



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 blue-tinted photograph of industrial machinery, possibly a water treatment plant, featuring large pipes and valves.

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](#)

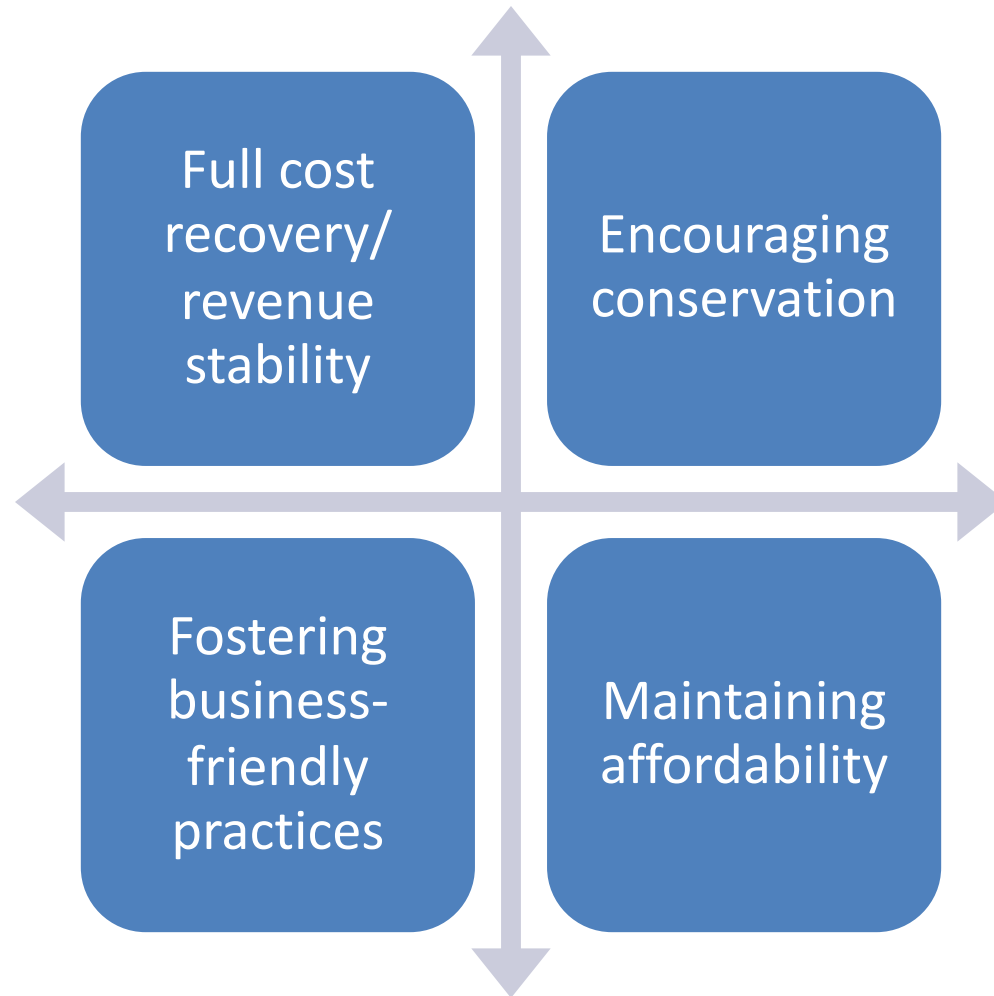
10:00 am-11:00 am CST

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

Irwindale 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 FICA 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	\$22,443.00
49	30-810-57 MISC EXPENSE	\$500.00
50	30-810-60 W/S - USERS	\$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 ABRA LOAN PRINCIPAL	\$8,675.00
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 PENALTIES	\$1,500.00
		\$382,902.87





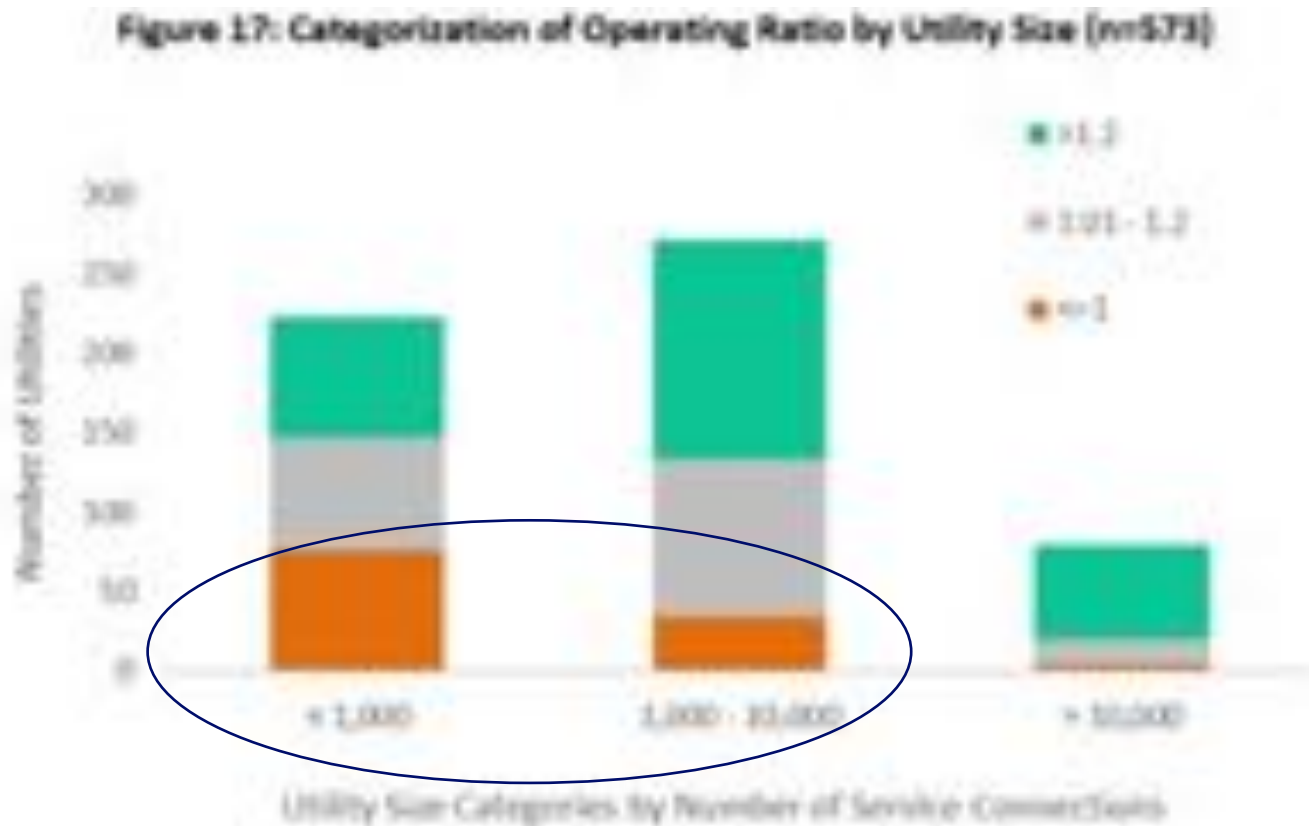
Fixed
Cost

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





What not including money for capital looks like





Getting to know your customers

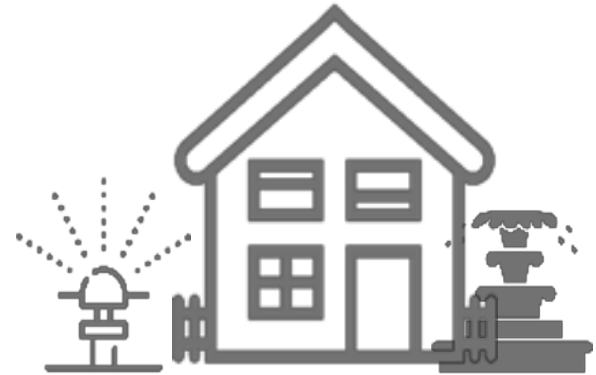
- Residential vs. non residential
- Incomes and economic status of customers
- Use of water (irrigation, industrial production, tourism)
- Seasonality patterns
- Economic future of large users
- Population and usage trends



Customers



4,000 gallons/month
(all indoor)



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



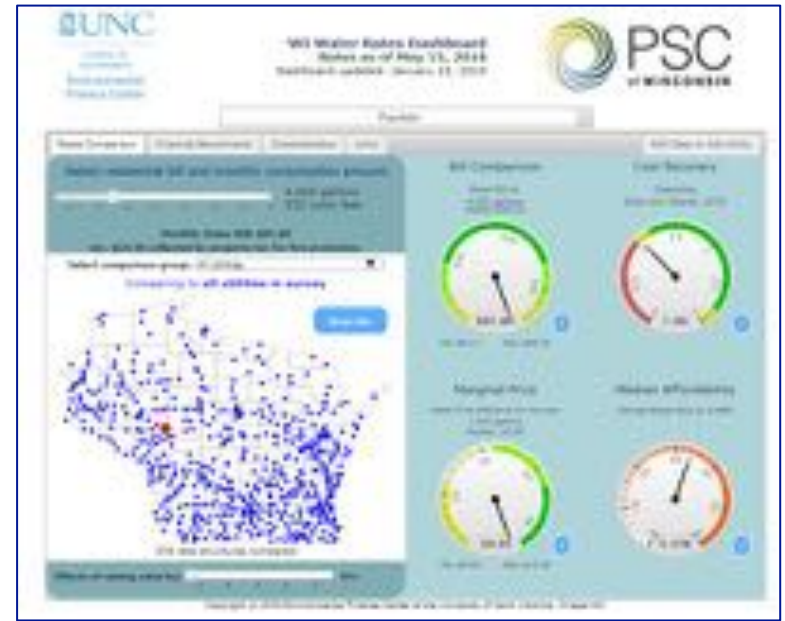
15,000 gallons/month
(all indoor)



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 lackling in capital investment needs
- Interruptions in supplies that hurt revenues
- Loss of major customers
- Increasing pricing and customer relations strategies
- Lagging 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 sales. 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 1). 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.¹

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

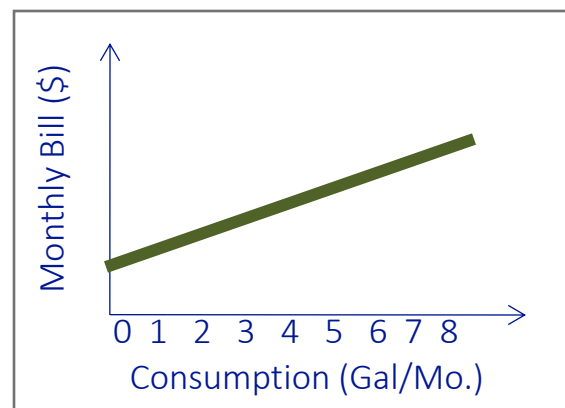
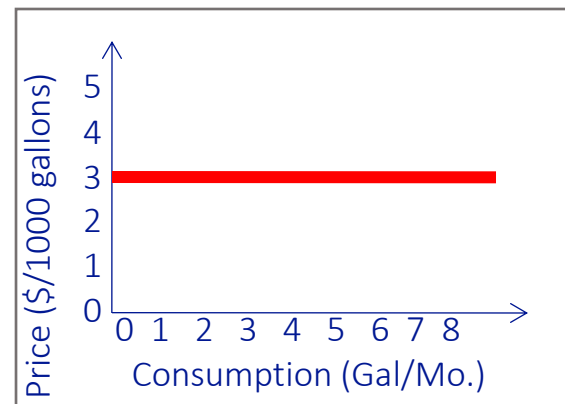


Small system rate setting decisions

- **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

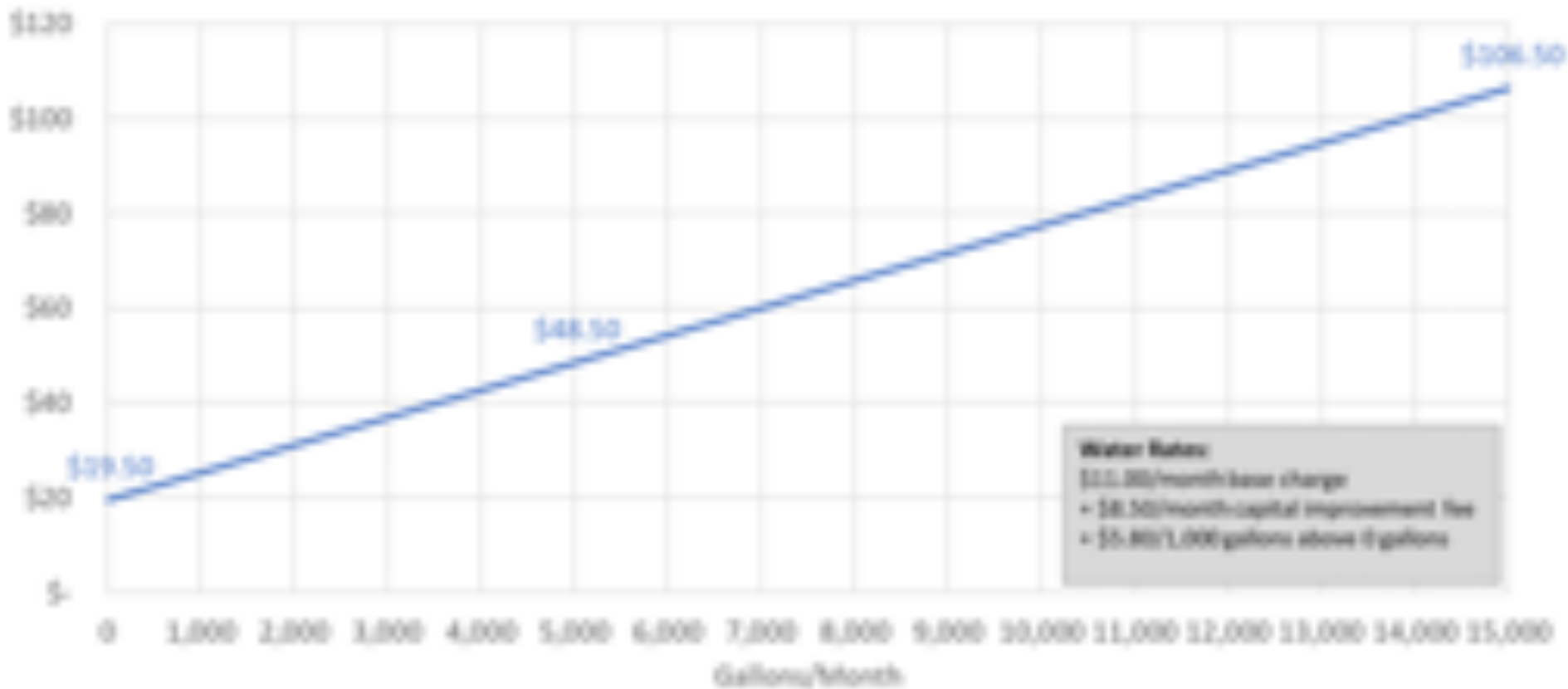
- Simple
- Can be modified by varying base charge and volumetric charge
- Can include basic consumption amount in base charge





Example of a Uniform Water Rate Structure

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

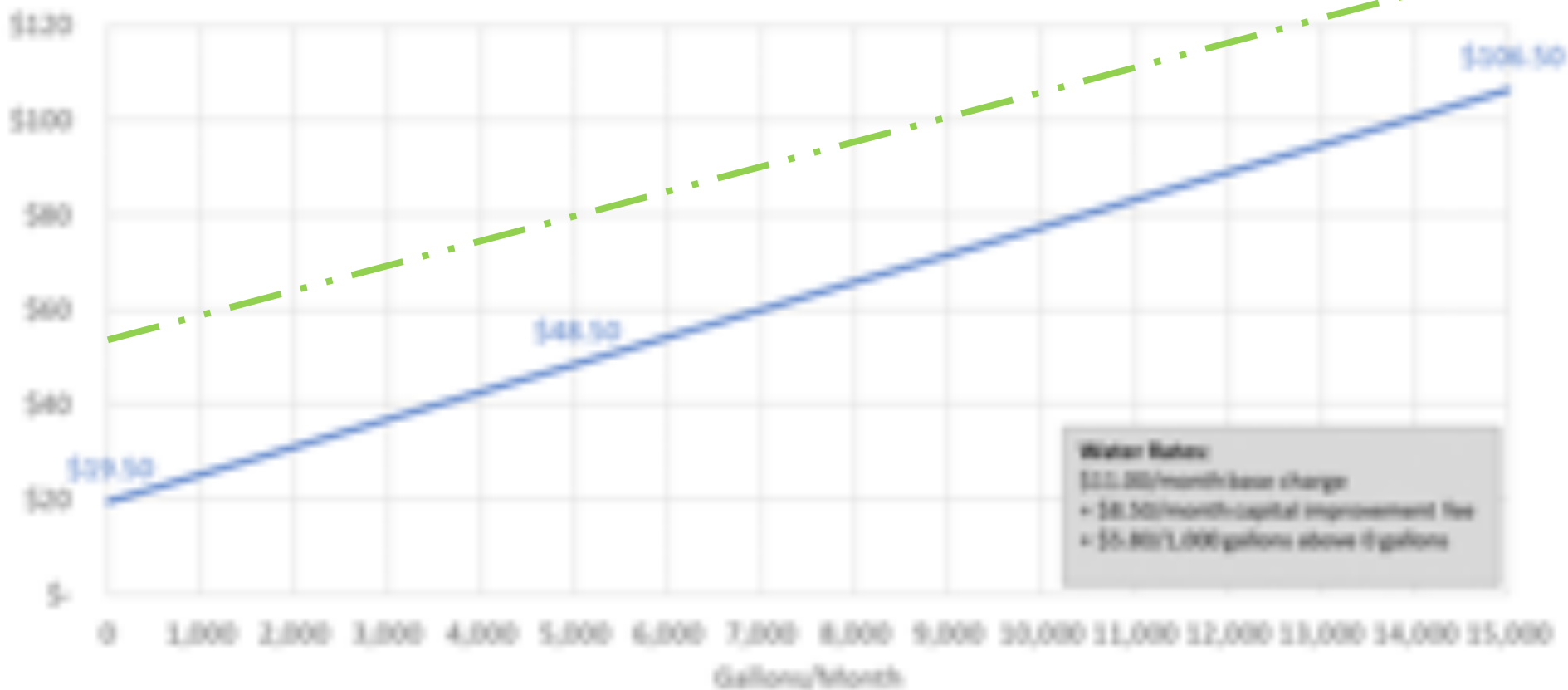


City of Dawson, MN's water service population = 1,540



Moving towards a rate structure that generates more revenue for capital

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

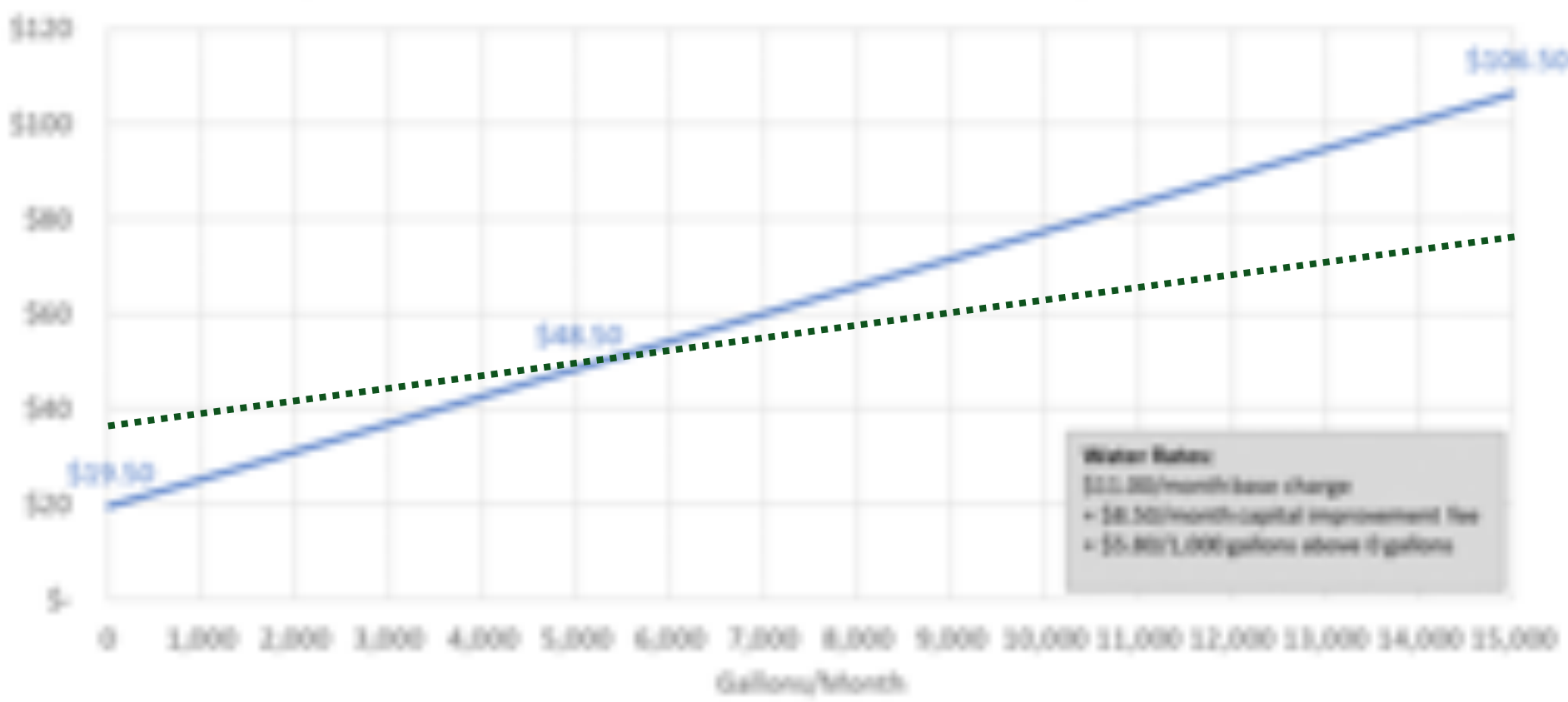


City of Dawson, MN's water service population = 1,540



Moving toward a more revenue stable rate structure

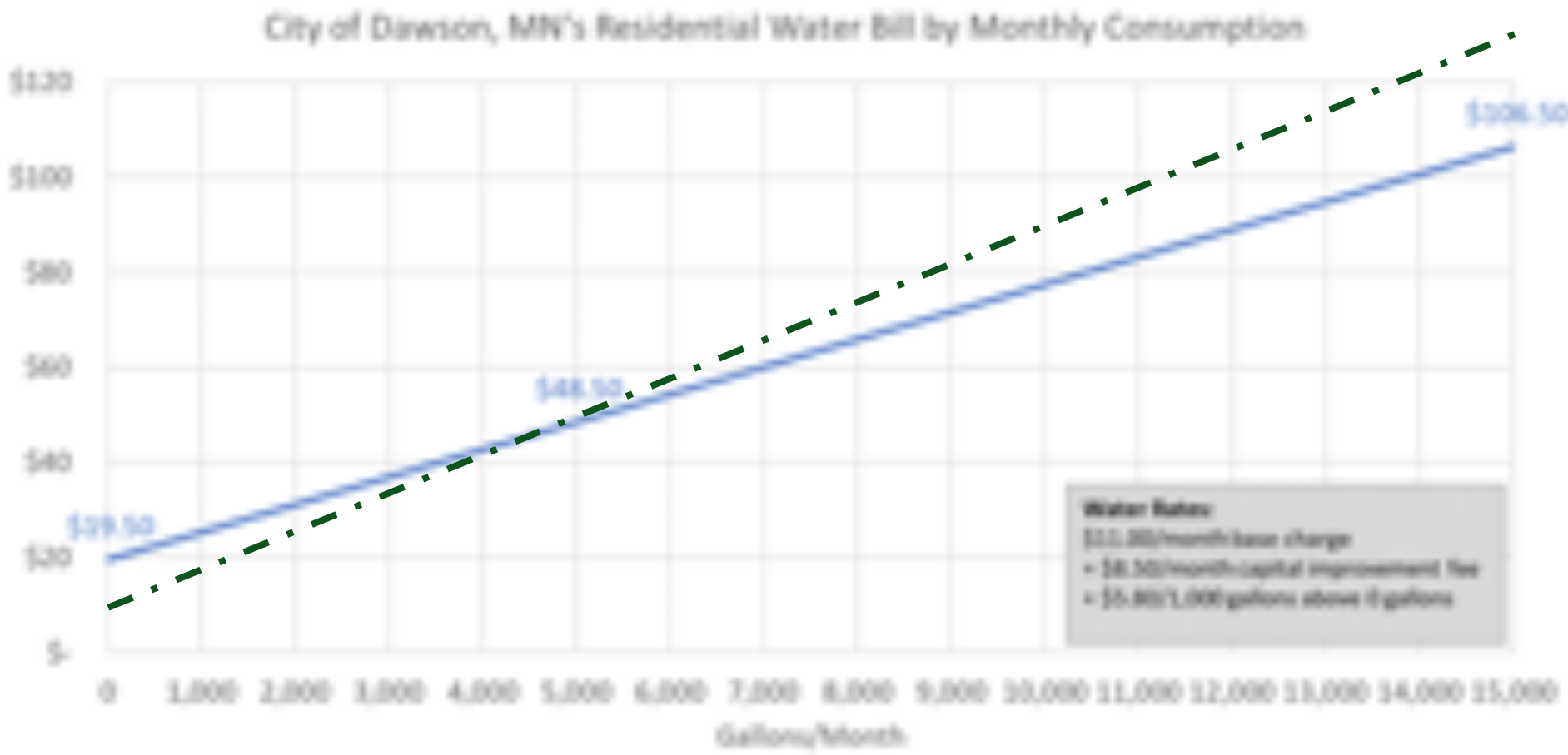
City of Dawson, MN's Residential Water Bill by Monthly Consumption



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



Moving toward a more conservation oriented rate structure



City of Dawson, MN's 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

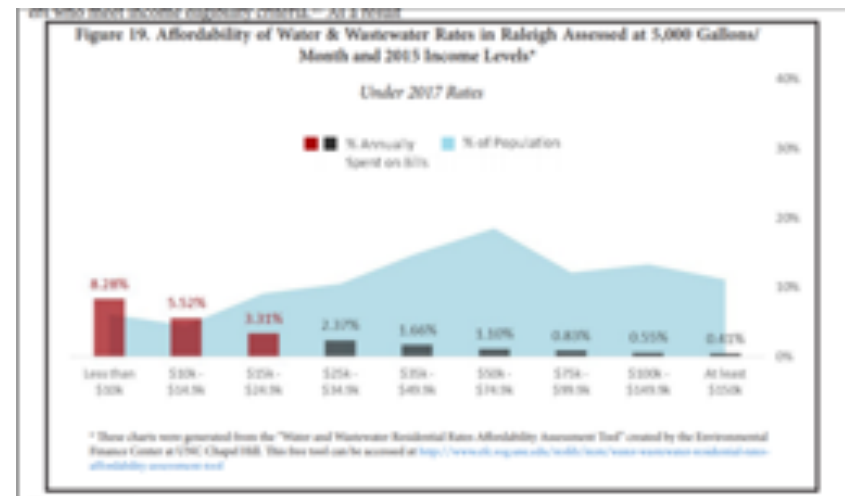


Beyond rate structures

- 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

The screenshot shows the homepage of the 'Financial Health Checkup for Water Utilities' tool. At the top, the title is displayed in a dark blue banner. Below this, the UNC Environmental Finance Center logo is on the left, and the EFC Network logo is on the right. The UNC logo includes the text 'Developed by the Environmental Finance Center at the University of North Carolina, Chapel Hill' and 'http://efc.sog.unc.edu'. The EFC Network logo includes the text 'A resource for water systems through the Environmental Finance Center Network's Smart Management for Small Water Systems project, funded under a cooperative agreement with the U.S. Environmental Protection Agency' and 'http://efcnetwork.org'. The main content area has a heading 'What does this tool do?' followed by a paragraph explaining that the tool assesses the financial performance of a water (and/or wastewater) utility fund by inputting data from annual financial statements to compute key indicators like debt service, cash availability, and revenue sufficiency, comparing them to targets over a 5-year period. Below this is a 'Features' section listing: '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', and 'Guided navigation through hyperlinked images'. The next section is 'What are financial indicators?' with a link to a whiteboard video. At the bottom, there is a video player thumbnail with the text 'FINANCIAL BENCHMARKING' and a blue play button icon.

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)

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

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 2-10 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 reserves 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

View Results
Financial Summary of the System's Financial Condition
Operating, 2015-2034 (New Rates vs. Existing Rates)
Operating, 2015-2034 (New Rates vs. Existing Rates)

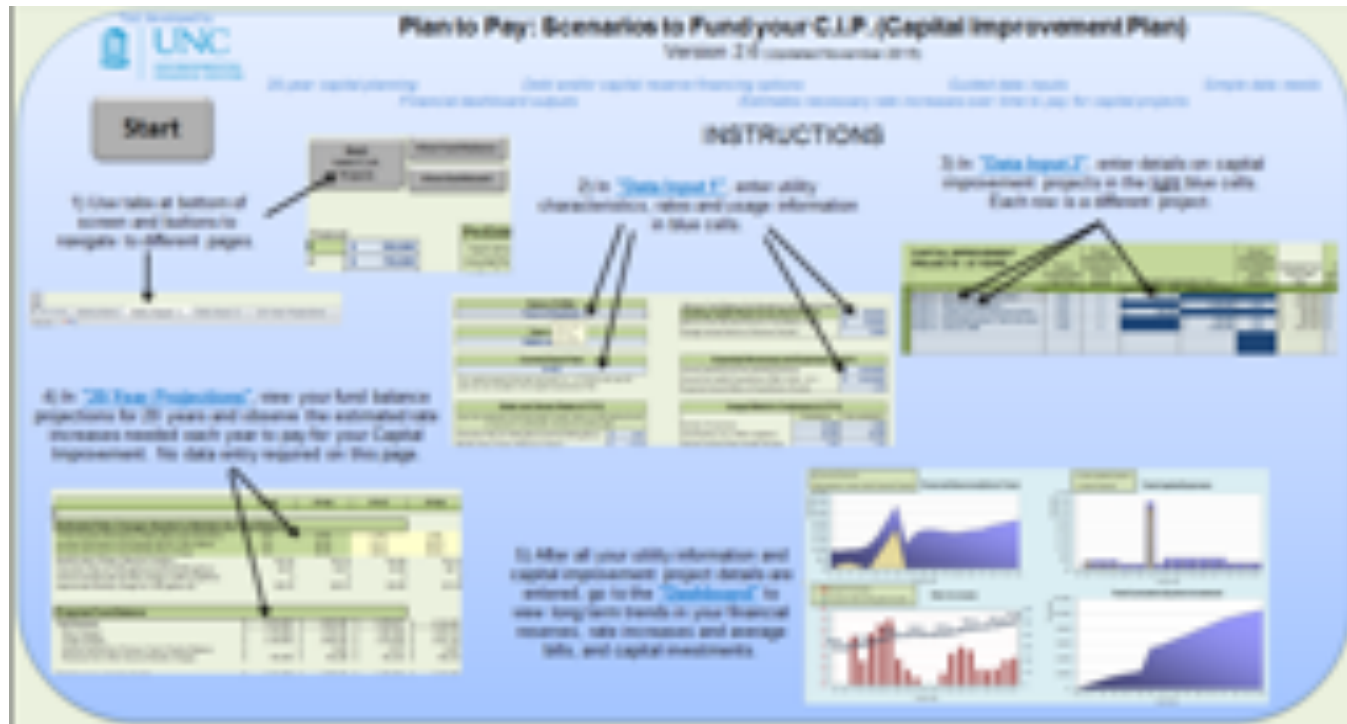
Watch out for red "Error" messages describing where data entry errors

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

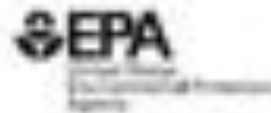




Guidebooks on setting rates/financial planning



<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.



- 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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