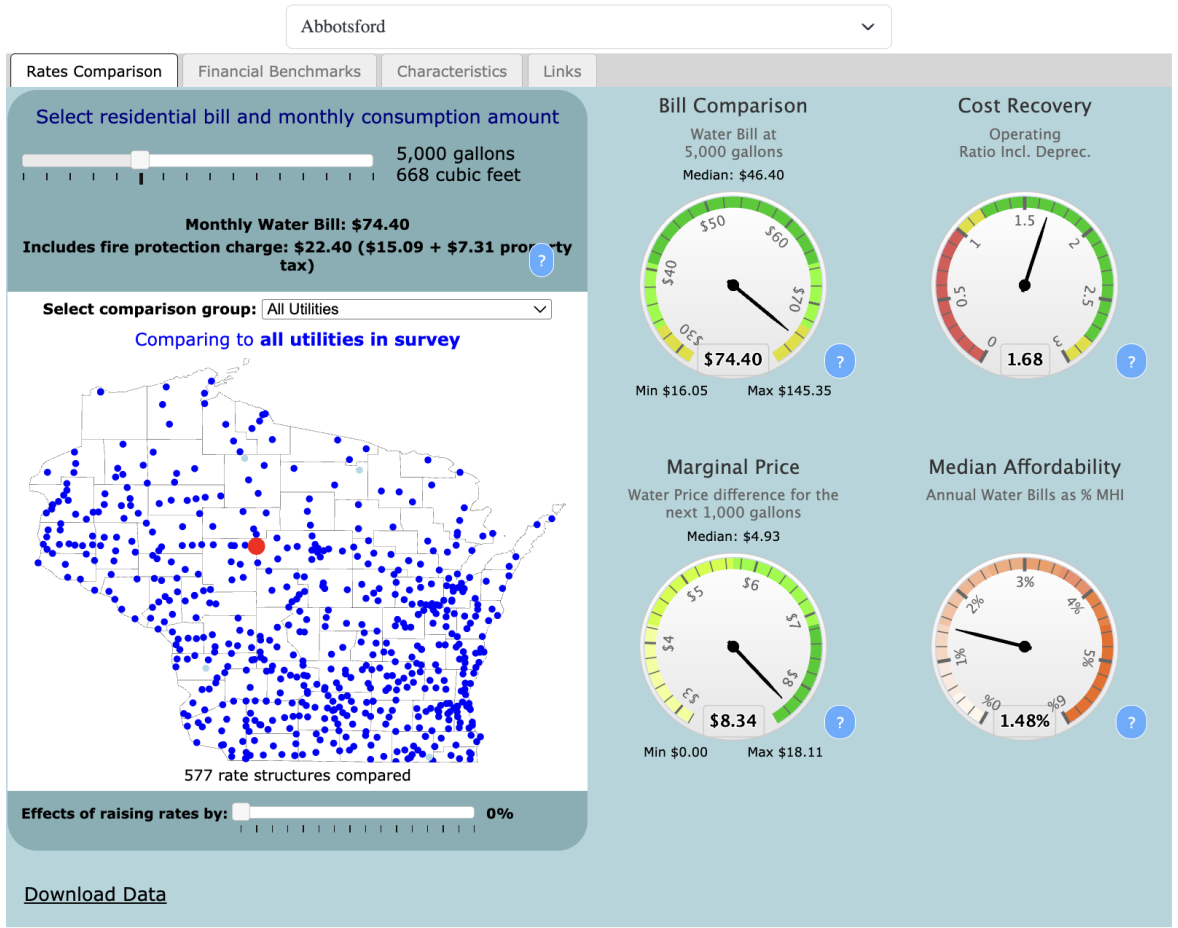
UNC | SCHOOL OF GOVERNMENT
Environmental Finance Center

2025 Wisconsin Cost of Water Dashboard

Dr. Ahmed Rachid El-Khattabi
Research Director
UNC SOG Environmental Finance Center

Agenda

- Introduction
- Rates dashboard as decision support tool
- Data overview
- How to navigate the dashboard
- How to interpret information on dashboard
- Supplementary Information



INTRODUCTION

UNC Environmental Finance Center

- The School of Government Environmental Finance Center (SOG EFC) supports North Carolina governments in providing financially sustainable water, wastewater, and stormwater utilities.
- We equip state and local leaders to make data-driven decisions through applied research, tools, teaching, and technical assistance.

  - Applied Research
  - Teaching and Outreach
  - Program Design and Evaluation

UNC School of Government

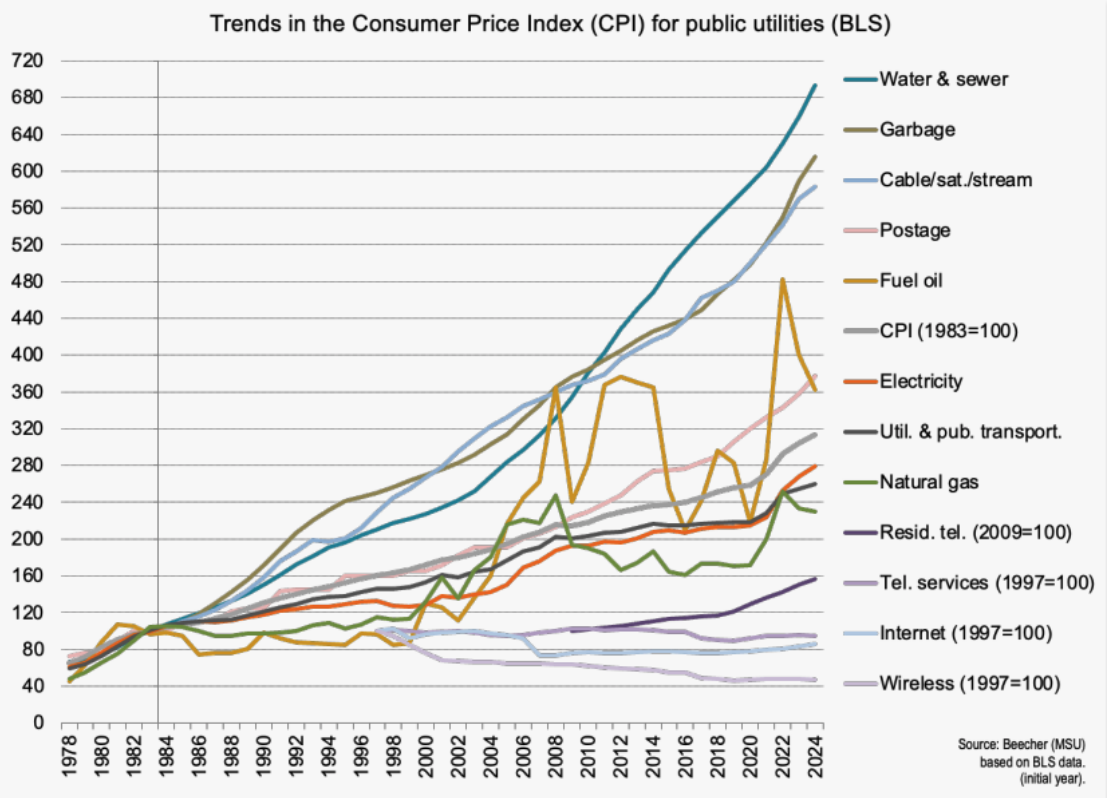
- The mission of the School of Government is to improve the lives of North Carolinians by engaging in practical scholarship that helps public officials and citizens understand and improve state and local government.

- Nonpartisan
- Policy-neutral
- Responsive

National Trends Suggest Water Costs Rising Faster than Other Utility Costs

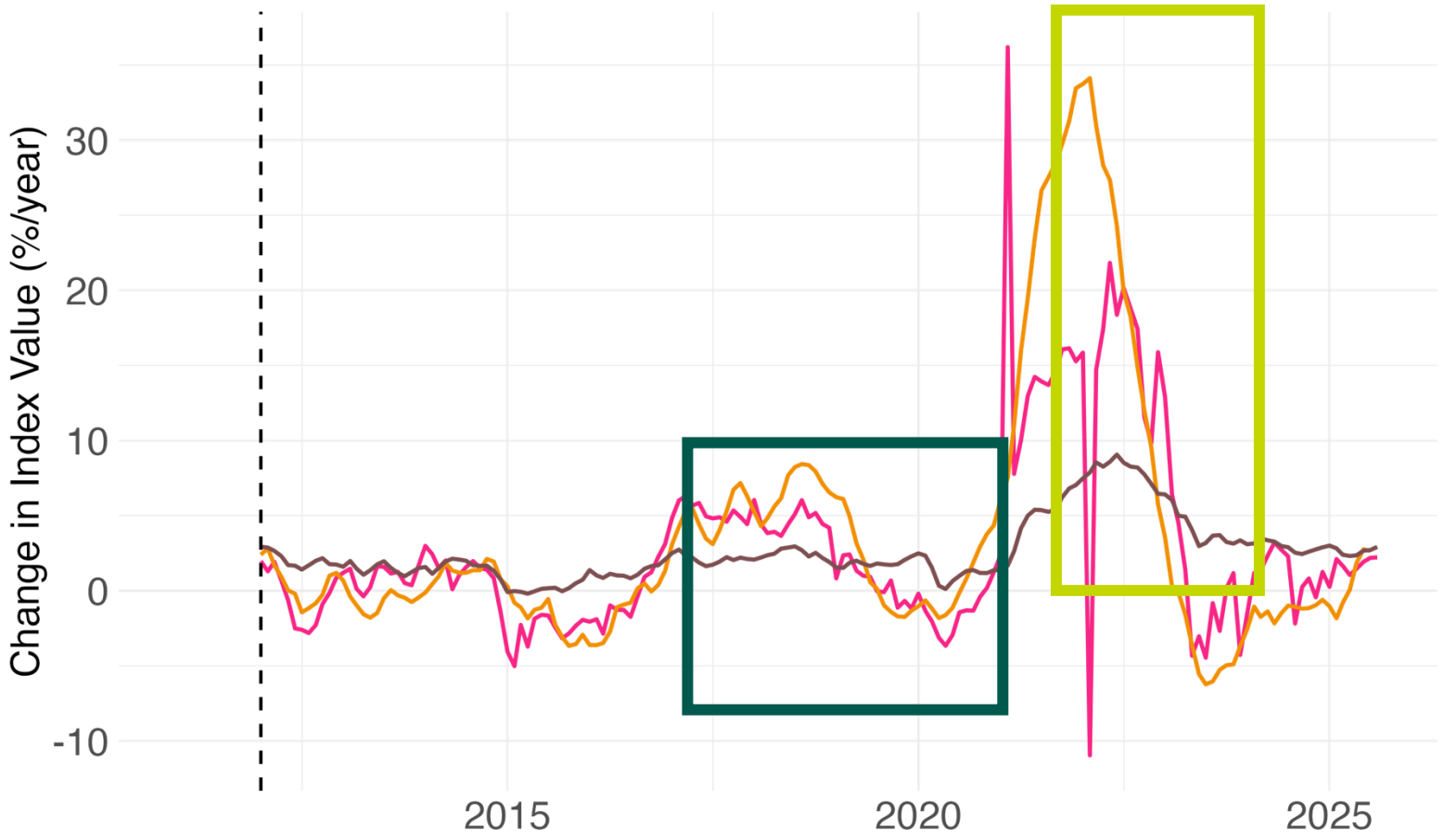
What's driving this trend?

- Deferred maintenance
- Emerging contaminants
- Extreme weather events
- Rising construction costs



Beecher, Janice, Trends in Consumer Prices and Expenditures for Public Utilities (2025) (March 14, 2025). Available at SSRN: https://ssrn.com/abstract=4766686

National Trends in Capital and O&M Costs for Water Utilities



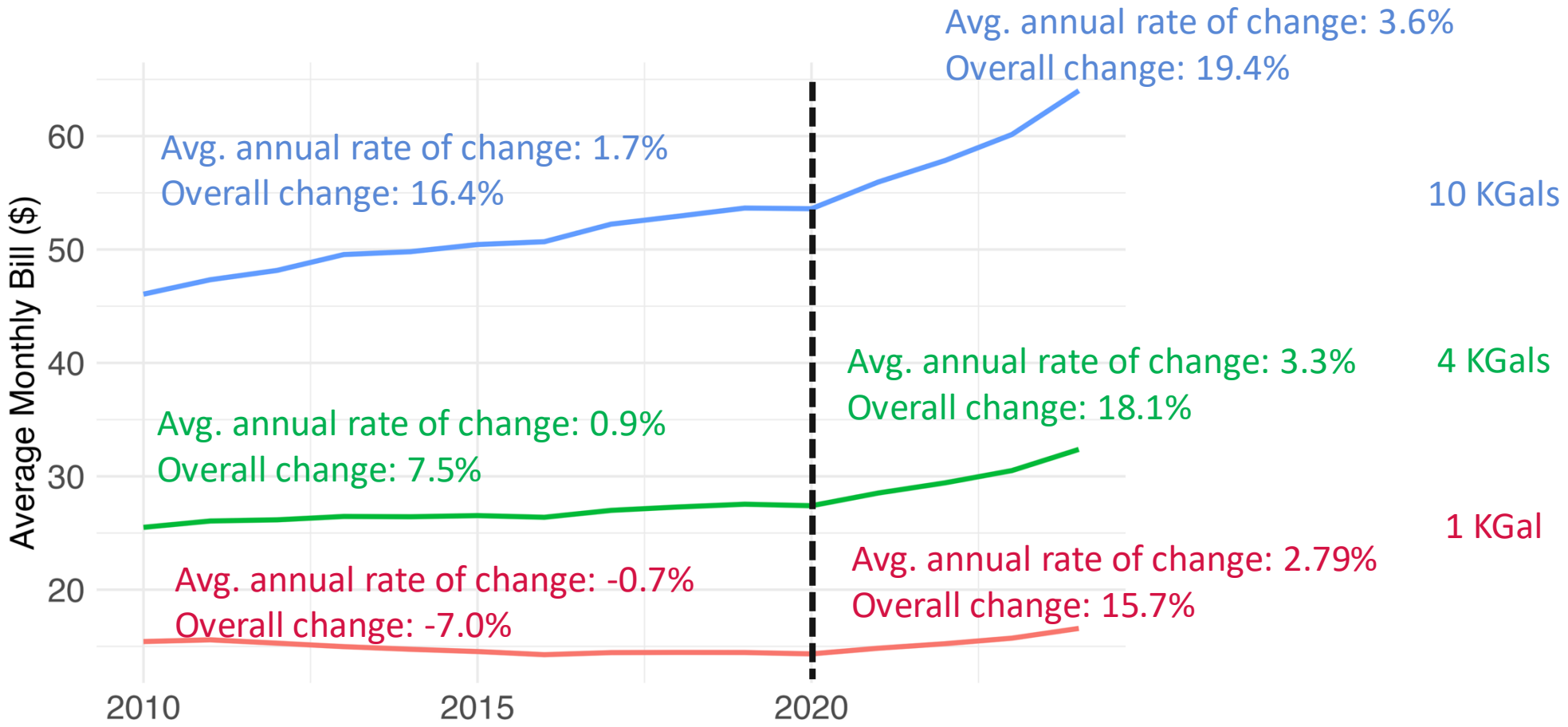
Annual rise in

- Construction costs
- Operations and Maintenance
- Other non-utility consumer goods

Construction Cost Index (derived from PPI)
O&M Cost Index (derived from PPI)
Consumer Price Index (BLS)

Accounting for Inflation in Water and Wastewater Capital Planning
https://efc.sog.unc.edu/accounting-for-inflation-in-water-and-wastewater-capital-planning/

Trends in Cost of Water in Wisconsin



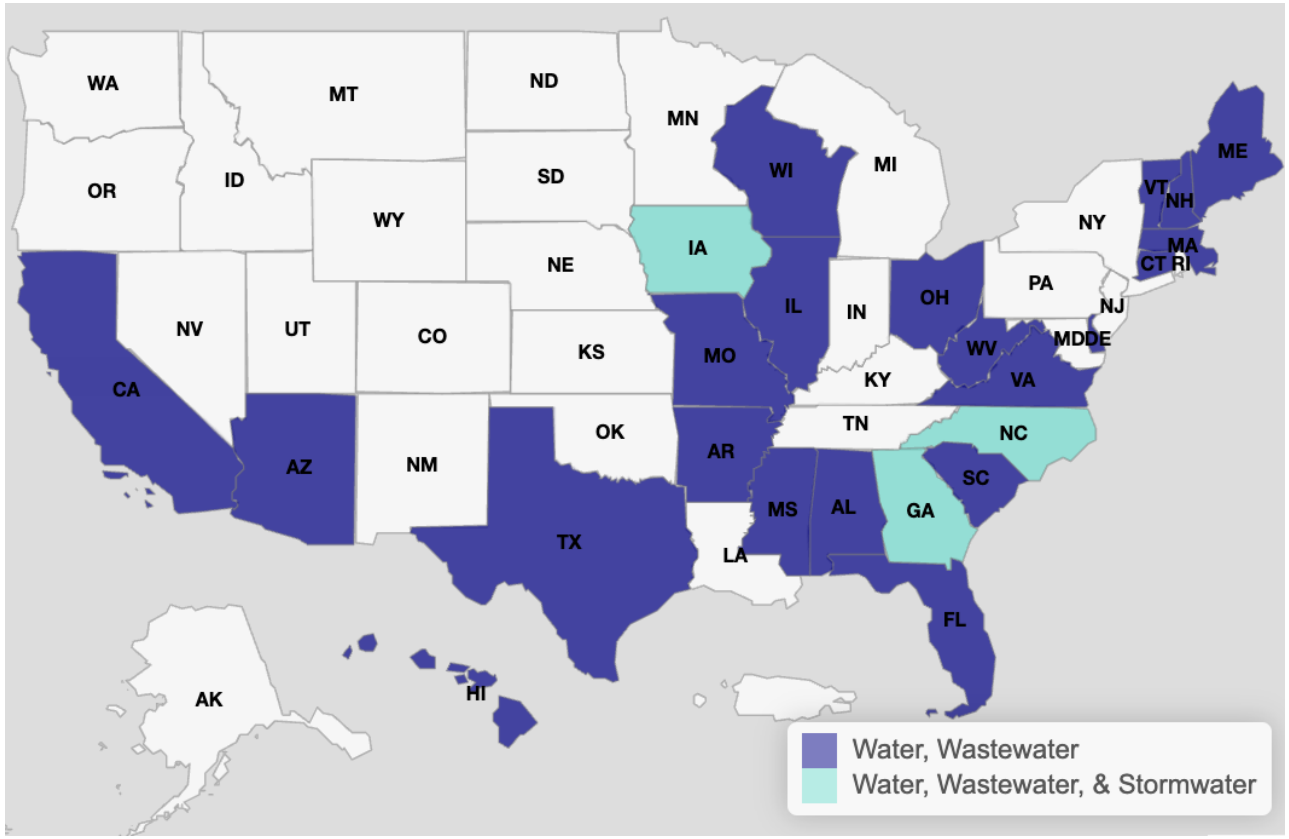
*Fixed meter charge (5/8”) & volumetric charges only

INTRODUCTION

Dashboard as a Public Decision Support Tool

School of Government | Environmental Finance Center

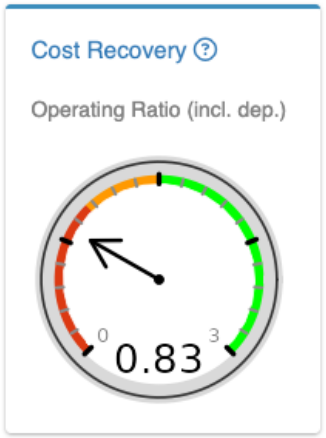
- Data visualization tool
- Started over 15 years ago
- Helping address need to both do peer comparisons for rates, as well as self-evaluations and financial benchmarking

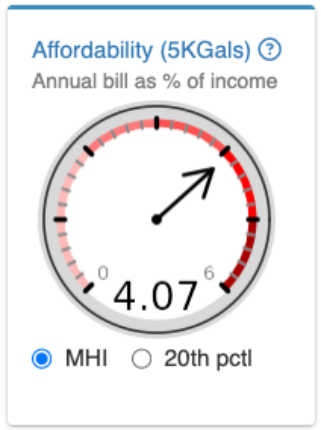


INTRODUCTION

Dashboard as a Public Decision Support Tool

Dashboard as a Public Decision Support Tool





"How much should you charge to remain financially healthy/viable?"

"How large a rate increase is socially tolerable?"

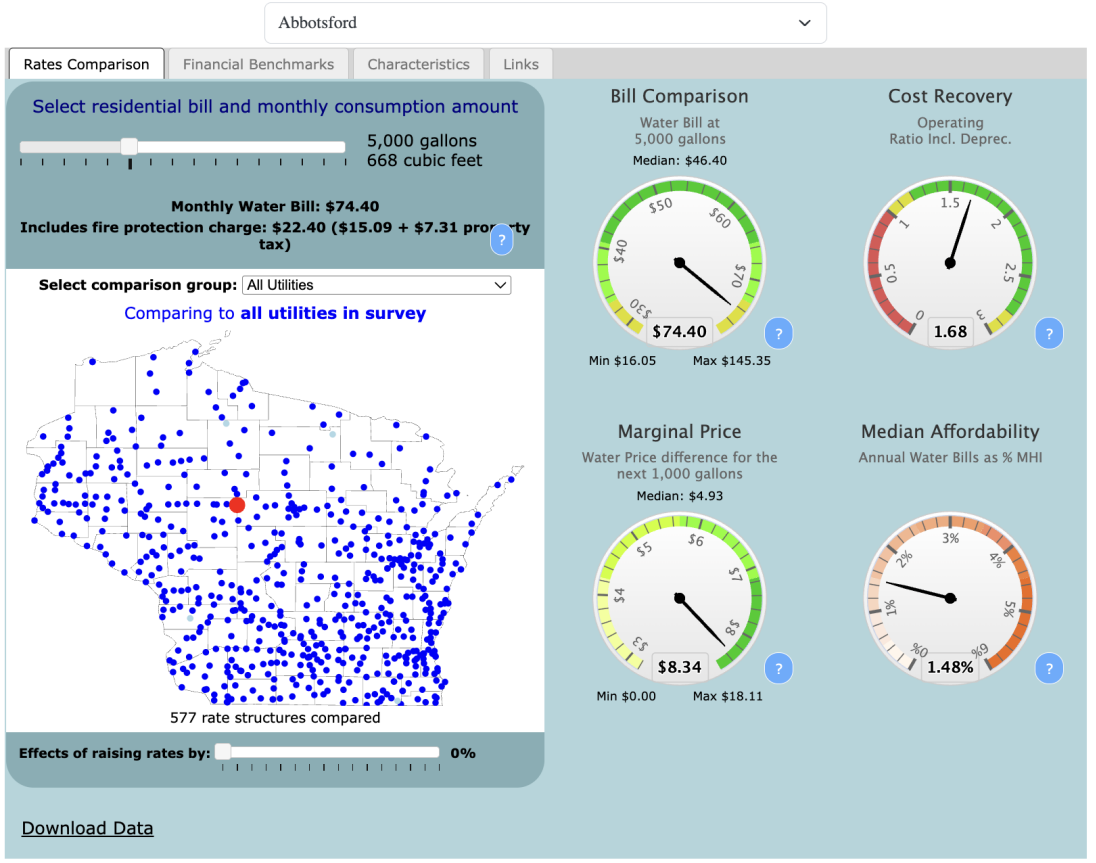
Example use cases

- As part of your annual rate review
- When presenting to boards or other decision makers on the need to change rates
- When explaining rates to customers
- As part of your PSC rate case
- SRF applications

DASHBOARD OVERVIEW

Wisconsin FY 2025 Water Dashboard

- 100% of ***water utilities*** regulated by PSC
- Includes municipalities, sanitary districts, townships, IOUs
- Range of service populations from 25 to 626,000
- ~67.4% of the state's population



Data Sources for Wisconsin Dashboard

PSC of WISCONSIN

- Water rates
- Direct PFP charges
- Municipal PFP charges
- Utility financials

Wisconsin Department of Revenue

Valuation information for municipal PFP charges

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

- Source water type
- Number of connections
- Service population

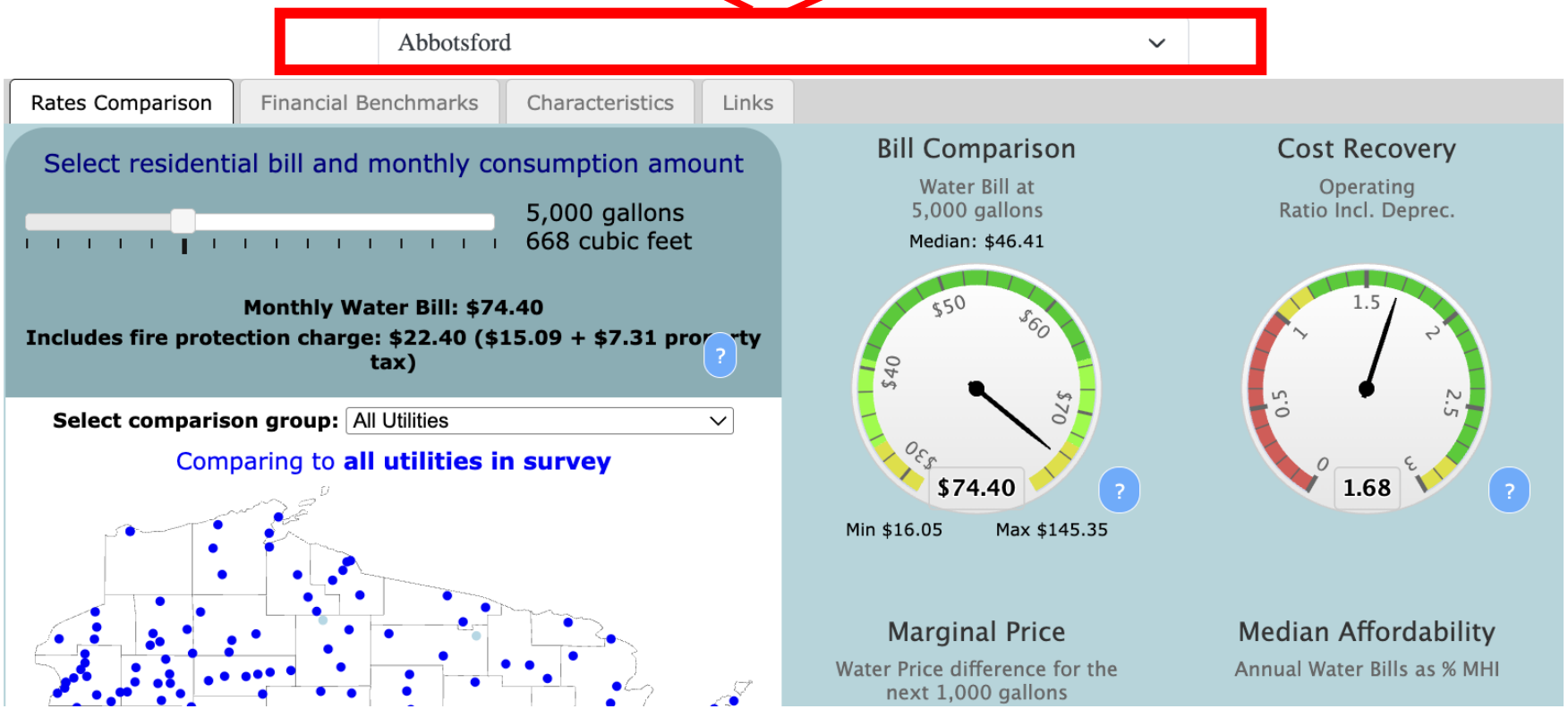
United States™ Census Bureau

- Household income
- Poverty rates

Select your community

Select your community from the dropdown menu

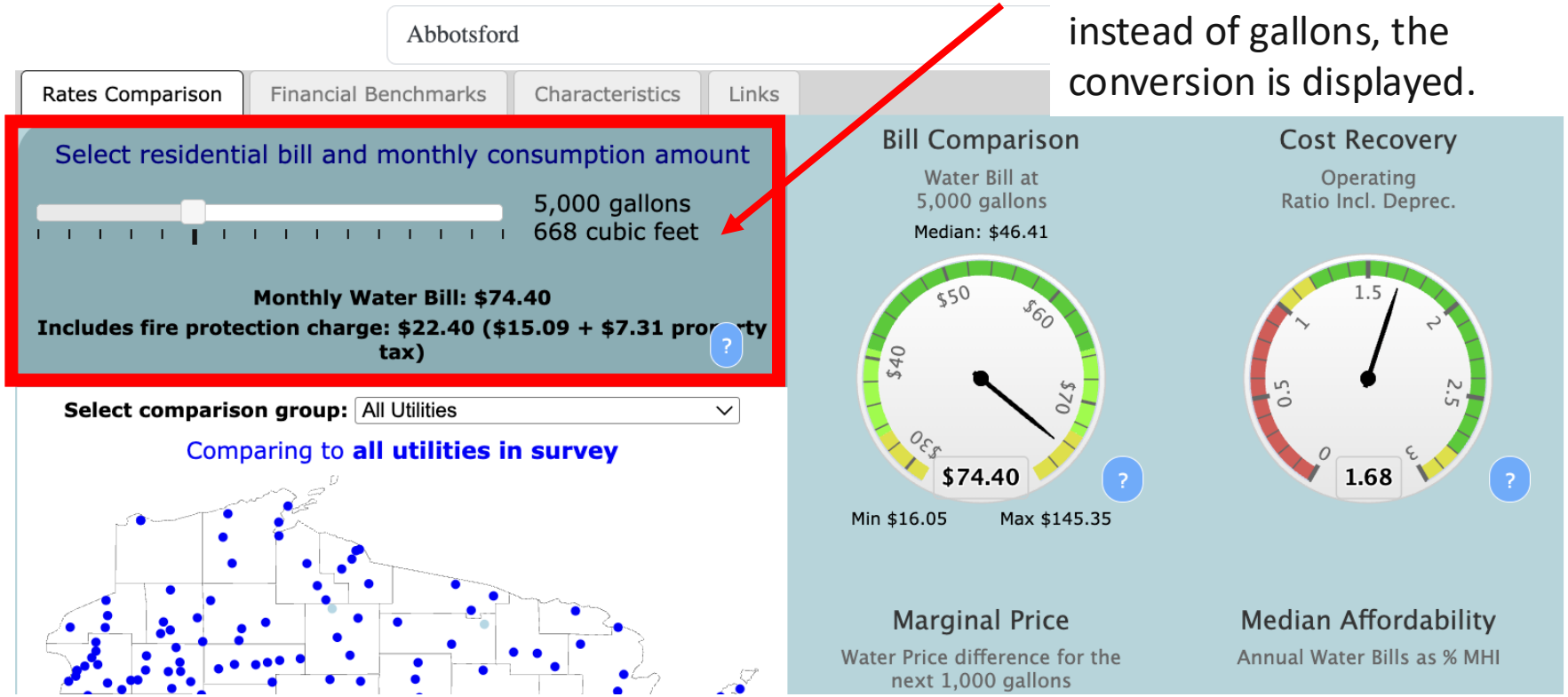
Begin typing and utility names that match will appear



Select Consumption Amount

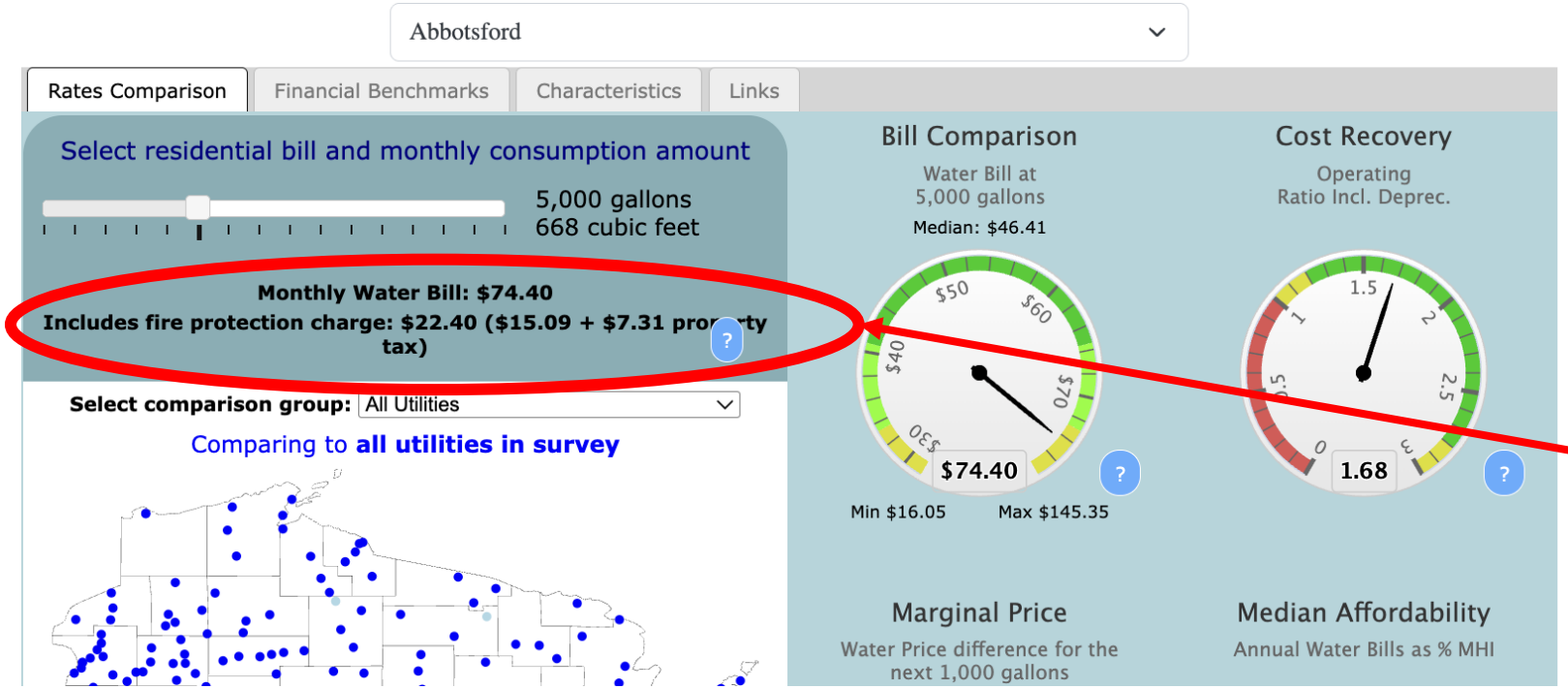
The consumption slider ranges from 0 gallons all the way up to 15,000 gallons, at 500-gallon increments.

Default starting amount is 5,000 gallons



For utilities that use cubic feet instead of gallons, the conversion is displayed.

Select Consumption Amount

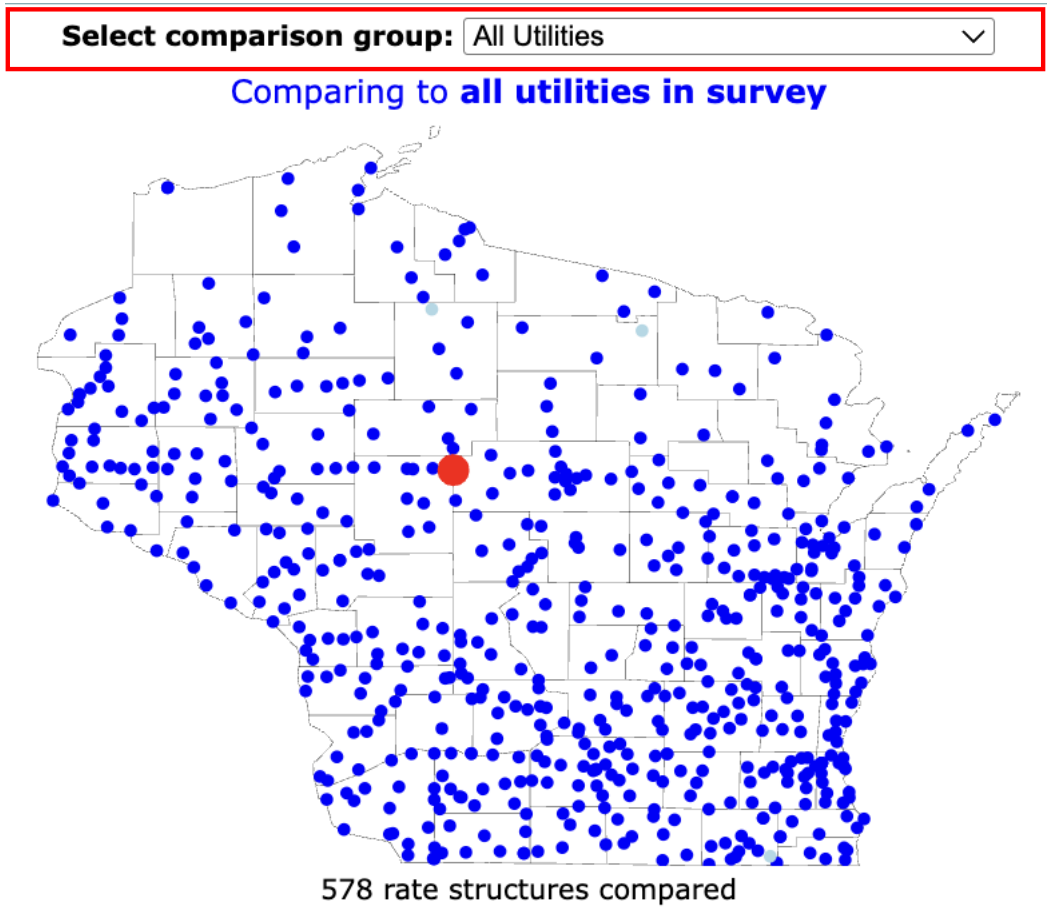


Base charge (0 gallons) includes

- Fixed meter charge for water
- Direct PFP charge (if applicable)
- Municipal PFP charge (if applicable)

HOW TO NAVIGATE THE DASHBOARD

Consider Comparisons

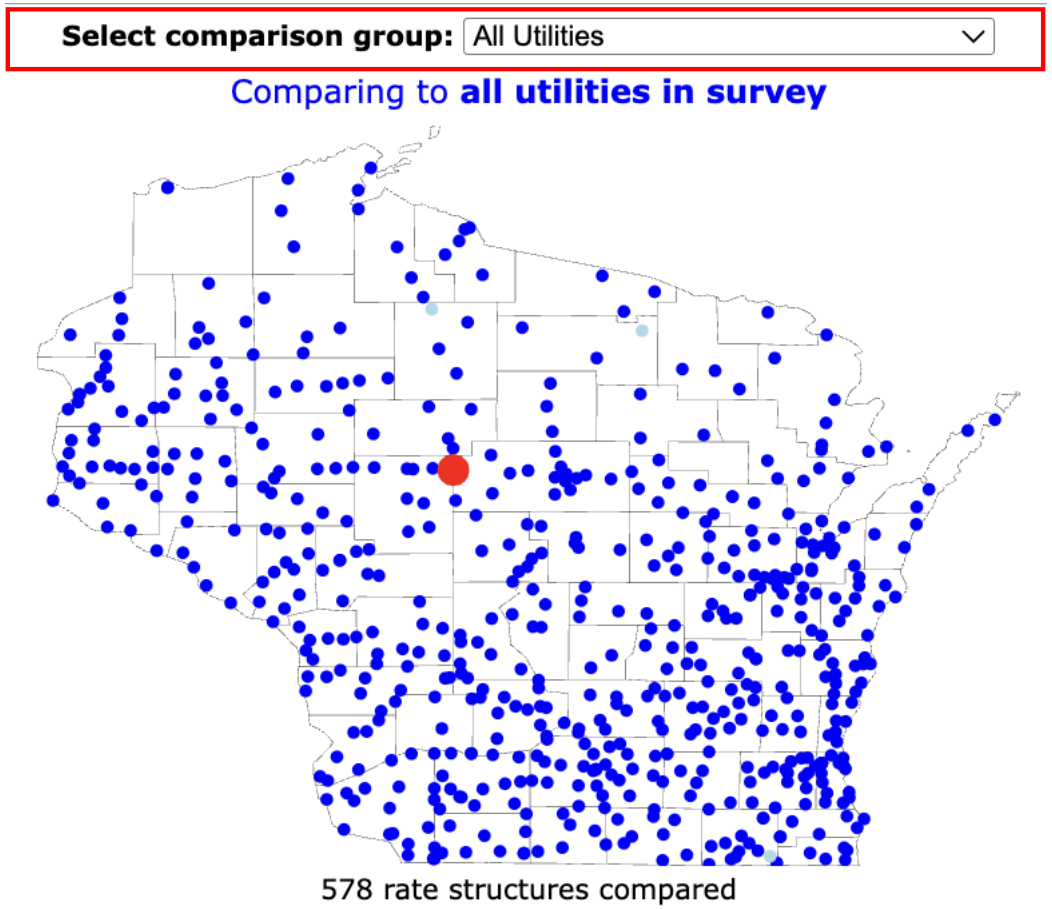


Comparison group options

- All utilities
- Similar revenue generation
- Similar customer income
- Same watershed
- Same water source (SW, GW, P)
- Same congressional district
- Same ownership type
- Same regional planning commission
- Same rate structure
- Within radius (25 and 50 miles)

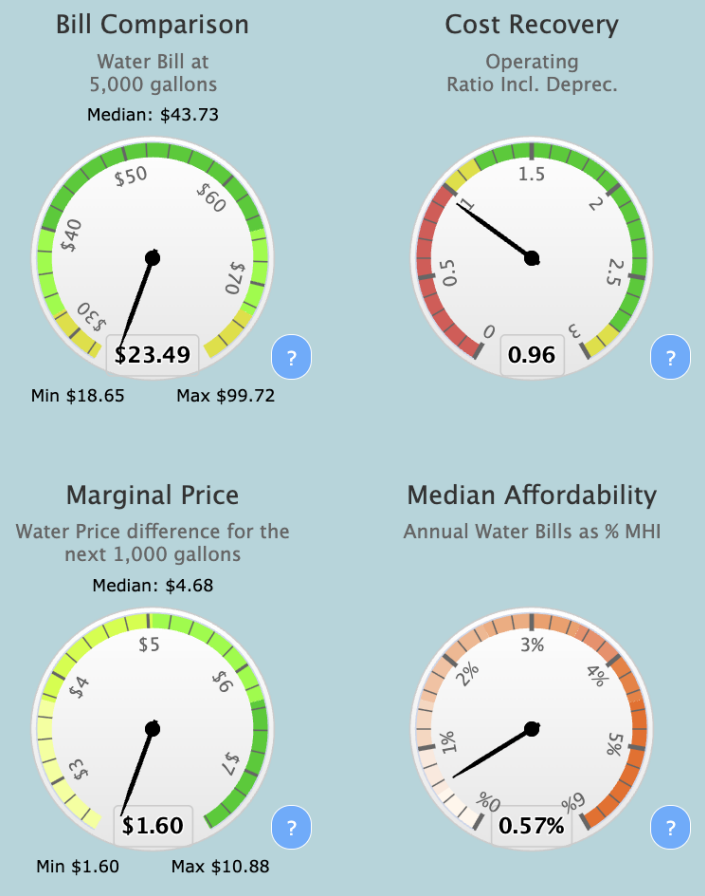
Map shows utilities' approximate locations

Consider Comparisons



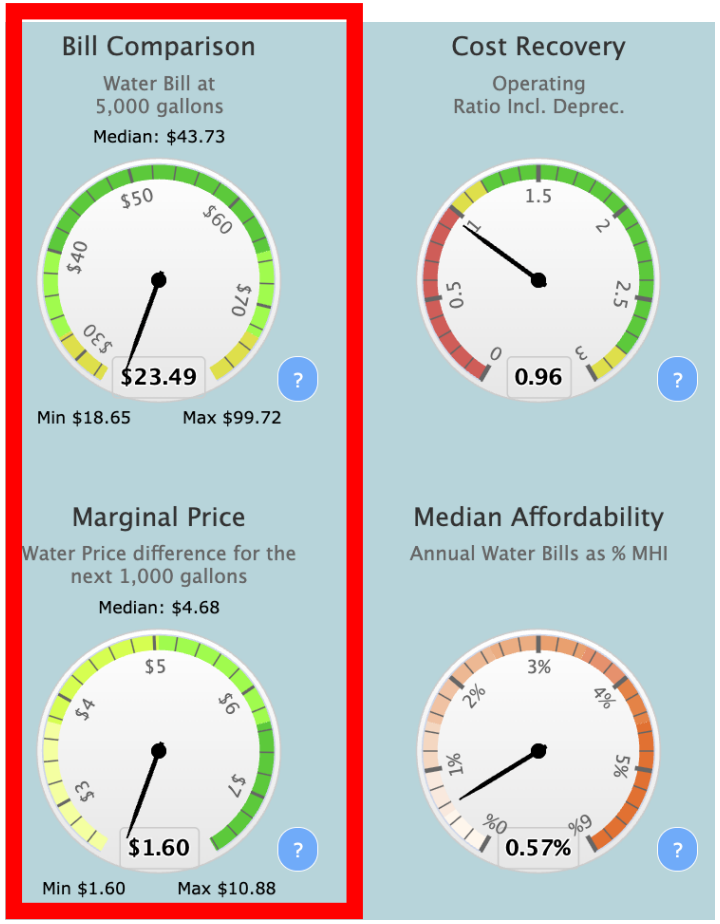
When a comparison group in the dropdown menu is grayed out, that means there are insufficient utilities in the peer group for meaningful comparison.

Metrics to Consider



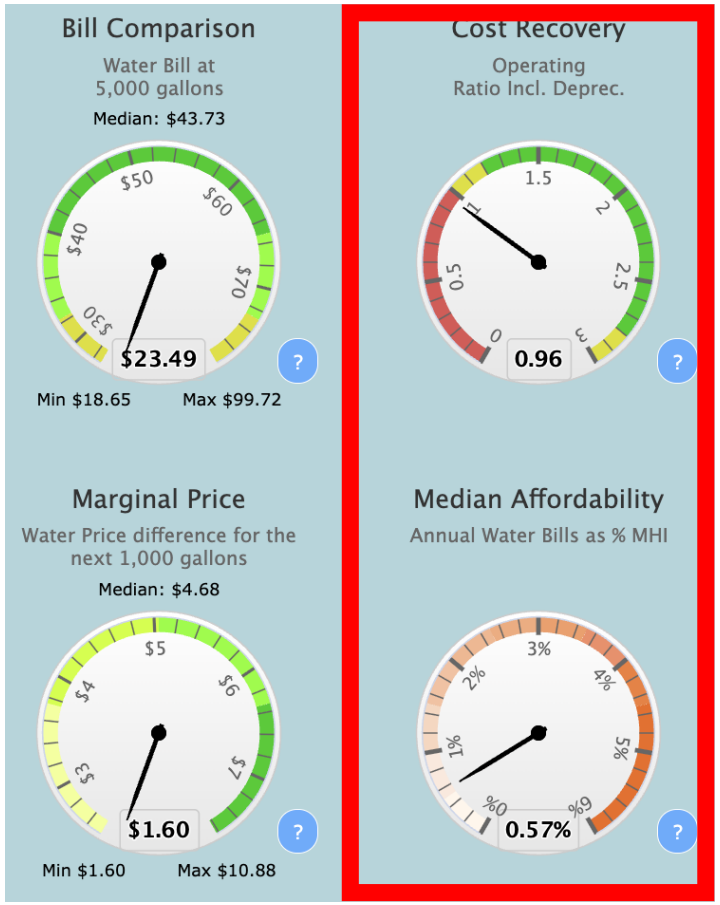
Bill comparison
Marginal Price
Cost recovery
Median affordability

Deeper Look at Dials



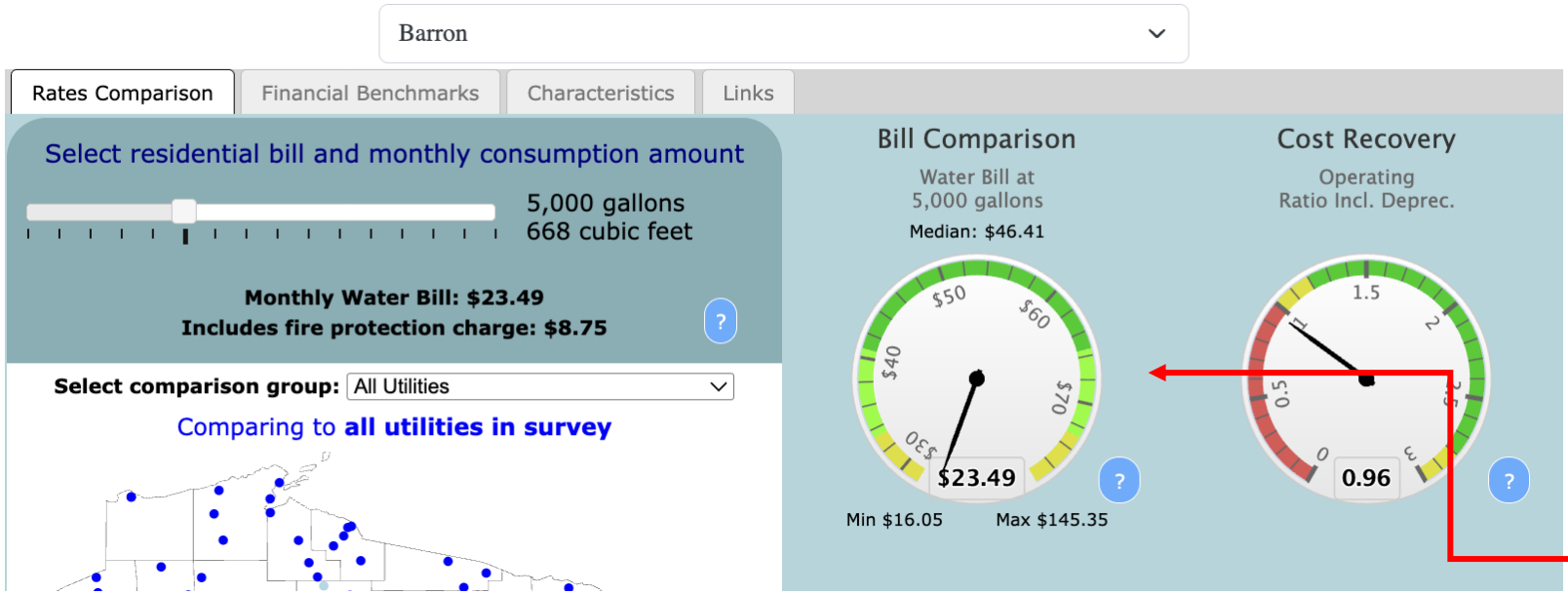
Based on where a utility stands in its peer group

Deeper Look at Dials



NOT based on where a utility stands in its peer group

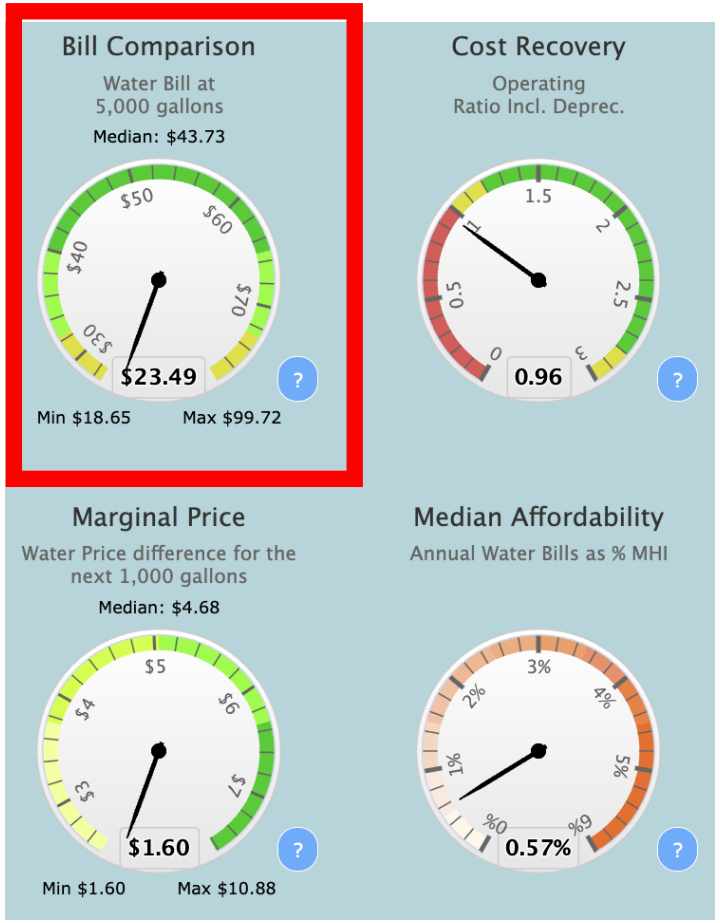
Compare to your peer group



Dials will adjust according to how your utility compares to other utilities in the comparison group.

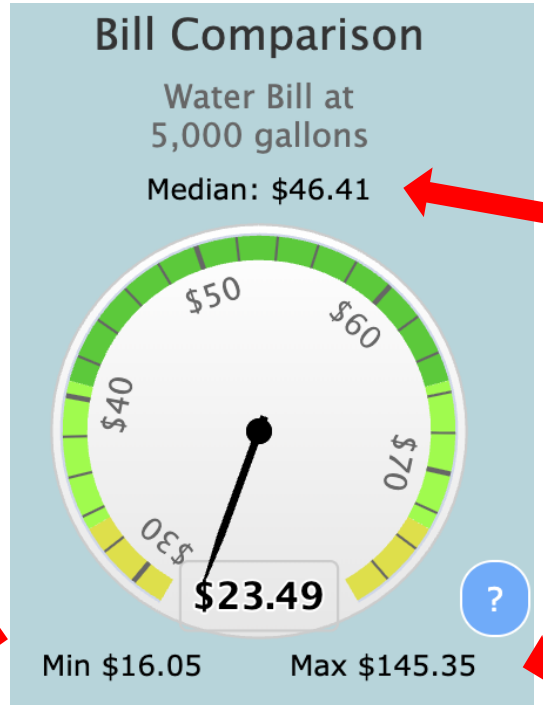
The left two dials (bill comparison and marginal price) are metrics that are relative to the selected comparison group.

Dial: Bill Comparison



- The bill comparison dial allows you to see how your water bill compares to others in the selected comparison group at the selected amount of usage.
- As you adjust the consumption slider, the bill comparison dial will adjust as well.

Dial: Bill Comparison



Median Bill in WI for 5,000 gallons across all utilities is $46.41

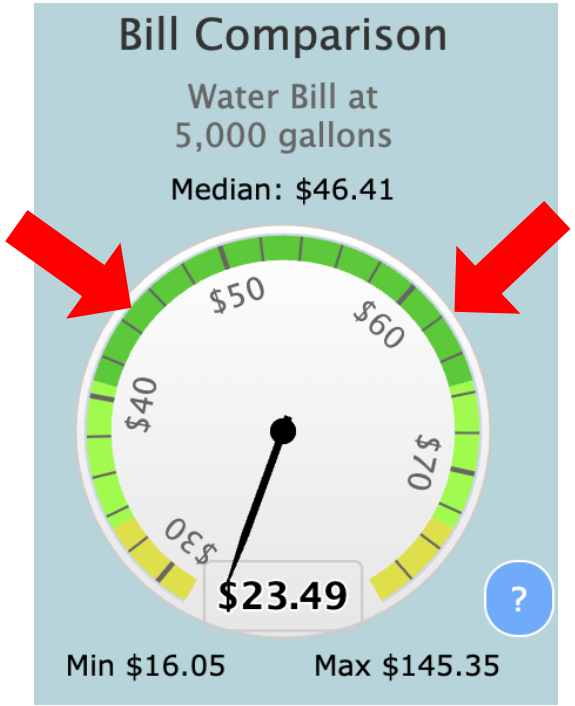
Min bill is $16.05

Max bill is $145.35

Dial: Bill Comparison

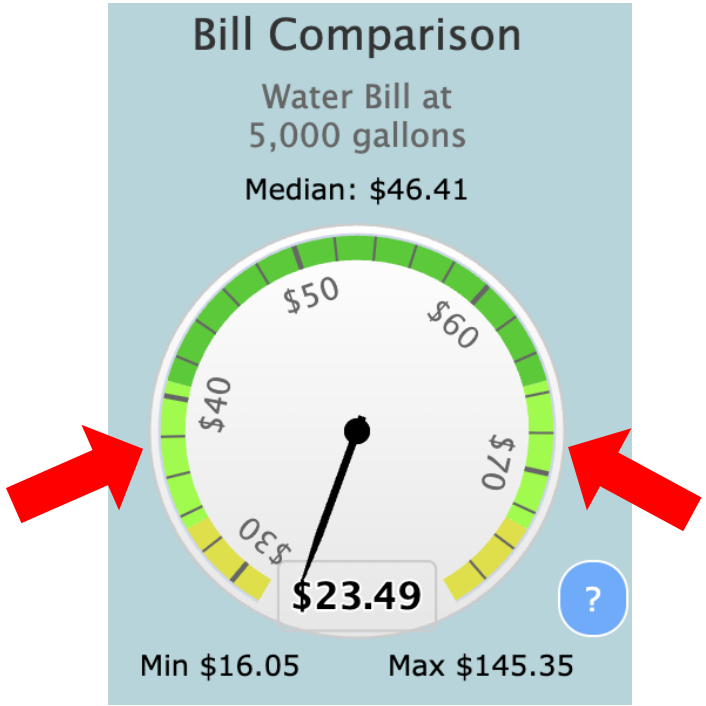
Darkest green band = middle 50% of utilities

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



Dial: Bill Comparison

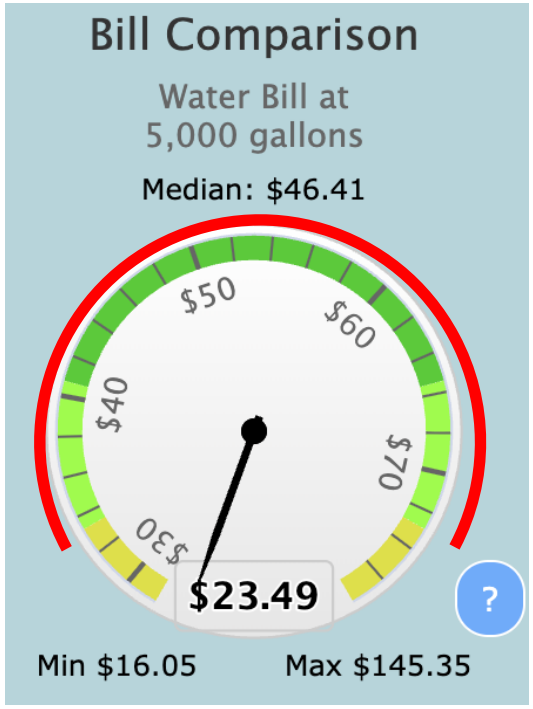
Light green bands = the 15% below and above the middle 50%



15% of utilities in your peer group have bills **lower** than the middle 50%, **15%** have bills **higher** than the middle 50%

Dial: Bill Comparison

Both greens combined = 80% of utilities

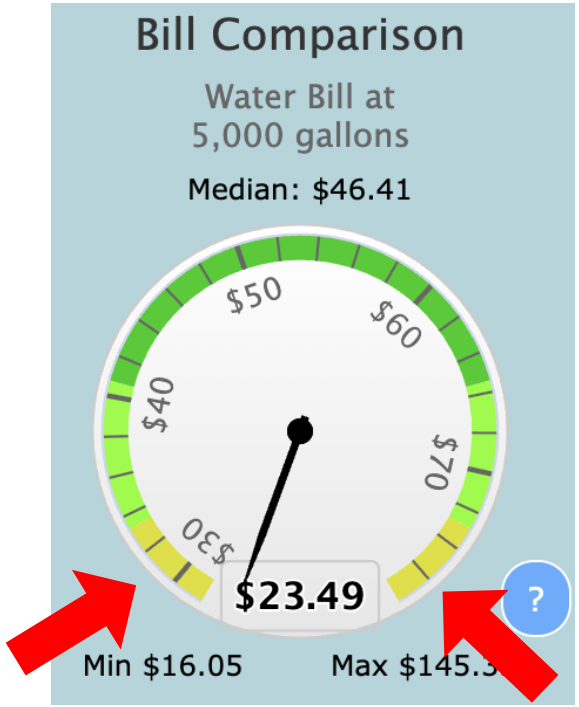


The majority of all utilities in your peer group have bills that fall within the range of the green bands

Dial: Bill Comparison

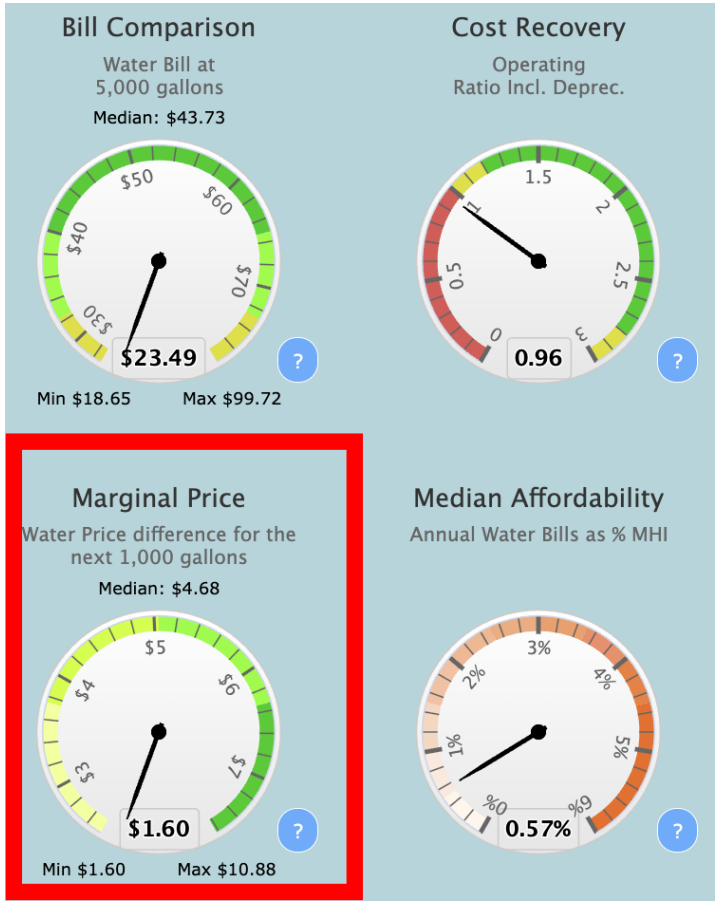
Yellow = the lowest and highest 10% of utilities

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



At $23.49, this utility has a water bill is in the lowest 10% of bills

Dial: Marginal Price

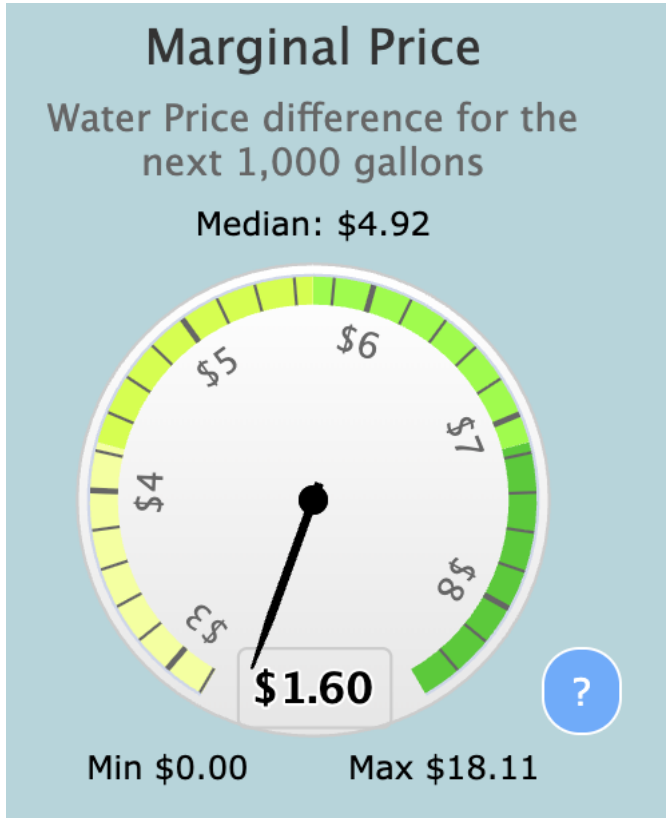


- The marginal price dial shows the water price per 1,000 gallons at the selected amount and how it compares to other utilities in the comparison group.
- If a utility wants to encourage water conservation, ideally the marginal price should increase as total consumption increases. This way, potentially wasteful water use will be discouraged, because high water use will be charged at a higher rate.

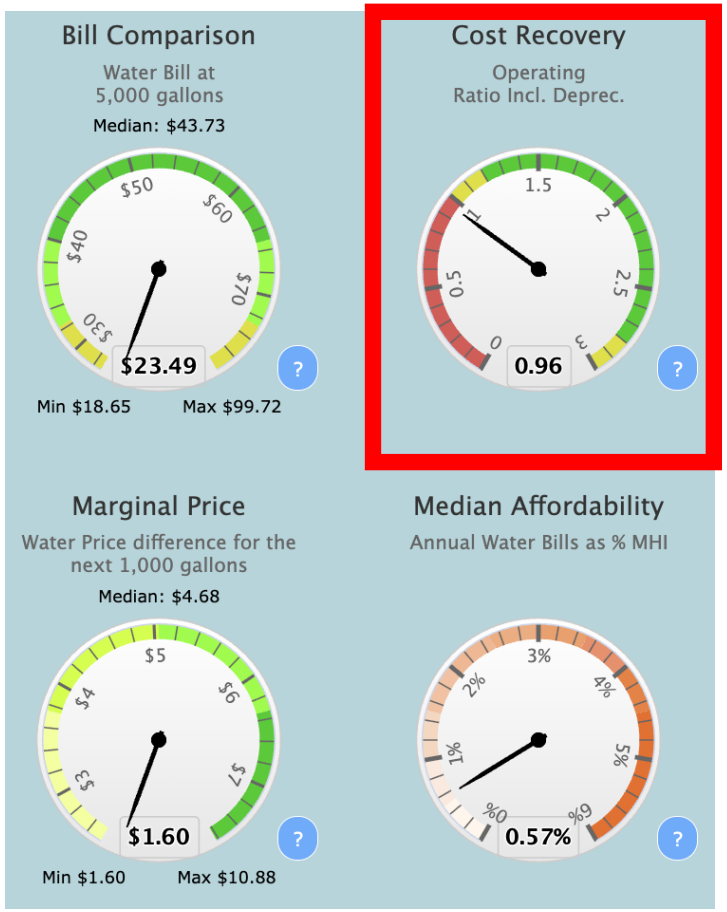
Dial: Marginal Price

Colored bands = quartiles

In this example, the marginal price of 1,000 gallons at 5,000 gallons is in the 25th percentile among its peer group



Dial: Cost Recovery



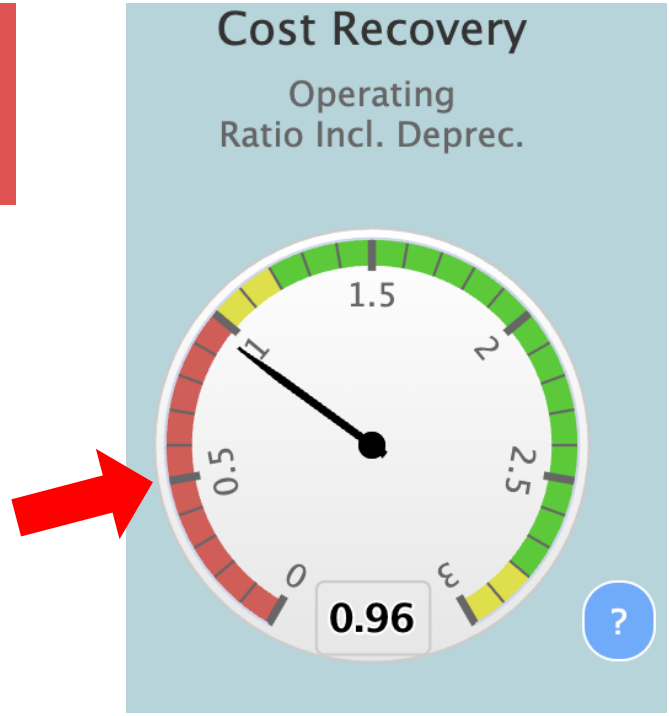
Operating Ratio =

$$\frac{\text{Operating Revenues}}{\text{Operating Expenses (including Depreciation)}}$$

Dial: Cost Recovery

Red = costs exceed revenues;
a concern for financial sustainability

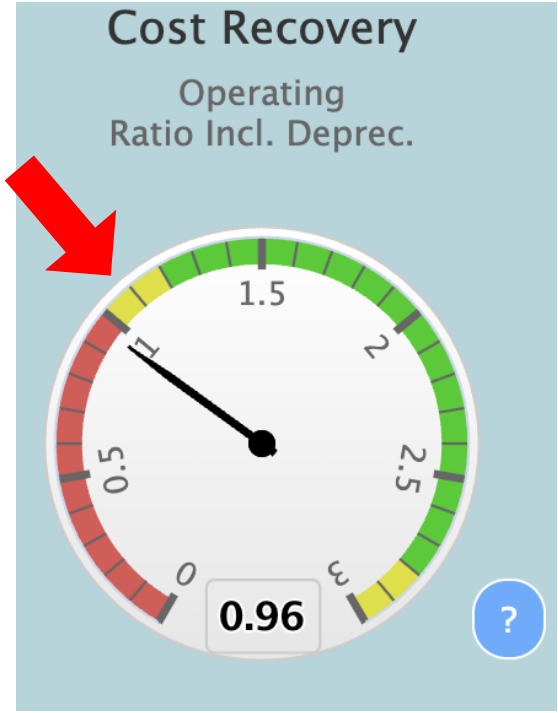
Suggests that a utility may have trouble meeting even day to day costs



Dial: Cost Recovery

Yellow = revenues are sufficient to cover costs, but could be problematic in long-term

Day-to-day costs are currently being covered, but it could be problematic when it comes to paying for long-term expenses.



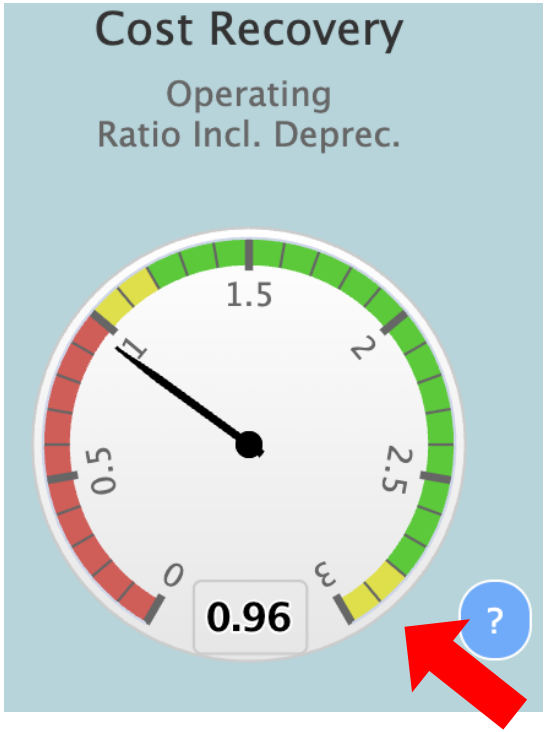
Being above 1.2 helps account for increased cost of materials (inflation) in the future.

Dial: Cost Recovery

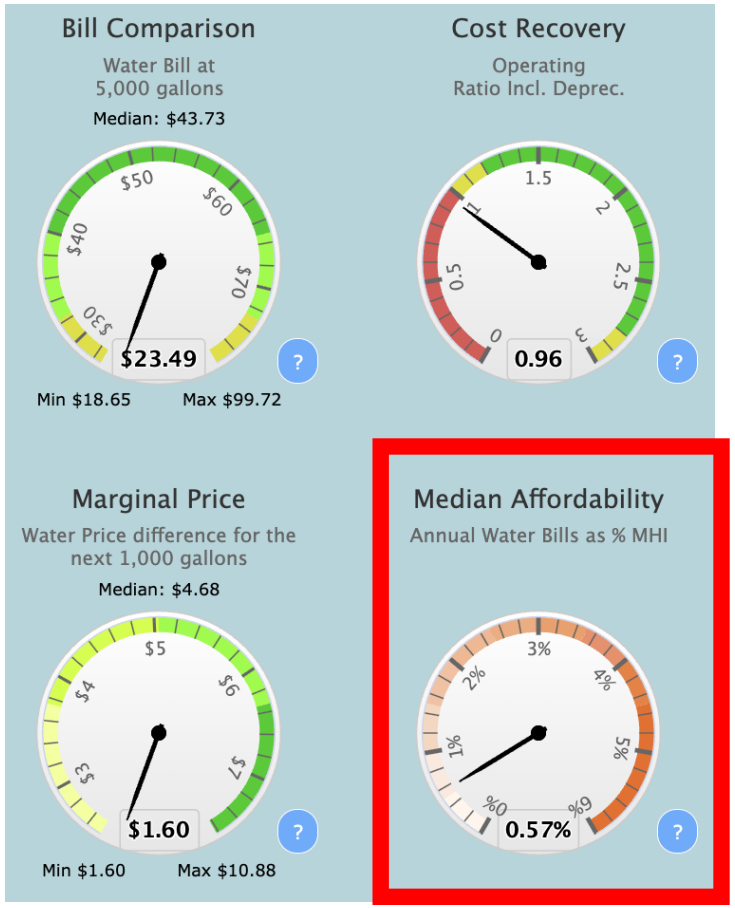
Green = revenues are likely enough to pay for day-to-day costs as well as long-term goals

Dial: Cost Recovery

Yellow = revenues may be “too” good



Dial: Affordability



Affordability Ratio =

$$\frac{\text{Annual Water Bills (\$)}}{\text{Median Household Income (\$)}}$$

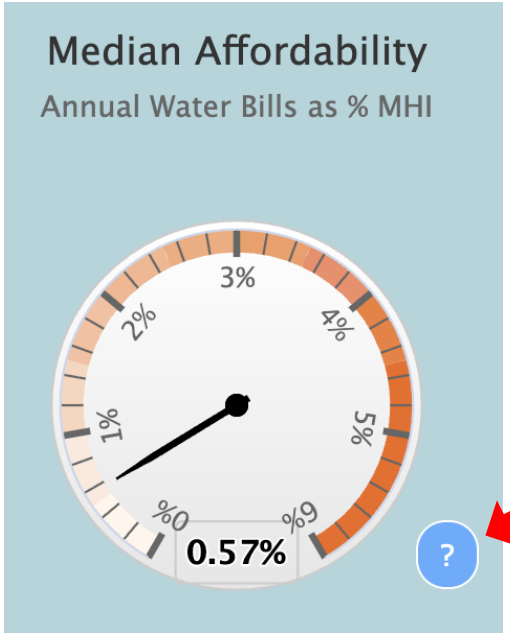
Measuring affordability is complicated….

Read more about affordability metrics: https://efc.sog.unc.edu/using-the-federal-poverty-level-to-quantify-affordability/

Dial: 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



Click the **question mark** to open a **help box** to help interpret the affordability dial

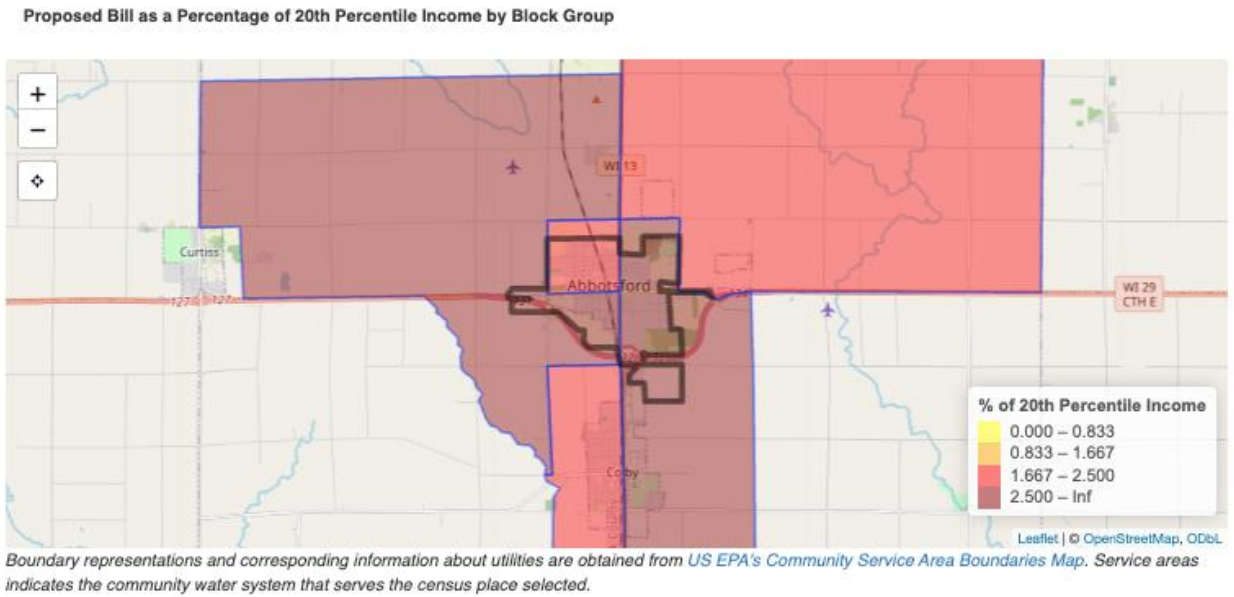
BRIEF DETOUR ON AFFORDABILITY

Affordability Dashboard

Other metrics

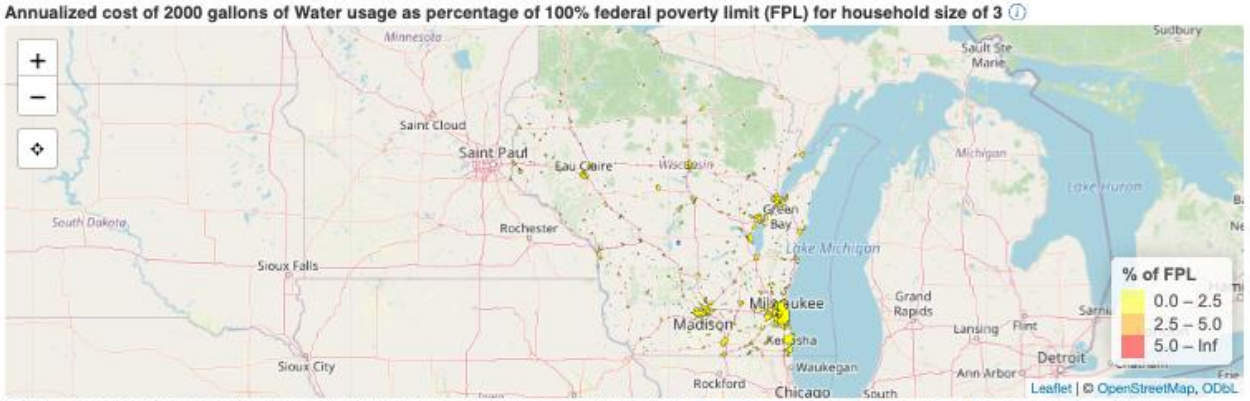
- % of 20th percentile
- % of federal poverty level

Localized impacts – Percentage of 20th Percentile by Block Group



Boundary representations and corresponding information about utilities are obtained from US EPA's Community Service Area Boundaries Map. Service areas indicates the community water system that serves the census place selected.

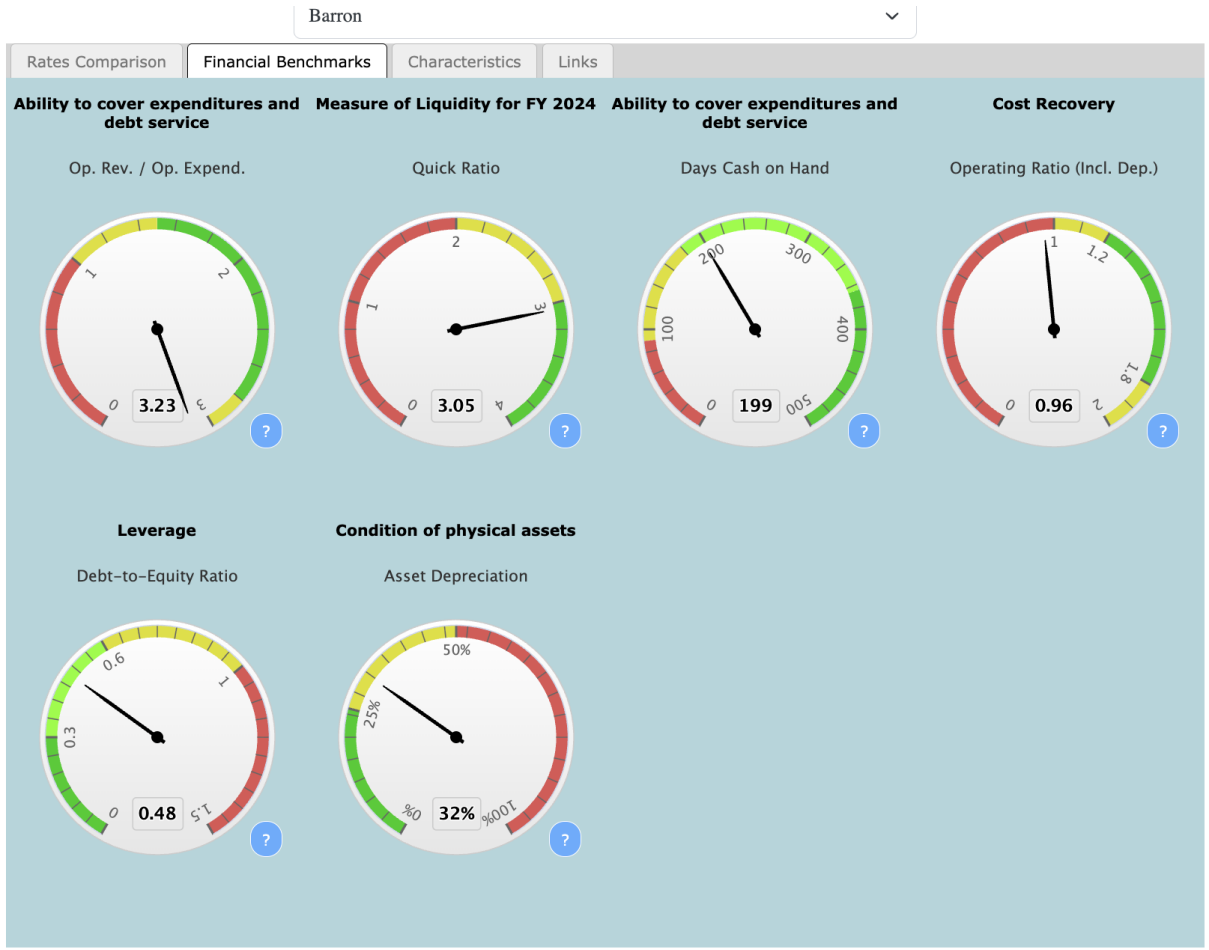
Comparison across state – Percentage of Federal Poverty Level



Boundary representations and corresponding information about utilities are obtained from US EPA's Community Service Area Boundaries Map. Service areas with blue boundaries indicate the community water system selected in the dropdown menu.

https://uncsog.shinyapps.io/efc_affordability/

Financial Benchmark Tab



[Watch this video for an in-depth overview of financial benchmarking](https://www.youtube.com/watch?v=QkwTJe-Nbuk)

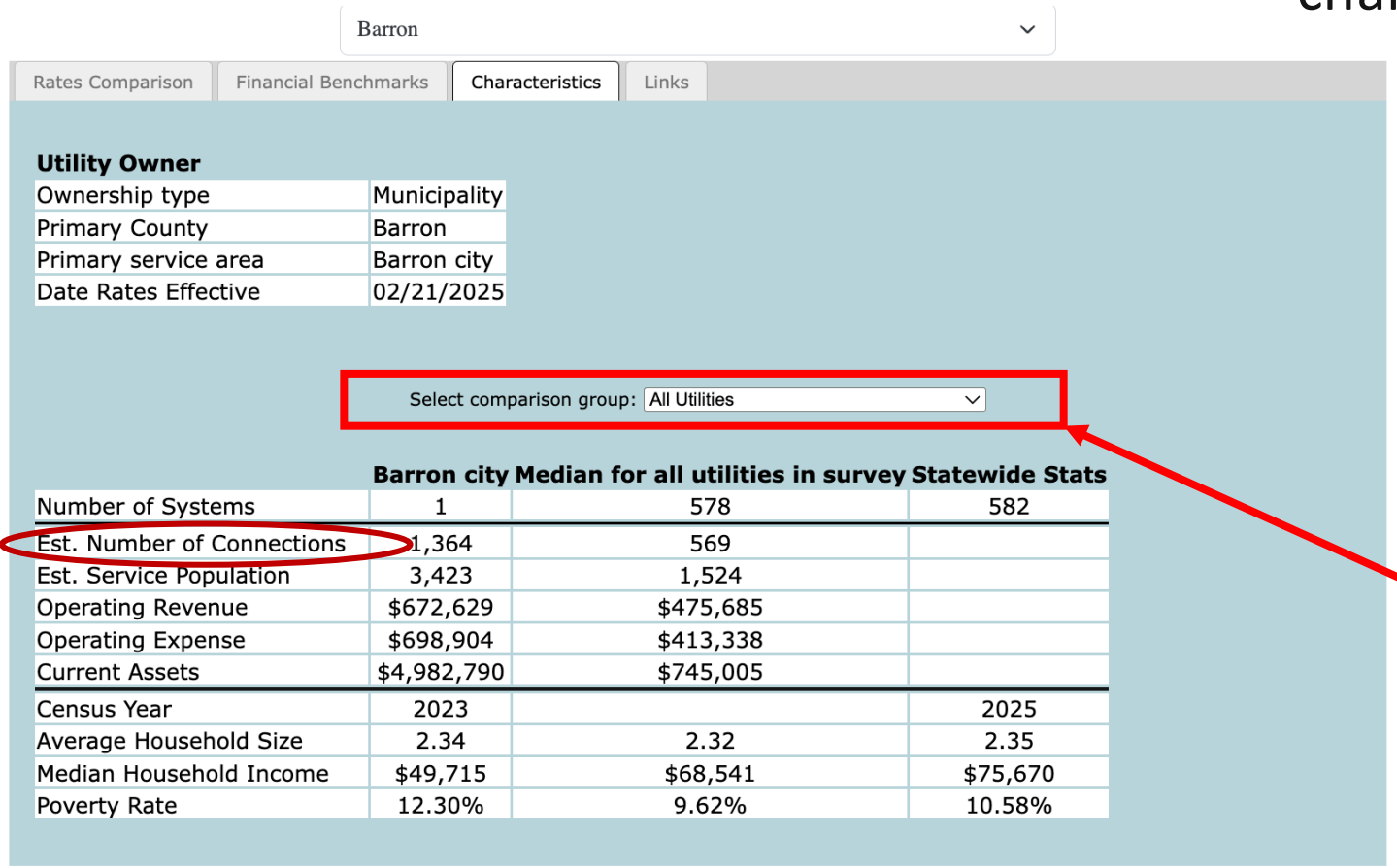
https://www.youtube.com/watch?v=QkwTJe-Nbuk

Financial Health Checkup Tool:
https://uncsog.shinyapps.io/efc_fhcu/

SUPPLEMENTARY INFORMATION

Characteristics Tab

Additional details on demographics, system characteristics, and financials for the chosen utility.



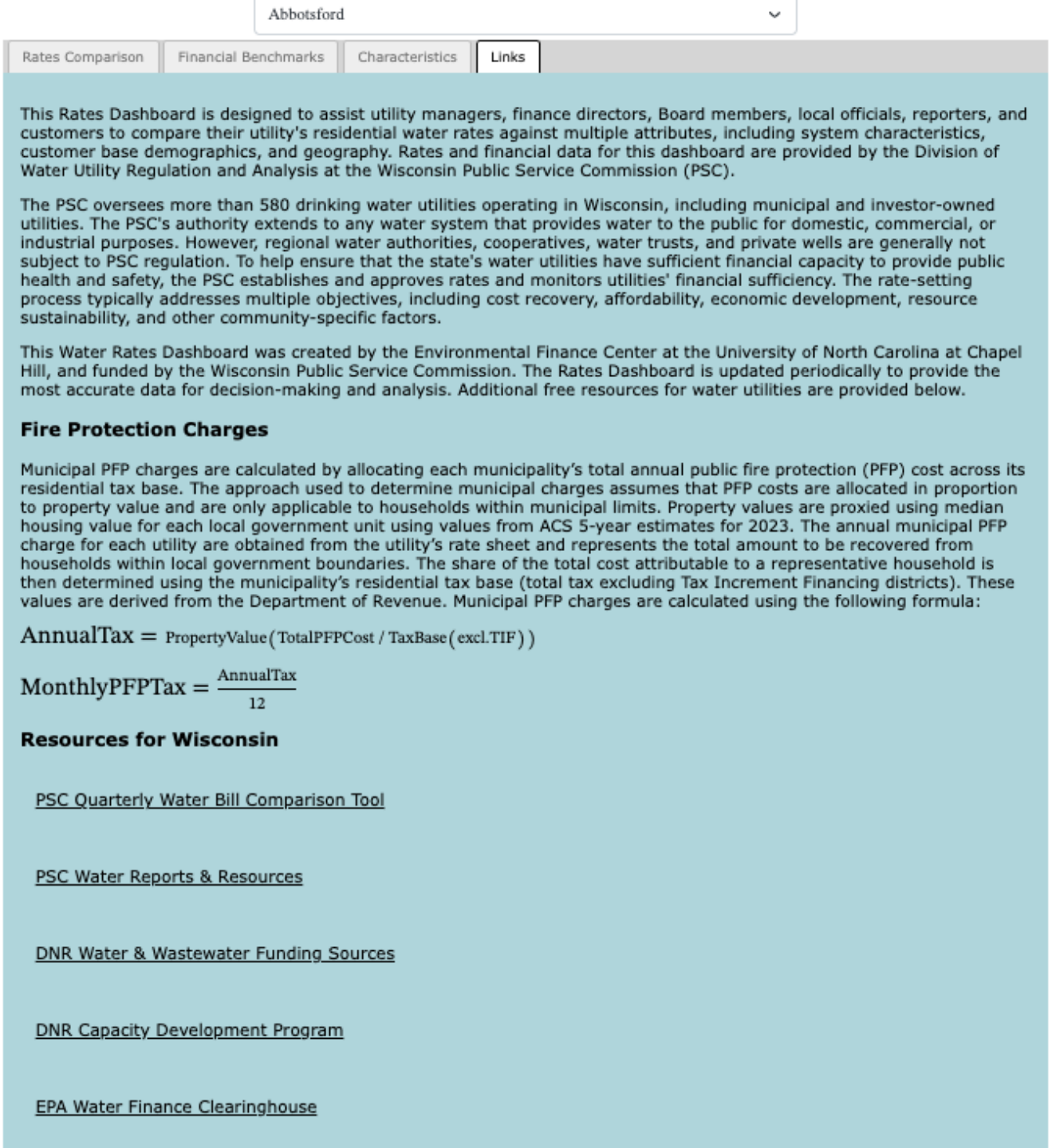
From EPA SDWIS

Can adjust by **comparison group**

SUPPLEMENTARY INFORMATION

Links Tab

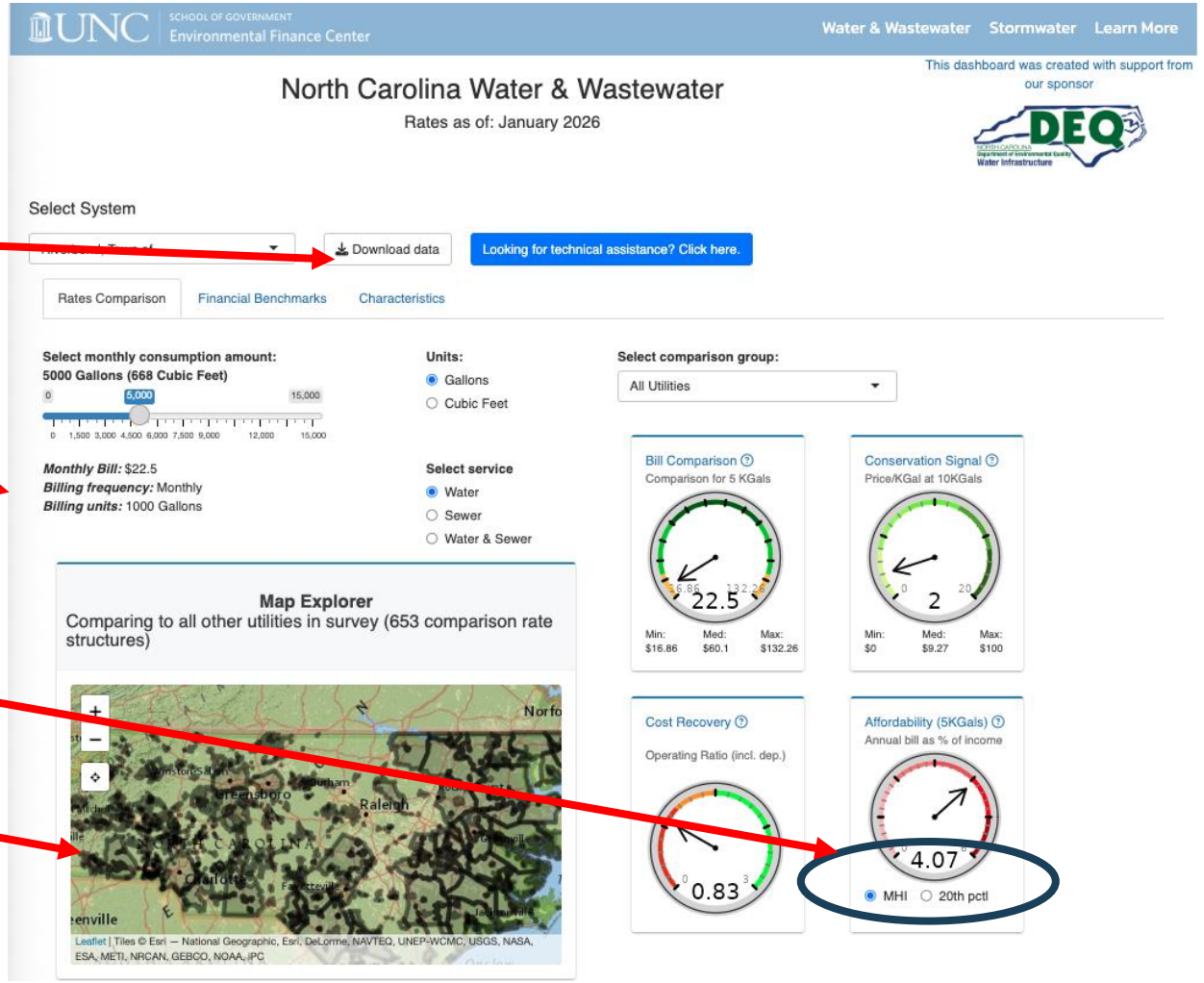
- Details on how municipal PFP charges were calculated
- Useful links
  - Wisconsin specific
  - Other relevant EFC tools/resources



Something to Look Forward to in Future Updates

Future updates would include:

- Easier access to data
- More info, e.g., rate structure, billing cycle, allowance
- Additional affordability metrics
- Map of water systems
- Benchmarking of PFP charges



Note: NC dashboard on new interface is shown for reference only

Questions?

Dr. Ahmed Rachid El-Khattabi

Research Director
UNC Environmental Finance Center
arelkhattabi@sog.unc.edu