

# 2014 WATER CONSERVATION PLAN



PREPARED BY:

OGDEN CITY

PUBLIC SERVICES DEPARTMENT

PUBLIC UTILITIES DIVISION

133 WEST 29<sup>TH</sup> STREET

OGDEN, UTAH 84401

NOVEMBER 2014

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## CHAPTER ONE - INTRODUCTION

### **Purpose of the Plan**

As the Wasatch Front's population continues to grow, an increased water supply is needed to sustain that growth. Immediate measures must be taken to maintain and supply limited water resources to a growing population. The purpose of this Water Conservation Plan is to find ways to conserve water and sustain a growing population's current water consumption as well as anticipating for its future needs.

As with any plan, there is a desired outcome. The desired result for Ogden City's Water Conservation Program is to reduce the overall per capita usage of water within the City by 25%. This will be achieved by helping its population become more efficient with its water use while simultaneously maintaining a high quality of life for its residents. Reducing water use while maintaining high quality of life ensures the City will continue to attract continued residential growth and business development without huge impacts to the environment.

The 2014 Water Conservation Plan is an update of the 2004 and 2009 Water Conservation Plans required by the State. The plan outlines the water conservation activities and measures that will occur during the next five years. This document complies with the requirements of Utah State Code Section 73-10-32 which states that:

*(2)(a) Each water conservation plan shall contain:*

- (i) a clearly stated overall water use reduction goal and an implementation plan for each of the water conservation measures it chooses to use, including a timeline for action and an evaluation process to measure progress;*
- (ii) a requirement that each water conservancy district and retail water provider devote part of at least one regular meeting every five years of its governing body to a discussion and formal adoption of the water conservation plan, and allow public comment on it;*
- (iii) a requirement that a notification procedure be implemented that includes the delivery of the water conservation plan to the media and to the governing body of each municipality and county served by the water conservancy district or retail water provider; and*
- (iv) a copy of the minutes of the meeting and the notification procedure required in Subsections (2)(a) and (iii) which shall be added as an appendix to the plan.*

The 2014 Conservation Plan fulfills the requirements of this Act and provides new goals and measures within the City.

## CHAPTER 2 – HISTORY OF OGDEN'S WATER SYSTEM

In 1914, a shortage of culinary water was predicted and the City Engineer was directed to conduct a study to find additional sources of water. As a result of this study, thirteen artesian wells were developed in the Ogden Valley, located about 10 miles east of the City. The water was piped from each well to a central collection basin and then piped through a redwood pipeline down Ogden Canyon to the Ogden Water System. The wells were found to deliver excellent drinking water. By 1923, a total of 51 wells had been drilled in Ogden Valley at a place designated as Artesian Park.

In 1936, Pineview Dam was constructed and the water impounded by the dam covered Artesian Park and the wells. Forty-Seven of the original fifty-one wells were piped to a central location and served as the main water source to Ogden City, even though the wells were under 40-50 feet of water most of the year. In 1958, the height of Pineview dam was increased 30 feet, which increased the depth of the water over the wells, and created issues with cleaning and maintaining them. When iron bacteria started growing in the artesian wells in 1964 it was determined that the old artesian wells would have to be replaced.

Between 1970 and 1973, six new deep wells were drilled on the north shore of Pineview Reservoir adjacent to the old artesian well field. The wells were located above the reservoir level so they could be serviced and maintained.

Growing demand for drinking water resulted in the 1956 construction of a water treatment facility immediately below Pineview Dam in Ogden Canyon. The treatment plant originally had the capacity to treat 10 Millions of Gallons per Day (MGD) of Pineview Reservoir surface water for distribution in the City.

A portion of the treatment plant was updated between 1970 and 1973. This project increased the treatment plant's capacity to 13.5 (MGD). The expansion helped provide sufficient water for the City's population and provided a redundant water source if the Pineview Well Field becomes inoperative.

In 1997, the City completed another renovation of the treatment plant, which updated the equipment and added a pretreatment facility east of the plant. Construction of a new water treatment facility began in April 2014 with project completion anticipated in April of 2015. The new water treatment facility provides more reliable water treatment ability and provides for future expansion of water treatment capacity.

The City began major improvements to its water system in 2008 to increase water storage capacity and replace failing infrastructure. These projects included new linings and covers at the 23<sup>rd</sup> street water storage reservoir, upgrades to existing facilities, improved pumping and storage facilities at 9<sup>th</sup> street, a new reservoir at 36<sup>th</sup> street, replacement of the 46<sup>th</sup> street transmission line and the construction of the Taylor Canyon Well.

In addition to the above described drinking water sources, approximately 40% of residential parcels within the City have access to seasonal irrigation water through a secondary irrigation system. The secondary irrigation system is currently not owned or operated by the City, but is part of the Pineview Water and Weber Basin Water Systems.

## CHAPTER 3 - DESCRIPTION OF OGDEN CITY AND ITS WATER SYSTEM

### Inventory of Water Supply System

Ogden City covers an area of 26.6 sq. mi and is located in Northern Utah nestled between the Wasatch Mountains and the Great Salt Lake. Climate can vary drastically from cool and snowy winters to dry and hot summers. During hot summer months, demands on water production increase significantly for landscape irrigation and put pressure on the distribution system. This inventory analysis will help determine current and future water needs of the City.

The source of much of the information concerning the drinking water distribution system is found in the 2011 Ogden City Water System Master Plan (Sunrise, 2011). Currently the City receives water from underground water wells year round and when demand exceeds the capacity of the wells, the water supply is supplemented with treated surface water.

City owned water rights that feed the plant consist of 10,000 acre-feet of water from Ogden River Water Users Association from the original Pineview Reservoir project, and 1,500 acre-feet of surface water from Weber Basin Water Conservancy District (WBWCD) as a result of the expansion of Pineview Reservoir. The City also has various other water rights within Ogden Canyon which can be treated and used during the peak irrigation season.

The City's total water supply is currently served by six Pineview wells located in Eden, Utah that produce 14.9 MGD. The Ogden City Water Treatment Plant has a capacity of 13.5 MGD combining for a total 28.4 MGD for the Canyon sources. The Taylor Canyon Well has a capacity of 1.44 MGD and WBWCD connections have a capacity of 4.33 MGD, 4.3 MGD, and 3.32 MGD respectively combining for a total of 11.95 MGD for Weber Basin sources.

*Table 1. Summary of Ogden's Culinary Water Sources*

| Source             | Capacity  |
|--------------------|-----------|
| Pineview Wells     | 14.9 MGD  |
| Taylor Canyon Well | 1.44 MGD  |
| Treatment Plant    | 13.5 MGD  |
| WBWCD              | 11.95 MGD |
| Total              | 41.79 MGD |

The amount of water supplied from the treatment facility and the Pineview Well Fields is limited by the capacity of the pipes that run through Ogden Canyon. The existing pipelines (24" and 36" diameter pipes) in Ogden Canyon linking the Pineview Wells and treatment plant to the City have a maximum capacity estimated at about 30 MGD. The existing transmission pipelines capacities closely match the existing production capacity of the Pineview wells and treatment plant at 28.4 MGD. Figure 1, shows the total water delivered from all sources. As can be seen in Figure 1 water usage has remained fairly stable over the last ten years despite the growing population.

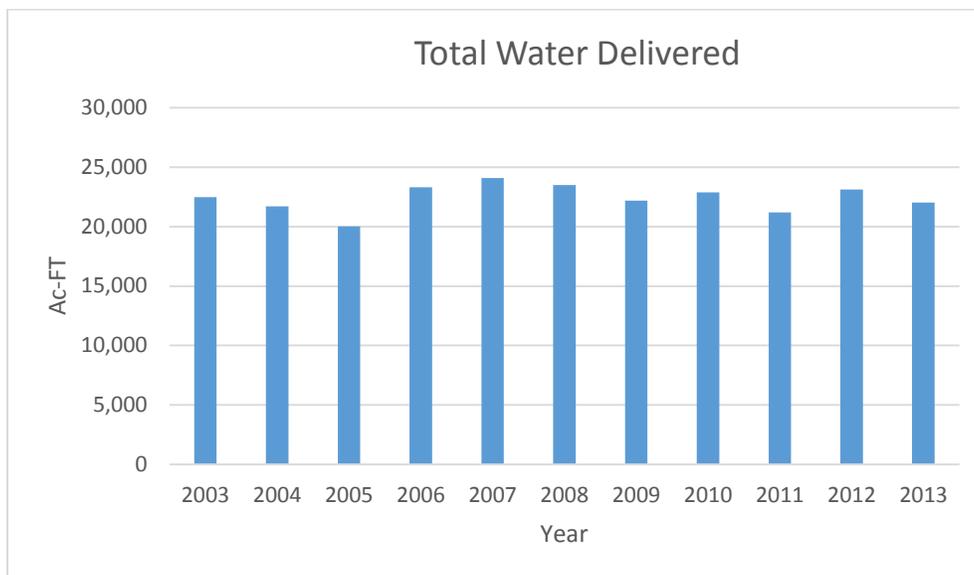


Figure 1: Ogden City water utility totals, well, treated, and WBWCD.

### City Connections

Ogden currently has 23,598 residential and commercial connections. Table 2 shows the number of connections by type and future projections of connections.

Table 2: Current and projected water connections.

| Year | Residential | Commercial | Industrial | Sprinkler | Total  |
|------|-------------|------------|------------|-----------|--------|
| 2010 | 21,455      | 1,774      | 123        | 246       | 23,598 |
| 2030 | 25,161      | 2,080      | 144        | 288       | 27,675 |
| 2050 | 29,508      | 2,440      | 169        | 338       | 32,456 |

### Water Consumption Goals

With increasing attention to water conservation, appropriate evaluations of per capita use has become critical. Determining the per capita water consumption can be achieved by dividing the total gross water used over a continuous 12-month period by the service area population (CDWR, 2010). As part of the State Water Conservation Plan, there is a goal set to decrease per capita water consumption by 25% by the year

2050. Ogden City has adopted this reduction as its goal. The daily per capita water use can be seen in Figure 2. A 25% reduction in water use would decrease 256 gpcd from base year 2000(est.), to 192 gpcd by the year 2050. According to our data there is a downward trend in per capita water consumption.

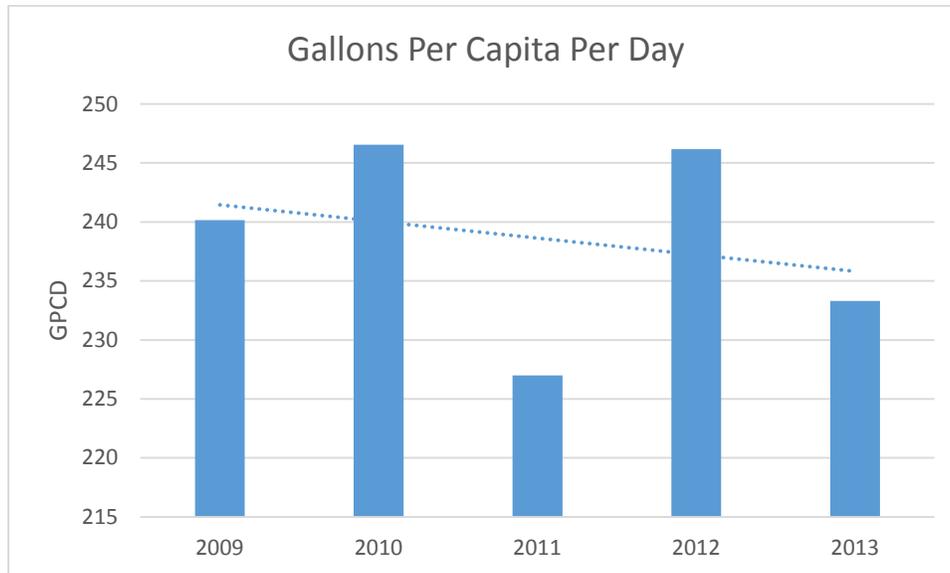


Figure 2: Per capita water use.

### Storage Requirements

The total existing storage requirement for the Ogden City water system including equalization, fire suppression, and emergency storage for existing is 28.9 million gallons (MG), 2030 storage requirement is 32.6 (MG), 2050 storage requirement is 36.9 MG. The total existing storage capacity for the Ogden system as a whole is 72.2 MG, most of which is provided by the 23rd/24<sup>th</sup> street reservoirs.

## CHAPTER 4 - POPULATION GROWTH AND CONTINUAL WATER CONSERVATION

### Projected Population Growth Based on 20 Year Plan

With any water distribution system supply, demand is always the critical question. Population projections help utilities plan where funding and resources should be spent in the distribution system. There are various methods for projecting population and future growth for cities. For this Water Conservation Plan, the projected population growth rate used for Ogden was the rate determined by the Utah Governor’s Office of Planning & Budget. Their average population growth rate for use in future projections is a rate of 0.8% per year. Using this rate the population for the 20-year planning period will grow from 82,522 in 2010 to 106,062 in 2030, and to 116,943 for the 40-year planning period (2050). Figure 3 shows the projected population. It should be noted that actual population growth rate may vary from this average projected growth rate.

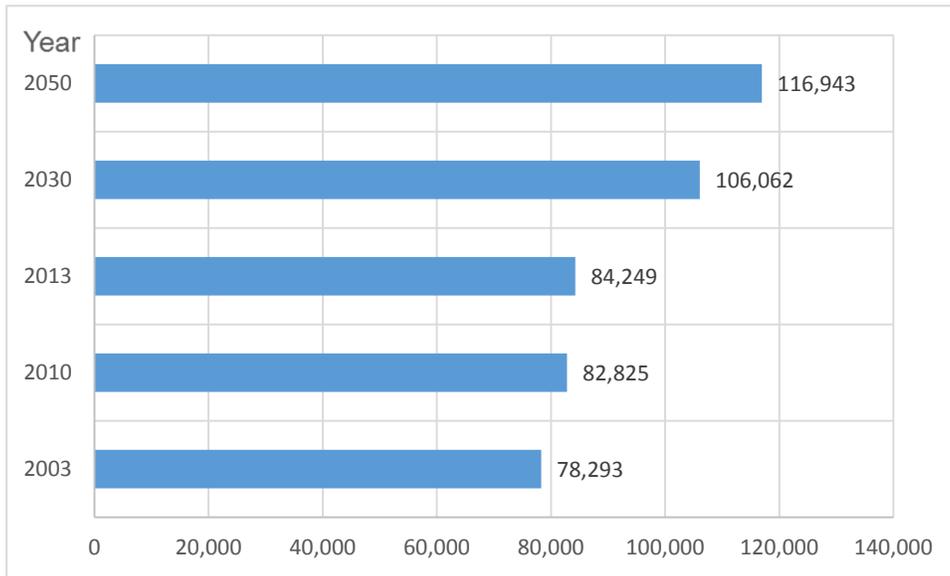


Figure 3. Ogden City Population Projection.

### Water Conservation Importance with a Growing Population

With an increasing population comes a higher demand for water. If the City can reduce overall water use by 25% by the year 2050 then we see in Figure 4 that water consumption will only increase slightly with the growing population during the next forty years. One way this can be achieved is by reducing the daily per capita water used for each person or entity. This reduction also allows Ogden City to supply water to the population without additional infrastructure.

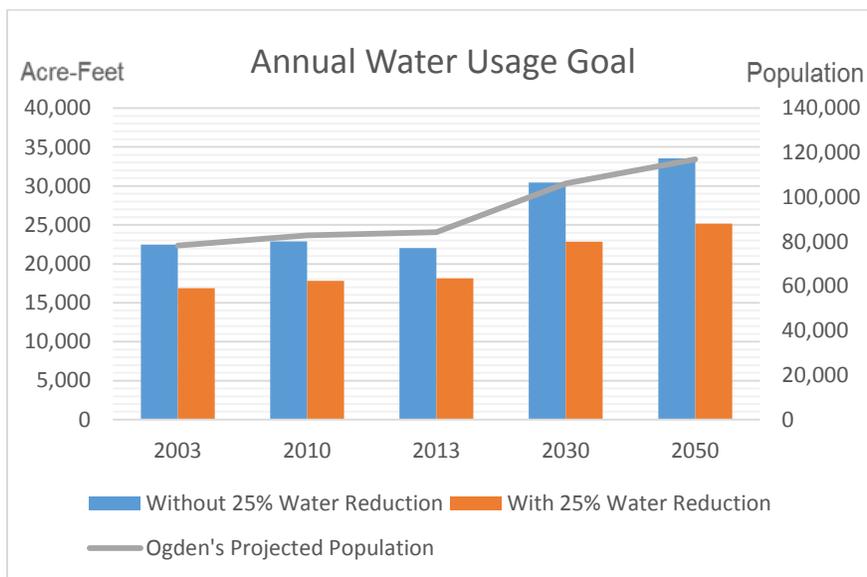


Figure 4: Reduced water usage goal

To facilitate State water reductions goals, Ogden City has also set its water conservation goal as a 25% per capita water use reduction by 2050 using 2000 as the base year. To achieve this, water conservation goals should include lowering peak day demand, reducing waste, distribution system efficiency, and optimized system capacities.

## CHAPTER 5 – INTERNAL CONSERVATION MEASURES

### **Capital Improvement Projects**

In 2008 Ogden City bonded to complete approximately 50 million dollars of capital improvement projects with the majority of those projects being water utility projects. These included: water transmission line replacements, construction of water storage tanks, new reservoir covers for storage tanks, and the construction of the Taylor Canyon Well. Currently, the Public Utilities Division's focus has turned to the construction of a new water treatment facility that will replace the current treatment facility in Ogden Canyon. The new facility will also have the ability to provide greater output capacity if needed. It is anticipated the new plant will be operational by April, 2015.

### **5 Year Capital Improvement Plan**

The five year capital improvement plan includes the projects that have been prioritized as the most urgent projects. These projects are those that should be completed during the next five years.

- New Water Treatment Facility in Ogden Canyon.
- Pipe classifications and replacement projects due to leaks and age.
- Various distribution system projects such as digital meters as one example.

### **Leak Detection and Repair**

According to the AWWA publication "Quantifying Future Rehabilitation and Replacement Needs of Water Mains" gives a collection of life expectancy data for four major US water utilities (Deb, A. K., Y. J Hasit, F. M Grablutz, and R. K Herz, 1998). The study put various pipe materials into a survival probability curve from different cities. The study showed that the pipe's health started to decline around 60 years and rapidly deteriorated at around 100 years. According to Ogden's 2011 Water Master Plan, there are a high percentage of pipes that fall under the age category where pipe health starts to decline; therefore, a large majority of resources should be allocated for pipe leak detection, pipe rehabilitation and pipe replacement in order to mitigate further water loss (Figure 5).

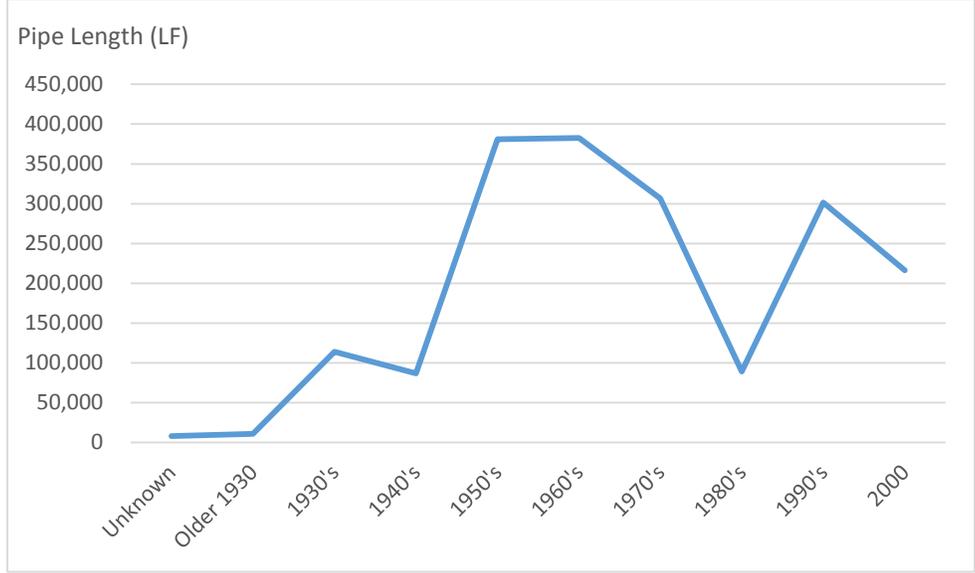


Figure 5: Ogden City Water Pipe Attributes Categorized by Age

The Public Utilities Division has an active leak detection and repair program. The Public Utilities Division provides 24-hour standby personnel available to receive notification of water leaks. Once notification is received a repair crew is dispatched to repair the leak. During working hours the response time is usually within an hour. At other times repair crews are dispatched within one to forty-eight hours depending on the severity of the leak.

An extensive study of the 36" and 24" Ogden Canyon pipelines that link the Pineview Wells to Ogden City was completed in January of 2009. The study determined the pipe thickness, pipeline deterioration, possible water loss, and rehabilitation options available. Inspection results indicated that the 36" line was in relatively good condition; however, the 24" line varied from good to poor condition. Fifteen total leaks total were found on the 24" line with 12 leaks classified as large, two leaks classified as medium, and one small leak. This study led to the replacement of the 24" line in the winter of 2012-2013.

The City also plans to establish an annual leak detection survey. Working with a leak detection consultant, the Public Utilities Division staff will identify areas of the water distribution system deemed to be at most risk for leaks. The consultant will then spend each year testing, evaluating and locating leaks within the subject area. When leaks

are found City crews are notified to repair the leaks. Each year a new subject area will be identified with the intent that over a decade, most of the City will be examined.

### **Supervisory Control and Data Acquisition (SCADA)**

Operation efficiency is an important and ongoing program that has been adopted by Ogden City Public Utilities. SCADA is an acronym for Supervisory Control and Data Acquisition. Ogden City's SCADA system is an integral part of improving operational efficiency. It is a monitoring system that allows for real-time measurement and control of pumping rates, water flows, tank elevations and other operational data. Before 2006, the City's SCADA system was limited to its water treatment plant and wells. In 2006 this system was expanded to include the reservoirs, pump stations, and many of its major components, and is continuing to expand as new components come online. This system can collect data from monitoring points throughout the water system and transmit the information to a central location. Here computer programs allow the water division to analyze the data and perform on-line control functions to operate the system. This SCADA system has greatly improved the efficiency of operations within Public Utilities.

### **System Wide Water Audit**

A full system water audit of the system is planned. The improved SCADA system helps facilitate this. The improvements made to water meters will help identify problems. The leak detection survey will also help clarify where losses are occurring.

### **Pressure Regulator Valves**

Pressure Regulator Valves (PRVs) regulate and control pressure zones throughout the City, eliminating fluctuations in pressure by opening and closing valves as needed to keep a consistent flow, and therefore, a more consistent pressure in each of the city's pressure zones. In 2005, the City evaluated its 34 existing PRVs as well as approximately 12 separate pressure zones to determine the possibility of consolidating pressure zones in order to eliminate stations and provide a more effective level of service to the water users. The evaluation found that 11 PRVs needed to be replaced because of deterioration, and an additional 3 new PRV's were added to the system. Since the completion of these installations and realignments the City has seen a significant drop in leaks due to pressure fluctuations. Ogden City will continue to replace older PRV's throughout the city as funding becomes available.

### **Water Rate Structure**

Residential and commercial water rates are based on the gallons of water used, meter size, and availability of secondary water. The base rate is charged monthly and is based on the water meter size. A discount of the minimum monthly charge, or base rate, is given to users who are granted tax abatement by Weber County.

The structure is graduated and increases rates with usage. The structure also accounts for those with secondary water available. Higher users that have access to secondary water are penalized. This structure is a great way to encourage water conservation.

### **Meter Replacement**

Water meters read less accurate as they age. This results in decreased water revenues and unaccounted water losses. The City has already begun retrofitting all of its water meters with radio-read systems. There are currently only a few hundred residential meters left to be replaced in the City. These are scheduled for replacement in the near future. These new meters have reporting capabilities to identify leaks and backflow events.

### **Secondary Water System**

Approximately 40% of residential parcels within the City have access to seasonal irrigation water through a secondary irrigation system. The City encourages the connection to the secondary irrigation system when available. The secondary irrigation system is currently not owned or operated by the City, but is part of the Pineview Water and Weber Basin Water Systems.

### **Enforce Current Water Conservation Ordinances**

Ogden City has enacted several ordinances to promote water conservation. These ordinances target unnecessary excess water usage and allow the City to impose water use restrictions in times of emergency. An example of this is restriction of water use for landscape purposed between the hours of 10 a.m. and 6 p.m. from June 1<sup>st</sup> through September 30<sup>th</sup>. If violators are found watering during the mandatory time restrictions penalties may be imposed, (See Appendix B).

### **Develop and Adopt Future Water Conservation Ordinances**

Future ordinances could include expanded use of water wise landscaping. The goal would be to limit the use of cool turf grass on all new developed lands and include native and water efficient plants that can survive on limited amounts of water.

### **Install Smart Flow Sensors**

The goal is to install smart flow sensors on all City owned automatic irrigation systems. These sensors supply water based on real-time data. Relating to this is a goal to replace all manual irrigations systems in Ogden City parks, recreational and open space areas with automatic smart flow systems. Work is already being completed to test the feasibility of this option.

### **Water Conservation Program Coordinator**

The City retains a Water Conservation Program Coordinator to develop programs that would educate the public about water conserving measures, coordinate public outreach programs, and solicit public involvement and calls to action in water conserving measures. The Water Conservation Coordinator also provides support for finding solutions for water losses throughout the City and system improvements. This position was created in July 2014.

### **Backflow Program**

Ogden City Public Utilities maintains a backflow prevention program to reduce the risk of unprotected cross-connections and ensure the highest quality drinking water. The

certified backflow technician performs hazard assessments throughout the city to determine the degree of hazard at each site and adequate backflow protection at each connection that may pose a risk to water quality. All new construction, modifications and (or) expansions of plumbing systems will fall under the permit process such as plan review and inspections. Additionally, Ogden City Public Utilities sends notices to property owners letting them know when testing of their backflow assemblies are due (See Appendix C).

### **Water Reclamation**

Studies on water reclamation from other cities have been done. At this time installing a system for the reclamation of water appears too costly. We are monitoring other entities in the State as they study this option. Further study will be discussed in the future.

## **CHAPTER 6 – EXTERNAL CONSERVATION MEASURES**

### **Public Information**

A vital component in water conservation is public awareness. Currently, information is distributed via social media, monthly *At Your Service* news articles, the Ogden City Website, and a semiannual water conservation flyer that is sent to all residents and businesses in their utility bill. Brochures are provided by Ogden City as well as from Weber Basin Water Conservancy concerning water conservation strategies. The City plans to launch a new Ogden Water Website where customers can pay their water bill and also find information concerning water conservation and programs available to the public. The website will focus on recommendations for conserving water, provide hydrozoning landscape information, and promote free indoor and outdoor water audits at the customer's property.

### **Public Education and Involvement**

Every year the City participates in the spring Weber County Water Fair. Typically only a few schools from Ogden School District participate in the fair. The City plans to visit each school as permitted to educate youth about their role in water conservation.

### **Water Week**

Every year dignitaries across the globe come together to talk about pressing water issues and the future of water. Public Utilities will promote awareness of World Water Week by providing activities that promote water awareness such as: classes, photo, drawing, and essay contests, and an open house to meet the Water Utility Manager and Water Conservation Program Coordinator.

Three major themes for water conservation will be:

- Promote awareness that while Ogden is situated near the Wasatch watershed, the Rocky Mountains still border the Great Basin Desert with Ogden only receiving an average of 1.8 inches of precipitation a month according to the Utah Annual Rainfall and Climate Data.

- Conservation of our water sources and protection of our watershed is vital.
- Conserve water to preserve habitat and recreational opportunities for our future quality of life.

### **Emergency Readiness**

Water, wastewater, and storm water services are critical functions provided for the public's well-being. Each of these utilities can be affected by disasters and emergencies, resulting in disruption of services and water shortages (See Appendix D). Water conservation programs have an important role in our community's disaster readiness.

- Water conservation programs help us plan for ways to manage consumption of a limited resource, especially when disruptions of a city's water supply due to emergencies and disasters may occur.
- Water conservation programs help us use water more efficiently which enables more water to be available for emergency response.
- Water conservations programs give the community the tools and information they need to respond accordingly when an emergency occurs.
- Water conservation programs help us adapt quickly to changing water conditions such as drought.

### **Partnering Entities**

With any program, combining resources, sharing information, and utilizing experts in the field are advantages to a successful Water Conservation Program. Public Utilities encourages partnering with other entities such as Weber Basin Water Conservancy District (WBWCD) and other institutions to help educate and provide new insights into water conservation. Public Utilities recognizes that water conservation is not just a City concern, but a state and global concern and that new programs should reflect this broad view.

### **Landscape Conservation Programs and Incentives**

The City, in partnership with Utah State University, is working on the installation of a Water Conservation Learning Garden located in the Ogden Botanical Gardens. The garden will feature medium, low, to no use water areas. It will also feature how-to areas that illustrate how to group certain plants together based on watering needs. The garden will also demonstrate how to landscape a parkstrip that can be maintained with very little water, while still retaining cosmetic appeal.

### **Outdoor Water Audit Programs**

A trained technician will go to a resident's home or business and perform a water audit, or sprinkler check. The audit will consist of checks such as: the amount of water the system is providing, how uniform the distribution is, the soil permeability, the root depth of the grass, and then recommend a general watering schedule.

The technician will also point out any deficiencies in the system such as broken, missing, or sunken nozzles that need to be replaced. The technician will provide

additional information on water conservation activities that can be implemented during spring and summer months. This program is currently offered through Weber Basin Water Conservancy District in the months of May thru August. Ogden City will provide extended season sprinkler audits starting in April and will run thru September in an effort to reach more residents and businesses.

### **Indoor Water Audit Programs**

A trained technician will go to a resident’s home or business and perform a general water loss prevention inspection. The inspection includes identifying leaking plumbing fixtures, potential water loss areas and fixtures that could be replaced with more water efficient fixtures. The residential inspection will also offer suggestions on winterizing pipes, what to look for during the winter months, and general ways that water can be conserved through every day household activities.

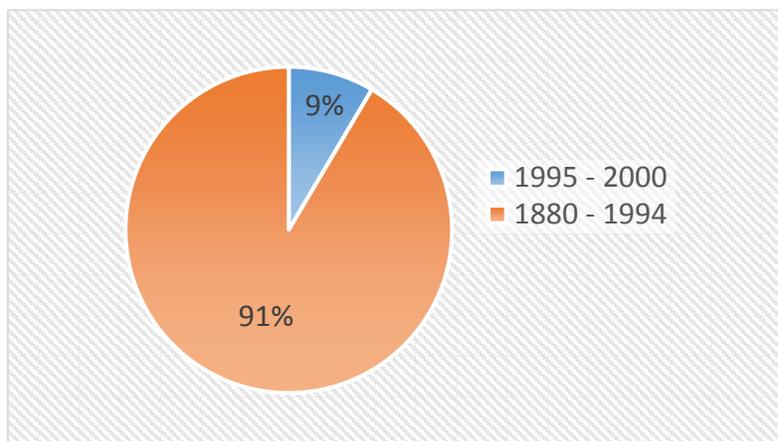
### **Real-Time Metering**

Real-Time Metering is a system that provides water meter readings in real time and is updated at designated time increments. The data collected from real-time monitoring provide the most up to date information about the water meter reading, the water meter temperature and the daily usage. This will provide customers with instant monitoring of water costs, data back-up, downloadable data for personal records and increased leak detection.

### **Water Efficient Plumbing Standards**

In 1992 the federal government enacted the 1992 U.S. Energy Policy Act. This law required plumbing manufacturers to produce fixtures such as toilets, showerheads and faucet that meet a set standard for water-efficiency. All toilets sold in the U.S. now have a maximum flush of 1.6 gallons instead of 3 to 5 gallons per flush.

All new construction in Ogden City since 1992 has the new higher efficiency fixtures; however, according to the U.S. Census data there are approximately 27,000 homes in Ogden built before the Energy Policy Act (Figure 6). As homeowners replace old and worn out fixtures, these replacements will result in “automatic” water savings. It is estimated by 2025 the natural replacement of old fixtures with new water efficient



*Figure 6: Age percentage of homes constructed in Ogden*

fixtures will result in approximately 3.5% or 850 acre-feet per year reduction in overall water use.

With a large majority of the city being constructed before 1992, there is a definite need to encourage upgrades of older less efficient water fixtures. In order to offset the amount of water wasted while upgrades are made to these older fixtures, the City is offering Conservation Kits to Ogden residents in an effort to help mitigate water loss. Each Conservation Kit will contain the following:

- (1) Chrome 1.5 gpm showerhead
- (2) 1.0 gpm faucet aerators
- (1) 1.5 gpm swivel kitchen aerator
- (1) 1 toilet tank bank
- (1) Water Flow meter bag
- (1) Packet of toilet leak detection tablets
- (1) Information sheet containing water conservation tips and ideas.

In addition to the Conservation Kit, the Public Utilities Division may consider providing rebates to customers who replace older less efficient fixtures with new and approved water efficient fixtures so they are replaced sooner rather than later.

### **Rain Harvesting**

According to the Utah Division of Water Rights, rain collection was made legal in 2010 with the following stipulations:

- *To collect, store, and place the captured precipitation to a beneficial use, a person must register the use with the Utah Division of Water Rights as detailed in 73-3-1.5.*
- *A person may collect and store precipitation without registering in no more than two covered storage containers if neither covered container has a maximum storage capacity of greater than 100 gallons.*
- *The total allowed storage capacity with registration is no more than 2,500 gallons. Collection and use are limited to the same parcel of land on which the water is captured and stored.*
- *There is no charge for registration and a certificate will be provided to the applicant.*

The harvested rainwater may be used for non-potable purposes only such as lawn and garden watering, washing vehicles, etc.

## High Water Usage Reports

Monthly reading and billing can be used as a conservation measure by providing property owners with data to assess not only their recent usage but historical usage as well. This data will help owners assess any issues with their plumbing system and whether or not changes in water use behavior would affect their monthly usage and costs.

Monthly billings and software have enabled the city to generate a High Water Usage Report which provides information about what properties have unusually high water use for that property. The City then contacts the owner of the property as soon as the high water usage is detected instead of waiting for the owner to receive this information in their billing statement. This enables the owner to resolve any issues that may be present in the owner's system immediately. The City plans to enhance this program by sending a City employee out to the property to complete a water audit on the property to help the owner locate possible water loss areas and also provide the owner with water conservation tips, ideas, and recommendations for improving water efficiency.

## CHAPTER 7 – WATER CONSERVATION GOALS

### Conservation Measure Summary

*Table 3: Summary of water conservation program activities.*

| Measure                                 | Description  | Ongoing | In Development | Suggested |
|---|--|---------|----------------|-----------|
| Brochures, Newsletters, Billing Inserts | Develop and distribute brochures, newsletters, and articles concerning water conservation and programs available | X       |                |           |
| School Programs                         | Develop programs, presentations, and activities that facilitate classroom learning on conservation               |         | X              |           |
| Water Fair                              | Participate in annual Weber County Water Fair  | X       |                |           |
| Water Week                              | Develop community programs that promote world water week and water conservation                                  |         | X              |           |
| Learning Garden                         | Design and construct public garden demonstrating water wise landscaping  |         | X              |           |
| Media                                   | Develop and distribute water conservation programming and material for Ogden TV-17 and social media              |         | X              |           |

|                                |   |   |   |   |
|--------------------------------|---|---|---|---|
| Water Website                  | Develop and design water utility website with a focus on water conservation   |   | X |   |
| Community Involvement          | Develop and promote programs that bring awareness and provide community action regarding water conservation             |   | X |   |
| Water Conservation Coordinator | Provide a full time person dedicated to water conservation and public education   | X |   |   |
| Meet and Greets                | Allow public to meet the Public Utilities Manager and Water Conservation Coordinator in a Water Conservation Open House |   |   | X |
| Contests                       | Promote drawing, photo, and writing contests in the community about water conservation                                  |   | X |   |
| Employee awareness             | Provide yearly presentation on water conservation techniques and strategies   |   |   | X |
| Landscape and Irrigation       | Develop and distribute a guide for water efficient landscapes and irrigation systems                                    |   |   | X |
| Landscape check-ups            | Provide residential landscape assessments and offer suggestions to enhance water efficiency                             |   | X |   |
| Landscape plant list           | Develop and distribute a water-wise plant list specific to local weather and soils                                      |   |   | X |
| Landscape templates            | Develop and distribute landscape reference plans  |   |   | X |
| Outdoor Audits                 | Promote and conduct lawn sprinkler check-ups for residential, commercial, and institutional properties                  |   | X |   |
| Indoor Audits                  | Promote and conduct internal check-ups for residential, commercial, and institutional properties                        |   | X |   |
| Parkstrips                     | Encourage water-wise plants to be planted in parkstrips   |   | X |   |
| Parkstrip Incentives           | Provide incentives for the removal of high water use plants in exchange for low water use plants                        |   |   | X |

|                                   |  |   |   |   |
|-----------------------------------|--|---|---|---|
| Parkstrip Plants List             | Develop and distribute an approved water-wise plant list for parkstrip areas   |   |   | X |
| Virtual Learning Garden           | Develop virtual water-efficient learning garden tour for website   |   |   | X |
| Conservation Kits                 | Provide low water use shower heads, aerators, and save tanks and provide information on water saving procedures                      |   | X |   |
| Partnering                        | Partner with other water entities and institutions in an effort to provide new strategies on water conservation and public awareness | X |   |   |
| Workshops and Classes             | Provide workshops on various water conservation strategies and promote WBWCD classes and workshops                                   |   | X |   |
| Rate structuring                  | Utilize a rate structure to encourage responsible water use  | X |   |   |
| Rebates                           | Promote rebate programs available through WBWCD  |   | X |   |
| High water usage report           | Promptly notify property owners when large spikes in water use are reported  | X |   |   |
| Monthly meter reading and billing | Provide timely information to the customer concerning water use and show historical data to be used as a comparison                  | X |   |   |
| Universal metering                | Ensure that every account is metered   |   | X |   |
| Water loss prevention             | Revitalize distribution system by implementing an aggressive pipe replacement program  | X |   |   |
| Leak detection                    | Provide annual leak detection audits and identify and repair leaks in a timely manner  |   | X |   |
| Pipe Replacement plan             | Develop and implement a system in replacing aging pipes  |   |   | X |
| Water loss Audit                  | Complete a full system water loss audit  |   |   | X |
| Irrigation Standards              | Develop and adopt water efficiency standards for all commercial properties   |   |   | X |

|                                 |   |   |   |   |
|---------------------------------|---|---|---|---|
| Landscape ordinance             | Develop and adopt ordinance to encourage water-wise landscaping   |   |   | X |
| Parkstrip ordinance             | Develop and adopt ordinance to encourage water-wise planting  |   |   | X |
| Rainwater Harvesting            | Promote rainwater harvesting based on state legislative guidelines  |   | X |   |
| Rain Sensor Ordinance           | Require properties with automated sprinkler systems to be upgraded with rain sensor                           |   |   | X |
| Wasteful water Ordinance        | Develop and adopt an ordinance that would prohibit any unnecessary or excessive use of water                  | X |   |   |
| Water Shortage Contingency Plan | Update and identify specific actions to be taken during water shortages and emergencies                       | X |   |   |
| EPA Residential Study           | Measure water efficiency in newly constructed homes   |   |   | X |
| Plumbing fixtures               | Inventory upgrades in plumbing fixtures and calculate the quantity of remaining older fixtures to be replaced |   |   | X |
| Plumbing rebates                | Provide rebates to property owners with fixtures older than 1994  |   |   | X |

### 5 Year Conservation Activities

Ogden City’s water conservation goal is to reduce per capita water use by 25 percent by the year 2050. This reduction from the base year of 2000 is currently underway. In order to reach a 25% per capita reduction, smaller goals of 5% reductions every five years will be utilized. This approach would take into account population growth, funding for new and rehabilitation projects that may not be readily available upfront to realize instantaneous results, and continued public education of current and new techniques and strategies on conservation as they are developed and implemented.

The next five years activities will specifically focus on the following recommendations to achieve current water reduction goals:

- Establish procedures to improve infrastructures, leak detection, or action taken by the Public Utilities Division.
- Work to implement and encourage water efficient landscapes, landscape ordinances, policies, and regulations.

- Continue in real-time meter replacements.
- Enhance classroom opportunities for home owners and youth in the community on water conserving activities and water use habits.
- Work closely with other entities such as Weber Basin Water Conservancy District and Utah State University on water conservation tips and procedures.
- Continue to promote the use of water efficient plumbing fixtures.
- Educate consumers about benefits of water conservation and provide information on techniques and strategies in order to achieve conservation goals.
- Development of Ogden Water Website.

## REFERENCES

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Governor's Office of Planning & Budget, 2011, *Sub-county Population Projections (Total Population)*, <http://governor.utah.gov/dea/popprojections.html>

*Ogden City Culinary Water Master Plan*, Prepared by Sunrise Engineering., Logan, UT. 2004

*Ogden City Culinary Water Master Plan*, Prepared by Ogden City Water Utility Department., Ogden, UT. 2009

*Ogden City Water Conservation Plan*, Prepared by Gilmore Engineering Inc., Salt Lake City, UT., October 2004

*State of Utah, Conservation Plan Sample*. Prepared by State of Utah., Salt Lake City, UT., March 2009

## APPENDICES

Appendix A – Culinary Water Rates

Appendix B – Water Conservation Ordinances

Appendix C – Backflow and Cross Connection

Appendix D – Water Shortage Response Summary

Appendix E – Adoption Documentation

# APPENDIX A

This section has been affected by a recently passed ordinance, 2014-29 - EQUAL PAY PROGRAM FOR WATER UTILITY CUSTOMERS. [Go to new ordinance.](#)

## 9-1-6: RATES AND BILLING:

### A. Designated

1 Metered Water Service All water service except the delivery of water which does not meet the requirement for domestic and culinary use, and sales negotiated by contract shall be metered by water meters of a design and size approved by the division. Monthly service and usage charges for metered water service are as follows.

- a. The service charge, or base rate, shall be charged each customer to whom water service is available regardless of whether any water is used. This charge is based on the meter size.
- b. The applicable meter size and corresponding charge is as follows.

| Monthly Service Charge  | Begin July 1, 2012<br>(Including 2012 CPI Increase) | Begin July 1, 2013<br>Rate Increase | Begin July 1, 2014<br>Rate Increase | Begin July 1, 2015<br>Rate Increase |
|---|---|-------------------------------------|-------------------------------------|-------------------------------------|
| Meter Size  |   |                                     |                                     |                                     |
| <sup>3</sup> / <sub>4</sub> " or smaller  | \$ 17 .50   | \$ 0 .88                            | \$ 0 .64                            | -                                   |
| 1"  | 28 .96  | 1 .45                               | 1 .06                               | -                                   |
| 1 <sup>1</sup> / <sub>2</sub> "   | 40 .43  | 2 .02                               | 1 .48                               | -                                   |
| 2"  | 64 .87  | 3 .25                               | 2 .38                               | -                                   |
| 3"  | 181 .08   | 9 .06                               | 6 .65                               | -                                   |
| 4"  | 227 .80   | 11 .39                              | 8 .37                               | -                                   |
| 6"  | 506 .98   | 25 .34                              | 18 .64                              | -                                   |
| 8" or larger  | 929 .11   | 46 .45                              | 34 .15                              | -                                   |
| Current year rate = (previous year rate + current year rate increase) x (1 + current year CPI)  |   |                                     |                                     |                                     |
| Sample calculation 2013 rate calculation for <sup>3</sup> / <sub>4</sub> " meter assuming 2013 CPI = 2%<br>\$18.75 = (\$17.50 + \$0.88) x (1 + .02) |   |                                     |                                     |                                     |

c. In addition to the above meter size base rate, the following rates shall be assessed per one thousand (1,000) gallons of water used, based upon the meter size, the availability of secondary water on the property and the number of gallons of water used per month

(1) One inch (1") and smaller; except that connections without secondary water service shall be billed according to the schedule in subsection A1c(2) of this section between May 1 and October 31

|  | Begin July 1,<br>2012                   | Begin July 1,<br>2013 | Begin July 1,<br>2014 | Begin July 1,<br>2015 |
|--|---|-----------------------|-----------------------|-----------------------|
| Gallons Of Water Used Per Month  | 2012 Rate (Including 2012 CPI Increase) | Rate Increase         | Rate Increase         | Rate Increase         |
| 0 to 6,000   | \$1 .50                                 | \$0 .08               | \$0 .05               | -                     |
| 6,001 to 12,000  | 2 .30                                   | 0 12                  | 0 .08                 | -                     |
| Above 12,000   | 3 .00                                   | 0 15                  | 0 11                  | .                     |
| Current year rate = (previous year rate + current year rate increase) x (1 + current year CPI)                   |   |                       |                       |                       |
| Sample calculation 2013 1st tier rate calculation assuming 2013 CPI = 2%. \$1.61 = (\$1.50 + \$0.08) x (1 + .02) |   |                       |                       |                       |

(2) One inch (1") and smaller without secondary service between May 1 and October 31

|                                 | Begin July 1,<br>2012                   | Begin July<br>1, 2013 | Begin July<br>1, 2014 | Begin July<br>1, 2015 |
|---------------------------------|---|-----------------------|-----------------------|-----------------------|
| Gallons Of Water Used Per Month | 2012 Rate (Including 2012 CPI Increase) | Rate Increase         | Rate Increase         | Rate Increase         |
| 0 to 6,000                      | \$1 .50                                 | \$0 .08               | \$0 .05               | -                     |
| 6,001 to 42,000                 | 2 .30                                   | 0 12                  | 0 .08                 | -                     |
| 42,001 to 84,000                | 2 .65                                   | 0 13                  | 0 10                  | -                     |
| Above 84,000                    | 3 .00                                   | 0 15                  | 0 11                  | -                     |

Current year rate = (previous year rate + current year rate increase) x (1 + current year CPI)

Sample calculation 2013 1st tier rate calculation assuming 2013 CPI = 2% \$1.61  
 = (\$1.50 + \$0.08) x (1 + .02)

(3) Larger than one inch (1")

|  | Begin July 1,<br>2012                                  | Begin July<br>1, 2013    | Begin July<br>1, 2014    | Begin July<br>1, 2015    |
|--|--|--------------------------|--------------------------|--------------------------|
| <b>Gallons Of Water<br/>Used Per Month</b>   | <b>2012 Rate<br/>(Including 2012<br/>CPI Increase)</b> | <b>Rate<br/>Increase</b> | <b>Rate<br/>Increase</b> | <b>Rate<br/>Increase</b> |
| Charge per 1,000<br>gallons  | \$2 .30  | \$0 12                   | \$0 .08                  | -                        |
| Current year rate = (previous year rate + current year rate increase) x (1 + current year CPI) |  |                          |                          |                          |
| Sample calculation 2013 rate assuming 2013 CPI = 2% \$2.47 = (\$2.30 + \$0.12) x (1 + .02)     |  |                          |                          |                          |

d. In addition, the specified monthly culinary water service and usage charges shall be increased annually on July 1 in perpetuity by the increase in the consumer price index (CPI) for the prior January as compared to the index from January of the preceding year as published by Wells Fargo Bank with January 2008 being the base month and year

2. Discount: A fifty percent (50%) discount on the minimum monthly service charge, or base rate, described in subsection A1b of this section, will be given to the following.

a. Any user in a single- or two-family dwelling who as an owner of the property is, each year, granted abatement for taxes on their dwelling in Weber County under Utah Code Annotated sections 59-2-1106 through 59-2-1108, or their successors; or

b. Any residential user who is the account owner, or who is described in subsection [9-1-4C](#) of this chapter, and who is currently deployed, or whose spouse is currently deployed, to a combat zone designated by the president of the United States and who provides satisfactory proof of deployment to the utility manager. The reduction shall be limited to the period of deployment and shall apply to all members of the U.S. military, including active duty, reserve and national guard troops.

3. Increase For Severe Drought Conditions:

a. Whenever the mayor determines that severe drought conditions or other emergency conditions exist affecting the quantity of available water, the mayor, under an

administrative order adopted pursuant to subsection [9-1-8A](#) of this chapter and after seven (7) days' advance written notice to the city council, is authorized to increase by twenty percent (20%) the water rates assessed on the basis of usage (subsection A1c of this section) for all amounts of water used over

- (1) Ten thousand (10,000) gallons per month for meters one inch (1") and smaller in size;
- (2) Fifty thousand (50,000) gallons per month for meters one and one-half (1<sup>1</sup>/<sub>2</sub>) to two inches (2") in size, or
- (3) Two hundred thousand (200,000) gallons per month for meters over two inches (2") in size.

- b. For purposes of this subsection "severe drought conditions" shall be considered to exist whenever the annual rate of precipitation affecting the Weber River watershed areas drops to a level of seventy percent (70%) or less than normal. The above determination shall be based on precipitation rates existing on or after April 1 of the year in which such increase commences. Any such increase in water rates due to severe drought conditions shall terminate on November 1 of the applicable year
- c. For purposes of this subsection "other emergency conditions" shall be considered to exist whenever insufficient water resources exist to meet customer demand over a foreseeable period of time exceeding thirty (30) days due to: 1) a reduction of available water sources for reasons other than drought; or 2) a failure of, or damage to, the city's water storage or treatment facilities. Any such increase in water rates shall terminate at least thirty (30) days after water resources return to normal levels
- d. It is not the intention of this section to restrict or limit emergency powers of the mayor under a local emergency declared pursuant to section [12-15-3](#) of this code that threatens or affects the water resources available to the city

#### B. Bills Due; Service Restoration.

1. Upon Receipt: All water bills shall be due and payable upon receipt. Water bills not paid within seventeen (17) days after the billing date, as shown in the bill, shall be delinquent and service may be discontinued.
2. Delinquent Charges Paid, Hardship Cases Water service that has been discontinued because of delinquent bills will not be restored again until all delinquent charges, together with fees for turning water off and on, have been paid in full and the required deposit made; provided, that in cases of hardship, water service may be restored prior to payment in full on conditions approved by the manager
3. Account Transferred Uncollected amounts on any delinquent account may be transferred to any active account under the owner's or applicant's name, and upon failure to pay said bill after at least five (5) days' prior written notice, water being served to that account shall be turned off

C. **Bills Delivered; Payment Responsibility:** Unless otherwise requested, all water bills and notices relative to water bills will be addressed and mailed or delivered to the customer at the address receiving water service. On written request, water bills will be mailed to a different address designated by the customer. The customer must assume the responsibility of notifying the division of any change of address or change of person responsible for payment. Failure to give such notice will constitute sufficient cause for the withdrawal of billing service to the address designated in the request, and subsequent bills and notices will be sent to the premises served. Failure to receive a water bill will not relieve any person of the responsibility of the payment of said bill within the prescribed period, nor exempt any person from penalties imposed for delinquency in the payment thereof.

D. **Unpaid Charges, Deemed Debt To City:** Water service charges are levied and assessed against the person liable under law, ordinance or contract for water services rendered at the premises receiving water service through the city and are a debt due the city from and after the end of the accounting period for which a statement for water services is to be rendered under the ordinances and regulations governing the sale and distribution of water by the water utility.

E. **Unpaid Charges A Lien:** All unpaid charges for water service are a lien against the premises to which water service is rendered or for which such service is procured from the city, except to the extent limited by Utah law. Such lien may be foreclosed in any court of competent jurisdiction, or, by written direction of the water manager, the lien may be waived and an action in person may be maintained for the collection of such charges.

F. **Meters.**

1. **Reading; Interpretation:** The public services director shall, by regulation or effective order, prescribe the frequency with which meters of the various sizes for each type or class of service rendered shall be read, giving due consideration to the efficiency and economy of the operation of the utility as well as to the reasonable accuracy and justice to the consumer of the readings obtained. When meters are read less frequently than once a month, the measured water service determined by such readings shall be allocated to each month included in the period of time covered by the reading upon the assumption that water was consumed at an equal and unvarying rate throughout the period of time covered, and the rate shall be computed for the service allocated to each month on that basis.

2. **Rates, Applicable When:** The rates and minimums specified in subsection A of this section shall apply to consumers using secondary or rented meters. In cases where more than one meter is required to supply a building or premises, the water service measured by each of said meters shall be charged and billed separately at the regular

rate for all water measured by each meter, except that in the case of a compound meter such billing may be combined

#### G. Temporary Service

- 1 For Temporary Service Using A Fire Hydrant<sup>2</sup>: Where temporary water service is provided for temporary purposes from fire hydrants, the consumer served shall pay, in addition to the regular water rates, the reasonable charges of the utility for the rental of the fire hydrant meter and the other equipment incidental to the meter. Such charges shall be fixed by order of the public services director from time to time on the basis of one hundred fifteen percent (115%) of the average cost of such special service as determined by the water manager
2. Temporary Service, New Construction. Water during the construction of a new building may be paid for at a flat, onetime fee depending on the size of tap that will be placed in service for permanent water, which fee is payable at the time of building permit issuance. The general contractor for such new building will be allowed to use a filler (unmetered connection) during construction which will need to be the same length as the meter that will be placed after construction, provided, that a backflow device is installed to avoid contamination of the public water system, and an automatic shutoff device is installed to avoid wasting of water. Upon completion of the building, whether occupied or not, the filler shall be removed and the water, sewer and refuse signed for on a permanent basis, including installation of a permanent meter set. Construction water shall not be left running when not in use for construction purposes. A charge of one hundred dollars (\$100.00) will be assessed each time city personnel find water running without a contractor using it, and water service may be shut off, and not restored again until payment of all such assessed charges. The general contractor for the project shall be responsible for the payment of any assessments, and is responsible to control the wasting of water by any subcontractor on the construction project. It shall be unlawful for any person to install, use, or maintain a filler, and to fail to install and maintain the required meter, except as provided above for new construction. A charge of one hundred dollars (\$100.00) will be assessed against the owner of any premises, if a filler is used on the premises for any purpose other than new construction as provided above, which amount shall be due and payable prior to the provision or restoration of permanent water service.

#### H Sale Of Surplus Water

- 1 Domestic And Culinary: The mayor is authorized, at his or her discretion, to furnish domestic and culinary water service to consumers outside the corporate limits of the city when and only when he determines that such service may be rendered out of culinary and domestic water which is surplus and not required for the ordinary use, provided service to consumers outside the city limits may be discontinued at any time. The monthly rates charged for such water service outside the corporate limits shall be twice the monthly rate charged to consumers within the city, and the monthly minimum

charges to be charged to and paid by consumers outside the city limits shall be double those specified for consumers within the city

2. Other: The mayor is further authorized, in his or her discretion, from time to time, to furnish and sell to consumers or water users inside or outside the corporate limits of the city such quantities of water not meeting standards for domestic and culinary use as he determines to be surplus and not required for the ordinary uses of consumers of domestic and culinary water served by the utility. The price to be charged for such water shall be such price as the mayor shall determine to be fair and reasonable under all of the facts and circumstances existing. Contracts for the furnishing of such water shall all be subject to termination at any time. At any time, the mayor may declare that the water subject thereto is necessary for the ordinary uses of consumers of water for culinary or domestic purposes or for the municipal purposes of the city, including reservation thereof for future distribution. Nothing contained in this subsection shall be construed to authorize the sale, transfer or encumbrance of any water rights owned or held by the city.

I. **Supplying Free Water Service, Prohibited** The utility shall not supply free water or service to the city, departments or divisions thereof, or to any person, firm, public or private corporation, or to any public agency or instrumentality. All use, whenever practical, shall be metered. When metering is not feasible, the water use shall be estimated using standard formulas to determine water requirements and agencies or organizations in accordance with the rates in subsection A of this section.

J. **Monies, Depositing In Water Utility Fund** All monies received by the utility from the sale of water or the sale of bonds, facilities or equipment or from any other source shall be paid to the city treasurer, who shall deposit such monies in a separate water utility fund which shall be maintained separate from other public funds. Separate records and accounts shall be kept for the fund and all costs of maintenance, operation, bonded indebtedness and capital improvement for the utility shall be paid from the fund.

K. **Charitable Contributions.** The water manager may establish a program whereby utility customers may make charitable contributions over and above their monthly utility bill for the purpose of providing assistance to low income customers in paying their city utility bill, including those portions of the bill as may be related to the provision of sanitary sewer services and refuse services. Any such program shall be implemented in such a manner so as to ensure proper use of any donated funds. Program administration may be contracted to a nonprofit, charitable organization, provided, that administrative costs shall not be excessive.

L. **New Owners.** The utility may not require an applicant to pay for water that was furnished to the premises before the applicant became the owner of the property, nor may it deny

service to a property based on delinquencies of a prior owner

(1979 Code §§ 14.32.010, 14.32.020, 14.32.030, 14.32.040, 14.32.050, 14.32.090, 14.32.100, 14.32.110, 14.32.120, 14.32.130, 14.32.131, amd Ord 80-31, 6-26-1980; Ord 81-28, 6-25-1981, Ord 82-13, 3-18-1982, Ord 83-10, 3-3-1983, Ord 85-1, 1-3-1985, Ord 90-44, 8-9-1990; Ord 91-47, 12-5-1991; Ord 96-28, 7-19-1996; 1999 Code, Ord 2001-3, 1-2-2001, Ord 2001-38, 6-12-2001, eff 1-1-2002, Ord 2001-42, 7-3-2001, eff retroactive to 7-1-2001, Ord 2002-38, 6-18-2002, eff 7-1-2002, Ord 2003-28, 6-17-2003, eff 7-1-2003, Ord 2004-30, 5-25-2004, Ord 2004-39, 6-15-2004, eff 7-1-2004, Ord 2004-44, 6-15-2004, eff 7-1-2004, Ord 2004-45, 6-15-2004, eff 7-1-2004, Ord 2005-39, 6-14-2005, eff 7-1-2005, Ord 2006-33, 6-13-2006, Ord 2007-41, 6-12-2007, Ord 2007-79, 12-18-2007, Ord 2008-28, 6-10-2008, eff 11-1-2008, Ord 2008-47, 10-7-2008, Ord 2009-32, 4-28-2009; Ord 2010-22, 6-22-2010, eff 7-1-2010; Ord 2011-32, 6-21-2011, eff 7-1-2011, Ord 2012-23, 5-22-2012)

# APPENDIX B

## **9-1-8: RIGHTS AND AUTHORITY OF CITY:**

### **A. Restriction Of Water Use**

- 1 Generally: Whenever the mayor, after investigating the various needs for water in the city and the supply of water available to meet such needs, determines that it is in the best interests of the city to place restrictions on the use of water distributed in the city, he shall have the authority, by administrative order, to place reasonable restrictions, as to time, manner and place, on the use of water for any purpose whatsoever within the limits of the city. All such orders shall take effect when filed with the city recorder and published once in a newspaper of general circulation in the city.
- 2 Emergency: Whenever any immediate threat arises to the quantity or quality of the city water supply, or any part thereof, that creates an emergency necessitating immediate remedial action, the mayor shall have the authority to promulgate such temporary rules as are reasonably necessary in effect when published once in a newspaper of general circulation in the city or, if such publication is not immediately available, when such rules are announced through other means of communication calculated to give the public reasonable notice.

**B. Water Shutoff; Nonliability:** The division may shut off the water in its mains at any time and without notice to make repairs and/or extensions or for any other reasonable purpose. Neither the city nor the utility shall be liable for any breakage, damage or injury whatsoever that may result from the shutting off of water for any such purpose.

**C. Right Of Entry:** Any inspector or other authorized agent of the division shall have access at reasonable hours to all premises supplied with water by the city for the purpose of ensuring that applicable ordinances, orders, rules and regulations are complied with and to make any examination of the plumbing or water fixtures that may be reasonably necessary.

(1979 Code §§ 14.08.030, 14.08.040, 14.08.050, 14.08.060; amd. 1999 Code, Ord. 2004-30, 5-25-2004)

## **9-1-9: RULES AND REGULATIONS:**

**A. Unauthorized Water Use:** It is unlawful for the owner or occupant of any premises to supply water to others or to permit others to secure water through their service line by hose or other devices without written permission from the manager. If such unauthorized

use of water or services is permitted to continue after a five (5) day written notice from the utility to discontinue such use, the water supply shall be turned off and shall not be restored until the person authorized to use the service line has deposited with the division the sum of fifty dollars (\$50.00) to be forfeited in the event of any future violation and has paid the applicable charge for turning the water off and on again.

(1979 Code § 14.08.090; amd 1999 Code)

- B. Defective Fixtures Water service will be discontinued to any premises where there are defective or leaking closets, faucets or other plumbing fixtures that are not repaired or replaced after notice from the division Water must not be kept running to keep pipes from freezing and all waterways must be closed when not in use.

(1979 Code § 14 08.130; amd 1999 Code)

C. Equipment Maintenance:

1 Consumers shall keep their sprinklers, hydrants, faucets, valves, hose, curb stop, angle stops, meter box, meter box ring and cover and all other fixtures and service pipes in good condition at their own expense, except for service pipes running from the main to the meter box that are located within the public right of way but not located under a driveway Whenever it is found that service pipes, other than from the main to the meter box as described above, or any fixture on consumer's premises is broken or not in serviceable condition, the consumer shall, upon notice, make the necessary repairs or replacements at his expense. Should he fail to do so, the water shall be turned off or service limited and not turned on again until said repairs or replacements have been made. The city shall be responsible for repairing service pipes running from the main to the meter box, if broken or not in serviceable condition, that are located within the public right of way; provided that the city shall not be responsible for the repair of service pipes that run under a driveway

(1979 Code § 14.08.150; amd Ord 2001-3, 1-2-2001, Ord. 2002-20, 4-2-2002)

2. At the discretion of the manager, the utility may make repairs to the angle valve, if determined to be necessary for adequate control of water In such event, the manager is authorized to charge the owner for the actual cost of materials incurred in such repair
3. In the event the meter box is not set back by the curb, or is located in a sidewalk or driveway or other unsafe location as determined by the water utility, the city will install a new meter box at the proper location at city expense when either the property owner finds it necessary to replace their service line or when repair is required to a service pipe running from the main to a meter box not located within the public right of way The property owner shall be responsible for removal and disposal of the old meter box and the installation or restoration of improvements associated with the old location, or their plumber will remove the old meter box and dispose of it.

(Ord 2001-3, 1-2-2001, amd Ord 2002-20, 4-2-2002)

- D **Separate Fixtures, Required When** Except where there is a house or houses situated in the rear of a house fronting on a street and on the same building lots and owned by the same person, firm or corporation, service pipes must be so arranged that each separate house or premises is supplied from a separate tap on the water main and controlled by a separate stopcock placed within or near the line of the street curb

(1979 Code § 14.08.190)

E **Multiple Fixtures.**

- 1 **Actions Designated** Where water is being supplied to one or more houses or buildings or families through one service pipe, the manager may, at the manager's discretion, either:

- a. Discontinue water service to the single line until separate service lines are provided for each house or building,
- b. Require each house or building to be metered from the common service line, or
- c. Continue to supply water service on the condition that one party or person assumes full liability for all water supplied to all parties concerned through the common service line.

(1979 Code § 14.08.200; amd 1999 Code)

2. **Common Service Line, Maintenance** In the event the manager elects to permit the continued use of a common service line under one of the provisions of subsection E1 of this section, it shall be the responsibility of all persons receiving water therefrom to maintain the common service line from the curb line to the house or buildings serviced by the line. In the event of the failure of such persons to make any necessary repairs to such line after ten (10) days' written notice, the supply of water to such line may be turned off until such repairs are made.

(1979 Code § 14.08.210; amd 1999 Code)

**9-1-10: PROHIBITED ACTS:**

- A. **Misuse Of Facilities, Liability** No person shall use either the water or the facilities of the utility without prior written permission, nor shall any water facilities be used in any

manner nor by any person except in accordance with such written permission. Any person using such water or facilities contrary to the provisions of this subsection shall be liable for the reasonable value thereof, for any damages resulting therefrom and for the cost of preventing or terminating such unauthorized use of water or facilities.

- B. **Misuse Of Water:** It is unlawful for any person to misuse, waste, or in any way fail to conserve water distributed in the city for either culinary, commercial or irrigating purposes.
- C. **Diversion Or Damage:** It is unlawful to maliciously or wilfully divert any portion of the water supply of the utility or to corrupt the same or render it impure, or to damage or to destroy any canal, aqueduct, pipe, conduit, equipment or other property used or required for the procurement or distribution of water.
- D. **Interference:** It shall be unlawful to remove, damage, destroy or deface any property of the utility or in any way interfere, disturb or interrupt the operations, work or activities of the utility.
- E. **Contamination:** It is unlawful for any person to erect or maintain any buildings, pens, stalls or fenced enclosures in which horses, cattle, sheep or other animals are kept, or to permit any such animals to be corralled, to be bedded or to run at large in that area that extends three hundred feet (300') on each side of every stream from which water is taken for the city water utility system and fifteen (15) miles upstream from the point of diversion, or in any area within three hundred feet (300') from the maximum high water line storage elevation of any reservoir from which water is taken for the city water utility system. It shall also be unlawful to carry on any other activities in said areas that may in any way contaminate any water or water source used by the city water utility system. All closets, privies, toilets or outhouses in said area must be provided with effective septic tanks or other suitable sanitary facilities to prevent the contamination of such water or water sources and may be constructed only after written approval by the manager and by the county health department.
- F. **Time Restrictions:** No outside use of water shall be allowed between ten o'clock (10:00) A.M. and six o'clock (6:00) P.M. for the watering of lawns or other landscaping from June 1 through September 30 of each year, unless a written permit has been granted by the manager for the watering of new landscaping planted during the water season then in effect. The adoption of this regulation is not intended to restrict the mayor's power to adopt stricter or more extensive regulations under subsection [9-1-8A](#) of this chapter.

(1979 Code §§ 14.08.020, 14.08.120, 14.08.140, 14.12.010, 14.16.010, and 1999 Code, Ord. 2004-30, 5-25-2004)

### **9-1-11: SERVICE RESTORATION; FEES; PENALTIES:**

- A. **Payment In Full; Required** Whenever water has been turned off or water service limited in accordance with this chapter or any other ordinance, rule or regulation of the city, the water shall not be turned on again nor shall service be restored to normal, unless and until all sums due the city with respect to such water service or with respect to storm and sanitary sewer and refuse services to the premises and the service fee for turning off or limiting service or turning on or restoring service to normal have all been paid in full, and the required deposits provided.
- B. **Enumerated**
- 1 There is hereby established a service fee of fifteen dollars (\$15.00) for delivery to the customer of the written notice of intent to disconnect water service after the delinquency
  - 2 There is established a service fee in the sum of twenty dollars (\$20.00) for turning off or limiting water service and a further service fee of twenty dollars (\$20.00) for turning on or restoring to normal water service in any such case, to be assessed only in the event water is turned off or on under the provisions of this title.
  3. If a city employee goes to the premises in order to turn off service based on any delinquency and collects the delinquent amount without having to actually turn off service, a service fee of ten dollars (\$10.00) for the trip to the premises shall be charged.
- C. **Meter Removal; Charge** In the event a water customer turns the water back on after it has been turned off by the city and the city removes the water meter to enforce this turnoff and later replaces the water meter, a charge of fifty dollars (\$50.00) in addition to all other fees and charges shall be assessed and be collected for such additional service.
- D. **Illegal Hookup** In the event an owner or occupant makes an unauthorized connection by bypassing a meter box from which the water meter has been removed by the division, a charge of fifty dollars (\$50.00) in addition to all other fees and charges shall be assessed, which charge shall be collected prior to reinstatement of water services.

### E. Penalty For Illegal Watering

- 1 In the event of water usage in violation of the time restrictions imposed under subsection [9-1-10F](#) of this chapter or administrative order adopted by the mayor pursuant to subsection [9-1-8A](#) of this chapter:
  - a. For the first offense, a written warning will be issued to the customer either personally or by first class mail, postage prepaid, to the address listed on the application for service applicable to the location of the violation.
  - b. For the second offense in the same year, a civil penalty in the amount of twenty five dollars (\$25.00) shall be imposed, in addition to all other fees and charges assessed herein, which penalty shall be collected in the same manner as other fees and charges assessed under this chapter
  - c. For subsequent offenses in the same calendar year, an additional civil penalty shall be imposed in the same manner, but each subsequent civil penalty shall be double the amount of the penalty previously imposed on the same customer; provided that no penalty shall exceed an amount of eight hundred dollars (\$800.00).
2. No more than one civil penalty may be imposed on any one day
3. If such penalties are not paid when due, water will be shut off and not reinstated again as provided herein, until all such penalties are paid in full.

(1979 Code § 14.08.180; amd Ord. 81-28, 6-25-1981, Ord. 84-9, 4-5-1984, Ord. 85-1, 1-3-1985, Ord. 92-8, 1-9-1992; Ord 2001-3, 1-2-2001, Ord 2004-30, 5-25-2004; Ord 2004-44, 6-15-2004, eff 7-1-2004)

## **9-1-12: FIRE HYDRANTS<sup>3</sup>:**

- A. Installation, Maintenance And Removal: Fire hydrants may be installed on private property only with the written approval of the water manager. All fire hydrants, whether on private or public property, must meet the requirements of the city's subdivision title. Hydrants on private property will be maintained by the utility at the cost of the property owner and will be used only in case of fire, except as provided in subsection B of this section. If the property owner fails to pay the cost of maintaining any such fire hydrant, or if it is used for an unauthorized purpose, the water to the hydrant will be shut off. It will not be turned on again until all costs, including a reasonable fee for turning the water off and on, have been paid. In the event the water is shut off because of unauthorized use, the manager may, in the manager's discretion, remove the fire hydrant or require that the water to the fire hydrant be metered at the expense of the property owner.

(1979 Code § 14.20.010; amd 1999 Code)

## B Temporary Private Water Service

1 Authorized When Water service may be supplied to a private person through a public or private fire hydrant, or through other connections designed primarily for the use of the city, only upon issuance of a special written permit by the manager, after a determination by him that it is impractical to render the desired service through any other means. Nothing except temporary service for a period of not more than sixty (60) days may be rendered through such facilities, but such permits may be renewed by the manager for successive periods upon a showing that the necessity for such service continues without the fault or neglect of the consumer. Permits may be revoked for failure to comply with the rules and regulations of the utility or the ordinances of the city. Such service may be rendered only through facilities and connections approved and connected by the division. Such facilities and connections shall be so designed and installed as to permit the use of the fire hydrant or other connection for public use for its primary purpose with a minimum of delay in making required adjustments.

(1979 Code § 14.20.020; amd. 1999 Code)

2. Application: Application for the use of water from fire hydrants or other connections shall be made upon forms furnished by the division, stating the purpose for which the water is to be used and the justification for issuance of a permit. The division will furnish equipment to place the hydrant in use, including hydrant gate valves, hydrant water meters, hose and hydrant wrench. A deposit in the amount of the value of any equipment provided by the division must accompany the application and will be refunded upon return of the equipment. The hydrant must be operated in accordance with the instructions and the rules and regulations of the division. Only hydrant wrenches approved by the division shall be used in operating the hydrant. Any damage to the fire hydrant or the equipment of the utility will be charged to the applicant and may be deducted from his deposit.

(1979 Code § 14.20.030; amd. 1999 Code)

## C Prohibited Acts

1 Unauthorized Possession Of Keys. It is unlawful for any person, without authority, to have in his possession any wrench for a fire hydrant or a gate key for a water gate valve.

(1979 Code § 14.20.040)

2 Obstruction, Parking: It is unlawful for any person to park any vehicle within fifteen feet (15') of any fire hydrant, or to place any goods or materials or to plant any trees, plants, flowers or shrubs within ten feet (10') of any fire hydrant, or to in any way interfere with or impede the free access of the fire department to any fire hydrant.

(1979 Code § 14.20.050; amd. Ord. 2005-26, 4-19-2005)

**9-1-13: PINE VIEW RESERVOIR; POLLUTION CONTROL:**

- A. Findings, Jurisdiction The city draws a portion of its domestic and culinary water from waters impounded in Pine View Reservoir and the city has a duty to its water users to protect the reservoir from pollution and contamination. The city has jurisdiction, pursuant to Utah Code Annotated section [10-8-15](#), to protect said waters and all other water from which it draws its city water supply and to penalize persons polluting or contaminating the same.

(1979 Code § 14.24.010; amd Ord. 83-36, 12-22-1983, 1999 Code)

- B. Enforcement: All peace officers of the state, including regular and special officers of the city police department and authorized personnel of the division, are authorized and charged with the duty to enforce the provisions of this chapter

(1979 Code § 14.24.060; amd Ord. 83-36, 12-22-1983, 1999 Code)

- C. Pollution Prohibited No person shall do any act whatsoever which tends to make impure or unwholesome the water in Pine View Reservoir; nor cast or drop into or allow to float in or fall into the water of said reservoir any filth, sewage, carrion, garbage or any excretion, clothing, paper, rags or other extraneous substance, nor do any act or thing that would pollute or tend to pollute the water of said reservoir

(1979 Code § 14.24.050; amd. Ord. 83-36, 12-22-1983)

**9-1-14: PENALTY:**

- A. In the event of the violation of any of the provisions of chapters 1 through 4 of this title or any administrative order, rule, or regulation promulgated under the authority thereof or any amendments thereof, the water division may turn off the water supply to the premises where such violation occurred, and such water supply need not be turned on again until the violation has ceased, any damage resulting therefrom has been paid, all expenses incurred by the city, including the expenses of turning such water supply off and on, have been paid; all service fees and civil penalties have been paid; and the division has been given reasonable assurance that such violation will not be repeated.

- B. Any person violating any provision of this title shall be deemed guilty of a class B misdemeanor, punishable as set forth in [title 1, chapter 4](#) of this code

- C The provisions of this title may also be enforced by injunction, mandamus, abatement, or any other appropriate judicial action in law or equity
  
- D All remedies provided in this section for such violation shall be cumulative and shall be in addition to all other remedies that may be available to the city, its departments and employees and any other party injured by such violation

(1979 Code § 14.36.010; amd 1999 Code; Ord 2004-30, 5-25-2004, Ord 2005-29, 5-24-2005)

# APPENDIX C

## **Chapter 4**

# **BACKFLOW AND CROSS CONNECTION CONTROL**

### **9-4-1: PURPOSE:**

- A. **Protection** To protect the public potable water supply of the city from the possibility of contamination or pollution by isolating within the customer's internal distribution system such contaminants or pollutants which could backflow into the public water systems, and
  
- B. **Elimination:** To promote the elimination or control of existing cross connections, actual or potential, between the customer's in house potable water system and nonpotable water system, plumbing fixtures, industrial piping system, and
  
- C. **Maintenance:** To provide for the maintenance of a continuing program of cross connection control which will systematically and effectively prevent the contamination or pollution of all potable water systems.

(1979 Code § 14.08.161, Ord. 91-5, 2-21-1991)

### **9-4-2: DEFINITIONS:**

As used in this chapter, the following words and terms shall have the meanings ascribed to them in this section

**APPROVED BACKFLOW ASSEMBLY** The backflow assembly accepted by the Utah department of health as meeting an applicable specification or as suitable for the proposed use.

**AUXILIARY WATER SUPPLY** Any water supply on or available to the premises other than the city public water supply will be considered as an auxiliary water supply. These auxiliary waters may include water from another city/municipality's public potable water supply or any natural source such as a well, spring, river, stream, harbor, etc., or "used waters" or "industrial fluids"

**BACK PRESSURE:** The flow of water or other liquids, mixtures or substances under pressure into the distribution pipes of a potable water supply system from any source, other than the intended source.

**BACK SIPHONAGE** The flow of water or other liquids, mixtures or substances into the distribution pipes of a potable water supply system from any source, other than the intended source, caused by the reduction of pressure in the potable water supply system.

**BACKFLOW** The reversal of the normal flow of water caused by either back pressure or back siphonage.

**BACKFLOW PREVENTION ASSEMBLY** An assembly or means designed to prevent backflow. Specifications for backflow prevention assemblies are contained within the plumbing code as adopted in [title 16](#) of this code and by the state of Utah pursuant to Utah Code Annotated section 58-56-6, as amended. All backflow prevention assemblies must be approved by the Utah department of health prior to installation. A listing of these approved backflow prevention assemblies is available from the Utah department of health.

**CONTAMINATION** An impairment of the quality of the potable water supply by sewage, industrial fluids, waste liquids, compounds or other materials to a degree which creates an actual or potential hazard to the public health through poisoning or through the spread of disease.

**CROSS-CONNECTION**: Any physical connection or arrangement of piping or fixtures between two (2) otherwise separate piping systems, one of which contains potable water and the other nonpotable water or industrial fluids of questionable safety, through which, or because of which, backflow may occur into the potable water system. This would include any temporary connections, such as swing connections, removable sections, four-way plug valves, spools, dummy sections of pipe, swivel or change-over devices or sliding multiport tubes.

**CROSS-CONNECTION, CONTAINMENT** The installation of an approved backflow prevention assembly at the water service connection to any customer's premises where it is physically and economically infeasible to find and permanently eliminate or control all actual or potential cross-connections within the customer's water system; or, it shall mean the line leading to and supplying a portion of a customer's water system where there are actual or potential cross-connections which cannot be effectively eliminated or controlled at the point of the cross-connection (isolation).

**CROSS-CONNECTIONS, CONTROLLED**: A connection between a potable water supply system and a nonpotable water system with an approved backflow prevention assembly properly installed and maintained so that it will continuously afford the protection commensurate with the degree of hazard

(1979 Code § 14.08.161; Ord. 91-5, 2-21-1991, amd. 1999 Code)

### **9-4-3: CROSS-CONNECTIONS:**

- A. Prohibited It is unlawful for the owner or occupant of any premises using water supplied by the Water Utility to cross-connect such water supply with a foreign source of water that does not meet the purification standards maintained for the City supply or with any appliance, appurtenance, hose, pipe or other fixture in such a manner that there is a possibility that water from such foreign source may flow, be siphoned or be pumped into the City water system.

(1979 Code § 14.08.160; amd 1999 Code)

- B. Purification Of Fixtures. It is unlawful for any owner or occupant of any premises using water supplied by the Water Utility to make any connection, whether temporary or permanent, between the City water system and any appliance, appurtenance, hose, pipe or other fixture that was previously supplied with water from a foreign source as described in subsection A of this Section, unless the property owner or occupant first purifies, in a manner satisfactory to the Water Utility Division, any such appliance, appurtenance, pipe, hose or other fixture and, in addition, agrees in writing that the water from such foreign source will not again be used in such appliance, appurtenance, hose, pipe or other fixture.

(1979 Code § 14.08.170; amd. 1999 Code)

#### **9-4-4: DUTIES AND RESPONSIBILITIES:**

- A. City; Water Manager: The City shall be responsible for the protection of the public potable water distribution system from contamination or pollution due to the backflow of contaminants or pollutants through the water service connection. The Water Manager is vested with the authority and responsibility for the implementation of an effective cross-connection control program and for the enforcement of the provisions of this Chapter. If, in the judgment of the Water Manager, an approved backflow prevention assembly is required (at the customer's water service connection or within the customer's private water system) for the safety of the water system, the Water Manager shall give notice in writing to said customer to install such an approved backflow prevention assembly at a specific location on his premises. The customer shall immediately install such approved assembly at the customer's own expense. Failure, refusal or inability on the part of the customer to install, have tested and maintain said assembly shall constitute grounds for discontinuing water service to the premises until such requirements have been satisfactorily met.
- B. Inspection Services Division: The Inspection Services Division has the responsibility to review building plans and inspect plumbing installations to ensure compliance with the current edition of the plumbing code, as adopted by the city and the state with respect to

cross connections and back siphonages. The inspection services division's responsibility begins at the point of service (the downstream side of the meter) and carries throughout the entire length of the customer's water system.

- C. **Certified Backflow Assembly Technician** Certified backflow assembly technicians only shall do the testing, maintenance and/or repair of backflow prevention assemblies. The certified technician must tag each double check valve, pressure vacuum breaker, reduced pressure backflow assembly and air gap, showing the serial number of the assembly, date tested and by whom. The technician's license number must also be on this tag

(1979 Code § 14.08.161, Ord. 91-5, 2-21-1991, amd. 1999 Code)

#### **9-4-5: REQUIREMENTS:**

- A. **Conditions Or Defects Corrected** Service of water to any premises shall be discontinued by the city if a backflow prevention assembly required by this chapter for control of backflow and cross connections is not installed, tested and maintained, or if it is found that a backflow prevention assembly has been removed, bypassed or if an unprotected cross connection exists on the premises. Service will not be restored until such conditions or defects are corrected.
- B. **Open For Inspection** The customer's system shall be open for inspection at all reasonable times to authorized representatives of the city to determine whether cross connections exist.
- C. **Assembly; Installation** An approved backflow prevention assembly shall be installed on each service line to a nonresidential customer's water system, at or near the property line or immediately inside the building being served, when it is deemed necessary by the utility to conform to the safe drinking water act of 1974, Utah Code Annotated section 19-4-101 et seq., the occupational safety and health act, Utah Code Annotated section 35-9-1 et seq., and the plumbing code, as adopted in [title 16](#) of this code, and by the state of Utah pursuant to Utah Code Annotated section 58-56-6. In all cases, the assembly will be installed before the first branch line leading off the service line, whenever the city deems the protection of the water supply to be in the best interest of the water supply customers.

- D. **Assembly; Type** The type of protective assembly required under this section shall depend upon the degree of hazard which exists at the point of cross connection (whether direct or indirect), as stipulated in the plumbing code as adopted in [title 16](#) of this code, and by the state of Utah, pursuant to Utah Code Annotated section 58-56-6.
- E. **Exclusions.** All presently installed backflow prevention assemblies which do not meet the requirements of this section but were approved assemblies for the purpose described herein at the time of installation and which have been properly maintained, shall, except for inspection and maintenance requirements, be excluded from the requirements of these rules so long as the city is assured that they will satisfactorily protect the public water system. Whenever the existing assembly is moved from the present location or requires more than minimum maintenance or when the city finds that the maintenance of the assembly constitutes a hazard to health, the unit shall be replaced by an approved backflow prevention assembly meeting the requirements of this chapter
- F. **Certified Inspections.** It shall be the duty and responsibility of the customer at any premises where backflow prevention assemblies are installed to have certified inspections and operational tests made at least once per year at the customer's expense. In those instances where the city deems the hazard to be great, it may require certified inspections and tests at a more frequent interval. These inspections and tests shall be performed by a certified backflow assembly technician
- G. **Degree Of Protection** Backflow prevention assemblies shall be installed in water supply lines to provide at least the degree of protection stipulated in the plumbing code as adopted in [title 16](#) of this code, and by the state of Utah pursuant to Utah Code Annotated section 58-56-6. All backflow prevention assemblies shall be exposed for easy observation and be readily accessible.
- H. **Maintenance** All backflow prevention assemblies installed in a potable water supply system for protection against backflow shall be maintained in good working condition by the person or persons having control of such assemblies. Upon inspection, any assembly found to be defective or inoperative shall be replaced or repaired. No assembly shall be removed from use, relocated or another assembly substituted, without the approval of the City
- I. **Testing** All backflow prevention assemblies shall be tested within ten (10) working days of initial installation.

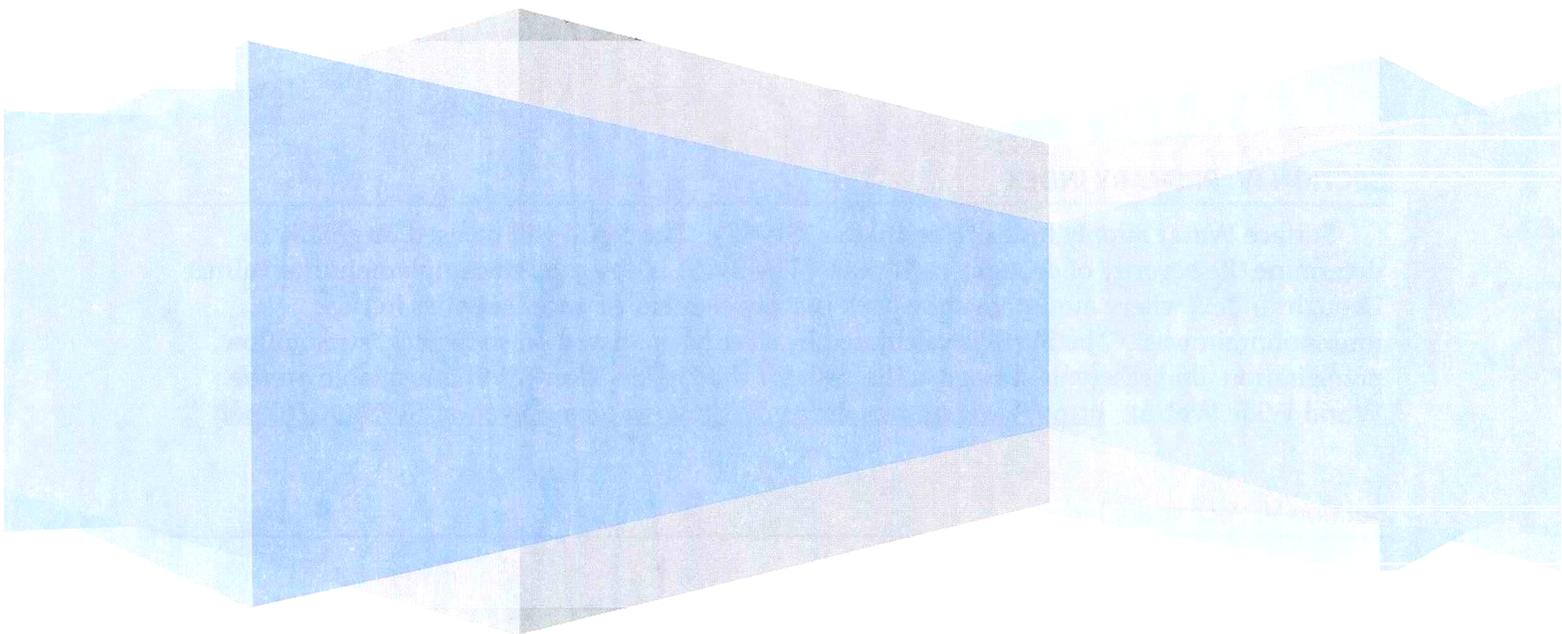
J Safety Hazards. No backflow prevention assembly shall be installed so as to create a safety hazard. Example installed over an electrical panel, steam pipe, boilers, pits or above ceiling level.

(1979 Code § 14.08 161, Ord. 91-5, 2-21-1991, amd. 1999 Code)

# APPENDIX D

## Ogden City Division of Public Utilities

# Ogden City Water Shortage Management Plan



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# OGDEN CITY WATER SHORTAGE MANAGEMENT PLAN

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*Ogden City Division of Public Utilities*

## SECTION I: DECLARATION OF POLICY, PURPOSE, AND INTENT

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The Ogden City Water Shortage Management Plan is intended to augment and support Ogden City Water Conservation Plans and Ordinances.

In order to conserve the available water supply and protect the integrity of water supply facilities, with particular regard for domestic water use, sanitation, and fire protection, and to protect and preserve public health, welfare, and safety, and minimize the adverse impacts of water supply shortages or other water supply emergency conditions, the Ogden City Division of Public Utilities (Hereafter “Utility”) hereby adopts the following Plan to address water shortages brought about by drought, service interruption, or other emergency or event.

## SECTION II: LEGAL AUTHORITY

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This Plan is adopted by Public Utilities pursuant to the direction of the Mayor and the City Council contained in Section \_\_\_\_\_, Ogden City Code (hereafter referred to as “ordinance”).

## SECTION III: APPLICATION

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

## SECTION IV: PRIMARY INDEX

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Surface Water Supply Index (Hereinafter “SWSI”): The SWSI will be used internally to determine the severity of drought each year. The SWSI is designed to complement the Palmer Drought Index, where mountain snowpack is a key element of water supplies in the intermountain west. The SWSI is calculated by river basin, based on snowpack, stream flow, precipitation, and reservoir storage. The data for the Ogden River SWSI is available on the World Wide Web at: <http://www.ut.nrcs.usda.gov/snow/watersupply/swsi/SWSIOGDE.pdf>

Section V: Secondary Index:

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The Utah State Division of Natural Resources publishes the data for snow pack, precipitation and reservoir storage. These data will be used to quantify and support the Surface Water Supply Index Data

1. Weber Basin Snow Pack Data
2. Weber River Precipitation
3. Pineview Reservoir Storage Data

The data for these indices are available on the World Wide Web at.

<http://www.ut.nrcs.usda.gov/snow/watersupply/wsor.html>

Both the SWSI and secondary data will be utilized by the utility to determine the severity of drought each year and subsequently that years conservation action(s) to be taken.

## **SECTION VI: CRITERIA FOR INITIATION AND TERMINATION OF WATER SHORTAGE PHASES**

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### **Termination of Water Shortage Phase**

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Each year the utility manager will review drought conditions using the SWSI and other secondary data available. That year's drought conditions will be collected and evaluated by the utility manager and the appropriate water shortage phase will be implemented (a copy of the water shortage phase response summary is attached to this report). Termination of each plan phase will be announced when the trigger conditions that initiated the drought measures have subsided and the shortage no longer exists, by the determination of the Utility Manager. Upon terminating a phase, it is not incumbent on the Utility Manager to implement the phase immediately lower. If the Utility Manager does not designate a Plan phase, then the next lower phase becomes active.

## **SECTION VII: NOTIFICATION AND EDUCATION**

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The Utility Manager shall notify The City Council and City Administration of the initiation of the applicable Plan phase and corresponding conservation measures, or the termination of a Plan phase and corresponding conservation measures, 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 announcements
- Signs posted in public places
- Take-home fliers at schools
- Public meetings/city council meetings
- Ogden City municipal website

### **Customer Agency Notification:**

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The Utility Manager shall endeavor to notify directly the following individuals and entities:

1. Ogden City Council
2. Fire Chief(s)
3. City and/or County Emergency Management Coordinator(s)
4. Ogden City Director of Public Services
5. Critical water users (i.e. hospitals, nursing homes)
6. Large water users (typically commercial users)

## 7 Local School Boards

Additionally, through a public education program the Ogden Public Utilities will periodically provide customers and customer agencies 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. Ogden Public Utilities currently participates in a yearly water fair program. This is a valuable program is sponsored by the local chapter of the American Water Works Association (AWWA) and other local water suppliers. The program utilizes water conservation information and games to educate youth about the importance of water conservation and water management. The program encourages local schools to attend and participate in the program. The participation has been very good and schools participate by allowing classes to take one day to attend the fair and view various exhibits prepared by water organizations. The students are encouraged to participate in experiments and other hands-on programs to increase their understanding of water and water conservation. Additionally students are able to take home a variety of information and promotional items to their family. Ogden Public Utilities will work with the AWWA and the other local water suppliers to further develop our participation in the water fair program to be more comprehensive and interesting to children. The concept of this program is to make the most of children's more accepting nature for new concepts and their ability to promote new ideas to their family.

The success of any water conservation program in achieving long term water conservation targets as might be required under a water shortage is dependent on Public Utilities' ability to convey to the community the water-supply situation, the expected response actions, and clear and measurable targets. The Response Summary and Appendices have been developed to enhance public understanding of water supply levels, response actions, and restrictions (a copy of the water shortage phase response summary is attached to this report).

## SECTION VIII: PHASES AND RESPONSES:

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This plan provides for four water shortage phases and associated responses of increasing severity, as progressively more serious conditions warrant. The measurements can be applied to identify the four phases in the proposed severity index. Each phase has associated with it a color to provide a visual, at a glance understanding of the severity of that phase. Attached to and made part of this plan is the Ogden City Phase and Condition Index outlining the general conditions for each phase of the drought plan and the corresponding color or cautionary segment. Each segment outlines the conditions that will trigger the phase and outline some advisory and mandatory actions.

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 - Advisory- (Color = Green):* This phase should be on-going and primarily be an education and conservation encouragement phase by which the City Council with the Public Utility Division prepare and publish drought education and management information to the public and industry. 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 on-going and intended to educate and encourage the public to conserve water

**Target:** Water Use Reduction. No specific target

*Phase II – Moderate (Color = Yellow):* This phase is intended as a cautionary phase by which the City Council with the Public Utility Division informs the public that the city is experiencing severe drought conditions and all indications are that this condition will extend for the rest of the water season (April 15 to October 15)

**Trigger:** This phase is initiated when Pineview Reservoir levels and the Ogden River levels are below 30% of normal as of April 15, using the SWSI and other supporting secondary data.

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

*Phase III – Severe (Color = Orange):* This phase is intended to inform the public that the city is in an extreme drought condition and there is a critical need to reduce water usage and increase water restrictions. This condition may at the City Council, the Mayor or the Public Utility Manager’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 city water supply is at or below 50% of normal.

The city water supply consists of well-water pumped from six wells located in the Eden valley, a city owned and operated filter plant located in Ogden Canyon and reservoir storage located in various areas of the city. The Public Utility Manager will monitor these 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% reduction in water usage.

*Phase IV – Extreme Shortage (Color = Red):* This is the most severe of the drought indices. This phase is initiated when the supply of water is not able to keep up with the demand for an extended period of time (3 days or more) and there is a possibility of initiating mandatory shut off of water service. **Trigger:** (conditions) when this phase may be initiated are:

- **Extraordinary drought:** A region wide drought has progressed to the point where the utility cannot maintain restricted service to a major portion of the city
- **Significant system failure:** An important water supply line breaks or any other significant system component fails and a large section of the city is without water for an extended period of time.
- **Water Supply Contamination:** A contaminant is found within the water system that could affect the health and well being of major portion of the city residences.

This phase sets in motion 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 certain types of non-essential use. Those critical industries will include hospitals, nursing homes and other life and health preserving enterprises. This phase may require the utility working closely with state drinking water authorities to assist in mitigating and managing the situation.

**Target Water Use Reduction:** A city wide 30% reduction in water usage

## SECTION IX: ENFORCEMENT

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Provisions of the Plan and Response Summary shall be enforced as indicated in the ordinance Number \_\_\_\_\_.

Violations:

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First violation. If a property is observed using inordinate amounts of water or is ignoring the rules and regulations set out in the drought ordinance, the property owner will be notified of the violation by a letter from the City Public Utility. The first letter notice will explain to the property owner that the city has adopted a conservation program that educates and assists property owners to conserve water. The notice will further explain that the property owner has been observed using more water than what seems necessary and may be in violation of City Ordinances. The Notice will be accompanied by education materials and tips on how to conserve water.

The second violation will be considered more stern and require the city to issue a ticket to the property owner. The ticket will be accompanied by a requirement to meet with the city Public Utility Manager and discuss the violation and the importance of citizens being conservation minded. The Public Utility Manager will discuss a remediation program with the property owner and request they develop a program to change their watering habits, including changes to their irrigation system to provide a more efficient “water wise” system.

The city Public Utility Manager recognizes that there are special circumstances when a property owner may need to deviate from water wise standards. One of those instances may be to ensure the survival of newly planted landscaping and lawn. The Public Utility Manager will have the ability to allow for special watering where property owners can show unusual or extraordinary circumstances requiring more water or unusual watering systems.

A typical water conservation program presented to the Public Utility Manager by a commercial business would have elements that are both practical (applied to their water system) and educational (applied to educate their employees).

#### Suggested elements for a commercial program might be:

1. Have a plumber or their in-house property management service review their system. In the case of a manufacturing company that may include an evaluation of the system components and their efficiency.
2. Develop and implement a water wise landscaping scheme for the property surrounding their building(s). This can be accomplished by a landscape company or by utilizing ideas promoted by Extension Services provided by local universities. Some local water companies provide water wise advice and demonstrations designed to educate people on water wise landscaping. Weber Basin Water Conservancy District provides such service.
3. Set specific goals intended to decrease overall water use within a specific time frame.

Overall, a program must have elements that evaluate and address adjustments to the privately owned system and include a plan to educate employees. Goals must be set to develop timeframes for accomplishment and keep the program on track.

#### A non commercial (home) program may include:

1. An evaluation of the home sprinkling system to determine effectiveness. Determine how much water the lawn is getting from the present method by zone. Adjustments as necessary for seasons and soil.

2. A Soil evaluation to determine if soil augmentation is appropriate to ensure the appropriate water is applied for the soil water intake
3. Mowing aeration and sprinkling plans (i.e. mowing height, sprinkler clock and yearly aeration)
4. A sprinkler system maintenance plan designed to check the irrigation system on a regular basis to ensure top performance. A routine check of sprinkler heads and adjustments to eliminate runoff on walks and driveways. Annual draining of the system to clear water from the system and avoid breaks caused by freezing. An annual battery check to ensure the timer and clock are performing as designed.

If a service is disconnected, Ogden City Public Utilities in accordance with applicable city ordinances will assess and collect a fee before service is restored. That fee is in addition to other fines or charges imposed under any particular water shortage response measure.

#### Customer Notification of Violation:

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In accordance with applicable city ordinances, any customer subject to a civil fine shall be notified by the Utility no more than SEVEN (7) calendar days after the date of occurrence of the violation. The notice shall advise the customer of his/her right to appeal the fine within ten business days after receipt of the notice. The appeal process will follow the specific procedure set out in the Ogden City Municipal Code. The Utility Manager, at his or her sole discretion may grant written variances to persons who apply for approval to use water not in compliance with the Plan. A letter from the property owner explaining in detail the situation requiring the inordinate use of water or the installation of an unusual watering system must be submitted to the Public Utilities Manager. The PUM will review the details and circumstances and may discuss the request with the property owner to better understand the request. A variance may be granted if the PUM finds that such water use or system is necessary to prevent an emergency condition relating to health or safety, extreme economic hardship.

Monies collected from fines are not considered rates for the production of water revenue. money collected from this program will be placed in a special water conservation fund, to be administered by Ogden City Public Utilities, and used for, but not limited to, meeting the expenses of enforcement of restrictions under this Plan, producing educational materials relating to water conservation, promoting information related to the Plan.

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Craig E. Frisbee  
Manager, Ogden City Public Utilities

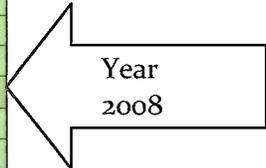
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Date:

# Surface Water Supply Index

Jan-Apr

|          |      | Ogden     | River  | SWSI      |        |    |
|----------|------|-----------|--------|-----------|--------|----|
| April 1, |      |           |        | Reservoir |        |    |
|          |      | Reservoir | Stream | Stream    |        |    |
| #        | Year | KAF       | KAF    | KAF       | Probab | S  |
| 1        | 19   | 64.       | 15.3   | 79.7      | 2      | -  |
| 2        | 19   | 64.       | 36.5   | 101.1     | 5      | -  |
| 3        | 20   | 57.       | 44     | 101.9     | 7      | -  |
| 4        | 19   | 62.       | 40     | 102.2     | 9      | -  |
| 5        | 19   | 74.       | 39.8   | 114.6     | 11     | -  |
| 6        | 20   | 47.       | 68     | 115.3     | 14     | -  |
| 7        | 19   | 80.       | 38     | 118.4     | 16     | -  |
| 8        | 20   | 84.       | 40     | 124.4     | 18     | -  |
| 9        | 19   | 88.       | 50     | 138.3     | 20     | -  |
| 1        | 20   | 60.       | 78     | 138.6     | 23     | -  |
| 1        | 20   | 63.       | 80     | 143.0     | 25     | -  |
| 1        | 20   | 79.       | 80     | 159.6     | 27     | -  |
| 1        | 19   | 66.       | 95     | 161.3     | 30     | -  |
| 1        | 19   | 76.       | 94.4   | 170.7     | 32     | -  |
| 1        | 19   | 67.       | 104.8  | 172.5     | 34     | -  |
| 1        | 19   | 10        | 78.9   | 180.5     | 36     | -  |
| 1        | 19   | 83.       | 102    | 185.4     | 39     | -  |
| 1        | 20   | 50.       | 140    | 190.8     | 41     | -  |
| 1        | 19   | 10        | 84     | 192.7     | 43     | -  |
| 2        | 19   | 55.       | 137.6  | 193.2     | 45     | -  |
| 2        | 19   | 10        | 95     | 197.8     | 48     | -  |
| 2        | 19   | 11        | 88.4   | 200.2     | 50     | 0. |
| 2        | 19   | 86.       | 118    | 204.7     | 52     | 0. |
| 2        | 19   | 64.       | 145    | 209.9     | 55     | 0. |
| 2        | 19   | 89.       | 125    | 214.4     | 57     | 0. |
| 2        | 19   | 96.       | 125.2  | 222.1     | 59     | 0. |
| 2        | 20   | 79.       | 145    | 224.2     | 61     | 0. |
| 2        | 19   | 74        | 151.7  | 226.3     | 64     | 1. |
| 2        | 19   | 86.       | 140.8  | 227.4     | 66     | 1. |
| 3        | 19   | 78.       | 150    | 228.4     | 68     | 1. |
| 3        | 19   | 79.       | 164    | 243.1     | 70     | 1. |
| 3        | 19   | 56.       | 186.9  | 243.3     | 73     | 1. |
| 3        | 19   | 96.       | 147.4  | 243.5     | 75     | 2. |
| 3        | 19   | 10        | 143.4  | 243.5     | 77     | 2. |
| 3        | 19   | 95.       | 150.1  | 245.8     | 80     | 2. |
| 3        | 19   | 91.       | 154.9  | 246.5     | 82     | 2. |
| 3        | 20   | 74        | 172    | 246.5     | 84     | 2. |
| 3        | 19   | 78        | 177    | 255.9     | 86     | 3. |
| 3        | 19   | 72        | 190    | 262.0     | 89     | 3. |
| 4        | 19   | 86.       | 196.8  | 283.7     | 91     | 3. |
| 4        | 19   | 85.       | 220.8  | 306.5     | 93     | 3. |
| 4        | 19   | 81        | 231    | 312.7     | 95     | 3. |
| 4        | 19   | 54.       | 261.4  | 316.2     | 98     | 3. |



| Property Type / Response  | Phase I                  | Phase II        | Phase III          | Phase IV                     |
|---|--------------------------|-----------------|--------------------|------------------------------|
| <b>Residential</b>  | <b>Advisory (Normal)</b> | <b>Moderate</b> | <b>Severe</b>      | <b>Extreme (Shortage)</b>    |
| <p><b>Lawn Watering</b></p> <p><i>Prohibited between 10:00 am and 6:00pm</i></p> <p>Suggested: Water 1/2 inch of water once every 4 days in May; once every 3 days in June, July, August; once every 6 days in September</p>  | Mandatory                | Mandatory       | Mandatory          | All Lawn Watering Prohibited |
| <p><b>CONSERVATION TIPS:</b></p> <p>Always maintain sprinkling systems in good working order<br/>                     Inspect each system regularly and make repairs as necessary to eliminate leaks.<br/>                     Measure the amount of water the system is producing during a specific timeframe.<br/>                     Use a system timer</p> <p>Consider using water wise grasses (i.e. Buffalo Grass)</p> |                          |                 |                    |                              |
| <p><b>Swimming Pools</b></p> <p>(suggested, may require an ordinance change to enforce)</p> <p>use pool covers when pools are not in use and lower the water level by 4 inches to reduce water loss by splashing.</p>   | Voluntary                | Voluntary       | Mandatory          | Pools May not be filled      |
| <p><b>Outdoor Fountains &amp; Ponds</b></p> <p>(suggested, may require an ordinance change to enforce)</p> <p>Water may not spray above fountain or pond surface</p>  | Voluntary                | Voluntary       | Highly Recommended | Mandatory                    |

|  |                             |                              |                              |                           |
|--|-----------------------------|------------------------------|------------------------------|---------------------------|
| <p><b><i>Hard-Surface Washing</i></b><br/>                 (suggested, may require an ordinance change to enforce)<br/>                 No hard-surface washing (except for health or safety)</p>  | Voluntary                   | Highly Recommended           | Mandatory                    | Mandatory                 |
| <p><b><i>Washing personal vehicles</i></b><br/>                 (suggested, may require an ordinance change to enforce)<br/>                 Use a bucket or a positive pressure nozzle on the end of any hose. Wash the vehicle on the lawn or a permeable surface.</p> | Voluntary                   | Voluntary                    | Highly Recommended           | Prohibited                |
| <p>CONSERVATION TIP:</p>   |                             |                              |                              |                           |
| <p>Find and use a car wash in your neighborhood that uses water recycle systems<br/>                 NOTE: This type of system is not widely available in some areas, however, they are becoming more available as water conserving car wash systems are installed.</p>  |                             |                              |                              |                           |
| <p><b><i>Commercial and Industrial</i></b></p>   | Advisory (Normal)           | Moderate                     | Severe                       | Extreme (Shortage)        |
| <p><b><i>Water Management Plan</i></b><br/>                 Prepare and implement a water management plan for your organization outlining practices and procedures designed to conserve or recycle water. Follow "water wise" and best water management practices.</p>   | Voluntary reduce use 5%-14% | Voluntary reduce use 15%-24% | Voluntary reduce use 25%-34% | Mandatory reduce use 35 % |

|  |           |           |                    |                                 |
|--|-----------|-----------|--------------------|---------------------------------|
| <p><b>Commercial Lawn Watering</b></p> <p><i>Prohibited between 10:00 am and 6:00pm</i><br/>                 Suggested: Water 1/2 inch once every 4 days in May;<br/>                 And 1/2" once every 3 days in June, July, August;<br/>                 And once every 6 days in September;</p> | Mandatory | Mandatory | Mandatory:         | All Lawn Watering Is Prohibited |
| <p><b>Swimming pools</b></p> <p>Use a pool cover when the pool is not in use;<br/>                 Lower the pool water level by 4 inches to minimize water loss by splashing.</p>   | Voluntary | Voluntary | Highly Recommended | Mandatory                       |
| <p><b>Outdoor Fountains &amp; Ponds</b></p> <p>Water should not spray above fountain or pond surface.</p>  | Voluntary | Voluntary | Highly Recommended | Mandatory                       |
| <p><b>Restaurants</b></p> <p>Serve water upon customer request.<br/>                 NOTE: Table Tent Cards Can Be Used To Notify Customers</p>  | Voluntary | Voluntary | Highly Recommended | Mandatory                       |
| <p><b>Hotels/Lodging</b></p> <p>Laundry is not washed daily for multiple night stay same patrons.<br/>                 NOTE: This Practice Is Standard For All Hotels/Motels</p>   | Voluntary | Voluntary | Highly Recommended | Highly Recommend                |

**CONSERVATION TIP:**

Maintain all irrigation systems in good working order. Inspect systems regularly and make repairs as necessary to eliminate leaks. Follow “water wise” best practices.

| <i>Government (Parks, Golf, Schools &amp; other facilities)</i>   | <b>Advisory (Normal)</b> | <b>Moderate</b>                   | <b>Severe</b>                     | <b>Extreme (Shortage)</b>       |
|---|--------------------------|-----------------------------------|-----------------------------------|---------------------------------|
| <p><b>Lawn watering</b></p> <p><i>P prohibited between 10 am and 6 pm</i></p> <p>Use established water irrigation rate target; Maintain all systems in good working order and inspect each system regularly and make repairs as necessary to eliminate leaks.</p> | Mandatory                | Mandatory<br>15% less than target | Mandatory<br>25% less than target | All Lawn Watering Is Prohibited |
| <p><b>Swimming pools</b></p> <p>Swimming pools - use a pool cover when the pool is not in use; lower water levels by 4 inches to minimize water loss by splashing.</p>  | Voluntary                | Voluntary                         | Highly Recommended                | Mandatory                       |
| <p><b>Fountains</b></p> <p>Do not operate fountains or ponds that spray above the water level.<br/>Public Fountains Will Be Turned Off</p>  | Voluntary                | Voluntary                         | Highly Recommended                | Mandatory                       |

**CONSERVATION TIP:**

Consider eliminating the use of ponds, fountains and decorative water features to save water evaporation. Convert them to dry landscaping features that enhance your building landscaping.

# APPENDIX E