

WATER CONSERVATION PLAN

FOR



WOLF CREEK WATER AND SEWER IMPROVEMENT DISTRICT

Eden, Utah

Robert Thomas – General Manager
Miranda Menzies – Chair, Board of Trustees

October - 2020

INTRODUCTION

Water is one of the most precious resources needing protection especially in the second driest state in our nation. The availability and costs need to be a priority to all water companies across the state of Utah. Wolf Creek Water and Sewer Improvement District is determined to do its part protecting the supply of this valuable resource; therefore, the company has written this water conservation plan.

DESCRIPTION OF OUR SYSTEM

Wolf Creek Water and Sewer Improvement District is a public utility company located within the Wolf Creek area in beautiful Ogden Valley. A map of our service area is shown in Appendix A. We currently provide water to 1100 residential units and 16 commercial units, totaling 1146 Equivalent Residential Connections (ERCs). The 16 commercial accounts represent 46 ERCs. There are no units considered institutional and we do not service any industries at this time. Since we are located primarily in a resort area, 50% of our residential connections are part-time residents; to determine population, we use a 1.6 ratio per connection. This translates to an approximate resident population of 1590, although the housing units represent a total approximate maximum population of 3021.

Culinary water use in 2019 was 118 AF residential and 6.9 AF commercial. Culinary sources were the Warm Spring Well - 179 AF and Wolf Creek (Crooked) Spring 39 AF; The Eden Hills Well was on standby for culinary or secondary use. These sources have minor changes in flow or water level from year to year, but are regarded as reliable sources.

Secondary water is provided from surface water sources (Wolf Creek Channel) under separate meters, for which different tiered charges apply. The flow in this secondary water source varies from year to year depending on snowpack levels, and most recently pumping from wells in the headwater areas at Powder Mountain Ski Area. Recent Utah Geological Survey studies (2019¹) have identified pumping in the Mountain Block as a long-term risk to valley water supply. In 2019 the District's metered secondary use to homes and multifamily properties was approximately 210 AF, with a further 150 AF estimated to be applied to the golf course (partially metered).

In July of 2020, after working with the State of Utah Department of Environmental Quality, Division of Drinking Water, Wolf Creek Water and Sewer Improvement District was granted a reduction to the peak day demand source requirement for the culinary water system, to 296 gallons per day per ERC (Equivalent Residential Connection) in accordance with the State of Utah Administrative Rules for Public Drinking Water Systems *R309-510-5*. The system has 397 empty lot owners who pay stand-by fees for the company to maintain the lines until connection is eventually made.

The residents and board members of the company are striving to keep as much of the area in open space as possible. As of January 2010, the 3,000 acres in our boundaries has approximately 1600 acres in open space with 880 acres in conservation easements and approximately 250 acres in undeveloped residential. No water is used for this acreage. The area has an 18-hole golf course covering approximately 135 acres. Only 88.67 acres is being irrigated the other 46.33 acres is native

¹ J Lucy Jordan et al Characterization of the Groundwater System in Ogden Valley with Emphasis on Groundwater-Surface Water Interactions – Special Study 165 Utah Geological Survey 2019

landscape area. An additional 6 acres were removed from the golf course irrigated area in 2018. The front nine of the golf course is irrigated with treated effluent from the MBR Sewage Treatment Facility.

Wolf Creek Water and Sewer Improvement District provides both culinary and secondary metered water to the area. In 2020, approximately 98% of all connections are metered and billed based on usage. This provides the information needed to keep residents and landscapers aware of their usage on a monthly basis. The rates are tiered very aggressively to also help with conservation.

The final build out of residential connections will be approximately 2730 by 2040; using 1.6 people per connection the average would be a total population of 4368. A comparison graph of water use vs population projections is considered inappropriate, since current Board policy is essentially that development is only permitted once excess capacity has been identified in Engineer’s IFFP.

INVENTORY OF WATER RESOURCES

Wolf Creek Water and Sewer Improvement District has municipal water rights consisting of 920 acre feet from Weber Basin Conservancy District, and 2 AF of further irrigation water rights. The District also owns 182.16 shares of Wolf Creek Irrigation and approximately 82 shares of Wolf Creek Irrigation are leased from individuals. See the tables below.

No water is obtained through purchase or exchange, nor is water available from Weber County or directly from Weber Basin. All water in Ogden Valley is controlled through irrigation company shares, and private or municipal water rights.

Water Rights

Exchange Contract	Source	Right #	Municipal	Irrigation/Domestic
Weber Basin	Artesian Well	E5492	920 AF	
Weber Basin	Eden Hills Well	E5492	Inc above	
Weber Basin	Belnap Well	E2023		2 AF

Irrigation Shares

Wolf Creek Irrigation	182.16 Shares
Leased Shares	82 Shares

The total amount paid for water rights and shares in 2019 was\$133,450.

Present Water Use and Future Needs

Wolf Creek Water and Sewer Improvement District only supplies to approximately 650 connections that are fulltime year-round residents. The other 450 connections may use water only a few weeks to several months per year. It is very difficult to determine “gallons per connection per day” (gpcd). Random readings during peak holiday seasons have been done to try to get a peak demand, and now the source demand from our SCADA system is used. Many of our connections are multi-family rental units or condominiums. Using the number of connection ERCs, an average usage of 169.8 gallons per connection/day for culinary usage has been established, or 106 gallons per day per capita using the assumed 1.6 persons per connection. The metered secondary water which is used

approximately 180 days of the year averages 170 gallons per connection/day on a full year basis. When the secondary water is included the estimated average usage per residential connection is 340 gallons per connection per day, which is equivalent to 212 gallons/capita/day including both indoor and outdoor use. We are required to maintain the 296 gallons per connection per day **culinary** source based on the State drinking water agency requirements. There is no specific requirement for secondary water.

Presently, there is approximately 174,850 feet of ductile iron piping for culinary along with 1,263,500 gallons of storage capacity for culinary water. The culinary water system supports the community's fire protection (hydrants) system, and house sprinklers, where these are installed. There is 58,640 feet of PVC piping and 94 acre feet of storage for secondary water.

Wolf Creek Water and Sewer Improvement District realizes that in the future we will need additional sources and storage of water. We have looked into additional well sites, as detailed in our Impact Fee Facilities Plans for culinary and secondary water. Ogden Valley is a closed basin for surface water allocation, per Division of Water Rights. We have had the support of hydrogeology and water rights experts and have found there are very few acceptable well sites available. Consequently we are now limiting the development of new building lots. We are also working with Weber County on a possible valley wide water system that would take water from the nearby Pineview Reservoir and treat the water. The water could be used directly for irrigation or treated for culinary use.

Wolf Creek Water and Sewer Improvement District is currently working in accordance to State Laws to dispose of treated effluent by irrigating on the 18-hole golf course that is within the boundaries.

WATER PROBLEMS, CONSERVATION MEASURES AND GOALS

Problems Identified

The District does not feel the problems lie with the culinary users, and that culinary usage is more dependent on percentage of full-time residents. Most problems occur with the use of secondary water, especially vacation homes.

- Many of our residences are not occupied in the summer. Watering clocks are set with no maintenance.
- Too many yards have too much turf to be watered.
- Commercial landscapers are too generous with homeowner's water in order to keep a plush yard.

These problems can be solved by continuation of tiered pricing by involving the community and businesses in a conservation program which teaches the importance of conserving our water resources. We are meeting with landscapers to discuss ways of saving their homeowners money by less watering and more fertilizing.

Water Conservation Goals

Goal #1 - Reduce the customers use of secondary water. The current use is 170 gallons per connection per day. The goal is to average 145-150 gpcd. (This goal has a 2030 timeline).

Goal #2 - Continue to work with developers, local landscapers and management companies to reduce water usage. (Implemented since 2010)

Goal #3 - Educate the community on the amount of water being used for shrubs and lawns and provide them with conservation methods, such as suggesting zeroscaping, xeriscaping and use of fertilizers. New home owners are noted to be responding to this since approximately 2012.

Goal # 4 – Minimize culinary leakage through leak detection efforts. (Ongoing)

CURRENT CONSERVATION PRACTICES

Wolf Creek Water and Sewer Improvement District have multiple conservation measures already in place; such as, all culinary and 98% of secondary water use is metered. We also have a very aggressive tiered water rates (culinary **and** secondary) to help reduce the amount of water used. See below. High water use records are verified before billing, monthly (ongoing).

We do not allow irrigation during the hours of 10 a.m. and 6 p.m. daily. Violators are given a written warning. Information on tips to conserving water both inside and outside the home is sent to all homeowners at least twice a year as a flyer with billings. As a Best Management Practices (BMP) it is emailed to paperless accounts, beginning in 2020.

BEST MANAGEMENT PRACTICES (See also Appendix):

For culinary water the District's BMPs implemented in the last 5-10 years include SCADA monitoring of source flows into the system, advanced sonic leak detection to quickly find and repair leaks, and cross-reference of culinary source/usage to sewage flows.

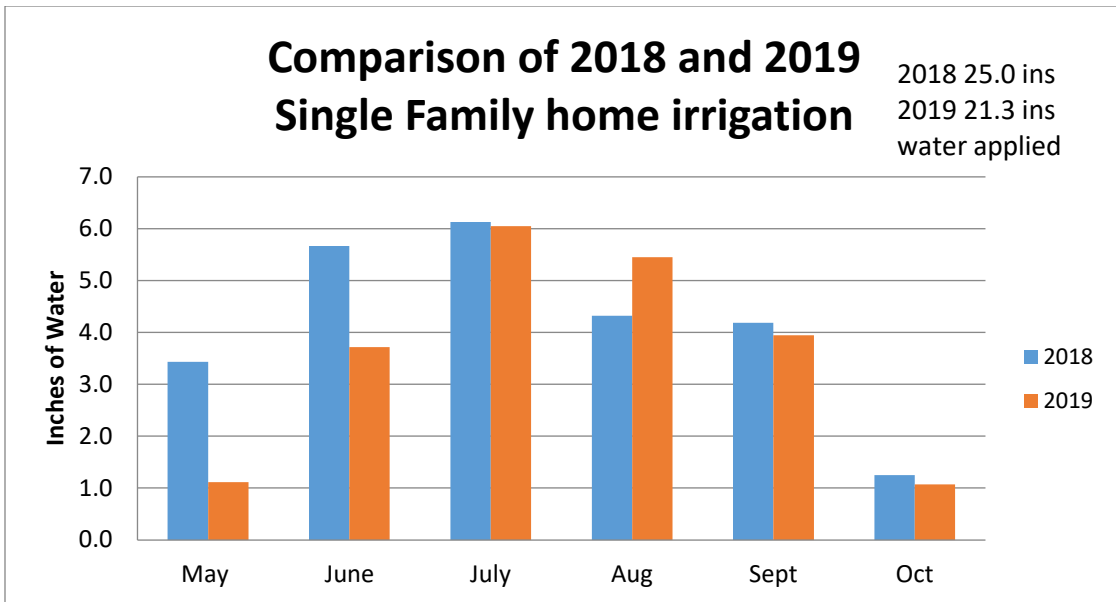
For secondary water, the District has introduced a new BMP of using radio-read meters with data logging on secondary as well as culinary services. These are helpful in showing customers when they have leaks, and poor sprinkler timing in their systems. Due to cost, this is being progressively introduced by 2023.

A BMP of establishing Development Agreements for new subdivisions is being attempted. These include water-efficient landscaping practice requirements and limits on amount of turf in yards. The effectiveness of these agreements is being assessed. Full implementation by 2022 is expected.

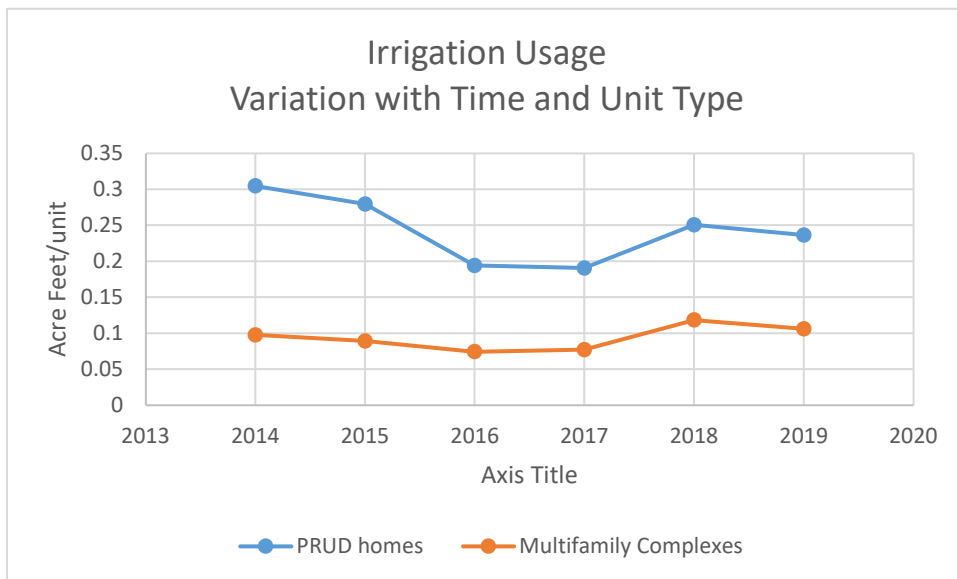
Tiered charges have been found to be the most effective "economic signal", and have been corrected to consider the typical irrigated acreage per housing unit in different housing types. To improve conservation at multifamily units, the base tier amount per housing unit has been adjusted from 10,000 gals/month to 3,000 gals/month.

Data Tracking

Usage of culinary and secondary water is monitored using the metered supply data sets. Irrigation usage varies significantly depending on the seasonal temperatures and plant demands, and from year to year depending on maximum temperatures:



There is also significant variation depending on the type of housing unit.



CURRENT PRICING STRUCTURE

CULINARY WATER RATES:

Base charge per month, including the first 8,000 gallons: \$20.00

Usage rates per month:

- | | |
|--------------------------------------|---------------------------|
| a. 8,001 gallons to 16,000 gallons: | \$3.50 per 1,000 gallons; |
| b. 16,001 gallons to 24,000 gallons: | \$5.00 per 1,000 gallons; |
| c. 24,001 gallons to 32,000 gallons: | \$6.00 per 1,000 gallons; |
| d. 32,001 gallons to 40,000 gallons: | \$7.00 per 1,000 gallons; |
| e. 40,001 gallons to 48,000 gallons: | \$8.00 per 1,000 gallons; |

- f. 48,001 gallons to 56,000 gallons: \$12.00 per 1,000 gallons;
- g. 56,001 gallons to 64,000 gallons: \$17.00 per 1,000 gallons;
- h. Over 64,001 gallons: \$22.00 per 1000 gallons

- h. Stand-by fee: \$10.00 per month
- I. Connection fee: \$1043.00
- J. Impact Fee \$1457.00

The culinary impact and connection fees are currently under review in accordance with Utah State Code (11-36a-306(1)) and are expected to rise to approximately \$3100 / \$1200 respectively.

Meters are read year around.

Stand-by fees are charged on all recorded lots. Wolf Creek Water & Sewer Improvement District is required by the State of Utah, to have water available for all properties whether it is in use or not. This fee helps maintain the infrastructure and the purchase of water rights to keep the water available for use.

All connection fees are charged to cover the fixed costs of installing metering and service infrastructure to the property. On individual lots all Water, Sewer and Irrigation fees are to be paid when building begins, prior to the Can and Will Serve Notice being released.

For new developments, the developer will pay the Impact Fee to receive a Can and Will Serve Letter to record the lots of the connection fee at the current rate, at the time the Can and Will Serve Letter is issued. The owner of the lot will pay a connection fee at the current rate when they pull a permit to build.

For new development of Multi-Family Units, the developer will pay an Impact Fee for the number of units to be recorded, at the time the Can and Will Serve Letter is issued for each phase. The connection fee per unit will be paid when the building Permits are issued for each phase, at the current rate at that time.

SECONDARY WATER RATES:

(Secondary water is provided for all exterior landscaping)

Base charge per month, including the first 10,000 gallons: \$15.00

Usage rates per month:

- a. 10,001 to 20,000 gallons: \$1.50 per 1,000 gallons; Multi Family \$10.00 base only get 3000 gallons
- b. 20,001 to 40,000 gallons: \$3.00 per 1,000 gallons;
- c. 40,001 to 60,000 gallons: \$4.00 per 1,000 gallons;
- d. 60,001 to 80,000 gallons: \$6.00 per 1,000 gallons;
- e. 80,001 to 100,000 gallons: \$10.00 per 1,000 gallons.
- f. 100,001 to 120,000 gallons: \$15.00 per 1,000 gallons
- g. Over 120,000 is \$20.00 per 1,000 gallons
- h. Stand-by Fee: \$10.00 per month
- i. Connection Fee: \$1,017
- j. Impact Fee \$13,983 Single family
- k. Connection Fee \$4,888.00
- l. Impact Fee \$4,614.00 Multi Family

Meters are read during the summer month (May - October), the secondary lines are cleaned out and shut off during the winter months. The base rate will be charged during the winter to help purchase the water rights necessary to service the district.

Stand-by fees are charged on all recorded lots. Wolf Creek Water & Sewer Improvement District is required by the State of Utah, to have water available for all properties whether it is in use or not. The stand-by fee helps maintain the infrastructure and for water rights to keep the water available for use.

All connection fees are charged to cover the fixed costs of installing metering and service infrastructure to the property. On individual lots all Water, Sewer and Irrigation fees are to be paid when building begins, prior to the Can and Will Serve Notice being released.

For new developments, the developer will pay Impact Fee at the current rate at the time the Can and Will Serve Letter is issued for each phase.

For new development of Multi-Family Units, the developer will pay an Impact fee at the current rate at the time the Can and Will Serve Letter is issued for each phase. The Connection Fee per unit will be paid when the building Permits are issued for each phase, at the current rate at that time.

ADDITIONAL CONSERVATION MEASURES

All culinary meters are now read year round with the installation of radio read meters. This has been very helpful for keeping an accurate monthly usage and leak detection. The District also has invested in advanced sonic leak detection equipment for finding main line piping leaks.

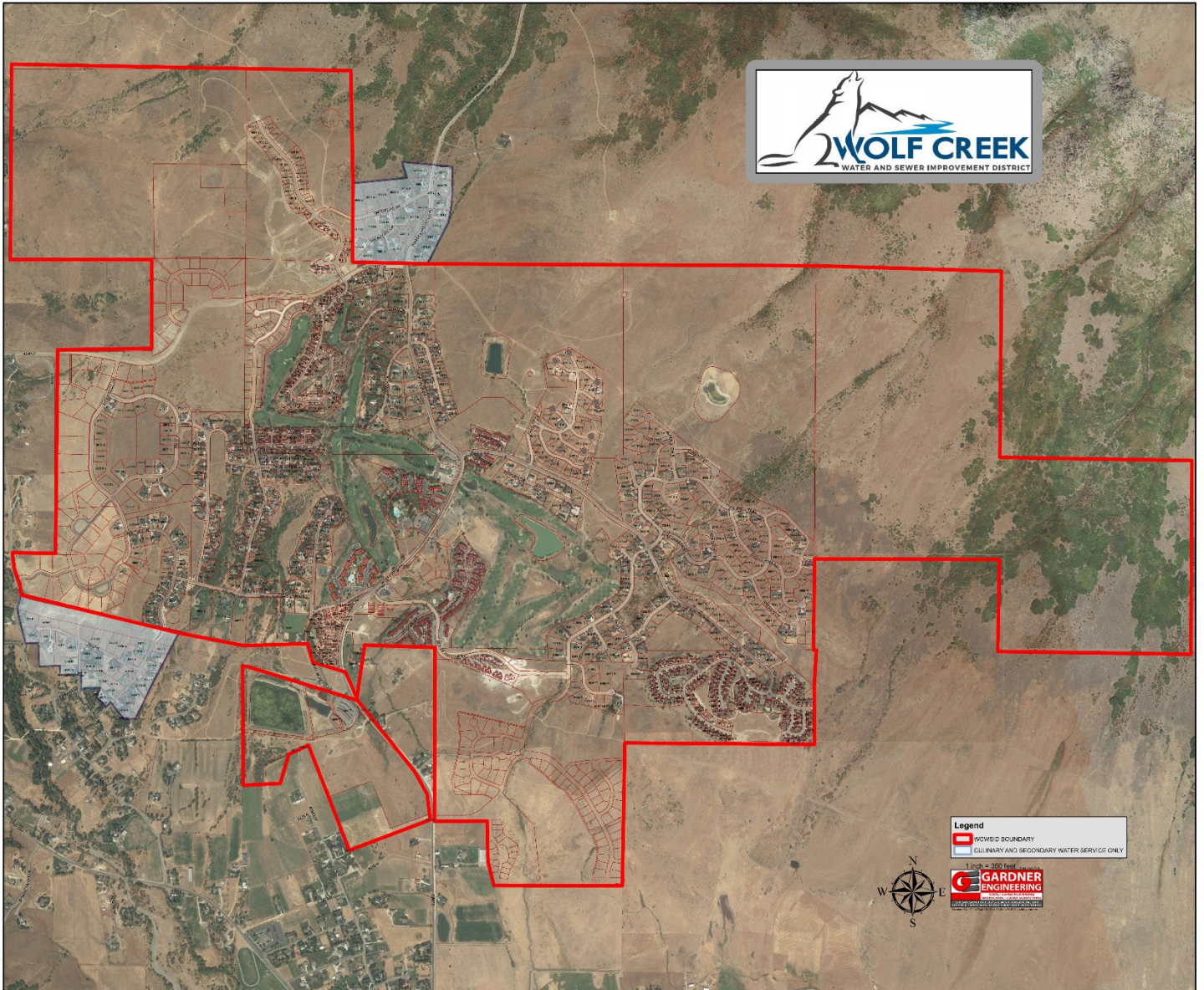
The company will keep pursuing the use of treated, disinfected effluent water from the \$6.1 million dollar membrane reactor sewage treatment facility. This could conserve much of the water being used for irrigation in our area.

IMPLEMENTING AND UPDATING THE WATER CONSERVATION PLAN

Wolf Creek Water and Sewer Improvement District prides itself in the very high quality culinary water that it provides. The District has done its best with its resources to provide high quality and conserve on quantity at the same time. It will also strive to accomplish the goals laid out in this conservation plan and continue to pursue more conservation efforts while developing new plans for the future.

Appendix

1. Service area map



2. Conservation Measures in use 2020
See next page:

Number	Practice – Highlighted/italic where already in use in some form at Wolf Creek
Water Conservation Staffing	
1a	Hire or designate a Water Conservation Coordinator (WCC).
1b	Create a committee/team/board with a chair that includes a combination of the following participants; WCC, Public Works Director, City Council Member, and/or applicable local advocacy group member to help research, coordinate, create and implement public information campaign(s), water conservation programs and incentives.
Water Conservation Plan (WCP)	
2a	Develop a WCP. More information at www.conservewater.utah.gov/wcp.html .
2b	Provide contact information, system profile, water use history and detail specific ongoing and new conservation programs.
Public Awareness/PR	
3a	Develop or utilize existing messaging from Slow The Flow, DWRe’s Conserve Utah, CWEL and/or WaterSense.
3b	Display educational materials & resources on agency website, social media & bills .
3c	Offer agency materials and resources to community partners for distribution.
3d	Hold or collaborate events, programs and/or presentations.
Education/Training	
3e	Provide adult efficient water use education and training.
3f	Provide or support youth education programs for elementary school students.
3g	Provide or recommend a water-wise demonstration garden.
3h	Educate customers about new water saving technology. Example: weather based smart timers.
3i	Provide new homeowner landscape information.
3j	Participate and promote large efficient landscape training and programs: https://www.qwelutah.com/training/
3k	Create and/or distribute “how to video’s”. Example: switching to drip.
Outreach Services	
4a	Offer or collaborate on residential water audit programs.
4b	Offer or collaborate on landscape consultation programs.
4c	Offer residential water budgeting program.
4d	Offer indoor and outdoor retrofit kits.
4e	Perform outdoor high water use inquiries and resolution techniques.
4f	Perform and address water waste investigations.
4g	Identify structures built before 1992 and organize low efficiency fixture replacements.
Rebates/Incentives/Rewards	
5a	Offer or collaborate on use of rebates for high efficiency appliances, fixtures , irrigation smart timers, drip irrigation , nozzles, shut off hose valves, and landscape conversions .
5b	Promote rebates offered in your service area.
Ordinances & Standards	
6a	Adopt a time-of-day watering ordinance. Example: no watering between 10-6pm.
6b	Adopt an ordinance requiring a water-efficient landscaping option in all new residential development.
6c	Review existing plumbing codes and revise them as necessary to ensure water-conserving measures in all new construction.
6d	Adopt an ordinance requiring water-efficient landscaping in all new commercial development.
6e	Change business license requirements to require water reuse and recycling in new facilities.
6f	Mandate retrofit upon resale.
Water Pricing	
7a	Utah S.B.28 requires water rates rise for higher tiers of consumption.
7b	Charge for secondary water based on individual use.
7c	High water use notification.
Physical System	
7a	Install & maintain efficient irrigation, utilize water-wise landscaping & smart controller technology at agency facilities.
7b	Perform agency water system audit.
7c	Implement leak detection program.
7d	Meter all connections (UT SCR 1), repair and replacement program, read meters on a regular basis.
7e	Consider water re-use (implemented).

WATER CONSERVATION PLAN

Wolf Creek Water and Sewer Improvement District

RESOLUTION 20-3

WHEREAS, Wolf Creek Water and Sewer Improvement District operates a culinary and secondary water system; and

WHEREAS, the Board of Trustee understands the pressing need to use water in a more efficient manner to allow for future sustained growth of the community;

NOW, THEREFORE, IT IS RESOLVED BY THE BOARD OF TRUSTEES OF WOLF CREEK WATER AND SEWER IMPROVEMENT DISTRICT, EDEN, UTAH:

The revised Water Conservation Plan of Wolf Creek Water and Sewer Improvement District was approved by the Wolf Creek Water and Sewer Improvement District Board of Trustees on October 29, 2020. The plan will be amended no less than every five years and will continue to play a vital role in the development of our district.

JON BINGHAM
LARRY MCBRIDE
BUD HUCHEL
DON STEFANIK
MIRANDA MENZIES

MIRANDA MENZIES
Chairman of Board of Trustees