Syracuse City General Plan - Integrated Land and Water Use Element

Implementation of the water use preservation element is required by Syracuse pursuant to Utah Codes 10-9a-403 and 17-27a-403. Municipal or county legislative bodies are required to adopt and implement this new integrated water and land use element. The following addition to the general plan is provided to satisfy this requirement.

Syracuse City is the main provider for both secondary and culinary water systems for all properties within the city boundaries.

Population Projections

Syracuse City is a rapidly growing city. Syracuse City's population grew from 24,331 in 2010 to 32,141 in 2020. The 2025 population estimate for the city is 40,286. The city is confident in its ability to have enough water to accommodate growth. Because of good planning and key infrastructure investments, the city has appropriate measures in place to provide adequate water to our projected 2050 population. Population projections are based on Syracuse City's general plan.

Table 1-Population Projections

Year	Population
2024	38,999
2025	40,286
2026	41,615
2027	42,989
2028	44,407
2029	45,873
2030	47,387
2031	48,950
2032	50,566
2033	52,234
2034	53,906
2035	55,631
2036	57,411
2037	59,248
2038	61,144
2039	63,101
2040	65,120

2041	67,204
2042	69,354
2043	71,574
2044	73,864
2045	76,228
2046	78,667
2047	81,184
2048	83,782
2049	86,463
2050	89,230

Culinary Water System

The city owns and manages a pressurized, treated culinary water system. This water is used for drinking, bathing, and other indoor needs. The water for the system is provided by a combination of a city owned well and purchased water from Weber Basin Water Conservancy District (WBWCD). The culinary water is pumped into a water tower, where the gravity of the water in the tower pushes the water into water mains buried mostly within public roadways. From the roadway mains, lateral lines carry the water to a water meter located in the park strip. From the meter, a private waterline delivers the water to the home. Wireless meters are read by radio, and the city bills the customer monthly based on a tiered fee structure.

Culinary Water Level of Service

The current level of service for culinary water is based on existing meter data from both individual meters and source meters and compared to the Syracuse City system specific-design criteria issued by the Division of Drinking Water (DDW). The level of service is established into average annual demand which is how much total water can be withdrawn annually which is 22,506 gal/Person annually, and peak source demand which is how much water needs to be withdrawn at any point in time which is set at 346 gal/day. For planning purposes this level of service will be maintained as the population grows. However, conservation efforts may lower this level of service over time.

Culinary Average Annual Demand – DDW System Specific Design Criteria

22,506 gal/Person/year X 40,286 People = 906.644 Million gallons per year

= 2782.38 ac-ft per year

Culinary Water Capacity

Syracuse City draws most of its water from Weber Basin through a contract with water from a city well supplementing. The City owns water rights for 3 wells within city limits: wells 1, 2, and 3. Wells 1 and 2 are not in operation due to the wells infiltrating with sand until they became unusable. Well 3 was relocated, and there are future plans to either relocate or rehabilitate wells 1 and 2. Table 2 shows the current capacity and typical usage of the water sources in operation.

Table 2-Typical Usage of Sources

Source	Average Metered use (gal/month)	Typical Use (gpm)	Maximum Supply (gpm)	Maximum Supply (Acre-Ft/Yr)
Existing Well #3: 589 West and 1700 South	19,134,250	750	1,346	2,142
Existing WBWCD Source 1: PRV at 1700 South and 589 West	55,171,250	1,309	2,600	2,275
Existing WBWCD Source 2: 200 South and 1000 West				
Total	**74,305,500**	**2,059**	**3,946**	**4,417**

Syracuse City owns water rights that are currently not in use and has plans to use them as the water is needed. Based on the level of service being maintained, an additional water source either through a well or contract will need to be obtained in 2039. However, the total water rights and contracts allocated to Syracuse city will sustain it through 2045.

Table 3-Culinary Water Allocated to Syracuse City Through Rights and Contracts

Well #	Water Right #	Flow (cfs)	Maximum Flow (gpm)	Volume (ac-ft/yr)	Typical Water Withdrawn (ac-ft/yr)
1	31-2207	0.21	94	152.03[2]	0
	31-3203	0.35	157	253.39[2]	0
1, 3[1]	**31-3996**	**2.5**	**1,122**	**1,809.92[2]**	250
2	31-745	1.30	583	941.16[2]	0
3[1]	**31-2768**	**0.50**	**224**	**361.98[2]**	**0**
-	31-3524	0.027	12	3.0	0
4	-	-	-	-	0
Syracuse Total Water Rights		**4.88**	**2,193**	**3,520**	**250**
Weber Basin Water Conservancy District Contract		**6.9**	**2600**	**2275**	**2100**
Water Allocated to Syracuse City		**11.78**	**4,793**	**5,795**	**-**

1. Well #3 is the only well source currently in operation.

2. This is a calculated value assuming the maximum flow rate is drawn continuously.

Summary of Efforts to Maintain Culinary Water Level of Service

The city has a culinary water impact fee facilities plan. The plan is available on our website here: https://www.syracuseut.gov/DocumentCenter/View/569/Syracuse-Culinary-Water-Master-Plan-and-IFFP- PDF?bidId= The plan is in the process of being updated, as the last plan is from May 2019. The impact fee plan studies the city's needed system improvements to accommodate growth and maintain the existing system. It also sets the maximum allowable impact fee that the city may charge. The city charges developers culinary water impact fees and culinary water connection fees. The impact fees and connection fees are collected with each building permit. Also, the developer pays to build their roads and associated culinary water lines buried within them. The goal is to ensure that growth is paying for itself.

In 2021, the city constructed a new three-million-gallon culinary water tank. This tank was needed to keep up with growth in the city. The estimated cost of the new tank was $5,837,410 dollars. The water tank was funded by issuing water bonds that will be paid back over 10 years. The funding to repay the bond comes from impact fees charged on new development and culinary water utility fees that each resident pays.

It is anticipated that the culinary source allotment will be adequate to meet build-out conditions based upon current population projections. If population continues to rise beyond 76,228 due to city boundary expansions or density increases in the General Plan, then a reliable water supply and water use must be evaluated to offset the demand.

Secondary System

Syracuse City owns and operates a secondary water system to provide irrigation for outdoor watering. Secondary water comes from City owned shares with West Branch, Clearfield Irrigation, Hooper Irrigation, Layton Canal, Contract Water from Weber Basin, District 3 water from Weber Basin, surface water rights, and Davis and Weber Canal shares. Total acre-feet owned is 14,503.6. The city is on the board and helps coordinate water delivery to the city directly.

Water for the system is diverted from the Weber River through canals to City ponds. From the ponds, it is pumped into pressurized pipes buried mostly within public roadways. Lateral lines connect private property to the water mains within the roadways. From that point of connection, residents are free to install their own private sprinkler systems or spigots. The city bills residents a flat fee of $27.44 per month for most homes. The monthly fee is applied year-round, even though the system is only available during the warmer months.

The city requires secondary water shares to be dedicated to the city prior to development on a project-by- project basis consistent with ordinance 8.10.090. The privately owned shares in Layton Canal and Davis Weber canal companies as well as contract water are available for purchase by developers in sufficient quantities to accommodate future growth.

Secondary Water Level of Service

The current level of service is based on existing meter records. Secondary water usage from 2025 was calculated using the final water statement from secondary water suppliers. The total usage was 8,927.78 AFY to project water usage into the future, that number was converted into gallons per capita per day, which is the current level of service of the Syracuse secondary water system. For planning purposes, it is assumed that the level of service will remain the same into the future. Conservation efforts will be considered separately in the overall water usage budget.

Secondary Water Average Annual Demand

72,235 gal/Person/year X 40,286 = 2,910 Million gallons per year
= 8927.78 ac-ft per year

The 2025 level of service for planning purposes will be maintained as the population grows, however, conservation efforts will lower this level of service over time.

Secondary Water Capacity

Syracuse City's secondary water supply is derived from a combination of irrigation company shares and contracted deliveries provided through regional purveyors. As shown in Table 4, these sources include Clearfield Irrigation, West Branch Irrigation, and the Layton Canal Company, along with contracted water and an associated water right. Together, these entities supply the mix of irrigation shares and contractual allocations that make up the city's overall secondary water capacity.

Table 4-Secondary Water Shares, Rights, and Contracts

	Davis & Weber		Weber Basin		Water Right and Shares	Total
Purveyor	Clearfield Irrigation	West Branch Irrigation	Layton Canal Co.	Contracts	31-5207	-
Shares	105	993.5	2,093.5	1,738.1	3,620	**-**
Acre-feet/Share	6.4	6.4	1	1	1	**-**
Acre-feet	674	6,378	2,093.5	1,738.1	3,620	**14,503.6**

Summary of Efforts to Maintain Secondary Water Level of Service

The city has a secondary water impact fee facilities plan. The plan is available on our website here: https://www.syracuseut.gov/DocumentCenter/View/571/Syracuse-Secondary-Water-Master-Plan-and-IFFP- PDF?bidId= The impact fee plan studies the city's projected system costs to accommodate growth and maintain the existing system, and sets the maximum allowable fee that the city may charge. The plan is in the process of being updated, as the last plan is from January 2017. The city charges developers secondary water impact fees and secondary water connection fees to pay for the system maintenance and upgrades.

The impact fees and connection fees are collected with each building permit, and the developer pays to build their roads and associated secondary water lines buried within them. The goal is to ensure that growth is paying for itself.

Utah Code 73-10-34 requires all secondary services to be converted to meters by January 1, 2030. The cost to install secondary water meters to each home in the city is approximately $16,400,000. The city has selected a contractor and is currently about 90% complete and projected to be done by the deadline. On the properties that do have meters, the usage data is being collected. HB 0501 requires the city to use the data to implement a tiered fee structure based on usage by 2030.
The city built a new secondary water reservoir completed in 2024 that cost $13,301,335. The reservoir has a 37 acre-feet capacity. This new reservoir will increase our capacity needed for full buildout.

Water Conservation Efforts

In addition to expanding water infrastructure capacity, water conservation measures are necessary in order to accommodate a growing population. The city has adopted a Water Conservation Plan as required by the Utah Department of Natural Resources, Division of Water Resources. The plan is available on the city's website at:
https://syracuseut.gov/DocumentCenter/View/1659/Water-Conservation-Plan-document-
The Great Salt Lake is central to Syracuse's identity as the gateway to Antelope Island, so its preservation is a priority. Reservoir water drains directly into the Great Salt Lake thereby making any conservation efforts supply additional water to the lake.
The conservation plan lays out 13 water conservation goals. They include:

1. Culinary Radio-read Meters – meters converted to radio read to improve leak detection, improved usage tracking.
2. Ordinances – city implemented the following ordinances:
    - 4.25 – annual conservation plan for large-area property owners.
    - 4.15 – prohibiting waste.
    - 10.30.050 – landscaping on new homes not to exceed 35% turf in front and side yards and 15% on commercial properties.
3. Water smart clocks – the city is adding smart clocks to all city parks and buildings.
4. Xeriscape –Various xeriscaping and turf conversion projects have been completed in our parks, City Hall, cemetery, and roundabouts.
5. Reclaimed Water – Research the possibility of one day reclaiming treated wastewater from North Davis Sewer District treatment plant on the city's west border.
6. Public Education – Ongoing education via print materials, handouts, website, and social media posts.
7. Supply and Demand Accuracy – The city added a pump outflow meter.
8. Secondary Metering – City is currently in process of adding meters to currently

unmetered connections.

9. Secondary Water Season – The city has shortened the season from April 15 to October 15 to May 1 to October 1. They also prohibit watering on Sunday and one other day based on location.
10. Ditch bank maintenance – We actively mow and spray phragmites in ditches.
11. High culinary consumption – The city reviews culinary water reads for unusually high consumption monthly.
12. Park strip conversion – City has an incentive program to excavate grass in park strips of single-family homes at no charge. Also, 'Flipped strip' at City Hall in 2023.
13. Improved accounting of unmetered culinary water – Evaluating the costs to retrofit all city buildings and parks with meters. The city recently increased the fee for the bulk water fill station. The public works department manages a construction water meter rental program.

Open Space and Agricultural Land Preservation

Syracuse City Ordinance provides strong protections for agricultural land, allowing property owners to maintain their land for agricultural use if they choose. These requests are frequently approved, as the City is committed to respecting landowners' wishes and applying no pressure to develop. In addition to these protections, open land surrounding the wastewater treatment plant is preserved by the Davis Sewer District, further contributing to the community's open space.

Syracuse also enforces development standards that prioritize sustainability and smart growth. For example, the City only permits developments that can be served by a gravity sewer system, which naturally limits expansion and helps preserve open space along the western edge of town. Furthermore, cluster developments are allowed when only a portion of a property can be served by sewer, provided that any undeveloped land is dedicated to the City for preservation. These measures collectively ensure a balance between growth and the protection of Syracuse's rural character.

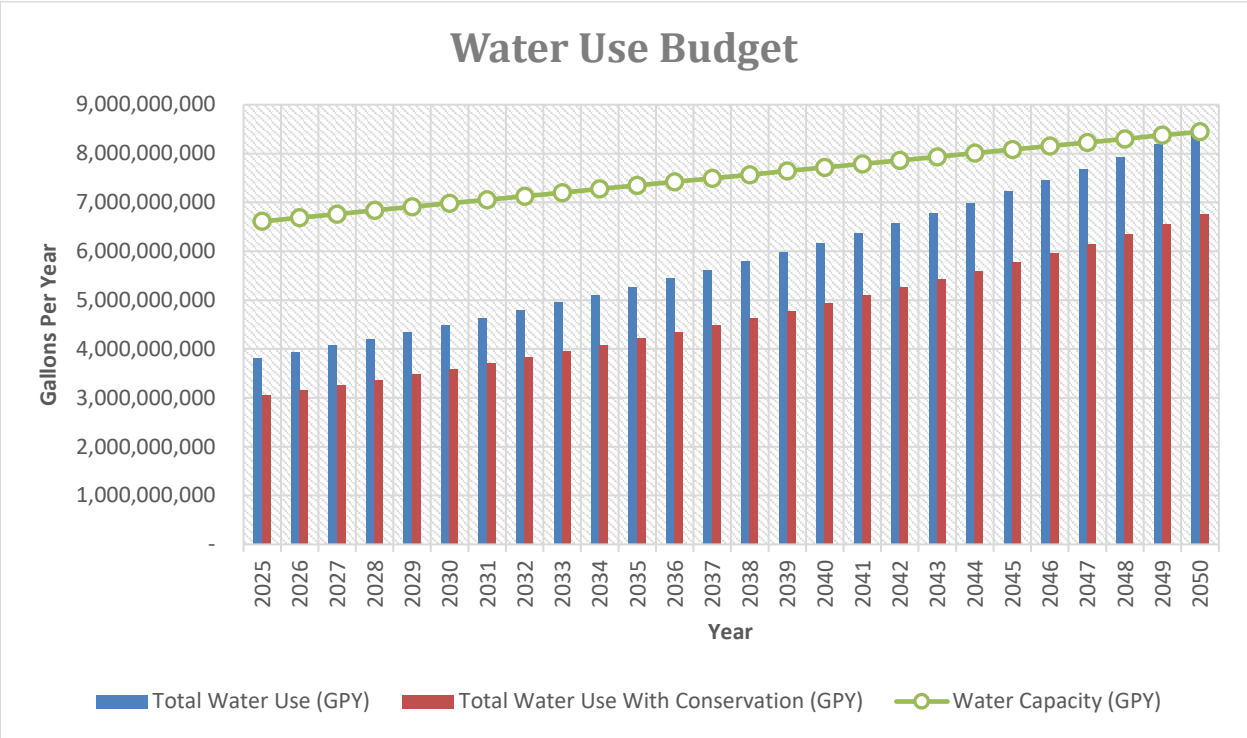
Overall Water Budget

The combined culinary and secondary water budget meets the current level of service through 2042, and with conservation, supplies can extend to 2049. After that, additional water sources will be required. D&W Canal Company currently delivers 1,990,241,872.5 gallons annually to agricultural customers, and it is assumed that some of this supply will be transferred to the city as development occurs. According to a Weber Basin Conservancy District Report titled "2024 Consumptive Per Capita Water Use – Weber Basin Water Conservancy District" the Gallons per capita per day of water use in Davis County is 83,220 Gallons/person/year and Weber County is 85,410 gallons/person/year.

Table 5-Comparative Water Use to Davis and Weber County

Community	Gallons/person/year
Syracuse	94,741
Davis County	83,220
Weber County	85,410

Figure 1-Syracuse City Water Budget



1. Water Capacity Increases due to city ordinance requiring new developments dedicate 3 acre-feet per acre to the city.