



Setting the Right Rates for Your (Small) Water System

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SCHOOL OF GOVERNMENT

Environmental Finance Center



How you pay for it matters

*Supporting fair, effective,
and financially sustainable
delivery of environmental
programs through:*

- Applied Research
- Program Design and Evaluation
- Teaching and Outreach
- Advising
- Policy Analysis

Environmentalfinance.org





Are our rates right?

It depends...





What can the right rates do?

- A. Provide adequate funds to support public health
- B. Provide adequate funds to support environmental quality
- C. Support local and state policies and objectives
- D. Communicate in a certain way with customers
- E. Allocate costs in an intentional and fair way
- F. All of the above?**



What can the wrong rates do?

- A. Provide **inadequate** funds to support public health
- B. Provide **inadequate** funds to support environmental quality
- C. **Contradict** local and state policies and objectives
- D. Communicate in a certain **undesirable** way with customers
- E. Allocate costs **unfairly**
- F. **All of the above?**



What are your rate setting challenges and questions?



A recipe for rate “happiness”

- Get to know your assets and financial condition
- Establish your priorities and goals
- Identify your “true”, “full”, or “fuller” costs
- Get to know your customers (usage, characteristics)
- Consider future scenarios and changes
- Establish rates (rate structure and prices)
- Repeat as often as necessary.....



MINNESOTA WEBINAR | Asset Management for Small Water Systems

Date/Time

Date(s) - 01/11/2018

10:00 am - 11:00 am

[iCal \(add to your calendar\)](#)

Register

Fill out form below to register for this event.

Categories

- Asset Management
- Webinars

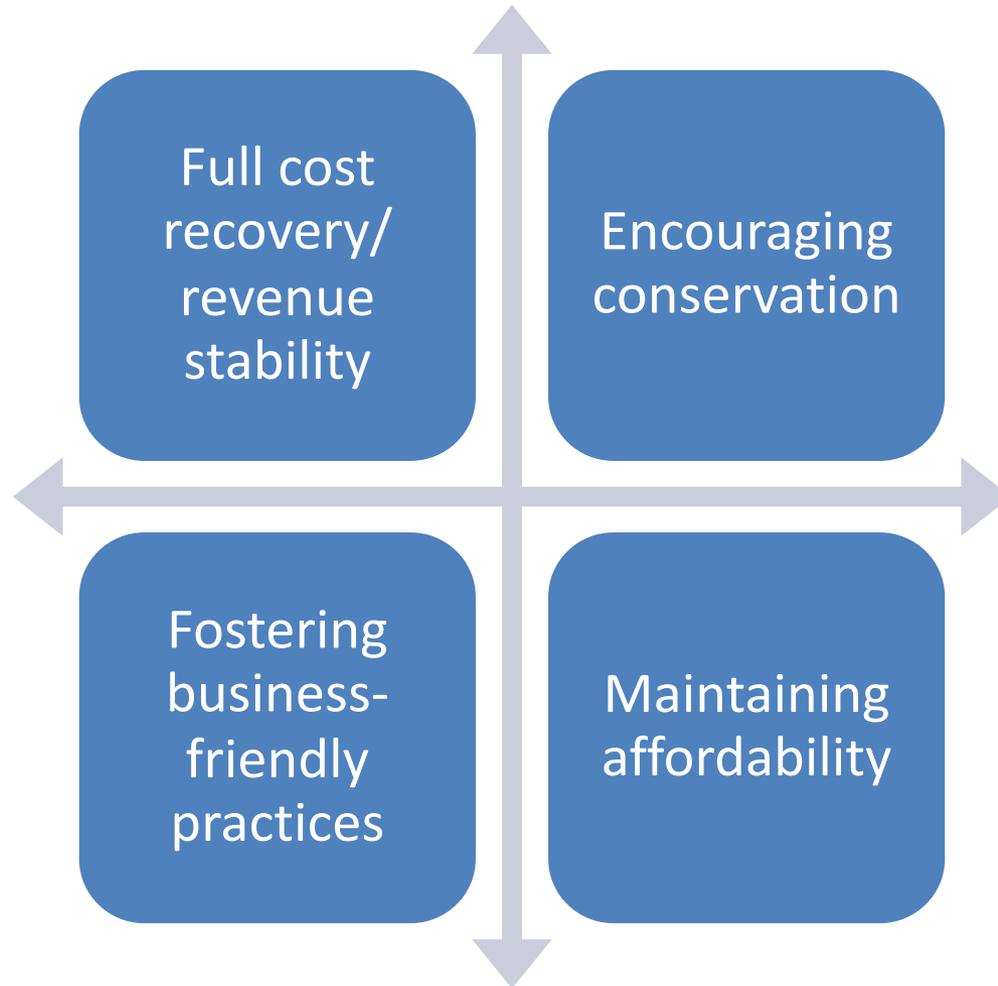
10:00 am - 11:00 am CST

Cost: Complimentary

In the current climate of increasing regulations, decreasing revenues, and aging and decaying infrastructure, an asset management approach is vital. This webinar will provide you with tools to begin the process and understand the benefits of asset management, which helps you solve problems that are important to you and your operations. Asset



Common Water System Priorities





Minnesota Specific Regulations (DNR)

- **Conservation Measures** (MN Statute 103G.291 Subd. 4)
 - “Demand reduction measures must include a conservation rate structure, or a uniform rate structure with a conservation program that achieves demand reduction.” This only applies to municipal water systems serving more than 1,000 people.
 - Demand reduction measures might be odd/even irrigation, time of day restrictions, rain sensors, etc.



Minnesota Specific Regulations (DNR)

- **Drought Measures** (MN Statute 103G.291 Subd. 1)
 - “If the governor determines and declares by executive order that there is a critical water deficiency, public water supply authorities appropriating water must adopt and enforce water conservation restrictions within their jurisdiction that are consistent with rules adopted by the commissioner.”
 - **Water systems should have watering restrictions detailed in city ordinance in the event of a drought.**



Common costs

- Labor related costs (salary, benefits, taxes..)
- Supplies
- Benefits
- Utilities
- Water purchases



Costs that may be overlooked

- Indirect costs of running the system (shared management costs, shared facility costs...)
- Non revenue water costs (costs associated with leaks, water theft etc.)
- Capital related costs (debt service, depreciation, sinking fund transfers, capital expenditures)
- Retirement/pension

Irvindale Budget Expenses

	Account	Budget
19	30-810-01 W/S PROF. SERVICES	\$500.00
20	30-810-02 TOWN MANAGER SALARY	\$28,499.99
21	30-810-03 W/S EMPLOYEE SALARY	\$57,200.00
22	30-810-04 CLERK SALARY	\$37,251.88
23	30-810-05 PICA EXPENSE	\$8,703.00
24	30-810-06 W/S EMPLOYMENT TAX	\$975.00
25	30-810-07 W/S OVERTIME	\$4,500.00
26	30-810-08 MERIT BONUS	\$3,000.00
27	30-810-09 HOLIDAY/EMPLOYEE APREC	\$1,200.00
28	30-810-10 POSTAGE	\$2,700.00
29	30-810-11 Office Supplies/Repairs	\$4,700.00
30	30-810-12 PHONE	\$3,400.00
31	30-810-13 W/S UTILITIES	\$30,000.00
32	30-810-14 TRAINING	\$2,400.00
33	30-810-15 Employee Screening	\$105.00
34	30-810-16 MAINT/REPAIR/SYST-EQUIP	\$30,000.00
35	30-810-17 Mayor Salary	\$1,800.00
36	30-810-18 Board Salary	\$10,500.00
37	30-810-20 W/S UNIFORMS	\$2,000.00
38	30-810-30 GAS AND OIL FOR VEHICLES	\$4,500.00
39	30-810-31 TIRES FOR VEHICLES	\$600.00
40	30-810-32 REPAIRS TO VEHICLES	\$1,000.00
41	30-810-33 SUPPLIES & MATERIALS	\$3,000.00
42	30-810-34 CHEMICALS AND SALT	\$20,000.00
43	30-810-45 CONTRACTED SERVICES	\$36,500.00
44	30-810-46 STATE PERMITS	\$1,700.00
45	30-810-48 DUES/SUBSCRIPTIONS	\$1,500.00
46	30-810-50 DEPRECIATION	\$0.00
47	30-810-54 INSURANCE	\$13,608.00
48	30-810-55 HOSPITAL INSURANCE	\$22,483.00
49	30-810-57 MISC EXPENSE	\$500.00
50	30-810-60 W/S - LGERS	\$9,172.00
51	30-810-70 WATER STUDY EXPENSES	\$24,000.00
52	30-810-74 Online Payments SVC	\$1,600.00
53	30-810-75 ARRA LOAN PRINCIPAL	\$8,875.00
54	30-810-76 PURCHASE WATER BILL	\$2,400.00
55	30-810-79 Banking Fees	\$500.00
56	30-810-89 CAPITAL OUTLAY NEW EQUIP	\$0.00
57	30-810-90 TRANSFER TO OTHER FUND	\$0.00
58	30-810-95 FINES AND PENAL TIES	\$1,500.00
		\$362,902.87





Fixed
Cost

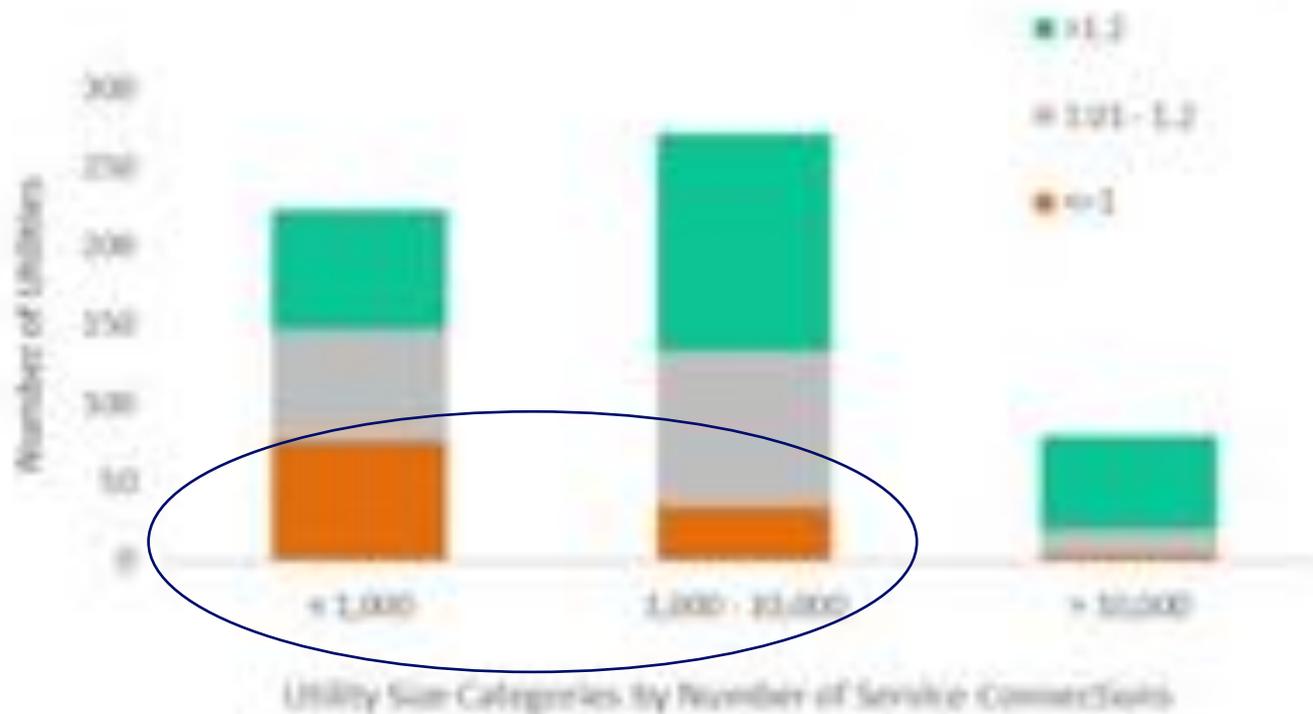
vs.

Variable
Cost

- Some costs for a water system are **fixed** regardless of the volume of water treated. Others **vary** based on the amount of water treated

What not including capital costs in rates looks like

Figure 17: Categorization of Operating Ratio by Utility Size (n=573)





What not including money for capital looks like





Getting to know your customers

- Residential vs. non residential
- Incomes and economic status of customers
- Use of water (irrigation, industrial production, tourism)
- Seasonality patterns
- Economic future of large users
- Population and usage trends

Customers



4,000 gallons/month
(all indoor)



15,000 gallons/month
(4,000 indoor;
11,000 summer irrigation)



15,000 gallons/month
(all indoor)

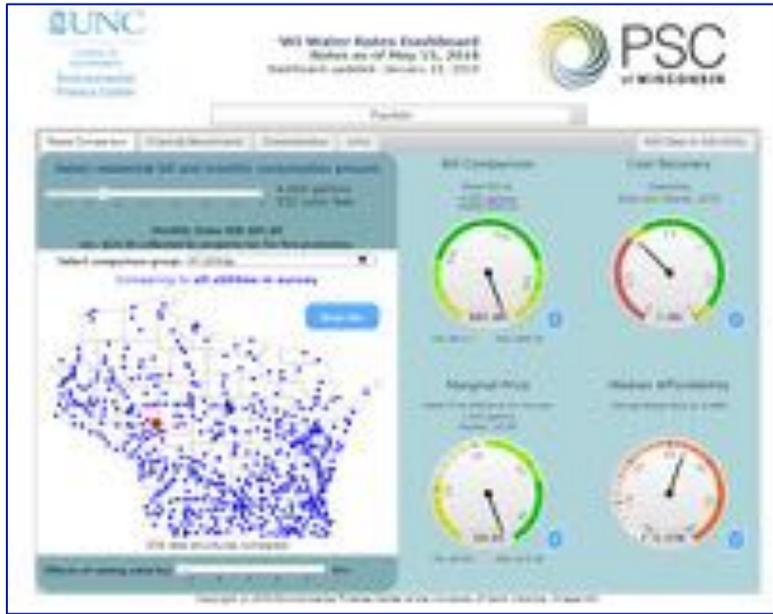


34,000 gallons/month
(all indoor)



Potential indicators of financial stress

- Poverty rates
- Income distribution
- Unemployment
- Senior citizens on fixed income



	Fairchild village	Median for all utilities in survey
Number of Systems	1	578
Est. Number of Connections	217	652
Est. Service Population	564	1,496
Operating Revenue	\$129,102	\$356,652
Operating Expense	\$121,625	\$293,361
Current Assets	\$2,738	\$497,049
Average Household Size	2.26	2.37
Median Household Income	\$29,097	\$40,534
Poverty Rate	21.65%	11.66%



Loss of water-using industry

UPM Blandin to shut a production line in Grand Rapids, affecting 150 workers

By Dee DePass Star Tribune | OCTOBER 25, 2017 -- 8:40AM



October 27, 2017.

<http://www.startribune.com/upm-blandin-to-shut-a-production-line-in-grand-rapids/452872813/>

Nov 12, 2018. <https://quickcountry.com/classic-minnesota-brewery-closing-for-good/>

Customer water usage

Monthly Usage Per Account	Count
0	563
1-999	1155
1,000-1,999	1755
2,000-2,999	1714
3,000-3,999	1238
4,000-4,999	748
5,000-5,999	444
6,000-6,999	328
7,000-7,999	179
8,000-8,999	144
9,000-9,999	89
10,000-10,999	56
11,000-11,999	38
12,000-12,999	27
13,000-13,999	9
14,000-14,999	16
15,000+	136

Population decline





Jeff Hagler

The Painful Art of Setting Water and Sewer Rates

- An increase in mergers and acquisitions
- Almost \$1 billion in assets and more than \$1 billion in annual revenues
- Changing regulations, affecting the bottom line
- A lack of capital investment funds
- Interruptions in supplies that hurt revenues
- Loss of major customers
- Innovative pricing and customer relations strategies
- Slagging revenues

typically fall on governing boards that were chosen not as business or technical experts but as representatives of their constituents on a broad range of matters.

The drought of 1992 brought two types of water crises to the headlines: (1) the struggles of many communities to maintain their water supplies and (2) the financial difficulties of water companies due to depressed rates. The response to the first type of circumstance was immediate and significant: an executive order requiring conservation, and statewide initiatives to conserve current supplies. The response to the second type of circumstance has been less obvious and less pronounced.

Table 3). These numbers are impressive. However, the proposed numbers are staggering. According to a study by the North Carolina Rural Economic Development Group, the state will need more than \$11 billion in investments to meet its capital needs for water and sewer infrastructure over the next twenty years.⁷

In North Carolina, as throughout the country, numerous water and sewer enterprises created by local governments benefited from the federal government's ambitious construction grants program of the 1970s (see the patterns of federal wastewater funding from 1970 to 2000, see Figure 1). Many local government officials fondly remember those days of



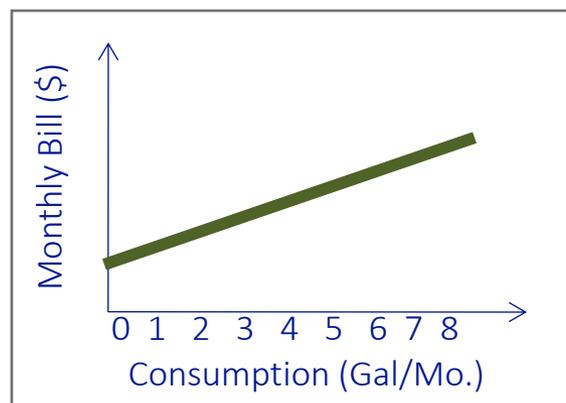
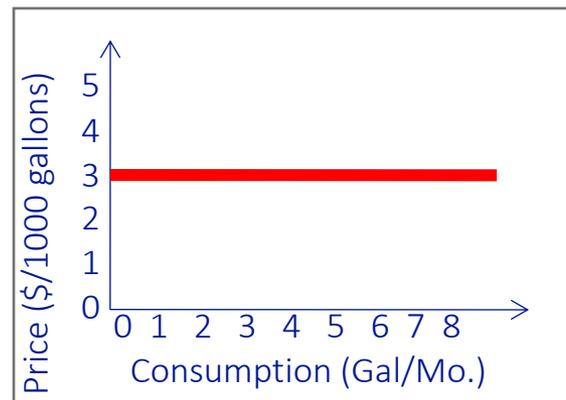
Small system rate setting decisions

- **Decision to on how much of costs to cover**
- **Revenue to be generated by base charge**
- **Revenue to be generated by volumetric charges**
- Establishing different customer classes
- Establishing different prices for water for larger users
- Complex rate structures



Base charge plus “uniform” volumetric charge

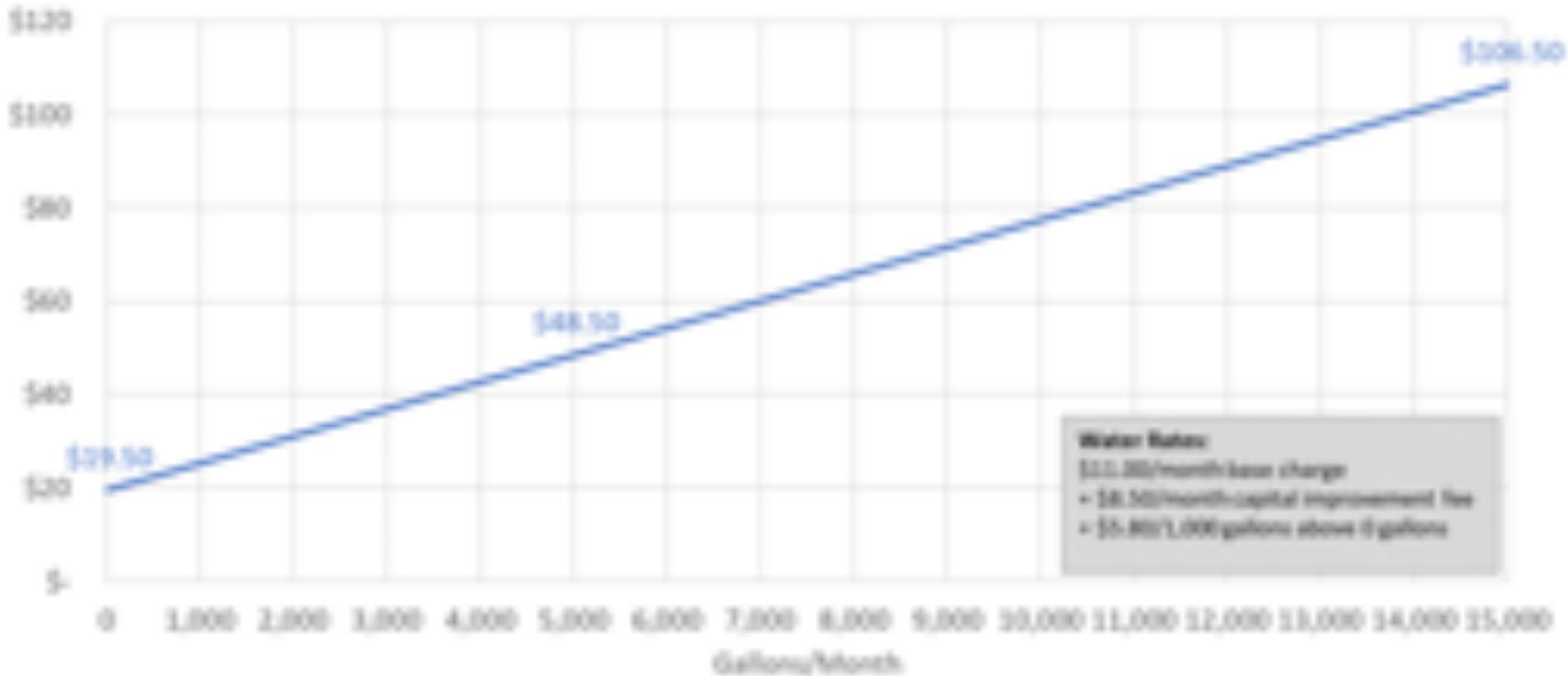
- Simple
- Can be modified by varying base charge and volumetric charge
- Can include basic consumption amount in base charge





Example of a Uniform Water Rate Structure

City of Dawson, MN's Residential Water Bill by Monthly Consumption

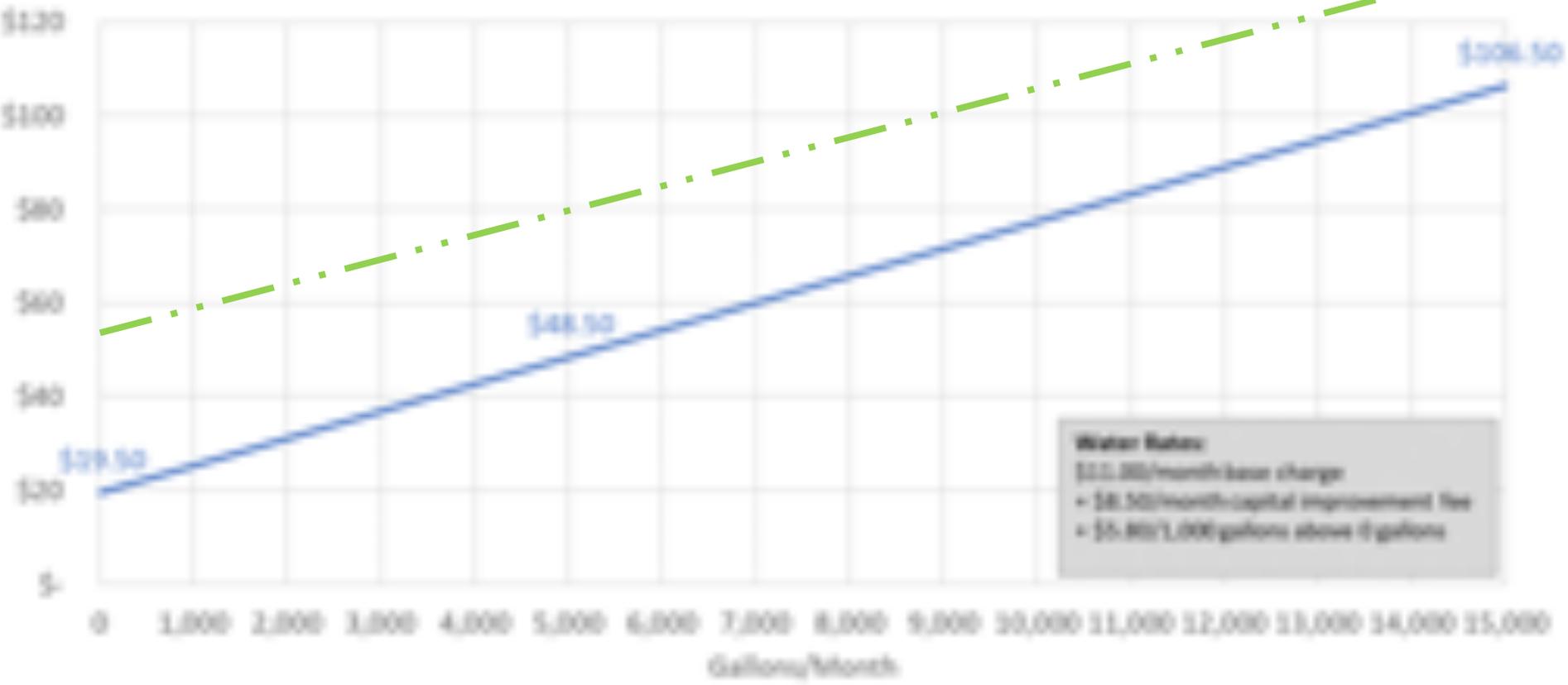


City of Dawson, MN's water service population = 1,540



Moving towards a rate structure that generates more revenue for capital

City of Dawson, MN's Residential Water Bill by Monthly Consumption

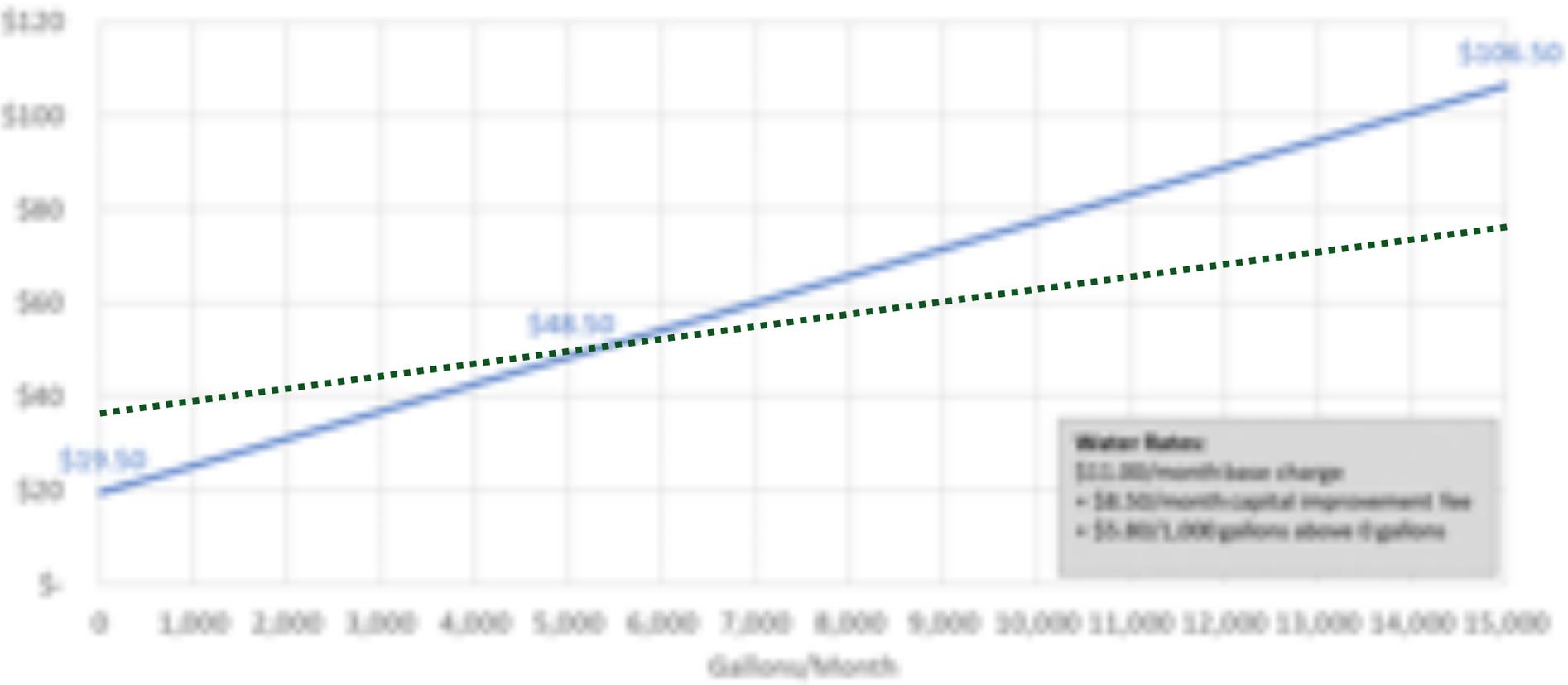


City of Dawson, MN's water service population = 1,540



Moving toward a more revenue stable rate structure

City of Dawson, MN's Residential Water Bill by Monthly Consumption

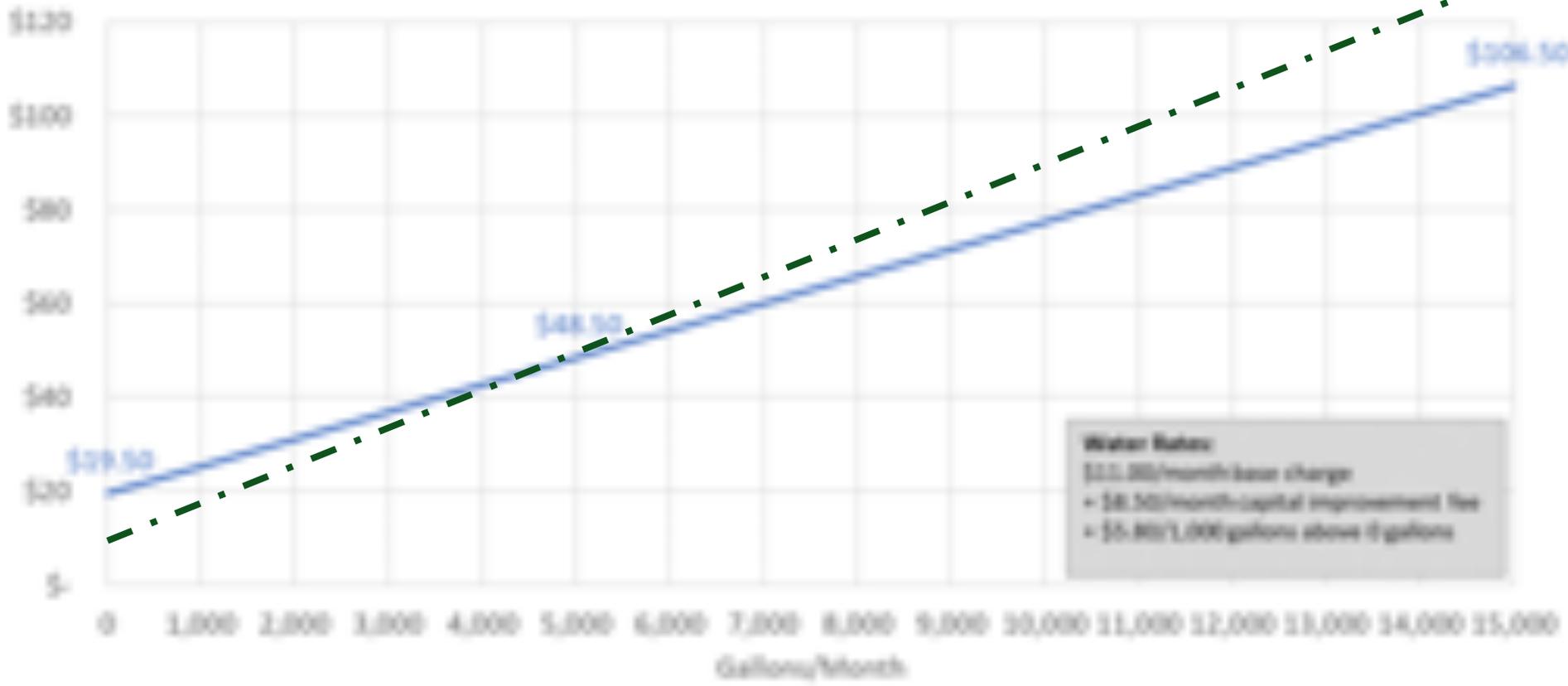


City of Dawson, MN's water service population = 1,540



Moving toward a more conservation oriented rate structure

City of Dawson, MN's Residential Water Bill by Monthly Consumption



City of Dawson, MN's water service population = 1,540



Other rate structures and tools

- Increasing block -- unit price of water increases for large users
- Decreasing block -- unit price decreases for large users
- Seasonal rate – prices depend on season
- Surcharges – additional charges triggered by an event or action



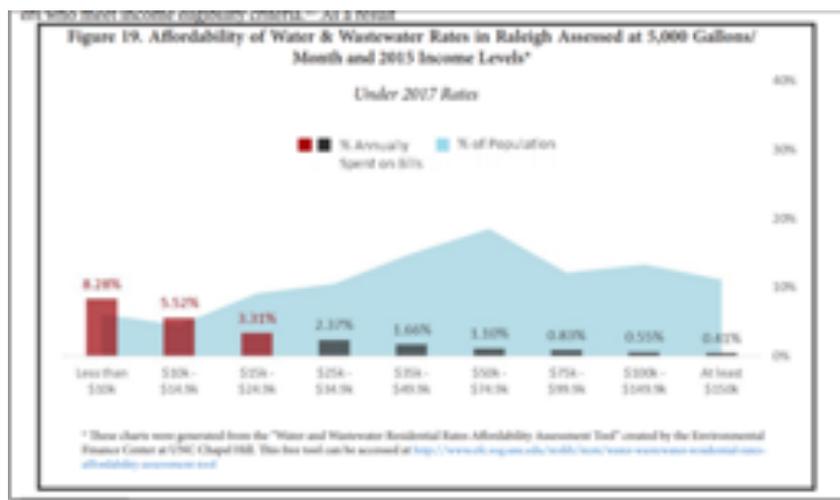
Beyond rate structures

- More frequent rate adjustments
- Communication and public relations
- Frequency of billing
- Software
- Collection policies
- Assistance for customers who have difficulty paying



Rates analysis and tools environmentalfinance.org

- State level rates surveys and analysis
- Utility rates and revenue modeling tools
- Utility rates affordability assessment tools
- Utility capital planning tools
- Survey results and presentations
- Rate setting publications and guides

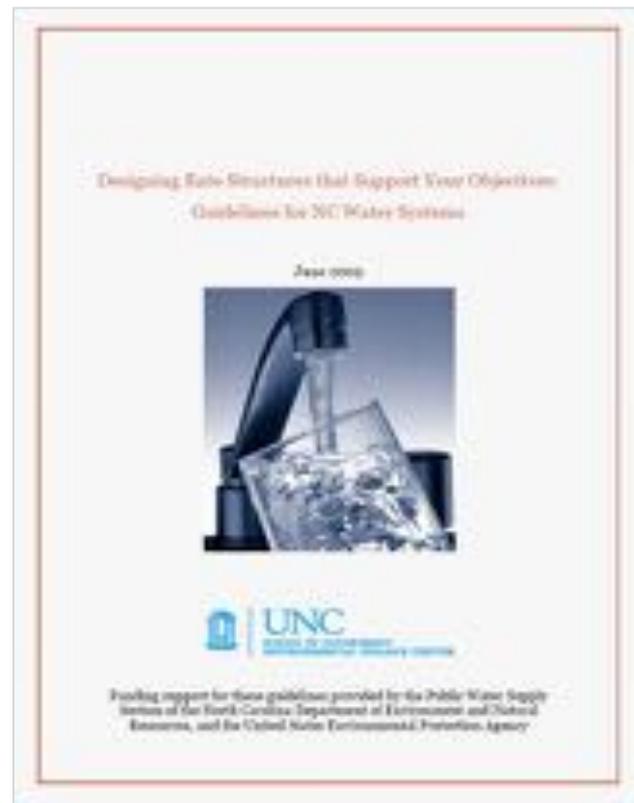


Designing Rate Structures That Support Your Objectives

Free guide
written for
system
managers

Available at:

<http://efc.sog.unc.edu/>



Financial Health Checkup for Water Utilities

<http://efc.sog.unc.edu> or <http://efcnetwork.org>

Find the most up-to-date version in Resources / Tools

Free, simplified Excel tool allowing you to track and benchmark financial performance metrics for your water/sewer fund in the past 5 years



Financial Health Checkup for Water Utilities

UNC ENVIRONMENTAL SCIENCE CENTER
Developed by the Environmental Science Center
at the University of North Carolina, Chapel Hill
<http://efc.sog.unc.edu>

Smart Management for Small Water Systems Program
A resource for water systems through the Environmental Science Center Network's
Smart Management for Small Water Systems program, funded under a cooperative
agreement with the U.S. Environmental Protection Agency/efcnetwork.org

What does this tool do?
This tool assists in the assessment of the financial performance of a water (and/or wastewater) utility fund. Financial data readily available in annual financial statements are input into this tool, which computes key financial indicators that measure a variety of important metrics, such as the ability to pay debt service, availability of cash to pay for operations and maintenance, the sufficiency of revenues generated, etc. Each metric is compared against targets that are specified by the user. The tool demonstrates the financial strengths and weaknesses of the utility fund in the past 5 years.

Features:
Simple data entry (uses data already reported in your audited financial statements)
6 financial performance indicators with explanations
Set your own targets
Assessment of last year's financial ratios, improvements since previous year, and five-year trends
Guided navigation through hyperlinked images

What are financial indicators?
Watch a whiteboard video explaining financial performance indicators in lay terms.

FINANCIAL BENCHMARKING

Water & Wastewater Rates Analysis Model

<http://efc.sog.unc.edu> or <http://efcnetwork.org>

Find the most up-to-date version in Resources / Tools

Free, simplified Excel tool allowing you to model and compare two rate structures on your projected fund balance

Water & Wastewater Rates Analysis Model
Version 2.8.2 (last updated August 4, 2015)

Developed by the Environmental Finance Center at the University of North Carolina, Chapel Hill
Funded by the L. Oran Byrd Foundation, the University of North Carolina, and the Public Water Supply Section of the North Carolina Department of Environment and Natural Resources

DESCRIPTION
A do-it-yourself, simplified financial model to assist utility managers and private system owners in setting water and wastewater rates.

FEATURES
Comparisons of annual fund balance projections (for up to 20 years) under proposed new rates vs. staying with existing rates
Adjust rates for the next 2-5 years
Up to 12 rate structures
Uniform or block rates (up to 20 blocks)
Model changes to accounts and water use
Customizable list of operating and capital expenses
Building up revenues through rates
Compare monthly bills under new rates vs. existing rates
Assess revenue sufficiency and fund balance
Error notifications

INSTRUCTIONS

1) Navigate using worksheet tabs at bottom of screen or following arrows and clicking on buttons

2) In the green "Data Input" worksheets, input data in the dark green cells

Watch out for red "Error" messages describing where data entry errors

Plan to Pay: Scenarios to Fund your C.I.P.

<http://efc.sog.unc.edu> or <http://efcnetwork.org>

Find the most up-to-date version in Resources / Tools

Free, simplified Excel tool allowing you to list your capital projects and plans for funding them, and automatically estimates rate increases

Plan to Pay: Scenarios to Fund your C.I.P. (Capital Improvement Plan)
Version 2.0 (www.efcnetwork.org)

Start

1) Click on the bottom of screen and follow the prompts to different pages.

2) In "Data Input 1", enter utility characteristics, rates and usage information in blue cells.

3) In "Data Input 2", enter details on capital improvement projects in the green blue cells. Each row is a different project.

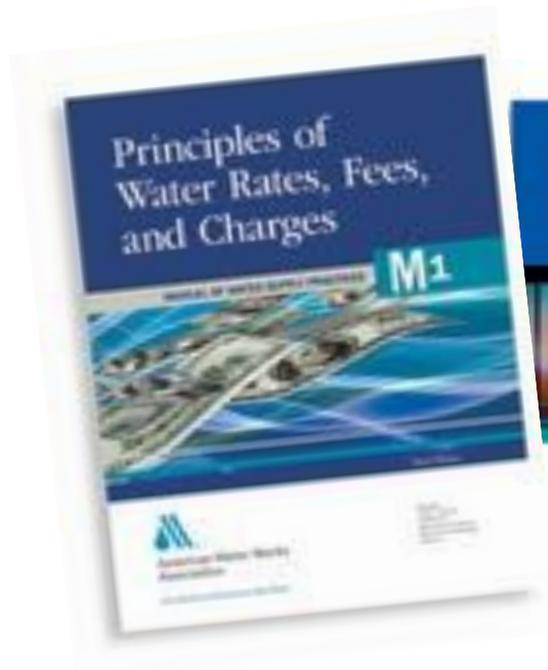
4) In "20 Year Projections", view your fund balance projections for 20 years and observe the estimated rate increases needed each year to pay for your Capital Improvement. No data entry required on this page.

5) After all your utility information and capital improvement project details are entered, go to the "Dashboard" to see long-term trends in your financial means, rate increases and usage calls, and capital investments.

The interface displays several charts and tables, including a bar chart showing trends over time, a line graph, and a table with columns for 'Year' and 'Amount'.



Guidebooks on setting rates/financial planning



<http://www.awwa.org>



Setting Small Drinking Water System Rates for a Sustainable Future

One of the Simple Tools for Effective Performance (STEP) Guide Series



<http://www.epa.gov/safewater/smallsystems>

http://www.epa.gov/ogwdw/smallsystems/pdfs/guide_smallsystems_final_ratesetting_guide.pdf

Environmental Finance blogs

<http://efc.web.unc.edu/>

or http://efcnetwork.org/small_systems_blog/





Small water systems: www.EFCNetwork.org

Workshops, webinars,
and recordings

Sign up for free in-depth
(multi-day or multi-hour)
direct assistance

Collection of resources for
small water systems
(tools, guides)



Free, thanks to
a cooperative
agreement with
the U.S. E.P.A.



Innovative Finance Solutions for Environmental Services

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Get Free Help Now!

Small water systems can request free technical assistance from our experts on finance and management challenges.

The thing about working with the EFCN is availability. You can call anytime with a quick question or to get outside advice.



- Basic reviews and assistance
- Water systems serving fewer than 10,000 people
- <https://efcnetwork.org/assistance/request-assistance/>



Additional Help for Small Systems

- American Water Works Association
- MN Rural Water Association
- Midwest Assistance Program



What are your rate setting questions and challenges?



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