# Water and Sewer Rates and Rate Structures in Georgia August 2009

*This document details the results of a survey of water and sewer rates and rate structures conducted by the Georgia Environmental Facilities Authority and the Environmental Finance Center[1] in 2009. Rates and rate structures are analyzed for public water and sewer utilities throughout the State. For more information or to download a listing of water and sewer rate tables, to use interactive Rates Dashboards designed to allow the user to compare rates among groups of utilities and analyze the affordability of services and the extent to which rates are financially sustainable, or to view rate sheets of individual utilities, please visit www.gefa.org and www.efc.unc.edu.*

## Contents




[1] Primary funding for this study was provided by the Georgia Environmental Facilities Authority, partial funding was also provided by the U.S. Environmental Protection Agency.

## Introduction

Water and sewer rate setting is one of a local government's most important environmental and public health responsibilities. Water and sewer rates ultimately determine how much revenue a community will have to maintain vital infrastructure. The purpose of this document is to help utilities in rate setting by providing an up-to-date, detailed survey of current statewide rate structures and trends. This report represents a collaborative effort between the Georgia Environmental Facilities Authority and the Environmental Finance Center.

This survey was funded primarily by the Georgia Environmental Facilities Authority. Additional support for this project came from the Georgia Association of Water Professionals, the Georgia Municipal Association, the Georgia Department of Natural Resources' Environmental Protection Division, the Georgia Department of Community Affairs, the Association County Commissioners of Georgia, the Georgia Rural Water Association, and the US Environmental Protection Agency.

Over the course of this survey, 523 water and sewer utilities were contacted by email, fax, letter or phone, and 471 utilities (90 percent) responded by sending in their rate schedules. These utilities account for 98 percent of the population served by all public community water and sewer utilities in the State. Table 1 describes the utilities analyzed. Some utilities use more than one rate structure for different portions of their service areas, raising the total number of rate structures in our sample to 520. Copies of the 520 rate structures of those participating utilities are available online at www.efc.unc.edu/ga/rates.html.

**Table 1: Number of Participating Utilities with Rates Data for 2009**

| Institutional Arrangement | Provides Water and Sewer | Provides Water Only | Provides Sewer Only | Total |
|---|---|---|---|---|
| **Municipality** | 290 | 95 | 2 | **387** |
| **County/District** | 26 | 17 | 0 | **43** |
| **Authority** | 21 | 18 | 1 | **40** |
| **Consolidated Government** | 2 | 1 | 0 | **3** |
| **Total Number of Utilities** | ***339*** | ***131*** | ***3*** | ***473*** |
| **Number of Rate Structures** | ***367*** | ***144*** | ***9*** | ***520*** |

In addition to this report, tables of each utility's rates and key components of their rate structures are available from GEFA (www.gefa.org) and the EFC (www.efc.unc.edu). **It is important to stress that an examination of rates and rate structures will only tell part of the story.** Pressure to maintain low or relatively low rates has the potential to force utilities to run a deficit or avoid making necessary operational and capital expenditures. Ideally, rates should reflect the cost of providing service which depends on diverse factors including size of treatment facilities, customer base, age of assets, type of water supply, and quality of receiving waters. Two neighboring utilities with similar customer bases may have very different costs that justify very different rate structures and rates. **Therefore, policy decisions drawn from the comparative information in this document should also consider many other factors such as age of system, geographic location, site-specific regulatory requirements, source of water, demand, and availability of resources.** Free, interactive Rates Dashboards that combine utility financial, physical and customer characteristics with the capability of comparing rates among utilities that are similar in various categories are available on the web at www.efc.unc.edu/RatesDashboards.

**High rates do not necessarily reflect poor or inefficient management.** In fact, some utilities with low rates do not generate sufficient revenue to properly maintain their system's assets, thereby reducing short-term investments that are likely to have long-term adverse cost and service impacts. Other utilities may have low rates because they have not re-examined their rate structures in many years. Even when a utility customer base does not grow, operating costs rise every year and rates should be examined and potentially readjusted on a yearly basis.

## Overview of Rates and Rate Structures

Utilities employ a range of rate structures to determine what their customers pay. Almost all utilities use a combination of base charges and variable charges in their rate structures. There is considerable variation in how these are calculated and how they are charged for different classes of customers.

### Base Charges

Base charges contribute to revenue stability because they do not vary from month to month, regardless of consumption. However, high base charges can also make it difficult for a utility to encourage conservation for the same reason. The number of rate structures with base charges and the range of the charges are shown in Figure 1. The median[2] base charges are presented in Table 2 by utility size. The median residential base charge applied by utilities in 2009 is $11 per month for water and $11 per month for sewer. For combined utilities, the median combined water and sewer base charge is $22 per month.

**Figure 1: Monthly Base Charges for Residential Customers among 515 Water and 370 Wastewater Rate Structures**

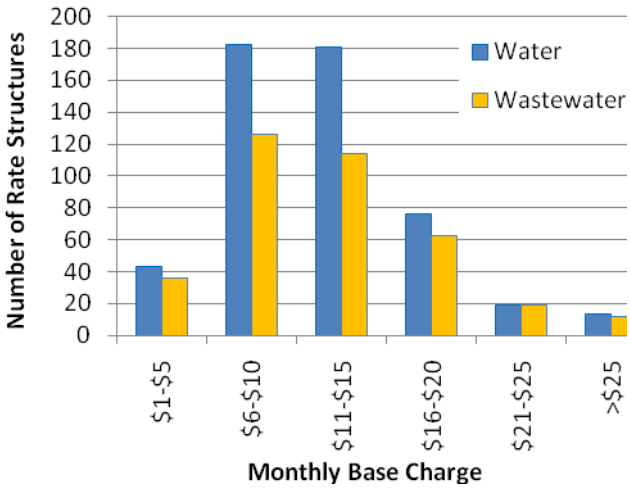



**Table 2: Monthly Base Charges in Water and Sewer Rate Structures, by Utility Size**

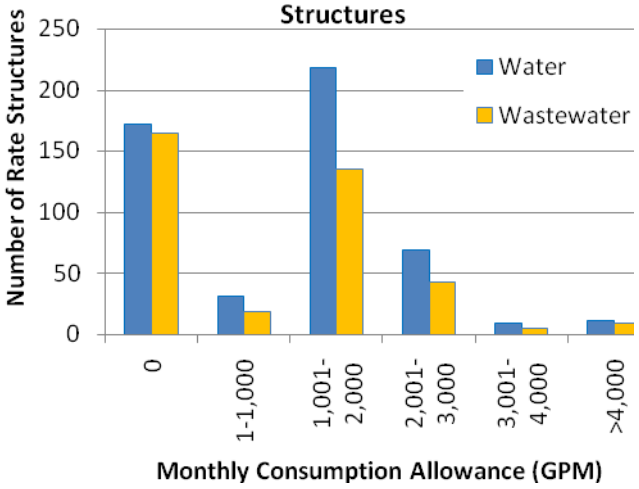
| | Water Rate Structures | | | Sewer Rate Structures | | |
|---|---|---|---|---|---|---|
| **Size of Utility (Service Population)** | **Total Number of Structures** | **Number with Base Charge** | **Median Base Charge** | **Total Number of Structures** | **Number with Base Charge** | **Median Base Charge** |
| 1 - 999 | 130 | 130 | $12.00 | 45 | 45 | $12.50 |
| 1,000 – 2,499 | 107 | 107 | $12.00 | 83 | 82 | $13.00 |
| 2,500 – 4,999 | 85 | 85 | $11.00 | 74 | 74 | $10.76 |
| 5,000 – 9,999 | 68 | 67 | $10.26 | 59 | 57 | $10.00 |
| 10,000 – 24,999 | 62 | 62 | $11.98 | 62 | 59 | $12.00 |
| 25,000+ | 64 | 64 | $7.80 | 57 | 53 | $8.00 |
| ***All Rate Structures*** | ***516*** | ***515*** | ***$11.00*** | ***380*** | ***370*** | ***$11.00*** |

[2] Most of the statistics reported in this report refer to *medians*. Exactly half of the rate structures in the sample have a value that is equal to or greater than (or equal to or lower than) the median value. The median is preferred over the average because averages are influenced by exceptionally high or low values whereas medians are not.

While nearly every rate structure (100 percent of water and 97 percent of sewer rate structures) has a base charge, their amounts vary by utility size. The largest utilities have smaller base charges than the smallest utilities. This may be a reflection of the fact that larger utilities have broader customer bases that provide a more stable revenue stream. Smaller utilities may, on average, have less stable customer consumption and therefore decide to shift a greater portion of their operating costs into the base charge.

The majority of rate structures (66 percent of water and 57 percent of sewer rate structures) include a minimum amount of water consumption or sewer disposal with their base charges (see Figure 2). For these utilities, the variable portion of the rate structure only takes effect when a customer uses more than the minimum included in the base charge. Thus, all customers of these utilities who consume or dispose of an amount up to the minimum allocation would receive the same bill, which is equal to the base charge. For both water and sewer utilities, the median amount of allowance included with the base charge is 2,000 gallons per month (GPM). Only 4 percent of water and 4 percent of sewer utilities include more than 3,000 GPM with the base charge.

**Figure 2: Consumption included with Base Charge for Residential Customers among 516 Water and 380 Wastewater Rate Structures**




## Variable Charges: Uniform, Increasing Block, Decreasing Block, and Other Rate Structures

Figures 3-6 present information on water and sewer rate structures for "inside" customers: those who live within a utility's political jurisdiction or municipal boundaries. The three most common rate structures are uniform, increasing block, and decreasing block. In a uniform rate structure, the rate at which water/sewer is charged does not change as the customer uses more water. In an increasing block structure, the rate increases with greater water consumption. This structure is often employed by utilities that want to encourage conservation. In a decreasing block structure, water rates decrease as consumption rises. This structure might be used to encourage economic development. Other rate structures used in Georgia include a hybrid of increasing and decreasing blocks where rates increase or decrease for specific targeted blocks of consumption, seasonal rate structures, rates that are capped at a maximum billable consumption amount, and tiered flat fees. Seasonal uniform rate structures support conservation, especially for those utilities that experience large seasonal consumption changes (e.g. tourist locations). Sewer bills are almost always calculated based on the amount of metered water consumption; however, a fraction of sewer utilities use rate structures with a cap on residential sewer consumption. For example, if a utility caps their sewer bill at 20,000 gallons, a customer that uses 25,000 gallons of water will only be charged for 20,000 gallons of sewer disposal. This sewer structure does not send strong conservation message and provides less incentive for conservation among high volume users.

**Figure 3: Residential Water Rate Structures (n = 516)**

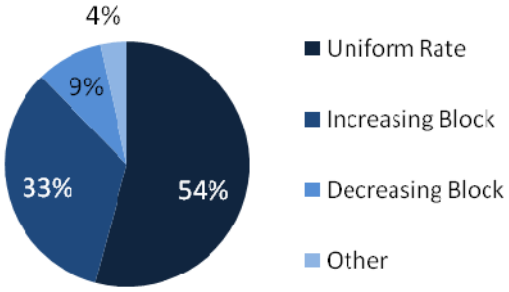
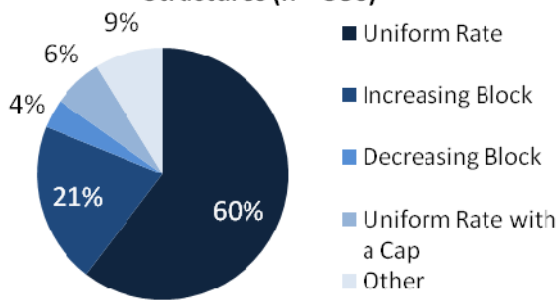



**Figure 4: Residential Sewer Rate Structures (n = 380)**




Most water and sewer utilities use the same rate structure for residential, commercial, and industrial customers, but some have separate rates for different customer classes. In this survey, 40 percent of water utilities have a separate rate structure for their commercial customers, and a fraction of these utilities also has a separate structure that pertains to their industrial customers. On the sewer side, 38 percent have a separate rate structure for their commercial customers. Information on the types of commercial rate structures for those utilities with designated commercial customer classes is presented in Figures 5 and 6.

**Figure 5: Commercial-Specific Water Rate Structures (n = 214)**

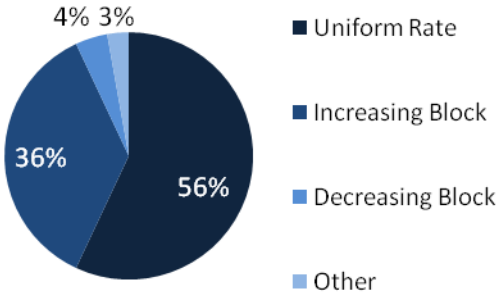
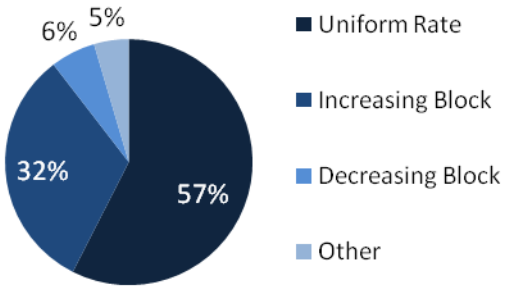
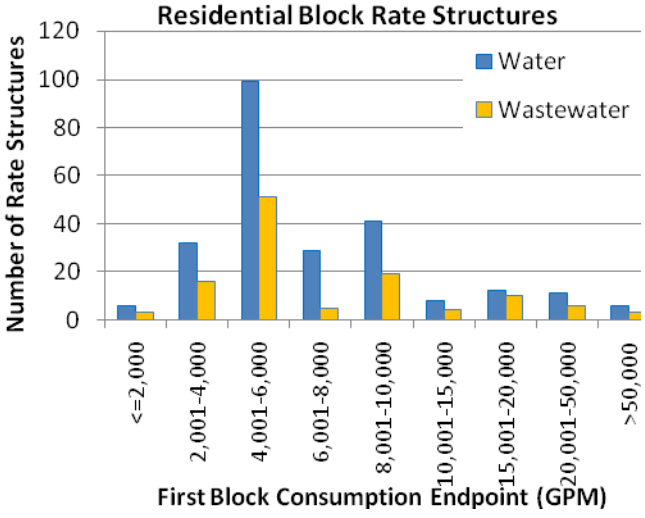



**Figure 6: Commercial-Specific Sewer Rate Structures (n = 153)**




While some utilities design separate rate structures for commercial users, other utilities use only one rate structure but design the blocks so that they inherently distinguish residential use from that of large commercial customers. A common practice is to set the first block high enough so that essentially all residential consumption is charged one rate (which is equivalent to a uniform rate for these customers) while most large commercial customers will typically exceed the first block, thus paying an increasing or decreasing block rate. Figure 7 shows how many rate structures include various amounts of consumption and disposal in the first block of their residential block rate structure. An examination of rate structures over the range of typical residential consumption reveals that many increasing and

**Figure 7: Maximum Quantity in the First Block among 244 Water and 117 Sewer Residential Block Rate Structures**



decreasing block structures are effectively uniform below 15,000 GPM (shown in Figures 8 and 9). For example, whereas 9 percent of residential water rate structures are decreasing block structures (Figure 3), only 4 percent actually apply decreasing rates within the first 15,000 GPM of consumption (Figure 8) – the other 5 percent have a first block that exceeds the range of typical residential use. Figures 8 and 9 also show the percent of the population served under each rate structure applicable to consumption/disposal levels of up to 15,000 GPM. While only 38 percent of the water rate structures are increasing block structures through 15,000 GPM, 67 percent of all residential customers are served by these rate structures. Figure 9 shows that the vast majority of residential customers pay uniform rates for sewer disposal.

**Figure 8: Water Rate Structures Applicable to Residential Consumption up to 15,000 GPM (n=516)**

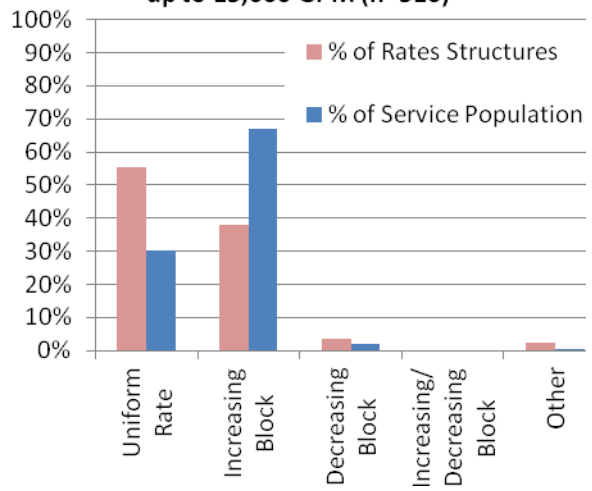
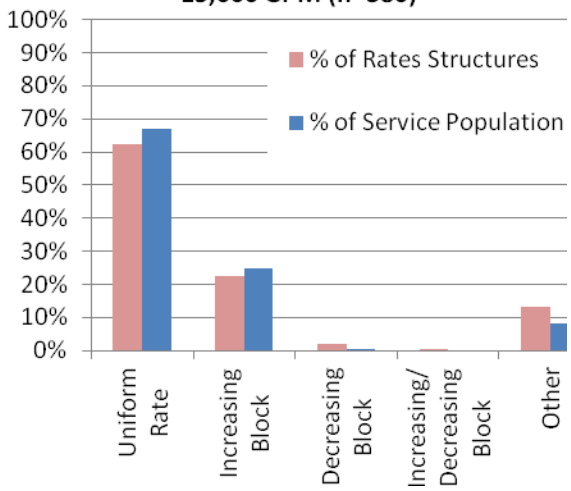


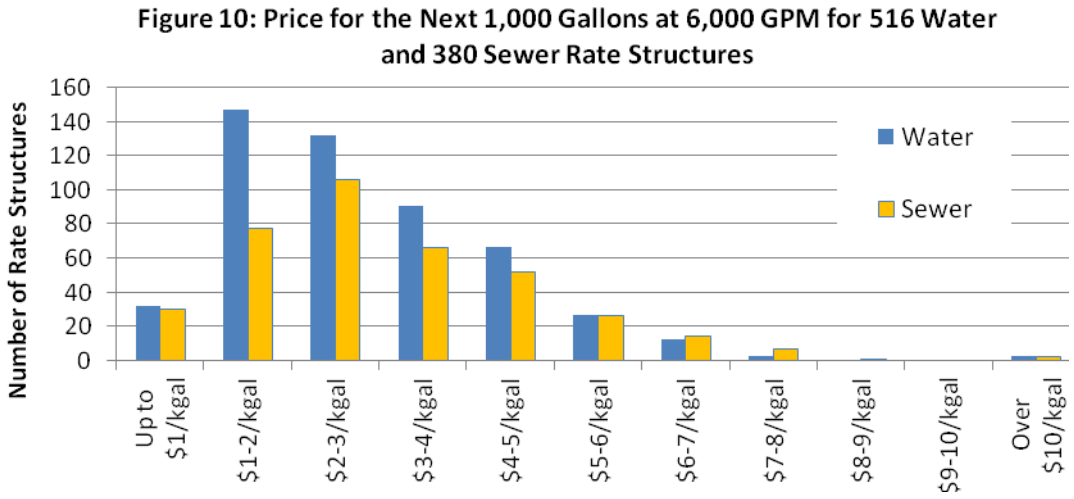

**Figure 9: Sewer Rate Structures Applicable to Residential Disposal up to 15,000 GPM (n=380)**




Residential customers in the Southeast consume an average of 5,000 – 6,000 gallons per month (GPM). Among the 516 water rate structures in the sample, the median price for the next 1,000 gallons (not including base charges) at the consumption level of 6,000 GPM is $2.64 per 1,000 gallons – 50 percent of the water rate structures have a price that is between $1.80 and $3.91 per 1,000 gallons. This $2.64 per 1,000 gallons compares to a median price of $2.50 per 1,000 gallons for the water rate structures studied in the 2008 survey and $2.25 in the 2007 survey.

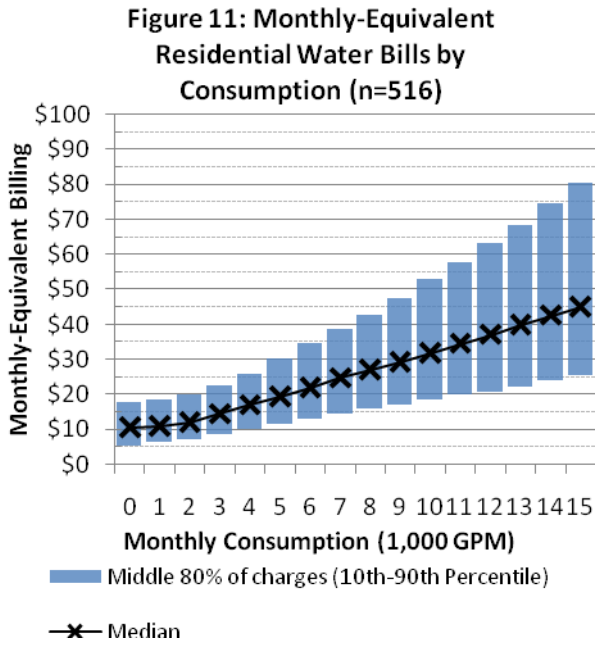
The price for sewer is slightly higher. Among the 380 sewer rate structures in the sample, the median sewer price for the next 1,000 gallons at 6,000 GPM is $2.75 per 1,000 gallons – 50 percent of the sewer rate structures have a price that is between $2.00 and $4.16 per 1,000 gallons. This $2.75 per 1,000 gallons compares to a median price of $2.68 per 1,000 gallons for the sewer rate structures studied in the 2008 survey and $2.38 in the 2007 survey. The range of water and sewer prices for the next 1,000 gallons at the 6,000 GPM consumption level is shown on Figure 10.

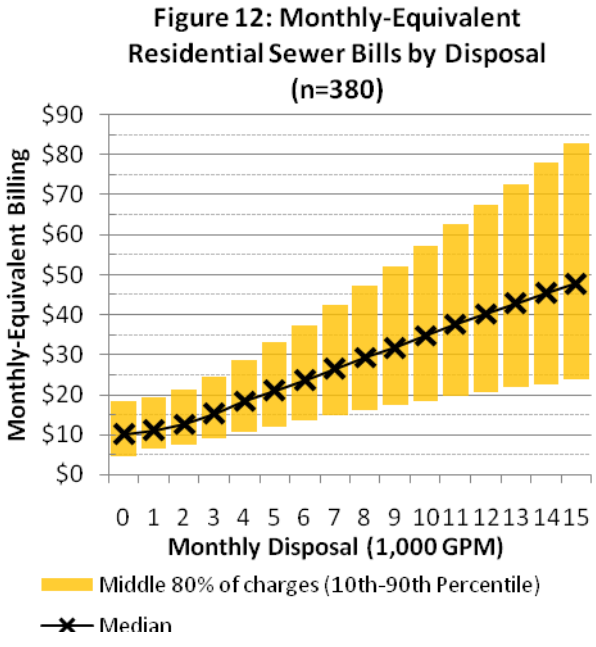
Among the 372 combined water and sewer rate structures, the median combined price for the next 1,000 gallons is $5.39 per 1,000 gallons (compared to $5.23 in 2008 and $4.65 in 2007) – 50 percent of the combined rate structures have a price that is between $3.99 and $8.07 per 1,000 gallons.




## What Utilities Charge their Customers

### Residential Water and Sewer Bills




Figures 11 and 12 show the amount utilities bill their residential water and sewer customers, respectively, for a range of consumption/disposal amounts on a monthly basis[3]. These calculations include base charges and consumption allowances. The colored bars highlight what the middle 80 percent of utilities charge (between the 10th and 90th percentile) across the consumption spectrum. Utilities that charge below or above the colored bars are charging less than or more than 90 percent of all other utilities in the sample, respectively.

[3] For utilities that bill on a non-monthly basis (bi-monthly or quarterly), charges have been calculated and presented on a monthly basis to allow for accurate comparison.

The median monthly amount charged for zero gallons of water is $11.00, $20.66 for 5,000 gallons, $23.02 for 6,000 gallons, and $32.91 for 10,000 gallons. As a point of comparison, a gallon of potable water at a major grocery retailer is approximately $1.00 while the median bill for 6,000 gallons is approximately $0.004 per gallon, which is 261 times cheaper. Despite the fact that water is a necessity for life, it is surprisingly inexpensive when compared to cable television, a luxury commodity. An informal survey of cable prices in Georgia finds that the average community price for basic cable, excluding premium packages, is $44.44, or more than twice the average water bill.

Sewer bills are generally higher than water bills. The median monthly sewer bill for customers disposing zero gallons of water is $11.00, $21.80 for 5,000 gallons, $24.50 for 6,000 gallons, and $36.40 for 10,000 gallons.

The range of combined water and sewer bills for various levels of consumption is shown on Figure 13. The median monthly combined bill for zero gallons is $22.00, $42.96 for 5,000 gallons, $48.07 for 6,000 gallons and $70.13for 10,000 gallons.

**Figure 13: Monthly-Equivalent Residential Combined Water and Sewer Bills by Consumption (n=372)**

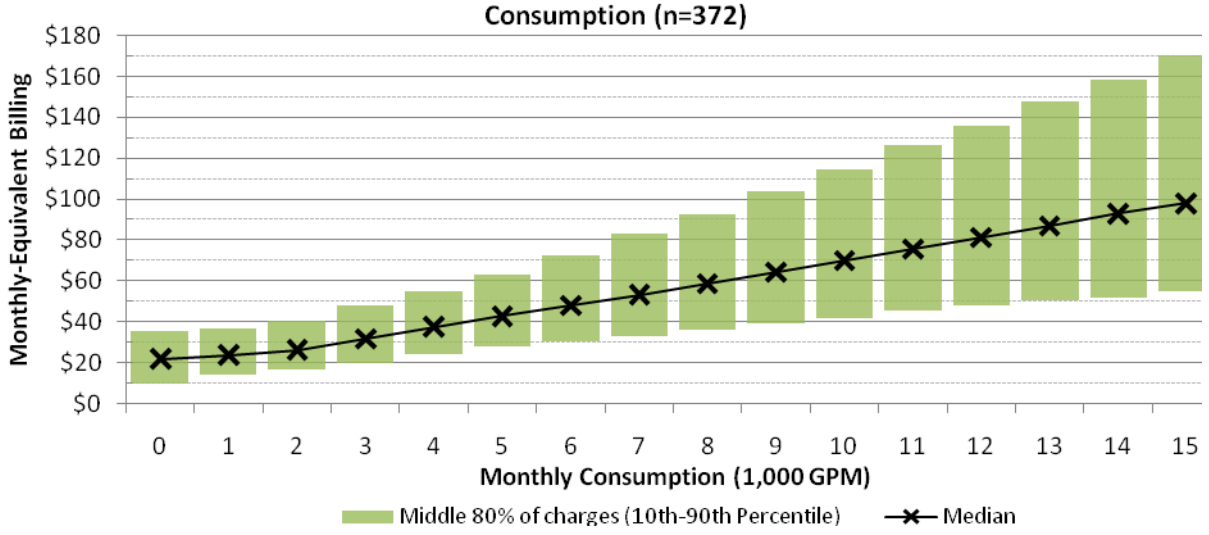



Table 3 shows that the median water and sewer bills among different size classes of utilities are roughly the same; i.e., there is no apparent economy of scale. Table 4 shows that municipal utilities generally have lower water and sewer bills than other service providers, possibly because the population density is highest for municipal utilities, which translates into lower per customer costs (and therefore bills) for distribution and collection. Conversely, county utilities, which are typically more spread out, have significantly higher water bills.

**Table 3: Median Water and Sewer Monthly Bills at 6,000 GPM, by Utility Size**

| | Water Rate Structures | | Sewer Rate Structures | |
|---|---|---|---|---|
| **Utility Size (Service Population)** | **Number of Rate Structures** | **Median 6,000 GPM Monthly Bill** | **Number of Rate Structures** | **Median 6,000 GPM Monthly Bill** |
| 1 - 999 | 130 | $21.63 | 45 | $21.80 |
| 1,000 – 2,499 | 107 | $23.25 | 83 | $24.50 |
| 2,500 – 4,999 | 85 | $23.54 | 74 | $24.21 |
| 5,000 – 9,999 | 68 | $22.64 | 59 | $24.55 |
| 10,000 – 24,999 | 62 | $26.67 | 62 | $25.16 |
| 25,000+ | 64 | $22.83 | 57 | $28.75 |
| ***All Rate Structures*** | ***516*** | ***$23.02*** | ***380*** | ***$24.50*** |

**Table 4: Median Water and Sewer Monthly Bills at 6,000 GPM, by Utility Type**

| | Water Rate Structures | | Sewer Rate Structures | |
|---|---|---|---|---|
| **Utility Type** | **Number of Rate Structures** | **Median 6,000 GPM Monthly Bill** | **Number of Rate Structures** | **Median 6,000 GPM Monthly Bill** |
| Municipality | 416 | $21.89 | 317 | $23.38 |
| County/District | 46 | $30.01 | 27 | $29.24 |
| Authority | 45 | $30.92 | 28 | $31.86 |
| Consolidated Government | 9 | $18.23 | 8 | $32.28 |
| ***All Rate Structures*** | ***516*** | ***$23.02*** | ***380*** | ***$24.50*** |

## Commercial Water and Sewer Bills

Figures 14 and 15 show the median monthly water and sewer bills, respectively, for commercial customers at different levels of consumption and disposal[4]. The middle 80 percent of charges are also indicated. The median monthly bill for commercial customers consuming zero gallons (on a ¾" meter[5]) is $13.00 for water and $13.48 for sewer. The median monthly bill for 50,000 GPM is $152.77 for water and $170.18 for sewer. The median bill for those consuming 500,000 GPM (on a 1½" or 2" meter) is $1,497.75 for water and $1,554.18 for sewer. The variation in commercial bills across rate structures increases significantly as the consumption/disposal amount increases.

[4] The residential rate structure is used to calculate the billings for commercial customers except for the utilities that specify different rates and rate structures for commercial or non-residential customers.

[5] Some utilities use different base charges for different meter sizes for customers. Bills for consumption or disposal of up to 100,000 GPM was computed assuming a 5/8" or ¾" meter size, 250,000 GPM assuming a 1" meter size, and 500,000 GPM assuming a 1½" or 2" meter size. When applicable, the "next largest" meter size is used in calculating the bills when a utility does not utilize a specific meter size.

Figure 14: Monthly-Equivalent Commercial Water Bills by Consumption (n=524)

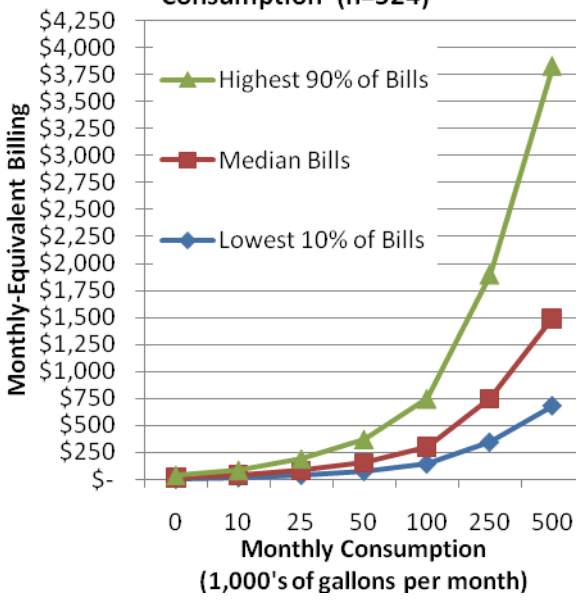
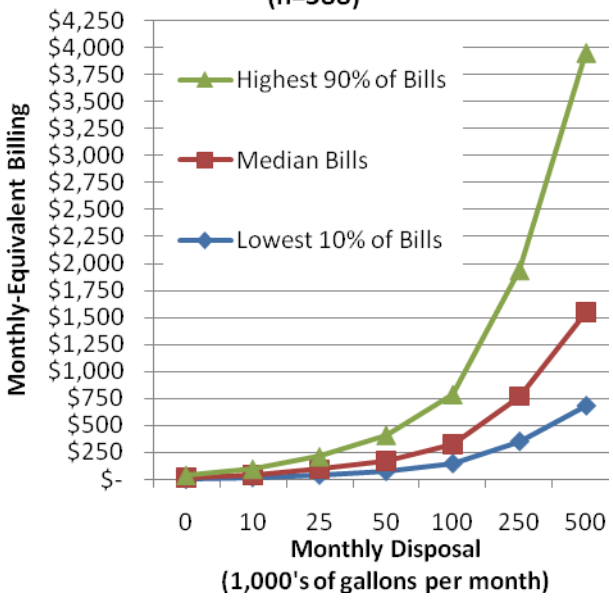
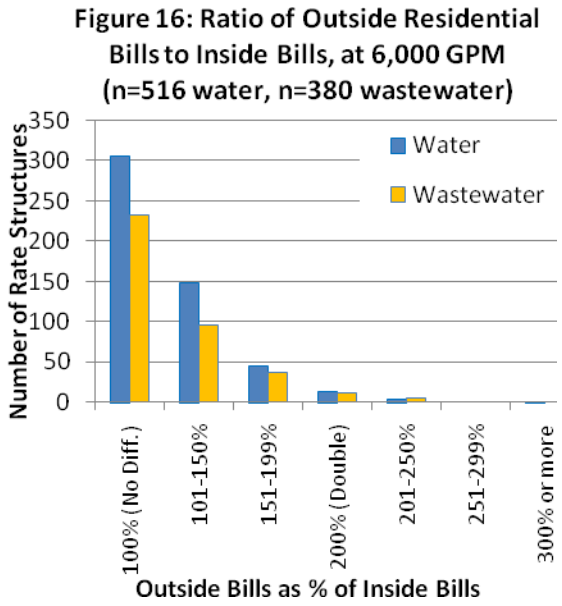


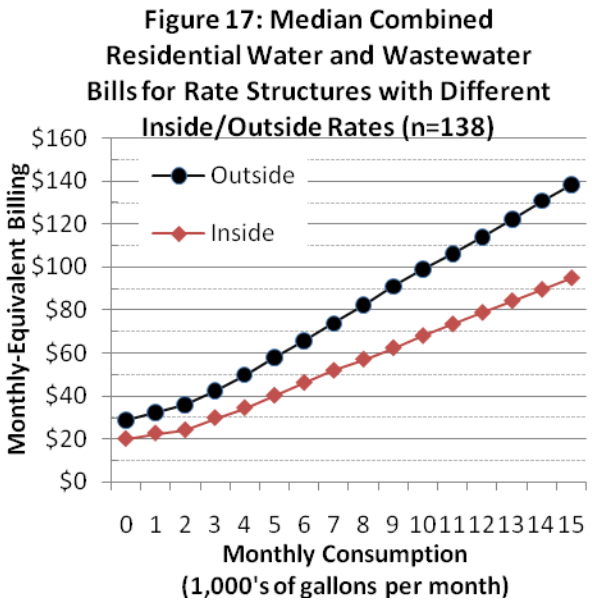

Figure 15: Monthly-Equivalent Commercial Sewer Bills by Disposal (n=388)




## What Utilities Charge Customers Located Outside their Political Boundaries (Inside vs. Outside)

All of the charges presented above refer to what utilities charge customers that live within their political boundaries. Municipal utilities often serve customers who live outside of city limits, and a handful of other utilities specify geographical boundaries within their service areas and identify their customers as those residing "inside" and "outside" those boundaries. In many cases, utilities charge different rates for customers living inside or outside the boundary. Overall, 41 percent of water rate structures and 39 percent of sewer rate structures specified different rates for customers living outside, and the vast majority were for municipal utilities. In fact, 50 percent of the rate structures from municipal utilities in the sample charged more for outside customers than for inside customers. At 6,000 GPM, outside customers who are charged a different rate than inside customers pay, on the median, a water bill that is 1.41 times more than inside customers. For sewer, the median ratio is also 1.41. The majority of utilities with different outside rates increase their rates by about 70 percent for outside customers, as shown in Figure 16. Figure 17 shows median charges for combined residential water and sewer service for all utilities that have a separate rate schedule for outside customers for both water and sewer service. The median bill charged to inside customers for 6,000 GPM of water and sewer combined is $46.15 compared to $65.91 for outside customers.




## What Utilities Charge by River Basin

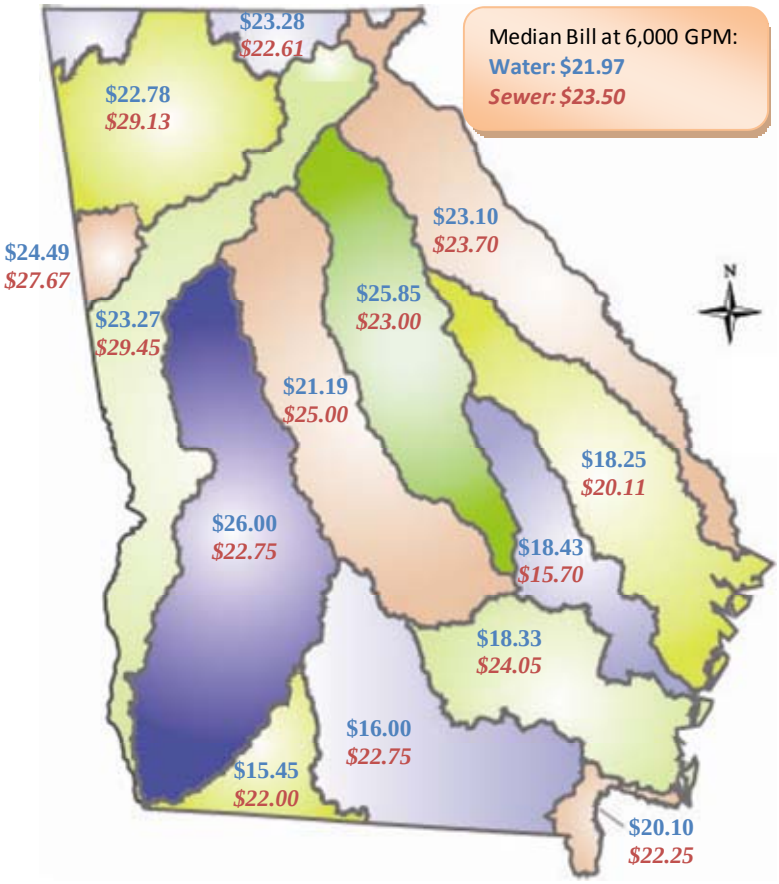
It is important to consider the operating environment when comparing rates among utilities. Source water quality and quantity can have a significant impact on the cost to produce water. Likewise, receiving water quality can have a major impact on the cost of sewer treatment. In an attempt to consider these impacts, median water and sewer bills for 6,000 GPM were calculated for each of Georgia's 14 major river basins; they are displayed in Table 5 and Figure 18.

The highest median water charge can be found in the Tennessee ($29.25) River Basin. The lowest median water charges, by contrast, are found in Southern Georgia in the Ochlockonee ($16.90) River Basin. This basin is mostly rural and lower water rates could be related to the high number of small utilities using groundwater. The highest median wastewater charges can be found in the highly urbanized Coosa ($31.08) River Basin while the lowest median wastewater charges can be found in the lower coastal plain Altamaha ($20.00) River Basin.

**Table 5: Median Water and Sewer Monthly Bills at 6,000 GPM, by River Basin**

| | Water Rate Structures | | Sewer Rate Structures | |
|---|---|---|---|---|
| River Basin | Total Number of Structures | Median Monthly Bill at 6,000 GPM | Total Number of Structures | Median Monthly Bill at 6,000 GPM |
| Altamaha | 16 | $20.40 | 13 | $20.00 |
| Chattahoochee | 57 | $24.83 | 40 | $29.53 |
| Coosa | 51 | $28.13 | 40 | $31.08 |
| Flint | 77 | $26.00 | 52 | $24.01 |
| Ochlockonee | 11 | $16.90 | 7 | $23.12 |
| Ocmulgee | 58 | $22.63 | 44 | $23.83 |
| Oconee | 46 | $26.00 | 35 | $24.00 |
| Ogeechee | 46 | $19.45 | 35 | $21.60 |
| Saint Mary's | 4 | $21.57 | 3 | $22.25 |
| Satilla | 24 | $18.48 | 20 | $24.59 |
| Savannah | 52 | $26.20 | 41 | $24.52 |
| Suwannee | 37 | $17.00 | 23 | $24.38 |
| Tallapoosa | 15 | $25.40 | 11 | $27.51 |
| Tennessee | 22 | $29.25 | 17 | $26.23 |

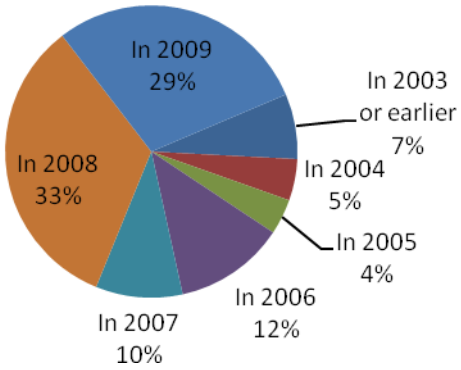
**Figure 18: Median Water and Sewer Monthly Bills at 6,000 GPM, by River Basin**



## Annual Rate and Rate Structure Adjustments

Most Georgia utilities actively evaluate and modify their rate structures every one to two years. The calendar year in which each of 458 rate structures were first put into effect is shown in Figure 19. The figure shows that 29 percent of the current rate structures were made effective since January 2009, and 62 percent were made effective since January 2008. Seven percent of the rate structures remain unchanged since before 2003.

**Figure 19: In What Calendar Year were the Current Rate Structures First Instated? (n = 458)**




### Changes in Rate Structures in the Last Year

The trend among Georgia utilities for many years has been to move away from decreasing block rate structures to either uniform or increasing block structures. This trend is largely driven by an interest in preserving water supplies by promoting water conservation and discouraging excessive or wasteful consumption.

This year's survey included 470 water rate structures and 345 sewer rate structures that were also included in the 2008 survey. Out of the 470 water rate structures included in last year's rates survey, 53 changed in the last year, shown in Table 6. Almost all of the changes were from decreasing block and uniform rates to increasing block rate structures. Overall, 12 decreasing block rate structures were ultimately changed in the last year, and 43 increasing block structures were gained. Among sewer rate structures, 29 were changed between 2008 and 2009, out of the 345 surveyed in both years.

**Table 6: Changes to Water Rate Structures from March 2008 to March 2009**

| | | | Changed To | | | |
|---|---|---|---|---|---|---|
| | | | Increasing Block | Uniform Rate | Decreasing Block | Other |
| | | **TOTAL** | ***43*** | ***10*** | ***0*** | ***0*** |
| Changed From | Increasing Block | ***3*** | | 3 | 0 | 0 |
| | Uniform Rate | ***36*** | 36 | | 0 | 0 |
| | Decreasing Block | ***12*** | 6 | 6 | | 0 |
| | Other | ***2*** | 1 | 1 | 0 | |

In the last three years, since 2007, 64 systems switched to increasing rate structures (out of 401 systems surveyed in both 2007 and 2009), 55 of those had uniform rate structures before the switch and 9 had decreasing block structures. Over that same period, 16 systems switched from a decreasing block structure to either increasing rates (9 systems) or uniform rates (7 systems).

### Changes in Residential Rates in the Last Year

Out of the 470 water and 345 sewer rate structures included in last year's rates survey, rates were increased from last year for 49 percent of the water rate structures and 48 percent of sewer rate structures. Figures 20 and 21 show the residential monthly bill increase for customers that use 6,000 GPM among the 53 water and 29 sewer rate structures that have raised rates in the last year. The median increase was $2.00/month for water (a 8.5

percent increase) and $2.50/month for sewer (a 9.3 percent increase). There are also a large number of utilities with very high, double-digit rate increases since last year. In all, 117 water rate structures (23 percent in all) saw 11 percent or greater rate increases at the 6,000 GPM level. This is an unusually large number of very high rate increases and may be a reflection of the fact that utilities are responding to water supply vulnerabilities posed by the drought by increasing rates to encourage water conservation. By comparison, over the last three years (from 2007) the median price for 6,000 GPM increased by $3.00, or $1.50 per year, for water and $3.30, or $1.65 per year for sewer. This translates into an average increase over the last three years was 7 percent per year for the median water bill and 8 percent for the median sewer bill.

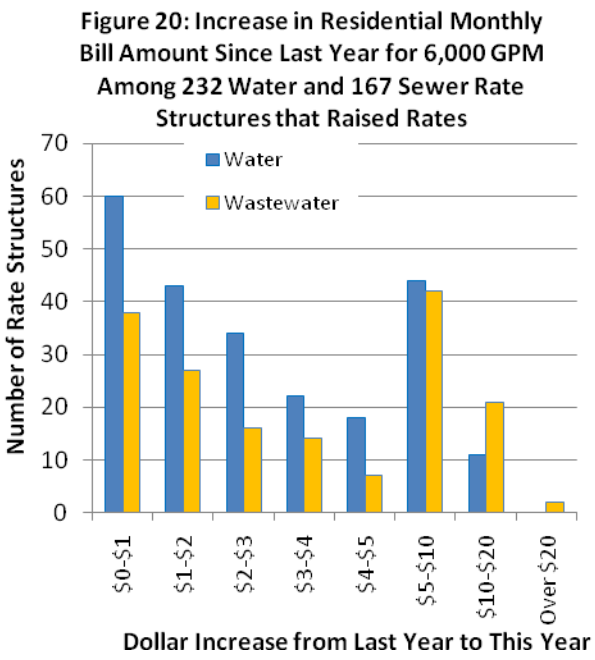



Figure 20: Increase in Residential Monthly Bill Amount Since Last Year for 6,000 GPM Among 232 Water and 167 Sewer Rate Structures that Raised Rates

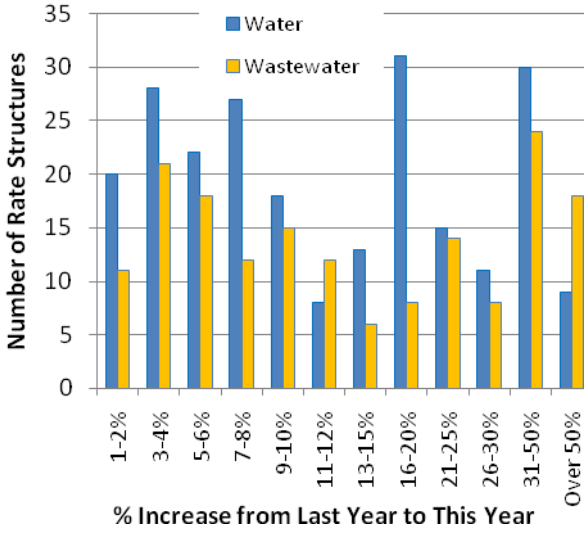
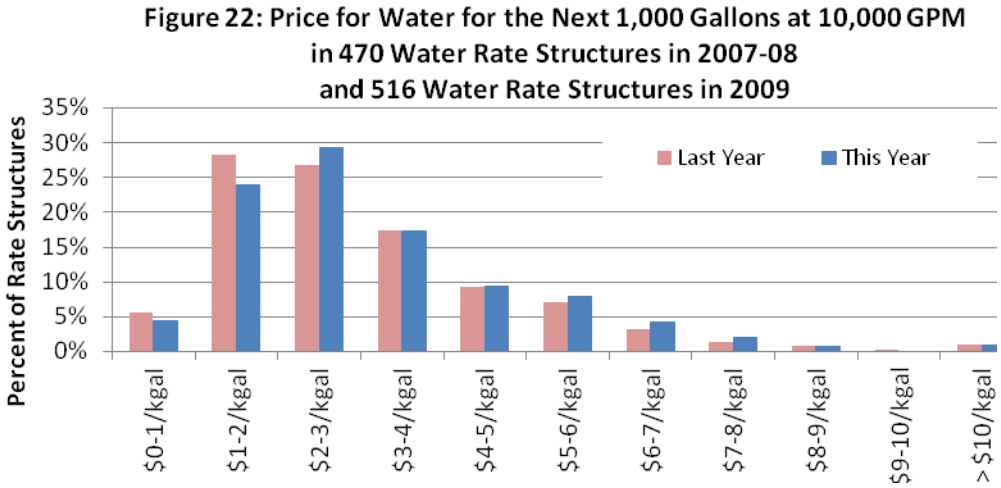



Figure 21: Percent Increase in Residential Monthly Bills Since Last Year for 6,000 GPM Among 232 Water and 167 Sewer Rate Structures that Raised Rates

## Changes in Conservation Price Signals in the Last Year

One mechanism utilities can manipulate to send a strong pricing signal to encourage water conservation is the rate that customers pay at higher levels of consumption. Average residential consumption is between 5,000 and 6,000 GPM. Seasonal use of water can raise consumption levels for some customers to two or three times this amount, or more, and utilities can discourage excessive use by setting high prices for the next 1,000 gallons of water at that level of consumption. Nearly half of Georgia's utilities raised the residential water rate at high levels of consumption in the past year. Out of the 470 water rate structures included in last year's survey, the price for the next 1,000 gallons at 10,000 GPM was raised for 197 rate structures (42 percent). The distribution of the prices for water for the next 1,000 gallons at that consumption is shown in Figure 22. As shown in the figure, utilities have generally shifted their high use water rates upwards. In particular, a smaller proportion of utilities charge less than $2/1,000 gallons than last year, and almost 8 percent of utilities charge over $6/1,000 gallons, whereas under 7 percent of utilities charged that much last year.




Of course utilities raise rates for many reasons not strictly limited to encouraging water conservation. These reasons may include, for example, nominal increases in operating costs or the need to save up for a major capital project. To understand why utilities are raising rates, utilities were asked specifically whether rate structures were being designed to encourage water conservation. Out of 104 utility respondents to an on-line questionnaire, 59 utilities (48 percent) reported that they had recently conducted a study to design "conservation-oriented" rate structures for their systems, and 40 of those systems (33 percent, overall) further reported that they have since implemented the recommendations of those studies.

Not surprisingly, the recent drought has led many utilities to raise rates to encourage water conservation and to make up for revenues lost when their customers use less water. Of the 104 respondents to the on-line questionnaire, 23 (19 percent) reported that they had increased rates to encourage conservation in response to the recent drought and 13 (11 percent) reported that they raised rates to replace revenues lost when their customers conserved.

## Metering Practices

Good metering practices are vital to a well managed utility. All systems should have an active meter change-out program to ensure that meters are calibrated to keep accurate record of individual customers' water demands and to minimize non-revenue water in the distribution system. As shown in Figure 23, out of 104 respondents to the on-line questionnaire, 74 (71 percent) report that they have an active meter change out program.

**Figure 23: Percent of systems reporting an active meter change-out program (n=104)**

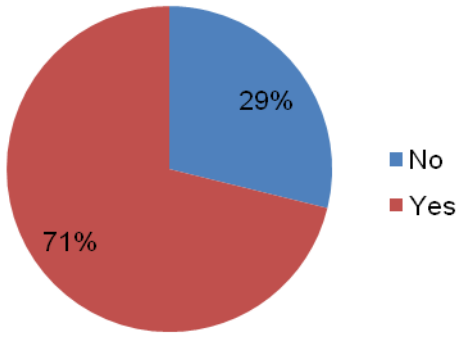
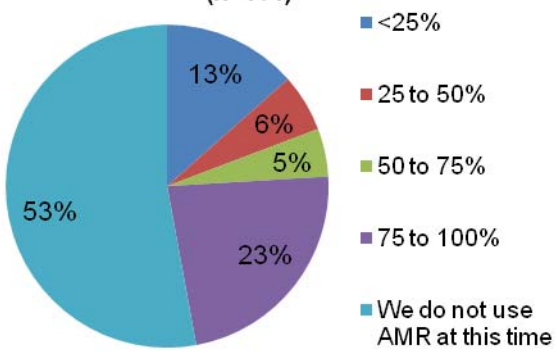



**Figure 24: Percent of system using Automated Meter Reading (AMR) (n=104)**



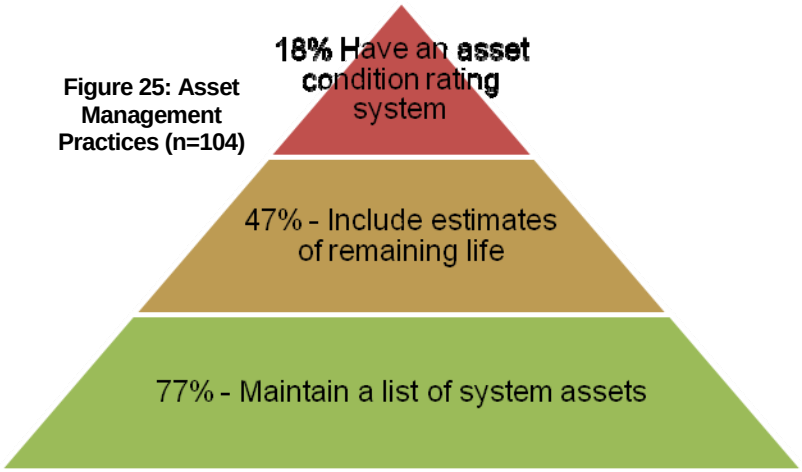

Depending on the size of the water system, Automated Meter Reading (AMR) can yield significant benefits including lower cost of meter reading, increased data handling accuracy and (for fixed systems) the potential to rapidly identify leaks on the customers' side of the meter. As shown in Figure 24, about half (47 percent) of respondents have AMR capabilities in some portion of their system and almost 1 in 4 respondents (23 percent) have AMR for their entire service population.

## Asset Management Practices

As many components of the typical water system near the end of their useful life, the risks of water quality violations increases, efficiencies decrease, and the cost of providing the same level of water and wastewater services rises. Good asset management practices seek to balance the need to ensure water quality and overall level of service with the often large costs of repairing and replacing aging assets. A comprehensive asset management system includes a working inventory of all assets with level of service requirements, age and condition ratings for each asset as well as a schedule of refurbishments and replacements.

When asked about current asset management practices, 80 out of 104 (77 percent) of systems reported maintaining a list of assets in their system, 47 percent have estimates of remaining useful life for assets in their inventory and 18 percent reported an asset condition rating system, independent of the estimates of useful life, for monitoring the ability of an asset to provide the required level-of-service.

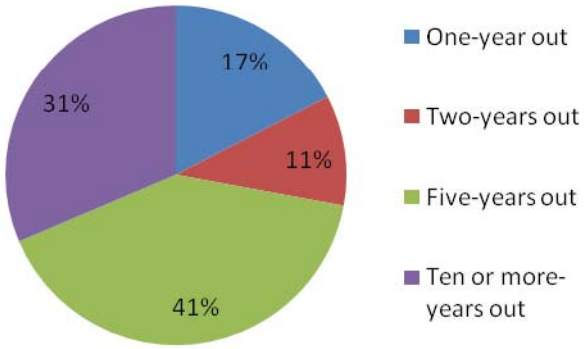
**Figure 25: Asset Management Practices (n=104)**




Maximizing operating efficiencies and getting the most out of existing assets is only one side of asset management. Any asset management system is incomplete without a plan for funding replacements when they are due. When asked how far in advance systems had planned for such funding, 72 percent reported having a plan for funding assets replacements and refurbishments for at least the next five years and 31 percent reported having a plan for ten years out.

As another measure of the extent to which utilities are planning for future capital expenses, 72 percent of (104) respondents said they have a capital reserve fund. Capital reserve funds are a great tool for reducing the amount of debt needed for capital projects and can be used to mitigate the impact of capital projects on future rate increases.

**Figure 26: Asset Replacement Funding Plans (n=86)**



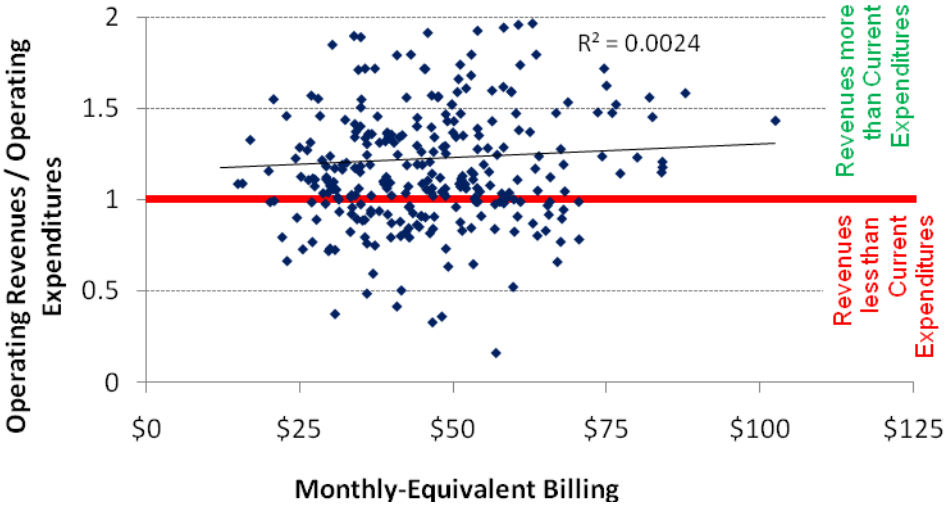

The most valuable assets for many utilities are their extensive water distribution and wastewater collection systems. Maintaining the integrity of these systems is crucial for efficient operations since leaks can mean major water losses or inflow and infiltration which can overwhelm wastewater treatment capacity. Thus, leak monitoring and repair is a vital part of utility asset management. Approximately 62 percent of (103) respondents said they have an active leak detection and repair program for their water distribution system and 47 percent of (78) respondents said they have a smoke testing program for their wastewater collection system. Only 38 percent of (103) respondents said they have a digital map of their system.

## The Status of Full Cost Pricing in Georgia

Comparing rates across the State or among specific utilities is complicated by the variation in the extent to which utilities charge the full cost of providing service. Rates that provide enough revenue to balance an annual budget do not necessarily provide enough revenue to cover long term capital and maintenance needs and many utilities charge much less than the full cost of service provision.

Figure 27 shows combined water and sewer charge for 6,000 gallons plotted against the ratio of operating revenue to operating expenditures from 2006-07. This ratio helps determine whether an entity is operating at a financial loss, financial gain, or is breaking even. The ratio does not account for all operating expenses, however; neither debt service nor depreciation are factored in. Financial data were provided by the Department of Community Affairs through either the annual Report of Local Government Finances or through the Report of Registered Authority Finances.

**Figure 27: Combined Residential Bill in 2007-8 for 6,000 GPM for Utilities with Reported DCA Data on Operating Revenues and Operating Expenditures in 2007-8 (n=299)**



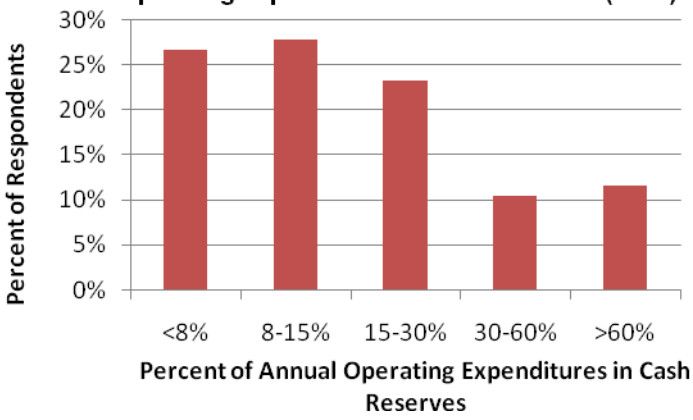

The figure shows that many utilities are not covering their basic operating expenditures, making it difficult or impossible to rehabilitate aging infrastructure, finance system improvements and expansion, and engage in

proactive asset management. It is interesting to note that the utilities that are operating at a financial loss are not always charging low rates; even some utilities with high rates are operating at a financial loss. Nevertheless, utilities which charged lower rates in 2006-07 (to the left of the graph), were slightly more likely to operate under a financial loss (below the horizontal line on the graph).

Insufficient revenues also make it difficult for utilities to establish cash reserves. Cash reserves are important for dealing with operating emergencies, such as when major infrastructure components fail, and they can also be used to help mitigate the impact of major capital projects on a utility's rate payers. The need for cash reserves to help utilities buffer against revenues shortfalls was also highlighted during the recent drought. For these and other reasons, cash reserves are an important indicator of the financial health of a utility.

When asked, 86 out of 104 (83 percent) utilities reported that they have "emergency and operating reserves." The percent of annual operating expenditures kept in reserve as reported by those 86 utilities are shown in Figure 28. Guidelines may vary, however some have recommended that a water utility should keep at least one month's expenditures (or 8 percent of the annual budget) in reserves. Approximately 27 percent of systems responding to the on-line questionnaire have not met this benchmark. Combined with the 17 percent of systems reporting no cash reserves at all, roughly 39 percent of systems have insufficient cash reserves for meeting operating emergencies among this sample group of respondents. This fact combined with the large number of utilities with insufficient revenues in Figure 27 suggest that many of Georgia's public water systems will need to raise rates in the near future to become financially sustainable.

**Figure 28: Distribution of utilities by the percent of Operating Expenditures in Cash Reserves (n=87)**




**About this Report**

This report is one of a series of reports on water and sewer rates and rate structures in Georgia, compiled by the Georgia Environmental Facilities Authority (GEFA) and the Environmental Finance Center (EFC). For reports from previous years, including more in-depth analysis on the relationships between rates, rate structures, system characteristics and policies including cost-recovery, conservation, and affordability, please visit our websites at www.gefa.org and www.efc.unc.edu. In addition to survey results, you will also be able to access free, interactive Rates Dashboards which facilitate rate comparisons among utilities and give benchmarks for every rate structure in this Survey.