



# **BEST PRACTICES FOR SMALL SYSTEMS**

**League of Wisconsin Municipalities  
December 6, 2021**

Denise Schmidt, Administrator  
Division of Water Utility Regulation and Analysis  
Public Service Commission of Wisconsin

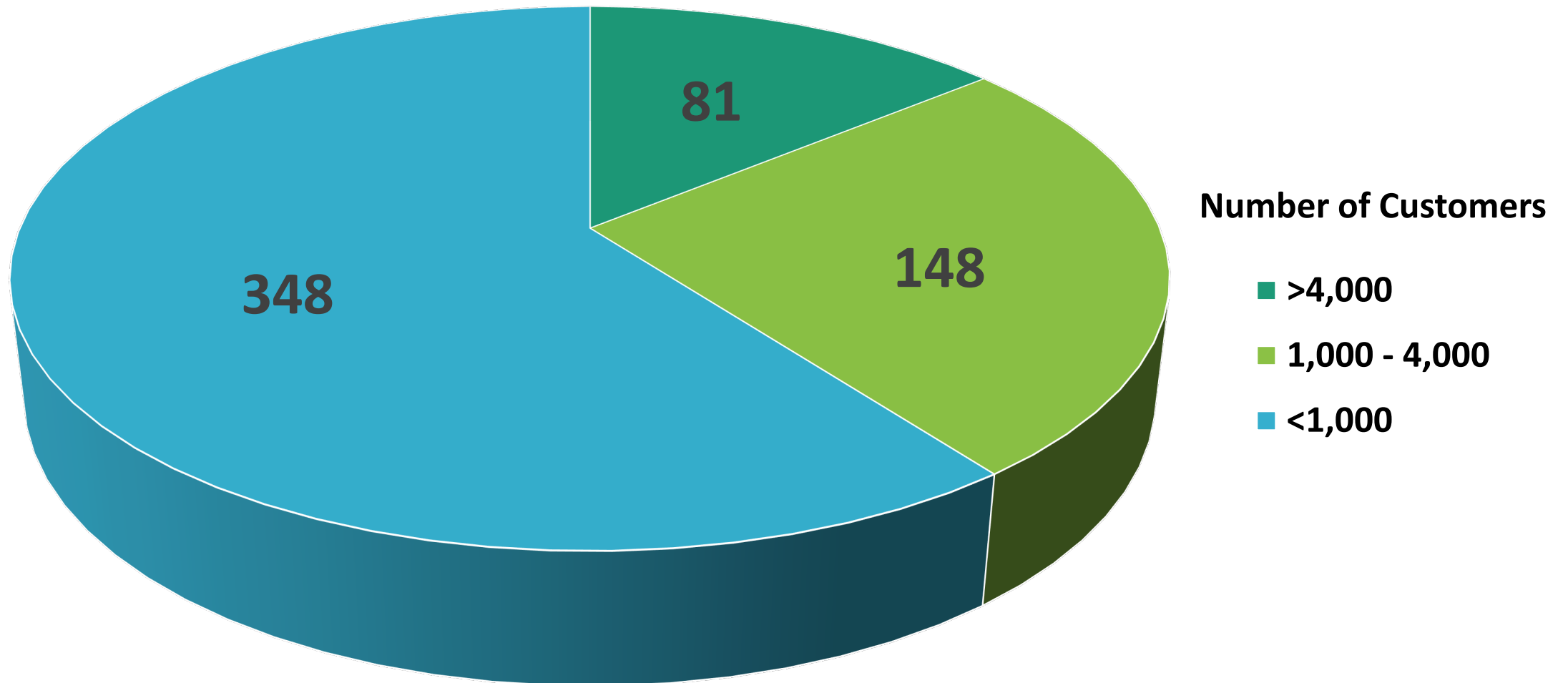
# Economic Regulatory Commission Jurisdiction

**Table 1. “Do you Regulate Rates for Municipal Water Utilities?”**

	<b>Number of Public Utility Commissions</b>	<b>States</b>
<b>Yes, Regulate Rates for All Municipal Water Utilities</b>	1	WI
<b>Yes, Regulate Rates for Certain Types of Municipal Water Utilities and/or Under Certain Conditions</b>	9	AK, IN, ME, MD, MS, NJ, PA, RI, WV
<b>No, Does Not Regulate Rates for Municipal Water Utilities</b>	40	Remaining States

Source: “Investigation Into the Methods Used by Wisconsin’s Water Utilities in Allocating Public Fire Protection (PFP) Costs,” Draft Staff Report, Docket 5-WI-104

# WI Water Utilities: Size



# WI Water Utilities: Ownership

## Number of Systems

- Municipal (City or Village): 514
- Sanitary District (Town): 60
- Privately Owned: 2
- Investor Owned: 1



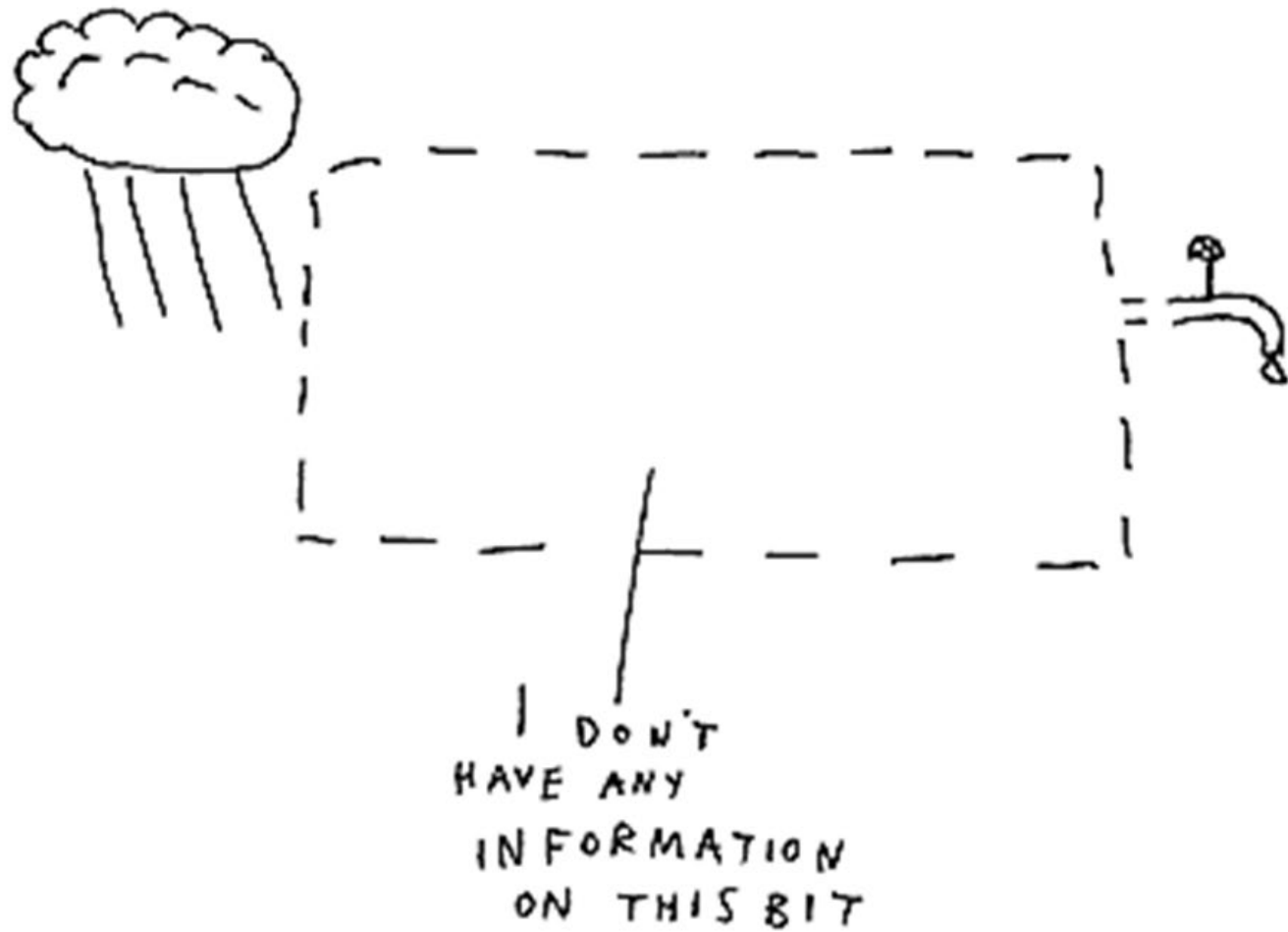
# WI Utilities: Governing Authority

Number of systems reporting directly to:

- City/village council 301
- Utility board/commission 213
- District board/commission 52
- Town board 8
- Other board 3



## HOW WE GET WATER IN OUR HOMES



HOW WE GET WATER IN OUR HOMES



## Practice #1

Decision makers: Learn more about your water system.

Utility managers: Invite the decision makers in!

I DON'T  
HAVE ANY  
INFORMATION  
ON THIS BIT





**WATER UTILITY**

Explore The City of Kenosha

SEARCH

★ // Departments // [Water Utility](#) // [O. Fred Nelson Water Production Plant](#) // Water Production Plant Field Trips

**IN THIS DEPARTMENT**

Pay Online

▲ Customer Service

▲ Engineering Services

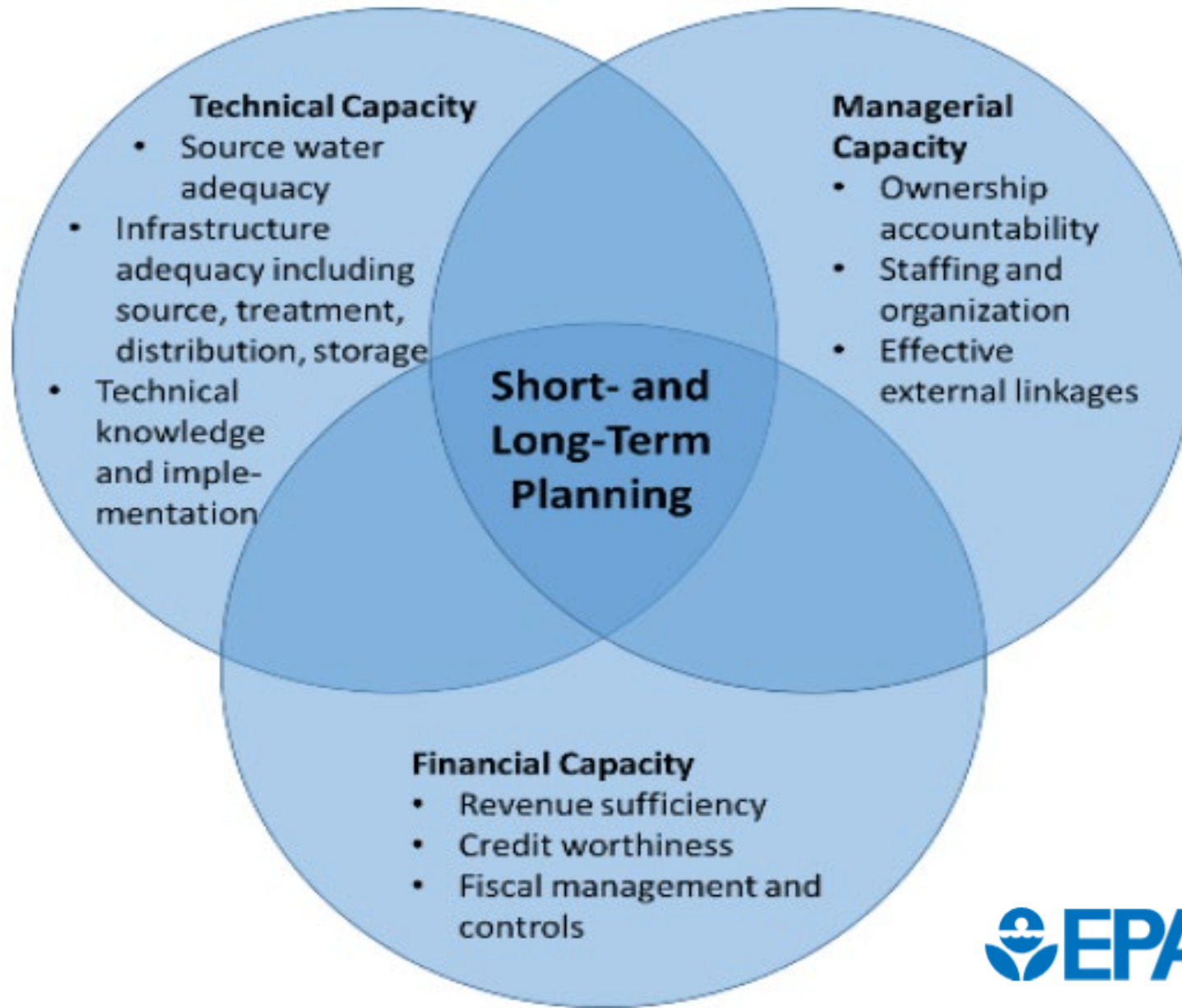
▼ O. Fred Nelson Water  
Production Plant

**WATER PRODUCTION PLANT FIELD TRIPS**

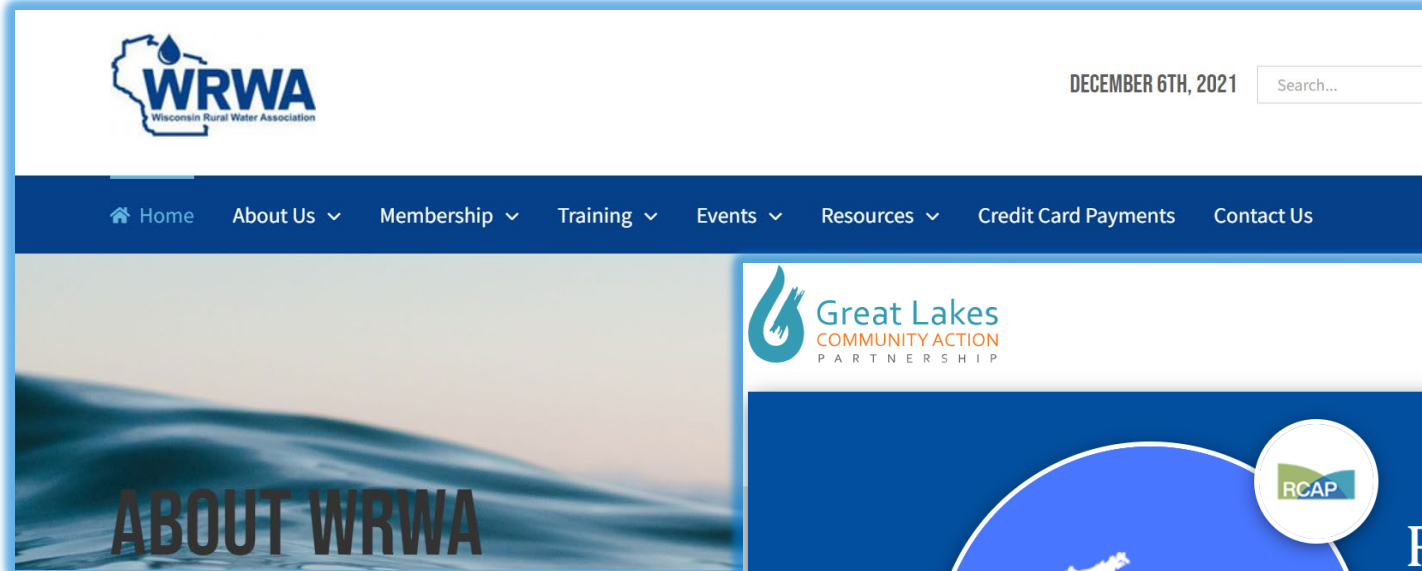
Schools and Organizations are welcome to contact us to schedule your group tour to learn about the water and wastewater treatment process.

To schedule a tour of the O. Fred Nelson Water Production Plant, please contact Ryan Spackman, Director of Water Production at 262.653.4331 or email at [rspackman@kenosha.org](mailto:rspackman@kenosha.org)

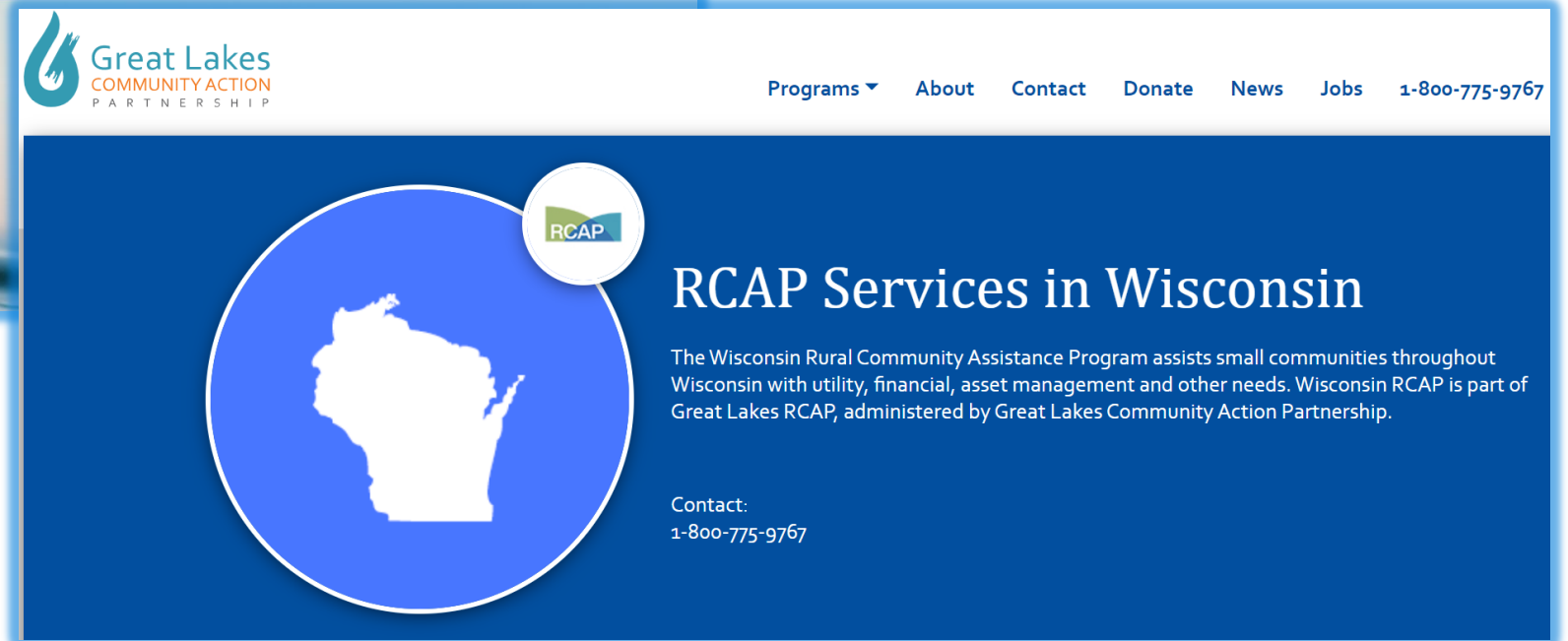




# Practice #2: Tap into water association resources.

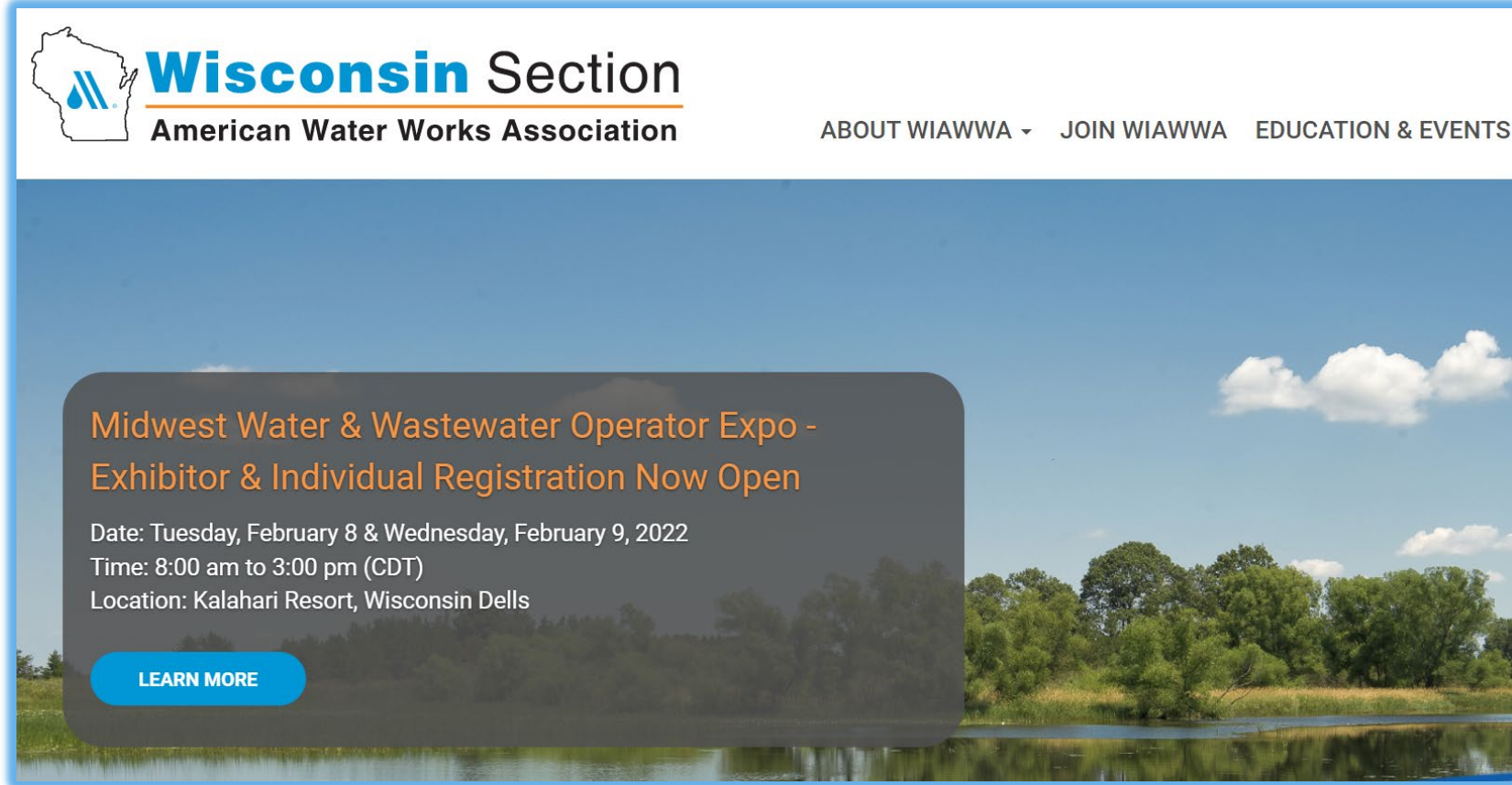


<https://www.wrwa.org/>



<https://www.glcap.org/programs/community-rural-development/rural-community-assistance-program-rcap/rcap-services-in-wisconsin/>

# Tap into water association resources.



The screenshot shows the website for the Wisconsin Section of the American Water Works Association. The header includes the Wisconsin Section logo (a map of Wisconsin with a water drop) and the text "Wisconsin Section" and "American Water Works Association". Navigation links for "ABOUT WIAWWA", "JOIN WIAWWA", and "EDUCATION & EVENTS" are visible. The main content area features a large image of a lake and trees, with a dark overlay box containing the following text:

**Midwest Water & Wastewater Operator Expo - Exhibitor & Individual Registration Now Open**

Date: Tuesday, February 8 & Wednesday, February 9, 2022  
Time: 8:00 am to 3:00 pm (CDT)  
Location: Kalahari Resort, Wisconsin Dells

A blue button labeled "LEARN MORE" is positioned below the text.

<https://www.wiawwa.org/>

# Practice #3: Familiarize yourself with State agency resources.



## Drinking Water System Portal

[Home](#)[Public Water Systems](#)[Contaminants](#)[Bacti Laboratories](#)[Plan Reviews](#)[Reports](#)[Help](#)

### Drinking Water System Portal: Home Page

A Public Water System (PWS) provides piped water to the public for human consumption. Wisconsin PWSs are regulated under the Safe Drinking Water Act (SDWA). This site allows you to query and download data from our database, the Drinking Water System (DWS), which is maintained and used by DNR SDWA regulators. Information is current as of approximately 10 p.m. the prior day. It includes information such as PWS monitoring and other requirements, sample results, violations, inspection findings, plan/document review status, etc. For assistance using this tool, please refer to the "Help" link in the upper right corner. If your question is not answered there or you receive an error, please email [DNRPublicWaterApplicationSupport@wisconsin.gov](mailto:DNRPublicWaterApplicationSupport@wisconsin.gov) for further assistance, or call Chris Hartwig (608) 264-6131 or Kathy Mooney (608) 264-6026.

[Find Public Water Systems](#)[Find Contaminants in Public Water Supplies](#)[PFAS Contaminant Sample Results](#)[Bacti Laboratory Listing](#)[Find Plan Reviews](#)[Reports](#)

- DNR Water System Portal:  
<https://dnr.wi.gov/dwsviewer>
- DNR Sanitary Survey Reports
- Consumer Confidence Reports



## DNR-SPONSORED FREE ONLINE TRAINING IN UTILITY MANAGEMENT

The DNR's Bureau of Drinking & Groundwater is offering three **free** [online training courses](#) [exit DNR] comprised of four unique learning modules for water utility governing bodies and for drinking water utilities professional staff who have decision making authority. These free online modules are management trainings intended for government bodies (village, city or town boards) as well as other utility governing boards (utility commissions) and professionals with decision authority as it pertains to drinking water utilities.

- ▼ [Learn more about the training](#)
- ▼ [FAQs](#)





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PROGRAMS

E-SERVICES

NEWS & EVENTS

Search PSC



Process & Procedure  
Energy  
Water  
Telecom



## Public Service Commission of Wisconsin

The Public Service Commission of Wisconsin (PSC) is an independent regulatory agency dedicated to serving the public interest. The agency is responsible for the regulation of Wisconsin public utilities, including those that are municipally owned, since 1907.

### COVID-19 Resources:

**For Consumers: Click here  
for Internet Resources and  
Emergency Broadband  
Benefit Information**

**For Consumers: Click here  
for Utility Service Help**

<https://psc.wi.gov/Pages/ForConsumers/FAQs.aspx>

**For Utilities: Click here for  
Answers to Frequently  
Asked Questions**

<https://psc.wi.gov/Pages/NewsEvents/UtilityCOVID19Resources.aspx>

<https://psc.wi.gov/Pages/Home.aspx>





ABOUT PSCW

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Search PSC



PSC > Water Utility Training

## Water Utility Training

### Resources and Training

Accounting

Customer-Related FAQs

Reports and Resources

Water Utility Financial Resiliency



Water Loss Control



Asset Management



PSC Presentations



<https://psc.wi.gov/Pages/ForUtilities/Water/WaterUtilityTraining.aspx>

**Utility Tariffs**

Utilities set out the rates, terms and conditions of service in Commission-reviewed filings referred to as tariffs. The tariffs on this page are available in Portable Document Format (PDF). You will need Adobe to read them.

The tariffs are in utility name order. If you can't find the tariff by name order or don't know the utility's name. Please use the [Cannot find the Utility Name?](#) link to search by either name or number.

**Electric****Gas****Telecommunications****Water/Sewer****Water/Sewer Utility Name Listing**

If you have any questions regarding the existing PDF tariffs, or ones that are not yet available on the web, please call us at (608)266-3766.

**First Letter\***[A](#) [B](#) [C](#) [D](#) [E](#) [F](#) [G](#) [H](#) [I](#) [J](#) [K](#) [L](#) [M](#) [N](#) [O](#) [P](#) [R](#) [S](#) [T](#) [U](#) [V](#) [W](#) [Y](#)**Utility Name Listing - Start with : A...**

<a href="#">Abbotsford Municipal Water Utility_(10)</a>	<a href="#">Adams Municipal Water And Sewer Utility_(20)</a>	<a href="#">Adell Municipal Sewer And Water Utility_(30)</a>
<a href="#">Albany Municipal Water And Sewer Utility_(40)</a>	<a href="#">Algoma Sanitary District No 1_(51)</a>	<a href="#">Algoma Utility Commission_(50)</a>
<a href="#">Allenton Sanitary District No 1_(60)</a>	<a href="#">Village of Allouez Water Department_(70)</a>	<a href="#">Alma Center Water Utility_(90)</a>
<a href="#">Alma Municipal Water Utility_(80)</a>	<a href="#">Almena Municipal Water Utility_(100)</a>	<a href="#">Altoona Municipal Water And Sewer Utility_(120)</a>
<a href="#">Amery Municipal Joint Water and Sewer Utility_(140)</a>	<a href="#">Village of Amherst Water Utility_(160)</a>	<a href="#">Antigo Utilities_(180)</a>
<a href="#">Appleton Water Department_(190)</a>	<a href="#">Applewood Hill Water Utility_(200)</a>	<a href="#">Arcadia Electric and Water Utility_(210)</a>
<a href="#">Arena Municipal Water Utility_(220)</a>	<a href="#">Argyle Municipal Electric and Water Utility_(230)</a>	<a href="#">Arlington Water Utility_(240)</a>
<a href="#">Ashland Water Utility_(250)</a>	<a href="#">Ashwaubenon Water And Sewer Utility_(255)</a>	<a href="#">Athens Municipal Water Utility_(260)</a>
<a href="#">City of Augusta Municipal Water and Sewer Utility_(270)</a>	<a href="#">Avoca Municipal Water Utility_(280)</a>	

\* Only utility names' first letters that have tariffs are displayed.

**RATE FILE**

Sheet No. 1 of 1

Schedule No. Mg-1

Public Service Commission of Wisconsin

Amendment No. 11

**Adell Municipal Sewer and Water Utility**
**General Service - Metered**
**Bimonthly Service Charges:**

5/8 -inch meter - \$	20.00	3 -inch meter - \$	78.00
3/4 -inch meter - \$	20.00	4 -inch meter - \$	108.00
1 -inch meter - \$	26.00	6 -inch meter - \$	172.00
1 1/4 -inch meter - \$	32.00	8 -inch meter - \$	238.00
1 1/2 -inch meter - \$	38.00	10 -inch meter - \$	328.00
2 -inch meter - \$	54.00	12 -inch meter - \$	418.00

**Plus Volume Charges:**

First	16,600	gallons used bimonthly - \$5.85 per 1,000 gallons
Next	183,400	gallons used bimonthly - \$5.35 per 1,000 gallons
Over	200,000	gallons used bimonthly - \$4.50 per 1,000 gallons

**Billing:** Bills for water service are rendered bimonthly and become due and payable upon issuance following the period for which service is rendered. A late payment charge of 1 percent per month will be added to bills not paid within 20 days of issuance. This late payment charge shall be applied to the total unpaid balance for utility service, including unpaid late payment charges. This late payment charge is applicable to all customers. The utility customer may be given a written notice that the bill is overdue no sooner than 20 days after the bill is issued. Unless payment or satisfactory arrangement for payment is made within the next 10 days, service may be disconnected pursuant to Wis. Admin. Code ch. PSC 185.

**Combined Metering:** For a residential customer with more than one meter on a single service lateral, volumetric reading from all meters shall be combined for billing. For a nonresidential customer, volumetric readings may be combined for billing if the utility for its own convenience places more than one meter on a single water service lateral. Multiple meters placed for the purpose of identifying water not discharged into the sanitary sewer are not considered for utility convenience and may not be combined for billing. This requirement does not preclude the utility from combining readings where metering configurations support such an approach. Volumetric readings from individually metered separate service laterals may not be combined for billing purposes.

**RATE FILE**
Sheet No. 1 of 1
Schedule No. Mg-1
Amendment No. 11
**Public Service Commission of Wisconsin**
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## Practice #4: Assess your utility's financial capacity.

Combined Metering: For a residential customer with more than one meter on a single service lateral, volumetric reading from all meters shall be combined for billing. For a nonresidential customer, volumetric readings may be combined for billing if the utility for its own convenience places more than one meter on a single water service lateral. Multiple meters placed for the purpose of identifying water not discharged into the sanitary sewer are not considered for utility convenience and may not be combined for billing. This requirement does not preclude the utility from combining readings where metering configurations support such an approach. Volumetric readings from individually metered separate service laterals may not be combined for billing purposes.

EFFECTIVE: October 30, 2014  
PSCW AUTHORIZATION: 30-WR-101

“Provide information annually about the utility’s financial condition and the revenues necessary to provide service and maintain utility assets on a sustained basis.” - AWWA

UTILITY NO. 4410  
Class AB

 **WATER, ELECTRIC, OR JOINT UTILITY  
ANNUAL REPORT**

OF  
ONALASKA MUNICIPAL WATER UTILITY  
415 MAIN ST  
ONALASKA, WI 54650-2953

For the Year Ended: DECEMBER 31, 2020

TO  
PUBLIC SERVICE COMMISSION OF WISCONSIN  
P.O. Box 7854  
Madison, WI 53707-7854  
(608) 266-3766

This form is required under Wis. Stat. § 196.07. Failure to file the form by the statutory filing date can result in the imposition of a penalty under Wis. Stat. § 196.66. The penalty which can be imposed by this section of the statutes is a forfeiture of not less than \$25 nor more than \$5,000 for each violation. Each day subsequent to the filing date constitutes a separate and distinct violation. The filed form is available to the public and personally identifiable information may be used for purposes other than those related to public utility regulation.

Filed: 03/30/2021      Water Service Started Date: 09/01/1894  
DNR Public Water System ID: 63203272  
Safe Drinking Water Information System (SDWIS) Total Population Served: 18000

I **Fred Buehler**, Finance Director of **ONALASKA MUNICIPAL WATER UTILITY**, certify that I am the person responsible for accounts; that I have examined the following report and, to the best of my knowledge, information and belief, it is a correct statement of the business and affairs of said utility for the period covered by the report in respect to each and every matter set forth therein.

Date Signed: 3/30/2021

Date Printed: 3/30/2021 2:06:59 PM      PSCW Annual Report

“Adopt a uniform system  
of accounts.” - AWWA

Public Service Commission of Wisconsin

Uniform System of Accounts

For  
Municipally-Owned Water Utilities



<https://psc.wi.gov/Documents/water/USOAWater.pdf>

Effective January 1, 2013



# “Do not divert revenues for unrelated purposes.”

- AWWA



“Collect sufficient revenues to finance all operating/maintenance expenses and capital costs.” - AWWA



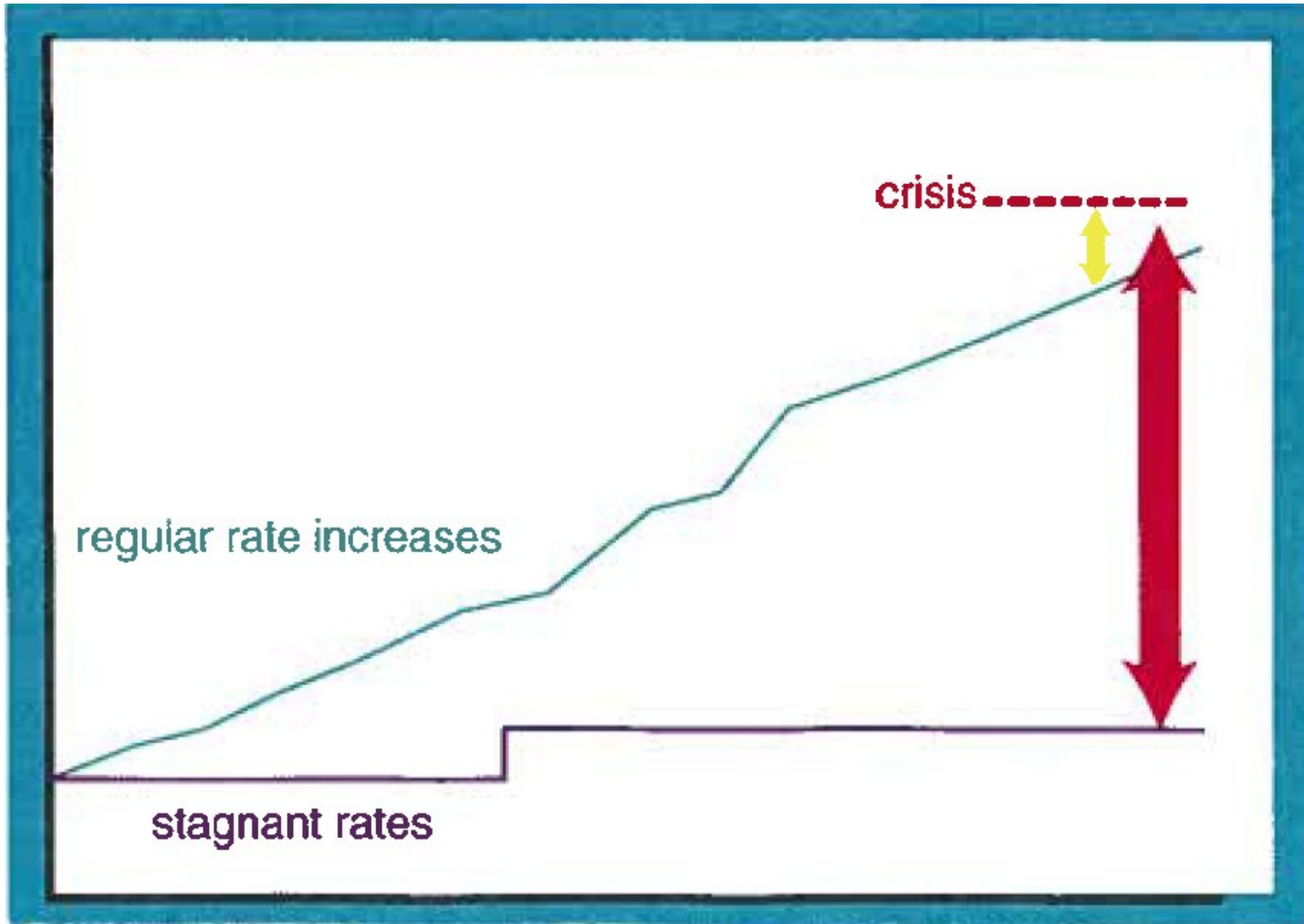
## Are Utilities that Need to Raise Rates Actually Raising Rates?

MARCH 2, 2017 / SHADI ESKAF / 0 COMMENTS

 Print  PDF

What happens if a water utility collects less in revenues than it pays in expenditures in one year? It will raise some alarms, but some utilities might be able to weather that shortfall by dipping into their reserves and bounce back the following year. But what happens if a water utility collects less in revenues than it pays in expenditures in *three consecutive years*? That is probably a strong indication that the rates it is charging its customers are too low. Assuming that expenses cannot be significantly reduced, a rate increase is almost certainly necessary. So are utilities in this position raising rates the following year, or are

# Rate Case Frequency



- Options
  - Multi-year rates
  - Rate phase-ins
  - Abbreviated process to allow for smaller, inflationary adjustments

Source: AWWA, "Avoiding Rate Shock: Making the Case for Water Rates"

# Rate Case Frequency

**Practice #5:** Do not wait too long between rate cases.

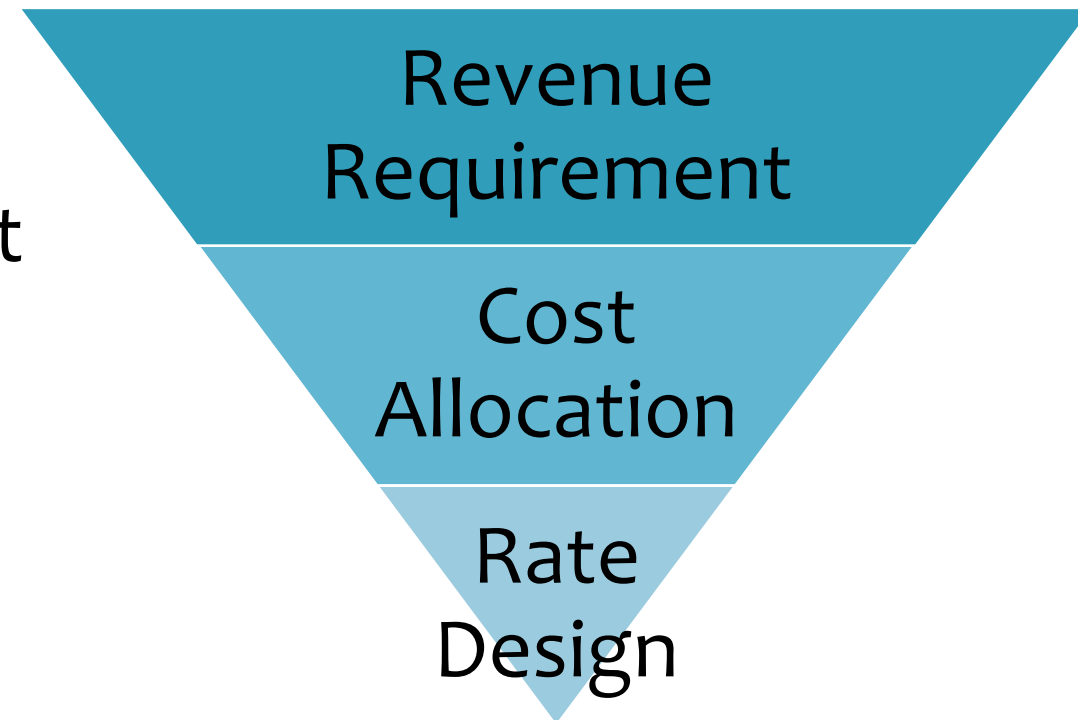
stagnant rates

cess to  
tments

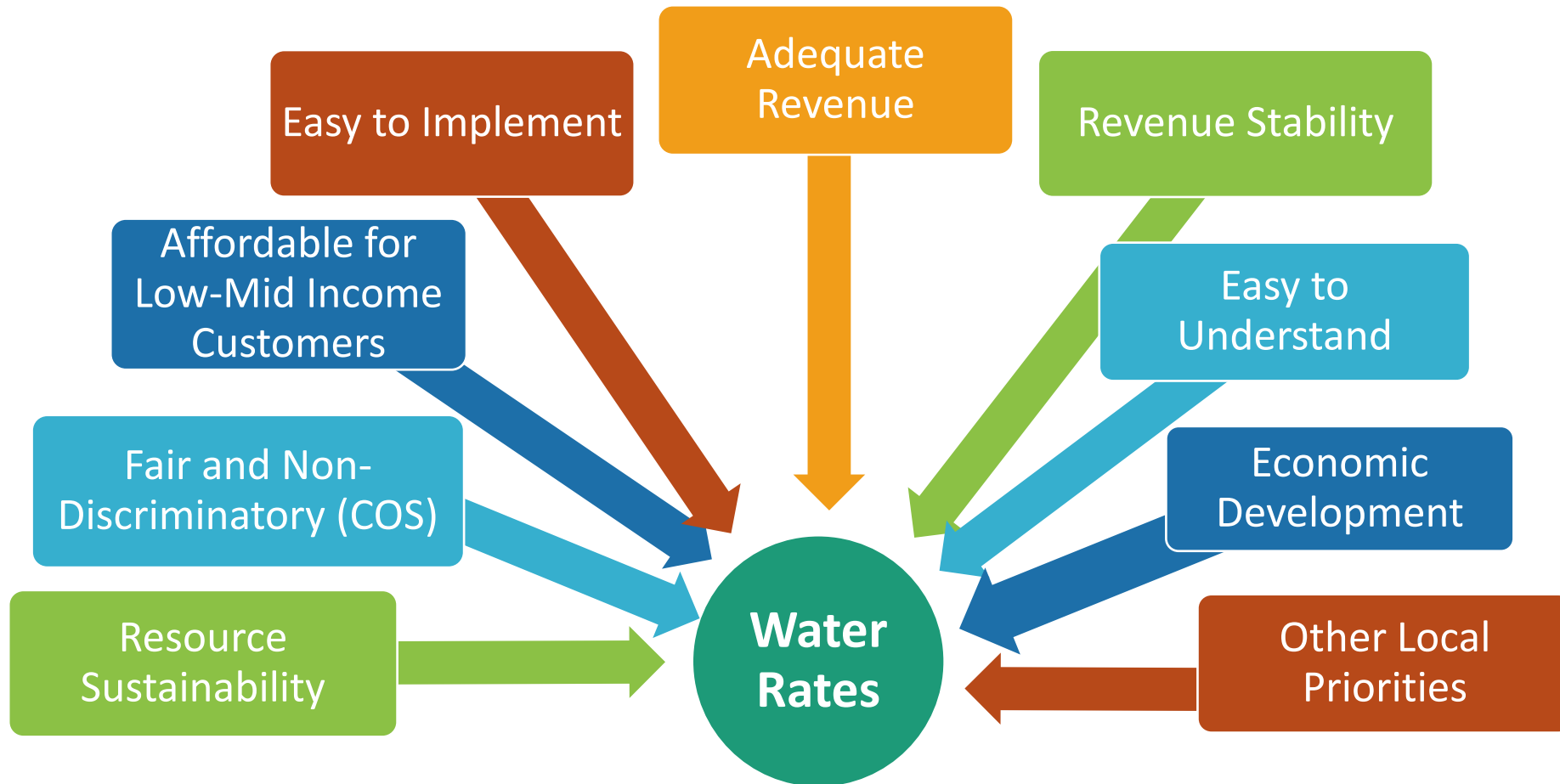
“Rates should be based on cost and avoid subsidizing customers.” - AWWA

What's included in rates?

- O&M expenses
- Depreciation as a way to recover capital investment
- Return on average net investment rate base
- Taxes, including PILOT to municipality



# Water Rates – Policy Considerations





# Water Rates – Policy Considerations

Adequate

**Practice #6:** Be involved in the rate-setting process.

Resource  
Sustainability

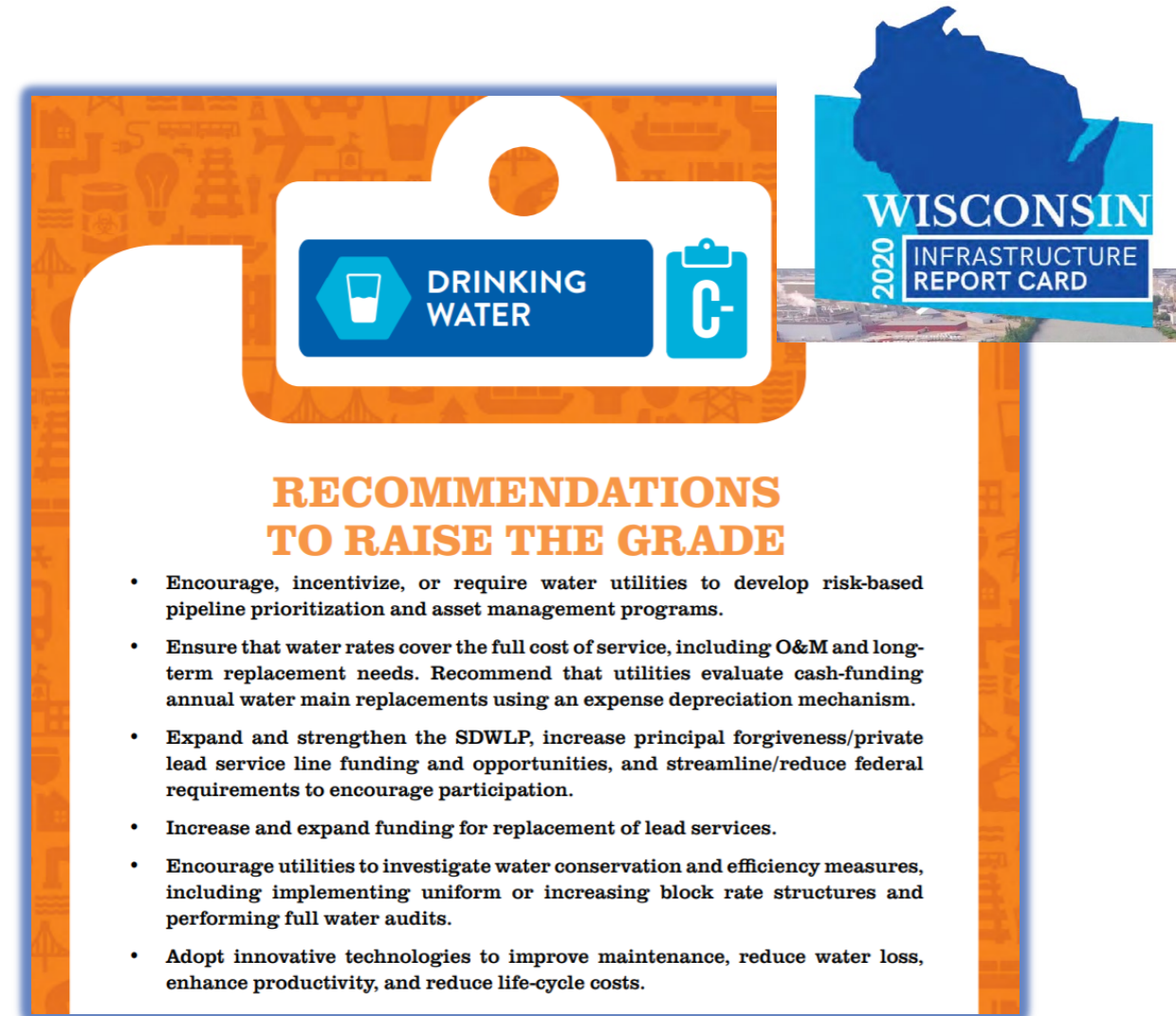
Water  
Rates

Other Local  
Priorities

**Practice #7:** Learn about water utility challenges.  
Which ones apply to your system?

# The infrastructure replacement era is upon us.


- There is a water main break every two minutes and an estimated 6 billion gallons of treated water lost each day in the U.S.
- The federal government's share of capital spending in the water sector fell from 63% in 1977 to 9% of total capital spending in 2017.
- The Bipartisan Infrastructure Bill represents a once-in-a-generation opportunity to make wise investments.



# Lead service lines need to be replaced.




[https://www.epa.gov/sites/default/files/2020-12/documents/ej\\_slr\\_funding\\_sources-final.pdf](https://www.epa.gov/sites/default/files/2020-12/documents/ej_slr_funding_sources-final.pdf)



WISCONSIN  
DEPARTMENT OF  
NATURAL RESOURCES

HUNTINGFISHINGPARKSCLIMATEENVIRONMENTFOREST

 » AID

## LEAD SERVICE LINE (LSL) REPLACEMENTS

Removing lead service lines is one way to minimize the potential for lead to get into your drinking water. The Wisconsin DNR Bureau of Drinking Water & Groundwater provides information regarding the concerns of [lead in drinking water](#).

### FUNDING OPTIONS FOR LEAD SERVICE LINE REPLACEMENT

Options for funding the replacement of private lead service lines (LSLs) include:

- Public Service Commission (PSC) [Lead Service Line \(LSL\) Replacement](#) (exit DNR).
- Wisconsin DNR [Safe Drinking Water Loan Program \(SDWLP\)](#) funding for replacing lead service lines under the control of the municipality.
- Wisconsin DNR [Private LSL Replacement Program](#).

<https://dnr.wisconsin.gov/aid/documents/EIF/leadServiceLineFunding.html>

PSC > Lead-Service-Line

Drinking Water Infrastructure Topics

PSC's Construction Authorization Process

Infrastructure FAQs

Municipal Authority FAQs

Water Topics

Rate Setting

Drinking Water Infrastructure

Conservation and Efficiency

Resources and Training

## Lead Service Line (LSL) Replacement

**Overview**

The Commission supports collaborative efforts between utilities, municipalities, local health departments, and customers to replace lead service lines (LSLs). Annual Report data submitted to the PSC includes information about service line material type for Wisconsin Water Utilities.

[2020 Service Lines by Material Type and Wisconsin Water Utility](#)

**Commission Approval for Customer-Side LSL Replacement Financial Assistance Programs**

While replacement of most utility-owned infrastructure containing lead, including mains, goosenecks, and service lines, generally does not require approval from the Commission, the provision of financial assistance to help customers replace customer-side LSLs does require Commission approval. See Wis. Stats. §§ 196.37, 196.372, and 196.20 (8).


**Filing Requirements**

Utilities interested in providing financial assistance to customers who replace customer-side LSLs must:

- Provide the information described in the [LSL Application Filing Requirements](#). The document includes sample tariffs.
- Upload the completed application and related documents (PDF format) to the PSC Electronic Records Filing (ERF) System using the utility's PSC Identification number.

Please contact RJ Pire at [Richard.Pire1@wisconsin.gov](mailto:Richard.Pire1@wisconsin.gov) with questions.

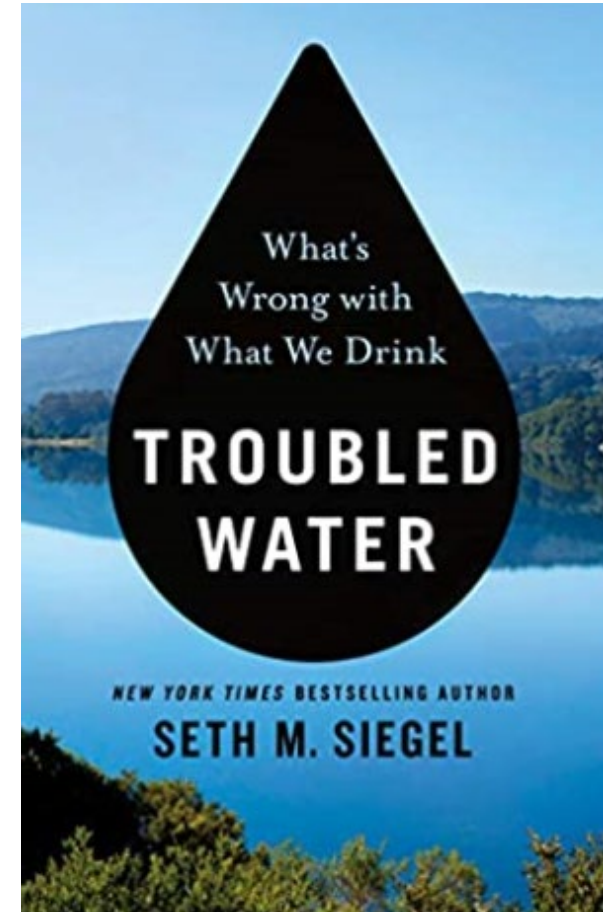
<https://psc.wi.gov/Pages/ForUtilities/Water/Lead-Service-Line.aspx>



30

# Water suppliers are the only public utilities that provide a service that is ingested by their customers.

- Customer expectations:
  - Water should be cheap, if not free
  - Drinking water must be safe 24/7
  - Expectations regarding “safe” can vary from customer to customer
- Changes to existing regulations (Ex: revisions to Federal Lead and Copper Rule)
- Health advisories on contaminants not currently regulated under Safe Drinking Water Act (Ex: PFAS)





## ‘Dangerous Stuff’: Hackers Tried to Poison Water Supply of Florida Town

For years, cybersecurity experts have warned of attacks on small municipal systems. In Oldsmar, Fla., the levels of lye were changed and could have sickened residents.

### JOINT CYBERSECURITY ADVISORY

TLP:WHITE

Product ID: A21-042A

February 11, 2021

Co-Authored by:



### Compromise of U.S. Water Treatment Facility

University of Missouri

Search this site

## FRI - The Financial Research Institute

About FRI Spotlight FRI Programs Crystal Award Calendar

### POV: Focus on Water Cybersecurity Now, Before It's Too Late

Written by Robert F. Powelson, President & CEO of National Association of Water Companies  
April 14, 2021

## Kansas Water System Hacking Highlights Risks

4/12/2021



(AP)– A former Kansas utility worker has been charged with remotely tampering with a public water system's cleaning procedures, highlighting the difficulty smaller utilities face in protecting against hackers.



# Water Workforce Issues



<https://www.awwa.org/Membership-Volunteering/Diversity-Center#11285601-resources--tools>

- Between 2016 and 2026, an estimated 10.6% of water sector workers will retire or transfer each year.
- Some utilities expecting as much as half of their staff to retire in the next five to 10 years.
- Some utilities have had operators and distribution system staff leave to take jobs with contractors.



<https://www.awwa.org/Resources-Tools/Resource-Topics/Workforce/Veterans>

## Affordability of Water Rates Assessed at 3000 Gallons/Month and the 2016 Income Levels

Under ALTERNATIVE Rates

  % Annually  
Spent on Bills  % of Population

☐ Current rates

☒ Alternative rates

☒ All households

☐ Homeowners only

28.7% of households are  
estimated to be low income.

“Non-cost of service rate-setting  
practices that achieve affordability  
objectives may be appropriate in  
some situations.” - AWWA

8.49%

5.66%

3.39%

2.42%

1.70%

1.13%

0.85%

0.57%

0.42%

Less than  
\$10k

\$10k -  
\$14.9k

\$15k -  
\$24.9k

\$25k -  
\$34.9k

\$35k -  
\$49.9k

\$50k -  
\$74.9k

\$75k -  
\$99.9k

\$100k -  
\$149.9k

At least  
\$150k

40%

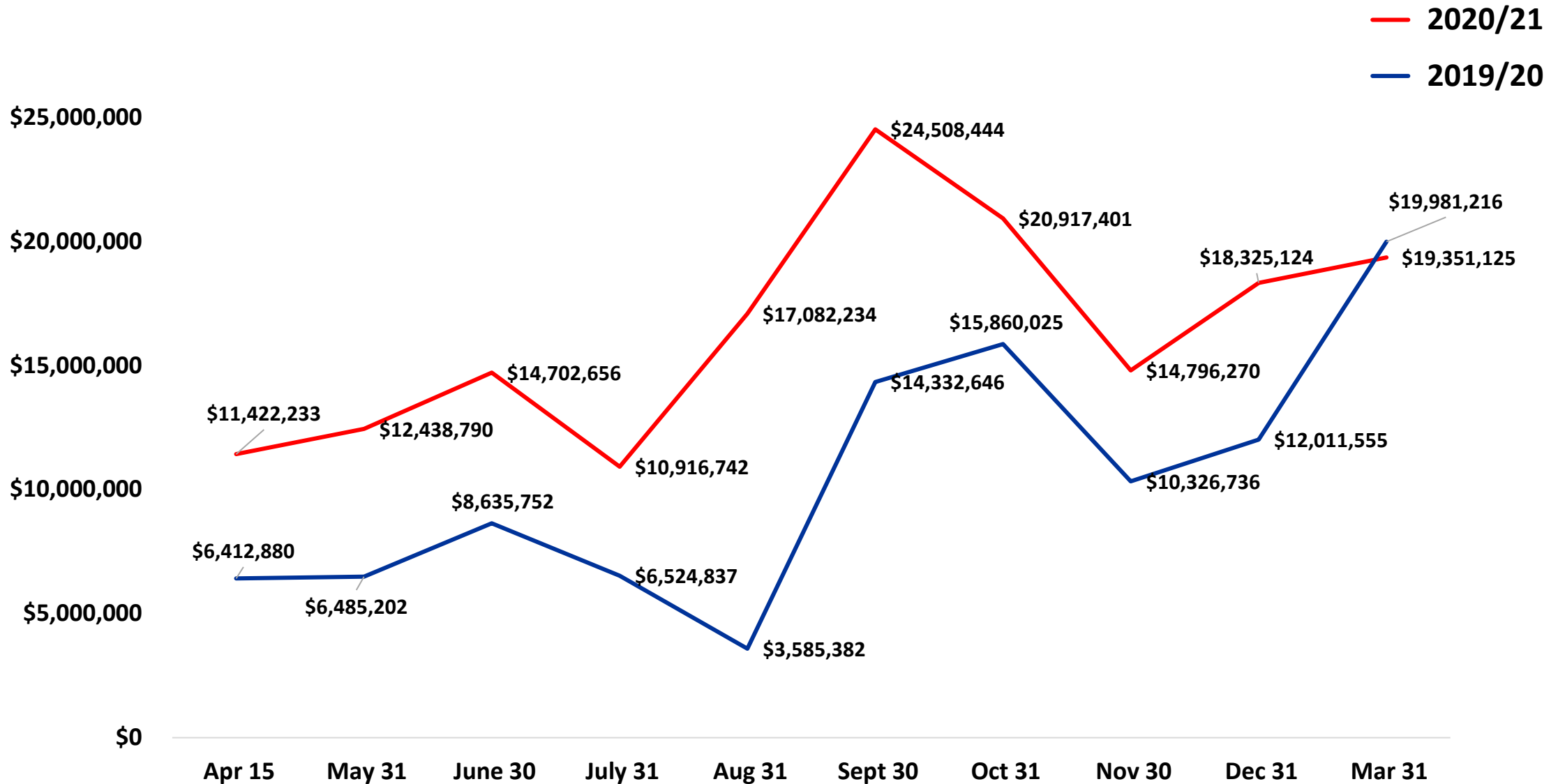
30%

20%

10%

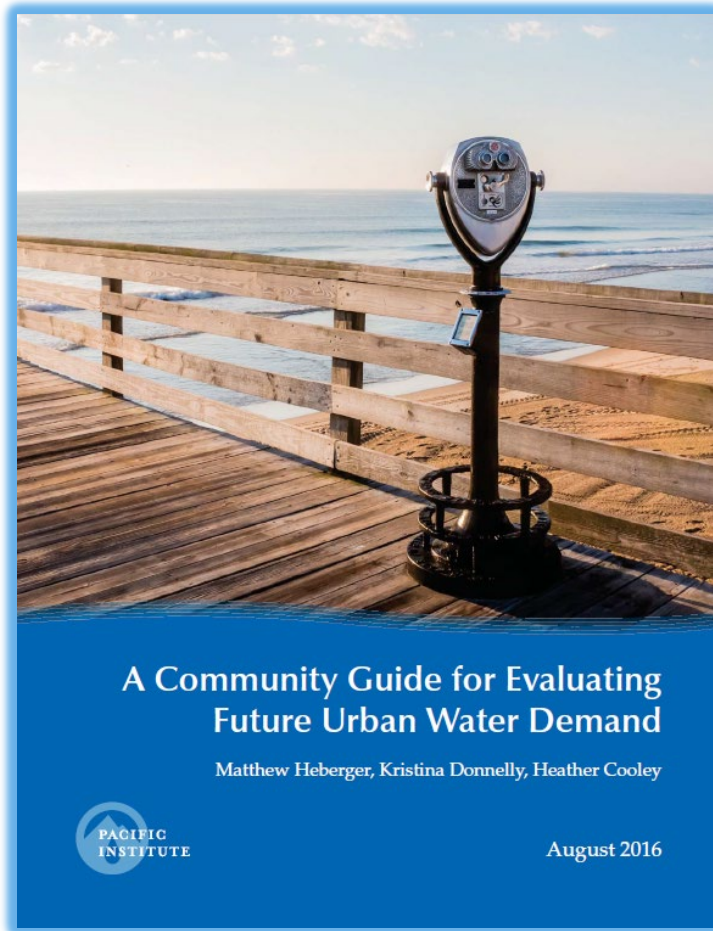
0%

## Wisconsin Residential Water Arrears Comparison




**Practice #8:** Think outside the box.

# Strategies: Adopt an asset management plan. Take a new look at capital planning.



*“The reality is that many water suppliers consistently overestimate actual water demand.”*



“Researchers have found there is often a strong case for building relatively modest, incremental additions to water infrastructure in advanced countries, rather than expensive larger-scale projects that may be needed only rarely.”

## Case study suggests new approach to urban water supply

One drought remedy: Keep infrastructure fast, cheap, and under control.

# Look for operational efficiency improvements.

- Controlling costs and improving efficiency can mitigate the impact of revenue shortfalls
  - Reduce water loss, non-revenue water.
  - Improve energy efficiency: water treatment, conveyance, facility management.
  - Revisit procurement and project management policies and practices.
  - Partner with other utilities to achieve scale economies.
- System optimization – flushing, meter reading, billing, etc.
- But be mindful of service quality, reliability, & public health.





## Water & Wastewater Facilities

Every drop counts. Improve operations through cost-effective upgrades.

With pumps, motors, and other equipment often operating 24 hours a day, seven days a week, water and wastewater facilities can quickly become the largest consumers of energy in a community, accounting for roughly 35 percent of typical municipal energy budgets. Focus on Energy can help improve energy efficiency in these facilities by advising staff on:

- **Equipment Upgrades** – Replacing items such as pumps and blowers with more efficient models
- **Operational Modifications** – Reducing the amount of energy used to perform specific functions, such as wastewater treatment
- **Upgrades to Facility Buildings** – Installing energy-efficient lighting, windows, and heating and cooling equipment

In addition to reducing costs on your utility bills, these upgrades offer environmental benefits. Improving energy efficiency in water and wastewater facilities can help reduce air pollution and Greenhouse Gas (GHG) emissions, by decreasing consumption of fossil fuel-based energy.

### Save on Your Energy Bills with the Wastewater Bridge Initiative

Focus on Energy is partnering with the WI Office of Energy Innovation and US Department of Energy (DOE) to reward wastewater facilities for reducing energy usage at their plants. The Wastewater Bridge Initiative will offer incentives for low and no cost energy conservation measures with a goal of reducing your energy bills by 5%. Incentives are determined by utility bill measured electricity savings (kW and kWh) compared to the prior year's energy use during the same time frame along with actual flow in million gallons (MG). Incentives are offered every six months for up to two years or until a capital upgrade is started. **Sign up with Focus on Energy by March 1st 2017!**

- Visit the [Wastewater Bridge Initiative webpage](#) for more information and how to participate!



**American Water Works Association**

*Dedicated to the World's Most Important Resource™*

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Events & Education

**Resources & Tools**

Professional Development

Publications

Policy & Advocacy

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Search [awwa.org](#)



# WATER LOSS CONTROL

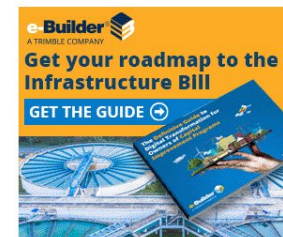
Resources & Tools / Resource Topics / Water Loss Control

Share [f](#) [t](#) [in](#) [e](#)

## Minimize System Losses by Implementing Water Loss Controls



Water loss control represents the efforts of water utilities to provide accountability in their operation by reliably auditing their water supplies and implementing controls to minimize system losses. Utilities incur real losses from pipeline leakage and apparent losses when customer water consumption is not properly measured or billed. AWWA advocates the water audit method developed jointly by the International Water Association and AWWA. The IWA/AWWA Water Audit Method provides the best management practice tools and guidance water utilities need to efficiently manage their supplies.



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Advertisement

Tools for Water Audit Analysis

<https://www.focusonenergy.com/business/water-and-wastewater-facilities>

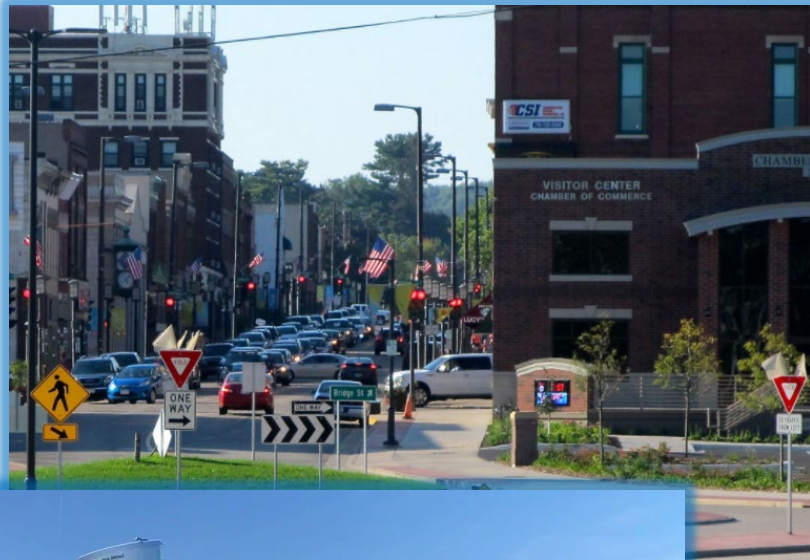
<https://www.awwa.org/Resources-Tools/Resource-Topics/Water-Loss-Control>

# Conservation & Efficiency: Avoided/downsized infrastructure reduces rates in the long-term

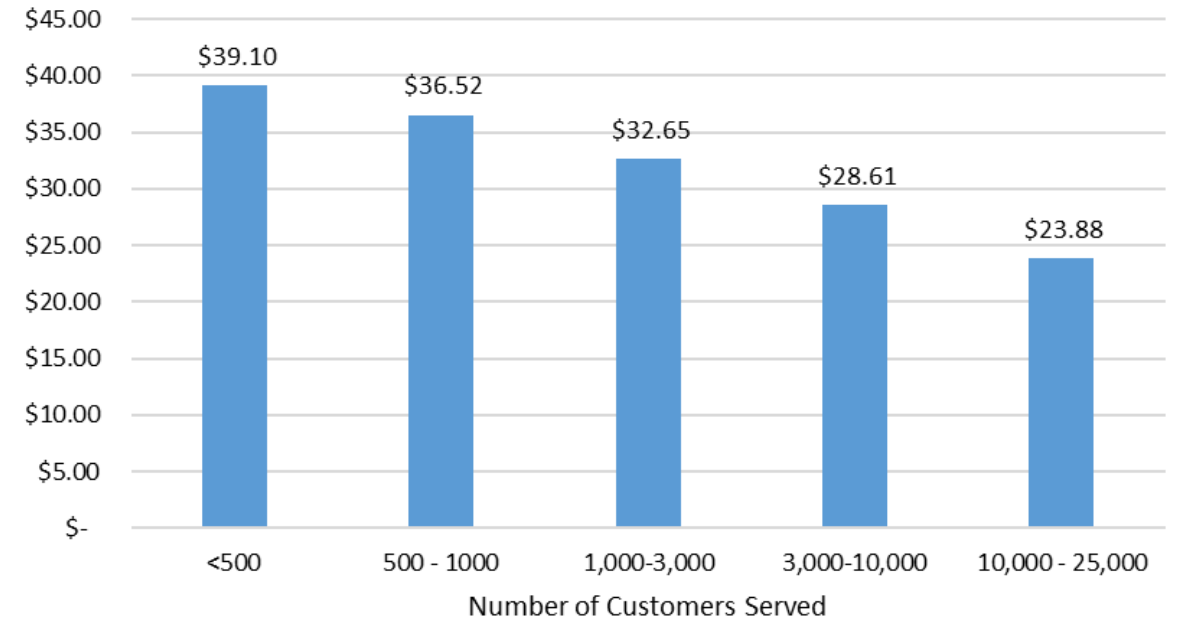
- Utilities reduced costs by:
  - Avoiding purchase of additional water supply
  - Deferring large-scale infrastructure projects
  - Reducing size of new facilities
- Reports available at:  
[www.financingsustainablewater.org](http://www.financingsustainablewater.org)



# Utility size matters.



Median Monthly Drinking Water Bill (4,000 Gallons)





# Partnerships/Regionalization/Consolidation



<https://efc.web.unc.edu/2020/03/18/regionalization-five-key-takeaways-with-resources/>

[https://www.rcap.org/wphttps://www.rcap.org/special-initiatives/regionalization/-content/uploads/2020/03/RCAP-Regionalization-Research-Report\\_March-2020\\_Pages.pdf](https://www.rcap.org/wphttps://www.rcap.org/special-initiatives/regionalization/-content/uploads/2020/03/RCAP-Regionalization-Research-Report_March-2020_Pages.pdf)

Increasing Transfer of Responsibility

Informal Cooperation	Contractual Assistance	Shared Governance	Ownership Transfer
<p>Work with other systems, but without contractual obligations</p> <p>Examples:</p> <ul style="list-style-type: none"> <li>• Sharing equipment</li> <li>• Sharing bulk supply purchases</li> <li>• Mutual aid agreements</li> </ul>	<p>Requires a contract, but contract is under systems' control</p> <p>Examples:</p> <ul style="list-style-type: none"> <li>• Contracting operation and management</li> <li>• Outsourcing engineering services</li> <li>• Purchasing water</li> </ul>	<p>Creation of a shared entity by several systems that continue to exist independently (e.g., regional water system)</p> <p>Examples:</p> <ul style="list-style-type: none"> <li>• Sharing system management</li> <li>• Sharing leadership</li> <li>• Sharing source water</li> <li>• JPA</li> </ul>	<p>Takeover by existing or newly created entity</p> <p>Examples:</p> <ul style="list-style-type: none"> <li>• Acquisition and physical interconnection</li> <li>• Acquisition and satellite mgmt</li> <li>• One system transferring ownership to another to become a larger existing system or a new entity</li> </ul>



Graphic adapted by RCAP and RCAC from U.S. Environmental Protection Agency resources



## Map of Partnership Case Studies





# Questions?

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