Garland City Water Conservation Plan

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Water System Profile

Population- Garland City population figures for the year 2010 were 2,400. The projected population figures calculated at this time are as follows:

- Year 2020 - 2,881
- Year 2050 - 4,160

These projected figures are based from the Utah Division of Water Resources and can be found at http://www.water.utah.gov/planning/SWP/bear/PDF/BR03_04.pdf.

Service Connections- Garland City currently has 832 water connections as of January of 2015.

Service Area- Garland City service area is 10 square miles of customers and has an additional 12 miles of transmission lines going to springs in Deweyville Utah and storage reservoirs on the west mountain of the valley.

Storage Tank Capacity- Garland City currently has three storage tanks. There is a 1,000,000 gallon, 500,000 gallon, and 300,000 gallon storage tanks with a total capacity of 1,800,000 gallons of reserves. As per BRAGs calculations Garland City has sufficient storage capacity (See Attached).

- Indoor requirements- 400 gal/connection
- Residential irrigation requirements- 2,848 gal/irrigated acre
- Fire Storage- 1,000 GPM for 2 Hours

The total storage capacity required is 738,400 gallons. According to the population growth figures of BRAG and future connection figures this storage capacity should serve to the year 2025. According to Brags calculations our current storage capacity will service 1,561 total connections.

Water Rates

Current water rates are as follows:

Residential

- $19.00 for 10,000 gallons.
- $1.00 per 1,000 gallons from 10,000 to 30,000 gallons.
- $1.50 per 1,000 gallons from 30,000 to 50,000 gallons.
- $2.00 per 1,000 gallons from 50,000 gallons and over.

Nonresidential

- $30.50 for 10,000 gallons.
- $1.25 per 1,000 gallons from 10,000 to 30,000 gallons.
- $1.75 per 1,000 gallons from 30,000 to 50,000 gallons.
- $2.25 per 1,000 gallons from 50,000 gallons and over.

In extreme situations for water conservation purposes Garland water rates will increase, with the allotted amount decreased to cut back the consumption extremely. It may come to the point that there will be no outside watering allowed.

Water Impact Fee Structure- We collect excess funds beyond the usual operation and maintenance expense which are held in reserve for future improvements or replacement of aging system components.

The current connection fees are $156.00 for a ¾ inch hookup. This breaks down to a $100.00 deposit, $36.00 for meter install, and $20.00 inspection fee.

The $100.00 deposit is applied back to the customer's account after a two year non-delinquent period.

Impact Fee Schedule

- ¾ inch line install- $2,221.00
- 1 inch line install- $3,953.00
- 1 ½ inch line install- $8,884.00
- 2 inch line install- $15,791.00
- 3 inch line install- $35,536.00
- 4 inch line install- $63,165.00

Water Source Quantities

Our current available source water supply looks promising. We have an available water supply of 750,644,846 gallons in a calendar year. Our current pumping station output is 1200 gallons a minute. We are capable of producing 630,720,000 gallons per year with our current system.

Source Capacity- Water is provided to the culinary system from the Bear River Spring with a source capacity of 3.1 CFS or 731,319,840 gallons per year. Garland City also has the East Side Spring which produces 15,000,000 annually.

Use of the Bear River Spring is authorized through water rights 29-1015, 29-1147 and 29-1371 for a combined total of 3.1 CFS or 1391 G.P.M.

The average number of acres irrigated per connection is estimated to be 0.125 acres. None of the existing connections currently use secondary irrigation water.

The source capacity available to the Garland City water system appears to serve the current and future needs of Garland City. Based on the Utah Division of Drinking Water guidelines of 800 gpd/connection for indoor use and, 3.96 G.P.M. per irrigated acre for outdoor use with 0.125 acres irrigated per connection; a total of 1,123 connections could be served with the existing source capacity. This is larger than the projected number of connections in the year 2030 so no improvements are suggested for source capacity. Garland City has an emergency backup connection with Tremonton City and the Riverside water system.

Current Water Use- The yearly total for water consumption for the year 2013 for residential, commercial, industrial, institutional, stock watering and wholesale was 165,750,821 gallons. 165,750,821 gallons divided by 365 days and then divided by 2400 population equals 189 gallons per capita per day.

The yearly total for water consumption including water for parks, fountains, firefighting, main water line flushing, street and sewer cleaning is 192,550,718 gallons.

Conservation Goals

Garland City's water conservation goal is to continue to reduce the per capita water demand by 15% within 15 years. With the projected population increase our estimated GPCD looks to be on target.

According to our water use data forms from 2008 and 2013 our gallons GPCD went from 226 GPCD in 2008 to 189 GPCD in 2013. The 2009 water conservation plan also had a goal of water use to be reduced by 15%. This is a reduction of 16% over a five year period and is accurate with our water conservation goals of the past. We will continue to further our pursuit in water use reduction.

Garland City will continue to pursue this goal by promoting the most efficient use of water as possible through continued water rate structuring, going door to door with water conservation literature and the benefits of savings for each customer. We will explain the benefits of watering during the cool hours of the day, which is to prevent evaporation, and allow deeper penetration of the water. We are also going to encourage water users to use automated timed sprinkling systems.

Other Goals- Another goal would be to eliminate unaccounted for water. Garland City has installed new meters that are electronic. These new meters allow Garland to monitor water consumption through reports given by the new system. The new system will alert Garland when a user has had an unusual increase in water consumption. It will also alert Garland if a user's water is continually running; this is an indication of a leak. Garland City will then notify the user that they have a leak, and the benefits of fixing that leak.

Evaluate the effectiveness of the water conservation plan from year to year at the end of each calendar year.

Maintain an ongoing leak protection program. We routinely travel the entire distribution system looking for leaks. If a leak is detected we are going to repair it as quickly as possible to prevent excess water loss.

The final goal we are taking into consideration is to water the park with a well or with secondary water to conserve culinary water.

Water Irrigating Practices

Water your lawn only when it needs it- Watering frequently can be very wasteful as it doesn't allow for cool spells or rainfall that can reduce the need for watering. A good way to see if your lawn needs

watering is to step on some grass and if the grass springs back up when you remove your foot, it doesn't need water.

Deep soak your lawn- When you do water your lawn, do it just long enough for the water to seep down to the roots where it won't evaporate quickly and where it will do the most good. A light sprinkling, which sits on the surface, will simply evaporate and be wasted. A slow steady fall of water is the best way to irrigate your lawn.

Watering during the cool parts of the day- Early morning is better than dusk since it helps in preventing the growth of fungus.

Water Restriction- Garland City has now introduced time constraints, water consumers know that there will be no outside watering from 10:00 am to 6:00 pm.

Don't water the gutter- Position your sprinklers in such a way that water lands on your lawn or garden, and not on the concrete where it does no good. Avoid watering on windy days when much of your water may be carried off before it hits the ground.

Check for leaks in pipes, hoses, faucets, and couplings- Leaks outside the house may not seem as unbearable since they don't mess up the floor or drive you crazy at night. They can be just as wasteful as leaks in the line from the water meter, sometimes more wasteful.

Plumbing Fixture Replacement

Install water saving shower heads or flow restrictions- Most shower heads put out five to ten gallons of water a minute, while three gallons is actually enough for a refreshing cleansing shower. Your local hardware or plumbing supply store stocks inexpensive water saving shower heads that you can install yourself. For even less money, you can purchase a small plastic insert that will limit the flow through your present shower head. There is also a device that you can put in your toilet to conserve on the amount of water per flush.

Water Use Education

Garland City will provide a water use education program featuring efficient use of water, constituting water conservation. This information will be available in type form and issued to all water consumers.

Severe Water Shortage

In extreme situations such as drought or disasters, water will be limited to inside use only. In this event the consumers will be notified through our billing systems, newspaper, fliers, broadcasts, PA systems, depending on the severity.

Emergency water shortage management procedures include the following:

- Eliminate watering on the city property during the hottest times of the day.
- Water city properties on a minimal watering schedule that does not water during daylight hours.
- Eliminate watering of city property in cases of severe shortages.
- Educate the public on the water supply situation.
- Instigate voluntary public conservation measures.
- No outside watering 10:00 am to 6:00 pm.
- Issue information to all customers on conservation procedures each can accomplish around their own property and within their own homes.
- Instigate mandatory public conservation measures.
- Enforce outside watering restrictions including watering times and quantities.
- Instigate emergency conservation measures, and strictly enforce all conservation policies with significant fines for noncompliance.

Other emergency water shortage management procedures would restrict water supplies to the following:

- All outside irrigation systems.
- Park properties and other nonessential support facilities
- Commercial businesses, restricting largest users first.
- Residential areas.
- Any other non-life support areas, insuring water supplies to hospitals, hospices, all other health care facilities, and controlled designated water supply facilities.

Evaluation Plan

In January of every year Garland City is going to look at the water use data for the previous year and compare it to the current year to determine if we are making progress with conservation and to see if we are getting closer to our goal to reduce the per capita water demand by 15% within 15 years.

Comparing the years 2008 to 2013, the GPCD decreased by 16%. One reason is because new population figures produced in 2010 have given us more accurate GPCD. Garland City is planning on going door to door every two years with public education fliers dealing with water conservation measures. Predictions estimate that if only half of consumers follow these guidelines that our GPCD will continue to decrease.

Different ways Garland City is going to rely upon getting the message out to the consumer is through early leak detection, efficient use of water for line flushing, sewer cleaning, and irrigating the park possibly with secondary water.

Evaluating water usage yearly will tell us how well our conservation plan is working and keep us up to date in trying to reach our conservation goal.