

CITY OF ENTERPRISE

**WATER MANAGEMENT
AND
CONSERVATION PLAN**

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PREPARED BY:

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WATER MANAGEMENT AND CONSERVATION PLAN

BACKGROUND INFORMATION

The City of Enterprise is located in Washington County, Utah, approximately 40 miles north of St. George. The population as of 2010 in Enterprise was approximately 1,710. An annual growth rate of 1% has been projected for Enterprise over the next 20 years.

According to Enterprise City water usage data, in 2006 the City was serving approximately 593 culinary water ERUs (Equivalent Residential Units). These include 568 residential, 12 commercial, 10 institutional, and 3 other ERUs.

To ensure that Enterprise's culinary water needs continue to be met, the City had a culinary water master plan completed in 2006. The plan identified several needed culinary water improvements which address current and future water needs. It is recommended that the Culinary Water Master Plan prepared by Sunrise Engineering, Inc. in September of 2006 be reviewed for additional information regarding the existing condition of the culinary water system in the City of Enterprise.

EXISTING CULINARY WATER RESOURCES

Enterprise's existing water sources consist of two wells and two springs. The City's major sources are the Spring Creek Well and the 200 West Well. These sources should provide sufficient capacity for the City's needs throughout the planning period. The table below summarizes the culinary water sources that are available to Enterprise.

Enterprise Culinary Water Sources

Water Source	Flow Capacity
*Pendleton Springs	80 gpm
*Bull Rush Springs	84 gpm
Spring Creek Well	1100 gpm
200 West Well	725 gpm
Total	1989 gpm

** The flow rates given for Pendleton Spring and Bull Rush Spring reflect the lower limit of the flow range; these flow rates can be much higher during wet seasons.*

Enterprise currently possesses 1,213 acre-feet of approved water rights. The 20-year projected required water rights identified in the 2006 Master Plan is 1,079 acre-feet, leaving a surplus of 134 acre-feet

The City has an existing culinary water storage capacity of 1,490,000 gallons. Calculations show that this capacity is sufficient for current and future needs through the end of the planning period. The 2006 Culinary Water Master Plan recommended that the City have some of the tanks inspected and refurbished, which has been completed. In addition, the plan also recommended that the City should prepare for the construction of a new 300,000 gallon tank on the east side of the City to support future development in the area. This tank has been sized to cover the demand if two of the three existing tanks were to be taken out of service within the 20-year planning period. The location and size of this proposed tank will be reevaluated based on growth and location of that growth as it occurs.

Enterprise's culinary water distribution system is in good condition. The 2006 Master Plan recommends replacing approximately 4,800 ft of 6" undersized line, throughout the City with 8" or 10" line, the majority of which has been replaced. These improvements to the distribution system have enhanced pressures throughout the City and will ensure that the system meets fire flow requirements.

Following the recommendations made in the 2006 Culinary Water Master Plan, the City has made adjustments to their water rates and impact fees in preparation for the recommended improvements.

SYSTEM REQUIREMENTS AND ONGOING IMPROVEMENTS

The State of Utah Public Administrative Rules for Public Drinking Water Systems (R309-510-7) state that a community should have an adequate water source capacity to supply a peak demand of 800 gallons per day per connection for indoor use. The regulations also require the source to be capable of meeting peak irrigation demands where no secondary source of irrigation water is available.

Additionally, the State of Utah Public Administrative Rules for Public Drinking Water Systems (R309-510-8) require storage for a community's culinary water system to meet one full day's use requirement for all connections in the community plus the required fire flows for a minimum of two hours.

Furthermore, the State of Utah Public Administrative Rules for Public Drinking Water Systems (R309-200-5 & R309-200-6), in accordance with the National Safe Drinking Water Act, has adopted "primary" regulations for the protection of public health, and "secondary" regulations related to taste and aesthetics. The regulations recommend that all culinary water sources have provisions for continuous disinfection.

Finally, the State of Utah Public Administrative Rules for Public Drinking Water Systems (R309-105-9) require distribution systems to be sized to supply peak instantaneous flows while maintaining a minimum system pressure of 30 psi, peak day flows while maintaining a minimum system pressure of 40 psi and peak day plus fire flows while maintaining a minimum system pressure of 20 psi.

The City of Enterprise is making every effort to be compliant with all State rules and regulations mentioned above. The following table summarizes the actions that Enterprise

is undertaking to ensure that the water system meets all federal, state and local requirements.

Enterprise Water System Improvements

Analysis	Actions & Improvements
Water Rights	-The City currently has adequate water rights for needs within the 20-year planning period. -The City has begun collecting impact fees for water rights that will be needed to sustain a build-out condition in Enterprise.
Water Source Capacity	-The City currently has sufficient source capacity for the 20-year planning period.
Water Storage Capacity	-The City is making preparations for the construction of a new 300,000 gallon storage tank that will likely be needed prior to the end of the 20-year planning period.
Distribution System	- The City has replaced undersized pipe within the City’s distribution system.

SYSTEM MANAGEMENT AND WATER CONSERVATION

It is expected that the plans the City has implemented will allow the Enterprise water system to function in compliance with State regulations while meeting current and future user demands.

Current Water Usage

Enterprise historical data (2014) shows that the average water use per capita is 444 gallons per day. The total annual use for the existing 593 ERUs is approximately 871 acre-feet per year. The City’s average usage exceeds the state average by 184 gallons per day per capita.

Total Water Deliveries by Type are as follows:

Residential: 241,809,000 gallons per year
Commercial: 1,827,000 gallons per year
Institutional: 39,000,000 gallons per year
Other: 100,000 gallons per year

Current Conservation Measures

The City has adopted a tiered rate structure meant to increase water rates and promote water conservation. This process has brought an awareness of water related issues among existing citizens. It is believed that this awareness will further assist in promoting water conservation.

Future Water Usage

If no changes to usage are realized, the City projects that it will need approximately 1,233 acre-feet of water in 2050, which would exceed the current amount of water available to the city by 20 acre feet. This assumes a 1% growth rate and a population of 2479 in 2050.

Future Conservation Measures

The City plans to increase and update the tiered water rate structure as needed to continue to promote water conservation. To increase public awareness, the City will include water conservation information and tips with the distribution of the Annual Drinking Water Quality Report and on the City's web site. The City will reassess its usage when updating its Water Conservation Plan as required by the state. To summarize, the City will attempt to encourage conservation with education, as well as disincentives for more use (i.e. higher rates the more you use).

Conservation Goal

The City of Enterprise has established a water conservation goal of reducing residential water usage by an average of 5% per household within ten years' time. The current average usage is 444 gallons per day per capita. A 5% reduction corresponds to an average usage of 422 gallons per day per capita. If an overall 5% reduction is met by

2050, the City will have sufficient water without acquiring new sources. This would be represented by a savings of 61 acre-feet per year (1233 acre-feet vs. 1172 acre-feet).

Water Meters

The City currently meters all water sold and periodically replaces meters as the radio component ceases operation. The City also reviews meters upon request to ensure proper function and accuracy. The turnover rate on meters is approximately 10% per year.

Water Pricing and Rate Structure

The City's pricing and rate structure is as follows:

Base Rate: \$31.50 (includes 24,000 gal. per month, use or lose)

24,001-36,000 gal.: \$0.75 per 1,000 gal.

36,001-100,000 gal.: \$1.00 per 1,000 gal.

Over 100,000 gal.: \$1.25 per 1,000 gal.

Water Conservation Policies and Ordinances

The City currently employs part of the planned conservation efforts in the form of our rate structure. The City will also provide education and support for water conservation through its website and the Water Supervisor, who is also the Water Conservation Coordinator at the City.

PERIODIC EVALUATION

It is the intention of the City of Enterprise to review and update the Water Management and Conservation Plan periodically to ensure that the culinary water system is functioning on updated data and is taking advantage of new trends and technology. This will also aid the City in monitoring management and conservation performance and progress by identifying areas in need of improvement.

WATER CONSERVATION PLAN RESOLUTION

(See Attached)

RESOLUTION NO. _____

**A RESOLUTION TO ADOPT A WATER
CONSERVATION AND MANAGEMENT PLAN**

CITY OF ENTERPRISE

WHEREAS, Enterprise City operates a culinary water system; and

WHEREAS, the City Council understands the need to use water in an efficient manner to allow for future sustained growth of the community;

NOW, THEREFORE, IT IS RESOLVED BY THE CITY COUNCIL OF THE CITY OF ENTERPRISE, UTAH AS FOLLOWS:

Water Management and Conservation Plan

The Water Management and Conservation Plan of the City of Enterprise, presented on the 13th day of January, 2016, is hereby adopted. The plan will be amended no less than every five years and will continue to play a vital role in the future development of the City of Enterprise.

DATED this _____ day of _____, 2016

ATTEST:

CITY OF ENTERPRISE:

Wendy Paine, City Recorder

S. Lee Bracken, Mayor