General Plan 2040 Appendix G: Water Resource Element 2025

Overview

Utah statute requires that the City of South Salt Lake General Plan include a Water Resource Element that addresses:

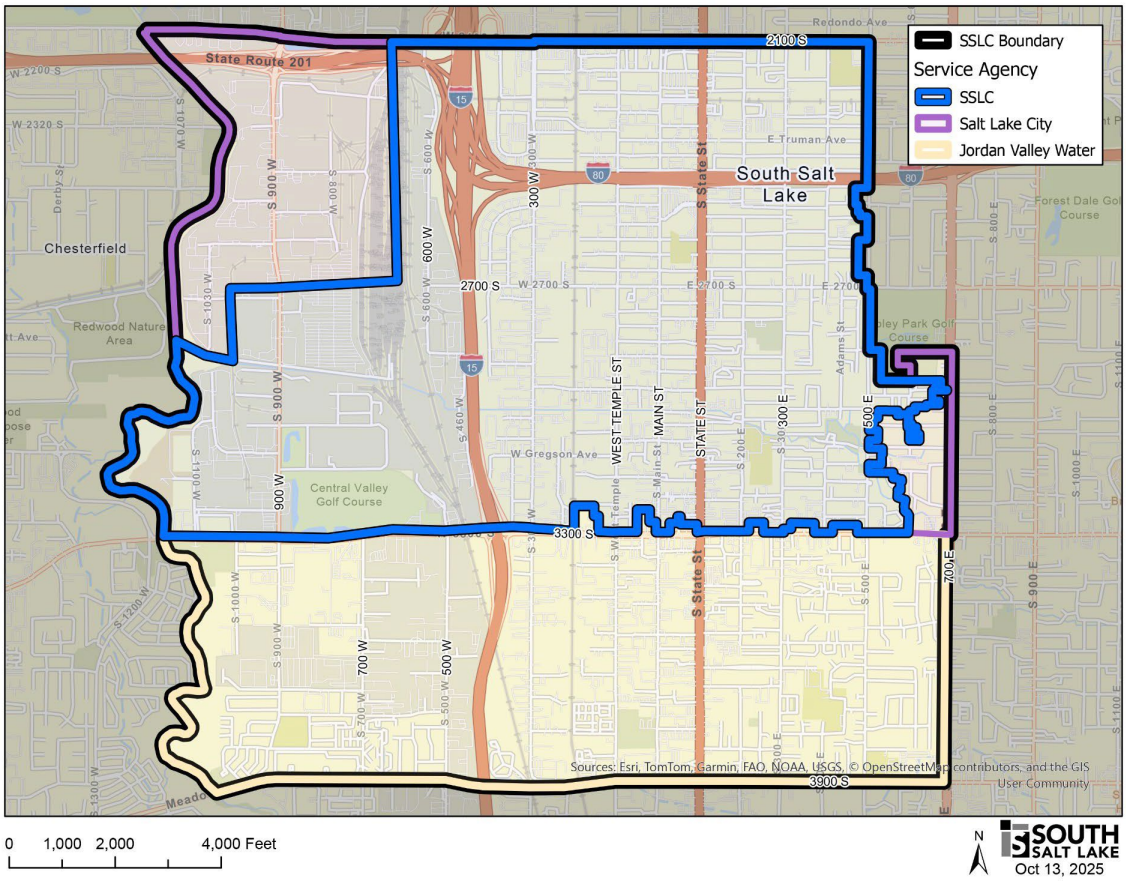
1) Effect of permitted development on water demand and infrastructure.
2) Methods for reducing water demand and per capita consumption for existing development.
3) Methods for reducing water demand and per capita consumption for future development.
4) Opportunities to modify operations to eliminate or reduce conditions that waste water.

The Utah State Legislature adopted SB 110 (Utah Code 10-9a-403), passed in 2022, which requires the City of South Salt Lake (SSLC) to develop a water use and preservation element that is integrated with the land use planning and development within the South Salt City General Plan. This update to the Water Resource Element in the General Plan Appendix integrates water and land use planning, outlines the current and projected water budgets as well as strategies for water conservation. This Water Resource Element of the General Plan has been developed to meet the letter and intent of the State's requirements and to secure a sustainable water future for SSLC.

This updated Water Resource Element seeks to provide detailed information on the current status of the City's water infrastructure and clear guidance for the City to integrate land and water use effectively. The recommendations included in this appendix are based on demand data, growth projections, standards from DDW (State of Utah Division of Drinking Water), city zoning ordinances, known planned developments, and standard engineering practices. The city's water system comprises a variety of components, including wells, booster pumps, storage facilities, valves, and pipes. The water system must be capable of responding to daily and seasonal variations in demand while concurrently providing adequate capacity for firefighting and other emergency needs. Both present and future needs were evaluated in this general plan water resource element update. Present water needs were calculated according to the DDW minimum sizing requirements and compared

with actual water use obtained from billing record data and system flow records. Future water needs were estimated by identifying locations where redevelopment is expected.

SSLC Water Service Agencies



The City was incorporated in 1938, with desire for water and sewer services as some of the primary motivations to incorporate the City. Since its incorporation, the City has evolved into a diverse mix of single-family and multi-family residences, commercial and business areas, and light industrial zones. According to the U.S. Census Bureau, the population for the City is estimated to be 26,003 as of July 1, 2022 (U.S. Census Bureau, 2022).

The city faces two major challenges: an aging water distribution system and declining well capacity. In order to meet expected future demands, the City must address these issues. Many of the system's pipes have been in use for over 50 years and nearing the end of their useful life, resulting in frequent water quality complaints. The City's water supply comes from both local wells and Jordan Valley Water Conservancy District (JVWCD). However, with well production decreasing and water demand increasing, the City has been forced to increase dependence on JVWCD water, which is significantly more expensive than City well water. The City also maintains two connections with Salt Lake City, but this source is

generally avoided due to even higher costs. The JVWCD currently allocates 1,020 acre-feet of water annually to SSLC through a contractual agreement. However, existing limitations within JVWCD's infrastructure necessitate a future strategy for the City to develop independent water sources to meet projected demands.

1) **Effect of permitted development on water demand and infrastructure**

One of the main purposes of the Water Resource Element update is to identify the current water demand and project the future water needs of the City.

To estimate future water needs, the City projected population growth in SSLC is used to forecast water usage demand trends. The growth projections for the City were evaluated as part of this master planning effort. Historic and projected population through 2060 are shown in the graph below. The Water Resource Element update primarily aims to determine current and future water demands for the City.

To achieve this, the City projected population growth within SSLC to forecast water usage trends. Figure 1 illustrates both historical and projected population growth through 2060, which was evaluated as part of this master planning effort.

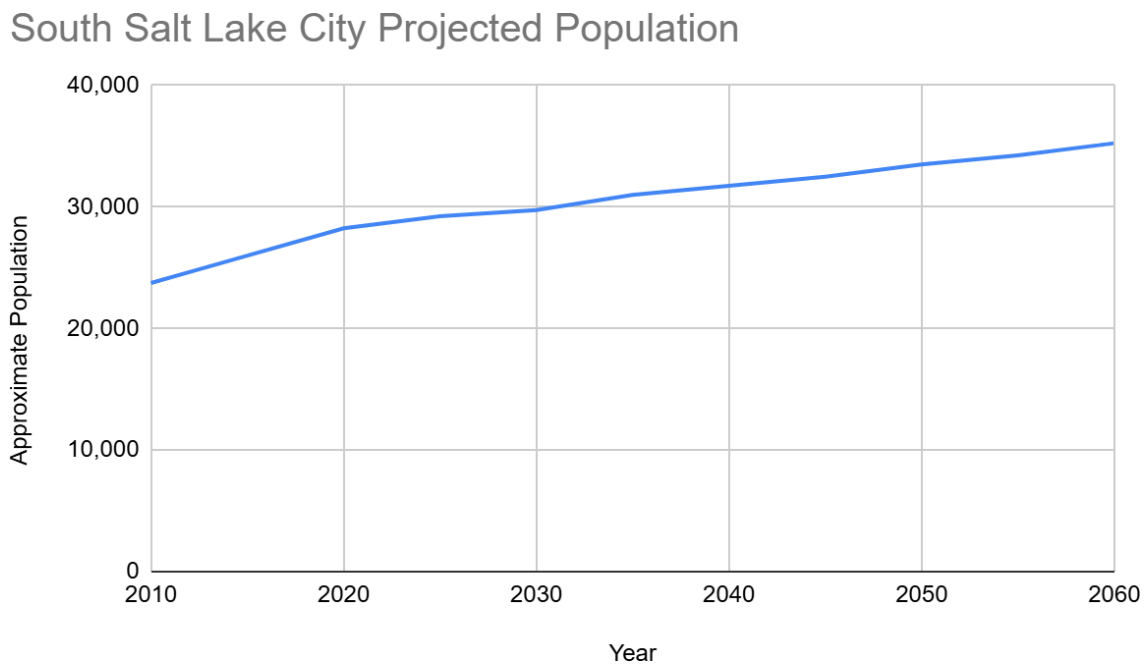


Figure 1

SSLC anticipates continued population growth, particularly as its Downtown and Transit-Oriented Development (TOD) areas continue to transform into high-density residential hubs. This steady increase is projected due to the city's proximity to public transit and its adherence to municipal code guidelines that encourage high-density, mixed-use

developments around transit hubs in the City. These developments aim to create attractive communities, increase the tax base, and boost ridership on the existing public transit system.

Table 1 presents the projected Equivalent Residential Connection (ERC) count for 2032, 2042, and at build-out. This ERC table is crucial for comparing with the City's reliable water supply to evaluate future water demand. It is important to note that "reliable water supply" does not refer to total water rights or the ability to purchase water. The City will continuously monitor and compare its ERC with the growth in water demand to ensure a sufficient water supply as the population increases.

Table 1 ERC Growth Projection

Year:	**Projected ERCs:**
2022	5,484
2032	7,747
2042	9,461
Built-out	16,440

The following paragraphs outline the water rights owned by the City along with the corresponding water sources. A summary of the City's water rights tied to existing wells is shown in Table 2. At the same time, Table 2 can help identify the current water supply and availability through identifying the existing available capacity and total associated water rights in gallons per minute (gpm).

Table 2 Summary of SSL Wells

Source:	**Existing Available Capacity:**	**Total of associated Water Rights (GPM):**
300 E Well	725	2,126
700 E Well	1,200	1,842
Davis Well	2,900	2,944
Total:	4,825	6,912

In addition to the existing wells, the City also maintains four connections with JVWCD, listed in Table 3. Table 3 demonstrates the total wet water SSLC receives at a minimum by contract, the total amount of water needed can be increased if necessary.

Table 3 Summary of JVWCD Connections

Source	Meter Size (inches)	Flow Capacity (gpm)	Annual Contract (ac-ft)
300 East	6	700	1,020
State St	6	700	
300 West	8	1,300	
900 West	10	1,500	
Total:	-	4,200	1,020

Peak day demand, defined as the highest water usage day of the year, is crucial for determining the necessary source flow capacity for current and future conditions. This demand is primarily characterized by the diurnal demand curve and the average peak day demand. Table 4 summarizes the existing peak day demand. As peak day demand is projected to increase, the City must enhance its peak day capabilities to avoid a water supply deficit.

Table 4 Existing Peak Day Demand

ERCs	Level of Service (gpd/ERC)	Existing Peak Day Requirement (gpm)	Existing Supply (gpm)	Surplus (+) or Deficit (-)
5,484	1,364	5,195	5,425	+230

Water utilities are required to meet the average yearly demand, which is the average volume of water consumed annually. Table 5 summarizes the City's current average yearly

demand. With a surplus of 7,554 ac-ft/yr, the City's water supply is adequate to meet immediate needs from new developments, including all approved projects. The City aims to foster an efficient relationship between water demand growth and new developments, supported by water conservation efforts. Table 5 is based on total certified water rights owned by the City as demonstrated in the SSLC's 40-year Water Rights Plan.

Table 5 Existing Average Yearly Demand

ERCs	Level of Service (ac-ft/ERC)	Existing Requirement (ac-ft/yr)	Existing Supply (ac-ft)	Surplus (+) or Deficit (-)
5,484	0.597	3,274	10,828	+7554

Section 1 details South Salt Lake City's current and projected water demand, particularly in relation to permitted development and population growth, including the city's reliance on local wells and the JVWCD. The section also provides data on existing water supply, including well capacities and JVWCD connections, and analyzes current peak and average yearly demands, identifying a surplus in average yearly supply but a deficit in peak day capacity at build-out. Addressing these shortfalls and promoting efficient water use for existing developments are critical for the city's sustainable water future.

2) Methods for reducing water demand and per capita consumption for existing development.

The City of South Salt Lake has identified several issues that require attention, according to its Water Conservation Plan. The primary concern is potential water waste resulting from inefficient indoor and outdoor water usage and system-wide losses of water. According to the South Salt Lake Culinary Water system summary, SSLC experiences water loss at an average of 15% to 20% per year. The water loss percentage is calculated through comparison between the total water acquired from all sources to total sum of retail culinary water use. To achieve statewide water preservation goals, the City has pinpointed the following specific concerns:

- Many pipes in the drinking water distribution system are old or undersized and may be leaking. A pipe replacement program addresses these issues periodically.
- Comparison of the water supplied to the distribution system and the monthly meter readings has revealed water that is unaccounted for.
- Potential for further indoor and outdoor conservation efforts still exists.

South Salt Lake has achieved significant progress in water conservation, decreasing per capita water use by 21% since 2000. The City is committed to ongoing efforts to conserve water resources, aiming to meet or surpass the original statewide conservation targets. The City has identified goals in this General Plan Water Element to address the identified problems and to promote conservation.

- The City will continue to implement the water conservation measures.
- The City's water rate structure has been amended to better promote conservation. The City will consider additional rate modifications to encourage wise water use.
- The City will determine potential causes for unaccounted drinking water and attempt to reduce this water loss.
- The City will continue its pipe replacement program, replacing leaking pipelines as budget allows.

Existing Conservation Measures:

The City of South Salt Lake is currently implementing, and will continue to implement, the following water conservation measures.

1. Promotion of individual water conservation measures to City residents through the City's website, the annual Water Quality Report, bill stuffers, the City's "On the Move" monthly newsletter, and a booth during the City's annual "Celebrate South Salt Lake" community event.
2. The City of South Salt Lake continues to welcome creative and innovative ideas and strategies to conserve water and minimize water waste.
3. Actively promoted conservation measures by the City include the following:
    a. Ways to save water indoors:
        i. Check all faucets, pipes, and toilets for leaks.
        ii. Install water-saving showerheads and low-flush toilets.
        iii. Take shorter showers.
        iv. Never use your toilet as an ashtray or wastebasket.
        v. Turn off the water while brushing your teeth or shaving.
        vi. Defrost frozen food in the refrigerator.
        vii. Rinse vegetables in a full sink or pan of water.
        viii. Fully load your dishwasher. Rinse dishes in a full sink or pan of water.
        ix. Wash full loads of clothes.
    b. Ways to save water outdoors:
        i. Don't over-water landscaping.
        ii. Limit watering of plants during the afternoon and and early evening.
        iii. Adjust sprinklers so that they don't water the sidewalk or street.
        iv. Don't water on cool, rainy, or windy days.
        v. Equip all hoses with shutoff nozzles.
        vi. Use drip irrigation systems for all areas except for turf grass.
        vii. Plant drought-tolerant or low–water use plants and grasses.
        viii. Use shrubs and ground cover to reduce the amount of grass.
        ix. Place mulch around plants to reduce evaporation and discourage weeds.
        x. Set your mower blades one notch higher, since longer grass means less evaporation.
        xi. Use a pool cover to cut down on water evaporation.
        xii. Use a bucket instead of a hose to wash your car.

xiii. Use a broom rather than a hose to clean sidewalks, driveways, loading docks, and parking lots.

c. The City directs citizens to the Slow the Flow website (www.slowtheflow.org) for additional conservation ideas.

d. The City directs citizens to the Center for Water-Efficient Landscaping at Utah State University (http://cwel.usu.edu/) for information on efficient landscape irrigation. A Landscape Handbook with water-wise landscaping information is accessible on the City's website. The handbook addresses irrigation techniques, lists recommended water-efficient plants, and outside water-conservation resources.

e. The City has adopted the International Plumbing Code (IPC) which requires installation of water-saving fixtures in new construction (City Code 15.08.050). Maximum flow rates as defined by IPC 604.4 are as follows:
   i. Shower head: 2.5 gpm at 80 psi
   ii. Sink faucet: 2.2 gpm at 60 psi
   iii. Toilet: 1.6 gal per flush

f. The City adopted a new water rate structure effective June 11, 2025. This new rate structure increases every year to encourage water-wise usage. Previous to this change, the rates were slightly increased in the summer of 2024. The 2025 rate increase is shown below in Table 6.

Table 6 Culinary Water - Minimum Monthly Fee

Meter Size	2025-2026	2025-2027	2025-2028	2025-2029	2025-2030
0.75" Meter	$15.00	$18.00	$21.60	$22.79	$24.04
1" Meter	$25.05	$30.06	$36.07	$38.06	$40.15
1.5" Meter	$49.95	$59.94	$71.93	$75.89	$80.05
2" Meter	$79.95	$95.94	$115.13	$121.47	$128.13
3" Meter	$150.00	$180.00	$216.00	$227.90	$240.40
4" Meter	$250.05	$300.06	$360.07	$379.91	$400.75
6" Meter	$499.95	$599.94	$719.93	$759.59	$801.25
8" Meter	$799.95	$959.94	$1,151.93	$1,215.39	$1,282.05

4. The City has implemented a program to replace outdated galvanized steel water services with new copper ones. Approximately 75% of these services have been replaced to date, with the City committed to continuing this replacement as leaks are detected and as budget permits. This initiative, particularly the replacement of galvanized pipes in City parks, has led to an estimated 15% reduction in water consumption.
5. Existing City Code 13.52.050, provides for emergency limitation of water use when necessary.
    a. Mayor's proclamation of water use limitation. In times of scarcity of water or whenever it shall be deemed necessary by the City Council, the Mayor shall, by proclamation, limit the use of water to such extent as may be necessary for the public good. Providing, however, that such restrictions and limitations are not discriminatory and are made on a reasonable basis. It is unlawful for any person by himself, family, servants or agents to violate any such proclamation, and in addition to any other penalties which may be imposed, the water shall be turned off and not turned on again until the payment set by resolution of the City Council for each violation has been made.
6. Existing City Code 13.56.070, prohibits the wasting of water. "Waste prohibited. It is unlawful for any water user to waste water, or to allow tanks, air conditioning units or similar equipment to leak or overflow, or to wastefully run water from hydrants, faucets or stops, or through basins, water closets, urinals, sinks or other apparatus, or to use the water for purposes other than those for which he has paid or to use water in violation of the rules and regulations for controlling the water supply and the provisions of this chapter."
7. Existing City Code 13.56.180, puts restrictions on outside water use times. "Outside water use time restrictions. The outside use of water for irrigation is not permitted between the hours of 10:00 a.m. and 6:00 p.m. unless otherwise directed in writing by the Public Works Director or specific water provider."
8. Existing City Code 17.06.300.D.2.g, regulates irrigation systems for new landscape areas. "Irrigation. Permanent irrigation systems are required wherever Landscaping is required by this Chapter. Irrigation systems shall meet the standards below.
    a. All irrigation shall be appropriate for the designated plant material to achieve the highest water efficiency. Drip irrigation or bubblers shall be used except in Turf Grass areas. Drip irrigation systems shall be equipped with a pressure regulator, filter, flush-end assembly, and any other appropriate components.

b. Each irrigation valve shall irrigate landscaping with similar site, slope, and soil conditions, and plant materials with similar watering needs. Turf Grass and planting areas shall be irrigated on separate irrigation valves. In addition, drip emitters and sprinklers shall be placed on separate irrigation valves."

3) Methods for reducing water demand and per capita consumption for future development.

As the city undergoes redevelopment, water demand is projected to rise. This will involve either converting open spaces or redeveloping existing properties into higher densities. SSLC currently do provide different tools to encourage and promote high density residential developments, like tax incentives, an interactive design process, and efficient approval workflow. Similar to current needs, future water source requirements were assessed based on both peak-day and average annual demand. "Build-out water demand" refers to the water volume required for developments currently under construction or in the application phase once they are completed and receive utility services.

Table 7 indicates that the City's build-out water source requirements project a total peak day demand of 15,572 gallons per minute (gpm). To support maximum development density, an additional 10,147 gpm of water sources are needed. This water deficit can be addressed through various strategies, including water conservation efforts, reactivating unused or abandoned wells, or developing new wells. Additionally, the land use coordination goals detailed in this appendix will help mitigate the water shortage by promoting water-efficient development patterns and uses through the alignment of municipal land use code with water efficiency objectives.

Table 7 Build-Out Peak Day Demand

ERCs:	Level Of Service (gdp/ERC):	Build-Out Requirement (gpm):	Existing Supply (gpm):	Surplus (+) or Deficit (-):
16,440	1,364	15,5720	5,425	-10,147

The build-out yearly demand for the City's drinking water system is summarized in Table 8. The build-out annual demand is expected to be met by the annual available groundwater rights.

Table 8 Build-Out Average Yearly Demand				
ERCs:	**Level Of Service (ac-ft/ERC):**	**Build-Out Requirement (ac-ft/yr):**	**Existing Supply (ac-ft):**	**Surplus (+) or Deficit (-):**
16,440	0.597	9,816	10,828	+1,012

To ensure system resilience, drinking water systems should maintain enough source capacity to meet demand even if a major source is unavailable. No single source should be indispensable. Therefore, redundancy evaluations must assume the largest source is out of service.

The Davis Well, with a capacity of 2,900 gpm, is currently the largest source. While the City presently has a surplus physical capacity of 230 gpm, the unavailability of the Davis Well would result in a 2,670 gpm deficiency. In such a scenario, the City might need to utilize existing JVWCD connections to supplement the system's capacity.

Under the build-out scenario, even with all current sources operating at full capacity, there is insufficient capacity. To meet build-out demands with full source redundancy, the City would need to meet a projected demand of 15,572 gpm without relying on the Davis Well.

To support future developments, the City requires additional water supply through alternative sources and expanded infrastructure. The City aims to obtain all its JVWCD (JVWCD) water via one of the four existing connections to mitigate water quality issues and lower peak-day demand charges. An analysis indicated that upgrading the 300 East connection to maintain a constant flow rate of 600 gpm is necessary. It is recommended that the City establish a constant flow rate from JVWCD through this upgraded connection, while utilizing its wells and storage tanks to meet peak-day capacity.

Hansen, Allen & Luce, Inc. (HAL) performed a well-siting study for the City in 2022. As a result of the study, the following actions have been taken and recommendations have been developed:

- The City has acquired the property and purchased the 150 West Price Avenue property and has begun planning for a new well.
- As stated in the well-siting study, it is recommended that the City pursue the Harmony Park well site as the second location for a future well.

- An alternative to constructing a new well is redeveloping an existing, unused well. The best choice for this is the Bolinder Well, as redeveloping the existing well, tank, and booster station will support future growth in the city's downtown area.

Extensive water conservation is recommended for SSLC for the following reasons:

- DDW periodically reviews water use data and issues minimum sizing requirements based on actual water use data. If sustained water conservation can be demonstrated, the City's sizing requirements may be reduced, which would allow the City to extend the capacity of existing sources and storage tanks and delay or eliminate the need for future capital projects.
- Water conservation results in better drought-preparedness and emergency preparedness.
- Water conservation can enhance the City's positive image and promote a culture of conservation among residents. Water conservation may create a positive image for the City and a culture of conservation among residents.

The following recommended actions help ensure sufficient source capacity for current and future customers:

- Regularly update and continuously implement the City's Drinking Water Source Protection plans.
- Take all necessary actions to protect existing water rights.
- Regularly clean and maintain wells to prevent their capacity from diminishing ensure the capacity does not diminish over time. Well cleaning is recommended whenever pumps are removed for maintenance or replacement – typically at intervals of 5–15 years.

South Salt Lake City's commitment to water sustainability is evident in its multi-pronged approach, encompassing both immediate and long-term strategies. From public awareness campaigns and adjustments to water rate structures to significant infrastructure investments and the integration of water-wise policies into future development, the City is actively working to secure a resilient water future. These efforts highlight a holistic vision where conservation, efficient infrastructure, and strategic planning converge to meet the challenges of increasing demand and changing environmental conditions.

4) **Opportunities to modify operations to eliminate or reduce conditions that waste water.**

South Salt Lake City anticipates increased water demand due to ongoing redevelopment. The city is proactively developing a comprehensive strategy to ensure a sustainable water supply for future growth. This includes a clear plan to address projected capacity deficits, promote water conservation, and mitigate the impact of a potential loss of a major water source, ensuring readiness to meet peak day demand at full build-out.

South Salt Lake is proactively addressing its future water needs through a multi-faceted approach. This includes significant infrastructure investments, such as acquiring land for a new well, identifying a second potential well site, redeveloping the Bolinder Well, and upgrading its connection to the JVWCD.

Beyond infrastructure, the City is strongly committed to aggressive water conservation. This commitment is demonstrated through educational initiatives, strategic rate structuring, partnership with JVWCD and updates to city codes, all aimed at managing demand effectively. These efforts are designed to extend the capacity of existing water systems and cultivate a resilient, drought-prepared water culture within the community.

In essence, South Salt Lake is not merely reacting to future water demands but is actively preparing for them. By combining capital projects, strategic partnerships, and community-wide conservation efforts, the City is positioning itself to support continued development and ensure long-term prosperity.

The City of South Salt Lake proposes to implement the following additional Water Conservation measures:

- The City will consider purchasing leak detection equipment and performing a leak detection survey. This survey would be followed by the implementation of the ongoing pipeline replacement program for leaking pipelines.
- The City is currently developing a commercial landscape ordinance to encourage water conservation under Title 17 of the SSLC Municipal Code, which includes the following:
    - Drought Tolerant Species. Climatic conditions in Salt Lake County are generally arid, and the selection of plant species suited to dry conditions is allowed and appropriate. The State of Utah has compiled a list of "WaterWise" plants which can be accessed at http://www.waterwiseplants.utah.gov. Drought tolerant plants shall be from transplants and not seeded on site.

    - Water Conservation. Landscape design pursuant to the requirements of this chapter should be done with water conservation in mind because of population growth, limited available water and the climatic limitations of Salt Lake County. While irrigation systems are required for certain landscaping and may be desirable for other applications, all irrigation systems shall be designed for efficient use of water.

- The City will consider reevaluating its water rate structure to further promote water conservation.
- The City will continue its program to replace old, galvanized steel water services with copper water services.
- The City will continue to monitor overall system water loss and institute measures to address unaccounted water.

South Salt Lake City's commitment to water sustainability is evident in its multi-pronged approach, encompassing both immediate and long-term strategies. From public awareness campaigns and adjustments to water rate structures to significant infrastructure investments and the integration of water-wise policies into future development, the City is actively working to secure a resilient water future. These efforts highlight a holistic vision where conservation, efficient infrastructure, and strategic planning converge to meet the challenges of increasing demand and changing environmental conditions.

Continued partnership with the JVWCD is crucial for the City of South Salt Lake's water future and long-term water resource management strategy. This collaboration is essential to effectively address increasing water demand from new development and expansion. It involves coordinated planning for infrastructure upgrades (e.g., new pipelines, storage facilities) and ensuring the city's water rights and usage align with regional supply capabilities. This ongoing coordination provides access to a larger, more resilient water network, mitigating risks from localized supply issues and ensuring a stable and sufficient supply for current residents and future growth.

The City of South Salt Lake recognizes the vital connection between land use development, future planning, and water usage. To foster sustainable growth, the City is committed to strengthening collaboration between its Community Development and Water Departments. This integrated strategy ensures that new developments align with the city's long-term water availability. By sharing and analyzing data on proposed developments and their projected water demands, the city can make informed decisions regarding zoning, density, and infrastructure.

Prioritizing and targeting uses with naturally lower water consumption is a crucial strategy for the City of South Salt Lake, especially given its water supply challenges. This proactive coordination prevents potential water shortages, ensuring that new residential, commercial, and industrial projects are both economically viable and environmentally sustainable. SSLC will continue to encourage water-efficient land uses, such as mixed-use and high-density residential developments. This initiative will be supported by current and future water-efficient landscaping and irrigation codes.

South Salt Lake (SSLC) is dedicated to advancing water conservation through the implementation and promotion of water-efficient landscaping. The city's current efforts include providing water-efficient landscape guidance via the City Landscaping handbook, which helps residents identify suitable local species of trees, shrubs, and other plants. Additionally, SSLC already has water-efficient irrigation codes that consider plant material, needs, soil type, and slope steepness.

To further these initiatives, SSLC will develop educational programs and continue to update land use ordinances as needed. A key goal is the continuous adoption of innovative water-saving measures and the integration of water-wise, streetscape-preserving landscaping requirements for all new and existing developments. This ensures that conservation is prioritized from the outset in future residential, commercial, and public spaces. By mandating drought-tolerant plants, efficient irrigation systems like drip lines, and reduced turf areas, the City aims to significantly decrease overall water consumption and establish a new benchmark for sustainable development.

The City of South Salt Lake, in close coordination with the statewide water preservation program, will continue to explore and adapt efficient ways to save water. The city will continue to explore and adopt new technologies, best practices, and educational programs that are proven to reduce water consumption and demand. This partnership ensures that South Salt Lake City remains at the forefront of water conservation, continually improving its approach to manage this essential resource for both current residents and future generations.