

RESOLUTION NO. 12-15-2021-B

A RESOLUTION AUTHORIZING, ADOPTING, AND APPROVING A PAYSON CITY WATER CONSERVATION PLAN UPDATE.

WHEREAS, the City Council desires to maintain and update from time to time a Water Conservation Plan; and,

WHEREAS, the City Council understands the pressing need to use water in a more efficient manner to allow for future sustained growth of the community, and;

WHEREAS, the City Council desires the Water Conservation Plan to be established and be amended no less than every five years and continue to play a vital role in future development of Payson City, Utah.

NOW THEREFORE, BE IT RESOLVED BY THE PAYSON CITY COUNCIL that this Resolution is the adoption of a Payson City Water Conservation Plan.

SEE ATTACHED PLAN

The Resolution shall take effect immediately upon its passage by the Payson City Council adopted in a public meeting.

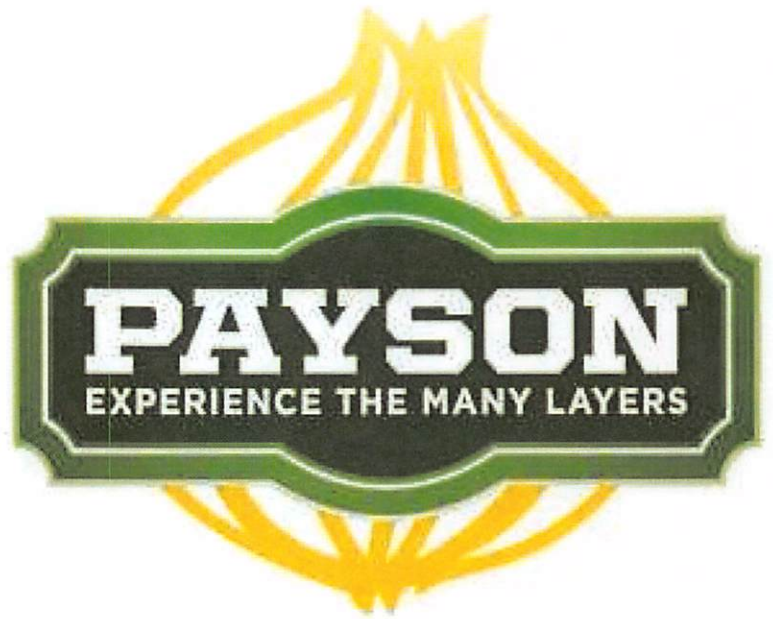
Passed and adopted by the Payson City Council, Utah, this 15th day of December, 2021.


William R. Wright, Mayor

ATTEST:


Kim E. Holindrake, City Recorder





2021 WATER CONSERVATION PLAN UPDATE

System ID: 1166
(HAL Project No.: 412.13.100)

CITY OF PAYSON

2021 WATER CONSERVATION PLAN UPDATE

System ID: 1166
(HAL Project No.: 412.13.100)



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November 2021

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CHAPTER 1 – INTRODUCTION

The City of Payson recognizes the need for proactive planning to meet the water needs of its citizens. The Utah State Legislature has passed legislation requiring public water suppliers to prepare a Water Conservation Plan and then to update the plan periodically. This 2021 report is an update of the City's 2015 Water Conservation Plan. This report describes the drinking water and pressurized irrigation systems, summarizes water consumption, assesses the water conservation alternatives available to the City, sets goals to conserve water, and identifies existing and proposed water conservation measures to be implemented by the City.

The new Regional M&I 2030 Water Conservation Goal for the Provo River region is to reduce consumption by 20% from the year 2015 to 2030, resulting in a reduction goal of 222 to 179 gpcd (HAL and BCA, 2019). The City is adopting the 20% goal for itself.

Appendix A includes the resolution documenting the City's adoption of the conservation plan update.

CHAPTER 2 – EXISTING WATER SYSTEM

SYSTEM PROFILE

Located in southern Utah County, Payson has received a small portion of Utah County's residential, commercial, and industrial growth. In 2020, the City reported to the Division of Water Rights an estimated population of 21,800 people.

Payson City Corporation owns and operates a public drinking water system serving 6,225 connections and a public pressurized irrigation system serving 4,683 connections (Utah Division of Water Rights, 2020). These connections include domestic, commercial, industrial, and institutional customers with both indoor and outdoor water uses. A summary of the current water connections by type is shown in Table 2-1.

Table 2-1: 2020 Water System Connections

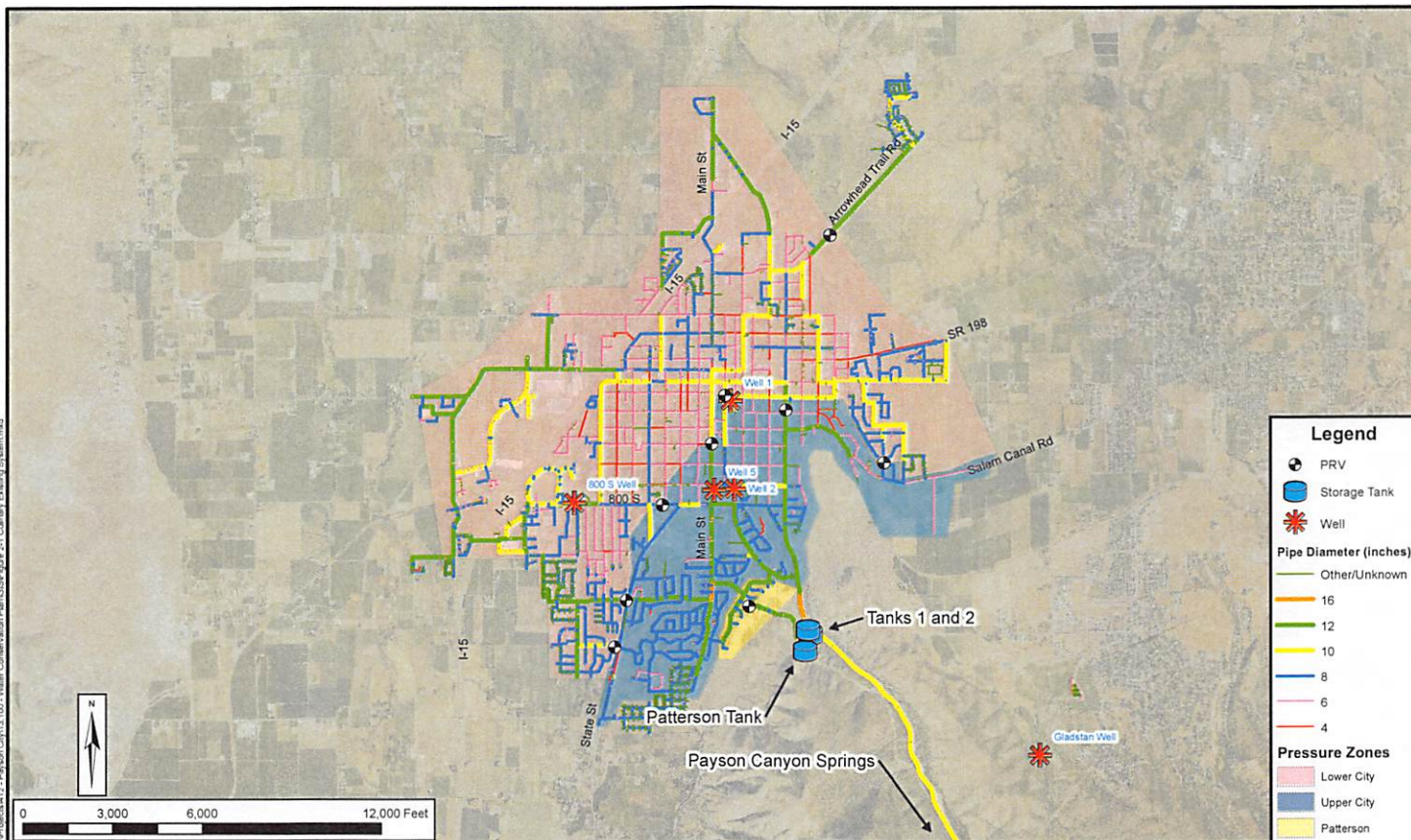
Connection Type	Total Drinking Water Connections	Total Pressurized Irrigation Connections
Residential	5,785	4,507
Commercial	362	2
Industrial	3	120
Institutional	75	54
Total	6,225	4,683

INVENTORY OF WATER RESOURCES

The drinking water system consists of three main pressure zones. The system serves the residents of Payson City and a small number of the residents in the adjoining unincorporated areas of the county. Water from Peteetneet Creek and/or nearby springs has been used since the settling of the City in the 1850s. It is estimated that the first modern water storage tank was constructed sometime in the early 1940s. The City's distribution system has been developed since the early 1900s. The water sources consist of springs located in Payson Canyon to the south-east of the City and 5 underground wells located within the City limits. Currently Wells No. 2 and No. 5 are used in the drinking water system, whereas Well No. 4 is used in the pressurized irrigation system. Well No. 1 is used solely as irrigation for a City park, and Gladstan Well is used exclusively to irrigate the golf course. Water storage is contained in three storage tanks: (2) 2.5 MG and (1) 0.6 MG, located at the mouth of Payson Canyon.

Payson has a citywide pressurized irrigation system and owns and operates several irrigation facilities serving different areas. Significant water conservation was achieved in 1991-1992 by installing a pressurized irrigation system throughout the City. The pressurized irrigation system stands separate from the drinking system and is serviced to each residence for lawn and garden watering. Therefore, the drinking water is generally not used for outdoor watering, with the exception of a few residential, commercial, and City facilities that use water from the drinking water system for outdoor watering. However, the City considers this volume to be minimal. The irrigation system was started to be metered for the first time in the year 2020. The City's drinking water and pressurized irrigation systems extend throughout the municipal boundaries covering an area of approximately 13 mi². Figure 2-1 and Figure 2-2 show the service area boundaries for the drinking water and pressurized irrigation systems, respectively.

Date: 05/07/2021
H:\Projects\412 - Payson City\13.100 - Water Conservation Plan\CIP\Fig 2-1_Culinary_Evalog_System.mxd



Legend

- PRV
- Storage Tank
- Well

Pipe Diameter (inches)

- Other/Unknown
- 16
- 12
- 10
- 8
- 6
- 4

Pressure Zones

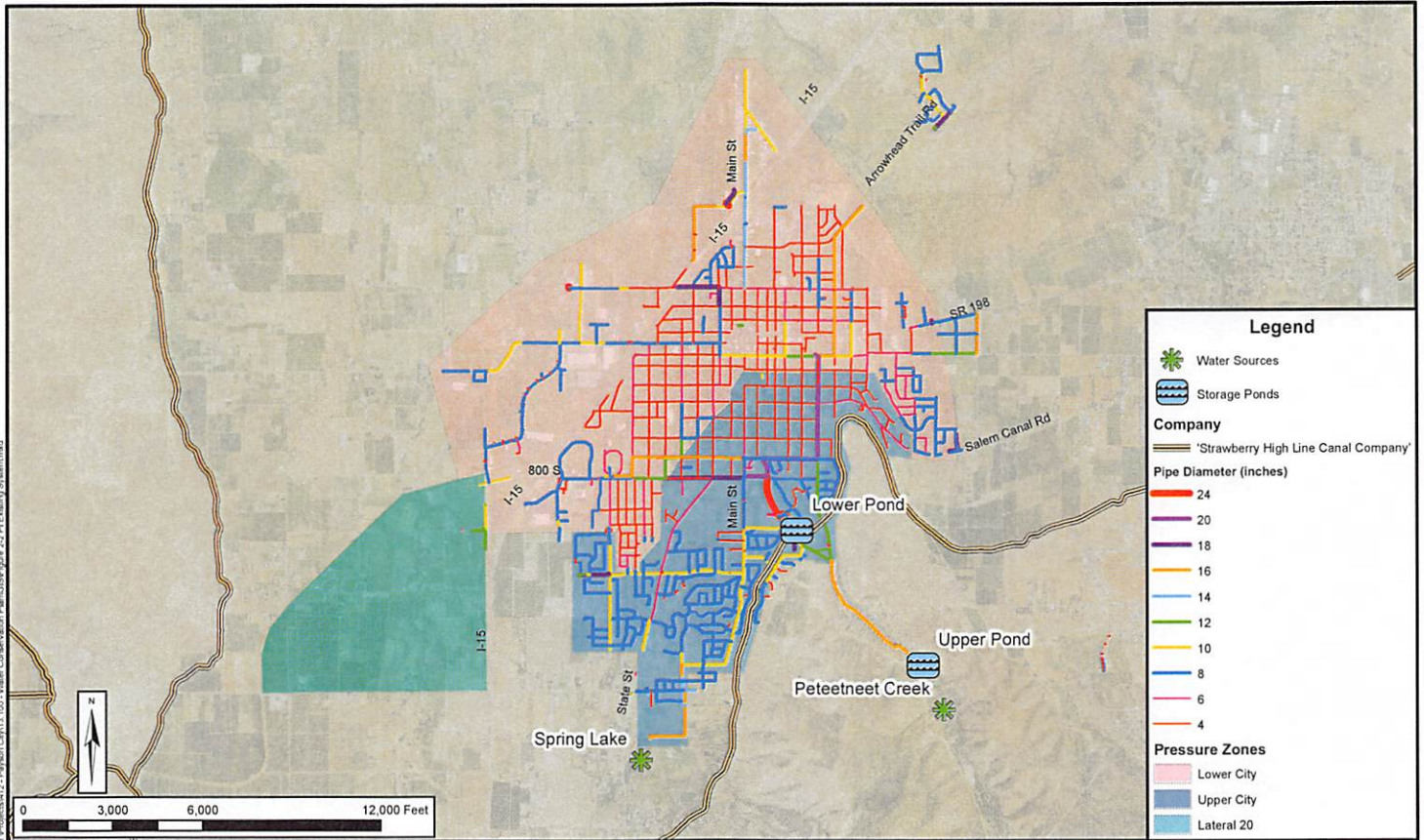
- Lower City
- Upper City
- Patterson



**PAYSON CITY
2021 WATER CONSERVATION PLAN**

EXISTING DRINKING WATER SYSTEM

**FIGURE
2-1**



Date: 11/20/2021
 Project: Payson City 2021 Water Conservation Plan
 File: Payson City 2021 Water Conservation Plan - Existing Irrigation System.mxd



**PAYSON CITY
 2021 WATER CONSERVATION PLAN**

EXISTING PRESSURIZED IRRIGATION SYSTEM

**FIGURE
 2-2**

Future water demands will, for the most part, come from the City's current sources and shares turned over to Payson City Corporation by land developers as part of development agreements.

Under current water rights the City is entitled to withdraw 5,935 acre-feet of drinking water annually from wells, as shown in Table 2-2. Furthermore, current irrigation water rights entitle Payson City to use 7,300 acre-feet annually from the Strawberry High Line Canal, Spring Lake, Payson Canyon, and wells as shown in Table 2-3 (HAL, 2020).

The City currently owns 3,790 ac-ft in Strawberry High Line Canal company shares (HAL, 2020), and this number is expected to grow. As farmland develops, the irrigation water is incorporated into the City's supply, which increases the Strawberry High Line Canal water allotment.

SUPPLY

Current drinking water supply is shown in Table 2-2. Drinking water sources include the springs located in Payson Canyon and Wells No. 2 and No. 5.

Table 2-2: Summary of Payson City Drinking Water Rights

Water Right Number	Change Application Number	Volume (Ac-ft)
51-7192	a21935	135.52
51-7197		
51-7198		
51-7203	a22131	48.4
51-7224	a22496	48.4
51-7241	a22703	48.4
51-7244	a22723	4.94
51-7250	a22765	103.74
51-7251	a22766	51.87
51-7268	a23129	4.84
51-7278	a23095	96.8
51-7294	a23259	9.68
51-7303	a23349	9.68
51-7314	a23441	53.24
51-7315	a23464	203.28
51-7316	a23465	4.84
51-7336	a23774	203.28
51-7403	a24258	48.4
51-7551	a25118	159.72
51-7580	a25513	4.84
51-7614	a25944	24.2
55-9505		
51-7328	a23644	27.545
51-7400	a24147	27.545
51-7555	a25222	47.22

Water Right Number	Change Application Number	Volume (Ac-ft)
51-7615	a25961	47.22
51-7785	a27885	80
59-5907	a41283	454.79
51-1313	a40557	3807.4323
51-1397		
51-1398		
51-1762		
51-1763		
51-1764		
51-1765		
51-2525		
51-2694		
51-3781		
51-4070		
51-7228		
51-7388		
51-7572		
51-8442		
51-7277	a23879	151
51-3499	a42050	28.08
Payson Municipal Groundwater Rights (Ac-ft)		5,935

* From Payson City's 2020 Drinking Water Master Plan (HAL, 2020).

Current pressurized irrigation water supply is shown in Table 2-3. Pressurized irrigation water sources include Strawberry High Line Canal, Spring Lake, Payson Canyon, and Well No. 4.

Table 2-3: Summary of Existing PI Water Sources

Source	Annual Capacity (Ac-ft)
Strawberry High Line Canal	3,790 ¹
Spring Lake	323 ¹
Payson Canyon	2,862 ²
Well No. 4	354.53
Total	7,330

1. From Payson City's 2020 PI Water Master Plan (HAL, 2020).

2. Average flow through power plant between March and October 2020.

The City's annual reliable supply is comprised of the combined system capacity between the drinking water and pressurized irrigation systems. Table 2-4 shows the City's total reliable supply. The City has said that they will have an additional 5,123.96 acre-feet of Central Utah Project (CUP) water shares upon completion of the new ULS Pipeline in about four years.

Table 2-4: Reliable Supply

Source	Annual Capacity (Ac-ft)
Drinking Water System	5,935
Pressurized Irrigation Water System	7,330
Additional PI Supply Source	5,124
Total	18,389

The City is in the process of reviewing drinking water and pressurized irrigation water rights to better quantify available water to use throughout the City. This will also help to better define the City's reliable supply.

WATER MEASUREMENT

Table 2-5 presents the percent metered drinking water connections by type. Clearly, most of the drinking water system is connected to residential homes. Water meters are critical to track water use and incentivize conservation. Currently meters are read monthly. They are calibrated as they come new from the factory. Meters are replaced on an as needed basis when they stop working or are having problems. The City plans to report any unmetered connections to Water Rights and install meters on those unmetered connections.

Table 2-5: Payson City Percent Metered Connections by Type of Use

Year	Type of Use			
	Residential	Commercial	Industrial	Institutional/Other
2010	95.6%	4.3%	0.07%	0.0%
2011	95.6%	4.3%	0.09%	0.0%
2012	95.5%	4.4%	0.09%	0.0%
2013	95.5%	4.4%	0.09%	0.0%
2014	95.5%	4.4%	0.09%	0.0%
2015	95.6%	4.4%	0.09%	0.0%
2016	93.9%	4.7%	0.07%	1.3%
2017	92.8%	5.8%	0.09%	1.2%
2018	92.7%	5.9%	0.13%	1.3%
2019	92.8%	5.9%	0.05%	1.2%
2020	92.9%	5.8%	0.05%	1.2%

Figure 2-3 below shows the percentage of metered connections by type in the form of a graph using the information found in Table 2-5 above.

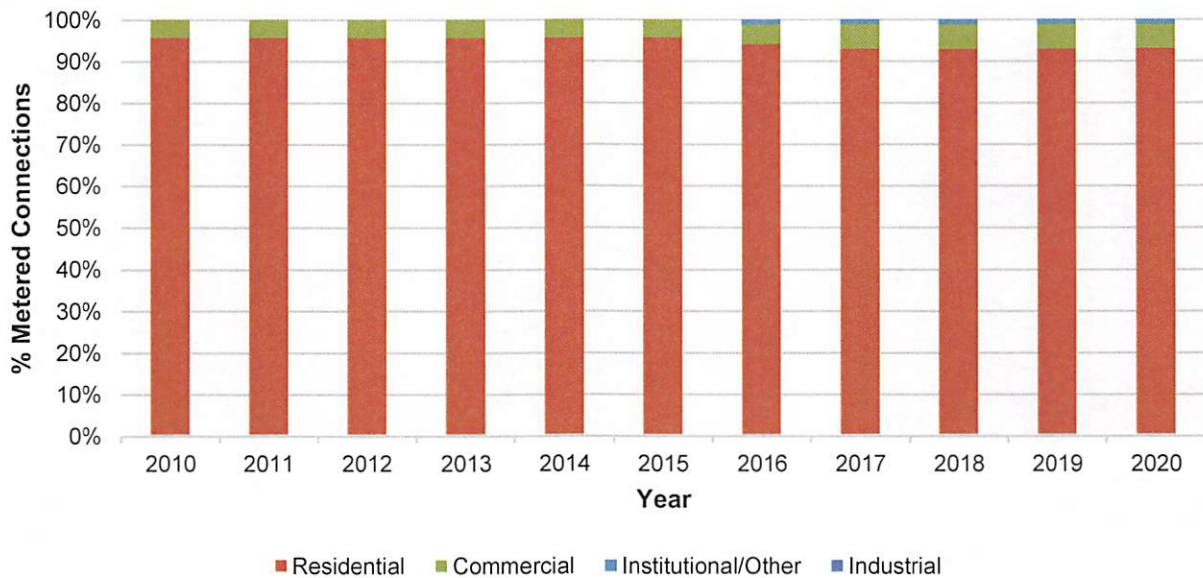


Figure 2-3: Payson City Percent Metered Connections by Type of Use

Every water system loses some water or at least cannot account for the fate of all water produced. Mechanisms for water loss include leaks, breaks, hydrant flushing, construction water, waste pumping, and unmetered uses. According to the EPA (2017), water loss in public water systems averages 16%; some Utah systems have identified losses of 30% or more. Lost water is also lost energy and lost revenue, so preventing and mitigating water loss should be a priority if losses are excessive.

In Payson, drinking water loss is currently around 35%, as shown in Table 2-6 below, with an average loss of 26% from 2015 to 2020. This demonstrates that the City should prioritize conservation efforts to address water losses or unmetered uses. In Payson, the only unmetered uses of potable water are those associated with fire hydrants. The Public Works Department attributes water loss to typical unknown leaks and systemwide line breaks. It is suggested that the City begin the process of water loss auditing.

Table 2-6 compares total drinking water produced vs. total drinking water metered from 2010 to 2020.

Table 2-6: Comparison of Drinking Water Produced to Metered Water Use

Year	Total Metered Use (ac-ft)	Total Source Production (ac-ft)	Percent of Water Unaccounted For
2010	2,400.95	3,281.65	26.84%
2011	2,139.24	4,528.35	52.76%
2012	1,761.03	3,758.72	53.15%
2013	2,257.58	3,181.37	29.04%
2014	2,269.48	4,559.23	50.22%
2015	2,364.70	3,292.57	28.18%
2016	2,589.83	3,126.47	17.16%
2017	2,276.25	2,744.74	17.07%
2018	2,252.26	2,887.03	21.99%

Year	Total Metered Use (ac-ft)	Total Source Production (ac-ft)	Percent of Water Unaccounted For
2019	1,848.98	3,059.54	39.57%
2020	2,174.12	3,379.27	35.66%

Figure 2-4 below charts the comparison of metered use vs. water using the information found in Table 2-6 above.

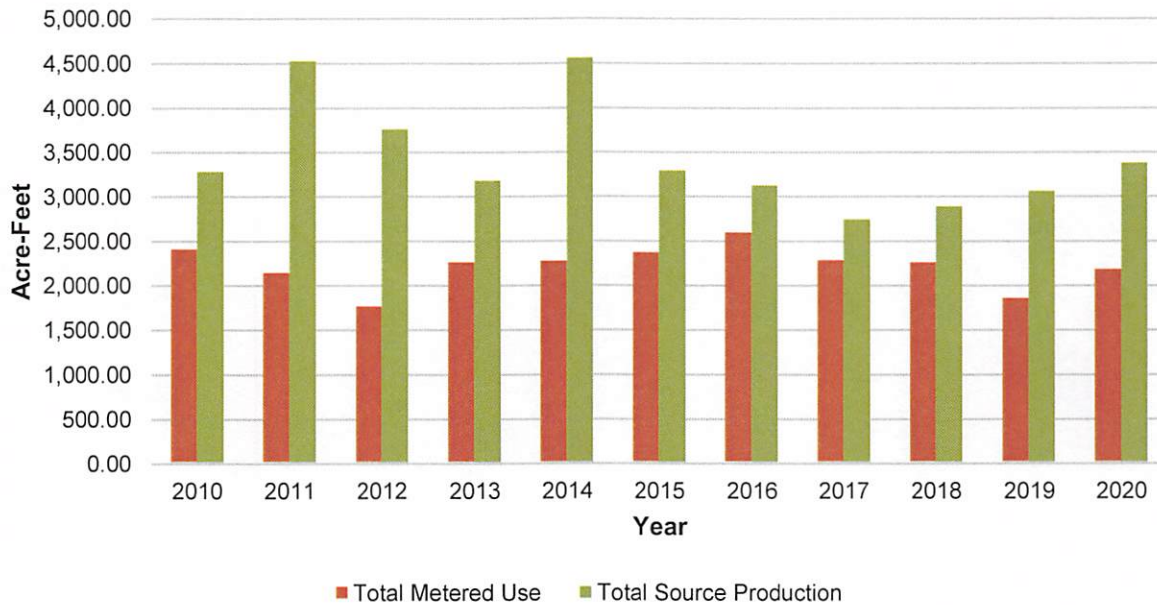


Figure 2-4: Comparison of Drinking Water Produced to Metered Water Use

The City has been in the process of installing meters for the pressurized irrigation system. Due to the limited available data, the City cannot yet compare the produced water to the metered water for the pressurized irrigation system.

BILLING

Current Water Rate Structure

The City’s drinking water rate structures are summarized in Table 2-7 and Table 2-8. The City adopted a tiered water rate structure to encourage water conservation and comply with the Division of Drinking Water’s requirements. This program lets homeowners know whether or not they are using too much water by penalizing high water users with higher fees. The drinking water rate structure was last adjusted in 2019. A tiered secondary water rate structure has recently been created, but not yet implemented. The City plans to implement the secondary tiered water rates in 2022.

Table 2-7: 2020 Drinking Water Rate Structure

Water Tiers	Price
Base Rate	
Monthly Base Water Fee (based on up to 1-inch meter)	\$20.31 per month
Monthly Base Water Fee (based on 1 1/2-inch meter)	\$43.50 per month

Water Tiers	Price
Monthly Base Water Fee (based on 2-inch meter)	\$66.69 per month
Monthly Base Water Fee (based on 3-inch meter)	\$89.89 per month
Monthly Base Water Fee (based on larger than 3-inch meter)	\$113.09 per month
Usage Charge	
0 - 6,000 gallons (Tier 1)	\$0.90 per 1,000 gallons
6,001 - 18,000 gallons (Tier 2)	\$1.16 per 1,000 gallons
18,001 gallons and up (Tier 3)	\$1.42 per 1,000 gallons

Table 2-8: 2020 Pressurized Irrigation Water Rate Structure

Water Tiers	Price
Lot size 0.50 acres or less	\$257.04 per year / \$21.42 per month
Lot size 0.50 acres to 0.75 acres	\$337.08 per year / \$28.09 per month
Lot size 0.75 acres to 1.00 acres	\$401.28 per year / \$33.44 per month
Lot size over 1.00 acres	\$427.44 / \$35.62 per month + \$134.16 / \$11.18 per month per 0.25 acre over the initial one acre

WATER USE

Payson City has some large water users, such as the UAMPS Nebo Power Plant which uses City water and the wastewater treatment plant effluent in its production process. The City also has an active Economic Development Plan that is targeting industrial users to occupy the City's business park. There is also a large cherry processing operation that requires a significant amount of high-quality production water.

Historical water supplied by the City's drinking water sources is summarized in Table 2-9.

Table 2-9: Payson City Historical Drinking Water Supply Summary

Year	Source Supplied (Ac-ft)				Total
	Purchase from Elk Ridge City	Springs Group	Well #2	Well #5	
2000	-	1,563.4	901.2	97.9	2,562.4
2001	-	1,192.6	1,171.0	177.2	2,540.8
2002	-	1,002.5	1,441.4	147.8	2,591.7
2003	-	944.8	1,287.4	224.9	2,457.1
2004	-	974.1	1,229.8	443.3	2,647.2
2005	-	1,146.9	843.7	580.5	2,571.1
2006	-	1,280.9	797.7	33.0	2,111.6
2007	-	999.8	979.9	0.5	1,980.1
2008	-	774.0	718.4	589.2	2,081.5
2009	-	539.5	226.9	604.9	1,371.3
2010	-	1,503.9	216.7	922.4	2,643.1

Year	Source Supplied (Ac-ft)				Total
	Purchase from Elk Ridge City	Springs Group	Well #2	Well #5	
2011	-	1,958.8	369.8	487.4	2,816.0
2012	-	1,736.9	628.9	635.6	3,001.5
2013	-	1,368.6	837.0	897.1	3,102.8
2014	-	2,380.5	1,200.8	903.2	4,484.4
2015	-	903.4	1,351.7	954.8	3,209.9
2016	-	752.1	1,354.8	962.9	3,069.9
2017	-	881.3	1,106.9	756.5	2,744.7
2018	-	901.5	1,077.2	908.4	2,887.0
2019	0.07	1,325.4	950.6	783.5	3,059.6
2020	1.24	1,008.5	1,361.6	1,007.9	3,379.3

For irrigation, Payson has many water sources. Well #4 was used in 2020 but not in the irrigation system prior. It is pumped to supply the upper zone directly. The City also uses canyon flows from the lakes and runoff, also known as Peteetneet Creek. This goes to the upper pond. The Payson Canyon metered data comes from the Strawberry Water Users Power Plant above the Upper Pond. Spring Lake is pumped directly to the upper zone but was not used 2018-2020. The Strawberry High Line Canal has two connections. The lower pond connection gets pumped to the lower pond whereas the 1700 West Lateral 20 connection gets pumped to the lower zone directly. The upper and lower ponds supply the upper and lower zones, respectively. They are metered as water leaves the ponds.

Well #1 is used exclusively for agricultural irrigation of a City park. Well #6 (Gladstan Well), is exclusively used to irrigate the golf course. The effluent from the treatment plant is used to run the power plant and irrigate the power plant's grounds. There are at least 2 meters at the power plant. One meter records effluent usage and the other meter records drinking water usage by the power plant.

Table 2-10 summarizes the historical water supplied by the City's pressurized irrigation water sources, according to Payson City and the Utah Division of Water Rights' website.

Table 2-10: Payson City Historical Pressurized Irrigation Water Supply Summary

Year	Source Supplied (Ac-ft)				Total
	Canyon Flows ¹	Well #4	Spring Lake	Strawberry High Line Canal	
2007	2,515	0	1,076.36	2,881.0	6,472.2
2008	3,178	0	478.48	1,675.0	5,331.9
2009	3,215	0	637.67	2,319.0	6,172.0
2010	2,825	0	584.28	1,912.0	5,320.8
2011	3,957	0	20.30	2,652.0	6,629.3
2012	2,488	0	20.33	1,790.9	4,299.4
2013	1,879	0	20.36	1,949.0	3,848.4

Year	Source Supplied (Ac-ft)				Total
	Canyon Flows ¹	Well #4	Spring Lake	Strawberry High Line Canal	
2014	1,967	0	19.34	2,431.0	4,417.1
2015	1,788	0	20.36	1,843.0	3,651.6
2016	2,278	0	21.38	2,116.0	4,415.1
2017	2,836	0	100.26	2,430.0	5,366.3
2018	3,341*	0	0	2,982.0	6,322.6
2019	2,737	0	0	1,841.0	4,577.8
2020	2,862	354.53	0	2,376.0	5,592.6

¹ Payson Canyon flow data was averaged from March to October for each year, based on the irrigation season.
 * The generator was offline from September to October 2018. These two months were averaged based on average September and October supply values from 2016-2017 and 2019-2020.

Figures 2-5 and 2-6 chart the City's historical drinking and pressurized irrigation water supply.

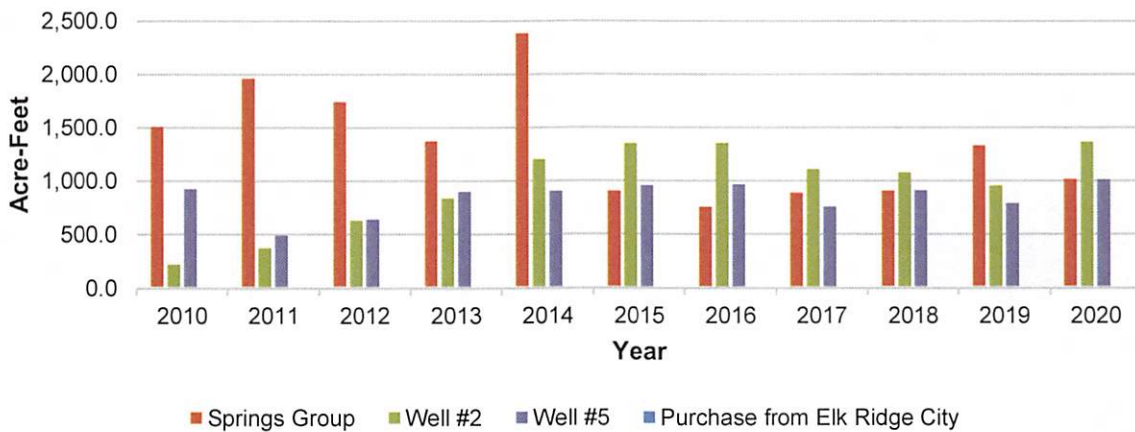


Figure 2-5: Payson City Historical Drinking Water Supply Summary

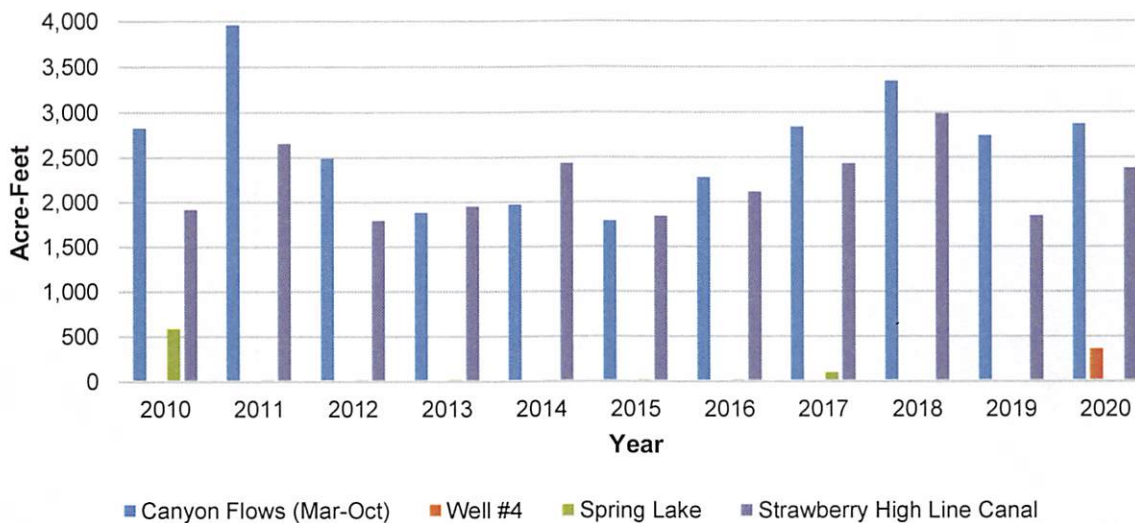


Figure 2-6: Payson City Historical Pressurized Irrigation Water Supply Summary

Water use data from 2020 was evaluated to determine indoor versus outdoor use. Indoor use was determined using the annual drinking water use values reported on the Utah Division of Water Right's website. Outdoor water use was determined using the annual irrigation water supply values that were provided by the City for 2020 (see Table 2-10). The metered values reported to the Division of Water Rights for the pressurized irrigation system in 2020 appeared to have errors or were not complete. However, a percentage of water use by type was reported on the Division of Water Right's website. Using the total water supplied to the pressurized irrigation system (see Table 2-10) and the percent water use for each type, an estimate of water use by type can be calculated. The percentages reported were: 75% domestic, 1% industrial, 3% commercial, 20% institutional, and 1% agriculture (which was added to industrial). Annual water use converted to average daily use divided by population provides the per capita water use, or gallons per capita-day (gpcd). The 2020 per capita water use is shown in Table 2-11.

Table 2-11: 2020 Per Capita Water Use by Type

Type	Indoor Use (Winter) (gpcd)	Outdoor Use (gpcd)	Total (gpcd)
Residential	56	172	228
Commercial	10	5	15
Institutional	17	46	63
Industrial	6	7	13
Total	89	229	318

Annual per capita use was calculated from 2007 to present using data reported to the Utah Division of Water Rights for drinking water and City provided pressurized irrigation water. Figure 2-7 shows that the gallons per capita per day use has been trending downwards from 2007 to 2020 but is still above the regional water conservation goal established by the Division of Water Resources for the Provo River region.

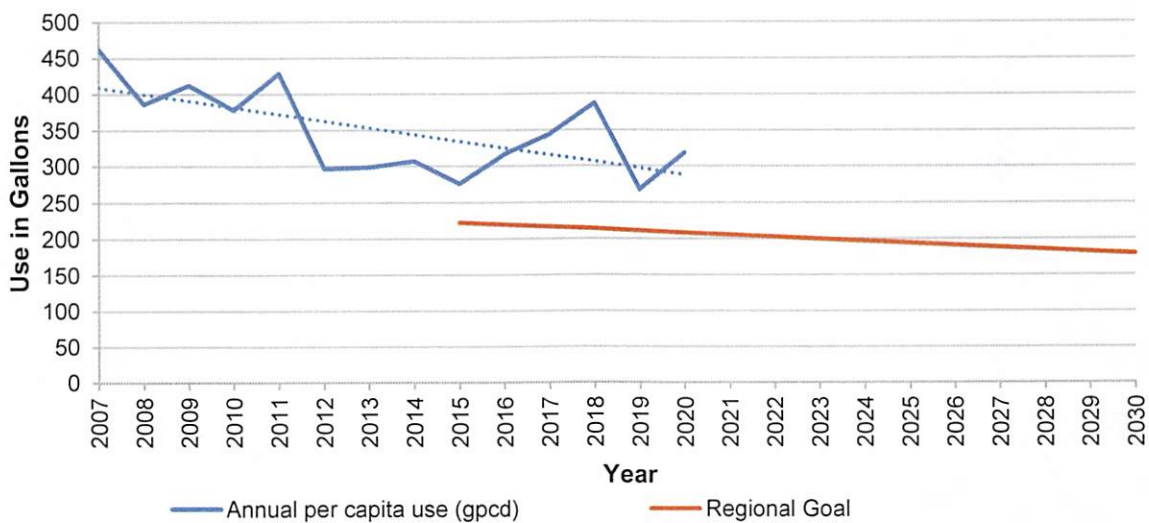


Figure 2-7: Historical Per-Capita Water Use

A comparison between reliable supply, current and projected water use, and efficient use are presented on Figure 2-8. Future water use was projected by using the existing ERCs reported to Payson City

the Division of Water Rights and the 2020 annual water use estimated in Table 2-9 and 2-10. Using these values, a use per ERC was calculated. The projected buildout ERC value from the 2020 Drinking Water Master Plan was multiplied by the use per ERC to calculate a projected buildout annual use volume. The reliable supply is based on the current water supply from the City's wells and springs. The reliable supply increases in 2025 because additional pressurized irrigation shares should be available to the City upon completion of the ULS pipeline. The regional efficient use curve begins with the 2015 water use per capita. The efficient use shows the 20% reduction goal in the 2015 regional water use by 2030, resulting in a reduction goal of 222 to 179 gpcd (HAL and BCA, 2019).

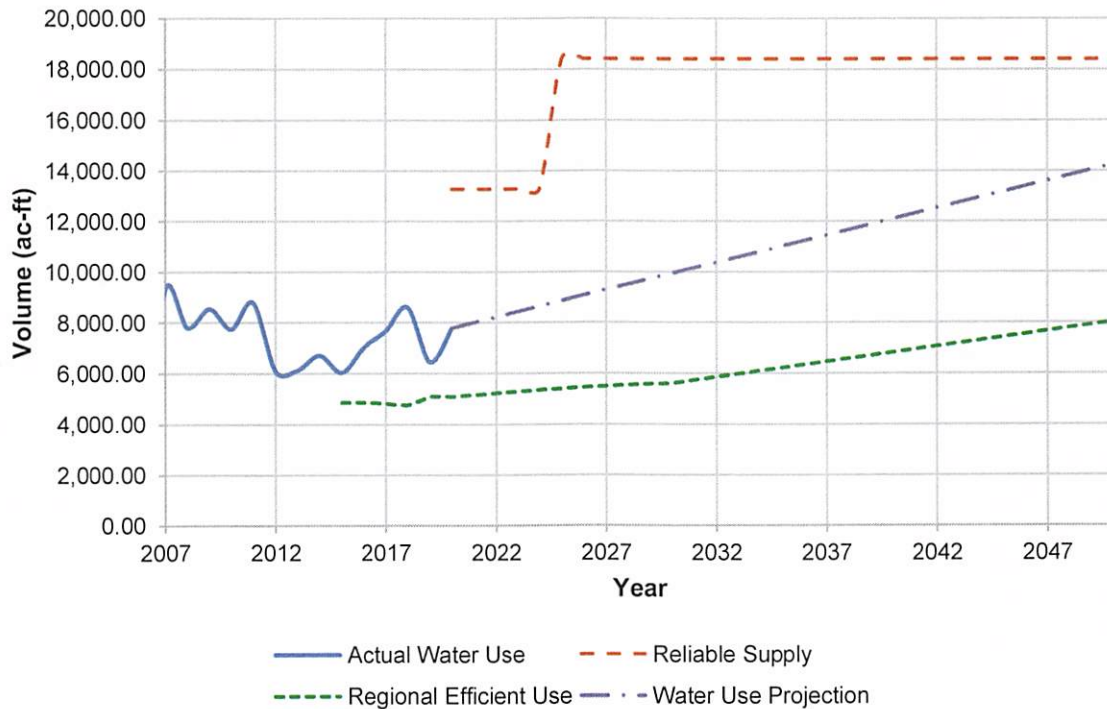


Figure 2-8: Future Use Comparison

Although the City is not currently within the regional conservation goal, with further conservation efforts, the City can reach conservation targets by 2030. The City's water use per capita has been on a downward trend from 2007 to the present. If future demands exceed the existing water supply the City plans to meet these demands through investigating current water rights and acquiring more as needed.

CHAPTER 3 – CONSERVATION ISSUES AND GOALS

IDENTIFIED PROBLEMS

The City is concerned with the potential waste of water from inefficient indoor/outdoor water use and from system wide losses. The following specific concerns have been identified by the City:

- Water loss from line breaks
- Water theft from hydrants or contractors
- Illegal connections
- Water loss from aged meters
- Water loss from leaks on both the customer and City's side
- No incentive to conserve pressurized irrigation water due to tiered rates not yet implemented.

GOALS

Based on Utah's Regional M&I Water Conservation Goals report (HAL and BCA, 2019), the regional water conservation goal for the Provo River Region is a 20% reduction from the 2015 baseline by 2030. The 2015 baseline was established as 222 gpcd resulting in a goal of 179 gpcd by 2030. The City's main conservation goal is to reach 179 gpcd by the year 2030. The City believes their conservation efforts would have the greatest impact if they focus on finding and resolving leaks in their infrastructure.

CHAPTER 4 – CONSERVATION MEASURES & IMPLEMENTATION

The City believes that water conservation is an important strategy in its water management portfolio, now and in the future. City staff are aware of the conservation goals and work together to reach them. Water conservation efforts are overseen by the Public Works Director.

Travis Jockumsen, P.E.
Public Works Director
801-465-5235

EXISTING CONSERVATION MEASURES

Table 4-1 identifies water conservation measures that are currently being implemented by the City. The measures will continue to be implemented according to the plan indicated in Table 4-1. Payson City's current water conservation program is directed primarily at managing water shortages and providing useful material to assist residents to use water more efficiently. Current measures include a water management plan, water education program for outdoor and indoor water use, meter replacement and leak detection program, and a conservation-oriented water rate schedule.

Table 4-1: Existing Conservation Measures

Conservation Measure	Implementation Plan
<p><u>Payson City Water Management Plan</u></p> <p>City Council passed Resolution No. 06-02-2021-G to protect and preserve public health, welfare, and safety in the event of a water shortage. The plan includes conservation measures implemented during times of drought.</p>	<p>The level and severity of water shortage has been categorized into three phases according to the availability of irrigation water.</p> <p>Phase 1 – Regular Water Schedule of 3 days/week.</p> <ul style="list-style-type: none"> • Water up to three days per week. • Specific days of the week are given based on addresses. • Watering times are from 6pm to 10am. <p>Phase 2 – Current water supply is below the projected amount needed to complete the irrigation season.</p> <ul style="list-style-type: none"> • Water up to two days per week. • Specific days of the week are given based on addresses. • Watering times are from 6pm to 10am. <p>Phase 3 – Current water supply critically below the amount needed to complete the irrigation season.</p> <ul style="list-style-type: none"> • Water one day per week. • Specific day of the week is given based on addresses. • Watering times are from 6pm to 10am.
<p><u>Water Education Program</u></p> <p>The City periodically sends out water conservation tips in newsletter mailers for City residents.</p>	<p>Information on efficient outdoor and indoor water use is available to the City's citizens through the City and county libraries and is periodically distributed with water bills.</p>

Conservation Measure	Implementation Plan
Implement Tiered Rates for Drinking Water	The City has implemented tiered rates and reevaluates them based on consumption.
<p data-bbox="224 352 753 436"><u>Require New Developments to Water Landscaped Areas by an Automated Irrigation System</u></p> <p data-bbox="224 470 743 611">To conserve water, required landscape areas for all new development whether commercial, industrial, or residential shall be maintained using an automatic underground sprinkling system.</p>	Under City Ordinance (1-23-08), the City is requiring all landscaped areas within new developments inside City boundaries to be watered by an automated irrigation system.
<p data-bbox="224 632 678 653"><u>City Ordinances on Water Conservation</u></p> <p data-bbox="224 686 743 856">The City has written ordinances, such as City Ordinance 10.08.11 and 10.10.2 Wasting Water, 10.8.13 Use and Regulation of Fire Hydrants and Valves, 10.10.7 Prohibitions, and 10.10.11 Use of Drinking Water for Irrigation.</p>	The City writes ordinances to limit the use of drinking water and promote the use of irrigation water for all irrigation purposes.
<p data-bbox="224 873 678 930"><u>Meter Replacement and Leak Detection Program</u></p> <p data-bbox="224 963 748 1073">Over time, all meters become less accurate in recording actual flows. This leads to lost revenue to the City and inaccurate data to citizens.</p>	The City currently has a meter replacement program and has been working on replacing old meters.
<p data-bbox="224 1089 651 1146"><u>Adopt CUWCD's Water Conservation Measures</u></p>	The City offers CUWCD's conservation resources to their residents. These include landscaping classes, conservation education through water conservation gardens, and resources found through CUWCD's partner programs. These partner programs include toilet replacement and smart controller rebates, irrigation evaluations, and landscape design.

In addition to water conservation measures implemented by Payson City, residents of the District also have access to conservation measures that are implemented by Central Utah Water Conservancy District (CUWCD) and Utah Water Savers. A summary of their efforts is included below:

CUWCD

- Landscape Classes: CUWCD offers landscaping classes that focus on water conservation principles for residential and commercial water users.
- Lawn Maintenance and Vegetable Gardening: CUWCD offers tips and conservation practices on lawn care, watering practices, sprinkler repairs, and vegetable gardening.
- Water Conservation Gardens: CUWCD is promoting waterwise landscaping techniques by establishing water conservation demonstration gardens. Educational resources are available to help residents implement more water efficient practices into their own landscapes.

CUWCD Partner Programs

- **Toilet Replacement:** Old toilets are a leading cause of wasted water in Utah homes. Rebates are given for replacing toilets that use more than 1.6 gallons per flush and were installed in homes built before 1994.
- **Smart Controller Rebates:** Smart controllers can help save water by automatically adjusting watering schedules based on local weather and landscape needs. Rebates for smart controllers are available throughout the state.
- **Localscapes:** Localscapes is an approach to landscaping designed specifically for Utah. Cash rewards and plan reviews will be given for landscaping projects that meet program requirements.
- **Slow the Flow – Irrigation Evaluation:** Customers can sign up for a free consultation to get expert advice about their watering practices, landscape, and sprinkler system.

PROPOSED CONSERVATION MEASURES

Table 4-2 identifies water conservation measures that are proposed to be implemented by the City in the future. The City plans to continue the measures described in Table 4-1. Therefore, they have been included below with additional proposed measures to be implemented in 2022. The proposed conservation measures will be evaluated annually, after water use data has been reported, to measure progress.

Table 4-2: Proposed Conservation Measures

Conservation Measure	Implementation Plan
<p><u>Meter Replacement and Leak Detection Program</u></p> <p>Over time, all meters become less accurate in recording actual flows. This leads to lost revenue to the City and inaccurate data to citizens.</p>	<p>The City currently has a meter replacement program and will continue to replace old meters as needed.</p>
<p>Improve Efficiency in Irrigating City Parks and Other Open Spaces</p>	<p>Have all City parks and open spaces irrigation systems integrated into the City’s computer automated control system. This automated system will allow the City to better control and monitor the irrigation water system. The City plans on visiting with the Parks Superintendent to implement this conservation measure.</p>
<p><u>Water Education Program</u></p> <p>The City will continue to send out water conservation tips in newsletter mailers for City residents.</p>	<p>Information on efficient outdoor and indoor water use is available to the City’s citizens through the City and county libraries and will continue to be distributed with water bills.</p>
<p>Implement Tiered Rates for Irrigation Water</p>	<p>The City has already created tiered rates for the irrigation system and will implement them in 2022.</p>
<p><u>Continue to Adopt CUWCD’s Water Conservation Measures</u></p>	<p>The City will continue to offer CUWCD’s conservation resources to their residents. These include landscaping classes, conservation education through water conservation gardens, and resources found through CUWCD’s partner programs. These partner programs include toilet replacement and smart controller rebates, irrigation evaluations, and landscape design.</p>

Conservation Measure	Implementation Plan
<p data-bbox="224 289 764 346"><u>Add Metering Stations for Pressurized Irrigation System</u></p> <p data-bbox="224 378 716 466">This would aid in efforts to track water conservation and system losses, as well as identifying inefficiencies in the system.</p>	<p data-bbox="820 289 1386 406">The City plans to add new metering stations near irrigation water sources, such as at Spring Lake and at diversion structures down the canyon which are not currently metered.</p>

REFERENCES

- Environmental Protection Agency (EPA). 2017. *Water Audits and Water Loss Control for Public Water Systems*. 6/10/21. <<https://www.epa.gov/sites/production/files/2015-04/documents/epa816f13002.pdf>>
- Hansen, Allen & Luce, Inc. (HAL) and Bowen Collins & Associates (BCA). 2019. *Utah's Regional M&I Water Conservation Goals*. Utah Department of Natural Resources.
- Hansen, Allen & Luce, Inc. (HAL). 2020. *Payson 2020 Drinking Water Master Plan*. South Jordan, UT.
- Hansen, Allen & Luce, Inc. (HAL). 2020. *Payson 2020 Pressurized Irrigation Master Plan*. South Jordan, UT.
- Utah Division of Administrative Rules. 2019. *Utah Administrative Code, Definitions – Water Conservation Plan Required 73-10-32*. The Department of Administrative Services.
- Utah Division of Water Rights. 2020. *Public Water Supplier Information*. 6/09/21. <https://waterrights.utah.gov/asp_apps/viewEditPWS/pwsView.asp?SYSTEM_ID=1166>
- Utah Division of Water Rights. 2020. *Public Water Supplier Information*. 6/09/21. <https://waterrights.utah.gov/asp_apps/viewEditSEC/secView.asp?SYSTEM_ID=11427>

APPENDIX A

PAYSON CITY COUNCIL ADOPTION OF CONSERVATION PLAN

Public notice notification
Meeting minutes
Adoption signature page

APPENDIX B

EXAMPLES OF PAYSON CITY'S CONSERVATION MEASURES

RESOLUTION NO. 06-02-2021-G

A RESOLUTION BY THE PAYSON CITY COUNCIL IMPOSING WATER RESTRICTIONS FOR THE REMAINDER OF THE 2021 IRRIGATION SEASON.

WHEREAS, the Payson City Council is authorized to protect and provide for the public health, safety and general welfare of its citizens; and

WHEREAS, with the cooperation of the High Line Canal Company and the great efforts of the citizens of Payson, the City projects it will have sufficient irrigation water to make it to September 30, 2021; and

WHEREAS, while the City projects sufficient irrigation water to make it through the irrigation season for the irrigation year 2021, the Payson City Council believes it to be in the best interest of its Citizens to create three water shortage phases. The Phases are herein described as follows:

Phase 1: Watering up to three days per week. All water users with even numbered addresses shall water on Tuesday, Thursday and Saturday. All water users with odd numbered addresses shall water only on Monday, Wednesday and Friday. Large water users, churches, schools, City Parks and larger agricultural users will water on Mondays, Wednesday and Saturday. Watering times are from midnight to 10:00 a.m. and 6:00 p.m. to midnight. It is recommended that pop-up sprinkler heads operate at 30 minutes or less and rotating sprinkler heads operate at 40 minutes or less. There shall be no hard-surface washing of driveways and parking lots.

Phase 2: This Phase is initiated when the water supply is below the projected amount needed to complete the irrigation season. All water users with even numbered addresses shall only water on Tuesday and Saturday. All water users with odd numbered addresses shall water only on Monday and Friday. Large water users, churches, schools, City Parks and larger agricultural users will water on Wednesday and Saturday. Watering times are from midnight to 10:00 a.m. and 6:00 p.m. to midnight. It is recommended that pop-up sprinkler heads operate at 30 minutes or less and rotating sprinkler heads operate at 40 minutes or less. There shall be no hard-surface washing of driveways and parking lots.

Phase 3: This Phase is initiated when the current water supply is critically below the amount needed to complete the irrigation season. All water users with even numbered addresses shall only water on Tuesday. All water users with odd numbered addresses shall water only on Wednesday. Large water users, churches, schools, City Parks and larger agricultural users will water on Thursday. Watering times are from midnight to 10:00 a.m. and 6:00 p.m. to midnight. It is recommended that pop-up sprinkler heads operate at 30 minutes or less and rotating sprinkler heads operate at 40 minutes or less. There shall be no hard-surface washing of driveways and parking lots.

WHEREAS, the Payson City Council would like the city properties to continue with the same watering schedules of three days per week with the exception of the priority parks, which include

the Cemetery, Memorial Park, Recreation fields, Gladstan Golf Course, Corridors along Main Street, 930 West and 800 South, Peteetneet Area near amphitheater and north Rose Garden; and

WHEREAS, Payson City water staff will monitor the water usage throughout the City and recommend changing the number of days that users are allowed to water based on the available water and the amount of usage throughout the City. The water usage will be monitored on an Excel Spreadsheet and updates posted weekly to Social Media and the City Website to let users know if water usage is increasing and if a projected restriction is required; and

WHEREAS, section 10.5 of the Payson City Ordinance authorizes and empowers the Mayor during times of emergency to issue an order restricting the use of water; and

NOW, THEREFORE, I, William R. Wright, Mayor of the Payson City, do hereby proclaim and declare that effective June 2, 2021, and continuing until the end of the irrigation season (September 30, 2021), the Citizens of Payson shall restrict watering in accordance with Phase 1, Phase 2 or Phase 3 detailed above and hereby implements Phase 1 water restrictions as follows:

All water users with even numbered addresses shall water only on Tuesday, Thursday and Saturday.

All water users with odd numbered addresses shall water only on Monday, Wednesday and Friday.

Large water users, Churches, Schools, City Parks and larger agricultural users will water on Monday, Wednesday, and Saturday.

Watering times are from midnight to 10:00 a.m. and 6:00 p.m. to midnight. It is recommended that pop-up sprinkler heads operate at 30 minutes or less and rotating sprinkler heads operate at 40 minutes or less.

There shall be no hard-surface washing of driveways and parking lots.

It is unlawful for any pressurized irrigation user to waste water by imperfect stop-taps, valves, leaky joints, or pipes. Water shall not be wasted by allowing water to run from hose bibs, excessive watering, open pipes, or other apparatus, or to use the water in such a manner as to cause it to overflow into the neighboring yards, properties, streets or sidewalks.

City employees will be enforcing the water restrictions first with a warning and then with a citation. The first citation shall be considered an infraction with a recommended fine of \$100.00. The second and subsequent citation shall be considered a Class C Misdemeanor and shall require a mandatory court appearance in the Payson Justice Court and may result in a fine of \$500.00 and/or incarceration up to ninety (90) days.

Watering of City Properties

In addition to the above-stated water restrictions, Payson City will adhere to the following priorities in watering its properties within the city limits:

1. Cemetery
2. Memorial Park
3. Recreation fields

4. Golf Course
5. Corridors along Main Street, 930 West and 800 South
6. Petetneet Area near amphitheater and north Rose Garden
7. All other city properties will be kept alive but not watered consistently.

Dated this 2nd day of June, 2021.

William R. Wright, Mayor

ATTEST:

Kim E. Holindrake, City Recorder



Payson City Water Management Plan

GUIDE FOR WATER CONSERVATION

What is the water management plan?

The Payson City water management plan is intended to protect and preserve public health, welfare, and safety in the event of a water shortage. This plan is designed to monitor the city's irrigation supply and make educated decisions regarding water restrictions.

It is important for any Payson water user (municipal, commercial, and residential) to understand how to appropriately respond to a water shortage. This document explains how a water shortage is defined, what action should be taken by city administration and Payson water users, and how the provisions will be enforced. The provisions of this plan apply to all persons, customers, and property utilizing water provided by Payson City.

Water Shortage Phases




The Payson City Water Department regularly monitors the level of city water resources. Twice a month during the water usage season (June, July, August and September), the Payson Water Department will use data collected internally, as well as data provided from external sources, such as Strawberry High Line Canal and Strawberry Water Users Association, to determine the drought conditions in Payson City. Based upon the water available for irrigation purposes, the water department will recommend the water shortage phase to be implemented by the Payson City Mayor & Council.

The level and severity of water shortage has been categorized into three phases according to the availability of irrigation water.

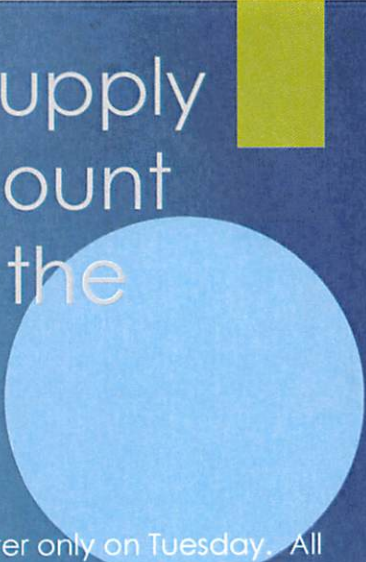
Phase 1 Regular water schedule of three days per week.

Phase 1: Watering up to three days per week. All water users with even numbered addresses shall water only on Tuesday, Thursday and Saturday. All water users with odd numbered addresses shall water only on Monday, Wednesday and Friday. Large water users, Churches, Schools, City Parks and larger agricultural users will water on Mondays, Wednesdays, and Saturdays. Watering times are from midnight to 10:00 a.m. and 6:00 p.m. to midnight. It is recommended that pop-up sprinkler heads operate at 30 minutes or less and rotating sprinkler heads operate at 40 minutes or less. There shall be no hard-surface washing of driveways and parking lots.



Phase 2 Current water supply is below the projected amount needed to complete the irrigation season.

Phase 2: All water users with even numbered addresses shall water only on Tuesday and Saturday. All water users with odd numbered addresses shall water only on Monday and Friday. Large water users, Churches, Schools, City Parks and larger agricultural users will water on Wednesdays and Saturdays. Watering times are from midnight to 10:00 a.m. and 6:00 p.m. to midnight. It is recommended that pop-up sprinkler heads operate at 30 minutes or less and rotating sprinkler heads operate at 40 minutes or less. There shall be no hard-surface washing of driveways and parking lots.



Phase 3 Current water supply critically below the amount needed to complete the irrigation season.

Phase 3: All water users with even numbered addresses shall water only on Tuesday. All water users with odd numbered addresses shall water only on Wednesday. Large water Users, Churches, Schools, City Parks and larger agricultural users will water on Thursday. Watering times are from midnight to 10:00 a.m. and 6:00 p.m. to midnight. It is recommended that pop-up sprinkler heads operate at 30 minutes or less and rotating sprinkler heads operate at 40 minutes or less. There shall be no hard-surface washing of driveways and parking lots.

Enforcement

Payson City has established a progressive enforcement strategy that is intended to educate water users about proper water conservation and provide punitive action for repeat violators.

- First violation:** Written warning to water user.
- Second violation:** Infraction Citation is issued. \$100 fine and warning of subsequent violations.
- Third & subsequent violations:** Misdemeanor Citation and mandatory appearance. \$500 fine.

Exceptions are made for new lawns that require frequent irrigation within 30 days for establishment purposes. Exceptions are also made for short cycles required for testing, inspecting, and maintaining irrigation systems.