Smart Management for Small Water Systems

Financial Benchmarking for Small Water Systems

October 8, 2020

UNC SCHOOL OF GOVERNMENT Environmental Finance Center

EFCN environmental finance center network

NADO RESEARCH FOUNDATION NATIONAL ASSOCIATION OF DEVELOPMENT ORGANIZATIONS

GFOA Government Finance Officers Association

This program is made possible under a cooperative agreement with the U.S. EPA.

Logistics

Opening the control panel

Show your control panel

Mute/unmute. Please keep yourselves muted by default.

Toggle between full screen/window screen view

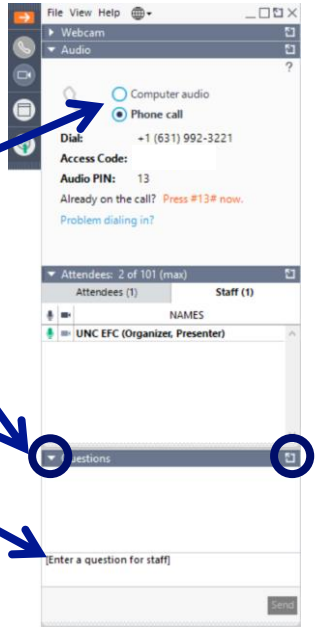
Raise your hand if you want to be unmuted and ask a question

Using the control panel

Audio: please choose between computer audio or phone call

Click to open in Control Panel

Submit **questions** in the Questions box at any time, and press [Send]



Click to open in separate box and resize

If you do not hear audio right now, please check your speaker volume or enter #[your Audio PIN]# if using phone

Requirements for 1 Credit Hour for Water Operators

This online course is approved for **1 contact hour** for licensed drinking water operators in Ohio.

Course approval # OEPA-B88604510-X.

Participants **must follow all attendance procedures** in order to receive credit:

- Be logged in with **your name**
- Must **attend the entire session** (one hour)
- **Respond to the polls** (at least every 15 minutes)
- Be **"screen attentive" for 90% or more**. This means that this GoToWebinar app must be active and the foremost, main program on your screen for at least 90% of the time. If you click into another application (e.g. email, web, etc.), you will lose "screen attentiveness" points.

If you meet these requirements, you will receive a certificate of attendance from Syracuse University Environmental Finance Center for completing the training within 30 days.

If you have questions or need assistance, please contact *smallsystems@syr.edu*.

About Us

The Environmental Finance Center Network (EFCN) is a university-based organization creating innovative solutions to the difficult how-to-pay issues of environmental protection and improvement. The EFCN works with the public and private sectors to promote sustainable environmental solutions while bolstering efforts to manage costs.

EFCN
environmental finance center network

Smart Management for Small Water Systems

The Smart Management for Small Water Systems Program works in every state, territory, and the Navajo Nation. All small drinking water systems are eligible to receive free resources including training, direct technical assistance, tools, blogs, and resources.

The Small Systems Program Team

- Environmental Finance Center at The University of North Carolina at Chapel Hill
- Environmental Finance Center at Wichita State University
- EFC West
- Government Finance Officers Association (GFOA)
- Great Lakes Environmental Infrastructure Center
- National Association of Development Organizations (NADO)
- New England Environmental Finance Center at the University of Southern Maine
- Southwest Environmental Finance Center at the University of New Mexico
- Syracuse University Environmental Finance Center
- Environmental Finance Center at the University of Maryland
- Rural Community Assistance Corporation
- Environmental Finance Center at California State University, Sacramento

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Environmental Finance Center

http://environmentalfinance.org

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

- Applied research
- Program design and evaluation
- Teaching and outreach
- Advising
- Policy analysis

How you pay for it matters

Two Sessions for OH Small Water Systems

October 6, 2020
2:00pm – 3:00pm ET

Funding Programs and Q&A Session on Financial Recovery from COVID-19

Presentations from funding programs, and Q&A format to allow you to ask questions about financial management of your water systems during the pandemic and recovery over the next few months.

October 8, 2020
2:00pm – 3:00pm ET

Benchmarking Rates and Financial Performance

Presentation on assessing financial performance metrics, how to compare rates more effectively, and a demonstration of the Ohio Water and Wastewater Rates Dashboard.

Agenda

- Welcome from Ohio EPA's Susan Schell
- Benchmarking financial performance
- Benchmarking rates
- Demonstration of the Ohio Water and Wastewater Rates Dashboard
- Questions, and resources available to help your systems

Submit your questions in the "Questions" box at any time

Welcome Remarks from Ohio EPA

Susan Schell

Manager, Engineering & Infrastructure

Division of Drinking and Ground Waters

Ohio Environmental Protection Agency

My Contact Information

Shadi Eskaf
Research Director
EFC at UNC Chapel Hill
eskaf@sog.unc.edu
919-962-2785

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Environmental Finance Center

Poll:

How do you determine whether your water system is financially sustainable?

Select all that apply

Benchmarking Financial Performance

What you Can Assess with Financial Performance Indicators

Is your utility self-sufficient?	Operating Ratio
Are you able to cover your debt service after paying for your day-to-day operations?	Debt Service Coverage Ratio
If your customers stop paying their bills, how long can you maintain operations?	Days Cash on Hand
Can your system meet its short-term obligations?	Quick / Current Ratio

Whiteboard Video: Financial Benchmarking

https://www.youtube.com/watch?v=pfs0brT_jkU

Part of a series of whiteboard videos at this link

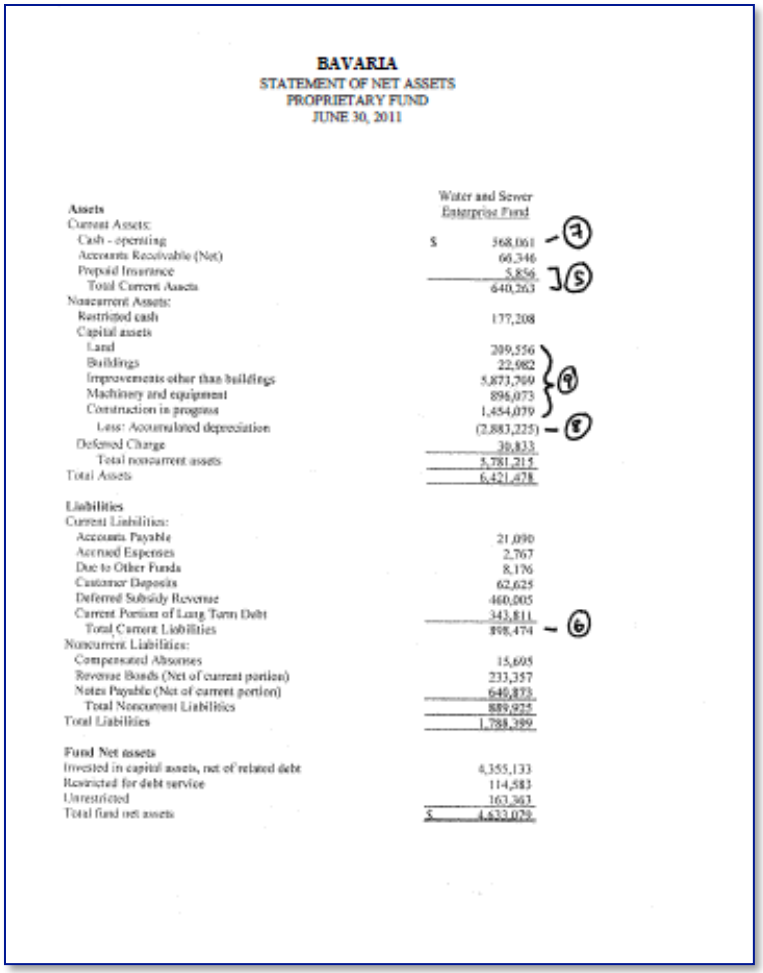
Where to Find Data

Local governments:

annual audited financial statements

Non-governments:

balance sheets, shareholder reports, annual reports, etc.



BAVARIA
STATEMENT OF NET ASSETS
PROPRIETARY FUND
JUNE 30, 2011

	Water and Sewer Enterprise Fund
Assets	
Current Assets:	
Cash - operating	$ 368,061
Accounts Receivable (Net)	66,346
Prepaid Insurance	5,856
Total Current Assets	640,263
Noncurrent Assets:	
Restricted cash	177,208
Capital assets	
Land	209,556
Buildings	22,982
Improvements other than buildings	5,873,769
Machinery and equipment	896,073
Construction in progress	1,454,079
Less: Accumulated depreciation	(2,883,225)
Deferred Charge	30,833
Total noncurrent assets	5,781,215
Total Assets	6,421,478
Liabilities	
Current Liabilities:	
Accounts Payable	21,090
Accrued Expenses	2,767
Due to Other Funds	8,176
Customer Deposits	62,625
Deferred Subsidy Revenue	460,005
Current Portion of Long Term Debt	343,811
Total Current Liabilities	898,474
Noncurrent Liabilities:	
Compensated Absences	15,605
Revenue Bonds (Net of current portion)	233,357
Notes Payable (Net of current portion)	646,873
Total Noncurrent Liabilities	889,925
Total Liabilities	1,788,399
Fund Net assets	
Invested in capital assets, net of related debt	4,355,133
Restricted for debt service	114,583
Unrestricted	163,363
Total fund net assets	$ 4,633,079

Poll:

How familiar are you with audited financial statements?

Audited Financial Statements

You will need all of the following:

- Statement of Net Position
- Statement of Revenues, Expenses & Changes in Net Position
- Statement of Cash Flows

Explanations in the Notes could be helpful

Operating Ratio

$$= \frac{\textit{Total Operating Revenues}}{\textit{Total Operating Expenses}}$$

Calculate two numbers:
one including depreciation in total operating expenses,
and one excluding depreciation

http://efc.web.unc.edu/2015/02/27/operating-ratio/

Operating Ratio

Including Depreciation

MAYBERRY

STATEMENT OF REVENUES, EXPENSES, AND CHANGES IN NET ASSETS
PROPRIETARY FUNDS
FOR THE YEAR ENDED DECEMBER 31, 2010

	Enterprise Funds Water and Sewer	
OPERATING REVENUES		
Charges for services	$ 444,231	
Grants	0	
Total operating revenues	444,231	(1)
OPERATING EXPENSES		
Personnel services	178,885	
Contractural services	63,898	
Other supplies and expense	126,202	(3)
Depreciation	142,463	
Total operating expenses	511,448	(2)
Operating income (loss)	(67,217)	

1a. $\frac{\text{\$444,231}}{\text{\$511,448}} = 0.87$

Operating Revenues ***(1)***

Operating Expenses (including depreciation) ***(2)***

Operating Ratio

Excluding Depreciation

MAYBERRY

STATEMENT OF REVENUES, EXPENSES, AND CHANGES IN NET ASSETS

PROPRIETARY FUNDS

FOR THE YEAR ENDED DECEMBER 31, 2010

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Operating income (loss)	(67,217)

OE $511,448

- Dep $142,463

1b. $444,231 (Operating Revenues **(1)**) / $368,985 (Operating Expenses (excluding depreciation) **(2-3)**) = 1.20

Debt Service Coverage Ratio

$$= \frac{\textit{Total Operating Revenues} - \textit{Operating Expenses (excluding depreciation)}}{\textit{Principal + Interest Payments on Long Term Debt}}$$

Bond covenants may specify a minimum target (usually 1.2 or higher)

http://efc.web.unc.edu/2015/04/23/debt-service-coverage-ratio/

Debt Service Coverage Ratio

MAYBERRY
STATEMENT OF CASH FLOWS
PROPRIETARY FUNDS
FOR THE YEAR ENDED DECEMBER 31, 2010

	Enterprise Funds Water and Sewer
CASH FLOWS FROM OPERATING ACTIVITIES	
Receipts from customers	$ 437,947
Payments to suppliers	(187,296)
Payments to employees	(178,885)
Net cash provided by operating activities	71,766
CASH FLOWS FROM NONCAPITAL FINANCING ACTIVITIES	
Transfers in (out)	(60,000)
Net cash (used) by noncapital financing activities	(60,000)
CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES	
Loan proceeds	0
Purchases of capital assets	(39,841)
Principal paid on capital debt	(49,655)
Interest paid on capital debt	(35,128)
Net cash (used) by capital and related financing activities	(124,624)

④ P $49,655 + I $35,128

2. $444,231 (Operating Revenues **(1)**) − $368,985 (Operating Expenses **(2-3)** (excluding depreciation)) / $84,783 (Principal & Interest on Long-Term Debt **(4)**) = 0.89

Days of Cash on Hand

$$= \frac{\textit{Unrestricted cash and cash equivalents}}{\textit{(Operating Expenses excluding depreciation) / 365}}$$

http://efc.web.unc.edu/2015/06/24/days-cash-on-hand/

Poll:

What's a good minimum target for Days Cash on Hand?

Days of Cash on Hand

MAYBERRY
STATEMENT OF NET ASSETS
PROPRIETARY FUND
DECEMBER 31, 2010

	Enterprise Funds Water and Sewer
ASSETS	
Current assets	
Cash	107,706 (5)
Restricted cash	176,424
Receivables, net	41,870 (6)
Total current assets	326,000
Capital assets	
Land and improvements	10,229
Distribution and collection systems	5,732,845
Buildings	503,398
Less accumulated depreciation	(2,514,933)
Total capital assets	3,731,539
Total Assets	$ 4,057,539

3. $\frac{\$107,706}{\$368,985 / 365} = 107$

Unrestricted Cash & Cash Equivalents ***(5)***

Operating Expenses (excluding depreciation) ***(2-3)***

Current Ratio

$$= \frac{\textit{Unrestricted cash and cash equivalents + Receivables, net}}{\textit{Current Liabilities}}$$

http://efc.web.unc.edu/2015/10/01/key-indicator-current-ratio/

Current Ratio

4. ($107,706 + $41,870) / $108,390 = 1.38

- $107,706 — *Unrestricted Cash & Cash Equivalents* **(5)**
- $41,870 — *Receivables, net* **(6)**
- $108,390 — *Current Liabilities* **(7)**

MAYBERRY
STATEMENT OF NET ASSETS
PROPRIETARY FUND
DECEMBER 31, 2010

	Enterprise Funds Water and Sewer
ASSETS	
Current assets	
Cash	107,706 (5)
Restricted cash	176,424
Receivables, net	41,870 (6)
Total current assets	326,000
Capital assets	
Land and improvements	10,229
Distribution and collection systems	5,732,845
Buildings	503,398
Less accumulated depreciation	(2,514,933)
Total capital assets	3,731,539
Total Assets	$ 4,057,539
LIABILITIES	
Current liabilities	
Accounts payable	$ 9,311
Customer deposits	44,229
Bonds payable current	54,850
Total current liabilities	108,390 (7)

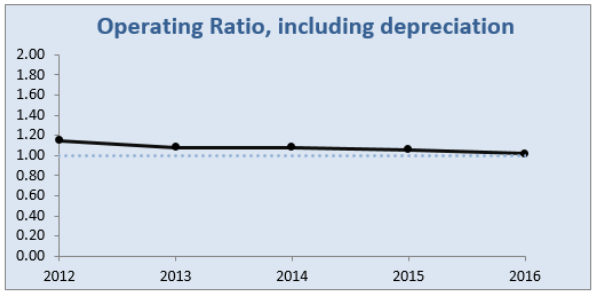
Quiz!

How do you calculate operating ratio?

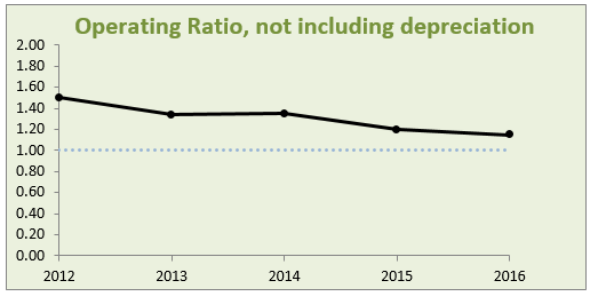
Consider Trends in the Last 5 Years

Assessment for Example utility

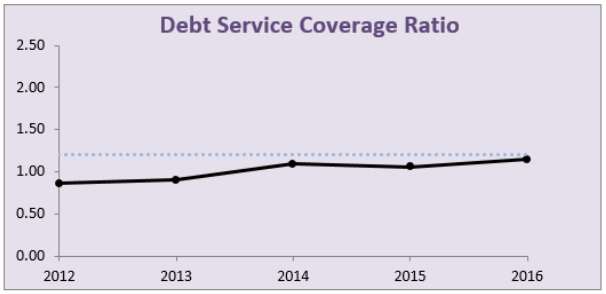
Did you generate the revenues needed to pay for O&M and a little for capital?



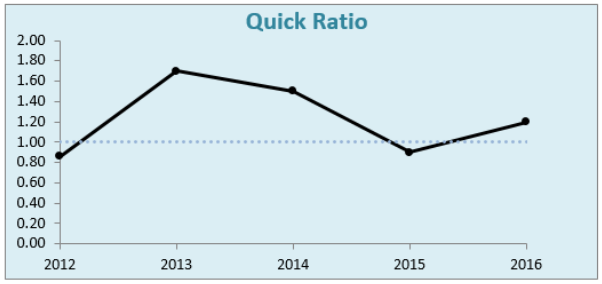
Did you generate the revenues needed to pay for O&M by itself?



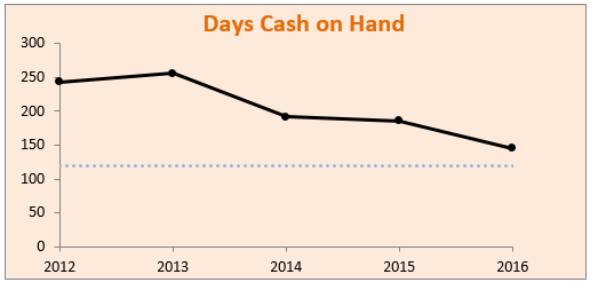
Did you generate the revenues needed to pay for O&M and existing debt service?



Did you have enough liquidity to pay your current liabilities at the end of the year?



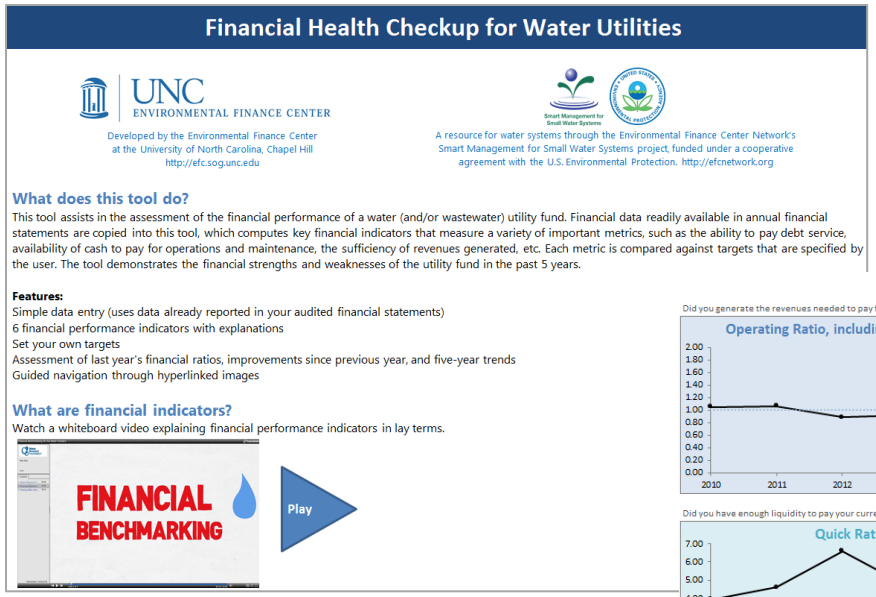
How many days could you continue to operate the utility with the cash levels available?



Tool: Financial Health Checkup for Water Utilities

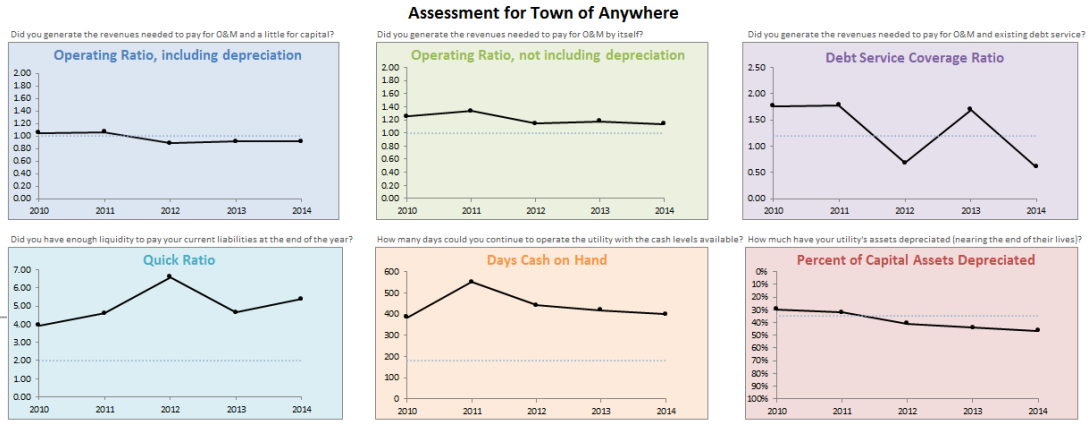
http://efc.sog.unc.edu or http://efcnetwork.org

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



Excel®- based tool

Free to use

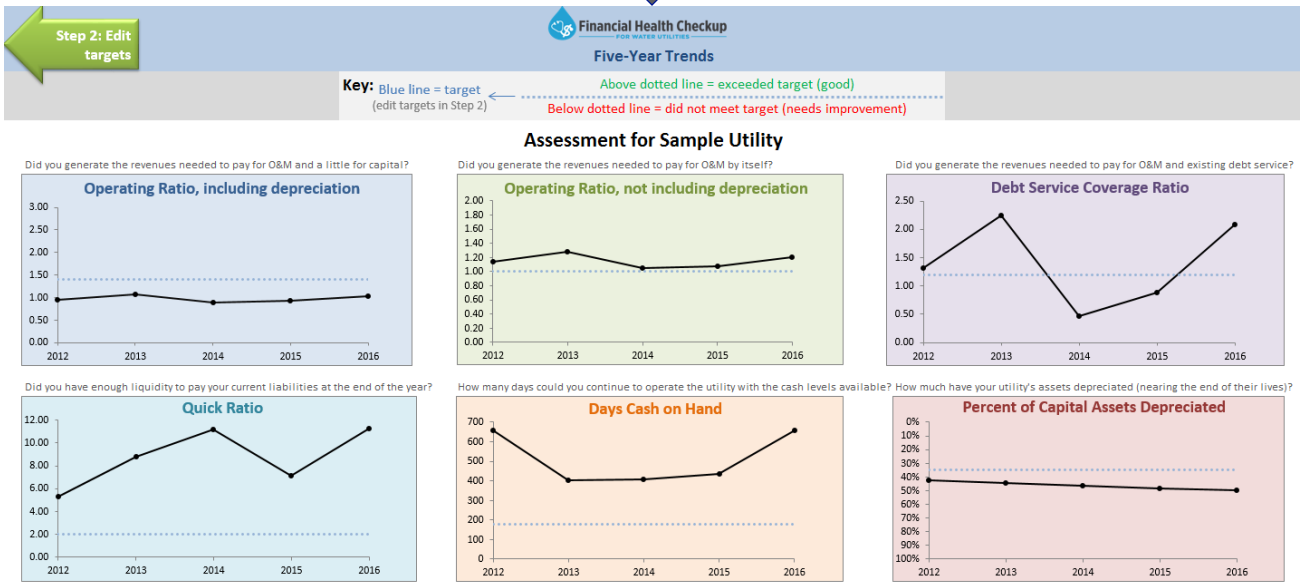


Created by the Environmental Finance Center at the University of North Carolina, Chapel Hill

A resource for water systems from the EFCN's Smart Management for Small Water Systems project funded under a cooperative agreement with the U.S. E.P.A.

Tool: Financial Health Checkup for Water Utilities

Key	Field in the financial statement/CAFR	2012	2013	2014	2015	2016	Instructions
[1]	Total Operating Revenues	$ 3,984,193	$ 3,965,968	$ 3,901,253	$ 4,459,727	$ 5,074,590	Enter as shown in the Total Operating
[2]	Total Operating Expenses	$ 4,165,641	$ 3,736,470	$ 4,378,937	$ 4,789,087	$ 4,896,441	Enter as shown in the Total Operating
[3]	Depreciation & Amortization Expenses	$ 681,808	$ 635,807	$ 656,255	$ 668,160	$ 684,561	Depreciation and amortization are list
[4]	Debt Principal Payments	$ 323,177	$ 331,520	$ 339,490	$ 342,512	$ 265,342	Enter $0 if there were no debt service
[4b]	Debt Interest Payments	$ 55,289	$ 53,350	$ 47,011	$ 38,474	$ 147,909	Enter $0 if there were no debt service
[5]	Current Assets, excluding inventories, restricted cash, prepaids	$ 6,614,237	$ 4,004,526	$ 4,756,504	$ 5,362,317	$ 7,808,389	Total Current Assets minus all invento
[6]	Current Liabilities, excluding deposits & bond anticipation notes	$ 1,247,456	$ 456,465	$ 425,164	$ 750,171	$ 691,223	Total Current Liabilities minus all refu
[7]	Unrestricted Cash & Investments	$ 6,297,233	$ 3,406,963	$ 4,149,266	$ 4,929,329	$ 7,580,205	Unrestricted Cash & Investments (and
[8]	Total Accumulated Depreciation	$ 12,976,114	$ 13,611,921	$ 14,268,176	$ 14,936,336	$ 15,620,897	Total accumulated depreciation on ca
[9]	Total Depreciable Capital Assets	$ 30,575,353	$ 30,686,885	$ 30,867,768	$ 30,994,872	$ 31,291,993	Enter the total value of capital assets

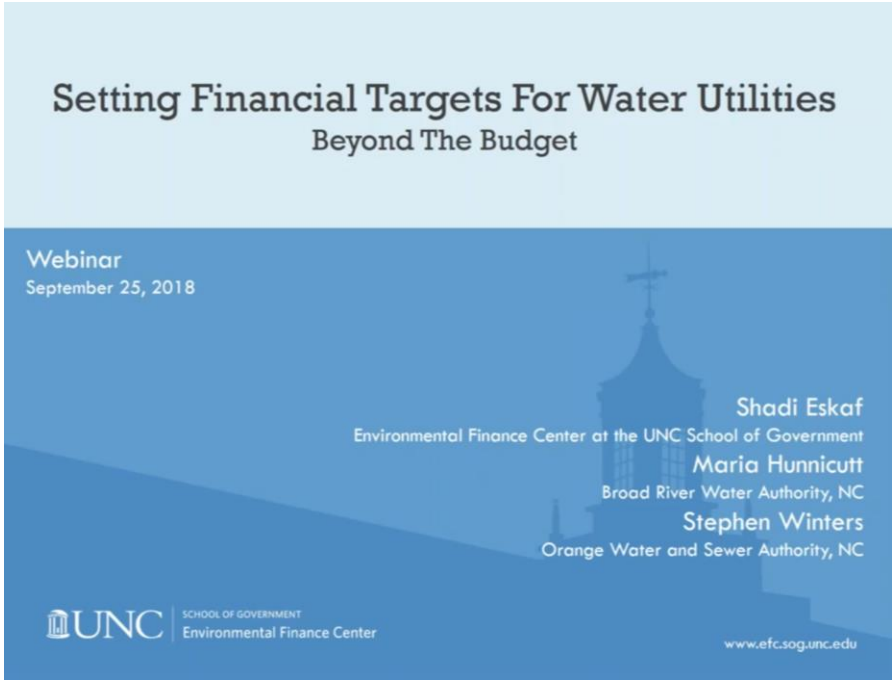


Set Up and Monitor Internal Financial Performance Targets

Set up specific financial performance targets, measure and monitor performance indicators, and adjust financial decisions to maintain success.

Recorded Webinar on Setting Financial Targets

https://efc.sog.unc.edu/event/setting-financial-targets-water-utilities-beyond-budget



Examples of Financial Targets

Minimum Reserves / Cash on Hand

Working Capital Reserves

Debt Service Coverage Ratio

Debt Burden or Debt-Per-Customer

Cash Financing of Capital Projects

Rates Affordability

Credit Rating

Benchmarking Rates

Poll:

True or False: it is important for our water system to compare our rates to other systems' rates

Sharing Information with Elected Officials when Staff Requested a Water Rate Increase

According to a national survey of 1,408 water/wastewater utilities in the U.S. in 2014:

- 94% included information about the utility's financial condition …
- 74% included information about what nearby utilities are charging …
- 58% included information about what similar sized utilities are charging …

… and the information was judged by staff as "very or somewhat useful".

Staff of 62% of the utilities compared rates to nearby utilities themselves as part of their internal rates review process prior to presenting a rate case to their governing body.

Source: Water Research Foundation project #4455 "Rate Approval Process Communication Strategy and Toolkit" (2014).

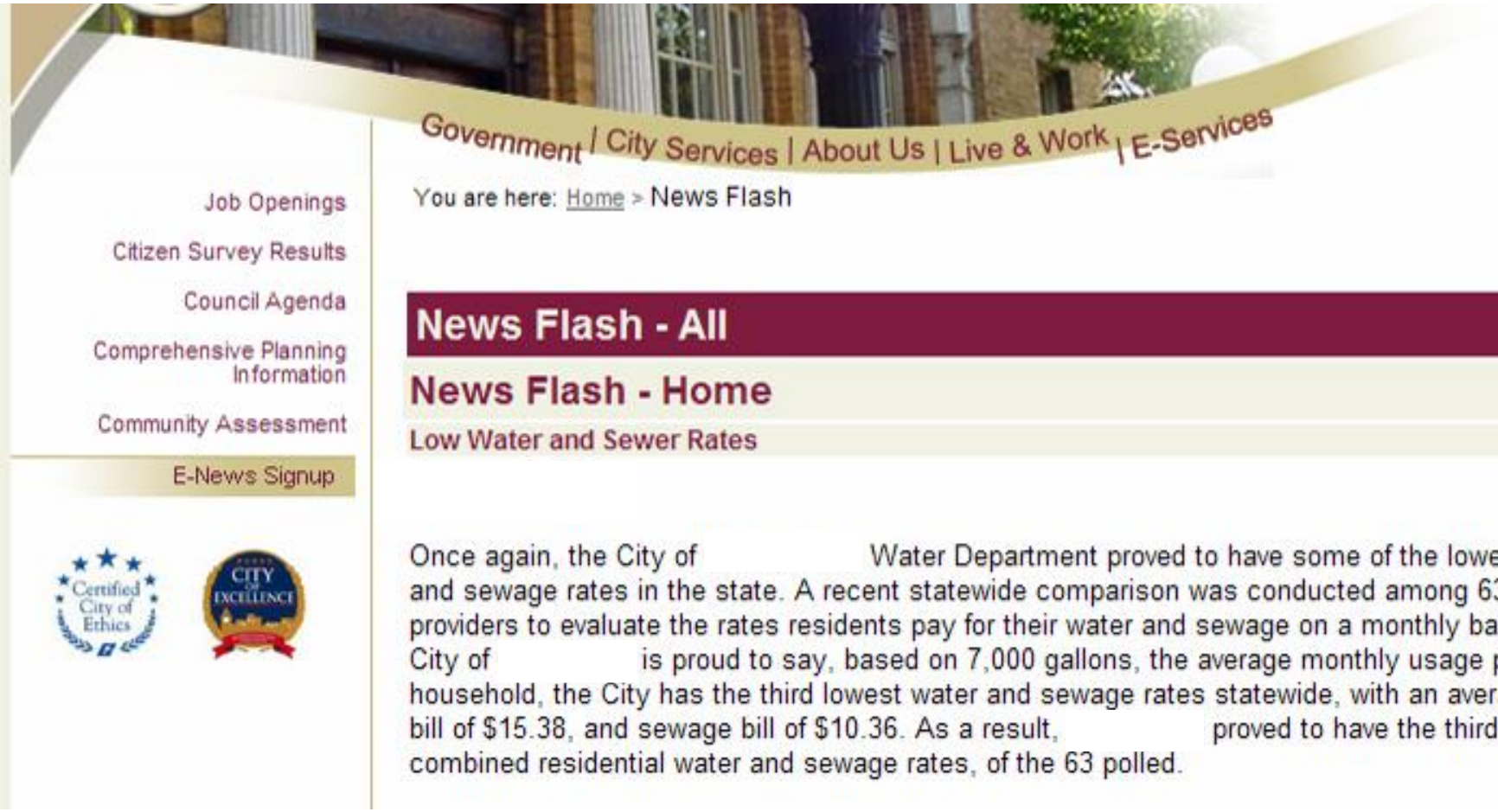
Elected Officials Cared About the Information

315 elected officials reported that the following were "very important" or "important" factors in their decisions about whether to raise water rates:

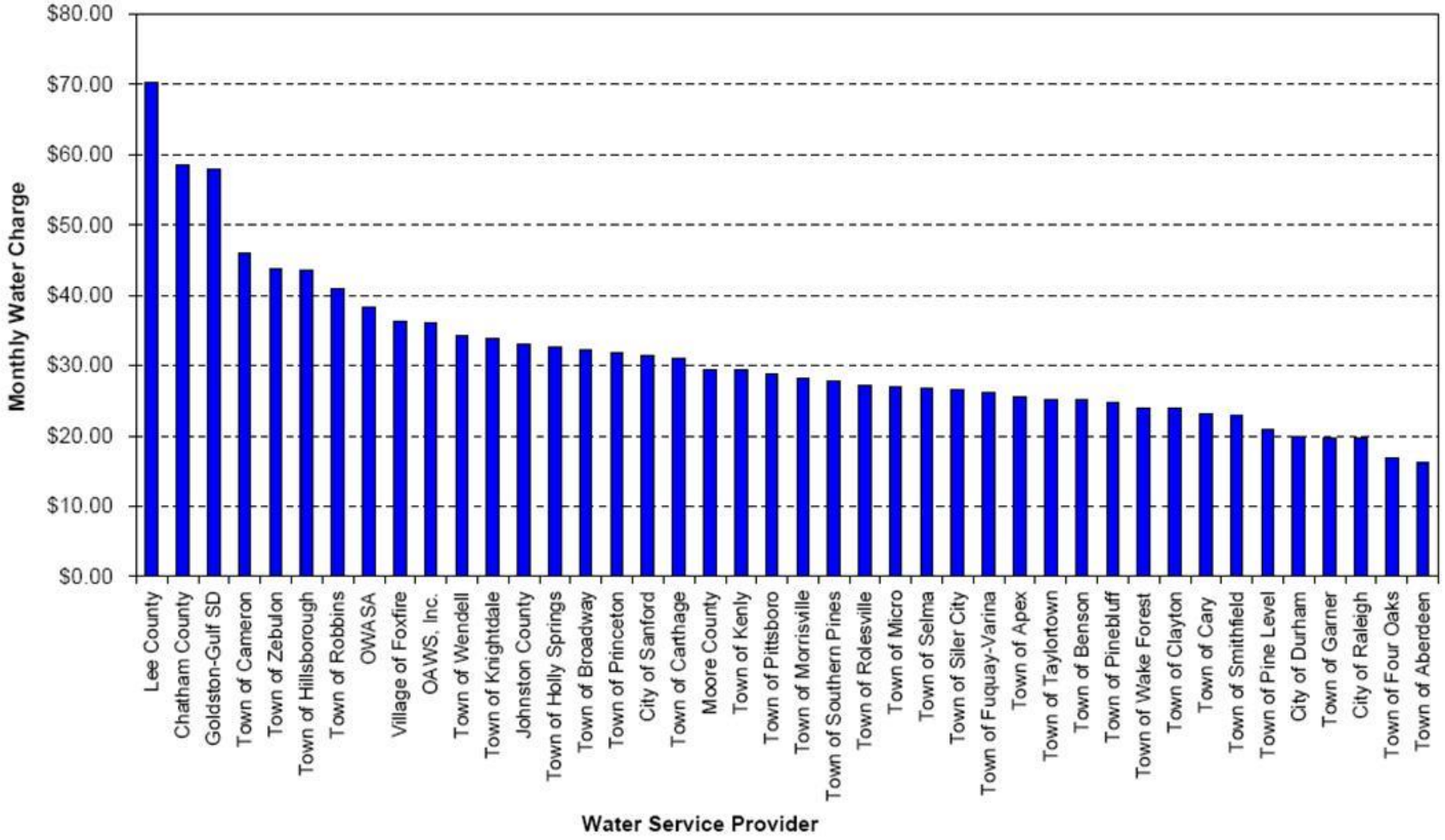
- Long-term impact on the utility's financial condition: 97%
- What nearby utilities are charging: 51%
- What similar sized utilities are charging: 56%
- Long-term affordability for residential customers: 92%

Source: Water Research Foundation project #4455 "Rate Approval Process Communication Strategy and Toolkit" (2014).

Source of Pride



Comparing Rates – Common Way



Problems with Benchmarking that Way

- Comparing to utilities that are not similar
- Comparing to only a few utilities
- Comparing only one bill amount
- Comparing nothing besides rates
  - pressure to keep rates low …
  - … regardless of financial condition of utility
  - ignores customers' ability to pay
  - ignores price signals and utility's policies

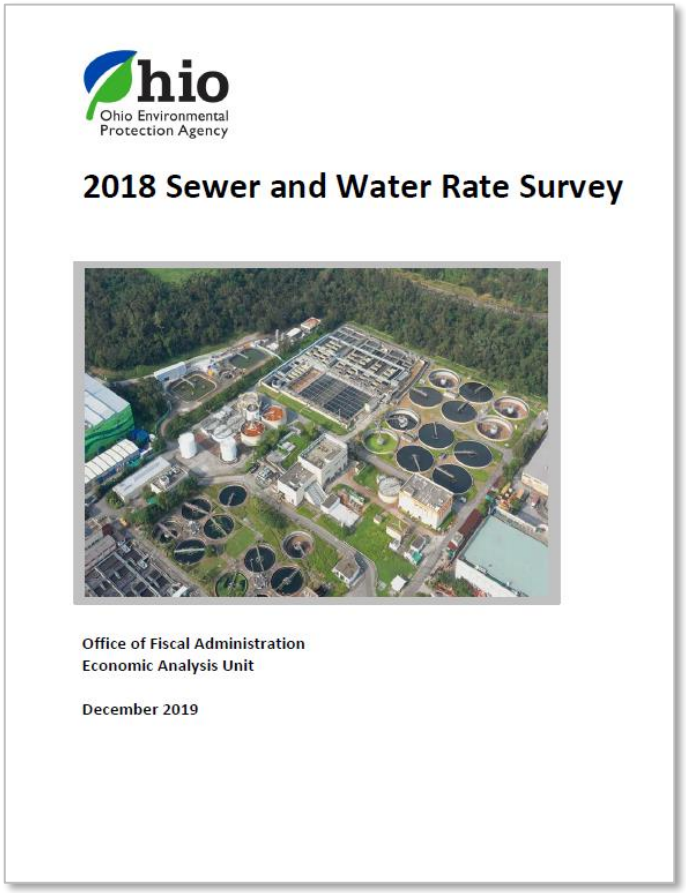
How Board Members Sometimes Respond to Request to Raise Rates

"Our rates are high enough"

"The customers cannot pay any more"

"Our rates are higher here than towns X, Y and Z [already 'too high']" or "our rates are lower here than towns A, B and C [good, let's not raise them]"

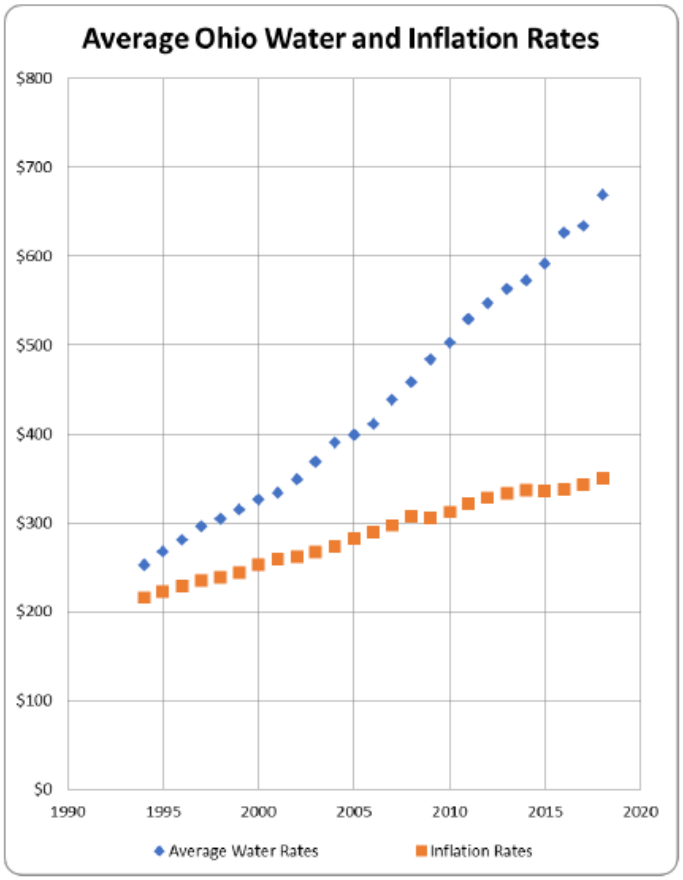
Survey of Ohio Water and Wastewater Rates



- Conducted yearly by Ohio EPA since the 1980s
- 2018 rates: 445 utilities participated (70%)
- Tables showing each utility's rates over time
- Monthly bill for 7,756 gallons (1,037 cubic feet)

Trends in Rates in Ohio

Figure 3: Annual Average Water Rates and Inflation 1990-2018



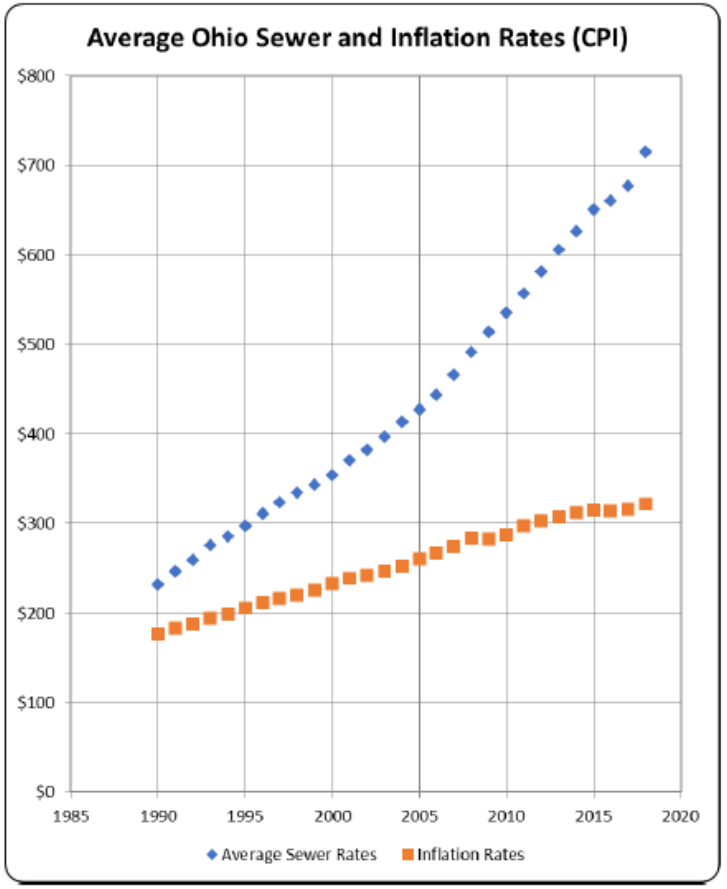


Figure 1: Annual Average Sewer and Inflation Rates 1990-2018

Source: 2018 Ohio EPA Sewer and Water Rate Survey

Demonstration of the Ohio Water and Wastewater Rates Dashboard

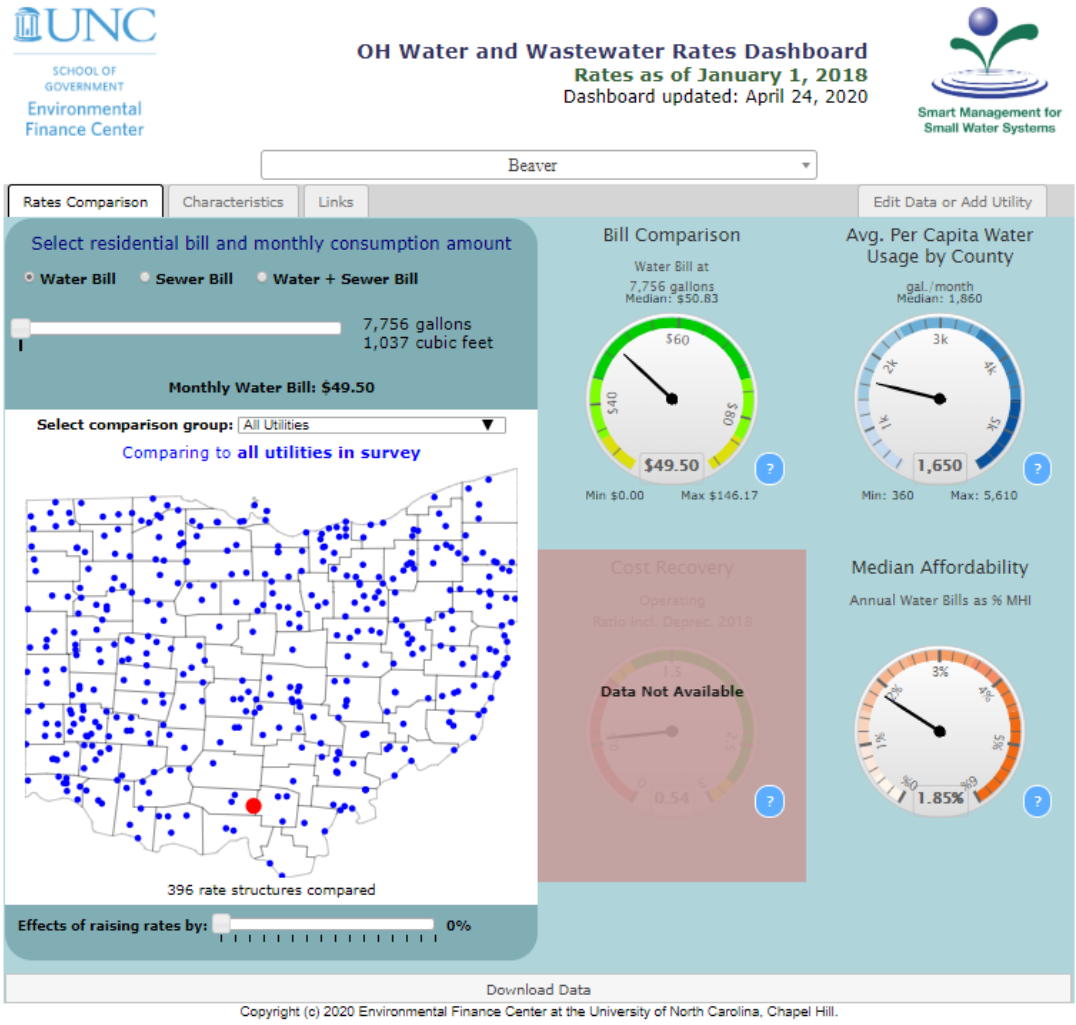
https://efc.sog.unc.edu/resource/ohio-water-and-wastewater-rates-dashboard

or

efcnetwork.org

Find it in

Resources / Tools



Poll:

Are you already familiar with this dashboard?

UNC SCHOOL OF GOVERNMENT Environmental Finance Center

OH Water and Wastewater Rates Dashboard

Rates as of January 1, 2018

Dashboard updated: April 24, 2020

Smart Management for Small Water Systems

Beaver

Rates Comparison | Characteristics | Links | Edit Data or Add Utility

Select residential bill and monthly consumption amount

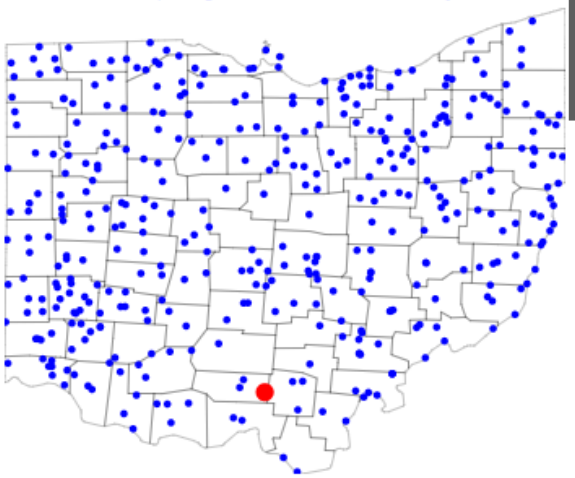
Water Bill **Sewer Bill** **Water + Sewer Bill**

7,756 gallons
1,037 cubic feet

Monthly Water Bill: $49.50

Select comparison group: All Utilities

Comparing to **all utilities in survey**

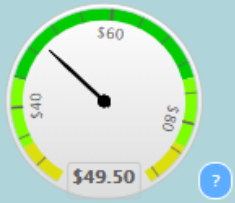


396 rate structures compared

Effects of raising rates by: 0%

Bill Comparison

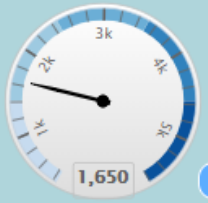
Water Bill at
7,756 gallons
Median: $50.83



Min $0.00 Max $146.17

Avg. Per Capita Water Usage by County

gal./month
Median: 1,860

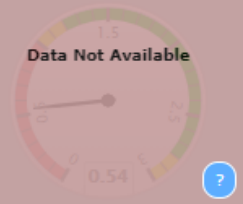


Min: 360 Max: 5,610

Cost Recovery

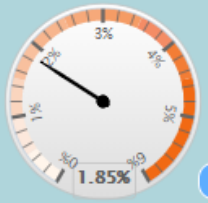
Operating Ratio Incl. Deprec. 2018

Data Not Available



Median Affordability

Annual Water Bills as % MHI

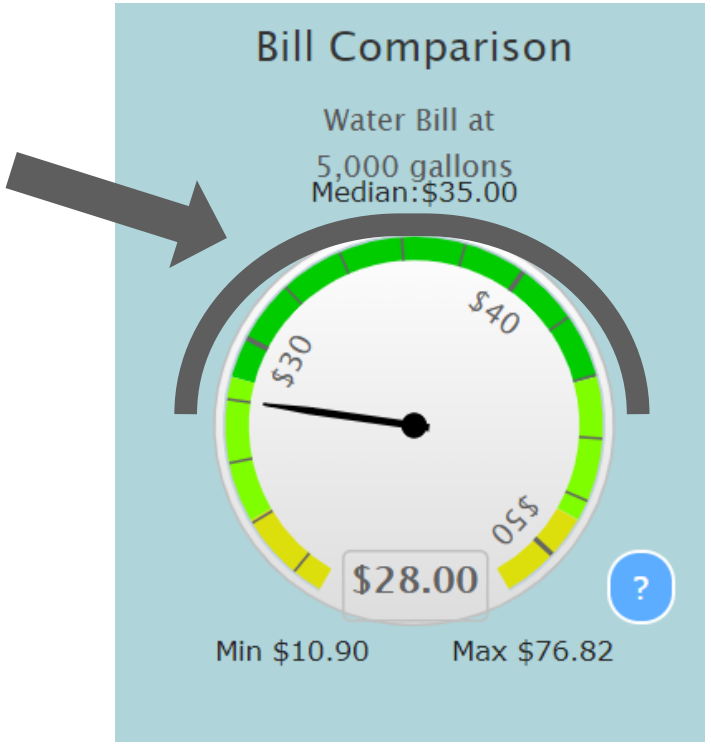


Download Data

Dial: Bill Comparison

Darkest green band = middle 50% of utilities

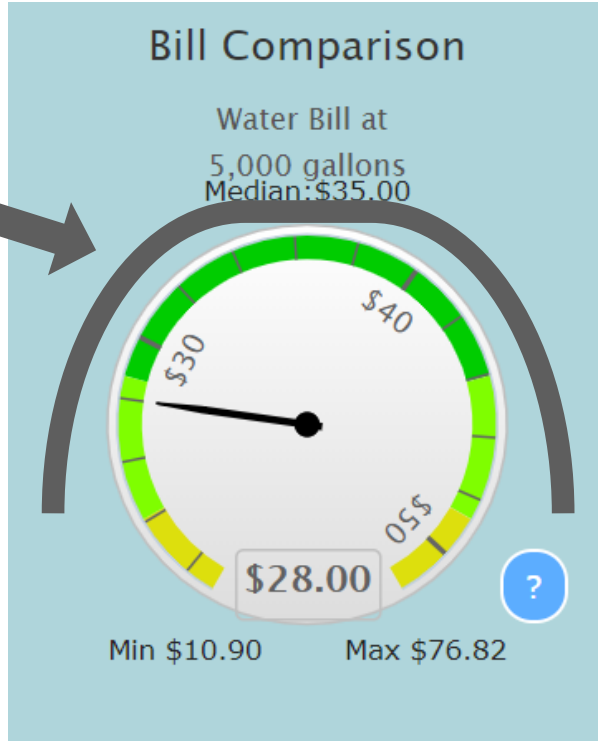
Half of all utilities in your peer group have bills that fall within this range



Dial: Bill Comparison

Both greens combined = middle 80% of utilities

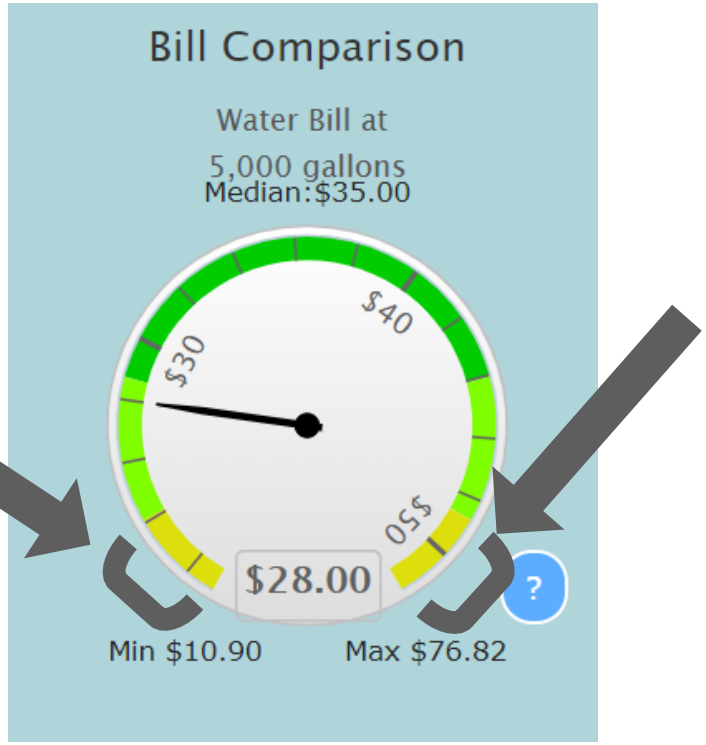
The majority of all utilities in your peer group have bills that fall within the range of the green bands



Dial: Bill Comparison

Yellow = the lowest and highest 10% of utilities

10% of utilities
in your peer group
have bills **lower** than
90% of other utilities,
10% have bills **higher**
than 90% of utilities



UNC SCHOOL OF GOVERNMENT Environmental Finance Center

OH Water and Wastewater Rates Dashboard

Rates as of January 1, 2018

Dashboard updated: April 24, 2020

Smart Management for Small Water Systems

Beaver

Rates Comparison | Characteristics | Links | Edit Data or Add Utility

Select residential bill and monthly consumption amount

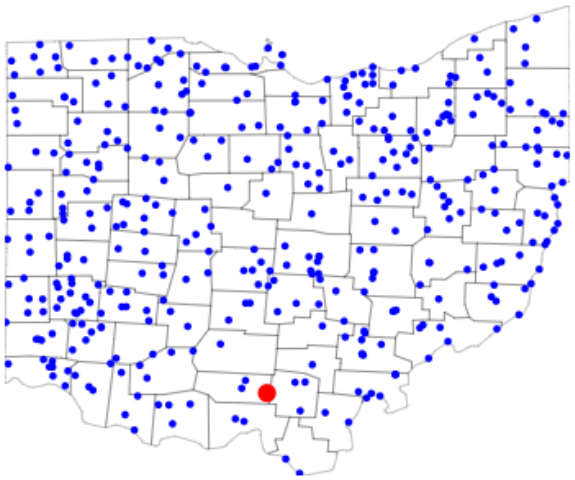
Water Bill | **Sewer Bill** | **Water + Sewer Bill**

7,756 gallons
1,037 cubic feet

Monthly Water Bill: $49.50

Select comparison group: All Utilities

Comparing to **all utilities in survey**

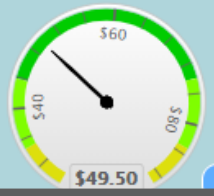


396 rate structures compared

Effects of raising rates by: 0%

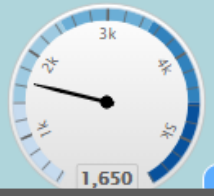
Bill Comparison

Water Bill at
7,756 gallons
Median: $50.83



Avg. Per Capita Water Usage by County

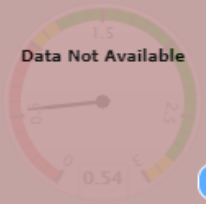
gal./month
Median: 1,860



Compare to **benchmarks**

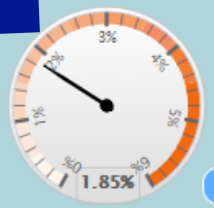
Cost Recovery

Operating Ratio Incl. Deprec. 2018



Median Affordability

Annual Water Bills as % MHI

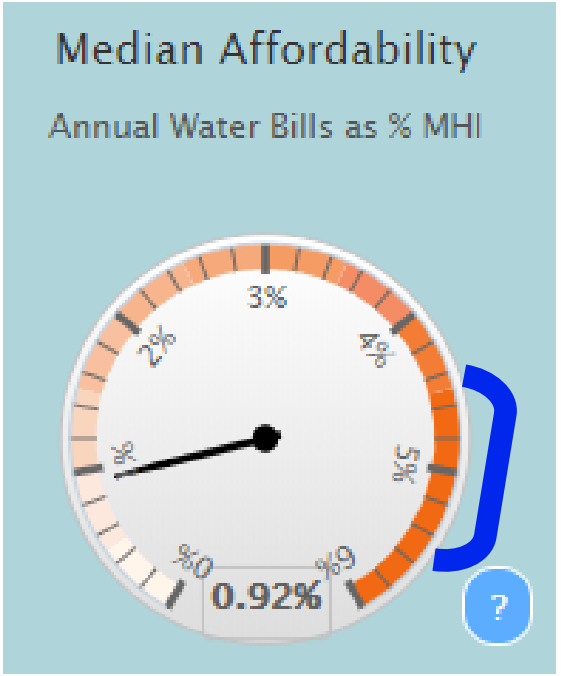


Download Data

Dial: Median Affordability

Darker shades of orange indicate a higher percentage of MHI spent annually on bills

The percentage of median household income (MHI) spent annually on water and wastewater bills



UNC SCHOOL OF GOVERNMENT
Environmental Finance Center

OH Water and Wastewater Rates Dashboard

Rates as of January 1, 2018

Dashboard updated: April 24, 2020

Smart Management for Small Water Systems

Beaver

Rates Comparison | Characteristics | Links | Edit Data or Add Utility

Affordability

$$\text{Annual Bill (Monthly Bill times 12 Months Per Year)} = \frac{\text{Annual Bill (Monthly Bill times 12 Months Per Year)}}{\text{Annual Median Household Income}}$$

This dial shows what a household making the median level of income in Beaver village would spend annually, as a percent of their income, on Water using 7,756 gallons per month. Half of the households in the community would be spending a greater portion of their income for these bills.

Raw Data	
Annual Bills	$594.00
Annual MHI	$32,083

The median affordability metric is often referred to as "percent Median Household Income (MHI)." It is only one of many metrics that can be used to assess affordability. There is no universally accepted definition of what "affordable rates" means and other factors such as poverty rate, income distribution, and fixed income will influence the affordability of rates in a community. The color spectrum reflects that this metric is on a continuum, without any single threshold that dictates what is affordable or unaffordable. The MHI data are derived from the U.S. Census Bureau's 5-year American Community Survey estimates for 2014 - 2018 MHI (in 2018 dollars).

For a more comprehensive look at affordability in your community using multiple metrics, use our

Residential Rates Affordability Assessment Tool

For more information about percent MHI, including considerations about its assumptions,

read this blog post about Percent MHI Indicator

For an in-depth look at customer affordability programs, read our report:

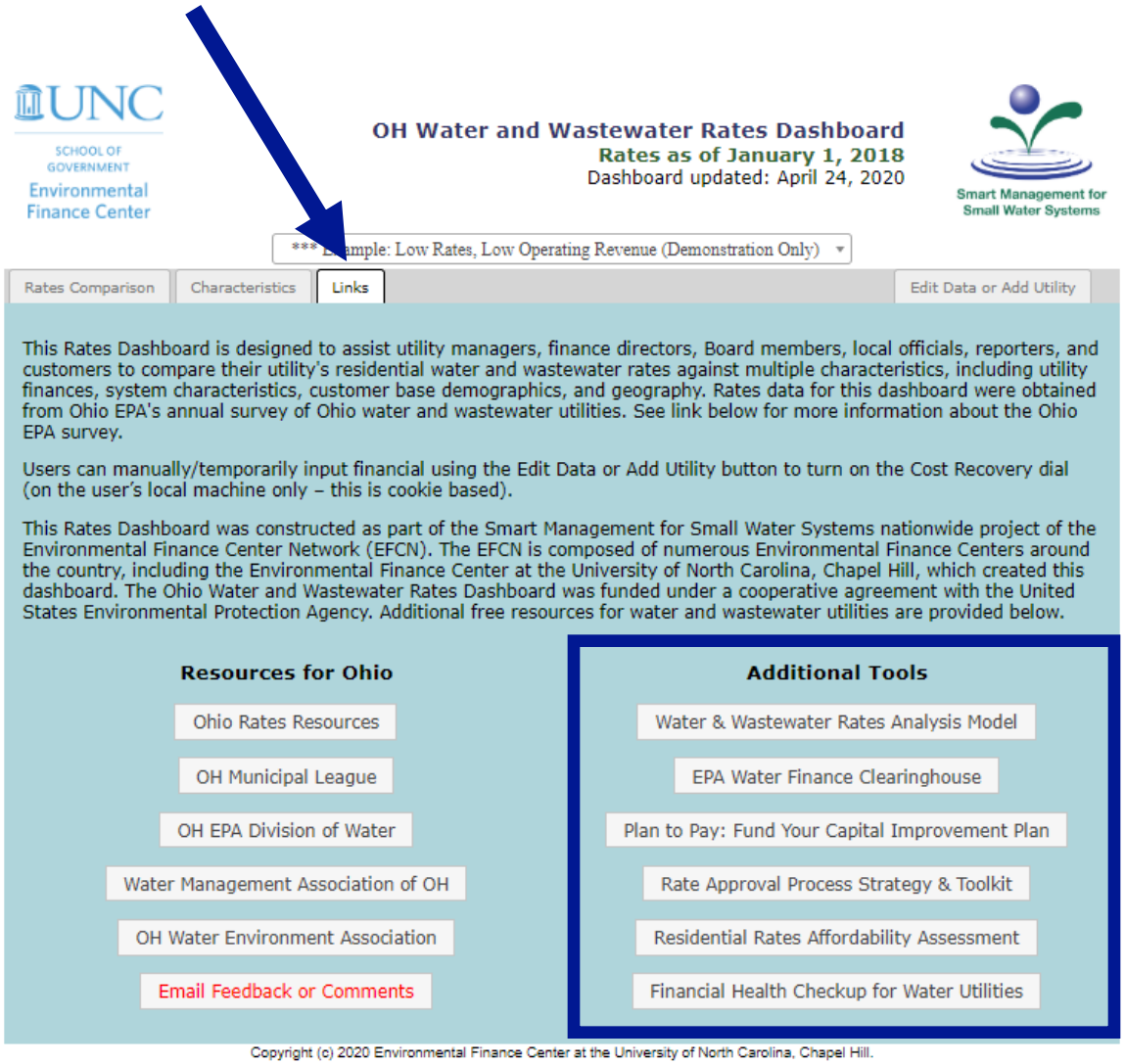
Navigating Legal Pathways to Rate-Funded Customer Assistance Programs: A Guide for Water and Wastewater Utilities

Ok

Download Data

Additional Resources

https://efc.sog.unc.edu/resource/ohio-water-and-wastewater-rates-dashboard



Free Assistance and Resources to Small Water Systems by the Environmental Finance Center Network

http://efcnetwork.org

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.

Tools To Assist Water Utilities With Financial Decision Making

http://www.efc.sog.unc.edu/project/utility-financial-tools

or http://efcnetwork.org/resources/tools/

Water and Wastewater Rates Analysis Model

Use this tool to review your rates to ensure projected revenues cover projected expenses. This tool will help you determine whether proposed rates will keep the utility financially self-sufficient for the next few years.

Financial Health Checkup for Water Utilities

Use this tool to get a snapshot of your utilitys financial health and demonstrate the financial strengths and weaknesses of your utility over the past 5 years. The tool uses your utility's financial data to calculate and visualize 6 financial performance indicators.

Residential Rates Affordability Assessment Tool

Use this tool to assess how affordable rates are to your customer base using multiple metrics.

Plan to Pay: Scenarios to Fund Your Capital Improvement Plan

Use this tool to help plan how to pay for future capital projects. The tool will estimate the effects that paying for capital projects will have on your rates under various scenarios.

Water Utility Customer Assistance Program Cost Estimation Tool

Use this tool to estimate the funds needed from your utility (or other organization) to create a Customer Assistance Program that helps residential customers when they cannot afford to pay their water bill.

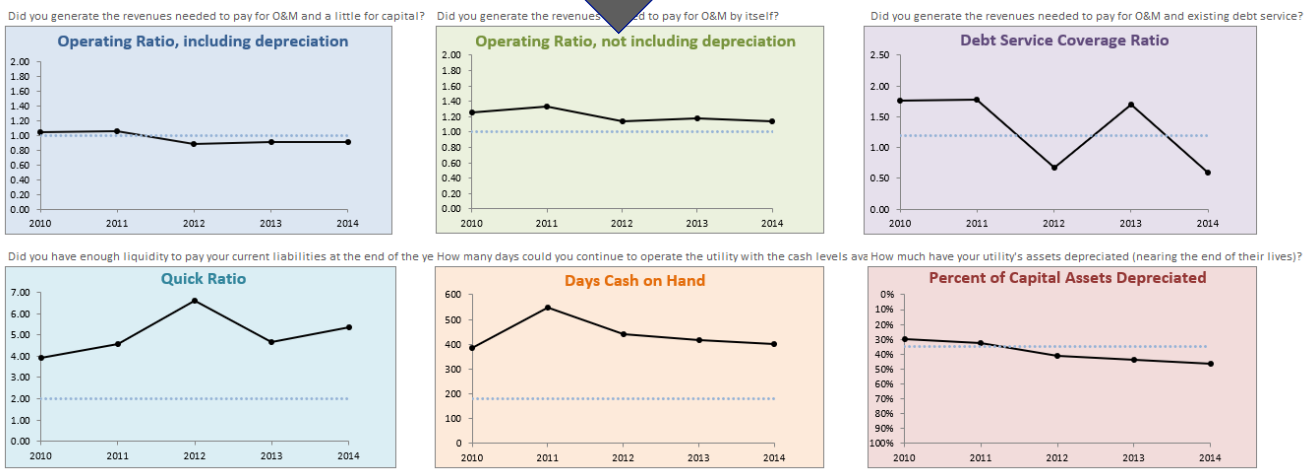
Financial Health Checkup for Water Utilities

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

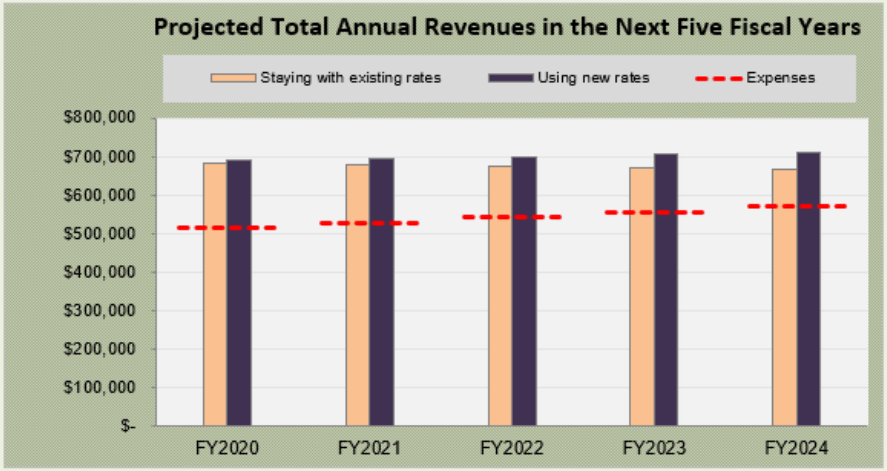
Key	Field in the financial statement/CAFR	Fiscal Year End 2010	2011	2012	2013	2014	Instructions
[1]	Total Operating Revenues	$ 2,341,857	$ 2,556,399	$ 2,271,777	$ 2,334,236	$ 2,501,286	Enter as shown in the Total Operating
[2]	Total Operating Expenses	$ 2,229,208	$ 2,403,938	$ 2,565,282	$ 2,555,504	$ 2,740,266	Enter as shown in the Total Operating
[3]	Depreciation & Amortization Expenses	$ 362,047	$ 490,007	$ 569,998	$ 568,179	$ 534,000	Depreciation and amortization are liste
[4]	Debt Principal Payments	$ 185,000	$ 279,242	$ 333,558	$ 132,742	$ 436,459	Enter $0 if there were no debt service
[4b]	Debt Interest Payments	$ 84,859	$ 81,330	$ 72,808	$ 71,620	$ 55,535	Enter $0 if there were no debt service
[5]	Current Assets, excluding inventories, restricted cash, prepaids	$ 2,986,691	$ 3,565,601	$ 3,266,234	$ 3,050,573	$ 2,941,629	Total Current Assets minus all inventor
[6]	Current Liabilities, excluding deposits & bond anticipation notes	$ 757,776	$ 776,266	$ 495,555	$ 656,257	$ 547,019	Total Current Liabilities minus all refun
[7]	Unrestricted Cash & Investments	$ 1,961,851	$ 2,883,569	$ 2,411,154	$ 2,273,697	$ 2,415,013	Unrestricted Cash & Investments (and
[8]	Total Accumulated Depreciation	$ 5,125,329	$ 5,520,510	$ 7,661,024	$ 8,229,207	$ 8,763,207	Total accumulated depreciation on cap
[9]	Total Depreciable Capital Assets	$ 17,221,067	$ 17,144,542	$ [illegible]697,849	$ 18,744,028	$ 18,854,157	Enter the total value of capital assets



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



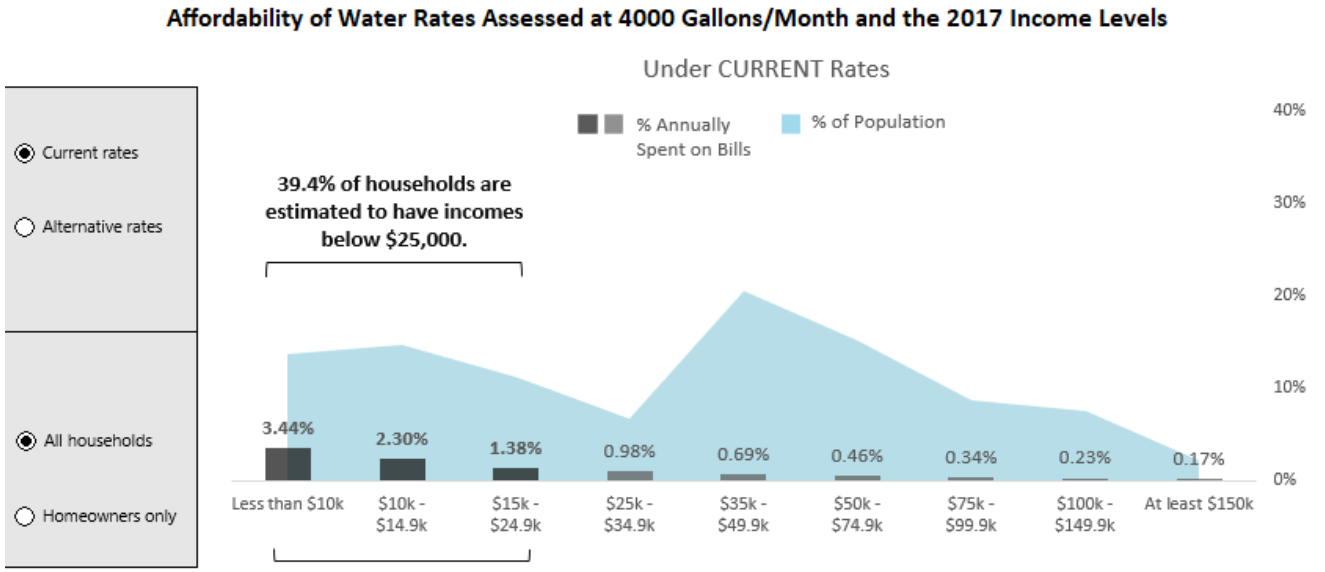
	FY2020	FY2021	FY2022	FY2023	FY2024
Net revenues without changing rates (existing rates)	$166,199	$149,665	$132,780	$115,532	$97,909
Net revenues after changing rates (new rates)	$174,771	$166,844	$158,602	$150,036	$139,817
Net Revenues Gained (Lost) Using the New Rates	***$8,572***	***$17,178***	***$25,822***	***$34,504***	***$41,908***

Plan to Pay: Scenario to Fund Your Capital Improvement Plan

	CAPITAL IMPROVEMENT PROJECTS - 20 YEARS	Project Construction Start Year	Project Expenditure/ Construction Period (years)	Estimated Construction Cost ...		info. Annual Construction Cost Inflation Factor (%/year)	Expected Grants at Time of Construction	Financing Mechanism: Debt Financing or Capital Reserves?	Term of Debt (years)	Interest Rate Charged for Debt (%/year)	First Year of Capital Reserve Allocation	Additional Annual O&M Costs ($/year)
	List all known projects for the next 20 years	Select here to sort by year		In the Start Year ... (	Today (i.e. in FY18							
1	Project 1 - type in name or description	FY27	2	$ 2,000,000			$ 100,000	Capital Reserves			FY22	$ 2,500
2	Project 2 - debt financed portion	FY21	3		$ 2,200,000	2.8%	$ -	Debt Financing	15	5.00%		$ 10,000
3	Project 2 - capital reserves financed portion	FY21	3	$ 500,000			$ -	Capital Reserves			FY21	$ -
4	Project 3 - immediate project. Start new year	FY19	1		$ 350,000	2.0%	$ -	Capital Reserves			FY19	$ 1,500
5	Project 4 - energy efficiency reduces O&M	FY29	5		$ 3,500,000	2.8%	$ -	Debt Financing	20	2.50%		$ (250,000)
6												
7												

Project cost in the start year net of grants	Number of years before project starts	Years of construction	Year payments end	Yearly allocations to reserves for capital reserve-financed projects	Number of years allocating to reserves for capital reserve-financed projects	Annual payment: debt service if debt-financed or cash payments during construction years if capital reserve-financed
$ 1,900,000	9	FY27-FY28	FY28	$ 316,667	6	$ 950,000
$ 2,390,023	3	FY21-FY23	FY35			$ 230,260
$ 500,000	3	FY21-FY23	FY23	$ 500,000	1	$ 166,667
$ 357,000	1	FY19	FY19	$ 357,000	1	$ 357,000
$ 4,742,336	11	FY29-FY33	FY48			$ 304,207

Residential Rates Affordability Assessment Tool



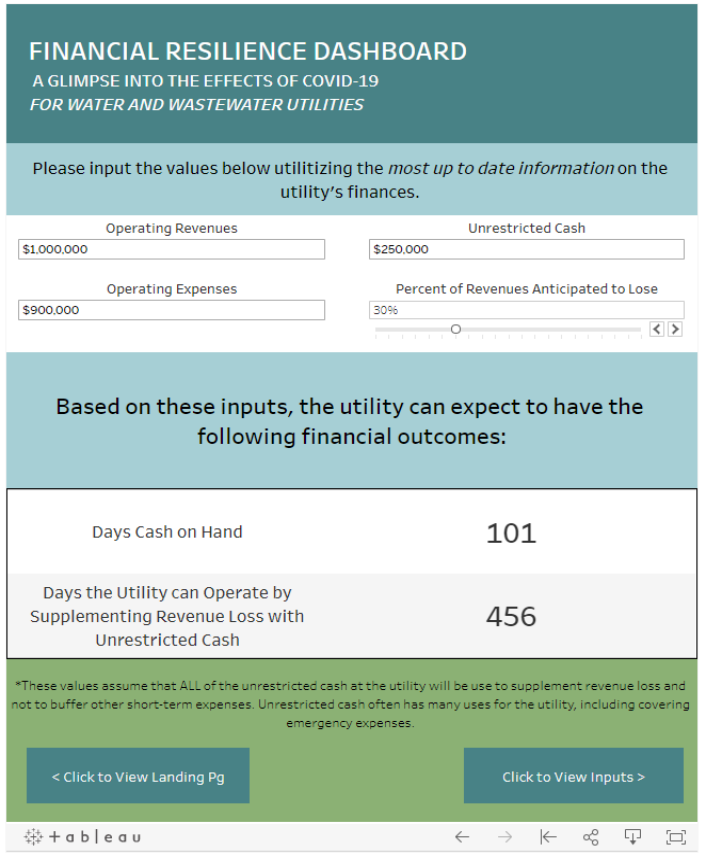
39.4% of residential customers are estimated to have had less than $25,000 in annual income. These households will have spent more than 1.38% of their income under the current rates for water bills at 4000 gallons/month. 13.6% of households will have spent more than 3.44% of their income. However, a substantial number of low-income households may be living in rental homes and apartments and do not pay water bills, which may be included in their rent.

Financial Resilience Dashboard

- This dashboard is designed to show the impact of revenue losses on a utility in light of COVID-19.

- What data do you need?
  - Operating revenues
  - Percent of revenues anticipated to be lost due to COVID-19
  - Operating expenses
  - Unrestricted cash

- https://public.tableau.com/profile/efc.at.unc#!/vizhome/InputCOVIDDashboard/Landing



COVID-19 Revenue Loss Tool

- This tool integrates any changes in usage, delinquencies, capital improvements, and expenses to provide a more in-depth understanding of COVID-19's impacts going forward.

	Name of Utility:				Name your scenarios:
					Scenario 1
Additional information on inputs					*Scenario 2*
	Bills charged		**Anticipated for FY2020**		State of Emergency lifted (when late fees can be collected, when payment plans start)
Only input revenue from water rate	Total annual revenue from billed charges:	$428,418.00			Enter as month/year (e.g. June 2020)
			leave blank if no change	Scenario	Jun-20
	Annual Revenue from residential connections	$ 406,417.44	$ 414,545.79	Scenario	Aug-20
	Annual revenue from non-residential connections	$ 22,000.56	$ 22,660.58		
This can be calculated by dividing t	% of average residential bill that is fixed	28%	29%		
	% of average non-residential bill that is fixed	7%	9%		

we might see a semi-gradual shift back to typical consumption, though it depends on the action of the local organizations/institutions and when folks go back to work

		Change in usage due to COVID-19	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022
Use AMI data if av	*Scenario 1*	% change in residential usage	5%	5%	5%	3%	2%	1%	0%	0%	0%	0%	-1%	-1%	-1%	-1%	-1%	-1%	-1%	-1%
Institutional, Indu		% change in non-residential usage	-20%	-20%	-18%	-15%	-12%	-8%	-8%	-6%	-4%	-4%	-2%	0%	0%	0%	0%	0%	0%	0%
	Scenario 2	% change in residential usage	10%	10%	9%	8%	7%	3%	3%	3%	2%	1%	1%	1%	1%	1%	1%	1%	1%	1%
		% change in non-residential usage	-20%	-20%	-18%	-15%	-10%	-5%	-5%	-5%	-5%	-5%	-5%	-5%	-5%	-5%	-5%	-5%	-5%	-5%

	Deliquencies				
Revenue that was billed but not co	Typical annual amount of delinquencies pre-COVID		Customer	Percentage of total delinquncies	
			Segment	25%	25% Pay full delinquencies after mortorium and full bills going forward
	OR	OR	Segment	40%	25% Pay partial delinquencies after moratorium and full bills going forward, with part of the delinquencies added
	Typical % of annual revenue from billed charges not c	0.6%	Segment	35%	50% Pay partial bills going forward

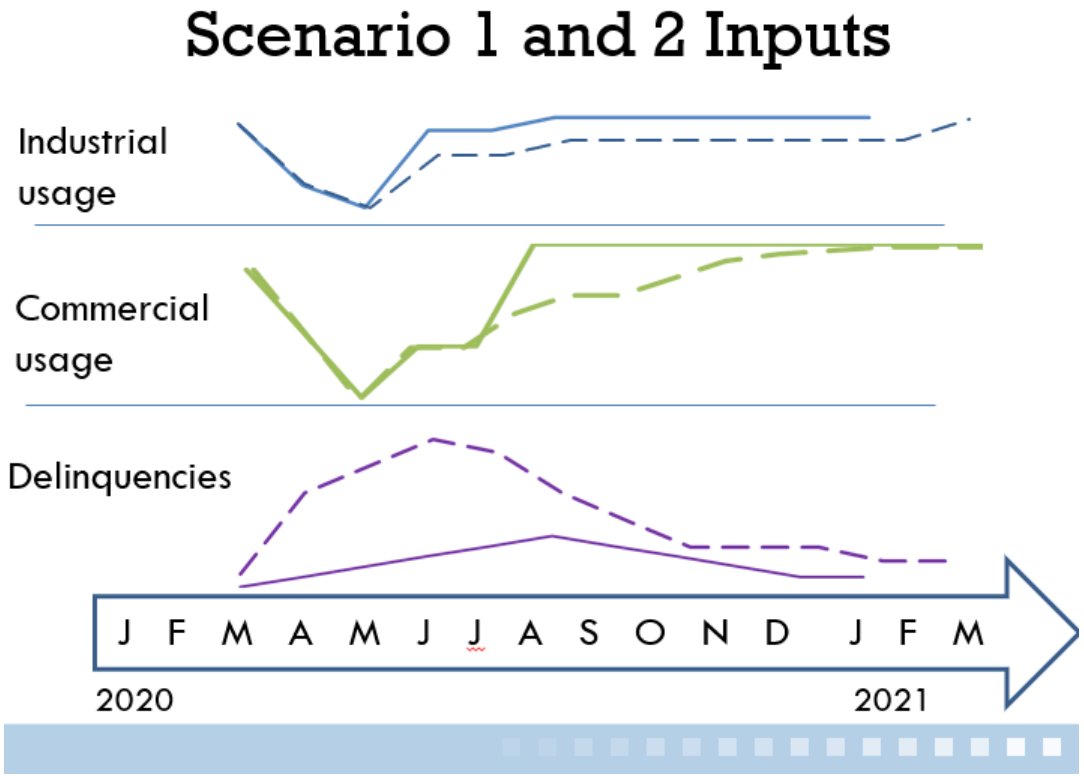
		Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022
Scenario 1	% of delinquences	6%	8%	10%	3%	2%	2%	2%	2%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Scenario 2	% of delinquences	15%	17%	20%	25%	23%	20%	18%	15%	10%	10%	10%	5%	2%	2%	2%	2%	2%	2%

If your delinquency rate has doubled, then it has increased by 200% * We expect a sharp increase at the in March and April of 2020, then perhaps a slow climb, and a decrease when the SOE ends*

	Change in non-rate revenue	
pre-COVID- find in audit	*pre-Covid annual Penalties*	$ 2,600.00
pre-COVID- find in audit	Connections and tap fees (and penalties, if not separ	$ 6,560.00
pre-COVID- find in audit	Capital (or system development) fees	$ -

			Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022
take into consider	*Scenario 1*	% change in Penalties	-100%	-100%	-100%	-5%	-5%	-3%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
proxy for decline i		% change in Connections and tap fees	-10%	-10%	-10%	-10%	-9%	-5%	-3%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
		% change in Capital, or system development, fees	-5%	-5%	-5%	-5%	-5%	-5%	-5%	-5%	-5%	-5%	-5%	-5%	-5%	-5%	-5%	-5%	-5%	-5%
	Scenario 2	% change in Penalties	-100%	-100%	-100%	-100%	-100%	-5%	-3%	-2%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%
		% change in Connections and tap fees	-10%	-10%	-10%	-10%	-9%	-5%	-3%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
		% change in Capital, or system development, fees	-5%	-5%	-5%	-5%	-5%	-5%	-5%	-5%	-5%	-5%	-5%	-5%	-5%	-5%	-5%	-5%	-5%	-5%

COVID-19 Revenue Loss Tool

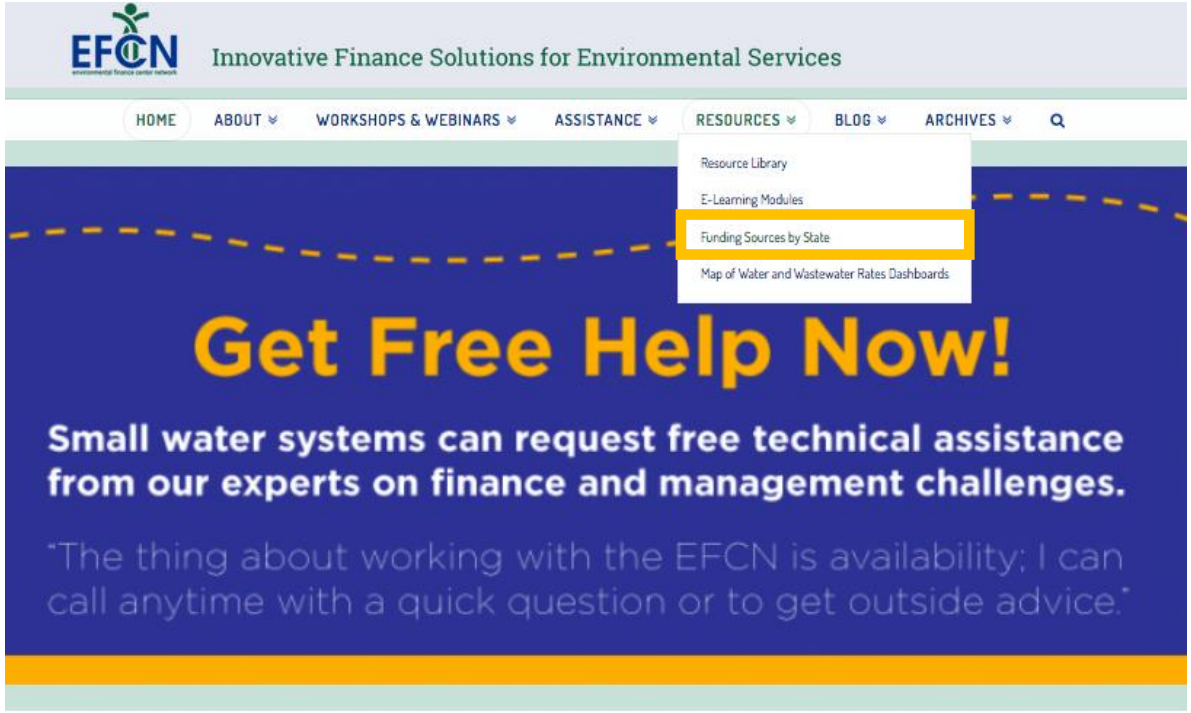


- Scenario 1 (solid line) is a more hopeful outlook with the impacts of COVID-19 lessening sooner than later
- Scenario 2 (dotted line) is a worse off case with the impacts of COVID-19 lasting longer

Funding Tables By State

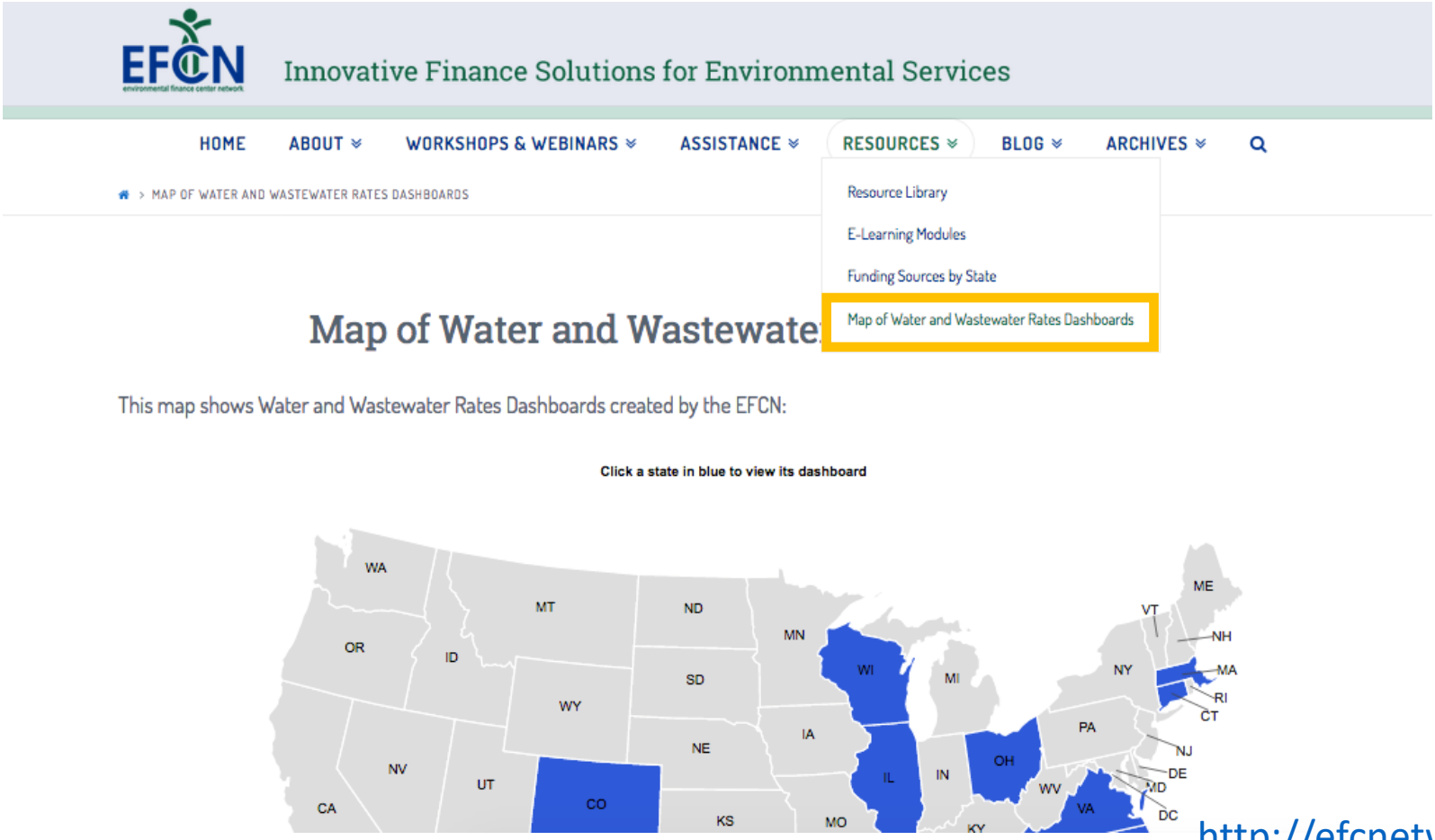
http://efcnetwork.org

Select “Funding Sources by State” under the Resources Tab.



Rates and Finance Dashboards

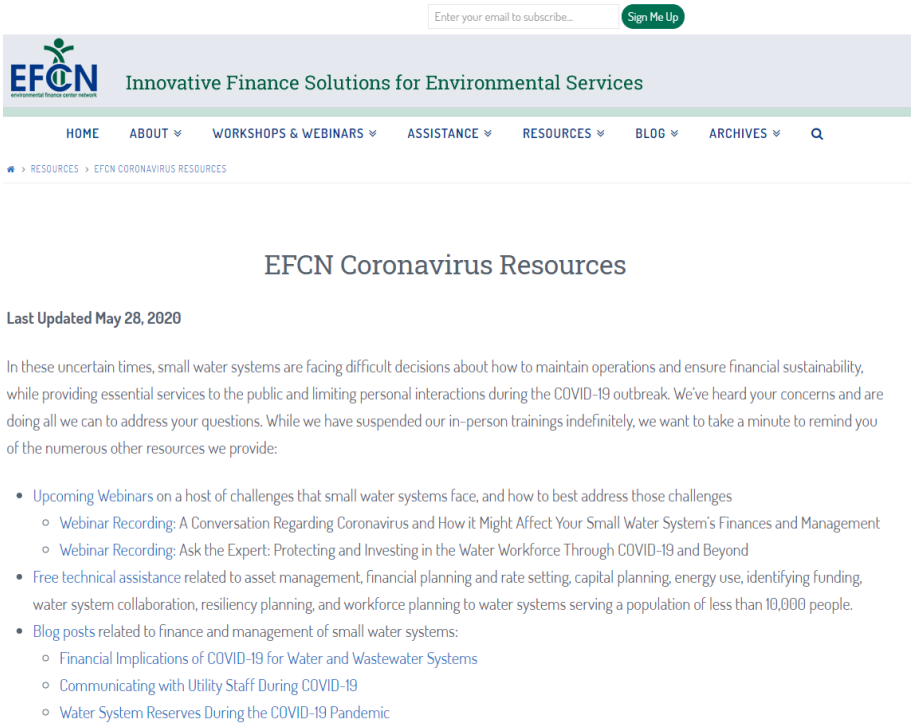
Select “Map of Water and Wastewater Rates Dashboards” under the Resources Tab, and click on any state in blue to view its dashboard.



http://efcnetwork.org

Resources From the EFC Network (efcnetwork.org)

https://efcnetwork.org/resources/efcn-coronavirus-resources/



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Last Updated May 28, 2020

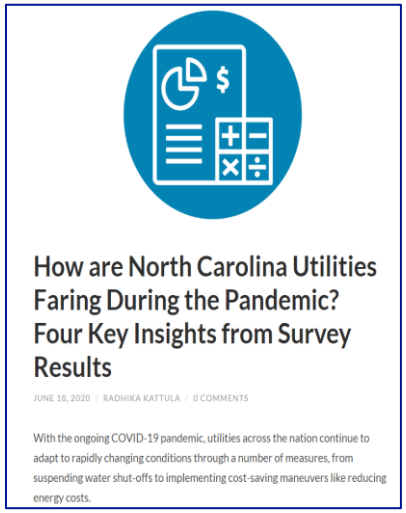
In these uncertain times, small water systems are facing difficult decisions about how to maintain operations and ensure financial sustainability, while providing essential services to the public and limiting personal interactions during the COVID-19 outbreak. We've heard your concerns and are doing all we can to address your questions. While we have suspended our in-person trainings indefinitely, we want to take a minute to remind you of the numerous other resources we provide:

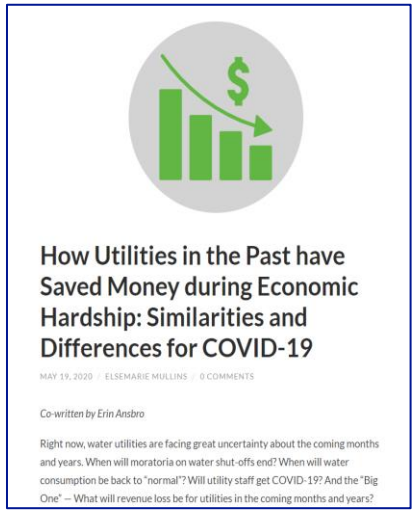
- Upcoming Webinars on a host of challenges that small water systems face, and how to best address those challenges
  - Webinar Recording: A Conversation Regarding Coronavirus and How it Might Affect Your Small Water System's Finances and Management
  - Webinar Recording: Ask the Expert: Protecting and Investing in the Water Workforce Through COVID-19 and Beyond
- Free technical assistance related to asset management, financial planning and rate setting, capital planning, energy use, identifying funding, water system collaboration, resiliency planning, and workforce planning to water systems serving a population of less than 10,000 people.
- Blog posts related to finance and management of small water systems:
  - Financial Implications of COVID-19 for Water and Wastewater Systems
  - Communicating with Utility Staff During COVID-19
  - Water System Reserves During the COVID-19 Pandemic

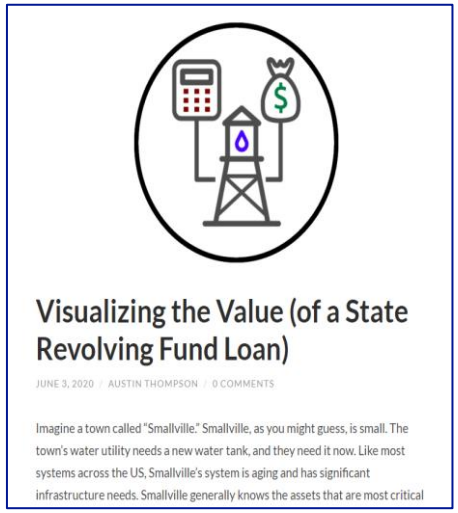
EFC Blog

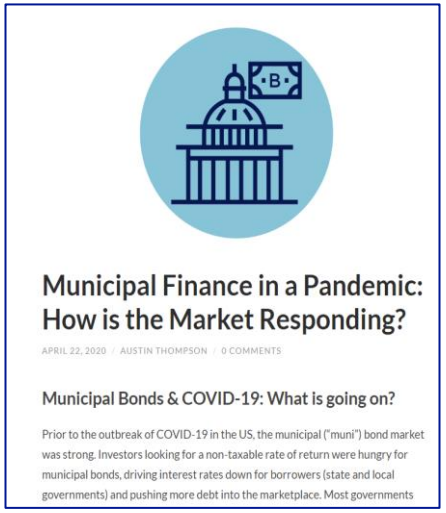
Where to stay updated on environmental finance topics?

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



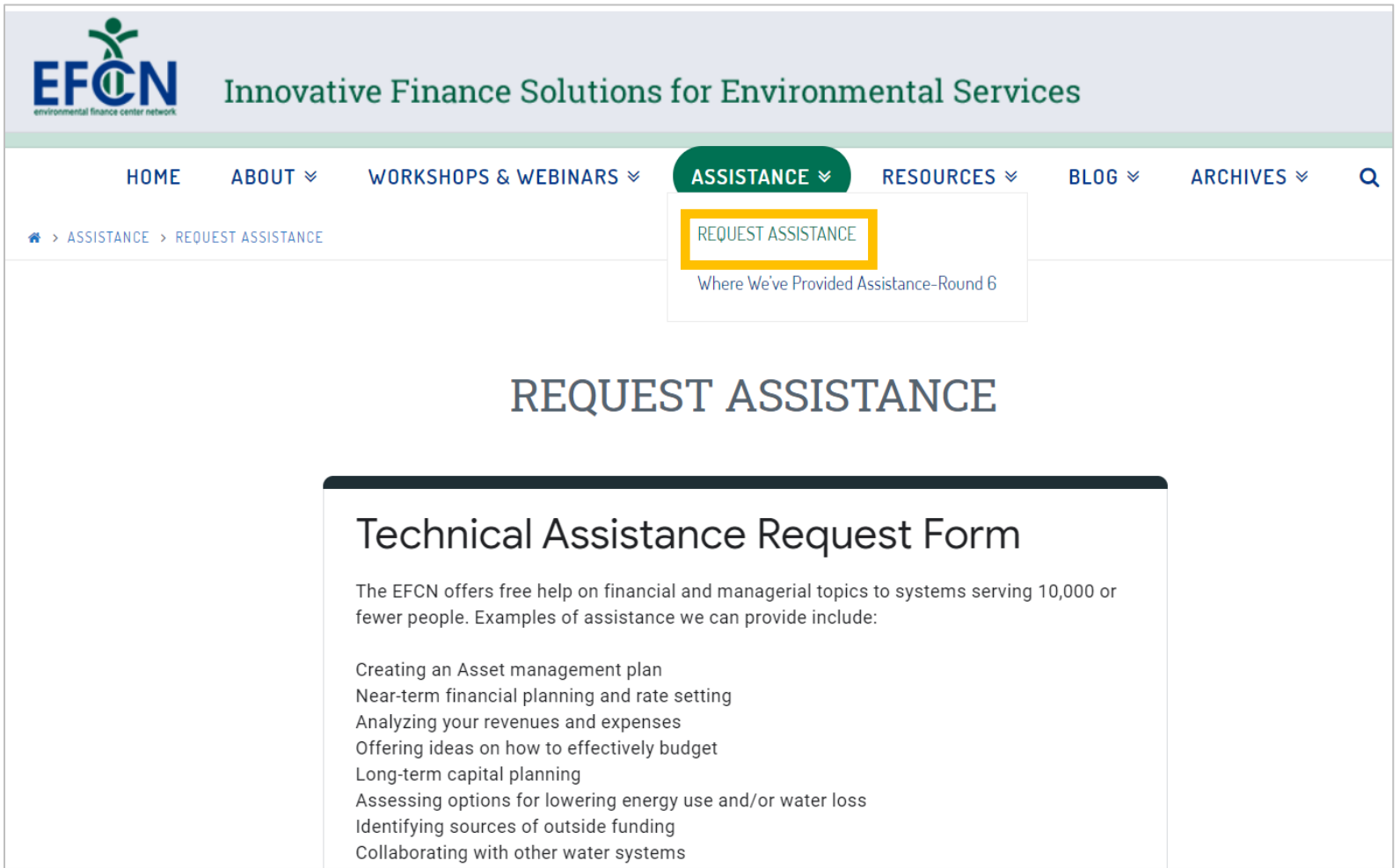






Request Technical Assistance

Select “Request Assistance” under the Assistance Tab off the EFCN homepage to access and submit the TA request form electronically. http://efcnetwork.org



Poll: would you like assistance?

Questions?

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