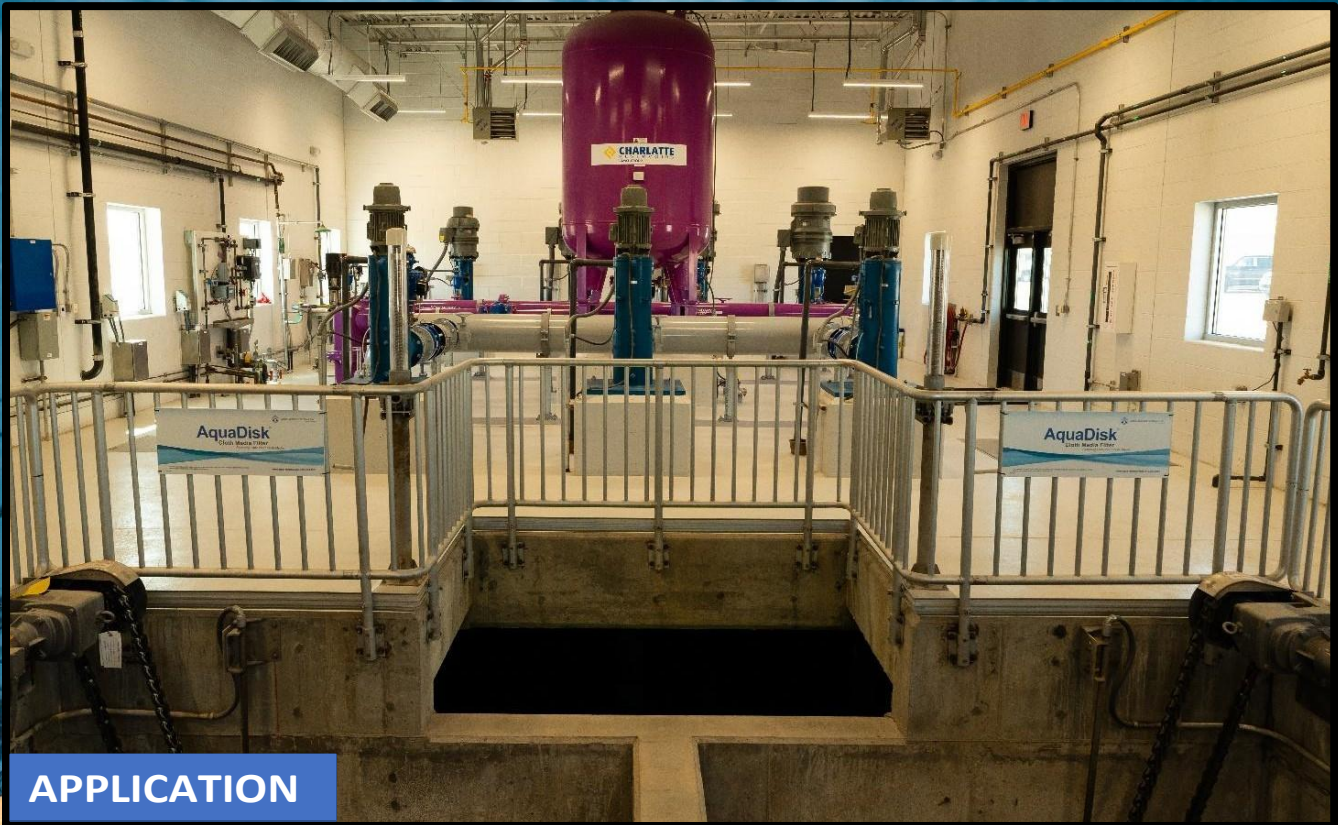


Magna Water District Water Conservation Plan



APPLICATION



DEVELOPMENT



EDUCATION

2026





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Plan Summary

Introduction

In 1998, the Utah State Legislature approved the Water Conservation Plan Act which was passed and revised in the 2004 legislative sessions with House Bill 71 Section 73-10-32 [1]. Driving this initiative was the response to rapid growth, suburbanization, future costs, and availability of water to consumers.

Under the law, retail drinking water providers are required to prepare a water conservation plan and to submit the plan to the Utah Board of Water Resources every five (5) years. The purpose of the Water Conservation Plan is to provide information to Magna Water District's (MWD, the District) water users, to fulfill the provisions of the Conservation Plan Act, and to be used in MWD's future Master Planning.

Continued urban planning, development, and economic growth are expanding throughout the State including MWD's service area. As a result, the need for conservation has become more critical for the District.

Conservation is essential to the continued success of MWD. To better support this goal, the MWD staff and Board of Trustees are committed to reducing per capita water use and achieving a new five-year target outlined in this conservation plan.



Image 1.) Magna Main Street Looking West



Image 2.) Magna Water District General Office



Image 3.) Construction of Buried Magna Water District Zone 3 Storage Tank.

Chapter One: System Profile

1.0 Introduction

This section provides an overview of the MWD's system profile, including its service area, population, and both culinary and secondary water systems. It outlines the total number of service connections and the distribution of connection types. By understanding the system's primary users and the scale of demand, MWD can develop more informed and effective water conservation goals and strategies.

1.1 Water District Service Area

Magna Water District is in the Northwest area of the Salt Lake Valley and serves a large area of 9.4 Square miles. MWD serves Magna City, as well as portions of West Valley City and Salt Lake City. MWD's service area covers a large diverse area, resulting in various customer types. *Image 4* shows the current district boundary of MWD's service area (area within the yellow dashed lines).

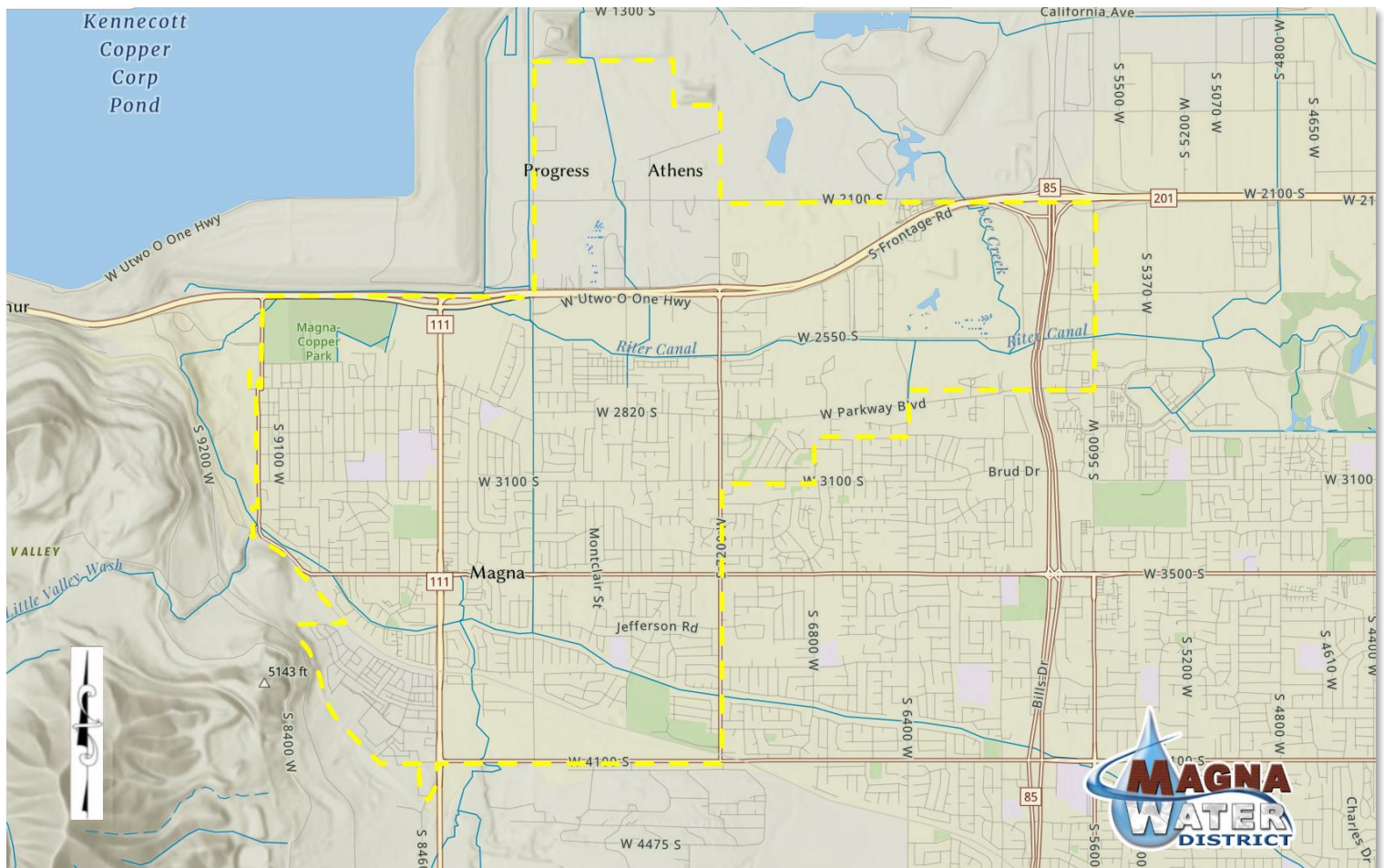


Figure 1-1) Current Magna Water District Boundary

Chapter One: System Profile

1.2 Population Data Analysis

Magna Water District in recent years has seen a significant increase in residential, industrial, and commercial developments. This in turn increases the population of MWD's service area. MWD's service population data from Utah Water Rights is given in Figure 1-2 *MWD Service Population from 2020 to 2025* shows a relatively linear increase in population with a current overall estimate of approximately 35,000 people [3]. This is a 7.6% increase from 2020 which shows a population of approximately 32,000 people.

Given this continued development within MWD's service area, the population is expected to keep growing. This growth will increase the demand for water resources and the infrastructure needed to supply them. As these demands rise, achieving conservation goals becomes even more important. Conservation efforts can help reduce the need for costly infrastructure expansions while preserving valuable resources for a growing community.

1.3 System Connections and Users

MWD produces, distributes, and maintains its own culinary and secondary water systems. The culinary water system includes approximately 9496 culinary connections with an additional 1553 secondary water connections [4,5]. The designated types and amounts for each connection appear in the table 1-1 "Summary of District Connections". The table also shows the increase of connections from the years of 2020 to 2025 [4,5].

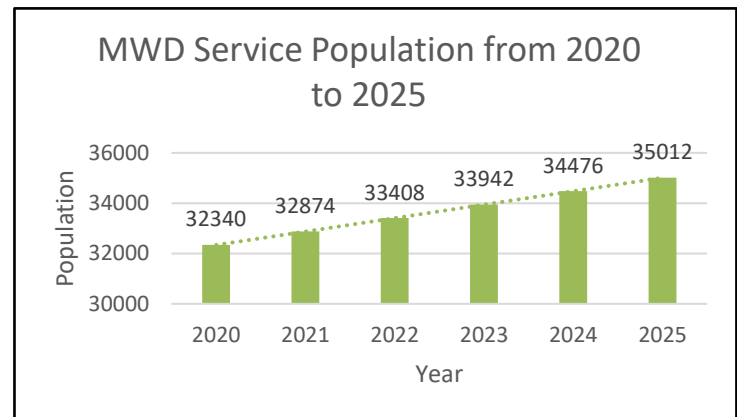


Figure 1-2) Service Population From 2020 to 2025

Table 1-1) Summary of District Connections

Magna Water District Connections					
Culinary Connections					
Year	Residential	Commercial	Industrial	Institutional	Total
2020	8064	244	6	71	8385
2021	8470	238	6	75	8789
2022	8770	308	6	75	9159
2023	8964	314	6	64	9499
2024	9115	281	9	73	9327
2025	9126	287	10	73	9496
Secondary Connections					
Year	Residential	Commercial	Industrial	Institutional	Total
2020	436	24	0	30	490
2021	532	27	0	32	591
2022	722	34	0	37	793
2023	844	31	0	37	912
2024	1370	34	0	40	1444
2025	1473	38	1	41	1553

Chapter One: System Profile

1.3.1 Water Deliveries

Understanding and tracking overall water usage across connection types is essential for evaluating demand patterns and helping MWD identify where conservation efforts should be focused.

Figure 1-3 illustrates current water deliveries by user type [6,7]. The figure highlights how secondary water usage compares with total culinary water usage and identifies which customer categories account for the greatest share of culinary demand. As expected, residential users represent the largest portion of water use due to the significantly higher number of residential connections compared to other customer types.

Figure 1-3 also compares culinary and secondary water use across the study years. Between 2021 and 2025, overall water usage increased, which is consistent with population growth and the

related increase in water service connections. One notable trend is the reduction in commercial culinary water use during this period. This decrease may be attributed to the expansion of the secondary water system and increased water reuse practices, which can reduce reliance on culinary water for non-potable uses.

MWD has collected data which has allowed for a further breakdown of the types into subgroups. Figure 1-4 titled “2025 *Culinary Water Usage by Type and Group*” on page 5 shows the culinary usage of each type of customer. Each type is then separated into subgroups to explore what subgroups take up the most usage. Figure 1-5 on page 6 titled “2025 *Secondary Water Usage by Type and Group*” shows the secondary usage similarly to the previous figure on culinary water.

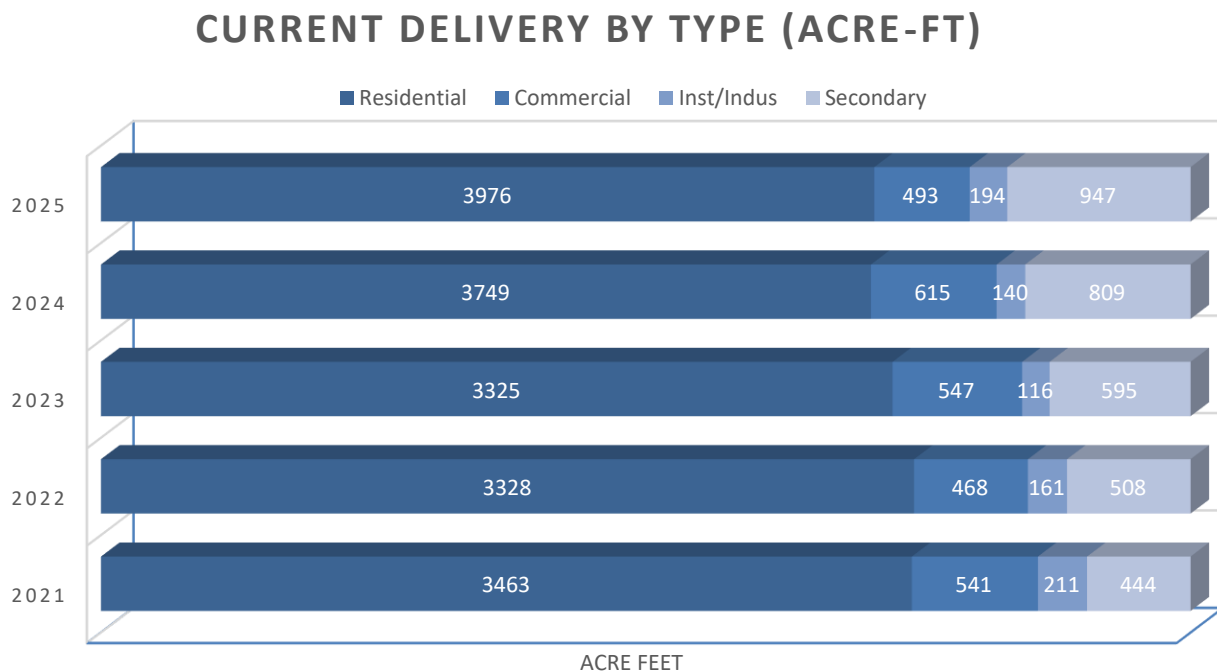
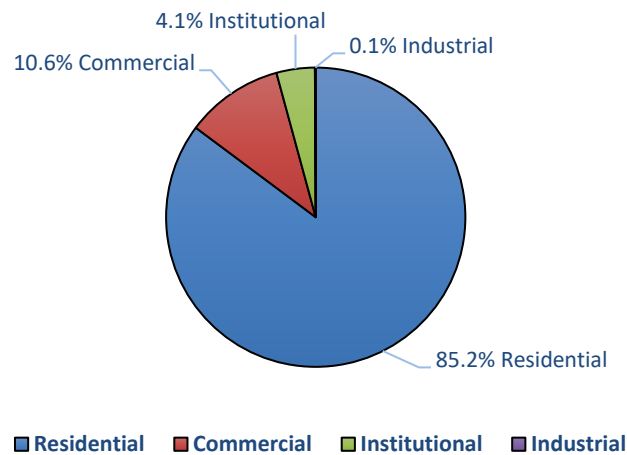


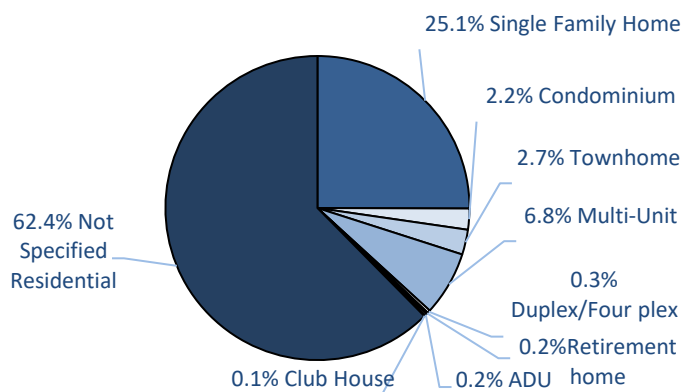
Figure 1-3) Current Water Deliveries by Type

Chapter One: System Profile

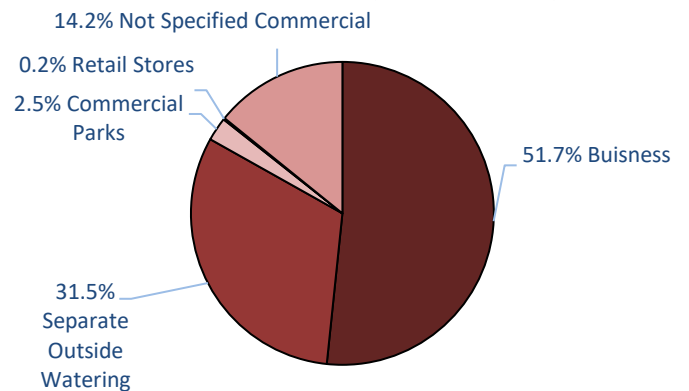
Total 2025 Culinary Water Usage by Type



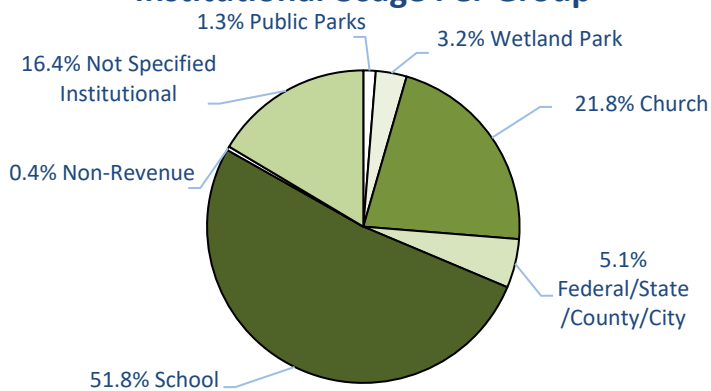
Residential Usage Per Group



Commercial Usage Per Group



Institutional Usage Per Group



Industrial Usage Per Group

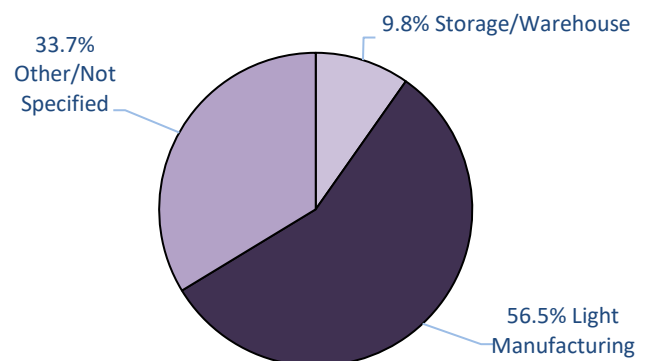
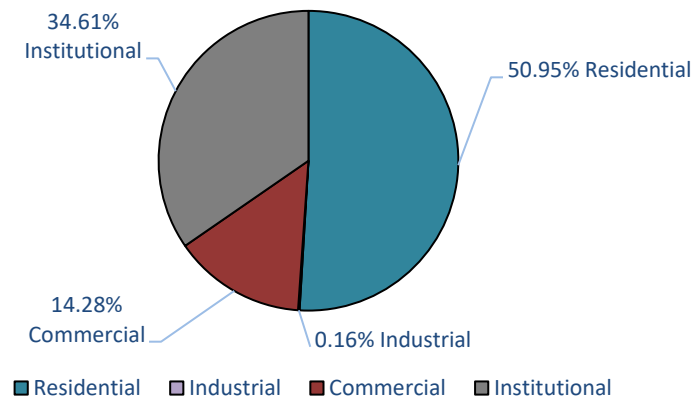


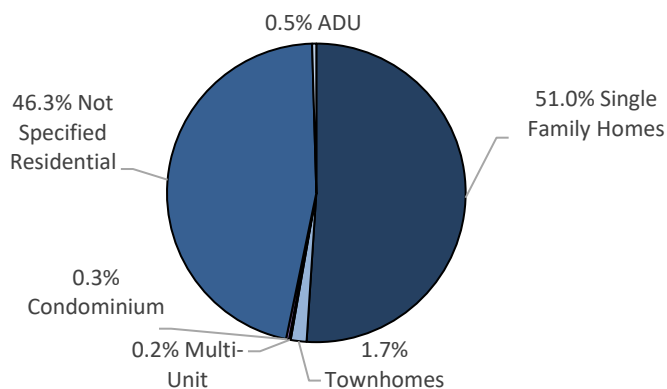
Figure 1-4) 2025 Culinary Water Usage by Type and Group

Chapter One: System Profile

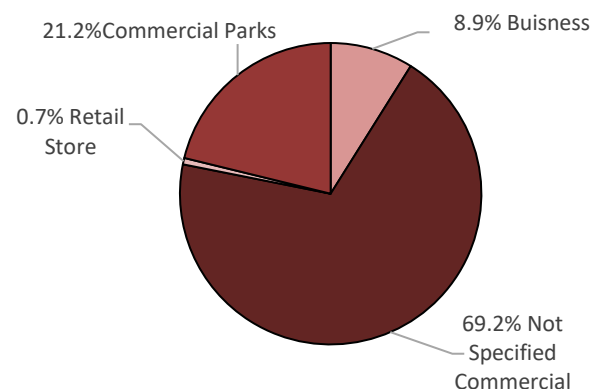
Overall 2025 Secondary Water Usage by Type



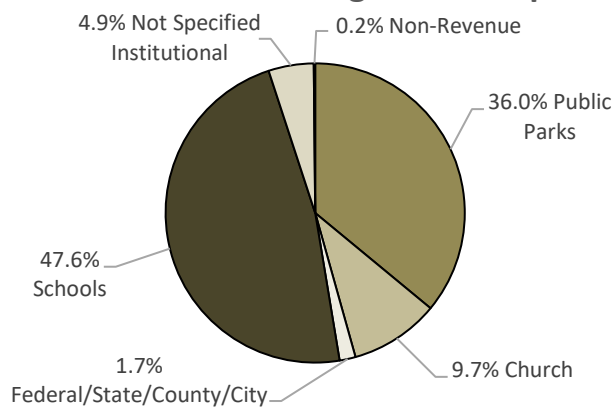
Residential Usage per Group



Commercial Usage per Group



Inttitutional Usage Per Group



Industrial Usage Per Group

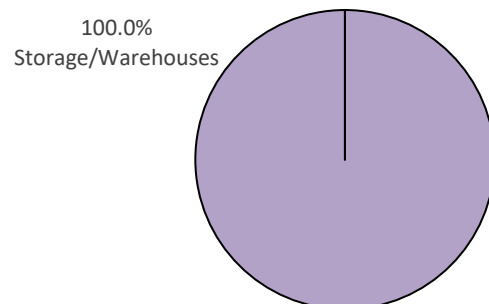


Figure 1-5) 2025 Secondary Water Usage by Type and Group



Chapter One: System Profile

1.3.2 Culinary Water Usage Analysis

Figures 1–4 on page 5, shows overall culinary water usage by type as well as the usage data for each subgroup. Overall, the data shows that residential use dominates culinary water consumption. This is not surprising, as most services MWD supplies are residential (see Table 1–1 and Figure 1-3). It is not surprising either that commercial use ranks second, institutional use third, and industrial use fourth, based on the connections MWD maintains. What is more interesting is an analysis of the groups within each type.

Since residential use accounts for the largest share, it is important to identify which subgroup within this category uses the most water. Within the residential category, MWD has not yet been able to fully identify the specific types of residential subgroups. However, based on the current data, single-family homes account for the greatest usage.

In the commercial category, the highest usage comes from businesses, along with a portion attributed to their outdoor water use. Within the institutional category, schools account for the highest usage. This is reasonable, as schools must accommodate large numbers of students and maintain extensive fields and landscaping. In the industrial category, the District supplies the most water to light manufacturing industries.

1.3.3 Secondary Water Usage Analysis

Figure 1–5 on page 6, shows the overall secondary water usage as well as the usage for each subgroup. Like the culinary data, the secondary data shows that residential use accounts for most the usage. This is not surprising, as most the services the District supplies are residential (see Table 1–1 and figure 1-3).

What differs, however, is that institutional usage exceeds commercial usage. This makes sense, as a good portion of institutions such as churches and schools within the District have access to secondary water and contain large areas of landscaping. In contrast, commercial usage of secondary water is currently limited due to a lack of secondary expansion and commercial properties have less overall irrigation needs.

It is not surprising that industrial usage is the least, given that few industrial units have access to the District’s secondary water system. Additionally, industrial properties typically have less irrigable land.

1.4 Conclusion

In summary, an analysis of MWD’s overall system profile, including culinary and secondary water connections, as well as population growth—provides valuable insight into setting appropriate goals and identifying effective water conservation solutions. Over the past five years, the District has experienced steady population growth, accompanied by an increase in user connections. This trend underscores the need for enhanced conservation efforts to maintain and expand system capacity. Additionally, the analysis indicates that residential users account for most water consumption, with single-family homes contributing the largest share of overall usage.

Chapter Two: Supply and Storage

2.1 Introduction

One of, if not, the most important aspects of a water delivery system is the supply and storage of the water. Having extensive and unique sources and storage facilities creates reliability in water delivery infrastructure. Having a continuous resource also creates that reliability that communities need to have a secure source of water.

MWD strives to develop and maintain these sources and storage facilities for this reason. This section provides information on MWD's current water supply sources as well as MWD's storage capabilities.

2.2 Existing Sources

MWD's culinary system consists of several wells two well fields, an EDR treatment facility, storage reservoirs, and supply piping throughout the entire district service area. MWD also has a connection to the Jordan Valley Water Conservancy District (JVWCD) for further water supplies. Table 2-1 shows all the sources summarized from MWD's 2025 master plan completed by Bowen Collins & Associates [8].

2.2.1 Summary of Culinary Water Sources

MWD's culinary water system is divided into three pressure zones. The wells from the Barton and Haynes well field pump raw water with a total reliable annual capacity of 7800 acre-ft. This water is pumped and then treated at MWD's EDR Plant to culinary standards and pumped into the lower pressure Zones. The JVWCD water is delivered into the zone 2 pressure zone which

provides 800 acre-ft with up to an additional 160 acre-ft available. Booster stations then lift the water into one of the three pressure zones of the system.

2.2.2 Summary of Secondary Water Sources

The secondary water system consists of two open storage reservoirs and supply piping serving the District's outdoor water users. MWD supplies water to the secondary water system from three (3) shallow wells, MWD's WRF Reuse facility, and from the Utah and Salt Lake Canal. The shallow wells and WWTP reuse facilities are a part of MWD's sources along with shares of the Salt Lake and Utah canal. Table 2-1 summarizes the reliable annual capacity of the MWD's secondary system.

Table 2-1) Existing Source Reliable Annual Capacity

Source	Reliable Raw Annual Capacity (acre-ft)	Reliable Culinary Annual Capacity (acre-ft)	Reliable Secondary Annual Capacity (acre-ft)
Haynes Well Field	3250	-	-
Barton Well Field	4550	-	-
EDR Plant	-	6864	-
Existing Shallow Wells	-	-	287
JVWCD Contract	-	800	-
JVWCD Option	-	160	-
Kennecott Spring Flows	-	-	10
Reuse Water	-	-	822
Canal Shares	-	-	1344
Total	7800	7824	2463



Chapter Two: Supply and Storage

2.3 Ground Water Storage & Recovery

Further expanding on MWD's specific sources, the most essential source of the Districts water supply are the Barton and Haynes Well Fields. These two well fields provide most of the culinary water supply for the District. MWD 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 MWD to make sure additional pumping does not exceed water right limitations for the well fields, 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 [9]. Over pumping the aquifer could lead to groundwater mining and a reversal for the groundwater flow.

2.3.1 Delineation of Recharge Zone

The MODFLOW groundwater model published by USGS [9] 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 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 estimated to be 12,850 acre-feet/year.

2.4 Pumped Ground Water

The Barton and the Haynes Well Fields are situated near each other within the District. All wells 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.

2.4.1 Barton Well Field

The Barton Well Field contains five (5) wells. Each of the Barton wells are fitted with a pump. Wells 1, 2, 3 and 4 connect 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 appears in Table 2-2.

Chapter Two: Supply and Storage

2.4.2 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 with the option of bypassing the EDR treatment and going directly to a finished water storage tank. A description of the wells and pumps appears in Table 2-3.

2.4.3 Secondary Water Irrigation Wells

MWD has three shallow ground water wells that help provide water for the secondary system. Each of the shallow wells are fitted with a pump. All the shallow wells pump to one of the system's secondary water reservoirs. A description of the wells appears in Table 2-4.

Table 2-2) 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

Table 2-3) 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

Table 2-4) 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

Chapter Two: Supply and Storage

2.4 Water Rights

MWD has certified culinary water rights in the amount of 22.16 cfs (cubic feet per second) or 15,595.33 acre-feet (ac*ft) per year. Table 2-5 contains a list of the culinary water rights, including the water right number, location, and value of each water right.

Table 2-6 lists the water rights associated with the secondary water system. MWD has secondary water rights in the amount of 15.87 cfs or 10,265.54 acre-feet per year. Table 2-6 contains a list of the water rights, including the water right number, location, and value of each water right.

2.4.1 Shares

In addition to the well water rights, MWD owns 293 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 1,343 acre-feet of water each year, as calculated below.

$$293 \text{ Shares} * 4.59 \text{ ac*ft/share} = 1,344 \text{ ac*ft}$$

Table 2-5) 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	
59-1286	Haynes	Perfected	0.62	
59-1287	Haynes	Perfected	1	
59-1288	Haynes	Perfected	0.822	
59-1295	Haynes	Approved	1	
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	0.022	
59-4754	Haynes	Approved	1	
Subtotal Haynes Perfected Rights			9.61	6,502.56
59-1289	Barton	Perfected	1	
59-1709	Barton	Perfected	2.5	
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	
59-5834		Approved		
Subtotal Barton Perfected Rights			12.55	9,092.77
Total All Perfected and Approved Rights			22.16	15,595.33

Table 2-6) Secondary Water Rights

W.R. NUMBER	LOCATION	STATUS	FLOW RATE (CFS)	VOLUME (AC*FT)
59-1004	WWTP Outfall – Sec 16	Approved	8	5,791.74
59-3598	Shallow Drains – Sec 22	Approved	1	723.97
59-4802	2600 So. 8000 W	Approved	5	3,619.83
59-1679	130 Locations	Approved	1.87	130
Total Secondary Water			15.87	10,265.54

Chapter Two: Supply and Storage

2.5 Reuse as a Water Source

Although new to the District, the Reuse Program has already proven to be an asset to the secondary water system. Bowen Collins & Associates initially projected a reliable yield of 822 acre-feet from the program [8]. In 2025, however, the District slightly exceeded this projection, producing a total of 904 acre-feet of reuse water.

The additional secondary water source has allowed MWD to significantly reduce its reliance on canal water. In previous years, such as 2024, canal usage approached 1,000 acre- feet. In contrast, during 2025 the District used only 410 acre-feet of canal water due to the supplemental supply provided by the Reuse Program (see Table 2-7 for a yearly comparison).

2.5.1 Conservation with Reuse

As a recycled water source, reuse water also provides substantial conservation benefits. MWD obtains the reuse water from the District's treated wastewater flow. By reclaiming and reusing this resource for secondary irrigation purposes, the District conserves both culinary water and other secondary water sources, including canal water and shallow groundwater. This approach maximizes the beneficial use of existing water supplies while supporting long-term water conservation goals.

This reduction in canal dependency is especially important as the secondary water system continues to expand. Increased use of reuse water will allow MWD to further reduce demand on both canal supplies and shallow groundwater wells, helping preserve

these resources for future needs and future expansion. Additionally, reuse water is of higher quality than canal water, resulting in reduced maintenance requirements and less frequent flushing of the secondary water system.

Table 2-7) Secondary Yearly Source Summary

Sources	Usage of Each Source (acre-ft)				
	2025	2024	2023	2022	2021
Well No. 1	40.67	231.72	106.6	3.7	162.22
Well No.2	113.5	59.79	158.16	151.49	165.73
Well No. 3	18.13	36.55	59.66	44.41	73.69
WWTP Reuse Facility	903.72	0	0	0	0
Received from Kennecott	10.23	10.36	11.02	10.75	10.71
Utah Salt Lake Canal Co.	409.16	999.04	554.86	565.91	414.65
Total	1495.41	1337.46	890.3	776.26	827.00



Image 4.) MWD's WRF Reuse Supply Pumps

Chapter Two: Supply and Storage

2.6 Future Sources

With a growing community it is important to plan for future sources of supply. MWD has determined multiple new potential sources that can help provide further supply of culinary and secondary water. The expansion of secondary water itself can reduce the use of culinary water which in turn saves this more vital source for drinking water and hygiene purposes, rather than the irrigation of landscapes.

2.6.1 Potential Future Reuse

Reuse is a prime example as it will continue to grow as the community grows and sewer flows rise. The limiting factors of Reuse are storing the water and the secondary system itself. Expanding the secondary system and storage of this reuse water should be a priority of the District's development. From MWD's Master plan, reuse water has been determined to have the potential maximum yield of 1535 acre-ft [8].

2.6.2 Potential Future Shallow Water

There is also the potential to expand the shallow ground water wells with a total available water rights of 2200 acre-ft. These shallow wells will reduce the costs for transmission piping while also providing more secondary water to the system. With more secondary water it allows MWD to further expand the system and provide an alternative to using culinary water.

2.6.3 Other Potential Future Sources

Another potential future source that Bowen Collins & Associates acknowledges in MWD's 2025 Master plan of the District's water system would be the future Little Valley and Kennecott Foothill developments. Kennecott may have water rights and water sources that can help

provide a water supply to those developments as their production shifts. This opportunity could theoretically provide 1115 acre-ft/year for Kennecott foothills and 1622 acre-ft/year for Little Valley. Within these theoretical numbers it was assumed that it would first be used to supply culinary water and the rest would be used to supply secondary [8].

Table 2-7 summarizes these potential future sources from the 2025 Master Plan [8]. These sources can be beneficial to the growth and progression of MWD while also providing further sourcing for secondary water which eases the need for using culinary water for irrigation.

Table 2-8) Summary of Estimated Potential Future Sources

Source	Reliable Annual Capacity (acre-ft)	Reliable Culinary Annual Capacity (acre-ft)	Reliable Secondary Annual Capacity (acre-ft)
Additional Reuse Water	-	-	713
Additional Shallow Wells	-	-	1913
Little Valley (JVWCD Budget)	1234	1234	388
Kennecott Foothills	880	880	235
Total	2114	2114	3249

Chapter Two: Supply and Storage

2.7 Current Storage Facilities

MWD has seven (7) culinary water storage tanks with a combined storage capacity of approximately 18 million gallons (MG). This storage volume helps the District meet peak water demands during high-usage summer days. The reservoirs vary in size and construction type, ranging from above-ground steel tanks to underground concrete tanks (see images 5 and 6).

For MWD's secondary water system, the District maintains two (2) storage reservoirs with a combined capacity of approximately 12 MG. As future growth and expansion occur, the District will need to evaluate additional storage capacity to meet increasing demand.

2.8 Future Storage Facilities

Currently MWD has been moving to expand the secondary water system. This would then require further storage facilities which helps deal with the peak flows during the summer months of the irrigation season. The storage facilities also will need to be designed in a place that allows the District to pump up to the storage facility which then would provide the needed pressure into the system.

Soon, MWD will complete the development of a new secondary water reservoir for Zone 3 of the secondary water system (see image 7). This additional storage will provide an extra 6 MG which brings the total secondary water storage to 18 MG.



Image 5.) Zone 3, 0.75 MG Underground Tank



Image 6.) Zone 1, 1.5 MG and 0.5 MG Tanks



Image 7.) Zone 3 Secondary Reservoir Construction



Chapter Two: Supply and Storage

2.9 Conclusion

In summary, MWD benefits from a diverse and reliable water supply system supported by multiple water sources and a variety of storage facilities. Maintaining this level of service requires careful management of each supply source, as the availability, quality, and long-term sustainability of these resources differ. For the culinary water system, it is essential that the District continues to monitor water demand trends, evaluate system performance, and assess the condition and productivity of its well fields to ensure a dependable supply for current and future customers.

For the secondary water system, continued expansion and increased utilization of reuse water opportunities can play a significant role in conserving valuable culinary water supplies. Maximizing the use of reclaimed and secondary water resources not only reduces demand on potable water sources but also helps preserve canal water supplies and strengthens the District's overall water resiliency. As the District grows, ongoing planning, infrastructure investment, and resource management will be critical to maintaining a sustainable, efficient, and reliable water system for future generations.

Chapter Three: Present and Future Demand

3.1 Introduction

As MWD serves a growing and developing community, it is important to plan for future demands to ensure that the District's infrastructure remains capable of meeting community needs. The master plan study conducted by Bowen Collins & Associates [8] provides guidance for future infrastructure planning and helps the District identify conservation measures needed to achieve its established conservation goals.

Annual raw water, culinary water, and secondary water demands are compared with annual water supplies in the following figures. These figures also assume a 35 percent reduction in water use between 2020 and 2065. These figures also

assume an 18 percent reduction in outdoor use [8]. Several observations can be made from the figures and can be seen in the following sections.

3.2 Raw and Culinary Demands

Raw water supplied by the District's well fields is the primary source for the District's culinary water system. As the District continues to grow, it is important to evaluate the ability of these sources to meet future demands and support ongoing development.

3.2.1 Raw Water Demand

The District's raw water sources have been shown to be adequate to meet current and projected demands. The 2025 Master Plan concluded that, with the District's continued

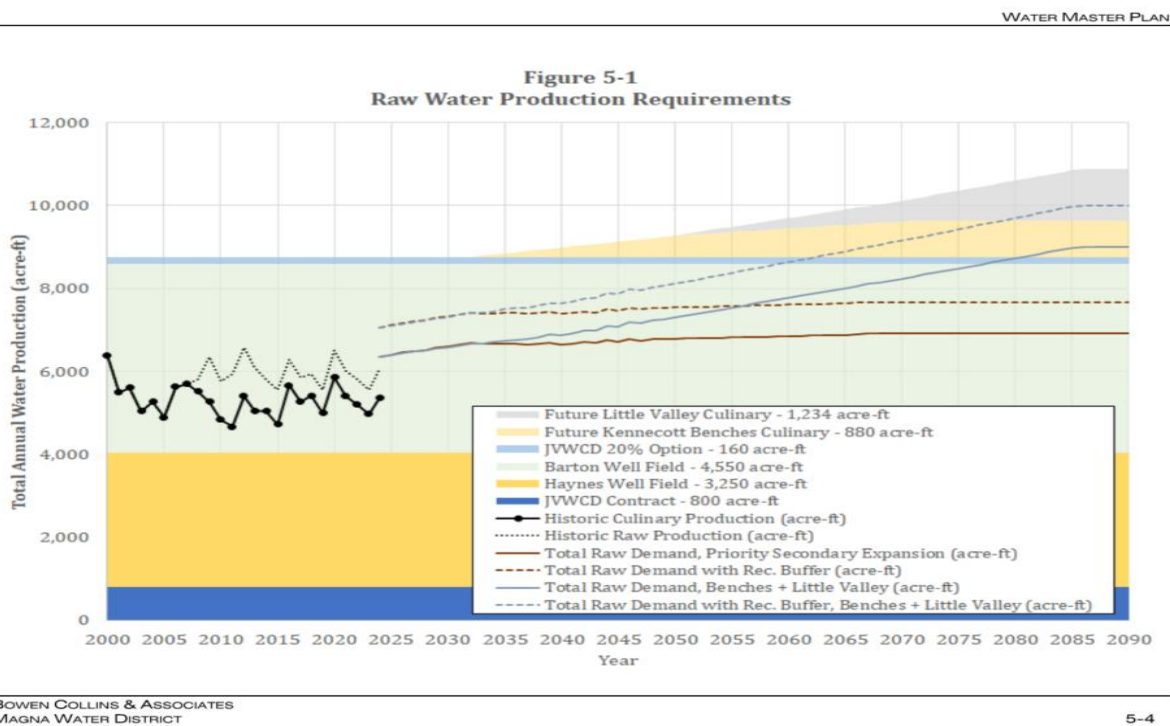


Figure 3-1) Raw Water Production

Chapter Three: Present and Future Demand

focus on expanding the secondary water system and implementing ongoing conservation measures, the District will be able to meet long-term water demands, as illustrated in Figure 3-1 (Figure 5-1 in the 2025 Master Plan) on page 16 [8].

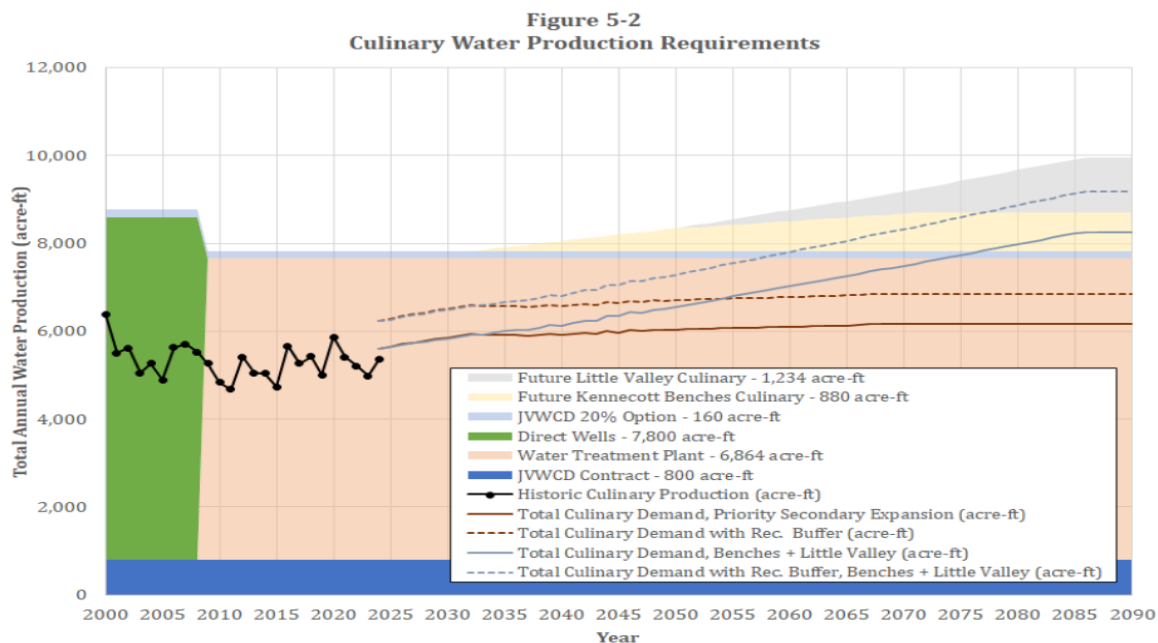
In Figure 3-1, the lines represent projected water demands under several planning scenarios, while the colored shaded areas represent the District's existing and potential future production capacity. The figure demonstrates that available raw water supplies are sufficient to meet anticipated future demand.

3.2.2 Culinary Water Demand

The District's culinary water outlook is like its raw water outlook. The 2025 Master Plan concluded that, with the District's continued emphasis on expanding the secondary water system and implementing ongoing conservation measures, the District will be able to meet long-term culinary water demands, as shown in Figure 3-2 (Figure 5-2 in the 2025 Master Plan) [8].

Like the previous figure, the lines represent projected water demands under several planning scenarios, while the colored shaded areas represent the District's existing and potential future production capacity. The figure indicates that the MWD's current and anticipated future water supplies are sufficient

WATER MASTER PLAN



BOWEN COLLINS & ASSOCIATES
MAGNA WATER DISTRICT

5-5

Figure 3-2) Culinary Water Production

Chapter Three: Present and Future Demand

to meet projected culinary water demands throughout the planning period [5].

3.2.3 Secondary Water Demand

The secondary water outlook is also like that of the District's culinary and raw water production. It was concluded in the 2025 Master Plan that with the current addition of reuse the District has more than adequate secondary water production to meet future demands. The reuse system, however, has not grown to its full yield so there will be some usage required from the District's canal water rights or further expansion of the shallow water wells. Figure 3-3 (figure 5-3 in the 2025 Master Plan) on this page, shows the secondary water demands and production. Like the previous two figures, the lines represent the

demands for multiple different scenarios while the colored shaded areas represent the production capacity the District has and can potentially have.

3.3 Conclusion

It is important to compare the District's production capacity with projected system demands. Through expansion of the secondary water system and continued conservation efforts, MWD has demonstrated a strong ability to meet future water needs. However, maintaining this positive outlook will require ongoing conservation and infrastructure development.

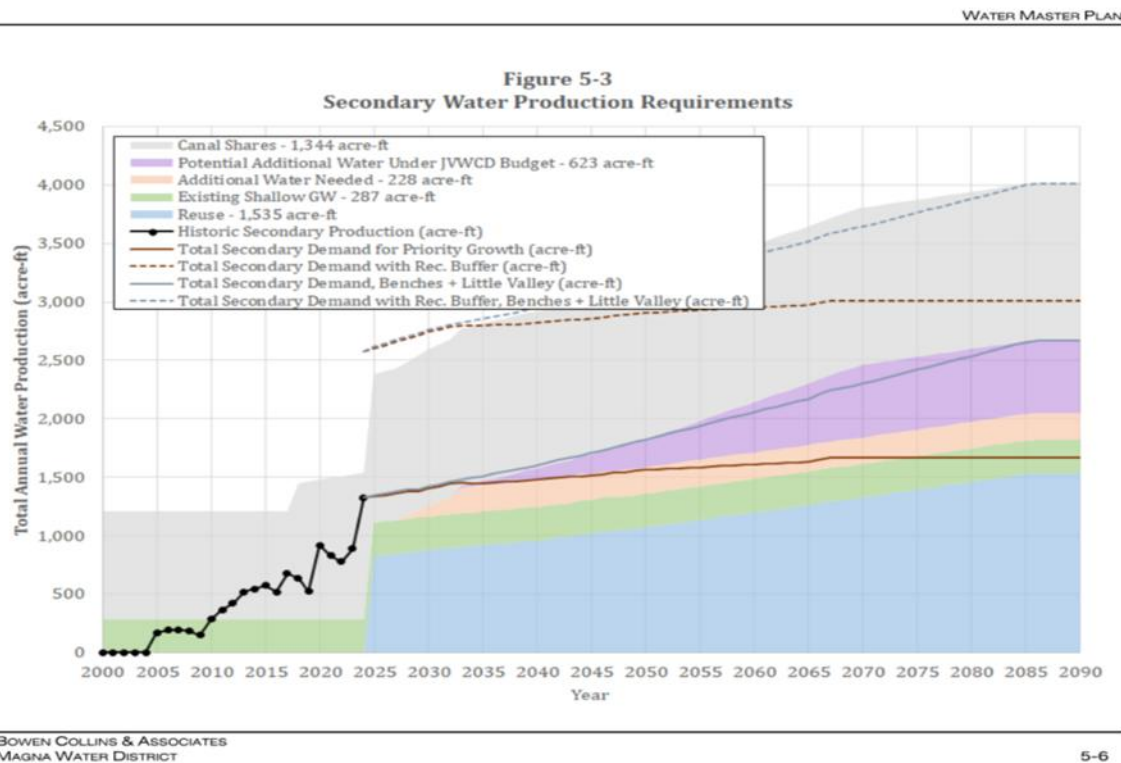


Figure 3-3) Secondary Water Production

Chapter Four: Measurement and Water Loss

4.1 Introduction

MWD measures the water produced from the 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 the 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”. The water is then distributed through the system.

4.2 Water Measurement

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 in the District consists of 95% residential, 2.5% institutional, and 2.5% commercial and industrial 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. MWD has implemented a meter replacement program to replace the larger meters to continue to measure the usage accurately. Most larger meters were not replaced until the first part of 2021. Residential meters (3/4-inch or 1- inch) do not lose their accuracy as fast as the larger meters do. However, the District has replaced nearly all the older meters so that roughly 100% of the meters in the system are 10 years and younger.

4.3 Water Loss Control

Unaccounted for water has been a major concern of MWD. There are 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. Tables 4-1 and 4-2 show the water loss recorded for the last 4 years for the culinary and secondary water systems [7,10].

Table 4-1) Culinary Estimated Water Loss

Year	Total From Sources	Total Retail Use	Total Wholesale	Estimated Water Loss %
2021	6014.233	4216.4	604.19	19.85%
2022	5816.11	3959.66	609.97	21.43%
2023	5555.3	3990.59	573.47	17.84%
2024	6135.32	4509.29	630.04	16.23%
2025	6619.57	4666.72	633.92	19.92%

Table 4-2) Secondary Estimated Water Loss

Year	Total From Sources	Total Retail Use	Total Wholesale	Estimated Water Loss %
2021	827	443.59	0	46.36%
2022	776.26	508.23	0	34.53%
2023	890.3	594.85	0	33.19%
2024	1337.46	809.29	0	39.49%
2025	1495.41	946.97	0	36.67%

Chapter Five: Billing and Rates

5.1 Introduction

In the fall of 2024 MWD began to update its master plan, impact fee facilities study and a new rate study. Currently the new rates are not finalized or adopted by the District's board. It is expected that the new rates will be adopted in January of 2027 and will go into effect later that year. Currently the District is using the previously determined values from the fall 2019 study that was adopted in January 2022.

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 who have access to secondary water. The current adopted rate structure can be seen in the following sections.

5.2 Current Culinary Billing Rates

Table 5-1 shows the current billing rates that the District is using. The culinary rates include the fluoride rate but as of May 2025, Utah House Bill 81 banned community fluoridation [11]. So, the Fluoride rate is no longer used in the billing process.

This rate system helps the conservation of water by having a tiered system with higher and higher rates depending on usage which will help turn users away from using excessive amounts of water.

5.3 Current Secondary Billing Rates

Table 5-2 on page 21 shows the secondary billing rates that the District is currently using. What is vital about these rates is how the District wants to promote the use of secondary water for the use of irrigation. The rates for secondary water use are notably less than the rates designated for culinary water. This helps economically incentivize users that have access to secondary water to use the secondary water for outdoor watering rather than the more vital culinary supply. The rates for Secondary water are also highly varied based on lot and irrigation acreage of the properties that use it allowing for equitable flexibility.

Table 5-1) Culinary Water Rates 2021-2026

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	

Chapter Five: Billing and Rates

5.4 Conclusion

As MWD continues to develop new water rates in the coming months, it will be important to maintain this incentive for secondary water use as the system expands. Keeping the rates tiered and economically incentivizing for MWD's customers will support both water conservation efforts and the overall well-being of the community.

Table 5-2) Secondary Water Rates 2021-2026

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.						

Chapter Six: Water Use and Goal for Conservation

6.1 Introduction

In 2015 the Utah Division of Water Resources created a GPCD goal for Salt Lake County. That goal remains to be 187 GPCD (gallons per capita per day) by 2030 [12]. With this initiative MWD set its own goal to reduce its water use significantly by 2020.

6.2 Past Goal

The past goal set by MWD in 2015 was to reduce the GPCD from 158 GPCD to 142 GPCD by 2020, an overall reduction of 10%. The District almost made this goal with achieving 145 GPCD. The Goal was then set to reach 142 GPCD by 2025 with a further 10% reduction through the year 2060 (10% over 35 years).

6.3 Analysis of Current GPCD

Over the past 5 years since the previous water conservation plan, MWD has kept track of both population estimates and usage. From this the District derived the GPCD values. The values are summarized in figure 6-1.

From figure 6-1, MWD was not able to achieve the goal of 142 GPCD but the District achieved a value of 143 GPCD.

6.3.1 Current GPCD

From the population and water usage data MWD determined that the latest GPCD was 143 GPCD for 2025. Table 6-1 shows the estimated values that make up the GPCD. This table can be compared to the previous water conservation report values for 2020, those values can be found in Table 6-2.

Table 6-1) 2025 GPCD By Type

2025 GPCD by type				
	Indoor	Outdoor	Secondary	total
Residential	40.55	60.83	12.30	113.68
Commercial	5.03	7.54	3.45	16.02
Inst/Indus	2.01	3.02	8.39	13.43
total	47.59	71.39	24.14	143.13

Table 6-2) 2020 GPCD By Type

2020 GPCD by type				
	indoor	Outdoor	Secondary	total
Residential	43.91	65.87	7.06	116.84
Commercial	5.56	8.35	3.12	17.03
Inst/Indus	2.02	3.03	6.46	11.51
total	51.50	77.25	16.64	145.39

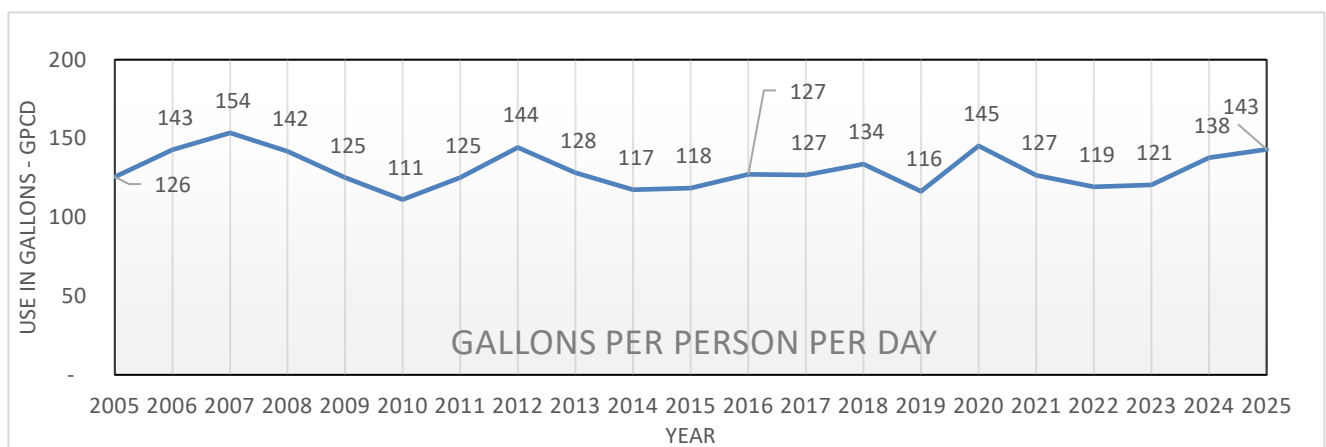


Figure 6-1) GPCD vs Time



Chapter Six: Water Use and Goal for Conservation

As shown in the tables on page 22, there has been a slight improvement in overall water conservation. A key trend to examine is the relationship between secondary water usage and culinary water usage.

The 2020 GPCD data shows that secondary water use was lower across all service areas. By 2025, however, secondary water use had increased, while culinary water use experienced an overall decline. This inverse relationship suggests that increased availability of secondary water may be helping reduce demand on the culinary water system.

While it is difficult to determine the exact cause of the decrease in culinary water usage, it is likely the result of multiple factors. Further Conservation efforts made by both MWD, and its customers may have contributed to the reduction. At the same time, the expansion of the secondary water system may have allowed more irrigation demand to be met with secondary water rather than culinary water.

Therefore, it is reasonable to conclude that both increased conservation and expanded secondary water infrastructure have played a role in reducing culinary water use. As the secondary system continues to grow, reliance on culinary water for irrigation will continue to decrease, further supporting long-term water conservation goals. This is especially true with the reuse program as it recycles water from a reliable source and will allow MWD to conserve secondary water from the canal, shallow wells, and culinary water from MWDs culinary system.

6.3.2 GPCD vs Population

Figure 6-2 on page 24 illustrates the relationship between population growth and GPCD over time. Despite continued population growth within MWD's service area, overall water use has remained relatively stable since 2020. This indicates that the District has been successful in maintaining a predictable water-use pattern while accommodating an increasing number of customers.

Under normal circumstances, water demand would be expected to increase as the population grows. However, the relatively stable GPCD values suggest that the District's conservation efforts and water-use efficiency programs have helped reduce the impacts of population growth. The slight reductions in per capita water use observed over time provide evidence that these measures have had a positive effect.

While these results are encouraging, opportunities for improvement still exist. Additional conservation measures and continued public outreach may help further reduce per capita water use in the future.

Chapter Six: Water Use and Goal for Conservation

6.4 New District Goal and Conclusion

Building on the goals established in the 2021 Water Conservation Plan, MWD has adopted a primary conservation target of reducing per capita water use by an additional 10 percent between 2025 and 2060. Achieving this target would lower water use from 143 gallons per capita per day (GPCD) to 128 GPCD by 2060, with an interim milestone of 141 GPCD by 2030. Based on recent conservation trends and program performance, this goal appears achievable and provides a realistic path for continued water-use efficiency.

In addition to this primary target, MWD will pursue a more ambitious long-term conservation objective based on recommendations from the 2025 Master Plan [8]. The Master Plan identified a goal of reducing water use by 35 percent from the 2020

baseline of 145 GPCD by 2065. Achieving this level of conservation would result in a demand of approximately 94 GPCD by 2065, representing a total reduction of 51 GPCD. While this aspirational goal may be challenging to attain, striving toward it will help minimize future infrastructure needs, reduce long-term capital and operational costs, and maximize the conservation of the District's water resources.

As a result, MWD will use the 94 GPCD target as a high achievement benchmark, while maintaining the 128 GPCD target as its primary planning and performance goal.

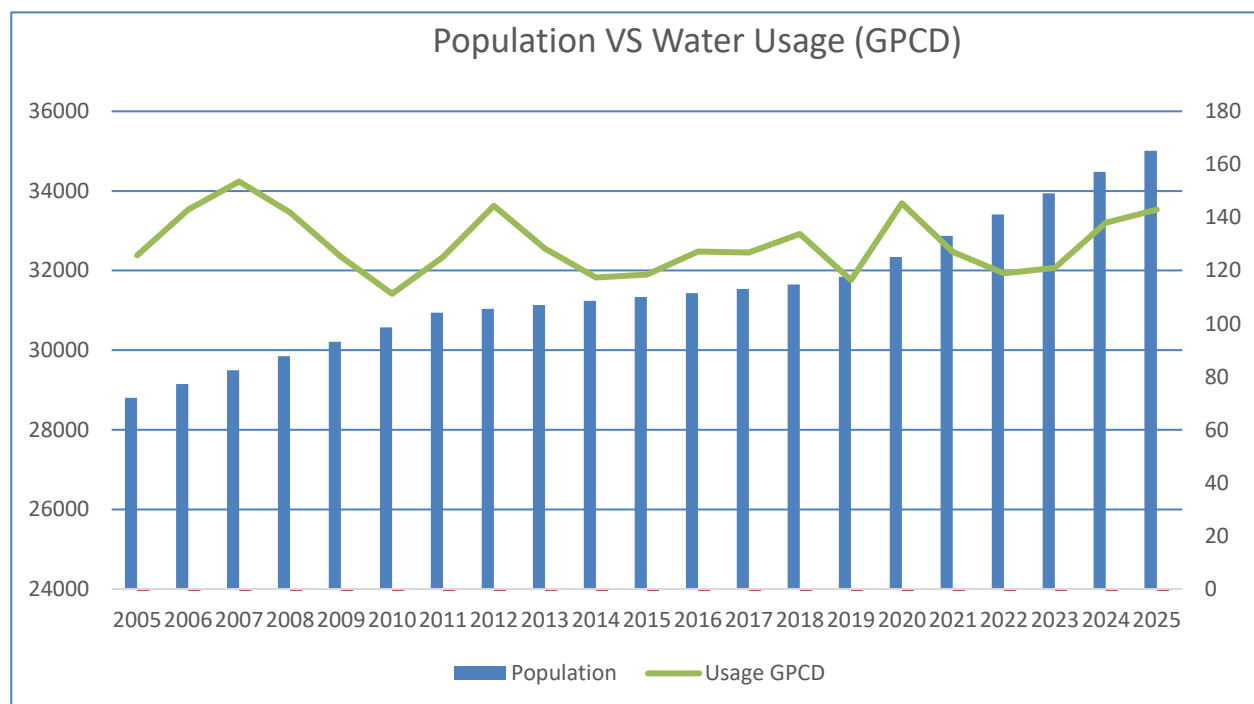


Figure 6-2) Population vs Water Usage (GPCD)

Chapter Seven: Conservation Practices and Outreach

7.1 Introduction

MWD practices a variety of conservation practices to better achieve its goals. From education, community engagement, and incentives, the District applies as many strategies as possible to achieve the most effective results.

7.2 Coordinator and Staff

MWD does not have the resources or revenue to hire a single coordinator or staff position to devote all their time for water conservation programs. The District makes it a team effort as much as possible. Table 7-1 shows the executive staff of the District.

7.3 Public Education and Outreach

MWD has always been committed to open dialogue with its customers by raising public awareness and using various communication tools including open Board meetings, annual consumer confidence reporting, an open-door policy to meet with District management, and intermittent communication in the monthly water statements.

7.3.1 Conservation Garden

Back in 2016 Magna Water District built a new general office building which includes a conservation garden as part of the site. The conservation garden is like Jordan Valley Water Conservancy District's Garden but on a smaller scale with water wise plants, displays, solar panels and conservation information (see images on the next page).

Recently, MWD has had the intention to renovate the current Conservation Garden with additional signage and improved exhibits. Currently the plans are at 100% design and can be found in appendix Item C. The hope is that this project will make the garden more effective at educating the public of water efficient gardening.

7.3.2 Public Outreach

MWD's website offers tips on conservation, contact information, news releases, a comment section, newsletters, and other resources [13]. The District offers

Table 7-1) MWD Executive Staff

Name	Position	Phone Number	Email Address
Clint Dilley	General Manager	801-250-2118	clintd@magnawaterut.gov
Steve Clark	Water Operations Manager	801-250-2118	stevec@magnawaterut.gov
Trevor Andra	District Engineer	801-250-2118	trevor@magnawaterut.gov
Lelsle Fitzgerald	District Controller	801-250-2118	leisle@magnawaterut.gov
Dallas Henline	Wastewater Operations Manager	801-250-2118	dallas@magnawaterut.gov
Andrew Sumsion	HR Manager	801-250-2118	andrews@magnawaterut.gov

Chapter Seven: Conservation Practices and Outreach

suggestions to customers on managing their water needs and provides customers with updates on implementation of low flow water devices throughout the District.

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

MWD collaborates with local schools in teaching students simple gardening techniques for responsible irrigation of vegetable crops and flower beds when possible. Images 10 and 11 show some of those educational events.

7.4 Programs and Incentives

MWD currently has two conservation programs that will continue into the near future. Those being the secondary water expansion and the District's meter replacement schedule.



Image 8.) MWD Conservation Garden Sign

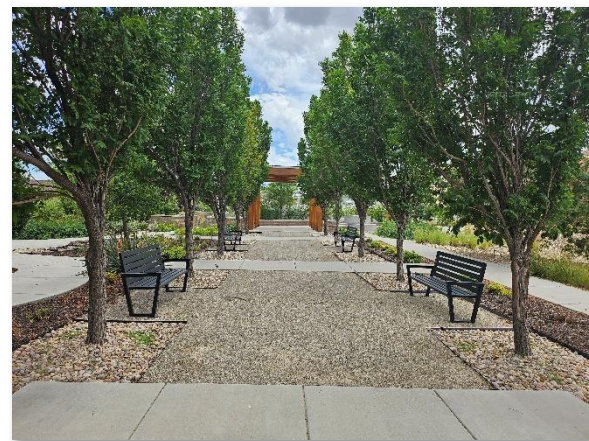


Image 9.) MWD Conservation Garden



Image 10.) Career Fair Education Event



Image 11.) Elementary School Conservation Presentation



Chapter Seven: Conservation Practices and Outreach

7.4.1 Secondary and Reuse Water System

The largest conservation program MWD has is the secondary water system. MWD's system is unique in that all users have water meters. With the secondary system being metered it allows for users to manage their water use more carefully. Other secondary water systems that do not have meters often see abuse or wasting of water

Along with meters, the District also utilizes its recently finished reuse program where wastewater effluent from the District's Wastewater Treatment Plant is treated to secondary water standards and reused in the District's secondary water system. This allows for the District to reduce canal usage and thereby conserve not only culinary water but that canal water which can be saved for future needs or applications.

7.4.2 Meter Replacement Schedule

The District has continued replacing inefficient water meters with state-of-the art automated reading meters. This action will allow MWD to reduce field work orders by 15% provide improved accuracy in water usage reading, enhance customer service and response times, and utilize MWD's workforce for other innovative District projects. The District has replaced approximately 100% of the meters that were over ten years old, being replaced with the newest metering technology supplied by Neptune Technology Group. The District continues 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.

7.5 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, The District has 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



Chapter Seven: Conservation Practices and Outreach

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.



Chapter Seven: Conservation Practices and Outreach

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 D). Magna Water District provides services to Magna Metro



Chapter Seven: Conservation Practices and Outreach

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.

7.6 Conclusion

In summary, MWD includes extensive strategies and programs that provide public outreach, education on water conservation, and incentives to help create further conservation in the District's service area. MWD also has ordinances and standards that can allow the district to further conserve water in emergency situations.



Chapter Eight: Future Conservation plans and Implementation

[8.1 Introduction](#)

As the District strives to reach its conservation goals it will have to continue to develop programs and incentives for its customers. The highest priority of which would be the expansion of the secondary water system. Along with that, the creation of water source reliability and redundancy are also a high priority.

[8.2 Secondary Water Expansion](#)

The expansion of the District's secondary/reuse water has been a high priority of MWD. With expansion of the reuse program MWD can help negate the use of canal water while also recycling the wasted water from the District's sanitary sewer system. Pushing this forward will need to be a balancing act. If the Secondary system grows too quickly the District might not have enough secondary water to supply the system. The reuse program, as stated in previous sections, will need time to fully mature and gain its full yield as it grows with the population.

[8.2.1 Incentives](#)

To help motivate secondary water use MWD provides an economic incentive for its users. Secondary water rates are lower than the Districts culinary rates (see Chapter Five: Billing and Rates) and will be set up that way for the near future.

[8.2.2 Balancing Act of Expansion](#)

As recommended by Bowen Collins & Associates [8], the District will require secondary water expansion with new developments while having an initial pause on expansion of the system in the existing developments. This will allow for the District to

reach that balancing act of reducing culinary use without over developing unnecessary elements.

[8.2.3 Future Storage Developments](#)

Currently to accommodate future secondary flows the District is nearing completion of the development of the Zone 3 Secondary Water Reservoir. This is in hopes to further add reliability to the reuse resource and secondary water resources in general.

[8.3 Conclusion and Implementation](#)

As the secondary and reuse system expands, the District will have to develop greater amounts of infrastructure. This in turn will require that balancing act of expansion where MWD will have to balance the needed reduction in culinary use with economic costs of expanding the secondary system.

[8.3.1 Implementation Summary](#)

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

- 1.) Protect its water systems and preserve its water rights through constant monitoring and research.
- 2.) Research funding sources for system expansions and developments.
- 3.) Educate the public through diversified communication efforts; and
- 4.) Provide exceptional customer service so MWD can be a trusted resource for MWD's customers.

Appendices

Appendix A – References

Appendix B – Image References

Appendix C – 100% Conservation Garden Design Plans

Appendix D – West Valley City Landscape Ordinance

Appendix A – References

Appendix A – References

References

- [1] D. Ownes, Committee of Consumer Services Sunset Amendments. 2025. [Online]. Available: <https://le.utah.gov/~2025/bills/static/HB0081.htm> |
- [2] J. Teuscher, Metro Township Modifications. 2024. [Online]. Available: <https://le.utah.gov/~2024/bills/static/HB0035.html>
- [3] Water Rights Utah, “General System Info”, 2025.
https://waterrights.utah.gov/asp_apps/vieweditpws/pwsview.asp?system_id=1294#general_system_info
- [4] Water Rights Utah, “Annual Retail Connection Info”, 2025.
https://waterrights.utah.gov/asp_apps/viewEditPWS/pwsView.asp?SYSTEM_ID=1294#Annual_Use_Info
- [5] Water Rights Utah, “Annual Water Use Connections”, 2025.
https://waterrights.utah.gov/asp_apps/viewEditSEC/secView.asp?SYSTEM_ID=11436#Annual_Water_Use_Connections
- [6] Water Rights Utah, “Annual Use Info”, 2025.
https://waterrights.utah.gov/asp_apps/viewEditPWS/pwsView.asp?SYSTEM_ID=1294#Annual_Use_Info
- [7] Water Rights Utah, “Annual Use Totals in Acre Feet”, 2025.
https://waterrights.utah.gov/asp_apps/viewEditSEC/secView.asp?SYSTEM_ID=11436#Annual_Use_Totals_In_Acre_Feet
- [8] Bowen and Collins, “Magna Water District Water Master Plan”, 2026.
https://clients.ruralwaterimpact.com/documents/1345/MWD_2026_Final_Water_MP-compressed.pdf
- [9] Lambert, P., 1995, Numerical simulation of ground-water flow in basin-fill material in Salt Lake Valley, Utah: Technical Publication 110-B, vi, 58 p.
<https://pubs.usgs.gov/publication/70179464>
- [10] Water Rights Utah, “Annual Use Totals”, 2025.
https://waterrights.utah.gov/asp_apps/viewEditPWS/pwsView.asp?SYSTEM_ID=1294#Annual_Use_Totals
- [11] S. Gricius, Fluoride Amendments. 2025. [Online]. Available: <https://le.utah.gov/~2025/bills/static/HB0081.html>

Appendix A – References

[12] “Regional Water Conservation Goals – Conserve Water Utah,” Utah.gov, 2025.

<https://conservewater.utah.gov/regional-water-conservation-goals/>

[13] “Conservation and Drought Info | Magna Water District,” Magna Water District, 2022.

<https://magnawater.myruralwater.com/conservation-and-drought-info>

Appendix B – Image References

Appendix B – Image References

Image References

Title Page

1.) Reuse building

https://clients.ruralwaterimpact.com/images/images_rwi/rwi_1345_MWD_Reuse_Pump_Station-740004_1352902479_2731.jpg

2.) Reservoir Development

https://clients.ruralwaterimpact.com/images/images_rwi/rwi_1345_dji_fly_20260513_133254_163_1778701184386_photo_1352902479_6760.jpg

3.) Career Fair

https://clients.ruralwaterimpact.com/images/images_rwi/rwi_1345_image31_1352902479_6565.jpeg

Plan

Image 1

<https://www.wvcjournal.com/2024/06/06/494214/magna-from-township-to-official-city-status>

Image 2

https://clients.ruralwaterimpact.com/images/images_rwi/rwi_1345_IMG_20201202_143220_1352902479_2288.jpg

Image 3

https://clients.ruralwaterimpact.com/images/images_rwi/rwi_1345_P3310012_1352902479_4687.jpg

Image 4

https://clients.ruralwaterimpact.com/images/images_rwi/rwi_1345_MWD_Reuse_Pump_Station-749953_1352902479_6066.jpg

Image 5

https://clients.ruralwaterimpact.com/images/images_rwi/rwi_1345_P3080164_1352902479_9041.jpg

Image 6

https://clients.ruralwaterimpact.com/images/images_rwi/rwi_1345_20260706_140402_1352902479_8483.jpg

Appendix B – Image References

Image 7

https://clients.ruralwaterimpact.com/images/images_rwi/rwi_1345_dji_fly_20260513_133254_163_1778701184386_photo_1352902479_6760.jpg

Image 8

https://clients.ruralwaterimpact.com/images/images_rwi/rwi_1345_20260706_140327_1352902479_3929.jpg

Image 9

https://clients.ruralwaterimpact.com/images/images_rwi/rwi_1345_20260706_140343_1352902479_9065.jpg

Image 10

https://clients.ruralwaterimpact.com/images/images_rwi/rwi_1345_image31_1352902479_6565.jpeg

Image 11

https://clients.ruralwaterimpact.com/images/images_rwi/rwi_1345_image2_1352902479_6215.jpeg

Appendix C – 100% Conservation Garden Design Plans

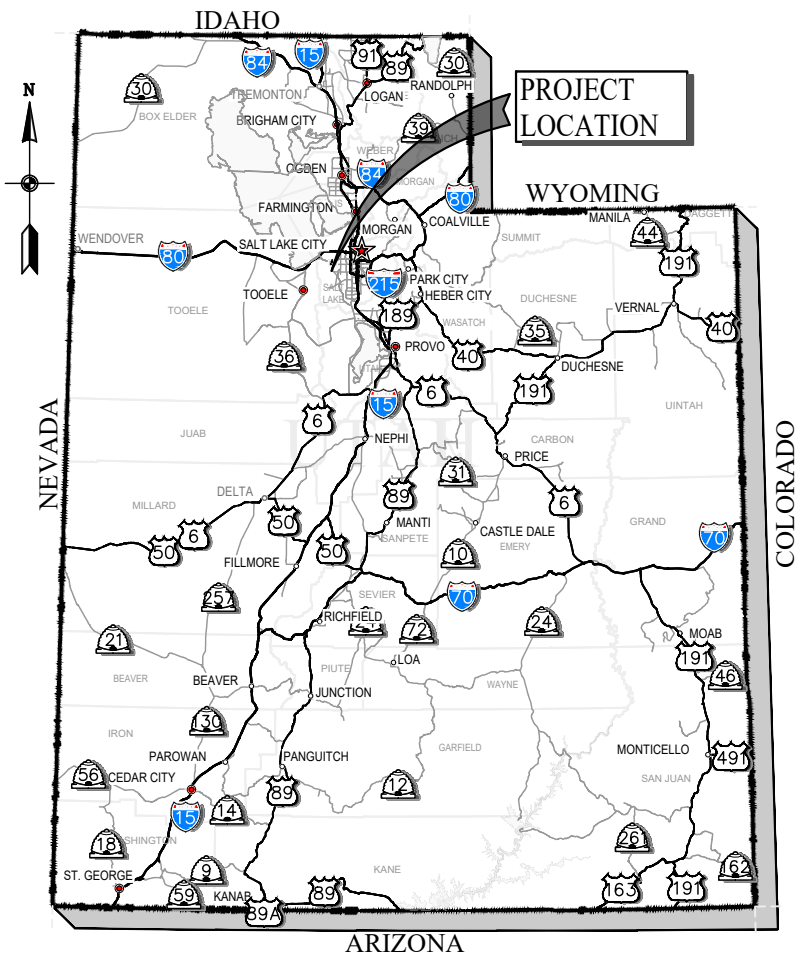
Appendix C – 100% Conservation Garden Design Plans

100% Conservation Garden Design Plans Link

https://clients.ruralwaterimpact.com/documents/1345/4832503_100_Plan_Set_260416.pdf

The plans are also attached to this plan in the following page.

DRAWINGS FOR CONSTRUCTION OF THE
DEMONSTRATION GARDEN
MAGNA, UTAH

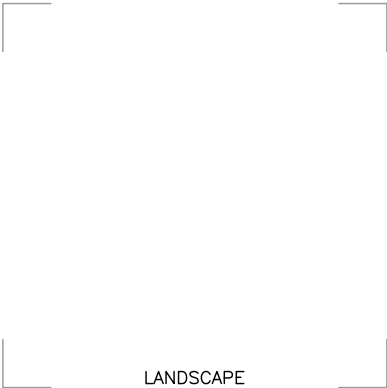


PROJECT LOCATION MAP

INDEX OF DRAWINGS		
SHT NO.	DWG NO.	DESCRIPTION
GENERAL		
1	G-01	INDEX OF DRAWINGS, PROJECT LOCATION AND VICINITY MAPS
2	G-02	SYMBOLS & NOTES
LANDSCAPE ARCHITECTURE		
3	LX-01	DEMOLITION PLAN
4	L-01	LANDSCAPE NOTES & SCHEDULES
5	L-02	SITE & MULCH PLAN
6	L-03	PLANTING PLAN
7	L-04	IRRIGATION PLAN
8	GL-01	LANDSCAPE DETAILS
9	GL-02	IRRIGATION DETAILS



PROJECT VICINITY MAP



8885 WEST 3500 SOUTH P.O. BOX 303
MAGNA, UTAH 84044-0303
(801) 250-2118

MAGNA WATER DISTRICT

TRUSTEES:

MICK SUDBURY (CHAIR),
JEFF WHITE,
DAN L. STEWART
CLINT DILLEY, P.E.

DISTRICT GENERAL MANAGER:

DISTRICT ENGINEER:

TREVOR ANDRA, P.E.

WASTEWATER OPERATIONS MANAGER:

DALLAS HENLINE



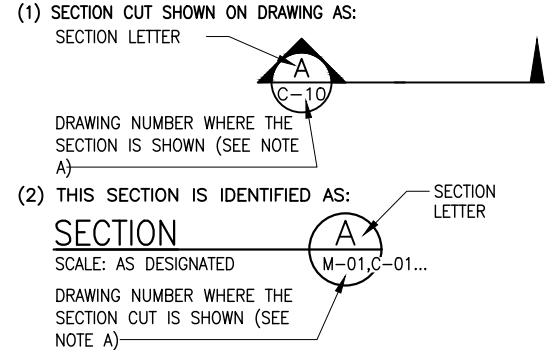
NOT FOR CONSTRUCTION FOR REVIEW ONLY		REVISIONS	
		NO.	DESCRIPTION
		DATE	REV BY

MAGNA WATER DISTRICT DEMONSTRATION GARDEN MAGNA, UTAH		VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING
DESIGN T. WYATT	REVIEW C. GLABAU	APPROVED J. TSANDES

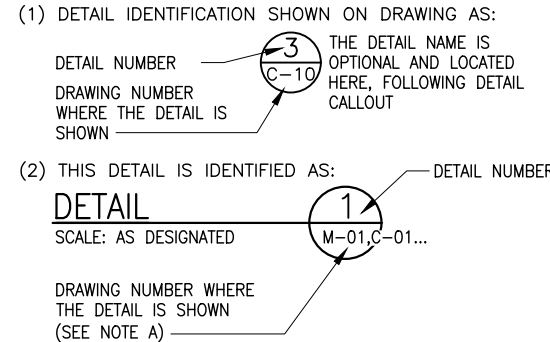
GENERAL INDEX OF DRAWINGS, PROJECT LOCATION & VICINITY MAPS	PROJECT NUMBER
	DATE: APRIL 2026 485-25-03

DRAWING NO. G-01
SHEET 1 OF 9

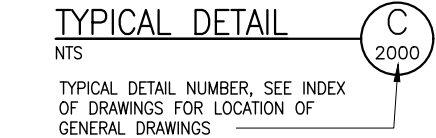
SECTION IDENTIFICATION



DETAIL IDENTIFICATION



TYPICAL DETAIL IDENTIFICATION



DRAWING IDENTIFICATION SYSTEM

LETTER	DISCIPLINE
G	GENERAL
C	CIVIL
CP	CORROSION PROTECTION
L	LANDSCAPE
A	ARCHITECTURAL
S	STRUCTURAL
M	MECHANICAL
E	ELECTRICAL
I	INSTRUMENTATION
GC	GENERAL CIVIL DETAILS
GA	GENERAL ARCHITECTURAL DETAILS
GS	GENERAL STRUCTURAL DETAILS
GM	GENERAL MECHANICAL DETAILS
GE	GENERAL ELECTRICAL DETAILS
GI	GENERAL INSTRUMENTATION DETAILS

S-02

INDIVIDUAL DRAWING NUMBER

DISCIPLINE

NOTES:

- A. IF PLAN AND SECTION (OR DETAIL CALL-OUT AND DETAIL) ARE SHOWN ON SAME DRAWING, DRAWING NUMBER IS REPLACED BY A HORIZONTAL LINE.
- B. ELECTRICAL SYMBOLS SHOWN ON ELECTRICAL DRAWINGS. FOR WELDING SYMBOLS USE AMERICAN WELDING SOCIETY STANDARD SYMBOLS. SEE AMERICAN INSTITUTE OF STEEL CONSTRUCTION MANUAL.

	COORDINATE IDENTIFICATION
	ELEVATION INDICATOR
	SECTION CORNER
	BENCH MARK
	MONUMENT INDICATOR
	POT HOLE
	TEST HOLE
	BORING HOLE
	SECTION LINE
	PROPERTY LINE
	EASEMENT
	PARCEL
	RIGHT-OF-WAY
	NEW ASPHALT
	EXISTING ASPHALT
	CENTERLINE
	CONTOUR LINE, FINISHED GRADE
	CONTOUR LINE, EXISTING GRADE
	FINISHED ELEVATION
	EXISTING ELEVATION
	CUT OR FILL SLOPE TO BE CONSTRUCTED
	SILT FENCE
	FENCE
	RAILING
	DITCH
	CULVERT
	RIPRAP
	TREE LINE/VEGETATION
	EXISTING STRUCTURE OR FACILITY
	NEW STRUCTURE OR FACILITY
	FUTURE STRUCTURE OR FACILITY
	NEW PIPELINE (CIVIL SHEETS)
	NEW PIPELINE 10" DIA AND SMALLER (CIVIL SHEETS)
	EXISTING UTILITY PIPELINE
	ATMS
	CABLE
	COMMUNICATION BURIED
	COMMUNICATION OVERHEAD
	ELECTRICAL BURIED
	ELECTRICAL OVERHEAD
	FIBER OPTICS OVERHEAD
	FIBER OPTICS UNDERGROUND
	GAS
	IRRIGATION
	PETROLEUM LINE
	SANITARY SEWER
	STORM DRAIN
	TELEPHONE BURIED
	TELEPHONE OVERHEAD
	WATERLINE
	CABLE BOX
	CATCH BASIN
	ELECTRICAL BOX
	HYDRANT
	GAS MANHOLE
	SEWER MANHOLE
	STORM DRAIN MANHOLE
	TELEPHONE MANHOLE
	WATER MANHOLE
	WATER METER

	POWER POLE
	TELEPHONE BOX
	LIGHT POLE ONE LUMINAIRE
	LIGHT POLE TWO LUMINAIRES
	LIGHT POLE
	STREET LIGHT WITH BRACKET
	TO BE REMOVED OR ABANDONED
	MASONRY
	STEEL
	INSULATION
	GRAVEL
	CONCRETE
	EARTH
	SAND
	ALUMINUM OR METAL DECKING
	CHECKERED PLATE
	GRATING
	PLASTIC, RUBBER OR NEOPRENE
	WOOD (ROUGH FRAMING) OR, OPENING OR DEPRESSION IN SLAB OR WALL
	FIRE HOSE CABINET
	FIRE EXTINGUISHER
	UNIT HEATER
	PRESSURE CLEANOUT TO GRADE
	WALL CLEANOUT
	FLOOR CLEANOUT
	CLEANOUT TO GRADE
	BLOW OFF ASSEMBLY
	HUB DRAIN
	FLOOR DRAIN
	FLOOR SINK
	DRAIN TRAP
	CHANGE IN PIPING MATERIAL
	PIPE SIZE AND TYPE/FLUID ABBREVIATION (USE FOR EXISTING PIPE CALLOUT)
	PIPE CALLOUT (SEE PIPING SCHEDULE)
	EQUIPMENT NUMBER (SEE EQUIPMENT SCHEDULE)
	STOP GATE
	SLIDE GATE
	SLUICE GATE
	GATE VALVE
	HOSE BIBB (H/B)
	REDUCER OR INCREASER
	LIQUID SURFACE EL

	REVISION WORK
	REFERENCE TO NOTE
	COLUMN LINE GRID
	WINDOW TYPE
	DOOR NUMBER
	ROOM NUMBER

GENERAL NOTES

- SYMBOLS FOR STRUCTURES, PIPE, ETC. USED FOR IDENTIFICATION ARE SHOWN IN LEGENDS AND SHALL BE FOLLOWED THROUGHOUT THE PLANS WHENEVER APPLICABLE. NOT ALL OF THE VARIOUS COMPONENTS SHOWN IN THESE LEGENDS ARE NECESSARILY USED IN THE PROJECT.
- SCALE OF THE DRAWINGS OR DETAILS ARE SHOWN IN TITLE BLOCK OR DIRECTLY UNDER THE PLAN OR DETAIL. THE SIZE OF THE ORIGINAL PLOTTED DRAWINGS IS 22"x34". CARE SHOULD BE TAKEN TO VERIFY THE SCALE BAR IN THE TITLE BLOCK AREA TO DETERMINE THE SCALE OF REDUCED REPRODUCTIONS.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PERFORM CONSTRUCTION ACTIVITIES PER THE CONTRACT DOCUMENTS. ANY ADDITIONS, DELETIONS, OR MODIFICATIONS SHALL FIRST MEET WITH THE WRITTEN APPROVAL OF THE ENGINEER AND THE OWNER.
- CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMIT(S) AND COMPLY WITH ALL REQUIREMENTS OF GOVERNING AGENCIES.
- THE CONTRACTOR SHALL KEEP ALL CONSTRUCTION ACTIVITIES WITHIN THE ESTABLISHED RIGHTS-OF-WAY. THIS SHALL INCLUDE BUT NOT BE LIMITED TO, VEHICLES AND EQUIPMENT, LIMITS OF TRENCH EXCAVATION, AND EXCAVATED MATERIAL AND BACKFILL STORAGE. IF THE CONTRACTOR REQUIRES ADDITIONAL CONSTRUCTION EASEMENTS, IT SHALL BE SOLELY THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN SUCH EASEMENTS FROM INDIVIDUAL PROPERTY OWNERS.
- UTILITY LOCATIONS:
 - CONTRACTOR SHALL CONTACT BLUE STAKES TO LOCATE EXISTING UTILITIES.
 - ALL UTILITY LOCATIONS, SHOWN ON DRAWINGS, ARE APPROXIMATE AND ARE NOT INCLUSIVE OF ALL EXISTING UTILITIES.
 - CONTRACTOR TO VERIFY DEPTHS OF UTILITIES IN THE FIELD BY POT HOLING A MINIMUM OF TWO WEEKS TIME AHEAD OF PIPELINE CONSTRUCTION TO AVOID CONFLICTS WITH DESIGNED PIPELINE GRADE AND ALIGNMENT. IF A CONFLICT ARISES RESULTING FROM THE CONTRACTOR NEGLECTING TO POT HOLE UTILITIES, THE CONTRACTOR TO RESOLVE THE CONFLICT WITHOUT ADDITIONAL COST OR CLAIM TO THE OWNER.
- THE CONTRACTOR SHALL TAKE ALL PRECAUTIONARY MEASURES NECESSARY TO PROTECT EXISTING IMPROVEMENTS FROM DAMAGE WHICH ARE TO REMAIN IN PLACE. ALL SUCH IMPROVEMENTS OR STRUCTURES DAMAGED BY THE CONTRACTORS OPERATIONS SHALL BE REPAIRED OR RECONSTRUCTED TO ORIGINAL OR BETTER CONDITION TO THE SATISFACTION OF THE OWNER AT THE EXPENSE OF THE CONTRACTOR.
- THE CONTRACTOR IS RESPONSIBLE FOR LOCATING SERVICE LINES FOR GAS, SEWER, WATER, AND OTHER UTILITIES AND REPAIRING DAMAGE TO SUCH LINES AS A RESULT OF THE CONTRACTOR'S OPERATIONS. SERVICE CONNECTIONS FOR UTILITIES ARE NOT SHOWN ON THE DRAWINGS.
- CONTRACTOR IS SOLELY RESPONSIBLE FOR CONFORMANCE WITH LOCAL AND FEDERAL CODES GOVERNING SHORING AND BRACING OF EXCAVATIONS AND TRENCHES. CONTRACTOR IS RESPONSIBLE FOR THE SAFETY OF THE PUBLIC AND PROTECTION OF PERSONNEL AND WORKERS.
- CONTRACTOR SHALL NOT DESTROY, REMOVE, OR DISTURB ANY EXISTING SURVEY MONUMENTS WITHOUT AUTHORIZATION OF CONTROLLING AGENCY. NO PAVEMENT CUTTING OR REMOVAL SHALL BEGIN UNTIL ALL SURVEY MARKERS OR MONUMENT POINTS THAT HAVE THE POTENTIAL OF BEING DISTURBED BY THE CONSTRUCTION OPERATIONS HAVE BEEN PROPERLY REFERENCED BY A REGISTERED LAND SURVEYOR. ALL SURVEY MONUMENTS OR POINTS DISTURBED BY THE CONTRACTOR SHALL BE ACCURATELY RESET BY A REGISTERED LAND SURVEYOR AFTER ALL RESTORATION AND RESURFACING HAS BEEN COMPLETED.
- CONTRACTOR SHALL RESTORE OR REPLACE ANY SPRINKLING SYSTEMS AND LANDSCAPING DAMAGED DURING CONSTRUCTION TO EQUAL OR BETTER CONDITION THAN WHAT EXISTED PRIOR TO CONSTRUCTION AT NO ADDITIONAL COST TO THE OWNER.
- ALL CONSTRUCTION ACTIVITIES SHALL BE PERFORMED IN A WORKMANLIKE AND SAFE MANNER AND IN ACCORDANCE WITH ALL STATE AND LOCAL CODES AND JOB-SITE RELATED CONSTRUCTION CONDITIONS AND REQUIREMENTS. OBTAIN PERMITS, INSPECTIONS AND APPROVALS AS REQUIRED BY JURISDICTIONAL AGENCIES AND PAY ALL ASSOCIATED FEES. CONTRACTOR AND INSTALLERS SHALL BE LICENSED AS REQUIRED BY STATE AND LOCAL JURISDICTIONS, AND BONDED AS DETERMINED BY PROJECT REQUIREMENTS.
- WORKING HOURS SHALL BE 7AM TO 5 PM MONDAY THROUGH THURSDAY.
- INSTALL ALL MATERIALS ACCORDING TO MANUFACTURER RECOMMENDATIONS AND STATE AND LOCAL REQUIREMENTS. USE ONLY NEW AND UNUSED MATERIALS. ALL MATERIALS SHALL BE PROVIDED BY MANUFACTURERS REGULARLY ENGAGED IN PRODUCING SAID ITEMS, AND WHICH SHALL BE FIRST QUALITY, HEAVY DUTY, COMMERCIAL/INDUSTRIAL GRADE, SUITABLE FOR THE INTENDED USE.

100% DESIGN

NOT FOR CONSTRUCTION
FOR REVIEW ONLY

NO.	DATE	REV. BY	DESCRIPTION

MAGNA WATER DISTRICT
MAGNA, UTAH

DEMONSTRATION GARDEN

DESIGN	REVIEW	CHECKED	APPROVED
T. WYATT	C. GLABAU	J. SANDER	J. SANDER

GENERAL

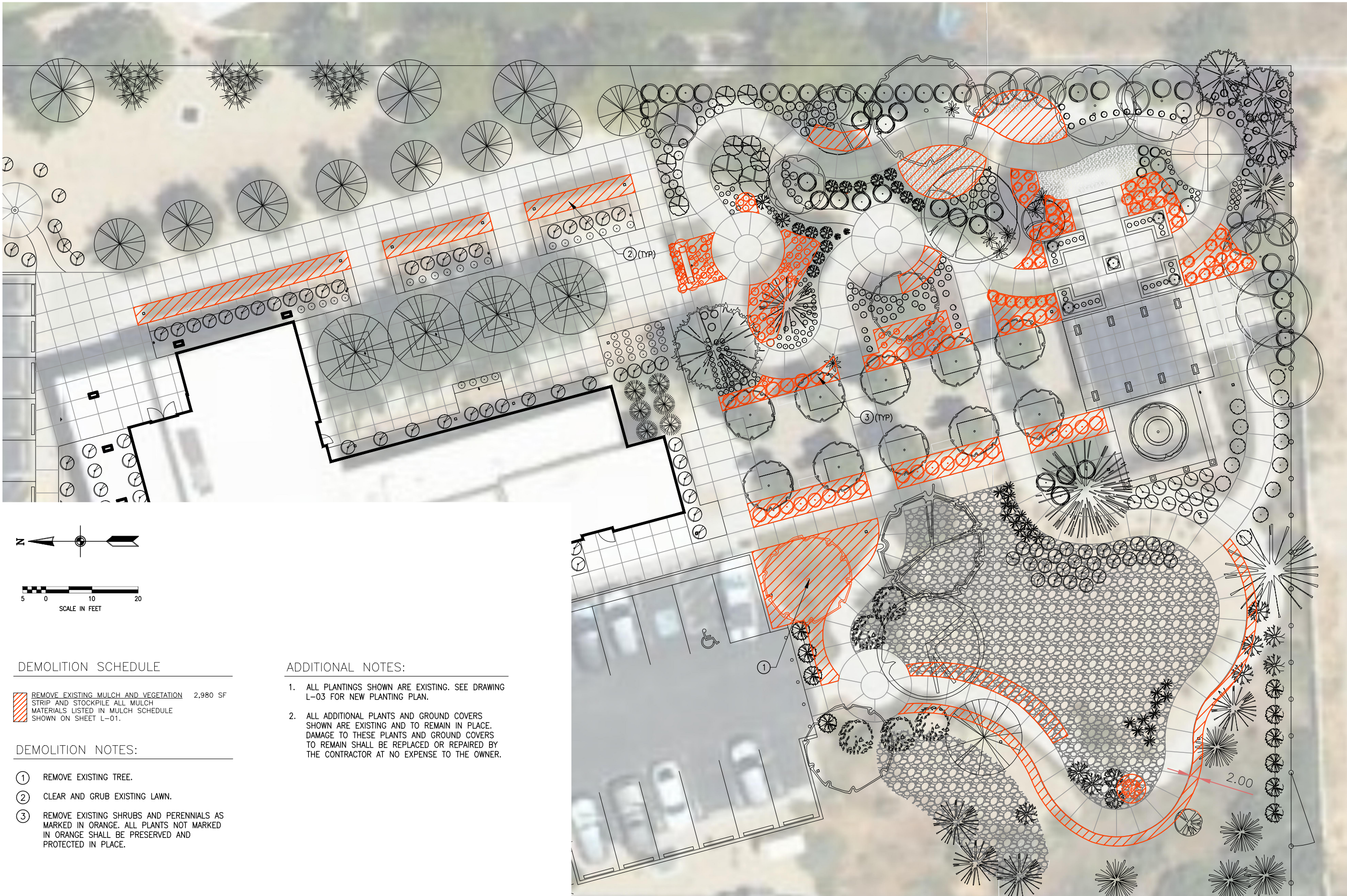
GENERAL SYMBOLS & NOTES

DATE: APRIL 2026

PROJECT NUMBER 485-25-03

DRAWING NO.
G-02

SHEET 2 OF 9



DEMOLITION SCHEDULE

REMOVE EXISTING MULCH AND VEGETATION 2,980 SF
STRIP AND STOCKPILE ALL MULCH
MATERIALS LISTED IN MULCH SCHEDULE
SHOWN ON SHEET L-01.

DEMOLITION NOTES:

- 1 REMOVE EXISTING TREE.
- 2 CLEAR AND GRUB EXISTING LAWN.
- 3 REMOVE EXISTING SHRUBS AND PERENNIALS AS MARKED IN ORANGE. ALL PLANTS NOT MARKED IN ORANGE SHALL BE PRESERVED AND PROTECTED IN PLACE.

ADDITIONAL NOTES:

1. ALL PLANTINGS SHOWN ARE EXISTING. SEE DRAWING L-03 FOR NEW PLANTING PLAN.
2. ALL ADDITIONAL PLANTS AND GROUND COVERS SHOWN ARE EXISTING AND TO REMAIN IN PLACE. DAMAGE TO THESE PLANTS AND GROUND COVERS TO REMAIN SHALL BE REPLACED OR REPAIRED BY THE CONTRACTOR AT NO EXPENSE TO THE OWNER.

PLAN



100% DESIGN

NOT FOR CONSTRUCTION FOR REVIEW ONLY		REVISIONS	
NO.	DATE	REV. BY	DESCRIPTION

MAGNA WATER DISTRICT
MAGNA, UTAH

DEMONSTRATION GARDEN

DESIGN	REVIEW	VERIFY SCALE
DESIGN T. WYATT	CHECKED C. GLABAU	BAR IS ONE INCH ON ORIGINAL DRAWING
DRAWN T. WYATT	APPROVED J. TSANDES	

LANDSCAPE

DEMOLITION PLAN

DRAWING NO. LX-01	PROJECT NUMBER 485-25-03
DATE: APRIL 2026	

SHEET 3 OF 9

LANDSCAPE NOTES:

1. CHANGES TO LANDSCAPING DESIGN OR IRRIGATION DESIGN MUST BE SUBMITTED TO THE LANDSCAPE ARCHITECT FOR APPROVAL.

2. ALL CONTRACTORS SHALL COMPLY WITH IA STANDARDS WHEN INSTALLING THE IRRIGATION AND THE LANDSCAPING AS WELL AS LANDSCAPE CONSTRUCTION SHALL CONFORM TO ALL APPLICABLE STATE AND CITY/COUNTY CODES.

3. PROVIDE LANDSCAPE AND IRRIGATION SYSTEM MAINTENANCE FOR 1 YEAR AFTER SUBSTANTIAL COMPLETION OF THE LANDSCAPE INSTALLATION. LANDSCAPE MAINTENANCE SHALL INCLUDE ALL FERTILIZING, WEEDING, TRIMMING, WATERING, PLANTING REPLACEMENTS, AND LANDSCAPE AND IRRIGATION REPAIRS AS REQUIRED.

4. THE LANDSCAPE AND IRRIGATION SYSTEM SHALL BE TURNED OVER TO THE OWNER AFTER THE 1-YEAR WARRANTY IN GOOD CONDITION. AT TURN OVER DATE, TREES AND SHRUBS SHALL BE HEALTHY AND THE SHRUB BEDS SHALL BE WEED FREE. A SECOND APPLICATION OF PRE-EMERGENT SHALL BE APPLIED TO ALL ROCK MULCH AREAS AT TURN OVER DATE.

5. ALL LANDSCAPING MUST BE MAINTAINED BY CONTRACTOR FOR 1 YEAR AFTER SUBSTANTIAL COMPLETION HAS BEEN ISSUED BY THE ENGINEER.

6. ALL CONTRACTORS SHALL SUBMIT, TO THE OWNER, TWO COPIES OF AN APPROVED SET OF LANDSCAPE DRAWINGS, PRIOR TO THE WARRANTY PERIOD INSPECTION.

7. THE LANDSCAPE SEEDING AND PLANTING ARE TO BE USED IN CONJUNCTION WITH THE SITE CIVIL PLANS TO FORM COMPLETE INFORMATION FOR THIS REFER TO SITE PLAN FOR EXISTING AND PROPOSED DEVELOPMENT AND AREAS OF CONSTRUCTION.

8. THE CONTRACTOR SHALL EXAMINE THE SITE CONDITIONS UNDER WHICH THE WORK IS TO BE PERFORMED AND NOTIFY THE ENGINEER IN WRITING OF UNSATISFACTORY CONDITIONS. DO NOT PROCEED UNTIL CONDITIONS HAVE BEEN CORRECTED.

9. BEFORE STARTING WORK, CONTRACTOR SHALL CONTACT APPROPRIATE UTILITY COMPANIES FOR EXISTING AND PROPOSED UNDERGROUND UTILITIES, IRRIGATION SLEEVES, ELECTRICAL CONDUITS, SIGNAGE, ETC. CONTRACTOR SHALL REPAIR ALL DAMAGED IMPROVEMENTS AT CONTRACTORS EXPENSE.

10. SEE SPECIFICATION SECTION 32 90 00 FOR TOPSOIL REQUIREMENTS, SEEDING REQUIREMENTS, AND SEEDING WINDOW.

11. AREAS FOR SEEDING OR SOD TO EITHER INCLUDE SIX (6) INCHES OF APPROVED IMPORTED, AMENDED TOPSOIL OR EXISTING SOIL ONSITE BE TESTED AND AMENDED PER THE TOPSOIL ANALYSIS REPORT RECOMMENDATIONS TO A DEPTH OF SIX (6) INCHES.

12. ALL PLANT MATERIALS SHALL MEET AS LISTED ON PLANT SCHEDULE. LANDSCAPE ARCHITECT RESERVES THE RIGHT TO REFUSE PLANT MATERIAL WHICH DOES NOT MEET THE QUALITY REQUIREMENTS FOR THE PROJECT PER SPECIFICATIONS. ALL DECIDUOUS TREES SHALL HAVE FULL, WELL-SHAPED HEADS. ALL EVERGREENS SHALL BE UNSHEARED AND FULL TO THE GROUND. IF SIZE SPECIFIED IS NOT AVAILABLE, CONTACT LANDSCAPE ARCHITECT PRIOR TO SUBSTITUTIONS.

13. ONCE IMPORTED TOPSOIL IS PLACED OR ONSITE SOIL IS AMENDED, IT SHALL BE RAKED SMOOTH PRIOR TO SEEDING AND BE UNIFORM IN QUALITY, FREE FROM TOXIC SUBSTANCES, SUBSOIL, STIFF OR LUMPY CLAY, HARD CLODS, HARDPAN, ROCKS, DISINTEGRATED DEBRIS, PLANTS, ROOTS, SEEDS, AND ANY OTHER MATERIALS THAT WOULD BE TOXIC OR HARMFUL TO PLANT GROWTH. TOPSOIL SHALL CONTAIN NO NOXIOUS WEEDS OR SEEDS.

14. CONTRACTOR TO APPLY A PRE-EMERGENT TO ALL SHRUB AND TREE BEDS ONCE PLANTING IS COMPLETE.

15. SEEDED AREAS SHALL NOT BE BROADCAST SEEDED. SEEDING SHALL ONLY BE HYDROSEED OR DRILL SEEDING. SEEDING SHALL NOT TAKE PLACE IF SOIL IS SATURATED OR FROZEN OR WHEN TEMPERATURES EXCEED 75 DEGREES FAHRENHEIT.

16. CONTRACTOR SHALL CONTACT LANDSCAPE ARCHITECT OR ENGINEER 7 DAYS PRIOR TO SEEDING.

17. AFTER SEEDING AREAS ARE ESTABLISHED THEY SHALL BE FERTILIZED WITH MILORGANITE FERTILIZER. RESTORED AND SEEDED AREAS SHALL BE ESTABLISHED TO A UNIFORM COVERAGE OF 60% OR GREATER AT THE END OF THE FIRST GROWING SEASONS, BUT PRIOR TO FINAL RELEASE OF CONTRACT WARRANTY. AREAS THAT ARE BELOW 60% COVERAGE OR DESIRED PLANT SPECIES SHALL BE RE-SEEDED BY CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
18. BULBS SHALL BE PLANTED WITH 6" SPACING AND ONLY IN PLAN-DESIGNATED AREAS WHERE NO OTHER PLANTS ARE CURRENTLY EXISTING AND AT THE DEPTH AND IN THE MANNER SPECIFIED BY THE BULB PROVIDER.

19. GRADING, TOPSOIL PLACEMENT AND COMPACTED SOILS: FINISH SUBGRADE AND TOPSOIL PLACEMENT AND GRADING SHALL CONSIST OF:

19.1. PREPARE SUBGRADE BY ROUGH GRADING AND REMOVING ALL IRREGULARITIES AND DEBRIS, THEN TILL AND SCARIFY SUBSOIL TO A DEPTH OF 6 INCHES BEFORE AMENDING TOPSOIL OR PLACING IMPORTED TOPSOIL. PROVIDE LASER LEVELING ON LARGE FLAT AREAS TO CREATE A UNIFORM LEVEL SUBGRADE.

19.2. SUBGRADE SOIL SHALL BE IN A LOOSENED AND ROUGH SURFACE FINISH BEFORE IMPORTED TOPSOIL IS PLACED OVER SUBGRADE. (SUBGRADE SURFACE SHALL NOT BE SMOOTH, BUT A ROUGH SURFACE SHALL EXIST FOR A TRANSITION ZONE OF TOPSOIL TO SUBSOIL). IF AREAS OF SUBGRADE BECOME COMPACTED BEFORE IMPORTED TOPSOIL IS PLACED, SUBGRADE SHALL BE TILLED AGAIN BEFORE TOPSOIL PLACEMENT.

19.3. PLACING ALL SOIL ADDITIVES AND FERTILIZERS FOR THE AREAS AS NOTED ON THE PLAN AND NOTES. THEN TILL (NO SCARIFYING) ADDITIVES TO A DEPTH OF 4-INCHES.

19.4. AFTER TILLING, BRING AREAS TO UNIFORM GRADES BY FLOATING AND/OR HAND RAKING. IN LARGE OPEN LEVEL AREAS, PERFORM LASER LEVELING TO CREATE UNIFORM LEVEL AREAS.

19.5. MAKE MINOR ADJUSTMENT OF FINISH GRADES AS DIRECTED BY THE CITY OR LANDSCAPE ARCHITECT.

19.6. REMOVE WASTE MATERIALS OVER 1" IN SIZE SUCH AS STONES, ROOTS, OR OTHER UNDESIRABLE FOREIGN MATERIALS AND FINISH RAKING, DISHING, DRAGGING, AND SMOOTHING SOIL READY FOR PLANTING.

19.7. NO GRADING OR SOIL PLACEMENT SHALL BE UNDERTAKEN WHEN SOILS ARE WET OR FROZEN.

20. ALL AREAS THAT ARE DISTURBED OUTSIDE OF THE PROJECT BOUNDARIES, SUCH AS STAGING, SHALL BE RESTORED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. CONTRACTOR SHALL RESTORE DISTURBED AREAS AND CONSULT WITH THE LANDSCAPE ARCHITECT FOR AN APPROVED SEED MIX, PLANTS, AND INSTALLATION METHOD/SCHEDULE.

21. CONTRACTOR TO MAINTAIN MULCH DEPTH INDICATED IN THE SCHEDULE THROUGHOUT THE ONE YEAR WARRANTY PERIOD.

22. CONTRACTOR TO PROVIDE MAINTENANCE PLAN AS SUBMITTAL.

23. IN DEMOLITION, CONTRACTOR TO REMOVE AND DISPOSE OF ALL EXISTING UNDERSTORY VEGETATION (SHRUBS, GRASSES, AND PERENNIALS) IN AREAS MARKED IN PLANS. ALL TREES AND IRRIGATION SYSTEM, AS WELL AS SURROUNDING LANDSCAPE NOT MARKED IN THE DEMOLITION PLAN IS TO BE PRESERVED AND PROTECTED UNLESS OTHERWISE NOTED IN THESE PLANS.

24. AFTER VEGETATION REMOVAL, MULCH IS TO BE STOCKPILED OUTSIDE OF VEGETATED AREAS FOR LATER RE-USE.

25. SOIL IS TO BE CLEARED OF WEEDS, LOOSENED TO A DEPTH OF 12" WHEREVER POSSIBLE, AND REPLANTED PER THESE PLANS.

26. IF TREE ROOTS WILL BE IMPACTED BY REMOVAL OF OTHER VEGETATION, CONTRACTOR IS TO CONTACT LANDSCAPE ARCHITECT FOR INSTRUCTIONS TO PROCEED.

27. WHERE IRRIGATION SYSTEM ADJUSTMENTS ARE NEEDED, EXISTING IRRIGATION SYSTEM IS TO BE SALVAGED AND RE-USED IF POSSIBLE. COMPONENTS THAT WILL NOT BE USED IN THE NEW IRRIGATION SYSTEM MAY BE DISPOSED OF AFTER SUBSTANTIAL COMPLETION.

PLANT SCHEDULE (PROPOSED ONLY)

SYMBOL	BOTANICAL / COMMON NAME	SIZE	QTY
SHRUBS			
CM	CHAMAEBATIARIA MILLEFOLIUM / FERNBUSH	5 GAL	2
CB2	CORNUS SERICEA 'BAILEY' / BAILEY'S RED TWIG DOGWOOD	5 GAL	1
FA	FORSYTHIA X 'ARNOLD'S DWARF' / ARNOLD'S DWARF FORSYTHIA	5 GAL	4
MC	MAHONIA AQUIFOLIUM 'COMPACTA' / DWARF OREGON GRAPE	5 GAL	32
PP2	PINUS MUGO 'MOPS' / MOPS MUGO PINE	5 GAL	6
SS	SPIRAEA JAPONICA 'ANTHONY WATERER' / ANTHONY WATERER JAPANESE SPIREA	5 GAL	3
ANNUALS/PERENNIALS			
AL	AQUILEGIA X 'PAS1258486' / EARLYBIRD™ PURPLE WHITE COLUMBINE	1 GAL	8
CV	COREOPSIS VERTICILLATA 'MOONBEAM' / MOONBEAM TICKSEED	1 GAL	4
EP	ECHINACEA PURPUREA / CONEFLOWER	1 GAL	24
GA	GAILLARDIA X GRANDIFLORA 'ARIZONA SUN' / ARIZONA SUN BLANKETFLOWER	1 GAL	5
HX	HYLOTELEPHIUM X 'HERBSTFREUDE' / AUTUMN JOY STONECROP	1 GAL	48
LM	LAVANDULA ANGUSTIFOLIA 'MUNSTEAD' / MUNSTEAD ENGLISH LAVENDER	1 GAL	36
LL	LINUM LEWISII / BLUE FLAX	1 GAL	29
MM	MIRABILIS MULTIFLORA / DESERT FOUR O'CLOCK	1 GAL	3
PB	PENSTEMON BARBATUS / BEARDLIP PENSTEMON	1 GAL	3
PP	PENSTEMON EATONII / FIRECRACKER PENSTEMON	1 GAL	4
PR	PENSTEMON ROSTRIFLORUS / BRIDGE PENSTEMON	1 GAL	6
RC	RATIBIDA COLUMNIFERA / PRAIRIE CONEFLOWER	1 GAL	7
RG	RUDBECKIA FULGIDA SULLIVANTII 'GOLDSTURM' / GOLDSTURM BLACK-EYED SUSAN	1 GAL	30
VA	VINCA MINOR 'ATOPURPUREA' / PURPLE DWARF PERIWINKLE	1 GAL	15
GRASSES			
BG	BOUTELOUA GRACILIS / BLUE GRAMA GRASS	1 GAL	32
PH	PENNISETUM ALOPECUROIDES 'HAMELN' / HAMELN FOUNTAIN GRASS	1 GAL	51
GROUND COVER			
TS	THYMUS SERPYLLUM / CREEPING THYME	1 GAL	45
SYMBOL BOTANICAL / COMMON NAME CONT QTY			
SHRUB AREAS			
	TULIP MIX / VARIOUS SPECIES, SEE NOTES	BULB	134 SF
SYMBOL BOTANICAL / COMMON NAME SIZE QTY			
GROUND COVERS			
	BIOMEADOW SOD / INSTALL OVER SOIL PREPARED PER NOTES.	SOD	165 SF
	BUCHLOE DACTYLOIDES 'TEXHOKA' / TEXHOKA BUFFALO GRASS	SOD	164 SF

MULCH SCHEDULE

	SHREDDED BARK STRIP, STOCKPILE, AND RE-APPLY TO 3" DEPTH, SUPPLEMENT WITH MATERIAL FROM STAKER PARSON (OR EQUAL) AS NEEDED.	6,078 SF
	MEDIUM BARK (2" - 3") STRIP, STOCKPILE, AND RE-APPLY TO 3" DEPTH, SUPPLEMENT WITH MATERIAL FROM STAKER PARSON (OR EQUAL) AS NEEDED.	15 SF
	1-2 IN. LANDSCAPE ROCK APPLIED TO 3". MATCH TO EXISTING	275 SF
	SMALL BARK (1/2" - 1") STRIP, STOCKPILE, AND RE-APPLY TO 3" DEPTH, SUPPLEMENT WITH MATERIAL FROM STAKER PARSON (OR EQUAL) AS NEEDED.	12 SF



100% DESIGN

NOT FOR CONSTRUCTION
FOR REVIEW ONLY

VERIFICATION SCALE
BARS ONE INCH ON ORIGINAL DRAWING

REVISIONS

DESIGNATION GARDEN
MAGNA, UTAH

REVIEW
CHECKED C.GLABAU
APPROVED J.T.SANDES

DESIGN
DESIGN T.WYATT
DRAWN T.WYATT

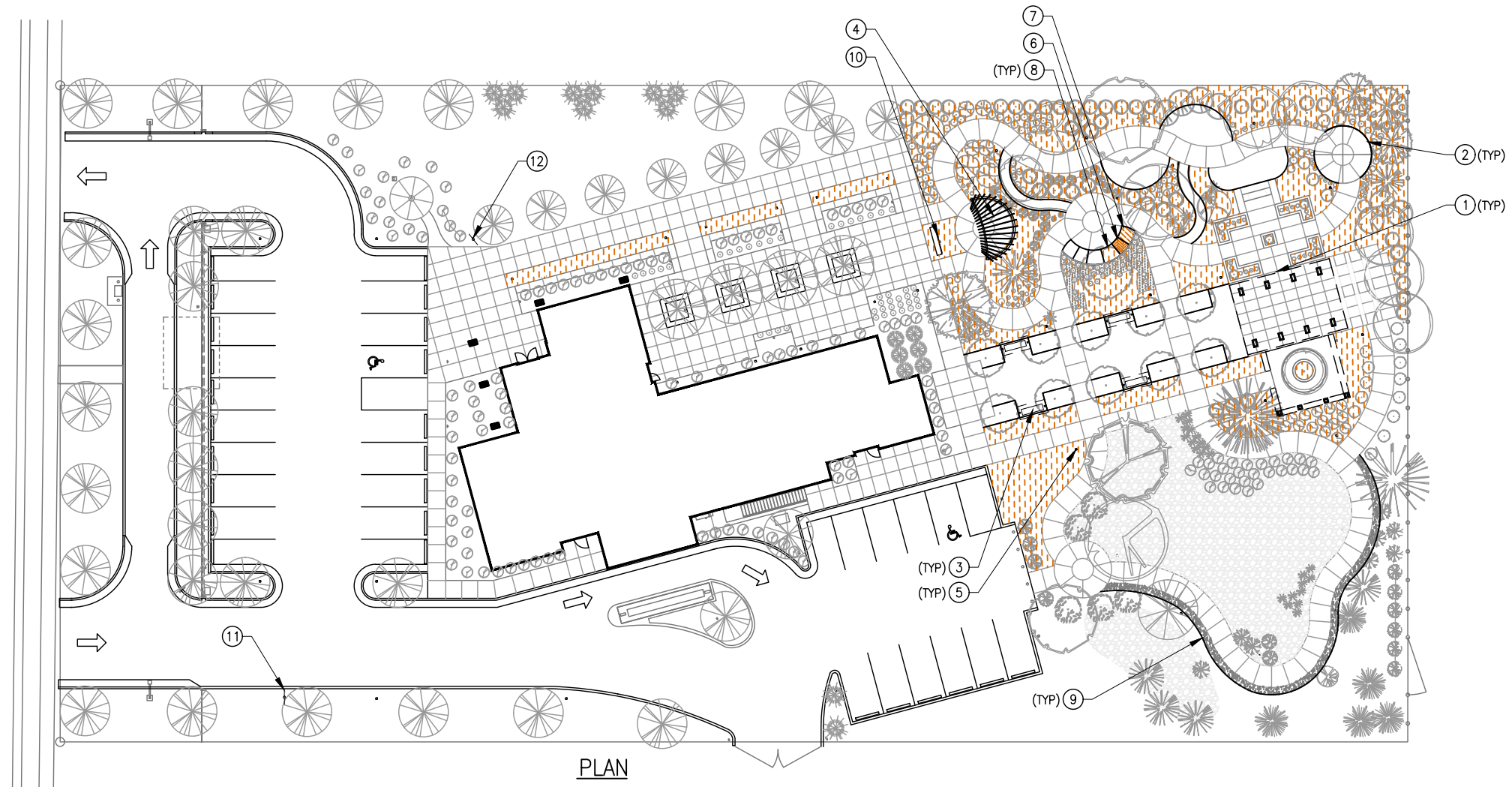
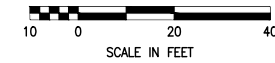
LANDSCAPE

PLANTING SCHEDULE & NOTES

DATE: APRIL 2026
PROJECT NUMBER 485-25-03

DRAWING NO.
L-01

SHEET 4 OF 9



	<u>SHREDDED BARK</u> STRIP, STOCKPILE, AND RE--APPLY TO 3" DEPTH, SUPPLEMENT WITH MATERIAL FROM STAKER PARSON (OR EQUAL) AS NEEDED.	6,078 SF
	<u>MEDIUM BARK (2" - 3")</u> STRIP, STOCKPILE, AND RE--APPLY TO 3" DEPTH, SUPPLEMENT WITH MATERIAL FROM STAKER PARSON (OR EQUAL) AS NEEDED.	15 SF
	<u>1-2 IN. LANDSCAPE ROCK</u> APPLIED TO 3". MATCH TO EXISTING	275 SF
	<u>SMALL BARK (1/2" - 1")</u> STRIP, STOCKPILE, AND RE--APPLY TO 3" DEPTH, SUPPLEMENT WITH MATERIAL FROM STAKER PARSON (OR EQUAL) AS NEEDED.	12 SF

- ① GRIND DOWN CONCRETE LIP TO REMOVE TRIPPING HAZARD.
- ② REPLACE PLASTIC EDGING WITH 1/8" THICK 4 IN. HEIGHT HOT ROLLED LOW CARBON STEEL CONFORMING TO A MINIMUM ASTM A366 (WITH CARBON CONTENT HELD TO .10 MAXIMUM) WITH STAKING AT NECESSARY INTERVALS TO ENSURE FORM.
- ③ LOCATION FOR BENCH SHELTER (PROVIDED BY OWNER, INSTALLED BY OTHERS).
- ④ LOCATION FOR PERGOLA (PROVIDED BY OWNER, INSTALLED BY OTHERS).
- ⑤ REPLACE LIGHT FIXTURE IF MISSING FROM PLAN LOCATION OR DAMAGED. USE HINKLEY ATLANTIS 1518SK--LL. IF EXISTING LIGHT IS FUNCTIONAL BUT NEEDS BETTER ANCHORING, REPLACE GROUND SPIKE WITH 15" SPIKE (0019BZ) FROM MANUFACTURER.
- ⑥ INSTALL SMALL BARK TO DEPTH SPECIFIED IN MULCH SCHEDULE.
- ⑦ INSTALL MEDIUM BARK TO DEPTH SPECIFIED IN MULCH SCHEDULE.

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2801

NG (L 28)

ETE

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DETAIL

1. ALL PLANTINGS SHOWN ARE EXISTING. SEE DRAWING L-03 FOR NEW PLANTING PLAN.



FOR REVIEW ONLY
NOT FOR CONSTRUCTION

REVISIONS

RDEN

VERIFY SCALE

BAR IS ONE INCH ON
ORIGINAL DRAWING

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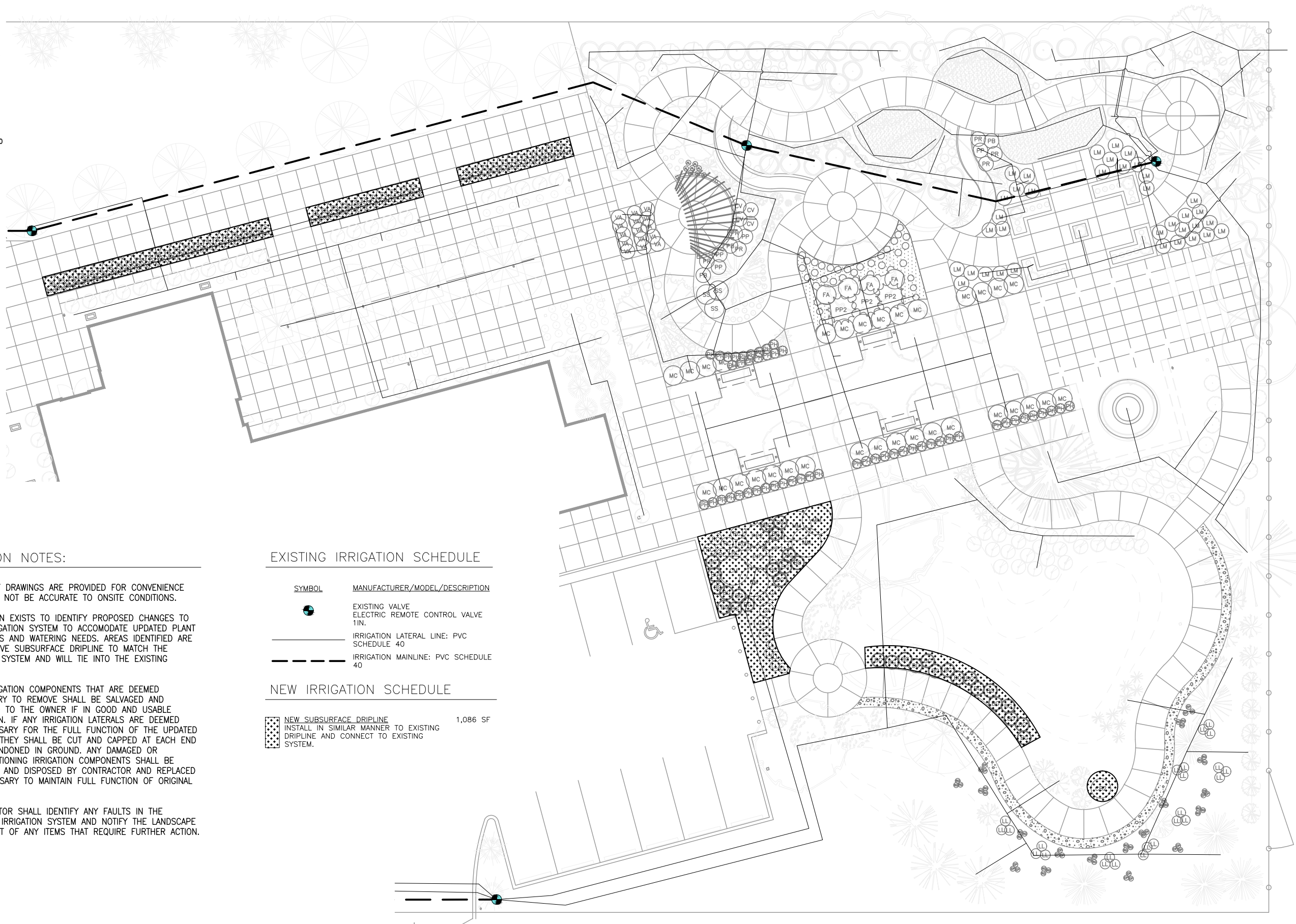
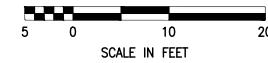
REVIEW CHECKED <u>C. GLABAU</u> APPROVED <u>J. TSANDES</u>

DESIGN
DESIGN T.WYATT
DRAWN T.WYATT

SITE PLAN	DATE:	APRIL 2026	PROJECT NUMBER	485-25-03
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DRAWING NO.
L-02

SHEET 5 OF 9



1. AS-BUILT DRAWINGS ARE PROVIDED FOR CONVENIENCE AND MAY NOT BE ACCURATE TO ONSITE CONDITIONS.
2. THIS PLAN EXISTS TO IDENTIFY PROPOSED CHANGES TO THE IRRIGATION SYSTEM TO ACCOMMODATE UPDATED PLAN LOCATIONS AND WATERING NEEDS. AREAS IDENTIFIED ARE TO RECEIVE SUBSURFACE DRIPLINE TO MATCH THE EXISTING SYSTEM AND WILL TIE INTO THE EXISTING SYSTEM.
3. ANY IRRIGATION COMPONENTS THAT ARE DEEMED NECESSARY TO REMOVE SHALL BE SALVAGED AND PROVIDED TO THE OWNER IF IN GOOD AND USABLE CONDITION. IF ANY IRRIGATION LATERALS ARE DEEMED UNNECESSARY FOR THE FULL FUNCTION OF THE UPDATED SYSTEM, THEY SHALL BE CUT AND CAPPED AT EACH END AND ABANDONED IN GROUND. ANY DAMAGED OR MALFUNCTIONING IRRIGATION COMPONENTS SHALL BE REMOVED AND DISPOSED BY CONTRACTOR AND REPLACED IF NECESSARY TO MAINTAIN FULL FUNCTION OF ORIGINAL SYSTEM.
4. CONTRACTOR SHALL IDENTIFY ANY FAULTS IN THE EXISTING IRRIGATION SYSTEM AND NOTIFY THE LANDSCAPE ARCHITECT OF ANY ITEMS THAT REQUIRE FURTHER ACTION.

<u>SYMBOL</u>	<u>MANUFACTURER/MODEL/DESCRIPTION</u>
	EXISTING VALVE ELECTRIC REMOTE CONTROL VALVE 1IN.
	IRRIGATION LATERAL LINE: PVC SCHEDULE 40
	IRRIGATION MAINLINE: PVC SCHEDULE 40.

 NEW SUBSURFACE DRIPLINE 1,086 SF
INSTALL IN SIMILAR MANNER TO EXISTING
DRIPLINE AND CONNECT TO EXISTING
SYSTEM.



NOT FOR CONSTRUCTION
FOR REVIEW ONLY

REVISIONS			
NO.	DATE	REV. BY	DESCRIPTION

DEMONSTRATION GARDEN

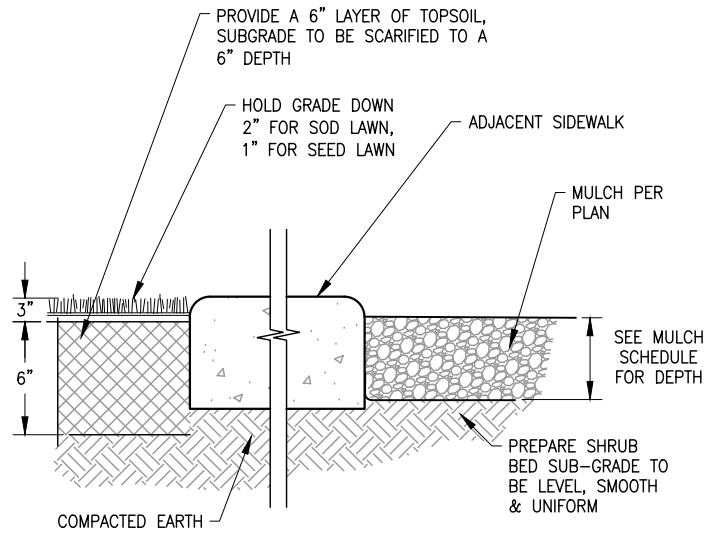
DESIGN DESIGN: T. WYATT DRAWN: T. WYATT	REVIEW CHECKED: C. GLABAU APPROVED: J. TSAIDES	VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING ■■■■■

IRRIGATION PLAN

DATE: APRIL 2026
NUMBER 485-ZS-U3

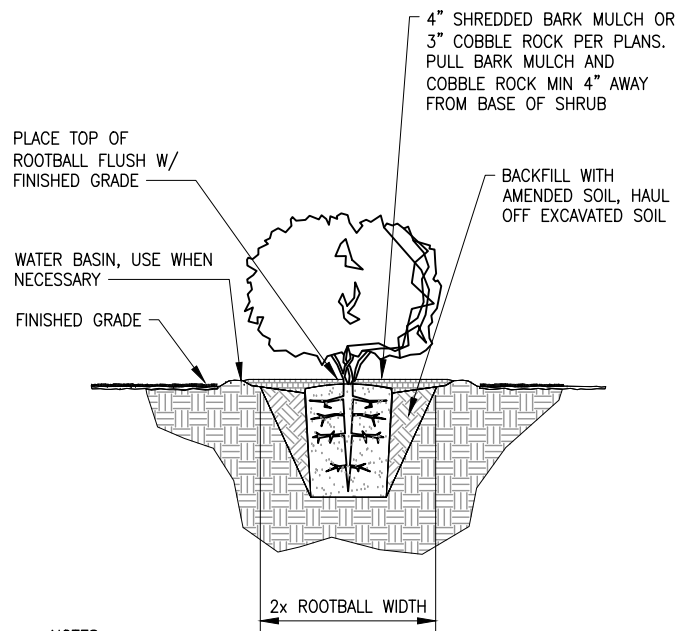
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L-04



MULCH AND SOD PLACEMENT
SCALE: NTS

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2801

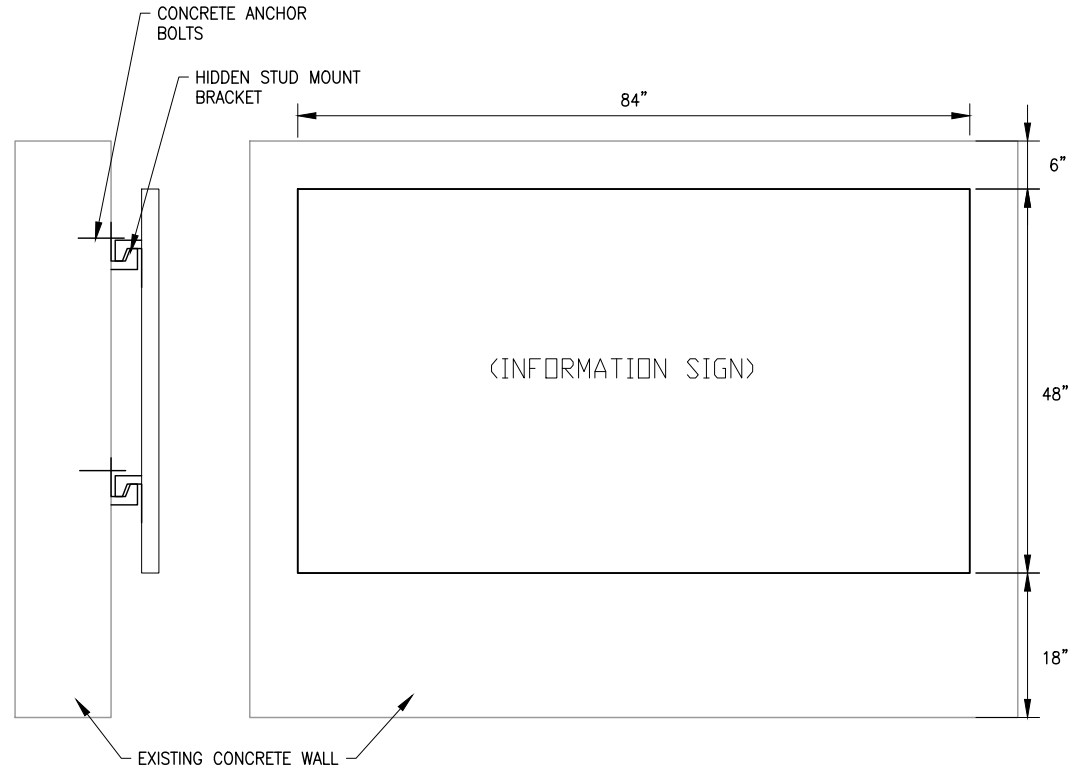


NOTES:

1. SCARIFY SIDES OF PLANTER PIT PRIOR TO PLANTING SHRUB SO AS TO AVOID ANY GLAZING OR HARDENED AREAS THAT WILL BE DIFFICULT FOR ROOTS TO GROW THROUGH.
2. AMEND SOIL SHALL CONTAIN 3 PARTS GOOD TOPSOIL EXCAVATED FROM PIT AND 1 PART "SOIL PREP" SOIL CONDITIONER.

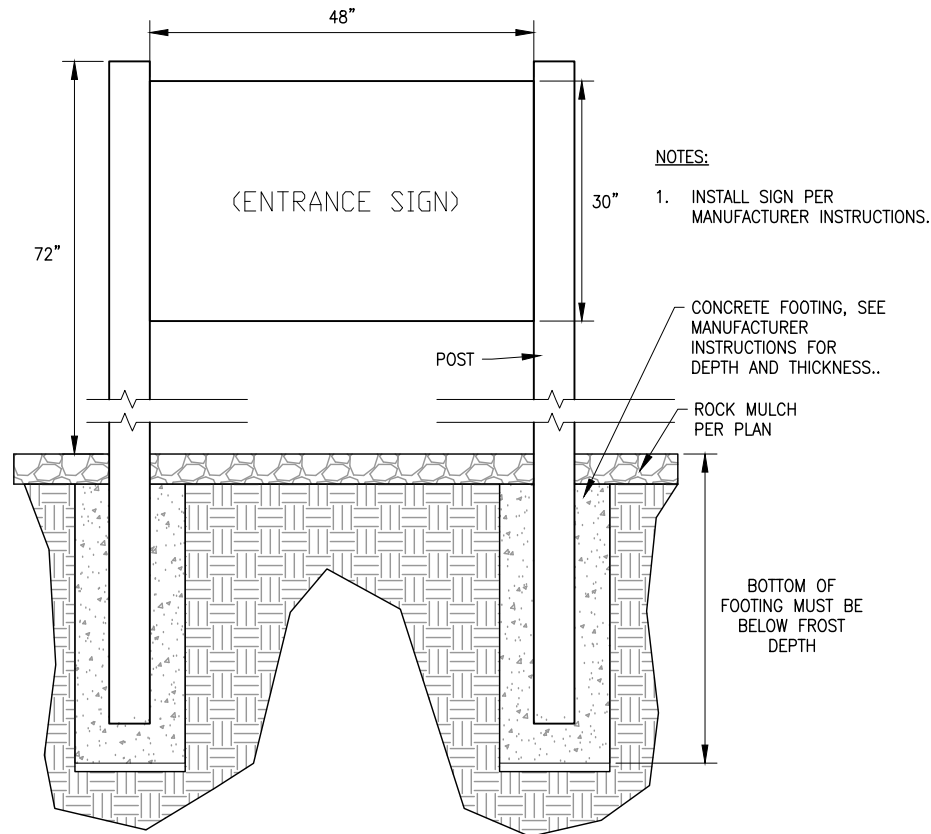
SHRUB PLANTING DETAIL
SCALE: NTS

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INFORMATION SIGN DETAIL
SCALE: NTS

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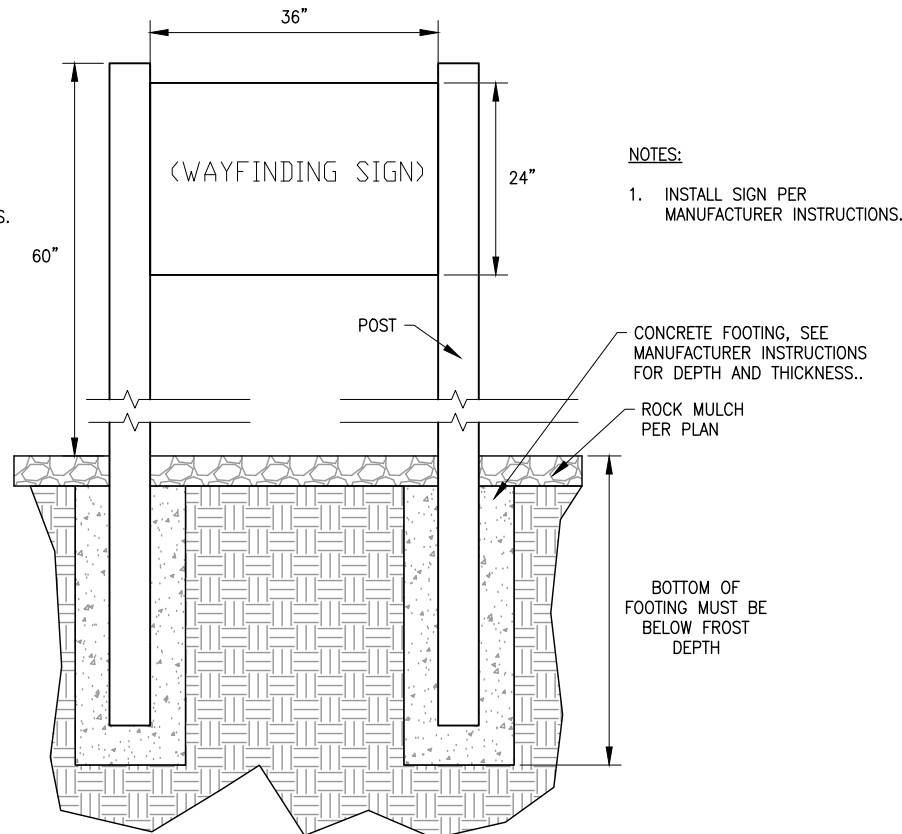


NOTES:

1. INSTALL SIGN PER MANUFACTURER INSTRUCTIONS.

WAYFINDING SIGN DETAIL
SCALE: NTS

L
2902



NOTES:

1. INSTALL SIGN PER MANUFACTURER INSTRUCTIONS.

ENTRANCE SIGN DETAIL
SCALE: NTS

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2903

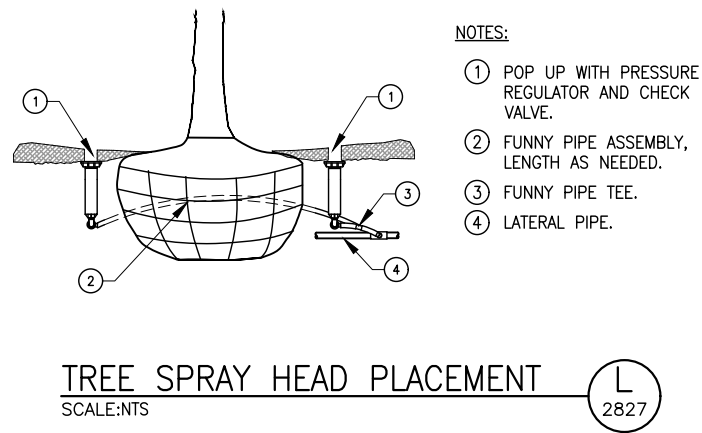
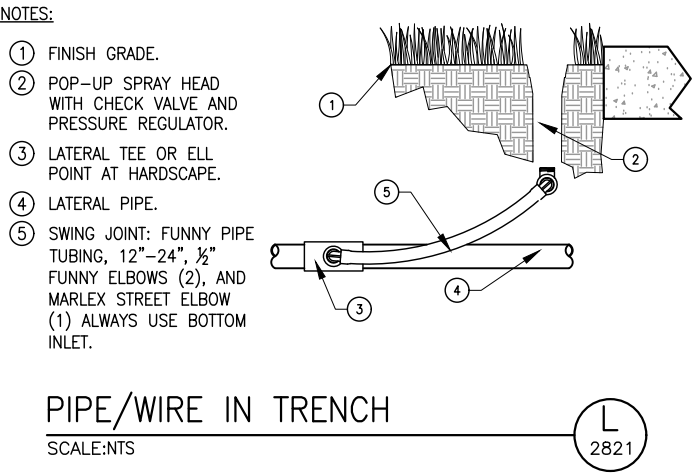
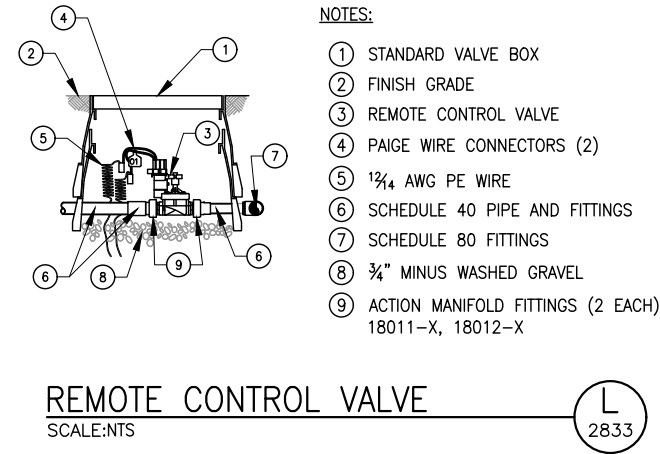
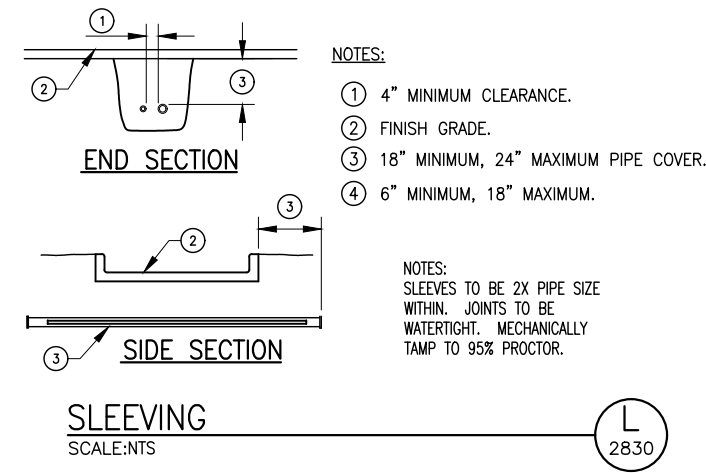
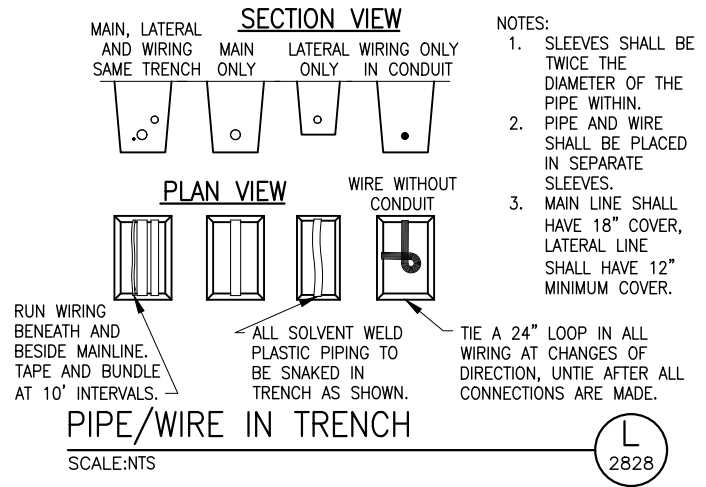
NOT FOR CONSTRUCTION FOR REVIEW ONLY			
NO.	DATE	REV. BY	DESCRIPTION

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN	REVIEW
DESIGN T. WYATT	CHECKED C. GLABAU
DRAWN T. WYATT	APPROVED J. TSANDES

MAGNA WATER DISTRICT MAGNA, UTAH

LANDSCAPE DETAILS
DATE: APRIL 2026
PROJECT NUMBER 485-25-03



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NO.	DATE	REV. BY	DESCRIPTION

MAGNA WATER DISTRICT MAGNA, UTAH		REVIEW	
DESIGN		CHECKED	
DESIGN T. WYATT		C. GLABAU	
DRAWN T. WYATT		APPROVED	
J. TSANDES			

LANDSCAPE		PROJECT	
IRRIGATION DETAILS		NUMBER	
DATE:		485-25-03	
APRIL 2026			

Appendix D – 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.

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