Water Conservation Plan & Water Use & Conservation Element of the General Plan

MAPLETON
PUBLIC WORKS

August 2023

Amended August 2025

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MAPLETON CITY WATER CONSERVATION PLAN & WATER USE AND CONSERVATION ELEMENT OF THE GENERAL PLAN

I. Introduction

Located on the east side of Utah Valley, Mapleton City has a current estimated population of ± 16,000 residents and growing. The City is primarily a residential area with limited commercial or industrial development. Past development of Mapleton was generally rural in nature with large lots and large homes. However, in recent years, development trends have changed to include more density, although the City maintains its quiet, more rural appeal.

Mapleton City operates a culinary water system that serves all of its service area, and an expanding secondary water system that currently serves about half of its service area. Water conservation is of great importance to the City as it experiences significant growth that puts pressure on the current infrastructure. However, even with current fast-paced development, the City has been successful in its ability to meet the water needs of its residents, all of whom live within the City boundaries.

The Mapleton City Water Conservation Plan has been prepared to meet the requirements of Utah Water Conservation Plan Act of 1998 amended in 2004 with Utah Administrative Code 73-10-32, which requires implementation of conservation goals and plans to reduce the overall per capita consumption of water within the City's supply and delivery service area. The plan must be updated every five years. To avoid redundancy, this plan has been amended to also act as the Water Use and Preservation Element of the General Plan as required by Utah Code section 10-9a-403. As outlined in this plan, Mapleton City is committed to a program of efficient and careful use of water in order to be a good steward of the resources which are available to the City and its residents.

II. Water System Overview

Mapleton City is located on a foothill bench southeast of Springville City in Utah County, Utah. The City currently comprises 8,462 acres, with the potential to reach approximately 8,610 acres through future annexations. It is bounded by Springville City on the north, Maple Mountain on the east, Spanish Fork City on the south and

west, with the Union Pacific Railroad Tracks forming the western boundary. Figure 1 presents a location map for Mapleton City.

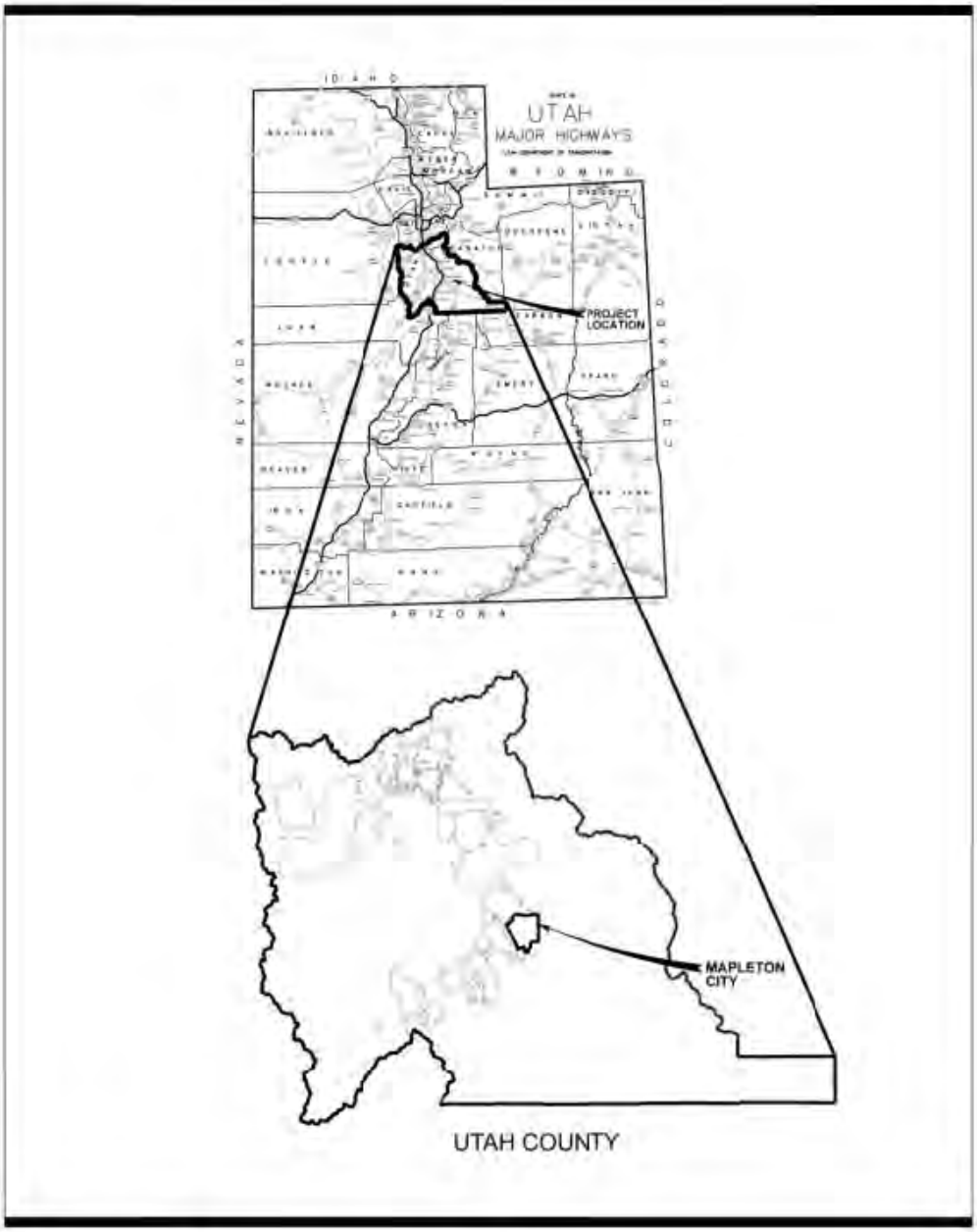

Figure 1
Mapleton City Water Conservation Plan
Location Map

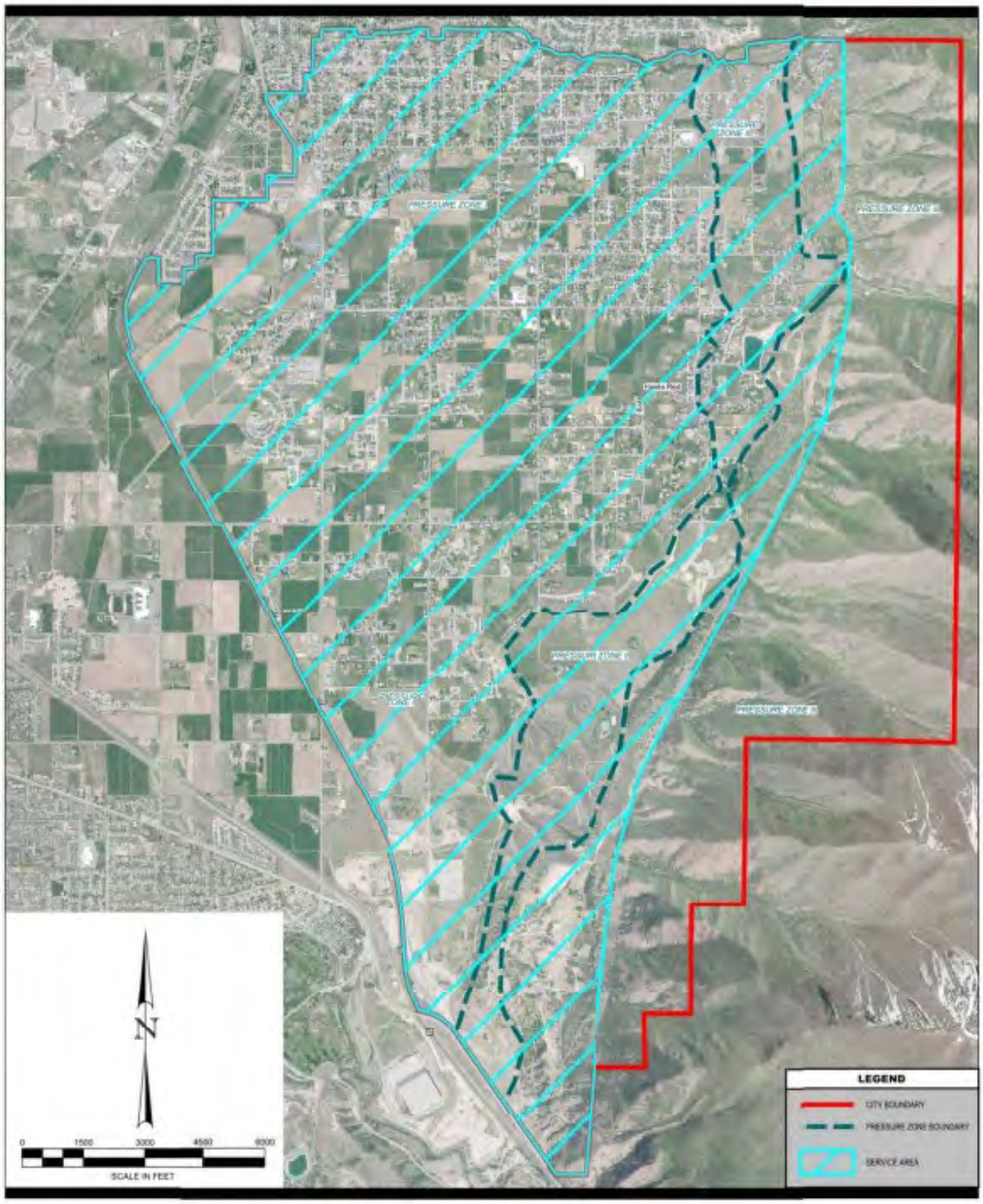

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Figure 2
Mapleton City Water Conservation Plan Service Area

Mapleton Town became Mapleton City Corporation through incorporation as a third-class city on April 16, 1948. For much of the period since that time, the City has experienced relatively steady growth. However, a sanitary sewer collection system was constructed beginning in 1996, and since then the City has experienced more rapid growth. The estimated population has grown by ±25% in the last 3 years alone. By the end of 2022, there were 3,655 culinary water connections within the existing Mapleton City service area. The City culinary water service area is shown on Figure 2.

The culinary water distribution system includes ±500,000 lineal feet of pipe ranging in size from 4-inches in older City areas to 20-inches near the mouth of Maple Canyon. The City has more than 10,800,000 gallons of storage in five existing tanks spread across the system, primarily in Maple Canyon and along the foothills. Culinary water has been provided from springs in Maple Canyon and four wells within the City limits.

In the mid-1990s, groundwater contamination from the Ensign Bickford property southeast of the City forced the disconnection of City Well No. 1 to prevent its use in the culinary system. Since 1998, the well has been pumped continuously in an effort to clean the water bearing aquifer. In order to make beneficial use of the water pumped from this well, a pressurized irrigation system was installed to serve the northwest portion of the City. In 2011, the distribution system was expanded and a storage pond and pump station were constructed. By the end of 2022, there were 1,821 active connections to the pressurized irrigation system that do not require outdoor irrigation from the City's culinary water system. There is also extensive "dry" mains that the City is working to connect to the active lines, that will provide pressurized irrigation to an additional ±1,500 connections.

The pressurized irrigation system includes ±400,000 feet of distribution pipe ranging in size from 4-inches to 30-inches, a 109 acre-foot storage pond and a pump station to boost water from the pond to acceptable pressures for the system. Source water for the pressurized irrigation system comes from City Well No. 1, two smaller wells. and irrigation water rights delivered through the Mapleton Irrigation District and the Central Utah Water Conservancy District (CUWCD) Mapleton Lateral Canal.

Table 1 summarizes the total existing water system connections and water usage during the 2020 calendar year separated by culinary and secondary water systems.

Table 1
Summary of Water System Connections and Usage
2022 Calendar Year

Type of Connection	Culinary Water Connections	Culinary Water Used (gallons)	P.I. Water Connections	P.I. Water Used (gallons)
Residential/Domestic	3,571	632,270,688	1,805	432,832,446
Commercial	53	23,692,064	9	5,046,561
Institutional/Churches	25	28,011,987	7	28,185,066
Agriculture	4	333,736	0	0
City Owned	1	15,500	0	0
Other	1	125,463	0	0
Total	**3,655**	**684,449,438**	**1,411**	**466,064,073**

III. Existing Water Sources and Supply

Mapleton City obtains culinary water from springs and wells. The most reliable culinary water sources are the City's four wells. The current water sources with the reliable capacity of each source is outlined in Table 2. Flows from the springs have historically varied widely from year to year, until they were contaminated and turned out of the culinary system and into the existing canyon channel a few years ago. Mapleton City is finalizing a plan to rehabilitate the springs, but they are not included in the computations for existing source capacity.

Table 2 also shows the water sources used in the secondary water (pressurized irrigation) system. Those sources include three wells that are pumped continuously to clean the water bearing aquifer as discussed previously. In addition to the wells, Mapleton City has acquired shares of stock in the Mapleton Irrigation Company, the East Bench Irrigation Company, the East Jordan Irrigation Company and the Utah and Salt Lake Canal Company, as well as Strawberry Project Water shares. The

irrigation water corresponding to those water shares is currently being used in the pressurized irrigation system and is delivered to the Mapleton storage pond by the Central Utah Water Conservancy District (CUWCD) through the Mapleton Lateral Canal. The City has also been allocated irrigation water from the Utah Lake

Drainage Basin Water Delivery System (ULS), but has currently deferred use. Therefore, ULS water is also not included in the existing source capacity.

Table 2
Mapleton City
Water Sources, Supply and Capacity

Source	Use	2020 Water Supplied (acre-feet)	2020 Water Supplied (gpm)	Reliable Capacity (gpm)
Mapleton Springs	Culinary	722.57	448	None(1)
Carnesecca Well	Culinary	424.79	263	1,000
Seal Well	Culinary	593.46	368	1,650
Westwood Well	Culinary	758.36	470	1,800
Crowd Canyon Well	Culinary	405.81	252	1,750
City Well No. 1	P.I.	318.07(4)	387(5)	1,000
Orton Well	P.I.			250
Whiting Well	P.I.			50(2)
Mapleton Lateral Canal	P.I.	1,611.00	1,960(5)	10,100(3)

(1) Water from Mapleton Springs is used to supplement other sources as the capacity varies from year to year based upon climate.
(2) Whiting well not available at all times.
(3) Mapleton Irrigation is allocated up to 45% of the estimated 50 cfs capacity. Water is ordered and delivered from CUWCD based upon need.
(4) Combined total of all wells less water discharged to Hobble Creek.
(5) Gallons per minute for P.I. based upon 186 calendar days.

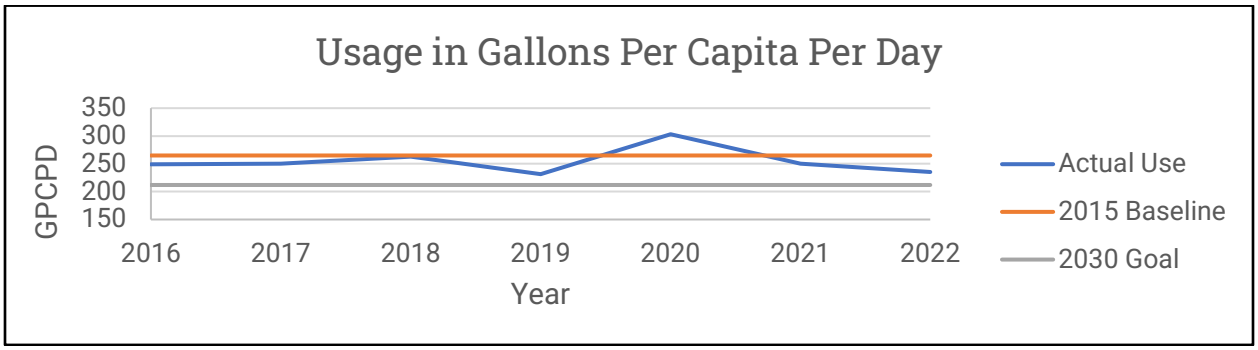
IV. Water Usage

Mapleton City's active secondary water system, which is primarily located in the north and central areas of the City, operates from approximately April through October to meet the outdoor irrigation needs for those residents who have it available to them. The remaining residents irrigate from the City's culinary water

system. Water usage has been summarized from 2005 to 2022 and is presented in Table 3. The daily gallons per capita usage is also shown on the subsequent graphic.

Table 3
Mapleton City
Summary of Water Use in Acre-Feet

Year	Residential/ Domestic	Commercial	Industrial	Institutional	Pressure Irrigation	Total
2005	1,308.81	6.46	0	5.09	552.78	1,873.14
2006	1,672.27	9.37	0	67.16	643.75	2,392.55
2007	618.50	0.8	0	13.61	729.65	1,362.56
2008	1,877.32	5.19	0	69.17	685.59	2,637.27
2009	2,807.69	5.44	0	116.10	675.30	3,604.53
2010	1,566.88	4.46	0	32.34	595.99	2,199.67
2011	1,667.67	4.81	0	47.62	529.23	2,249.33
2012	1,409.24	31.58	0	422.27	839.17	2,702.26
2013	1,971.10	5.99	0	56.00	740.44	2,773.53
2014	1,770.62	3.90	0	36.87	783.20	2,594.59
2015	1,638.68	4.13	0	17.57	812.71	2,473.09
2016	1,795.17	4.75	0	17.57	974.76	2,792.25
2017	1,665.55	95.50	1.25	100.83	1,053.54	2,916.67
2018	1,738.04	86.91	1.15	142.34	1,184.54	3,152.98
2019	1,609.80	95.74	0.89	79.28	1,066.18	2,851.89
2020	2,155.00	95.70	1.00	111.20	1,542.10	3,905.00
2021	1,986.95	77.78	0.90	80.84	1,332.43	3478.88
2022	1,940.75	72.71	1.02	86.01	1,430.30	3,530.80



It may be observed from the graph that, with the exception of the 2020 calendar year, per capita water usage in Mapleton City has been below the 2015 baseline. It should be noted that the per capita usage for 2020 can in some measure be attributed to the Covid-19 pandemic as more people were in their homes rather than being away during the day. During the 2020 calendar year, the City has also been flushing waterlines as a maintenance effort to improve flow and water quality. That water is also included in the above summary. Since 2020, the per capita water usage has trended downward. It is anticipated that this trend will continue as the City grows and as water conservation efforts are implemented.

The usage shown in the figure includes water supplied to all types of connections, such as residential, commercial, industrial, institutional, agriculture and secondary. Table 4 shows the amount of per capita use by type of connection for the year 2022.

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Table 4
Mapleton City
Per Capita Water Use (2022)

Type of Connection	Indoor (Winter Use) (gpcd)	Culinary Outdoor (gpcd)	Pressurized Irrigation (gpcd)	Total (gpcd)
Residential/Domestic	50.4	77.9	87.8	216.1
Commercial	2.5	2.3	1.0	5.8
Institutional/Churches	0.7	5.0	5.7	11.4
Agriculture	0.1	0	0	0.1
City Owned	0	0	0	0
Other	0	0	0.0	0.0
Total	**53.6**	**85.3**	**94.6**	**233.5**

V. Water Measurement

With the exception of City-owned buildings and parks, all water connections, both culinary and pressurized irrigation, within Mapleton City are metered. City parks and building connections are not metered. The City uses electronic meters that are read on a monthly basis, even through the winter months for those on the culinary system. Several of the City parks use electronic observation for water conservation, but the usage is not included in the reported meter measurements.

Over the past several years, the City switched to electronic meters, which has made reading of the meters easier and more economical. The meters on the pressurized irrigation system have all been installed in the past 12 years, so they are also relatively new. Meters are replaced by City crews whenever necessary or when anomalies are observed.

By City ordinance, new developments are required to provide water rights for future use as a condition of approval. This will ensure that the City will have an adequate supply of water into the future.

There are no known sources of leakage within the City distribution system. Maintenance to the system is performed on a daily basis. When leaks are identified, they are immediately repaired to conserve water and maintain high water quality. Beginning in the year 2020, the City started an ongoing flushing program to remove sediment from the existing distribution lines. Water used in this program is not metered and is included in the percentage of loss from the system. The average loss over the past five years is estimated at 15%.

VI. Land Use Ordinance

The primary goal identified in the Mapleton City Land Use Element of the General Plan is to preserve and enhance Mapleton's rural atmosphere and agricultural history through careful planning and the preservation of open space. Large lots, agricultural fields and natural open space are important components to Mapleton's character. It is important to note that land use decisions have significant impacts on the use of water. Agricultural uses typically are the least efficient users of water followed by low-density residential development. The City desires to balance water conservation with maintaining its rural character.

Utah Code requires the City to review the land use ordinance (zoning code) and include recommendations for changes to any ordinance that promotes the inefficient use of water as part of the adoption of the Water Use and Preservation Element. State code also requires recommendations for low water use landscaping standards.

Mapleton City's land use ordinance is found in Title 18 of the Municipal Code (MCC) and the landscape ordinances are found in sections 18.90 and 18.92. In promoting water efficiency, Section 18.92.060 states the following:

> *"A sustainable or water-wise landscape allows for a beautiful healthy landscape using the minimal supplemental irrigation water as possible. Water-wise landscape takes into consideration appropriate plant selection, planning and design, soils, practical turf area, efficient irrigation, mulches and maintenance."*

Below is a summary of the current landscaping requirements:

Residential:

- Front yards shall include landscaping;
- Sod is allowed but not mandated;
- Xeriscape designs are encouraged provided at least 30% of the landscaped area includes plant material; and
- Rear yard landscaping is not mandatory.

Commercial/Industrial:

- Requires 20% of project sites to be landscaped;
- Requires parking lots to include trees;
- Requires that no more than 60% of landscape area may be in sod; and
- Recommends water-wise plantings and irrigation systems.

Planter Strips

- Planter strips must be at least six feet wide;
- Street trees are required;
- Sod is allowed but not mandatory;
- Xeriscape designs are encouraged provided that 30% of the planter strip contains plant materials.

In addition to the landscape standards cited above, the City has also prepared a homeowner landscape guide entitled "*Water-wise Park Strip – Design Guide*" to assist in water wise landscaping choices (see appendix).

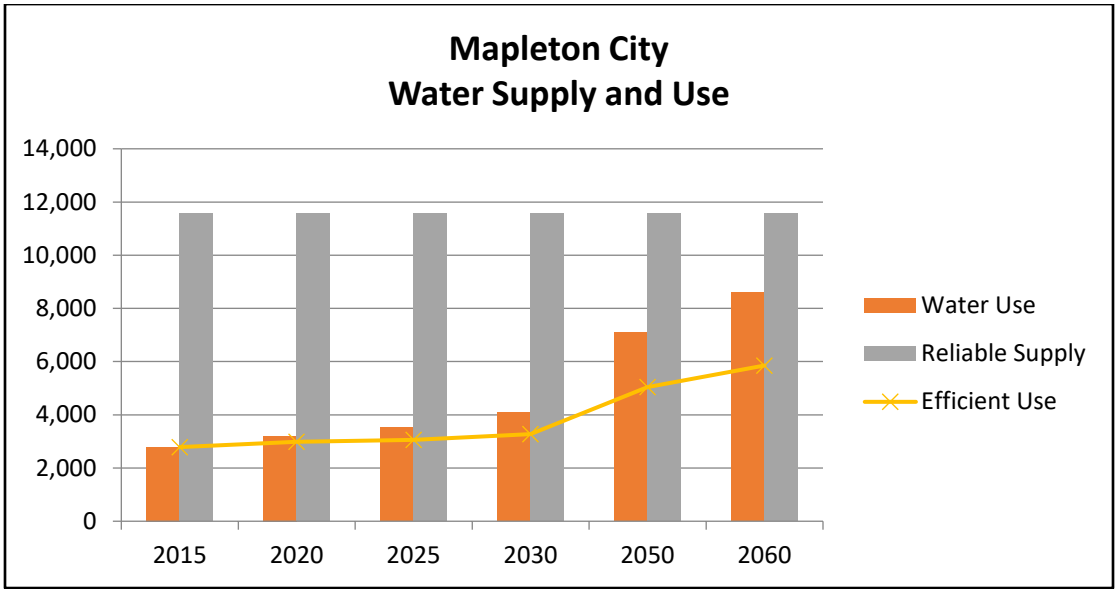
VII. Water Conservation Goals

In 2019, the State of Utah established regional M&I water conservation goals for nine regions throughout the State[1]. Mapleton City is part of the Provo River region, which includes Utah, Wasatch and Juab Counties. The new regional goals replaced the Governor's statewide goal to conserve "25% by 2025." The document includes goals for each of the nine regions as well as timelines to accomplish the goals

[1] Utah's Regional M&I Water Conservation Goals, Utah Division of Water Resources, November 2019.

The goal for the Provo River conservation region is to reduce gallons per capita per day water usage by 20% from the 2015 baseline value by the year 2030. In developing its conservation goals, Mapleton City has used a baseline usage value of 265 gallons per capita per day and has applied the 20% conservation reduction by 2030. Thus, the City's conservation goal is to reduce usage to 212 gallons per capita per day. The 2040 future projection, although not a specific goal, would add another 7 percent reduction to reduce usage to 193 gallons per capita per day.

The below graphic compares the City's reliable supply through 2060, water usage based upon estimates in increased population with 2015 as a baseline, and efficient use through implementation of the conservation goals outlined above. It is anticipated that by 2060, Mapleton City will have essentially been built out to its final land use and population capacity. As the conservation goal is achieved, Mapleton City will save approximately 820 acre-feet of water per year by 2030 as compared to the baseline condition.



VIII. Tiered Water Rate Structure

Mapleton City has adopted a tiered water rate structure for both culinary and pressurized irrigation water. The rate structure is presented in Table 5.

TABLE 5
Mapleton City Water Rate Schedule

TABLE A **Culinary Water Rates for users w/out PI Access**

Base	$ 30.00	3/4 inch & 1 inch Meters				
	Rate per 1000 gal	Rate per Gallon	Gallons From	Gallons To	$ Dollar Min $	$ Dollar Max $
1st Tier	$ 1.25	0.001250	-	8,000	1.25	10.00
2nd Tier	$ 1.50	0.001500	8,001	100,000	11.50	138.00
3rd Tier	$ 1.75	0.001750	100,001	200,000	139.75	175.00
4th Tier	$ 2.25	0.002250	200,001	300,000	177.25	225.00
5th Tier	$ 2.75	0.002750	300,001	100,000,000	227.75	274,175.00
6th Tier	$ 3.25	0.003250	100,000,001	+	274,178.25	+

TABLE B **Culinary Water Rates for users with PI Access**

Base	$ 15.00	3/4 inch & 1 inch Meters				
	Rate per 1000 gal	Rate per Gallon	Gallons From	Gallons To	$ Dollar Min $	$ Dollar Max $
1st Tier	$ 1.25	$ 0.001250	-	8,000	1.25	10.00
2nd Tier	$ 2.75	$ 0.002750	8,001	100,000	12.75	253.00
3rd Tier	$ 3.75	$ 0.003750	100,001	200,000	256.75	375.00
4th Tier	$ 4.75	$ 0.004750	200,001	300,000	379.75	475.00
5th Tier	$ 5.75	$ 0.005750	300,001	100,000,000	480.75	573,274.99
6th Tier	$ 6.75	$ 0.006750	100,000,001	+	573,281.74	+

TABLE C Pressurized Irrigation Rates for users with PI Access

Base	$ 15.00	3/4 inch & 1 inch Meters				
	Rate per 1000 gal	Rate per Gallon	Gallons From	Gallons To	$ Dollar Min $	$ Dollar Max $
1st Tier	$ 1.00	$ 0.001000	-	8,000	1.00	8.00
2nd Tier	$ 1.25	$ 0.001250	8,001	100,000	9.25	115.00
3rd Tier	$ 1.50	$ 0.001500	100,001	200,000	116.50	150.00
4th Tier	$ 2.00	$ 0.002000	200,001	300,000	152.00	200.00
5th Tier	$ 2.50	$ 0.002500	300,001	100,000,000	202.50	249,250.00
6th Tier	$ 3.00	$ 0.003000	100,000,001	+	249,253.00	+

TABLE D Culinary Water Rates for users with PI Access that DO NOT Use it

Base	$ 30.00	3/4 inch & 1 inch Meters				
	Rate per 1000 gal	Rate per Gallon	Gallons From	Gallons To	$ Dollar Min $	$ Dollar Max $
1st Tier	$ 1.25	$ 0.001250	-	8,000	1.25	10.00
2nd Tier	$ 2.75	$ 0.002750	8,001	100,000	12.75	253.00
3rd Tier	$ 3.75	$ 0.003750	100,001	200,000	256.75	375.00
4th Tier	$ 4.75	$ 0.004750	200,001	300,000	379.75	475.00
5th Tier	$ 5.75	$ 0.005750	300,001	100,000,000	480.75	573,274.99
6th Tier	$ 6.75	$ 0.006750	100,000,001	+	573,281.74	+

It may be observed that Mapleton City's rate structure encourages connection to the pressurized irrigation system when it is available in order to reduce usage of high-quality culinary water. The rate structure also economically encourages conservation through lower rates for lower usage.

IX. Conservation Practices

As outlined in Section VI of this plan, Mapleton City has established a goal of 20% reduction in water usage by the year 2030 from the 2015 baseline. Achieving the goal will require implementing the existing and proposed conservation measures to educate and encourage water conservation by Mapleton City, the Nebo School District and all residents within the water service area. Conservation programs are overseen by the Public Works Director and the Public Works Operations Manager. The contacts for these individuals are shown in the following table.

Name	Position	Phone Number	Email Address
Rob Hunter, P.E.	Public Works Director	801-806-9154	rhunter@mapleton-ut.gov
Brad Roundy	Public Works Operations Manager	801-806-9156	broundy@mapleton-ut.gov

Existing Conservation Measures

Over the past several years, Mapleton City has developed and implemented the following conservation measures. The impacts of the identified conservation measures have not been quantified in the past, so their effectiveness is unknown at this time.

Public Education:
Mapleton City includes suggestions for efficient use of water resources several time each year as part of the monthly City newsletter. The City's website is also set up to include a Water Conservation Page (see proposed conservation measures below).

Replacement Program for Old Pipelines:
The Mapleton City Water Resources Master Plan, last adopted in 2018, is currently in the process of being updated. The Master Plan will include identifying waterlines to be replaced based upon being undersized or a history of leaking or breaks. The annual City Public Works budget includes costs to replace old and undersized waterlines in accordance with the City's long-range plans to improve the water system.

Water Meters:
All culinary and secondary water connections, with the exception of some City-owned properties, are currently metered. Electronic meters were installed in the secondary water system with improvements and expansion over the past 10 years. The culinary water system has also been upgraded to include electronic meters over the past several years. Therefore, all meters within the system are relatively new, and the City has it in their planning and budgeting to quickly replace faulty electronic meters.

Smart Controllers:
Smart irrigation controllers have been installed in several Mapleton City Park irrigation systems that allow modifications to the irrigation schedule to be made remotely. City staff can change irrigation in response to changes in weather so that an appropriate amount of water is applied.

Utility Rate Structure:
The City's current rate structure, included in Section VII, encourages residents to switch from the culinary water system to the lower quality secondary water system when it becomes available to their property. The tiered levels of the structure economically penalize those who choose to use large quantities of water, thus encouraging conservation.

Proposed Conservation Measures

Mapleton City intends to continue the conservation efforts outlined above. Furthermore, the City proposes the following additional conservation measures to be implemented over the next five years:

Create a Water Conservation Page on City Website:

A Mapleton City Water Conservation page will be created as part of the existing City website. Links have already been created on Mapleton City Public Work's Drinking Water and Pressurized Irrigation web pages. The Water Conservation page will include a PDF version of this Water Conservation Plan, information on City initiatives, links to other helpful conservation websites, suggestions for water wise landscape materials, and an appeal for City residents to implement water conservation measures. This web page is currently being prepared by City staff and will be on the City's website by the end of 2023.

Create a Water Conservation Committee:

The proposed committee will consist of the Public Works Director, Public Works Operations Manager, Parks Director, at least one elected official, and other city staff and local residents. It will meet at least twice a year to help research, coordinate, create and implement public education and information campaigns and water conservation programs and incentives. This committee will also review the implementation plan, as specified below. This committee will be created and have their first meeting by March 31, 2024.

Encourage Water-Wise Landscaping :
Mapleton City will prepare flyers identifying water-wise landscape materials and methods. Mapleton City Public Works, Community Development, and Parks staff will be consulted in the development of these flyers. The information will be available at the City's main office and Public Works building, and will also be made available to residents at various City activities and functions. A water conservation booth will be set up at appropriate community events to provide education and materials to residents. These flyers will be prepared by City staff by June 30, 2024.

The City will also continue to promote the "Water-wise Park Strip – Design Guide" to assist property owners with landscaping ideas (see Appendix).

Include Water Conservation Information with Building Permits:
A packet will be prepared and included with building permit application forms that encourage the use of high water efficiency appliances, fixtures and water-wise irrigation and landscaping for all new construction and remodels. Mapleton City Public Works, Community Development, and Parks staff will be consulted in the development of this information packet. These packets will be prepared by City staff by December 31, 2024.

Rebates for Irrigation Equipment and Fixtures:
The City will investigate the potential to provide rebates to residents for implementation of water-wise irrigation equipment and low water use fixtures. Initial discussions and information gathering will include the City Administration, Finance Department, Public Works Department, Community Development Department, and Parks Department. The findings and any associated recommendations will then be presented to the City Council by December 31, 2025.

Meter Water for all City Properties:
Water meters will be installed at all City properties, including parks, City buildings and other facilities that use water. Mapleton City Public Works will be in charge of installing the meters. Information gathered from the meters will be used to determine what additional water efficient practices may be required at City properties. Meters will be added to all City properties by December 31, 2025.

Create a Local Water Wise Garden:
Mapleton City will plan and construct a water-wise garden within the City that demonstrates the use of appropriate local water wise plants. Residents will be able visit the garden and learn about the types of plants that do well and conserve water in our climate. The garden can become a key educational focal point for individuals and families within the community. The Public Works Department will meet with City Administration and the Parks Department to determine the best location for the garden. Upon completion, the City web page and informational flyers will be updated to highlight the garden. This garden will be completed and open to the public by December 31, 2027.

Consider Participating in, and Promoting the Utah Water Savers Incentive Programs
The Utah Water Savers organization offers the following statewide fixture rebates and landscape incentives to help conserve water:

1. **Landscape Incentive**: Water Savers provides financial incentives for the removal of grass and replacing it with water wise landscaping. In order for residents to participate, the City must adopt the model landscape ordinance.
2. **Smart Controller**: Water Savers provides rebates for residents that purchase and install a WaterSense-labeled smart controller that adjusts irrigation based on local weather.
3. **Toilet Replacement**: Water Savers provides rebates for replacing old toilets with a WaterSense-labeled toilet.

Mapleton City will review the model landscape ordinance and determine if it is appropriate to adopt to make the landscape incentive available to its residents. The City will also promote the smart controller and toilet replacement programs.

Consider Water Conservation when Reviewing and Updating the Land Use Ordinance and General Plan.
As the City reviews amendments to the land use ordinance and the general plan, it will consider the amendments' impact on water use when applicable.

Evaluation and Implementation

Mapleton City is committed to ensuring the stated measures are implemented with the stated goal of reducing water use by 20% by 2030. The Public Works Director and Operations Manager will prepare yearly water conservation credit reports that summarize that year's water use, how that compares to the goal and where water use is trending, the implementation status of conservation measures, and conservation-related plans for the following year.

The Water Conservation Committee will meet at least twice a year to review the implementation status of conservation measures and the ongoing trends in the City's water use. Based on how those trends compare to the goal of reducing water use by 20% by 2030, the Committee will evaluate the need to move up implementation timelines, revise proposed conservation measures, or add new proposed conservation measures and timelines.

X. Water Conservation Plan Adoption

In accordance with the Utah Code Section 73-10-32(2)(a), the Mapleton City Council shall devote part of at least one regular meeting every five years for discussion and adoption of the City's Water Conservation Plan. Minutes of the meeting shall be included as an appendix to the plan. The discussion shall take place in a regular public meeting which provides access to the media and will permit public comment on the Plan. The meeting will serve to increase awareness of the plan and encourage public involvement in its implementation, resulting in a more effective water conservation effort.

Appendix

Copy of Public Notice

Resolution for Adoption by Mapleton City Council

Water-Wise Park Strip – Design Guide

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PUBLIC NOTICE

Notice is hereby given of a Public Hearing to be held during the regular meeting of the Mapleton City Council, Wednesday, August 16, 2023, at 6:00 pm in the City Council Chambers, Mapleton City Building, 125 West Community Center Way (400 N), Mapleton, Utah for the purpose of considering:

The Mapleton City Council will consider adoption of the 2023 Mapleton City Water Conservation Plan at the City Council Meeting on August 16, 2023. Per Utah Code, entities that provide water service must maintain a Water Conservation Plan, updated at least every 5 years. The Water Conservation Plan contains information on historic water use and trends, available water sources, goals for conservation, and proposed implementation measures to reach the conservation goal. The proposed Water Conservation Plan can be reviewed on Mapleton City Public Works' Water Conservation web page at https://mapleton.org/departments/public_works/drinking_water/water_conservation.php. Public comment may be made in person at the Mapleton City Council Meeting on August 16, 2023 @ 6pm in the Mapleton City Council Chambers (125 West 400 North, Mapleton, UT 84664).

Camille Brown, Recorder

Posted at the below locations on June 14, 2023, 2023: Utah Public Notice website and at www.mapleton.org.

In compliance with the Americans with Disabilities Act, individuals needing special accommodations (including auxiliary communicative aids and services) during these hearing should notify Camille Brown at Mapleton City, 125 West Community Center Way (400 N.), Mapleton, UT 84664, or by phone, (801) 806-9106, giving her at least 24 hours notice. Signature on this document certifies that this Public Notice was posted on July 31, 2023.

Camille Brown

From: support@utah.gov
Sent: Monday, July 31, 2023 2:25 PM
To: Camille Brown
Subject: Public Notice for City Council

Utah Public Notice

City Council

Public Notice

Notice Date & Time: 7/31/23 2:24 PM

Description/Agenda:

PUBLIC NOTICE

Notice is hereby given of a Public Hearing to be held during the regular meeting of the Mapleton City Council, Wednesday, August 16, 2023, at 6:00 pm in the City Council Chambers, Mapleton City Building, 125 West Community Center Way (400 N), Mapleton, Utah for the purpose of considering:

The Mapleton City Council will consider adoption of the 2023 Mapleton City Water Conservation Plan at the City Council Meeting on August 16, 2023. Per Utah Code, entities that provide water service must maintain a Water Conservation Plan, updated at least every 5 years. The Water Conservation Plan contains information on historic water use and trends, available water sources, goals for conservation, and proposed implementation measures to reach the conservation goal. The proposed Water Conservation Plan can be reviewed on Mapleton City Public Works' Water Conservation web page at https://mapleton.org/departments/public_works/drinking_water/water_conservation.php. Public comment may be made in person at the Mapleton City Council Meeting on August 16, 2023 @ 6pm in the Mapleton City Council Chambers (125 West 400 North, Mapleton, UT 84664).

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Notice of Special Accommodations:

In compliance with the Americans with Disabilities Act, the City will make reasonable accommodations to ensure accessibility to this meeting. If you need special assistance to participate in this meeting, please contact the City Recorder at 801-806-9106 at least three working days prior to the meeting.

Notice of Electronic or telephone participation:

NA

Other information:

Location:

125 West 400 North, Mapleton, 84664

Contact information:

Camille Brown , cbrown@mapleton.org, 8018069106

RESOLUTION NO. 2023-28

A RESOLUTION ADOPTING TO ADOPT THE 2023 MAPLETON CITY WATER CONSERVATION PLAN

WHEREAS, Mapleton City is committed to conserving water as the population grows and increases demand on existing water sources; and

WHEREAS, cities providing water service are required to implement a Water Conservation Plan and update the Plan at least every 5 years; and

WHEREAS, this Water Conservation Plan includes goals, existing and proposed measures, and implementation strategies to conserve water; and

NOW THEREFORE, BE IT RESOLVED by the City Council of Mapleton, Utah, that: the City adopts the 2023 Mapleton City Water Conservation Plan.

This resolution adopted this 16th day of August 2023, by the City Council of Mapleton City, Utah.

Dallas Hakes
Mayor

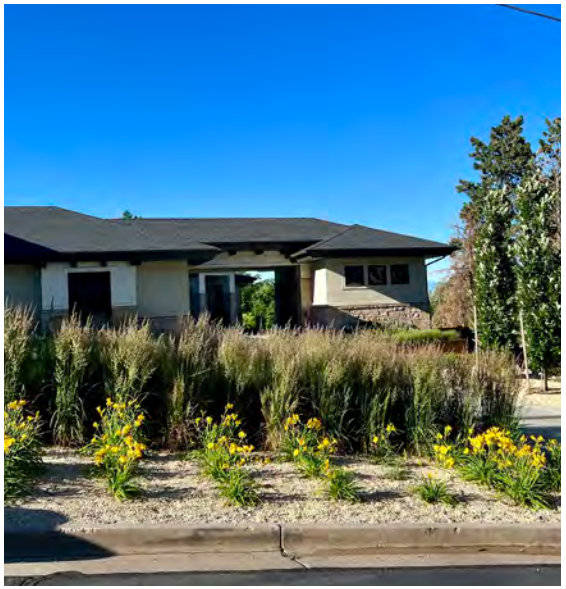
ATTEST:

Camille Brown
City Recorder

MAPLETON CITY CORPORATION
UTAH COUNTY-STATE OF UTAH

MAPLETON
UTAH

Water-wise Park Strip - Design Guide



MAPLETON
UTAH

Water Conservation in Park Strips:

Park strips are an important design feature in Mapleton City for several reasons. Park strips generally include street trees, which provide shade, beauty, and help to calm traffic. Park strips create a buffer between the sidewalk and the roadway, making a safer pedestrian experience. Park strips also provide an area for snow (storage) during the winter months as roads are plowed and sidewalks shoveled.

Traditionally, park strips have included turf grass as the primary landscape feature. As water conservation becomes increasingly important, Mapleton City is encouraging property owners to consider drought tolerant options, which will save water and reduce utility costs to property owners.

According to Utah Water Savers, a statewide conservation rebate program ”Removing lawn from your park strip will save an estimated 5,000 - 8,000 gallons of water each year - and you can get cash for it.” Property owners that replace the turf grass in their park strips with drought tolerant alternatives can receive up to $1.25 per square foot through the Flip Your Strip program.

How to use this guide:

This guide provides five landscape design options for park strips. Each option includes specific trees, shrubs, perennials, ornamental grasses, and ground cover that can easily be obtained from local nurseries. While the guide is meant primarily for park strips, it can also be used for other landscapes.

To use the guide:

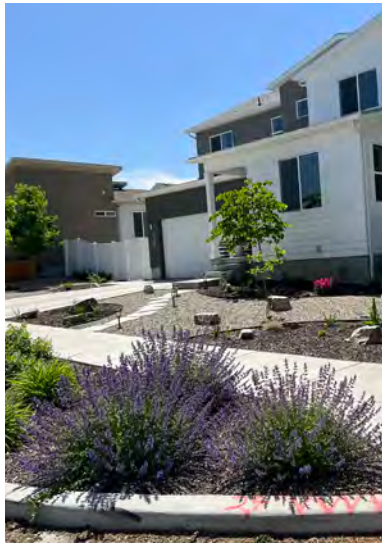
1. Measure your park strip dimensions and draw them on a graph paper.
2. Select a style and plants that best meet your intent.
3. Draw out a basic concept using the recommended plants (or other water conservation plants).
4. Start the Flip Your Strip program (optional), see page 10 of this document. Get approval from the Flip Your Strip program.
5. Begin construction of your water conservation landscape project! Be sure to follow the City’s ordinances, call 811 for utilities, follow Flip Your Strip requirements (optional), and best practices for irrigation and weed management.

This guide identifies the adopted landscape requirements of Mapleton City and the additional requirements if a property owner is wanting to qualify for the Flip your Strip program (see page 10).

Guide prepared by:
Jake Young, AICP, PLA - Citi Design

Utah Water-wise Examples

MAPLETON
UTAH

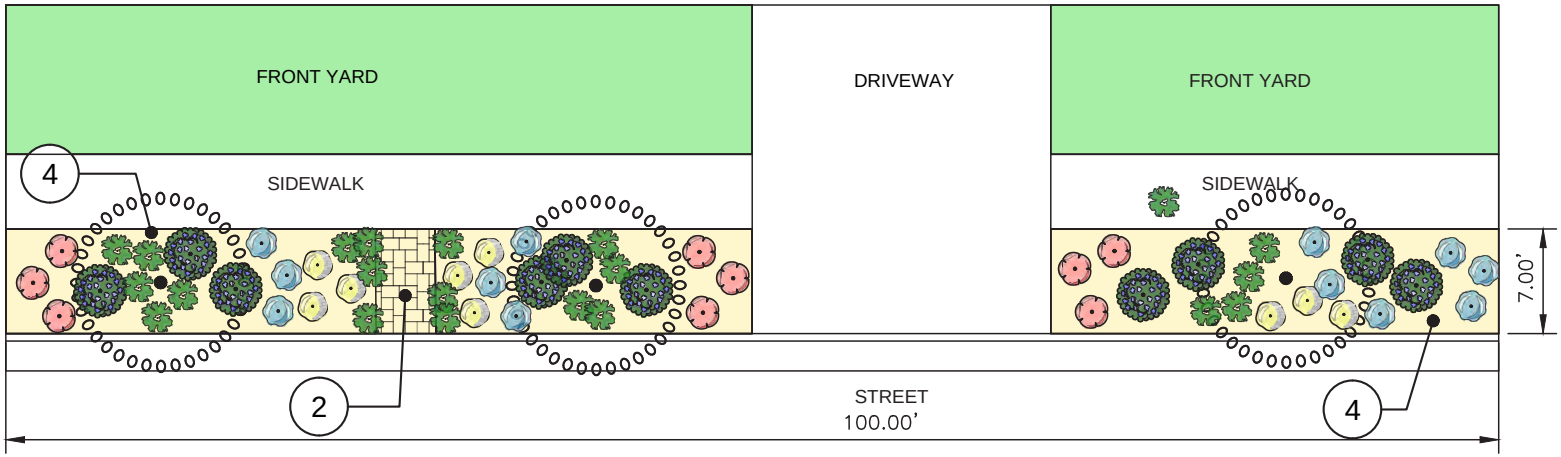


Utah Water-wise Examples

MAPLETON
UTAH

Water-wise Park Strip - Design Guide

Mediterranean Style



PLANT TYPES

COLUMNAR DECIDUOUS TREE	-	3
SMALL SHRUB	-	10
PERENNIAL (A)	-	9
PERENNIAL (B)	-	9
PERENNIAL (C)	-	12
GROUND COVER	-	21

NOTES

SYMBOL	DESCRIPTION
2	OPTIONAL PAVER PATH (ALIGN WITH FRONT DOOR)
4	GROUND MUST BE COVERED WITH 3-4" DEEP OF WOOD MULCH, COMPOST, OR SMALL ROCKS/GRAVEL. IF PLANTS/GROUNDCOVER COVER 100% OF GROUND THEN MULCH AND ROCK ARE NOT NEEDED.

PLANT SUGGESTIONS (OPTIONS)

Trees

Armstrong Red Maple, columnar - *Acer rubrum 'Armstrong'*
Slender Silhouette Sweetgum - *Liquidambar styraciflua 'Slender Silhouette'*
Skinny Genes® Oak - *Quercus x bimundorum 'JFS-KW2QX' PP 24442*
Palisade® American Hornbeam - *Carpinus caroliniana 'CCSQU'*

Shrubs

Hidcote Blue English Lavender - *Lavandula angustifolia 'Hidcote Blue'*
Mediterranean Pink Winter Heath - *Erica x darleyensis 'Mediterranean Pink'*
Mini Blue Lavender - *Lavandula angustifolia 'Mini Blue'*

Perennials

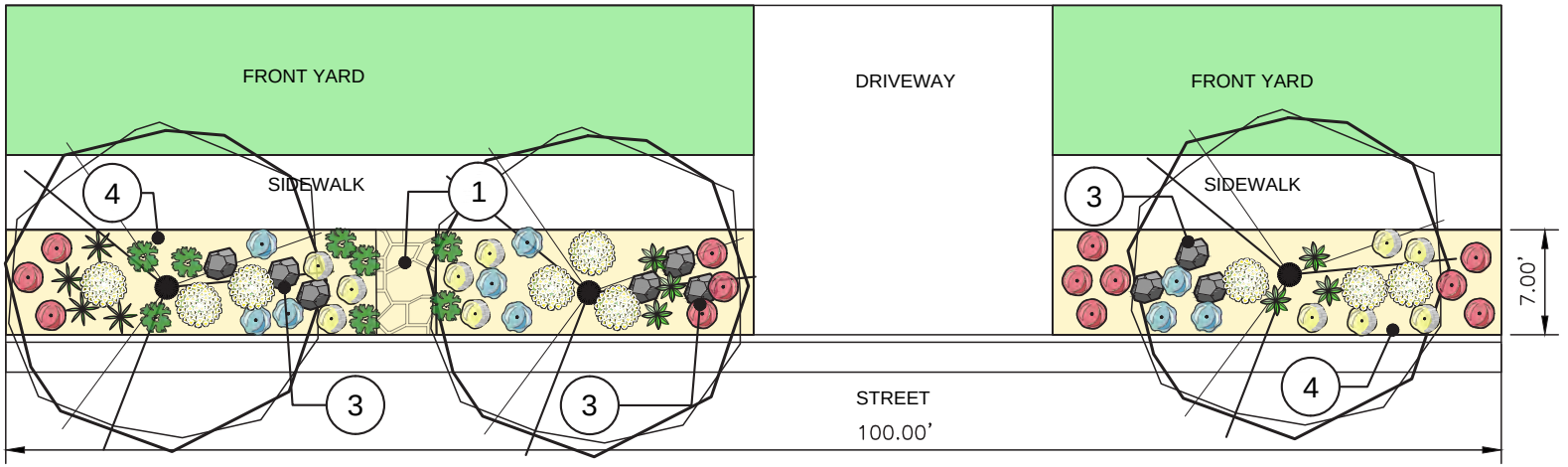
Hardy Geranium, Cranesbill - *Geranium 'Dragon Heart'*
Meadow or Woodland Sage - *Salvia nemorosa 'Caradonna'*
Tickseed - *Coreopsis grandiflora 'Baby Sun'*
Sonoran Sunset Hummingbird Mint - *Agastache cana 'Sinning'*
Walkers Low Catmint - *Nepeta x faassenii 'Waikers Low'*

Ground Covers

Pink Ice Plant - Delosperma 'Delmara® Pink'
Tricolor Ice Plan - Delosperma 'P001S' Fire Spinner®
Red Creeping Thyme - *Thymus Praecox 'Coccineus'*

Water-wise Park Strip - Design Guide

Great Basin (Desert) Style



PLANT TYPES

MEDIUM SIZE TREE	-	3
PERENNIAL (B)	-	11
PERENNIAL (C)	-	9
GROUND COVER	-	8
SMALL DESERT SHRUB	-	9
PERENNIAL (D)	-	13

NOTES

1. OPTIONAL FLAGSTONE PATH (ALIGN WITH FRONT DOOR)
3. OPTIONAL BOULDERS. SUGGESTED TO PLANT IN GROUPS OF 2-3 (MAKING PLANTING POCKETS). FOR SAFETY NO TALLER THAN 24" AND PLACED 18" FROM EDGE OF SIDEWALK AND CURB.
4. GROUND MUST BE COVERED WITH 3-4" DEEP OF WOOD MULCH, COMPOST, OR SMALL ROCKS/GRAVEL. IF PLANTS/GROUNDCOVER COVER 100% OF GROUND THEN MULCH AND ROCK ARE NOT NEEDED.

PLANT SUGGESTIONS (OPTIONS)

Trees

Sensation Box Elder/Maple - *Acer negundo 'Sensation'*
Big Tooth Maple - *Acer grandidentatum*

Shrubs / Succulents

Big Sagebrush - *Artemisia tridentata*
Rubber Rabbitbrush - *Chrysothamnus nauseosus*
Gro-Low Sumac - *Rhus aromatica 'Gro-Low'*
Brakelights Red Yucca - *Hesperaloe parviflora 'Perpa'*

Perennials

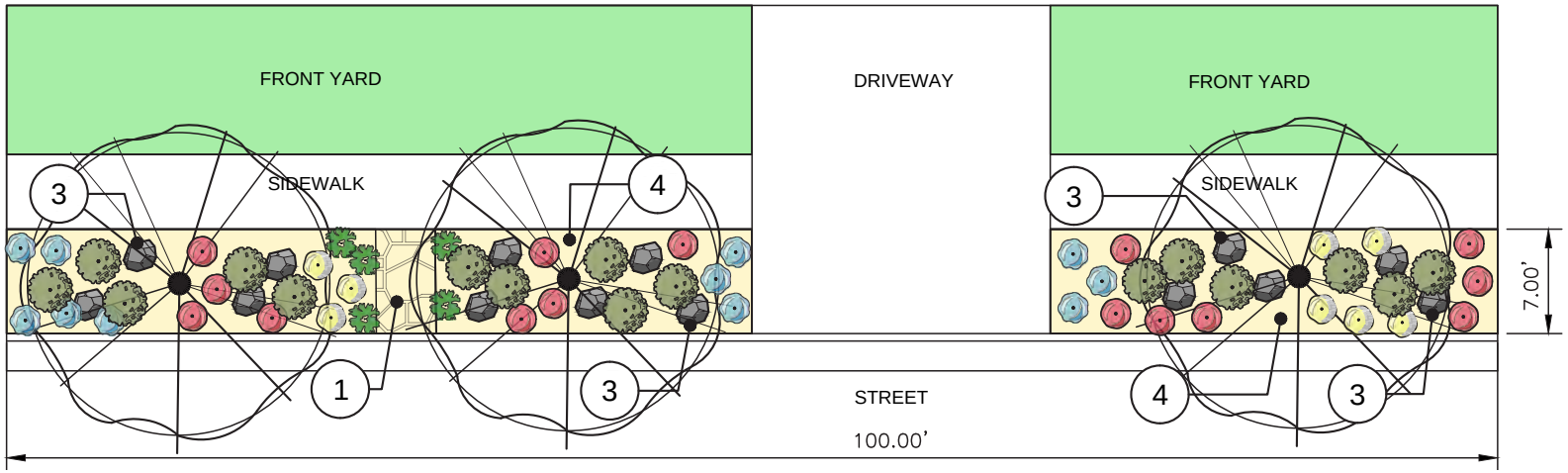
Carpet Fire Chalice - *Zauschneria garrettii 'Orange Carpet'*
Moonshine Yarrow - *Achillea millefolium 'Moonshine'*
Sonoran Sunset Hummingbird Mint - *Agastache cana 'Sinning'*
Walkers Low Catmint - *Nepeta x faassenii 'Waikers Low'*
Firecracker Penstemon - *Penstemon eatonii*
Baby Cole Blanket Flower - *Gaillardia aristata 'Baby Cole'*
Pikes Peak Purple Penstemon - *Penstemon x mexicali 'Pikes Peak Purple'*
Red Rocks Penstemon - *Penstemon x mexicali 'Red Rocks'*

Ground Covers

Calgary Carpet Juniper - *Juniperus sabina 'Calgary Carpet'*
Blue Star Juniper - *Juniperus squamata 'Blue Star'*
Blue Chip Creeping Juniper - *Juniperus horizontalis 'Blue Chip'*

Water-wise Park Strip - Design Guide

Mountain Style



PLANT TYPES

MEDIUM MOUNTAIN TREE	-	3
PERENNIAL (B)	-	8
PERENNIAL (C)	-	11
GROUND COVER	-	5
PERENNIAL (D)	-	15
SMALL MOUNTAIN SHRUB	-	16

NOTES

1. OPTIONAL FLAGSTONE PATH (ALIGN WITH FRONT DOOR)
3. OPTIONAL BOULDERS. SUGGESTED TO PLANT IN GROUPS OF 2-3 (MAKING PLANTING POCKETS). FOR SAFETY NO TALLER THAN 24" AND PLACED 18" FROM EDGE OF SIDEWALK AND CURB.
4. GROUND MUST BE COVERED WITH 3-4" DEEP OF WOOD MULCH, COMPOST, OR SMALL ROCKS/GRAVEL. IF PLANTS/GROUNDCOVER COVER 100% OF GROUND THEN MULCH AND ROCK ARE NOT NEEDED.

PLANT SUGGESTIONS (OPTIONS)

Trees

Big Tooth Maple - *Acer grandidentatum*
Flame Amur Maple - *Acer ginnala 'Flame'*
Paperbark Maple - *Acer griseum*
Norwegian Sunset® Maple - *Acer truncatum x A. platanoides 'Keithsform'*

Shrubs

Alpine Currant - Ribes alpinium
Gro-Low Sumac - Rhus aromatica 'Gro-Low'
Compact Oregon Grape - *Mahonia aquifolium 'Compacta'*
Sherwood Compact Mugo Pine - *Pinus mugo 'Sherwood Compact'*

Perennials

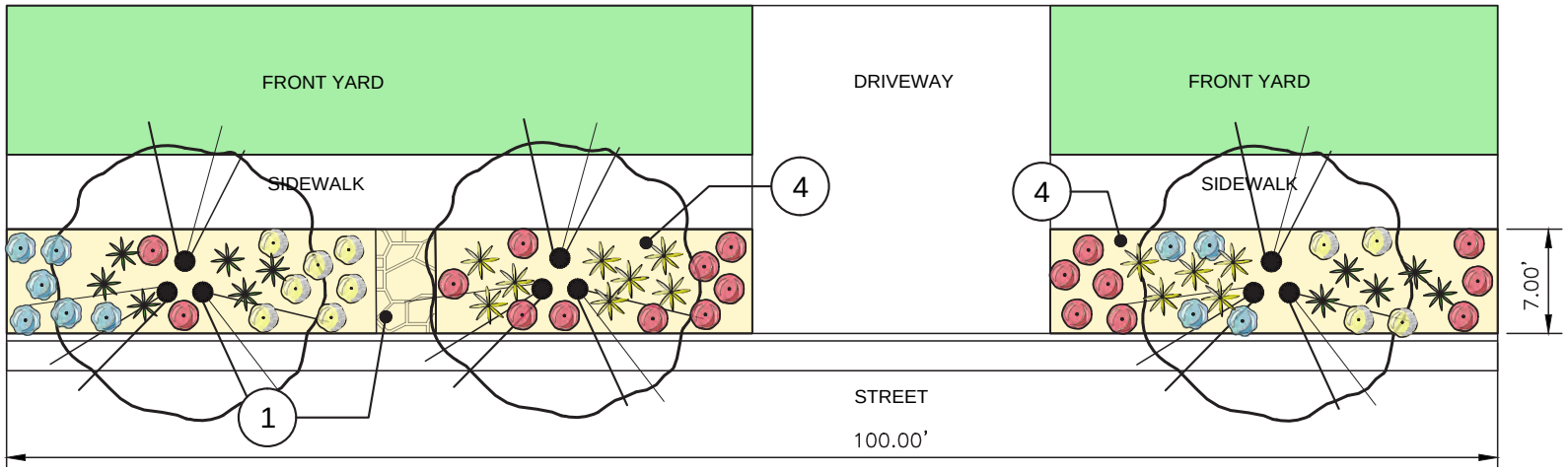
Hardy Geranium, Cranesbill - *Geranium 'Dragon Heart'*
Firecracker Penstemon - *Penstemon eatonii*
Pikes Peak Purple Penstemon - *Penstemon x mexicali 'Pikes Peak Purple'*
Red Rocks Penstemon - *Penstemon x mexicali 'Red Rocks'*
Rocky Mountain Columbine - *Aquilegia caerulea*

Ground Covers

Pink Ice Plant - Delosperma 'Delmara® Pink'
Tricolor Ice Plan - Delosperma 'P001S' Fire Spinner®
Compact Oregon Grape *Mahonia aquifolium 'Compacta'*
Turkish Speedwell - *Veronica liwanensis*

Water-wise Park Strip - Design Guide

Meadow Style



PLANT TYPES

MEDIUM MEADOW TREE	-	3
PERENNIAL (B)	-	11
PERENNIAL (C)	-	10
PERENNIAL (D)	-	19
ORNAMENTAL GRASS (A)	-	11
ORNAMENTAL GRASS (B)	-	13

NOTES

1. OPTIONAL FLAGSTONE PATH (ALIGN WITH FRONT DOOR)
4. GROUND MUST BE COVERED WITH 3-4" DEEP OF WOOD MULCH, COMPOST, OR SMALL ROCKS/GRAVEL. IF PLANTS/GROUNDCOVER COVER 100% OF GROUND THEN MULCH AND ROCK ARE NOT NEEDED.

PLANT SUGGESTIONS (OPTIONS)

Trees

Bur Oak - *Quercus macrocarpa*
Skyline Honeylocust - *Gleditsia triacanthos f. inermis 'Skyline'*

Perennials

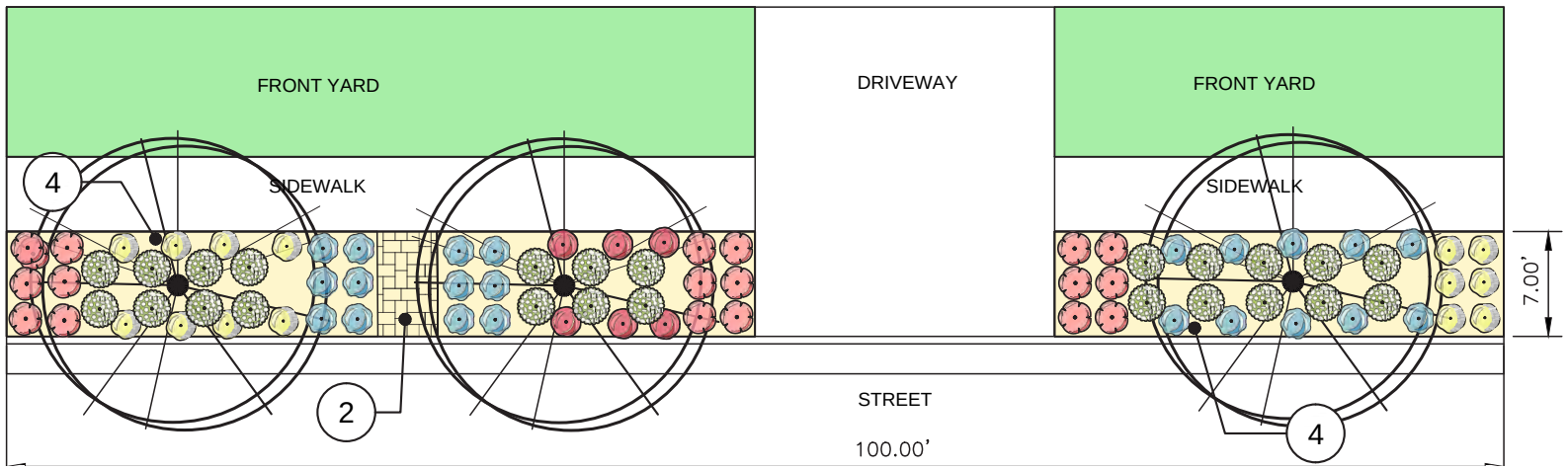
Hardy Geranium, Cranesbill - *Geranium 'Dragon Heart'*
Meadow or Woodland Sage - *Salvia nemorosa 'Caradonna'*
Tickseed - *Coreopsis grandiflora 'Baby Sun'*
Sonoran Sunset Hummingbird Mint - *Agastache cana 'Sinning'*
Walkers Low Catmint - *Nepeta x faassenii 'Waikers Low'*
East Friesland Meadow Sage - *Salvia nemorosa 'East Friesland'*
May Night Meadow Sage - *Salvia nemorosa 'May Night'*
Wild Berry Coneflower - *Echinacea purpurea 'PowWow Wild Berry'*
Moonbeam (Tickseed) - *Coreopsis verticillata*

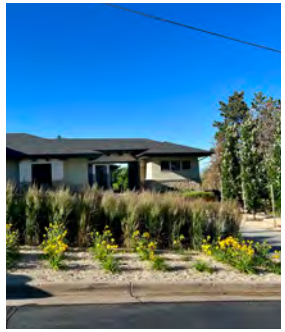
Ornamental Grasses

Blue Oat Grass - *Helictotrichon sempervirens*
Little Bluestem - *Schizachyrium scoparium*
Karley Rose - *Pennisetum orientale*
Blonde Ambition Blue Grama Grass - *Bouteloua gracilis 'Blonde Ambition*

Water-wise Park Strip - Design Guide

Modern Garden Style





PLANT TYPES

FORMAL GARDEN MEDIUM TREE	-	3
PERENNIAL (A)	-	19
PERENNIAL (B)	-	14
PERENNIAL (C)	-	22
PERENNIAL (D)	-	6
SMALL FORMAL SHRUB	-	24

NOTES

(2) OPTIONAL PAVER PATH (ALIGN WITH FRONT DOOR)

(4) GROUND MUST BE COVERED WITH 3-4" DEEP OF WOOD MULCH, COMPOST, OR SMALL ROCKS/GRAVEL. IF PLANTS/GROUNDCOVER COVER 100% OF GROUND THEN MULCH AND ROCK ARE NOT NEEDED.

PLANT SUGGESTIONS (OPTIONS)

Trees

Golden Raintree **-** *Koelreuteria paniculata*
Fairmount Ginkgo - *Ginkgo biloba 'Fairmount'*
Armstrong Red Maple, columnar - *Acer rubrum 'Armstrong'*
Slender Silhouette Sweetgum - *Liquidambar styraciflua 'Slender Silhouette'*
Skinny Genes® Oak - *Quercus x bimundorum 'JFS-KW2QX' PP 24442*
Palisade® American Hornbeam - *Carpinus caroliniana 'CCSQU'*

Shrubs or Ornamental Grasses

Dark Knight Bluebeard - *Caryopteris x clandonensis 'Dark Knight'*
Hidcote Blue English Lavender - *Lavandula angustifolia 'Hidcote Blue'*
Blue Oat Grass - *Helictotrichon sempervirens*
Lo & Behold® Blue Chip Jr. Butterfly Bush - *Buddleja x 'Blue Chip Jr.'*
Flutterby Petite® Tutti Fruitti Pink Butterfly Bush - *Buddleja x 'Podaras13'*
Munstead Lavender - *Lavandula angustifolia 'Munstead'*

Perennials

Hardy Geranium, Cranesbill - *Geranium 'Dragon Heart'*
Meadow or Woodland Sage - *Salvia nemorosa 'Caradonna'*
Tickseed - *Coreopsis grandiflora 'Baby Sun'*
Sonoran Sunset Hummingbird Mint - *Agastache cana 'Sinning'*
Walkers Low Catmint - *Nepeta x faassenii 'Waikers Low'*
Stella De Oro Daylily Hemerocallis 'Stella de Oro'

Mapleton City Landscape Ordinances:

City ordinance - Thirty percent (30%) or more of the parkway surface must be covered with vegetation, not including required street trees, within three (3) years of planting or when planting has reached maturity, whichever comes first. Water conserving plants shall constitute at least eighty percent (80%) of all plants used. With the exception of trees, no planting material shall exceed 36 inches in height at maturity.

Parkways 4 feet in width or more in width shall include trees. Such trees shall be spaced not more than thirty feet (30') apart and shall have a minimum caliper size of one inch (1").

Flip Your Strip Program:

These requirements are applicable for the Flip Your Strip Program.
"General Requirements:
• Park strips must be currently landscaped with living, well-maintained lawn. If lawn has been killed or removed prior to a pre-conversion site visit, you are not eligible for this program.
• Applicant must be in good standing with a participating water provider. Unpaid water bills will disqualify applicants from the Flip Your Strip program.
• Applicants must be participating voluntarily. Projects required by governmental codes or policy are not eligible for this program.
• Projects should remove all lawn from the park strip and replace it with water-efficient landscaping.
• Projects that replace lawn with artificial turf are not eligible.
• Rebate checks will be made payable to the property owner.

Planting Requirements:
• Perennial plants must cover at least 50% of the converted park strip at maturity.
• Trees will not be considered in density calculations.
• Plants may not exceed 24 inches in height at maturity. Taller plants block views, impede safety, and can interfere with city maintenance.
• Completed projects must be covered with 3-4 inches of gravel, bark, or compost mulch. Groundcover plants can qualify as mulch if 100% plant density is achieved at maturity. If landscape fabric is used (not recommended), it must be permeable to water and air. Concrete areas do not qualify for a square foot rebate, but pavers, bricks, stone, and other permeable materials are permitted.

Irrigation Requirements:
• Completed park strips must be irrigated with low-volume drip systems. Drip systems must include filter and pressure regulators visible for inspection:
• Drip emitters must be rated at 5 gallons per hour or less.
• Bubblers, micro-spray emitters and soaker hoses are not allowed.
• Drip emitters and spray heads must be on separate zones."
Source: https://utahwatersavers.com/Program/2/flip-your-strip#eligibility

Best practices for maintenance and water conservation:

In addition to the City's landscape ordinance and Flip Your Strip Program the following recommendations will assist with landscape maintenance.

• Weed fabric - is encouraged to be used under gravel or rock planting areas. For mulch planting areas with shrubs and ornamental grasses weed fabric is also recommended. In planting areas with ground cover plants or bulbs weed fabric is not recommended. Weed fabric used should be woven, rated to 15-20 years, and 5 ounce weight. Quality weed fabric is generally purchased at specialty stores such as nurseries, garden, farm, or irrigation (not big box hardware).

Around Shrubs and Plants: Weeding maintanence beneath shrubs and plants can be time consuming, hard work and difficult. Bushes and small shrubs that are weed free are healthier plants and require less plant bed maintenance. Landscape fabric stops weeds without chemicals while allowing moisture and nutrients to pass through. Installing the fabric properly doesn't disturb the existing bushes or take a significant time investment, but it does provide an optimum weed barrier that can conserve water by design.

https://www.dewittcompany.com/wp-content/uploads/2021/07/Landscape-fabric-installation-guide2.pdf

• Wood mulch - 4" of small to medium size wood mulch helps keep moisture in the ground and decreases weeds (but definitely doesn't prevent them).

• Decorative rock - can be attractive and doesn't need replenishment, however the rock does add heat to the plants. It is recommended that rock sizes be one inch (1") or smaller (for safety and beauty) and be installed at 3-4 inches deep (over weed fabric).

• Weed management - water-wise, xeric, or drought tolerant landscapes require ongoing maintenance just like turf grass (mowing). Weekly/monthly weed management is necessarily just like mowing, however with proper planning, installation, and routine maintenance it can be minimized.

• Drip irrigation - it is recommended that plants have a minimum of two emitters per plant (more for larger plants), if one emitter is clogged the other emitter should still provide water. It is easy to see when a sprinkler head is broken or not working properly by its spray, however drip irrigation requires close inspection to identify issues. Irrigation drip systems should receive a spring inspection and regularly inspections to identify emitters not working properly.

Resources:

Localscapes program
https://localscapes.com/

Flip Your Strip
https://utahwatersavers.com/Program/2/flip-your-strip

Conservation Garden Park
https://conservationgardenpark.org/

Water-wise Plants (USU list)
https://extension.usu.edu/cwel/files/Utah_House_Plant_List_v2_4p.pdf

https://extension.usu.edu/cwel/water-wise-plants

Native plant list
https://plantnative.org/rpl-ut.htm

Tree selection resource
https://treebrowser.org/

Lehi Water-wise Landscape Guidelines
https://www.lehi-ut.gov/wp-content/uploads/2020/02/Xeriscape-Guidelines-Smaller-Size.pdf

Sandy Water-wise Landscapes
https://sandy.utah.gov/413/Water-wise-Landscapes

Red Butte Gardens
https://redbuttegarden.org/plan-your-garden-visit/online-classes-virtual-resources/garden-journal/waterwise-gardening-tips/

Call 811 before digging:

Source: https://www.bluestakes.org/