Resolution 2021-18

A RESOLUTION TO UPDATE THE HEBER CITY WATER CONSERVATION PLAN

WHEREAS, Heber City, Wasatch County, Utah (Heber City) desires to assist and promote the conservation of water in Heber City and the Valley; and

WHEREAS, the City has developed a Water Conservation Plan to instigate and realize conservation; and

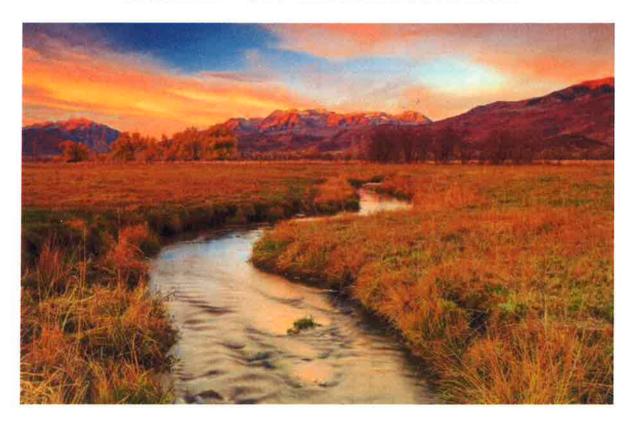
WHEREAS, the City is confident that the referenced Conservation Plan, if followed, will greatly improve the implementation of practical processes for conserving the City's water.

NOW THEREFORE, it is hereby resolved by the City Council of Heber City, Wasatch County, Utah, that Heber City intends to adopt the aforementioned Water Conservation Plan, and hereby approves the same, as attached as Exhibit "A".

ADOPTED and PASSED by the City Council of 2021, by the following vote:	Heber City, U	tah, this 1th day of
	AYE	NAY
Council Member Heidi Franco		
Council Member Wayne Hardman		-
Council Member Mike Johnston		:
Council Member Rachel Kahler		
Council Member Ryan Stack		:
ATTEST: City Recorder	- Ki	Mayor Kelleen Potter

HEBER CITY CORPORATION

WATER CONSERVATION PLAN



December 2021

Prepared by:



Heber City Corporation 75 North Main Street Heber City, Utah 84032

TABLE OF CONTENTS

Introduction	
DESCRIPTION OF HEBER CITY	1
Population Trends & Projections	1
Water Connections	2
WATER SOURCE CAPACITY	2
Water Rights	3
Water Budget	
SECONDARY WATER	
CULINARY WATER USE	
RESULTS OF PRIOR CONSERVATION EFFORTS	
FUTURE WATER USE	
WATER PROBLEMS AND GOALS	7
Problems Identified	
Water Conservation Goals	
CURRENT WATER CONSERVATION MEASURES AND PROGRAMS	
Public Information and Education Program	
Pressurized Secondary System for Outdoor Use	10
LEAK DETECTION AND SYSTEM MAINTENANCE	
WATER CONSERVATION CONTINGENCY PLAN	
CURRENT PRICING STRUCTURE	12
FUTURE WATER CONSERVATION OPTIONS	13
DROUGHT RESPONSE PLAN	
ESTABLISHMENT OF A WATER CONSERVATION COMMITTEE	
PROMOTE WATER EFFICIENT LANDSCAPING	
SECONDARY IRRIGATION WATER CONSERVATION	. 15
PEAK USE REDUCTION	
RETROFIT DEVICES	
IN HOME LEAK DETECTION AND WATER USE MANAGEMENT ASSISTANCE	. 16
COST ANALYSIS	.17
IMPLEMENTING & UPDATING THE CONSERVATION PLAN	.18
REFERENCES	.19
APPENDIX A – POPULATION AND WATER USAGE	
APPENDIX B – DROUGHT RESPONSE PLAN	
APPENDIX C - RESOLUTION	
AFFENDIA C - RESULUTION	.42
FIGURES:	
FIGURE 1: HEBER CITY PROJECTED POPULATION GROWTH	2
FIGURE 2: HEBER CITY MONTHLY CULINARY WATER USE	6
TABLES:	
	1
TABLE 1: HEBER CITY HISTORIC POPULATION GROWTHTABLE 2: HEBER CITY'S WATER SOURCES	
TABLE 2: HEBER CITY'S WATER SOURCES	
TABLE 5. HEBER CITY'S MONICIPAL WATER RIGHTS	
ARBOS OFFICIAL OFFICE DODGEL, SULF-SUSU III.	

TABLE 5: HEBER CITY'S CULINARY WATER BILLING SCHEDULE (2021)	
TABLE 6: BENEFITS OF WATER CONSERVATION PROGRAM	

"When the well is dry we know the worth of WATER" -Benjamin Franklin

Introduction

The value of water, an essential natural resource, will only increase as time goes on. There is reasonable concern over the future cost and availability of the water supply. Heber City is rapidly growing, which affects the amount of water required to sustain the population. Citizens and leaders, having foreseen the continued growth, have taken many steps to ensure that Heber continues to have a sufficient supply of water for all of its needs. This water conservation plan is written to address the concerns of leaders and citizens of both Heber City and the State of Utah.

DESCRIPTION OF HEBER CITY

Heber City is a rural community located in the northern portion of Wasatch County, Utah. Although it is located within 30 minutes of more populated areas, the community enjoys a rural atmosphere and places high value on open spaces. Traditional landscaping for residences includes large areas of grass and other water intensive landscaping. The combination of a rapidly growing population and the deep rooted rural lifestyle is expected to significantly increase demands on water sources as the community continues to grow and develop.

Population Trends & Projections

Between the years 2000 and 2020, the population in Heber City more than doubled with an annual average growth rate of approximately 4.6%. The historic population growth in Heber City between the years 2000 and 2020 is shown below in Table 1.

Year	Source	Population	Average Annual Growth Rate
2000	Census Population	7,291	/
2010	Census Population	11,362	4.5%
2016	Census Estimate	14,995	4.5%
2017	Census Estimate	15,775	5.2%
2018	Census Estimate	16,401	4.0%
2019	Census Estimate	17,139	4.5%
2020	Census Estimate	17,574	2.5%
2021	Population Estimate	18,640	6.1%

Table 1: Heber City Historic Population Growth

It is anticipated that significant growth will continue over the next two decades. It is projected that the existing population of approximately 18,640 people will increase by 46 percent to 27,042 people in the year 2040. Figure 1 shows the projected population growth trend over the next 20 years. See Appendix A for a more detailed population projection showing year by year estimates.

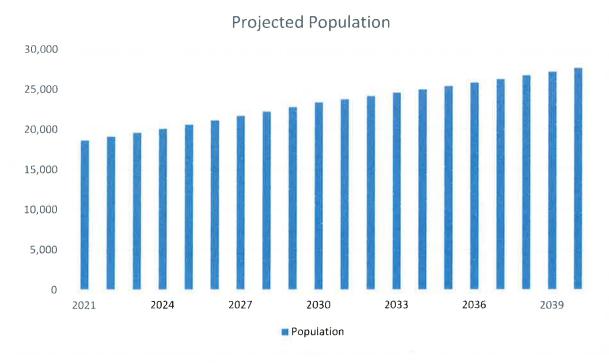


Figure 1: Heber City Projected Population Growth

It should be noted that a portion of the total population in Heber City is located in The Red Ledges Subdivision and North Village Areas. These areas are located in the northeast portion of the City, and due to numerous factors, the City does not provide water to them. To account for this, it was necessary to make an adjustment to the population figures used throughout the remainder of this document so that the population referenced coincides with the culinary water connections receiving water service from the City. See Appendix A for the adjusted population figures. It should also be noted, the North Village Areas are composed of multiple developments and proposed annexations that are currently in the process of being developed and annexed into the City. The population estimates used in this report are based off of preliminary development plans that currently estimate a total buildout population for the North Village Areas of approximately 8000 people by 2050. This is a conservative population estimate for the North Village Areas and could increase significantly as zoning, population densities, and development agreements are finalized for this area.

Water Connections

Currently, the culinary water system provides water to approximately 4,194 residential, 321 commercial, 73 institutional, and 2 agricultural culinary water connections. The City is also expanding its pressurized irrigation system, which currently provides secondary water to approximately 2,669 residential connections.

Water Source Capacity

The current supply to the culinary water system consists of three wells and one spring. Historically, the spring flow was able to keep up with residential demand throughout the winter

season. The wells were only operated during the spring, summer, and fall when demands caused by outdoor irrigation exceeded the spring's capacity. However, with the high growth rate Heber City has experienced, operating the wells year round is now often required to keep up with demands. Table 2 shows Heber City's current water sources.

Table 2: Heber City's Water Sources

Habar City Culinary Saures	Total Flow			
Heber City Culinary Sources	CFS	gpm		
Valley Hills Well*	1.604	720		
Hospital Well	6.684	3,000		
Well No. 1	3.119	1,400		
Upper Broadhead Spring**	1.114	500		
Source Total =	12.522	5,620		

^{*} Flow Source is from DDW Records. Current Rated Capacity is 750 gpm

Water Rights

The water rights associated with Heber City's Culinary Water Sources are summarized below in Table 3. These water rights are approved for Municipal uses which means the water can be used for any purposes required by a municipality to provide water to its residents including but not limited to drinking water, sewer, fire protection, sanitation, and irrigation. Heber City also owns irrigation water rights in the form of shares in several irrigation companies.

Table 3: Heber City's Municipal Water Rights

Heber City Culina	ry Water Rights	Flo	w - Divers	ion	Flow-Depletion			
W.R. Number	Source	GPM	CPS	Ac-Ft	GPM	CFS	Ac-Ft	
55-947	Well #1	897.66	2.00	1,447.93	897.66	2.00	1,447.93	
55-5780	Valley Hills Well	112.21	0.25	105,00	112.21	0.25	105.00	
55-8420	Valley Hills Well			64.40			64.40	
55-8534 (E1053)	Valley Hills Well			75.00			75.00	
55-1392	Upper Broadhead Spring	1.059.24	2.36	1,708.56	1,059.24	2.36	1.708.56	
55-7052	Upper Broadhead Spring	1,122.08	2.50	1,809.92	1,122.08	2.50	263.20	
55-1351	Hospital Well			19.96			19.96	
55-3346	Hospital Well	448.83	1.00	723.97	448.83	1.00	723.97	
55-4360	Hospital Well	,		75.57			75.57	
55-13016	3 Existing Underground Wells & Surface Sources			703.73			485.59	
55-13262	3 Existing Underground Wells & Surface Sources			11.20			7.73	
55-13325	3 Existing Underground Wells & Surface Sources			1,830.76			1,257.98	
55-894	3 Existing Underground Wells	6.73	0.02	1.82			1.22	
55-4188	3 Existing Underground Wells	6.73	0.02	1.01			0.45	
55-4706	3 Existing Underground Welfs	6.73	0.02	1.34			0.75	
55-4737	3 Existing Underground Wells	98.74	0.22	20.99			14.68	
55-7121	3 Existing Underground Wells			1.31			0.72	
55-8400	3 Existing Underground Wells			1.48			0.89	
55-9162*	3 Existing Underground Wells			1.00			0.35	
55-12327	3 Existing Underground Wells			12.36			8.53	
55-12708	3 Existing Underground Wells			6.00			4.14	
55-13280*	3 Existing Underground Wells	5.43	0.01	0.80			0.71	
	Total:			8,624.11			6,267.34	

^{*} Approved Change Applications transfering water to the City, Title work still needs completed

^{**} Minimum Flow Listed, Maximum is 1,250 gpm

Water Budget

Table 4 shows the amount of water delivered to the culinary water system based on source meters and the metered outflows to all end-users for the years 2017 to 2020.

Table 4: Heber City's Water Budget, 2017-2020

Year	Inflow (kgal) Total	Outflow (kgal) Total	% Diff.
2017	725,866	680,463	-6.26%
2018	749,314	696,290	-7.08%
2019	702,236	658,303	-6.26%
2020	735,092	723,737	-1.54%*

^{*}Accuracy concerns regarding source meters and SCADA equipment

Average losses from the culinary water system are 5.28 percent for the four years of record shown in Table 3 above. However, there is some concern over the accuracy of the data from the year 2020. These accuracy concerns are currently being addressed through the replacement of some of the City's source meters and updates to the SCADA systems used to track and control the water delivery systems. If the year 2020 is disregarded, the average losses from the culinary water system over the previous three years is 6.53 percent. Regardless, this percentage is down significantly from the 12.5 percent average water loss from 2014 to 2016. Primary reasons for this reduction of water loss include waterline replacement projects, installation of meters on previously unmetered connections, and inclusion of construction meter readings in the outflow totals.

According to the EPA, most public water supply distribution system losses in the United States fall within the 10-15 percent range as the maximum acceptable value for water that is lost or unaccounted for. Heber City's water loss percentage falls in line with and is better than average with expected losses from a public water supply distribution system as compared to the rest of the Country. Although the exact reasons for the losses are unknown, they may be a result of leakage, incorrect production readings, meter inaccuracies, water breaks, and/or system flushing.

Secondary Water

Secondary irrigation water is also used throughout the more recently developed portions of Heber City. This water is currently provided to users by pressurized irrigation lines and open ditches. This secondary water is used to irrigate a variety of areas such as residential lots and grazing pastures. Heber City currently requires new development to connect to the pressurized secondary irrigation system. This secondary irrigation system provides irrigation quality water to public and private landscaped areas. In the past, the secondary pressurized irrigation water has been metered to the subdivisions but not individual homes. Recently the City has taken steps to start moving towards metering all secondary irrigation connections. These steps include:

- Requiring all new development to provided individual meters for secondary water
- Pursuing funding and grants to retrofit existing irrigation services

- Incorporating retrofitting of existing irrigation services into City wide sewer, water, and road projects
- Incorporating retrofitting of existing irrigation services through operation and maintenance of the existing system

Culinary Water Use

Heber City is located in a semi-arid region. In the hot summer months, a large demand is placed on the culinary water system for landscape and garden irrigation. From 2017-2020 the average culinary usage per residential connection was 300 gallons per connection per day. Based on 2020 winter versus summer usage data, approximately 60.3% (or 180.9 gpd) of this average usage is used indoors. The remaining 39.7% (or 119.1 gpd) is considered to be for outdoor uses.

Using the four year averages between 2017-2020, all uses of culinary grade water were compared with the estimated number of residents in the city. Heber citizens used an average of 119 gallons of culinary water per capita per day (gpcd) during this time. This number is derived by using the average total amount of water entering the culinary system over the four year period (728.1 MG) and the average number or Heber City residents during the same period (16,722 people). Therefore, the 119 gpcd amount includes water losses throughout the system that never reach the user. For evaluation purposes, this usage can be compared to the 2019 statewide average of 150 gpcd for total potable water usage.

As compared to the previous evaluation performed using the same method between 2014 and 2016 this represents a 17% reduction from the 143 gallons per capita per day previously calculated. All of the reasons for the 17% reduction since 2016 are not known, but it is understood that the primary reasons include expansion of the pressurized secondary irrigation system, replacement and repair of leaking pipes, and conservation efforts implemented by the City and residents.

When residential water usage only is considered between 2017-2020, Heber City citizens used 83 gallons of water per capita per day (gpcd). This number is derived by using the averaged metered water used for the residential connections over the four year period (506.6 MG), and the average number of Heber City residents during the same period (16,722 people). For evaluation purposes, this usage can be compared to the 2019 statewide average of 102 gpcd for residential potable water usage. This number is also down by 12% from the 2014-2016 residential usage number of 94 gallons of water per capita per day.

The total monthly culinary water used for the year 2020 is depicted by Figure 2 below. This is based on metered water leaving the culinary water system.

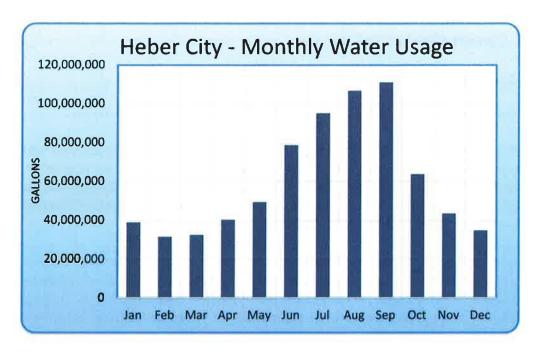


Figure 2: Heber City Monthly Culinary Water Use

Results of Prior Conservation Efforts

Based on conservation efforts, Heber City residents have been able to reduce potable water consumption over the past 5 years from 143 gpcd to 119 gpcd. This represents a considerable 17.0% reduction in usage. The following factors are believed to be the largest contributors to this reduction:

- Expansion of the pressurized irrigation system.
- Replacement and repair of leaking water lines.
- Public Outreach and Education efforts.

Future Water Use

The population of Heber City in 2060 is projected to be 35,843 people, with an adjusted population of 26,505. If current water usage remains steady (119 gpcd), Heber City will need to supply just over 3.15 million gallons of potable water per day at that time. By continuing to implement water conservation practices, this amount can be reduced. If Heber City were able to lower consumption by an additional 5 percent (113.1 gpcd), the city would be saving 156,380 gallons per day (57.1 MG per year). Through diligent implementation of water conservation efforts, this goal can be achieved.

WATER PROBLEMS AND GOALS

Problems Identified

Several problems with current water conservation measures have been identified.

- There is a need for a better understanding of landscaping water requirements and efficient water-use habits and practices. A small percentage of residents know how much water is required to maintain healthy landscaped areas and how to consistently use water efficiently outdoors. Many citizens base irrigation and outdoor practices on convenience rather than plant needs and water supply considerations.
- With the currently available methods for setting water rates, city council action is required for each adjustment. The city council strives to minimize the additional financial burdens on residents with financial challenges or fixed incomes, especially during these financially challenging times. Due to these challenges, water rates haven't kept up with the increasing costs.
- Traditionally, Heber City families have landscapes with large garden areas, grass, and other water intensive landscaping. The landscape's irrigation needs usually create a water use peak in the summer straining the existing water delivery system, particularly in the central portion of Heber.
- Many of the residents in the central portion of Heber City also use surface irrigation to irrigate lawns and gardens. The water is delivered to Wasatch Irrigation Company shareholders via a network of small ditches. This method of irrigation is very inefficient, resulting in a significant quantity of lost water. It is estimated that water losses in the ditch delivery system could be as high as 50 percent.
- Many of the existing connections to the pressurized irrigation are not individually metered. Some of these users may over-water landscaping because there is simply a flat fee per month for pressurized irrigation water use. Recently, the City has started to address this concern and individual meters are being installed in the pressurized irrigation system as resources become available. Moving forward, it will be important to continue to dedicate resources to this effort.

Each of these problems represents an opportunity for change. A policy is currently being developed to solve the problem of ditch irrigation water loss by converting all ditch irrigation to pressurized irrigation. However, a plan to do so will take many years to fully implement. In addition to this plan, the opportunity exists to prepare a new generation of wise-water users who build low-water use landscaping. This can be assisted with a strong sustained water education program in the public and private schools.

Additional opportunities exist to help correct other conservations problems. Landscaping along existing and future roads in the city could be more easily maintained if low water use shrubs and

mulches were used instead of Kentucky Bluegrass. Additional methods, such as implementing incentives to pressurized irrigation customers could be incorporated to decrease secondary water use and to help ensure sufficient water for additional users in the future. Implementing these ideas would help reduce peak demands and the need for expensive water system upgrades.

Water Conservation Goals

As part of Heber City's Water Conservation Plan, Heber City has established the following goals in pursuit of solutions to the previously identified problems:

- Goal 1: Reduce Heber City's per capita water use by approximately five percent in five years. The water-use rate is currently 119 gallons of treated water per capita day (gpcd). The goal is to bring this usage down to 113.1 gpcd by the end of 2026. For comparison, Heber City is already 27% lower than the State of Utah's 2030 goal of 162 gpcd for the Provo River Region
- Goal 2: Continue to develop a policy and plan for the pressurized secondary irrigation system and mandate that all outdoor irrigation come from the pressurized irrigation system. The long-term goal is to eliminate all ditch and culinary water irrigation.
- Goal 3: Maintain or improve the appearance and function of street landscapes, open spaces, and yards. Improved irrigation practices and water efficient landscapes can enhance the beauty of Heber City while helping to reduce water consumption.
- Goal 4: Reduce deficits in water used (metered) compared to water produced by continuing efforts to reduce leakage and account for used water. As shown in the water budget (Table 4), there is a yearly deficit between water pumped and water delivered. Continued maintenance and improvements to the culinary water system, such as replacing source meters and updating SCADA equipment and programming, will give more accurate and reliable data and allow for better monitoring of the water system and pin pointing of leaks. Additionally, City wide planned capital improvement projects, such as the Central Heber Water and Sewer Line Replacement project starting in 2022, will replace aging infrastructure through a large portion of "old town" Heber City and continue to increase system efficiencies throughout the City.

CURRENT WATER CONSERVATION MEASURES AND PROGRAMS

Heber City's water conservation efforts have primarily been directed at finding and fixing leaks in the existing system, education, and instituting a secondary pressurized irrigation system in new developments. This section briefly describes the measures that are now being utilized to help achieve the city's conservation goals. Descriptions of how Heber City is addressing each item, along with other appropriate details, are listed under the following headings.

Public Information and Education Program Pressurized Secondary System for Outdoor Use Leak Detection and System Maintenance Water Conservation Contingency Plan

Public Information and Education Program

Heber City's water conservation education is aimed at enhancing the awareness and understanding of water-related problems and is based on the premise that it will influence people to voluntarily use water more efficiently and cooperate with regulatory requirements. Public education includes both public information and outreach to schools, the use of fliers, bill stuffers, and presentations containing water awareness information. It addresses both long-term and short-term water use practices. Heber City also participates in and promotes the State's "Slow the Flow" and "Water Wise" programs that promote the same goals as the City. The following are examples of things that are presented as part of the education program.

Outdoor Water Use

- Irrigate landscaping only as needed according to the types of vegetation and the specific weather patterns of your area. In general, water in the early morning or late evening hours.
- Do not water on hot, sunny, and/or windy days. You may actually end up doing more harm than good to your landscaping, as well as wasting a significant amount of water.
- A single lawn sprinkler spraying five gallons of water per minute uses 50 percent more water in just one hour than the combination of 10 toilet flushes, two five-minute showers, two dishwasher loads, and one full load of laundry.
- Sweep sidewalks and driveways instead of using the hose to clean them off.
- Wash your car from a bucket of soapy (biodegradable) water and rinse while parked on or near the grass or landscaping so that all the water running off goes to beneficial use instead of running down the gutter to waste.
- Check for and repair leaks in all pipes, hoses, faucets, couplings, valves, etc. Verify there are no leaks by turning everything off and checking your water meter to see if it is still running. Areas with drip systems will use much less water, particularly during hot, dry and windy conditions.

• Keep your lawn well trimmed and all other landscaped areas free of weeds to reduce overall water needs of your yard.

Indoor Water Use

About two thirds of the total water used in a household is used in the bathroom. The following are suggestions for this specific area:

- Do not use your toilet as a wastebasket. Put all tissues, wrappers, diapers, etc. in the trash can.
- Check the toilet for leaks. Is the water level too high? Put a few drops of food coloring in the tank. If the bowl water becomes colored without flushing, there is a leak. If you do not have a low volume flush toilet, put a plastic bottle full of sand and water to reduce the amount of water used per flush. However, be careful not to over conserve to the point of having to flush twice to make the toilet work. Also, be sure the containers used do not interfere with the flushing mechanism.
- Take short showers with the water turned up only as much as necessary. Install low flow showerheads and/or other flow restriction devices.
- Do not let the water run while shaving or brushing your teeth. Fill the sink or a glass instead.
- When doing laundry, make sure you always wash a full load or adjust the water level appropriately as your machine allows. Most machines use 40 gallons or more for each load, whether it is two socks or a week's worth of clothes.
- Repair any leak within the household. A minor slow drip can waste up to 15 to 20 gallons of water a day.
- Know where your main shutoff valve is and make sure that it works. Shutting the water off yourself when a pipe breaks or a leak occurs will not only save water, but also eliminate or minimize damage to your personal property.
- Keep a container of water in the refrigerator for a cold drink instead of running water from the tap until it gets cold. You are putting several glasses of water down the drain for one cold drink.
- Stopper the sink when rinsing vegetables, dishes, or anything else; use only a sink full of water instead of continually running water down the drain.

Pressurized Secondary System for Outdoor Use

Heber City has developed a master plan for installing a secondary irrigation system throughout the remainder of the City. One of the purposes of this system is to reduce water loss through the elimination of irrigation ditches. New developments are required to implement the pressurized secondary irrigation system with all outdoor irrigation connecting to the system. When the secondary irrigation system is fully implemented, the majority of water lost through ditch infiltration and evaporation will be conserved. It is estimated that this could save approximately 1,653 acre-feet of water annually. In addition, water reuse is being considered as part of the

secondary system upgrade. While reuse does not directly reduce consumption, it does stretch existing supplies which is one of the goals of conservation.

Leak Detection and System Maintenance

A portion of the water processed by the public system never reaches any customer. It flows through leaks in the distribution system and seeps into the ground or is otherwise lost. Heber City previously replaced its old manual read meters with radio read meters. The meter read system is an enhanced version that automatically monitors and reports potential system leaks. The new system has demonstrated the ability to detect leaks quickly which the city can then have repaired.

Water Conservation Contingency Plan

Heber City has developed a contingency plan, which spells out climate and political realities related to water use during drought or other water supply shortages. Included here are conservation measures that Heber City may implement during times of emergency. They are as follows:

- Eliminate watering on city property during the hottest times of the day
- Water city properties on a minimal watering schedule that does not water during hot daylight hours
- Eliminate watering of city property in cases of severe shortages
- Educate the public on the water supply situation
- Instigate voluntary public conservation measures
- No outside watering from 10:00 a.m. to 7:00 p.m.
- Issue information to all customers on conservation procedures each can accomplish around their own property and within their own homes
- Instigate mandatory public conservation measures
- Enforced outside watering restrictions including watering times and quantities
- Instigate emergency conservation measures:
 - O Strictly enforce all conservation policies with significant fines for non-compliance
 - Physically restrict water supplies to (in order of priority):
 - All outside irrigation systems
 - Park properties and other non-essential support facilities
 - Commercial businesses, restricting largest users first
 - Residential areas
 - Any other "non-life support" areas, insuring water supplies to hospitals, hospices, all other health care facilities, and controlled designated area water supply facilities
 - Additional non-emergency water conservation measures

CURRENT PRICING STRUCTURE

Designing an appropriate rate schedule is a complex task. Rate design is a process of matching the costs of operating the water system to the unique economic, political and social environments in which a city provides its service. The cost of delivering the service must be evaluated and understood. Each water system has unique assets and constraints. Based on the characteristics of the system, and past capital and operating costs, revenue requirements can be estimated. In the past several years, the City has commissioned a studies to review the estimated cost of providing water service and to propose a rate schedule designed to cover such costs. These studies found that the rates were not keeping up with the costs necessary to operate and maintain the system. Since that time the Heber City Council has been working to keep the billing schedule updated in order to alleviate this issue while still keeping low and fixed income residents in mind. The details of the current tiered billing schedule are shown in Table 5 below.

Table 5: Heber City's Culinary Water Billing Schedule (2021)

HEBER CITY									
Resi	Residential Water Rate Structure								
Base Fee	.75" Meter	\$23.51							
	1.0" Meter	\$23.51							
Price per	Thousand Gallons								
	0 - 7,000	\$0.84							
	\$1.04								
	12,001 - 19,000	\$1.51							
	19,001 - 35,000	\$1.88							
	35,001 - 70,000	\$2.17							
	70,001 & Up	\$2.54							
Com	mercial Water Rate Stri	ıcture							
Base Fee	.75" Meter	\$23.51							
	1.0" Meter	\$23.51							
	1.5" Meter	\$102.99							
	2.0" Meter	\$169.30							
	3.0" Meter	\$394.70							
	4.0" Meter	\$659.82							
	6.0" Meter	\$1,216.69							
	8.0" Meter	\$2,118.21							
	10.0" Meter	\$2,112.04							
Price Per	Γhousand Gallons								
	0 - 7,000	\$0.93							
	7,001 & Up	\$1.97							

FUTURE WATER CONSERVATION OPTIONS

The recent 2020 water year was one of the driest and hottest years on record. Lower than average snowpack across the entire state and record dry soils resulted in average stream flows across the state at less than 50% of normal. On March 17, 2021, Governor Cox issued an Executive Order declaring a state of emergency due to drought with all of Utah's 29 counties experiencing some level of drought. Due to the drought conditions many cities and towns in Utah initiated drought response plans to reduce the consumption of water and stretch remaining water reservoirs. In light of the recent drought conditions, Heber City may consider adopting a drought response plan in addition to the current water conservation measures and programs being implemented. Presented below is an outline of a potential drought response plan along with some other options to further enhance water conservation efforts and to help meet the goals set forth above.

Drought Response Plan
Establish a Water Conservation Committee
Promote Water Efficient Landscaping
Secondary Irrigation Water Conservation
More Stringent Water Rate Structure
Peak Use Reduction
Retrofit Devices
In Home Leak Detection and Water Use Management Assistance

Drought Response Plan

Over the last 10 years, the State of Utah has experienced prolonged periods of abnormally dry or unusually hot weather that threatens the availability of water. This trend is predicted to continue. Droughts develop gradually over months and years and can take just as long to recover. Although drought is typically a prolonged or slow-moving disaster, impacts can sometimes escalate suddenly and cause water supply disruptions in a matter of weeks. If not addressed quickly these supply disruptions can have a significant impact on a municipality including but not limited to: loss of water supply, increased demand from users, reduced source water quality, and increased costs and reduced revenues related to drought response.

Having a drought response plan for severe drought conditions can help reduce the impact to the municipality caused by the supply disruptions and help maintain service to the water users while still ensuring a consistent water supply for essential services such as medical care, fire protection, and general health and sanitation services. The drought response plan (Plan) should also be a framework for planning for scenarios and objectives, actions, and potential response in order to better respond to, a drought-related emergency or critical situation. The overall goal of the Plan, and the contingency planning process, is to facilitate rapid emergency response. The intention of the Plan is to be functional, flexible, and easy to implement. Presented below is an outline of what a potential drought response plan should include. See Appendix B for an example of a potential drought response plan for Heber City.

The drought response plan includes:

- General description of plan goals and reasons for the need for the plan
- Water use priorities during a drought
- Establishment of a Drought Task Force
- Criteria for establishing drought levels
- Drought level stages and triggers
- Water use reduction goals and restrictions

Establishment of a Water Conservation Committee

A technical advisory committee may be useful for evaluating water conservation measures and making recommendations concerning such measures to the local government. This committee could evaluate the success of water conservation measures currently in practice and consider the potential applicability of other practices for future application.

Additional decisions to be made:

- Number of persons to comprise the committee
- Would the committee be made of current city employees
- How committee members are, or will be, chosen
- Length of service on committee
- Establish meeting schedule; monthly, bi-weekly, etc
- Committee's authority and responsibility
- Types of issues for which the committee will be responsible

Promote Water Efficient Landscaping

During some months, water used for lawns and landscapes may comprise more than half of the public water deliveries for many communities. Landscaping with low water use plants and site designs reduces the amount of water needed for irrigation. Such landscapes do not have to be barren, lacking in color, diversity or only consist of thorny desert plants. Succulent plants and other popular ornamentals may be designed into a water wise landscape if placed in a location that does not require excess watering. Landscaping along existing and future roads may also be designed to use low water-use shrubs, plants, and mulches that do not have intrusive root systems.

Additional ideas to promote:

- Adopt a water efficient landscape ordinance
- Include water wise landscaping as a major topic in public information and education programs.
- Adopt a policy of applying water efficient landscaping principles to newly landscaped or re-landscaped public buildings, parks, and other sites.

- Adopt a policy requiring all new development to place rockscaping and/or drought tolerant plants in park strips instead of lawn
- Offer incentives for existing park strips to be converted to rockscape and/or drought tolerant plants
- Convert all landscaped islands on City owned streets to rockscape and/or drought tolerant plants
- Replace manual or standard sprinkler controllers with smart controllers at City parks and open spaces using pressurized irrigation
- Monitor and evaluate the results of the water wise landscape information and education.
- Investigate the technologies of Xeriscape[™] and its potential use in Heber City parks and open spaces.

Secondary Irrigation Water Conservation

As more users connect to the pressurized secondary system, outdoor conservation measures will become even more important. Conservation measures will be utilized to ensure enough secondary water is available for all users and the average per capita consumption continues to decline. Continuing current efforts to meter all individual connections to the pressurized irrigation system will allow a better understanding of how the secondary irrigation water system is used and how more targeted conservation efforts in this system can be utilized. One example would be a tiered rate schedule that would financially incentivize large water users to reevaluate their water use and implement conservation measures on their own.

Peak Use Reduction

Some water systems are capable of meeting average daily demands but have difficulties meeting peak demands. If this condition occurs in the future, measures to reduce peak demand may need to be implemented in order to prevent the need to develop new resources or expand treatment and distribution facilities. Some methods that may be used to reduce peak demand include:

- Installation of "demand meters"
- Seasonal peak time rates
- Quantity of use restrictions
- Restrictions on landscape irrigation and other outside water uses during peak demand time

Retrofit Devices

Installation of water conserving devices in existing structures complements plumbing codes that require low water-use items in new structures. Retrofit requirements could be mandatory or devices be provided free of charge in order to achieve a high degree of compliance. Some localities require retrofit devices to be installed before ownership of a property can be transferred.

Possible program features:

- Define a set of measures to consider
- Evaluate the impact that such measures would likely have on water demand
- Analyze the advisability of adopting those measures for their service areas

In Home Leak Detection and Water Use Management Assistance

The City may consider providing a technical assistance outreach program for locating leaks and identifying ways in which a resident or property owner might use water more efficiently. This program would provide staff that is knowledgeable in leak detection and water conservation methods.

Probable action items prior to program origination are as follows:

- Design an assistance program to consider
- Evaluate the impact that the program would likely have on water demand
- Analyze the advisability of implementing the program in their service areas

COST ANALYSIS

Heber City has been able to reduce the gallons per capita use significantly over the past five years. It also has a goal to reduce consumption by another 5 percent over the next five years. This will be done by continuing the practices used over the previous five years. These include: continuing to educate the public about water conservation practices, continuing to find and fix leaks in the system, and continuing to employ a Water Conservation Coordinator. These are all part of the routine costs to the city (the City Engineer acts as the Water Conservation Coordinator), and will put no additional burden on the already tight budget. As shown in Table 6, the benefits to the city are estimated to be \$110,596.77 over the five-year period. It should be noted, this evaluation only considers residential water use savings at the current billing structure and does not consider future increases in pumping or system maintenance costs, or system water losses.

Table 6: Benefits of Water Conservation Program

Year I.	Adjusted						Future Use With Conservation			
	Population -	gpcd	kgal/yr		Cost*	gpcd	kgal/yr	Cost*	Savings	
2021	18,714	119.00	812,829	\$	720,633.74	117.81	804,700	\$713,427.40	\$ 7,206.3	
2022	18,862	119.00	819,262	\$	726,337.79	116.62	802,877	\$711,811.04	\$ 14,526.70	
2023	19,022	119.00	826,240	\$	732,524.30	115.43	801,453	\$710,548.58	\$ 21,975.7	
2024	19,196	119.00	833,776	\$	739,205.62	114.24	800,425	\$709,637.40	\$ 29,568.2	
2025	19,383	119.00	841,885	\$	746,394.42	113.05	799,791	\$709,074.70	\$ 37,319.73	
ssumes	cost to produce w	ater are equ	ivalent to resi	dentia	I billing rate.			Total Savings	\$110,596.7	

sumes cost to produce water are equivalent to residential billing rate.

^{*} Percentage of overall usage billed at different tiered rates assumes current average usage per ERU.

IMPLEMENTING & UPDATING THE CONSERVATION PLAN

Tasks must be set forth to ensure the goals stated above are reached. A person or department must be given the responsibility of implementing the necessary tasks. The City Engineer, Russ Funk, has been designated as the "Water Conservation Coordinator". The Heber City Council has authorized this position and will have responsibility for providing funding for the measures outlined in this plan.

This water conservation plan was placed on the December 7, 2021, Heber City Council meeting agenda and was adopted by the City Council. A copy of the resolution to adopt the plan is included in Appendix C.

Heber City's Water Conservation Plan will be revised and updated as required to meet changing conditions and needs of the City. The plan will help promote the effective use of culinary water as the methods set forth are utilized. Through public awareness and involvement, water may continue to be available for years to come.

REFERENCES

Non-Published references:

HORROCKS ENGINEERS, 2018. Heber City Master Plan 2018 to 2040. Heber City: Horrocks Engineers.

HEBER CITY, 2020, culinary water use reports. Heber City: Heber City's internal documentation.

HEBER CITY, 2020, Water Production. Heber City: Heber City's water scada system.

HEBER CITY, 2016, Water Conservation Plan. Heber City: Heber City Public Documents

U.S. Census Bureau. (2016). American Fact Finder. Retrieved October, 2021, from Heber City: http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=CF

Utah Division of Natural Resources. (2019). *Utah's Regional M&I Water Conservation Goals*. Retrieved November 2021, from: https://conservewater.utah.gov/wp-content/uploads/2021/05/Regional-Water-Conservation-Goals-Report-Final.pdf

APPENDIX A - POPULATION AND WATER USAGE

ATTACHED DOCUMENTS:

- 1. POPULATION PROJECTIONS
- 2. WATER USAGE REPORTS & CALCULATIONS
- 3. FUTURE WATER USAGE PROJECTIONS

1. POPULATION DATA:

	Population	% Growth
2000 Census Population	7,291	
2010 Census Population	11,362	4.5%
2016 Census Estimate	14,995	4.7%
2017 Census Estimate	15,775	5.2%
2018 Census Estimate	16,401	4.0%
2019 Census Estimate	17,139	4.5%
2020 Census Estimate	17,574	2.5%
2021 Population Estimate	18,640	4.7%

4.5% Growth rate experienced between 2000 & 2010

4.5% Growth rate experienced between 2010 & 2020

4.5% Growth rate experienced between 2000 & 2020

4.6% Growth rate experienced between 2016 & 2018

3.7% Growth rate experienced between 2017 & 2020

Growth Rate Projections

Residential Growth Rate

Varies

Commercial Growth Rate

35.0% of Residential

City/Church/Gov Growth Rate

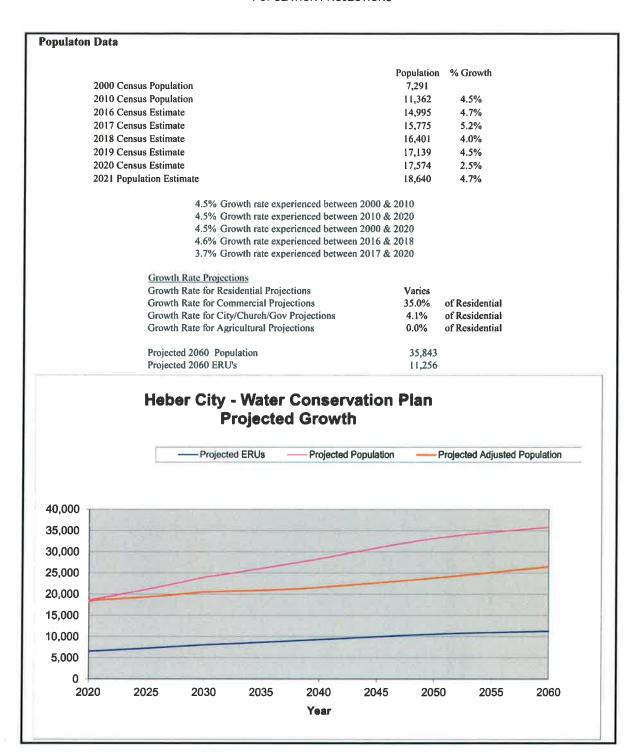
4.1% of Residential

Agricultural Growth Rate 0.0% of Residential

Projected Growth

Year	Est. Residential Growth Rate	Estimated Residential ERU's	Estimated Commercial ERU's	City/Gov ERU's	Agricultural ERU's	Total Estimated — ERU's	Total Estimated Population	Estimated Red Ledges Population	Estimated North Village Population	Adjusted Population
2020		4,863	1,380	286	1	6,530	18,640	348	0	18,292
2021	2.56%	4,987	1393	286	3	6,666	19,117	404	0	18,714
2022	2.56%	5,115	1405	286	1	6,806	19,607	459	286	18,862
2023	2.56%	5,246	1418	287	1	6.951	20,109	514	572	19,022
2024	2.56%	5,380	1430	287	1	7,097	20,623	569	858	19,196
2025	2.56%	5,518	1443	287	1	7,248	21.151	625	1144	19,383
2026	2.56%	5,659	1456	288	1	7,403	21,693	680	1430	19,583
2027	2.56%	5,804	1469	288	1	7,561	22,248	735	1716	19,797
2028	2.56%	5,953	1482	288	1	7,723	22,818	790	2002	20,025
2029	2.56%	6,105	1496	289	1	7,890	23,402	846	2288	20,268
2030	2.56%	6,262	1509	289	1	8,060	24,001	901	2574	20,526
2031	1.69%	6,367	1518	289	1	8,174	24,406	956	2860	20,590
2032	1.69%	6,475	1527	289	1	8,291	24,819	1,012	3146	20,661
2033	1.69%	6,584	1536	289	T .	8,409	25,238	1,067	3432	20,740
2034	1.69%	6,696	1545	290	1	8,531	25,665	1,122	3718	20,825
2035	1.69%	6,809	1554	290	1	8,653	26,099	1,177	4004	20,917
2036	1.69%	6.924	1563	290	1	8,777	26,540	1,233	4290	21,017
2037	1.69%	7,041	1573	290	1	8,904	26,988	1,288	4576	21,124
2038	1.69%	7,160	1582	290	1	9,032	27,444	1,338	4862	21,244
2039	1.69%	7,281	1591	291	1	9,163	27,908	1,338	5148	21,422
2040	1.69%	7,404	1601	291	1	9,296	28,380	1,338	5434	21,608
2050	1.57%	8,652	1609	291	1	10,552	33,164	1,338	8000	23,826
2060	0.78%	9,351	1614_	291	-1	11,256	35,843	1.338	8000	26,505

- 1. Projected Residential Growth Rate through 2040 Based on Recent Growth Patterns
- 2. Projected Residential Growth Rates from 2021 through 2060 Based on US Census and MAG Projections
- 3. Commercial Growth Rate (as a percentage of Residential) was estimated by dividing the average annual commercial connection growth rate over a 15 year period by the average annual residential growth rate over a 15 year period.
- 4. City/Church/Gov Growth Rate (as a percentage of Residential) was estimated by dividing the average annual City/Church/Gov connection growth rate over a 15 year period by the average annual residential growth rate over a 15 year period.
- 5. North Village population estimated from total build out population of 8000 by 2050.



	241	121	183	60.3%	50.20	4,803	4,863 3,976		539,035,101 482,178,239	SIDENTIAL+ RESIDENTIAL
							807		49,447,613	APARTMENT
Non-Reside							80		16,270,100	TRAILER
Non-Residential ERU's / Conn:							0		0	UNCLASSIFIED
4.0	140	70	234	76,9%	304	1,380	343		152,983,817	COMMERCIAL
ယ	293	147	157	51.7%	304	286	82		16,534,515	CHURCH/GOVT
							0		15,152,063	CITY OWNED
0.1	606	304	0	0.0%	304	0	2		31,935	AGRICULTURE
								İ		Ŧ

or water usage is assumed to be the usage between November and April. dential+ ERU's include: Residential Conn + Apartment Units + Trailer Units + Unclassified dential includes: Residential + Unclassified

mercial includes: Commercial Only rch/Govt ERU's include: Church/Govt + City Owned Connections.

culture includes: Agriculture + Sprinkler or and Outdoor usage do not consider system water losses. nections are based on December 2020 year end report.

Total Non-Residential ERU's: Avg Non-Residential ERU's / Conn:

SIDENTIAL+	RESIDENTIAL	APARTMENT	TRAILER	UNCLASSIFIED	COMMERCIAL	CHURCH/GOVT	CITY OWNED	AGRICUI TURE	H
474,840,242	418,999,036	40,331,936	15,509,270	0	152,959,238	17,415,342	11,987,288	1.100.530	
4,742	3,906	756	80		339	85	0		
4,742					1,528	294		1	
274					274	274		274	
29.8%					76.9%	21.7%		0.0%	
164					211	142			
110					63	133		274	
220					126	264		547	_
			Non-Resi	Non-Residential ERU's / Conn:	4.5	3.5		5.5	

or water usage is assumed to be the usage between November and April. idential+ ERU's include: Residential Conn + Apartment Units + Trailer Units + Unclassified dential includes: Residential + Unclassified

Imercial includes: Commercial Only rch/Govt ERU's include: Church/Govt + City Owned Connections. culture includes: Agriculture + Sprinkler or and Outdoor usage do not consider system water losses. nections are based on December 2019 year end report.

Total Non-Residential ERU's: Avg Non-Residential ERU's / Conn:

5.5

· · · · · · · · · · · · · · · · · · ·									
SIDEN (IAL+	RESIDENTIAL	APARTMENT	TRAILER	UNCLASSIFIED	COMMERCIAL	CHURCH/GOVT	CITY OWNED	ACDIC III TIDE	23
							2000	AGNICOLI UNE	
511,887,245	449,533,428	46,300,347	16,053,470	0	153,253,957	19.402.002	11 708 440	38 170	
								071,00	
4,553	3,785	688	80	0	313	83	0		
4,553					1,363	277		0	
308					308	308		308	
58.4%					76.9%	51.7%		%0.0	
180					237	159		0	
128					71	149		308	
722					142	297		614	
			Non-Resid	Non-Residential ERU's / Conn.	4.4	3,3		0.3	

Total Non-Residential ERU's: Avg Non-Residential ERU's / Conn:

or water usage is assumed to be the usage between November and April. dential+ ERU's include: Residential Conn + Apartment Units + Trailer Units + Unclassified dential includes: Residential + Unclassified includes: Commercial Only rich/Govt ERU's include: Church/Govt + City Owned Connections.

culture includes: Agriculture + Sprinkter or and Outdoor usage do not consider system water losses. nections are based on December 2018 year end report.

HEBER CITY CORPORATION WATER USAGE IN GALLONS 2017

15,775

Population Estimate

725,866,000

Average Total Water Usage (gpcd) - Based on tinlow 126
Average Total Water Usage (gpcd) - Based on Oudflow 118
Average Residential Water Usage (gpcd) - Based on Oudflow 118

680,463,399 TOTAL CITY OWNED AG & SPRIMAGER HYDRANT/CONST 0.0% 0 314 626 314 0.0 13.482.640 296 314 51.7% 162 152 302 3.5 20,301,262 20 COMMERCIAL CHURCHIGOVT 313 314 314 76.9% 72 72 745 4.1 145,943,225 Non-Residential ERU's / Conn. UNCLASSIFED 80 18,508,690 TRAMER 40 869 719 100 APARTMENT 3,690 441.357.862 RESIDENTIAL+ RESIDENTIAL 199 4,371 314 115 500,736,271 GPD/ERU Indoor (Winter) Avg. Yr. GPD/ERU Outdoor Avg. Yr. GPD/ERU Outdoor (Summer) Avg. Connections
ERU's
GPDERU Avg. Yr.
% Indoor Ussage (2016 ratio) MONTH TOTAL

Notes:

- Indoor water usage is assumed to be the usage between November and April.
- Residential+ ERN's include: Residential Conn + Apartment Units + Trailer Units + Unclassified
- Residential includes: Residential + Unclassified
- Residential includes: Residential + Unclassified
- Commercial includes: Commercial Only
- Chruch/Connections
- Agriculture includes: Agriculture + Sprinkler
- Indoor and Outdoor usage do not consider system water losses.
- Connections are based on December 2017 year end report.

3.9

Total Non-Residential ERU's: Avg Non-Residential ERU's / Conn;

206 108 215

A. Heber City Culinary Source Capacity

Heber City Culinary Sources	Total	Flow
Trener City Cumulary Sami Ces	CFS	gom
Valley Hills Well*	1.604	720
Hospital Well	6.684	3.000
Well No. 1	3,119	1,400
Upper Broadhead Spring**	1.114	500
Source Total =	12.522	5,620

^{*} Flow Source is from DDW Records. Current Rated Capacity is 750 gpm ** Minimum Flow Listed, Maximum is £250 gpm

B. Current Required Culinary Source Capacity

Using Heber City Historic Average Consumption x 2

600 gpd/ERU,

_	I Indoor/O ERU's X	600	Source gpd X ERU	1 day X 24 hr	l hr 60 min.	2,721	gpm
	Total Rec	-			pacity Surplus	2,721 2,899	gpm

C. Projected 20 Year Required Culinary Source Capacity

Using Heber City Historic Average Consumption x 2

600 gpd/ERU.

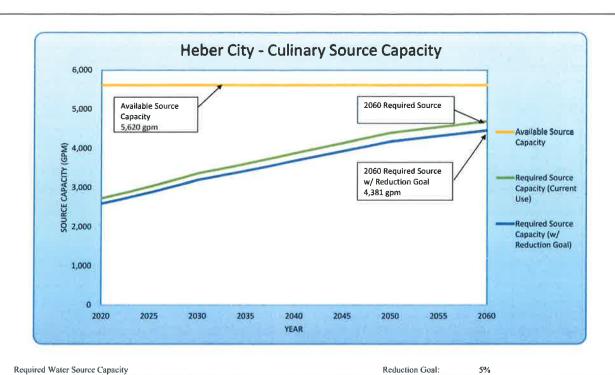
	eutdoor Source 600 gpd X ERU	l day X 24 hr	1 hr 60 min.	-	3,873	gpm
	uired Source Culinary System		pacity Surplus		3,873 1,747	gpm gpm

D. Projected 40 Year Required Culinary Source Capacity

Using Heber City Historic Average Consumption x 2

600 gpd/ERU.

I Indoor/O ERU's X	600 gpd X ERU	e 1 day X 24 hr	1 hr 60 min.	=	4,690	gpın
	uired Source Culinary Syste		pacity Surplus		4,690 930	gpm



Year	ERUs	Heber Ci
I real	I ISNUS	l (m

Year	ERUs	Heber City Source (gpm)	Ave Usage per ERU x 2 (gpd)	Source Required	Ave Use / ERU w/ Reduction (gpd)	Source Req'd w/ Reduction Goal
2020	6,530	5,620	600	2,721	570.0	2,585
2021	6,666	5,620	600	2,778	570,0	2,639
2022	6,806	5,620	600	2,836	570,0	2,694
2023	6,951	5,620	600	2,896	570.0	2,751
2024	7,097	5,620	600	2,957	570.0	2,809
2025	7,248	5,620	600	3,020	570.0	2,869
2026	7,403	5,620	600	3,085	570.0	2,930
2027	7,561	5,620	600	3,150	570.0	2,993
2028	7.723	5,620	600	3,218	570.0	3,057
2029	7,890	5,620	600	3,288	570.0	3,123
2030	8,060	5,620	600	3,358	570.0	3,190
2031	8,174	5,620	600	3,406	570.0	3,236
2032	8,291	5,620	600	3,455	570.0	3,282
2033	8,409	5,620	600	3,504	570.0	3,329
2034	8,531	5,620	600	3,555	570.0	3,377
2035	8,653	5,620	600	3,605	570.0	3,425
2036	8,777	5,620	600	3,657	570.0	3,474
2037	8.904	5,620	600	3,710	570.0	3,525
2038	9,032	5,620	600	3,763	570.0	3,575
2039	9,163	5,620	600	3,818	570.0	3,627
2040	9,296	5,620	600	3,873	570.0	3,680
2050	10,552	5,620	600	4,397	570.0	4,177
2060	11,256	5,620	600	4,690	570.0	4,456
		Saurca Canadi	ty Surplus/(Deficit)	930	gpm	1,165

gpm

A. Heber City Culinary Water Rights

Heber City Culinar	y Water Rights	Flo	w - Divers	ion	Flo	w-Deplet	lon
W.R. Number	Source	GPM	CFS	Ac-Ft	GPM	CFS	Ac-Ft
55-947	Well #1	897.66	2.00	1,447.93	897.66	2.00	1,447,9
55-5780	Valley Hills Well	112.21	0.25	105.00	112.21	0.25	105.00
55-8420	Valley Hills Well			64.40			64,40
55-8534 (E1053)	Valley Hills Well			75.00	1		75.00
55-1392	Upper Broadhead Spring	1,059,24	2.36	1,708.56	1,059.24	2.36	1,708.56
55-7052	Upper Broadhead Spring	1,122.08	2.50	1,809.92	1,122.08	2.50	263.20
55-1351	Hospital Well			19.96			19.96
55-3346	Hospital Well	448.83	1.00	723.97	448.83	1.00	723.97
55-4360	Hospital Well	Į.		75.57			75.57
55-13016	3 Existing Underground Wells & Surface Sources			703.73			485.59
55-13262	3 Existing Underground Wells & Surface Sources			11.20			7.73
55-13325	3 Existing Underground Wells & Surface Sources			1,830,76	1		1,257.98
55-894	3 Existing Underground Wells	6.73	0.02	1.82			1.22
55-4188	3 Existing Underground Wells	6,73	0,02	1.01			0.45
55-4706	3 Existing Underground Wells	6.73	0.02	1.34			0.75
55-4737	3 Existing Underground Wells	98.74	0.22	20.99			14.68
55-7121	3 Existing Underground Wells			1,31			0.72
55-8400	3 Existing Underground Wells			1.48			0.89
55-9162*	3 Existing: Underground Welfs			1.00			0.35
55-12327	3 Existing Underground Wells			12,36			8.53
55-12708	3 Existing Underground Wells			6.00			4.14
55-13280°	3 Existing Underground Wells	5.43	0.01	0.80			0.71
	Total:			8,624.11			6,267.34

^{*} Approved Change Applications transfering water to the City, Title work still needs completed

B. Current Required Water Right

Using Heber City Historic Average Consumption

300 gpd/ERU.

	Demand (To								
6,5	30 ERU's	X 300	gpd X	1 day X	1 hr	100	1,360	gpm	
			ERU	24 hr	60 min.	100			
6,5	30 ERU's	K_300	gpd X	365 day X	1 Acft.		2,194	Acft	
			ERU	l yr	325,852 gal				
	Total R	equire	d Water	r Right			2,194	Acft	1,360 gpn

C. Projected 20 Year Required Water Right

Using Heber City Historic Average Consumption

300 gpd/ERU,

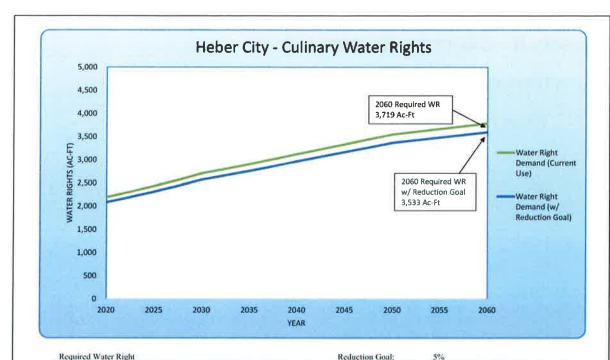
erage Den										
9,296	ERU's X	300	gpd X	1 day	X 1 hr	=	1,937	gpm		
				24 hr	60 mi	n.				
9,296	ERU's X	300	gpd X	365 day 2	X 1 Ac	eft. =	3,124	Acft		
			ERU	1 yr	325,852 gal					
	Total Red	quire	d Water	r Right			3,124	Acft	1,937	gpn

D. Projected 40 Year Required Water Right

Using Heber City Historic Average Consumption

300 gpd/ERU.

Average Demand (Total	Use)					
11,256 ERU's X _3	00 gpd X 1 day X 1 hr	-	2,345	gpm		
	ERU 24 hr 60 min.					. 1
11,256 ERU's X_3	00 gpd X 365 day X 1 Acft.	1-0 mg	3,782	Acft		. 1
	ERU l yr 325,852 gal					
Total Requ	ired Water Right		3,782	Acft	2,345 gp	m



Required Water Right			Reduction Goal: 5%		
Year	ERU\$	Average Usage per ERU (gpd)	Ac-Ft Required	Ave Use / ERU w/ Reduction (gpd)	Ac-Ft Req'd w/ Reduction Goal
2021	6,666	300,0	2,240	285.0	2,128
2022	6,806	300.0	2,287	285.0	2,173
2023	6,951	300.0	2,336	285.0	2,219
2024	7,097	300,0	2,385	285.0	2,266
2025	7,248	300,0	2,436	285.0	2,314
2026	7,403	300.0	2,488	285.0	2,363
2027	7,561	300.0	2,541	285.0	2,414
2028	7,723	300.0	2,595	285.0	2,465
2029	7,890	300.0	2,651	285.0	2,519
2030	8,060	300.0	2,708	285.0	2,573
2031	8,174	300.0	2,747	285.0	2,609
2032	8,291	300.0	2,786	285.0	2,647
2033	8,409	300.0	2,826	285.0	2,684
2034	8,531	300.0	2,867	285.0	2,723
2035	8,653	300.0	2,908	285.0	2,762
2036	8,777	300.0	2,949	285.0	2,802
2037	8,904	300.0	2,992	285.0	2,843
2038	9,032	300.0	3.035	285.0	2,883
2039	9,163	300.0	3,079	285.0	2,925
2040	9,296	300,0	3,124	285.0	2,968
2050	10,552	300.0	3,546	285,0	3,369
2060	11,256	300.0	3,782	285.0	3,593

APPENDIX B – DROUGHT RESPONSE PLAN

ATTACHED DOCUMENTS:

1. EXAMPLE HEBER CITY DROUGHT RESPONSE PLAN

HEBER CITY DROUGHT RESPONSE PLAN

1.1 General

In order to conserve the available water supply and protect the integrity of water supply facilities, with particular regard for domestic water use, medical care, sanitation, and fire protection, and to protect and preserve public health, welfare, and safety and minimize the adverse impacts of water supply shortage or other water supply emergency conditions, Heber City hereby adopts the following regulations and restrictions on the delivery and consumption of water through an ordinance or resolution.

The primary focus is placed on best management practices to manage water use demand, while evaluating options for alternative water supply sources. Water uses regulated or prohibited under the Plan are considered to be non-essential and continuation of such uses during times of water shortage or other emergency water supply condition are deemed to constitute a waste of water which subjects the offender(s) to potential penalties which can be defined at the Heber City Council direction as necessary.

This plan is intended to supplement and compliment the Heber City Water Conservation Plan.

1.2 Water Use Priorities

The risks to public health from water shortages can be high and include issues of water quality, water quantity, sanitation, and hygiene for personal use and food preparation. As a result of this, the Plan establishes the following priorities for use in developing demand reduction programs and allocations during a water shortage emergency. Priorities for use of available water, from highest to lowest priority, are:

- 1. Health and safety: residential home interior uses, medical, sanitation, and fire fighting
- 2. Commercial, industrial, and governmental: maintain jobs and economic base
- 3. Existing landscaping: primarily trees and shrubs
- 4. New demand: projects without permits when shortage declared

1.3 Application

The provisions of this Plan shall apply to all customers and property utilizing water provided by the public water system.

2. DROUGHT TASK FORCE

A drought task force will be created by Heber City in order to develop this Plan and to assist in further developing and implementing effective drought monitoring, mitigation, and response actions. The drought task force can be made up of representatives from the following:

- Mayor or City Council
- City Planning Department
- Public Works
- Engineering Department
- Local Fire Chief
- Local Police Chief
- Critical Water Users, eg health clinics, schools

3. AUTHORIZATION

The Heber City Council will direct the implementation of the applicable provisions of this Plan upon recommendations from City staff in the determination that such implementation is necessary to protect public health, safety, and welfare. The City Council shall have the authority to initiate or terminate drought or other water supply emergency response measures as described in this Plan.

4. AUTHORIZATION

The provisions of this Plan shall apply to all persons, customers, and properties utilizing water provided by Heber City Public Utilities.

5. PRIMARY INDEX

Heber City has a large number of irrigation shares in Wasatch Irrigation Company and Timpanogos Irrigation Company. As such, these shares are subject to the Provo River Decree and the Provo River Commissioner Reports to the State Engineer. Throughout the irrigation season, the Provo River Commissioner utilizes the decree and real-time river flows to adjust the allowed amount of water to be diverted from surface water sources and informs water right holders of these adjustments. Central Utah Water Conservancy District (CUWCD) plays a large role in helping to coordinate and manage a large percentage of the irrigation companies within the Heber Valley. As such, Heber City staff work closely with CUWCD staff to monitor water conditions each year. Heber City will coordinate with Central Utah Water Conservancy District along with other local agencies and water suppliers to determine the extent of the drought impact to the valley and its water supplies and will make recommendations to the Heber City Council as described in this Plan.

The localized data used to evaluate potential drought conditions is available from the Utah State Division of Natural Resources. The Division publishes the data for snow pack, precipitation and reservoir storage. This data will be used to quantify and support the recommendations to the Council by looking at the snow packs and reservoir levels that directly impact Heber City's water supply. Including but not limited to the following:

- Provo River Basin snow pack data
- Provo River Basin soil moisture data
- Provo River flow rate
- Jordanelle Reservoir storage levels

The data for these indices are available on the World Wide Web at: https://www.nrcs.usda.gov/wps/portal/nrcs/main/ut/snow/

6. NOTIFICATION AND EDUCATION

The City Council shall initiate the applicable Plan phase and corresponding conservation measures, or the termination of a Plan phase and corresponding conservation measures at their discretion or based on recommendations from the Drought Task Force. The public will be notified of these recommendations by one or more of the following means:

- Publication of notices in a newspaper of general circulation
- Direct mail to each customer on the utility bill, as a bill insert, and/or as a special mailing Public service announcement
- Signs posted in public places
- Public meetings/city council meetings
- Heber City municipal website

Additionally, through the monthly City newsletter, Heber City will periodically provide customers with information about the Plan, including information about water conditions under which each phase of the Plan is to be initiated or terminated, the response measures to be implemented in each phase, as well as any Plan updates.

The success of any water conservation program in achieving long term water conservation goals, as may be required under a water shortage, is dependent on the ability to convey to the community the water-supply situation, the expected response actions, and clear and measurable goals.

7. PHASES AND RESPONSES

This plan outlines four water shortage phases and associated actions of increasing severity as progressively more serious drought conditions warrant. The measurements can be applied to identify the four phases in the proposed severity index.

Following are proposed severity benchmarks that are intended to notify the public and city officials of the severity of a drought situation and recommend steps to be taken during that phase.

Phase I - Normal Water Conditions - Standard Conservation Goals

This phase is the current water conservation plan and goals of overall more efficient use of water, maintenance and repair of the City's water systems and ongoing City efficiency projects. Water conservation goals are primarily accomplished through education and conservation encouragement through which the City Council, along with relevant city staff and departments, prepare and publish drought education and management information to the public. The intent of this phase is to educate and encourage water use conservation.

Trigger: There is no specific trigger for implementing this phase. This phase is ongoing and intended to educate and encourage the public to conserve water.

Target: Water Use Reduction: No specific target

Phase II - Moderate Drought Conditions

This phase is intended as a cautionary phase by which the City Council along with the Public Works Department informs the public that the city is experiencing drought conditions and all indications are that this condition will extend for the rest of the water season (typically April 15 to October 15).

Trigger: This phase could be initiated when snowpack and reservoir levels are below 30% of normal as if April 15, using data from CUWCD, Provo River Commissioner, and other supporting data.

Target: Water Use Reduction: a city wide 5% reduction in water usage.

Phase III - Severe Drought Conditions

This phase is intended to inform the public that the city is in a severe drought condition and there is a critical need to reduce water usage and increase water restrictions. This condition may, at the City Council's discretion, require mandatory actions. This phase is used when the drought indices indicate a progressive severe drought situation.

Trigger: This phase is initiated when the Governor of the State of Utah or other local municipalities issue a State of Emergency due to drought or the city water supply is at or below 30% of normal.

The City Engineer and Public Works Manager will monitor the water system components to determine the level of supply and notify the City Council and City Administration of the severity of the situation.

Target: Water Use Reduction: A City wide 15% or greater reduction in water usage.

Phase IV – Extreme Drought Conditions and Water Shortage

This phase is initiated when the supply of water is not able to keep up with the demand for an extended period of time and there is a possibility of initiating a mandatory shut-off of water service.

Trigger: (conditions) when this phase may be initiated are:

- Extreme drought: A region wide drought that has gotten to the point where the utility cannot maintain service to a major portion of the city.
- Significant system failure: A significant water system component fails and a large section of the city is without water for an extended period.
- State wide or regional water reduction mandate

This phase is an emergency situation by which the public utility may need to prioritize water service to keep the most critical residences and industries supplied and shut off other types of non-essential use.

Critical industries will include hospitals, nursing homes and other life and health preserving enterprises. This phase may require working closely with state drinking water authorities to assist in mitigating and managing the situation.

Target: Water Use Reduction: A City wide 30% minimum reduction in water usage or as required for sustainability

Phase Regulations and Restrictions

The following tables represent the regulations and level of restrictions for each phase of the Drought Response Plan for both Residential and Commercial uses.

Table 1: Residential Regulations and Restrictions

Regulation	Regulation Phase II Phase III		Phase IV		
	Normal		No.		
Residential	Conditions	Moderate	Severe	Extreme	
Lawn Watering					
Prohibited Between 10 am- 6					
pm	Voluntary	Mandatory	Mandatory		
Prohibit Watering on windy				A 11 O	
days	Voluntary	Mandatory	Mandatory	All Outdoor Watering	
Limit Watering to 3 days per					
week	Voluntary	Voluntary	Mandatory	Prohibited	
Limit watering to trees and	-	-			
shrubs	Voluntary	Voluntary	Recommended		
Outdoor Fountains and					
Ponds					
No water misting or spray	\$ / - 1 1	>6.1.6			
above water surface	Voluntary	Voluntary	Recommended	Prohibited	
Swimming Pools					
Use of pool covers to reduce	Makambana	Malauntaur		Filling of Pools	
water loss	Voluntary	Voluntary	Mandatory	Prohibited	
Washing Personal Vehicles					
Bucket washing with hose					
nozzle. Wash vehicle on	Makembane	Voluntary	Recommended	Prohibited	
permeable surface such as	Voluntary				
lawn.					
Hard Surface Washing					
No hard surface washing	Voluntary	1/-1	Mandatan	Mandatar	
except for health or safety	Voluntary	Voluntary	Mandatory	Mandatory	

Table 2: Commercial Regulations and Restrictions

Regulation	Phase I	Phase II	Phase III	Phase IV
Commercial	Normal Conditions	Moderate	Severe	Extreme
Lawn Watering				
Prohibited Between 10 am- 6				
pm	Voluntary	Mandatory	Mandatory	
Prohibit Watering on windy				All Outdoor
days	Voluntary	Mandatory	Mandatory	Watering
Limit Watering to 3 days per				Prohibited
week	Voluntary	Voluntary	Mandatory	
Limit watering to trees and shrubs	Valuatan	Mali imtami	Decemberded	
	Voluntary	Voluntary	Recommended	
Water Management Plan				
Implement a water				
management plan outlining	Voluntary Goal	Voluntary Goal	Voluntary Goal	Mandatory
best management practices	to reduce use by	to reduce use	to reduce use	reduction of
for water use for your	5%	by 10%	by 25%	use by 30%
business				
Outdoor Fountains and				
Ponds				
No water misting or spray	Voluntary	Recommended	Recommended	Prohibited
above water surface	Voluntary	Recommended	Recommended	Profibiled
Swimming Pools				
Use of pool covers to reduce	Voluntary	Recommended	Mandatory	Filling of Pools
water loss	Voluntary	recommended	Manuatory	Prohibited
Hard Surface Washing				
No hard surface washing	Voluntary	Voluntary	Mandatory	Mandatory
except for health or safety	, oraniar y	v orantar y	Mariantory	y

APPENDIX C - RESOLUTION

ATTACHED DOCUMENTS:

1. RESOLUTION TO ADOPT THE HEBER CITY WATER CONSERVATION PLAN

Resolution 2021-18

A RESOLUTION TO UPDATE THE HEBER CITY WATER CONSERVATION PLAN

WHEREAS, Heber City, Wasatch County, Utah (Heber City) desires to assist and promote the conservation of water in Heber City and the Valley; and

WHEREAS, the City has developed a Water Conservation Plan to instigate and realize conservation; and

WHEREAS, the City is confident that the referenced Conservation Plan, if followed, will greatly improve the implementation of practical processes for conserving the City's water.

NOW THEREFORE, it is hereby resolved by the City Council of Heber City, Wasatch County, Utah, that Heber City intends to adopt the aforementioned Water Conservation Plan, and hereby approves the same, as attached as Exhibit "A".

day of

ADOPTED and PASSED by the City Council of Heber City, Utah, this

ATTEST: City Recorder		
		Mayor Kelleen Potter
APPROVED:		
Council Member Ryan Stack	:	
Council Member Rachel Kahler		
Council Member Mike Johnston	-	
Council Member Wayne Hardman	88	-
Council Member Heidi Franco	S	
	AYE	NAY
, 2021, by the following vote:	icoci city, ot	an, thisuay or

PUBLIC HEARING NOTICE

Notice is hereby given that the Heber City Council will hold a public hearing on updates to the City's Water Conservation Plan for Year 2021. Comments are being solicited, both verbally and in writing, from all interested parties. The plan discusses current and future actions and goals for water conservation within the City. Hearings will begin at _7:00 PM on December 7, 2021 at the Heber City Office Building, 75 North Main Street, Heber City, Utah. A copy of the draft plan can be obtained by contacting the Heber City Engineering Department at (435) 654-0757. In compliance with the Americans with Disabilities Act, individuals needing special accommodations (including auxiliary communicative aids and services) during these hearings should notify Trina Cooke at (435) 654-0757 or at 75 North Main Street, Heber City, Utah at least three days prior to the hearing to be attended.

1 2 3 4 5 6 7 8 9 10 11 12 13 14	TIME AND ORDE	HEBER CITY CORPORATION 75 North Main Street Heber City, UT 84032 City Council Meeting December 7, 2021 DRAFT Minutes 4:00 p.m. Work Meeting 7:00 p.m. Regular Meeting ER OF ITEMS ARE APPROXIMATE AND MAY BE CHANGED AS TIME PERMITS NG-4:00 P.M.
15 16 17 18 19 20 21	Present:	Mayor Kelleen Potter Council Member Rachel Kahler Council Member Heidi Franco Council Member Mike Johnston Council Member Ryan Stack – arrived 4:14 p.m. Council Member Wayne Hardman
22 23 24 25 26 27 28 29 30 31 32 33	Staff Present:	City Manager Matt Brower City Attorney Mark Smedley City Planning Director Tony Kohler City Finance Manager Wes Bingham City Planner Jamie Baron City Engineer Russ Funk IT Specialist Anthon Beales Parks and Cemetery Director Mark Rounds City Recorder Trina Cooke Officer Bryan Berg
34 35 36 37 38 39 40 41 42	Funk, City Finance M. Tony Kohler, Public Turnbow. Also Present: Shaun John, Terry Diehl, Go Casian, Sophia Capso	Remotely: Assistant to the City Manager Luke Searle, City Engineer Russ Ianager Wes Bingham, City Attorney Mark Smedley, City Planning Director Works Director Matthew Kennard, and Assistant City Engineer Kyle a Bennett, George Bennett, Bill Fox, Scott Phillips, Jimmy Hansen, Arnold ordon Spencer, Sharon Spencer, Dawn Sopar, Robert McConnell, Maydeline on, Quentin Partridge, Kenna Jones, Laurie Gagan, John Kohlman, and others it whose names were illegible.

- 1 Also Attending Remotely: (Names are shown as they appeared online) Sandi Brower, Dan and
- 2 Trudy Simmons, Kelli G, Tracy Taylor, Howard Saldarini, Dave, James Doolin, Kyle K, Marco
- 3 Diaz, Barb Boss, Chuckz, Robin Raines-Bond, Kendra Wyckoff, Rob Harter, Paul, R Kent, Ben
- 4 Lasseter, Marianne B Allen, Bobbie Jo Glover, and Kent Buie.

5

- 6 Mayor Potter called the Work Meeting to order at 4:03 p.m. and welcomed everyone in
- 7 attendance
 - 1. Discuss draft Downtown Overlay Zone (DOZ) with Planning Commission (Kohler) 120 min
- 8 Downtown Overlay Zone Draft
- 9 Downtown Overlay Zone PC CC >>>
 - Discuss Proposed Envision Heber 2050 Phase 3 Code Amendments: Repeal Section 17.38.100 Costs and Charges; Consolidate Chapter 18.16 Zones General with Chapter 18.20 Official Zone Map; Repeal Section 18.67 Hillside Overlay Zone; and Repeal Chapter 18.51 R-14 Transitional Residential Zones (Kohler) - 15 min
- 10 Envision Code Updates
 - 3. Discuss Proposed North Village Annexation (Kohler) 45 min (time permitting)
 - II. REGULAR MEETING-7:00 P.M.

11

1. Call to Order

12

13 Mayor Potter called the Regular Meeting to order at 7:15 p.m.

14

2. Pledge of Allegiance (Council Member Stack)

15

16 Council Member Stack led the recitation of the Pledge of Allegiance.

17

3. Prayer/Thought by Invitation (Default: Council Member Franco)

18

19 Council Member Franco shared a prayer.

20

III. CONFLICT OF INTEREST DISCLOSURE:

21

There were no conflicts of interest disclosed by the Council.

23

IV. CONSENT AGENDA:

24

1. Approval of October 19, 2021 City Council Meeting Minutes (Cooke)

25

26 CS Item 1 10.19.2021 DRAFT Minutes >>

2. Approval of Destruction of Evidence for the Heber City Police Department (Booth)

1 2

CS Item 2 Staff Report Evidence Destruction

3 4

Motion: Council Member Franco moved to approve the Consent Agenda as listed. Council Member Stack made the second. Voting Aye: Council Members Franco, Hardman, Johnston, Kahler, and Stack. The motion Passed unanimously 5-0.

6 7

5

V. PUBLIC COMMENTS:

VI. ACTION ITEMS:

- 1. Public Hearing Regarding a Proposed Budget Amendment for Fiscal Year 2021-2022 (Bingham)
- 8 Staff Report Budget Amendment >>>
- 9 Resolution 2021-17 Budget Amendment >>>
 - 2. Public Hearing Regarding Proposed Updates to the Heber City Water Conservation Plan for 2021 (Turnbow)
- 10 Staff Report 2021 Water Conservation
- 11 2021 Water Conservation Plan
- 12 Staff Engineer Kyle Turnbow presented the 2022 Heber City Water Conservation Plan Update. He
- 13 explained that municipalities were required to provide a Water Conservation Plan Update to the
- State every five years in order to remain eligible for Federal and State funding. He noted the Plan
- 15 had considered projected population growth. Council Member Kahler expressed concern whether
- there was enough water in the Valley to sustain the immense population growth in the City. City
- 17 Manager Matt Brower described the water rights developers were required to obtain in order to
- build. They would be unable to develop if there was not enough water. Mr. Turnbow described the
- water adjudication process currently being done state-wide. He highlighted that the City had surpassed its 2016 goal to reduce water usage by 5% and had achieved a 17% overall reduction.
- He shared Heber City's water usage was below state average and reviewed planned projects to
- help increase efficiency as well as a drought response plan.

23 24

Mayor Potter opened the Public Hearing at 8:06 p.m.

- James Hansen, resident, had read the report and commended he City's detail. He hoped to see more
- 27 information regarding secondary water usage and wished to see secondary water metering
- implemented. He noted the record low level of the Great Salt Lake and concern for the bird estuary
- 29 located there. City Engineer Russ Funk explained the City had received federal grant funding and
- was in the process of implementing a phased secondary water meter installation. There was trouble
- 31 getting materials due to the limited supply chain.

- 1 With no further comments coming forward from the public, Mayor Potter closed the Public
- 2 Hearing at 8:10 p.m.

3

- 3. Consider Approval of Resolution 2021-17 to Amend Budget for Fiscal Year 2021-2022 (Bingham) 5 min
- 4 Staff Report Budget Amendment
- 5 Resolution 2021-17 Budget Amendment >>
 - 4. Consider Adoption of Resolution 2021-18 to Approve the Proposed Updates to the Heber City Water Conservation Plan for 2021 (Turnbow) 5min
- 6 Staff Report 2021 Water Conservation
- 7 2021 Water Conservation Plan
- 8 Motion: Council Member Franco moved to approve Resolution 2021-18 Updating the Heber City
- 9 Water Conservation Plan. Council Member Kahler made the second. Rollcall Vote: Voting Aye:
- 10 Council Members Franco, Stack, Kahler, Hardman, and Johnston. The motion Passed
- 11 Unanimously 5-0.

- 5. Children's Justice Center Update Regarding Application of City Donated CARES Funds (Kenna Jones) 5 min
- 6. Peace House Update Regarding Application of City Donated CARES Funds (Kendra Wyckoff) 5 min
- 7. Christian Center Update Regarding Application of City Donated CARES Funds (Rob Harter)
 5 min
- 8. Mountainlands Association of Governments (MAG) Presentation to Review Available Grant Options (Nancy O'Toole) 15 min
- 9. Monthly Current Development Report (Planning Department) 10 min
- 10. Presentation of Heber City's 2021 Annual Audit (Stephen Rowley) 15 min
- 11. Consider adoption of Ordinance 2021-38, approving the Highlands Annexation, located at approximately 3000 North Highway 40 (Kohler) 30 min
- Highlands Ord 2021-38 and other materials
- 14 Final Modified MDA Exhibit with Redline
 - 12. Consideration of Approval of the Old Mill Village Master Development Agreement (MDA) 1st Amendment (Baron) 30 min
- 15 Staff Report Old Mill

- 13. Establish Dates for Council Retreat (Brower) 5 min
- 14. Consider Request to Fund Repairs From City Water Main Break.
- 1 Item 14. Staff Report

VII. COMMUNICATION:

2

VIII. CLOSED EXECUTIVE SESSION

- 1. Personnel
- 2. Real Estate
- IX. ADJOURNMENT
- Motion: Council Member Stack made the motion to adjourn. Council Member Kahler seconded the motion. The meeting adjourned at 10:47p.m.

5 6

7

8 Trina Cooke, City Recorder