

**2013 Survey
of
Community Drinking Water Systems**

**Cost of Water
Rate Structures
Water System Revenue
Infrastructure and Financial Condition**

**Division of Drinking Water
Utah Department of Environmental Quality**

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Forward

This document was prepared by staff of the Utah Department of Environmental Quality, Division of Drinking Water, from data provided by community drinking water systems within the State of Utah. If you have any questions or comments about this report or the survey please contact Michael Grange of the Division of Drinking Water at mgrange@utah.gov or by phone at (801)536-0069.

This document is also available from the Division's web site:

<http://drinkingwater.utah.gov>

Every effort has been made to present the data as completely and accurately as possible. However, due to the nature of the survey, data accuracy and completeness can not be assured and this report is presented on an "as-is" basis.

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Executive Summary

During 2013 there were 472 community water systems registered in the State of Utah. Community Water Systems were asked to complete the survey, either using the hard copy forms provided or using an online form. Completed survey forms and a database of responses to the on-line survey were forwarded to the Utah Division of Drinking Water. The data were analyzed and summarized for this report. 311 community water systems responded to the survey.

Based on survey responses, the average consumer water bill in the State of Utah is **\$47.03 per month per connection** and is comprised of direct periodic billings to consumers and annual property tax payments by consumers. Another measure of the cost of water is based on dollars per 1000 gallons. Survey results indicate that in Utah drinking water currently costs **\$2.48 per 1000 gallons**. Impact fees, connection fees and other forms of system revenue are not included in the average water bill or unit cost calculations.

The average water bill of \$47.03 per month per connection is 1.39% of the State Median Adjusted Gross Income (MAGI). This figure is based on the 2013 MAGI of \$40,489.

Water systems responding to the survey reported receiving \$300.52 million dollars in total revenue for 2013. This includes periodic billings, taxes, impact fees, connection fees, and other revenue. Other revenue sources identified in the survey include assessments, penalties, interest earned, and other fees.

User rate structures vary widely throughout the state. 244 systems responded to the water rate structure information request. Eighteen systems reported that they employ a “uniform” rate structure. This means that the cost of water remains the same as water consumption increases. 226 systems (92.6%) reported employing a tiered rate structure, which means that the cost of water increases as consumption increases.

Approximately 25% of survey respondents reported receiving sufficient revenue to establish reserve accounts for future infrastructure improvements or replacement. Another 70% reported that they met their annual expenses and had a balanced budget.

Survey responses indicate that 9.2% of water systems in the State of Utah are considered worn out or have significant immediate problems. Another 17.7% of systems are reported to be adequate for only another five years. Fire protection is reported as poor by 4.9% of survey respondents.

2013 Community Water System Survey Report

Introduction

The Utah Division of Drinking Water, in conjunction with the Utah Division of Water Rights and the Utah Division of Water Resources, conducts an annual survey of community drinking water systems within the state. This report presents the results of the 2013 Community Water System Survey.

A community drinking water system is defined as “a public drinking water system which serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents.” (See *Utah Administrative Rules* R309-100-4(4)(a))

In 2013, there were 472 registered community water systems in the State of Utah, serving a reported population of 2,873,490 residents. Of those 472 systems, 311 (65.9%) responded to the survey. Of the 311 respondents, 205 provided satisfactory responses to questions regarding water bill information and consumer costs.

Typical Revenue Sources and Expenses

The financial objective of any public water system is to have enough revenue to cover operating expenses. It is also very desirable for a water system to have a capital reserve and replacement fund to cover the costs of infrastructure improvements. If the system happens to be a for-profit endeavor, providing a return on investment to shareholders is also an important consideration.

Table 1 Typical Water System Expenses
<i>Operation & Maintenance</i>
Source Supply
Pumping
Water Treatment
Transmission and Distribution
Customer Accounting
Administrative and General

Table 1, adapted from the American Water Works Association publication *Water Rates (Manual M1, Sixth Edition, 2012)* Table II.3-1, identifies typical system expenses as published by AWWA. The US Government Accountability Office publication *Water Infrastructure – Information on Financing, Capital Planning, and Privatization* (GAO-02-764, 2002) identified a list of possible revenue sources, including grants and debt or equity funding sources, for water systems. This information is presented in Table 2. While the data presented by GAO is somewhat dated, it represents the most recent national data on water system funding and revenue available.

Table 2 Estimated Percentages of Utilities That Used Each Source of Funding in Their Most Recently Completed Fiscal Year		
1	User Charges	98%
<i>Other Local Revenues</i>		
2	Hook-up, connection, or tap fees	89%
3	Interest Earned	77%
4	Sales to other utilities	42%
5	Permit and inspection fees	41%
6	Reserves	35%
7	Assessments	14%
8	Property taxes	8%
9	Special operating cost levies	3%
<i>Grants</i>		
10	State grants	21%
11	Federal Grants	16%
<i>Debt and Equity</i>		
12	Revenue bonds	36%
13	State loans	25%
14	General Obligation bonds	19%
15	Federal loans	12%
16	Commercial loans	9%
17	Private activity bonds	2%
18	Sale of stock	2%

The Community Water System Survey is an important source of information used to determine the average cost of drinking water to the consumer in the State of Utah. The average cost is defined as the charge to the consumer through periodic billings and annual property taxes, identified as Items 1 and 8 in Table 2.

Connection fees, impact fees and other such potential sources of water system revenue are not included in the calculation of “average consumer cost.” Other studies and surveys, which describe the cost of supplying drinking water to the public, may use different methods to calculate that cost. If water cost information from different sources is used to compare the cost of water in Utah with other states or a national average, it is important to be aware of the possible differences in calculation methods to be sure the comparison is accurate and valid.

It is also important to understand that the cost of drinking water may not be directly linked to a specific supplier's capability as a water utility. There are many factors that influence the final cost of drinking water supplied to the public and each system must be judged based on those factors that bear the most influence on it.

Average Consumer Cost

Based on survey results, the average consumer cost of drinking water for 2013 was **\$47.03 per month per connection**. This cost includes the charge to consumers through periodic billings and taxes but does not include impact, connection or other assessment fees. Table 3 presents a history of average consumer cost of drinking water.

<i>Year</i>	<i>Cost</i>
2013	\$47.03
2011	\$39.53
2006	\$37.11
2001	\$33.89
1996	\$25.12

Please note that the average water cost presented in this report is determined only from periodic billings and taxes paid to drinking water systems. Consumers in several drinking water systems throughout the state are served by separate irrigation systems. The costs associated with these irrigation systems are not included in this survey nor are they used in calculating the average consumer cost of drinking water.

Appendix A presents the survey results used to calculate the average consumer cost of drinking water in the State of Utah for 2013. The information is broken out into different categories, based on the system's responses to the survey questions.

Average Water Bill as a Percent of Median Adjusted Gross Income

The Median Adjusted Gross Income (MAGI) is calculated from federal income tax returns except those that claim no deductions. MAGI data is provided to DDW by the Utah State Tax Commission. The Utah MAGI for 2013 is \$40,489. The 2013 average monthly water bill of \$47.03 equates to 1.39% of the State MAGI. Table 4 shows a history of average monthly water bill as a percent of MAGI.

<i>Year</i>	<i>% MAGI</i>
2013	1.39%
2011	1.26%
2006	1.20%
2001	1.25%
1996	1.13%

Water Cost per 1000 Gallons

<i>Year</i>	<i>Cost</i>
2013	\$2.48
2011	\$2.09
2010	\$1.62
2009	\$2.09
2006	\$1.34
2001	\$1.36

Another perspective on the cost of drinking water is provided when the cost is expressed in relation to the quantity used. Survey respondents were asked to identify the quantity of water used by consumers in their service area and to identify their annual revenue from those same consumers. Based on survey results, this measure of the cost of drinking water was calculated at \$2.48 per 1000 gallons. Table 5 presents a comparison of water costs per 1000 gallons. Current survey results are detailed in Appendix A.

Residential Water Rate Structures

Water rate structure information was provided by 244 survey respondents, 78.4% of total responses. Water rate structures throughout the state indicate how the cost of water paid by the consumer varies with the amount of water used by the consumer. Structures are labeled as:

“**uniform**” if the cost of water remains the same no matter how much water is used;

“**increasing**” if the cost of water goes up as consumption increases; and,

“**decreasing**” if the cost of water goes down as consumption increases.

Those structures identified as “increasing” tend to encourage water conservation.

Table 6 presents a summary of rate structure results from the 2013 survey. For comparison purposes rate structure information from the 2006 survey is also provided.

<i>Type</i>	<i>2013</i>		<i>2006</i>	
	<i># of Systems</i>	<i>% of Systems</i>	<i># of Systems</i>	<i>% of Systems</i>
Uniform	18	7.4%	128	47.9%
Decreasing	0	0.0%	2	0.8%
Increasing	226	92.6%	137	51.3%

Appendix B contains a list of survey respondents and their reported rate structures.

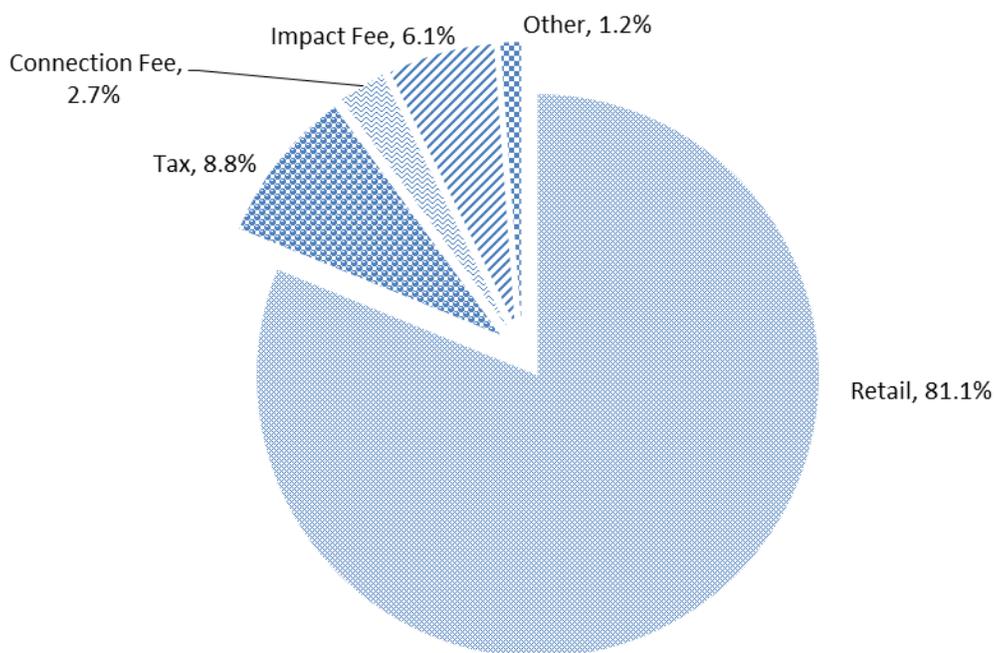


Figure 1
Revenue Received by Water Systems – by Type of Revenue

Revenue Received by Drinking Water Systems

For 2013, community water system in Utah reported annual revenue totaling \$300,522,144. Revenue sources included retail sales, tax revenue, connection and impact fee revenue and other revenue.

Figure 1 presents a summary of annual drinking water system revenue as reported by survey respondents. The figure represents all reported revenue sources, excluding “wholesale” revenue. Wholesale revenue typically involves water sales from one system or water district to another. Costs associated with the purchase of wholesale water are accounted for in the retail sales and revenue of the purchasing water system.

“Other” revenue sources reported most often by survey respondents include interest earned, fees, and penalties.

General Condition of Water Systems

Survey questions asked respondents to perform a self-evaluation of the financial and physical condition of their water system. Please refer to Appendix C for detailed information on survey responses.

The following highlights are noteworthy:

- 3.8% of survey respondents indicate their water systems operate in the red. Almost one-third of these systems transfer money from other municipal funds to cover expenses, the remaining two-thirds plan to raise their rates to balance their budget.
- 25.5% of respondents report that their water system collects sufficient revenue, some of which is held in reserve for future improvements.
- 9.2% of respondents believe their water system is currently inadequate, worn out, or has significant immediate problems. While 17.7% report their system is adequate for the next 5 years.
- 7.4% of respondents report that their system has “poor” or “fair” fire protection capabilities.
- 15.9% of survey respondents indicated that their system regularly experiences leakage, with 2.1% reporting that their system is deteriorating.

Water System Infrastructure Improvement Projects

A number of drinking water systems indicated that there are plans to install new infrastructure, or repair or replace existing infrastructure, within the next four years. Total estimated construction/repair costs for those systems reporting planned projects are over \$550 million.

In addition to these improvement projects over the next four years, 60 water systems (19.3% of survey respondents) have developed master plans that cover projected system growth and improvements as far as 20 years into the future. Total estimated cost associated with projected master plan construction and water system improvements is over \$1.3 billion dollars.

Water Conservation and Management Plans

Utah law (73-10-32 Utah Code Annotated) requires all community water systems serving 500 or more connections to develop and implement a Water Conservation and Management Plan. These plans, which are submitted to the Utah Division of Water Resources, are to contain information such as: existing and proposed water conservation measures, a description of the measures a water system will use to reach its conservation

goals and the extent to which these measures will be used, and a clearly stated water use reduction goal and implementation plan for each conservation measure.

While not an integral part of the Community Water System Survey, Water Conservation and Management Plans are considered an important part of a water system's management and preparedness structure. The Utah Division of Drinking Water recommends that all Community Water Systems develop and implement a Water Conservation and Management Plan as part of any planning process for future system improvements or development.

A sample plan is available from the Division of Water Resources website at:

<http://conserwater.utah.gov/templates.html>

APPENDIX A

APPENDIX B

APPENDIX C