

**Santaquin City**

**WATER CONSERVATION PLAN**



**A Community Prospering  
in Country Living  
(Agriculture, Equestrian, Recreation)**

December 2023  
Prepared by Santaquin City

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## **INTRODUCTION**

Santaquin City and its leaders have worked diligently, for many years, to ensure adequate water for current and future residents, businesses, and institutions, and will continue to do so. The City owns and operates both a culinary (drinking) water system and a pressure irrigation (or secondary water) system. The culinary water system provides for all potable water demands requiring a high quality of water, and is used for outside watering in commercial, industrial, and some, minimal residential areas. It also provides fire protection. The culinary system has evolved over many years since the incorporation of Santaquin on March 10, 1932.

The pressure irrigation system provides for all other outside watering demands using raw surface water sources and irrigation wells heretofore used for flood irrigation, supplemented by a minimal amount of culinary water through 4 backflow preventers. The initial construction of the Pressure Irrigation System began in August 2006 and was completed in April 2009. Multiple system upgrades and additions, including pipeline, pump stations, and tanks have been made since the initial system was constructed.

Because we are in the second driest state in the nation, water conservation and the wise use of water has been a focal point on both a local and state level. The state legislature in 1998 passed the Utah Water Conservation Plan Act (House Bill 153), revised in the 1999 legislative session (Section 73-10-32 Utah Code Annotated), updated in the 2004 General Session. This water conservation plan addresses the concerns of leaders and citizens of both Santaquin and the State of Utah. The Act relates to water and irrigation, requesting cities to implement and update every 5 years, a water conservation plan. The “Recommended Best Management Practices (BMP) for Utah’s Water Providers” was used as an aid in preparing this Comprehensive Water Conservation Plan (BMP 1-Comprehensive Water Conservation Plans).

## **DESCRIPTION OF OUR CITY AND ITS WATER SYSTEMS**

Santaquin City is the southern most City located in Utah County and partially straddles the County boundary into Juab County. It is truly the gateway city to Utah County with Interstate 15 running through and along its eastern side. It is also a major cross-roads for Utah County in that State Route 6 (Main Street) connects I-15 to the recreational amenities of the “Little Sahara Recreation Area” and the southern accesses to and around Utah Lake. It is also the corridor to many smaller towns, including Genola, Goshen, Elberta, and Eureka.

Other jurisdictions around Santaquin include Payson, the Spring Lake Community, unincorporated County rural areas, and the Bureau of Land Management lands to the north. To the south are lands controlled by Juab County and the small, incorporated community of Rocky Ridge. Santaquin is bounded on the east by mountainous lands managed by the Uinta National Forest, and lands owned by the Utah Department of Natural Resources, Division of Wildlife Resources. It is located about 70 miles south of the state capital, Salt Lake City and approximately 20 miles south of the county seat, Provo City.

The incorporated area of the city is approximately 6,744 acres, or 10.5 square miles. The growth boundary defined in the General Plan is approximately 11,262 acres, or 17.6 square miles. The population of Santaquin has grown from approximately 3,600 in 2000 to 16,276 in 2020, and is estimated to be 16,764 in 2022. With large-scale development projects that anticipate completion within the next 10 to 15-years, it is expected that the City’s growth rate could exceed 3.6 % per year over the next ten years. The influx of population over the next several years will

strain many aspects of the City's water systems. Meeting the future needs of a growing population as well as the needs of current citizens has always been a top priority for city leaders and planners. As a result, well maintained and operated culinary and pressure irrigation water systems provide the citizens of Santaquin with water where and when needed.

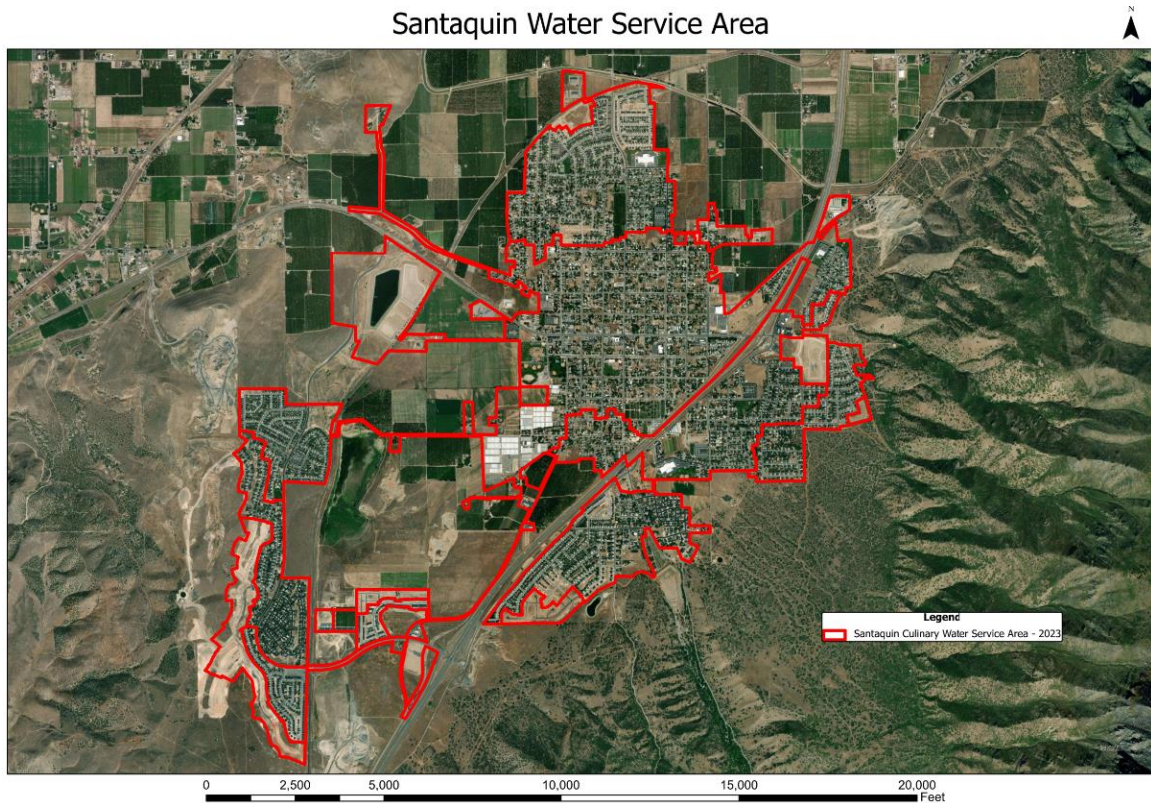
Currently, the domestic water system provides water to 4,990 residential, 46 commercial, 13 industrial, and 31 institutional customers.

Open space and preservation of a "Community Prospering in Country Living" is of high value to our leaders and citizens. Consequently, open space, orchard, and agricultural preservation are a high priority. There are eleven (11) developed parks containing over 88 acres. There are four (4) elementary schools. Three (3) public and one charter school, with their accompanying athletic fields, playgrounds, and other landscaped areas. Nebo School District contemplates constructing additional schools over the next 10 to 15 years.

Santaquin City's potable water sources come from seven springs in Santaquin Canyon and two deep wells located within the city. The water supply for the pressure irrigation system comes from surface and sub-surface sources. The largest shares owned by the City are in Summit Creek Irrigation & Canal Company. The water provided under these shares is, and will continue to be, used for irrigation of lawns, gardens, school athletic fields, playgrounds, church landscaped and recreation areas, city-owned parks, and other open spaces. This lesser quality surface water, that does not require treatment, conserves the higher quality water that comes from the city's springs and culinary wells for the potable water system. Each connection to the PI system is metered. An electrical connection from the PI meter is linked to the culinary water meter, making it possible for both meters to be read at the same time.

The City's sewer treatment plant utilizes Membrane Biological Reactor (MBR) technology, which reclaims wastewater to produce high quality Type-I water. Funding sources for the initial construction of the treatment plant included: Utah Division of Water Quality (SRF), United States Department of Agriculture-Rural Development (RD), Central Utah Water Conservancy District, and an EPA-STAG Grant. Planning for the facility included a Wastewater Treatment Facility Master Plan, public involvement including: several open houses, meetings of a Community Advisory Committee, and more. An important segment of this Master Plan was the planned use of the type-I effluent water in the pressure irrigation system. Santaquin City received approval from the Utah State Engineer, dated October 20, 2009 for the reuse of this Type-I water.

Figure 1 shows the service area of Santaquin City.



### **Inventory of Water Resources**

Santaquin City supplied 2,292 acre-feet of water to the culinary water system and 2,268 acre-feet to the pressurized irrigation system in calendar year 2022. The previous year’s culinary water and pressurized irrigation supply was 2,106 acre-feet and 2,248 acre-feet respectively. Springs provide approximately 64% of the potable water delivered in 2022, the balance coming from wells. Wells will supply potable water for future growth. The City presently has developed well capacity to supply up to 4,904 acre-feet annually. The city also has developed spring water capacity that historically has supplied an average of 1,144 acre-feet annually for the last five years. By combining these two sources of water for our culinary water supply, the city has the ability to deliver 6,048 acre-feet of culinary water annually, more than 2 times the amount supplied in 2022. Under current water rights, the city is entitled to withdraw approximately 6,307.58 acre-feet annually from the wells and springs shown below in Table 2. This Table shows that the city has the ability to withdraw nearly two (2) times the amount of water that was delivered in 2022 by water right.

By ordinance, future development is required to provide water rights or irrigation shares to the City. Santaquin City Code 8.04.100 requires “land within or annexed to the city be accompanied by water rights sufficient to accommodate the needs of the existing and potential occupants of said land”. Diversion of this water historically has been from streams, springs, shallow wells (artesian) and subsurface drains. We anticipate that the amount of water needed for future growth will be within the available safe yield from the springs and the aquifer supplying the wells. Table 2 shows the City-Owned Culinary Water Rights.

**Table 2  
SANTAQUIN CITY MUNICIPAL WATER RIGHTS**

<b>Water Right Number</b>	<b>Change Application</b>	<b>Approved Sources</b>	<b>Annual Volume (ac-ft/year)</b>
51-1013	Certificated	Summit Creek & Springs 2 - 5	1,447.955
51-1347	a39488	East Side Well Center Street Well Summit Ridge Well Spring #1	1,824.423
51-1348	a16256	Cemetery Well Center Street Well	1,795.464
51-7045	a35122	East Side Well Cemetery Well Center Street Well Summit Ridge Well West Side Well (Provisional)	224.77
51-8394	a40536	Center Street Well Summit Ridge Well	53.84
51-8787	a43339	Center Street Well Summit Ridge Well	150.00
53-1496	a25719	Provisional Well	204.4 <sup>1</sup>
53-1773	a44081	Center Street Well Summit Ridge Well West Side Well (Provisional) East Side Well	600.00
55-12887	a43615	Center Street Well Summit Ridge Well	6.72
		<b>Total:</b>	<b>6,307.58</b>

Santaquin City also owns surface water rights in the form or shares for its pressurized irrigation system from Summit Creek Irrigation Canal Company. See Table 3.

**Table 3**

Source Name/No.	Shares held
SUMMIT CREEK IRRIGATION AND CANAL COMPANY	679

**Present Water Use and Future Water Needs**

The water delivered into Santaquin City’s culinary water system divided by the number of people living in Santaquin in 2022, averages a daily use of 132 gallons per capita per day (gpcd).

The water delivered into Santaquin City’s pressurized irrigation system divided by the number of people living in Santaquin in 2022, averages a daily use of 121 gpcd. The total metered sales of

all water use within Santaquin City is 253 gpcd.

Compared to the Provo River Regional average of 222 gpcd . Our per capita usage is approximately 14% higher than the regional average.

Our total combined usage of 253 gpcd is 105% of the Utah state average of 240 gpcd.

Table 1 shows the current gallons per capita per day (GPCD) water use in the Santaquin City’s culinary and pressurized irrigation system during 2022.

Figure 1 shows population projections for Santaquin City through 2060.

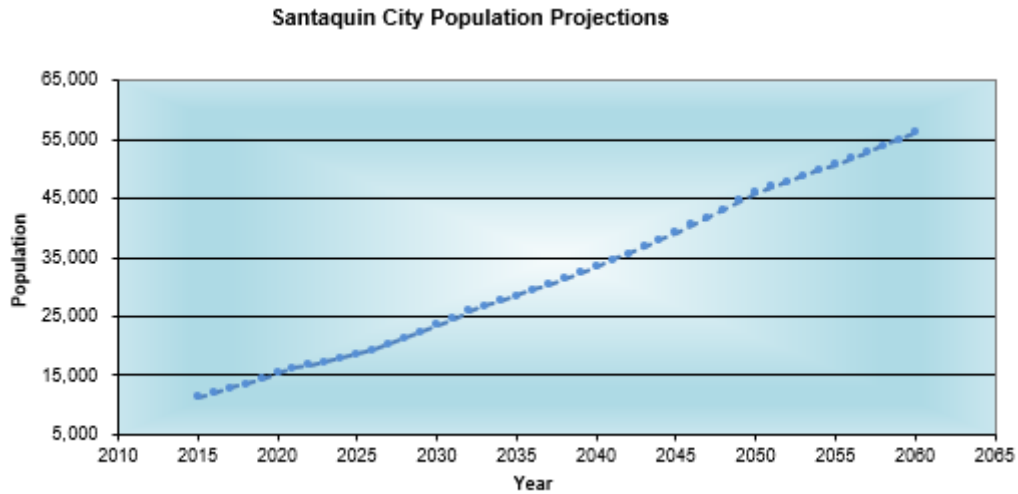
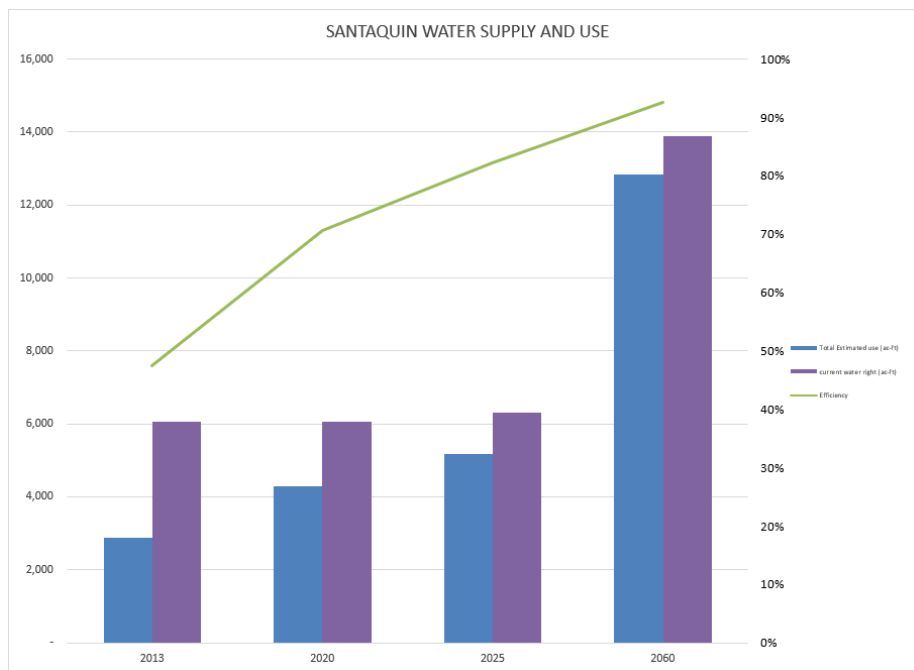


Figure 2 shows the estimated use, current water right held by Santaquin City, and a line representing the efficiency of Santaquin City’s water right held vs the estimated water being used by residents and business within the city.



Santaquin City has averaged an annual growth rate over 5.5% over the past five (5) years. Based on the General plan update completed in 2022 the estimated population at build out is 40,390.

Per Santaquin City's 40-year plan, Santaquin City will need approximately 6,260 acre-feet of culinary water and 7,620 acre-feet of pressurized irrigation, for a total of 13,880 acre-feet of water annually in 2060.

## **WATER PROBLEMS, CONSERVATION MEASURES AND GOALS**

### **Problems Identified**

City Staff identified and prioritized several problems during the investigative phase of preparing this Water Conservation Plan. Those problems identified are as follows:

- Water not metered, accounted for, and/or billed such as City owned facilities (i.e. City Parks and Streetscapes).
- Water not metered, accounted for, and/or billed such as water used for flushing sanitary sewer lines, testing and flushing new water lines and storm drain lines and street sweeping.
- Contractor authorized use or unauthorized use of water for construction purposes. Authorized use is metered by a hydrant meter or by load count, reported and billed separately. Unauthorized use by contractors, builders, etc. is obtaining water from hydrants without having notified the city.
- Inaccuracy of meters as they wear.
- Citizens lack understanding of water conservation.
- Large landscape areas such as park space, open space, schools, etc.
- Leak detection and repair.

Each problem represents an opportunity to further reduce water use. The opportunity exists to solve the above problems through a combination of accounting for all water delivered from the culinary and pressure irrigation systems, monitoring and billing for authorized use, reducing unauthorized use, verification of meter accuracy and replacement of inaccurate meters, education, reduction in high water-use landscaping and repair of leaks.

The opportunity exists to realize a more balanced water budget by installing meters on culinary and pressure irrigation services to city owned facilities and "billing" the appropriate fund for the water used rather than having the water fund carry the burden. Meters should also be used to measure the amount of water used for flushing sewer lines and new water lines and for street sweeping as much as is practical (BMP 2-Universal Metering).

Additional opportunities to reduce water use can be found in two of the remaining problems. Authorized use of water by contractors, builders, etc., could be metered, rather than using a load count, to provide accuracy in water usage (BMP 2-Universal Metering). There is also a need for increased enforcement, with appropriate fines, for unauthorized use of water by contractors, builders, and others (BMP 4-Water Conservation Ordinances).

The opportunity exists to adopt a meter testing and replacement program. Santaquin City currently has a meter replacement program to replace worn or broken meters that no longer produce accurate meter reads (BMP 2-Universal Metering).



The opportunity exists to educate a new generation of wise water users. This can be assisted with a strong sustained water education program in the public and private schools (BMP 11-School Education Programs). One funding opportunity that has been identified is through the State of Utah ARPA grant funds that were made available for public water systems with existing meters. These funds would allow for replacement of old worn out meters as well as real time water usage data made available to water users connected to Santaquin City's water system. It is anticipated that this data will help users be able to make better water use decisions.

The opportunity exists to promote water conservation programs available for high volume water users that maintain large landscape areas (BMP 12-Conservation Programs for Commercial, Industrial and Institutional Customers).

The opportunity also exists to implement a 'leak detection and repair program' (BMP 7-System Water Audits, Leak Detection and Repair).

The opportunity exists to implement outdoor water conservation measures through ordinance changes/additions that would encourage and promote water conservation through limiting wasteful outdoor watering practices, limiting turf on newly constructed homes, encouraging and promoting proper water wise plant selection, etc.

## **CURRENT CONSERVATION PRACTICES**

In order to solve the problems identified above and take advantage of the associated opportunities, specific water conservation measures must be identified and evaluated. Santaquin has already implemented several water conservation measures that are listed in the International Building Code (IBC) and the International Plumbing Code (IPC) as adopted by the State of Utah (BMP 10-Indoor Water Conservation). These, along with additional measures that will effectively help manage Santaquin City's water systems, are discussed below.

Water conservation for both the culinary system and the pressure irrigation system is directed at education and information sharing regarding the water available for a given water year.

### **1. Water Education Program (BMP 11-School Education Programs)**

The following information on efficient outdoor and indoor water use is available to the citizens of Santaquin through the City Center, Public Works Department, and online via the City's website. This information is also annually distributed with the water users' monthly bill.

#### **Outdoor Water Use:**

- ◆ Use pressure irrigation system for watering of landscaping, if available. Most residential and some commercial areas have the pressure irrigation system available for use.
- ◆ Water landscape only as much as required by the type of landscape, and the specific weather patterns of our area, including cutting back on watering times in the spring and fall.
- ◆ Do not water during the hours of 10:00 AM and 6:00 PM.
- ◆ Sweep sidewalks and driveways instead of using the hose to clean them.
- ◆ Wash your car from a bucket of soapy (biodegradable) water and rinse while parked on or near the grass or landscape so that all the water running off goes to beneficial use instead of running down the gutter to waste.

- ◆ Check for and repair leaks in all pipes, valves, faucets, hoses etc. on culinary and secondary systems. Verify there are no leaks by turning everything off and checking your water meter to see if it is still running. Some underground leaks may not be visible due to draining off into storm drains, ditches, or traveling outside your property.
- ◆ Periodic checks by city staff on service line leaks.
- ◆ Adjust and repair sprinkler heads to maintain proper spray patterns and eliminate waste.
- ◆ Periodically check and adjust timers on sprinkling systems.
- ◆ Use mulch around trees and shrubs, as well as in your garden to retain as much moisture as possible. Areas with drip systems will use much less water, particularly during hot, dry and windy conditions.
- ◆ Keep your lawn well trimmed and all other landscaped areas free of weeds to reduce overall water needs of your yard.
- ◆ Discourage water fountains.
- ◆ Encourage low water landscaping at interchanges, planting strips, etc. in the city.
- ◆ Encourage the use of smart meters utilizing grants from the State of Utah and others (CUWCD).

In addition to the above information, there are other opportunities available for high volume water users to receive information and on-site assistance that can advance water conservation measures. Three different organizations will make an onsite visit to conduct water audits, analyze usage and advise users on water conservation procedures they can implement. These organizations are as follows: The US Bureau of Reclamation, the Utah State University Cooperative Extension in Utah County, and Central Utah Water Conservancy District. The services provided by these organizations are a valuable resource for high volume water users. Santaquin City encourages participation in these programs as it will assist the city and high volume water users with water conservation efforts (BMP 12-Conservation Programs for Commercial, Industrial and Institutional Customers).

### **Indoor Water Use:**

About two-thirds of the total water used in a household is used in the bathroom. Concentrate on reducing your bathroom use. Following are suggestions for this specific area:

- ◆ Do not use your toilet as a wastebasket. Put all tissues, wrappers, diapers, cigarette butts, etc. in the trashcan.
- ◆ Check the toilet for leaks. Is the water level too high? Put a few drops of food coloring in the tank. If the bowl water becomes colored without flushing, there is a leak.
- ◆ Install low flow toilets utilizing available grant funds.
- ◆ Take short showers with the water turned up only as much as necessary. Turn the shower off while soaping up or shampooing. Install low flow showerheads and/or other flow restriction devices.
- ◆ Do not let the water run while shaving or brushing your teeth. Fill the sink or a glass instead.
- ◆ When doing laundry, make sure you always wash a full load or adjust the water level appropriately, if your machine will do that. Most machines use 40 gallons or

- more for each load, whether it is two socks or a week's worth of clothes.
- ◆ Repair any leak within the household. Even a minor slow drip can waste up to 15 to 20 gallons of water per day.
- ◆ Know where your main shutoff valve is and make sure that it works. Shutting the water off yourself when a pipe breaks or a leak occurs will not only save water, but also eliminate or minimize damage to your personal property.
- ◆ Keep a picture of water in the refrigerator for a cold drink instead of running water from the tap until it gets cold.
- ◆ Plug the sink when rinsing vegetables, dishes, or anything else; use only a sink full of water instead of continually running water down the drain.

**2. Water Rates (BMP 3-Incentive Water Conservation Pricing)**

Designing an appropriate rate schedule is a complex task. Rate design is a process of matching the costs of operating a water system to the unique economic, political, and social environments in which the city provides its service. The cost of delivering the service must be evaluated and understood. Each water system has unique assets and constraints. Based on the characteristics of the system, and past capital and operating costs, revenue requirements can be estimated. Users are discouraged from excessive use by this graduated rate structure.

Tables 4 and 5 show the current monthly rate structures for culinary and pressure irrigation.

**Table 4. Water Rates With or Without Pressure Irrigation Available**

Base Rate	\$ 27.40					
Usage Volume	0-4,000 gal	4,001-8,000 gal	8,001-12,000 gal	12,001-50,000 gal	50,001-100,000 gal	100,000 + gal
Volume Charge	\$ 0.65 1,000 gal	\$ 0.98 1,000 gal	\$ 1.30 1,000 gal	\$ 2.38 1,000 gal	\$ 2.58 1,000 gal	\$ 2.81 1,000 gal

**Table 5. Pressure Irrigation Water Rates**

Monthly Rates					
	1" Service	1-1/2" Service or larger			
Base Rate	\$ 18.54	\$ 27.53			
Usage Volume	0-25,000 gal	25,001-45,000 gal	45,001-65,000 gal	65,001-100,000 gal	100,001 + gal
Volume Charge	\$ 0.83	\$ 0.85	\$ 0.87	\$ 0.93	\$0.97

The City typically conducts a Water Systems Rate Analysis every 3 to 5 years. Based on the results of these analyses, the City Council may make changes to these rates accordingly.

### 3. Water Conservation Ordinances (BMP 4-Water Conservation Ordinances)

Santaquin has several city ordinances in place that aid with water conservation measures. Santaquin City Code Title 10, Chapter 15, Section 1 encourages the conservation of water resources through inclusion of more drought-tolerant plants for new developments. Santaquin City ordinance # 12-02-2006, effective 12-07-2006 adds the defining term “Xeriscaping” to the language of the city’s landscaping standards for new developments. Xeriscaping is a very effective measure used to achieve water conservation. Santaquin City Code Title 8, Chapter 1, Section 16 makes it unlawful for water users to waste water or allow water to be wasted by faulty equipment, intentionally allowing storage containers to overflow and or allowing unauthorized persons to obtain water regularly from any water users’ premises. Santaquin City Code Title 8, Chapter 1, Section 18 allows for penalties to be assessed including forfeiture of services and, the levying of a Class B misdemeanor fine and or incarceration of those guilty of violating any rules, regulations or ordinances controlling the City water system.

In addition to the City’s existing water conservation ordinances, additional ordinance changes/additions are currently being drafted for future City Council consideration. These ordinance changes are anticipated to include, among other changes, limiting turf for all new construction (i.e. residential, commercial, institutional, industrial, etc.), prohibiting turf in certain areas (i.e. less than 8’ wide), etc.

#### Water Conservation Goals

In pursuit of finding effective solutions to the problems identified previously, Santaquin City is adopting the Provo River Region Water Conservation goal of 179 GPCD. Santaquin City is implementing the following goals:

- **GOAL #1**
  - **Reduce water use by providing water users with access to real time water use.** Allowing water users access to real time water use will allow them to make better water conservation and usage decisions. Implementation plan: Install new meters along with metering technology that includes radio read antennas and computer software that will provide real time usage information to water users. This will require the replacement of approximately 2,600 existing old and aging meters with new meters and radios to fully utilize the new meters and Radios. Funding for this project has been obtained by Santaquin City through the Utah Division of Water Resources.
  - **Time Line:** With the approved funding, the anticipated schedule for the installation of the new metering technology will begin in winter of 2023 and is planned to be completed by December 2024.
  - **Evaluation:** To appropriately evaluate the impact of the new technology, historical water usage data (2023 and older) will be compared to the future usage data.
  - **Cost of Reaching Goal #1:** The cost incurred to achieve this goal is a one-time cost to install the new meters along with state of the art, real time, usage data technology for water users. It is estimated that the costs for materials are as follows:

Meter Tower System:

- ◆ Tower Purchase & Installation \$294,455

◆ 8” Meter – Centennial Park/Ball Fields/Arena	\$12,500
◆ Meter purchase	\$931,545
◆ Installation	\$464,000

Santaquin City has obtained an ARPA grant funds from the State of Utah to cover these costs.

- **Goal #2**

**Implement Water efficiency ordinance and standards on all new homes constructed in Santaquin.** The result of implementation of water efficiency standards similar to those proposed by Central Utah Water Conservancy District.

- Water Efficiency Standards may include but not limited to the following items:
  - Provide a “Flip you Strip” incentive program
  - Restrict the irrigated area in new residential yards (i.e.: limit turf area, require drip irrigation systems for trees and shrubs, require drought tolerant or native shrubs and grasses, etc.)
- Time Line: Santaquin City plans to have the new ordinances and standards adopted by the spring/summer of 2024

- **GOAL #3**
  - **Account for water supplied from the culinary and pressure irrigation systems to city parks and public properties.** The use of culinary and pressure irrigation water to maintain these public facilities and properties needs to be appropriately accounted for.
  - **Implementation Plan:** Install new meters at public facilities that are currently unmetered to measure the water used at these facilities.
  - **Time Line:** Completed before the end of the 2025 irrigation season.
  - **Cost of Reaching Goal #2:** This cost is expected to be minimal. These billings are expected to be in place by October 15, 2025.
  
- **GOAL #4**

**Implement a meter-testing and replacement program.** Adopt a program to test all meters and replace excessively worn, broken and inaccurate meters to improve the water budget and increase revenue to the water fund.
- ♦ **GOAL #5**

**Implement leak detection and repair programs.** Adopt a program to detect leaks and repair them that will improve the water budget and decrease costs for the water department.

## **IMPLEMENTING/UPDATING THE WATER CONSERVATION PLAN**

To ensure that the goals outlined above are reached, appropriate tasks must be determined, responsibility fixed with the logical person or department, and a time line set for completion of each task. The city manager and city staff will be responsible for carrying out the necessary tasks within the appropriate time constraints.

Both City Staff and Elected Officials have reviewed this Water Conservation Plan. It will be on the City Council agenda for Council consideration and adoption December 19, 2023. The members of the City Council are:

Daniel M. Olson, Mayor

Art Adcock, Council Member  
 Betsy Montoya, Council Member  
 David Hathaway, Council Member  
 Lynn Mecham, Council Member  
 Jeff Siddoway, Council Member

The water conservation plan will be revised and updated as required to meet changing conditions and needs. The adopted plan will be updated and resubmitted to the Utah Division of Water Resources in February 2024, as required by Legislative House Bill 153. The ordaining ordinance for the water conservation plan is attached as Appendix A.

# **APPENDIX A – Adopted Water Conservation Plan Ordinance**