for future growth
- Study alternatives for water quality and treatment processes
- Develop plan for orderly expansion of the distribution system
- Convene regional planning efforts

Staff will have a formal proposal for consideration at the July Board meeting



Well Installation No. 42 - Unique Well Number 839922: 30.0 inches diameter, 460.0 feet depth, 1400 gpm, unique number 839922
Point(s) of Taking
UTM zone 15N, 539942m east, 4876468m north
NESE of Section 28, T107N, R14W

DNR Water Appropriation Permit 1979-5076 is amended to add installation #42 to the Rochester Public Utility Water Supply System.

Issued Date: 04/26/2024	Effective Date: 04/26/2024	Expiration Date: Long-Term Appropriation

Authorized Issuer:	Title:	Email Address:	Phone Number:
John Gleason	Hydrologist Supervisor	john.gleason@state.mn.us	651-259-5753

This permit is granted **subject to** the following **CONDITIONS:**

LIMITATIONS: (a) Any violation of the terms and provisions of this permit and any appropriation of the waters of the state in excess of that authorized hereon shall constitute a violation of Minnesota Statutes, Chapter 103G. (b) This permit shall not be construed as establishing any priority of appropriation of waters of the state. (c) This permit is permissive only. No liability shall be imposed upon or incurred by the State of Minnesota or any of its employees, on account of the granting hereof or on account of any damage to any person or property resulting from any act or omission of the Permittee relating to any matter hereunder. This permit shall not be construed as estopping or limiting any legal claims or right of action of any person other than the state against the Permittee, for any damage or injury resulting from any such act or omission, or as estopping or limiting any legal claim or right of action of the state against the Permittee, for violation of or failure to comply with the provisions of the permit or applicable provisions of law. (d) In all cases where the doing by the Permittee of anything authorized by this permit shall involve the taking, using, or damaging of any property, rights or interests of any other person or persons, or of any publicly owned lands or improvements thereon or interests therein, the Permittee, before proceeding therewith, shall obtain the written consent of all persons, agencies, or authorities concerned, and shall acquire all property, rights, and interests necessary therefore. (e) This permit shall not release the Permittee from any other permit requirements or liability or obligation imposed by Minnesota Statutes, Federal Law, or local ordinances relating thereto and shall remain in force subject to all conditions and limitations now or hereafter imposed by law. (f) Unless explicitly specified, this permit does not authorize any alterations of the beds or banks of any public (protected) waters or wetlands. A separate permit must be obtained from the Department of Natural Resources prior to any such alteration.

FLOW METER: The Permittee shall equip each installation for appropriating or using water with a flow meter, unless another method of measuring the quantity of water appropriated to within ten (10) percent of actual amount withdrawn is approved by the Department.

WATER USE REPORTING: Monthly records of the amount of water appropriated or used shall be recorded for each installation. Such readings and the total amount of water appropriated or used shall be reported annually to the Director of DNR Ecological and Water Resources, on or before February 15 of the following year, via the MNDNR Permitting and Reporting System (MPARS) at www.mndnr.gov/mpars/signin. Any processing fee required by law or rule shall be submitted with the records whether or not any water was appropriated during the year. Failure to report shall be sufficient cause for terminating the permit 30 days following written notice.

MODIFICATION: The Permittee must notify the Commissioner in writing of any proposed changes to the existing permit. This permit shall not be modified without first obtaining the written permission from the Commissioner.

TRANSFER OR ASSIGNMENT: Any transfer or assignment of rights, or sale of property involved hereunder shall be reported within 90 days thereafter to the Director of DNR Ecological and Water Resources. Such notice shall be made by the transferee (i.e., new owner) and shall state the intention to continue the appropriation as stated in the permit. This permit shall not be transferred or assigned except with the written consent of the Commissioner.

COMMISSIONER'S AUTHORITY: (a) The Commissioner may inspect any installation utilized for the appropriation or use of water. The Permittee shall grant access to the site at all reasonable times and shall supply such information concerning such installation as the Commissioner may require. (b) The Commissioner may, as he/she deems necessary, require the Permittee to install gages and/or observation wells to monitor the impact of the Permittee's appropriation on the water resource and require the Permittee to pay necessary costs of installation and maintenance. (c) The Commissioner may restrict, suspend, amend, or cancel this permit in accordance with applicable laws and rules for any cause for the protection of public interests, or for violation of the provisions of this permit.

CONDITIONS continued on next page...

Summary Recommendations | Priorities and Budget Development

2. **Asset Management and Capital Improvement Planning**
   - Refine a 5-year and long-term capital improvement program
   - Incorporate capital programming into cash flow and rate analysis

3. **Staff Resources**
   - Proposed addition of one (1) FTE to improve backflow prevention program, ERP/workflow coordination, and planning efforts
   - Proposed addition of one (1) limited term employee for AMI (metering) and Lead Service Line Replacement program implementation

Questions