

Payson Water Use and Preservation Element of the General Plan

Water has always been a key component in Payson's general plan elements. Current state law requires municipalities to include a Water Use and Preservation Element in their General Plan (SB110, 2022; Utah Code §73-10-32). This water use element connects existing land use planning, water supply management, and conservation into a single framework. It outlines how development patterns affect water demand, how infrastructure must be planned to support that demand, and how conservation goals help extend available water supplies.

The following sections define Payson's approach to water management based on strategies previously outlined in the 2021 Payson Water Conservation Plan as guiding principles (Payson City, 2021).

1. Water Conservation Goals & Policies

Payson City is committed to sustainable water resource management, involving conservation practices directly with patterns of growth and land use. Guided by SB110 (2022) and Utah Code §73-10-32, this element defines how the City will set conservation goals, adopt supporting policies, and align with regional targets established for the Provo River Basin. The emphasis on building a framework that reduces per capita demand, curbs waste, and establishes development patterns that can be supported by the City's long-term supply. These principles establish the foundation for regional and municipal conservation goals and guide Payson's long-term water management.

1.1 Regional & Municipal Conservation Goals

Payson City operates within the Provo River Region, where a regional conservation goal has been established to guide municipal and industrial water planning. By 2030, communities in the region are expected to reduce demand by 20 percent from their 2015 water usage. This benchmark, set by the Utah Division of Water Resources in the Regional Water Conservation Goals Report (Utah DWR (Division of Water Resources), 2019), provides the reference point for local planning. Payson formally adopted the target in its 2021 Water Conservation Plan (Payson City, 2021), aligning municipal objectives with state and regional directives.

The City's plan serves a dual role. It is the operational framework for local water management, and it fulfills the requirements of Utah Code §73-10-32, which requires systems with more than 500 water service connections develop and adopt water conservation plans, and update those plans every 5 years. Within that operational

framework, Payson has committed to reducing water consumption from the 2015 baseline of 222 gpcd (gallons per capita per day) to 179 gpcd by 2030 (Payson City, 2021).

1.2 Municipal Policies for Water Conservation

To support the adopted conservation goal of 179 gpcd by 2030, Payson City's 2021 Water Conservation Plan outlines strategies for residential, commercial, and institutional water use (Payson, 2021). This goal will be measured through meter readings and tracking water usage throughout the different users. If Payson City sees an area that is not conserving and this goal is not looking like a reality, the City will look at raising water rates to encourage water conservation through a cost to discourage high usage. These measures focus on reducing demand, improving utility management, and curbing waste. Because outdoor irrigation remains the largest driver of municipal water use, especially in the summer, the City has set goals and adopted landscape policies aimed at cutting non-functional outdoor consumption while preserving community character and public amenities. These policies guide existing and future use toward water-wise standards and set enforceable, consistent requirements for both public and private development.

Existing policies include:

- Payson City Water Management Plan
 - Resolution No. 06-02-2021-G to protect and preserve public health, welfare, and safety in the event of a water shortage, including drought-related conservation measures.
- Water Education Program
 - The City periodically sends out water conservation tips in newsletters.
- Tiered Water Pricing
 - The City has implemented tiered culinary and irrigation water rates and reevaluates them based on consumption.
- Automated Irrigation Systems
 - City Ordinance (1-23-08) requires all landscaped areas within new developments to be watered by an automated irrigation system.
- Improve Efficiency in Irrigation City Parks and Other Open Spaces
 - To help reduce water consumption in line with the 2030 target of 179 gpcd the City is integrating all parks and open spaces into the computer automated control system.
- Water Conservation Ordinance
 - The City has written ordinances, 4.08.110, 4.08.130, and 4.04.090 to promote the use of irrigation water for all irrigation purposes.
- Meter Replacement and Leak Detection Program
 - The City has a meter replacement program and has been replacing meters that stop working in phases as the budget will allow. This will be completed over a

ten-year period. Payson City is actively replacing meters and will start doing more leak detection and replacing the worst lines first starting in three to five years. These changes will better inform water usage measurements by land use type, including tracking of conservation efforts. Accurately measuring trends will ensure that future ordinances and conservation strategies can be tailored to the actual usage by type of user.

- Public Demonstration Landscapes
 - City facilities, parks, and transportation corridors include xeriscape demonstration areas with signage to illustrate practical water-saving landscape designs for residents and developers. The City has begun incorporating xeriscaping into landscaping (see images below), and plans to expand and improve these installations over time.
- Regional Water Conservation Measures
 - The City offers Central Utah Water Conservancy District's (CUWCD) WES conservation resources to residents, including promoting partner incentive programs.



Payson’s conservation policies and programs combine financial incentives, regulatory tools, system monitoring, and public participation to create a program that meets state requirements and builds a culture of water use efficiency. A central focus of these efforts is landscaping, where the City has begun addressing outdoor irrigation as the largest driver of seasonal demand. The standards adopted aim to cut water use, improve irrigation efficiency, and reduce maintenance costs. These measures conserve water and preserve community character to lay the groundwork for broader land use and development standards in Section 2.

2. Land Use & Development Standards

Land use decisions carry lasting weight in how a city consumes water. Every subdivision plat, zoning ordinance, and landscape standard influences future demand more than any short-term program can. Payson City recognized this in its 2021 Water Conservation Plan, which identified code refinement as a central strategy for achieving regional goals (Payson City, 2021). Since then, the City has begun aligning its ordinances with conservation principles, demonstrating that water stewardship can be advanced not only through operations but through the rules that shape development. This section evaluates the effectiveness of those ordinances and identifies refinements that reflect current best practices and community expectations.

2.1 Ordinance Review Summary

Payson’s Title 13 – Water Efficiency Standards For Landscaping ordinance has been the primary tool for turning conservation goals into enforceable requirements. The code has set clear expectations for landscaping and irrigation in new development, helping ensure that growth is not detached from the City’s water objectives. However, evaluation of Title 13 and related water policies against state and regional guidance shows that some provisions could be strengthened.

Turf is still allowed, but not recommended in planter strips under 8’ in width which are recognized in the Regional Water Conservation Goals Report (Utah DWR, 2019) as inefficient landscape areas. Irrigation requirements stop short of specifying smart technologies such as drip systems, weather-based controllers, or pressure-regulated heads, though these are identified in the Utah Best Management Practices Guide (Utah Department of Natural Resources (DNR), DWR, n.d.) as baseline standards. Large developments, including multifamily and institutional sites, are not required to provide landscape water budgets at plan review, despite recommendations in the 2025 Water Conservation Plan Guide (Utah DWR, 2025) that budgets be used to benchmark irrigation demand. Decorative water features also lack criteria for recirculation, leaving efficiency dependent on design preference. These recommendations may be implemented in the future but are not required at this time in the City.

These details illustrate how Title 13 has provided a strong base for conservation but has not yet fully incorporated the efficiency measures now recommended across Utah communities.

2.2 Recommended Zoning and Ordinance Updates

State and regional guidance consistently points to outdoor irrigation as the area where cities can achieve the greatest reductions in per capita use (Utah DWR, 2019). To reflect that guidance, Payson can create standards in several ways:

- Prohibit turf in new or redeveloped strips, medians, and planting areas less than eight feet wide, reserving irrigated turf for recreation or civic use.
- Require xeriscape principles in new development and major remodels, prioritizing drought-tolerant and native species, hydrozoning, and mulched beds.
- Encourage drip irrigation in non-turf areas and require weather-based controllers, rain sensors, and pressure-regulated heads in automated systems.
- Require water budgets for commercial, multifamily, and institutional projects and include them as part of the current plan review process (Utah DWR, 2025).
- Limit potable-fed fountains and ponds to recirculating systems that serve a civic or cooling function, consistent with the Best Management Practices Guide (Utah DWR, n.d.).
- Promote drought-tolerant shade trees that provide cooling benefits without significantly increasing irrigation demand.
- Explore a local or partner turf conversion program modeled after the state's Flip Your Strip initiative to retrofit existing landscapes (Utah DWR, 2019).

These refinements extend the role of ordinance from regulating aesthetics to directly managing water performance. In doing so, they position Payson to meet state conservation targets while ensuring landscapes remain functional and sustainable.

2.3 Landscaping Requirements for New Development

When ordinance standards are applied to new development, they shape landscapes that will determine water demand for decades. Regional documents such as the Growing Water Smart Guidebook (Kopp & Endter-Wada, 2023) and the Integrating Land & Water Planning Guide (Utah DWR, n.d.) highlight several strategies that are not yet common in Payson's code but can be incorporated.

Minimum soil depths with organic amendments ensure planting areas retain moisture and reduce irrigation demand. Grading that directs stormwater into swales, rain gardens, or infiltration basins supplements irrigation supply while reducing runoff. Functional turf areas can be clearly distinguished from non-functional spaces, limiting high-water landscapes to playfields or civic gathering areas.

Performance verification is also important. Irrigation systems can be inspected before occupancy, with as-built plans submitted to confirm installation matches design intent. Submetering of HOA-maintained common areas makes it possible to track shared irrigation use against approved water budgets, creating accountability and linking neighborhood demand back to City conservation goals (Utah DWR, 2025).

By embedding these requirements into the development process, Payson can ensure new developments contribute to the City's commitment to water stewardship. Payson will work to update Title 4.04 through water rates to ensure systems meet the conservation goals of the City. Work on updating Title 12.34.030 will be done in the next three years to require a building permit to include the sprinkler plan so that conservation through a well designed sprinkler system will also occur.

3. Water Supply & Infrastructure Planning

Payson's approach to water use and preservation has always been grounded in infrastructure planning. The City regularly updates its master plans to evaluate existing conditions, anticipate future needs, and guide capital investment. The 2020 Drinking Water Master Plan evaluates wells, springs, and storage tanks that make up the culinary system (Payson City, 2020a), while the 2020 Pressurized Irrigation Master Plan details how untreated sources are captured and delivered for outdoor use (Payson City, 2020b). Together, these plans form the roadmap for balancing supply and demand, identifying when new sources or facilities will be needed, and sequencing projects to match growth.

By maintaining these plans in compliance with Utah Code §19-4-114, the City accounts for projected population growth, pressure zone performance, and seasonal irrigation demand (Utah Code, 2023). This integrated process allows Payson to evaluate the long-term sustainability of both culinary and secondary systems, ensuring that future development does not outpace available capacity.

In addition to the Master Plans, Payson has also started developing data tables that will track connections by type, water usage, source and storage capacity, and more. This information will ensure that new development does not exceed the existing supply, and future infrastructure is adequately planned.

3.1 System Capacity

Payson's service area is shown in Figure 1.

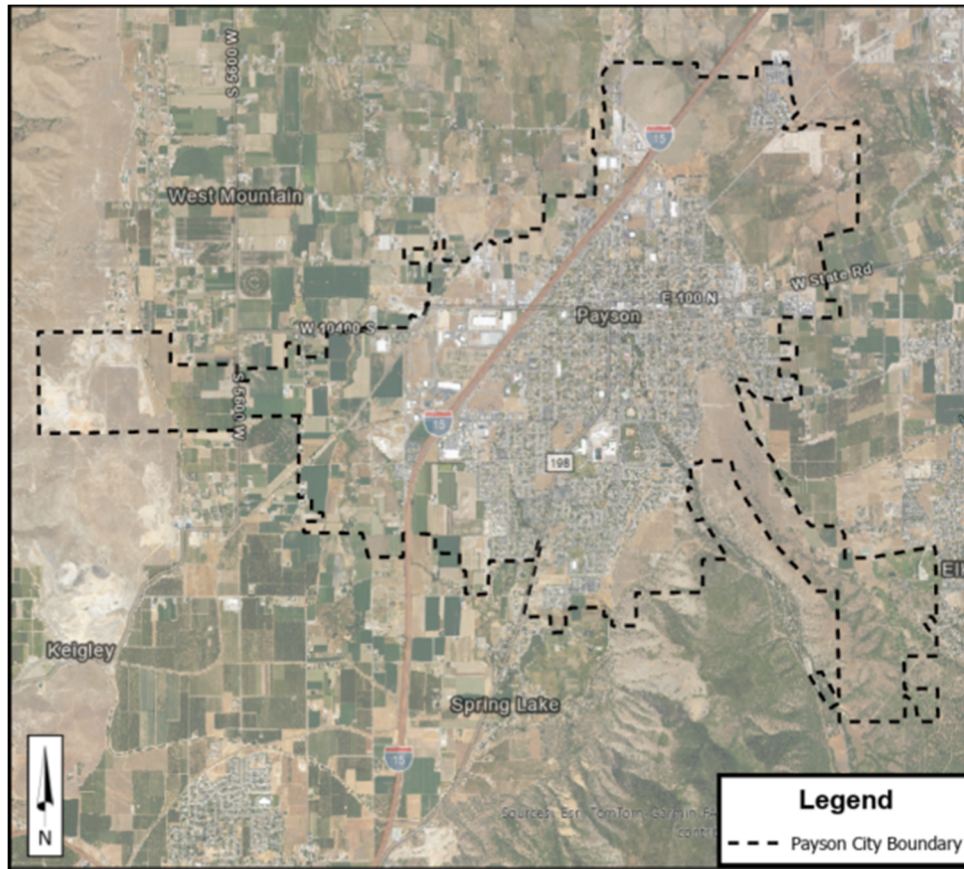


Figure 1. Payson Service Area

Payson’s culinary water system currently serves more than 7,100 connections, drawing primarily from groundwater wells and high-quality springs in Payson Canyon. The annual capacity (reliable supply) is based on the limitation of either infrastructure capacity, water rights, or physical water supply (aquifer capacity). Payson is working to refine these numbers over time through the data table development.

Three storage tanks with a combined capacity of 5.6 million gallons provide balance to daily demand, stabilize pressures across the network, and ensure reserves for fire protection and emergency conditions (Payson City, 2020a). Together, these sources and facilities have reliably supported the community through recent growth and form the backbone of the City’s supply. A summary of source and storage capacity is shown in Table 1. With the safe yield of the sources being 9,000 ac-ft and the total annual capacity being 11,211 ac-ft the shortage of available water will be made up in two options. Option 1 is that more wells will be drilled as the demand from growth happens, or Option 2 is that Central Utah Water Conservancy District will construct a new culinary water treatment plant in Salem Utah that will be delivered to the City and supply the shortage in source water that Payson City will need. Option 2 is already being discussed and will most likely be ready for use in 10 to 15 years.

Table 1. Drinking Water Source and Storage Capacity

Drinking Water Sources	
Source	Annual Capacity (ac-ft)
Springs	1,129
Well #1 (Park Well)	2,016
Well #2 (Fairground Well)	2,904
Well #5	1,936
Red Bridge Well	3,226
Total¹	11,211
Drinking Water Storage Facilities	
Tank	Capacity (MG)
Tank 1	2.5
Tank 2	2.5
Tank 3	0.6
Total	5.6

1. Safe yield capacity is closer to 9,000 ac-ft when considering dry years and safe yield of the aquifer.

The pressurized irrigation system, supplied by Well No. 4 and seasonal flows from Peteetneet Creek, and the irrigation water delivered through the Highline Canal has become one of Payson's most effective conservation tools. With over 5,200 connections, this secondary network shifts outdoor irrigation away from potable supplies, extending the useful life of the culinary system and reducing peak summer demand (Payson City, 2020b). The 2020 Pressurized Irrigation Master Plan outlines strategies to maintain reliability, diversify seasonal sources, and expand service into new neighborhoods as development occurs. The Strawberry Highline Canal delivers water to the lower irrigation pond and this is the location that services the City irrigation system from this entity. A summary of source and storage capacity is outlined in Table 2. This is based on either water right or infrastructure capacity. With the safe yield of the sources being 13,000 ac-ft and the total annual capacity being 18,325 ac-ft the shortage of available water will be made up through a combination of acquiring more Strawberry Highline Canal Water through development. Payson City allows Strawberry Highline Canal Water and ULS Water as the only additional water that can be dedicated to Payson City through development. A developer is required to provide the Strawberry water, if it has been used on the property, if they want to develop or they can purchase our ULS water. Currently Payson City uses approximately 3,000 acre-ft of our Strawberry Highline Canal supply and with the addition in a year and a half of the ability to use the ULS water, we are able to meet the demand for future growth for many years to come. The numbers listed with the safe yield will also be helped with the water conservation efforts described in this report.

Table 2. Pressurized Irrigation Source and Storage Capacity

Pressurized Irrigation Water Sources	
Source	Annual Capacity (ac-ft)
Strawberry High Line Canal	3,790
Dry Creek (Peteetneet Creek & Foreba)	2,090
Gladstan Well (Golf Course Well)	768
Well No. 4	947
Spring Lake	1,352
Utah Lake System (ULS)	6,382
Total¹	18,325
Pressurized Irrigation Storage Facilities	
Reservoir	Capacity (ac-ft)
Upper Pond	10
Lower Pond	25
Total	35

1. Safe yield capacity is closer to 13,000 ac-ft when considering dry years and safe yield of the aquifer.

The following are the main canal companies:

- Strawberry High Line Canal: 801-465-4824
- Utah Lake System (ULS): Central Utah Water Conservancy District

Both the culinary and irrigation master plans emphasize that distribution performance is as critical as source capacity. Hydraulic modeling shows that future growth will require not just new sources but also upsizing key transmission mains and adjusting pressure zones to maintain efficient service (Payson City, 2020a; 2020b). These projects are costly, and the timing of when they must be built is tied directly to the pace of demand growth. By lowering peak use and reducing overall consumption, conservation helps defer the need for new wells, storage tanks, and transmission lines. Every gallon conserved stretches existing capacity further, postpones capital expenditures, and lowers the financial burden on both the City and its residents (Payson City, 2021).

3.2 Historical and Future Demand

The following section outlines the historical water usage throughout the system. Figure 2 illustrates the per capita water usage in the drinking water and pressurized irrigation system.

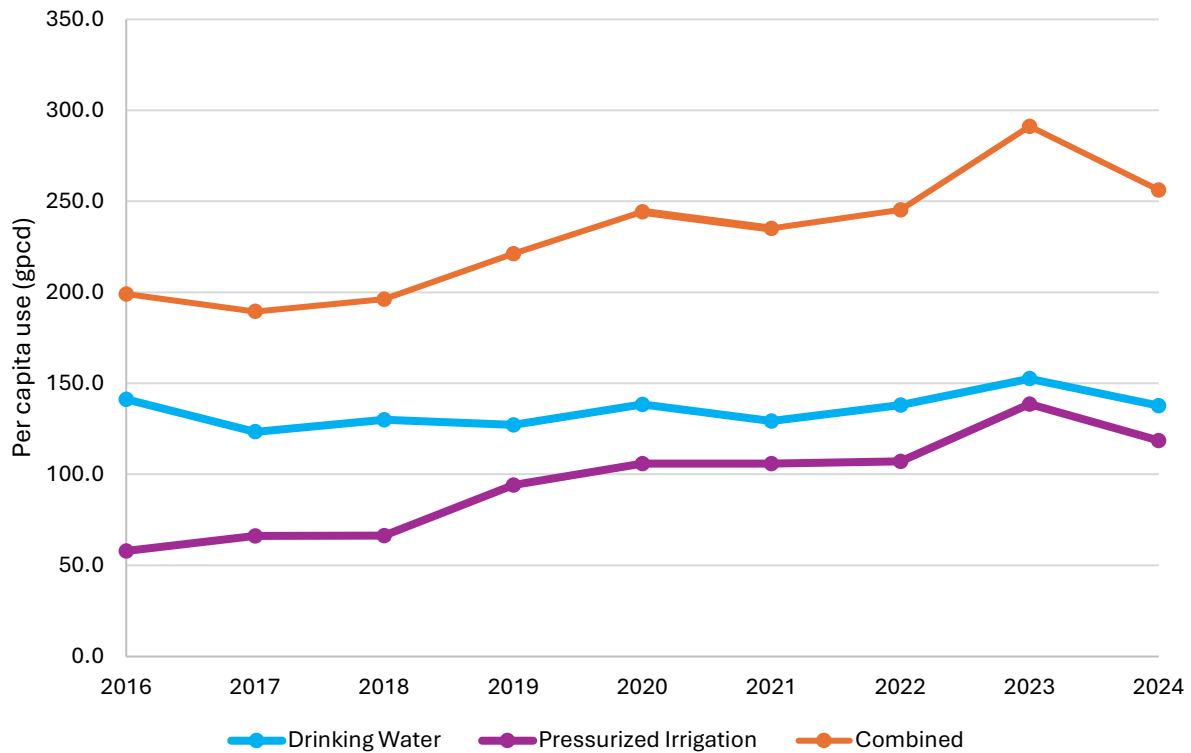


Figure 2. Per Capita Water Usage Trends

Water usage per capita has trended up over time, highlighting the importance of water conservation. Payson City understands the importance of this and will work towards implementing additional water conservation efforts.

Figure 3 shows the number of connections, and volume of water usage by connection on the drinking water system.

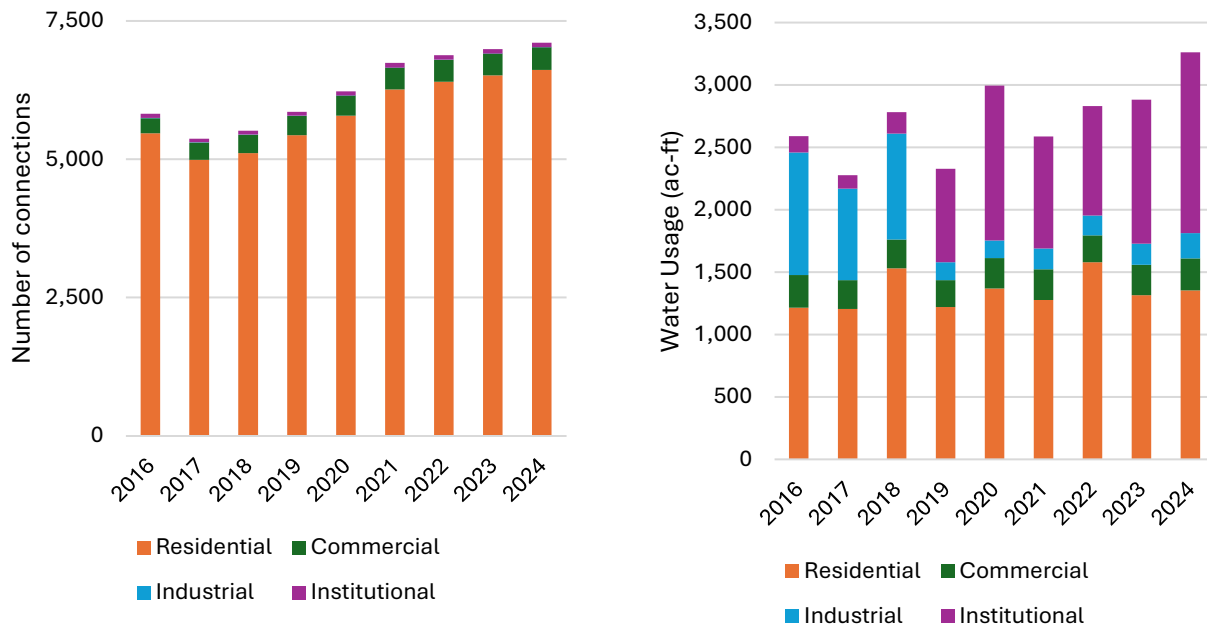


Figure 3. Drinking Water Usage by Connection Type

Understanding water usage by user will help inform future land use planning decisions. Through the data tables, this effort will be tracked more closely to ensure users do not exceed their allocated usage. Water usage by connection type on the pressurized irrigation system is not as defined as meters have just been recently installed. As more data is collected, this information will be tracked more closely.

Existing and future demands were taken from the Drinking Water and Pressurized Irrigation Master Plans (Payson City, 2020a; Payson City, 2020b). The demands are compared against the water supply capacity listed in Tables 1 and 2. A summary is shown in Table 3.

Table 3. Existing and Future Demand Against Source Capacity

Drinking Water System		
Existing Demand (2020)	Source Capacity	Remaining Capacity
3,191 ac-ft	~9,000 ac-ft	5,809 ac-ft
Future Demand (2060)	Source Capacity	Remaining Capacity
7,185 ac-ft	~9,000 ac-ft	1,815 ac-ft
Pressurized Irrigation System		
Existing Demand (2020)	Source Capacity	Remaining Capacity
3,549 ac-ft	~13,000 ac-ft	9,451 ac-ft
Future Demand (2060)	Source Capacity	Remaining Capacity
6,304 ac-ft	~13,000 ac-ft	6,696 ac-ft

Table 3 shows there is sufficient source capacity if all of the source facilities are operational. However, this is not the case if a source is unavailable, the safe yield is less in the future, or other circumstances exist that may hinder source capacity. Redundancy in the system is necessary to ensure that sufficient water supply is available to Payson City residents. Water conservation should also continue to be promoted to ensure that existing and future users don't exceed their allocated usage.

As Payson City continues to plan and utilize the data tables, permitted development and its water usage will be tracked against the available source and storage capacity. Payson City has the necessary frameworks to ensure new development, based on land use, is planned against the reliable water supply.

3.3 Infrastructure Improvements and Asset Management

Meeting Payson's future water demand will require both expansion of capacity and diligent care of existing facilities. The City's master plans identify where growth will add pressure, and which improvements must be prioritized (Payson City, 2020a; 2020b). Hydraulic modeling shows that several transmission mains will need to be upsized to move future peak flows, while growth toward the east bench will require an elevated storage tank and new booster facilities to maintain service in higher pressure zones (Payson City, 2020a). Adjustments to pressure zones are also anticipated, which can improve energy efficiency and reduce pumping costs. These projects are sequenced in the Capital Facilities Plan to provide a practical schedule for investment and to align with the timing of development (Payson City, 2020a).

At the same time, Payson is strengthening its asset management program to extend the life of existing infrastructure. SCADA technology provides real-time monitoring of wells, tanks, and pressure zones; scheduled pipe replacement reduces the risk of costly failures; and meter calibration and leak detection programs help control non-revenue water and improve demand forecasting (Payson City, 2021). By investing in both expansion and maintenance, the City ensures that today's network remains reliable while preparing for tomorrow's needs.

Infrastructure projects are inherently expensive, and each new tank, pipeline, or booster station represents a multimillion-dollar investment. Conservation helps manage these costs by reducing the pace at which capacity projects must be built, allowing the City to delay or downsize improvements. In this way, water efficiency is not only a resource strategy but also a financial tool, lowering capital requirements, stabilizing long-term rates, and protecting residents from the escalating costs of growth (Utah DWR, 2025).

4. Preserving our Community through Conservation

Preserving water in Payson is more than planning documents, policies, and operations. Our community members demonstrate true stewardship of our water resources every day in

use across homes, businesses, and public spaces. Our neighbors encourage efficient water use in both public and private systems. The community as much as any policy is supporting the City's goal of reducing per capita use to 179 gallons per capita per day (gpcd) by 2030 (Payson City, 2021). Steady progress has been made toward this benchmark, and our community remains committed to continuing that trajectory.

4.1 Shaping our City's Growth

The way Payson grows will shape how water is used for generations. Residents, developers, and City planners already work together to ensure that efficiency standards are part of every new neighborhood. Smaller irrigated lots, shared open spaces, and proper soil preparation reduce demand without sacrificing amenities. Choices like planting drought-tolerant trees and groundcover, limiting turf to functional areas, and adopting efficient irrigation systems are becoming the norm. By ensuring that water supply and distribution are in place before new development proceeds, our community is helping growth align with system capacity. This approach avoids unnecessary costs and protects reliability for everyone. Payson City will work to incorporate these components into future ordinances.

4.2 Preserving our Community

Most of Payson's water use still comes from established neighborhoods, and here too the community is making a difference. Homeowners and HOAs are replacing ornamental grass with drought-friendly landscapes, particularly in visible areas such as park strips and medians. Families are upgrading irrigation systems with smart technology, and older homes are being fitted with fixtures and appliances that promote water preservation. In multifamily settings, submetering helps neighbors take shared responsibility for irrigation. City parks and facilities lead by example, showcasing landscapes that use less water while preserving community character. These collective efforts show that conservation is not just a policy; it is part of how Payson residents care for their homes and neighborhoods.

4.3 A Community Legacy of Stewardship

Water has always been part of Payson's story. When our ancestors settled here, irrigation ditches were dug to support crops and families; later their descendants laid the framework for our drinking water and pressurized irrigation systems. Today, conservation ordinances, universal metering, and thoughtful planning continue that tradition. Master plans identify where new wells, tanks, ponds, and pipelines will be needed, and conservation reduces the pace and scale of those investments. Small and simple measures preserve existing infrastructure so our water systems remain reliable, affordable, and resilient, sustaining the community that has grown here for more than 150 years and will continue to thrive for generations to come.

References

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