



CITY OF OREM  
PLANNING COMMISSION MEETING  
56 North State Street, Orem, Utah  
July 16, 2025

*This meeting may be held electronically  
to allow a Commission member to participate.*

4:30 PM Work Session – CITY COUNCIL CONFERENCE ROOM, 56 NORTH STATE STREET,  
OREM, UT

- 1 General Plan Update Continued**
- 1 Water Conservation Element, Introduction, and Overview**
- 1 Housing and Moderate Income Housing Report Discussion**
- 1 Land Use Element Discussion**
- 1 Redevelopment Chapter Discussion**

5:30 PM REGULAR SESSION – CANCELED

- 1. CALL TO ORDER
  - 1.1 No Items for Discussion, Regular Session Canceled**
- 2. INVOCATION/INSPIRATIONAL THOUGHT: BY INVITATION
- 3. 5:30 PM SCHEDULED ITEMS
  - 3.1 No Items for Discussion, Regular Session Canceled**
- 4. MINUTES REVIEW AND APPROVAL
- 5. ADJOURN

**THE PUBLIC IS INVITED TO PARTICIPATE IN ALL PLANNING COMMISSION MEETINGS.**  
If you need a special accommodation to participate in the Planning Commission Meetings and Study Sessions,  
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**This agenda is also available on the City's webpage at [orem.org](http://orem.org)**





# INTRODUCTION

DRAFT -- FOR DISCUSSION PURPOSES ONLY -- DRAFT

## Orem City General Plan

### Chapter 9 - Water Use and Preservation

#### INTRODUCTION

This chapter provides:

- A description of water system basics.
- A snapshot of current and future water use in Orem.
- Existing and proposed water planning goals and strategies.
- Recommendations for additional goals and policies to reduce water demands in current and future developments.

Between 2010 and 2020, Utah State was ranked by the US Census Bureau as the fastest growing state in the nation<sup>1</sup>. By 2065, the population is expected to double, increasing demand for and stretching finite water resources even further.<sup>2</sup>

“Utah ranked driest on record for 2020 with two additional western states ranking second driest. In fact, Utah's 7.23 inches of annual precipitation was 0.89 inches less than the previous record set in 1956.”<sup>3</sup> with much of Utah under “extreme” or “exceptional drought.”

Although the water situation has improved since 2020, as of November, 2024, most of Utah is still classified as “abnormally dry” by the U.S. Drought Monitor.<sup>4</sup>

In Utah, water conservation is an issue that touches everyone. Ensuring adequate water for the future is a major concern for state and local leaders, water providers, and the public.

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<sup>1</sup> U.S. Census Bureau. (2021, August 25). *Utah: 2020 Census*.

<https://www.census.gov/library/stories/state-by-state/utah-population-change-between-census-decade.html>

<sup>2</sup> Utah Governor's Office of Management and Budget. (2016). *Population projections 2015–2065*.

Retrieved

[https://d36oiwf74r1rap.cloudfront.net/wp-content/uploads/2016/10/2016\\_10\\_07\\_StateProjections-Final-for-Print.pdf](https://d36oiwf74r1rap.cloudfront.net/wp-content/uploads/2016/10/2016_10_07_StateProjections-Final-for-Print.pdf)

<sup>3</sup> National Centers for Environmental Information. (2021, January 12). *Annual 2020 National Climate Report*. National Oceanic and Atmospheric Administration.

<https://www.ncei.noaa.gov/access/monitoring/monthly-report/national/202013>

<sup>4</sup> National Drought Mitigation Center. (2024). *U.S. Drought Monitor*. University of Nebraska–Lincoln.

Retrieved from <https://droughtmonitor.unl.edu/>

## Requirement For Water and Preservation Element in General Plan

The Utah State Legislature adopted Senate Bill 110 in 2022 - *Water as Part of the General Plan* which requires municipalities and counties to amend their general plans to consider how land use planning impacts water use.<sup>5</sup>

The 2020 US Census established the population of Orem City 98,129.<sup>6</sup> The city is 18.63 square miles in area.<sup>7</sup> The city's water system serves approximately 23,530 connections, including residential, commercial, and institutional users.<sup>8</sup>

The median residential single-family lot in Orem City is 9,150 square feet in size.<sup>9</sup> The Utah Division of Water Resources determined that on average 50% of residential lots are dedicated to landscaping.

TABLE 1 - Single-Family Residential Landscaping

	Orem City	Utah County
<b>Median Single-Family Residential Lot Size*</b>	9,150 sq ft	
<b>Average Single-Family Lot Size*</b>	11,160 sq ft	13,154 sq ft <sup>10</sup>
<b>50% Average Landscaping per lot</b>	5,580 sq ft <sup>11</sup>	
<b>Number of Single-Family Lots (est)</b>	16,240 <sup>12</sup>	
<b>Area of Single Family Landscaping (est)</b>	2,101 acres 3.28 sq miles	

\* In Orem, excludes PRD/PD lots with common open space.

<sup>5</sup> Utah State Legislature. (2022). *S.B. 110: Water as Part of General Plan*. Retrieved from <https://le.utah.gov/~2022/bills/sbillenr/SB0110.pdf>

<sup>6</sup> U.S. Census Bureau. (2020). *P1: Demographics*. In *2020 Decennial Census*. Retrieved from <https://data.census.gov/table/DECENNIALPL2020.P1?q=orem%20population%202020>

<sup>7</sup> City of Orem. (2024). *City Boundary Layer*. ArcMap GIS.

<sup>8</sup> City of Orem. (2022). *Water Conservation Plan* (Table 1, p. 5).

<sup>9</sup> City of Orem. (2024). *Orem Parcel Layer*. ArcMap GIS database.

<sup>10</sup> Utah Division of Water Resources. (2019). *Regional water conservation goals: Supporting a water-wise Utah*. Retrieved from [https://conservewater.utah.gov/wp-content/uploads/2021/05/Regional-Water-Conservation-Goals-Report-Final.pdf?utm\\_source=chat](https://conservewater.utah.gov/wp-content/uploads/2021/05/Regional-Water-Conservation-Goals-Report-Final.pdf?utm_source=chat)

<sup>11</sup> *ibid.*

<sup>12</sup> NeighborhoodScout. (n.d.). *Orem, UT real estate market data*. Retrieved November 22, 2024, from <https://www.neighborhoodscout.com/ut/orem/real-estate>

## Consolidated List of Challenges and Issues from the 2021 Orem Water Master Plan and 2022 Water Conservation Plan

As a community anticipated to be built out and facing redevelopment opportunities, Orem faces significant water use challenges. The 2021 Orem Water Master Plan and 2022 Water Conservation Plan have identified these topics as challenges and issues that need to be addressed now and in the future.

### Conservation Goals and Regional Standards

Utah has set ambitious water conservation goals through 2065, including reducing per capita water use by 20% by 2030 and 32% by 2065. Orem has made significant progress but must continue to innovate and align with state and regional standards.

### Water Source Reliability

Reliance on diverse sources (wells, springs, and treated surface water) requires careful management to maintain long-term reliability amidst variability in supply and increasing demands.

#### **Water Source Health Assessment**

***Springs:*** While cost-effective and high-quality, the springs represent a less reliable source during prolonged dry periods, posing a vulnerability to the overall water supply, especially given Utah's status as the second driest state.

***Wells:*** From a direct water quality standpoint, deep wells are generally considered high-quality sources for culinary water and typically present fewer immediate "health concerns" related to contamination compared to more exposed surface water sources.

***Surface Water:*** Orem obtains a significant portion of its culinary water from surface water rights to natural runoff in the Provo River and reservoir storage in Deer Creek Reservoir and Jordanelle Reservoir. All surface water used by Orem is treated at the Don A. Christiansen Regional Water Treatment Plant (DACRWTP), owned and operated by the Central Utah Water Conservancy District (CUWCD). The plant incorporates sedimentation basins and both ozone and chlorine disinfection, which are crucial steps for purifying surface water sources. This multi-barrier treatment approach ensures that the water meets public health standards before distribution.

## Vineyard City Water Supply

As of July 1, 2025, the City of Orem will complete a transition away from supplying water to Vineyard City as it contracts directly with the Central Utah Water Conservancy District (CUWCD) will reduce Orem's supply obligations decreasing the impact on system conveyance needs.

## Water Quality Management:

Maintaining water quality, particularly in aging infrastructure and varied water sources, remains a priority to ensure public health and regulatory compliance.

## Water Meters and System Efficiency:

Aging water meters have historically provided inaccurate readings, contributing to water loss. The city is replacing these with Advanced Metering Infrastructure (AMI) technology, expected to improve efficiency and user accountability by the end of 2024.

## Future Storage Needs

Decreasing availability of storage at the Don A. Christiansen Regional Water Treatment Plant (DACRWTP) highlights the need for independent storage solutions. To help mitigate this, a 10-million gallon tank will be fully completed in 2025 southeast of Community Park. The site will double as the new Heritage Park.

## Aging Infrastructure

Orem City is systematically upgrading its aging water infrastructure through a comprehensive Capital Improvement Plan (CIP) and strategic financial management. The 2021 Water Master Plan guides a nearly \$93 million CIP, with annual investments of \$5.4 million to \$7.6 million, significantly increasing past investment levels. Funding for major projects comes from bond proceeds and cash reserves, with a tiered water rate structure generating revenue and encouraging conservation.

Key initiatives include:

- Major Conveyance Improvements: Upgrading large-diameter pipelines, especially in growing western areas.
- Systematic Replacement & Maintenance: Proactive replacement of aging water mains and service lines, often coordinated with street resurfacing.

- **Water Supply & Storage Expansion:** Developing new deep culinary wells to add capacity and a new 10-million-gallon storage facility.
- **Conservation & Efficiency Programs:** Implementing a wastewater reuse system for park irrigation, replacing older meters with Automated Metering Infrastructure (AMI) for improved accuracy and customer data, upsizing undersized waterlines for fire flow improvements, and an active leak detection program.

Orem continually monitors water demands and conservation progress, updating its Water Master Plan every five years to inform future investment decisions.

### Stormwater and Runoff Management

Site-specific designs to minimize stormwater runoff and irrigation-related water loss can optimize water use and reduce waste.

### Pricing and Financial Pressures

Rising operational and capital costs, combined with inflation and new regulations, strain financial resources. While inflationary pressures and the rising costs of maintaining and improving our water infrastructure are a concern, these issues are not incompatible with maintaining affordability for our residents. Orem's tiered rate structure, implemented in 2016, aims to balance these competing concerns. By adjusting rates to reflect usage, the tiered system promotes conservation while ensuring that the costs of necessary infrastructure projects are distributed equitably. This approach encourages responsible water use and helps offset lost revenue from those who may not be as mindful of their consumption.

### Population Growth and Water Demand

Ongoing growth and redevelopment, particularly in high-density areas, are increasing water demand. Strategic planning is necessary to ensure future supply while achieving conservation goals.

### Peak Day Demand Management

Ensuring the system can meet peak day water demands is a challenge, requiring adequate capacity in supply, treatment, and distribution infrastructure.

### Climate Change and Drought

As one of the driest states in the U.S., Utah faces increasing drought frequency and climate variability, which threaten water supply reliability and sustainability.

## Sustainable Landscaping and Outdoor Water Use

Reducing turf, promoting low-water-use landscaping, and improving irrigation efficiency are essential to addressing high outdoor water consumption.

## Public Awareness and Education

Many residents are unaware of efficient water use practices, both indoors and outdoors. Expanding educational initiatives, including community outreach and partnerships with schools, is critical to fostering sustainable water habits.



# WATER SYSTEM BASICS

## WATER SYSTEM BASICS

### Prior Appropriation Doctrine

In Utah, water resources are explicitly deemed public property. However, the prior appropriation doctrine governs water rights, granting priority rights to water use based on the principle of "first in time, first in right." Under this doctrine, the first individual or entity to divert water from its natural source and apply it to a beneficial use acquires a senior right to continue using that specific amount of water for the designated purpose. This right is maintained even during periods of drought or water shortage but is contingent upon the continued beneficial use of the water.<sup>13</sup>

In Utah, this framework is codified through statutory directives and is overseen by the Utah Division of Water Rights. Individuals or entities must obtain a permit from the state to ensure that water use aligns with legal and policy requirements. Each year, over five million acre-feet of water are diverted from Utah's natural water systems to serve agricultural, residential, commercial, institutional, and industrial needs. Of that total, approximately 82% is allocated to agricultural uses, with the remaining water distributed for other purposes via municipal water delivery systems.<sup>14</sup>

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<sup>13</sup> Cornell Law School, Legal Information Institute. (n.d.). *Prior appropriation doctrine*. Retrieved November 21, 2024, from [https://www.law.cornell.edu/wex/prior\\_appropriation\\_doctrine](https://www.law.cornell.edu/wex/prior_appropriation_doctrine)

<sup>14</sup> Utah Legislature. (2023). *Water rights in Utah*. Retrieved November 21, 2024, from <https://le.utah.gov/interim/2023/pdf/00003778.pdf>



## Orem City Water Sources and Delivery System

Orem City operates a comprehensive water delivery system that includes multiple water sources, storage facilities, and an extensive distribution network within its service area of approximately 20 square miles. This system must be carefully planned and designed to meet a wide range of demands, including daily and seasonal variations, fire protection, and emergency scenarios.

The potable water sources used in Orem include:

- **Orem Wells:** Primarily located on the east side of the city, nine wells are the primary municipal groundwater wells, varying in depth and capacity. By 2026, this will be expanded to ten wells.  
**Provo River Direct Flow Rights:** These rights grant Orem a 'Class A' water right of up to 35 million gallons per day from April 20 to October 15. However, considering seasonal reductions result in an average annual yield of 16,812 acre-feet. In dry years, yields can drop to 20% of the average, producing only 3,706 acre-feet annually.
- **Metropolitan Water District of Orem (MWDO) Surface Water Allocations:** MWDO manages rights to 13,861 acre-feet of surface water annually from Jordanelle and Deer Creek reservoirs. These sources act as a buffer, supplying water during dry periods or when Provo River flows are insufficient.
- **Central Utah Project (CUP) Water:** CUP provides Orem with a reliable annual allocation of 7,520 acre-feet, managed by the Central Utah Water Conservancy District (CUWCD).
- **Canyon Springs:** Alta Springs and Canyon Springs located in Provo Canyon offer high-quality, cost-effective water but are influenced by seasonal and climatic conditions.

## Future Supply

**Reuse Water:** Orem has constructed a facility to reuse water for irrigation and other non-potable applications. This involves treating effluent from the city's Water Reclamation Facility, providing a sustainable and reliable alternative water supply to reduce demand on potable sources.

Much of the delivery infrastructure for reuse water from the WRF has been installed, connecting the facility to various irrigation sites. The reuse project is considered an essential component of Orem's long-term water conveyance and conservation strategies.

## Water Supply

The following table summarizes the water source yields, based on the 2021 Water Master Plan and the Orem City Water Conservation Plan 2022:

Source	Average Year (AcreFeet)	Dry Year (Acre-Feet)	Notes
<b>Orem Wells</b>	18,306	18,306	The 2021 Water Master Plan specifies a maximum sustained pumping rate of 18,306 acre-feet per year for Orem wells.
<b>Provo River Rights</b>	16,812	3,706	The 2021 Water Master Plan indicates a yield of 16,812 acre-ft in average years and 3,706 acre-ft during dry years. These numbers represent direct flow rights from the Provo River.
<b>Deer Creek Storage</b>	6,700	6,700	The 2021 Water Master Plan states that the Metropolitan Water District of Orem (MWDO) has rights to 6,700 acre-ft per year of surface water from Deer Creek storage, which is consistent for both average and dry years.
<b>Jordanelle/Deer Creek Storage</b>	1,161	1,161	The 2021 Water Master Plan notes that the MWDO has rights to 1,161 acre-ft per year of surface water from Jordanelle/Deer Creek storage. This is consistent for both average and dry years.
<b>CUP Water</b>	7,520	7,520	The "Orem City Water Conservation Plan 2022" states that the MWDO has contracted with CUWCD for 7,520 acre-feet of Central Utah Project (CUP) water, and this is consistent for both average and dry years. The

			2021 Water Master Plan does not provide a specific figure for CUP water.
<b>Total Springs</b>	3,838	2,958	The 2021 Water Master Plan combines Alta and Canyon Springs with an average yearly yield of 3,838 acre-ft and a dry year yield of 2,958 acre-ft. The 2022 Water Conservation Plan also lists the average for the Alta Spring as 2,400 acre-feet per year, and the average for Canyon Springs as 547 acre-feet per year. It's important to note that these averages are based on slightly different historical periods.
<b>Future Reuse</b>	516	516	The 2021 Water Master Plan anticipates a future reuse system that will yield 516 acre-feet per year.
<b>TOTAL</b>	54,853	40,867	
<p>To get a clearer picture of Orem's water supply, refer to the specific tables and figures in the 2021 Water Master Plan, especially <b>Table 4-4</b>. Pay close attention to the difference between water <i>rights</i> or <i>shares</i> and actual <i>available</i> water.</p> <p>It is important to note that these figures represent the <i>rights</i> or <i>contracted</i> amounts, not necessarily the actual amount of water available each year.</p>			

<p>Factors like drought, infrastructure limitations, and water management practices can affect actual yields. Also, different parts of the document use different data, for example, the average spring yield is based on data from 1981 to 2006 and the historical source utilization data uses numbers based on 2009-2019.</p> <p>Remember that the figures provided are estimates based on historical data and projections, and are subject to change</p> <p>The "Orem City Water Conservation Plan 2022" offers a more recent perspective on the city's water resources and goals.</p>			
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## Facilities

**Don A. Christiansen Regional Water Treatment Plant (DACRWTP):** This plant treats surface water sourced from the Provo River and reservoirs, providing up to 42 million gallons per day to meet the city's peak demands. This water supplements Orem's local water supplies and is treated at the Don A. Christiansen Regional Water Treatment Plant before distribution.

**Water Reclamation Facility (WRF):** The WRF in Orem is a key component of the city's water management strategy, particularly in its efforts to implement water reuse. The facility treats wastewater to a high standard, enabling its use for non-potable applications such as irrigation at locations like the Sleepy Ridge Golf Course, Lakeside Sports Complex, and nearby parks. With much of the necessary infrastructure for reuse already in place, the project is poised to provide an initial supply of 516 acre-feet annually, with the capacity to expand as demand grows. Supported by significant funding from ARPA grants, the WRF's reuse initiative is designed to reduce reliance on potable water for irrigation, addressing peak day demands of up to 1.5

million gallons per day (MGD). This sustainable approach aligns with Orem's long-term conservation goals, ensuring efficient use of water resources.

## **Storage Facilities: Water Storage Tanks in Orem**

1. **Upper Tanks (1 and 2)**
  - **Volume:** 2.0 million gallons each (4.0 MG total)
  - **Description:** Buried concrete circular tanks.
2. **Canyon Springs Tank**
  - **Volume:** 0.05 million gallons (50,000 gallons)
  - **Description:** Buried concrete circular tank.
3. **Lower Tanks (1 and 2)**
  - **Volume:** 5.0 million gallons and 3.0 million gallons (8.0 MG total)
  - **Description:** Steel tanks.
4. **Cherapple Tank**
  - **Volume:** 0.4 million gallons (400,000 gallons)
  - **Description:** Buried concrete circular tank.
5. **DACRWTP Storage**
  - **Volume:** 9.5 million gallons available to Orem (out of a total capacity of 37 MG)
  - **Description:** Buried concrete circular tanks used jointly with Central Utah Water Conservancy District (CUWCD).
6. **Heritage Park Tank**
  - **Volume:** 10.0 million gallons (planned capacity)
  - **Description:** This tank was completed in 2025 and will be put in service in 2026 to enhance system storage and meet future demand. It will provide critical support for water supply and emergency storage needs, serving as part of Orem's long-term water infrastructure plan.

**Total Storage Capacity:** 31.95 million gallons from all tanks combined.

## **Water Demand Increasing**

The Orem Water Master Plan projected population growth in three categories based upon Mountainland Association of Governments (MAG) projections.<sup>15</sup>

**Population Growth:** Orem grew from a population of 87,497 to 98,625 between 2009 and 2020, and has an estimated 2024 population of 100,000. It is anticipated the city will reach a buildout population of just under 140,000 by 2065, which is an increase of 40,000 over current population levels.

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<sup>15</sup> Bowen Collins & Associates. (2021). *City of Orem water master plan*. City of Orem. p 2-9.

**Nonresidential Population Growth:** Additionally, Orem City has a significant nonresidential population. A nonresidential population refers to individuals who are present in a specific area for purposes other than residence, such as work, study, or tourism, and do not reside there permanently.

**Student Population Growth:** Because Utah Valley University (UVU) makes up a significant portion of City-wide water demand, and has a significant potential for growth, projections for UVU were treated separately from other nonresidential projections.

**Table 3-1**  
**City of Orem Population Projections**

Year	Orem Residential Population*	Orem Nonresidential Population*	UVU Student Population
2020	98,625	65,373	39,931
2030	109,374	74,042	42,749
2040	122,441	73,564	45,568
2050	133,429	73,605	48,386
2060	137,734	77,827	51,205
2065	139,887	79,939	52,614

\*Population data projections based on data from MAG.

Table 3-1, Orem City Water Master Plan

Ensuring water is available to meet all users' existing needs and anticipated growth is an essential function of the city.

## Water Usage

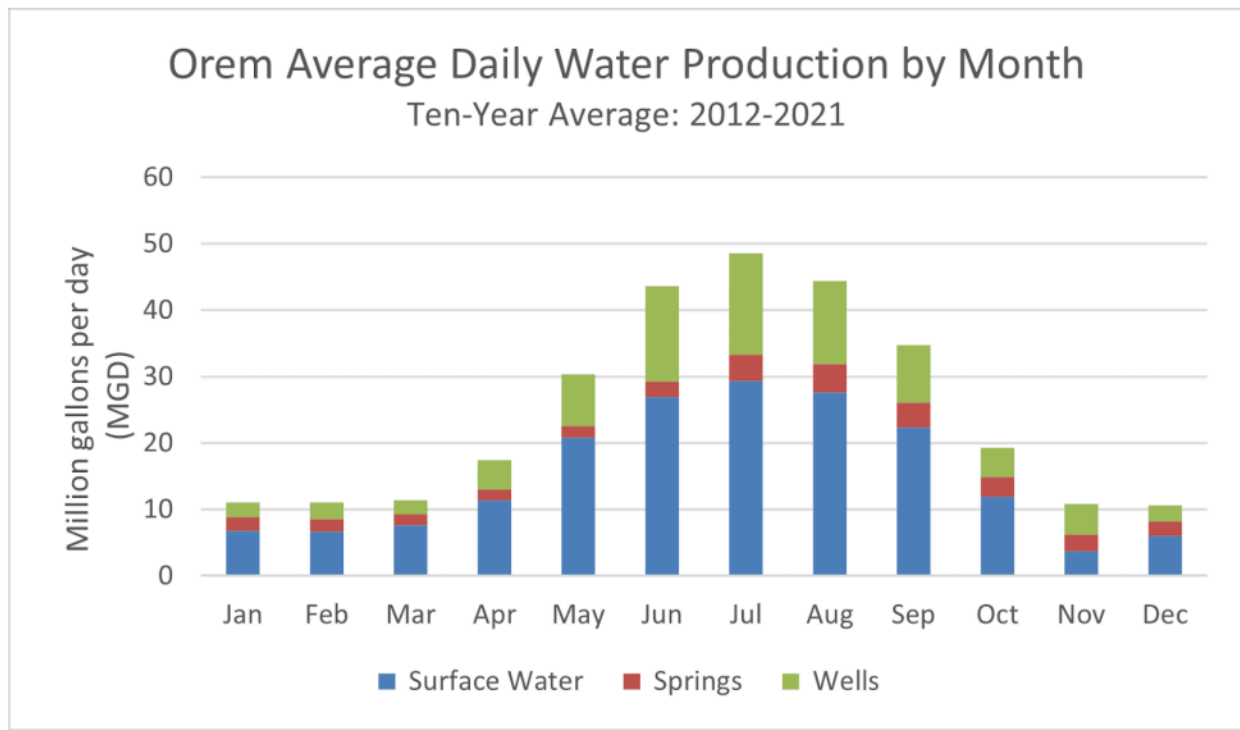
Gallons per capita per day (GPCD) is a measurement used to represent water use for an area and is the standard practice among water professionals. GPCD includes residential water use, commercial water use, institutional water use, and system losses, and is calculated by dividing total annual water use by the resident population. Water supply and use numbers are often reported in Acre Feet Per Year (ACFT).

## Existing Requirements - Culinary Water System

The ten-year (2012 and 2021) average monthly water deliveries for the culinary system from all sources was as follows:

Source	Million Gallons per Day Annually
Surface Water	15,106 (62%)
Orem Wells	6,768 (28%)

Springs	2,583 (11%)
TOTAL	24,456 (24.456 billion)



Source: Figure 3 - Orem Water Conservation Plan

## Need for Additional Primary Water Sources

### New Wells

The City of Orem is constructing one new well and has plans to construct another and rehabilitate an existing well to expand its water supply capacity and meet future demands. These include:

1. **Community Park Well (400 South):**
  - Under construction adjacent to the new Heritage Park/Water Tank near Community Park, this well is a priority for supporting storage and conveyance needs. It will address water supply demands and is expected to be completed in 2026.
2. **1600 North Well (400 West):**
  - Identified as a suitable site, this well will enhance system capacity and is scheduled for development by 2024, according to the Water Master Plan
3. **Well No. 1** is planned for reconstruction at Hillcrest Park to maintain and improve its operational efficiency.

The need for additional wells in Orem's culinary water system is driven by multiple factors, including population growth, system reliability, and long-term water security. Orem's current system relies on nine deep wells, which provide approximately 28% of the city's annual water supply. These wells are essential for maintaining system redundancy, ensuring that water needs are met even if one or more wells are offline due to maintenance or unexpected failure. As the city continues to grow, additional wells are necessary to meet rising demand and maintain adequate pressure and supply across all pressure zones.

Moreover, new wells can diversify the city's water portfolio, reducing dependence on surface water sources like the Provo River, which are vulnerable to seasonal fluctuations and potential environmental or regulatory changes. Expanding well capacity also ensures resilience against emergencies, such as droughts or infrastructure failures, while enhancing the system's ability to handle peak demands during summer months.

## Secondary Water Systems

Orem does not have a traditional secondary (non-potable) water system for landscape irrigation or other outdoor uses. Instead, all water needs, including indoor and outdoor use, are met through the culinary water system. This system integrates water from multiple sources, including surface water from the Provo River, groundwater from wells, and mountain springs, which are all treated to meet drinking water standards.

## Reuse Facility

The City of Orem is actively developing a reuse water system to enhance sustainability and maximize the efficiency of its water resources. Treated effluent from the Water Reclamation Facility (WRF) will be utilized as a secondary, non-potable water source for irrigation at parks, golf courses, and other landscaped areas. This dedicated reuse water system, separate from the potable water infrastructure, will help meet non-drinking water needs while reducing demand on the city's culinary water supply. Initially capable of providing 516 acre-feet annually, the system is designed for future expansion to support growing needs. By recycling water within the community, the reuse system not only increases Orem's water resilience during droughts and peak usage periods but also aligns with the city's commitment to sustainable water management practices.

## Utah Valley University

However, institutions like Utah Valley University (UVU) have their own water systems for specific uses. For example, UVU utilizes a deep well constructed on campus for landscape irrigation, helping to reduce the demand on the city's culinary water system for such purposes.



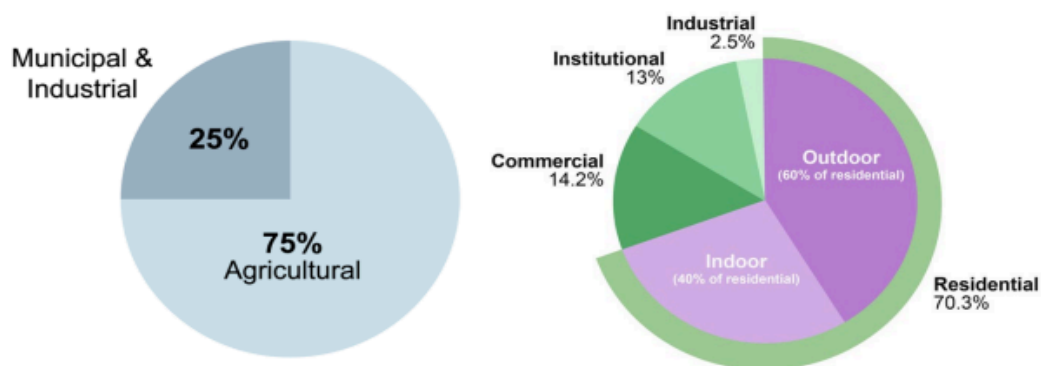
## Per Capita Water Usage

With conservation measures in place, it is estimated that in 2025, average daily water usage is projected to reach **142 gallons per capita**, based on a combined residential and non-residential population of **172,240**.<sup>16</sup>

It is estimated that in 2025, peak day water usage is projected to reach **371 gallons per capita**, based on a combined residential and non-residential population of **172,240**. This peak demand occurs only once per year.<sup>17</sup>

## Outdoor Water Use and Sustainable Landscapes

As of 2010, “ 65% of Utah’s residential water is used outdoors and 35% indoors. In terms of total public community system use, 60% is used outside and 40% indoors.”<sup>18</sup>



**Figure 1. Utah's Water Use:** (left) diverted water use by sector, and (right) residential use accounts for over 70% of municipal and industrial diverted water; 60% of residential water is used outdoors.

Data source: DWR, 2021

The agricultural sector uses 75% of Utah's water, while the municipal and industrial (M&I) sector accounts for 25% (DWR, 2021). Within the M&I sector, over 70% is residential, with **60% of that used for landscaping**. Overall, outdoor residential water use represents 11% of Utah's total annual water diversions, approximately 500,993 acre-feet per year.<sup>19</sup>

<sup>16</sup> This calculation was derived from - Bowen Collins & Associates. (2021). *City of Orem water master plan*. City of Orem. Table 3-4.

<sup>17</sup> Ibid. p. 3-12


<sup>18</sup> Utah Division of Water Resources. (2010). *Municipal and industrial water use in Utah*. p 7. Retrieved from [https://content.csbs.utah.edu/~lozada/Research/DNR\\_WaterUse\\_original.pdf](https://content.csbs.utah.edu/~lozada/Research/DNR_WaterUse_original.pdf)

<sup>19</sup> Clark, C., Becker, K., Wagner, K., & Hotaling, S. (2022). Climate resiliency fact sheet: Policies and programs for water-wise residential landscaping in Utah. Utah State University Extension.


## Principles Of Sustainable Landscaping

### PRINCIPLES OF SUSTAINABLE LANDSCAPING


- #### 1 Start with a plan




For a landscape design to be water-conserving, it needs to use water efficiently. The planning stage is the optimal time to decide which water efficiency strategies will be used.
- #### 2 Practical turf areas reduce over-irrigation




Water-efficient landscaping does not require the elimination of all turfgrass. In fact, turfgrass can be a practical and beneficial component of a water-wise landscape if best practices are followed. The use of turfgrass becomes problematic when it is over-irrigated, used in areas that are challenging to irrigate such as steep slopes or odd-shaped and narrow spaces, and when it is placed in areas where it isn't useful.
- #### 3 Soil preparation is the foundation of a quality landscape



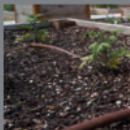
Soil is the most basic component of a quality landscape and will have an impact on the growth rate, health, and appearance of plants.
- #### 4 Proper plan selection & placement saves water




Selecting the right plant for the right place is critical to creating a water-efficient landscape. Proper placement provides shade, privacy, beauty, efficiency, and can even decrease yard maintenance.
- #### 5 Retain soil moisture with mulch



Mulch covers the soil and prevents crusting, compaction, and moisture loss. Mulching around trees, shrubs, and flower beds can result in a ten-fold reduction in evaporative water loss from soil.
- #### 6 Efficient irrigation is critical for conserving water



Grouping plants with similar water needs (hydrozoning) is the first step in developing an efficient irrigation plan. Once plants are properly zoned, develop an irrigation schedule that will apply the appropriate amount of water based on the unique needs of each zone.
- #### 7 Proper landscape maintenance keeps plants healthy & helps conserve water



Landscape maintenance is one of the most important components of a beautiful and lasting landscape. The main activities required to maintain a water-wise landscape are irrigation and irrigation system maintenance, weed control, fertilization, pruning, and pest and disease control.

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## FUTURE WATER REQUIREMENTS

### FUTURE WATER REQUIREMENTS

Future water requirements in Orem City are calculated assuming water use patterns and per-capita water use both remain relatively constant. According to this measurement, the total yearly demand in **buildout** conditions is projected to be approximately **37,500 acre-feet**, which

<sup>20</sup> City of Lindon General Plan (2023)

can be met over the next decade with continued wholesale purchases and the current exchange agreement through CUWCD.

Future water requirements in Orem City are calculated based on historical water use patterns, adjusted for population growth, and the incorporation of conservation measures. Under buildout conditions, the city's annual demand is projected to reach approximately 37,107 acre-feet and without conservation, 32,496 acre-feet with conservation strategies implemented. These projections assume declining per-capita water use in alignment with state conservation goals. To meet future needs, Orem relies on its current water rights, agreements with the Central Utah Water Conservancy District (CUWCD), and wholesale purchases, including a contracted 7,520 acre-feet annually from CUWCD. While these resources are sufficient for the next decade, continuous monitoring and adaptive management will be critical to ensure long-term water security.

Orem City, with its limited undeveloped land, faces unique water conservation challenges. The city is estimated to be over 90% developed, with most future growth expected to occur through redevelopment. As noted in the 2021 Water Master Plan, new development is concentrated on the west side of the city, while the majority of water sources and storage facilities are located in the northeast, requiring significant upgrades to the water conveyance system to meet future demand. Policies that prioritize efficiency in residential development, reduced turf grass, and sustainable landscaping are essential to align with state conservation goals and reduce outdoor water use. The city's water management strategy adopts conservation goals similar to the Salt Lake Region, emphasizing efficient urban design and redevelopment-driven water savings, as these align more closely with Orem's development patterns than the broader Provo Region. These measures are critical to ensuring the sustainability of Orem's water resources.

The projected population growth and total water demand at current use levels are **significantly higher** compared to water demand with conservation levels recommended for the Provo River Region in *Utah Growing Smart - the Water Land Use Integration Handbook*.

## Population and Conservation Goals

- The Provo River Region's conservation goals from the 2015 baseline are:
  - 20% reduction by 2030.
  - 27% reduction by 2040.
  - 32% reduction by 2065.

### Baseline and Projected Water Demand:

- Table 3-4 of the 2021 Water Master Plan provides water demand estimates for Orem:
  - 2030 without conservation: ~35,000 acre-feet (rounded from 32,839 acre-feet).

- 2030 with conservation: ~28,000 acre-feet (rounded from 28,570 acre-feet).
- 2065 without conservation: ~45,000 acre-feet (rounded from 40,118 acre-feet).
- 2065 with conservation: ~30,600 acre-feet (rounded from 32,496 acre-feet).

#### Water Savings:

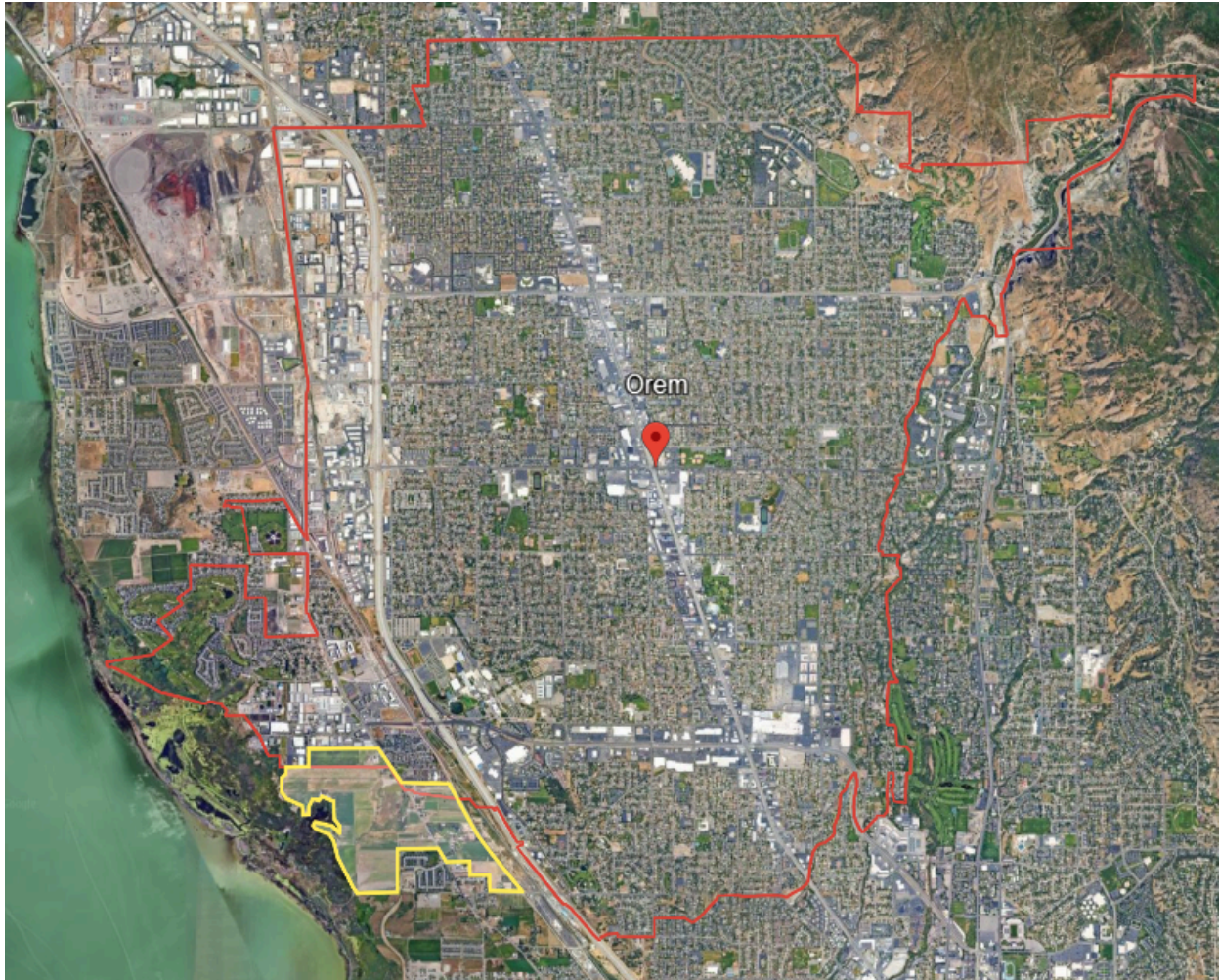
- Using these reductions, the water savings would be:
  - 2030: ~7,000 acre-feet savings annually, equivalent to ~2.28 billion gallons/year or ~6.2 million gallons/day.
  - 2065: ~9,500 acre-feet savings annually, equivalent to ~3.1 billion gallons/year or ~8.5 million gallons/day.

By achieving a 20% reduction in water use by 2030 and a 32% reduction by 2065, Orem City is projected to save 7.3 billion gallons of water annually by 2030. These conservation measures, aligned with state goals, will not only reduce per capita water use significantly but also ensure that total water demand by 2065 remains below current levels, even as the city continues to grow.

The 2020 population of Orem is projected to increase by approximately **34,800 residents** by **2050** according to MAG's projections, with an average annual growth rate of **1 percent**.

Beyond infill development and redevelopment, the largest growth area for Orem City is outlined in yellow and constitutes approximately 380 acres:





As illustrated, the few remaining areas for new development in the community are focused primarily on the southwest side of the city, with uses that focus on low-density residential development. This area, often referred to as the **Southwest Annexation Area**, includes land between 2000 South and 1400 South west of I-15. The city's general plan emphasizes maintaining a balance of residential and open space uses in this region, accommodating anticipated growth while preserving community character and managing water resources efficiently.

## OREM WATER CONSERVATION PLAN

# OREM WATER CONSERVATION PLAN

In 1998, the Utah Legislature passed the Water Conservation Act, which was amended again in 2022, requiring water agencies with more than 500 culinary water connections to submit water conservation plans to the Utah Division of Water Resources and update the plans every five years. The purpose of a water conservation plan is to provide information regarding existing and proposed water conservation measures that will help conserve water in the state so that adequate supplies of water are available for future needs. Water conservation plans include water use reduction goals as well as implementation strategies.

The current Orem Water Conservation Plan was updated and adopted in 2022 and outlines the following goals:

- **Reduce the City's water use to reflect the Regional Water Conservation Goals for 2030**
- **Maintain an effective conservation-oriented water pricing structure each year.**
- **Complete the meter replacement project (completed in 2024).**
- **Construct a tertiary treatment process at the Water Reclamation Facility to produce secondary water for irrigation by 2025**
- **Continue education efforts to the public regarding water conservation.**
- **Replace automatic sprinkler controllers on all City-owned properties to newer technology by 2025.**

## **Opportunities for Conservation:**

- **Conservation-Oriented Water Pricing:**  
Evaluate the existing tiered pricing system to further incentivize reduced water use, particularly during peak demand periods.
- **Meter Replacement Program:**  
Replace aging water meters with advanced metering infrastructure (AMI) to improve accuracy and enable real-time water usage monitoring for customers.
- **Leak Detection and Repair:**  
Conduct regular inspections and promptly repair leaks in the distribution system to minimize water loss.
- **Public Education and Outreach:**  
Launch education programs for schools, residents, and businesses, using workshops, newsletters, social media, and other tools to foster a culture of wise water use.
- **Efficient Irrigation Practices:**  
Promote optimized irrigation schedules and water-efficient technologies, such as smart controllers and drip irrigation, for parks, open spaces, and residential properties.

- **Drought-Responsive Measures:**  
Adjust water usage policies and practices during periods of drought to ensure supply sustainability.
- **Water Conservation Ordinances:**  
Promote innovative landscaping policies that require waterwise landscaping for new developments and retrofits, reducing turf grass and encouraging water-wise designs. These ordinances allow non-turf landscaping options for public street park strips and encourage efficient irrigation mechanisms.
- **Demonstration Landscapes:**  
Transform city parks and properties into low-water demonstration landscapes to inspire and model conservation practices for residents and businesses. These demonstrations reduce turf usage, stormwater runoff, and yard waste while promoting site-specific landscape designs, healthy trees, and efficient irrigation.
- **Automatic Sprinkler Controllers:**  
Replace automatic sprinkler controllers on all City-owned properties with newer technology as appropriate that tracks and adjusts irrigation time against weather conditions.
- **Reuse Facility**  
Complete and study other opportunities to expand the water reclamation and reuse facility.

These measures reflect the city's commitment to sustainable water management and align with regional and state conservation goals.

## WATER EDUCATION PROGRAM

The City of Orem is committed to fostering a culture of water conservation through ongoing and enhanced public education efforts. Recognizing that conservation is a shared responsibility, the city's initiatives target a diverse audience, including residents and businesses, to ensure widespread participation.

Key messages focus on wise water use, emphasizing the importance of conserving resources in Utah's arid climate. Educational campaigns promote both indoor and outdoor water efficiency, encouraging practices such as watering during cooler times, fixing leaks promptly, and reducing water waste during daily activities.

To maximize outreach, Orem employs multiple information channels, including the Consumer Confidence Report (CCR), the city website, flyers with water bills, social media posts, and videos. The city also leverages community resources like the Orem City Library to provide accessible information. These sustained efforts aim to equip the community with the knowledge and tools needed to ensure the long-term sustainability of Orem's water resources.

## WATER RATE STRUCTURE

Designing an appropriate rate structure is a complex task, requiring alignment of water system operating costs with the city's economic, political, and social contexts. In compliance with Utah's Senate Bill 28, Orem implemented a tiered rate structure in 2016 that continues today. This four-tier system is designed to encourage conservation by charging higher rates as water use increases, while also meeting the financial needs of the water utility, such as operations, maintenance, and capital improvements.

The structure includes both a base rate, which varies with meter size following American Water Works Association (AWWA) guidelines, and consumption rates, which are tiered based on usage levels. For example, starting July 2024, consumption rates range from \$0.88 per 1,000 gallons in Tier 1 to \$1.55 per 1,000 gallons in Tier 4. The city periodically evaluates this structure to ensure it balances revenue stability, equity, affordability, and simplicity.

Revenue from the tiered rates funds critical water system maintenance and improvements, including pipe replacement, meter upgrades, and educational initiatives. These measures ensure a sustainable water future for the city while promoting responsible water use among residents and businesses.

## WATER CONSERVATION CONTINGENCY PLAN

Orem has a Water Conservation Contingency Plan as part of its broader water management strategy. This plan outlines measures to address water shortages during drought conditions or other supply disruptions. It includes the following stages and actions:

1. **Advisory Stage:** Follow general conservation guidelines.
2. **Mild Stage:** Request large users (e.g., city parks, schools, golf courses) to reduce water use.
3. **Moderate Stage:** Encourage voluntary reduction in water use across all customers.
4. **Severe Stage:** Mandate reductions, such as implementing odd-even watering days.
5. **Critical Stage:** Enforce mandatory reductions with penalties for non-compliance.

## Outdoor Water Conservation Guidelines

### Water According to Needs

- Water your landscape based on the type of plants and local weather conditions, reducing watering in the spring and fall.

### Avoid Wasteful Watering



- Do not water on windy or rainy days.
- Avoid watering during peak evaporation hours between 10:00 AM and 6:00 PM.

### **Use Efficient Cleaning Practices**

- Sweep sidewalks and driveways instead of using a hose.
- Wash your car using a bucket of biodegradable soapy water and park near landscaping to allow runoff to benefit the soil.

### **Inspect for Leaks**

- Regularly check for leaks in pipes, valves, faucets, and hoses for both secondary and culinary water systems.
- Monitor your water meter and valves when systems are off to detect leaks.

### **Maintain Sprinkler Systems**

- Adjust and repair sprinkler heads for proper spray patterns and to prevent waste.
- Periodically check and adjust timers to optimize watering schedules.

### **Incorporate Mulching**

- Apply mulch around trees, shrubs, and gardens to retain moisture.
- Use drip irrigation systems to reduce water use during hot, dry, or windy conditions.

### **Optimize Lawn Care**

- Mow your lawn at the highest setting to encourage deeper roots and retain soil moisture.
- Keep landscaped areas free of weeds to minimize competition for water.

### **Promote Water-Wise Landscaping**

- Discourage the use of water fountains.
- Encourage drought-tolerant plants, xeriscaping, and low-water landscaping for public spaces like interchanges and planting strips.
- Seek to reduce turf usage, stormwater runoff, and yard waste while promoting site-specific landscape designs, healthy trees, and efficient irrigation.

**These practices are designed to maximize outdoor water efficiency, minimize waste, and support Orem's water conservation goals.**

## LANDSCAPING ORDINANCE

Orem City's landscaping regulations play a vital role in supporting the city's water conservation plan by encouraging sustainable, resource-efficient landscaping practices. These standards seek to reduce turf usage, stormwater runoff, and yard waste while promoting site-specific landscape designs, healthy trees, and efficient irrigation.

### **Living Vegetation Requirements**

- At least 50% of each landscaped area must include living vegetation such as grass, shrubs, trees, flowers, or vines.
- Areas of vegetation coverage higher than 24 inches above grade (e.g., tree canopies) do not count toward this requirement except for the trunk area.

### **Alternative Materials and Xeriscaping**

- Non-living materials like mulch, decorative rocks, boulders, and artificial turf may be used, provided they are part of a deliberate landscaping plan and meet installation guidelines (e.g., proper weed barrier, depth).
- Xeriscaping is encouraged, using drought-tolerant plants and moisture-retaining materials like mulch and gravel.

### **Vegetation Reduction Incentives**

- Landscaped areas may reduce living vegetation coverage from 50% to 45% if at least three additional trees are maintained in the front or side yard adjacent to a street.

### **Residential Landscaping**

- Residential front and side yards adjacent to streets (excluding driveways and sidewalks) must be landscaped.
- Driveways may not exceed 60% of the front or side yard area (50% for corner lots).

### **Berms, Strips, and Islands**

- Landscaped berms, strips, and islands are required in commercial and residential zones to reduce heat islands and support stormwater management.
- Trees in buffer strips along sidewalks must follow spacing and placement guidelines (e.g., 40 feet on center).

### **Irrigation Systems**

- Approved irrigation systems are required for all landscaped areas to ensure efficient water distribution and minimize waste.<sup>21</sup>

## **ADDITIONAL WATER CONSERVATION MEASURES**

In addition to landscaping regulations, Orem City's water conservation planning documents outline several measures to promote efficient water use:

### **Water Conservation-Oriented Rates**

- The tiered rate structure is a key conservation tool discussed in Orem's plans. This structure encourages reduced water usage and funds conservation initiatives.

### **Meter Replacement Program**

- The upgrade to Advanced Metering Infrastructure (AMI) is explicitly mentioned in Orem's Water Master Plan to improve water usage monitoring and leak detection.

### **Leak Detection and Repairs**

- Both plans highlight the importance of regular inspections, annual surveys, and replacing outdated infrastructure to minimize water loss and improve efficiency.

### **Efficient Public Irrigation Practices**

- The plans detail optimizing irrigation schedules and using water-efficient technologies in public spaces such as parks and city-owned properties to reduce outdoor water consumption.

### **Public Education and Awareness**

- Orem's public education programs are well-documented and emphasize community events, workshops, and school programs to raise awareness about water conservation.

### **Plumbing Fixture Upgrades**

- Encouraging the replacement of high-water-use fixtures is aligned with Orem's conservation efforts, although the city may not specifically link these incentives to penalty tiers in rate schedules.

### **Water Reuse Initiatives**

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<sup>21</sup> Section 22-14-13. Landscaping. Orem City Code.

- The exploration of treated wastewater for irrigation is mentioned as a potential future effort in Orem's conservation planning.

### **Sustainable Development Techniques**

- Low Impact Development (LID) strategies, such as permeable pavements and rainwater harvesting, are consistent with broader sustainability goals found in the Water Master Plan.

### **Rain Water Harvesting Program**

- Orem City actively participates in the Utah Rivers Council's RainHarvest program, demonstrating a strong commitment to water conservation. Through this collaboration, the city subsidizes approximately 170 rain barrels annually, making them available to residents at a reduced cost. This initiative encourages homeowners to collect and utilize rainwater for outdoor purposes, thereby reducing reliance on municipal water supplies. By promoting the use of rain barrels, Orem City supports sustainable water management practices and fosters community engagement in environmental stewardship.

## **Orem City Natural Resources Stewardship Committee**

The Natural Resources Stewardship Committee (NRSC) of Orem City plays a pivotal role in advancing the city's water conservation and environmental sustainability objectives. This volunteer-driven committee focuses on several key initiatives:

### **Community Education and Engagement**

The NRSC organizes events and activities to raise public awareness about environmental issues. For instance, they have conducted educational hikes in the foothills above Timpanogos Park, where experts like Mark Farmer from the Division of Wildlife Resources educate participants about local flora and fauna.

### **Policy Development and Recommendations**

The committee collaborates with city officials to develop and recommend policies that promote sustainable practices. Their insights contribute to the creation of ordinances and programs aimed at reducing water consumption and enhancing environmental stewardship.

### **Participation in Regional Sustainability Efforts**

Members of the NRSC represent Orem City in regional sustainability discussions. For example, committee members have participated in panels at events like the UVU Sustainability Summit, sharing insights on leveraging citizen engagement for sustainability.

### **Implementation of Conservation Programs**

The NRSC assists in implementing city-wide conservation programs, such as promoting

water-wise landscaping and efficient irrigation practices. Their efforts align with the city's goals to reduce outdoor water use and encourage the adoption of drought-tolerant plants.

Through these initiatives, the NRSC significantly contributes to Orem City's efforts to conserve water resources and promote environmental sustainability.



## REGIONAL COLLABORATION

### REGIONAL COLLABORATION

Local water suppliers possess detailed knowledge of their systems, challenges, and opportunities. However, because water resources are shared across political boundaries, collaboration among local, regional, and state entities is essential.

#### **Orem City's Collaborative Efforts**

- Actively works with neighboring municipalities, regional water suppliers, and state agencies to establish policies and partnerships for enhanced water management.
- Focus areas include promoting water-use efficiency programs, ensuring long-term water supply sustainability, maximizing water conservation and reuse, aquifer recharge, and educating the public on the importance of water conservation.

#### **Guidance from Regional Reports**

- The 2019 *Utah Regional Municipal and Industrial (M&I) Water Conservation Goals Report* provides a framework for addressing Utah's semiarid climate and increasing water demands.
- For the Provo River Region, the report recommends a 20% reduction in outdoor water use and a 5% reduction in indoor water use by 2030.<sup>22</sup>

Collaboration with regional partners ensures that infrastructure, policies, and programs align with the broader goals outlined in the report. By embracing these strategies, Orem contributes to a sustainable water future for the region while supporting the city's growth and development goals.

### **RECOMMENDED STRATEGIES & ACTIONS TO MEET WATER CONSERVATION GOALS**

In addition to regional water conservation goals, the Utah Regional Municipal and Industrial (M&I) Water Conservation Goals Report recommends several practices to support sustainable

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<sup>22</sup> Utah Division of Water Resources. (2019). *Utah's regional M&I water conservation goals*.

water use. Orem has adopted many of these practices, while others present opportunities for future implementation or collaboration.

## **Adopted Strategies**

1. Tiered Water Rates: Encouraging conservation by charging higher rates for increased water usage, aligning with Orem's efforts to promote efficiency.
2. Advanced Metering Infrastructure (AMI): Upgrading water meters to improve accuracy, enable real-time monitoring, and support proactive leak detection.
3. Waterwise Landscaping Standards: Establishing limits on lawn areas and promoting the use of drought-tolerant plants and efficient irrigation systems.
4. Public Education Programs: Conducting workshops, outreach events, and school programs to raise awareness about indoor and outdoor water conservation practices.
5. Leak Detection and Repairs: Performing routine inspections and replacing aging infrastructure to prevent water loss.
6. Efficient Public Irrigation Practices: Using optimized schedules and technologies for irrigation in parks and city properties to reduce waste.

## **Strategies for Future Consideration**

1. Enhanced Reuse Initiatives: Partnering with regional entities to expand the use of treated wastewater for irrigation or industrial purposes, reducing reliance on potable water. While local support for water reuse initiatives is strong, the state legislature's focus on increasing water levels in the Great Salt Lake has presented challenges for the expansion of new water reuse opportunities.
2. Conservation Incentives: Encouraging residents and businesses to participate in rebate or incentive programs to replace high-water-use fixtures with low-flow alternatives and landscaping improvements.
3. Water Conservation Ordinances: Strengthening regulations to require water-efficient fixtures, landscaping, and irrigation systems in all new developments.
4. Expanded Education Programs: Collaborating with regional partners to broaden public outreach, emphasizing efficient water use during drought conditions and promoting conservation habits.
5. Collaboration on Regional Projects: Engaging with neighboring municipalities and water districts to share resources and align efforts to achieve Provo River Region conservation targets.
6. Monitoring and Reporting Tools: Implementing systems to track water usage trends and measure the effectiveness of conservation measures.

## **Partnering Opportunities**

Orem can further collaborate with the Central Utah Water Conservancy District (CUWCD) and other stakeholders to align local conservation efforts with regional goals, ensuring an integrated

approach to sustainable water management. By adopting these strategies, Orem will continue to lead in water conservation and achieve long-term sustainability for its residents and businesses.



# IMPLEMENTATION

## IMPLEMENTATION

Both the Orem 2021 Water Master Plan has a detailed chapter on the 10-year Capital Improvement Plan. The 2022 Water Conservation Plan outlines broad goals, but does not establish timelines.

### 2021 Water Master Plan Implementation

#### Capital Improvement Plan

A 10-year schedule prioritizing projects based on system needs, including:

- **Storage:** Addressing a 10-million-gallon storage deficiency with projects like the 400 South Tank.
- **Wells:** Adding new wells and improving existing ones to expand peak day capacity and meet future demand.
- **Fire Flow:** Upgrading undersized waterlines to improve fire flow across the city.
- **Replacement:** Replacing aging water lines that are prone to leaking.
- **Major Conveyance:** Installing large pipelines to address growth and pressure deficiencies.

#### Reuse Water Projects

Initiating a system to reuse treated effluent from the city's water reclamation facility, focusing on irrigation for golf courses and parks. (Completed by the end of 2025).

#### Automated Metering Infrastructure (AMI)

Phased implementation of smart meters to enhance operational efficiency and water use tracking. (Completed)

#### Conservation Goals

Adopting state conservation targets, emphasizing reduced per capita use through redevelopment and efficiency measures.

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## **2022 Water Conservation Plan Implementation**

### **Conservation-Oriented Rates**

Continued use of a tiered pricing structure to encourage conservation and fund system improvements.

### **Public Education**

Expanding educational outreach through schools, utility bill inserts, social media, and partnerships with organizations like CUWCD.

### **Meter Replacement Program**

Replacing aging meters to improve water use tracking and revenue accuracy. (Completed)

### **Irrigation Efficiency**

Implementing waterwise landscaping guidelines and improving irrigation practices for city-owned properties and public parks.

- A major project has been completed to replace all irrigation controllers with WeatherTRAK smart controllers on city properties.
- Ongoing efforts to fine-tune irrigation practices on these properties continue.

### **Water Shortage Management Plan**

A contingency framework for managing water supply during shortages, including mandatory reductions and enforcement measures based on severity.

### **Ordinances and Policies**

Promoting landscaping and irrigation guidelines that support conservation efforts, including turf reduction and water-efficient designs.



## **AMEND CH 2 - LAND USE**

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AMENDMENT TO



## Chapter 2 - Land Use

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### Coordination and Integration of Land Use with Water Use

Utah State Code states that the Land Use element of the General Plan “is coordinated to integrate the land use element with the water use and preservation element; and accounts for the effect of land use categories and land uses on water demand.”

Orem City recognizes the critical importance of integrating land use planning with water use and preservation strategies, as mandated by state code. The following actions and policies demonstrate how Orem's General Plan Land Use Chapter is coordinated with the city's Water Use and Preservation Element:

#### Integration of Land Use with Water Planning

Orem's land use classifications and development policies are designed to account for the impacts of land use on water demand. For example, residential and commercial developments are encouraged to adopt landscaping practices and lot configurations that minimize water consumption, particularly in areas with larger lots or water-intensive uses.

#### Impact of Land Use on Water Demand

The city actively evaluates the effect of various land use categories on water demand. Policies promoting efficient landscaping and reduced turf grass in all development types are emphasized to conserve water and lower overall demand.

#### Sustainable Growth Strategies

With over 90% of the city already developed, future growth will focus on redevelopment and maintaining efficiency in existing land use patterns. The General Plan prioritizes minimizing water-intensive uses, such as large grass-dominated lots, and promoting water-wise landscaping guidelines to support conservation goals.

## Infrastructure Alignment

The Land Use Chapter identifies areas for future development, such as the west side of the city, where water conveyance systems will need upgrades to deliver water efficiently from sources concentrated in the northeast. These infrastructure improvements are planned in coordination with water resource management strategies to ensure long-term sustainability.

## Policy Coordination

The city's goals for land use and water conservation are further integrated through policies that:

- Encourage water-efficient landscaping for new developments and retrofits.
- Implement conservation pricing to reduce water use in higher-demand categories.
- Promote land use policies that align with state-mandated conservation goals, focusing on sustainable practices for residential, commercial, and institutional properties.