

# **STAGECOACH GENERAL IMPROVEMENT DISTRICT**

## ***WATER CONSERVATION PLAN***

### **Background / System Information**

The Stagecoach General Improvement District public water system (PWS NV0000224) serves customers within the community of Stagecoach and Churchill Ranchos and adjacent areas. The total service area is approximately sixty-five square miles. The total number of connections served is 550 with an estimated population (in Jan 2014) of 1269. Annual customer usage in 2013 was 92,841,013 gallons. Residential and commercial customers are billed a base rate plus an overage charge. Meters are installed at all services. The commercial services are all metered.

The system is located in the Stagecoach Valley. Water is supplied from two drilled wells using submersible pumps. Above ground storage consists of five water tanks for a total of 1.3 million gallons. Full-time disinfection is used at both well sites and at all three booster pump stations. Wastewater is managed through individual nitrate removal and conventional septic systems. There is no reclaimed water system within the Stagecoach GID service area.

The original Conservation Plan for the system was developed in 1992, and modified in 1997, 1999, 2000, 2004 and 2007. The plan is to be reviewed at a minimum of five-year intervals, with modifications to meet changing system conditions.

### **Plan Elements**

This plan describes the drinking water conservation and drought management efforts in the Stagecoach GID, along with implementation schedules. The plan components conform to Nevada regulations as outlined by the Nevada Department of Conservation and natural Resources, Division of Water Resources. Plan elements address the following areas:

- Increase public awareness of the need to conserve water.
- Encourage reduction in lawn sizes and use of arid and semiarid plants.
- Identify specific water conservation measures.
- Propose plan to identify and reduce leakage.
- Increase reuse of effluent where applicable.
- Provide a drought contingency plan.
- Implementation schedule.
- Plan effectiveness metrics.
- Variable pricing analysis.

## **Public Awareness**

The Stagecoach GID efforts to enhance public awareness of the need to conserve water include the following:

New customers are provided with literature on conservation when they open a water service account. Examples include materials from the Turf Institute, American Waterworks Association and USDA Agricultural Extension.

Periodically, education literature is placed in water bills or messages appear printed in the quarterly newsletter. Education materials include tips on conservation landscaping and 5 basic ways to conserve water.

We participate in Earth Day activities or other public outreach opportunities to raise public awareness of water use.

## **Lawn sizes and use of arid and semiarid plants**

The Stagecoach GID encourages the public to practice scientific turf management, makes literature and resources such as the Turf Institute available to customers. Local nurseries are encouraged to promote the use of drip irrigation and climate-appropriate plant materials.

## **Specific water conservation measures**

Lyon County has adopted a Plumbing/Water Conservation Ordinance (copy available upon request). The Ordinance applies to structures, which are renovated as well as all new construction.

Copies of the Plumbing/Water Conservation Ordinance are furnished to local suppliers and contractors.

The Lyon County Building Department checks new construction, renovation and expansions within Lyon County to insure compliance with the ordinance.

All residential meters are replaced on a continual as needed basis.

The Stagecoach GID includes a provision that water service can be shut off for wasting water. This is enforced by visual inspection for runoff, following up on citizen reports and review of use at metered services. Typically a verbal or written warning is issued, followed by a shut-off when cooperation is not forthcoming.

All commercial customers are metered and pay a metered water rate charge based on usage.

A residential metering program has been implemented requiring water meters to be installed on all new construction. These meters are read monthly to obtain usage information.

### **Plan to identify and reduce leakage**

The Stagecoach GID has in place a capital improvement plan to replace distribution lines at the anticipated life-cycle end.

Monthly, we audit production vs. sales to determine the amount of unaccounted water and infrastructure leakage index. We also compare current to historical same-month production. When production increases unexpectedly we initiate a leak survey.

It is our written policy to repair leaks in a timely manner. All large leaks are repaired immediately and small leaks are scheduled for repairs.

### **Reuse of effluent**

Currently, there are no plans in place to reuse effluent within the service area.

### **Drought Contingency Plan**

Nevada is an arid state and Lyon County is continuing to grow and water requirements are increasing. The area is subject to drought cycles; therefore, it is necessary to have a drought contingency plan. The objective of our plan is to manage the available resources to insure continued supply of potable water during periods of drought. We monitor water levels at our Well Sites and record the information. We work with other local water purveyors to insure adequate supplies are available. We are currently participating with the Carson Water Subconservancy District in their attempt to install an intertie with the local water systems which will allow water to flow both ways between the towns, should condition warrant.

When the Stagecoach GID has found that a water scarcity condition exists or is likely to exist and has proclaimed the existence of a drought or emergency condition, it shall also declare an appropriate drought or emergency stage for its service area, which may be Stage 1, Stage 2, Stage 3 or Stage 4. Meter reading will monitor the effectiveness of this Conservation Plan.

**Drought or Emergency Stages are described as follows:**

**Stage 1 Drought or Emergency**

1. Water from the Stagecoach GID's water system allowed to pool, pond, or run-off of applied areas is considered a waste of water and as such is not permitted.
2. Leaks occurring on the customer side of each meter in the Stagecoach GID's water system are considered a waste of water and as such are not permitted.
3. Water from the Stagecoach GID's water system, which runs down the street due to excessive watering or poorly maintained sprinklers, is considered a waste of water and as such, is not permitted. If a sprinkler system is broken, the water will be shut off by the GID until it is repaired.
4. During a Stage 1 Drought or Emergency, a voluntary reduction of water usage including lawn watering, landscaping and the watering of a garden, will be requested by the GID.
5. Notification of all stages of drought will be given through verbal contact, public notice and newspaper.

**Stage 2 Drought or Emergency**

1. Water from the Stagecoach GID's water system allowed to pool, pond, or run-off of applied areas is considered a waste of water and as such is not permitted.
2. Leaks occurring on the customer side of each meter in the Stagecoach GID's water system are considered a waste of water and as such are not permitted.
3. Water from the Stagecoach GID's water system, which runs down the street due to excessive watering or poorly maintained sprinklers, is considered a waste of water and as such, is not permitted. If a sprinkler system is broken, the water will be shut off by the GID until it is repaired.
4. Outside watering will be restricted to two days a week. Two written warnings will be issued and then a fine of \$50.00 will be imposed for each violation thereafter.
5. Water used for watering vegetation, including lawns, landscaping and gardens is limited as follows:
  - a. Residences with odd numbered addresses: Sunday and Wednesday
  - b. Residences with even numbered addresses: Saturday and Tuesday
  - c. Commercial and Industrial Customers will be limited to 15,000 gallons per week.
6. Notification of all stages of drought will be given through verbal contact, public notice and newspaper.

### **Stage 3 Drought or Emergency**

1. Water from the Stagecoach GID's water system allowed to pool, pond, or run-off of applied areas is considered a waste of water and as such is not permitted.
2. Leaks occurring on the customer side of each meter in the Stagecoach GID's water system are considered a waste of water and as such are not permitted.
3. Water from the Stagecoach GID's water system, which runs down the street due to excessive watering or poorly maintained sprinklers, is considered a waste of water and as such, is not permitted. If a sprinkler system is broken, the water will be shut off by the GID until it is repaired.
4. There will be a limit of 65 gpcpd. Written warnings and fines will be levied up to \$100.00 for each violation thereafter.
5. Water used for watering vegetation, including lawns, landscaping and gardens is limited as follows:
  - a. Residences with even numbered addresses: Saturday
  - b. Residences with odd numbered addresses: Sunday
  - c. Commercial and Industrial Customers will be limited to 10,000 gallons per week.
6. Notification of all stages of drought will be given through verbal contact, public notice and newspaper.

### **Stage 4 Drought or Emergency**

1. Water from the Stagecoach GID's water system allowed to pool, pond, or run-off of applied areas is considered a waste of water and as such is not permitted.
2. Leaks occurring on the customer side of each meter in the Stagecoach GID's water system are considered a waste of water and as such are not permitted.
3. Water from the Stagecoach GID's water system, which runs down the street due to excessive watering or poorly maintained sprinklers, is considered a waste of water and as such, is not permitted. If a sprinkler system is broken, the water will be shut off by the GID until it is repaired.
4. There will be a limit of 65 gpcpd. One written warning and a fine will be levied up to \$150.00 for each violation thereafter.
5. No commercial or construction water use will be allowed.
6. Notification of all stages of drought will be given through verbal contact, public notice and newspaper.

### **Implementation Schedule**

All of the plan elements listed are currently in place. The plan is to be reviewed every five years and updated as system needs change.

Approximately 550 each or 100% of residential services are metered. Residential meters in place are read monthly.

### **Plan effectiveness metrics**

Customer allotment is 295 gpcpd.

When a plan element is activated, such as mailing literature or declaring a drought stage, total water sold in terms of gpcpd will be compared to same month historical data to estimate effectiveness. It is estimated that metering alone will be the major driver of conservation, by raising awareness of individual account use. Metering alone, without a rate structure change, but with the public education elements, can be expected to provide a ten percent reduction in water use, or 29.5 gpcpd.

In the event of a proclamation of a drought or emergency condition, it is estimated that Stage 1 measures can be expected to provide a 20 percent reduction in water use, or 59 gpcpd.

In the event of a proclamation of a drought or emergency condition, it is estimated that Stage 2 measures can be expected to provide a 40 percent reduction in water use, or 118 gpcpd.

In the event of a proclamation of a drought or emergency condition, it is estimated that Stage 3 measures can be expected to provide a 60 percent reduction in water use, or 177 gpcpd.

In the event of a proclamation of a drought or emergency condition, it is estimated that Stage 4 measures can be expected to provide an 80 percent reduction in water use, or 236 gpcpd.

### **Variable pricing analysis**

The present residential water rate structure is a single step increasing block rate which is charged at \$2.00 per thousand gallons for the first twenty-five thousand gallons and \$3.00 per thousand for everything over the first twenty-five thousand gallons. The four commercial accounts are billed at a base rate (depending on meter size) plus progressive unit charge basis: \$3.50 per thousand gallons for the first fifty thousand gallons, \$4.00 per thousand gallons for the next fifty thousand gallons and \$5.00 per thousand for each thousand gallons over one hundred thousand gallons. These rates are automatically increased annually according to the Social Security Cost of Living adjustment. There are no plans to change the rate structure only to promote conservation. Rates are scheduled to be reviewed annually and adjusted, to meet budgeted costs. Each time rates are altered; the water usage patterns will be analyzed to determine price sensitivity. The amount of water conserved as a result of actual price changes, in terms of gpcpd, will be used in future analyses.

Stagecoach has a relatively small customer base. If a variable rate were imposed, you would almost have to lower the base rate and the allowable amount of consumption. If that transpired, the District could not pay the operating costs thereby creating an unviable District financially. If the base rate was what it currently is for much less water, the majority of the higher use customers would dramatically cut back on consumption **but** the lower use customers would waste water since they already feel the rates are too high for what they are entitled. Currently customers are saving approx. 30 percent of their 25,000 gallon per month allotment. If lowered to 18,000 customers are still conserving, based on an average monthly customer usage of 17,326 gallons.

The District theoretically could save xxx gallons of water annually if it imposed a variable rate, however it would lose income based on overage charges, which are still necessary for operation and maintenance thereby resulting in higher base-rate charges.

Conservation is detrimental to the capacity of the District.

### **Water Conservation Incentives**

At present it is not viable to offer water conservation incentives. The water rates are high enough to be a financial conservation incentive.

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