2023 IOWA WATER, WASTEWATER & STORMWATER RATES REPORT

UNC SCHOOL OF GOVERNMENT Environmental Finance Center

IOWA LEAGUE of CITIES

SRF IOWA STATE REVOLVING FUND

ABOUT THIS REPORT

This report is just one resource in a series on Iowa water, wastewater, and stormwater rates, funded by the Iowa Finance Authority in partnership with the Iowa League of Cities and compiled by the Environmental Finance Center (UNC EFC) at the University of North Carolina at Chapel Hill.

In addition to this report, there is an accompanying set of tables and standardized water and wastewater rate information for each participating utility. Furthermore, with the online, interactive water and wastewater rates dashboard and stormwater dashboard, users can compare utilities against various attributes such as geographic location, system characteristics, and customer demographics, as well as financial indicators and benchmarks.

CONTRIBUTORS TO THE REPORT

Iowa Finance Authority:

Aaron Smith, *Chief Bond Programs Director*

Iowa League of Cities:

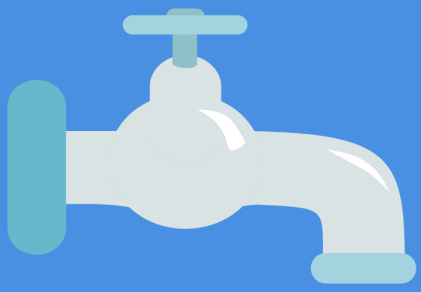
Erin Mullenix, *Research Director*

The Environmental Finance Center at UNC Chapel Hill:

Hope Thomson, *Project Director,* **Emma Copenhaver,** *Project Analyst,* **Melanie Sanchez,** *Project Director,*

Delia Wegner, *Research Assistant, and* **Julia Cavalier,** *Database Manager*

4 Myths About Water Pricing



1 MYTH: High Rates are Bad

FACT: Higher rates do not necessarily reflect poor or inefficient management. Some utilities may not be charging enough to properly maintain assets or have not re-examined rate structures.

2 MYTH: Comparing Rates is Simple

FACT: Rates alone do not tell the entire story. Rates should reflect the cost of providing service and can vary based on many factors. Comparing rates is really just a starting point for more analysis.

3 MYTH: Pricing is Simple

FACT: Utilities employ a variety of pricing structures and should be thoughtful in designing those structures to meet their needs, objectives, and priorities as they evolve over time.

4 MYTH: Promoting Conservation Requires Increasing Block Rate Structures

FACT: Many different types of pricing structures can be employed to encourage conservation, not just increasing block rate. Utilities should aim to focus on all aspects of pricing, not just rate structure design.

For more information on The Four Myths of Water Pricing, visit the original blog post at http://efc.web.unc.edu/2015/02/12/myths-about-water-rate-setting/

UNC SCHOOL OF GOVERNMENT
Environmental Finance Center

INTRODUCTION

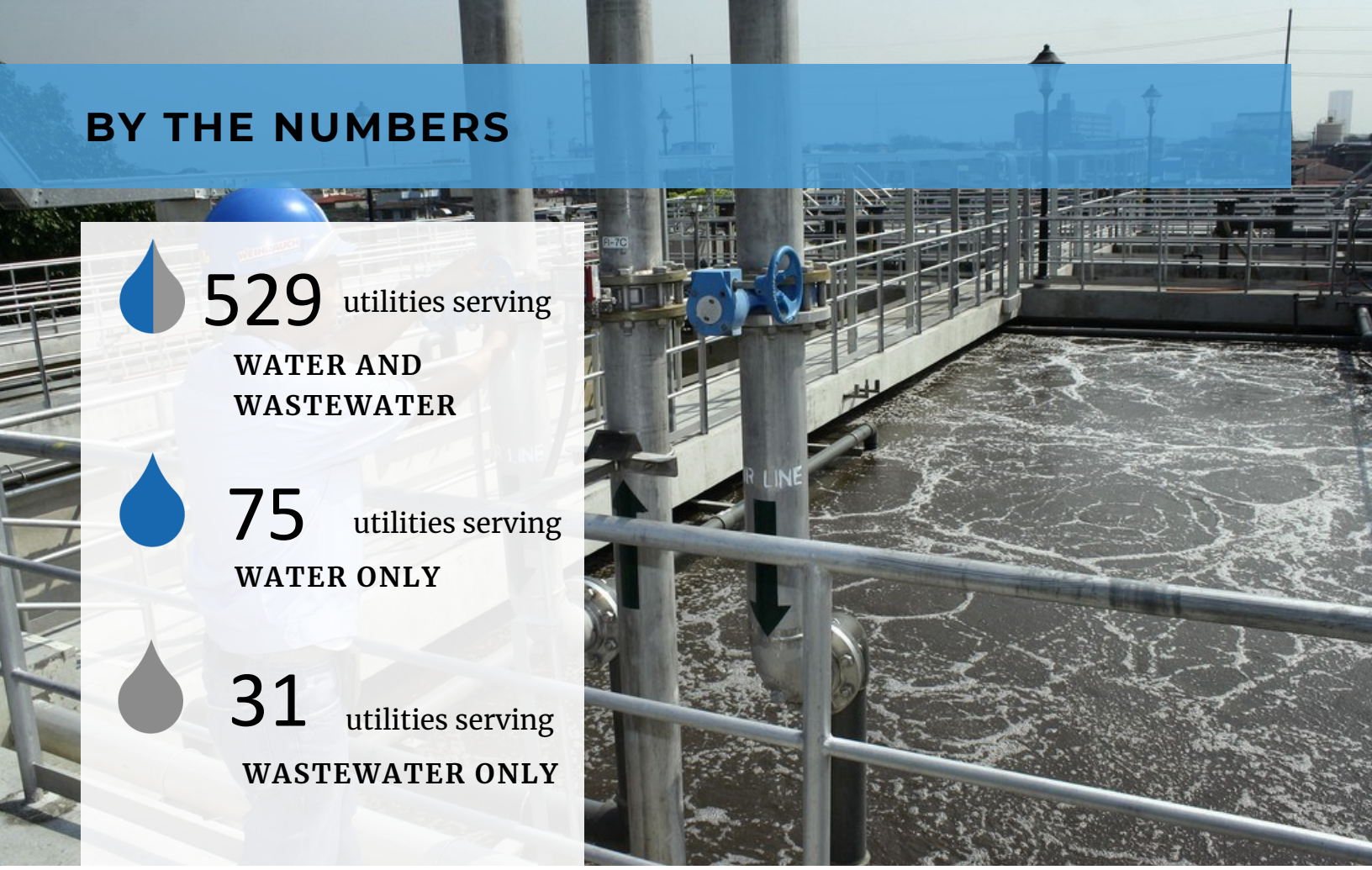
Between June 2022 and April 2023 the UNC EFC conducted a survey of 881 rate-charging water and wastewater utilities in Iowa.

A total of **635** utilities participated by providing their rate schedules, yielding a response rate of **72%** of utilities. Utilities from across the state are represented in this survey group.

Water and wastewater rate setting is one of a local government's most important environmental and public health responsibilities. This report aims to provide utility professionals and public officials with an up-to-date, detailed survey of current statewide rate structures and trends, and thus assist in the protection of public health, improvement of economic development, and promotion of sustainability in Iowa.

Continue reading to find out how water, wastewater, and stormwater **rates** ultimately determine how much **revenue** a community has to maintain **vital infrastructure**.

BY THE NUMBERS



529 utilities serving
WATER AND WASTEWATER

75 utilities serving
WATER ONLY

31 utilities serving
WASTEWATER ONLY

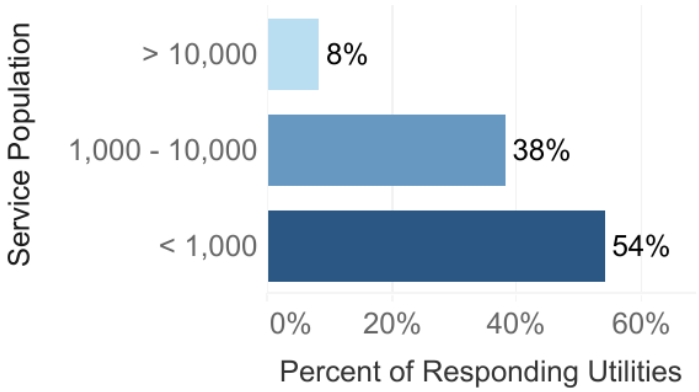
95.6%
MUNICIPAL

1.57%
COUNTY/DISTRICT

1.41%
NOT-FOR-PROFIT

1.42%
OTHER

Distribution of Utilities by Service Population



WHAT DO RATE STRUCTURES LOOK LIKE?

Base Charges

Considerable variation exists in how utilities model rate structures, but almost all use a combination of a ***base charge*** and a ***volumetric charge***.

Base charges do not vary from one billing period to the next regardless of consumption. These charges can be a constant, universal amount for all customers, or vary based on customer class (e.g. residential vs. commercial) or even meter size.

Base charges sometimes feature a ***consumption allowance***, which is a volume of usage included in the base charge.

Larger water utilities tend to have **lower** base charges than smaller utilities, likely because they are able to spread **fixed costs** across a greater customer base.

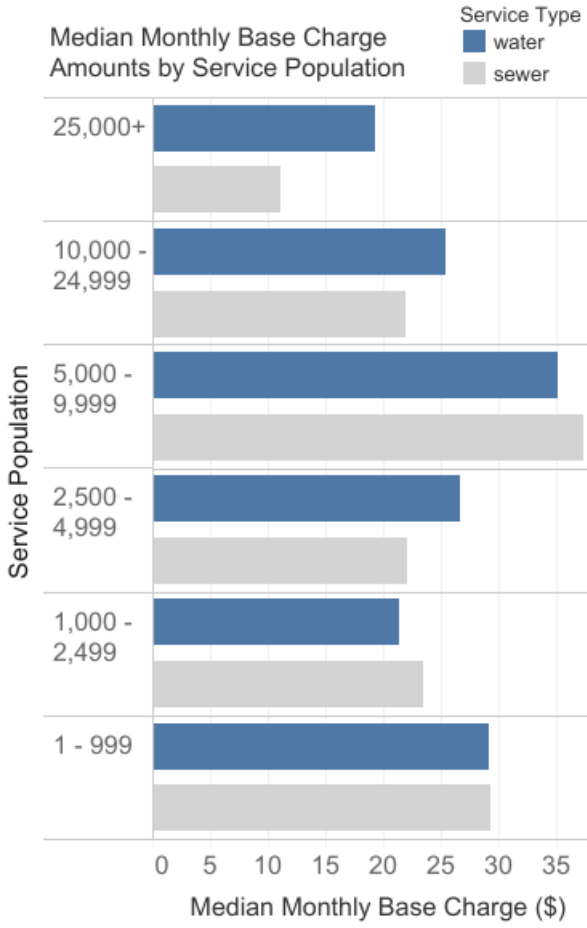
In Iowa, **65% of water rate structures** with base charges included a consumption allowance. The median monthly consumption allowance is **2,258 gallons.**

Median Monthly Base Charge

$24.56
WATER

$25.93
WASTEWATER

$41.30
WATER AND WASTEWATER



WHAT DO RATE STRUCTURES LOOK LIKE?

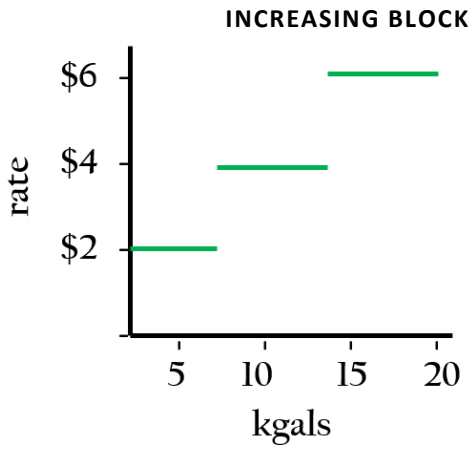
WAYS TO CHARGE FOR VOLUME

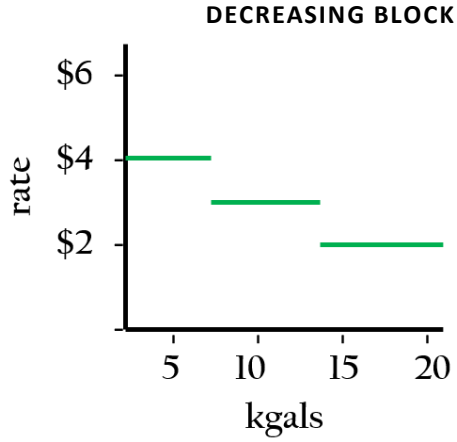
As mentioned, most rate structures are a combination of a fixed base charge plus a volumetric charge. Three common ways to charge for volume are uniform, increasing block, and decreasing block rates.

With a ***uniform rate*** structure, the rate does not change as the customer consumes more.

In an ***increasing block*** *rate* structure, the rate increases as the customer uses more. This structure is often employed by utilities that want to encourage conservation by making higher volumes of consumption more expensive.

The rate per unit decreases with greater consumption in a ***decreasing block*** structure. This type of rate structure may be used to encourage economic development, but likely will not encourage conservation.



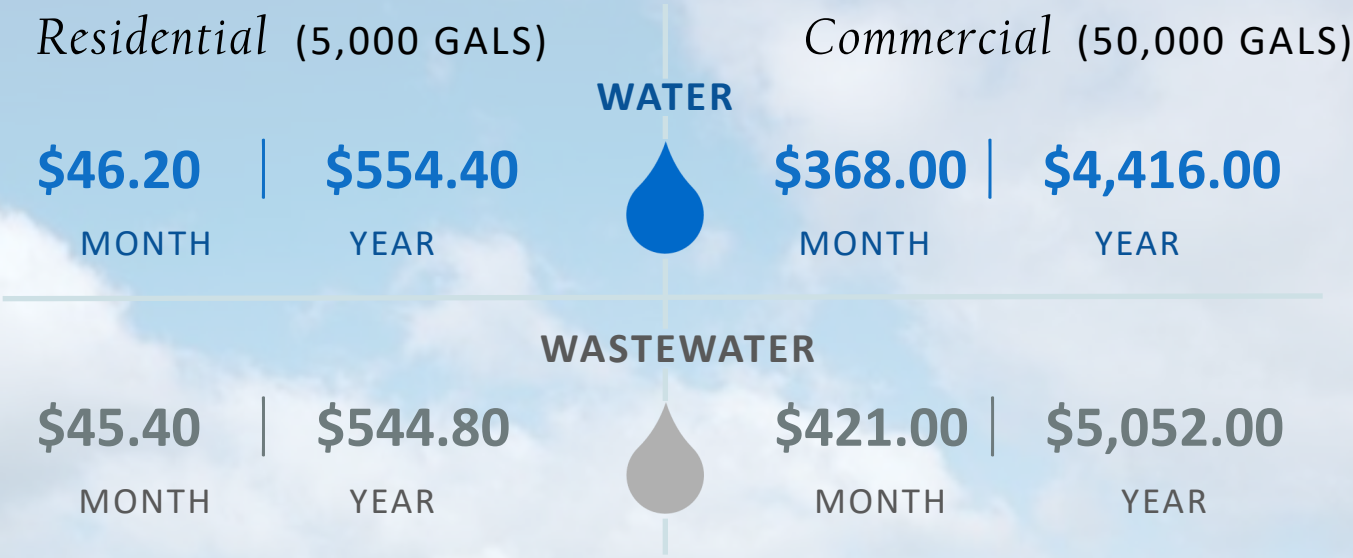


WHAT IS THE MOST COMMON VOLUMETRIC RATE STRUCTURE ?

In Iowa, the majority of residential water (77%) and wastewater (72%) rate structures use a **uniform rate** to charge for volume. Standardized to thousands of gallons, the median uniform rate is **$6.43 for water** and **$6.22 for wastewater** services.

WHAT ARE UTILITIES CHARGING?

Iowa's Average Bills



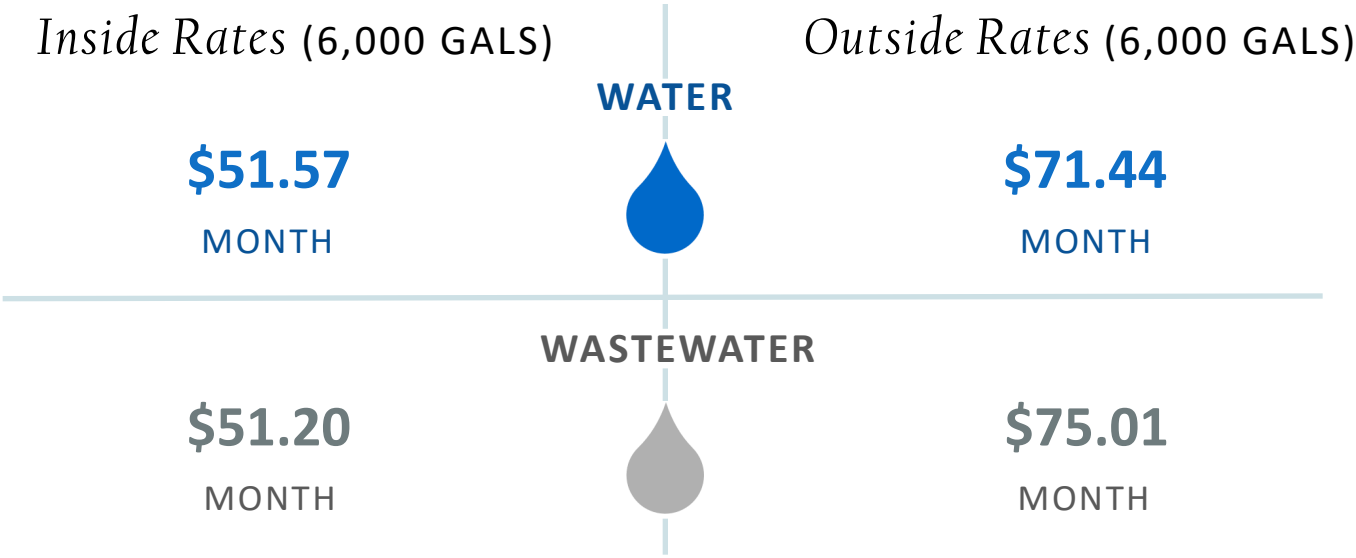
RANGE OF BILLS

The graphic above displays average monthly and yearly bills for Iowa's residential and commercial water and wastewater customers. Residential customer bills at 5,000 gallons of consumption are very similar for water versus wastewater. For commercial customers, however, at 50,000 gallons of monthly consumption, wastewater bills were 14% higher than water bills.

The UNC EFC recommends that utilities review their rates **at least every two years** to keep in pace with inflation. Regular review provides an opportunity to evaluate if current rates are sufficient to cover day-to-day expenses as well as saving for emergencies and capital planning.

HOW DO OUTSIDE RATES COMPARE?

Iowa's Median Monthly Bills



Inside versus Outside Rates

Municipal utilities often serve customers who live outside of city limits, and a handful of other utilities specify geographical boundaries within their service areas and identify their customers as residing "inside" and "outside" those boundaries. In many cases, utilities charge different rates for customers living inside or outside the boundary.

The median monthly outside bill at 6,000 gallons is **1.38** times the inside bill for water and **1.47** times the inside bill for wastewater. A combined median water and wastewater bill at 5,000 gallons for outside customers is **39%** higher than for inside customers.

In Iowa **19%** of water rate structures and **10%** of wastewater rate structures charge outside rates.

Generally, outside water rates are greater than inside water rates because customers reside farther, on average, from the water and wastewater treatment plant than inside customers.

DO PRICES REFLECT THE TRUE COST OF SERVICE?

Utilities sometimes fall into the trap of pricing services based on what their customers have always paid, rather than focusing on the bottom line of their balance sheets. This year, some financial data were available for **595 Iowa water and wastewater utilities** (67.5%).

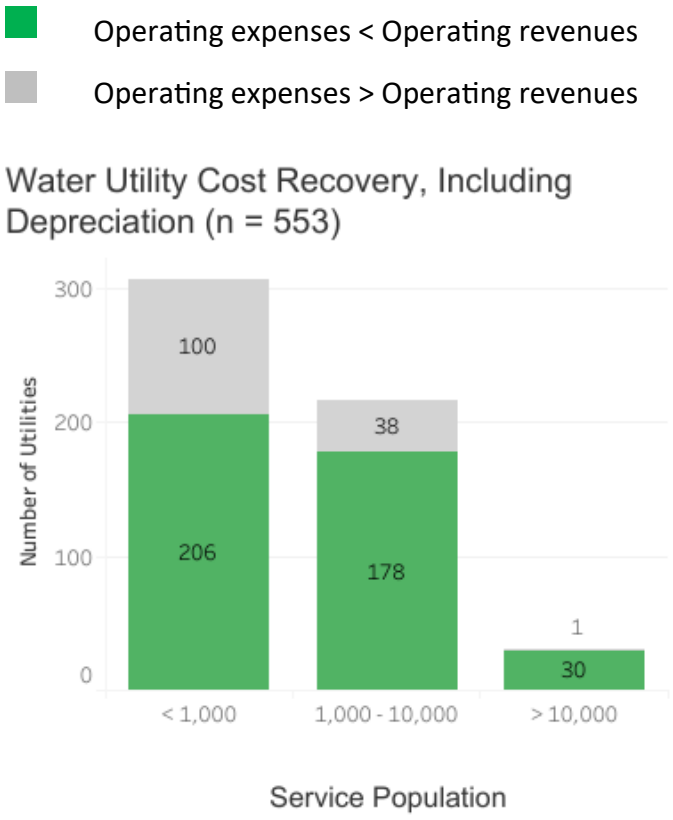
WHAT IS OPERATING RATIO?

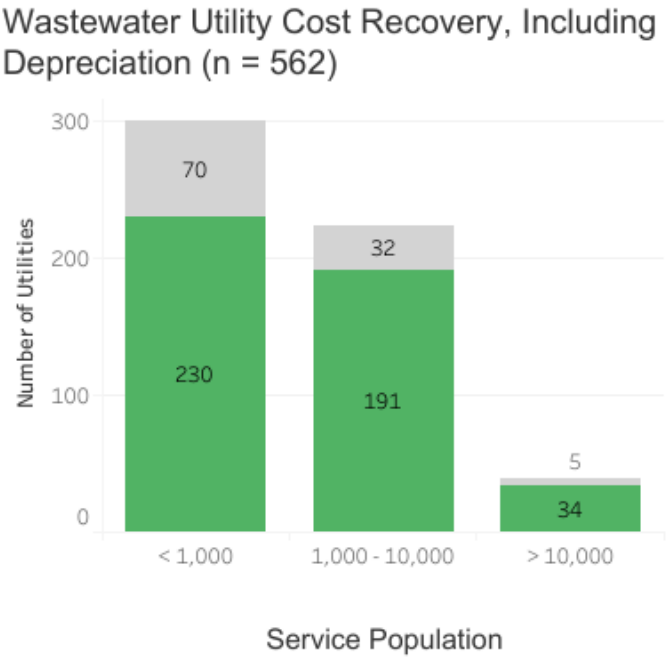
Operating ratio, also known as cost recovery ratio, is a financial benchmark that determines if an entity is operating at a loss, gain, or just breaking even. The ratio is simply the division of operating revenues by operating expenses, which can include or exclude depreciation. A utility's operating ratio must be *at least 1.0* to break even.

WHY INCLUDE DEPRECIATION?

Whenever possible, depreciation should be included in operating expenses to account for the inevitable cost of replacing equipment and infrastructure at the end of its expected useful life. Depreciation allows costs to be figuratively parceled out over time, avoiding a sudden, enormous expense when the time comes to replace assets.

The graphs below include depreciation within expenses.





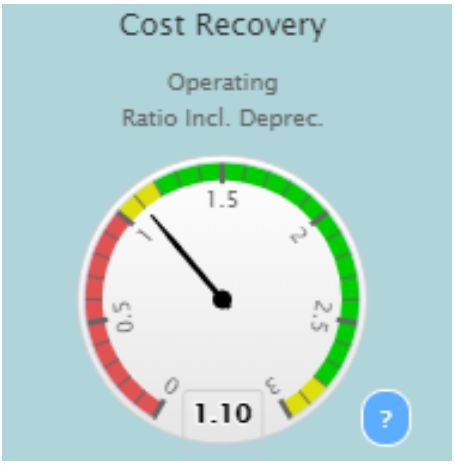
DO PRICES REFLECT THE TRUE COST OF SERVICE?

With depreciation included, 75% of water utilities and 81% of wastewater utilities generated enough revenue to cover operating expenses. All utilities face the issue of generating sufficient revenue to pay for the high fixed costs of providing safe and reliable services. However, smaller utilities must spread out those high fixed costs over a smaller customer base. For water utilities, **138 out of 139** with an operating ratio of less than 1.0 serve fewer than 10,000 people. For wastewater utilities, **102 out of 107** with an operating ratio of less than 1.0 serve fewer than 10,000 people.

For the 27 water utilities for which depreciation data was available, **19 water utilities** generated enough revenue to recover operating costs *excluding depreciation* (operating ratio of 1.0 or greater). Of the 8 water utilities that were not able to recover expenses, 5 serve fewer than 10,000 people.

WHAT IS CONSIDERED HEALTHY?

The Cost Recovery dial on the Rates Dashboard uses red, yellow, and green colored bands to give the viewer a simplified idea of the health of the utility's operating ratio at a glance.



While it is clear that being "in the red" is not a good position, there is no universal standard for what constitutes a healthy operating ratio beyond 1.0. Generally, as the Cost Recovery dial shows in the green band above, an operating ratio including depreciation of **at least 1.2** allows utilities to account for day-to-day expenses, as well as for future capital costs.

51% of utilities in Iowa have an operating ratio including depreciation of 1.2 or greater.

ADDITIONAL FINANCIAL DATA

The 2023 Rates Dashboard features additional financial metrics pending available data, including average annual capital outlays over the past 5 years. This metric serves as an indication of utility investment in infrastructure.

HOW AFFORDABLE ARE RESIDENTIAL BILLS?

Assessing rate affordability remains a challenge, because there is no one true, universal measure of affordability. The most commonly used indicator, **Percent Median Household Income**, or **"Percent MHI,"** calculates how a year's worth of water and wastewater bills, in this case 5,000 gallons/month, compares to the MHI of the community served by the utility. MHI is provided by the most recent 5-year estimates of the US Census Bureau's American Community Survey.

	MEDIAN % MHI for 5,000 Gals/Month:	RANGE OF % MHI for 5,000 Gals/Month:
WATER	0.94%	0.17% - 5.05%
WASTEWATER	0.94%	0.10% - 6.61%

As all communities have a range of income brackets, it is important to keep in mind that what may seem like a small percentage of the community's MHI can have a proportionally larger impact on lower-income populations. This includes households making less than or equal to the **federal poverty guideline, $26,200 in 2020 for a family of four**, according to the US Department of Health and Human Services. In Iowa, the 75th percentile water bill and wastewater bill equates to about **1.18% income for water and 1.21% for wastewater**, respectively, at the federal poverty guideline.

As all communities have a range of income brackets, it is important to keep in mind that what may seem like a small percentage of the community's MHI can have a proportionally larger impact on lower-income populations. For a more in-depth look at the affordability of water and wastewater services in a community, the EFC offers the free, Excel-based **Residential Rates Affordability Assessment Tool**, available for download on our website.

ASSESSING STORMWATER RATES AND FEES

The UNC EFC also collected rate and financial data for from Iowa's 177 stormwater utilities. 126 participated in the Iowa stormwater survey for a response rate of 71.7%. Those participating utilities service a total of 1,465,650 people, roughly 46% of Iowa's population. The majority of those surveyed have service populations under 10,000 people. Cedar Rapids, serving approximately 141,000 people, has the largest service population in the state. Vincent has the smallest service population, serving only 130 people.

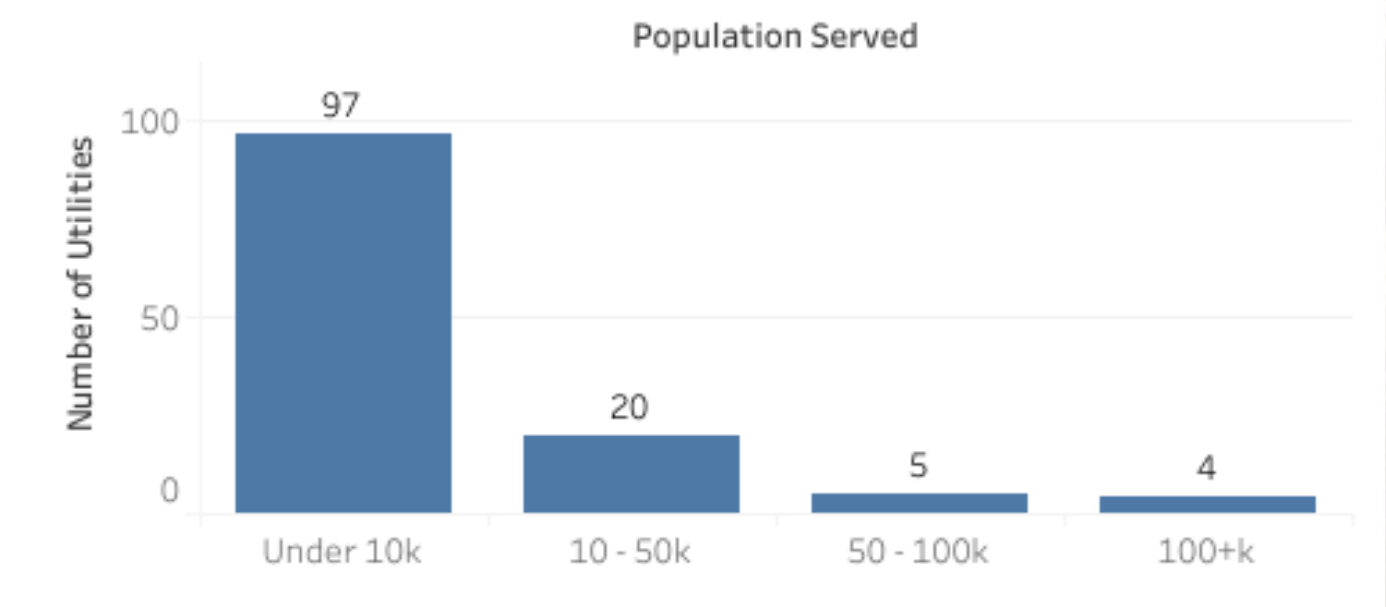


Figure 1: The distribution of surveyed municipalities with stormwater utilities in Iowa based on their service population.

WHAT ARE COMMON STORMWATER FEE STRUCTURES?

Flat Fees

Utilities that use flat fees charge all properties the same fee regardless of the estimated amount of impervious surface on the property. Communities might implement a flat fee for residential customers because residential parcels within the city's jurisdiction do not vary significantly in size. This eliminates the city or county's need to estimate the size of each parcel individually, cutting down on data collection and administration costs. Prior to the establishment of a stormwater utility, many communities conduct studies to determine the average size of a residential parcel. In Iowa, about 53 percent of the 106 utilities that implement a residential flat fee structure charge nonresidential customers using a different structure. In the example provided above in Table 1 and Equation 1, all residential customers are charged $3.80 per month, which is the average flat fee charge in Iowa.

Table 1: Example of Residential Flat Fee

Residential flat fee per month
$3.80

Equation 1: Example Calculation for 3,000 ft^2 of Impervious Surface

All Properties Pay the Same Monthly Fee = $3.80

Tiered Flat Fees

Properties that are charged based on tiered flat fees are assessed a fee based on the estimated amount of impervious surface on the parcel. However, unlike per ERU fee structures, the amount of impervious surface on a parcel is not multiplied by the size of an ERU. Instead, each property is categorized into a single tier based on the amount of impervious surface estimated to be within that parcel. These tiers tend to be larger than defined ERUs in per ERU rate structures because there are fewer tiers. Thus, within the fee structure illustrated in Table 2, a property with 7,000 square feet of impervious surface will pay the same fee as a property with 10,000 square feet of impervious surface. Typically, tiered flat fee structures will create small, medium, and large categories for properties, but some utilities may have more than three tiers. The example provided in Table 2 and

STORMWATER TIERED FLAT FEES

Table 2: Tiered Flat Fees In Iowa

Single Property	Monthly Fee
Less than 7,000 ft^2	$5.25
7,000 ft^2— 10,999 ft^2	$9.06
11,000 ft^2 or more	$9.93

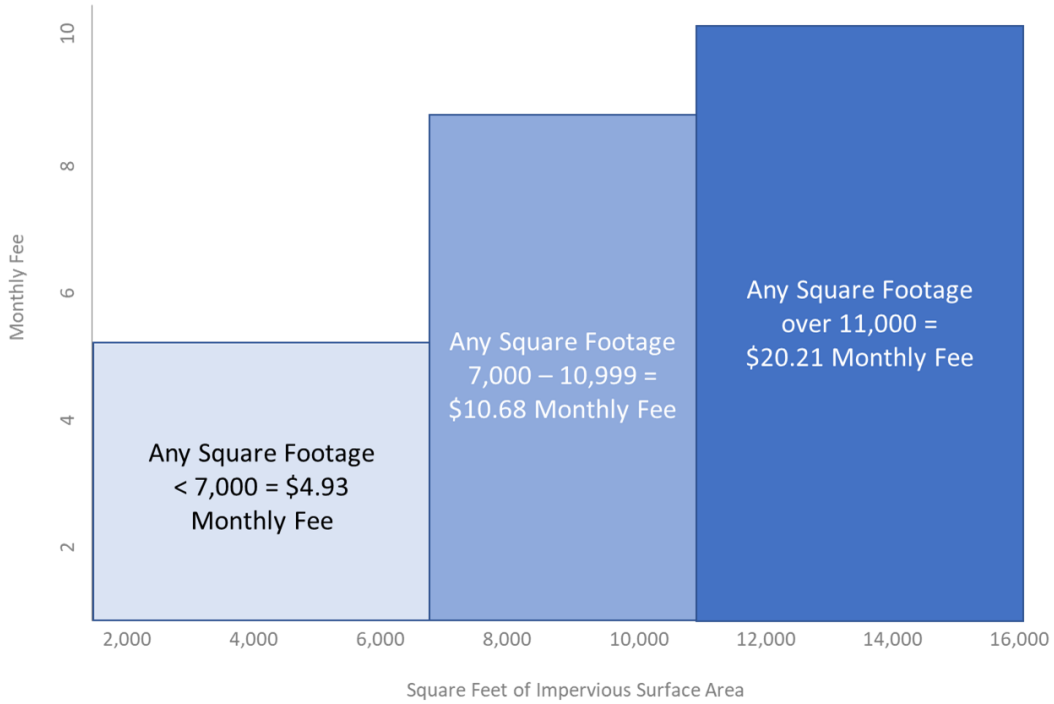
Equation 2: Example Calculation at 9,000 ft^2 of Impervious Surface

$$7{,}000\ ft^2 < 9{,}000\ ft^2 < 10{,}999\ ft^2$$

$$Monthly\ fee = \$9.06$$

Figure 2 provides a visual representation of how tiered flat fees are charged. The horizontal axis displays the impervious service on a fee payer's property, while the vertical axis displays the monthly fee owed. As impervious surface increases along the horizontal axis, the fee only changes when passing 7,000 ft^2 and 11,000 ft^2.

Figure 2: Visual Representation of Tiered Flat Fee Structure



STORMWATER PER ERU FEES

Per Equivalent Residential Unit

Properties that are charged per Equivalent Residential Unit (per ERU) are assessed a fee based on the estimated amount of impervious surface on the property. A "per ERU" stormwater fee structure may have a base charge which may or may not include a certain number of square feet of impervious surface. Additionally, a utility may have a "per ERU" with a cap fee structure. For example, a cap of 15,000 square feet means any residential property with more than 15,000 square feet of impervious surface will be charged for 15,000 square feet. Stormwater utilities with "per ERU" fee structures estimate the amount of impervious surface on individual properties using GIS or other methods. The area of impervious surface on a property is divided by the size of the ERU to get the number of ERUs on that property. Some utilities may round up or down to the nearest ERU to determine the fee for a property, but for the Iowa dashboard, each ERU is defined proportionally without rounding. The number of ERUs is multiplied by the price per ERU to get the stormwater fee owed for the individual property.

In Iowa, the average ERU was approximately 3,200 ft^2, and this value was applied to all utilities with an unknown ERU value. The average price per ERU in Iowa is $5.26 per ERU for all customer classes. The example calculation provides below in Table 3 and Equation 3 shows that a property with 5,000 square feet of impervious surface will pay a fee of $8.78 per month because it is 1.67 ERUs.

Table 3: Example of Per ERU fee

Per ERU Fee Per Month
$5.26

Equation 3: Example Calculation at 5,000 ft^2 of Impervious Surface

5,000 ft^2 / 3,200 ft^2 = 1.67 *ERUs*

*1.67 ERUs * $5.26* = $8.78 per month

STORMWATER CUSTOMER CLASSES

Residential fee structures

Residential fee structures in Iowa are mostly flat fee. About 72 percent of residential fee structures are flat fee. Some residential fee structures are per ERU, but only one purely residential fee structure was a tiered flat fee (Figure 3).

Non-residential fee structures

Nonresidential fee structures are also mostly flat fee, but a higher proportion (36%) of purely nonresidential customers are assessed a per ERU fee than purely residential customers (25%) (Figure 3). Why not charge a flat fee for nonresidential customers? Residential parcel sizes tend to have similar impervious surface areas to one another, but the variation in impervious surface area for nonresidential parcels can be quite large. Nonresidential parcels may be as large as a shopping mall or as small as a restaurant. Thus, charging per ERU ensures that each nonresidential establishment pays a fee proportional to the amount of impervious surface on the parcel.

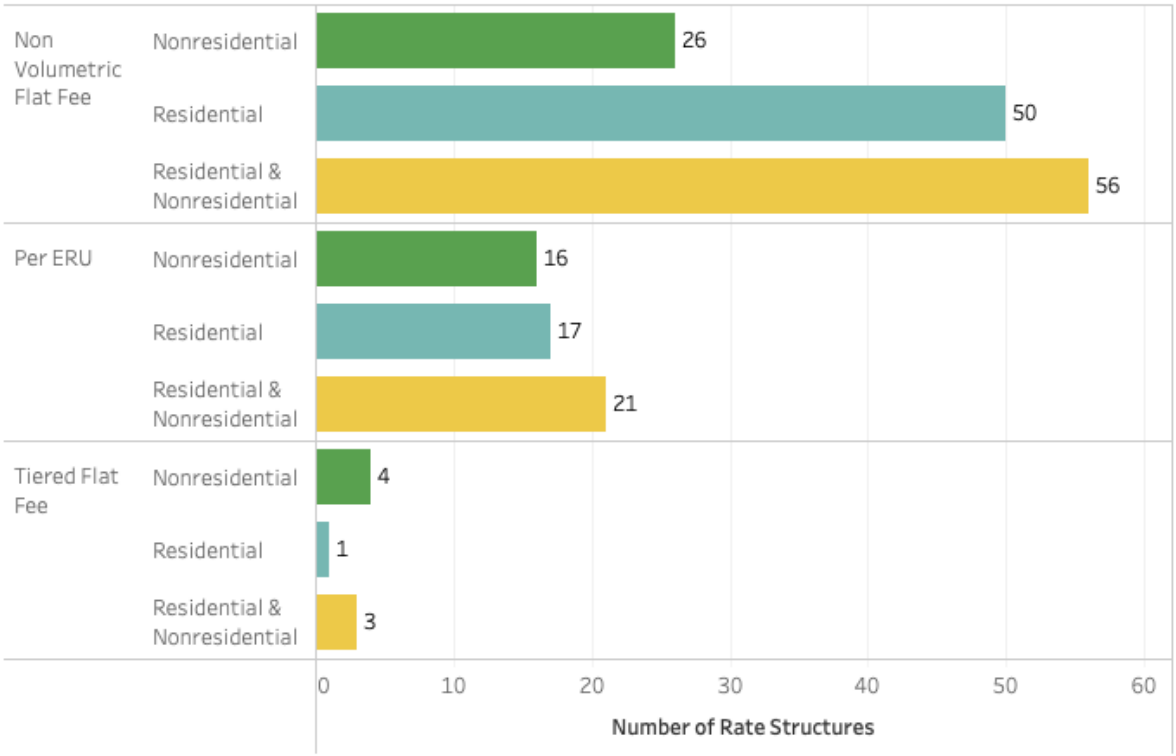


Figure 3: Stormwater fee structure types by type of customer class. Nonresidential (green) includes commercial and industrial only; residential (blue) includes residential and multifamily only; the third category (yellow) includes rate structures that apply to both residential and non-residential customer classes.

STORMWATER MONTHLY RESIDENTIAL BILLS

Residential monthly bills

Table 4 shows that at 3,000 square feet of impervious surface, the median monthly residential stormwater bill is $3.00. The median bill at 6,000 square feet of impervious surface is $4.00, just a $1.00 increase from the median bill at 3,000 square feet. These impervious surface areas are intended to show the difference in the bill for an average home and a large sized home.

Table 4: Residential Minimum, Median, and Maximum Bills at 3,000 ft^2 and 6,000 ft^2 of Impervious Surface

	3,000 ft^2	6,000 ft^2
Minimum	$0.50	$0.50
Median	$3.00	$4.00
Maximum	$15.33	$30.66

Figure 4: Monthly Residential Stormwater Fees at 3,000 ft^2 of Impervious Surface

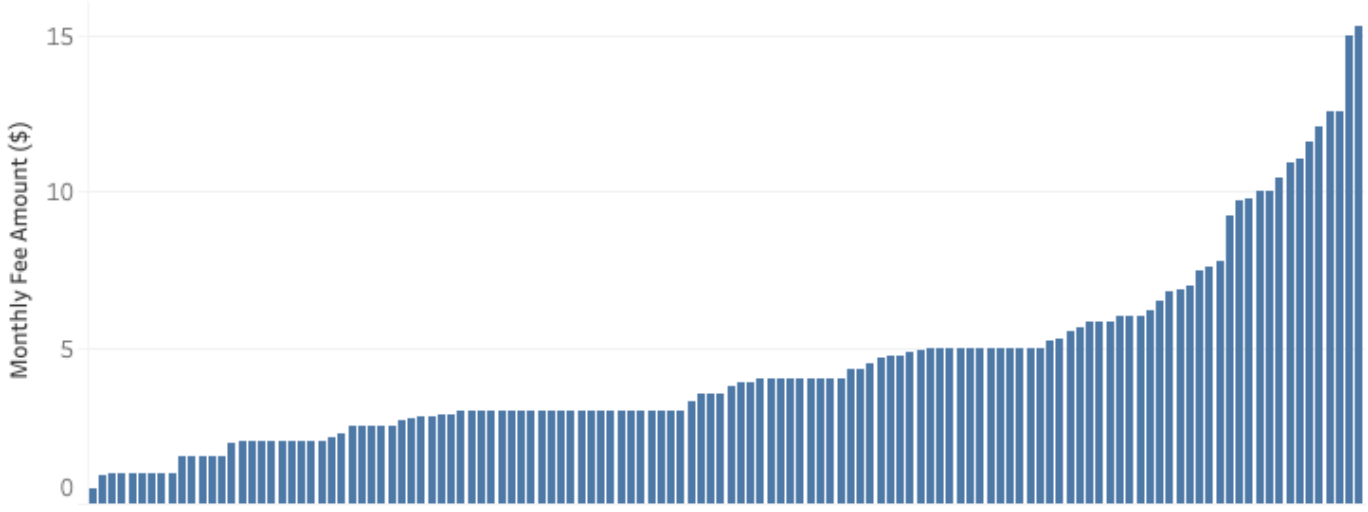


Figure 4 displays the individual single-family residential stormwater monthly bill amount for each fee structure at 3,000 square feet of impervious surface. Note that these comparisons do not include level of service (LOS) provided, which can vary widely based on the stormwater utility's goals, regulatory mandates, service area, and population. LOS is a general term used to describe the stormwater service a utility provides. A utility with a high LOS may be constructing and maintaining stormwater control measures as well as implementing programs such as floodplain buyouts. A utility with a lower LOS may be focused on the minimum practices needed to achieve regulatory compliance.

STORMWATER MONTHLY MULTIFAMILY BILLS

Multifamily monthly bills

Table 5 shows that at 6,000 square feet of impervious surface, the median monthly residential stormwater bill is $3.50. The median bill at 10,000 square feet of impervious surface is $3.53, just a $0.03 increase from the median bill at 6,000 square feet.

Table 5: Multi-Family Minimum, Median, and Maximum Bills at 6,000 ft^2 and 10,000 ft^2 of Impervious Surface

	6,000 ft^2	10,000 ft^2
Minimum	$0.50	$0.50
Median	$3.50	$3.53
Maximum	$30.66	$51.09

Figure 5: Monthly Multi-Family Stormwater Fees at 6,000 ft^2 of Impervious Surface

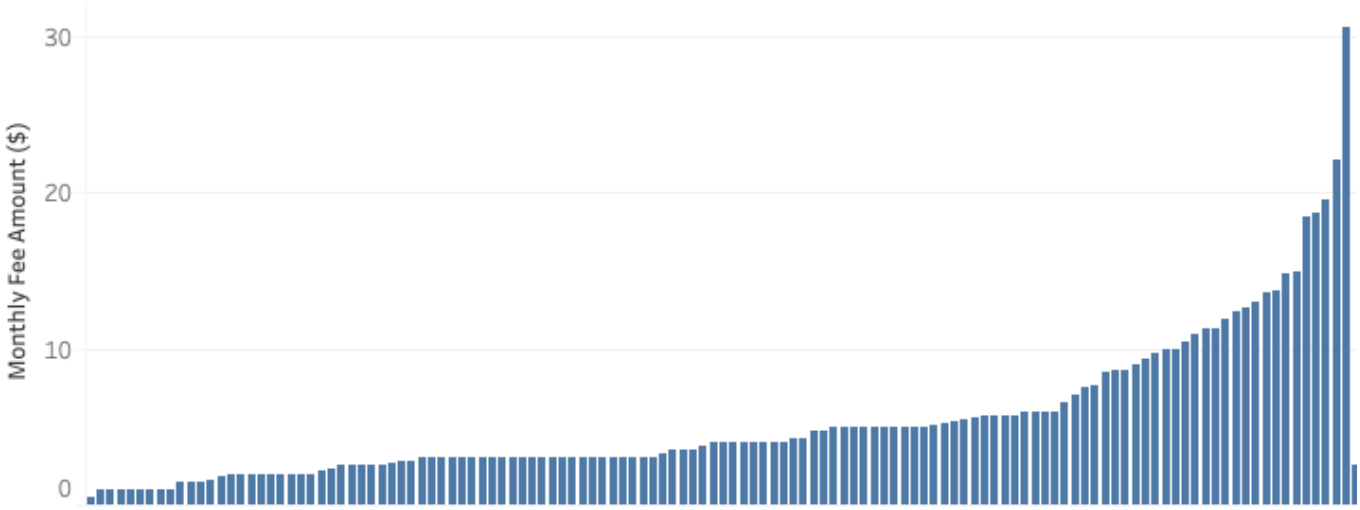


Figure 5 displays multi-family residential stormwater monthly bill amount for each fee structure at 6,000 square feet of impervious surface. Note that these comparisons do not include level of service (LOS) provided, which can vary widely based on the stormwater utility's goals, regulatory mandates, service area, and population.

Utilities may also define multifamily properties as individual units (e.g., a single apartment or townhome) or a group of units (e.g., an apartment complex). For the purposes of the stormwater dashboard, there is no distinction in how a property is charged, although the vast majority of utilities charged per unit.

STORMWATER MONTHLY NONRESIDENTIAL BILLS

Nonresidential monthly bills

Table 4 shows that at 10,000 square feet of impervious surface, the median monthly nonresidential stormwater bill is $5.00. The median bill at 50,000 square feet of impervious surface is $5.00, which is the same price as the median bill at 10,000 square fee of impervious surface. These impervious surface areas are intended to show the difference in the bill for an average and larger sized property.

Table 6: Nonresidential Minimum, Median, and Maximum Bills at 3,000 ft^2 and 6,000 ft^2 of Impervious Surface

	10,000 ft^2	50,000 ft^2
Minimum	$0.50	$0.50
Median	$5.00	$5.00
Maximum	$78.56	$392.80

Figure 6: Monthly Nonresidential Stormwater Fees at 10,000 ft^2 of Impervious Surface

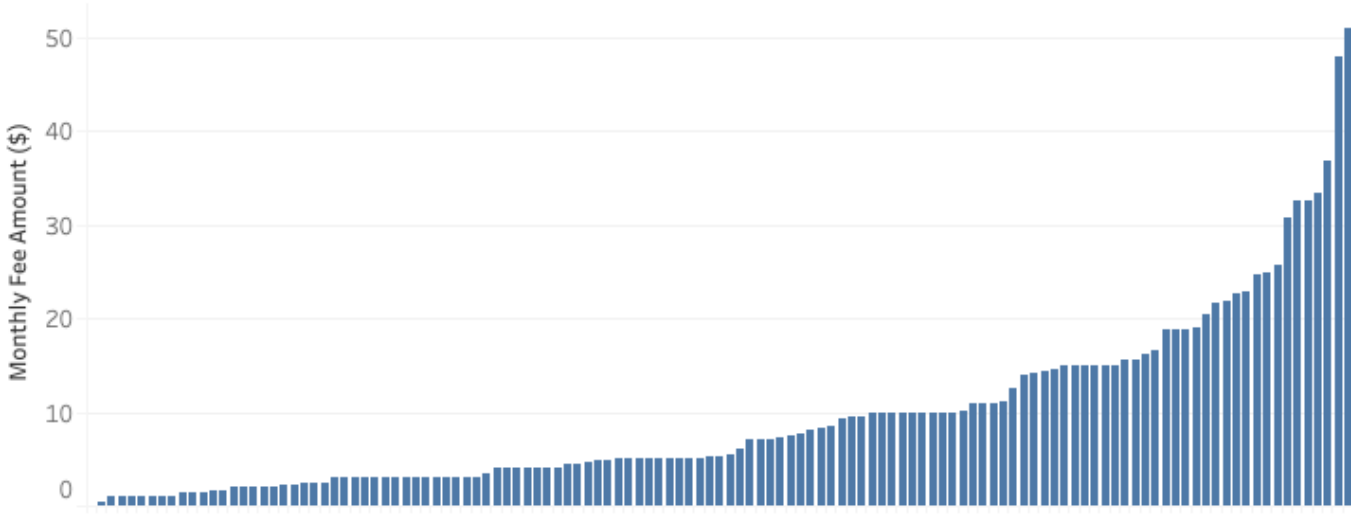


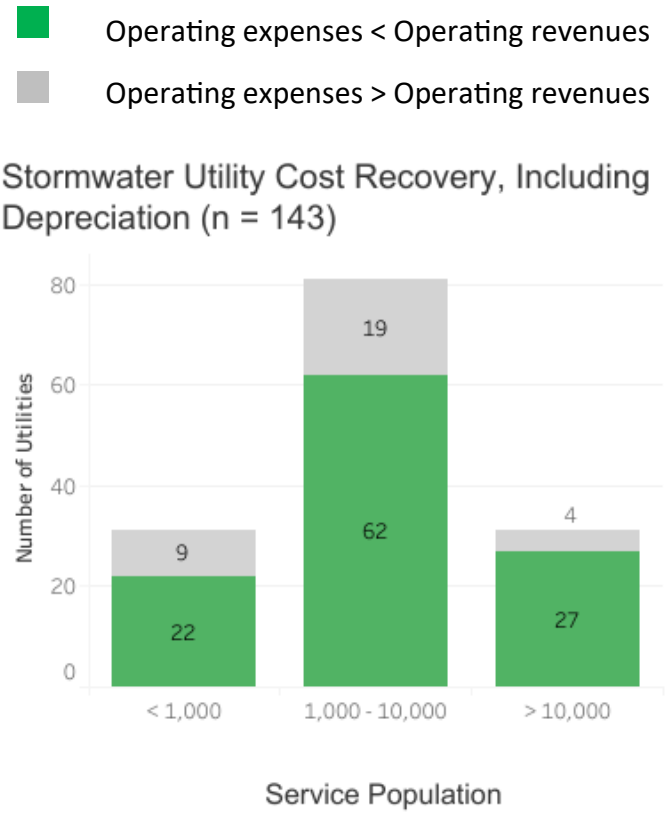
Figure 6 displays the individual single-family residential stormwater monthly bill amount for each fee structure at 10,000 square feet of impervious surface. Note that these comparisons do not include level of service (LOS) provided, which can vary widely based on the stormwater utility's goals, regulatory mandates, service area, and population.

STORMWATER UTILITY COST RECOVERY

Some financial data were available for **143 stormwater utilities** (80.8% of total). Operating ratio for these utilities is calculated the same as for water and wastewater utilities, by dividing revenues by expenses.

A utility's operating ratio must be *at least 1.0* to break even. Again, the UNC EFC recommends including depreciation in operating expenses to account for inevitable infrastructure replacement costs.

The graphs below include depreciation within operating expenses.



With depreciation included, **110 of the 143** (77%) utilities generated enough revenue to cover operating expenses. All utilities face the issue of generating sufficient revenue to pay for the high fixed costs of providing safe and reliable services. However, smaller utilities must spread out those high fixed costs over a smaller customer base. 28 out of 32 of the utilities with an operating ratio of less than 1.0 serve fewer than 10,000 people.

Further Resources

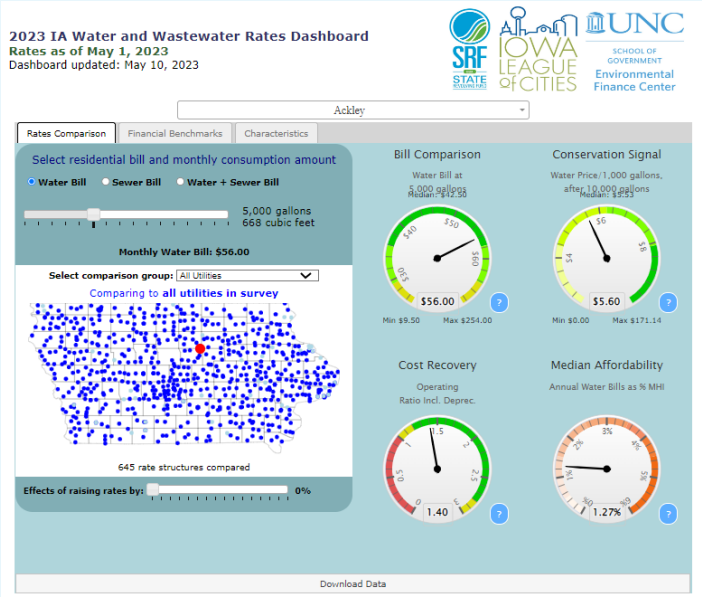
All of the following free resources are available at:

efc.sog.unc.edu

2023 Water and Wastewater Rates Dashboard

Downloadable tables of rates and rate structures for residential and commercial customer classes for water and wastewater

Tableau software tool with standardized rate sheets for all utilities in the survey



Need Technical Assistance?

Fill out the form below:

https://efc.sog.unc.edu/technical-assistance/

Questions? Feedback?

Aaron Smith

aaron.smith@iowafinance.com

Hope Thomson

efc@sog.unc.edu

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