

Prepared by:



Prepared for:

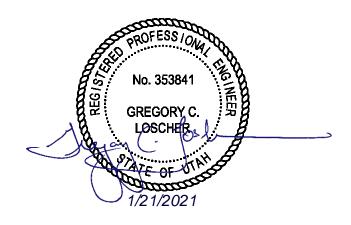


2020 WATER CONSERVATION PLAN UPDATE

Prepared for: Holliday Water Company

Prepared by: Bowen, Collins & Associates





January 2021

i

TABLE OF CONTENTS

	Page No.
INTRODUCTION	1
WATER SYSTEM PROFILE	1
Background and History	
Current Population and Service Area	
Existing Water Users	4
Total Water Deliveries	5
Existing Water Supply	7
WATER MEASUREMENT METHODS AND PRACTICES	8
CURRENT PRICING STRUCTURE	8
CONSERVATION GOAL	9
Limits to Conservation Efforts	9
Water Conservation Goal	9
Measuring Conservation Efforts and Conservation Coordinator	10
ONGOING CONSERVATION AND BEST MANAGEMENT PRACTICES	
Control Practices to Minimize Loss	
Public Involvement and Water Education Program	
Daytime Watering Resolution	12
Graduated Rate Schedule	
Strategic Source Utilization	
Consumer Confidence Report	
Web-Based Information	
Water Conservation Plan	
Water Conservation Ordinances and Standards	12
EVALUATION OF CURRENT CONSERVATION MEASURES	13
POTENTIAL ADDITIONAL CONSERVATION MEASURES	13
WaterSense Program	14
Meter Testing/Replacement Program	14
District Services Booths	
Water System Audit	14
Leak Detection Survey and Repairs	
Expanded Telemetry and Automated System Operations	14
COST ANALYSIS	
Water and Revenue Losses	15
IMPLEMENTING AND UPDATING THE WATER CONSERVATION PLAN	15

LIST OF TABLES

No.	Title	Page No.
1	Number of Connections per Customer Class	4
2	Annual Water Deliveries per Customer Class	5
3	Per Capita Demands by Customer Class	6
4	Water Supply Portfolio	8
5	HWC 2019 Quarterly Minimum Charges	9
6	HWC 2019 Usage Rates	
7	HWC Per Capita Potential Demand Reduction through 2035	10
8	HWC Water and Revenue Loss	15
	LIST OF FIGURES	
No.	Title	Page No.
1	HWC Service Area 2020	3
2	Per Capita Demands by Customer Class	7
3	Projected Water Use, Conservation and Supply	10
4	Metered Usage Trends by Connection Type	13

LIST OF APPENDICES

APPENDIX A - ADOPTION OF WATER CONSERVATION PLAN

INTRODUCTION

Officials at the State of Utah Division of Water Resources (UDWRe) recognize the potential of conservation programs to extend current water supplies. They have established regional conservation goals of reducing water use from levels measured in 2015 by the year 2035. For Holliday Water Company, this goal is an 11 percent reduction in total water use.

The Utah Water Conservation Plan Act (Utah Administrative Code, Title 73, Chapter 10, Section 32) requires that water providers with more than 500 connections maintain a Conservation Plan with regular updates. The UDWRe has been charged with administering the Utah Water Conservation Plan Act. In compliance with the Act, the Holliday Water Company (HWC, Company) maintains a Conservation Plan, most recently updated and submitted to the UDWRe in 2014. The HWC has retained Bowen, Collins & Associates (BC&A) to prepare this 2020 Conservation Plan Update.

Water conservation has different meanings to different people. People who have adopted a conservation ethic are likely to support a wide range of water conservation practices aimed at reducing water use. Others not so inclined often associate water conservation with inconvenience, deprivation, and dry yards. From the HWC perspective, water conservation means increasing the efficiency of water use to sustain and optimize future water supplies to its customers. It does not mean dry flower beds and brown lawns, but rather a wise use of water to ensure that it is not needlessly wasted. With this in mind, HWC has adopted water conservation as a key element in its long-term master plan to serve its customers.

Water is no longer seen as an endless supply, but as a valuable commodity that needs to be managed carefully. With this shift in attitude, conservation is becoming a larger part of water suppliers' plans to meet future water needs. Many water suppliers throughout the country have adopted conservation programs. Benefits experienced as a result of these programs include:

- Using existing water supplies more efficiently
- Maximizing utilization of existing treatment, water conveyance and distribution facilities
- Deferring expensive construction of capital improvement projects
- Reducing the need for additional water supplies.

HWC recognizes the potential benefits of conservation efforts that will ultimately likely reduce costs to individual customers. Since sustained additional water conservation will be an important component in HWC's plans for future water use, this report will evaluate current conservation efforts within the Company and will discuss additional measures that will allow HWC to conserve water.

WATER SYSTEM PROFILE

Background and History

HWC is a mutual water company serving the potable water needs of its shareholders. The Company serves a population of approximately 15,000¹ who live inside the boundary of a well-defined service area. Big Cottonwood Creek is the system's southern boundary, Upper Canal is the eastern boundary, Mill Creek channel is the northern boundary and Highland Drive is the western boundary. HWC By-

¹ Population value as reported on Utah Division of Water Rights Public Water Supplier Information website accessed June 17, 2020: https://waterrights.utah.gov/asp-apps/viewEditPWS/pwsView.asp?SYSTEM_ID=1104

Laws and Articles of Incorporation require that each meter connection in their system has a share of stock associated with the meter, without which water will not be supplied. All system service connections are metered, and water supplies can only be delivered to shareholders within the boundaries of the service area. Water supplied in the HWC service area is utilized for indoor (potable) use, fire protection, and for outdoor irrigation. There is no separate, pressurized, secondary irrigation system in the HWC service area.

The HWC operates and maintains approximately 61 miles of distribution pipelines in the service area. Main pipelines are made of cast iron or ductile iron pipe and range from 4 inches to 16 inches in diameter. Over the past two decades, the HWC has implemented an upgrade plan to replace nearly all of its 4-inch pipe and significant portions of 6-inch pipe with 8-inch pipe, and to upgrade nearly all of the fire hydrants in the service area to pumper-style hydrants with five-inch nozzles. As of 2019, HWC services 3,995 connections², most of which are copper.

Current Population and Service Area

The current population for the service area is estimated by HWC at 15,000 permanent residents and has remained generally constant from year to year for more than two decades. The area was settled around 1850 and the area has been almost completely built out, with very little room for further expansion. The HWC service area is more than 90 percent residential, with the remainder being commercial and institutional properties (i.e. schools and churches). The current service area is shown in Figure 1.

The Holliday Water Company service area does not coincide with municipal boundaries. In general, HWC services portions of Holladay City and Millcreek City. For this reason, it is challenging to directly estimate population for the HWC service area. As reported in HWC's annual public water supplier information provided to the Utah Division of Water Rights, HWC's estimated population for their service area is 15,000. The University of Utah Kem C. Gardner Policy Institute provides population estimates for the municipalities of Holladay City and Millcreek City. These estimates indicate that the average growth of these areas in the last 10 years has been small (approximately 0.25 percent average) and that Holladay City has had no net growth since 2015. These estimates support HWC's estimate of little or no population growth in recent years.

In the past year, HWC has gathered information to assist them in better estimating the population served. Using residential connections and multi-family housing units together with U.S. Census average household size (2.75 persons per household for Holladay City) results in an estimated population of 15,018, which is within 0.1 percent of the estimate reported by HWC annually.

-

² As reported by Holladay Water Company for total number of existing services in 2019.

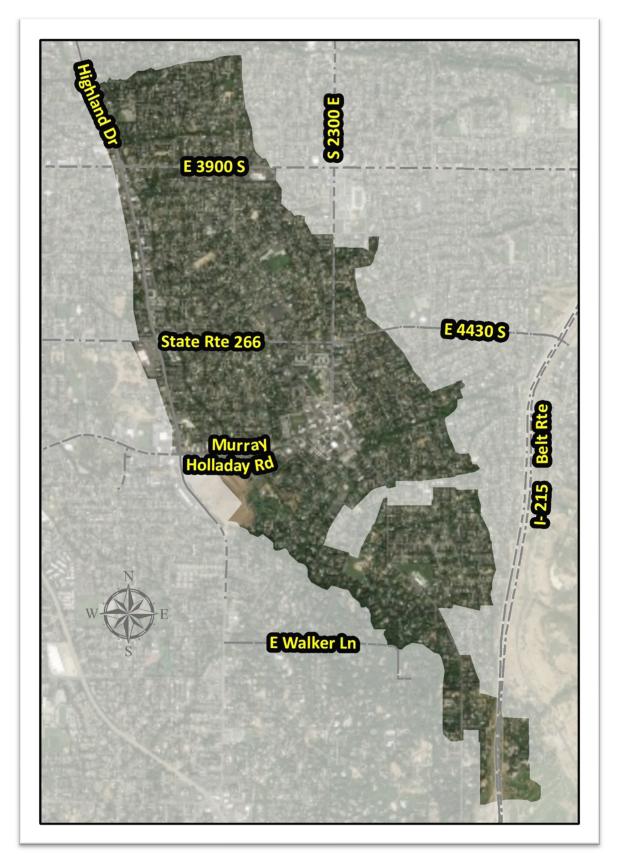


Figure 1. HWC Service Area 2020.

On average over the last five years, the HWC has added approximately 7 new service connections per year across all connection types³. Many of the homes in the service area have large lawns, gardens, and other landscaped areas. The service area continues to see redevelopment in both residential and commercial zones. The average household density is currently estimated at 2.75 people per household.⁴

Existing Water Users

The HWC has 3995 metered water service connections, 95 percent of which are residential customers, with the remaining 5 percent comprised of commercial and institutional services. There are no unmetered connections in the system. Connections categorized by customer class for 2005 through 2019 are shown in Table 1.

Table 1
Number of Connections per Customer Class

Year	Residential	Commercial	Institutional	TOTAL
2005	3764	119	34	3917
2006	3775	119	34	3928
2007	3765	121	32	3918
2008	3769	121	32	3922
2009	3775	121	32	3928
2010	3776	121	32	3929
2011	3780	121	32	3933
2012	3785	121	32	3938
2013	3794	121	32	3947
2014	3822	121	32	3975
2015	3782	140	40	3962
2016	3788	140	40	3968
2017	3782	158	40	3980
2018	3790	159	39	3988
2019	3796	160	39	3995

 $^{^{3}}$ In summary, there have been 33 connections added between 2015 through 2019.

⁴ https://www.census.gov/quickfacts/holladaycityutah, accessed March 24, 2020.

Total Water Deliveries

Total water delivered to HWC customers is shown in Table 2, organized by customer class for the years 2005 to 2019.

Table 2
Annual Water Deliveries per Customer Class (acre-ft)

Year	Residential	Commercial	Institutional	TOTAL
2005	3,108	444	144	3,695
2006	3,415	488	158	4,060
2007	3,717	459	162	4,339
2008	3,391	473	176	4,041
2009	3,242	453	169	3,864
2010	3,368	470	175	4,013
2011	3,176	529	159	3,864
2012	3,803	633	190	4,626
2013	3,418	569	171	4,159
2014	3,433	586	167	4,186
2015	3,153	219	211	3,583
2016	3,349	245	170	3,764
2017	3,352	233	231	3,817
2018	3,497	219	250	3,966
2019	3,060	220	233	3,513

As is apparent in Table 2, total water usage in 2015 and 2019 was lower than average. HWC has confirmed that these totals are correct. In both years the decreased usage was a result of unusually wet and cool periods of the year when very little water was used for outdoor irrigation.

Estimated per capita usage for the years 2005 to 2019 is shown in Table 3. From year to year, the per capita usage fluctuates as more or less water is used for irrigation depending on average temperatures and annual rainfall. Per capita usage is also shown in Figure 2.

Table 3
Per Capita Demands by Customer Class⁵(gpcd)

Year	Residential	Commercial	Institutional	TOTAL
2005	185	26	9	220
2006	203	29	9	242
2007	221	27	10	258
2008	202	28	10	240
2009	193	27	10	230
2010	200	28	10	239
2011	189	32	9	230
2012	226	38	11	275
2013	203	34	10	248
2014	204	35	10	249
2015	188	13	13	213
2016	199	15	10	224
2017	200	14	14	227
2018	208	13	15	236
2019	182	13	14	209

BOWEN COLLINS & ASSOCIATES HOLLIDAY WATER COMPANY

 $^{^{5}}$ Values in Table 4 are rounded. In a few cases the values in the column titled "Total" will not match a direct summation of the values as they appear in the preceding columns.

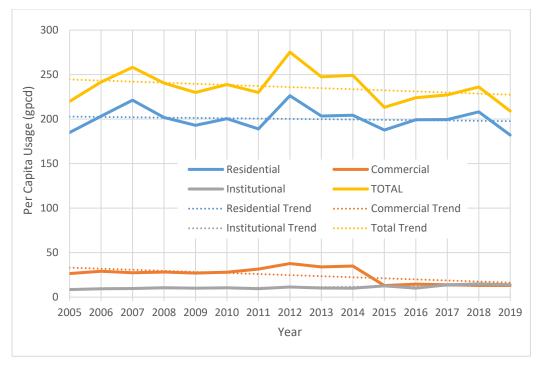


Figure 2
Per Capita Demands by Customer Class (gpcd)

Existing Water Supply

HWC relies on two surface water and four groundwater sources to supply water to its customers. The two surface water sources are perennial water sources for the HWC service area. They provide water from:

- 1. Spring Creek
- 2. Big Cottonwood Creek (via exchange with Salt Lake City).

The HWC's Spring Creek Water Treatment Plant (WTP) has a nominal peak capacity of 2.5 MGD; however, the actual plant production depends on available flow from the spring, which fluctuates in wet and dry years. HWC staff indicate that the target flow rate from the WTP for much of the year is approximately 1,400 gpm maximum (to avoid overtaxing the spring). Records show that the reliable safe yield from this source is approximately 80 percent of this target (1,120 gpm). Note that the Spring Creek WTP has capacity to be expanded to 3.0 MGD in the future if needed, by adding more filters. Water from the Spring Creek source is currently treated at the Spring Creek WTP, while water from Big Cottonwood Creek is treated by Salt Lake City at the Big Cottonwood Creek WTP and delivered to HWC via interconnections.

In addition to surface water sources, HWC also relies on four wells to provide seasonal water demands to its customers. Water from the wells does not require any treatment. Wells #2 and #3 meet the majority of seasonal demands, while Wells #1 and #4 are used during peak demand periods. Table 4 summarizes the Company's water supply portfolio. Reliable capacity is estimated based on a number of factors including available water rights, equipped mechanical capacity, and safe yield based on historical average and peak production of sources.

Table 4
Water Supply Portfolio

Source	Туре	Reliable Capacity (gpm)
Wells #1 – 1885 E 4500 S	Groundwater	
Well #2 - 1993 E Gundersen Ln	Groundwater	1,357
Well #3 – 4360 S Wander Ln	Groundwater	(combined)
Well #4 - Live Oak Circle	Groundwater	
Spring Creek	Surface Water	1,120
Big Cottonwood Creek	Exchange	681
	Total Supply	3,158

HWC owns water rights to provide for use of all of its surface water and underground sources of supply. Some of these water rights date back to the 1890s. The Spring Creek source has been used from the early pioneer days. Water rights for the Spring Creek and groundwater well sources have been consolidated. Issues relating to groundwater depletion, aquifer storage and recovery have not been explored by HWC.

WATER MEASUREMENT METHODS AND PRACTICES

All connections in the HWC service area are metered connections, with meter readings occurring three times annually. This allows the HWC to monitor usage, identify unusually high usage or leaks, and charge for water use according to a graduated rate schedule. Each new connection is installed with a meter.

HWC upgraded all meters in its system in 2010 to radio read meters. HWC reviews meter readings regularly to identify irregularities and replaces meters as needed. Since the upgrade in 2010, there has not been a need to replace significant meters; however, it is recognized that long-term, approximately 200 meters will need to be replaced each year based on an average meter design life of 20 years. There has not been a formal meter accuracy analysis; however, measurements of water supplied each year agree well with total metered water sold each year. In the short-term, HWC will consider increasing the frequency of readings to provide customers with more information on water use patterns. In the long-term, HWC will consider an upgrade to an AMI system to further streamline meter reading and enhance available data for use in encouraging conservation measures.

As noted in HWC annual water use reports, there are 46 homes that potentially use some portion of Spring Creek overflow water (i.e. water that is not treated) for secondary garden or landscape watering purposes. HWC does not have an effective means to measure this water use, which fluctuates depending on season and availability and may or may not be used.

CURRENT PRICING STRUCTURE

The four-tiered, graduated rate schedule adopted by the HWC is designed to encourage conservation by requiring higher-use shareholders to pay higher rates. All HWC are metered. Meters are read three times annually, in March, June and September. Customers are billed quarterly at the end of March, June, September and December, with December billing including only the minimum base rate charge. The current minimum quarterly charges are summarized in Table 5, and the current Usage Rates are summarized in Table 6.

Table 5
HWC 2019 Quarterly Minimum Charges

Meter Size	Minimum Charge	
3/4"	\$59.55	
1"	\$76.86	
11/2"	\$99.42	
2"	\$159.81	
3"	\$605.64	
4"	\$777.06	
6"	\$1,154.85	

Table 6
HWC 2019 Usage Rates

Tier	Rate	
First 60,000 gallons	\$1.22 per 1,000 gallons	
Next 60,000 gallons	\$1.49 per 1,000 gallons	
Next 60,000 gallons	\$1.83 per 1,000 gallons	
All additional usage	\$2.10 per 1,000 gallons	

CONSERVATION GOAL

Successes and Challenges for Conservation Efforts

HWC's 2014 Conservation Plan Update identified a conservation goal of 218 gpcd by 2020. HWC achieved an average of 222 gpcd for 2015 to 2019. HWC has implemented a program of water conservation and has had measurable success in this effort. Challenges of implementing conservation for the HWC include the fact that as a private mutual water company, the HWC does not have the authority to adopt an ordinance, nor do they have enforcement authority to compel shareholders to comply with recommended conservation practices. In addition, the Spring Creek source is a spring that runs continuously, so the measures that HWC has taken to prohibit water use during the day allow a considerable volume of this water to drain to the Great Salt Lake, where it can no longer be treated to drinking water standards. The service area is fully developed and there is opportunity to reduce demands through new development standards is limited to redevelopment of individual lots or small areas. Redevelopment does occur, but much more slowly than new development. While this means there is little demand increase due to growth, it also means there is less opportunity to improve the per capita usage. Despite these challenges, HWC continues to encourage users to conserve through education and other best management practices.

Water Conservation Goal

Consistent with the regional goals identified in the Utah DNR Report published in November 2019, the Company's goal is to reduce water usage by 11 percent between 2015 and 2035. Target

conservation goals on a per capita demand basis are shown in Table 7 through 2035. Figure 3 illustrates a projection of HWC water use to 2050 alongside the reduction goal. Reliable supply from HWC sources is also graphed for reference.

Table 7
HWC Per Capita Potential
Demand Reduction through 2035

Year	Per Capita Demand w/ Conservation (gpcd)	
2025	213	
2030	205	
2035	197	

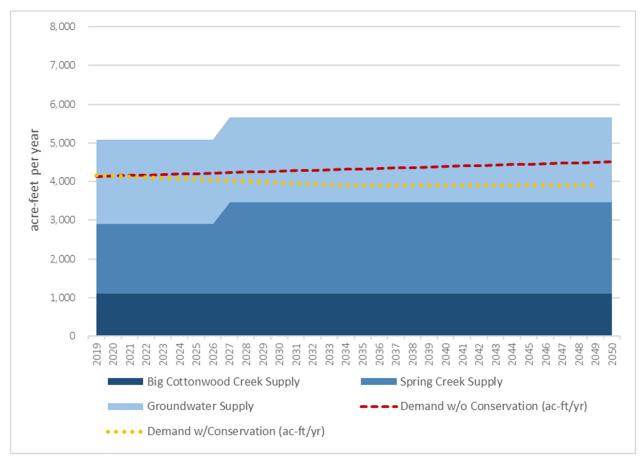


Figure 3
Projected Water Use, Conservation, and Supply

Measuring Conservation Efforts and Conservation Coordinator

To measure the success of conservation efforts and tracking for the overall conservation goal, HWC will continue to estimate per capita water demands on an annual basis based on yearly production data, and updated numbers of system connections.

HWC has designated Mr. Darren Shepherd as the solely responsible Conservation Coordinator and he can be reached at (801) 277-2893.

ONGOING CONSERVATION AND BEST MANAGEMENT PRACTICES FOR THE NEXT 5 YEARS

With each update to the HWC Conservation Plan, HWC has been able to report progress in conservation and successful implementation of conservation best management practices. The following paragraphs summarize measures that have been taken since the HWC adopted their first Conservation Plan. Focus in the next five years will continue to be on educating water users regarding conservation through web-based information, public open houses, and annual reports.

Control Practices to Minimize Loss

There has not been a water system audit or a leak study in recent years. However, these are measures HWC will consider implementing in the future.

The wells in the system are continuously metered. The Spring Creek WTP is also continuously metered and monitored via SCADA. All exchange connections are metered. Water system pressures can be remotely monitored at various locations throughout the system. Critical system elements are equipped with alarms to quickly notify an on-call operator of problems.

Public Involvement and Water Education Program

HWC provides notices to water users for annual stockholders' meetings, including educational information encouraging water conservation. Along with annual meeting notices and occasional educational information distributed with water bills, HWC sends out information pamphlets and flyers to encourage water conservation and to give information on how to protect valuable and limited water sources.

Before the adoption of the initial HWC Water Conservation Plan, and in conjunction with HWC's annual stockholders' meeting, a public hearing was conducted to give HWC users a forum to discuss the Water Conservation Plan.

Conservation activities that were discussed included the following:

- Xeriscape landscaping;
- Upgrading toilets and showers to the new plumbing codes which reduce water consumption at each appliance;
- Wise usage of water for whatever purposes customers deem necessary;
- The graduated water rate schedule that was first implemented in July of 1998 to encourage high consumption customers to use less or to pay higher prices to help meet the costs at peak demands;
- Careful attention to protection of our sources of this precious resource;
- The two-edged sword of conservation, i.e. if too little water is used so that insufficient revenues are raised, rates may have to be increased to operate and maintain the system;
- HWC's unusual situation of being almost completely built out so that they are adding only a few new service connections to the current 3,995 connections each year. The HWC likely has sufficient water resources to supply customer's needs for the foreseeable future

without the development of new sources. The most imminent need is to protect the sources that HWC currently has so that they will be usable indefinitely into the future.

HWC will organize another open house the next two years to educate shareholders regarding water conservation measures.

Daytime Watering Resolution

A resolution was adopted on April 15, 2004, to prohibit the use of culinary water for irrigation purposes during the day from 10:00 a.m. to 6:00 p.m. to help conserve water and to reduce losses to evaporation during the hotter parts of the day.

Graduated Rate Schedule

A graduated rate schedule was put in place as of July 1, 2004. This new rate schedule added two new tiers to the former two-tier schedule and reduced the size of the tiers to encourage high usage customers to reduce their consumption. The four-tiered rate schedule has also been updated for current pricing (see Table 6).

Strategic Source Utilization

The HWC makes every effort to maximize the usage of surface water sources (i.e. Spring Creek and Big Cottonwood Creek via exchange with Salt Lake City Public Utilities) prior to utilizing underground sources. The greater the usage from surface water sources the less need there is to pump from wells and the greater the volume of water that can be conserved in the aquifer. Conversely, unused spring water drains to the Great Salt Lake where it is no longer usable as drinking water. Water not utilized from the Salt Lake City Public Utilities exchange agreement is used by Salt Lake City's customers at the expense of HWC shareholders.

Consumer Confidence Report

This is something HWC planned on doing previously and they have now implemented it. As part of its annual Consumer Confidence Report, the HWC has included a section discussing tips to develop better water conservation habits. This serves as a simple reminder to the water system customers.

Web-Based Information

Another planned item from the 2014 Water Conservation Master Plan that has been implemented is web-based conservation information. For many people, the internet is now the primary source of information. The HWC has developed a website, including a summary of water conservation tips, and the benefits of actively conserving water.

Water Conservation Plan

HWC maintains and regularly updates its Water Conservation Plan to comply with the Utah Water Conservation Plan Act. This plan allows the HWC to proactively encourage conservation, to implement conservation strategies, and to measure the success of implementation on a regular basis.

Water Conservation Ordinances and Standards

As previously stated, HWC does not have the authority to adopt an ordinance, nor do they have enforcement authority to compel shareholders to comply with recommended conservation practices. All of the conservation efforts, therefore, must be voluntary actions from users or systemic approaches that can be managed and controlled by HWC.

EVALUATION OF CURRENT CONSERVATION MEASURES

A review of the data for total water sold year by year from 2005 to 2019 reveals a downward trend (dashed line) in all categories but institutional. Institutional has the lowest usage volume of all categories (about 6 percent of overall usage). The following charts summarize this data.

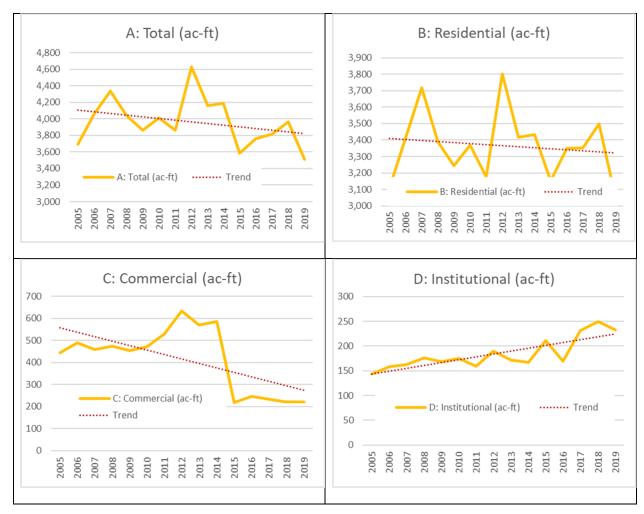


Figure 4 (Parts A through D)
Metered Usage Trends By Connection Type

Based on a relatively constant population from year to year, these numbers indicate a trend of conservation as shown in Table 2.

The current mix of conservation practices appear to be effective, and as such, will be continued into the foreseeable future.

POTENTIAL ADDITIONAL CONSERVATION MEASURES

Potential additional conservation measures that could be implemented by the HWC are discussed in this section. Due to the interrelated nature of conservation measures, the amount of water that will be saved by any individual program cannot be estimated accurately. However, the combined effect of these programs can be monitored by the HWC relative to its conservation goals. As necessary, conservation measures can be added or modified to improve performance.

WaterSense Program. The "WaterSense" partnership program developed by the Environmental Protection Agency provides free access to media materials, public service announcements, factsheets, brochures, and bill stuffers with water-efficiency messages. The HWC may consider becoming a WaterSense partner to obtain relevant information and encourage conservation. There is no cost to HWC for a WaterSense partnership.

Meter Testing/Replacement Program. HWC's program of regularly reading meters throughout the year allows them to easily identify meters that are no longer working. These meters are replaced immediately. If in the future the HWC notes an increase in the need for replacements as meters reach their design life, the HWC can undertake a program to gradually replace groups of meters more proactively. In general HWC plans for regular replacement of up to 200 meters per year based on an average design life of 20 years.

District Services Booths. The HWC will seek opportunities to host a booth at community functions to help citizens learn more about the HWC and the HWC Water Conservation Plan. Booths can be set up with water conservation information, information about the current water supply situation, and other activities that teach about water resources. The primary cost associated with this practice is the cost to staff the booth.

Water System Audit. The HWC will consider conducting a formal water system audit. This would include evaluating the accounting, management, operations practices of the company. The purpose would be to identify inefficiencies and recommend course corrections. A formal audit of the HWC system could cost anywhere from \$30,000 to \$50,000.

Leak Detection Survey and Repairs. The HWC will consider commissioning a leak detection study. These studies consist of numerous field tests, main and valve potholing or excavation, and system metering to identify potential system leaks. Once identified, the leaks would be placed on a prioritized repair schedule. A leak detection survey for the HWC service area may cost anywhere from \$25,000 to \$35,000. The cost of the repairs depends on what issues are discovered and where they are located.

Expanded Telemetry and Automated System Operations. The HWC continues to upgrade their SCADA system to remotely monitor flow and pressure, and will consider installing additional pressure and flow sensors throughout the system with automated reporting capabilities. This would allow the company to have a better pulse on the system and identify potential problems sooner. Remote sensing and reporting can cost approximately \$30,000 per site for capital costs, installation, and programming. There will also be long-term operations, maintenance, and replacement costs.

COST ANALYSIS

Most of HWC's operational costs remain constant regardless of whether shareholders use more or less water. When customers use less, revenues to conduct operations are reduced without a corresponding reduction in operating costs. When water use drops substantially over an extended period, it may be necessary to raise rates to meet operational costs. Due to the unusual nature of some of HWC surface water sources, the HWC believes that long-term conservation may cost shareholders more than it some may believe that it would save from an economic viewpoint. Implementing some of the additional potential conservation measures identified in this report may not generate a benefit sufficient to justify the costs. Despite this, HWC will continue to pursue practices of conservation and education in order to exercise wise stewardship of limited water resources.

Water and Revenue Losses

The total amount of water supplied and metered from all sources typically does not equal the total amount of water measured (i.e. sold) at the points of use. The difference in these measurements is the water loss for the system. Water loss can also be referred to as non-revenue water because it is water going out from the sources that the company is not being paid to supply. Non-revenue water can be attributed to limitations of measuring accuracy, data and accounting errors, system leaks, hydrant flushing, or illicit unmetered use.

Non-revenue water still costs the company money to pump, treat, purchase, distribute, and deliver. These operating expenditures and lost potential revenue can add up quickly from seemingly small but recurring causes.

Table 8 summarizes the non-revenue water and theoretical associated revenue loss for HWC.

Table 8
HWC Water and Revenue Loss

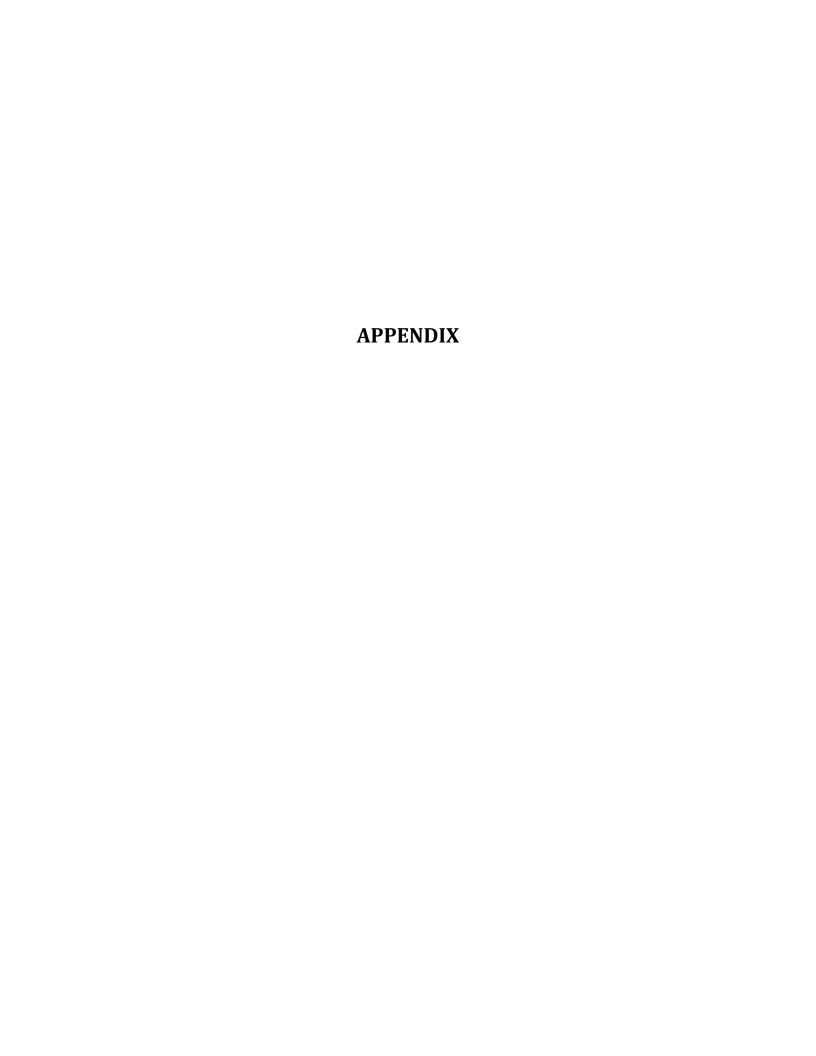
Year	Percent Loss of Total Water Supplied (%)	Volume Lost (ac-ft/yr)	Theoretical Revenue Lost (\$/yr)
2015	12.33%	504	\$344,607
2016	8.25%	339	\$231,587
2017	8.26%	344	\$235,092
2018	7.94%	342	\$234,116
2019	8.72%	336	\$229,523

While this apparent revenue loss is significant, it is important to understand that not all of the lost water is a real loss and not all of the real loss is economically or physically recoverable. For example, water lost to leakage or main breaks is not water that would otherwise be sold. There is also a portion of loss that is not preventable because of the physical limitations in wet infrastructure.

Non-revenue water of less than 10 percent is generally considered to be acceptable for a public water system. Regardless, it is the Company's goal to minimize losses to the maximum extent practical.

IMPLEMENTING AND UPDATING THE WATER CONSERVATION PLAN

HWC discussed and adopted the 2020 Water Conservation Plan Update as part of their January 21, 2021 Board Meeting. HWC provides public notice of all Board Meetings via their website. Documentation of discussion and adoption of the Conservation Plan at the January 21, 2021 Board Meeting is included as an appendix.





Jan. 22, 2021

To whom it may concern,

On Jan. 21, 2021, Holliday Water Company board of directors reviewed and accepted the 2020 Water Conservation Plan Update, which was prepared by Bowen Collins engineering firm. Board acceptance of the Water Conservation Plan is recorded in the company's Jan. 21, 2021 board meeting minutes. The company will inform water users of the board's acceptance of the plan going forward. The following message (and related messages) will be shared with water users via newsletters, website, bills and community events where the company's participation is requested.

Web copy and newsletter notice:

HWC board approves water conservation plan

Holliday Water Company board of directors approved a water conservation plan, Jan. 21, 2021, to help reduce total water usage by more than 10 percent by 2035.

The comprehensive plan is the result of the Utah Water Conservation Plan Act requiring water providers our size to maintain a plan with regular updates. Some of the conservation measures include:

- Continued use of our four-tier pricing schedule;
- Promote use of time-efficiency tools (e.g., automatic and smart-sprinkling systems),
 high-efficient showerheads and faucets, and ongoing conservation messages;
- Encourage landscape watering between the hours of 6 p.m. to 10 a.m.
- Provide conservation info booth for community events; and
- Emphasize common-sense watering messages "It takes more water to revive a brown lawn than to keep a lawn reasonably green."

For more information about the company's commitment to water conservation, contact Darren Shepherd, Holliday Water Company, 801-277-2893.

Darren Shepherd,

General Manager and Board Member

Get in Touch

154 East 14075 South Draper, Utah 84020

(801) 495-2224

gloscher@bowencollins.com bowencollins.com

