# GERLACH GENERAL IMPROVEMENT DISTRICT WATER SYSTEM
# WATER CONSERVATION PLAN
## January 2014

### Management Options

Conservative water supply management practices have been implemented by the Gerlach General Improvement District to insure this is a well-run water utility. Supply management options other than leak detection and repair are: various source water control strategies, service metering and implementation of a backflow preventer program.

### Water Source:

Two mountain Springs supply water for the town of Gerlach, Railroad Springs and Garden Springs.



### Source Water Protection and Control:

The district water Distribution System Model project was completed in 2004. A copy is available at the district office 410 Cottonwood Street, Gerlach, Nevada. Surveys of both springs are ongoing. Water permits have been issued by the Department of Water Resources for the water at both sources. A three dimensional ground water flow is being developed.

**Water Service Metering:** It has been observed in the water industry that metering water services is a strong incentive for water conservation. Water meters were installed and have been in use in the town of Gerlach since March 2003. Customers are billed based on meter size and usage with an increasing block rate.

**Service Connections:** At the present time, 147 water meters have been installed and are in active use or on standby. Of these, 111 are residential, 27 are for the school and commercial enterprises, 8 are local government and 1 is federal government. Rate tables for the various meter sizes are attached for reference.
New meter installation is performed by the Public Works Supervisor when meters fail or new service is started.
Maintenance of the meters is performed on the schedule recommended by the manufacturer. Water meters are expected to be operational for approximately 15 years. The meters are checked for accuracy on an individual basis depending on the meter reading. If a large variance or inconsistency occurs, the meter is checked.

### Demand Management Options

Gerlach GID realized the need to enact a variety of demand management water conservation strategies because of the limited supply of water and the costs associated with treating water to meet the Safe Drinking Water Act uranium standard. Gerlach GID

will achieve Demand Management Options using the following criteria: Educate the public about the limits on it water supply and the need to conserve water and imposing water conservation by adjusting metered water rates. Available options for the implementation of these water conservation measures are discussed below.

**Water Conservation Education**

Demand management implies modifying people's habits and attitudes with respect to their use of water. Therefore, public education about water conservation is the necessary first step in any water conservation campaign focusing on demand management strategies. Successful demand management depends upon effective and persistent communication of the reasons for and goals of a water conservation program in general and specific water conservation measures in particular.

The Gerlach GID works with the community to implement water conservation measures. Educational literature on water conservation is available to the public, including landscape ideas, encouraging the reduction in the size of lawns and the use of plants that are adapted to arid and semiarid climates, as well as installing low flow showerheads and toilets.

**Water Management**

Gerlach GID keeps an inventory on the water meter usage by month and compares this data to the amount of water treated at the new water treatment plant. If the water use data is within 5% of the source water treated date, the water system will be considered to be in sound condition. If the difference in the water use data is greater than 5%, staff of the Gerlach GID Public Water System will investigate the difference and make recommendations to the Gerlach GID Board on possible repairs or solutions. Resources such as the Nevada Rural Water Association will be used, as needed, to assist with leak detection. Our goal is to immediately repair any detected leak in the system, in order to maintain the low ratio of unaccounted water.

Gerlach GID will provide the proper maintenance for all aspects of the water system, which includes maintenance of water meters, treatment plant maintenance and water storage tank maintenance.

**Residential Fixture Retrofits**

Average residential indoor water consumption is estimated at 75 to 85 gallons per capita per day. The easiest and most reliable ways to effect indoor water conservation involve installation (in new construction) and retrofitting of water saving plumbing fixtures. The Nevada State Legislation mandates water conserving plumbing fixtures in all construction projects.

**Commercial and Institutional Fixture Retrofits**

All of the fixture retrofit options discussed for residential customers apply for commercial and institutional customers as well. All GGID facilities which have restroom facilities are in compliance.
Since most commercial bathroom facilities see dramatically higher usage rates than residential units with the same fixtures, water savings potential for commercial retrofits are all the more impressive. When replacing fixtures, commercial operations are installing water saving devices.

**Efficient Outdoor Water Use and Residential Lawn Watering**

Much of the residential water use occurs in the summer months when customers are watering lawns and landscaping. Many communities have realized dramatic reductions in peak water consumption by implementing summertime outdoor water use ordinances, however, with the installation of meters and the attending increase in cost, it has been determined this will not be necessary for the town of Gerlach. Water consumption during the summer months has been reduced significantly due to the cost of watering landscaping. Many customers have reduced the size of their lawns and/or have installed automatic sprinklers to improve coverage and reduce waste.

A residential lawn watering ordinance was considered and deemed unnecessary due to customers voluntarily reducing outdoor water usage.



**Education for Efficient Water Use**

Lawn watering and irrigation are not necessarily the cause of excessive water use. Inefficient landscaping and irrigation techniques waste water. Many people are ignorant of the various factors affecting irrigation efficiency. The Gerlach GID will assist customers in planning the most efficient use of water in landscape irrigation upon request.

The Gerlach GID has installed automatic sprinklers on all municipal landscaping to reduce water usage and improve irrigation efficiency. This was also done as an example for the town and seems to be effective as more customers are installing sprinkler systems with automatic timer to improve water efficiency. It has been observed that fewer customers are watering during the heat of the day.

People often water at times of day when irrigation is least efficient, such as during the heat of the day. The town irrigation system is scheduled to run in the early morning and customers are encouraged to do the same.

Community education for water-efficient landscaping has been utilized by communities implementing water conservation measures. With the installation of meters and the associated cost of paying for excess water use, many residents have modified or reduced their landscaping to avoid large water bills during the summer.

## RECOMMENDED WATER CONSERVATION ACTIONS

### Summary

The following is a summary of the recommended demand management water conservation measures.

**Community Education:** Use a wide variety of community education strategies to inform the public about the need for and methods of water conservation. Education includes providing literature in customer's bills, making available free literature at the Gerlach GID office, and addressing water conservation issues at the GID monthly Board meetings.

**Water Management:** The Public Works Supervisor completes a yearly inspection of the entire water distribution and transmission system. An inspection of the water line from the storage tanks to town is completed on a monthly basis. Leak repairs are done during the monthly evaluation. An inspection is also done in extreme circumstances such as after flash floods.
Customers are advised as soon as it becomes apparent there is a leak on the customer's side of the meter. The Public Works Supervisor will shut off the customer's water when he is notified by the customer or otherwise becomes aware that the customer has a leak or broken pipes and is losing water. If not in residence, the customer is notified when this occurs. Residential repairs are the responsibility of the customer and must be completed before water service is reestablished.

**Residential Water Usage Reports:** Customers have been made aware of their monthly water usage as this information is included in the monthly utility bills. Monthly water consumption reports are available at the GGID office. These are reviewed each month, prior to billing, by the Public Works Supervisor and any customer showing unusual water usage is notified. The district will assist customers in developing water conservation measures when requested.

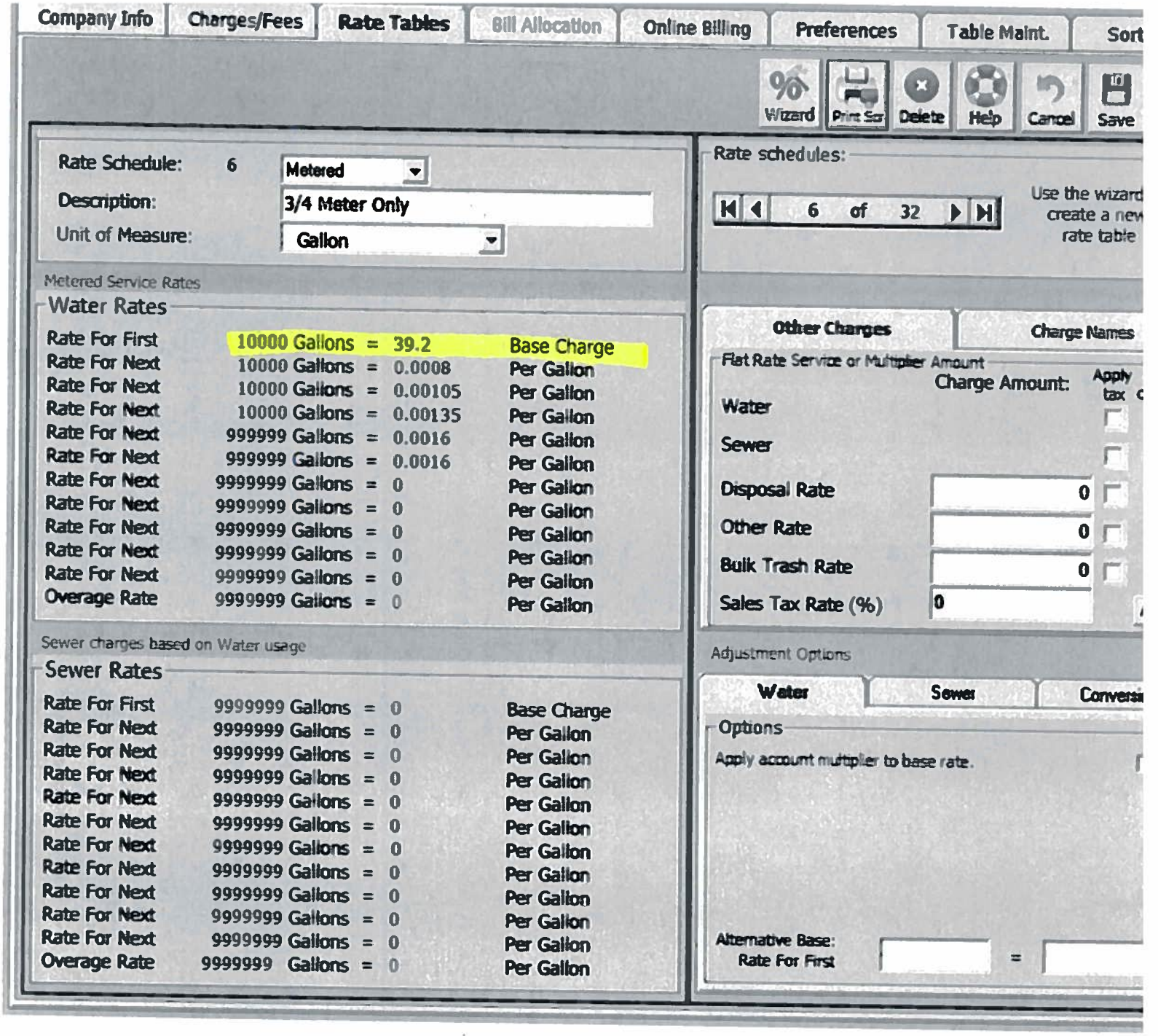
**Meter and Backflow Preventer Assembly:** The district provides a meter and backflow prevention assembly to anyone using water from a hydrant. This assures the water use is accounted for and controls any unauthorized use. Special locks are installed on hydrants during the Burning Man Festival to prevent unauthorized access.

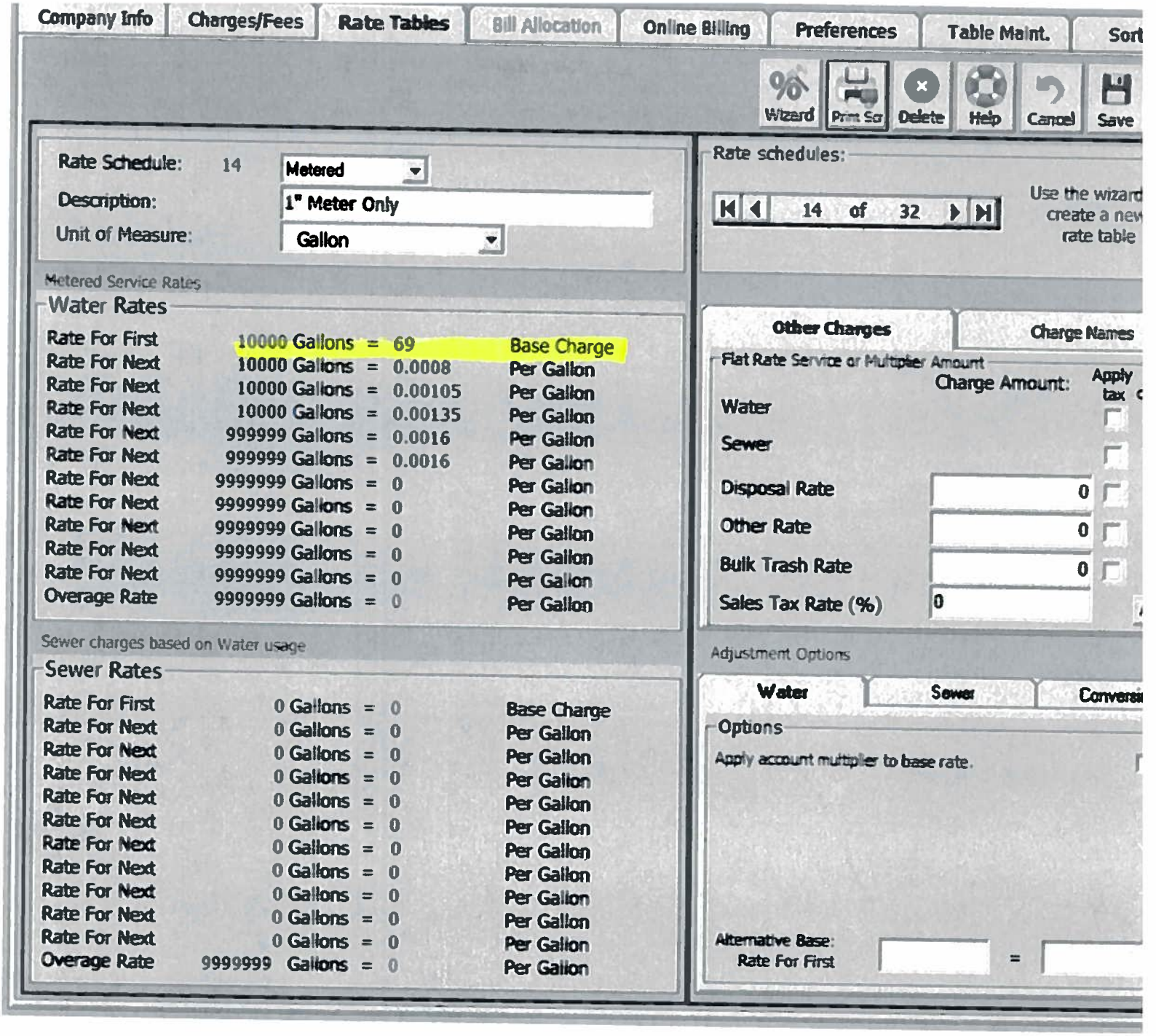
**Plumbing Fixture Retrofit Incentives:** Encourage the purchase and installation of ULF toilets, urinals, showerheads, and faucets in commercial and institutional establishments.

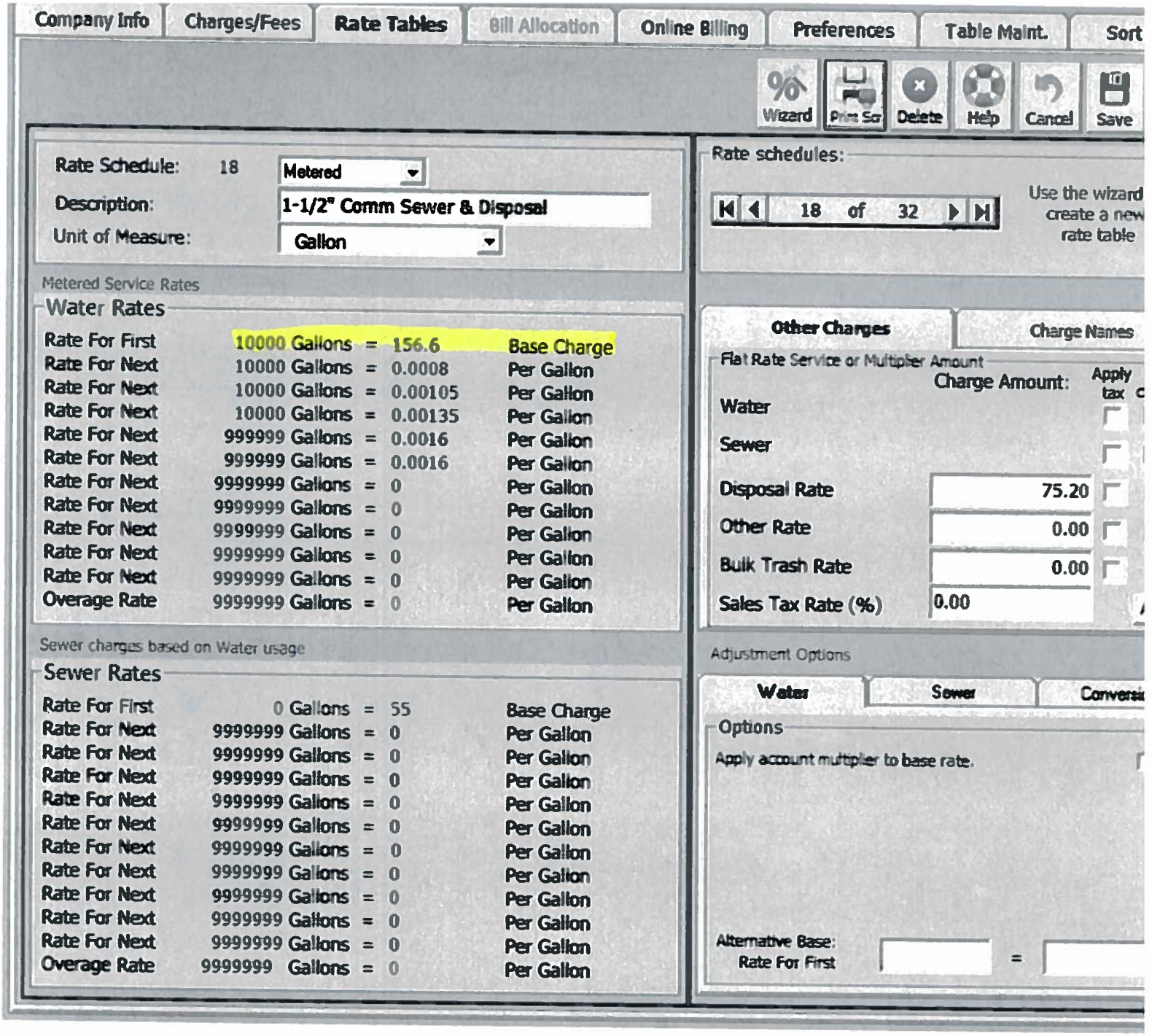
**Drought Contingency Plan:** The Gerlach GID has never had an instance where there wasn't an adequate volume of potable water available. However, the following measures have been approved by the Board of Trustees in the event this should occur:

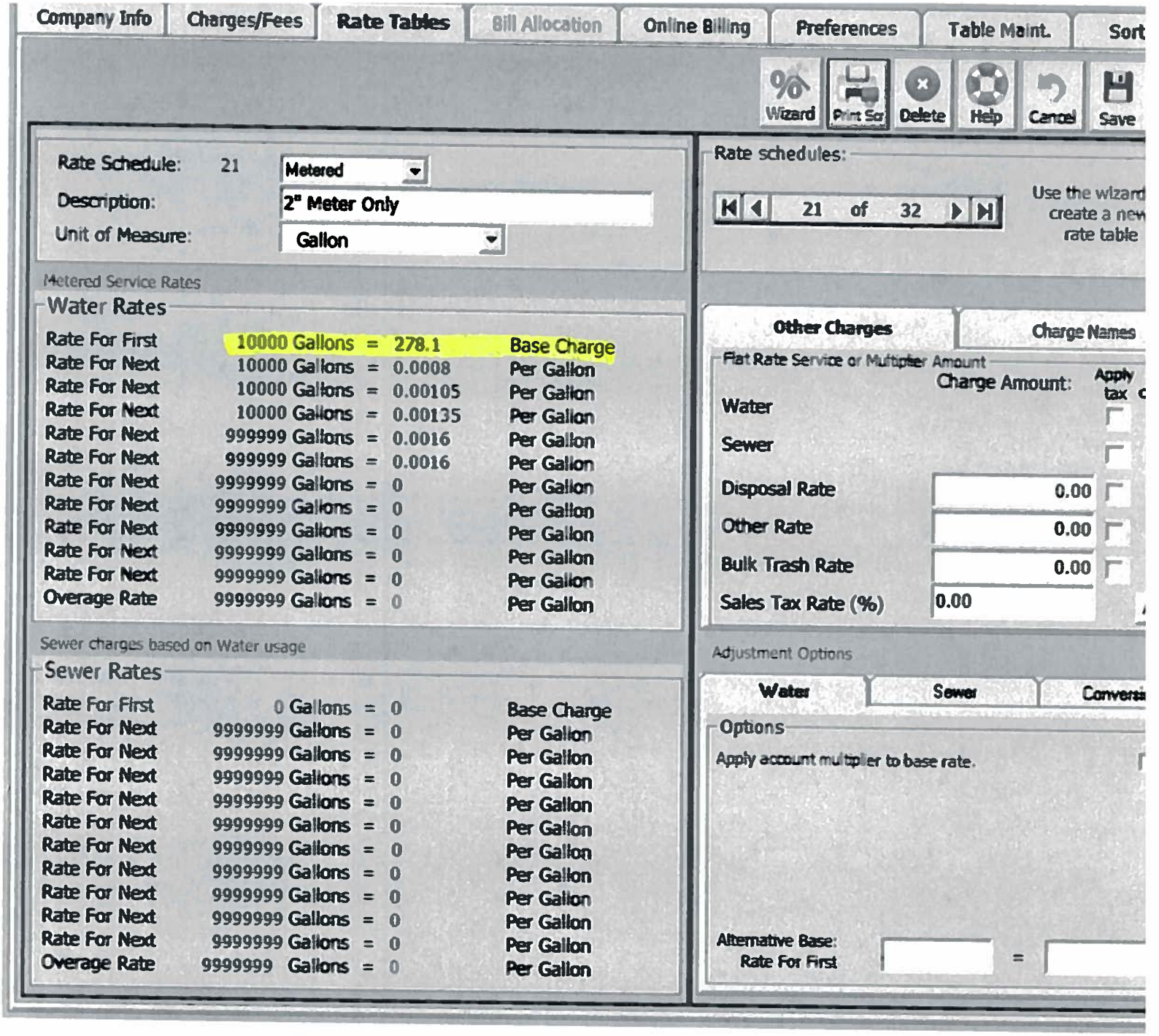
1. All landscape watering will be done between 7PM and 9AM. No watering will be allowed during the heat of the day. Residents will be notified if they are observed violating this provision.
2. Watering will be done on a rotating schedule. Even numbered addresses will water on even numbered days and odd numbered addresses will water on odd numbered days. If this doesn't prove adequate, landscape watering will be restricted to allow residents only to water twice a week.
3. Should additional measures be needed, all bulk water sales will be curtailed.

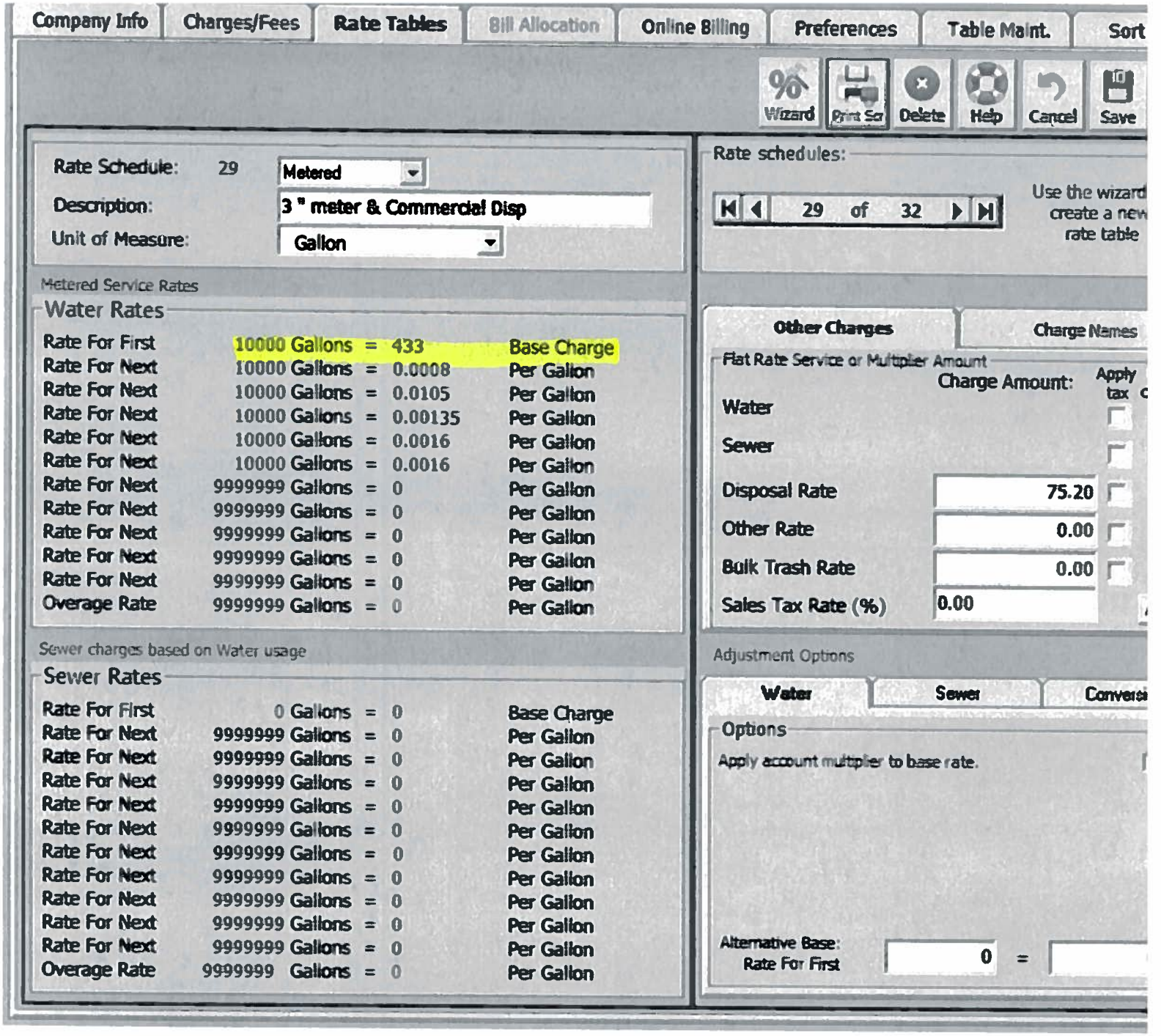
The recommended water conservation measures in the Gerlach GID Water Conservation Plan are ongoing. The Gerlach General Improvement District has completed an Emergency Management Plan.












1 customer BLM