



Magna Water District Water Conservation Plan 2021

INTRODUCTION

In 1998, the Utah State Legislature approved the Water Conservation Plan Act which was passed and revised in the 2004 legislative session with House Bill 71 Section 73-10-32. Driving this initiative was the response to rapid growth, suburbanization, and planning for the future cost of and availability of water to consumers. Under the law, retail drinking water providers are required to prepare a water conservation plan and submit the plan to the Utah Board of Water Resources by December every five (5) years. The purpose of this Water Conservation Plan is to provide information to Magna Water District's water users, to fulfill the provisions of this Act, and to be included in the District's Master Planning.

For many years, Magna has maintained its status as one of Utah's most populous unincorporated communities. Urban planning and new ideas continue to shape this area. The District works closely with the Magna Metro Township, Magna Chamber of Commerce, Municipal Service Districts, and Salt Lake County to ensure a healthy economic infrastructure and sustainable water supply for the future. Below is an illustration of our current District boundary.



Magna Water District's staff and Board of Trustees are committed to decreasing the District's per capita water use and meeting a new goal of 142 GPCD by the year 2025. The GPCD in 2000 was 175 gallons, the 1% reduction per year goal to 2025 would bring the GPCD to 131 gallons. Beyond 2025, the District has set an internal goal of reducing per capita water use another 10 percent through the year 2060 (10% over 35 years)

SYSTEM PROFILE

Magna Water District is in the northwest area of the Salt Lake Valley and is home to approximately 32,000 residents. Approximately 9.375 square miles comprise the District and include Magna Metro Township, western areas of West Valley City and a corner of southwest Salt Lake City. Magna Water District has always made it a top priority to provide clean, safe, drinking water to its residents and businesses.

The District produces, distributes, and maintains its own gravity fed culinary and secondary water systems. The culinary water system includes approximately 8,385 connections (10,334 ERU) and the secondary 494 connections (1,199 ERU).

Magna Water District Connections

Culinary				Secondary		
Year	Residential	Commercial	Indust & Instit	Residential	Commercial	Institutional
2017	6263	184	63	321	16	28
2018	6773	191	66	353	16	28
2019	7320	222	67	377	23	29
2020	8064	244	69	436	24	30

Culinary and Secondary Water Systems

The **culinary water system** consists of an EDR treatment facility, storage reservoirs and supply piping throughout the entire District service area. The District supplies water to the culinary water system from several wells and from a connection to the Jordan Valley Water Conservancy District (JVWCD). The District has two well fields that it uses to meet the majority of District supply needs. Water rights associated with these well fields are in excess of 15,000 acre-ft. Currently the contracted supply from JVWCD is 800 acre-feet per year with an option to use an additional 160 acre-feet if needed. The District has seven (7) water storage reservoirs, containing a total storage of approximately 18 million gallons (mg). This storage volume helps the District meet peak demands on summer high usage days.

The District's culinary water system is divided into three pressure zones. The wells pump water into the lower pressure zone and the JVWCD water is delivered into the zone 2 pressure zone. Water is raised from the lower to the upper pressure zones by booster stations at three locations to distribute water from the well fields.

The secondary water system consists of two open storage reservoirs and supply piping serving a portion of the District's several large outdoor water users. The District supplies water to the secondary water system from three (3) shallow wells and from the Utah and Salt Lake Canal. The wells have a combined capacity of 500 gallons per minute. The District can also divert 1,161 acre-feet from the canal.

SUPPLY

The District's existing water supply comes from a number of different sources, deep groundwater wells, Jordan Valley Water Conservancy District, and for the secondary water, shallow groundwater wells, and Utah & Salt Lake Canal. The District's ability to supply water for the water needs within its service area depends upon two water resource components, the amount of water rights that the District owns and the water delivery capacity of its water sources.

Summary of Existing and Potential Source Annual Capacity

Existing

Source	Reliable Annual Capacity (acre-ft)	Reliable Culinary Annual Capacity (acre-ft)	Reliable Secondary Annual Capacity (acre-ft)
Haynes Well Field	3,250	--	--
Barton Well Field	4,550	--	--
EDR Plant	--	6,240	--
Existing Shallow Wells	--	--	287
JVWCD Contract	--	800	--
JVWCD Option	--	160	--
Canal Shares	--	--	1,161
Subtotal - Existing	7,800	7,200	1,448

Future

Source	Reliable Annual Capacity (acre-ft)	Reliable Culinary Annual Capacity (acre-ft)	Reliable Secondary Annual Capacity (acre-ft)
Reuse Water	--	--	1,130
Stored Reuse Water	--	--	2,700
Additional Canal Shares	--	--	183
Additional Shallow Wells	--	--	1,913
Little Valley 2060	91	91	137
Subtotal - Future	91	91	6,063
Total	7,891	7,291	7,511

GROUND WATER STORAGE AND RECOVERY

The Barton and Haynes Well Fields are essential to the success of the District's drinking water system. The District projects that increasing demands in the drinking water system will require the pumping of a larger volume of water from the aquifer than has been pumped in the past. It is pertinent for the District to make sure additional pumping does not exceed water rights limitations for the well field, and that groundwater withdrawals do not exceed the recharge to the aquifer system. The recommended maximum well field discharge was estimated through identification of the extent of the aquifer recharge area and volume of recharge within those extents using the 3-dimensional MODFLOW groundwater model developed by USGS in Technical Publication No 110B (Lambert, 1995). Over pumping the aquifer could lead to groundwater mining and a reversal of the groundwater flow.

DELINEATION OF RECHARGE ZONE

The MODFLOW groundwater model published by USGS (Lambert, 1995) was used to evaluate the groundwater recharge which supports the Districts drinking and secondary wells. MODFLOW is a 3-dimensional numerical groundwater flow model that uses a finite-difference grid of cells to represent the aquifer system. Calculations are made from cell-to-cell based on input aquifer properties, boundary conditions, recharge sources (precipitation, stream infiltration, mountain bedrock underflow, etc.), and discharge features (wells, springs, etc.). The USGS model was developed and calibrated to match groundwater level and discharge records. Based on the calibration, it is believed that estimated recharge included in the model reasonably represents the average available recharge to the principal aquifer system. The computed

groundwater surface is also believed to reasonably represent actual groundwater flow patterns. The extent of the recharge area tributary to the Barton and Haynes well fields and the total recharge to the area was determined from the model results. The total recharge to the principal aquifer within the recharge area is estimated to be 12,850 acre-feet/year.

WATER RIGHTS EVALUATION

The District has certified culinary water rights in the amount of 22.16 cfs (cubic foot second) or 15,595.33 acre-feet (ac*ft) per year. Table 1 contains a list of the culinary water rights, including the water right number, location, and value of each water right.

TABLE 1
Culinary Water Rights

W.R. NUMBER	LOCATION	STATUS	FLOW RATE (CFS)	VOLUME (AC*FT)
59-1093	Haynes	Perfected	0.29	
59-1094	Haynes	Perfected	0.166	
59-1095	Haynes	Perfected	0.78	
59-1228	Haynes	Perfected	0.29	
59-1285	Haynes	Perfected	1.00	
59-1286	Haynes	Perfected	0.62	
59-1287	Haynes	Perfected	1.00	
59-1288	Haynes	Perfected	0.822	
59-1295	Haynes	Approved	1.00	
59-2910	Haynes	Perfected	0.3275	
59-2955	Haynes	Perfected	0.3275	
59-2956	Haynes	Perfected	0.3275	
59-2957	Haynes	Perfected	0.3275	
59-2958	Haynes	Perfected	0.3275	
59-2959	Haynes	Perfected	0.3275	
59-2960	Haynes	Perfected	0.3275	
59-2961	Haynes	Perfected	0.3275	
59-2815	Haynes	Approved	0.0220	
59-4754	Haynes	Approved	1.0000	
Subtotal Haynes Perfected Rights			9.61	6,502.56
59-1289	Barton	Perfected	1.00	
59-1709	Barton	Perfected	2.50	
59-2504	Barton	Perfected	0.071	
59-2506	Barton	Perfected	0.178	
59-2507	Barton	Perfected	0.178	
59-2508	Barton	Perfected	0.178	
59-2509	Barton	Perfected	0.261	
59-2510	Barton	Perfected	0.261	
59-2511	Barton	Perfected	0.105	
59-2512	Barton	Perfected	0.261	
59-2513	Barton	Perfected	0.105	

59-2704	Barton	Perfected	2.228	
59-2948	Barton	Perfected	0.111	
59-2949	Barton	Perfected	0.111	
59-4399	Barton	Approved	5.00	
59-5834	Barton	Approved		
Subtotal Barton Perfected Rights			12.55	9,092.77
Total All Perfected and Approved Rights			22.16	15,595.33

Table 2 lists the water rights associated with the secondary water system. The District has secondary water rights in the amount of 15.87 cfs or 10,265.54 acre-feet per year. Table 2 contains a list of the water rights, including the water right number, location, and value of each water right.

TABLE 2
Secondary Water Rights

W.R. NUMBER	LOCATION	STATUS	FLOWRATE (CFS)	VOLUME (AC*FT)
59-1004	WWTP Outfall – Sec 16	Approved	8.00	5,791.74
59-3598	Shallow Drains – Sec 22	Approved	1.00	723.97
59-4802	2600 So. 8000 W	Approved	5.00	3,619.83
59-1679	130 Locations	Approved	1.87	130.00
Total Secondary Water Rights			15.87	10,265.54

In addition to the well water rights, the District owns 253 shares of stock in the Utah & Salt Lake Canal. Each share of canal stock allows the District to divert 4.59 acre-feet of water for the Secondary Water System. Therefore, the District can divert up to 1,161 acre-feet of water each year, as calculated below.

$$253 \text{ Shares} * 4.59 \text{ ac*ft/share} = 1,161 \text{ ac*ft}$$

PUMPED GROUND WATER

The Barton and the Haynes Well Fields are situated in close proximity to each other within the District. All wells in both wellfields are assumed to be receiving water from the same aquifer. The aquifer is confined, and the well water flows to the surface in an artesian condition when not being pumped.

Barton Well Field

The Barton Well Field contains five (5) wells. Each of the Barton wells is fitted with a pump. Wells 1, 2, 3 and 4 are connected to a common discharge point. All flows from each of these four wells pass through a common transmission line directly to the EDR water treatment facility with option of bypassing the EDR treatment and going directly to a finished water storage tank. Barton well No. 5 discharges directly into the EDR water treatment facility feed tank. A description of the wells is shown in Table 3.

TABLE 3
Barton Well Field

Well	Casing Diameter (in)	Well Depth (ft)	Pump HP	Pump Yield (gpm)
Barton No. 1	12	200	125	1,100
Barton No. 2	12	200	200	1,200
Barton No. 3	12	200	100	800
Barton No. 4	12	200	150	1,200
Barton No. 5	12	200	150	1,400
Total All Wells				5,700

Haynes Well Field

The Haynes Well Field is the oldest well field which contains ten (10) wells. Five of the ten wells are operational. All of the wells discharge into a common transmission line which pumps to the EDR treatment facility. A description of the wells and pumps is shown in Table 4.

TABLE 4
Haynes Well Field

Well	Casing Diameter	Well Depth	Pump HP	Yield (gpm)
Haynes Well No. 1	8	75	N/A	Unmetered
Haynes Replacement Well No. 2	20	250	30	1,400
Haynes Well No. 2 Monitoring Well	8	145	Not Pumped	Monitoring Well
Haynes Well No. 3	8	150	N/A	Not Used
Haynes Well No. 4	20	230	125	2,100
Haynes Well No. 5	4	126	N/A	Not Used
Haynes Well No. 6	8	83	Not Used	Not Used
Haynes Replacement Well No. 7	20	250	30	2,100
Haynes Well No. 7 Monitoring Well	8	163	Not Pumped	Monitoring Well
Haynes Well No. 8	12	206	10	1,000
Haynes Well No. 9	8	Unknown	25	700
Source Well Capacity				7,300

Secondary Water Irrigation Wells

The District has three shallow ground water wells that helps provide water for the secondary system. Each of the wells is fitted with a pump. All the shallow wells are pumped to the system's secondary water reservoir. A description of the wells is shown in Table 5.

TABLE 5
Shallow Irrigation Wells

Well	Casing Diameter (in)	Well Depth (ft)	Pump HP	Pump Yield (gpm)
Irrigation Well #1	8	148	20	175
Irrigation Well #2	10	128	30	350
Irrigation Well #3	8	149	20	175
Total All Wells				700

The Barton and Haynes well fields are not the only discharges within the recharge area. Other wells include the Districts irrigation wells, Kennecott wells, Kearns Improvement District (KID) wells, and many small privately owned wells. Water rights for all wells within the recharge area were evaluated in comparison to the estimated groundwater recharge volume. While water rights do not necessarily provide a direct comparison to groundwater recharge, they can provide a measure of long-term sustainability if the water rights were exercised to their full value. Water rights flow limitations may be expressed in terms of annual volume, instantaneous flow rate, or both. When a water right has a volume limitation, the right holder is entitled to use that volume for the stated beneficial use as necessary on an annual basis.

There are a number of events that could negatively affect the yield of the aquifer serving as the primary source for the District. This could include mechanical failure of the well pulling from the aquifer, contamination, reduced recharge as a result of climate change, or simply low groundwater levels.

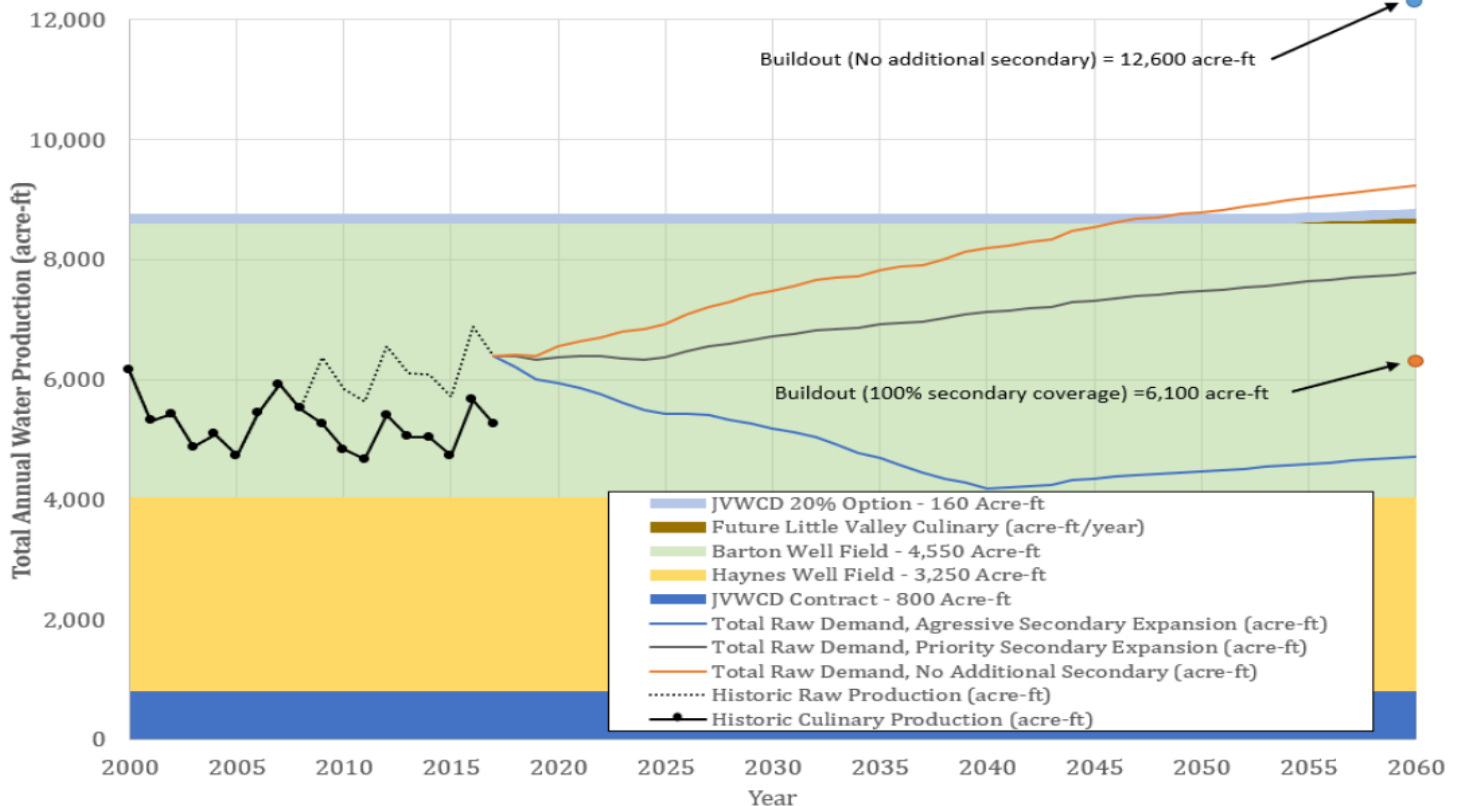
If the District identifies reliability concerns for the aquifer, one potential remedy may include aquifer storage and recovery (ASR). ASR includes many different methods of taking excess culinary, secondary, or raw water sources and infiltrating them into the ground to amend aquifers. The type of technology used to implement ASR may include using unlined reservoirs, gravity fed shallow or deep wells, injection wells where water is injected into the ground from using pressure pumped systems. The District will consider the need for ASR as more data on the status of the aquifer is collected.

PRESENT CULINARY WATER USE AND FUTURE DEMAND

Raw water, culinary water, and secondary annual demands are compared to annual supplies through the year 2060 in the following figures. Several observations can be made from these figures:

Raw Water Production Requirements (Figure 3-1 below)

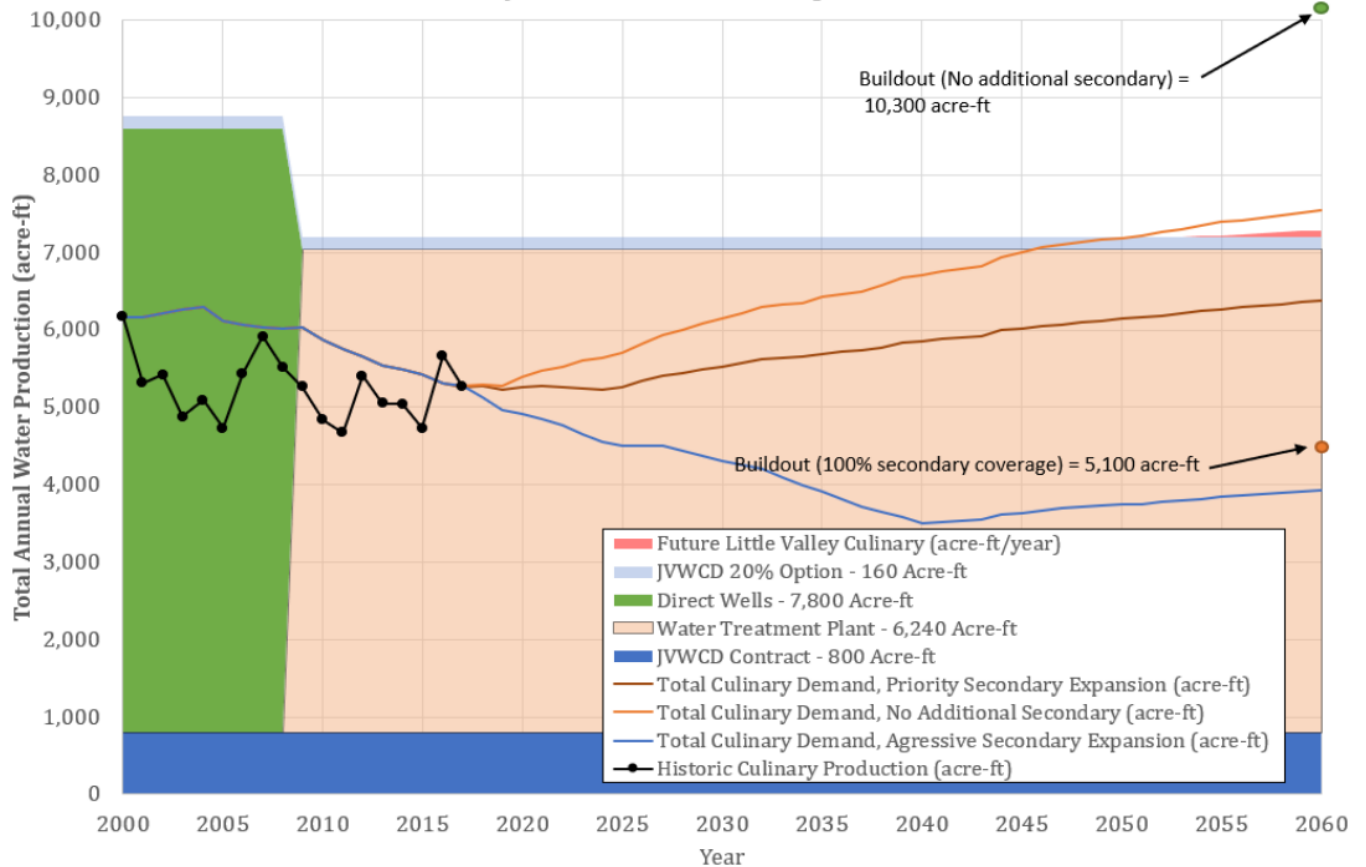
Figure 3-1
Raw Water Production Requirements



Raw water sources will not be adequate to meet long-term demands unless the District expands its secondary water system to take some demand off these raw water sources. Even without any kind of buffer for redundancy or reliability, raw water sources will be depleted by the year 2050 without expansion of the secondary system. Note that all scenarios include 35 percent conservation from year 2000 water use rates (25 percent by the year 2025 and an additional 10 percent thereafter). Without conservation, a deficit would begin earlier in the planning window. Priority expansion of the secondary system would be sufficient to reduce raw water demands enough through 2060 to prevent any deficits. Aggressive expansion would further reduce demands but is not needed based on current projections.

Annual Culinary Water (Figure 3-2 below)

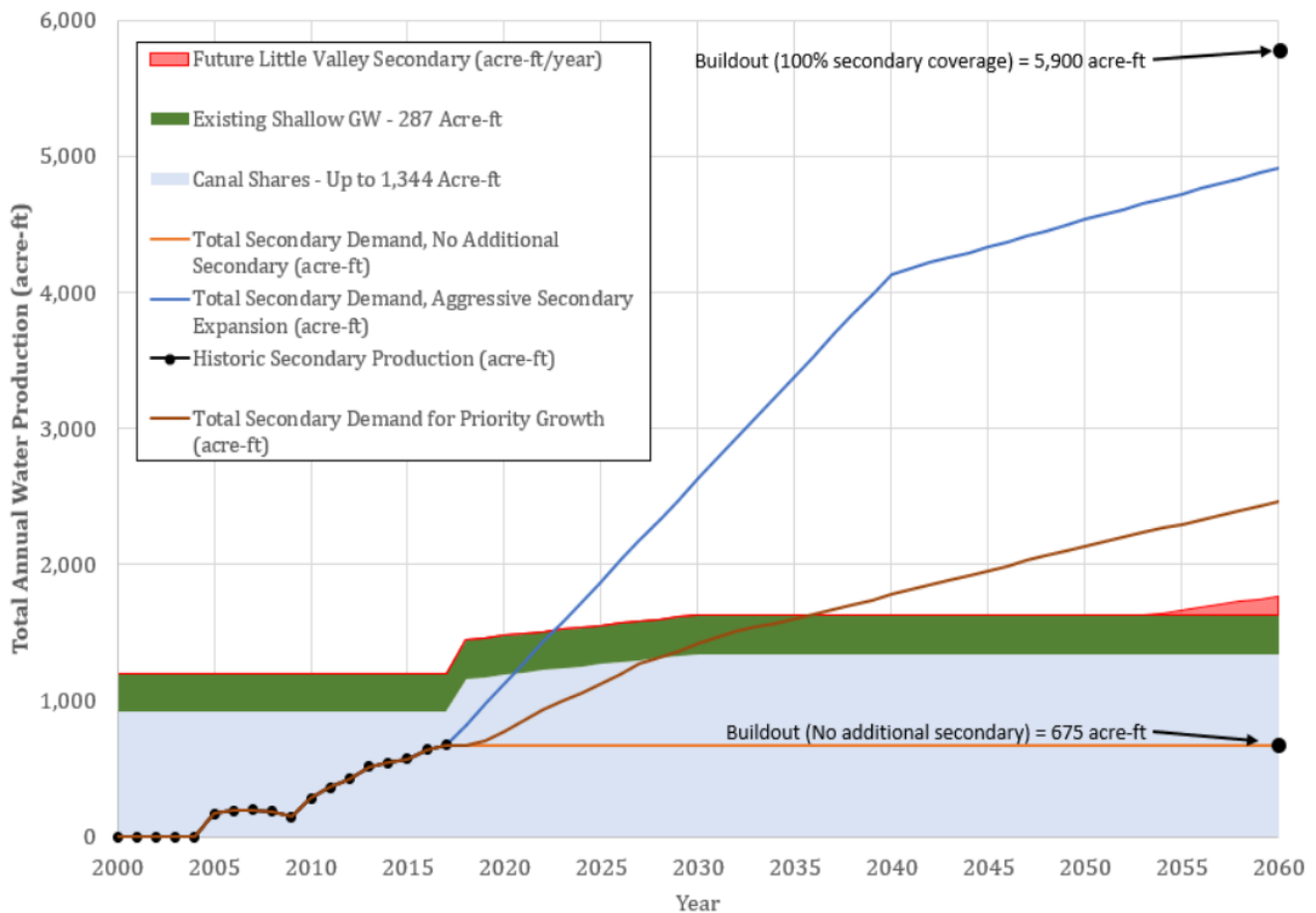
Figure 3-2
Culinary Water Production Requirements



Observations regarding culinary water are nearly identical to raw water observations. Culinary water sources will not be adequate to meet long-term demands unless the District expands its secondary water system. Even without any kind of buffer for redundancy or reliability, culinary water sources will be depleted by the year 2050 without secondary expansion. Priority expansion of the secondary system would be sufficient to reduce culinary demands enough through 2060 to prevent any deficits. Aggressive expansion would further reduce demands but is not needed based on current projections.

Annual Secondary Water (Figure 3-3 below)

**Figure 3-3
Secondary Water Production Requirements**



The District does not currently have adequate secondary sources to meet the aggressive expansion scenario for more than a few years. Even without any kind of buffer for redundancy or reliability, following this scenario would require developing additional water sources beginning no later than the year 2023. Expansion of secondary water for priority growth only would extend the time the District could serve development for several years.

The District must continue to expand its secondary system, or it will run out of culinary water to supply future growth. Conversely, if it grows the secondary system too quickly, it will require major investments in new secondary source. The priority secondary expansion scenario strikes the right balance of pulling enough demand off culinary sources to avoid running out of culinary water while going slow enough to not unnecessarily accelerate secondary source improvements. This scenario has the added benefit that it is the most cost-effective way to implement the secondary system from a transmission and distribution perspective.

WATER MEASUREMENT

The District measures the water produced from their wells with flow meters. Once the water has left the wells, it either enters the EDR plant for treatment or goes to a finished blend storage tank. The treated water ends up in the finished blend storage tank when treatment process is complete. Once the water leaves the finished blend tank the volume is measured by another flow meter and recorded as the “finished blend” water will be distributed into the culinary water system, and to the District’s storage tanks.

Each end user’s usage in the District is measured and tracked by a water meter. The District is made up of 96% residential, 3% commercial and 1% industrial and institutional culinary connections. The secondary water system is metered and tracked at the customer’s connection to monitor usage, the secondary water system is partially complete in the District and consists of 89% residential, 5% commercial, and 6% institutional connections. Each meter is read electronically by the District monthly and billed to the user accordingly.

Statistics indicate meters larger than 1.5”, specifically larger flow meters lose their accuracy by at least 50% after 10 years. The District has implemented a meter replacement program to replace the larger meters to continue to measure the usage accurately. Most of these larger meters were not replaced until the first part of 2021. The regular sized meters do not lose their accuracy nearly as fast as the larger meters do. However, the District replaces at least 10% of the meters in the system that are older than 10 years.

WATER LOSS CONTROL

Unaccounted for water has been a major concern of the District’s for many years. There are many explanations for unaccounted water, such as well maintenance & flushing, distribution system maintenance, fire flow testing, new construction (Magna Water District projects & new homes) and unmetered main line breaks and leaks. Below is the water loss recorded for the last 4 years for the culinary and secondary water systems.

Annual Culinary Water Audit Results

Water Production						Water Deliveries						
Year	Well Production	Treatment Plant Waste	EDR Finished Blend	JVWCD	Total	Res	Comm	Indus & Inst	Non-Revenue	Total	Difference	% Different
2017	5,022	542	4480	786	5266	3480	406	145	1	4032	1234	23.43
2018	5,176	688	4488	765	5253	3587	456	200	1	4244	1009	19.20
2019	4,754	607	4147	800	4947	3162	380	147	1	3690	1257	25.40
2020	5,717	656	5061	802	5863	3977	504	183	1	4665	1198	20.43

Annual Secondary Water Audit Results

Water Production		Water Deliveries					
Year	Total	Res	Comm	Indus & Inst	Total	Difference	% Different
2017	674	212	54	184	450	224	33.23
2018	766	259	69	227	555	211	27.54
2019	547	206	76	180	462	85	.15
2020	918	256	113	234	603	315	34.31

BILLING

In the fall of 2019 Magna Water District began to update its master plan, impact fee facilities study and a new rate study. In April of 2021, the rate study and new user rates were adopted. A rate increase will not go into effect until January of 2022; however, the District has had an aggressive tiered rate structure since 2014, promoting water conservation and to incentivize the use of secondary water to those users it is available to. The adopted rate structure adopted can be seen in the table below.

Culinary Water Rates:						
Tier	Description					
Tier 1/Base Rate	Minimum Fee, includes first 6,000 gallons per month					
Tier 2	Rate per 1,000 gal. between 6,001 & 18,000 gal./mon.					
Tier 3	Rate per 1,000 gal. between 18,001 & 35,000 gal./mon.					
Tier 4	Rate per 1,000 gal. over 35,000 gal./mon.					
Tier	2021	2022	2023	2024	2025	2026
Tier 1	\$19.12	\$20.08	\$21.08	\$22.14	\$23.25	\$23.95
Tier 2	\$2.08	\$2.18	\$2.29	\$2.40	\$2.52	\$2.60
Tier 3	\$2.33	\$2.45	\$2.57	\$2.70	\$2.84	\$2.93
Tier 4	\$2.65	\$2.78	\$2.92	\$3.06	\$3.22	\$3.32

(Fluoride Rate included in Tier 1/Base Rate above)

2021	2022	2023	2024	2025	2026
\$1.02	\$1.07	\$1.12	\$1.18	\$1.24	\$1.28

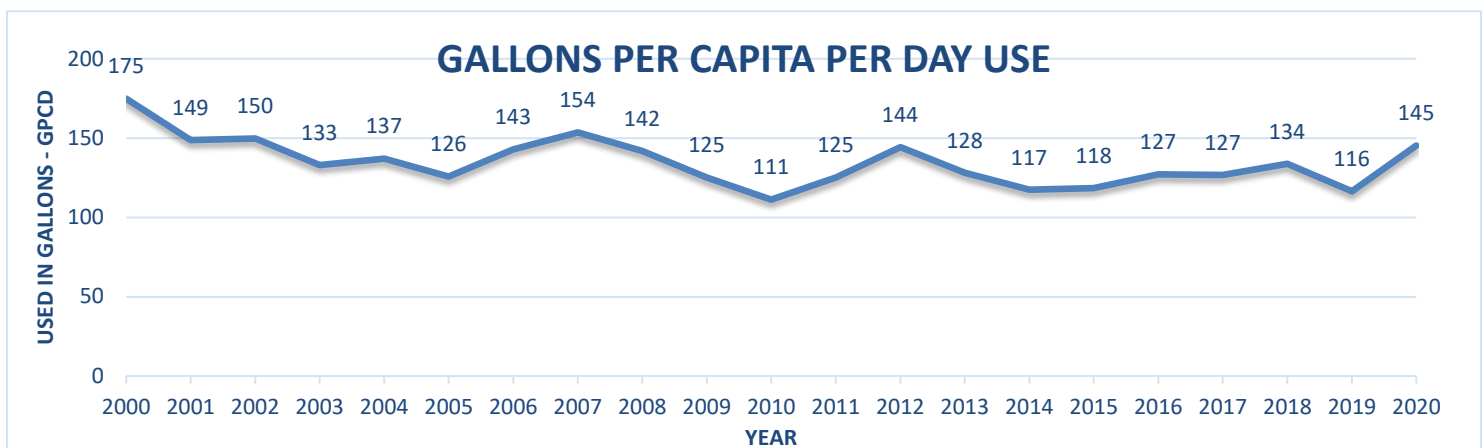
Secondary Water Rates:						
Residential						
Base Rate and Usage for Lot Sizes 0.00 to 0.24 acres						
Tier	Description					
Tier 1/Base Rate	Minimum Fee per month year-round regardless of usage					
Tier 2	Rate per 1,000 gal. for first 22,000 gal./month (Seasonal)					
Tier 3	Rate per 1,000 gal. between 22,001 & 37,000 gal./month (Seasonal)					
Tier 4	Rate per 1,000 gal. over 37,000 gal./month (Seasonal)					
Tier	2021	2022	2023	2024	2025	2026
Tier 1/Base Rate	\$5.69	\$4.50	\$4.50	\$4.50	\$4.50	\$4.64
Tier 2	\$0.87	\$0.99	\$1.05	\$1.12	\$1.20	\$1.24
Tier 3	\$1.03	\$1.17	\$1.25	\$1.33	\$1.42	\$1.46
Tier 4	\$1.56	\$1.77	\$1.89	\$2.01	\$2.15	\$2.21
Base Rate and Usage for Lot Sizes 0.25 to 1.0 acres						
Tier	Description					
Tier 1/Base Rate	Minimum Fee per month year-round regardless of usage					
Tier 2	Rate per 1,000 gal. for first 45,000 gal./month (Seasonal)					
Tier 3	Rate per 1,000 gal. between 45,001 & 75,000 gal./month (Seasonal)					
Tier 4	Rate per 1,000 gal. over 75,000 gal./month (Seasonal)					
Tier	2021	2022	2023	2024	2025	2026
Tier 1/Base Rate	\$5.69	\$5.70	\$6.75	\$7.85	\$9.00	\$9.27
Tier 2	\$0.87	\$0.99	\$1.05	\$1.12	\$1.20	\$1.24
Tier 3	\$1.03	\$1.17	\$1.25	\$1.33	\$1.42	\$1.46
Tier 4	\$1.56	\$1.77	\$1.89	\$2.01	\$2.15	\$2.21
Lot Size: 0.25 to 0.49 acres		(Multiply Base Rate and Usage by 1)				
Lot Size: 0.50 to 0.99 acres		(Multiply Base Rate and Usage by 2)				
Lot Size: 1.00 acre or more		(Multiply Base Rate and Usage by 5)				
Residentials lots greater than 0.49 acres may request the District to evaluate the lot's actual irrigable acreage. The base rate will be calculated by a multiplier (rounded to the next whole number) in increments of 0.20 acres.						
Commercial						

Tier	Description					
Tier 1/Base Rate	Minimum Fee per month year-round regardless of usage					
Tier 2	Rate per 1,000 gal. for first 45,000 gal./month (Seasonal)					
Tier 3	Rate per 1,000 gal. between 45,001 & 75,000 gal./month (Seasonal)					
Tier 4	Rate per 1,000 gal. over 75,000 gal./month (Seasonal)					
Tier	2021	2022	2023	2024	2025	2026
Tier 1/Base Rate	\$5.69	\$5.70	\$6.75	\$7.85	\$9.00	\$9.27
Tier 2	\$0.87	\$0.99	\$1.05	\$1.12	\$1.20	\$1.24
Tier 3	\$1.03	\$1.17	\$1.25	\$1.33	\$1.42	\$1.46
Tier 4	\$1.56	\$1.77	\$1.89	\$2.01	\$2.15	\$2.21
District will determine irrigation area based on approved plans which will then be used to determine the secondary water rate applied to the lot. The base rate will be calculated by a multiplier (rounded to the next whole number) in increments of 0.20 acres.						

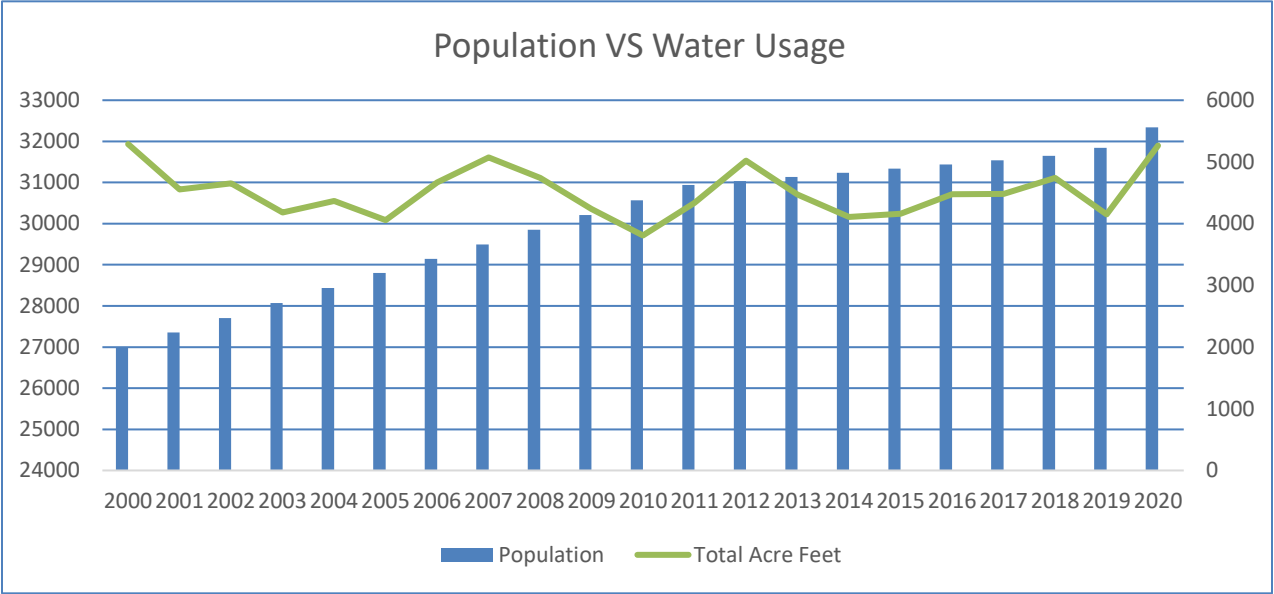
WATER USE

SALT LAKE COUNTY REGIONAL GOAL

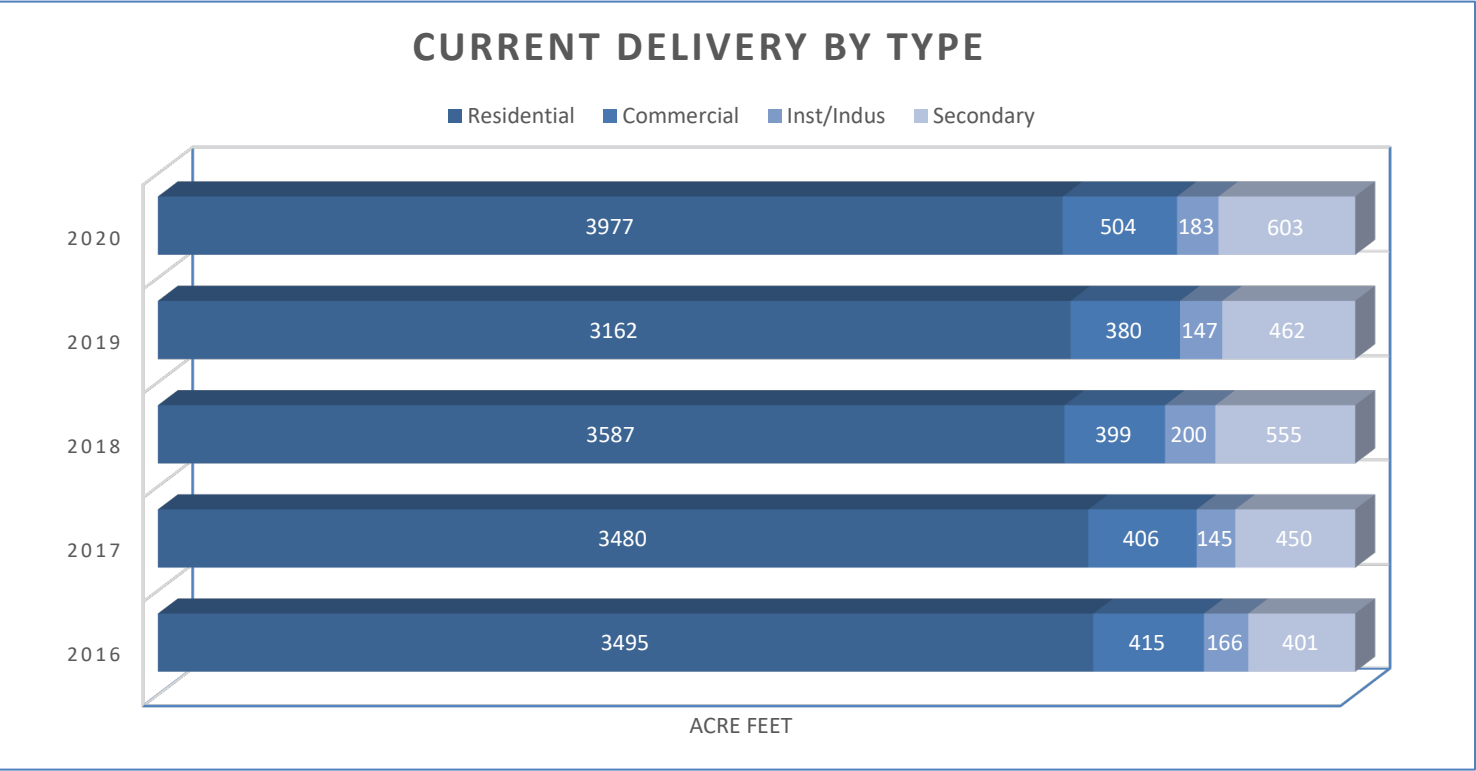
The new regional goal for Salt Lake County is 187 GPCD by 2030. The District set a goal in 2015 to reduce the GPCD from 158 by 10% by 2020 to 142 GPCD. As you can see below, the District almost hit its goal, the GPCD in 2020 is 145. The District continues to strive to hit the goal by 2025. Beyond 2025, the District has set an internal goal of reducing per capita water use another 10 percent through the year 2060 (10% over 35 years).



CURRENT POPULATIONS VS WATER USAGE



CURRENT WATER DELIVERIES BY TYPE



CURRENT GPCD BY TYPE

	Indoor	Outdoor	Secondary	Total
Residential	43.91	65.87	7.06	116.84
Commercial	5.56	8.34	3.12	17.03
Inst/Indus	2.02	3.03	6.46	11.51
Total	51.50	77.25	16.64	145.39

CURRENT CONSERVATION PRACTICES

COORDINATOR AND STAFF

Magna Water District does not have the resources or revenue to hire a single coordinator or staff position to devote all of their time for water conservation programs. We make it a team effort as much as possible. Below is the executive staff of the District.

Name	Position	Phone Number	Email Address
Clint Dille	General Manager	801-250-2118 Ext	clintd@magnawater.com
Raymond Mondragon	Water Operations Manager	801-250-2118 Ext	raymond@magnawater.com
Trevor Andra	District Engineer	801-250-2118 Ext	trevor@magnawater.com
Lelsle Fitzgerald	District Controller	801-250-2118 Ext	leisle@magnawater.com
Dallas Henline	Wastewater Operations Manager	801-250-2118 Ext	dallas@magnawater.com

PUBLIC EDUCATION AND OUTREACH

The District has always been committed to open dialogue with the customers we serve by raising public awareness through the use of various communication tools including open Board meetings, annual consumer confidence reporting, open door policy to meet with District management, and intermittent communication in the monthly water statements.

Back in 2016 Magna Water District built a new general office building that includes a conservation garden as part of the site. The conservation garden is similar to Jordan Valley Water Conservancy

District's garden but on a smaller scale with water wise plants, displays, solar panels and conservation information.

The District's website offers tips on conservation, contact information, news releases, comment section, newsletter, and other resources.

The District offers suggestions to customers on managing their water needs and provides customers with updates on implementation of low flow water devices throughout Salt Lake County.

The District partners with Jordan Valley Water Conservancy District in notifying our customers of local resources and schedules for water conservation and landscaping classes. We also partner with JVVCD in offering customers the availability of outside water audits.

The District works with local schools in teaching students simple gardening techniques for responsible irrigation of vegetable crops and flower beds when possible.

PROGRAM AND INCENTIVES

EXPANDING OUR SECONDARY WATER SYSTEM

The biggest program the District has is our secondary water system. The District's system is unique in that all users have water meters. It appears that having meters is resulting in water conservation even with the secondary water. Other secondary water systems that do not have meters often see abuses or wasting of water. The District has not seen any such abuses or wasting. It appears that the careful management of water by the users due to the meters is contributing largely to the reduced usage.

METER REPLACEMENT SCHEDULE

Metering replacement schedule. The District is replacing inefficient water meters with state-of-the-art automated reading meters. This action will allow us to reduce our field work orders by 15% provide improved accuracy in water usage reading, enhance customer service and response times, and utilize our workforce for other innovative District projects. The District has replaced approximately 60% of older meters that were over ten years old, have been replaced with the newest metering technology supplied by Neptune Technology Group. We continue to maintain the older meters that are still in the system on a quarterly basis to ensure that the meter is still monitoring the customer's usage.

ORDINANCES AND STANDARDS

On April 13, 1999, the District adopted and implemented a water conservation plan pursuant to Utah Code Annotated § 73-10-32. This resolution allows us to "promote the wise and efficient use of water so as to protect and preserve this valuable" resource.

During times of drought and other emergency issues, we have implemented and monitor the following irrigation schedule:

Water Conservation and Restrictions

The District has the following four distinct levels of water conservation requirements, restrictions, and penalties that may be imposed by the District's Board of Trustees, in any order or sequence:

Level 1 Voluntary Water Conservation

This includes the three-tiered water rate structure which encourages the conservation of water through pricing. It also includes conservation awareness and education efforts, and all other voluntary efforts by the District and/or the public to conserve and make wise use of this limited resource.

Level 1 is always in effect, unless a higher level has been imposed, and there are no notice requirements associated with Level 1. Level 1 encourages voluntary water conservation practices such as:

- no outdoor watering during the heat of the day
- efficient sprinkler systems
- use of drought-tolerant plants and grasses
- use of low-use water fixtures; and
- any other means of reducing the use of water.

As a general and ongoing conservation requirement, it is the policy of the District that no outdoor watering shall be allowed with water provided by the District between the hours of 10:00 AM and 6:00 PM, except in special, temporary situations where frequent watering's are required, such as with newly planted lawns.

Level 2 Mandatory Water Conservation

This includes directives imposed by the District's Board of Trustees which limit the manner of use, but not directly the quantity of use, such as limitations as to the time of day and/or the days of the week when outdoor water is permitted.

Notice of Level 2 requirements shall be given by mail to the billing addresses or by publishing once a week for two weeks in a newspaper of general circulation locally. The four-step enforcement procedure associated with this level is as follows:

1. Upon the first violation, the District shall send a Notice of Violation by regular mail to the billing and service addresses for the subject property and shall include a copy of this Section 9.19.3 and any other appropriate conservation information. This step will be used to educate users to assist in the changing of water use habits.
2. Upon the second violation, the District shall hand-deliver a Warning Letter setting forth the specific requirements violated and any measures that must be taken in order to avoid further violations. This warning shall also state that violation fees will be imposed on all subsequent violations in that calendar year.
3. Upon the third violation, the District shall impose a Conservation Violation Fee as set

forth in the District's Fee Schedule and notice of the assessment of the violation fee shall be given by regular mail to the billing and service addresses of the subject property.

For each subsequent violation, the District shall impose a violation fee that is twice the amount of the Conservation Violation Fee set forth in the District's Fee Schedule. Notice of the assessment of the violation fee shall be given by regular mail to the billing and service addresses of the subject property.

Level 3 Mandatory Water Restrictions

This includes directives imposed by the District's Board of Trustees which limit the quantity of use of water by the adoption of temporary, emergency increases in the third tier, or the second tier and the third tier, of the District's water rate structure, and/or other restrictions imposed by the Board, such as temporary bans on the installations on new lawns which will require intensive watering. The amount of the increase shall include a water restriction violation fee and the increased rates shall apply to all water usage in the tier(s) upon which the increased rates are imposed.

Notice of Level 3 Restrictions shall be by direct mailing to the billing and service addresses following a duly noticed public hearing as required for a rate increase. The Resolution imposing Level 3 restrictions shall state when the increase rates and other Level 3 restrictions expire.

Level 4 Emergency Water Restrictions

This may include restrictions in both the quantity and/or the manner of use of water, such as no outdoor watering, or outdoor watering for a limited time or times each week, or such other restrictions as the Board of Trustees deems is appropriate under the specific conditions and circumstances. The District shall give whatever notice is practical under the circumstances, including announcements through the radio, television, and/or daily print media, followed up by direct mailing to the billing and service addresses and a duly noticed public hearing as soon as possible. Level 4 Restrictions may be for a fixed period of time or until the Board of Trustees revokes them. The three-step enforcement procedure at this level is as follows:

1. Upon the first violation, the District shall mail a Notice of Violation by regular mail to the billing and service addresses for the subject property and shall hand-deliver a copy thereof to any owner, resident, employee or agent that can be found at the subject property. This warning shall set forth the specific requirements violated and any measures that must be taken in order to avoid further violations. A copy of this Section 9.19.3 and of the Resolution imposing the Level 4 restrictions shall be included with the notice. This warning shall also state that violation fees will be imposed on all subsequent violations in that calendar year and that water service may be suspended upon or after the third violation.
2. Upon the second violation, the District shall impose a Conservation Violation Fee as set forth in the District's Fee Schedule and any additional fees set forth in the Resolution

3. imposing the Level 4 restrictions. The District shall also mail a Notice of Serious Violation by regular mail to the billing and service addresses for the subject property and shall hand-deliver a copy thereof to any owner, resident, employee, or agent that can be found at the subject property. This Notice shall set forth the specific requirements violated and any measures that must be taken in order to avoid further violations and/or suspension of service.
4. Upon any subsequent violations, the District shall impose the Serious Violation Fee set forth in the District's Fee Schedule and the District Manager shall determine whether and when suspension of service is appropriate under the circumstances. The District shall provide notice by mail to the billing and service addresses of each such Serious Violation Fee imposed and/or that water service has been suspended.

Violations must be duly verified by a District employee. Each day that a violation continues is considered to be a new violation. The number of violations received is calculated on calendar year basis. Violations at one level are not counted in the violation total of any other level. All violation fees will be assessed on the culinary water bills. Where hand-delivery is specified in this Section 9.19.3, if the District's staff is unable to locate the water user during three attempts to do so, the required delivery may be made by regular mail to the billing and service addresses.

Magna Water District does not have land use authority, however, we participated in the development of the West Valley City Landscape Ordinance (see Appendix A). Magna Water District provides services to Magna Metro Township within Salt Lake County, and parts of West Valley City. The District may set policies and procedures, however, in order to enforce water wise landscaping, change any type of business license requirements, or to require landscape contractors to attain specialized training in water conservation measures, the District has to work with Salt Lake County, Magna Metro Township, and West Valley City's Development Divisions to incorporate those requirements in their ordinances. In 2004, the District and West Valley City developed the City's Landscape Ordinance.

FUTURE CONSERVATION PRACTICES

EXPANDING OUR SECONDARY WATER SYSTEM

The District must continue to expand its secondary system, or it will run of culinary water to supply future growth. Conversely, if it grows the secondary system too quickly, it will require major investments in new secondary source. The priority secondary expansion scenario strikes the right balance of pulling enough demand off culinary sources to avoid running out of culinary water while going slow enough to not unnecessarily accelerate secondary source improvements. This scenario has the added benefit that it is the most cost-effective way to implement the secondary system from a transmission and distribution perspective.

The District believes that one of the largest secondary water sources can be the effluent water from our wastewater treatment system. The District is finalizing an agreement to receive a \$4.95M grant from the US Bureau of Reclamation to assist in to developing the effluent water source for the secondary water system.

The reuse water comes from our wastewater treatment plant. An additional benefit is that the water quality of treated wastewater is anticipated to be higher than the water quality of the Utah & Salt Lake Canal. Since the District does not currently have a way to store significant volumes of reuse water, use of this supply will initially be limited to satisfying outdoor demands during the irrigation season only. Based on projected demands, the estimated annual useable yield of reuse will be limited to 1,130 acre-ft. Peak capacity is projected to be 2,500 gpm. Both these values are based on source capacity in the year 2060. Capacity will be slightly less initially but will increase as wastewater loading (and corresponding reuse flow) increases as the District grows.

To maximize reuse as a resource, the District has been investigating the potential to construct a storage reservoir that would store reuse water during the winter when the irrigation system is not active. The estimated annual capacity of stored reuse is projected to be 2,700 acre-ft and peak capacity is projected to be 2,500 gpm.

IMPLEMENTATION SUMMARY

Well before the Water Conservation Plan Act was passed, Magna Water District was proactive in setting an example for effective and practical water usage. From innovative master planning to progressive technologies to improve production and efficiency, Magna Water District will continue to implement the following:

1. Protect its water systems and preserves its water rights through constant monitoring and research
2. Research funding sources for systems expansions and developments
3. Educate the public through diversified communication efforts; and
4. Provide exceptional customer service so that we can be a solid resource of information for our residents.

APENDIX A – WEST VALLEY CITY LANDSCAPE ORDINANCE

CHAPTER 7-16

WATER EFFICIENT LANDSCAPE

Sections:

- 7-16-101 Purpose and Intent.**
- 7-16-102 Definitions.**
- 7-16-103 Commercial, Industrial, and Certain Residential Development.**

7-16-101. PURPOSE AND INTENT.

The City has developed the regulations set forth in this Chapter for the purpose of:

- (1) Addressing the public interest to conserve public water resources and to promote water efficient Landscaping.
- (2) Protecting and enhancing the community's environmental, economic, recreational, and aesthetic resources by promoting efficient use of water in the community's landscapes.
- (3) Reducing water waste.
- (4) Establishing a Structure for the design, installation, and maintenance of water efficient landscapes throughout the City.

7-16-102. DEFINITIONS.

For the purpose of this Chapter, the following terms shall be defined as follows:

- (1) "Administrative Standards" means the set of rules, procedures and requirements set forth in a landscape ordinance associated with making a permit application, assembling materials for public review, meeting the requirements of the landscape ordinance, seeking approvals, enforcement, conducting site inspections, and filing reports.

- (2) "Bubbler" means an irrigation head that delivers water to the root zone by "Flooding" the planted area, usually measured in gallons per minute. Bubblers exhibit a trickle, umbrella or short stream pattern.
- (3) "Designer" means a Landscape Architect, Landscape Contractor (General Engineering Contractor), Professional Engineer, or Architect as set forth by State law.
- (4) "Drip Emitter" means irrigation fittings that deliver water slowly at the root zone of the plant, usually measured in gallons per hour.
- (5) "Evapotranspiration" means the quantity of water evaporated from adjacent soil surfaces and transpired by plants during a specific time, expressed in inches per day, month or year.
- (6) "Extra-Drought Tolerant Plant" means a plant that can survive without irrigation throughout the year once established, although supplemental water may be desirable during drought periods for improved appearance and disease resistance.
- (7) "Grading Plan" means a plan showing all finish Grades, spot elevations as necessary and existing and new contours within the developed landscaped area.
- (8) "Ground Cover" means live and mineral materials used in such a way as to form a continuous cover over the ground that can be maintained at a height of not more than 12 inches. Living ground cover may include: vegetative vines, low-spreading shrubs, perennial flowering or foliage plants. Mineral ground cover may include: rocks, boulders, gravel, or brick.
- (9) "Hardscape" means patios, decks, and paths. Hardscape does not include driveways and Sidewalks.
- (10) "Irrigated Landscaped Area" means all portions of a Development site to be improved with planting and irrigation. Natural areas shall not be included in the Irrigated Landscaped Area.
- (11) "Irrigation Efficiency" means the measurement of the amount of water beneficially applied, divided by the total amount of water applied. Irrigation efficiency is derived from measurements and estimates of irrigation system hardware characteristics and management practices.

(12) "Irrigation Contractor" means a Person who has been certified by the Irrigation Association (IA) to install irrigation systems.

(13) "Irrigation Plan" means the plan that shall show the components of the irrigation system with water meter size, backflow prevention, precipitation rates, flow rate and operating pressure for each irrigation circuit, and identification of all irrigation equipment.

(14) "Landscape Architect" means a Person who holds a license to practice landscape architecture in the State of Utah.

(15) "Landscape Plan Documentation Package" means the preparation of graphic and written criteria, specifications, and detailed plans to arrange and modify the effects of natural features such as plantings, ground and water forms, circulation, walks and other features to comply with the provisions of this ordinance. The Landscape Plan Documentation Package shall include a project data sheet, a Planting Plan, an Irrigation Plan, a Grading Plan, a Soils Report, a Landscape Water Allowance, and an Irrigation Schedule.

(16) "Landscape Water Allowance" means, for design purposes, the maximum annual applied water for the established landscaped area. It is based upon the local Reference Evapotranspiration Rate, the ETO adjustment factor and the size of the landscaped area.

(17) "Landscape Zone" means a portion of the landscaped area having plants with similar water needs, areas with similar microclimate (i.e., slope, exposure, wind, etc.) and soil conditions, and areas that will be similarly irrigated. A landscape zone can be served by one irrigation valve, or a set of valves with the same schedule.

(18) "Landscaping" means the improvement of property through the addition of plants and eradication of weeds and other deleterious material. Landscaping includes any combination of living plants, such as trees, shrubs, vines, ground covers, flowers, or grass; natural features such as rock, stone, or bark chips; and structural features, including but not limited to, fountains, reflecting pools, outdoor art work, screen walls, Fences, benches, or berms. All elements of the Landscaping shall be combined in a harmonious manner to make the land more attractive for users, to screen unattractive Uses, or to act as buffers to visually separate different types of Uses.

- (19) "Microclimate" means an area within the overall landscape which shares similar elements such as slope, exposure, wind, soil conditions, etc.
- (20) "Mulch" means any material such as bark, wood chips or other materials left loose and applied to the soil.
- (21) "Non-Drought Tolerant Plant" means a plant that will require regular irrigation for adequate appearance, growth and disease resistance.
- (22) "Planting Plan" means a plan that shall clearly and accurately identify and locate new and existing trees, shrubs, ground covers, turf areas, driveways, Sidewalks, hardscape features, and Fences, and which includes a planting schedule showing graphic symbols (if applicable), botanical names, common names, quantity, and plant size.
- (23) "Precipitation Rate" means the depth of water applied to a given area, usually measured in inches per hour.
- (24) "Rain Shut-Off Device" means a device wired to the automatic controller that shuts off the irrigation system when it rains.
- (25) "Reference Evapotranspiration Rate" or "ETO" means a standard measurement of environmental parameters which affect the water use of plants. ETO is expressed in inches per day, month or year and is an estimate of the evapotranspiration of a large field of four to seven-inch tall, cool season grass that is well watered. The average annual ETO for the West Valley City area is 31.17 inches.
- (26) "Rehabilitated Landscaping" means site Alterations of 75 percent or more.
- (27) "Runoff" means irrigation water that is not absorbed by the soil or landscape area to which it is applied and which flows onto other areas.
- (28) "Secondary or Reuse Water" means non-potable water suitable for irrigation purposes. This water would be available in a pressurized system.
- (29) "Soils Report" means a report by a soils laboratory indicating soil type(s), soil depth, uniformity, composition, bulk Density, infiltration rates, and pH for the topsoil and subsoil for a given site. The soils report also includes recommendations for soil amendments.
- (30) "Spray Sprinkler" means an irrigation head that sprays water through a nozzle.

(31) “Stream Sprinkler” means an irrigation head that projects water through a gear rotor in single or multiple streams.

(32) “Turf” means a surface layer of earth containing mowed grass with its roots.

(33) “Water Conserving Plant” means a plant that can generally survive with available rainfall once established although supplemental irrigation may be needed or desirable during spring and summer months.

(Ord. No. 21-14 § 2 Amended 04/13/2021)

7-16-103. COMMERCIAL, INDUSTRIAL, AND CERTAIN RESIDENTIAL DEVELOPMENT.

(1) *Applicability.* The provisions of this section shall apply to all new and rehabilitated Landscaping for public agency projects, private Development projects, developer-installed Landscaping in multi-unit residential projects, and developer-installed Landscaping in single-unit residential projects that require a review process.

(2) *Documentation.* Landscape Plan Documentation Package. A copy of a Landscape Plan Documentation Package shall be submitted to and approved by the City prior to the issuance of any permits. A copy of the approved Landscape Plan Documentation Package shall be provided to the property Owner or site manager and to the local retail water purveyor. The Landscape Plan Documentation Package shall be prepared by a Designer who certifies that the package satisfies the requirements of this Chapter and its contents have been prepared or reviewed by individuals meeting State Code regulations. The Landscape Plan Documentation Package shall consist of the following items:

- a. *Water Efficient Landscape Worksheets.* The Water Efficient Landscape Worksheets shall contain the following:
 - i. Project name and address;
 - ii. Applicant or Applicant’s agent’s name, address, phone and fax number;
 - iii. Designer’s name, address, phone and fax number; and

iv. Landscape contractor's name, address, phone and fax number, if available at this time.

v. The annual Landscape Water Allowance, which shall be calculated using the following equation:

Landscape Water Allowance = $ETO \times 0.62 \times A$, where:

Landscape Water Allowance is in gallons per year

ETO = Reference Evapotranspiration in inches per year

0.62 = conversion factor (to gallons per square feet)

A = total Irrigated Landscape Area in square feet

NOTE: refer to the worksheet packet for formula data.

b. *Planting Plan*. A detailed Planting Plan shall be drawn at a scale that clearly identifies the following:

i. Location of all existing trees and plant materials to be removed and retained and all new plant materials with a planting schedule;

ii. Property lines and Street names;

iii. Existing and proposed Buildings, walls, Fences, utilities, paved areas and other site improvements;

iv. Designation of Landscape Zones, and

v. Details and specifications for tree staking, soil preparation, and other planting work.

c. *Irrigation Plan*. A detailed Irrigation Plan shall be drawn at the same scale as the planting plan and shall contain the following information:

i. Layout of the irrigation system and a legend summarizing the type and size of all components of the system, including manufacturer name and model numbers;

- ii. Static water pressure in pounds per square inch (psi) at the point of connection to the public water supply;
 - iii. Flow rate in gallons per minute and design operating pressure in psi for each valve and precipitation rate in inches per hour for each valve with sprinklers; and
 - iv. Installation details for irrigation components.
- d. *Grading Plan.* A Grading Plan shall be drawn at the same scale as the Planting Plan and shall contain the following information:
 - i. Property lines and Street names, existing and proposed Buildings, walls, Fences, utilities, paved areas and other site improvements; and
 - ii. Existing and finished contour lines and spot elevations as necessary for the proposed site improvements.
- e. *Soils Report.* A Soils Report will be required where a site's irrigated landscaped areas exceed 2,500 square feet total. The Soils Report shall describe the depth, composition, and bulk Density of the topsoil and subsoil at the site, and shall include recommendations for soil amendments. The Planting Plan shall incorporate the recommendations of the Soils Report into the planting specifications.
- f. *Irrigation schedule.* A monthly Irrigation Schedule shall be prepared that covers the initial 120-day plant establishment period and the typical long-term use period. This schedule shall consist of a table with the following information for each valve:
 - i. Plant type (for example, turf, trees, low water use plants);
 - ii. Irrigation type (for example, sprinklers, drip, bubblers);
 - iii. Flow rate in gallons per minute;
 - iv. Precipitation rate in inches per hour (sprinklers only);
 - v. Run times in minutes per day;
 - vi. Number of water days per week, and
 - vii. Cycle time to avoid Runoff.

(3) *Landscape Design Standards. Plant Selection.* Plants selected for landscape zones shall consist of plants that are well-suited to the microclimate and soil conditions at the project site. Plants with similar water needs shall be grouped together as much as possible.

a. For projects located at the interface between urban areas and natural open space (non-irrigated), Extra-Drought Tolerant Plants shall be selected that will blend with the native vegetation and are fire resistant or fire retardant. Plants with low fuel volume or high moisture content shall be emphasized. Plants that tend to accumulate excessive amount of dead wood or debris shall be avoided.

b. Areas with slopes greater than 33% shall be landscaped with deep-rooting, Water Conserving Plants for erosion control and soil stabilization.

c. *Mulch.* After completion of all planting, all irrigated non-turf areas shall be covered with a minimum four (4)-inch layer of Mulch to retain water, inhibit weed growth, and moderate soil temperature. Non-porous material shall not be placed under the mulch.

d. *Soil Preparation.* Soil preparation will be suitable to provide healthy growing conditions for the plants and to encourage water infiltration and penetration. Soil preparation shall include scarifying the soil to a minimum depth of six (6) inches and amending the soil with organic material as per specific recommendations of the Landscape Designer/Landscape Architect based on the Soils Report (when applicable).

(4) *Irrigation Design Standards.* Irrigation design standards for this Ordinance shall be as outlined in the latest version of the "Minimum Standards for Efficient Landscape Irrigation System Design and Installation" prepared by the Utah Irrigation Association. In addition, the following portions of this Section shall also be applicable:

a. *Pressure Regulation.* A pressure regulating valve shall be installed and maintained by the consumer if the static service pressure exceeds 80 pounds per square inch (psi). The pressure-regulating valve shall be located between the meter and the first point of water use, or first point of division in the pipe, and shall be set at the manufacturer's recommended pressure for the sprinklers.

b. *Landscape Water Meter.* A water meter which is separate from the water meter installed for indoor use shall be installed for landscape irrigation systems when

required by the local retail water purveyor for secondary water systems. The size of the meter shall be determined based on irrigation demand.

c. *Automatic Controller.* All irrigation systems shall include an electric automatic controller with multiple program and multiple repeat cycle capabilities and a flexible calendar program. All controllers shall be equipped with an automatic rain shut-off device, and the ability to adjust run times based on a percentage of maximum ETO.

d. On slopes exceeding 33 percent, the irrigation system shall consist of Drip Emitters, Bubblers or sprinklers with a maximum Precipitation Rate of 0.85 inches per hour and adjusted sprinkler cycle times to eliminate Runoff.

e. Each valve shall irrigate a landscape zone with similar site, slope and soil conditions and plant materials with similar watering needs. Turf and non-turf areas shall be irrigated on separate valves. Drip Emitters and sprinklers shall be placed on separate valves.

f. Parking strips and other landscaped areas less than eight (8) feet wide shall be landscaped with Water-Conserving Plants. Drip Emitters or a Bubbler shall be provided for each tree. Bubblers shall not exceed 1.5 gallons per minute per device. Bubblers for trees shall be placed on a separate valve unless specifically exempted by the City due to the limited number of trees on the project site.

g. Sprinklers shall have matched Precipitation Rates with each control valve circuit.

h. Check valves shall be required where elevation differences will cause low-head drainage. Pressure compensating valves and sprinklers shall be required where a significant variation in water pressure will occur within the irrigation system due to elevation differences.

i. Drip irrigation lines shall be underground, except for Drip Emitters and where approved as a temporary installation. Filters and end flush valves shall be provided as necessary.

j. Valves with spray or stream sprinklers shall be scheduled to operate between 9 p.m. and 8 a.m. to reduce water loss from wind and evaporation.

k. Program valves for multiple repeat cycles shall be required where necessary to reduce runoff, particularly on slopes and soils with slow infiltration rates.

l. When secondary or reuse water is available from the local water purveyor, it shall be used in the irrigation system.

(5) *Plan Approval, Construction Inspection and Post-Construction Monitoring.* As part of the building permit approval process, a copy of the Landscape Plan Documentation Package shall be submitted to the City for approval before construction begins. With the Landscape Plan Documentation Package, a copy of the Landscape Water Allowance Work-sheet shall be completed by the Designer and submitted to the City. Once approved, the Landscape Water Allowance Worksheet will be transmitted to the local water purveyor.

a. All Landscape Plan Documentation Packages submitted must be certified by a Designer.

b. All landscape irrigation systems shall be installed by an IA-certified Irrigation Contractor, or under the direct supervision of the Designer. The certified Person representing the contracting firm shall be a full-time employee of the firm and shall be directly involved with the project including, at least, weekly site visits.

c. All installers, Designers, and auditors shall meet state and local license, insurance, and bonding requirements, and be able to show proof of such.

d. After the Landscaping has been installed, the property Owner is encouraged to contact a certified water auditor and request a Water Audit. The Water Audit will determine the irrigation system efficiency and make recommendations for improvements.

e. The City reserves the right to perform site inspections at any time before, during or after the irrigation system and landscape installation, and to require corrective measures if requirements of this Ordinance are not satisfied.

The West Valley City Municipal Code is current through Ordinance 21-42, passed July 6, 2021.

Disclaimer: The city recorder's office has the official version of the West Valley City Municipal Code. Users should contact the city recorder's office for ordinances passed subsequent to the ordinance cited above.

Note: This site does not support Internet Explorer. To view this site, Code Publishing Company recommends using one of the following browsers: Google Chrome, Firefox, or Safari.

[City Website: www.wvc-ut.gov](http://www.wvc-ut.gov)

City Telephone: (801) 966-3600

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Entity: Magna Water District

Body: Magna Water District

Subject:	Special Districts		
Notice Title:	November Regular Board Meeting		
Meeting Location:	8885 W 3500 S		
	Magna UT 84044		
Event Date & Time:	November 18, 2021 November 18, 2021 10:00 AM - November 18, 2021 01:00 PM		
Description/Agenda:	MEETING DATE:	November 18,	
	2021, at 10:00 am		
	LOCATION:	8885 W 3500 S, MAGNA, UT, GENERAL OFFICE BUILDING	
	A.	Call to order.	
	B.	Public, Board and Staff join in the Pledge of Allegiance.	
	C.	Welcome the Public and Guests.	
	D.	Public Comment. (Written requests that are received) Please do not take over three minutes due to time restraints for other individuals and the Board.	
	E.	Inquire of any conflicts of interests that need to be disclosed to the Board.	
	F.	Approval of common consent items:	
	1.	Minutes of the regular board meeting held October 14, 2021	
	2.	Minutes of the board workshop held October 26, 2021	
	3.	Expenses for October 7 to November 10, 2021:	
		General expenses: \$4,224,480.02	
		Project expenses paid by bond proceeds:	
		\$1,639,318.45	
		Zions Bank bond payments: \$403,402.56	
	G.	Presentation of and discussion on the 2022 Proposed Budget. Motion to approve Resolution No 2021-03 regarding adoption of the District's Tentative 2022 budget.	
	H.	Discussion and possible motion to approve water and sewer availability to WinCo Pad E located at 2640 S 5600 W.	
	I.	Discussion and possible motion to approve water and sewer availability to Panda Express located at 3509 S 8150 W.	
	J.	Discussion and possible motion to approve water and sewer availability to Unified Fire Service Area Station #102 located at 8609 W Magna Main Street.	
	K.	Update on Trustee Election, November 2, 2021.	
	L.	Discussion on Haynes Well #2 Pump Repairs.	
	M.	Discussion on operation of Shallow Well Pumps.	
	N.	Discussion on WWTP preparation for winter conditions.	
	O.	Discussion and possible motion to approve	

Supplemental Sewer Lateral Agreement and Access Easement between Magna Water District and Godfrey West Investors, LLC.

P. Presentation of final design of the proposed truck garage and general office parking lot project.

Q. Discussion and possible motion to approve the District's 2021 Conservation Report.

R. Discussion and possible motion to approve Change Order #1, in the amount of \$34,383.25, increasing the original contract amount of \$569,100 to \$609,483.25 on the 2021 Steel Tank & Secondary Clarifiers Painting and Repair project.

S. Discussion and possible motion to approve Change Order #1, in the amount of \$1,477.06, decreasing the original contract amount of \$1,588,239 to \$1,586,761.94 on the 2019 Secondary Waterline project.

T. Discussion and possible motion to approve employee appreciation gift cards in the amount of \$50.00.

U. Report & Discussion from General Manager.

V. Discussion on District's actual vs budget status as of October 31, 2021.

W. Engineering projects update.

X. Water Distribution /Production.

1. Water production report.

2. Call out report.

Y. WWTP Operation/Collection System.

1. Status of sewer system.

2. Call out report.

Z. Discussion and possible motion to approve the purchase of a standby Generac Generator for the WWTP Administration building in the amount of \$15,239. (Approved in the 2021 Final Budget)

Aa. Motion to meet immediately in closed session to discuss the character, professional competence, or physical or mental health of an individual, pending or reasonably imminent litigation, and the sale or purchase of real property pursuant to Utah Code Ann. §§ 52-4-204 through 205.

Ab. Motion to close the closed meeting and re-open the public board meeting.

Ac. Consider action on any noticed agenda item discussed in closed meeting.

Ad. Adjourn.

Notice of Special Accommodations:

In accordance with the Americans with Disabilities Act, individuals needing reasonable accommodations for participation in the above noticed meeting should contact the District Clerk at 801-250-2118 at least three working days in advance of the meeting. The District does not discriminate on the basis of disability or any other status protected by federal, state, or local law.

Notice of Electronic or telephone participation:

Trustees may participate electronically in the above noticed meeting in accordance with state law and District regulations. The anchor location for this meeting where the public may attend and monitor the proceedings shall be the Districts board room at 8885 West 3500 South, Magna, Utah, unless otherwise specified above. Any Trustee wishing to participate electronically must notify the District Manager or the District Clerk personally prior to the

meeting and provide the telephone number at which the Trustee can be reached at the appointed time. A conference call shall be initiated from the anchor location to each Trustee participating by telephone at the appointed time. If a Trustee is having difficulty connecting to the meeting, please call the District offices at 801-250-2118. This same procedure shall be used at any continuation of this meeting, unless otherwise specified in the meeting.

Other information:

Contact Information:

LeIsle Fitzgerald
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MINUTES OF THE
REGULAR MEETING
OF THE BOARD OF TRUSTEES OF
MAGNA WATER DISTRICT

A regular meeting of the Board of Trustees of the Magna Water District was held Thursday, November 18, 2021, at 10:00 a.m., at the Magna Water District General Office, Kim Bailey Board Room, located at 8885 West 3500 South, Magna, UT.

Trustees Present:

Mick Sudbury, Chairman
Jeff White
Dan Stewart, excused

Staff Present:

Clint Dilley, General Manager
LeIsle Fitzgerald, District Controller
Trevor Andra, District Engineer
Raymond Mondragon, Water Operations Manager
Dallas Henline, Wastewater Operations Manager

Also Present:

Nathan Bracken, Smith Hartvigsen, PLLC
Don Olsen, Epic Engineering
Clint Rogers, Stantec
Todd Richards, Planning & Zoning Magna
Randy Zollinger, Carollo Engineers

Call to Order: Mick Sudbury called the meeting to order at 10:00 am.

Public, Board, Staff join in the Pledge of Allegiance.

Welcome the Public and Guests: Chairman welcomed those in attendance.

Public Comment: None.

Chairman asked if any of the staff or board members had a conflict of interest with anything on this agenda. There were no conflicts of interest.

Approval of Common Consent Items:

Minutes of the regular board meeting October 14, 2021

Minutes of the board workshop held October 26, 2021

Expenses for October 7 to November 10, 2021:

General Expenses: \$4,224,480.02

Project expenses paid by bond proceeds: \$1,639,318.45

Zions Bank bond payments: \$403,402.56

A motion was made by Mick Sudbury, seconded by Jeff White, to approve the minutes of the regular board meeting held October 14, 2021, the minutes of the board workshop held October 26, 2021, and for the approval of the general expenses, project expenses paid by bond proceeds, and the Zions Bank bond payment from October 7 to November 10, 2021, in the amount of \$4,224,480.02, \$1,639,318.45, and \$403,402.56, respectively. The motion was approved as follows: Mick Sudbury, yea and Jeff White, yea.

Presentation of and discussion on the 2022 Proposed Budget. Motion to approve Resolution No 2021-03 regarding Adoption of the District's Tentative 2022 budget: The 2022 Tentative Budget was presented to the Board. The Budget was provided to each board member to review. LeIsle indicated the tentative budget will be available for public inspection seven days before the budget hearing to be held December 9, 2021. A motion was made by Jeff White, seconded by Mick Sudbury, to approve Resolution No 2021-03 regarding adoption of the District's Tentative 2022 Budget and to set the budget hearing to be held December 9, 2021, at 10:00 am. The motion was approved as follows: Mick Sudbury, yea and Jeff White, yea.

Discussion and possible motion to approve water and sewer availability to WinCo Pad E located at 2640 S 5600 W: Trevor presented the WinCo Pad E development project consisting of one building with three-units for retail shops. He indicated there are existing services available and recommended the Board approve service availability to this project. A motion was made by Jeff White, seconded by Mick Sudbury, to approve water and sewer availability to WinCo Pad E located at 2640 S 5600 W. The motion was approved as follows: Mick Sudbury, yea and Jeff White, yea.

Discussion and possible motion to approve water and sewer availability to Panda Express located at 3509 S 8150 W: Trevor presented the Panda Express development indicating there are existing services available for this development. Trevor recommended the Board approve service availability to this project. A motion was made by Jeff White, seconded by Mick Sudbury, to approve water and sewer availability to the Panda Express located at 3509 S 8150 W. The motion was approved as follows: Mick Sudbury, yea and Jeff White, yea.

Discussion and possible motion to approve water and sewer availability to Unified Fire Service Area Station #102 located at 8609 W Magna Main Street: Trevor presented the Unified Fire Service Area Station #102 development located at 8609 W Magna Main Street and indicated this development will be a rebuild of the old fire station on Main Street. There are existing services available to this project and Trevor recommended board approval of the availability to this project. A motion was made by Jeff White, seconded Mick Sudbury, to approve water and sewer availability to Unified Fire Service Area Station #102 located at 8609 W Magna Main Street. The motion was approved as follows: Mick Sudbury, yea and Jeff White, yea.

Update on Trustee Election, November 2, 2021: This agenda item was skipped due to the fact there was an election canvass certification meeting held November 16, 2021, presenting the results of the election.

Discussion on Haynes Well #2 Pump Repairs: Trevor indicated the pump has been pulled. There was a video done of the well which showed a lot of buildup on the pump. The contractor has brushed and bailed the well which removed some of the buildup, but not as much as we

would have hoped. The next step will be to treat the pump with some type of chemical treatment. If successful, the chemical treatment should restore some capacity to that well also.

Discussion on operation of Shallow Well Pumps: Raymond indicated that some of the corrosion was caused by the material originally used for the shallow wells. The District has replaced the material that was causing the corrosion with a full stainless-steel pump. Another problem found with the pumps, was the power leads going to the pump, originally the electrical leads were spliced. The spliced wires were subjected to being under water and eventually the water would get into the spliced area and caused the pumps to fail. All the wires now have been replaced with no splicing done. They found that the impellers are wearing out from the TDS in the water, which is natural. The District is averaging 5 years on the shallow well pumps right now. Staff has discussed this with Bowen Collins and Associates, they suggested pulling the pumps during the off season, the problem is because the pumps are sitting for six months not running and the rust builds up. Jeff suggested additional isolation of the VFD for corrosion prevention, which Staff will investigate.

Discussion on WWTP preparation for winter conditions: Dallas shared with the Board, at the WWTP, they have changed the method for process control from the SVI 30-minute settleable method to a more biological focused method. By maintaining a constant mass and being aware of the biology coming in and going out of the plant. The last few months they have gained improved control and understanding of the new aeration system and equipment, by moving some of the sensors and getting into the programming to evaluate where the equipment is at its optimal performance and how it operates with the plant's biology. Dallas has introduced new sampling routines to aid in real time process control. In house sampling results give the Operator's the ability to adjust processes quicker. In the winter, it takes a little longer for the biology to break down, in the summer the biological activity is increased so the plant is operated differently. Some of the main constituents in the wastewater that have been a concern, were the ammonia and the BOD, a new process control strategy and new operations have been put into place to ensure those constituents are within our permit.

Discussion and possible motion to approve Supplemental Sewer Lateral Agreement and Access Easement between Magna Water District and Godfrey West Investors, LLC: Trevor indicated this is an agreement between the District and Godfrey West Investors, LLC agreeing that Godfrey West will maintain an 8" sewer main that goes to their property and gives Magna Water District access to inspect the sewer main. A motion was made by Jeff White, seconded by Mick Sudbury, to approve the sewer lateral agreement between Magna Water District and Godfrey West Investors, LLC. The motion was approved as follows: Mick Sudbury, yea and Jeff White, yea.

Presentation of final design of the proposed truck garage and general office parking lot project: Trevor presented the final design of the proposed truck garage and general office parking lot project. The designed garage is a two-bay truck garage, 50 ft deep and 30 ft wide, big enough to store two vac trucks. One vac truck will be parked there when not being used and the other side will be open to any other equipment or vehicles that need to be in the garage or any variation of extra storage. It is proposed to be built with a sloped roof, taller in the front then slopping to the back.

The office modifications expand the existing parking to the south to add four additional parking spaces. The curb by the exit of the drive-up window will be modified along with additional asphalt on the east side of the exit, this will allow a wider turning area as people leave the drive-up window. The project's design is expected to be wrapped up this month and the bidding process in December.

Trevor also discussed a possible covered material storage unit at the maintenance shop that is proposed to go to the south of the steel building. Currently they have stocked inventory of pipe where the covered material storage unit would go. The material storage unit would hold road base, sand, and bedding sand. It would be a rounded dome having two sides and a concrete barrier down the center, sand on one side, fill material (road base) on the other. It is to be roughly 40-feet wide and approximately 25-feet high.

Discussion and possible motion to approve the District's 2021 Conservation Report:

LeIsle indicated the District is required to update the Conservation Report every five years. This is the update to the 2015 Conservation Report. The District set a goal in 2015 to reduce the GPCD from 158 by 10% by 2020 to 142 GPCD. The District almost hit its goal in 2020, the GPCD in 2020 was 145. The District continues to strive to hit the goal by 2025. Beyond 2025, the District has set an internal goal of reducing per capita water use another 10% through the year 2060, which would be a 10% reduction over a 35-year period. A motion was made by Jeff White, seconded by Mick Sudbury, to approve the District's 2021 Conservation Report. The motion was approved as follows: Mick Sudbury, yea and Jeff White, yea.

Discussion and possible motion to approve Change Order #1, in the amount of \$34,383.25, increasing the original contract amount of \$569,100 to \$609,483.25 on the 2021 Steel Tank & Secondary Clarifiers Painting and Repair project: Trevor indicated to the Board this change order is increasing due to the following: 1) a new vent pipe, on the 1.5 MG tank on 3500 S, had to be replaced. When the tank was sand blasted, the vent on the tank had a big hole, it had corroded away so that repair cost was a little over \$8,000, 2) at the 2 MG tank, on 4100 S, as they removed some of the soil around the bottom of the tank and sand blasted, there was a section of asphalt that moisture was able to get behind, therefore causing the bottom portion of the tank to corrode, this repair was for approximately \$10,000, 3) on the same tank the vent pipe had a small hole that had to be repaired for \$1,098, and 4) the paint on the EDR feed tank's roof had failed. It was decided to put a new coating on the entire tank for \$15,000. These items increased the contract price by \$34,343.25. A motion was made by Jeff White, seconded by Mick Sudbury, to approve Change Order #1 on the 2021 Steel Tank & Secondary Clarifiers Painting & Repairs Project for an increase in the contract of \$34,383.25 for a new contract price of \$603,483.25. The motion was approved as follows: Mick Sudbury, yea and Jeff White, yea.

Discussion and possible motion to approve Change Order #1, in the amount of \$1,477.06, decreasing the original contract amount of \$1,588,239 to \$1,586,761.94 on the 2019

Secondary Waterline project: Trevor indicated to the Board this change order is decreasing because of several quantities that ended up different than in the bid documents. There was a degree bend that had to be installed to miss an existing gas line, a flange adapter to tie into an existing valve, removal of 317 feet of trench depth and additional feet of trench depth, all adding up to a decrease in the contract of \$1,477.06. A motion was made by Jeff White, seconded by Mick Sudbury to approve the Change order #1 to the 2019 Secondary Waterline Project for a decrease of \$1,477.06, new contract price of \$1,586,761.94. The motion was approved as follows: Mick Sudbury, yea and Jeff White, yea.

Discussion and possible motion to approve employee appreciation gift cards in the amount of \$50.00: Mick indicated he wanted to see this amount of the gift certificates change from \$50.00 to \$75.00 per employee. The cost-of-living increases have been high this year, and the \$50.00 limit has been in place for quite a few years. A motion was made by Jeff White, seconded by Mick Sudbury, to approve the employee appreciation gift cards in the amount of \$75.00 for each employee. The motion was approved as follows: Mick Sudbury, yea and Jeff White, yea.

Report & Discussion from General Manager: Clint indicated to the Board his report is included in the board packet and asked if any of the board members had any comments or concerns. The Board indicated they had no questions or concerns. Clint did report that he has been meeting with all the crews as part of his goals for the year, it has been a great thing, there is a lot of information and ideas from the employees. One thing Clint thought was significant, is our excavation practices, how the District digs up waterlines and repairs. Industry processes have changed over the years. Clint has talked to other Districts regarding this, the construction crew, and with Raymond. Hydro-excavation is how repairs and digging up water lines is done now. It used to be hand shovels, backhoes, and mini excavators, but the majority of the exposing of an existing line is hydro excavation. Currently the crew uses a vactor truck that was designed to be used in the wastewater department, there are hydro excavators that are specifically designed for heavier use. The hydro-excavators are designed for the vacuum removal of debris and are more robust for the use of repairing and maintaining water lines. In the future, when the vactor truck needs to be replaced, Clint would like to evaluate the purchase of a hydro-excavator. This type of equipment would be in the range of \$300,000 – \$800,000 to purchase.

Discussion on District's actual vs budget status as of October 31, 2021: LeIsle informed the Board the actual vs budget status is in line with the past few months. We are still under budget as far as expenses are concerned and we are still under budget in water sales by about 6%, but overall, our revenue is about 3% less than what was budgeted.

Engineering projects update:

Tank & Clarifier Painting Project: The contractor has found some of the beams in the larger tank on 3500 S have rusted, there is a potential repair to be done for that, which could result in a change order to the project.

Segment 1a Sewer Project (30" Sewer trunk line): This project is approaching completion the contractor will be asphaltting on November 22, 2021.

2019 Secondary Water Line Project: The contractor is pressure testing currently then the project will be substantially complete by this week.

Dirt Hauling: The contractor was subbing out the trucking and now his ability to get those subs to move the material is no longer viable. The District is surveying the remaining material to be moved. The District will pay the remaining owed for the amount that has been moved, then cancel the contract. The remaining to be moved will be added as a bid item to the Zone 3 Booster Pump Station project.

Water Distribution/Production:

1. **Water production report:** The culinary water production for October was 121.7 million gallons, a decrease of 22.48% from 2020. Year to date production was 1,561.7 million gallons or 4,792.98-acre feet, this is a decrease from YTD 2020 of 12.51%. The secondary water production for October was 10.4 million gallons, an increase of 12.81% from 2020. Year to date production was 305.9 million gallons or 938.95-acre feet, this is an increase from YTD 2020 of 2.20%. We have purchased 671.20-acre feet of water from Jordan Valley Water as of October 2021.

2. **Call out report:** Raymond reported that there was a total of 18 call outs, (2 mainline leaks and 16 miscellaneous) with a total number of 89 hours paid.

WWTP Operation/Collection System:

1. **Status of sewer system:** Dallas reported it has been business as usual for the wastewater department. Aside from balancing the collection system and the treatment plant, one of the priorities has been to build the certification training library for operators. One of the names he wanted to introduce to the Board is Indigo Water. It's an engineering firm out of Colorado, they offer some of the best online and inhouse training material for process control. They do both water and wastewater. We are projecting to get in some training with them online or possibly a site visit, to increase process efficiency. One of the trainings they are looking at specifically is microbiology identification through our microscope tool. Dallas wanted the Board to be familiar with this name.

Discussion and possible motion to approve the purchase of a standby Generac Generator for the WWTP Administration building in the amount of \$15,239: Dallas explained this generator has been approved already in the 2021 budget, however, the price of the generator came in with a \$2,100 increase. A motion was made by Jeff White, seconded Mick Sudbury, to approve the purchase of a standby Generac Generator for the WWTP Admin building in the amount of \$15,239. The motion was approved as follows: Mick Sudbury, yea and Jeff White, yea.

Motion to meet immediately in closed session to discuss the character, professional competence, or physical or mental health of an individual, pending or reasonably imminent litigation, and the sale or purchase of real property pursuant to Utah Code Ann. §§ 52-4-204 through 205: Jeff White made a motion to meet immediately in closed session to discuss the character, professional competence, or physical or mental health of an individual, pending or reasonably imminent litigation, and the sale or purchase of real property pursuant to Utah Code Ann. 52-4-204 through 205. The motion was seconded by Mick Sudbury, and approved as follows: Mick Sudbury, yea, and Jeff White, yea. The open session of the Board meeting was closed at 1:25 p.m.

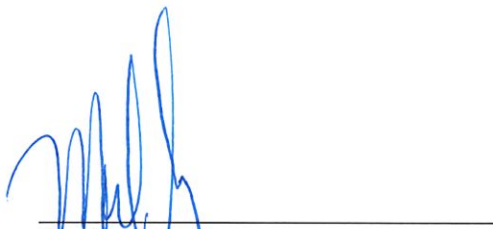
Motion to close the closed session and to reopen the open session of the Board Meeting: Mick Sudbury made a motion to close the closed session and reconvene the open session at 3:01 pm. The motion was seconded by Jeff White, and approved as follows: Mick Sudbury, yea and Jeff White, yea.

Consider action on any noticed agenda item discussed in closed meeting: A motion was made by Jeff White, seconded by Mick Sudbury, to accept the settlement offer from Legal Counsel, Kenneth Grimes, of Terry Pollock, for \$30,000 and continuation of executive retiree benefits. The motion was approved as follows: Mick Sudbury, yea and Jeff White, yea.

Adjourn: Having no further business to discuss, a motion was made by Jeff White, seconded by Mick Sudbury, to adjourn the meeting at 3:02 pm. The motion was approved as follows: Jeff White, yea, and Mick Sudbury, yea.



Attest



Chairperson