Appendix A
Water Use and Preservation Element

Introduction

Effective June 2022, the State of Utah amended Utah Code 10-9a-403 to require municipal general plans to include a Water Use and Preservation Element. All municipalities must comply with the amended code by December 31, 2025. This Water Use and Preservation Element (Element) has been prepared to meet the new legislative requirements. In accordance with State Code, this Plan describes:

1. The effect of permitted development on water demand and water infrastructure for Eagle Mountain City (City)
2. The City's proposed methods of reducing water demand and per capita consumption for future development
3. The City's efforts and plans to reduce water use in existing development
4. Opportunities for the City to modify its municipal operations to eliminate practices or conditions that waste water.

Although the requirements for this Element are similar to those of the state required Water Conservation Plan, this Element focuses on the big-picture interaction between water use and municipal development or land use. This Element provides information that will allow City officials to plan for anticipated growth by incorporating water use information into land development decisions.

Effect of Development on Water Demands

Knowing the amount and patterns of current water use in the City is essential before water conservation and preservation measures can be implemented. The purpose of this section of the Element is to discuss "the effect of permitted development or patterns of development on water demand and water infrastructure". (Utah Code 10-9a-403(2)(iv)). The City recently completed both a Water Conservation and Management Plan[1] and Culinary Water Master Plan to guide their water conservation and preservation efforts. Those documents contain a thorough analysis of the City's existing and projected water demands (i.e., use), source capacities, system sustainability, and existing and future water conservation measures and can be referred to supplementally to this plan.

Water Demand

Indoor and outdoor water were considered separately in this analysis as they have varying unit rate demands. Currently the indoor culinary water demand in Eagle Mountain is about 62 gallons per capita per day (gpcd) with a non-culinary, or outdoor, demand at 106 gpcd. It is apparent that outdoor water use (irrigation) constitutes the majority of per capita water demands within the City

[1] The full 2024 Eagle Mountain City Water Conservation Plan can be found here: https://eaglemountain.gov/wp-content/uploads/2024/12/12.5.24-Water-Conservation-and-Management-Plan_Final.pdf

with an approximate 63% and 37% split of outdoor and indoor water use, respectively. It has also been estimated that about 75% of water use in the City is residential. Therefore, reducing residential outdoor water use will be vital for the City to achieve long-term water preservation and to ensure existing and planned water sources will be sufficient for essential uses of the City's residents.

The area within the Eagle Mountain City corporate limits is actively developing with significant potential for future development. The current population is only about 38% of the anticipated buildout population. With the City's population projected to more than double in the next 35 years, water conservation efforts in new developments will be key to successful water preservation within the City.

Overall water demands as presented in the following supply and demand analysis (Tables 1 and 2 and Figures 1 to 3) are calculated based on:

- City population projections as described in the City Reuse Master Plan
- Land use designations as described in the 2018 Future Land Use Map from the General Plan
- Indoor water use assumed at 62 gpcd
- City water users successfully achieving State of Utah Regional Conservation Goals[2]
- Average existing irrigation rates for Eagle Mountain residential homes of 3.5 acre-ft/year
- Future irrigation rates of 3.2 or 2.7 acre-ft/acre depending on land use type
    - This is based on the City's landscape ordinance that now requires no less than 30 percent low water use landscaping and no more than 70 percent turf on most properties. It is assumed that turf will be irrigated at a rate no greater than 3.2 acre-feet/acre and low water use landscaping at a rate no greater than 1.43 acre-ft/acre. This results in an irrigation rate of 2.669 or about 2.7 acre-ft/acre for residential properties.
    - The irrigation rates quoted here are for 2025. Additional reductions in irrigation rates are expected as the City achieves its future conservation goals.

Further details of calculated outdoor water demand are presented in Table 1. This table describes the land use types, irrigated areas, and assumed irrigation rates for this demand analysis.

[2] State regional goals can be found here: https://conservewater.utah.gov/regional-water-conservation-goals/

Table 1: *Eagle Mountain Outdoor Water Demand Projection by Land Use*

Land Use Type	Acreage	Land Efficiency	% Irrigated	Irrigated Acres	Irrigation Rate (acre-ft/acre)	Total Outdoor Use (acre-ft/year)	Outdoor Use (acre-ft/year/gross acre)
Irrigated Open Space	113	90%	80%	81.4	3.2	260	2.30
Non-Irrigated Open Space	3,875	100%	0%	0.0	0.0	0	0.00
Schools	113	90%	40%	40.7	3.2	130	1.15
City Center Parks	142	90%	75%	95.9	3.2	307	2.16
Business Park/ Light Industry	5,456	80%	10%	436.5	2.7	1,165	0.21
Civic Uses	15	80%	15%	1.8	3.2	6	0.38
Employment Center Campus	1,021	80%	15%	122.5	2.7	327	0.32
Foothill Residential	1,942	60%	48%	559.3	2.7	1,493	0.77
Neighborhood Residential One	5,924	75%	53%	2,354.8	2.7	6,285	1.06
Neighborhood Residential Two	507	75%	20%	76.1	2.7	203	0.40
Neighborhood Residential Three	3	75%	20%	0.5	2.7	1	0.40
Regional/ Community Commercial	1,567	80%	15%	188.0	2.7	502	0.32
Rural Density One	618	75%	15%	69.5	2.7	186	0.30
Rural Density Two	1,543	75%	38%	439.8	2.7	1,174	0.76
Town Center Mixed Use	427	75%	15%	48.0	2.7	128	0.30
Total	23,266			4,515		12,166	0.72

Note: Irrigation rates presented in this table are based on the 2025 City land use plan for the undeveloped areas in the south service area only. More details on this table can be found in the City Reuse Master Plan

Table 2 details overall population projections and water demands for the City calculated for both indoor and outdoor demands with conservation as described above.

Table 2: *Eagle Mountain City Projected Population and Water Demands (Including Projected Conservation)*

Year	Total City Projected Population	Total Projected Indoor Water Demand (acre-ft/year)	Total Projected Outdoor Water Demand (acre-ft/year)	Total Projected Water Demand (acre-ft/year)
2020	46,412	2,793	4,785	7,578
2025	73,990	3,734	11,170	14,904
2030	93,180	4,972	12,478	17,449
2035	112,607	5,707	14,736	20,443
2040	130,910	6,362	17,109	23,471
2045	147,157	7,352	17,899	25,251
2050	161,092	8,306	18,910	27,217
2055	172,984	8,937	19,437	28,375
2060	183,317	9,635	20,030	29,665
Buildout	193,900	10,990	20,607	31,597

Water Supply

To place the projected water demands into context, it is prudent to consider and better understand the City's available supplies. Currently, the City has only two major sources of water supply: groundwater wells and wholesale water from Central Utah Water Conservancy District as described below:

- Groundwater Wells: Eagle Mountain City has a sustainable groundwater yield of 7,337 acre-ft/year from wells drawing from the Cedar Valley Aquifer.
- CUWCD Wholesale Water: The City has a contract with CUWCD to eventually deliver up to 16,300 acre-ft of culinary water per year. The amount of water delivered under this contract grows each year over the next several decades in conjunction with expected City growth.

Due to Eagle Mountain's location in Cedar Valley west of the Lake Mountains and east of the West Desert, there are limited options for additional sources of water; there are no additional rivers, streams, or springs that can be used for reliably supplying drinking or irrigation water. This means that new water source options for future needs and water supply diversification are limited to the following:

- Develop More Groundwater Wells: The City has groundwater rights greater than the amount it is currently utilizing through its existing wells. The City could further develop their groundwater rights up to the max allowable sustainable yield of the Cedar Valley Aquifer. According to the 2014 *Cedar Valley and Northern Utah Valley Groundwater Management Plan (Utah Division of Water Rights, 2014)* the Cedar Valley Aquifer has 10,300 acre-ft of annual sustainable yield. However, not all of this is available to the City; some portion will be used by other entities and water rights in the Valley. Based on an analysis of the City's portion of total water rights in the Valley, it is estimated that the City could develop an additional 906 acre-ft/year from this aquifer. It should be noted that this analysis is completed based on the most accurate data currently available. However, it has been recommended by the October 2020 *Water and Reuse Optimization Report* that further analysis be completed on the sustainable aquifer yield to verify the assumed available yield discussed here.
- Reuse: Reuse has been a part of the City's plans since 2012. The City has submitted a reuse application to the state for 6,273 acre-ft/year and is currently awaiting approval. Should the state deny the City reuse application, this additional source might not be available for future use.
- Wholesale Purchase: A possible option for increasing water sources within the City would be to find additional wholesale water. However, CUWCD has sold all of its existing available water and with other cities also in need of additional water, purchasing new wholesale water is expected to be a difficult and expensive option.

There are limits to water supplies that can reasonably be used by the City due to its location in Cedar Valley. To ensure ample water supply, the City should analyze any new water rights or sources provided by developers to make certain that they can be used as intended. For example, developers providing additional water rights for groundwater wells may not be useful since the limitation on groundwater is physical availability, not paper water rights. In contrast, additional

wholesale water from culinary sources outside the Valley could be useful as long as they can be effectively conveyed to the point of use.

Implications of Permitted Development on Water Demand and Infrastructure

To better understand the current City water supply and demand an analysis was performed using the demand projections and the potential sources as described above. Figures 1 through 3 are visual representations of these analyses:

- Figure 1: compares projected growth in the existing service area to available existing supply.
- Figure 2: compares projected growth in the existing service area to expected future supply.
- Figure 3: compares expected future supply to projected growth with potential additional annexation by the City. The potential annexation areas as identified by City planning personnel in the 2018 General Plan were assumed to develop in the same land use ratios and corresponding water use as development within the current city limits.

Each figure also includes a demand line that identifies the projected demand associated with existing development and currently undeveloped vested units (20,993 as of 23 September 2025).

From these figures we can draw the following major conclusions:

- To ensure sufficient supplies to meet projected demands, the City will need to develop new sources as soon as 2026 (Figure 1).
- If the City were to develop an additional 906 acre-ft/year of groundwater, the City would have sufficient supplies to meet needs through 2043 (Figure 2). Alternatively, further development of reuse water would also be adequate to meet projected needs for the next several decades. The City could also look at accelerating conservation efforts to stretch the available supply.
- The City currently does not have sufficient existing source supply for their 20,993 currently undeveloped vested units (Figure 1).
- Both groundwater development and reuse are vital to the development of currently vested and future units (Figure 2).
- To develop Eagle Mountain City as currently planned (with current land use designations and landscaping ordinances), a total of at least 7,960 acre-ft/year of additional water will need to be developed. If reuse and the additional groundwater are developed, this is reduced to an additional 781 acre-ft/year (Figures 1 and 2).
- Some additional groundwater to satisfy this potential shortage does exist in the Cedar Valley (Figure 2). However, the City's ability to access this water is uncertain.
- Any additional annexation by the City will add to potential future water needs. If the City were to expand to the maximum extents of annexation contemplated, the City would potentially need up to 13,700 acre-ft/year above the 7,960 acre-ft/year needed for the current city limits (Figure 3). This volume of water is not currently available in the Cedar Valley.

In short, the City does not have enough water to support current development plans. Even with the development of planned future sources, water supplies are still not quite enough. Shortages are even greater when annexation is considered. Fortunately, the City does have some policy levers they can use to impact future water use and achieve their overall goals. Some of the major policy levers available include:

- Adjusting land use designations
- Limiting outdoor irrigation coverage
- Encouraging additional conservation (greater than the state conservation goal),

Subsequent sections of this Water Use and Preservation Element will focus on methods of reducing per capita water demand for future and existing development in addition to opportunities to reduce water waste within the City's operations.

In addition to analyzing the effect of permitted development or development patterns on water demands, the Element requires consideration for water infrastructure as well. An in-depth analysis has been completed as part of the 2025 Culinary Water and Wastewater Master Plans; reference these documents for further detail on development impact on infrastructure.

Figure 1: *Eagle Mountain Outdoor Water Demand Projection by Land Use*

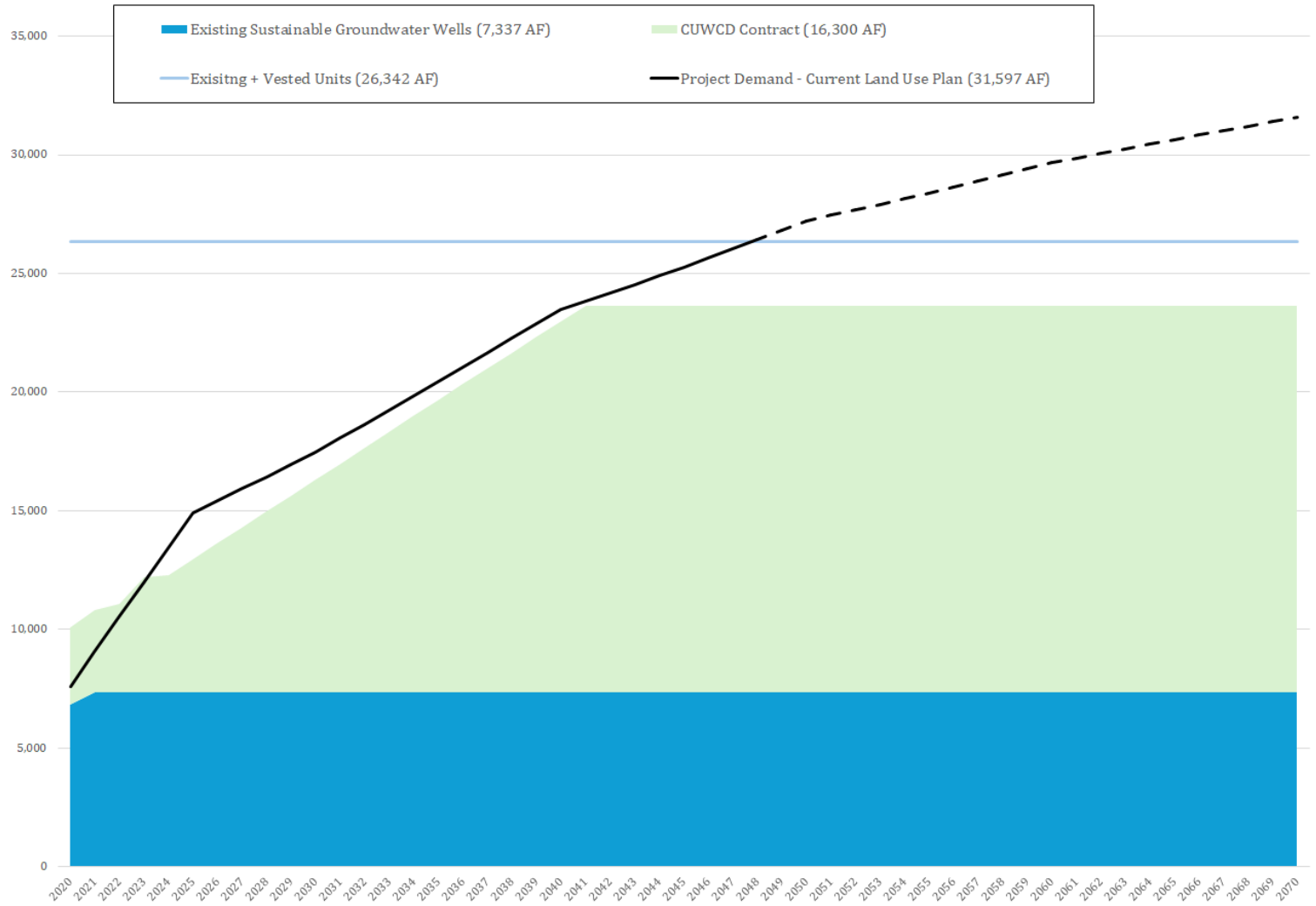


Figure 2: *Eagle Mountain Supply and Demand Analysis – Land Use Impacts*

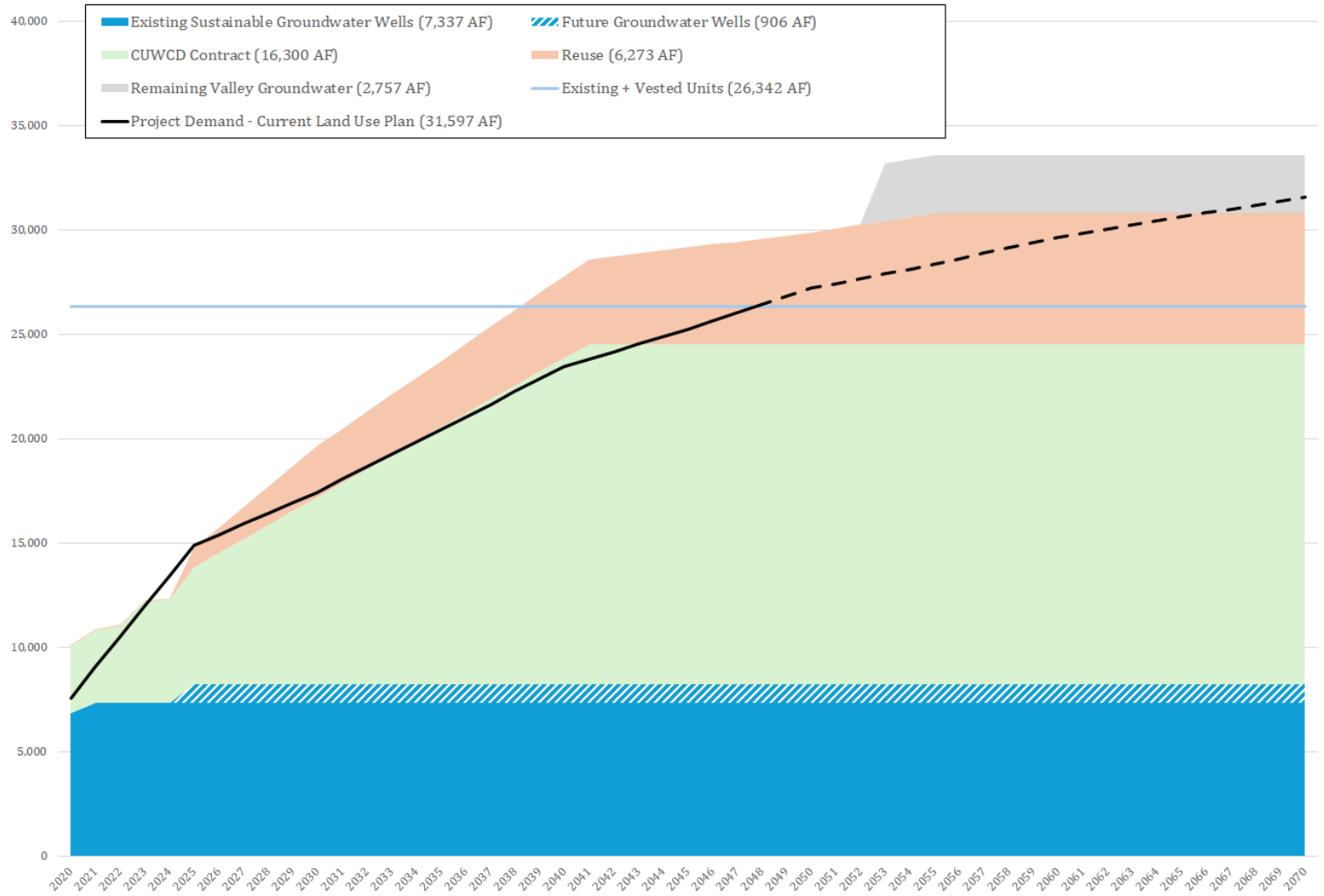
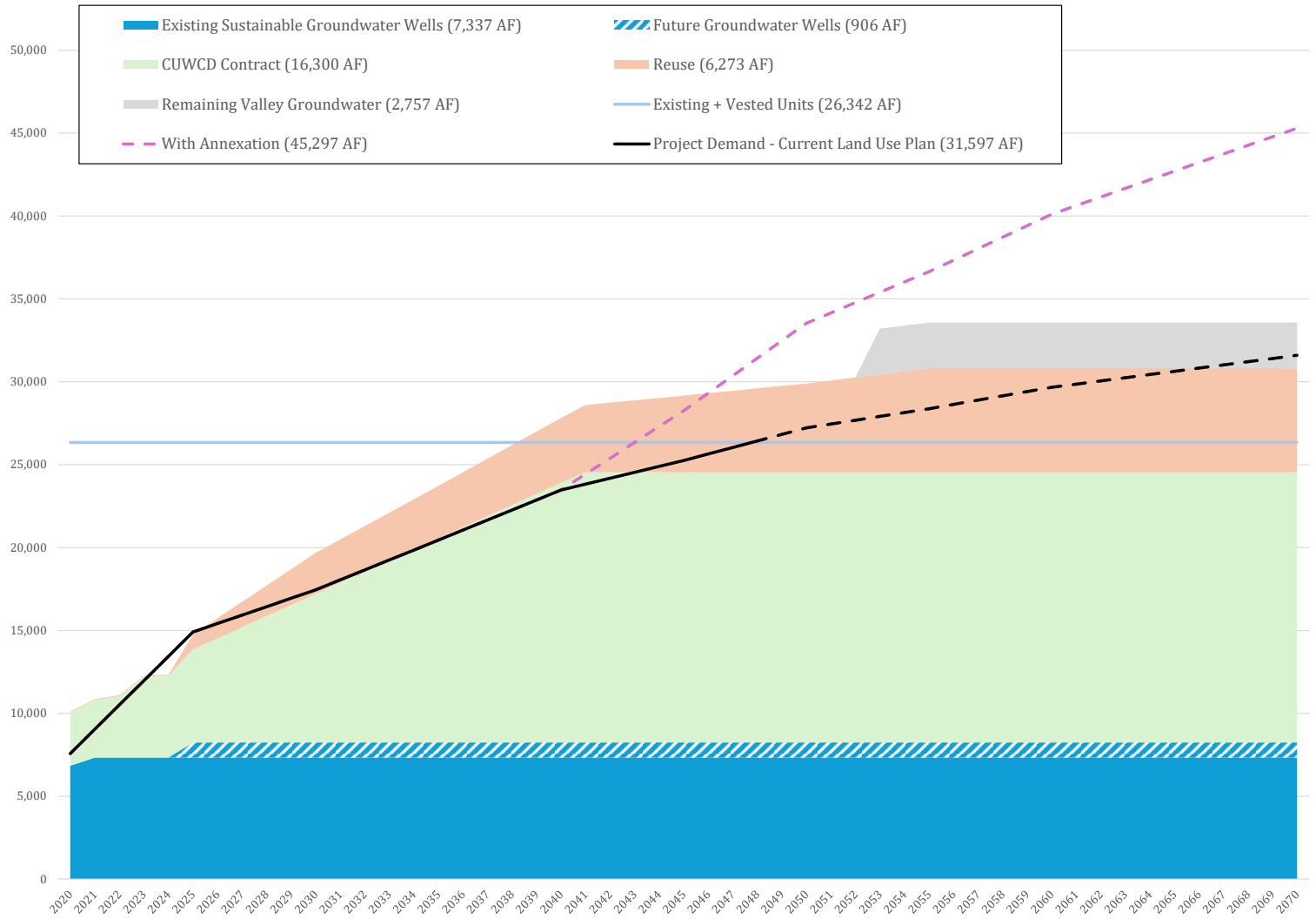


Figure 3: *Eagle Mountain Supply and Demand Analysis – Land Use Impacts*



Reducing Water Demand for Future Development

Impact of Land Use on Water Demands

An analysis was performed to compare housing density with expected indoor and outdoor water use. The purpose of this analysis was to provide a metric for planners as they work to understand water use in terms of zoning or land use.

Several key assumptions were made in this analysis to convert from the gpcd water use units described in the "Water Demand" section of this document to acre-ft per acre (acre-ft/acre), which is most helpful for planning purposes. These assumptions included:

- The average household size for future single-family development will be approximately 3.50 people per unit.
- Average indoor residential water use is 62 gpcd.
- Average outdoor residential application rate at 2.7 acre-ft/acre.
    - This assumes 30% water-wise and 70% sod residential landscaping.
- For densities greater than 1 unit per acre, as housing density increases, outdoor landscaped areas decrease as more and more of the available area is used for living space, parking, etc.
- For densities less than 1 unit per acre, it is common to leave portions of the property as unirrigated open space. Correspondingly, it has been assumed that no more than 0.6 acres per unit will be irrigated, regardless of how large the lot is.

The results of this analysis are presented in Figure 4 and depict the annual demand in acre-ft/acre on an equivalent residential unit (ERU) density basis. Demands are distinguished between indoor and outdoor demands.

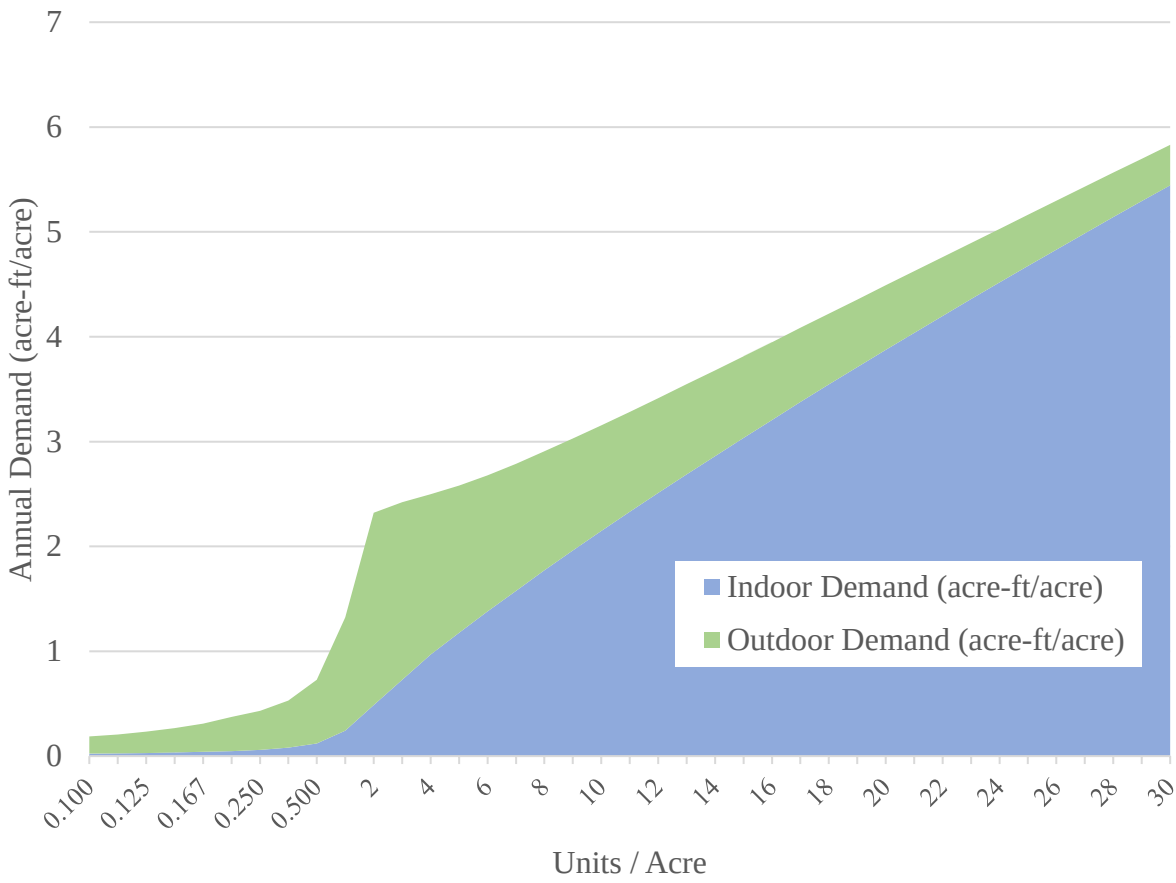


Figure 4
Change in Annual Demand Based on ERU Density

Figure 5 takes this analysis a step further by considering water usage on a per unit basis and then identifying current city land use types for further insights.

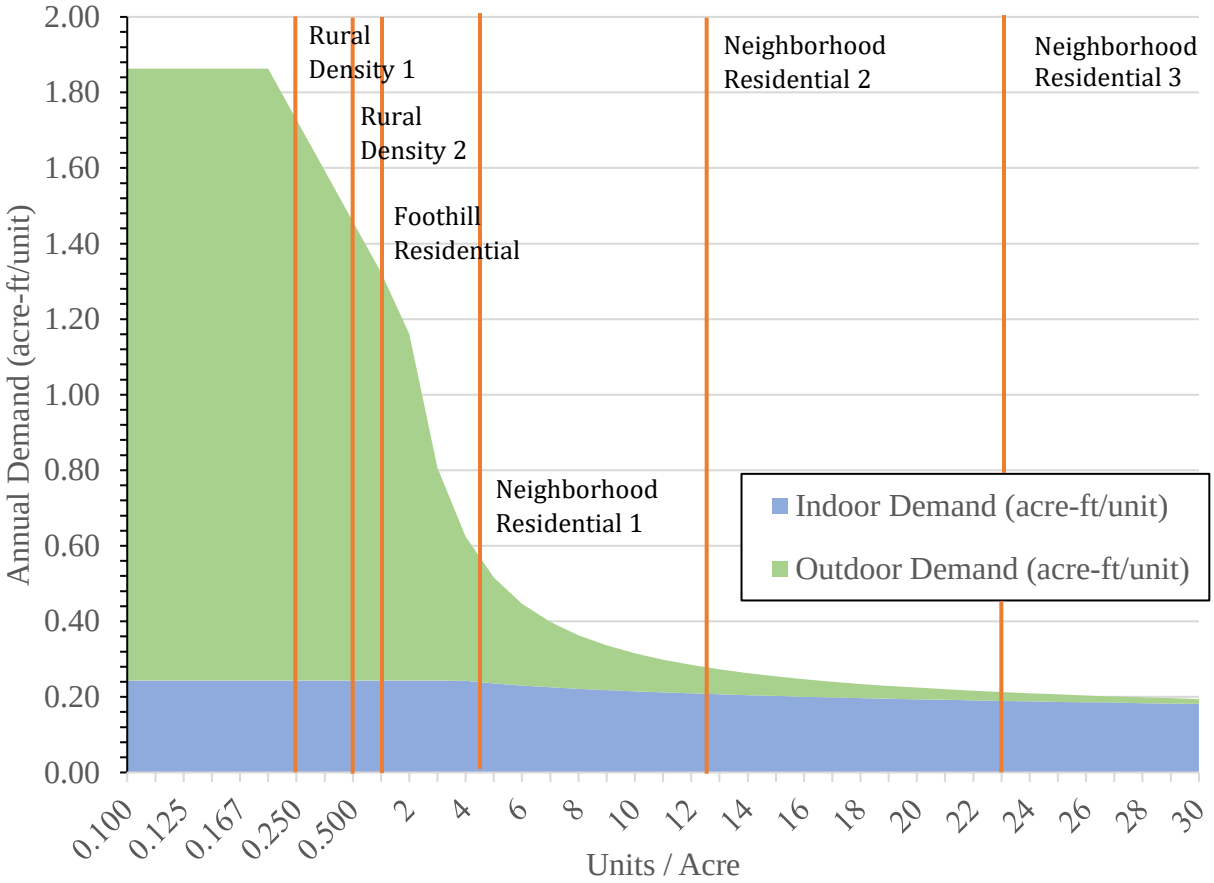


Figure 5
Change in Per Unit Annual Demand Based on ERU Density

The following conclusions can be drawn from the information presented in Figures 4 and 5:

- On a per unit basis, indoor water usage is fairly consistent.
- Outdoor water usage will vary with density. For typical suburban residential development, the higher the density, the less landscaping possible and the corresponding lower water demand. However, this is not necessarily true for very low-density properties. Outdoor demands may actually begin to decrease on a per acre basis for larger lot sizes as long as irrigation is limited to a fixed, maximum area of the lot.
- Outdoor water use per acre is expected to be highest at a density of about two dwellings per acre. The annual demand at this density was estimated to be 1.84 acre-ft/acre.
- Residential land use designations have a significant impact on both per acre and per unit water usages. As density increases, water usage increases on a per acre basis but decreases on a per unit basis.

This preliminary analysis provides valuable insights for city planners and decision makers to consider how future development can impact water use and conservation in Eagle Mountain City. Unless the City is able to secure additional supply, changes to its land use plans will be needed to make sure development does not exceed available water supply.

Reducing Water Demand for Future Development

With the considerable growth projected to occur in Eagle Mountain City through buildout, developing a framework to reduce future water use (or water system demands) before development occurs will prove especially effective for the City. The following sections describe a few "methods of reducing water demand and per capita consumption for future development" (Utah Code 10-9a-403(4)(b)) that the City has already implemented.

Land Use Designations

To stay within available water supplies, the City will likely need to consider one or more of several potential land use changes:

- Limit Areas of Development: One of the most straight forward approaches to reducing future water demands is to simply reduce the total area of development. Unfortunately, this is easier said than done as it could affect the ability of existing property owners to beneficially use their property and result in legal risk to the City. Any complete limitation of development would need to consider affected private property owners.
- Significant Decrease Densities: Historically, most of the developed areas within Eagle Mountain City consist of low-density, single-family homes. One approach to reducing water use is to shift at least a portion of the area currently identified as low density residential to rural density. As long as this action was coupled with restrictions on the total amount of irrigated area allowed per lot, this could result in significant reductions in total water use. Unfortunately, this would also result in significant increases in the use of water per unit and severely reduce the number of units that can be served in the City overall.
- Cluster Development: Another approach to reducing water demands could be to increase density. The City might consider moving towards higher density multi-family homes such as apartments, condominiums, and townhomes as these residential units tend to use much less water on a per unit basis. However, since this type of development is more water intensive on a per acre basis, it would need to be coupled with designation of corresponding areas that remain as unirrigated open space. This would allow the same (or greater) number of units to be developed overall, but with less water use.
- Implement Water Restrictions for Specific Land Uses: The projected water demands here are based on certain water use assumptions for given land use types. The City could consider implementing water use restrictions on specific land use types to limit water demands. For example, the land use designation of "Business Park/Light Industry" currently has an assumed water demand of 0.73 acre-ft/acre. This is based on the average demand for typical development of this type along the Wasatch Front. However, the City could place a more restrictive water budget on this type of development to limit total water demands (e.g. the City could designate that water demand may not exceed 0.41 acre-ft/acre which better matches some of the existing industrial development demand in the City).

Because the nature and needs of each property will be different, the City is currently considering a land use approach that would develop a water budget for various areas of the City. Under this approach, the City would allocate volumes of water as available to areas of new development. Each area could then select from the solutions above to maintain demands within the available budget. These allocations would aid the City in water supply planning as new development and annexation areas are added to the City limits.

Development Standards Applicable to All New Developments

The City requires that all new developments comply with the following water-conservation standards in park strips as described in ordinance O-52-2023:

- Lawn areas in front or side yards must not exceed 250 square feet or 50% of the total landscape for new developments.
- Individual water metering devices (AMI) must be installed for each connection.
- No landscaping shall be composed of more than 70% turf.
- A minimum of 50% of all tree and shrubs must be drought resistant.
- Planting beds must be irrigated with drip lines to reduce the amount of water loss to evaporation.
- Planting beds are required to have a weed barrier with mulched wood chips, rocks, or other similar treatment.
- Landscaped areas must "have enough plant material to create at least 50 percent living plant cover at the ground plane, not including tree canopies" (17.60.090(D)).

Development Standards Applicable to All New Commercial, Industrial, or Developer Installed Landscaping

For all new commercial, industrial, developer-installed landscaping in multifamily residential projects and developer-installed landscaping in single family projects, the City can require the following standards from Section 17.60.090 of Eagle Mountain City Municipal Code:

- A Landscape Plan must be submitted and approved for any commercial or multi-family development prior to occupation.
- Turf is prohibited on slopes greater than 25%, or 4:1 grade, and in landscaped areas less than 8 feet wide.
- Park strips must have at least 30% living plant cover at maturity not including tree canopies.
- For institutional and multifamily properties, turf is limited to 20 percent of the total landscaped area, except in active recreation areas.
- In commercial and industrial properties, turf is not permitted except in active recreation areas. A minimum of one approved deciduous/evergreen tree must be planted per 1,000 square feet of landscaped area.
- The City is currently working to update Commercial and Multi-Family architectural Standards to require a minimum of 30% waterwise landscaping and a maximum of 70% sod.

It should be noted that these standards are also required for existing land uses in addition to new development unless otherwise noted within the code.

Reducing Water Demand for Existing Development

In addition to reducing water use of future development, decreasing the water use of current residents will be essential for the City to meet its long-term water needs. In reducing current water use, existing residents ensure reliable and sustainable use of the system, decrease their current water bills, and mitigate future rate increases. These water conservation measures are described in the City's 2024 Water Conservation Plan. Eagle Mountain City also participates in several Central Utah Water Conservancy District (CUWCD) water rebate programs, which incentivizes conservation in existing developments. Each of these documents or programs are discussed below.

Eagle Mountain City Water Conservation Plan

Eagle Mountain City's Water Conservation Plan was updated in 2024. The purpose of that document was to evaluate the City's current conservation program and identify additional measures that would allow further conservation of water in the City. A driving motivator in these conservation measures are the regional conservation goals issued in 2019 by the Utah Division of Water Resources. Eagle Mountain City is located in the Provo River Region, with a conservation goal of reducing water use by 19% from the 2015 baseline. The following conservation measures were identified and have been or are in the process of being implemented by Eagle Mountain City:

- Universal Metering:
    - The City currently meters both storage and sources systems to monitor daily and total flows. This data is essential for water accounting purposes and water use determination.
    - All existing developments are required to install individual metering devices for each connection to determine the amount of water each connection is using. The data from meters allows the city to implement a tiered water rate structure based on usage and informs customers of their usage and encourage water conservation.
    - Eagle Mountain City is currently in the process of installing Advanced Metering Infrastructure (AMI) on all residential connections. These meters send real time 1-gallon readings to residents and the city. This will increase the accuracy and frequency of readings leading to real-time leak detections and quicker leak responses.
    - A one-time utility bill credit of $20 will be offered to those who sign up for the AMI portal and create a water usage goal.
- Water Accounting and Loss Control:
    - Yearly, the City, conducts a system audit to determine the amount of unaccounted for water (the discrepancy between individual meters and source meters). The City Water Resources Manager tracks the unaccounted water and the associated costs and reports this information yearly.

    - Properties with large landscapes (e.g. parks, churches, high water use residents, and municipal properties) are audited for irrigation usage, application efficiency, and scheduling.
    - Routine maintenance is performed on the system to ensure efficient functionality with minimal water loss.
    - Identified leaks are repaired quickly to reduce the amount of water loss within the system.
    - The City is looking to conduct water audits by customer class. These classes would focus on typical water use practices within each class and identify any potential efficient changes.
- Water Rate Structure: Eagle Mountain City uses a relatively aggressive tiered water rate structure with increasing volumetric charges. The rate structure has been designed to encourage water conservation and to financially penalize users that use more outdoor water than is needed.
- Pressure Management: The City requires the installation of pressure reducing valves on higher pressure homes within the system. They also use pressure reducing valves within the water system to manage water pressures and protect their equipment and infrastructure.
- Public Education: Eagle Mountain City has proactively been seeking to better educate the public on water conservation issues and solutions. The City has:
    - Produced and continues to develop an assortment of informational pamphlets for their customers. These materials seek to explain how water users can help the City fulfill conservation goals. They further discuss the conservation need for the Great Salt Lake crisis and inform users of the cost of supplying drinking water and long-term savings associated with conservation.
    - The City has created a website with a comprehensive list of landscape watering conservation tips in addition to providing links to the State of Utah and Utah State University resources (https://eaglemountain.gov/priorities-plans/water-conservation/).
    - Social media platforms (Facebook, X, Instagram, and YouTube) are regularly updated to promote conservation by the City.
    - The monthly resident newsletter includes a water conservation section with tips on how to continue to conserve water.
    - With the installation of the AMI systems and portal, residents will understand better their own water usage.
    - The City is working to develop a new informative water invoice focused on conservation by educating residents on their water consumption data. This invoice will compare previous water use with neighbors or expected efficient use and will give tips on how to better conserve.
- Slow the Flow: Eagle Mountain City supports the "Slow the Flow" water conservation campaign. Two water check kits complete with catch cups, guides, and more are available at the library to help residents conduct their own irrigation system check on their property.
- Water Reuse and Recycling Plan:

    - The City is seeking to use industrial and wastewater reuse for use in a secondary system. A reuse permit has been submitted to the state and is awaiting approval.
    - Eagle Mountain City will continue to pursue a Secondary Water Master Plan to grow their reuse capabilities.
- Landscape Efficiency:
    - Eagle Mountain City encourages irrigation metering, timing, and water sensing devices that promote low water usage for both large volume customers and residential users.
    - For building permits issued on or after February 1, 2024, WaterSense smart irrigation controllers are required. These controllers must be equipped with automatic rain delay or rain shut-off capabilities.
    - The City is looking to require new developments and large water users to adopt a drought tolerant planting requirement to potentially decrease typical outdoor water use by 50%.
- System Upgrades:
    - All irrigation systems have recently been upgraded with sprinkler heads that work off smart controllers. These controllers automatically adjust water application based on precipitation or temperature.
    - Eagle Mountain City is currently in the process of changing all residential meters to AMI smart meters. This allows for reading down to the gallon and will provide a residents with a portal that give leak alerts, high usage warnings. Additionally, these meters will enable the City to better monitor outdoor watering timing ordinance violations.
- Eagle Mountain City Coordinator:
    - The feasibility of creating a full-time conservation coordinator position is currently being reviewed. The role would include scheduling appointments, managing all program documents and rebates, and any other tasks needed for water conservation within the City. The coordinator would also have a focus on public outreach while coordinating and assisting with rebates, audits, consultations, and assisting customers with leak checks.
    - The coordinator would also perform residential water audits. Residents will be able to schedule an hour-long appointment with the certified staff to go over their outdoor water usage and assist them with water savings during summer months.
- Other City Led Initiatives: An Asset management Plan and Reuse Water Plan are currently being developed to aid in planning for future water conservation.

CUWCD Rebate Program

CUWCD offers several rebates to residential customers of Eagle Mountain City to incentivize water conservation, as summarized below.

- Smart controller: Residential customers may receive a rebate for purchasing and installing a WaterSense labeled smart controller to automize their landscape watering. Smart controllers reduce water by automatically adjusting watering patterns based on local weather

conditions. Commercial properties in Eagle Mountain City may also qualify for a smart controller through the CUWCD rebate program.

- Toilet Replacement: Homeowners can receive a rebate when they replace toilets that were manufactured before 1994 with a new WaterSense labeled toilet.

Efforts to Reduce Water Waste from Municipal Operations

Eagle Mountain City owns and maintains public parks as well as multiple offices and buildings needed for the administration, employees, and operations of the City's departments. This means that a significant amount of water is used to supply both the indoor and outdoor needs of these City-owned facilities. Additionally, the City owns, operates and maintains the water distribution system, which is often a source of water loss due to leaks or other water inefficiencies. The City has recently implemented multiple measures to reduce the amount of water required to maintain public spaces, reduce water waste in their distribution system, and encourage water efficiency and conservation in municipal responsibilities. These "opportunities for the municipality to modify the municipality's operations to eliminate practices or conditions that waste water" (Utah Code 10-9a-403(4)(d)) are summarized below:

- Landscaping Improvements: The City is seeking to minimize landscaping improvements for any park strip, median, or landscaped area within public rights-of-way and on City-owned properties. For example, park strips and other landscaping a public facilities like utility booster stations can be converted to low-water use ground cover. The Parks Department can experiment with the conversion of streetscapes to bark and/or low water use trees and plants. At parks, the Parks Department can consider planting trees and shrubs on inclines or areas not being used as active playfields, with water use in those areas restricted once the plants are established. Storm water detention basins can be landscaped with drought-tolerant plants.
- Irrigation Plan: To mitigate issues of sprinkler over spray, the City is looking into conducting irrigation reviews and irrigation plans for municipal areas.
- Pipeline Corrosion Protection: Eagle Mountain City requires the installation of corrosion protection on all ductile iron pipes in corrosive soil or the use of PVC pipe. In addition to extending the life of the pipelines, this measure is designed to minimize system losses by reducing leaks in pipelines.
- Line Replacement Program: The City has a water fund budget for pipeline replacement (not including major conveyance projects). Funds reserved for this purpose will be used to replace old and failing water lines in the water system. In addition to maintaining the system in good working order, this effort will reduce the number and severity of water leaks in the system.
- Park Computerization: All of the City's park sites that have power (including parks, city buildings, and streetscapes) will be equipped with smart controller systems that monitor daily weather reports and adjust output at each zone to maximize irrigation efficiency.

- AWWA Water Audit Program: The City plans to participate in the AWWA Water Audit Program. This program helps water suppliers quantify system water losses and associated revenue loss. The City will participate in at least one additional water audit by 2030.
- Pipeline Construction Standards: The City is looking to adopt construction controls and quality assurance standards for pipeline projects. This would ensure that pipelines are installed properly to maximize life expectancy and reduce leaks due to incorrect installation.
- Smart Hydrant Technology: The City will investigate the feasibility of using smart hydrant acoustic or pressure based technology to proactively detect leaks within their system.

Implications for Great Salt Lake

As Eagle Mountain is within the Great Salt Lake watershed, the Element requires the City to consider implications of development patterns, existing and future, on Great Salt Lake. Implications from development as outlined in this plan are as follows:

- Projected demands are to be served through existing or future water rights as allocated by the state. The City has no intention of depleting water greater than is within their allocated rights. As long as the City stays within its allowable depletion, it should not increase diversions of water away from Great Salt Lake.
- Water rights used to support development are predominantly coming from previous agricultural use. The change in depletion from historic ag use to new municipal uses will depend on how the municipal water is used. For indoor use, depletion will generally decrease. For outdoor use, depletion will generally increase. As a result, minimizing outdoor irrigation will be key to both maximizing the amount of development that can be supported by the available water rights and potentially increasing discharges to Great Salt Lake.
- The City is in compliance with regional conservation goals and plans to pursue further conservation efforts. These efforts will reduce the overall amount of water needed which will correspondingly allow more water to discharge to Great Salt Lake than would occur without conservation.

Summary and Conclusions

Eagle Mountain City is committed to conserving and preserving the water sources available to all of its water users. This Water Preservation Element identifies the measures they are taking to reduce water use and keep demands within available water supply. It also identifies the areas with the most opportunities to focus on water preservation and conservation. From the analysis presented in this plan the following main conclusions were made:

- Eagle Mountain City is a fast-developing city with estimates indicating the population will more than double in the next 35 years.
- Approximately 75% of water use within the City is residential use. About 63% of this is outdoor water use indicating that outdoor residential water use should be a major target for conservation policy.
- Current water supplies are not sufficient to meet projected buildout demands of the City. Eagle Mountain City will need to develop additional sources of water to meet future demands.

- Even with additional supply development, demands associated with current land use plans are projected to exceed future supply. The City will need to modify its land use planning and further encourage conservation above and beyond state regional goals to ensure sufficient supplies.
- Assigning a water budget to future additional development or annexation may be a useful tool for the City to ensure sufficient supplies.
- Reuse is a vital future source for the City and should be aggressively pursued.

The following list summarizes the steps Eagle Mountain City is already taking to preserve and conserve their precious water supplies.

- Eagle Mountain City is moving forward to administer outdoor water conservation through their Landscape Ordinance (17.60), which requires new development to limit the amount of turf used in landscaping, utilize water-wise landscape design, incorporate drip irrigation (vs. sprinklers) in non-turf areas, and use WaterSense smart irrigation controllers.
- Additional measures the City is taking to reduce water use for existing development include:
    - Free water system audits
    - Public education
    - Using AMI water meters
    - Tiered water pricing
    - Participation in the CUWCD Rebate Programs.
- Eagle Mountain City plans to reduce municipal water waste by implementing the following measures:
    - Converting areas of public landscapes from turf to low-water use ground cover
    - Pipeline corrosion protection or using PVC pipe
    - Waterline replacement to reduce leaks in the water distribution system
    - Equipping public parks with smart controller watering systems