



SEPTEMBER 2024

NACWA's Triennial Financial Survey

Executive Highlights

NACWA 



COPYRIGHT NOTICE & DISCLAIMER

NACWA Financial Survey (© 2024)

This work is protected by copyright owned by the National Association of Clean Water Agencies (NACWA), all rights reserved. This work is made available as a benefit of NACWA membership and its use, while encouraged, should be limited to member agency/entity use and may not otherwise, without prior permission from NACWA, be reproduced, stored, or transmitted in any form or by any means. Persons desiring to reproduce this work should contact NACWA to discuss the intended use and to obtain appropriate permission. This work contains information reported to NACWA by its member agencies, which has been accurately compiled and analyzed by NACWA's project contractor. Neither NACWA nor its project contractor represent that the information contained is suitable for any particular situation; have any obligation to update this work or to make notification of any changes to the information discussed in this work; or assume any liability resulting from the use of or reliance upon any information, conclusions, or opinions contained in this work.

Table of Contents

Preface 4

Introduction 5

Key Takeaways 6

Survey Participants at a Glance 8

Financial Trends & Pressures 9

Sustainable Rates & Charges 18

Conclusion 25

Preface



What is the Financial Survey?

Since 1981, the National Association of Clean Water Agencies (NACWA) has performed a triennial financial survey of its membership to provide utilities, government officials, and the public, a comprehensive knowledge base on financing, rates, staffing and key utility management initiatives of public clean water utilities. The 2023 NACWA *Financial Survey*, the 14th triennial report to be published since the original development of the survey, gathered information from 96 clean water utilities who collectively serve one-third of the sewered population in the United States.

Why is it important?

The NACWA *Financial Survey* is a unique source of information that can be used by utilities and others to guide national, state and local policy development through comparative analysis and tracking of national trends.

How are survey results provided?

For the 2023 *Financial Survey*, NACWA is publishing three different products summarizing the results. An **Executive Highlights report** – this document – provides overarching summary information for utility Board members and other high-ranking officials, and/or the public. A **data results summary report** presents data snapshots and additional analyses for selected utility functions and calculated indicators, which can be used as a reference tool by utility analysts and decisionmakers. And finally, an **electronic spreadsheet** for those utilities and researchers that wish to perform their own custom analyses for internal performance tracking.

Introduction

Public clean water utility managers must make informed decisions as they seek to balance their dual missions of protecting the environment and responsibly managing ratepayer dollars. Making the necessary investments in utility systems while ensuring that rates are sustainable and do not pose an unreasonable burden on ratepayers continues to present challenges for the water sector as regulatory requirements mount and infrastructure ages. As with previous editions of the *Financial Survey*, NACWA conducted the 2023 *Survey* to capture a snapshot of rising cost pressures, the resulting impacts on rates and financing, and the actions that utilities across the United States are taking in response.

A total of 96 clean water agencies¹ representing over 84 million people served by centralized wastewater treatment responded to the 2023 *Financial Survey*. The data detailed in this document and the larger *Survey* report are largely drawn from the 2022 to mid-2023 timeframe, and follow trends in revenues, expenditures, rates, staffing, and energy use, as in previous surveys.



The time period covered by the 2023 *Survey* was heavily influenced by efforts to recover from the 2020 COVID-19 pandemic, as well as a surge in inflation and intense supply chain pressures. The country also saw historic infrastructure investments through the Bipartisan Infrastructure Law (BIL) and Inflation Reduction Act (IRA) and the establishment of a temporary federal Low-Income Household Water Assistance Program. This recent activity at the federal level has shined a light on the importance of investing in water infrastructure, while making sure that clean and safe water remains affordable, and the critical role clean water plays in protecting public health, the environment and the nation's economy.

¹A total of 96 clean water agencies responded to the survey questionnaire, however, summary statistics are based on the number of agencies responding to a question, which in all cases is fewer than the total number of respondents to the survey.

Key Takeaways

The survey results indicate that US clean water utilities maintain strong fiscal health but face rising capital and operation costs. These increased expenses stem from addressing aging infrastructure, wet weather challenges, and stricter water quality regulations. Striking a balance between these costs and user affordability remains a future challenge as annual charges rise to meet revenue demands. Below are some of the key highlights from the 2023 *Survey*.

FISCAL HEALTH

High credit ratings reflect the financial strength of utilities.

Twenty-four (24) out of 65 respondents received the highest “AAA” rating from S&P, Moody’s or Fitch rating services, and 93 percent of respondents received better than “A+/A1” rating on senior debt for revenue bonds or G.O. bonds. Revenue bonds continue to be the dominant source of debt-financing used by responding utilities (67 percent of total debt), however, the proportion of long-term utility debt from State Revolving Fund (SRF) programs increased to 19 percent in 2023. Total outstanding debt increased by 4.4 percent between the 2020 to 2023 *Surveys*, while debt service payments increased by only 2.5 percent from 2019 to 2022.

REVENUE

Over 80 percent of utility revenue was generated directly from users.

Eighty-nine (89) utilities reported \$23.1 billion in revenue in 2022, with 70 percent of revenue being sourced from user charges alone. Along with taxes, hookup fees, and assessments, users directly contributed to more than 80 percent of utility revenue in 2022. Additionally, debt financing through bonds, state revolving fund loans, and other debt instruments – which all must be repaid by the system users over time – comprise an additional 11 percent of revenue.

O&M COSTS

Operation and maintenance costs per million gallons treated have increased at an average rate of 5.4 percent per year since 1998.

Ninety-one (91) agency respondents reported \$8.2 billion in O&M costs for wastewater collection and treatment services in 2022. These expenses translated into a unit cost of \$3,461 per million gallons treated, nearly four times the \$977 per million gallons treated reported in 1998.

USER CHARGE

The average residential charge for wastewater services increased 3.2 percent from 2022 to 2023 to \$588, though for the past three years, inflation as measured by the US Consumer Price Index, has risen faster.

The average household cost for wastewater services rose 3.2 percent in 2023, as compared to a 4.1 percent annual inflation rate. Individual components of rates such as flat charges and volume charges increased closer to the inflation rate at an average of 3.8 to 4.5 percent annually from 2019 to 2022. Industrial users are also impacted by rate increases with volume rates increasing nearly 5 percent per year from 2019 to 2022.

CAPITAL COSTS

Capital expenditures increased by 19 percent from 2019 to 2022. In parallel, five-year capital improvement budgets have increased by 24 percent since the 2020 Survey and 56 percent since the 2017 Survey.

Sixty-five (65) agencies that responded to both the 2020 and 2023 *Surveys* reported a 19 percent increase in annual capital spending from \$3.4 to \$4.1 billion. A total capital expenditure of \$5.0 billion was reported by 86 utilities.

Fifty-eight (58) agencies that responded to both the 2020 and 2023 *Surveys* increased their five-year CIP budgets from \$28.5 to \$35.2 billion from 2020 to 2023, while 83 agency respondents to the 2023 *Survey* reported a combined total for five-year capital improvement budgets of \$53.5 billion. Commitments to address aging infrastructure and combined sewer overflows dominate most capital improvement programs with nearly two-thirds of overall planned spending

CUSTOMER

Nearly two-thirds of respondent utilities provide financial assistance to customers that have difficulty paying their bills.

The most common form of assistance is payment plans whereby customers receive an extended payment period which is used by 48 percent of utilities providing customer assistance. Other forms of assistance include bill discounts and lifeline rates which are used by 27 percent of utilities for low-income qualifying customers. Respondent agencies indicated that they generally consider the cost of these low-income assistance programs and build these into the costs of services when determining their rates.

Survey Participants at a Glance

A total of **96 clean water agencies** representing over **84 million people served** by centralized wastewater treatment responded to the 2023 *Survey*. Clean water agencies from all ten EPA regions are represented in the responses.

96

PUBLIC AGENCIES



84 million
POPULATION SERVED

18 billion
GALLONS PER DAY FLOW CAPACITY

15.7 million
RETAIL CUSTOMER ACCOUNTS



340
TREATMENT PLANTS

2,256
PUMPING STATIONS

133,339
MILES OF COMBINED AND SEPARATE SANITARY SEWER PIPE



\$138 billion
IN TOTAL ASSETS (NON-DEPRECIATED)

\$23.1 billion
2022 REVENUES

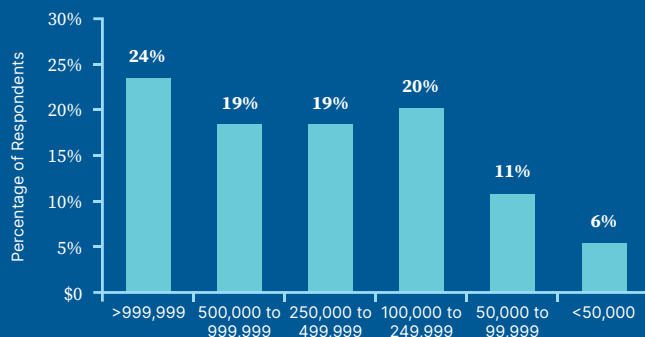
\$19.1 billion
2022 EXPENDITURES

\$89 billion
LONG-TERM DEBT

>93%
UTILITIES WITH BETTER THAN A+/A1 CREDIT RATING

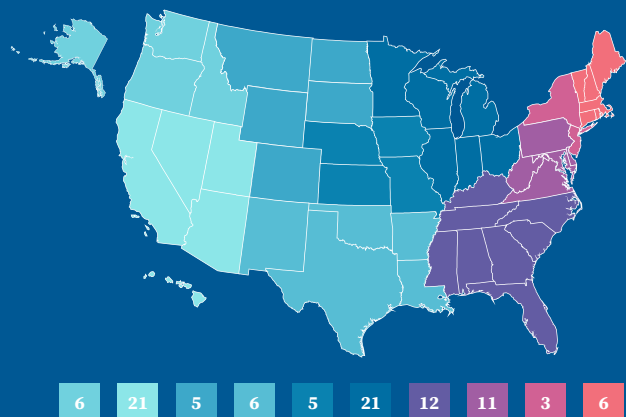
Size Breakdown

Breakdown of Population Served
(2022, 93 survey respondents)



Geographic Distribution

Number of Survey Respondents
(by EPA region)



SECTION 1

Financial Trends and Pressures

Utility managers face a complex array of factors when making decisions about water quality investments, services, and rates. These include inflationary cost pressures, aging infrastructure, demand for better services, regulatory requirements, affordability concerns, workforce issues, and shifting community demographics. Despite these challenges, the financial health of the nation's clean water utilities remains robust, and they continue to enhance services while reducing pollutant loads.

Based on the 2023 *Survey*, total expenditures increased at a moderate pace from 2019 to 2022, despite a 19 percent increase in capital expenditures. This capital spending increase parallels large increases in five-year capital improvement program budgets since 2017. The 2023 *Survey* reports a 19 percent increase in five-year capital improvement program (CIP) budgets since the 2020 *Survey*, which continues a similar trend seen between the 2017 to the 2020 *Surveys*. These CIP budgets are focused on commitments to repair and replace aging infrastructure, as well as capital plans for sewer overflow correction. This reflects the ongoing significant utility efforts to address the challenges of aging systems that will likely continue to drive an increase in capital expenditure over the coming years.

As past *Surveys* have shown, personnel costs are a major expenditure, constituting 43% of all operation and maintenance expenses in the 2023 *Survey*, with salaries adjusting slightly below cost-of-living increases. Between 2019 and 2022, long-term outstanding debt rose by 4%, while state revolving loan fund debt surged by over 9%. Impressively, more than 93% of respondents received credit ratings better than A+/A1, indicating above-average creditworthiness.

Total Utility Expenditures Increase Moderately, While Capital Expenditures Surge from 2019-2022

Overall, 91 *Survey* respondents reported a total of \$19.1 billion in expenditures for clean water services in 2022, with an average annual expense per capita of \$261. Major components of total expenditure include expenditures for capital infrastructure (acquisition, repair and replacement, and expansion), operations and maintenance, and debt service (principal and interest expenses).

Figure 1 shows the breakdown of 2022 utility expenditures for 91 utility respondents. Since 2007, there has been relatively little change in expenditure breakdowns. In proportion to total costs, operation and maintenance costs have remained at 40 to 43 percent of total expenditures since 2007, while debt service costs have fluctuated between 26 to 30 percent of total expenditures.

²Per person served by the clean water agency.

Forty-three percent (43%) of total expenditures are dedicated to operation and maintenance

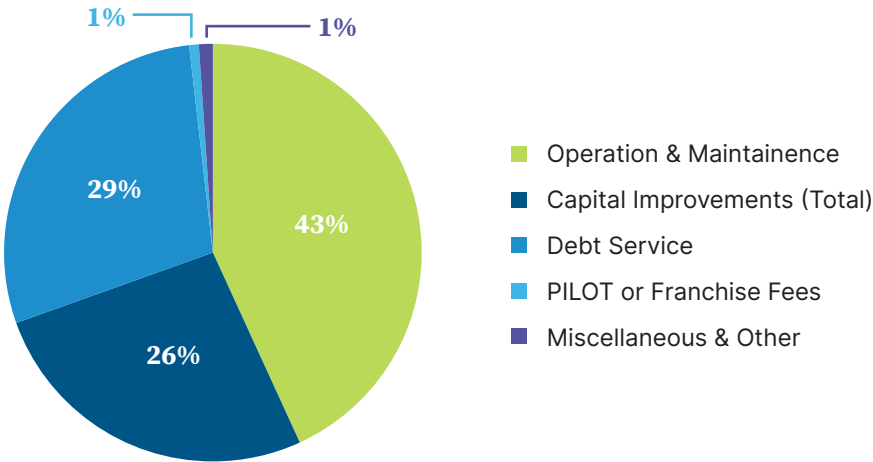


FIGURE 1: Expenditure breakdown - \$19.1 billion, 2022 (91 utility respondents)

Total expenditures increased by 8.1 percent from 2019 to 2022 for 65 utilities³, slightly higher than the 7.0 percent growth in total expenditures from 2016 to 2019. Three-year changes in utility expenditures have ranged from 1.7 percent (2013 to 2016), to 25.3 percent (2007 to 2010).

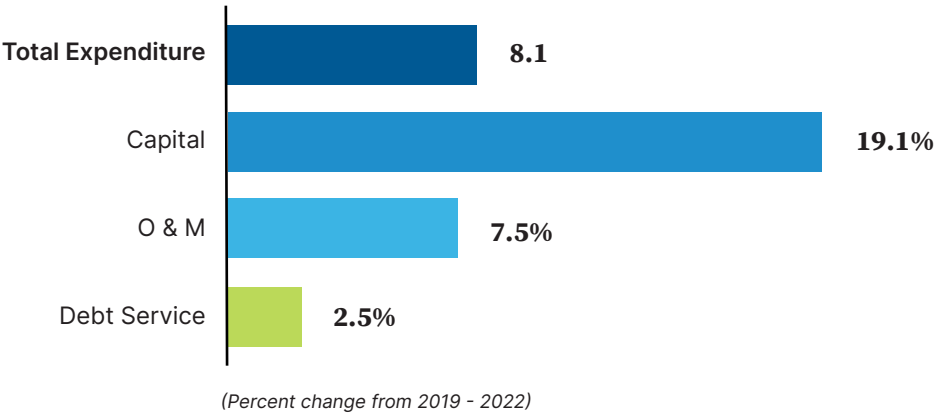


FIGURE 2: Clean water utility expenditure trends, 2019-2022 (65 common utility respondents)

CAPITAL EXPENDITURE

Capital spending increased significantly by 19 percent from 2019 to 2022 for the 65 common utility respondents, reversing a decline in capital spending seen from 2016 to 2019. Total capital expenditures of \$5.0 billion were reported by 86 Survey respondents for fiscal year 2022.

³A total of 65 agencies reported expenditure data in both the 2020 and 2023 Surveys

Capital expenditures increased by over 19 percent for common agency respondents from 2019 to 2022

OPERATION AND MAINTENANCE COSTS

Operation and maintenance (O&M) costs include recurring costs necessary for management and daily operation of collection systems and treatment facilities, and costs such as: staff salaries (and benefits), supplies, electricity, chemicals, and inter-departmental or contracted services. A total of 91 respondents reported \$8.0 billion in O&M costs for wastewater collection and treatment services in 2022. O&M expenditure for 65 common utility respondents to the 2020 and 2023 *Surveys* increased by 7.5 percent from \$5.56 to \$5.98 billion from 2019 to 2022, an average increase of 2.4 percent annually.

Personnel costs, including staff wages, salaries and benefits, comprised 43 percent of O&M costs in 2022, followed by costs for private sector services⁸ at 15 percent. A comprehensive summary breakdown of O&M costs is shown in Table 2.

TABLE 2

Operation and maintenance cost category breakdown, 2022

(87 utilities, \$6.9 billion⁴)

EXPENDITURES	2022
Personnel Costs (wages, salary and benefits)	43%
Private Sector Services	15%
Electric Power⁵	7%
Services Provided by Other Departments⁶	6%
Chemicals	6%
Supplies and Materials	6%
Other Utilities	2%
Utility Management⁷	2%
Insurance	1%
Other	13%
TOTAL	100%

⁴87 utilities provided O&M cost breakdowns for \$6.9 billion on O&M expenditures.

⁵Additional costs that may not be reflected in this category include natural gas purchased for co-generation engine power production

⁶Services performed by another department including: finance, human resources, payroll, legal services, billing, fleet management, etc.

⁷Permit fees, public relations, travel expenses, bad debt expense, utility membership fees, PILOT or franchise fees, staff training, etc.

⁸Cost of services for fleet management, biosolids processing, plant operations, collection system operations, repair services, laboratory services, etc.

Personnel costs comprise 43 percent of operation and maintenance expenditures

One performance metric that is used by nearly half of respondent utilities for assessing O&M is cost per million gallons treated. This metric is used over time to track internal cost performance or is compared with utilities of similar size/ service levels to determine the overall cost efficiency of the organization. In 2022, the average O&M cost per million gallons treated for 81 utility respondents⁹ was \$3,461. Trend data indicate that O&M expenditures per million gallons have increased on average 5.4 percent per year since 1998 and averaged 4.4 percent per year between 2019 and 2022.

Operation and maintenance expenditures per volume treated rose 5.4 percent per year from 1998 to 2022



FIGURE 3: Operation and maintenance cost per million gallons treated (1998-2022)

⁹These 81 respondents provided both O&M cost data and average flow rate data for 2022. The types and service levels of these utilities varied from wholesalers to retailers and include secondary to tertiary treatment levels.

CHEMICAL AND ELECTRICITY COSTS RISE DRAMATICALLY

Disinfection equipment and other wastewater treatment chemicals, as well as electricity to operate pump stations, in-plant pumps, aeration, solids handling equipment, and other devices comprise a significant proportion of clean water utility operating costs. In 2022, over \$850 million was spent on chemicals and electricity at 87 respondent utilities (13 percent of total O&M cost).

Chemical and electricity costs comprise 13 percent of total O&M costs

Average electricity and chemical costs per million gallons treated were \$268 and \$197, respectively in 2022 (Figure 4). While the long-term average annual increase in electricity costs was 4 percent from 1998 to 2019, electricity costs increased annually at an average of 12 percent from 2019 to 2022¹⁰. Similarly, chemical costs per million gallons treated rose on average 16 percent¹¹ per year from 2019 to 2022, a significant jump from the long-term average increase of 6 percent per year from 1998 to 2019.

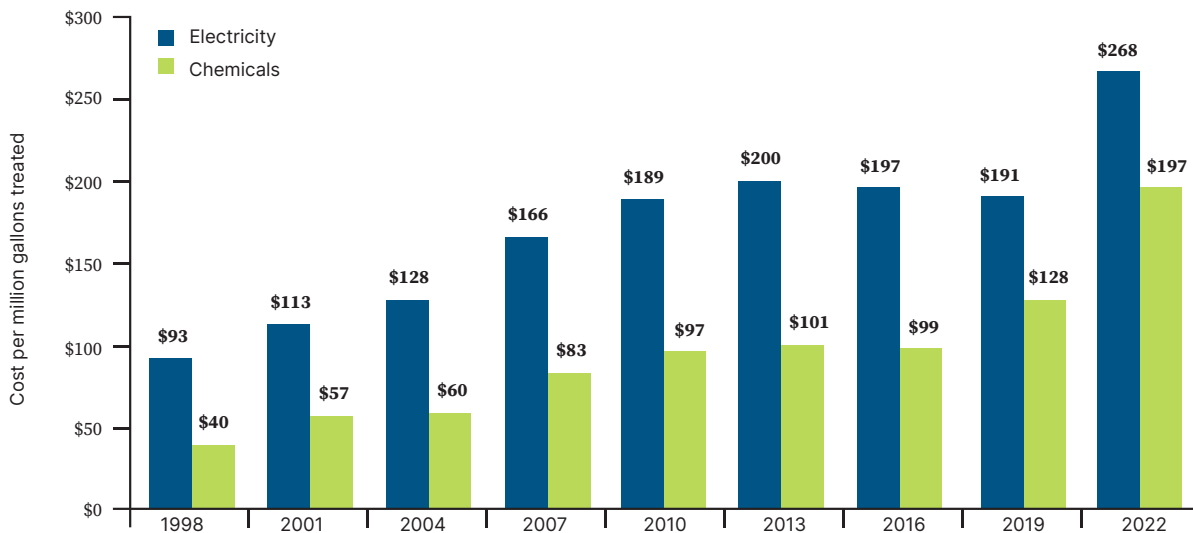


FIGURE 4: Chemical and electricity costs per million gallons treated (1998-2022)

¹⁰Using the values shown on Figure 4 which represents all survey respondents. A similar trend (an average increase of 8.8 percent per year) is seen when considering 55 common survey respondents to the 2020 and 2023 Surveys.

¹¹Using the values shown on Figure 4 which represents all survey respondents. A similar trend (an average increase of 12.3 percent per year) is seen when considering 54 common survey respondents to the 2020 and 2023 Surveys.

PERSONNEL COSTS TOP THE LIST OF O&M EXPENDITURES

Personnel costs comprised 43 percent of total operation and maintenance (O&M) expenses and 18 percent of all agency expenses in 2022¹². A similar cost proportion (i.e., between 45 to 47 percent of O&M expenses) devoted to personnel was reported in previous NACWA surveys¹³. Of these costs, wages/salaries¹⁴ make up 67 percent of all personnel costs, while benefits compose 33 percent. Both wages/salaries and benefits costs increased, on average at 2.8 and 2.4 percent per year, respectively from 2019 to 2022.

Salaries

From 2019 to 2022, median salaries at clean water utility respondents increased 10.3 percent, an average of 3.3 percent per year. This trend is consistent with Bureau of Labor and Statistics trend data on average wages and salaries of state and local government employees nationwide, which increased 3.4 percent per year over the same period¹⁵. Wages and salary compensation for truck drivers, inspectors, and engineers grew the fastest at an average of over 4 percent per year (and nearly 6 percent per year for truck drivers) (Figure 5).

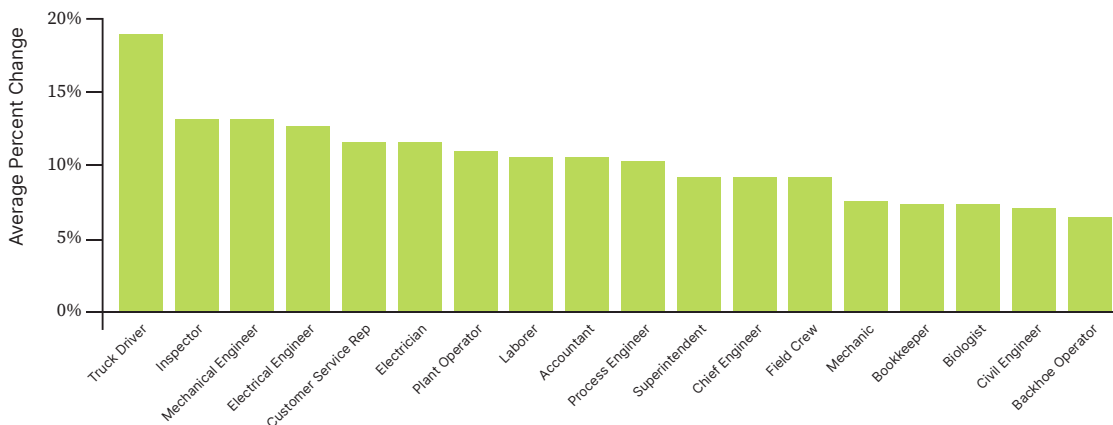


FIGURE 5: Average change in median salary from 2019-2022

On average, the consumer price index rose 4.6 percent per year from 2019 to 2022. A low 1.2 percent inflation rate in 2020 increased to 4.7 percent in 2021 and then jumped to 8 percent in 2022. The inflation rate was notably higher than the average 3.3 percent salary increase during the 2019 to 2022 period.

Salaries for senior level jobs increased at a faster rate than salaries for entry level staff, with the median senior level salaries increasing an average of 0.4% higher per

¹²It is noted that a few of the respondents with lower personnel costs (i.e., less than 30 percent of O&M expense) had a significant amount of costs classified through private sector services and services provided by other departments, which if added together, amounted to greater than 50 percent of O&M costs.

¹³As a comparison, personnel costs have similarly comprised between 45 and 47 percent of O&M expenses in 2010, 2013, 2016 and 2019.

¹⁴Includes hourly and salaried staff costs, overtime, comp time, bonus, and payroll taxes.

¹⁵Average hourly employee cost for state and local government workers – wages and salaries component, December 2019 – December 2022, Bureau of Labor and Statistics, <https://www.bls.gov/web/ecec/ecec-government-dataset.xlsx>

year than entry level salaries. Senior-level salaries for senior-level mechanical and electrical engineers increased the most, rising at an average of 6.8 percent and 5.0 percent per year, respectively between 2019 and 2022 (Figure 6).

Salaries increased on average 3.3 percent per year between the 2020 and 2023 Surveys for all clean water utility staff positions

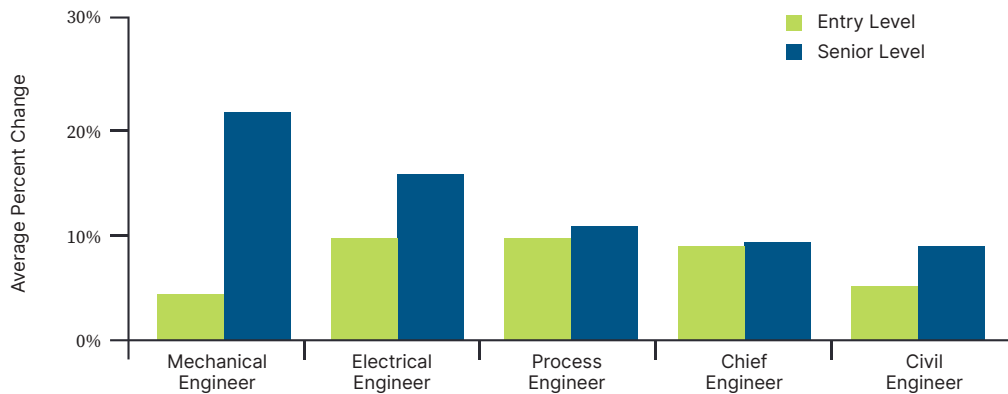


FIGURE 6: Average change in median salary for entry and senior-level engineers from 2019-2022

Capital Program Budgets Increase 56% from 2017 to 2023

Commitments to replace and repair aging infrastructure, increasing service populations, construction costs and compliance costs, continue to push capital program budgets upwards with five-year capital infrastructure program (CIP) budgets rising 24 percent¹⁶ since the 2020 *Survey*, and over 56 percent since 2017¹⁷. A total of 83 agency respondents reported \$53.5 billion in five-year capital improvement budgets for 2023-2027. The distribution of five-year capital program budgets (Figure 7) shows that:

- **Commitments to address aging infrastructure** rose to nearly 46 percent of all capital improvement programs (up from 36 percent in 2020), with replacement and repair of existing sewers, pump stations, and treatment facilities comprising over one-half of CIP budgets for two out of every five respondent utilities;
- **Capital program budgets for new treatment facilities** increased from 9.3 percent to 13.0 percent of total CIP budgets (as compared to the 2020 *Survey*), and;
- **Capital budgets for combined sewer overflow correction** decreased from 15.7 percent to 9.7 percent of total capital budgets since the 2020 *Survey*¹⁸.

¹⁶Fifty-eight (58) common respondents report that total five-year capital budgets increased from \$28.5 to \$35.2 billion from 2020 to 2023.

¹⁷Fifty-three (53) common respondents report that total five-year capital budgets increased from \$21.4 to \$33.2 billion from 2017 to 2023.

¹⁸Nineteen (19) out of 83 respondents to this question reported needs for CSOs. Out of 96 Survey respondents, 23 agencies indicated service areas that include combined sewers. The proportion of capital budgets to address CSO correction for these 19 agencies averaged 24 percent ranging from one to 80 percent of total five-year capital budgets.

Commitments to address aging infrastructure and combined sewer overflows dominate planned capital spending, with overall five-year capital budgets rising by 24 percent between the 2020 and 2023 Surveys

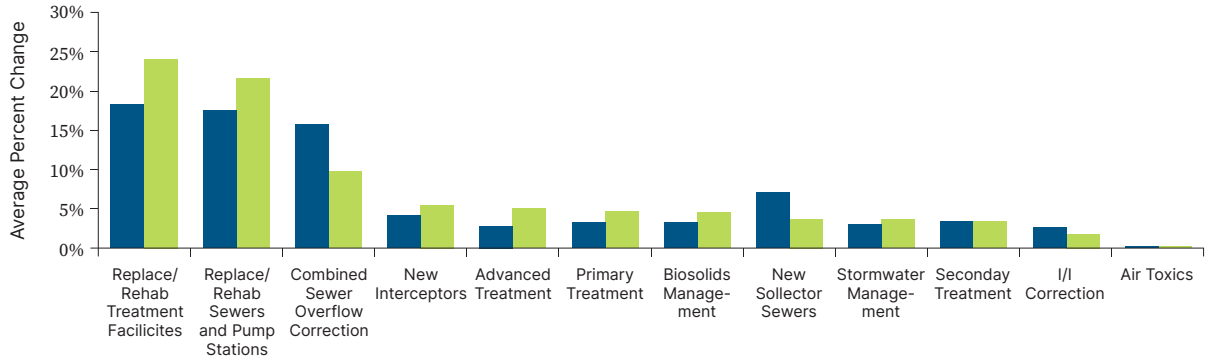


FIGURE 7: Distribution of five-year capital budgets (\$53.5 billion, 83 agency respondents, 2023)¹⁹

Long-Term Debt Increases Four Percent Over 3-Year Period

Total long-term debt as of January 1, 2023, for 85 responding agencies was reported at \$58 billion. Revenue bonds continue to be the preferred debt financing source representing 67 percent of total debt, while 19 percent of debt is from state revolving loan funds (Figure 8). From 2020 to 2023, long-term debt increased by 4.4 percent, as compared to 2.2 percent from 2017 to 2020. State-revolving loan fund debt increased by over 9 percent²⁰ and rose from 15 to 19 percent of total debt outstanding.

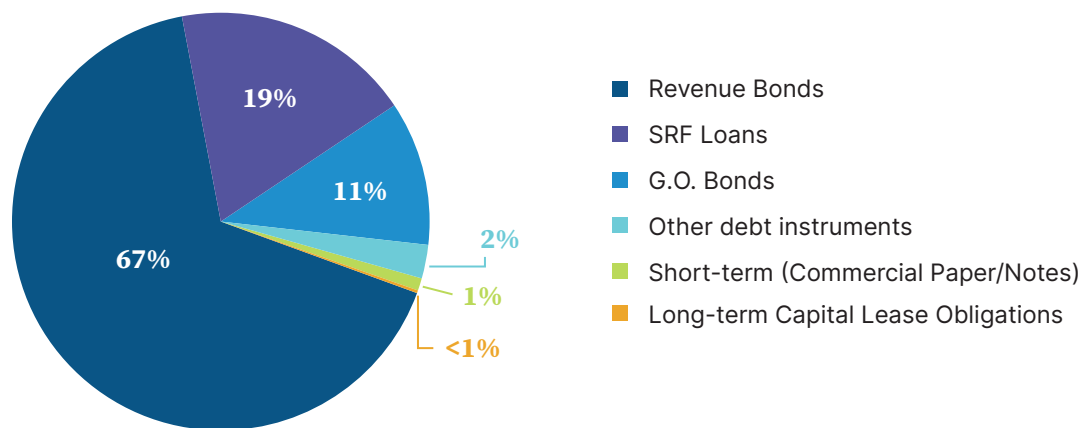


FIGURE 8: Breakdown of outstanding long-term debt on January 1, 2023 (\$58 billion, 85 agencies)

²⁰Thirty-nine (39) common respondents, report that SRF outstanding debt increased from \$7.1 to \$7.8 billion from 2020 to 2023.

Long-term debt increased by four percent from 2020 to 2023²¹

Debt service payments, which are comprised of both loan principal and interest payments, are directly affected by overall debt levels. While overall debt levels rose by 4.4 percent from 2020 to 2023, debt service expenses increased by 2.5 percent, a decline from a nearly 8 percent increase between the 2017 to 2020 Surveys.

Bond Ratings Continue to Reflect Strong Financial Position

Municipal bond ratings used to establish credit worthiness in the investment market provide a measure of fiscal health. Fifty-one (51) out of 65 respondents use more than one rating service, with both Standard and Poor’s and Moody’s ratings being most prevalent and used by 88 percent of respondents to this question. Respondent utilities continue to receive very strong credit ratings from all three major rating services²². Twenty-four (24) out of 65 respondents received the highest “AAA” rating from S&P, Moody’s or Fitch rating services (Figure 9). Over 93 percent of all respondents received better than an “A+/A1” rating (i.e., above average creditworthiness).

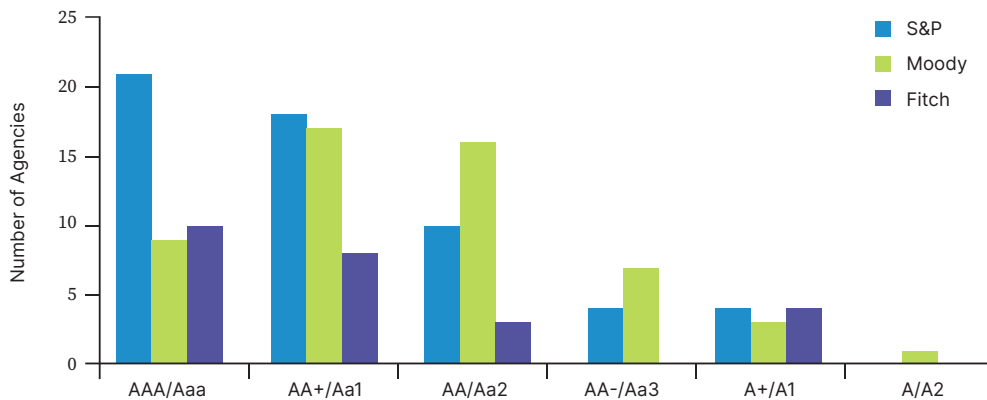


FIGURE 9: Credit ratings, 2023 (65 respondents)

²¹Sixty (60) common respondents report that total outstanding debt increased from \$38.5 billion to \$40.2 billion from 2020 to 2023.
²²Standard and Poor’s (S&P), Fitch, and Moody’s

SECTION 2

Sustainable Rates And Charges

Sewer service charges, which are based on a rate or cost per unit of consumption, a fixed charge or tax, or some combinations thereof, serve as the primary revenue source for NACWA's clean water utility members. Utility managers face a delicate balance, needing to generate revenue for regulatory compliance and infrastructure repairs while being mindful of the growing share of ratepayers' income allocated to water and wastewater services.

Average residential charges for sewer service reached \$588 in 2023 which amounts to just under two percent of the federal income poverty threshold (\$30,000 in 2023) for a family of four. While the average residential sewer charge rose 3.2 percent from 2022 to 2023 and was outpaced by inflation, it is likely that sewer charges will increase more rapidly in the near future. From 2024-2028, rates for wastewater services are expected to increase from 4 to 5 percent per year with a median cumulative five-year increase of 20 percent²³. The top reasons cited for large projected rate increases include capital needs to address aging infrastructure, meeting increased regulatory requirements due to consent decrees, sewer overflows, and nutrient control, and increasing O&M costs, including labor, construction, supplies and materials due to inflation.

Recognizing the potential impact of higher rates on lower-income or fixed-income residents, a majority of survey respondents offer community assistance (e.g., extending bill payment time, reduced rates, etc.) to customers that have difficulty paying their bill. Respondent utilities indicated that approximately 16 percent of customers²⁴ utilize some form of assistance in paying their bill. Funding for these programs is generally reflected in the cost of services when developing rate structures or by grant funding, general funds, or revenue from specific government programs.

Sources of Utility Revenue

Over 80 percent of utility revenues are generated directly from user charges, taxes, fees, and/or assessments. Debt financing through bonds, state revolving fund loans, and other debt instruments – which all must be repaid by the system users over time – comprise 11 percent of revenue. Interest earned revenue declined from 2.1 to 0.8 percent of total revenue, while other sources of revenue, including Federal and state grants and product sales, each contributed less than one percent of total utility revenue (Figure 10).

²³2023 NACWA Cost of Clean Index

²⁴Sixteen percent is the average value reported by 18 respondent utilities.

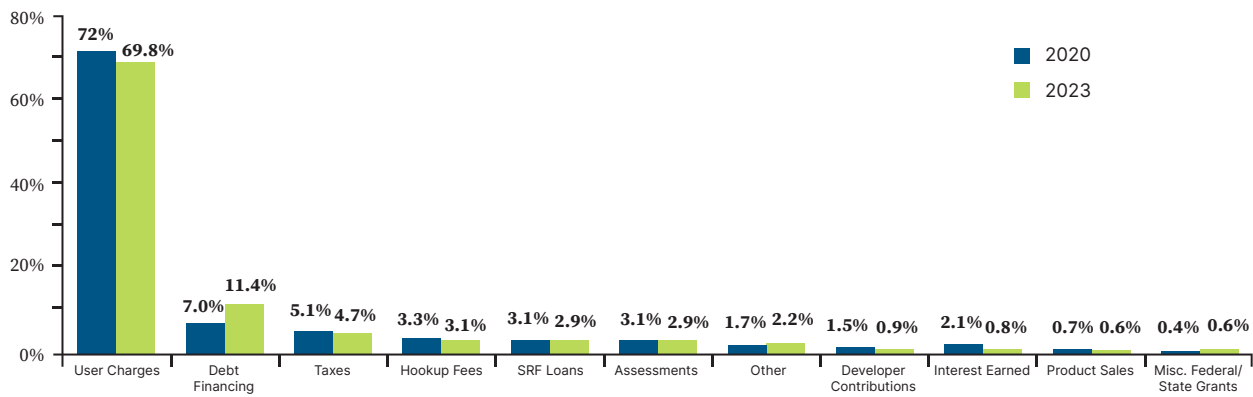


FIGURE 10: Sources of revenue, 2022 (\$23.1 billion, 89 agency respondents)

Revenue generated directly from residential and industrial user charges, taxes, fees, and assessments comprise over 80 percent of all revenue

The percentage of revenue sourced from federal and state grants and loans was 3.5 percent in 2022 and has ranged from 3.5 to 4.0 percent of total revenue since 2013²⁵. Federal or state grants and loans, particularly the State Revolving Fund, comprised 13 percent of revenue sources (12 percent for the SRF alone) for capital spending in 2022 (Figure 11).

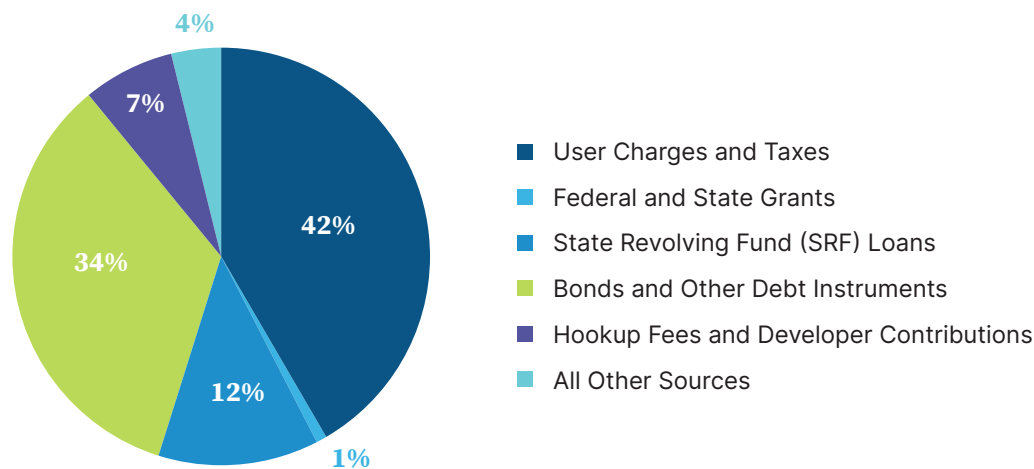


FIGURE 11: Sources of revenue for capital improvements 2022 (\$3.3 billion, 47 agency respondents)

²⁵Amount has varied from 3.5 (2019), 4.0 (2016), 3.6 (2013), 7.7 (2010), 4.3(2007), 5.9 (2004), 10.6 (1992)

Distribution of Rate Structure Types

Nearly all NACWA agencies depend heavily on user service charges, and rate structures for these charges are diverse. Agencies can use any one or a combination of fixed/flat charges, volume-based charges, and tax-based charges. Figure 12 shows a breakdown of rate structures used by 2023 *Survey* respondents and highlights that over one-half of responding clean water utilities (61 percent) use a combination of flat and volume-based charges. Past surveys have shown similar results, with 46 to 60 percent of respondents using a combination of flat and volume-based charges since 2005.

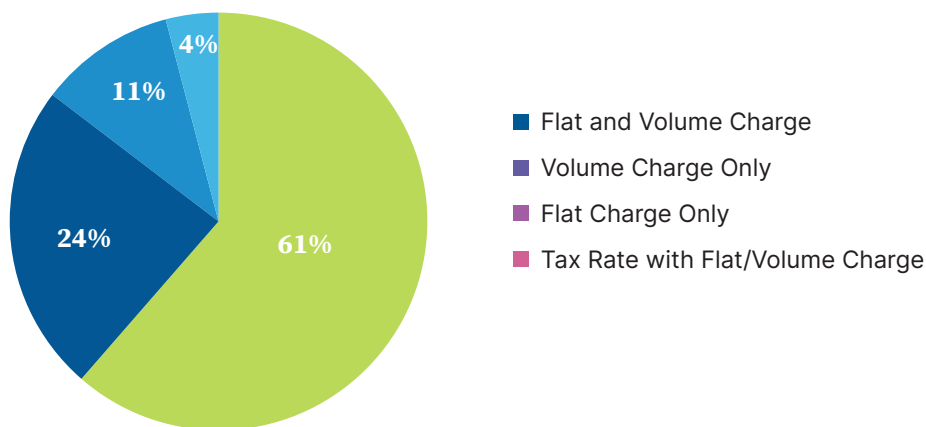


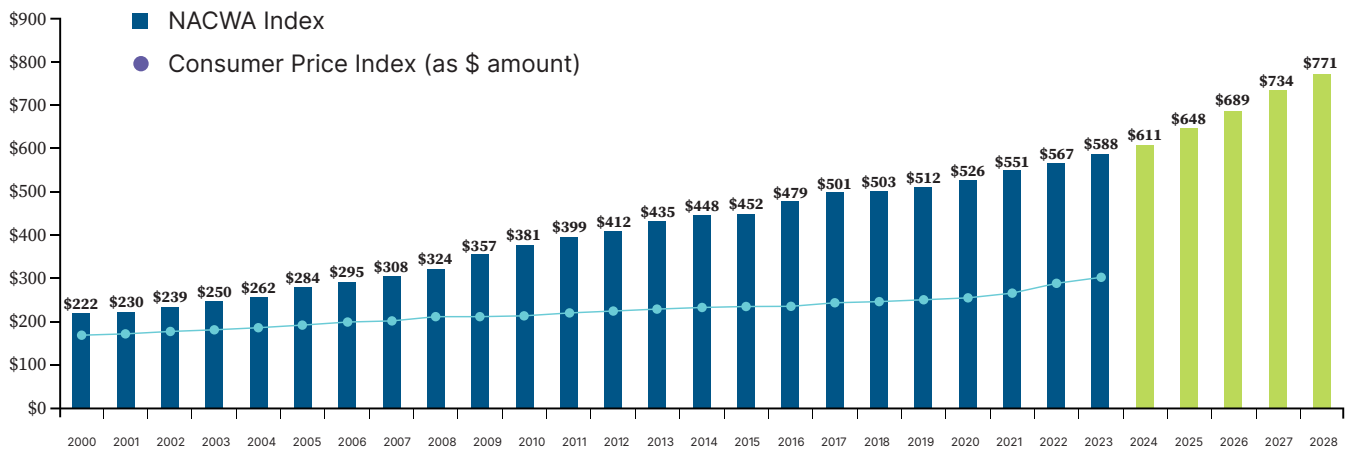
FIGURE 12: Type of rate structures implemented at clean water agencies, 2022 (75 agencies)

Average Sewer Service Charges

Because of the variation of rate structures implemented, the average annual single-family residential sewer service charge, inclusive of collection and treatment charges, provides a consistent benchmark to measure the price of service and changes in the price of service among clean water agencies nationwide.

NACWA performs an annual survey on changes in residential sewer service rates called the *NACWA Cost of Clean Index (Index)* to supplement the data in the *Financial Survey*. The *NACWA Index* measures the year-to-year percent change in residential sewer charges and has tracked the national trends in residential service charges since 1985. Historical data illustrate a long trend of residential sewer charges outpacing inflation. Only recently have high inflation levels over the past three years outpaced the average increase in the residential service charges.

From 2006 to 2023, the average annual service charge nearly doubled from \$295 to \$588. By comparison, the Consumer Price Index (CPI) increased only 51 percent in the same period. Projections from the 2023 *NACWA Index* indicate that the average single-family residential service charge for wastewater will exceed \$600 per year in 2024 (Figure 13).



Note: Series data for the CPI represent the CPI as a dollar value on the chart. The annual average CPI value for 2000 was 172.2, which has been converted to \$172.20. Likewise, the average annual CPI in 2023 was 304.7, which has been converted to \$304.70. In 1985, the average residential sewer service charge of \$102.75 and the CPI value of 107.6, were close to equivalent.

FIGURE 13: Historical and Projected Average Single-Family Residential Service Charge (2000 - 2028)²⁶

In 2023, the national average annual residential sewer service charge was \$588

Trends for Fixed Charges and Volume-Based Rate Components

Most utilities (80%) adjust their rates annually or biennially to ensure operational costs are adequately recovered. Increased costs of advanced treatment, reductions in water use, large legacy replacement costs and increasing pension and employee healthcare costs have continually pushed average residential rates upwards. Both flat and volume-based components of residential rate structures have increased up to an average of 14 percent since 2019²⁷. Figure 14 shows the changes in fixed charge and volume-based rate components from 2019 to 2022.

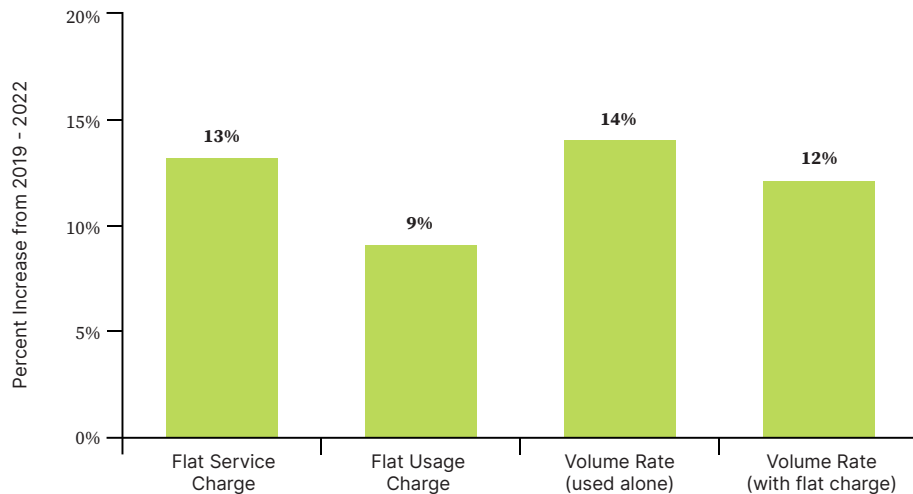


FIGURE 14: Percent increases in flat and volume-based rate components, 2019 to 2022

²⁶Source: 2023 NACWA Service Charge Index
²⁷Average increase of common respondents

The average fixed rate for service and billing (i.e., flat service charge) in 2022 was \$211. The rate increased an average of 4.2 percent per year from 2019 to 2022. The average volume rate for residential customers (when combined with a flat charge) has steadily risen from \$2.36 to \$6.12 per 1,000 gallons from 2001 to 2022 — an average increase of 4.6 percent per year (Figure 15).

Residential volume rates have increased on average, 4.6 percent per year from 2001 to 2022

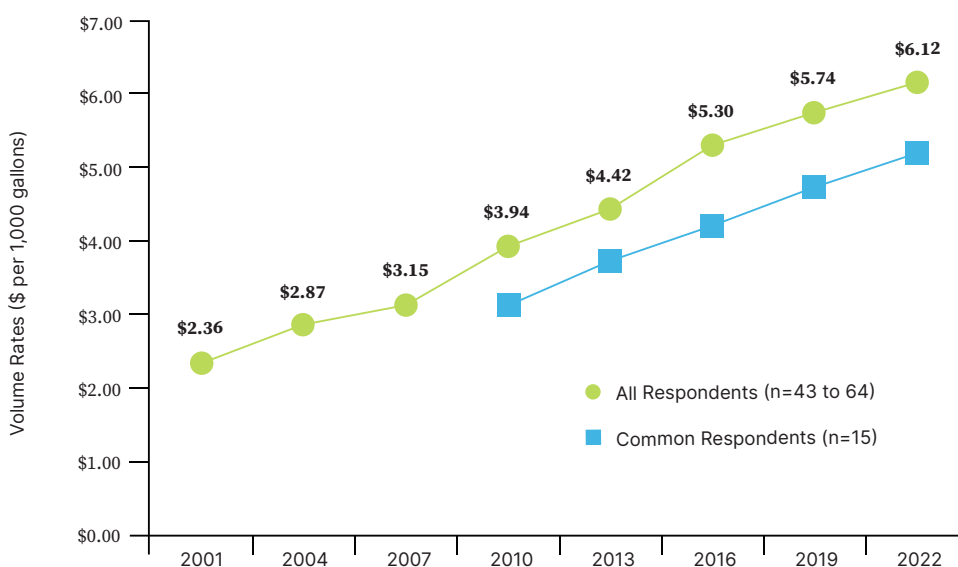


FIGURE 15: Increase in residential volume rates (\$ per 1,000 gallons) when used with a flat charge

Industrial User Charges Also Impacted by Rising Costs

Industries discharging to the sewer system are also impacted by the rising cost of wastewater collection and treatment. While utility rate structures for commercial and industrial discharges are more diverse than residential rate structures, most agencies require that industrial dischargers pay a volume-based charge and applicable extra strength charges for high strength waste. High strength charges are generally expressed as a cost per quantity discharged (\$ per pound) in excess of a threshold concentration level. The most common parameters for high strength charges are biochemical oxygen demand (BOD) and suspended solids (SS). Figure 16 shows the changes in the industrial volume-based charge and extra strength charges from 2010 to 2022.

Industrial volume-based rates increased at 14 percent²⁸ from 2019 to 2022

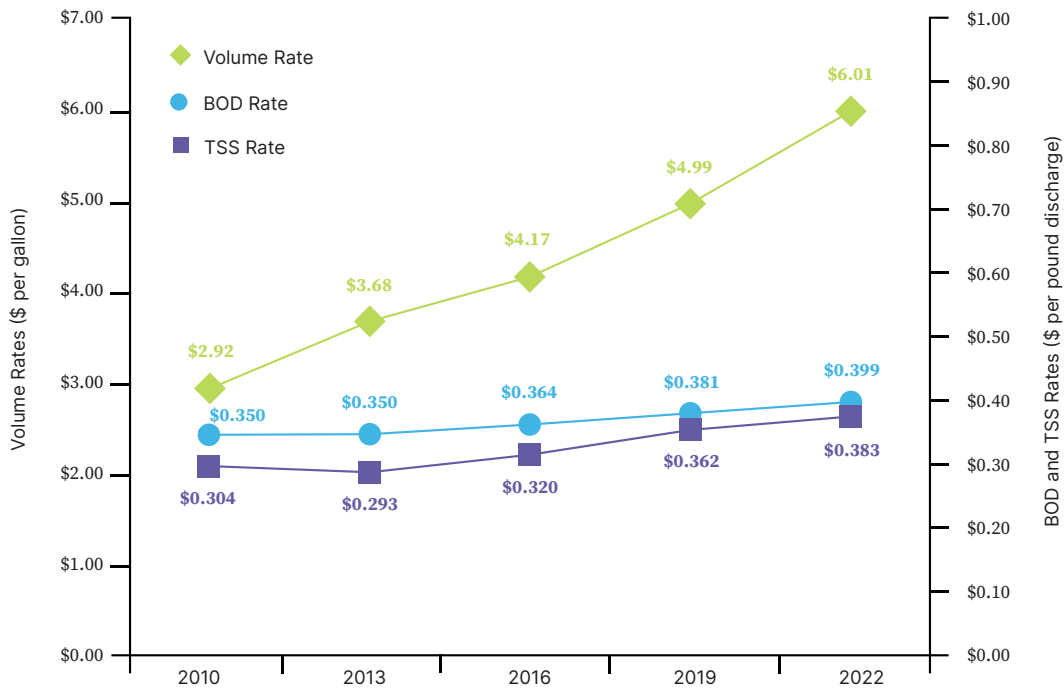


FIGURE 16: Change in industrial user charges 2010-2022 (22, 22, and 26 common agency respondents – rates for volume, BOD, TSS, respectively)

Community Assistance Programs Help Low-Income Residents Pay Utility Bills

Recognizing that rising service charges impact customers in different ways, nearly two-thirds of respondent utilities (62 out of 96) reported that they have a program available for those customers that have difficulty paying their bills. The most common form of assistance is payment plans whereby customers receive extended payment periods. Alternatively, bill discounts and lifeline rates (used by 27 percent of responding utilities) provide low-income qualifying customers with reduced rates or bill discounts (Figure 17).

²⁸Change in volume-based rate from 2016 to 2019 was reported at over 14 percent for 47 common respondent utilities of these two surveys. Chart shows responses of 22 utilities that reported volume rates in all surveys between 2011 and 2023. Volume rate change shown in chart from 2019 to 2022 is 20 percent. A similar method was applied to changes in BOD and TSS rates.

Extended payment plans are the most common form of utility bill payment assistance

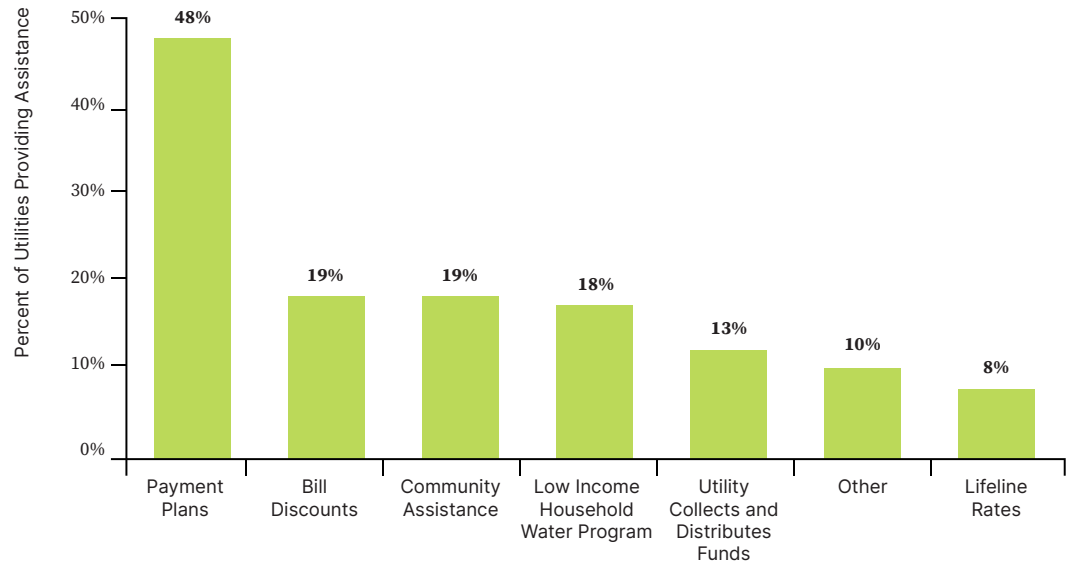


FIGURE 17: Use of community assistance programs (percent of 96 survey respondents using)

Eighteen agencies estimated the number of customers using some form or payment assistance. These 18 agencies reported that 569,000 customers use some form of payment assistance out of 2.4 million customers accounts served. The range of customer assistance provided was 0.01 to 52 percent of all customers with a median of 5.7 percent of customers using some form of payment assistance.

Most agencies consider the cost of customer assistance programs and build it into the costs of services for their rate model (i.e., revenue losses associated with these programs are considered when developing the components of pricing structures). These may be implemented in the regular rate structures, or as an additive charge (e.g., \$0.15 per 1,000 gallons per retail customer). Other funding sources for these programs may be state grant funding, city general funds, revenue from programs sponsored by local government, or other set asides from the utility operating budget.

Conclusion

Clean and safe water is a fundamental necessity, yet ensuring its availability can be costly, especially to low-income ratepayers. Current and future water infrastructure needs, rising personnel and capital financing costs, and increased regulatory requirements, will only continue to contribute to higher costs and potentially make water services unaffordable for some. In fact, US EPA's *2022 Clean Watersheds Needs Survey (CWNS) Report to Congress* underscored the critical investment needs for clean water infrastructure, identifying \$630 billion in unfunded needs over the next 20 years.

NACWA's *2023 Financial Survey* indicates that clean water utilities have been significantly boosting capital program budgets and capital expenditures to meet current needs including aging infrastructure, wet weather challenges and regulatory requirements. And projections for the next five years indicate that these trends are likely to continue. Despite these pressures, the financial stability of NACWA's public member utilities continues to be strong.

While over 80 percent of utility revenues are generated directly from user charges, taxes, fees, and/or assessments, the *2023 Survey* also highlights the Clean Water State Revolving Fund as a vital funding source for water infrastructure capital projects. Unfortunately, its annual funding faces ongoing threats and overall federal funding in clean water remains insufficient despite recent infusions from the Bipartisan Infrastructure Law (BIL) and Inflation Reduction Act (IRA), underscoring the need for continued advocacy to ensure that local ratepayers are not asked to make up the difference.

The *2023 Survey* also highlights an important trend toward providing customer assistance to those who need it the most, with nearly two-thirds of NACWA public agencies reporting that they have programs available to help customers that have difficulty paying their bill. Local programs like these are helping, but they can also be constrained by funding availability and actual or perceived restrictions on charging different customers different rates for the same service or using rate revenues to provide income-qualified assistance. The federal Low-Income Household Water Assistance Program or LIHWAP, established as a temporary program during the COVID-19 pandemic, takes customer assistance to its logical conclusion with federal funds being used to minimize impacts on low-income customers, freeing up utilities to raise rates as necessary to keep up with new federal rules and infrastructure replacement needs.

NACWA's *Financial Survey* will continue to track these and other industry trends, empowering clean water managers and other stakeholders with the information they need to make informed decisions on investment and management issues.

NACWA's Triennial Financial Survey

EXECUTIVE HIGHLIGHTS

