

Council Meeting Date of January 22, 2020

Agenda Item Number: 16a

## REQUEST FOR COUNCIL ACTION

**SUBJECT:** West Jordan Water Conservation Plan Update

**SUMMARY:** Approve the document "West Jordan 2019 Water Conservation Plan Update" which is required to be submitted to the Utah Division of Water Resources every 5 years and will serve as a general guide for future conservation efforts in West Jordan.

**FISCAL/ASSET IMPACT:** No direct impact. The Plan recommends various potential water conservation measures. However, the Plan does not commit or bind the City to spend any funds.

**STAFF RECOMMENDATION:** Staff recommends approval. The plan is required to be submitted to the State once every 5 years. The plan will serve as a guiding document for water conservation measures.

**MOTION RECOMMENDED:** "I move to approve the West Jordan 2019 Water Conservation Plan Update."

Prepared and to be Presented by:

  
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Recommended by:

  
Brian Clegg  
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Authorized for Council Consideration:

  
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Chief Administrative Officer

Reviewed for Legal Sufficiency

  
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## **BACKGROUND:**

The West Jordan Water Conservation Plan Update presents current water use information and conservation measures to help increase water conservation. The Plan does not commit or bind the City to spend City funds and refers to rebates and conservation incentives to homeowners who install water wise landscapes or water fixtures that use less water.

The 2018 average daily water use per person (capita) was 206 gallons, the goal was 170 gallons. The citizens reached this goal in 2011 which was a year with very heavy precipitation (23.64 inches). Since then the citizens used as much as 214 gallons per person per day (2016 with 13.45 inches of precipitation). Water use per person is calculated by dividing the average daily amount of water used by homes, businesses, and industries by the number of residents in the water system.

The recommended water conservation goals and measures to increase water conservation are as follows:

- Promotion of more efficient outdoor water usage,
- Promotion of more drought tolerant landscaping,
- Encourage a water conservation culture,
- Consider future rate adjustments to encourage wise water use,
- Continued public education and promoting Jordan Valley Water Conservancy District Water Savers Programs,
- Perform periodic review of commercial and residential landscape ordinances to ensure balance between aesthetics and water wise landscape and irrigation standards.

Reducing water consumption has the benefits of cost savings, less City water system infrastructure needed, and delay of construction of large water supply projects.

### **Attachments:**

Resolution  
2019 Water Conservation Plan Update





# 2019 WATER CONSERVATION PLAN UPDATE

# **CITY OF WEST JORDAN**

## **2019 WATER CONSERVATION PLAN UPDATE**

**Project Engineer**

**Tim Heyrend, P.E.**

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## Introduction

The City of West Jordan is located in the center of the Salt Lake Valley and is currently experiencing phenomenal, and rapid growth. In 2000 West Jordan had a population of 78,788, and in 2018 the United States Census Bureau estimated the population at 115,522, a 46% increase. Providing a high-quality drinking water supply to meet the needs of our residents is the highest of priorities for city leaders and water planners. A portion of the forecasted water supply comes from water conservation in the form of a reduction in per capita water use of 25% from the year 2000 to 2025. If this goal is met, the City will have reduced consumption from 227 gallons per capita per day (gpcd) to 170 gpcd. The Utah State Legislature reemphasized its commitment to water conservation by implementing the water conservation plan act. This legislation requires water systems to update and submit a water conservation plan to the Utah Division of Water Resources every 5 years.

The purpose of the 2019 City of West Jordan (City) Water Conservation Plan (Plan) update is to provide a guidance document of conservation goals or Best Management Practices (BMPs) for the city to use for the next five years. The Plan includes data and graphs to support conservation goal implementation by presenting reductions in per capita residential water use.

## Water System Profile

### *Service Area*

There are just over 32 square miles within the City boundaries of West Jordan. The City's drinking water system serves the area within the City boundaries except for a 1.2 square mile area in the north part of the City that is served by Kearns Improvement District (KID) (Figure 1).

### *Types of Use*

The City's drinking water system currently delivers annually about 13,810 ac-ft to 27,017 residential customers and 7,684 ac-ft to 1,233 commercial, 635 institutional, and 122 industrial customers throughout the City, see Table 1. The majority of the City's water (88%) comes from Jordan Valley Water Conservancy District (JWCD) and is distributed throughout the City via multiple City-owned pump stations, storage reservoirs, and transmission pipelines.

The drinking water system supplies both indoor and outdoor water uses to most of these customers. Secondary water use from canals is limited to less than 7% of the total water in the City. Residential and commercial users are located throughout the City, while Industrial users are in the southwest area.

**Table 1. Water System Use (acre-feet) by Connection Type**

Year	Residential	Commercial	Institutional	Industrial
2015	12039	4919	1406	1411
2016	11959	6723	741	
2017	11886	5769		
2018	13810	1960	4159	971

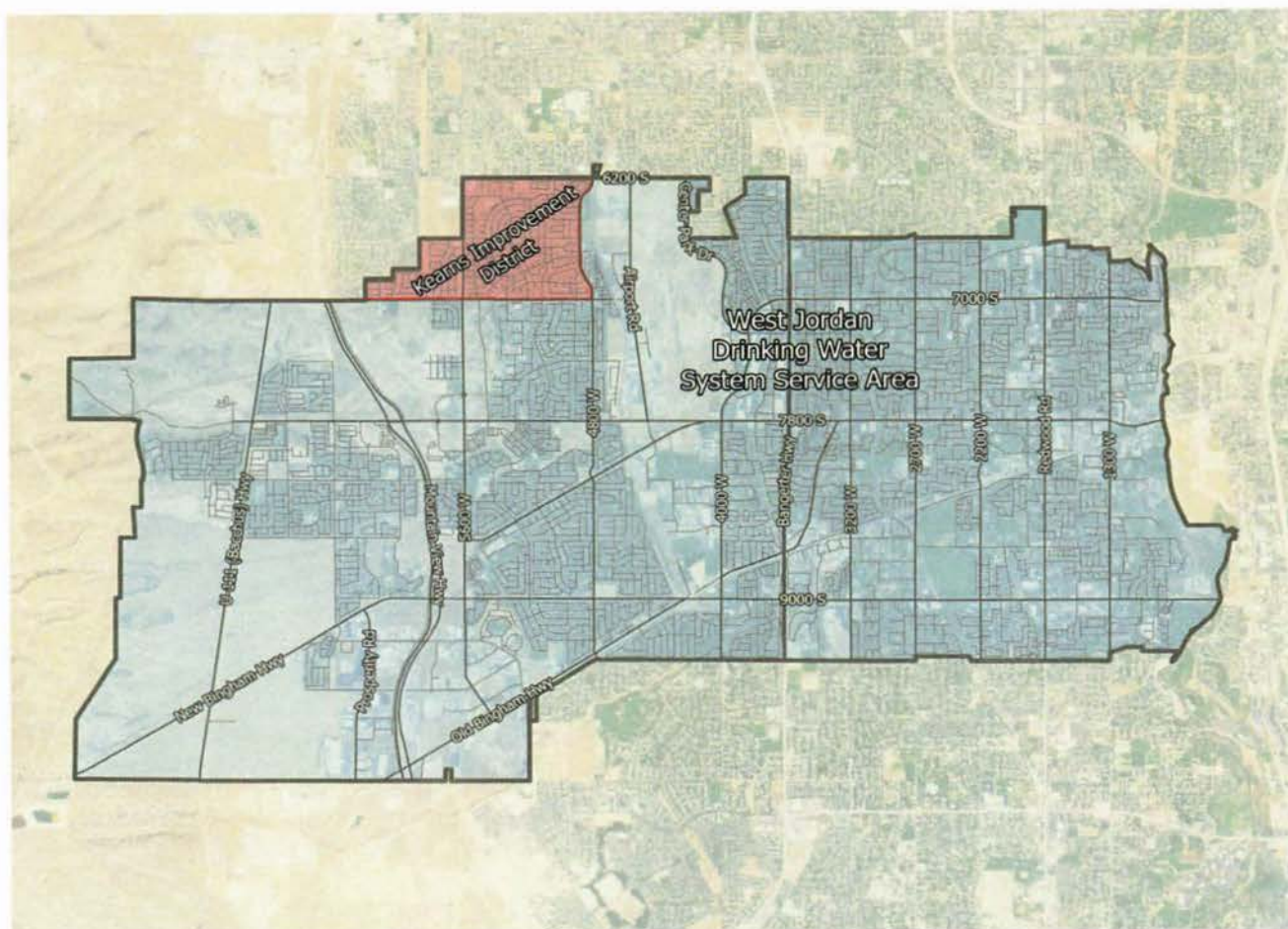
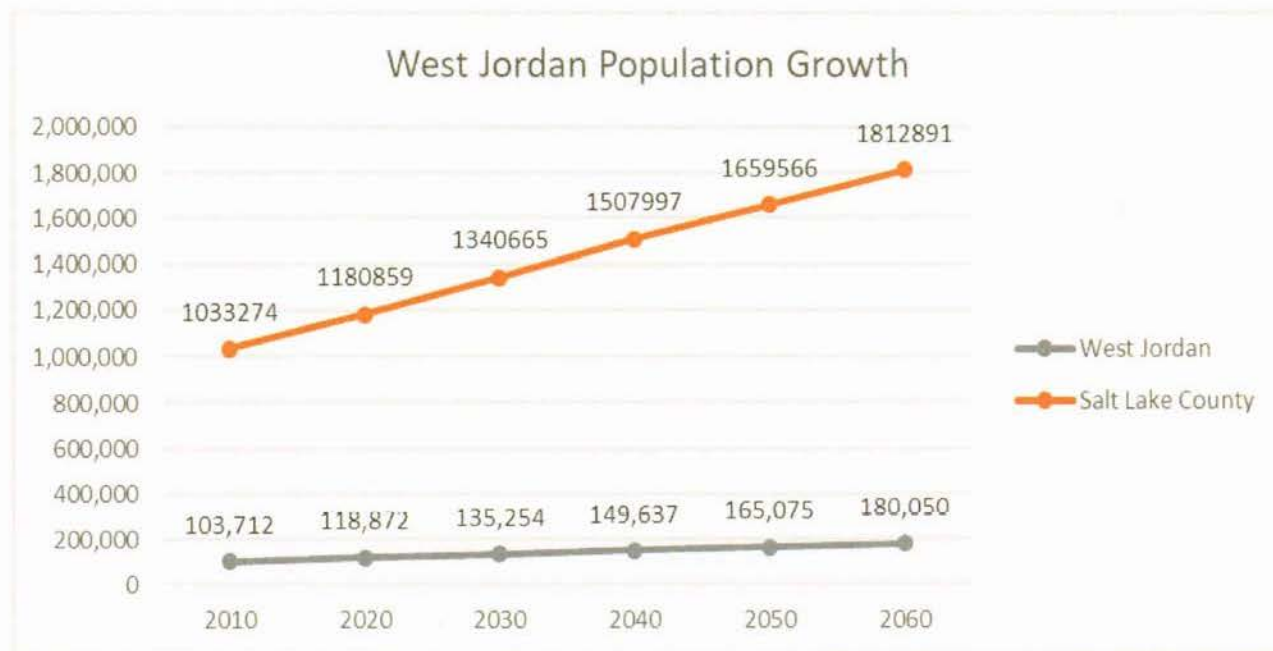


Figure 1: West Jordan Drinking Water System Service Area



## Population

In 2017, the City of West Jordan had an estimated population of 113,905 residents according to the U.S. Census Bureau. Census and State of Utah estimates indicate a net increase of 10,193 residents between 2010 and 2017. Growth rate projections estimated the city's 2018 population at 115,522 residents. The Governor's Office of Management & Budget projected that the city would reach 118,872 residents by 2020 and 135,254 by 2030. Figure 2 displays population projections through 2060. Table 2 provides total historical, current, and future population and those served by West Jordan's water system, excluding about 12,000 residents served by KID.



**Figure 2 West Jordan Population Growth**

Source: Governor's Office of Planning & Budget, 2012 Baseline Projections, U.S. Census Bureau

**Table 2. Population Past, Current, and Future**

Year	Total Population	Population Served Water by West Jordan System
2000	78,036	68,336
2005	95,620	85,418
2010	106,511	94,500
2015	112,171	100,171
2018	115,522	102,500
2020	118,871	106,871
2025	127,063	115,063
2030	135,254	123,254
2040	149,637	137,637
2050	165,075	153,075
2060	180,050	168,050

## WATER USE

### *Annual Drinking Water Use*

The City owns and maintains four wells and recently completed drilling of an additional well to be placed into service by spring 2021. The City annually samples and monitors the water quality from the City's wells. The City has conducted a source water assessment and has implemented a groundwater protection program for each well source, including a groundwater protection ordinance. The program has identified protection zones around each well and catalogued every potential contamination source within those zones. A risk assessment was conducted to evaluate the current safeguards to prevent or reduce pollution from entering drinking water sources. The water produced from City wells is mixed and blended with other water sources as it enters the water distribution system.

### *Annual Secondary Water Use*

Secondary irrigation water in the City is supplied from five canals to a small portion of the City. This includes city parks, housing developments, a golf course, two public schools and several homes and businesses on the eastern portion of the City. Secondary water usage represents less than 7% of the total water used in the City; however, secondary water sources are expected to be distributed and used more in the future, see Table 3. A breakdown of type of use and indoor and outdoor applications is shown in Table 4. Figure 3 presents the yearly gallons per capital per day usage.

**Table 3. Current and Past Per Capita Water Use by Source (acre-feet) 2000 to 2018**

Year	JVWCD Supply	City Wells	Secondary Supply	Totals	Population Served*	Per Capita Use (gpcd)
2000	13,715	3,652		17,367	68,336	227
2005	15040	1980	150	17170	85,418	179
2010	16520	2924	1300	20744	94,500	196
2015	18983	1723	374	21081	100,171	186
2018	21173	1888	544	23605	102,500	206

\*Does not include ~12,000 people in Oquirrh Shadows serviced by Kearns Improvement District

The Current 2018 gallons per capita per day (gpcd) = 206 gallons and includes residential, commercial, industrial, and institutional water use.

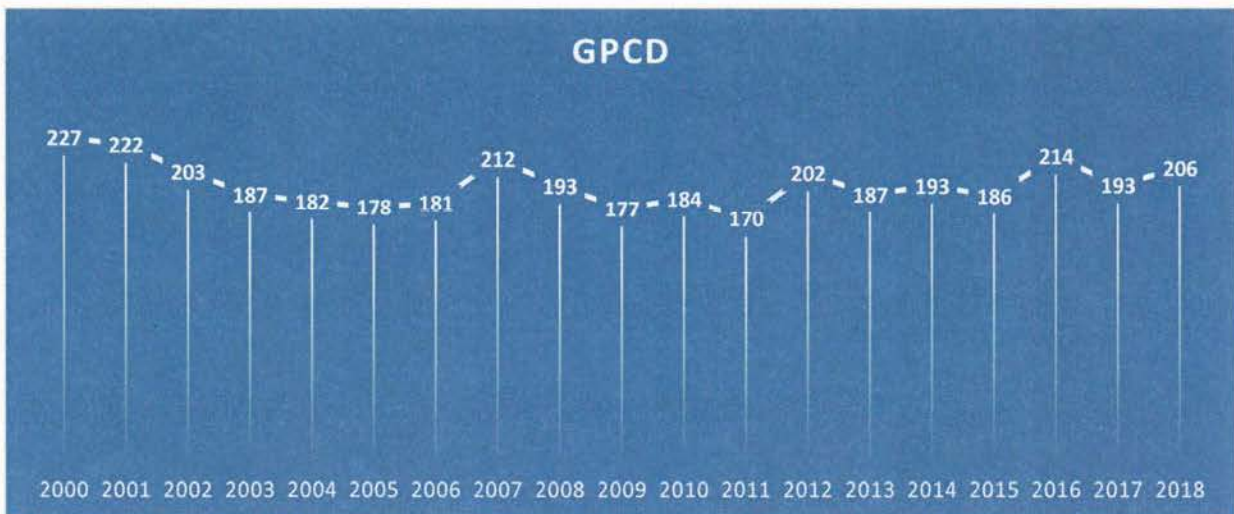
### *Future Water Use*

Based on the City's population projections shown in Table 2, the population served by the City's water system is estimated to be approximately 115,063 by the year 2025. The City has adopted the State of Utah water conservation goal to reduce per capita water use by 25% by the year 2025 using year 2000 per capita water use as the benchmark. The City's per capita water use in 2000 was about 227 gpcd (gallons per capita per day). Therefore, the goal is to reduce water use to 170 gpcd by 2025. Per capita or per person water use is calculated by dividing the total water used in the City in gallons by the total water service population.



**Table 4. 2018 Average GPCD Water Use by Type and Indoor vs. Outdoor**

2018 Connections	Indoor (Winter Use)	Potable (Outdoor)	Non-Potable (Secondary)	Total
27,017 Residential	63	57	NA	120
1,233 Commercial	11	6	NA	17
635 Institutional	7	29	2	38
122 Industrial	7	1.7	NA	8
<b>Total</b>	<b>88</b>	<b>94</b>	<b>2</b>	<b>184</b>



**Figure 3. Average Gallons per Capita per Day (GPCD) by Year.**

Current water use (2018) in the City has risen since the City reached the water conservation goal of 170 gpcd in 2011 and now averages 206 gpcd, see Figure 3. Precipitation in 2018 was 10.50 inches, a very low precipitation year. The 2011 water year produced 23.64 inches of rain when compared to 13.45 inches in 2016, the highest year of water use at 214 gpcd. High Industrial water use in the City can skew the total gallons per capita water rate higher. It is anticipated that more accurate population data will be available after the 2020 U.S. Census count, leading to better defined GPCD rates.

Table 5 presents projected water use with the current gallons per capita rate of 206 and compares this to the goal of 170 gallons per capita by 2025. At the current water use rate the

water demand is projected to be 26,498 acre-feet per year in 2025. With efficient water use the demand could be as low as 21,912 acre-feet per year. This represents a reduction of 4,586 ac-ft in the year 2025 with a maximum water purchasing cost savings of \$2,823,917 per year of water not purchased at \$615.79 per acre-foot (current west-side wholesale water contract cost).

**Table 5. Projected Water Use at 206 GPCD and 170 GPCD Conservation Goal**

Year	Population Served by City Water	Projected Water Use at Current 206 gpcd (acre-feet/yr)	Efficient Water Use at 170 gpcd (acre-feet/yr)	Water Savings (acre-feet/yr)	Cost Savings
2020	106,871	24612	21717	2895	\$1,782,449
2025	115,063	<b>26498</b>	<b>21912</b>	<b>4586</b>	<b>\$2,823,917</b>
2030	123,254	28384	23472	4912	\$3,024,957
2035	130,446	30041	24842	5199	\$3,201,454
2040	137,637	31697	26211	5486	\$3,377,951
2045	145,356	33474	27681	5793	\$3,567,395
2050	153,075	35252	29151	6101	\$3,756,838

Gpcd = gallons per capita per day

## RELIABLE WATER SUPPLY

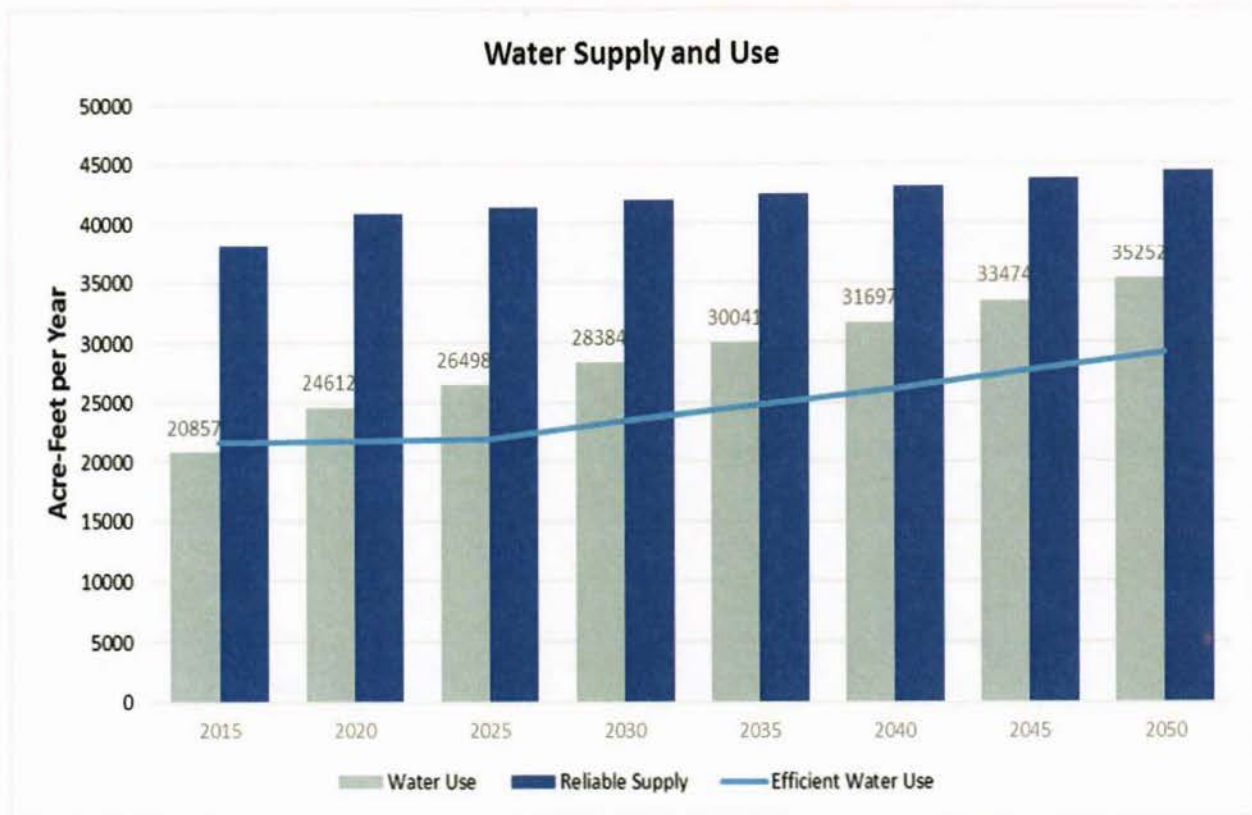
The City water supply is well established with multiple drinking water and secondary water sources. The City contracts with JWCD for treated drinking water delivery, and owns and uses underground water rights for wells, canal shares for surface irrigation, and spring rights for City ponds and the Cemetery. Some of these rights have early priority dates and the City maintains an adequate future allotment of rights for the future needs of the residents. Due to sulfate contamination of the underground aquifer on the west side of the City from mining activities on the Oquirrh Mountain bench, well production rates are voluntarily reduced to allow time for remediation wells to recover and treat the sulfate plume. Thus, the City currently relies heavily on JWCD water to make up for the loss of water that could be pumped from City Wells. These underground water rights will be fully utilized in the future. Table 5 presents the supply sources and quantities that the City owns. Figure 4 compares projected water needs with and without conservation measures to the reliable water supply through 2050.

**Table 5: Reliable Source Supply**

Source	Acre-Feet per Year
JWCD (Contract)	19,800 (Expandable)
Wells (Water Rights)	18,000
Canal Shares	1,167
Springs	43
<b>Total</b>	<b>39,010</b>

From: West Jordan Water Resources Report 2005 and Water Rights Update 2016





**Figure 4. Water Supply and Use**

## WATER LOSS CONTROL

The City utilizes a radio read metering system that provides fixed interval meter readings for all water connections in the City. Separate commercial, institutional and industrial landscape meters are required on all new development. Meters are read monthly and observed for anomalously high data, whereupon the customer is notified and City personnel assist in determining the reason. The Commercial meters are replaced regularly based on usage in gallons. Construction water use is metered and accounted for with every construction project. City facilities such as parks and buildings are metered. Currently, the City does not calibrate any meters, but instead replaces older meters. 2018 Revenue losses for unaccounted water amounted to \$1.7 Million based on \$2.19 per 1,000 gallons. Water losses are tracked annually and are presented in Table 6.

**Table 6: Water Produced vs. Metered, Percent Loss**

Year	Produced (ac-ft)	Metered (ac-ft)	Difference (acre-feet)	% Difference	Lost Revenue
2008	20,026	19,463	563	(2.8)	\$401,764.51
2009	18,544	17,465	1,079	(5.8)	\$769,989.17
2010	19,444	18,177	1,267	(6.5)	\$904,148.55
2011	18,293	17,149	1,144	(6.3)	\$816,374.06
2012	21,900	21,436	464	(2.1)	\$331,116.75
2013	20,550	20,321	229	(1.1)	\$163,417.54
2014	20,769	19,919	850	(4.1)	\$606,571.64
2015	21,229	19,285	1,944	(9.1)	\$1,387,265.01
2016	22,409	20,155	2,254	(10.1)	\$1,608,485.26
2017	21,839	18,386	3,453	(15.8)*	\$2,464,108.07
2018	23,816	21,426	2,390	(7.1)	\$1,705,536.72

\*City switched financial software resulting in incorrect data transfers and meter totals for this year. Compare metered totals from 2016 and 2018 to 2017.

Lost Revenue based on \$2.19/1,000 gallons

## CITY WATER RATES

City water rates are used to cover the cost to operate and maintain 505 miles of pipe and deliver 7.2 billion gallons of water annually. Water rates fund the personnel and equipment necessary to deliver safe and reliable water to the residents and businesses. Periodic rate adjustments are necessary to cover inflation and rising wholesale water costs.

Residential customers pay a base rate and an additional tiered rate based on the volume of water consumed. Commercial rates are based on meter size with an additional tiered rate based on the water consumed. The tiered rate encourages water conservation, which is one of the City's best management practices. The current water rates for the City's drinking water system are summarized in Table 7.

**Table 7: Water Rates by Usage Rate Tiers**

Residential Monthly Water Rate in addition to a \$35.35 Fixed Charge		Commercial Monthly Tiered Rate in addition to a Fixed Charge based on Meter Size	
Rate per thousand Gallons	Volume (Gallons)	Rate per thousand Gallons	Volume (Gallons)
\$2.19	0-7,000	\$1.91	0-200
\$2.53	7,001-20,000	\$2.20	201-5,000
\$2.90	Over 20,000	\$2.52	>5,000

## WATER CONSERVATION GOALS

The Citywide conservation goals address the following circumstances:

- Water use in the summer months is almost four times the water use in the winter months. As a result, the promotion of more efficient outdoor water usage provides the greatest potential for water conservation.
- Water use during dry years is significantly higher than in normal water years. Promotion of more drought tolerant landscaping also provides an opportunity for water conservation.
- The City would like to encourage a water conservation culture throughout the water system.
- Potential for further indoor and outdoor conservation still exists.

The following water conservation goals have been identified by the City to aid in the overall goal of 25% reduction in per capita water use by 2025:

- The City will continue to implement the water conservation measures currently in effect.
- The City's water rate structure has been reviewed annually and adjusted based on cost of operations. The City will consider future rate adjustments to encourage wise water use.
- The City will promote a water conservation culture by continued public education and promoting JWWCD Water Savers Programs.

## Water Conservation Measures

The City is already implementing, and will continue to implement, the following water conservation measures.

A portion of City staff responsibilities include periodic review of water conservation efforts, implementation of conservation efforts and reporting to City administration the progress towards reaching the City's water conservation goals.

New City water projects use rock scape land cover with low water use trees and shrubs instead of turf grass.

The City has a commercial landscape ordinance that requires all new non-residential developments to install water efficient landscapes as codified in Title 13, Chapter 13, Section 13 of the municipal code.

- Requires metering and monitoring of irrigation systems.
- Establishes a baseline landscape water consumption allowance for each month of the year through the required use of a water allowance worksheet that promotes conservation.



- Provides for monthly monitoring of irrigation use compared to the baseline water consumption allowance.
- Provides for a City water audit for habitual exceedance of the baseline water consumption allowance.

Irrigation of public landscaped areas is monitored by the City to promote conservation.

- Six of the City's parks and public landscaped areas use secondary water from canals for irrigation instead of the use of drinking water for irrigation. These parks include Brown's Meadow Park, Constitution Park, Veteran's Memorial Park, Plum Creek Park, the Soccer Complex, and the Cemetery.
- All City park irrigation systems are metered to monitor water use.
- The City is funding and implementing a SCADA controlled irrigation system for parks to allow for more efficient watering.
- The City drinking water system staff provides water usage reports to the parks department staff to allow for continued monitoring of water use for efficiency.

The City has an active public education program that promotes water conservation to residential and commercial water users.

1. Water conservation information is provided annually to customers within the West Jordan City Water Quality Report.
  - a) Informs customers of water conservation goals.
  - b) Promotes indoor and outdoor conservation strategies.
  - c) Refers customers to [conservewater.utah.gov](http://conservewater.utah.gov) for real-time watering recommendations.
2. The City maintains a Water Conservation page on their website.
  - a) Provides a lawn watering guide that promotes conservation.
  - b) Discusses need for conservation and City conservation efforts.
  - c) Provides links to water conservation resources including Jordan Valley Water Conservancy District ([www.jvwcd.org](http://www.jvwcd.org)), the Slow the Flow program ([www.slowtheflow.org](http://www.slowtheflow.org)), and the Governor's Water Conservation Team ([conservewater.utah.gov](http://conservewater.utah.gov)).
3. The City provides a section on each customer's water bill that compares current usage to the customer's previous 13 months of usage along with a reminder to conserve water.

The City has adopted the International Plumbing Code (IPC) which requires installation of water-saving fixtures in new construction (Municipal Code: 10-1-5). Maximum flow rates as defined by IPC 604.4 are as follows:

- Shower head: 2.5 gpm at 80 psi
- Sink faucet: 2.2 gpm at 60 psi
- Toilet: 1.6 gal per flush

The City has adopted an inclining block water rate structure that encourages conservation through increased rates for high water use (see Table 7).



- Rates have been updated regularly since the year 2000.
- An annual review of water rates is performed based on cost of operations with consideration for conservation.

Existing City code provides for drought management of water use (Municipal code: 9-6).

The City has organized a Sustainability Committee (previously called the Water Conservation Committee) with citizen representatives that holds meetings to provide guidance on City water conservation efforts.

## **Proposed Additional Conservation Measures**

The following conservation measures are proposed by the City for potential future implementation.

### ***New Conservation Measures:***

The City proposes to perform periodic review of commercial and residential landscape ordinances to ensure balance between aesthetics and water wise landscape and irrigation standards.

### ***Past West Jordan City Conservation Measures for Future Consideration:***

The City has distributed conservation information packets advertising water conservation programs to customers either in individual mailings or as bill inserts.

The City acquired a grant from Jordan Valley Water Conservancy District to study and implement a project that targeted high water users and sent custom reports of their water consumption compared to the “average similar customer” and the “efficient similar customer.” Similar customers are determined by similar lot size, meter size, etc.

In 2019 (27) residents participated in the Toilet Rebate Program through JWCD for a total of \$3,449.30. The City has implemented an ultra-low-flush toilet (ULFT) rebate program. Between 2006 and 2009, the City provided more than 500 rebates for ULFTs.

In 2019 (26) residents participated in the Flip Your Strip Program through JWCD for a total of \$12,841.24. The City has implemented a water-wise plant rebate program which offered \$50 rebates for plants on the [waterwiseplant.utah.gov](http://waterwiseplant.utah.gov) plant list if the plants are placed such that it is watered separately from turf grass. Between 2006 and 2009, the City provided more than 80 rebates for water-wise plants.

In 2019 City residents (14) received funding for LocalScapes from JWCD for a total of \$1,517.34. The City has presented annual Water-Wise Landscape Awards to 2 residential and 2 commercial customers.

The City has conducted a 4<sup>th</sup> Grade Water Conservation Education Program. The program assisted 4<sup>th</sup> grade teachers in teaching principles of water conservation and distributed conservation packets that included low-flow shower heads and faucet aerators. Between 2006 and 2009, over 2,000 packets were distributed.

### ***Other Potential Conservation Measures for Future Consideration:***

The Utah Division of Water Resources published the Conservation Best Management Practices (BMPs). This template recommends 38 BMPs for water conservation in Utah.

**Table 8. Cost of Water Conservation Program**

<b>Fiscal Year</b>	<b>City Funds</b>	<b>JVWCD Grants</b>	<b>Total Expenditures</b>
2009-2010	1,350	0	1,350
2010-2011	348	0	348
2011-2012	3,375	0	3,375
2012-2013	0	0	0
2013-2014	0	0	0
2014-2015	6,600	50,000	56,000
2015-2016	0	0	0
2016-2017	0	0	0
2017-2018	0	0	0

**Table 9. Water Conservation Implementation Plan Table**

<b>Best Management Practices</b>	<b>Plan of Implementation</b>
Encourage JVWCD Water Savers Rebates	These programs are "Flip Your Strip", "Localscapes Rewards", "Toilet Rebate Program", and "Smart Controller Program"
Water Bill Comparison	Continue to provide 13 month usage comparison on customer water bills with a reminder to conserve water.
Landscape Consultations	Refer Residents to JVWCD for a Free Landscape Consultation
Irrigation of Public Landscaped Areas	Promote conservation for public irrigated areas: Use secondary water at facilities where secondary water is available. Continue to meter water use at all parks and provide water usage reports to the parks department to monitor efficient water use. Implement SCADA controlled irrigation systems for parks to allow for more efficient watering.
Public Education Program	Promote water conservation to residential and commercial water users: Provide water conservation information in the annual Water Quality Report. Maintain and promote the City's water conservation webpage.
Conservation Water Rates	City has adopted an inclining block water rate structure that encourages conservation that has been updated regularly. Consider water conservation during annual review of water rates.
Drought Management Ordinance	Municipal Code (9-6): Provides for management of water use during drought conditions.
Sustainability Committee	Regular meetings with citizen representatives to provide guidance on City water conservation efforts.

## **Appendix**

***West Jordan Conservation Ordinance City Code***



### **13-13-1: PURPOSE AND SCOPE:**

A. Purpose: The purpose of this chapter is to prescribe landscaping requirements that establish minimum standards and incentives to:

1. Improve the community's image and identity;
2. Enhance property values and buffer noncomplementary land uses;
3. Conserve water by improving irrigation efficiency and selecting water conserving plants;
4. Encourage innovation in design;
5. Improve long term landscape health and maintenance;
6. Improve ability of landscaped areas to accept stormwater to increase groundwater available to plants and decrease demands on stormwater systems;
7. Encourage a healthy urban forest and a diversity of plants suited to local conditions;
8. Improve community sustainability, including energy conservation, air quality and water quality; and
9. Improve the safety, comfort and aesthetics of public spaces by mitigating noise, glare and heat.

### **13-13-3: FEES AND SUBMITTALS:**

- e. Designation of "landscape zones", as defined in section [13-2-3](#) of this title, grouping plants with similar water needs;
- b. Water conserving landscape worksheet: Outline the percentage of landscaped area coverage from water conserving shrubs, perennials and ground cover species expected after plant maturity, not including tree canopies.
- c. Landscape water allowance worksheet: Submit to the city and property owner annual and monthly landscape water allowances based on the worksheet calculations. Water use for the sixty (60) day plant establishment period is exempt (see city of West Jordan landscape guidelines handbook for annual water allowance calculation).
- d. Irrigation audit worksheet: The results of the irrigation audit shall be submitted on this worksheet. (2001 Code § 89-6-703; amd. 2009 Code; Ord. 11-01, 3-23-2011)

### **13-13-6: MATERIALS AND STANDARDS:**

A. Irrigation Systems: When landscaping is required, a permanent irrigation system shall be installed to help ensure survival of plants, unless the landscape plans specifically indicate that the plants will not require artificial irrigation for establishment or to remain healthy. All irrigation systems and components shall be selected and designed for the most efficient use of water. Microspray, bubblers, deep root watering systems and drip irrigation are suggested. Irrigation shall be



designed and installed with suitable emitters or spray heads to avoid overspray beyond the area requiring irrigation.

- C. Trees: Not less than seventy five percent (75%) of trees specified on the landscape plan shall be water conserving species selected from the city of West Jordan recommended plant list. Street trees in parking strips and parking lots shall be selected from the city of West Jordan street tree list. The recommended plant list and street tree list are contained in the landscape guidelines handbook which is available at the city's development department office or can be viewed on the city's development department webpage. At planting, all deciduous trees shall have a minimum trunk size of one and one-half inches (1.5") in caliper at four feet (4') above grade and all evergreen trees shall have a minimum height of five feet (5'). Vegetation, organic mulch or gravel shall be used around the base of trees and the trees shall be staked.
- D. Shrubs, Herbaceous Perennial And Ground Cover Plants: Not less than seventy five percent (75%) of shrubs, herbaceous perennial and ground cover plants specified on the landscape plan shall be water conserving species, selected from the city of West Jordan recommended plant list. All shrubs shall be two (2) gallon minimum and have a minimum height or spread of eighteen inches (18") depending on the plant's natural growth habit. All perennials shall be one gallon minimum. Ground cover crowns, plugs or containers shall be in a number and spacing sufficient by species to provide forty percent (40%) surface coverage at maturity.
- E. Turf Grasses: Turf grasses shall comprise not more than twenty five percent (25%) of the total landscaped area. Use of water conserving grasses, selected from the city of West Jordan recommended plant list is encouraged. This list is contained in the landscape guidelines handbook which is available at the city's development department office or can be viewed on the city's development department webpage. Permeable artificial turf may be substituted for turf grass.
- G. Mulch: Bark, shredded plant material, compost, and gravel between one-fourth inch (0.25") and three inches (3") in diameter may be used as mulch for plants. Mulch shall be a minimum three inches (3") in depth and placed to prevent it from migrating out of the landscape area onto adjacent roads or walkways.

#### **13-13-8: PARK STRIP LANDSCAPING:**

##### **4. Plants:**

- a. Not less than seventy five percent (75%) of shrubs, herbaceous perennial and ground cover plants used in the park strips shall be water conserving species, selected from the City of West Jordan recommended plant list. This list is in the Landscape Guidelines Handbook which is available on the City's Development Department webpage or at the City's Development Office. Plants shall meet the size and growth standards outlined in section [13-13-6](#) of this chapter.

- b. Up to twenty five percent (25%) of the plant coverage in the park strip may be turf grass. Turf is not permitted in park strips with a slope greater than thirty percent (30%). Permeable artificial turf may be substituted for turf grass.
  - c. Plants shall be of sufficient number and spacing to provide forty percent (40%) surface coverage at maturity, not including tree canopies. For properties with two (2) or more street frontages, the adjacent park strip on each street frontage is calculated separately.
5. Mulch: Mulch shall meet the requirements of section [13-13-6](#) of this chapter.
6. Hardscape, Ornamental Gravel, Rocks And Boulders: Gravel, rocks and boulders may be used as a landscape material on up to sixty percent (60%) of the park strip area. Mulch shall be sized and placed to prevent it from migrating out of the landscape area onto adjacent roads or walkways.

Pavers, pavement and other hardscape are permitted in park strips subject to the following limitations:

- a. Pavers: Ornamental concrete, brick or natural stone pavers, may be used in up to sixty percent (60%) of a park strip's area.
- a. Adjacent To Residential Developments: Unless part of a previously approved master plan, development plan or streetscape plan, single-family and two-family residential developments adjacent to arterial streets shall contain a minimum ten foot (10') landscaped area, with plants arranged and approved by the City's Parks Department and the City's Urban Forester. The required ten foot (10') landscaped area shall be installed by the developer following provisions contained in this chapter from the back of sidewalk to the adjacent property line. Xeric plants should be used extensively and may be used exclusively and shall be used as much as possible. The required street wall shall be installed beyond the landscaped area adjacent to the property line. The required ten foot (10') landscaped area adjacent to single-family and two-family residential shall be dedicated to the City.
- b. Adjacent To Commercial, Office, Industrial, Institutional And Multi-Family Developments: Unless part of a previously approved master plan, development plan or streetscape plan, commercial, office, industrial, institutional and multi-family developments adjacent to arterial streets shall contain a minimum ten foot (10') landscaped area. The required ten foot (10') landscaped area shall be installed between the back of sidewalk to the adjacent development line (parking area, building area, etc.) along the entire area adjacent to the arterial street. Decorative or retaining walls no greater than two feet (2') in height may be installed in this area. Decorative boulders may be installed in this area. The required ten foot (10') landscaped area adjacent to commercial, office, industrial and multi-family developments shall be installed and maintained by the commercial, office, industrial, institutional and multi-family development. This area may be counted as part of the development's overall landscaping percentage requirement. The landscaped area shall comply with the provisions governing landscaping in this chapter. Xeric plants should be used extensively and may be used exclusively and shall be used as much as possible.

### **13-13-13: WATER CONSERVATION:**

- A. Intent: The city intends to meter, monitor, and require adjustments to irrigation systems to improve awareness of water consumption, promote careful landscape design and maintenance, and encourage water conservation.



- B. Applicability: Applies to all properties that are required to build and maintain a separate water meter for landscape use.
- C. Establish Usage Baseline Landscape Water Allowance: The baseline landscape water consumption allowance shall be established for each month of the year using the water allowance worksheet in the city of West Jordan landscape guidelines handbook (available at the city's development department office or on the city's development department webpage).
- D. Monitoring: Water consumption records may be monitored monthly by the city. Businesses may receive an annual usage report by mail, with a comparison of their monthly landscape water allowance monthly allowance against actual water consumption data. Each month that a customer's water consumption exceeds one hundred thirty percent (130%) of the monthly landscape water allowance, the city may notify the property owner by mail.
- E. Irrigation System Adjustments: After the first month in which a landscape exceeds one hundred thirty percent (130%) of its monthly landscape water allowance, a free irrigation audit and timing clock adjustment is provided by the city upon owner's request. After the third month in which a landscape exceeds one hundred thirty percent (130%) of its monthly landscape water allowance, an irrigation audit and timing clock adjustment may be required by the city to determine if the water allowance should be adjusted and locate any leaks, maladjusted sprinkler heads, design flaws, or scheduling changes that should be made in order to meet the monthly allowance. (Ord. 11-01, 3-23-2011)











# Water Conservation Plan Update complete staff report

Final Audit Report

2020-01-15

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