

AUGUST 2021

NACWA  
**Financial  
Survey**

Executive Highlights

NACWA 





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## 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 management initiatives of U.S. clean water utilities. The 2020 *NACWA Financial Survey*, the 13th triennial report to be published since the original development of the survey, gathered information from 109 clean water utilities who collectively serve one-third of the sewered population in the US.

### 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 2020 *Financial Survey*, NACWA is publishing three different products summarizing the results. A published *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 decision-makers. And finally, an electronic spreadsheet for those utilities and researchers that wish to perform their own custom analyses for internal performance tracking.

## Introduction

The importance of water – both its quality and availability – were center stage in 2020 as the world grappled with the COVID-19 pandemic. Providing uninterrupted and affordable access to water and wastewater treatment services was paramount in the name of public health, but the financial consequences of ensuring water availability to all regardless of ability to pay were in clear focus. The water sector in the United States – deemed ‘essential’ for the first time in the eyes of the federal government during the pandemic – demonstrated its reliability and value in providing clean and safe water to its customer base, many of whom were now at home and more reliant on, and aware of, these services than before the pandemic. Now, as the country looks to stimulate an economic recovery through an historic investment in infrastructure not seen in decades, water is part of the conversation, on a more equal footing with other infrastructure sectors like highways and airports, in ways not experienced before.



A concept for years but made a reality by the COVID-19 pandemic, the federal government is now working on rolling out the first ever federal assistance program for low-income water and wastewater customers. How the program will work and whether current funding levels will provide enough relief are still unknowns, but the water sector will soon have another tool to help provide water services for all while working to minimize impacts on those least able to pay.

Other events during 2020, including the demonstrations held nationwide in support of racial justice and the election of Joe Biden as President and Kamala Harris as Vice President, have further turned the federal government’s attention toward communities that have previously been ignored or disproportionately impacted by previous environmental decision making. A renewed and expanded focus on

## The water sector in the United States [is now] deemed ‘essential’ for the first time in the eyes of the federal government.

environmental justice concerns has already started to influence thinking at the federal level, including in terms of federal spending/ investment and ratepayer affordability.

Today’s clean water utility managers are always mindful of the fact that they must be both environmental and fiscal stewards, looking for a balance between making the necessary investments in their systems

and ensuring that their rates are sustainable and do not pose a burden on their ratepayers. The ongoing conversation around the need for massive investment in the nation’s infrastructure looks certain to include sizable funding for the water sector. At the same time, legacy infrastructure needs, new regulatory requirements and increasingly complex affordability and environmental justice considerations will make this balancing act more difficult in coming years.

It is with this dynamic backdrop that NACWA has conducted its *2020 Financial Survey*, a report it has undertaken every three years since 1981 to document the rising cost pressures, the resulting impacts on rates and financing, and the actions that utilities are taking in response.

A total of 109<sup>1</sup> clean water agencies representing over 74 million people served by centralized wastewater treatment responded to the *2020 Financial Survey*. The data detailed in this document and the larger *Survey* report are largely drawn from the 2019 to mid-2020 timeframe, and follow trends in revenues, expenditures, rates, staffing, and energy use, as in previous surveys.

## Key Highlights

The results of the survey show that the overall fiscal health of US clean water utilities remains strong, and capital needs and O&M costs continue to increase faster than inflationary levels. These increased costs are a direct result of the need to address the challenges of aging infrastructure as well as wet weather and water quality regulatory requirements. Balancing these increasing costs with user affordability will remain a challenge in the future as average annual charges increase to meet increasing revenue needs.

### FISCAL HEALTH

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**High credit ratings and moderated use of debt financing reflect the financial strength of utilities.** Thirty (30) out of 71 respondents received the highest “AAA” rating from S&P, Moody’s or Fitch rating services, and 95 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 (69 percent of total debt), however, the proportion of long-term utility debt from State Revolving Loan Fund (SRF) program funds remains significant at 15 percent in 2020. Total outstanding debt increased by only 2 percent from 2017 to 2020, while funding from debt financing dropped by nearly half from 2016 to 2019.

### CAPITAL COSTS

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**Five-year capital improvement budgets increased by 24 percent from 2017 to 2020.** Sixty-six (66) agencies that responded to both the 2017 and 2020 surveys increased their five-year CIP budgets from \$25.6 to \$31.8 billion from 2017 to 2020, while 93 agency respondents to the 2020 survey reported combined total for five-year capital improvement budgets of \$50.3 billion. Commitments to address aging infrastructure and combined sewer overflows dominate most capital improvement programs with two-thirds of overall planned spending. Despite the increases in planned capital investment for 2020 to 2024, actual capital expenditure decreased by 3.0 percent from 2016 to 2019, while debt service and operations and maintenance costs increased.

### O&M COSTS

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**Operation and maintenance costs per million gallons treated have increased at an average rate of 5.5 percent per year since 1998.** Ninety-nine agency respondents reported \$6.9 billion in O&M costs for wastewater collection and

treatment services in 2019. These expenses translated into a unit cost of \$3,034 per million gallons treated, more than three times the \$977 per million gallons treated reported in 1998. While personnel costs comprise nearly one-half of utility O&M costs, wages and salary costs have risen modestly at less than 3 percent per year since 1998.

## REVENUE

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**The proportion of utility revenue generated directly from users increased markedly from 2016 to 2019.** One hundred and four (104) utilities reported \$20.1 billion in revenue in 2019, with 70 percent of revenue being sourced from user charges alone. Along with taxes, hookup fees, and assessments, users directly contributed to more than 81 percent of utility revenue in 2019, as compared to 76 percent in 2016.

## USER CHARGE

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**The average residential charge for wastewater services reached \$527 in 2020 and continued to increase faster than the rate of inflation as measured by the US Consumer Price Index.** The average household cost for wastewater services rose 2.9 percent in 2020, as compared to a 1.2 percent annual inflation rate. While many utilities postponed or canceled rate increases scheduled in 2020 and 2021 due to the pandemic, projected rate increases are expected to increase the average single-family residential service charge to \$600 in 2024. Industrial users are also impacted by rate increases with volume rates increasing nearly 5 percent per year from 2016 to 2019.

## CUSTOMER

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**Recognizing that rising service charges impact customers in different ways, over 60% of respondent utilities provide financial assistance to customers that have difficulty paying their bills.** Respondent agencies indicated that they generally consider the cost of these low-income assistance programs when determining their rates. Also recognizing the financial challenges brought on by the pandemic, many utilities indicated that they suspended service disconnections (i.e., shut-offs) through much of 2020 for nonpayment, suspended referrals to collection agencies, and waived late fees.



# Survey Participants at a Glance

A total of **109 clean water agencies** representing over **74 million people** served by centralized wastewater treatment responded to the 2020 Survey. Clean water agencies from all ten EPA regions are represented in the responses.

# 109

PUBLIC AGENCIES



## 74 million

POPULATION SERVED

## 17 billion gallons

PER DAY FLOW CAPACITY

## 15.1 million

RETAIL CUSTOMER ACCOUNTS



## 391

TREATMENT PLANTS

## 1,643

PUMPING STATIONS

## 132,301

MILES OF COMBINED + SEPARATE  
SANITARY SEWER PIPE



## \$151 billion

IN TOTAL ASSETS

## \$20.1 billion

2019 REVENUES

## \$17.3 billion

2019 EXPENDITURES

## \$52 billion

LONG-TERM DEBT

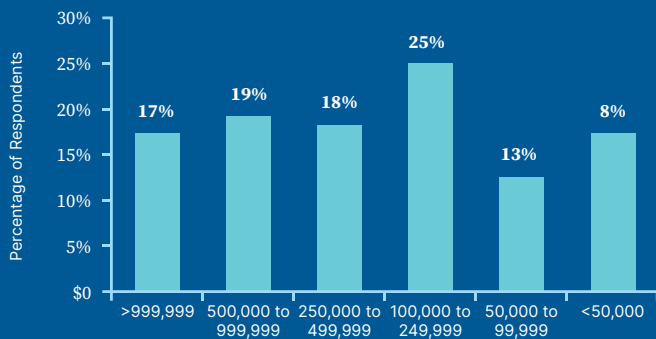
## >95%

UTILITIES WITH BETTER THAN  
A+/A1 CREDIT RATING

## Size Breakdown

### Breakdown of Population Served

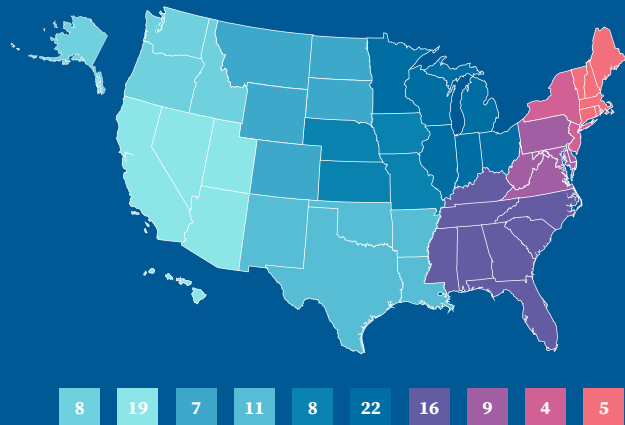
(104 survey respondents)



## Geographic Distribution

### Number of Survey Respondents

(by EPA region)



## SECTION 1

# Financial Trends And Pressures

Continued inflationary cost pressure, aging infrastructure, demand for improved services, regulatory mandates, affordability concerns, workforce challenges and changing community demographics illustrate the multitude of variables that must be balanced by utility managers when making decisions about short and long-term water quality investments, services, and rates. Despite the many cost pressures, the financial health of the nation's clean water utilities, as a sector, remains strong, and utilities continue to improve services and reduce pollutant loads.

Based on the 2020 *Survey*, total expenditures increased at a moderate pace from 2016 to 2019, with rising O&M and debt service expenditures offset slightly by decreasing capital expenditures. Total debt outstanding increased only slightly from 2017 to 2020, suggesting decreased capital spending and/or less reliance on long-term debt financing. Personnel costs remain at nearly one-half of all operation and maintenance costs, with salaries rising at close to cost-of-living-adjustment levels, and staff benefit costs increasing to nearly one-half of total wages and salary costs.

One of the more significant findings of the 2020 *Survey* is a reported 24 percent increase in five-year capital improvement program (CIP) budgets (i.e., 2017–2021 vs. 2020–2024). These CIP budgets are focused primarily on commitments to repair and replace aging infrastructure, and capital plans for sewer overflow correction. This large budgetary increase reflects the significant costs of regulatory mandates to address wet weather capacity and the challenges of aging systems that will likely drive an increase in capital expenditure over the coming years at the local level.

## Utility Expenditures Rise Modestly Due to Higher O&M and Debt Service

Overall, 104 *Survey* respondents reported a total of \$17.3 billion in expenditures for clean water services in 2019, with an average per capita<sup>2</sup> annual expense of \$258. 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 2019 utility expenditures for 104 utility respondents. Since 2007, there has been relatively little change in expenditure breakdowns. In proportion to total costs, operation and maintenance costs have remained steady at 40 to 41 percent of total expenditures since 2007, while debt service costs have fluctuated between 26 to 30 percent of total expenditures, and capital expenses between 28 to 31 percent of expenditures.

## Forty percent of total expenditures are dedicated to operation and maintenance.

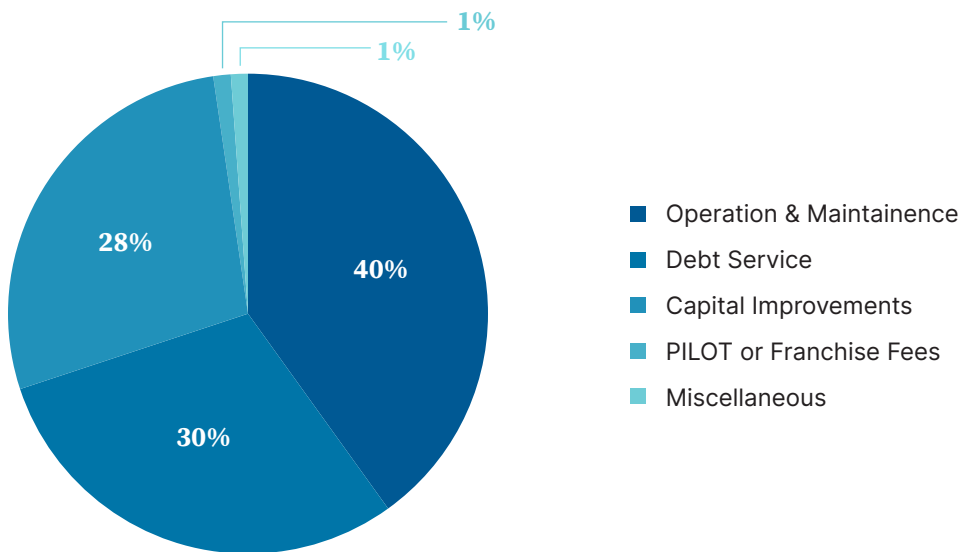


FIGURE 1: Expenditure breakdown - \$17.3 billion, 2019 (104 utility respondents)

**Total expenditures increased by 7.0 percent** from 2016 to 2019 for 77 utilities<sup>3</sup>, which is an increased pace of growth when compared with 1.7 percent growth between 2013 and 2016. Three-year utility expenditure growth trends have ranged from 1.7 percent (2013 to 2016), to 25.3 percent (2007 to 2010). Increasing O&M expenditure (9.6 percent) and debt service (7.6 percent) were offset slightly by a small percentage decrease in capital expenditures (decrease of 3.0 percent) from 2016 to 2019 (Figure 2).

<sup>3</sup>A total of 77 agencies reported expenditure data in both the 2017 and 2020 Surveys.

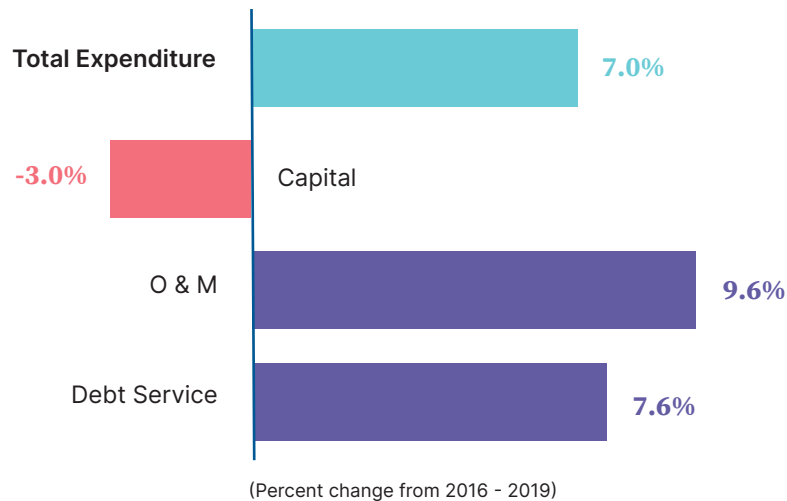


FIGURE 2: Clean water utility expenditure trends, 2016-2019 (77 common utility respondents)

## CAPITAL EXPENDITURE

Total capital expenditure of \$4.9 billion was reported by 98 *Survey* respondents for fiscal year 2019. Capital expenditure for 77 common utility respondents to the 2017 and 2020 *Surveys* decreased by over three percent, from \$4.1 to \$4.0 billion from 2016 to 2019. This decrease in capital spending represents a shift from the increasing trend shown in the previous *Survey* report for the 2013 to 2016 timeframe, where capital spending increased by 3.5 percent.

**Capital expenditure decreased by over three percent for common agency respondents from 2016 to 2019.**

## 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 104 respondents reported \$6.9 billion in O&M costs for wastewater collection and treatment services in 2019. O&M expenditure for 77 common utility respondents to the 2017

and 2020 Surveys increased by nearly 10 percent, (9.6 percent per year) from \$5.5 to \$6.1 billion from 2016 to 2019.

Personnel costs, including staff wages, salaries and benefits, comprised 47 percent of O&M costs in 2019, followed by costs for private sector services<sup>4</sup> at 13 percent. A comprehensive summary breakdown of O&M costs is shown in Table 1.

## Personnel costs comprise 47 percent of operation and maintenance expenditures.

TABLE 1

### Operation and maintenance cost category breakdown, 2019

(94 utilities, \$6.6 billion)\*

EXPENDITURES	2019
Personnel Costs (wages, salary and benefits)	47%
Private Sector Services	13%
Electric Power <sup>5</sup>	7%
Supplies and Materials	6%
Services Provided by Other Departments <sup>6</sup>	6%
Chemicals	5%
Other Utilities	4%
Utility Management <sup>7</sup>	2%
Other	11%
TOTAL	100%

\* Ninety-four (94) out of 104 agencies were able to provide a breakdown by cost category.

<sup>4</sup>Cost of services for fleet management, biosolids processing, plant operations, collection system operations, repair services, laboratory services, etc.

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

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

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

One performance metric that is used by 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 2019, the average O&M cost per million gallons treated for 90 utility respondents<sup>8</sup> was \$3,034. Trend data indicate that O&M expenditures per million gallons have increased on average 5.5 percent per year since 1998 and averaged 5.8 percent per year between 2016 and 2019 (Figure 3)<sup>9</sup>.

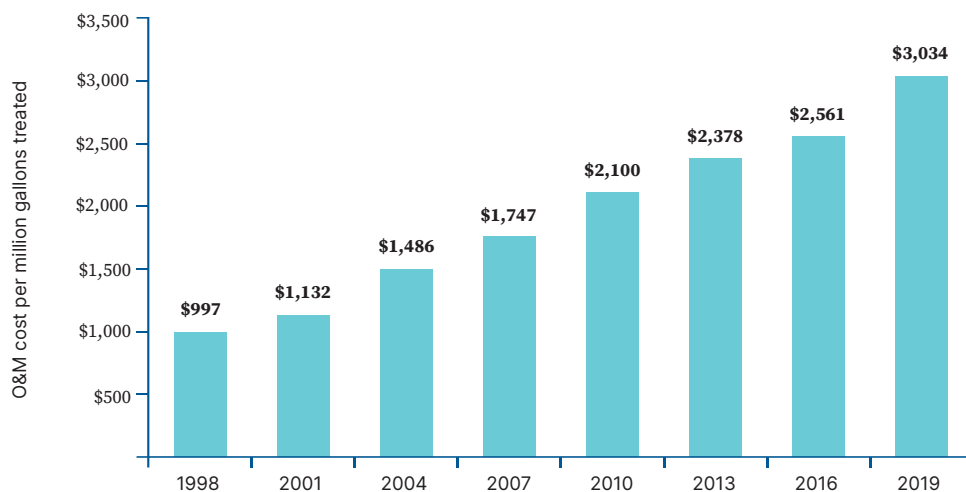


FIGURE 3: Operation and maintenance cost per million gallons treated (1998-2019)

**Operation and maintenance expenditures per volume treated rose 5.5 percent per year from 1998 to 2019.**

**CHEMICAL AND ELECTRICITY COSTS REMAIN A MAJOR COMPONENT OF O&M SPENDING**

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 2019, over \$800 million was spent on chemicals and electricity at 94 respondent utilities (12 percent of total O&M cost).

<sup>8</sup>These 90 respondents provided both O&M cost data and average flow rate data for 2019. The types and service levels of these utilities varied from wholesalers to retailers and include secondary to tertiary treatment levels.  
<sup>9</sup>Average of all respondents, which ranged from a low of 86 (2007) to a high of 123 (2004) depending on the year. The median values for 1998 to 2019 show a similar increasing trend with median values increasing an average of 4.9 percent per year.

Average electricity and chemical costs per million gallons treated were \$191 and \$128, respectively in 2019. Trends indicate that average electricity costs per million gallons treated rose on average 5.2 percent per year from 1998 to 2013 but then slightly decreased by 0.8 percent per year from 2013 to 2019. Chemical costs per million gallons treated rose on average 5.2 percent per year from 1998 to 2016 but increased by an average of 8.9 percent per year from 2016 to 2019 (Figure 4).

## Chemical and electricity costs comprise 12 percent of total O&M costs.

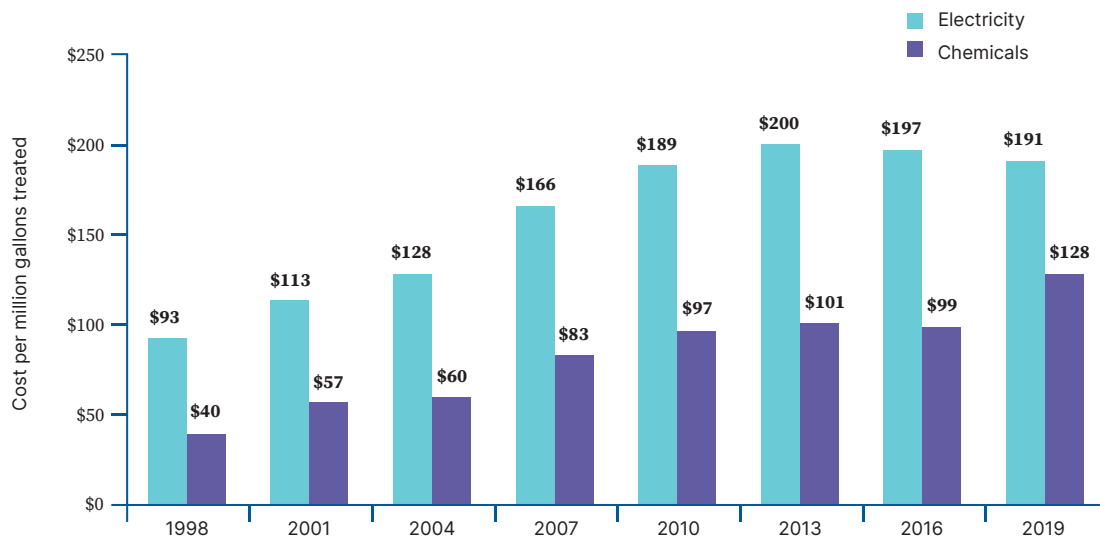


FIGURE 4: Chemical and electricity costs per million gallons treated (1998-2019)

### PERSONNEL COSTS TOP THE LIST OF O&M EXPENDITURES

Personnel costs comprised 47 percent of total O&M expenses and 18 percent of all agency expenses in 2019<sup>10</sup>. A similar cost proportion (i.e., 45 to 47 percent of O&M expenses) devoted to personnel was reported in previous NACWA surveys<sup>11</sup>. Of these costs, wages/salaries<sup>12</sup> make up 68 percent of all personnel costs, while benefits compose 32 percent. Both wages/salaries and benefits costs increased, on average at 3.7 and 3.4 percent per year, respectively from 2016 to 2019.

### Salaries

From 2016 to 2019, median salaries at clean water utility respondents increased 6.2 percent, an average of 2.0 percent per year. This trend is consistent with Bureau

<sup>10</sup>It is noted that a few of the respondents with lower personnel costs (less than 30 percent) had a significant amount of costs classified through services provided by other departments, or included significant non-operating costs, such as payments to wholesalers.

<sup>11</sup>As a comparison, personnel costs have similarly comprised between 45 and 47 percent of O&M expenses in 2010, 2013, and 2016.

<sup>12</sup>Includes hourly and salaried staff costs, overtime, comp time, bonus, and payroll taxes.

of Labor and Statistics trend data on average wages and salaries of state and local government employees nationwide, which increased 2.5 percent per year over the same period.<sup>13</sup> Wages and salary compensation for field crew, engineers, and electricians grew the fastest at an average of over 2.8 percent per year (Figure 5).

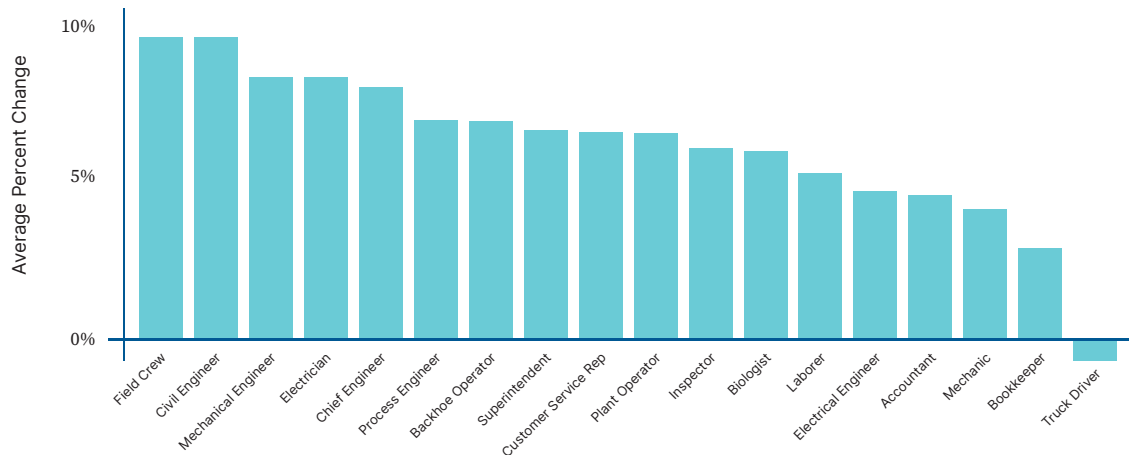


FIGURE 5: Average change in median salary from 2016-2019

Low inflation from 2016 to 2019 likely contributed to modest cost of living salary adjustments. The consumer price index rose on average 2.1 percent per year during this time.

Salaries for entry level jobs increased at a faster rate than salaries for senior level staff, with the median entry level salaries increasing an average of 0.5% higher per year than senior level salaries. Entry-level salaries for engineers increased the most, rising at an average of 3.2 percent per year between 2016 and 2019 (Figure 6).

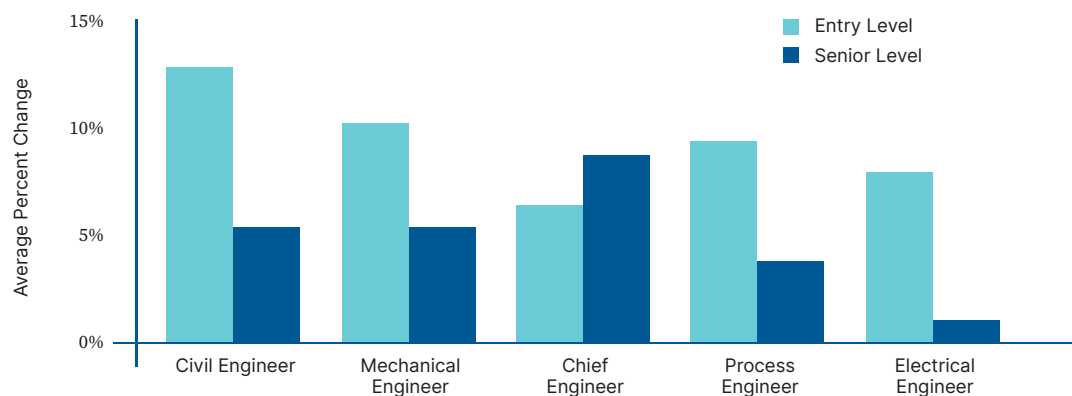


FIGURE 6: Average Change in Median Salary, Engineering (2016-2019)



## Capital Program Budgets Increase Over 60% from 2014 to 2020

Commitments to replace and repair aging infrastructure, increasing service populations and compliance costs associated with wet weather capacity, continue to push capital program budgets upwards with five-year capital infrastructure program (CIP) budgets rising 24 percent<sup>14</sup> since the 2017 *Survey*, and over 60 percent since 2014<sup>15</sup>. A total of 93 agency respondents reported \$50.3 billion in five-year capital improvement budgets for 2020-2024. The distribution of five-year capital program budgets (Figure 7) shows that:

- **Commitments to address aging infrastructure** continue to dominate capital improvement programs, with replacement and repair of existing sewers, pump stations, and treatment facilities comprising 44 percent of total budgets;
- **Capital program budgets for advanced treatment** decreased from 8.8 percent to 3.4 percent of total CIP budgets (as compared to 2017 *Survey*), and;
- **Capital budgets for combined sewer overflow correction** increased from 16 to 19 percent of total capital budgets since the 2017 *Survey*.<sup>16</sup>

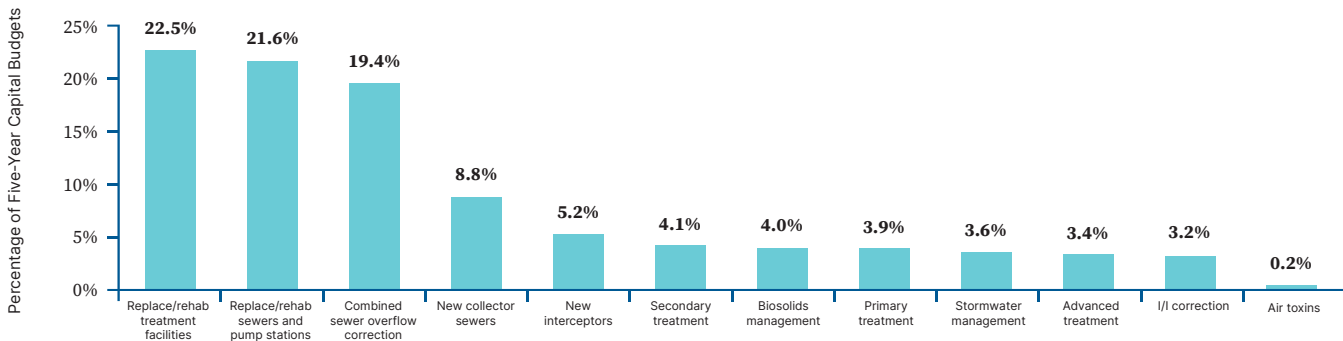


FIGURE 7: Distribution of five-year capital budgets (\$50.3 billion, 93 agency respondents)

**Commitments to address aging infrastructure and combined sewer overflows dominate planned capital spending, with overall five-year capital budgets rising 24 percent from 2017 to 2020.**

<sup>14</sup>Sixty-six (66) common respondents report that total five-year capital budgets increased from \$25.6 billion to \$31.8 billion from 2017 to 2020.

<sup>15</sup>Fifty-seven (57) common respondents report that total five-year capital budgets increased from \$19.0 to \$30.6 billion from 2017 to 2020.

<sup>16</sup>Nineteen (19) out of 93 respondents to this question reported needs for CSOs. Out of 109 Survey respondents, 27 agencies indicated service areas that include combined sewers. The proportion of capital budgets to address CSO correction for these 19 agencies ranged from 28 to 88 percent of total five-year capital budgets.

### Long-Term Debt Increases Slightly Over 3-Year Period

Total long-term debt as of January 1, 2020 for 90 responding agencies was reported at \$52 billion. Revenue bonds continue to be the preferred debt financing source representing 69 percent of total debt, while 15 percent of debt is from

**Long-term debt increased by only two percent from 2017 to 2020.<sup>17</sup>**

state revolving loan funds (Figure 8). From 2017 to 2020, long-term debt increased by only two percent, as compared to six percent from 2014 to 2017<sup>17</sup>. Short-term debt through commercial paper, notes, etc. increased from 0.5 to over 2 percent of total debt outstanding.

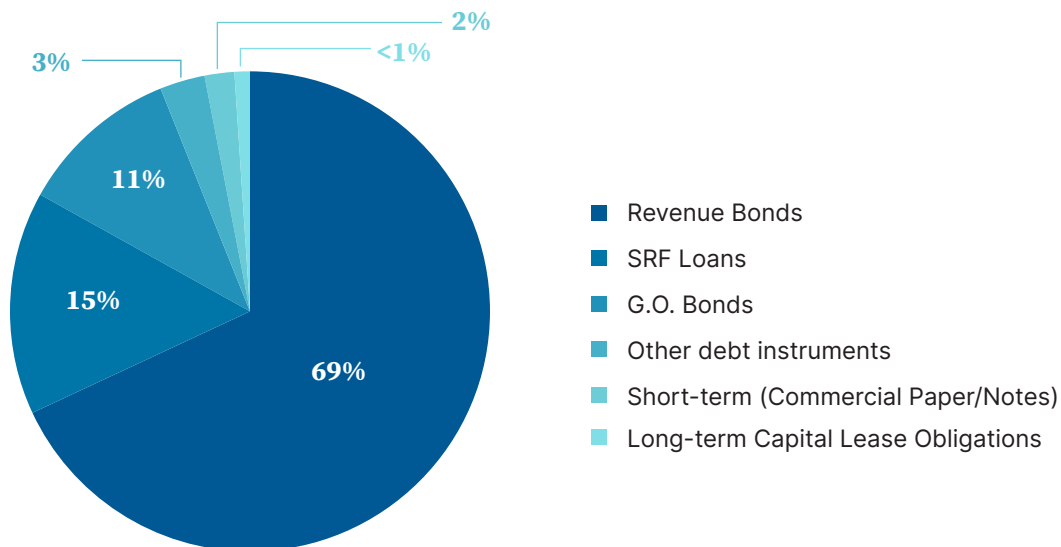


FIGURE 8: Breakdown of outstanding long-term debt on January 1, 2020 (\$52 billion, 90 agencies)

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 two percent from 2017 to 2020, debt service expenses increased by 8 percent, reflecting the sharper increase seen in long-term debt financing from 2014 to 2017. Other debt instruments, such as commercial paper and capital leases, are funding a small portion of infrastructure spending at the local level.

<sup>17</sup>Sixty-six (66) common respondents to both the 2017 and 2020 Surveys report that total outstanding debt increased from \$40.2 billion to \$41.2 billion from 2017 to 2020.

## 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-five (55) out of 74 respondents use more than one rating service, with both Standard and Poor’s and Moody’s ratings being most prevalent and used by 84 percent of respondents to this question. Respondent utilities continue to receive very strong credit ratings from all three major rating services<sup>18</sup>. Thirty out of 71 respondents received the highest “AAA” rating from S&P, Moody’s or Fitch rating services (Figure 9). Over 95 percent of all respondents received better than an “A+/A1” rating (i.e., above average creditworthiness), up from 90 percent of respondents in 2017.

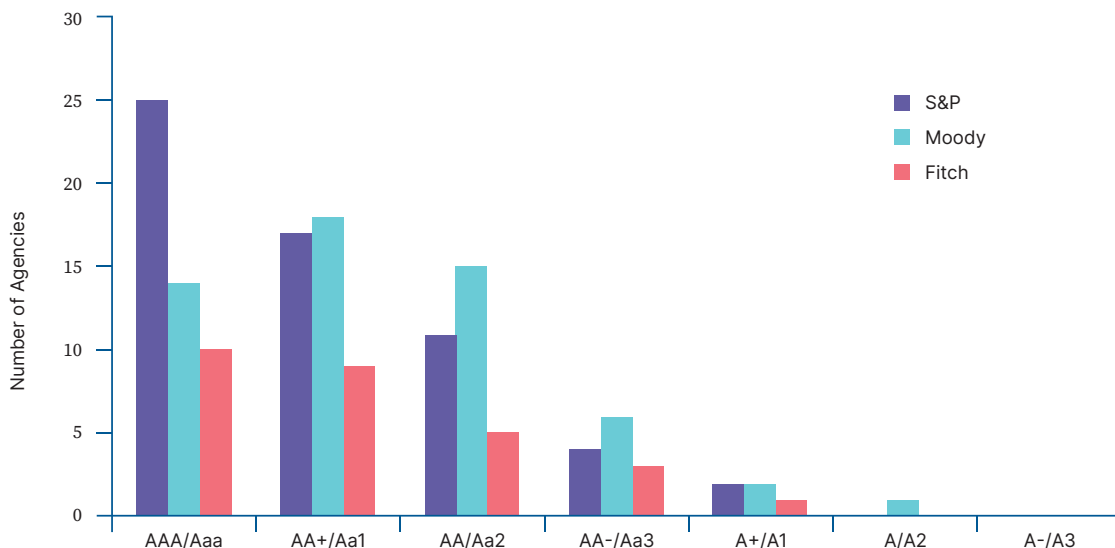


FIGURE 9: Credit ratings, 2020

<sup>18</sup>Standard 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 combination thereof, are the primary revenue source for NACWA's clean water utility members. Utilities must continually consider the careful interplay between raising revenue to pay for new regulatory requirements and infrastructure repair and the increasing percentage of their ratepayers' incomes that is being spent on water and wastewater services.

Average residential charges for sewer service reached \$527 in 2020, the fourth year in-a-row that the average annual sewer service charge was more than two percent of the federal income poverty threshold for a family of four. The increase in the average residential charge is likely to slow in the next two years as over one-third of agencies indicated that rates will not be increased in 2021, with many citing canceled or postponed rate changes due to the COVID-19 pandemic.

Recognizing the impact increased rates can have on lower or fixed-income residents, a majority of survey respondents provide some form of community assistance (e.g., extending bill payment time, reduced rates, etc.) to those customers that have difficulty paying their bill. Respondent utilities indicated that approximately three percent of customers<sup>19</sup> utilize some form of assistance in paying their bill, though many of these programs cannot reach renters and occupants of multi-unit buildings where a single bill is paid by a landlord or owner. Funding for these programs is generally reflected in the cost of services when developing rate structures or provided through voluntary contributions or local government relief programs.

**Revenue generated through residential and industrial user charges comprises the largest revenue source for utilities at nearly 72 percent of all funding sources.**

### Utility Funding Sources

Over 80 percent of utility funding is 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 10 percent of funding, down from 18 percent of funding in 2017. Interest earned revenue rose from 0.7% to 2.0% of total revenue, while other

<sup>19</sup>Three percent is the average value reported by 21 respondent utilities.

sources of funding, including federal and state grants, and product sales each contribute less than one percent of total utility funding sources (Figure 10).

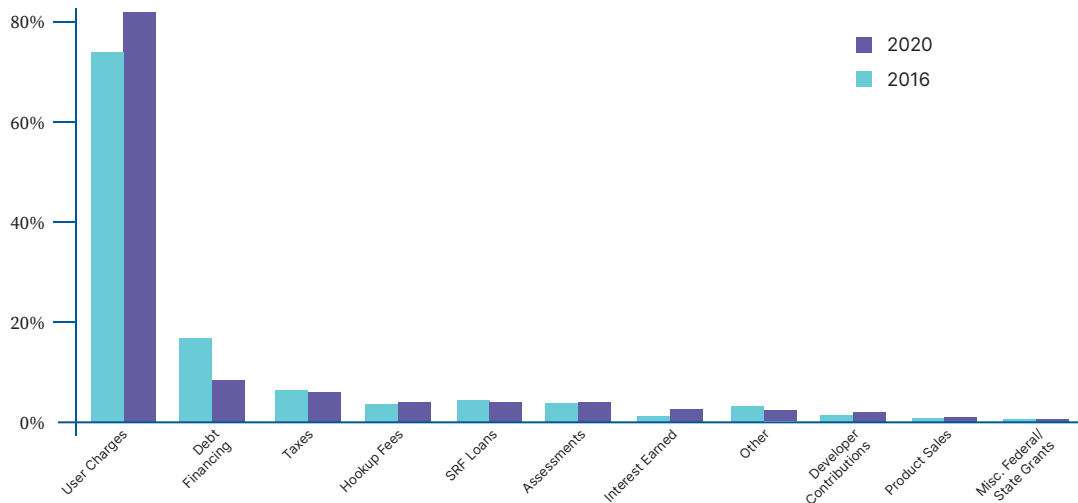


FIGURE 10: Funding Sources, 2019 (\$19.8 billion, 101 agency respondents)

The percentage of funding sourced from federal and state grants and loans has ranged from 3.5 to 4.0 percent of total revenue since 2013<sup>20</sup>, and is still significantly reduced from nearly 8 percent in 2010. However, federal and state grants as well as loans, particularly the State Revolving Fund, do fund a large proportion of capital improvement projects, comprising 21 percent of revenue sources for capital spending in 2019 (Figure 11).

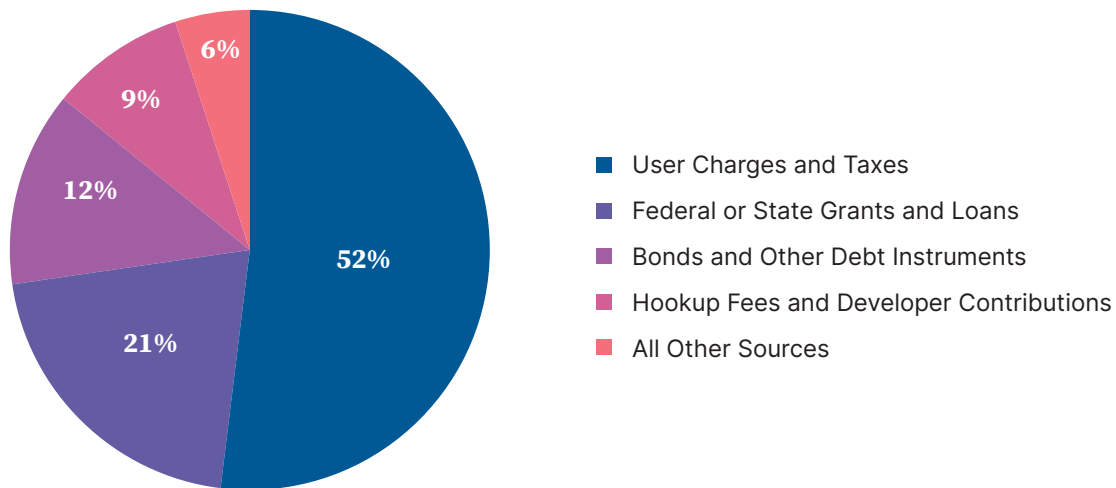


FIGURE 11: Sources of revenue for capital improvements 2019 (\$2.8 billion, 44 agency respondents)

<sup>20</sup>Amount has varied from 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 2020 *Survey* respondents and highlights that over one-half of responding clean water utilities (60 percent) use a combination of flat and volume-based charges. Past surveys have shown similar results, with 46 to 59 percent of respondents using a combination of flat and volume-based charges since 2005.

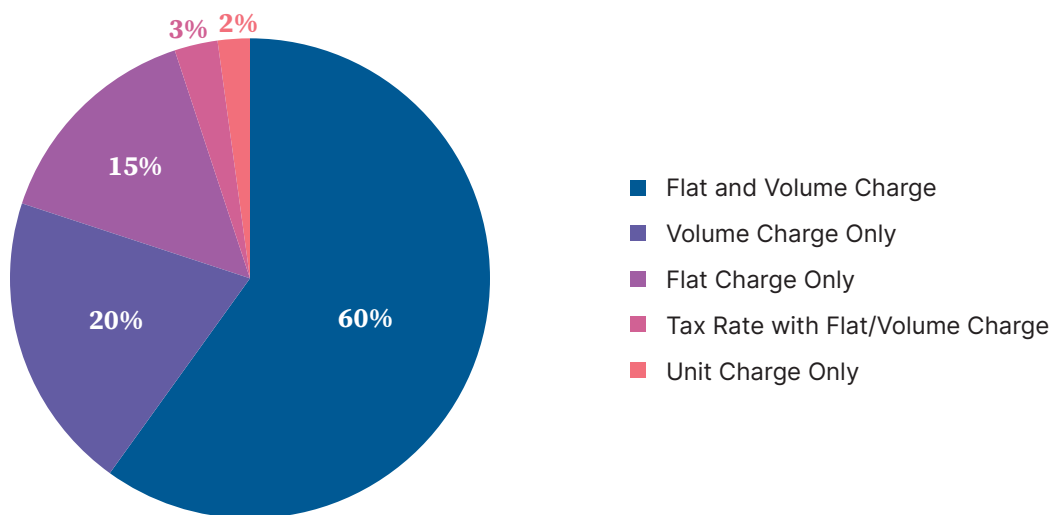


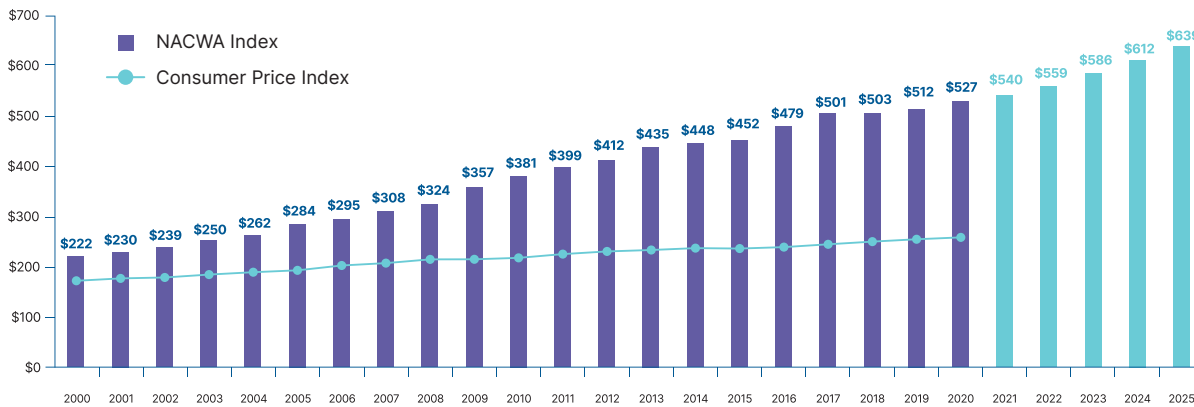
FIGURE 12: Type of rate structures implemented at clean water agencies, 2019 (87 agencies)

### Average Sewer Service Charges Increase at Nearly Double the Inflation Rate

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 from 1985 onward. The 2020 data indicate that the average residential service charge continues to increase faster than the national rate of inflation as measured by the Consumer Price Index. From 2004 to 2020, the average annual

service charge nearly doubled from \$264 to \$527. By comparison, the Consumer Price Index (CPI) increased only 37 percent in the same period. Projections from the 2020 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 2020 was 258.81, which has been converted to \$258.81. 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 - 2025)<sup>21</sup>



<sup>21</sup>Source: 2020 NACWA Cost of Clean Water Index Survey

## Trends for Fixed Charges and Volume-Based Rate Components

Most utilities (83%) 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 19 percent since 2016<sup>22</sup>. Figure 14 shows the changes in fixed charge and volume-based rate components from 2016 to 2019.

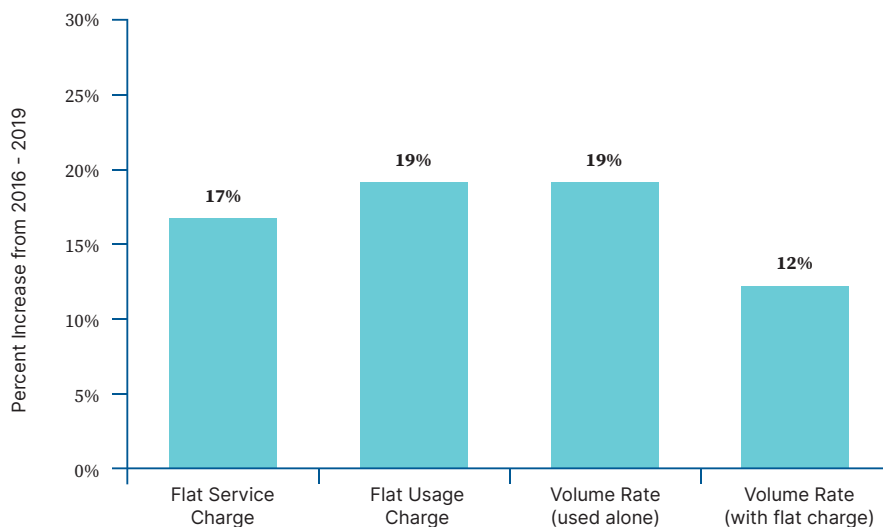


FIGURE 14: Percent increases in flat and volume-based rate components (2016 to 2019)

The average fixed rate for service and billing (i.e., flat service charge without a usage component) in 2019 was \$163. The rate increased an average of 5.3 percent per year from 2016 to 2019. The average volume rate for residential customers (when combined with a flat charge) has steadily risen from \$2.36 to \$5.74 per 1,000 gallons from 2001 to 2019 — an average increase of 5.1 percent per year (Figure 15).

**Residential volume rates have increased on average, 5.1 percent per year from 2001 to 2019.**

<sup>22</sup>Average increase of common respondents.



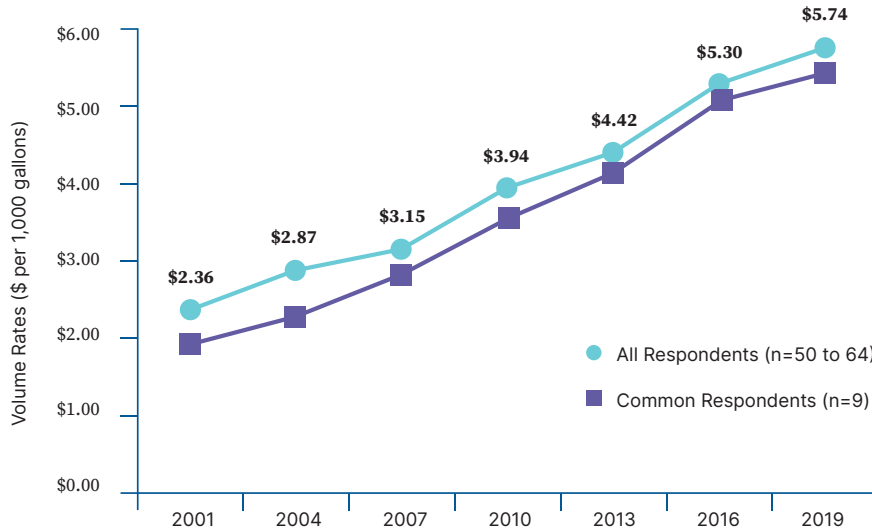


FIGURE 15: Increase in residential volume rates (\$ per 1,000 gallons) when used with a flat charge

### 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 2007 to 2019.

While industrial volume-based rates increased over 15 percent<sup>23</sup> from 2016 to 2019, extra strength charges for BOD and suspended solids increased more slowly (6 and 11 percent, respectively).

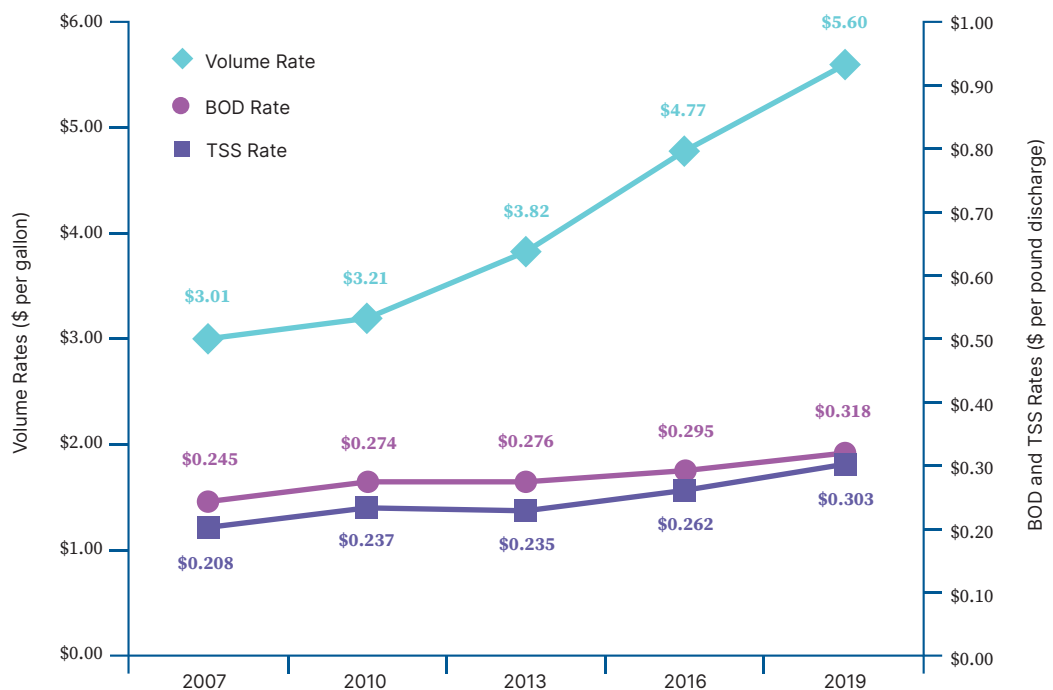


FIGURE 16: Change in industrial user charges 2007-2019 (27, 21, and 26 common agency respondents – rates for volume, BOD, TSS, respectively)

<sup>23</sup>Change in volume-based rate from 2016 to 2019 was reported at over 15 percent for 52 common respondent utilities of these two surveys. Chart shows responses of 27 utilities that reported volume rates in all surveys between 2008 and 2020. Volume rate change shown in chart from 2016 to 2019 is 17 percent. A similar method was applied to changes in BOD and TSS rates.

## Community Assistance Programs Help Low-Income Residents Pay Utility Bills

Recognizing that rising service charges impact customers in different ways, over one-half of respondent utilities (66 out of 109) 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, lifeline rates (reported used by 21 percent of utilities) provide low-income qualifying customers with reduced rates or bill discounts (Figure 17).

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

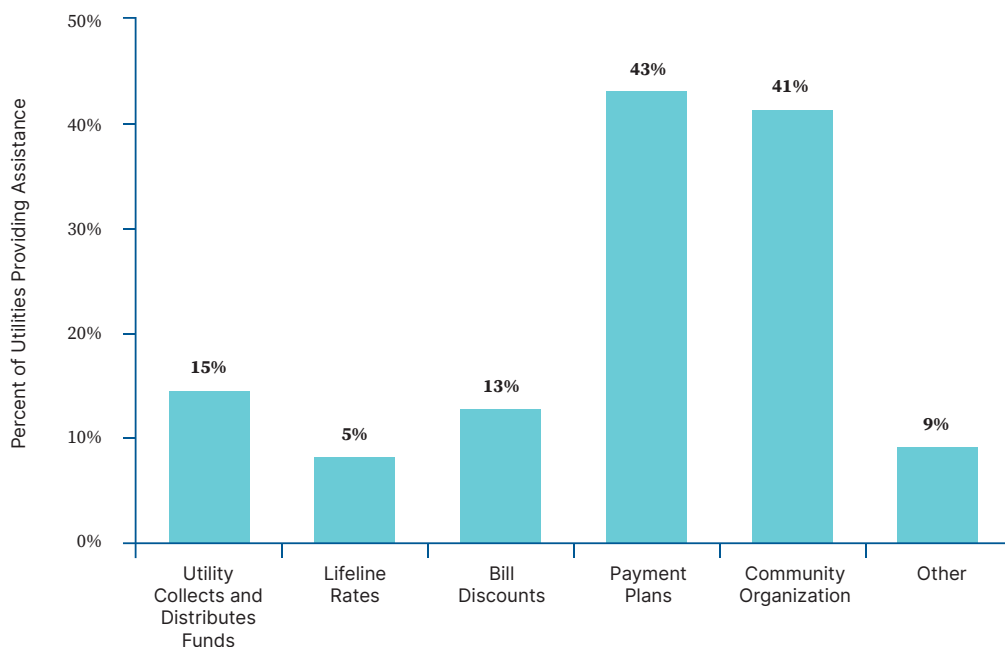


FIGURE 17: Use of community assistance programs (percent of 109 survey respondents)

Twenty-one agencies estimated the number of customers using some form of payment assistance. These 21 agencies reported that 204,000 customers use some form of payment assistance out of 3.3 million customers served. The range of customer assistance provided was 0.01 to 28 percent of all customers with a median of 0.9 percent of customers using some form of payment assistance.

Most agencies consider the cost of the low-income assistance programs and build these expenses into the cost 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 voluntary donations from customers, employees, relief programs sponsored by local government, or other set asides from the utility operating budget.

## Conclusion

The overall financial health of the public wastewater sector provides a strong foundation for the future, but increased federal investment in water infrastructure, on the scale of what is being discussed currently in Washington, DC, will provide a needed infusion and help alleviate growing capital budget needs and increasing affordability concerns.

With the average annual charge for wastewater services now over \$520 and expected to pass \$600 in 2024, certain vulnerable populations are already feeling an impact, with the COVID-19 pandemic only exacerbating the situation. How cost impacts are considered when new requirements are being set or permit limits imposed has not been re-evaluated in decades. Policy changes will be important as clean water utilities look to meet their existing financial obligations while continuing to invest in infrastructure repair and upgrades. EPA was on the cusp of releasing an update to its existing guidance for evaluating financial capability in early 2021 and the outcome of that effort will have financial ramifications for clean water utilities for decades to come.

The Water Infrastructure Finance and Innovation Act (WIFIA) program and the State Revolving Funds (SRFs) will remain important tools for clean water utilities far into the future, but strong bond ratings, even in the face of a year like 2020, and a strong overall financial position, will ensure the clean water community can continue to meet the challenges of tomorrow. NACWA's *Financial Survey* will continue to track these and other industry trends to provide clean water managers and other stakeholders with the information they need to make informed decisions on investment and management issues.

# NACWA Financial Survey

EXECUTIVE HIGHLIGHTS

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