

# **Town of Minden 2007 *Water Conservation Plan***

## **Background / System Information**

The Town of Minden public water system (PWS NV0000168) serves customers within the town and adjacent county areas. The total service area is approximately two square miles. The estimated population served (in 2007) is 3,234. Residential customers are billed at a uniform rate. Meters are being installed on new residential services, and on existing services at change of ownership or remodeling. The 224 commercial services are all metered. Residential customers are billed on a flat rate basis; commercial customers are billed on a base plus progressive unit charge basis.

The system is located in the Carson Valley. Water is supplied from six drilled wells using vertical line shaft turbine pumps equipped with variable speed drive motors. The pumping rate can be increased to meet system demands and there is currently no above-ground storage. Full-time disinfection has not been necessary and is not practiced. Wastewater collected from the area is treated at a regional plant and the effluent is used for agricultural purposes. There is no reclaimed water system within the Town of Minden service area.

The original Conservation Plan for the system was developed in 1993, and modified in 1997. The plan is to be reviewed at 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 Town of Minden, along with implementation schedules. The plan components conform to Nevada regulations as outlined by the Nevada Department of Conservation and Natural Resource, 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 Town of Minden 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, educational literature is placed in water bills, or messages appear printed in quarterly news letter. Educational materials include tips on conservation landscaping, 5 basic ways to conserve water, 25 things you can do to prevent water waste and water loss calculators.

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 Town of Minden encourages the public to practice scientific turf management, makes literature and resources such as the Turf Institute, available to customers. Town-owned and public turf areas are scientifically

managed. Local nurseries are encouraged to promote the use of drip irrigation and climate-appropriate plant materials.

### **Specific water conservation measures**

- Douglas County has adopted a Plumbing-Water Conservation Ordinance (copy enclosed). The Ordinance applies to structures which are renovated as well as all new construction.
  - a) Copies of the Plumbing- Water Conservation Ordinance are furnished to local suppliers and contractors.
  - b) The Douglas County Building Department checks new construction, renovation, and expansions within the Douglas County to insure compliance with the ordinance.
- All meters 2" and larger are tested annually, and replaced if under-registering by more than 5%
- All residential meters are tested every ten years, and replaced if under-registering by more than 5%
- The plumbing code, which specifies low-flow fixtures, is enforced.
- The Town code 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. ( water rate charges are included)
- A residential metering program has been implemented, requiring water meters to be installed on all new construction and anytime a property changes ownership. These meters are read quarterly to

obtain usage information, however a metered water rate charge will not become effective until all residential customers are meter.

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

- The Town of Minden 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 (less than 1 gallon a minute) within 48 hours.

### **Reuse of effluent**

Effluent is treated by a separate entity, and is reused for agricultural purposes. Currently, there are no plans in place to reuse effluent within the service area.

### **Drought contingency plan**

Nevada is an arid state and Douglas 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 have installed an inter-tie with the Gardnerville Town Water Company which allows water to flow both ways between the towns should condition warrant.

When the Town of Minden 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, described as follows:

### **Stage 1 Drought or Emergency**

1. Water from the Town'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 Town's water system are considered a waste of water and as such are not permitted.
3. Water from the Town'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 and left on for more than two (2) hours, the water will be shut off by the Town until it is fixed.
4. During a Stage 1 Drought or Emergency, lawn watering, including landscaping and the watering of a garden, will NOT be permitted between the hours of 1:00 pm and 5:00 pm

### **Stage 2 Drought or Emergency**

1. Water from the Town'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 Town's water system are considered a waste of water and as such are not permitted.
3. No hard surfaces including sidewalks, driveways, parking areas, or decks may washed or hosed down with water supplied through the Town's

potable water system unless required by health and safety requirements.

4. No washing of vehicles with hoses is permitted with the Town's water supplied through the Town's potable water system, except with hoses equipped with automatic shut off device or at facilities designated on the Town's billing records as a commercial vehicle wash.
5. Water used for watering vegetation, including lawns, landscaping, and gardens is limited as follows:
  - a. Residences with even numbered addresses: Monday, Wednesday, & Saturday;
  - b. Residences with odd numbered addresses: Tuesday, Thursday & Sunday;
  - c. Commercial and Industrial Customers: Tuesday and Friday; and Sunday;
  - d. All watering of lawns, landscaping, and gardens is prohibited between the hours of 1:00 pm and 5:00 pm
6. No use of water for and decorative purpose is permitted.

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

1. Water from the Town'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 Town's water system are considered a waste of water and as such are not permitted.
3. No hard surfaces including sidewalks, driveways, parking areas, or decks may washed or hosed down with water supplied through the Town's potable water system unless required by health and safety requirements.

4. No washing of vehicles with hoses is permitted with the Town's water supplied through the Town's potable water system, except with hoses equipped with automatic shut off device or at facilities designated on the Town's billing records as a commercial vehicle wash.
5. Water used for watering vegetation, including lawns, landscaping, and gardens is limited as follows:
  - a. Residences with even numbered addresses: Wednesday & Saturday;
  - b. Residences with odd numbered addresses: Tuesday & Sunday;
  - c. Commercial and Industrial Customers: Tuesday & Friday;
  - d. All watering of lawns, landscaping, and gardens is prohibited between the hours of 1:00 pm and 5:00 pm
6. No use of water for and decorative purpose is permitted.
7. Water from the towns potable water system used for general construction or maintenance activities, including dust control, compaction and concrete curing, is considered a waste of water and as such is not permitted.

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

1. Water from the Town'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 Town's water system are considered a waste of water and as such are not permitted.
3. No hard surfaces including sidewalks, driveways, parking areas, or decks may washed or hosed down with water supplied through the Town's potable water system unless required by health and safety requirements.

4. No washing of vehicles with hoses is permitted with the Town's water supplied through the Town's potable water system, except with hoses equipped with automatic shut off device or at facilities designated on the Town's billing records as a commercial vehicle wash.
5. Water used for watering vegetation, including lawns, landscaping, and gardens is limited as follows:
  - a. No watering from December through February;
  - b. Watering will only be allowed one day per week during March, April & May.
  - c. Watering will be allowed two days per week from June 1<sup>st</sup> through August 15<sup>th</sup>:
    1. Residences with even numbered addresses: Wednesday & Saturday;
    2. Residences with odd numbered addresses: Tuesday & Sunday;
    3. Commercial and Industrial Customers: Tuesday & Friday;
  - d. One day per week August 16<sup>th</sup> through September;
  - e. All watering of lawns, landscaping, and gardens is prohibited between the hours of 1:00 pm and 5:00 pm
6. No use of water for and decorative purpose is permitted.
7. Water from the towns potable water system used for general construction or maintenance activities, including dust control, compaction and concrete curing, is considered a waste of water and as such is not permitted.

8. During a Stage 4 Drought or Emergency, the planting or installing of new lawns is prohibited from July through September.

### **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 229 each or 21% of residential services are now metered. Residential meters in place are now being read. At the current rate of installation, it can be anticipated that the entire system will be metered in approximately ten years. As that time approaches, the degree of metering will be evaluated, to determine whether implementation of full metering is warranted.

### **Plan effectiveness metrics**

Historical well production will be compared to estimated population each year to determine the gallons per capita per day (gpcpd) consumption. For 2006, the gross production less commercial sales, divided by the estimated population, is 250 gpcpd. With average annual consumption is significantly greater than 250 gpcpd, plan revision will be considered, to include additional conservation measures. At the present time, well production, less commercial sales, provides a gross gpcpd estimate. The same calculation applied to winter sales, provides an estimate of non-irrigation household use. More accurate determination of water loss and conservation components will become available as residential metering nears completion.

When a plan element is activated, such as mailing literature or declaring a drought stage, production 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 25 gpcpd.

### **Variable pricing analysis**

The present residential water rate structure is a uniform rate. Commercial accounts numbering 222 are billed at a base plus progressive unit charge basis. There are no plans to change the rate structure to promote conservation. Rates are scheduled to be reviewed annually and adjusted, to meet budgeted costs.