



HIGHLIGHTING CHALLENGES IN UTILITY FINANCING AND MANAGEMENT 2008 NACWA Financial Survey Summary

Acknowledgments & Ordering Info

This report summary and the full *NACWA 2008 Financial Survey...A National Survey of Clean Water Agency Financing and Trends* were produced and published by the National Association of Clean Water Agencies (NACWA) under the general direction of the NACWA Board of Directors. The *2008 Financial Survey* is the latest edition of NACWA's triennial Financial Survey. The *2008 Survey* provides analysis of the most recent clean water financial data and updates and expands upon the content of past surveys, specifically the *2005 Financial Survey*.

We are particularly grateful to the members of the Financial Survey Workgroup who provided guidance and comments to ensure the quality of this publication.

The complete *2008 Financial Survey* report is available for purchase on NACWA's website at: www.nacwa.org/pubs.

HIGHLIGHTING CHALLENGES IN UTILITY FINANCING AND MANAGEMENT

2008 NACWA Financial Survey Summary



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INTRODUCTION



Since 1981, the National Association of Clean Water Agencies (NACWA) has performed a triennial financial survey of its membership to provide insight into the financing and management of clean water utilities. Each day clean water utility managers are faced with a multitude of decisions that impact how revenues are raised and spent in the service of their communities. Utility budgets and long-term plans reflect competing demands that must be evaluated, including the need to reach higher treatment levels, rate affordability, minimizing chemical and electricity use, building future capacity, retaining high-quality staff and more.

This document highlights the key findings and conclusions from the *2008 NACWA Financial Survey (Survey)* and together with the full Survey report provides a complete picture of how utility managers continue to find a balance in providing an essential service and responsibly managing their communities' resources. A total of 101 clean water agencies representing over 67 million people served by centralized sewer service responded to the *2008 Survey*.

This survey is especially timely considering the current economic downturn being faced by all levels of government — federal, state and local. While the statistics covered in this *Survey* are largely drawn from before the downturn became pronounced, this data will provide critical benchmarking capability as the impacts of the downturn continue to play out.

Increasing Costs Continue to Push Rates Higher.

The *2008 Survey* shows that clean water utilities are facing sustained increases in capital and operations and maintenance costs, long-term debt, and capital needs. While it is assumed that expenses will naturally increase due to inflationary pressures and population growth, the *Survey* data reveal that clean water utilities have experienced cost increases at levels much higher than would be expected due to these factors alone. Some of the additional cost increases are due to new regulatory requirements and efforts to increase service levels. Other increases, such as those in energy and chemical costs, may be explained by external factors, including global demand and volatile oil prices.

Increasing Debt Levels Threaten Borrowing. With higher costs comes the need for additional revenue. The *2008 Survey* shows that rates and charges for residential and industrial customers have increased at more than double the rate of inflation from 2005 to 2007. Data from NACWA's *Service Charge Index Survey* indicate that the nationwide average single-family residential service charge will eclipse \$400 by 2011. As the nation's economy slows, it will become more difficult for some to pay these increased charges without some form of assistance.

In NACWA's *2005 Survey* report, it was noted that the rapid increase in long-term debt, coupled with increasing capital needs could result in difficulties for utilities to meet future funding needs through debt financing mechanisms, especially if interest rates begin to rise significantly. The *2008 Survey* data shows that debt financing has continued to increase as a proportion of total utility expenditure. In fact, debt service increased from 22 to 28 percent of total expenditures over the past six years. These rising debt service levels can impact a utility's bond rating and its ability to get favorable conditions when it borrows to finance improvements. The current economic downturn and the impacts it has had on credit

markets will further complicate the ability of clean water agencies to meet their long-term needs.

Despite Budgetary Challenges, Utilities Continue to Improve Service.

In the face of budgetary challenges, the *2008 Survey* shows that clean water utilities are continuing efforts to improve efficiency and sustainability through energy recovery initiatives, asset management programs, and implementation of utility management/excellence initiatives. Service levels also continue to steadily improve with increased provision of reclaimed water services and enhanced treatment.

Since the release of NACWA's last *Financial Survey* in 2005, clean water utilities have continued to focus attention on the status of their physical assets, working to characterize the condition, value, and longevity of those assets so they can better plan for future needs. Ninety percent of *2008 Survey* respondents indicated that asset management programs are being implemented at their utilities. These programs have helped to emphasize the importance of sound financing and management policies to address the budgetary challenges faced by local governments in funding the operation and maintenance of critical wastewater treatment infrastructure.

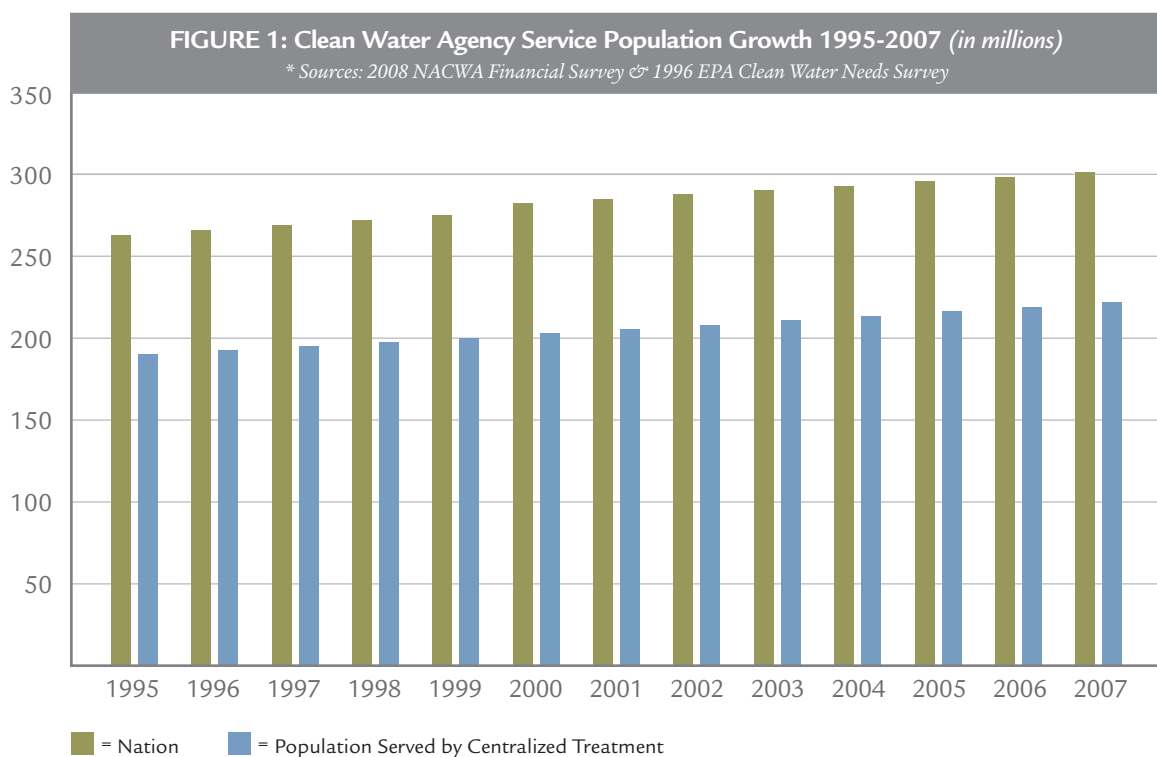


EXTERNAL DRIVERS

Several external drivers continue to have a major impact on clean water agency operations. Population growth and changing demographics, including population shifts between urban and suburban areas, present a regular challenge to utility managers who must meet the needs of a growing community and find the right balance in the cost for their services. Meeting permit requirements is an essential function for all utilities, but water quality concerns and new regulatory requirements that necessitate treatment upgrades or other investments continue to add to the list of resource demands. Utilities must also consider longer-term drivers, including aging infrastructure and climate change impacts that could significantly impact their operations.



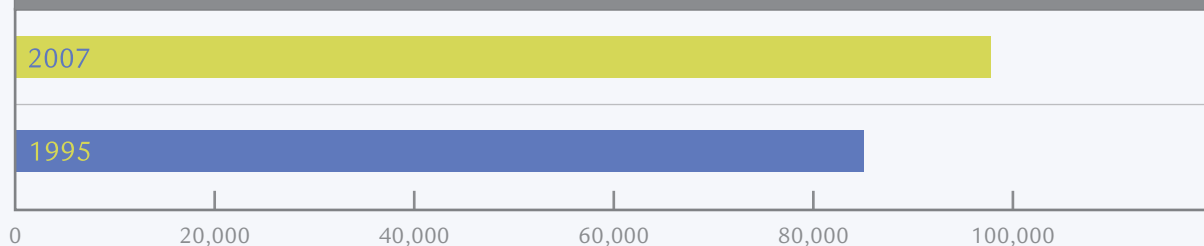
Service populations have mirrored U.S. population growth from 1995 to 2007 and have increased by 32 million in 12 years.



Utilities Continue to Meet the Needs of a Growing Population

Publicly owned clean water agencies must be prepared to serve the nation's growing population. According to the U.S. Census Bureau, the nation's population grew by 39 million from 1995 to 2007, an increase of 1.2 percent per year. Clean water utility service populations have mirrored U.S. population trends growing at 1.3 percent per year. With growing service populations come additional capital and operation and maintenance costs as plant capacities are increased and collection systems are extended.

FIGURE 2: Total Sewer System Length (45 Common Respondent Agencies) 1995-2007 (in miles)



Utilities have increased the length of their sewer systems by 15% from 1995 to 2007

The U.S. Census Bureau estimates that the U.S. population will grow at approximately 1.0 percent per year over the next 10 years, with a net population increase of 30 million from 2008 to 2017¹. With this population growth, an additional capacity of 4.5 billion gallons of wastewater treatment per day will be needed, with an additional cumulative annual operation and maintenance cost on the order of \$3 billion per year.

While populations are trending upward nationwide, this is not the case in every community. Some utilities are struggling to meet growing needs with a decreasing number of ratepayers. Even where the population is trending upward, the loss of population in the urban core can complicate the process of equitably charging for sewer services. Median household incomes may be high for an entire service area that may include an affluent suburban community, but the low income residents in the urban core may face a larger financial burden for the same services.

New Permit Requirements Likely to Add to Utility Needs

Clean water agencies are being asked to meet increasingly stringent permit limits and will continue to face pressure to make additional progress on reducing sewer overflows. In the next five to ten years, controls for nutrient discharges and pathogen reductions will likely have the greatest impact on utility budgets. The technologies for meeting low levels of the key nutrients, nitrogen and phosphorus, are very expensive to install and can dramatically increase chemical and power costs for the utility.

Aggressive enforcement for sewer overflows will continue to lock many communities into long-term orders committing hundreds of millions of dollars to reduce sewer overflows or make other collection system improvements. The nature of these court-approved agreements will require utilities to dedicate resources that might otherwise be spent on other utility needs.

These and other new requirements and commitments will add to the already long list of demands for clean water agency resources and in many cases will require the utility to take on more debt to finance the necessary improvements. Given the new Administration and increased majorities in the House and Senate that are likely to be more active on environmental protection, such trends appear more likely.

¹ <http://www.census.gov/population/www/projections/summarytables.html>

FINANCIAL TRENDS & CHALLENGES



The *2008 Survey* highlights a continuing trend of rising costs and expenditures for clean water utilities. Notably, these increases are accelerating at twice the rate of inflation. This indicates that factors other than inflationary pressure are contributing to rising costs. Coupled with increasing costs, utilities are also faced with growing capital needs and higher long-term debt. Despite these ongoing challenges, the financial health of the nation's clean water utilities as a sector appears strong, though slightly weakened since 2004 due to increased debt load.

Expenditures Increase by 20 Percent in 3 Years

Survey respondents reported \$10.7 billion in expenditures for 2007, with an average per capita² annual expense of \$195. Figure 3 shows the breakdown of 2007 utility expenditures. Operation and maintenance comprised 41% of total expenditures in 2007, while capital improvements and debt service each comprised 28% of total expenditures. In short, as much money is going to service debt as is going to maintain and expand the nation's clean water infrastructure.

From 2004 to 2007, clean water agency expenditures increased by 20 percent. Both revenues and expenditures are expected to increase each year due to inflationary pressures and population growth. However, other cost pressures, such as improvements in service and treatment levels and rapid cost increases for supplies, chemicals, and electricity have added additional burdens. Table 1 shows a breakdown of expenditure increases from 2001 to 2007.

FIGURE 3 – Breakdown of 2007 Utility Expenditures

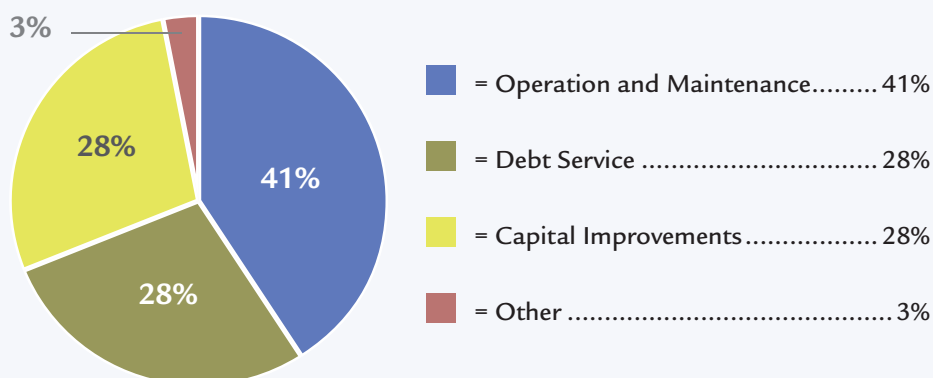


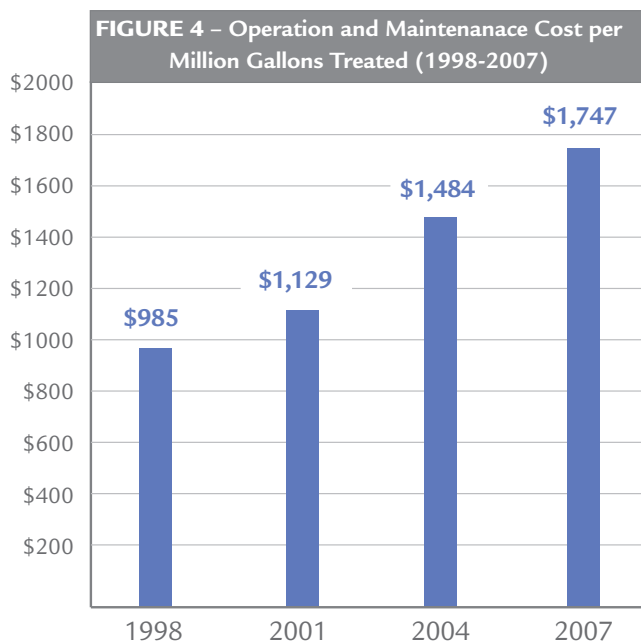
TABLE 1 – Expenditure Increase by Category (2001 - 2007)

Expenditures	2001-2004	2004-2007	2001-2007
Total Expenditure (% Change)	+11.3%	+20.0%	+33.5%
O&M Expenditure (% Change)	+11.2%	+17.0%	+30.1%
Capital Improvement Expenditure (% Change)	+28.3%	+22.1%	+56.7%
Debt Service Expenditure (% Change)	+4.4%	+23.4%	+28.4%
Consumer Price Index (% Change)	+6.7%	+9.7%	+17.1%

² Per person served by the clean water agency.

Operation and Maintenance Cost Trends

Survey respondents reported \$3.7 billion in operation and maintenance (O&M) costs for wastewater services, with an average O&M cost per million gallons treated of \$1,747. Table 2 shows a breakdown of O&M expenditures for 2007. Figure 4 shows that O&M expenditures have increased 77% since 1998.

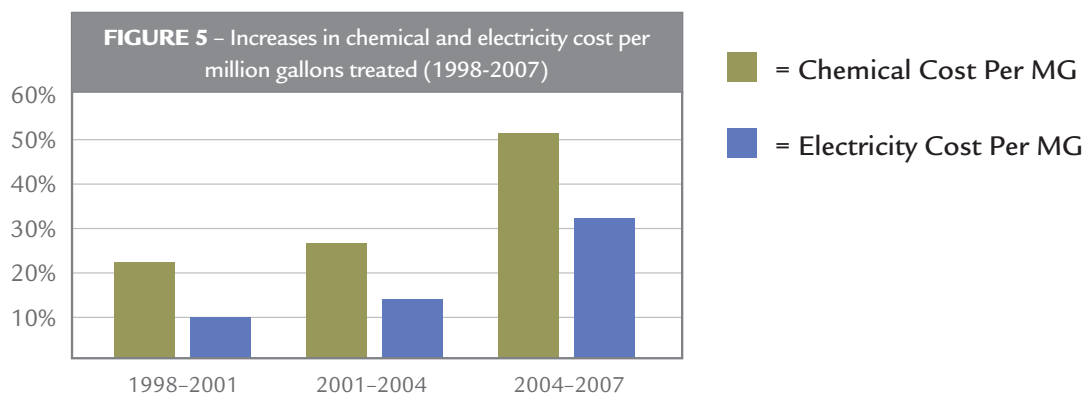


Expenditures	2007
Personnel Costs (Wages, Salary and Benefits)	45.1%
Private sector services	16.6%
Electric power	10.3%
Service provided by other departments	7.1%
Supplies and materials	6.4%
Chemicals	4.7%
Other utilities	3.5%
Utility management	1.0%
Other	4.9%
Total	100%

TABLE 2 – Operation and maintenance cost category breakdown (2007)

Chemical and Electricity Costs

Chemical and electricity costs comprised 15 percent of O&M expenditures and 6 percent of total agency expenditures in 2007. Average chemical cost per million gallons treated was \$83 in 2007, and average electricity cost per million gallons treated was \$166. From 2004 to 2007, chemical costs per million gallons treated increased 51 percent while electricity costs per million gallons treated rose 32 percent.



Personnel Costs



Personnel costs make up a major portion of clean water utility expenditures. The *Survey* data show that staff wages and benefits comprised 45 percent of total operation and maintenance expenses and 19 percent of all agency expenses in 2007. An analysis of trend data show that wage expenditures increased 11.5 percent, while benefits expenditures increased 22 percent from 2004 to 2007.

Faced with a growing number of senior staff nearing retirement, and a potential shortage of qualified staff replacements, utilities are working to ensure that compensation packages remain competitive in order to recruit and retain qualified staff. Median salaries have increased 6 to 19 percent from 2004 to 2007 for nearly all job positions and levels. An abridged list of staff salary trends is shown in Table 3. For comparison, the consumer price index, or inflation rate, rose 9.7 percent during the 2004 to 2007 timeframe.

TABLE 3 – Expenditure Increase by Category (2001 - 2007)

Position	Common Respondents	Median Salary 2007 (\$)	Median Salary 2004 (\$)	3-Year Increase (%)
Civil Engineer - Entry Level	62	\$53,220	\$49,057	8.5%
Civil Engineer - Senior Level	70	\$84,821	\$73,199	15.9%
Accountant/Bookkeeper - Entry Level	46	\$41,610	\$38,780	7.3%
Accountant/Bookkeeper - Senior Level	49	\$60,502	\$55,000	10.0%
Operator - Entry Level	76	\$35,403	\$33,115	6.9%
Operator - Senior Level	77	\$51,811	\$48,045	7.8%
Plant Superintendent - Entry Level	51	\$65,215	\$56,542	15.3%
Plant Superintendent - Senior Level	75	\$89,021	\$81,865	8.7%
Biologist/Chemist/Lab - Entry Level	72	\$41,090	\$38,202	7.6%
Biologist/Chemist/Lab - Senior Level	73	\$59,600	\$52,800	12.9%
Mechanic - Entry Level	49	\$36,500	\$34,778	5.0%
Mechanic - Senior Level	48	\$49,196	\$44,366	10.9%
Electrician - Entry Level	49	\$42,527	\$38,000	11.9%
Electrician - Senior Level	49	\$53,021	\$49,000	8.2%
Field Crew - Entry Level	60	\$32,863	\$28,973	13.4%
Field Crew - Senior Level	55	\$44,063	\$40,140	9.8%

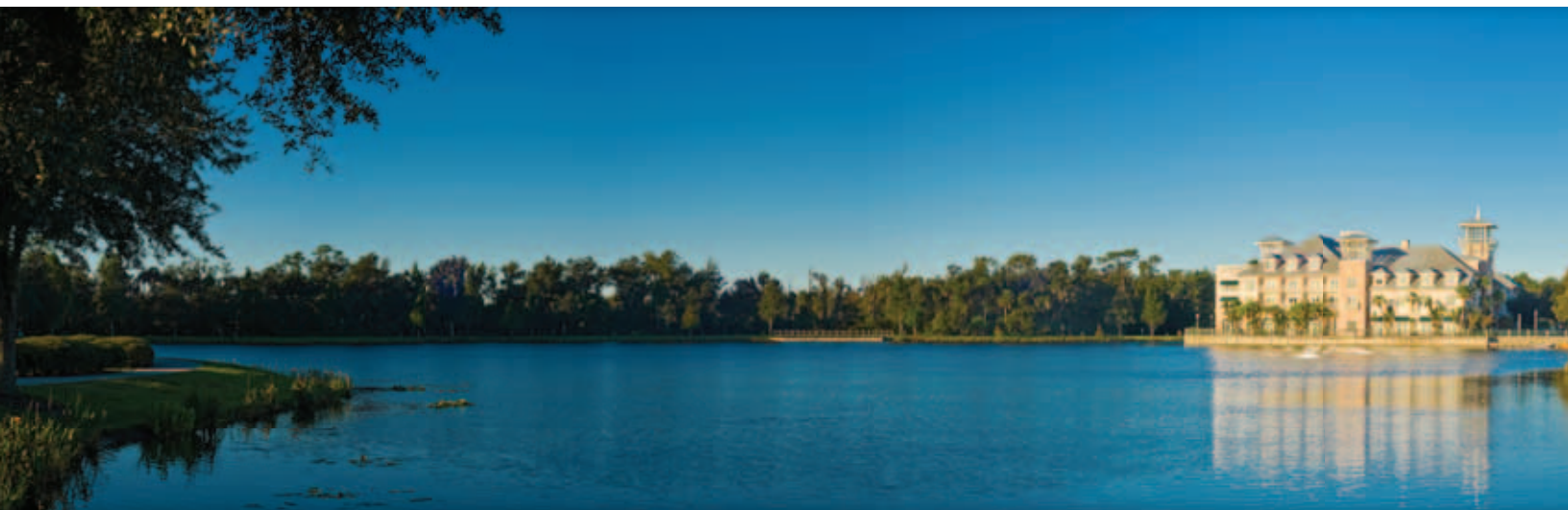
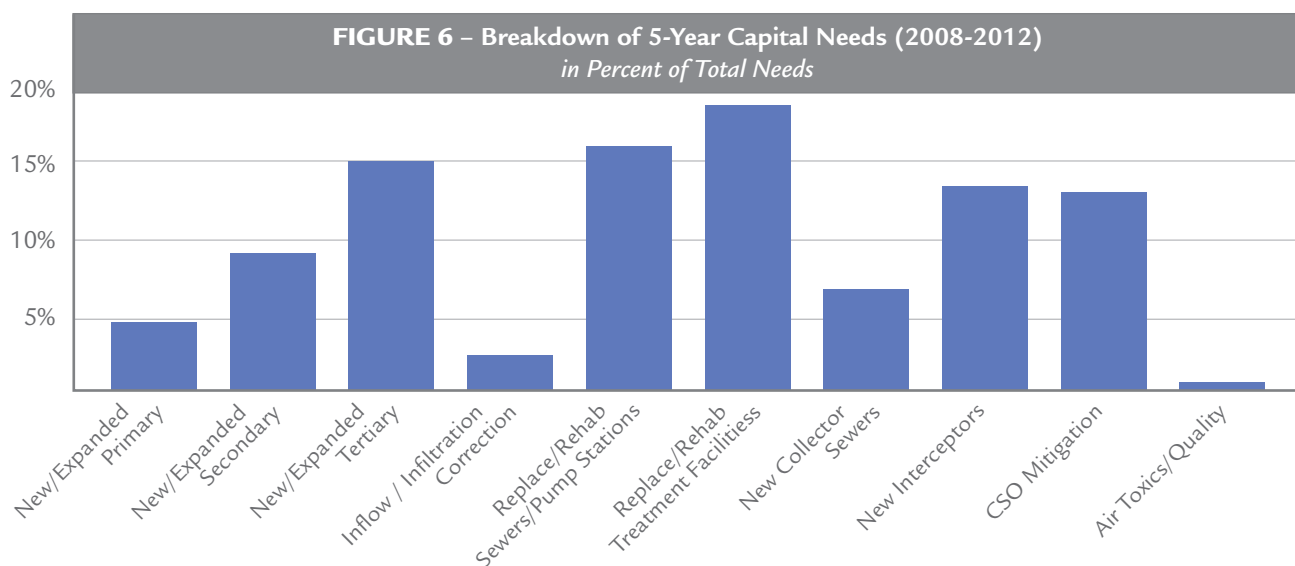
The Survey data show that wages and benefits comprised 45 percent of total operation and maintenance expenses and 19 percent of all agency expenses in 2007.

Increased Capital Needs

Five-year capital needs increased 20 percent from 2005 to 2008, and have risen 85 percent since 1999.

Survey respondents reported \$22 billion in five-year capital improvement needs for 2008-2012, with an average per capita five-year need of \$591. Figure 6 shows the breakdown of capital needs, with the highest needs for replacement and repair of existing sewers, pump stations, and treatment facilities (35 percent of total need). New and expanded treatment facilities comprise 29 percent of the total need. Utility respondents also indicated that 6.1 percent of capital needs were not included in five-year capital improvement plan budgets, and remained “unfunded.”

Aging infrastructure, increased regulatory requirements, and population growth continue to fuel increasing capital needs. Total capital needs rose 20 percent from 2005 to 2008, and have risen 85 percent since 1999.



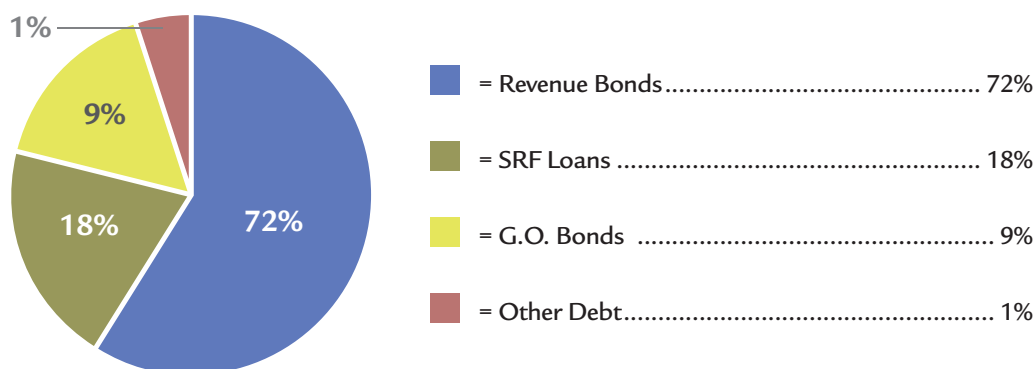
Increased Long-Term Debt

Long-term debt at the Nation's clean water agencies increased 27 percent from 2004 to 2007

Total long-term debt as of January 1, 2008 was reported at \$41 billion with an average per capita debt of \$560. Figure 7 shows that 72 percent of debt is in the form of revenue bonds, 18 percent in state revolving loan funds, and 10 percent in general obligation bonds and other debt. Long-term debt increased 27 percent from 2004 to 2007.

One direct impact of rising long-term debt is the increased proportion of agency expenditures devoted to debt service. Debt service expense has increased from 22 to 28 percent of agency expenditures over the past 6 years, while the amount of debt service expenditures has risen by 23 percent in the last 3 years. Debt service is a key factor for the agencies that develop bond ratings for utilities (e.g., Standard & Poor's). As the debt obligation portion of a utility's budget increases, bond ratings could be negatively impacted, increasing the utility's cost to borrow additional money.

FIGURE 7– Breakdown of outstanding long-term debt on January 1, 2008 (\$41 billion, 89 utilities)



Utility Financial Statements Show Higher Debt Ratios

Clean water utility balance sheets for the end of fiscal years 2004 and 2007 show that utilities are financing a greater proportion of their assets through long-term debt. An aggregated balance sheet for 59 clean water utilities with over \$56 billion in assets in 2007 shows that the debt ratio (total liabilities divided by total assets) rose from 0.57 to 0.63 from 2004 and 2007. The average current ratio liquidity measure (current assets divided by current liabilities) rose slightly for the same 59 utilities, indicating very little change in liquidity.

TABLE 4 – Aggregated balance sheet summary 2004-2007 (59 agencies)

ASSETS	end FY 2007 (in \$ millions)	end FY 2007 (%)	FY 2004 (in \$ millions)	end FY 2004 (%)
Current assets	\$7,459	13.2 %	\$6,767	13.9 %
Noncurrent assets	\$48,928	86.8 %	\$41,871	86.1 %
Total assets	\$56,387	100.0 %	\$48,638	100.0 %
LIABILITIES AND NET ASSETS				
Total current liabilities	\$3,270	5.8 %	\$3,059	6.3 %
Long-term liabilities	\$32,060	56.9 %	\$24,467	50.3 %
Net assets	\$21,057	37.3 %	\$21,112	43.4 %
Total liabilities and net assets	\$56,387	100.0 %	\$48,638	100.0 %

An aggregate statement of revenues and expenses for the end of fiscal year 2004 and 2007 shows that, despite rising operations costs, utilities continue to generate adequate revenue to cover operational expenses. The average operating ratio (operating revenue divided by operating expense) decreased slightly from 1.8 to 1.7 from 2004 to 2007. User charges and revenue bonds continue to comprise the highest sources of funding for clean water utilities at 57 percent and 12 percent of total funding, respectively.

TABLE 5 – Aggregate statement of revenues and expense summary 2004 to 2007 (68 agencies)

REVENUES	end FY 2007 (in \$ millions)	end FY 2004 (in \$ millions)
Operating revenue	\$6,050	\$4,986
Interest and other non-operating income	\$854	\$471
Total revenues	\$6,904	\$5,457
EXPENSE		
Operating expense	\$3,596	\$2,824
Depreciation	\$1,628	\$1,046
Special and other non-operating expenses	\$1,525	\$885
Total expenses	\$6,749	\$4,755
CAPITAL CONTRIBUTIONS	\$657	\$426
CHANGE IN NET ASSETS	\$812	\$1,128

MEETING THE CHALLENGES: MAKING UTILITY OPERATIONS MORE SUSTAINABLE



Despite the growing list of resource demands and other cost pressures, clean water agencies continue to improve their efforts to protect human health and the environment through improved treatment performance, expansion of water reclamation services, and green-initiatives including energy efficiency enhancements.

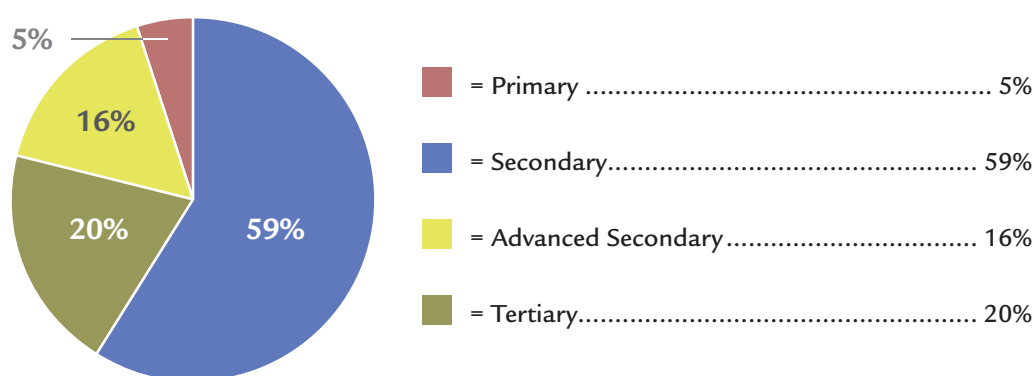


Thirty-six percent (36%) of all flows are treated to higher than secondary treatment levels

Improved Treatment Level Performance

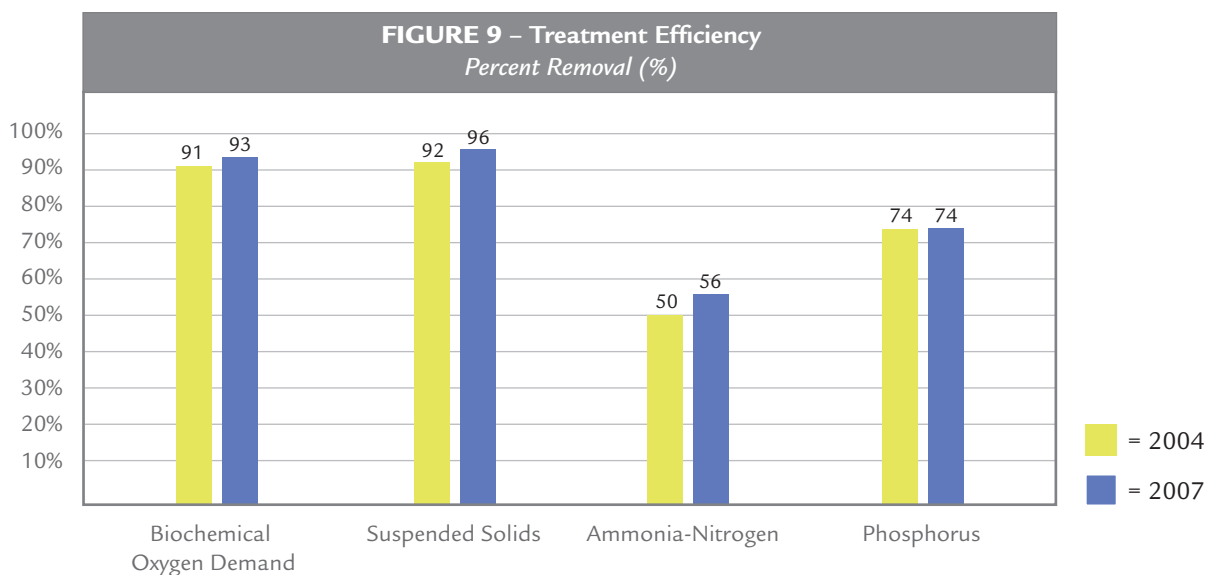
Clean water utilities nationwide continue to improve the performance of their treatment plants through upgrades and expansion. Over the past 12 years, the volume of flow treated to levels above secondary treatment standards (via biological nutrient removal or tertiary treatment processes) has more than doubled, and now comprises 36 percent of all flows treated by *Survey* respondents.

FIGURE 8 – Percentage of Flow Treated by Treatment Level (2007 – 96 Respondents)



High Levels of Treatment Efficiency

Due to higher treatment levels and improved operational efficiency, the nation's clean water utilities are continuing to remove higher percentages of pollutants, improving on already high levels of removal. Suspended solids and ammonia-nitrogen removal have improved from 92 to 96 percent, and 50 to 56 percent, respectively, from 2004 to 2007.



Diminishing Use of Chlorine Gas Disinfection

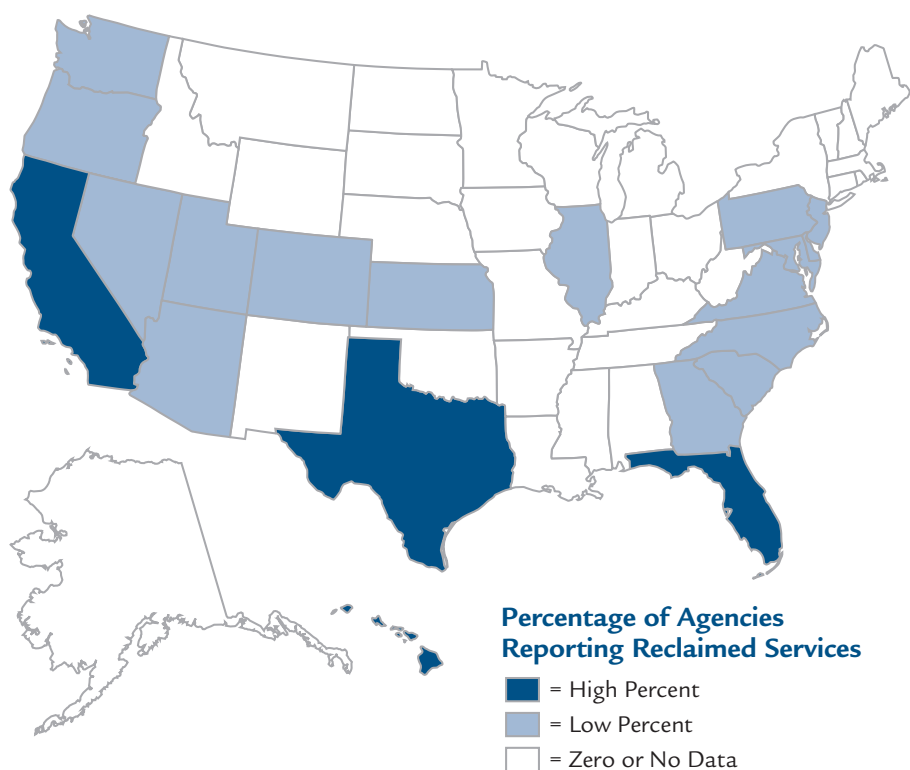
Nearly 40 percent of NACWA Survey respondents have switched from chlorine gas to another disinfection method since 1998.

Since 1998 nearly 40 percent of NACWA Survey respondents have switched from chlorine gas to another disinfection method. In addition, of the Survey respondents that currently use chlorine gas at one or more plants, 46 percent indicated that there is a planned phase-out of gaseous chlorine usage. Those utilities that have not found an effective alternative to chlorine gas for their operational needs have made enhancements to physical security measures and others have built dedicated containment structures to provide added protection for their communities.

Reclaimed Water Services

Results from both the 2005 and 2008 Surveys indicate an upward trend in the percentage of respondent utilities providing reclaimed water services. One-third of all agency respondents indicate that reclaimed water services are provided, up from only 18 percent in 1999. A majority (53%) of the NACWA Survey respondents that provide reclaimed water service are located in the states of California, Florida, and Texas; however, the geographic breadth of reclaimed water services has increased over the past ten years with NACWA agencies in 19 states reporting reclaimed water service. This trend is likely to continue as the population continues to grow and more communities look to highly treated wastewater as a resource rather than a waste.

FIGURE 10 – Geographic Breadth of NACWA Agencies Providing Reclaimed Water Services



One-third of all agency respondents indicated that they provide reclaimed water services.

Energy Efficiency and Cost Reduction

As costs for energy increase, clean water utilities are achieving energy and cost reductions and environmental benefits through a variety of energy saving techniques. A large proportion of utilities have already implemented one or more of these techniques at their plants, while a significant proportion plan to do so in the future. For example, 71 percent of utilities surveyed have already installed high efficiency pumps, motors and variable frequency drives, 39 percent of agencies indicated the use of heat recovery, and 35 percent indicated that electricity is generated onsite using biogas.

TABLE 6 – Energy Conservation or Cost Reduction Methods Implemented and Planned

The impact of energy saving techniques can be significant. Nine of 17 utilities that estimated reductions in offsite energy needs for planned projects indicated that these projects would reduce offsite energy needs 10 to 49 percent.

Energy Conservation or Cost Reduction Method	Percent of Agencies that Have Completed Projects	Percent of Agencies that Have Planned Projects
Installation of high-efficiency pumps, motors, & variable frequency drives	71%	28%
Using SCADA systems to monitor and optimize energy needs	68%	24%
Use of efficient lighting, HVAC for plant and administrative buildings	60%	25%
Reduction of I/I to reduce plant flows	53%	26%
Other plant process modifications to reduce energy use	43%	34%
Optimized purchasing strategies & load shifting to reduce peak demand	41%	14%
Heat recovery	39%	10%
Electricity generation – (biogas fueled engine, microturbine, fuel cell)	35%	24%

MEETING THE CHALLENGES: OPTIMIZING BUSINESS PRACTICES



Clean water agencies have continued efforts to adopt current business practices that help optimize operations and management. Environmental and quality management programs, such as the National Biosolids Partnership and International Organization for Standardization (ISO) 9000 series standards provide frameworks for targeting business objectives, process improvement, and measurement and evaluation. Performance benchmarking systems measure improvements against targeted objectives and can be used to compare business performance against other organizations. Asset management systems help utilities in capital planning by focusing attention on the status of physical assets so future needs can be met in the most effective manner.

Utility Management Initiatives

Thirty percent of Survey respondents are either considering or participating in the National Biosolids Partnership Environmental Management System. Another 20 percent are considering or implementing ISO 9000 or 14000 standards.

The 2008 NACWA *Financial Survey* requested information regarding whether utilities are implementing or considering implementation of an environmental/quality management system. The National Biosolids Partnership Environmental Management System (EMS), remains a popular utility management system, with nearly 30 percent of responding agencies either considering or participating in the program. The American Water Works Association (AWWA)/Water Environment Federation (WEF) Qualserve program is gaining popularity, with 23 percent of agencies considering or participating in the program, up from 16 percent in 2005. The ISO 9000 and 14000 standards continue to generate interest with one in five agencies considering or participating in the program. A few respondent agencies indicated interest in the newly issued ISO 24500 series management standards specifically designed for wastewater and drinking water service providers.

Performance Benchmarking

Benchmarks or indicators can be used to evaluate progress with internal objectives, compare utility performance with other “like” clean water utilities, or measure performance with other industry sectors. Nearly 50 percent of agencies surveyed are using one or more performance benchmarks to evaluate business or operational performance.

A wide range of performance indicators were cited as being used and cover different aspects of the business including: operations, compliance, customer service, finance, management, and human resources. Table 7 shows a list of the most commonly cited performance benchmarks used by clean water agencies.

TABLE 7 – List of the Most Prevalent Wastewater Utility Performance Benchmarks Cited by Survey Respondents

Rank	Performance indicator	Average Indicator Value from 2008 NACWA Financial Survey Data
1	Total cost per million gallons treated (\$ per MG)	\$4,437
2	Average annual residential service charge (or rate comparison) (\$/year)	\$303
3	Training hours per employee	Not Available
4	Odor complaints per month or year	Not Available
5	Permit compliance rate	99.97% ¹
6	O&M costs per million gallons treated	\$1,780
7	Number of SSOs per length of pipe	Not Available
8	Electricity use (kWh/MG)	1,766 kWh/MG ²
9	Employees (or full-time equivalents) per million gallons per day treated	1.8 FTEs/MGD ³

¹ 2007 NACWA Peak Performance Awards Program

² Plant energy use only. Does not include collection system electricity use.

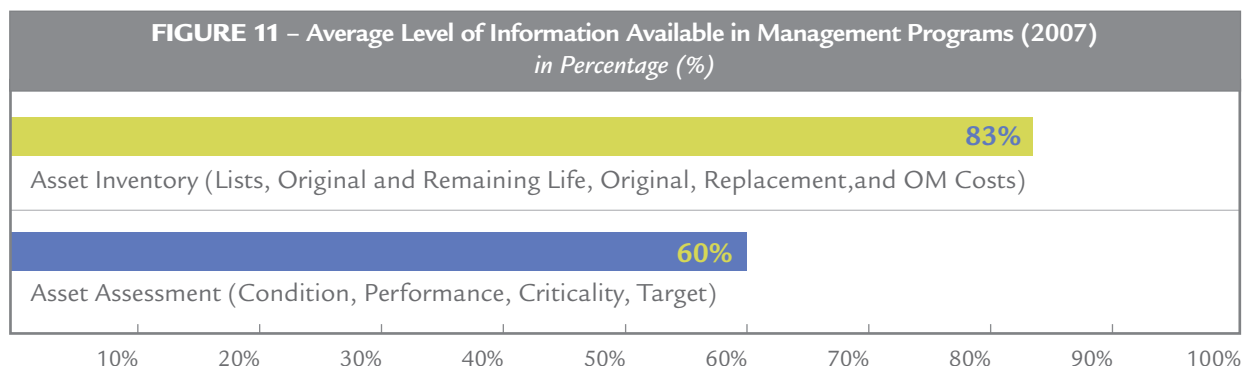
³ Treatment and biosolids staff only. Does not include collection system or administrative staff.



Increased Implementation of Asset Management Systems

Asset management systems can help utilities determine how to minimize the life cycle cost of owning and operating infrastructure assets, while continuously delivering service levels demanded by customers. According to the 2008 NACWA *Survey*, nearly 90 percent of respondents currently implement an asset management system, as compared to 68 percent of *Survey* respondents three years ago. Seventy percent of agencies use their asset management systems to provide information for their capital improvement programs and 60 percent of agencies use asset management systems to support the modified accounting approach described in Government Accounting Standards Board (GASB) Statement 34.

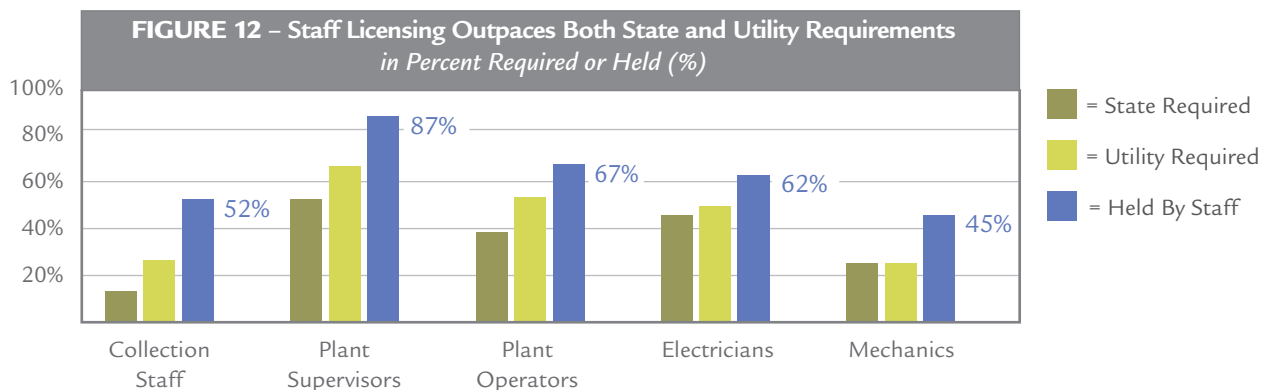
Ninety percent (90%) of Survey respondents implement an asset management system, as compared to only 68 percent of Survey respondents three years ago.



Staff Licensing Outpaces Regulatory Requirements

Utility staff have exceeded state licensing requirements to ensure efficient plant operation and protection of the environment

Clean water agency workers provide an invaluable service to the community and the environment. In order to ensure that treatment plants and collection systems operate efficiently, most states have set minimum licensing or certification requirements for plant superintendents, plant operators, collection system workers, electricians, and mechanics. The 2008 *Survey* indicates that licensing requirements imposed by utilities exceed state requirements, and furthermore, that the percent of staff holding licenses continues to outpace both state and utility licensing requirements.



Note: The term "license" was used broadly to indicate any grade, class, or level of license or certification issued by a state government, an industry trade association, or labor union.

MEETING THE CHALLENGES: INCREASING RATES AND SERVICE CHARGES

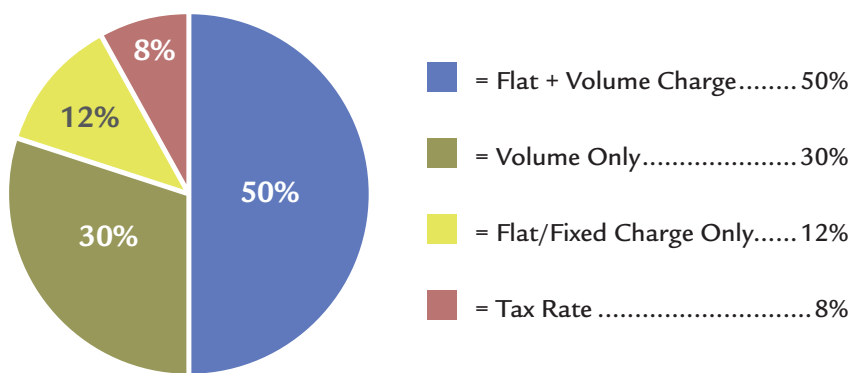


The NACWA *Financial Survey* has consistently shown that local user charges are the primary source of revenue generated by clean water agencies. As a result of rapid increases in costs over the past several years, clean water utility managers and governing boards have been faced with a continuing need to gain support for large and sustained rate increases. Accordingly, average sewer charges have increased at a rapid pace. The current economic downturn is likely to make it more difficult for utilities to gain support for additional rate increases.

Rate Structures

While nearly all clean water agencies depend heavily on user charges for their revenue stream, the 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 13 shows a breakdown of rate structures used by 2008 Survey respondents and highlights that 50% of utilities use a combination of flat charges with volume-based charges.

FIGURE 13 – Types of Rate Structures Implemented at Clean Water Agencies

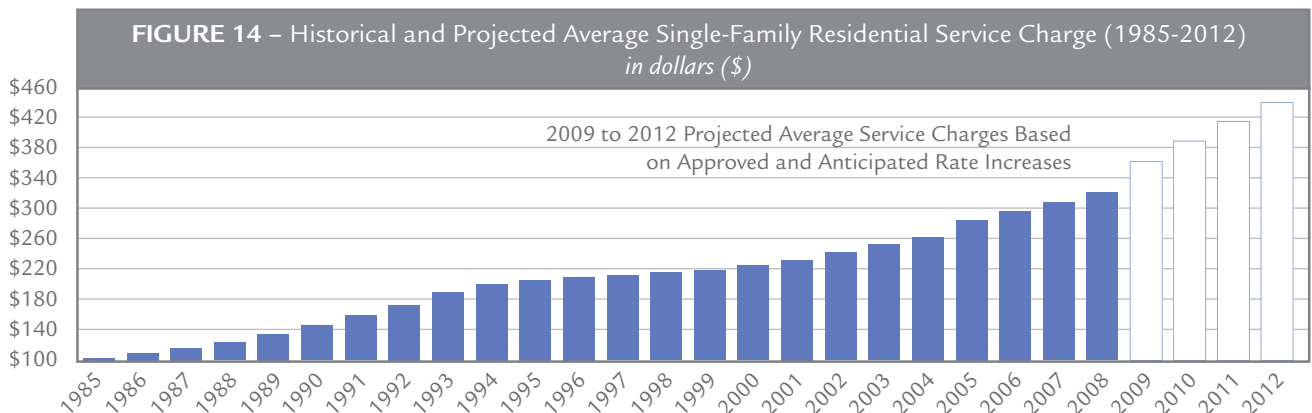


Average Sewer Service Charge Increases Faster than Inflation

The average single-family residential sewer service charge will exceed \$400 per year in 2011, only four years after eclipsing \$300 in 2007.

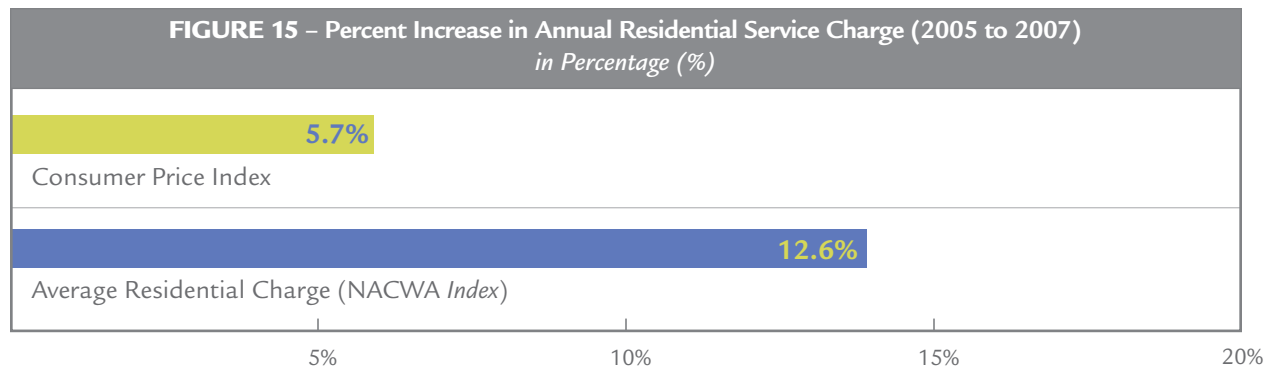
Because of the variation of rate structures implemented, the average annual single-family residential sewer service charge, inclusive of collection and treatment, provides a consistent benchmark to measure the cost of sewer service and changes in those costs among clean water agencies nationwide.

NACWA performs an annual survey on changes in residential sewer service rates, called the NACWA *Service Charge 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 2007 data indicate that the average residential service charge continues to increase at more than double the inflation rate. Projections (Figure 14) from the 2007 *NACWA Index* indicate



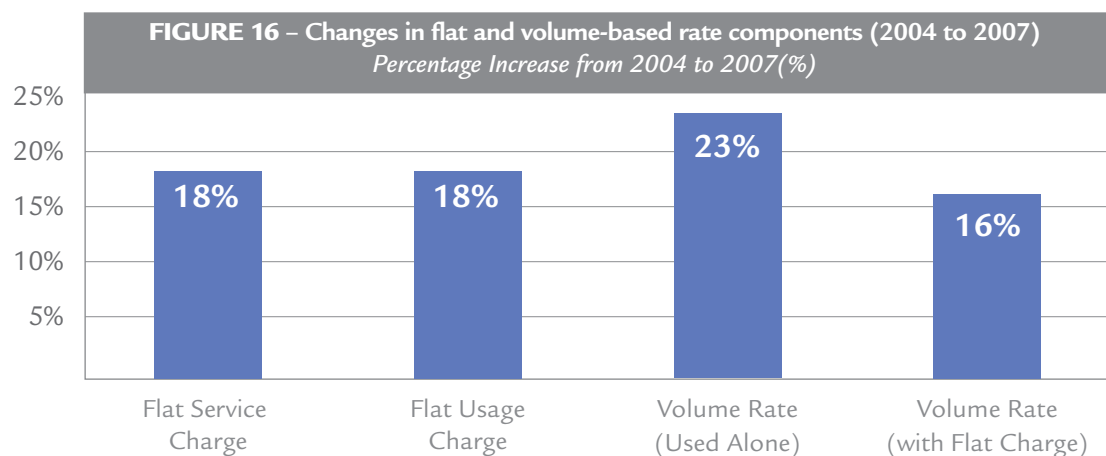
Source: 2007 NACWA Service Charge Index

that the average single-family residential service charge will exceed \$400 per year by 2011, only four years after eclipsing \$300 by 2007.



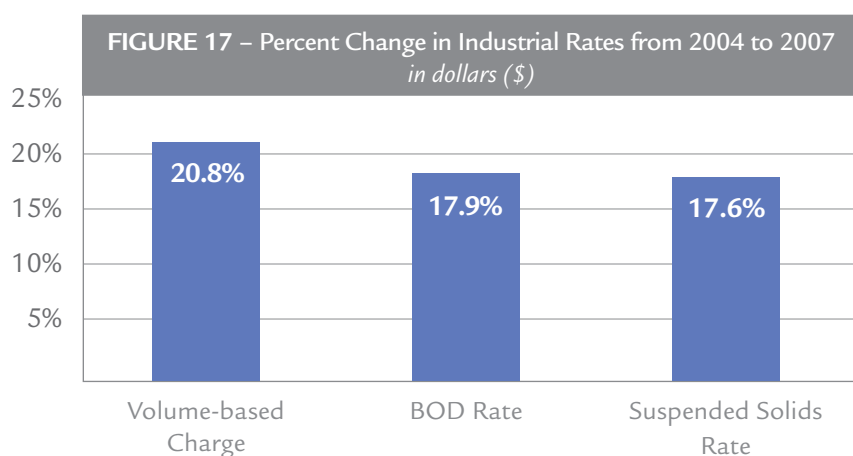
Fixed Charges and Volume-Based Rate Components Increase

As components of the total residential sewer service charge, the NACWA *Financial Survey* examines the changes in fixed charges and volume rates and how they relate to the change in the average residential service charge. The 2008 *Survey* shows that both flat and volume-based components of residential rate structures have increased at approximately the same pace (16% to 23%) as the annual average service charge. Figure 16 shows the changes in fixed charge and volume-based rate components from 2004 to 2007.



Industrial Users Also Pay for Rising Costs of Wastewater Collection and Treatment

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 dischargers 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. Figure 17 shows the increase in the industrial volume-based charge and extra-strength charges from 2004 to 2007. These increasing costs present challenges for communities struggling to attract and keep businesses and the jobs they provide for the local community.



Average connection and hookup fees increased by 25 percent and 23 percent, respectively from 2004 to 2007.

TABLE 8 – Average Industrial Rates in 2007

Parameter	2007 Average Rate
Volume Charge (\$/1,000 gallons)	\$2.76
BOD (\$ per pound)	\$0.2625
SS (\$ per pound)	\$0.2421

Residential Fees - Connection and Hookup Charges

In addition to yearly service charges, new customers can be charged connection fees (the cost of connecting a house lateral) and hookup fees (one-time fees used to offset capital improvements associated with the expansion of the system). Both these fees increased substantially from 2004 to 2007. From 2004 to 2007 the average connection fee rose 25 percent and the average hookup fee increased 23 percent. The current economic downturn and its impact on the housing market and new home construction is already affecting the revenues utilities generate from these fees.

CONCLUSIONS



The 2008 *Financial Survey* continues to demonstrate that utilities are facing rapid increases in the cost of providing clean water services, while capital needs continue to rise. Additional revenue has been generated to offset these cost increases, but debt financing revenue is rising at a faster pace than revenues from user charges and other sources, leading to higher debt loads and a higher proportion of debt service expenditure.

Though costs are rising, utilities are also increasing their levels of service. The percent of flows treated to higher than secondary levels has reached 36 percent of all flows, while already high treatment efficiencies for pollutants, especially nitrogen and suspended solids, continue to improve. Utilities are continuing to search for cost savings through a variety of mechanisms such as utility management initiatives, performance tracking, planned reductions in off-site energy use, and use of asset management systems. Costs for materials and key commodities have experienced deflationary pressure recently due to the economic downturn and NACWA will be tracking the impacts, which will likely show up in some of the data in the next NACWA *Financial Survey* due out in 2012.

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