Roy Water Conservancy District

Water Conservation Plan

December 2021

WASATCH CIVIL
Consulting Engineering

ROY WATER CONSERVANCY DISTRICT

WATER CONSERVATION PLAN

December 2021

Roy Water Conservancy District
5440 South Freeway Park Drive
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Prepared By

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INTRODUCTION

SECTION I - INTRODUCTION

THIS ROY WATER CONSERVANCY DISTRICT WATER CONSERVATION PLAN, December 2021 (the "Water Conservation Plan"), is submitted by Roy Water Conservancy District, a water conservancy district organized under the Utah Water Conservancy Act (the "District"), pursuant to and in conformance with the requirements of Section 73-10-32, Utah Code Annotated, 1953, as amended (the "Act").

PURPOSE

Rapid growth and limited water resources in the State of Utah have raised concerns about the future water supply availability in the State as well as the costs that will be required to develop additional water sources. In response to these concerns, the Utah State Legislature passed the Water Conservation Act (House Bill 418) in the 1998 legislative session. It was revised in 1999 (House Bill 153) and again in 2004 (House Bill 71), and codified under the Act. The Act requires retail water providers serving more than 500 culinary water connections and water conservancy districts to submit a water conservation plan to the Utah Division of Water Resources.

BACKGROUND

The District's previous water conservation plan submitted by the District, entitled *Roy Water Conservancy District Water Conservation Plan, December 2015* (the "Previous Conservation Plan"), was prepared by Wasatch Civil Consulting Engineering. This Water Conservation Plan and the Previous Conservation Plan include both a long-term water conservation plan and an emergency water conservation plan. This Water Conservation Plan is prepared and filed as an update to the Previous Conservation Plan as required by the Act, and is intended to fulfill the requirements for long-term and emergency water conservation plans.

Information used in the preparation of this Water Conservation Plan was obtained from District personnel, District operational records, and information set forth in the Previous Conservation Plan. In order to make this Water Conservation Plan complete, applicable information previously presented in the Previous Conservation Plan is repeated in this document.

CONTACT INFORMATION

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Riverdale, Utah 84405

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801-825-9744

SECTION 2

DESCRIPTION OF WATER SYSTEM

SECTION 2 - DESCRIPTION OF WATER SYSTEM

HISTORY AND DEMOGRAPHICS

The District is located in Weber County, Utah and covers an area of about 8 square miles. The area was settled in 1873 and was initially established as a small farming community. Growth was slow until the 1940s and 1950s when, due to its close proximity to Hill Air Force Base and other military supply depots, the community began its transition from agricultural to residential land use. Throughout the past seventy years, residential growth has continued, and businesses, schools, churches, fire and police departments, sewer and water systems have continued to expand to serve the growing population. The District was established in 1965 as a water conservancy subdistrict, but pursuant to statutory amendments in 2007, the District has been redesignated as a water conservancy district by law.

Consistent with the purpose of the Utah Water Conservancy District Act, the District was organized in order to conserve, develop and stabilize the existing supplies of water within the District boundary. At that time, conservation was primarily accomplished by allowing sources of high-quality treated water to be used for culinary purposes rather than for irrigation. With funding from the U.S. Bureau of Reclamation, the District constructed a pressurized irrigation system to provide pressurized secondary irrigation water to residences as well as agricultural activities in the Roy City area. The current service area now includes most of Roy City as well as portions of the cities of Riverdale, West Haven, and Hooper. Through the years, as agricultural land has developed into residential, institutional, and commercial uses, agricultural customers have been replaced by residential, institutional, and commercial customers. The rate of growth within the District's service area has slowed in recent years as the District approaches build-out.

The District is currently governed by a Board of five trustees (the "Board"), each representing one of five geographical divisions. The trustees are appointed by the Weber County Commission and the trustees meet regularly to conduct the affairs of the District. The Board appoints one of its members to act as a chairman and hires a General Manager to oversee the day-to-day operations and business of the District. Maintenance and office personnel are also hired to perform administrative tasks and to operate the system.

SYSTEM OVERVIEW

The District's secondary water system currently provides irrigation water to a total area of approximately 5,713 acres of ground. Of this area, it is estimated that approximately 2,946 acres are irrigable. The District's current boundaries are shown on the Service Area Map in Appendix A. Existing connections serve approximately 2,298 acres of residential property and 648 acres of commercial, industrial, institutional, municipal, and agricultural properties.

Water Storage

The District owns, operates, and maintains a concrete-lined water storage reservoir (the "District Reservoir") located northeast of the District's administrative offices. The District Reservoir has a maximum capacity of approximately 112 acre-feet (when measured at a depth of 12 feet).

Water Distribution

The District's pressurized irrigation water distribution system (the "System") is generally divided into two zones: an upper pumped zone and a lower gravity zone. As the name indicates, the upper zone uses pumps to produce the required pressure and flows. The main lines for the pumped zone within the system vary in size from 30" diameter transmission lines to 4" diameter distribution lines. The lower zone uses gravity to achieve the required flows and system pressures. The main lines for the gravity zone vary in size between 48" diameter transmission lines to 6" diameter distribution lines. An overall system map is included in Appendix B.

Population

The service area population estimates for the past 5 years as well as a projected population at build-out are given in Table 2-1. Estimates indicate a relatively constant population with limited change over the past 10 years. The average rate of growth during this period is approximately 0.70 percent per year. The build-out population was estimated based on a review of proposed land use maps and an examination of aerial photographs. An analysis of the photographs indicates that approximately 90% of the available property in the District is currently developed.

TABLE 2-1. POPULATION ESTIMATE

Year	Population
2016	42,548
2017	42,727
2018	42,980
2019	43,882
2020	45,315
Build-Out	46,500

System Connections

The District currently maintains approximately 10,770 service connections to the System, including residential, agricultural, commercial, industrial, institutional, and municipal connections.

WATER RESOURCES INVENTORY

Existing Water Sources

The District's primary source of water supply consists of shares of stock owned by the District in the Davis and Weber Counties Canal Company ("D&WCCC") and shares leased by the District from time to time. D&WCCC water is diverted from the Weber River and carried by a canal to various points throughout the county, where it is delivered to its shareholders for use. The canal passes near the District Reservoir, into which the District's portion of the water is diverted and stored. Over the past 20 years, the annual diversion from the D&WCCC canal into the District Reservoir for the District's use has varied from a low of 4,888 acre-feet to a high of 8,379 acre-feet.

The District has also contracted for an additional water supply through an agreement with Weber Basin Water Conservancy District ("Weber Basin"). The District has obtained the right to divert and use 365 acre-feet of Weber Basin water that is a contract between the District and Weber Basin. This water supply is delivered by Weber Basin to the District through the D&WCCC canal into the District Reservoir.

Currently, the District annually diverts and uses less than the total quantity of water allocable to the District pursuant to the shares of D&WCCC stock owned or controlled by it. D&WCCC water in excess of the District's current needs is leased to Weber Basin for its use. However, as drought conditions within the District continue, the balance of the D&WCCC water to which to District is entitled will be called for and used by the District to serve its existing customers. Additional water sources may also be required. The current yield for all District sources is presented in Table 2-2.

TABLE 2-2. SUMMARY OF WATER SOURCES

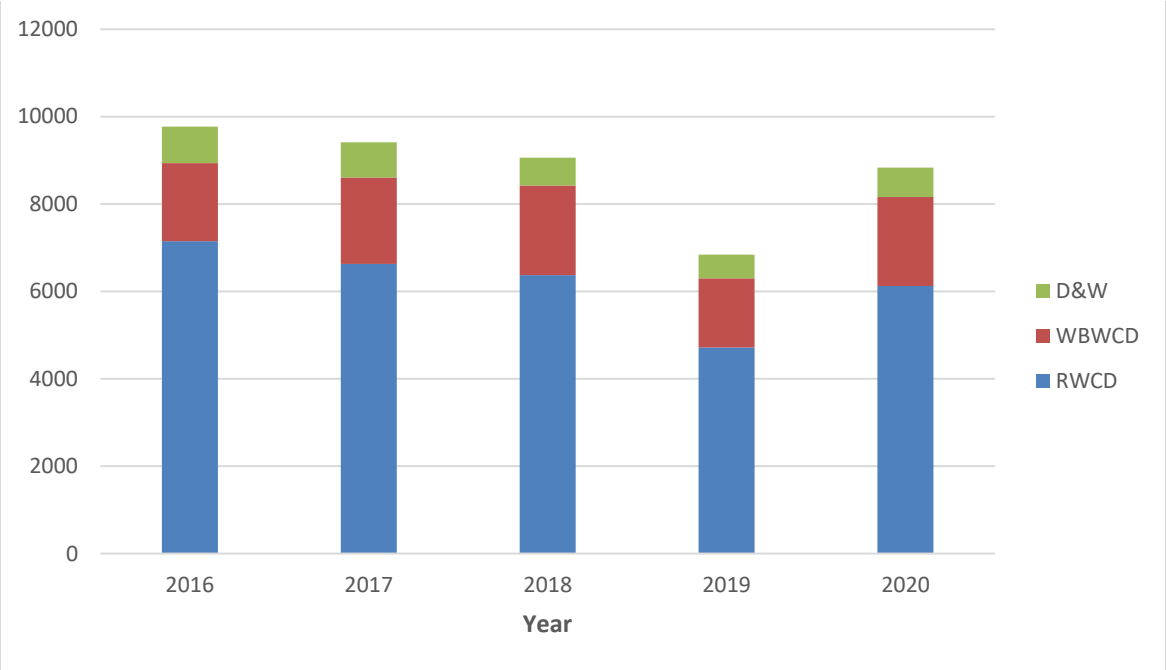
Name of Source	No. of Shares	Quantity (acre-feet)	Irrigated Area (acres)
Owned D&WCCC Shares	1,512.5	9,075	2,669
Leased Shares	144	864	254
Owned Wilson Irrigation Shares	20.5	78	23
Weber Basin Water Conservancy District	NA	365	107
Total	1,677	10,382	3,083

CURRENT WATER USE AND DELIVERIES

Water use by the District was determined by reviewing historical flow records. Actual water used by the District is obtained by subtracting the quantity of water wheeled through the system for D&WCCC and Weber Basin from the total quantity used by the District for the year. The quantity used by the District is shown in Figure 2-1 by the blue areas. The quantity that is wheeled through the District's system for use by D&WCCC is represented by the red areas and

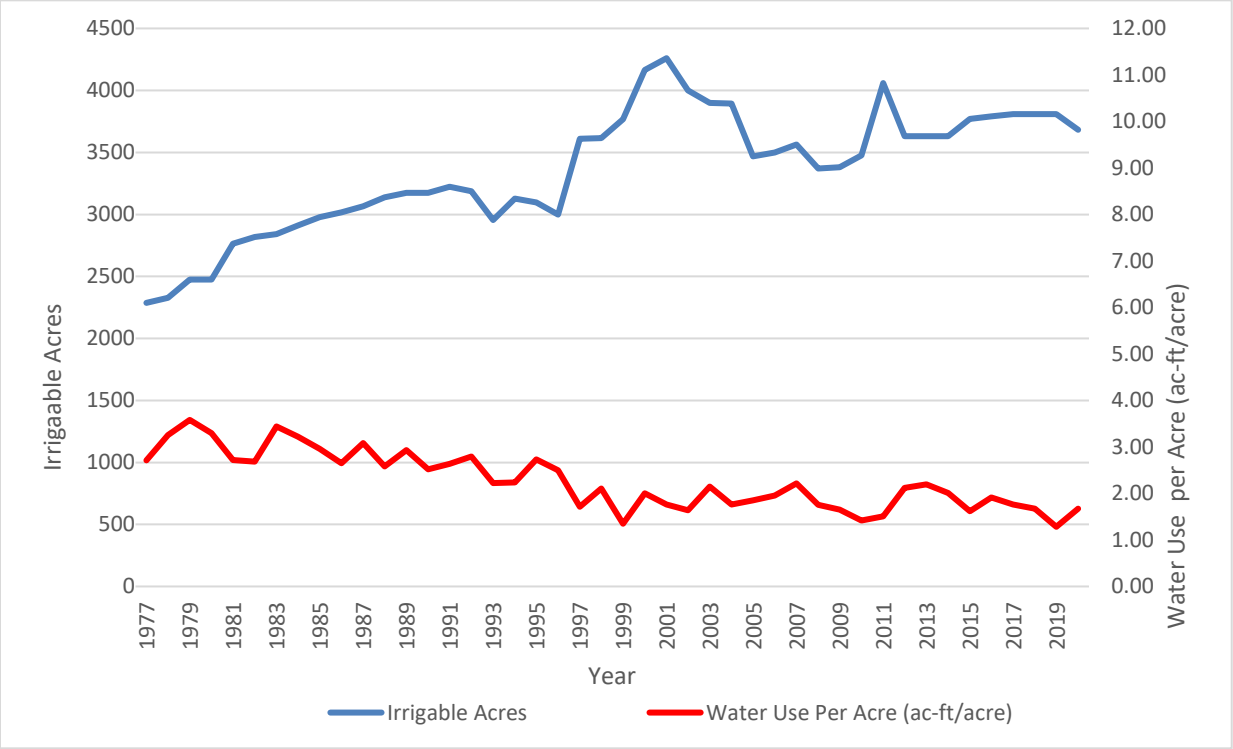
the quantity of water that is wheeled through the District's system for use by Weber Basin is represented by green areas. For the purposes of this study, the losses due to evaporation from the District Reservoir were assumed to be relatively minor and were neglected. A summary of water use data is presented in Figure 2-1.

FIGURE 2-1. ANNUAL WATER USE



In order to determine the effectiveness of current conservation measures, it is useful to determine water consumption per irrigable acre. This is done by dividing the water use for the year by the total irrigable acreage. Using District water use records, the water consumption was determined for each year beginning in 1977 and continuing through 2020. However, for the purposes of this study, only water use data for the past 5 years is presented above. The results were then graphically compared with the change in water use per acre for each corresponding year. The results are presented in Figure 2-2.

FIGURE 2-2. WATER USE HISTORY

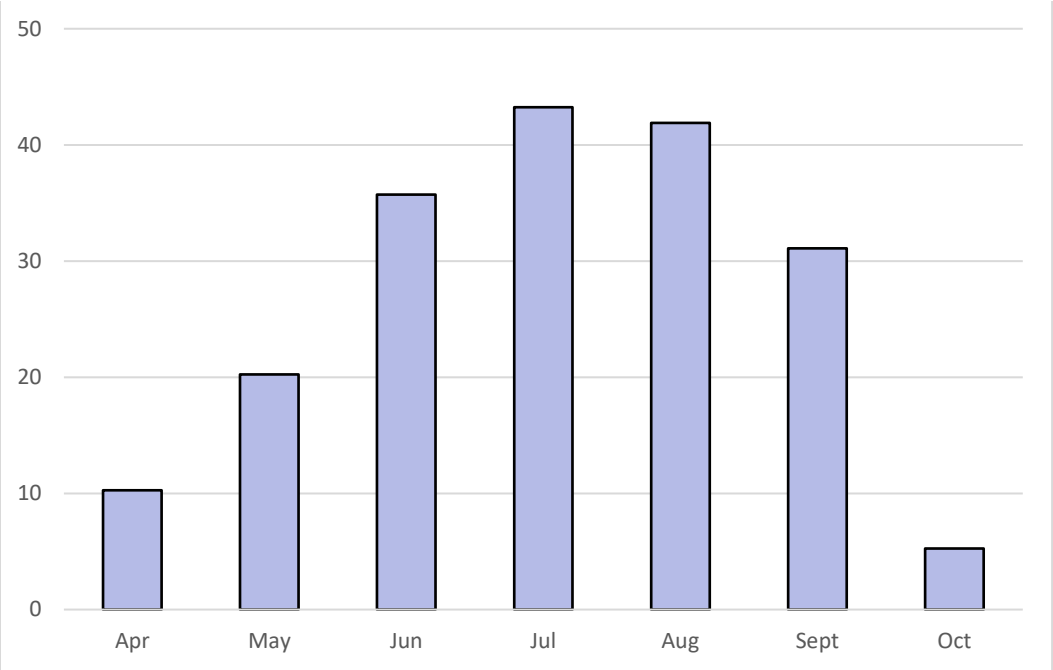


Since water use can vary greatly from year to year due to seasonal variations in precipitation and temperature, water use data was slightly modified to show general trends. As indicated in Figure 2-2, a corresponding increase in water use was seen as agricultural acreage was brought into the District. In the early 1990s, water use per acre began to drop even as additional land began to be irrigated. This trend corresponds to the transition of land from agricultural use to the irrigation of residential, institutional, and commercial properties. It is also likely to reflect the implementation of initial conservation measures.

As indicated previously, annual water use can vary greatly from year to year due to natural variations in precipitation and temperature. Consumption has been as high as 2.71 acre-feet/acre in 2007 and as low as 1.38 acre-feet/acre in 2019. The average water consumption per acre for the past 10 years is approximately 2.22 acre-feet/acre. It is important to note that the water use per acre has been steadily decreasing.

In secondary water systems, individual services are not typically metered. However, the District has recently been obtaining small grants to install meters on existing services. The District has also added meters as a requirement for new construction. Even though water use data obtained from the meters is currently limited, monthly flow records have begun to give an indication of daily and monthly variations in water use for both residential, institutional, and commercial users. System wide flow data shows an expected seasonal water use pattern that reflects variations in temperature and rainfall in the spring and fall months versus the hotter and drier summer months. The maximum monthly flow for the year 2020 is presented in Figure 2-3.

FIGURE 2-3. 2020 MONTHLY MAXIMUM FLOW (CFS)



The flow patterns presented in Figure 2-3 are generally typical, with lower flow rates during the spring and fall and higher flows in the hotter summer months. Annual maximum flow data for the past 5 years are presented in Table 2-3.

TABLE 2-3. MONTHLY FLOW DATA

Month [1]	Flow (cfs)				
	2016	2017	2018	2019	2020
April	9.2	10.2	10.3	12.0	9.6
May	18.7	21.4	23.8	10.7	26.7
June	45.0	39.9	38.3	27.3	28.2
July	46.2	45.6	44.2	42.6	37.6
August	44.1	43.7	42.7	38.2	40.7
September	28.6	27.2	40.7	28.2	30.8
October	4.8	5.2	0.0 [2]	5.4	10.9

1. The District irrigation season generally begins April 15th and ends October 15th of each year.
2. The irrigation season ended early in 2018.

FUTURE WATER REQUIREMENTS

Future water requirements were calculated assuming that water use patterns and water consumption per acre remain relatively constant. For the purposes of this calculation, the 10 year average of 2.22 acre-feet/acre was used. An estimate of future water requirements is presented in Table 2-4.

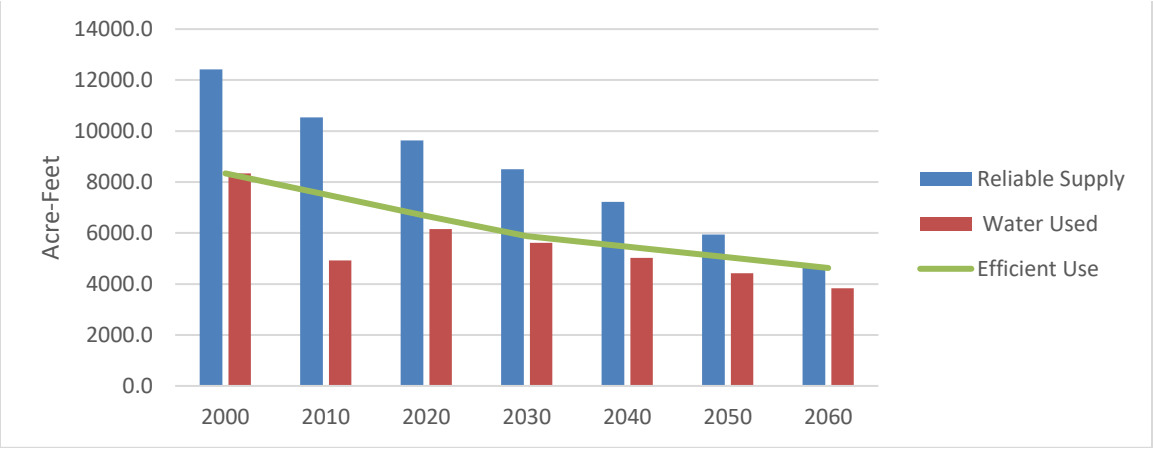
TABLE 2-4. FUTURE WATER REQUIREMENT

Year	Average Water Use (ac-ft/acre)	Irrigable Acreage	Required Water (ac-ft)
2020	2.22	2,946	6,540
Build-out	2.22	3,395	7,537

As indicated in Table 2-2, the yearly water demand at build-out conditions is projected to be approximately 450 acre-feet more than is the current yield of the District's water sources. The simplest alternative for obtaining additional water source capacity without developing additional sources is to decrease the amount of water used annually to irrigate each acre of ground. Other options include acquiring additional D&WCCC shares or increasing water purchases from Weber Basin by either of the following: (1) assuming more of the excess water supply that Roy City is already contracted to purchase from Weber Basin or (2) by contracting for additional water from Weber Basin directly.

Figure 2-4 shows a comparison of the reliable water supply, current water use, and efficient use. Reliable supply is based on the water shares and acre-feet per share. Projections are based from the year 2000 to 2020 and projected to 2060.

FIGURE 2-4. WATER SUPPLY AND USE



COMPARISON TO STATE ENGINEER'S REQUIREMENT

The Utah State Engineer's office has stated that the "duty" for irrigation within the state of Utah varies from 6.0 acre-feet/acre in the dryer parts of the state, to 3.0 acre-feet per acre in the high mountain areas. The District is located in an area where the State Engineer has determined to use a duty of 4.0 acre-feet per acre. As stated, the average consumptive use in the District's service area has varied in the past 10 years from a high of 2.71 acre-feet/acre in 2007, to a low of 1.38 acre-feet/acre in 2019. The average use for the past 15 years is approximately 2.22 acre-feet per acre. This is well below the 4.0 acre-foot per acre duty for irrigated land in the District's service area as determined by the State Engineer.

SECTION 3

SYSTEM PROBLEMS, CONSERVATION, AND GOAL

SECTION 3 - SYSTEM PROBLEMS, CONSERVATION, AND GOALS

IDENTIFIED PROBLEMS

This Water Conservation Plan identifies several problems with regard to water conservation issues. These items are as follows:

1. Agricultural irrigation flows are often based on traditional flows rather than flow rates based on shares owned by the user.

2. Many of the water users in the District lack the understanding of how to efficiently water landscaped areas. Their practices are based on convenience or habit instead of the needs of the vegetation.

3. The water rate structure does not have incentives or penalties that will encourage conservation.

WATER CONSERVATION GOAL

The goal of the Water Conservation Plan is to reduce future water use while maintaining a financially viable System. A review of *"Utah's M&I Water Conservation Plan - Investing in the Future"* reveals that the state has a goal of reducing per capita water use by 25% between 2000 and 2025. Total water consumption within the District's service area between 2000 and 2020 have been reduced by approximately 26%. The District's water conservation goal for the next 5 years consists of a reduction in water use by an additional 1%. It is anticipated that this goal can be achieved by continuing the existing control measures and implementing the additional control measures indicated in this section. A 1% reduction in water use could result in an estimated savings of approximately 83.4 acre-feet each year.

CURRENT WATER CONSERVATION IMPLEMENTATION PLAN

Current water conservation measures include the following: public education; internal training and education; water use restrictions; pipeline replacement; reservoir maintenance; leak detection; and the water conservation learning garden.

It is difficult to evaluate the effectiveness of individual conservation measures due to the natural variation in water use from year to year. However, the combination of the existing conservation measures appears to be at least moderately effective. A review of water use records indicate that per acre use has decreased from approximately 3.6 acre-ft/acre use in 1994 to approximately 2.14 acre-ft/acre in 2020.

Public Education

Information promoting water conservation are made available on the District website to residents and at the District Office. This information describes various water conservation practices that customers can use to reduce their water consumption. This information can

easily be used to improve education at city functions, special school and university programs, and pursuant to special requests by other organizations.

Internal Training and Education

The District is currently actively participating in several organizations that work with state and local governments on ongoing conservation efforts. District personnel routinely attend seminars and conferences that promote water conservation. These organizations, seminars, and conferences provide information regarding newly developed equipment, instrumentation, methods and techniques, and how they can be applied to conservation efforts in the District.

Water Use Restriction

It is well documented that watering landscaped areas and turfgrass between 10 p.m. and 6 a.m. can greatly reduce water losses due to evaporation. Along with encouraging proper watering techniques, the District has a policy that restricts the watering of lawns and landscaping between the hours of 10 a.m. and 6 p.m. An initial violation results in a verbal warning and is followed by a written warning if necessary. Repeated violations can result in fines or the District terminating water service.

Pipeline Replacement

Maintenance of aging waterlines, valves, and fittings with repeated leaks are promptly identified and scheduled for repair or replacement. The priority and schedule of replacement or repair is based upon the severity of the leak and the potential for property damage. The annual maintenance plan is reviewed and adjusted annually.

Reservoir Maintenance

The District Reservoir is maintained on a regular basis. At the end of the irrigation season, the water is drained, any accumulated sediment is removed, and the concrete liner is inspected for damage. Joints and cracks are sealed or re-sealed on an as-needed basis.

Leak Detection

In an effort to conserve water and protect adjacent facilities, the District has installed a leak detection system adjacent to the reservoir. This leak detection system is actually made up of two separate components as follows:

Groundwater Monitoring System - Seven piezometers have been constructed along the north and east sides of the reservoir. Each of the piezometers contains monitoring equipment that automatically detects changes in groundwater elevation, indicating a possible leak. The data is transmitted electronically to a recording device.

Sand Drain - A sand drain system is located under the concrete liner along the northeast sidewall of the reservoir. If water leaks through cracks or joints in the liner, it will travel through the sand drain, where it is captured by a piping system and diverted into a manhole where it is stored. Automatic monitoring equipment continually records water levels in the manhole.

Although changes in groundwater elevations occur and water is occasionally measured in the drain manhole, any water that accumulates in the manhole is mainly due to condensation, seasonal precipitation, and changes in barometric pressure. To date, no significant leaks have been detected.

Water Conservation Learning Garden

Currently, Roy Water Conservancy District is located within the jurisdictional boundary of Weber Basin Water Conservancy District. Weber Basin operates an extensive water conservation learning garden that is open to the public. By visiting the garden or attending classes offered by Weber Basin, individuals can see how to use beautiful water-wise landscaping in a semi-arid environment. Since the Weber Basin garden is so extensive, the District refers customers to this facility.

CONSERVATION PRACTICES

Additional water conservation measures that could be implemented by the District are presented below.

1. **Public Information.** Continue to develop new ways to improve the current public education program. Continue to encourage efficient watering of lawns and gardens, landscaping with drought-resistant plants, and other water-saving practices. If residents can be encouraged through public education to adopt water-saving practices, the water savings can be significant. Research by the Utah Division of Water Resources indicates that a typical household in the Salt Lake City area can reduce outdoor water use by approximately 25,000 gallons per year by efficient watering of lawns and gardens.

2. **Water Conservation Information.** Provide water saving and conservation information to each customer through information posted on the District website. The conservation information specific to the District is provided to each customer by accessing the district website. Other more general information can be found online from the Utah Division of Water Resources at https://conservewater.utah.gov. This website also provides links to other water conservation websites.

3. **Universal Metering.** The District will continue to install metering devices on existing District connections in accordance with a plan previously submitted to the Department of Water Resources. In order to install meters on all connections more quickly, a financially viable solution must be made available.

   It should be noted that in August of 2013, the District adopted a policy requiring all new developments to install meters on each of their service laterals. The District has also modified its construction standard and specifications accordingly.

4. **Incentive Pricing.** The District currently mails out a regular water use report to those with meters. This report talks about the estimated water need and compares it to the actual use for the month. The District encourages the purchase and installation of a smart controller when replacing an old controller panel. The District also encourages when purchasing a smart controller the use of the rebate program at https://utahwatersavers.com.

5. **Water Check Program.** In order to assist customers in developing good conservation practices with regard to watering their landscaped areas, the water check program educates the customer to know how much water their sprinkler system is providing to each area of their landscaping. This information can then be used to set sprinkler timers to the proper time interval, thereby reducing over-watering. The District encourages water users to participate in the water check program by going to https://cwel.usu.edu/watercheck#:~:text=To%20sign%20up%20for%20a,begin%20work%20in%20the%20spring. Utah State University will provide assistance in completing the water check.

SECTION 4

PLAN ADOPTION PROCEDURES

SECTION 4 - PLAN ADOPTION PROCEDURES

ADOPTION REQUIREMENTS

In conformance with the requirement of the Act, at a minimum, once every 5 years, the District will devote at least a part of one of its regular board meetings to a discussion of the District's Water Conservation Plan and general conservation issues. During the public comment portion of the meeting, the Board will allow sufficient time for public comment. A public hearing will then be scheduled to adopt the District's Water Conservation Plan. There will be reasonable notice of the public hearing. Following the public hearing, any items brought forth by the public regarding the Plan will be discussed. Following the discussion, the Plan will be formally adopted by the Board. The minutes of the meetings will be added to the Plan, (Appendix E).

NOTIFICATION REQUIREMENTS

A complete copy of the Plan will be delivered to the governing bodies of Roy City, West Haven City, and Hooper City in accordance with U.C.A. Section 73-10-32(2)(a)(iii). A copy of the notification procedure will be included in the Plan, (Appendix E).

WATER CONSERVATION PLAN UPDATE

The water conservation plan will be reviewed and updated periodically. It is recommended that the Plan be reviewed by the District on an annual basis to determine if an update is necessary. Factors to be considered in the annual review include development trends, progress toward conservation goals, water use trends, and the financial stability of the District. The Water Conservation Plan will be updated if significant changes to these factors are noted. An overall update of the water conservation plan is required no less than every 5 years.

REFERENCES

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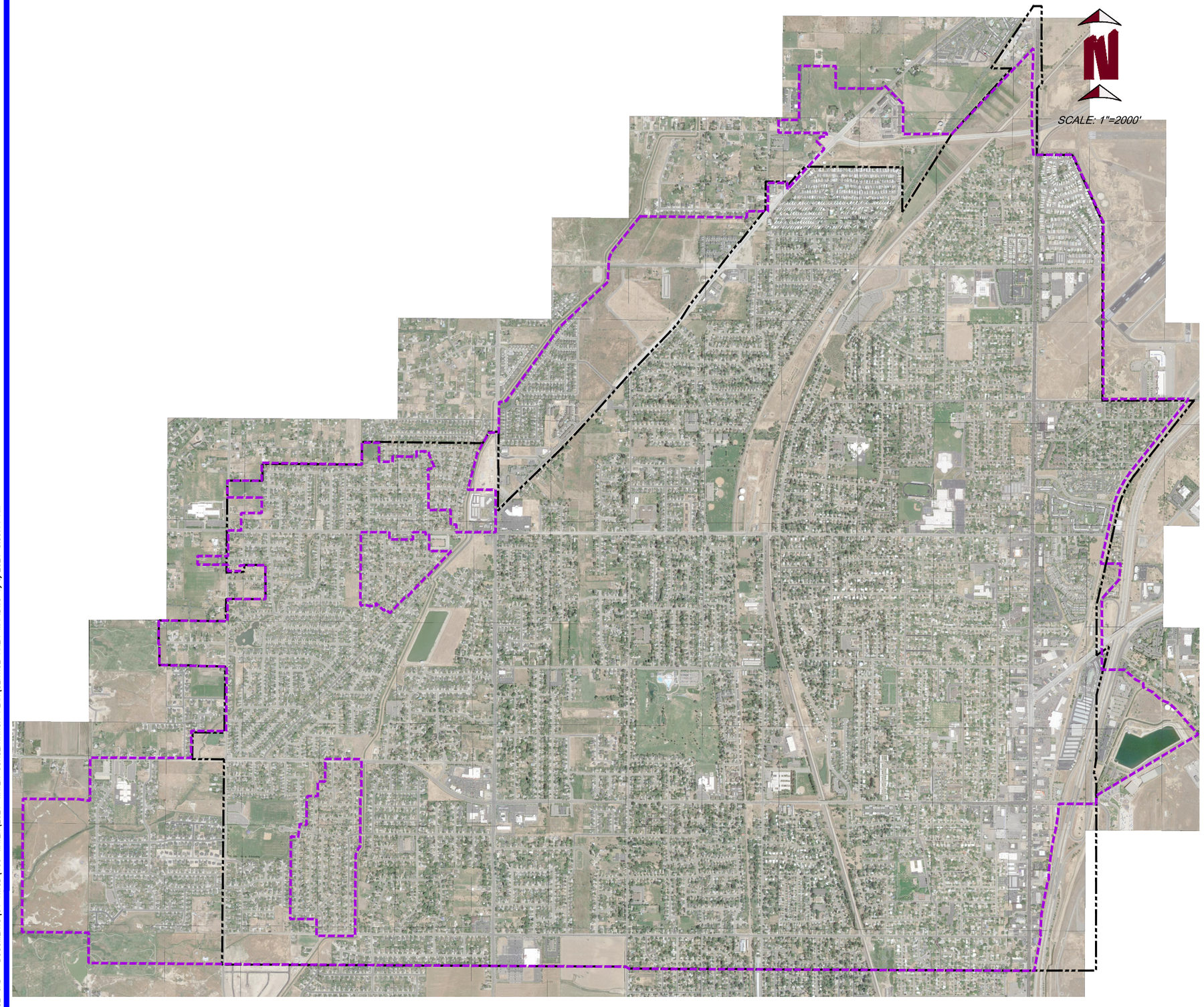
APPENDIX A

SERVICE AREA MAP

ROY WATER CONSERVANCY DISTRICT



ROY WATER
CONSERVANCY DISTRICT
Conserve Every Drop

LEGEND

STUDY AREA LIMITS

ROY CITY LIMITS

SERVICE AREA MAP

SHEET 1

DESIGNED	B.C.J.	DATE	MAR. 5, 2021
DRAWN	M.M.	SCALE	1"=2000'
CHECKED	B.C.J.		

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5320 SOUTH 1950 WEST, SUITE 1
ROY CITY, UTAH 84067 (801) 775-9191

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APPENDIX B

WATER SYSTEM MAP

ROY WATER CONSERVANCY DISTRICT

ROY WATER CONSERVANCY DISTRICT
Conserve Every Drop

SCALE: 1"=2000'

SAUNDERS LATERAL

PIPPEN LATERAL

RAPP LATERAL

LOWER ZONE

UPPER ZONE

NORTH BRANCH TURNOUT

RWCD RESERVOIR & PUMP STATION FACILITY

LEGEND

- ROY CITY BOUNDARY
- EXISTING RWCD SERVICE BOUNDARY
- FUTURE RWCD SERVICE BOUNDARY
- PRESSURE ZONE BOUNDARY
- FUTURE SERVICE PIPELINE
- J-358 JUNCTION NODE

PIPE DIAMETER (INCHES)

- <= 4
- <= 6
- <= 8
- <= 10
- <= 12
- <= 14
- <= 16
- <= 18
- <= 24
- <= 30
- <= 36
- <= 42
- <= 48

WATER SYSTEMS MAP

SHEET 2

DESIGNED J.D.B.
DRAWN M.M.
CHECKED B.C.J.
DATE MAR. 5, 2021
SCALE: 1" = 2000'

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APPENDIX C

WATER CONSERVATION TIPS

Note: The following water-saving tips were obtained from the Utah State Division of Water Resources website at https://conserverwater.utah.gov.

Tips for Saving Water Outdoors

Try planting drought-tolerant and regionally adapted plants in areas that are hard to water or that receive little use. This may include narrow strips near sidewalks or driveways and steep hills.

Sweep your driveways and sidewalks with a broom instead of spraying them off with a hose.

Check outdoor faucets, pipes, hoses for leaks.

Change your lawnmower to a 3-inch clipping height and try not to cut off more than one-third of the grass height when you mow.

Consider replacing infrequently used lawn areas with low-water-use plants or ground covers.

Apply as little fertilizer to your lawn as possible. Applying fertilizer increases water consumption and actually creates more mowing for you! Use iron-based fertilizers to simply "green-up" your lawn instead.

Tips for Saving Water in your Landscape

Visually inspect your sprinkler system once a month during daylight hours. Check and fix any tilted, clogged, or broken heads. Although watering at night is recommended, you won't notice problems with your system unless you see it in operation.

Avoid watering your landscape during the hottest hours of the day (10 a.m. until 6 p.m.) to minimize evaporation.

Water your landscape in cycles by reducing the number of minutes on your timer and using multiple start times spaced one hour apart. This allows the water to soak into the soil and avoids runoff.

Water your lawn only when it needs it. If you leave footprints on the grass, it is usually time to water.

Turn your sprinkler system off during or after a rainstorm and leave it off until the plants need to be watered again.

Consider installing an automatic rain shutoff device on your sprinkler system.

Install drip irrigation systems for trees, shrubs, and flowers.

Check your sprinkler valves for leaks when checking all your heads.

Avoid watering your lawn on windy days.

Try to add more days between watering. Allowing your lawn to dry out between watering creates deeper roots and allows you to water deeper and less often.

Place a rain gauge in your backyard to monitor rainfall and alter your sprinkling schedule according to rainfall received.

Set a timing device when you water by a hose.

Test soil moisture with a soil probe or screwdriver before you water. If the soil is moist, don't water!

Watch out for broken sprinklers, broken pipes, and any other significant water losses in your community. Be sure to notify the property owner or the water district of the problem.

Make sure the water coming out of your sprinklers is not misting and drifting away in the wind. This is usually caused by too high of pressure. If necessary, install a pressure reducer on your sprinkler line.

Turn back your automatic timers in the spring and fall. Water only once or twice a week during the spring and fall.

Tips for Saving Water when Planting

Plant your garden when temperatures are cooler, and plants require less water. This is also less stressful for the plants.

Use a thick layer of mulch around landscape plants and on bare soil surfaces. This reduces evaporation, promotes plant growth, and reduces weeds.

Collect the runoff from your roof in a barrel and use it on your plants and garden.

Arrange plants in your garden according to watering needs. This is called "Hydro-zoning."

Remove weeds from the garden. This helps cut down on excess water consumption due to plant competition.

Don't overreact and try to drown the brown spots on your lawn. Simply moisten the area up a bit, and the grass will green up in a few days.

Create a compost pile and use it in your yard to add needed nutrients and organic matter to the soil.

Don't over-water your plants. Learn how much water they need and how best to apply just the right amount.

APPENDIX D

WATER CONSERVATION LITERATURE

Information

For more information, please contact:

STATE OF UTAH
NATURAL RESOURCES
Division of Water Resources

Utah Division of Water Resources
1594 West North Temple, Ste. 310
PO Box 146201
Salt Lake City, Utah 84116-6201
(801) 538-7299

TAKE Pride IN UTAH

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

USE UTAH WATER Wisely!
UTAH WATER CONSERVATION FORUM

Design: Carol Niederhauser

Rev. 5/97

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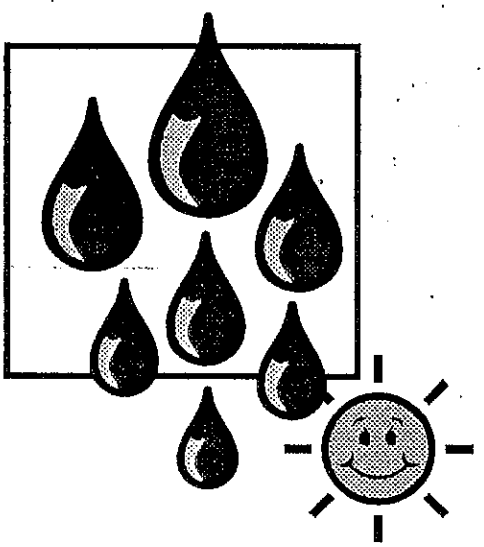
The Water-Wise Checklist



Try this checklist to see where you stand

- ☐ **1. Water your lawn only when it needs it!** Watering frequently can be very wasteful as it doesn't allow for cool spells or rainfall that can reduce the need to water. A good way to see if your lawn needs water is to step on the grass. If the grass springs back when you move your foot, it doesn't need water. Change your sprinkler clocks to suit weather conditions. (Remember less water is needed in spring and fall.)
- ☐ **2. Deep-soak your lawn.** When you do water your lawn, do it long enough for water to seep down to the roots where it won't evaporate quickly and where it will do the most good. A light sprinkling, which sits on the surface, will simply evaporate and be wasted. A slow, steady fall of water is the best way to irrigate your lawn.
- ☐ **3. Water during the cool part of the day.** Avoid watering between 10 a.m. and 6 p.m. During the cooler morning and evening hours, there is less evaporation and wind is generally lighter.
- ☐ **4. Don't water the gutter.** Position your sprinklers in such a way that water lands on your lawn or garden, not on concrete where it does no good. Avoid watering on windy days when much of your water may be carried off before it ever hits the ground.
- ☐ **5. Check for leaks in pipes, hoses, faucets and couplings.** Leaks outside the house may seem bearable since they don't mess up the floor or drive you crazy at night. But they can be just as wasteful as leaks in the water meter line; even more wasteful.
- ☐ **6. Plant drought resistant trees and plants.** Visit your local nursery to see the many varieties of trees and plants that thrive in Utah and require far less water than other species.
- ☐ **7. Use a broom to clean driveways, sidewalks and steps.** A broom is the proper tool for cleaning these areas. Using a hose wastes hundreds of gallons of water.
- ☐ **8. Put a layer of mulch around trees and plants.** A layer of mulch (3-4 inches) will slow the evaporation of moisture and inhibit weeds!
- ☐ **9. Don't run the hose while washing your car.** Soap down your car with a pail of soapy water. Then use the hose to rinse it off.

nd what you can do to help.

- [ ] **10. Teach your children that your hose and sprinklers are not toys.** There are few things more cheerful than the sound of happy children playing under a hose or sprinkler on a hot day. Unfortunately, there are also few things more wasteful of precious water.
- [ ] **11. Check your toilet for leaks.** A leak in your toilet may be wasting more than 100 gallons of water a day. To check, put a little food coloring in your toilet tank. If, without flushing, the coloring begins to appear in the bowl, you have a leak. Adjust or replace the flush valve, or call a plumber.
- [ ] **12. Stop using your toilet as an ashtray or wastebasket.** Every time you flush a cigarette butt, facial tissue or some other small bit of trash down the toilet, you waste five to seven gallons of water.
- [ ] **13. Replace your old toilet.** Toilets are the biggest water users inside the home. Replace your old toilet with a new ultra-low-flow toilet. These toilets use approximately 1.6 gallons per flush as opposed to older style toilets that use five to seven gallons per flush. The new toilets are readily available and come in many styles and colors.
- [ ] **14. Take shorter showers.** Long, hot showers waste five to 10 gallons of water every unneeded minute. Limit your showers to the time it takes to soap up, wash down and rinse off.
- [ ] **15. Install watersaving shower heads.** Replace your old shower head with a new low-flow shower head that uses 2.5 gallons per minute. A good low-flow showerhead produces a great shower. Try it! You'll like it! (And you'll save water, too.)
- [ ] **16. Turn off the water after you wet your toothbrush.** After you have wet your toothbrush and filled a glass for rinsing your mouth, there is no need to keep water pouring down the drain.
- [ ] **17. Rinse your razor in the sink.** Before shaving, partially fill your sink with a few inches of warm water. This will rinse your blade just as efficiently as running water and far less wastefully.
- [ ] **18. Check your faucets and pipes for leaks.** Even the smallest drip from a worn washer can waste 50 or more gallons of water a day. Larger leaks can waste hundreds of gallons.

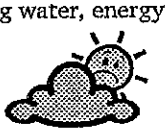
Checklist continued

- ☐ **19. Use your automatic dishwasher only for full loads.** Every time you run your dishwasher, you use about 25 gallons of water.
- ☐ **20. If you wash dishes by hand, don't leave the water running for rinsing.** If you have two sinks, fill one with soapy water and one with rinse water. If you have one sink, gather all the washed dishes in the dishrack and rinse them with an inexpensive spray device.
- ☐ **21. Don't let the faucet run to clean vegetables.** To wash vegetables, put a stopper in the sink and fill with a few inches of clean water.
- ☐ **22. Keep a bottle of drinking water in the refrigerator.** This ends the wasteful practice of running tap water to cool it off for drinking.
- ☐ **23. Use your automatic washing machine only for full loads.** Your automatic washer uses 30 to 35 gallons of water in a cycle. That's a lot of water for three T-shirts.

Your Score

If you've checked **19-23** boxes, you're doing an excellent job saving water, energy and protecting our environment!

From **12-18** means you're doing a good job, but there's room for improvement.



Less than **12** means you need to change your habits.

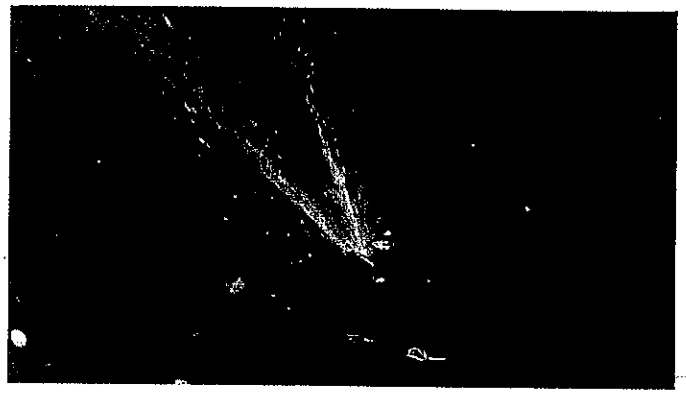
ion Tips

Do Get Into the Maintenance Habit!

Check your irrigation system on a regular basis to ensure top performance. Routinely check the coverage of sprinkler heads and adjust them if they're creating runoff on walks and driveways. Before the first freeze, be sure to drain and clear the system of water to avoid leaks and breaks. Be sure the batteries (if any) are fresh and the clock will keep on time.

Don't Get Into a Fog

If your system's spray pattern is creating a fine mist or fog, reduce the operating pressure or adjust the nozzles to eliminate the mist. When you do, you'll reduce water loss that's due to evaporation and wind drifting by 20% to 25%



em Overview

a suitable level for the sprinkler system. Both of these components are usually located on the system's main line.

In most cases, a typical Weber Basin turnout feeds two lots, as shown in the diagram.

Clock Controller Units

The controller is the system's timing mechanism. Its job is to activate the sprinkler system on the day and time it has been set/programmed to run. There are two basic styles of controller clock units: electro-mechanical clocks and digital read-out clocks.

To determine which style best suits your needs, check with your local hardware store or lawn sprinkler company. As a general rule, look for a controller unit that allows you to easily change watering schedules and to irrigate turf and shrubs separately. You'll also want your controller to enable you to set several short repeat cycles to give the soil more time to absorb water between cycles.

Controller Unit Location

Consider placing your controller on the back porch or patio rather than in the basement or garage. This will allow you to easily check the system's performance without having to run back and forth from the garage or basement. Most clocks come in protective boxes that are already designed for outdoor placement and use.

HE **inherited** HIS FATHER'S EYES,
HIS MOTHER'S COMPLEXION,
HIS GRANDFATHER'S LAUGH, AND
ALL HIS ANCESTORS **need for water.**

SLOW THE FLOW
SAVE H2O

WEBER BASIN WATER CONSERVANCY DISTRICT
2837 East Highway 193 • Layton, Utah 84040 • (801) 771-1677

Current Occupant

More Water-Wise Irrigation Tip

Don't Water on Automatic-Respond to Your Lawn's Need, Not Your Habit!

Your lawn will adapt easily to an every-three-day watering pattern; in fact, you can even water less frequently. If nature helps out, so much the better! Check to see if rainfall is meeting your lawn's needs. Here's a tip: let nature sprinkle your lawn as late into the spring as possible before you begin to irrigate, and you'll be helping your lawn develop healthy roots.

To determine if your lawn is getting enough water, try this simple test. Stick a screwdriver in the ground. If it goes in too easily, cut back on your watering. If it's a struggle to get it in, increase your watering.

Don't Water Everything the Same

Water the lawn separately from plant beds and trees because these areas need less water than the lawn.

Water By the Light of the Moon

Watering between 10 p.m. and 8 a.m. can reduce evaporation loss by 15 to 20 percent. Because our climate is typically dry, this practice won't create mildew or fungus on your lawn unless you water too much. **Always avoid watering during the heat of the day, from 10 a.m. - 6 p.m.**

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Automatic Sprinkler System Ov

Whether you design and install a system yourself or contract with a professional service, the makings of a water-efficient and money-saving system are basically the same. Here's a look at the basic components you'll find in nearly every system.

Two important sprinkler system components include a filter to prevent unforeseen matter and debris and a pressure-reducing valve (PRV not shown in diagram) that lowers the water pressure to

Typical Weber Basin Turnout

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Lawn and Soil

Water Patterns in the Soil

Different soils have different water intake rates. For example, water moves quickly through sandy soil, seeping deeply into it rather than spreading out. Therefore, it doesn't take much water to wet the roots. In loam (sand, clay and organic soil), the water spreads out and down, forming a ball-shaped water front. In clay soil, the water travels slowly, spreading more to the sides than moving downward.

Application Rate vs. Soil Intake Rate

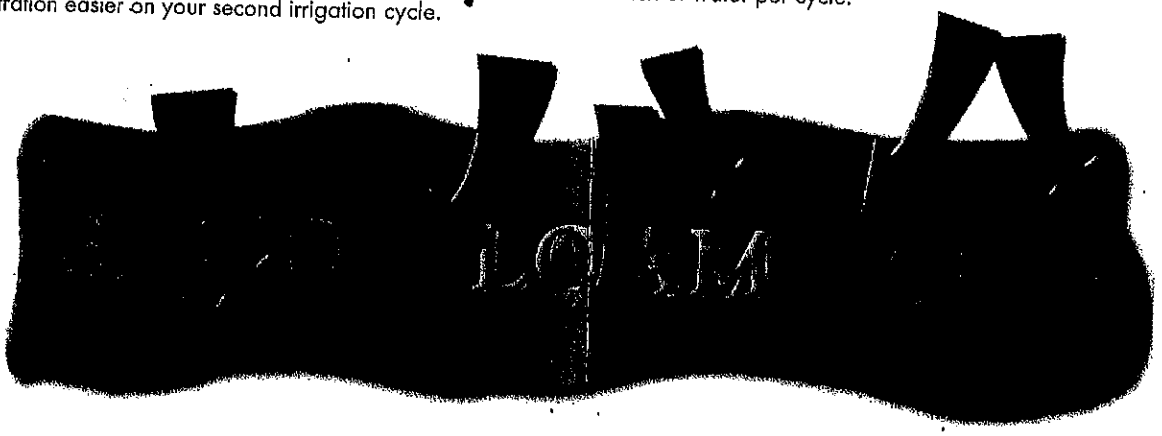
In the same way different yards have different soils, yards also vary in slope and exposure. This means you need to monitor your irrigation to make sure your application rate doesn't exceed your soil's intake rate. If you are applying too much water at one setting you will notice run off (if you're on a slope) or ponding. If this occurs, simply divide your watering time into several shorter cycles to achieve your goal. This way, your first irrigation cycle will have had time to sink into the soil and create a suction that will make penetration easier on your second irrigation cycle.

More About Soil

Clay soil can only absorb about 1/4-inch of water an hour. Therefore, the most efficient watering schedule for this soil would be to set each zone to deliver no more than 1/4-inch for each cycle. The time needed to deliver this 1/4-inch may differ from zone to zone, depending on the spacing and kind of sprinkler head you're using.

Clay soils need quite a bit of water to soak down 12 inches deep. This type of soil can absorb more water if a second cycle is started within an hour or two of the first cycle, delivering another 1/4-inch of water in the same area for a total of 1/2-inch per watering day.

While many lawns look great even when watered only once every three to four days, really sandy soil may need more frequent irrigation. Repeat cycles are best for this soil type and allow for deeper root watering and less runoff. Don't apply more than 1/4-inch of water per cycle.



Green It Up: More Tips for a Healthy Lawn

Aeration

A regular aeration schedule is important to the health of your lawn. Try to aerate 2-3 times a year, especially in the spring and fall. Clay soil has a tendency to become compacted, which prevents water from sinking into the ground. Aeration breaks up the soil and allows water to penetrate. Don't forget to add some compost when you aerate. In particularly dry areas, you can use a screwdriver to poke holes into the soil to help the water get into the ground.

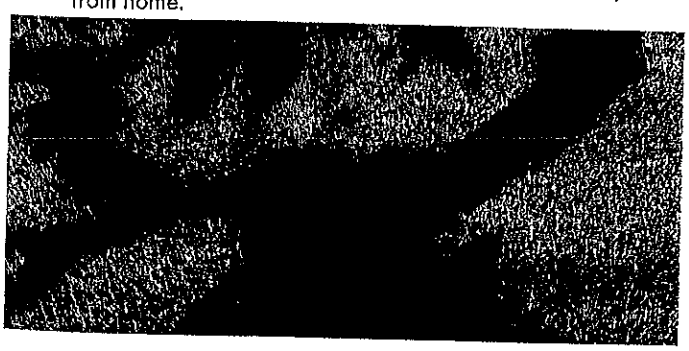
Mowing Height

Set the blade height on your mower so that you keep the grass at a height of 3 inches. This shades the soil and prevents both excess drying and evaporation.

Watch the Sprinkler Clock

Millions of gallons are wasted every year by sprinkler systems running in the rain and clocks still programmed for mid-summer schedules in the spring or fall. To prevent this from happening follow these guides:

- Water less frequently before Memorial Day and after Labor Day.
- Water less often in spring and fall - change the setting on the clock or leave the system on manual but continue to repeat cycles for deep root watering and clay soil.
- Turn the system off or flip the rain switch when it rains.
- Consider installing a rain sensor or arrange to have a neighbor turn off the clock if it rains when you are away from home.



Determine Your Lawn Watering Needs

It may surprise you to learn that lawn watering uses nearly half of the water around homes. That's because everyone wants a great-looking yard. And why not? Attractive lawns and landscapes not only improve your home's property value, they also provide a constant source of pleasure and pride. Here's the good news; maintaining a great looking lawn doesn't have to conflict with water-wise conservation and irrigation practices. In fact, with a bit of planning, the two go hand in hand! The following information will show you how easy it is to maintain an attractive lawn that's beautiful and water-wise, too! Just follow the procedures we've outlined throughout this brochure and you'll be on your way to an efficient irrigation schedule and a lush, green lawn!

Turf studies have shown that most lawns only need to be watered once every 3 to 4 days to stay healthy and green. Watering everyday creates shallow roots. Watering infrequently develops deep roots and healthier turf. Grass roots grow deeper into the soil and become stronger with less watering. If grass does not spring back after being stepped on, it's time to water. Water only when needed.

Following is a lawn water schedule you can use as a guide. Your lawn may need more water when it's extra hot or less when it's cool. Water less when it rains. Avoid watering on windy days or midday when the evaporation level is the highest. Proper lawn watering can save a lot of water.

How Much is Enough? A Simple Test to Determine Your Lawn Watering Needs

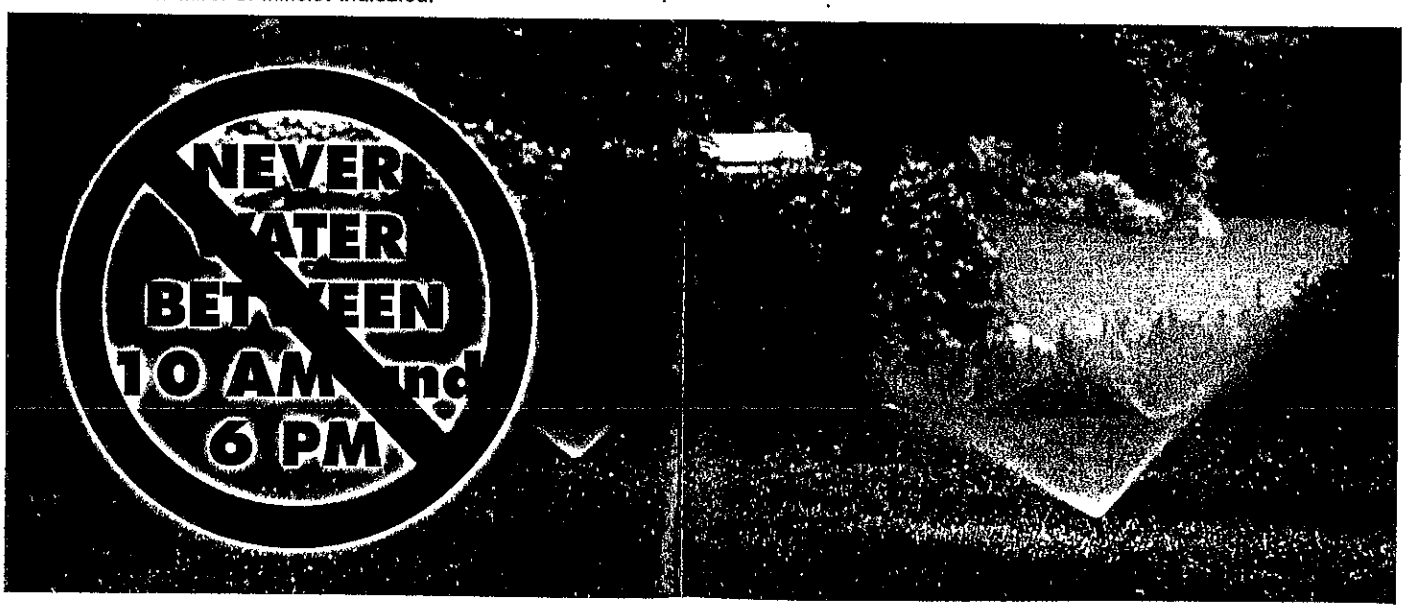
Before you can create an efficient watering schedule, you need to determine how much water your lawn is getting from your present method. This test will give you that information; it's based on measurements taken from different zones in your yard. A zone is a specific area of your landscape served by a series of sprinkler heads.

Just follow these simple steps.

1. Set 3 or more flat bottom cans or coffee mugs at various places on your lawn at least 4 feet from sprinkler heads.
2. Turn on your sprinkler(s) for 15 minutes.
3. Measure the depth of water in each can with a ruler and determine the average water depth in cans by adding up all the measurements and dividing by the number of containers you used.
4. Match your sprinkler output with the table to the right. Then water the number of minutes indicated.

Lawn Watering Guide

Water Depth in Cans	1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4	1
SEASONS	watering time in minutes								
SPRING (water every 4 days)	52	34	26	20	17	13	10	9	6
SUMMER (water every 3 days)	104	69	52	41	35	26	21	17	13
FALL (water every 4 days)	69	51	39	31	26	19	15	13	10



WEBER BASIN WATER
CONSERVANCY DISTRICT

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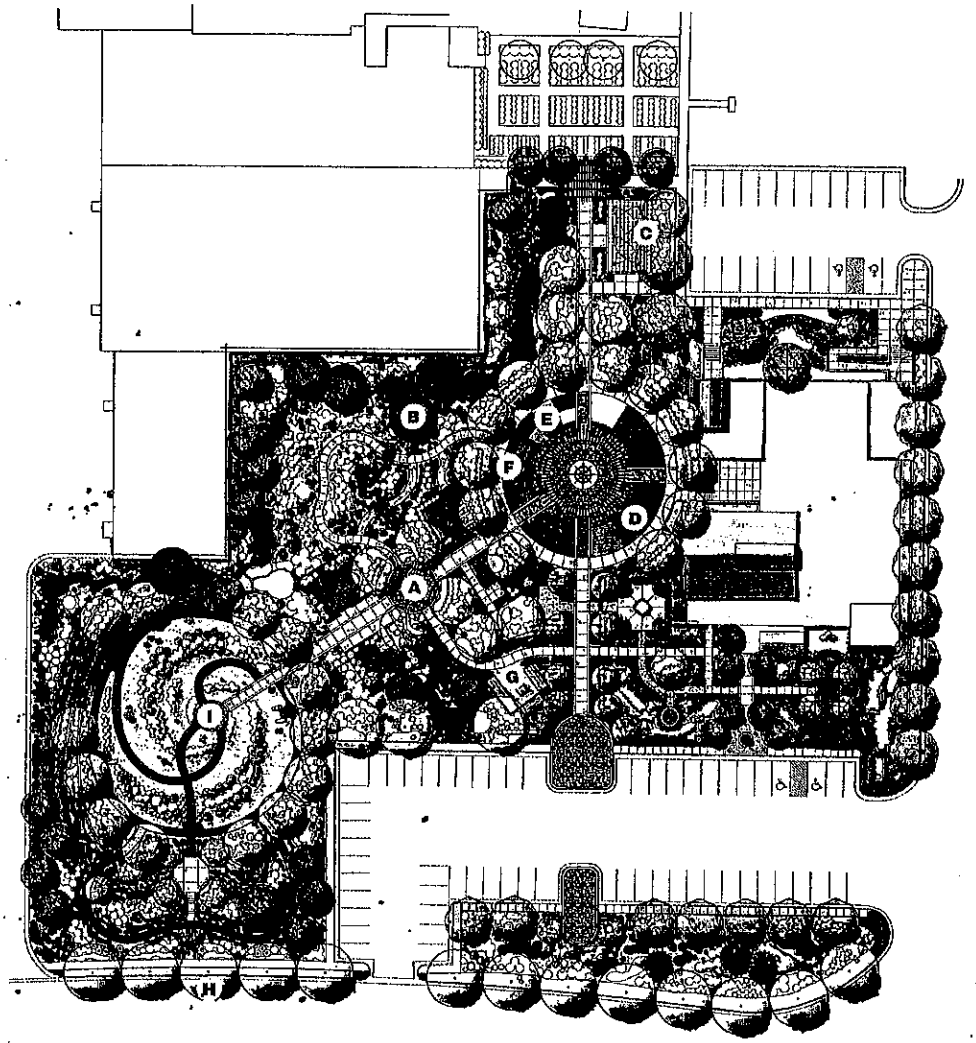
Weber Basin's

Water Conservation Learning Garden



Weber Basin's

Water Conservation Learning Garden

Weber Basin Water Conservancy District (WBWCD) has committed, along with other members of the Governor of Utah's Water Conservation Team, to reduce per capita water use of 25 percent by the year 2050. To help obtain this goal, WBWCD, assisted by EDA Land Planning, envisioned a water conservation learning garden. The learning garden provides an opportunity for community members to learn first-hand about the beautiful types of water-wise landscapes in a semi-arid climate. It is intended for visitors to learn not only about plant materials that are water-wise, but to learn how to care for and irrigate plants in different soil types and slope conditions. This garden creates a setting for outdoor classrooms and scenic nature walks. There are real examples of residential and commercial landscapes that will provide planning and design tools.

WBWCD realizes that conservation of the resources it manages is an important factor in meeting the long-term needs of the communities it serves. Through the learning garden, the District emphasizes the need for community members to use their water efficiently in the landscape and to obtain a life style water conservation ethic.

Map Index

A Residential Landscape Application

- **Front Yard** – View two examples of front yard landscaping which reduce turf areas and increase colorful plants and trees that add variety to your yard.

- **Back Yard** – View two examples of back yard landscaping that remain very functional and beautiful for entertaining, while being water-wise with reduced turf areas and maintenance requirements.

B **Commercial Landscape Applications** – The landscaping around the water filtration building exhibits landscape styles and techniques for commercial applications that are beautiful as well as water-wise by:

- minimizing turf areas
- maximizing the use of colorful water-wise perennials, shrubs and trees
- using a thick mulch layer to help hold moisture

C **Irrigation Demonstration** – This exhibit demonstrates some aspects of proper irrigation design, with several different sprinkler types, showing proper spacing and head to head coverage.

D **Turf Grass Demonstration** – The six most commonly used species of turf grass in northern Utah are planted here, side by side, to provide comparisons to help visitors make informed decisions about which grass is right for their application. Each species have different color, texture, water requirements, and maintenance requirements.

E **Mulch Demonstration** – Demonstrates different types of organic (barks, leaves) and inorganic (rock, sand) mulches and their applications.

F **Soil Profile Demonstration** – This exhibit shows how creating the proper soil profiles can be the difference between a successful and healthy landscape.

G **Raised Planter Garden** – Raised-bed gardens are beneficial because they:

- add elements of design to the yard
- ease planting and harvesting
- extends growing season
- minimizes the area of planting
- can be used where soil may be difficult for planting

H **Park Strip Planting** – Learn about alternative plant materials for park strips that create a safe and enjoyable environment for pedestrians, which can also be water conserving.

I **Xeric Garden** – This area demonstrates a landscape which requires the lowest need for water. After a two to three year establishment period, this landscape should survive on natural precipitation.

7 Principles of Water-Wise Landscaping

1. *Planning and Design*-Account for existing site conditions, use of the landscape, and landscape maintenance. Determine soil type, topography, drainage, sun exposure, etc. Determine outdoor objectives and style.

2. *Soil Type and Condition*-Good soil is the basis for a successful landscape. Adding organic matter (leaves, grass clippings, and other plant and animal remains) will improve all types of soils: clay, loam, or sand. It is a good idea to contact your local Extension Office for a soil test.

3. *Plant Selection* – Find plants that are adapted to Utah's climate and seasons. There are many beautiful trees, shrubs, perennials, and groundcovers that will fit in a water-wise landscape in Utah.

4. *Reduce Turf Area* – Turf, such as Kentucky Blue Grass, require substantial water and tend to be over-irrigated. Turf should be located only where it provides a useful purpose. Eliminate turf usage in narrow strips and sloped areas.

5. *Irrigate Efficiently* – Well designed and maintained sprinkler systems save water. Organize and irrigate plants according to their water needs.

6. *Mulch*-Mulches reduce evaporation, weed growth, runoff, and provide a manicured landscape. Inorganic mulches include rock, decomposed granite, etc. Organic mulches include bark chips, wood shavings, etc.

7. *Maintenance* – Water-wise landscaping will not eliminate maintenance, but will reduce it. Regular maintenance preserves landscape beauty and sprinkler systems while saving water.

PLANT LIST

BOTANICAL NAME	COMMON NAME
☐ Abies concolor	White Fir
☐ Acer ginnala	Amur Maple
☐ Achillea filipendulina	Fernleaf Yarrow
☐ Agave havardiana	Havard's Century Plant
☐ Agave neomexicana	New Mexico Century Plant
☐ Agave parryi	Parry's Agave
☐ Agave utahensis	Utah Agave
☐ Agastache x 'Desert Sunrise'	Desert Sunrise Hummingbird Mint
☐ Amelanchier utahensis	Utah Serviceberry
☐ Amorpha canescens	Lead Plant
☐ Anemone blarmiensis	Windflower
☐ Arctostaphylos nevadensis	Hardy Manzanita
☐ Artemisia versicolor 'Seafoam'	Seafoam Sage
☐ Aster alpinus	Alpine Aster
☐ Astragalus utahensis	Utah Milkvetch
☐ Aubrieta x 'Cascade Purple'	Cascade Purple Rock Cress
☐ Aurinia saxatilis	Basket of Gold
☐ Baileya multiradiata	Desert Marigold
☐ Berlandiera lyrata	Chocolate Flower
☐ Buxus koreana 'Wintergreen'	Wintergreen Korean Boxwood
☐ Caesalpinia gilliesii	Yellow Bird of Paradise
☐ Calamagrostis x acutiflora 'Karl Foerster'	Karl Foerster Grass
☐ Caragana frutex 'Globosa'	Globe Peashrub
☐ Carya illinoensis	Pecan
☐ Caryopteris x clandonensis 'Dark Knight'	Dark Knight Spirea
☐ Cedrus libani	Cedar of Lebanon
☐ Cerastium tomentosum	Snow-In-Summer
☐ Cercis canadensis	Eastern Redbud
☐ Cercocarpus ledifolius	Curl-Leaf Mountain Mahogany
☐ Cercocarpus montanus	Alder Leaf mountain-mahogany
☐ Chamaebatiaria millefolium	Fernbush
☐ Chilopsis linearis	Desert Willow
☐ Chitalpa tashkentensis 'Pink Dawn'	Pink Dawn Chitalpa
☐ Chrysothamnus viscidiflorus	Sticky-Leaved Rabbitbrush
☐ Cladrastis kentukea	American Yellowwood
☐ Coreopsis grandiflora 'Early Sunrise'	Early Sunrise Tickseed
☐ Cowania mexicana	Cliff Rose
☐ Cupressus arizonica	Arizona Cypress
☐ Cytisus purgans 'Spanish Gold'	Spanish Gold Hardy Broom
☐ Dasylirion texanum	Green Desert Sotol
☐ Delosperma congestum 'Gold Nugget'	Gold Nugget Ice Plant
☐ Delosperma cooperi	Hardy Purple Ice Plant
☐ Delosperma nubigenum	Hardy Yellow Ice Plant
☐ Echinacea purpurea 'Magnus'	Magnus Purple Coneflower
☐ Echinocereus fendleri	Fendlers Hedgehog Cactus
☐ Echinocereus reichenbachii v albispinus	Hardy Hedgehog Cactus
☐ Echinops ritro 'Taplow Blue'	Taplow Blue Globe Thistle
☐ Ephedra viridis	Mormon Tea
☐ Eriogonum umbellatum 'Prolliferum'	Proliferum Sulfur Buchwheat
☐ Euonymus japonica 'Aureo-variegata'	Aureo-variegata Gold Leaf Euonymus
☐ Fallugia paradoxa	Apache Plume
☐ Festuca idahoensis 'Siskiyou Blue'	Siskiyou Blue Fescue
☐ Festuca glauca 'Sea Urchin'	Sea Urchin Blue Fescue
☐ Forestiera neomexicana	Desert Olive
☐ Fraxinus velutina	Velvet Ash
☐ Gaillardia aristata 'Indian Yellow'	Indian Yellow Blanket Flower
☐ Gaillardia grandiflora 'Goblin'	Goblin Blanket Flower
☐ Gaura lindheimeri	Gaura
☐ Gazania linearis 'Colorado Gold'	Treasure Flower
☐ Genista lydia	Hardy Dwarf Broom
☐ Gutierrezia sarothrae	Broom Snakeweed
☐ Gymnocladus dioica	Kentucky Coffeetree
☐ Helianthemum 'Burgundy Dazzler'	Burgundy Dazzler Rockrose
☐ Helianthus maximiliana 'Santa Fe'	Santa Fe Maximilian's Sunflower
☐ Helictotrichon semperyirens	Blue Avena Grass
☐ Hemerocallis hybrid	Day Lily
☐ Hesperaloe parviflora	Red Yucca
☐ Hibiscus syriacus 'Blue Bird'	Blue Bird Hibiscus
☐ Hymenoxys acaulis	Angelita Daisy
☐ Hymenoxys scaposa	Thrift-leaf Perky Sue
☐ Illamna rivularis	Mountain Hollyhock
☐ Juglans major	Arizona Walnut
☐ Knautia macedonica	Crimson Scabious
☐ Kniphofia caulescens	Blue-leaf Red Hot Poker
☐ Kniphofia uvaria 'Pfitzer's Hybrid'	Pfitzer's Hybrid Red Hot Poker
☐ Krascheninnikovia lanata	Winter Fat
☐ Lamium maculatum 'Nancy White'	Nancy White Dead Nettle
☐ Lavandula angustifolia	Lavender
☐ Lewisia x longipetala 'Little Plum'	Little Plum Hybrid Bitter Root
☐ Liatris ligulistylus	Meadow Blazingstar
☐ Liatris punctata	Gayfeather
☐ Linum lewisii 'Appar'	Appar Blue Flax
☐ Liriope muscari	Big Blue Lily Turf
☐ Lysimachia nummularia	Creeping Jenny
☐ Magnolia grandiflora 'Edith Bogue'	Edith Bogue Magnolia
☐ Mahonia haematocarpa	Red Berry Mahonia
☐ Mahonia repens	Creeping Holly Grape
☐ Mirabilis multiflora	Desert Four O'clock
☐ Miscanthus sinensis 'Gracillimus'	Gracillimus Maiden Hair Grass
☐ Miscanthus sinensis 'Strictus'	Strictus Zebra Grass
☐ Nandina domestica	Heavenly Bamboo
☐ Nolina microcarpa	Bear Grass
☐ Nolina texana	Texas Bear Grass
☐ Oenothera berlandieri	Mexican Evening Primrose
☐ Oenothera caespitosa	White Tufted Evening Primrose
☐ Osteospermum barberiae 'Purple Mountain'	Purple Mountain African Daisy
☐ Panicum virgatum 'Prairie Sky'	Prairie Sky Switch Grass
☐ Penstemon digitalis 'Husker Red'	Husker Red Penstemon
☐ Penstemon 'Red Rocks'	Red Rocks Penstemon
☐ Penstemon linarioides v. coloradensis	Colorado Narrowleaf Penstemon
☐ Penstemon pinifolius	Pineleaf Penstemon
☐ Penstemon pseudospectabilis	Desert Penstemon
☐ Penstemon x mexicali 'Pikes Peak Purple'	Pikes Peak Penstemon
☐ Philadelphus lewisii 'Cheyenne'	Cheyenne Mock Orange
☐ Photinia fraseri	Fraser's Photinia
☐ Physocarpus opulifolius	Ninebark
☐ Pinus flexilis 'Vanderwolf'	Vanderwolf Pine
☐ Pinus jeffreyi	Jeffrey Pine
☐ Pistachia chinensis	Chinese Pistaschio
☐ Platanus x acerifolia	London Planetree
☐ Prunus besseyi 'Select Spreader'	Select Spreader Sand Cherry
☐ Prunus virginiana 'Canada Red'	Canada Red Chokecherry
☐ Quercus buckleyi	Buckley's Oak
☐ Quercus fusiformis	Escarpment Live Oak
☐ Quercus imbricaria	Shingle Oak
☐ Quercus macrocarpa	Bur Oak
☐ Quercus muhlenbergii	Chinquapin Oak
☐ Ratibida columnifera	Mexican Hat Prairie Cone Flower
☐ Rhus aromatica 'Grow-Low'	Grow-Low Sumac
☐ Rhus trilobata	Oakbrush Sumac
☐ Robinia pseudoacacia 'Purple Robe'	Purple Robe Locust
☐ Rudbeckia fulgida 'Goldsturm'	Goldsturm Black-Eyed Susan
☐ Ruschia species 'Calvinia Pink'	Shrubby Ice Plant
☐ Salvia daghestanica	Dwarf Silver-leaf Sage
☐ Salvia dorrii	Desert Sage
☐ Salvia farinacea 'Texas Violet'	Texas Violet Mealy Cup Sage
☐ Salvia greggii 'Wild Thing'	Wild Thing Bush Sage
☐ Salvia nemorosa 'May Night'	May Night Meadow Sage
☐ Salvia officinalis 'Minima'	Dwarf Herb Sage
☐ Salvia x 'Raspberry Delight'	Raspberry Delight Salvia
☐ Santolina chamaecyparissus	Gray Santolina
☐ Schizachyrium scoparium 'The Blues'	Little Blue Stem Grass
☐ Sedum spurium	Two-row Stonecrop
☐ Sedum sieboldii	Stonecrop
☐ Sedum x 'Autumn Joy'	Autumn Joy Showy Stonecrop Sedum
☐ Sequoiadendron giganteum	Giant Sequoia
☐ Shepherdia argentea	Silver Buffaloberry
☐ Sophora japonica	Japanese Pagoda Tree
☐ Sporobolus wrightii 'Los Lunas Giant'	Los Lunas Giant Sacaton Grass
☐ Sporobolus airoides	Alkali Sacaton Grass
☐ Sporobolus heterolepis	Prairie Dropseed
☐ Teucrium chamaedrys 'Prostratum'	Prostratum Prostrate Germander
☐ Thymus citriodorus 'Doone Valley'	Doone Valley Lemon Thyme
☐ Ulmus parvifolia 'Allee'	Lacebark Elm
☐ Vauquelinia corymbosa v. heterodon	Slimleaf Rosewood
☐ Verbena bipinnatifida	Great Plains Verbena
☐ Veronica incana	Silver Speedwell
☐ Veronica liwanensis	Turkish Veronica
☐ Veronica x 'Blue Reflection'	Blue Reflection Veronica
☐ Vitex agnus-castus	Chaste Tree
☐ x Cupressocyparis leylandii	Leland Cypress
☐ Yucca baccata	Banana yucca
☐ Yucca elata	Soaptree Yucca
☐ Yucca glauca	Soap Weed Yucca
☐ Yucca harrimaniae	New Mexico Yucca
☐ Yucca rostrata	Beaked Yucca
☐ Yucca schottii	Mountain Yucca
☐ Zauschneria latifolia	Firechalice
☐ Zelkova serrata 'Green Vase'	Green Vase Japanese Zelkova
☐ Zinnia grandiflora	Prairie Zinnia

APPENDIX E

BOARD MEETING MINUTES AND NOTIFICATION PROCEDURES

Roy Water Conservancy District

Minutes of Board Meeting

November 17, 2021

5:00 p.m.

The following are minutes of the Board of Trustees regularly scheduled board meeting that was held at Roy Water Conservancy District, located at 5440 Freeway Park Drive, Riverdale, UT 84405, on Wednesday, November 17, 2021, at 5:00 p.m.

Present: Chad Zito, Chair; Mark W. Ohlin, Vice-Chair; Gary L. Newman and Jay L. Cottle, Trustees; Rodney Banks, Manager/Treasurer; Jon Ritchie, newly appointed Trustee; Linda Toupin, District Clerk; and Courtney Harris, Records Clerk.

Excused: Darl R. Field, Trustee

I. CALL TO ORDER. Chair Zito called the meeting to order at 5:00 p.m. and welcomed everyone present.

II. PLEDGE OF ALLEGIANCE. The Pledge of Allegiance was led by Mr. Newman.

III. APPROVAL OF MINUTES. Mr. Newman made a motion to accept and approve the minutes of October 13, 2021, board meeting as written. Mr. Ohlin seconded the motion. The motion carried unanimously.

IV. BUSINESS.

A. Consideration of 2022 Tentative Budget. Mr. Banks said no changes were made from the draft budget presented last month.

Mr. Newman made a motion to approve the 2022 Tentative Budget. Mr. Ohlin seconded the motion. The motion carried unanimously.

B. Consideration of Public Hearing Date for 2022 Budget – December 8, 2021, at 6:00 p.m. Mr. Ohlin made a motion to hold a public hearing on December 8, 2021, at 6:00 p.m., at the District's office for the purpose of adopting the 2022 Final Budget. Mr. Newman seconded the motion. The motion carried unanimously.

C. Consideration of 2021 Water Conservation Plan. Mr. Banks said the water conservation plan is required to be updated every five years. Mr. Banks said because of COVID-19, the state offered a reprieve of one year to complete the update as the plan would have originally been due for an update in 2020. Mr. Banks said a public hearing will be held on the plan.

Mr. Banks said the water conservation plan has updates related to the amount of water shares the District owns and leases, water sources, and water use from 2016 to 2020. Mr. Banks said the plan shows water use is actually trending down from previous years. Mr. Banks said one of the goals the District has had for a number of years is the installation of secondary water meters when possible, which is included in the plan.

Mr. Ohlin made a motion to approve the 2021 Water Conservation Plan. Mr. Newman seconded the motion. The motion carried unanimously.

D. Consideration of Voting Davis & Weber Counties Canal Company Stock at Annual D&WCCC Stockholders Meeting. Mr. Banks said the stockholders meeting will be held December 20, 2021, at 6:30 p.m. Mr. Banks said

NOTICE OF WATER CONSERVATION PLAN HEARING

Notice is hereby given that Roy Water Conservancy District shall conduct a Public Hearing to adopt the 2021 Water Conservation Plan on **December 8, 2021, at 6:00 p.m.** at the District's office, 5440 Freeway Park Drive, Riverdale, Utah.

Chad Zito, Chair
Roy Water Conservancy District

Published: December 1, 2021

Roy Water Conservancy District

Minutes of Public Hearing

December 8, 2021

6:10 p.m.

The following are minutes of the Board of Trustees public hearing that was held at Roy Water Conservancy District, located at 5440 S. Freeway Park Drive, Riverdale, UT 84405, on Wednesday, December 8, 2021, at 6:00 p.m.

Present: Chad Zito, Chair; Mark Ohlin, Vice-Chair; Darl R. Field, and Gary L. Newman, Trustees; Rodney Banks, Manager/Treasurer; Linda Toupin, District Clerk; and Courtney Harris, District Recorder.

Excused: Jay L. Cottle, Trustee

I. CALL TO ORDER. Chair Zito called the hearing to order at 6:04 p.m. and welcomed everyone present.

II. PUBLIC HEARING – ADOPTION OF 2021 WATER CONSERVATION PLAN

A. Public Hearing Opened. Mr. Newman made a motion to open the public hearing for the adoption of the 2021 Water Conservation Plan at 6:04 p.m. Mr. Field seconded the motion. The motion carried unanimously.

B. Closure of Public Hearing. As there was no public present, Mr. Ohlin made a motion to close the public hearing at 6:04 p.m. Mr. Newman seconded the motion. The motion carried unanimously.

C. Adoption of 2021 Water Conservation Plan. Mr. Newman made a motion to adopt the 2021 Water Conservation Plan. Mr. Ohlin seconded the motion. The motion carried unanimously.

III. ADJOURNMENT. Mr. Newman made a motion to adjourn at 6:05 p.m. Mr. Ohlin seconded the motion. The motion carried unanimously.

Jan. 12, 2022
Minutes Approved

Mark W. Ohlin, Chair

Courtney Harris
Recording Secretary