

City of Carlin Water System

Water Conservation Plan

Background / System Information

The City of Carlin public water system (PWS NV0000014) serves customers within the city limits. The total service area is approximately 9 square miles. The estimated population served (in 2012) is 2861. Residential customers are billed at uniform rates. Meter sets are being installed on new residential services. All new commercial services are being metered. Residential customers are billed on a flat rate basis; commercial customers are billed on a base plus progressive unit charge basis.

Water is supplied from an underground spring and a drilled well using vertical line shaft turbine pump. Above-ground storage consists of a 3 tanks and 1 reservoir totaling 2.06 million gallons. Full-time disinfection is necessary and is practiced. Wastewater collected from the area is managed through public sewer systems and treated at a local regional plant and the effluent is recycled for agricultural purposes. There is no reclaimed water system within the City of Carlin service area.

The original Conservation Plan for the system was developed in 1992 and modified in 2010. 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 City of Carlin, 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.
- Identify specific water conservation measures.
- Propose plan to identify and reduce leakage.
- Provide a drought contingency plan.
- Implementation schedule.
- Plan effectiveness metrics.
- Variable pricing analysis.

Public Awareness

The City of Carlin 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, or 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 conserving water, 25 things you can do to prevent water waste and water leak loss calculators.

Lawn sizes and use of arid and semiarid plants

The City of Carlin encourages the public to practice scientific turf management, makes literature and resources such as the Turf Institute, available to customers. System-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

- City of Carlin 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 City of Carlin Building Department checks new construction, renovation, and expansions within the City of Carlin to insure compliance with the ordinance.
- All meters 2" and larger are tested annually, and replaced if under- registering by more than 5%
- The City of Carlin code includes a provision that water service can be shut off for wasting water. This is enforced by visual inspection for runoff, and following- up on citizen reports. Typically a verbal or written warning is issued, followed by a shut-off when cooperation is not forthcoming.
- All new commercial customers are metered and pay a metered water rate charge based on usage (water rate charges are included).

- Residential meter pit program has been implemented, requiring meter pits to be installed on all new construction.

Plan to identify and reduce leakage

- The City of Carlin has in place a capital improvement plan to replace distribution lines at the anticipated life-cycle end.
- Monthly, we audit and 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 per minute) within 48 hours.

Reuse of effluent

Effluent is treated by the City of Carlin, and is reused for agricultural purposes. Currently, we are working on plans for reuse of effluent water in community parks and ball fields.

Drought contingency plan

Nevada is an arid state and the City of Carlin 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.

When the City of Carlin 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 City of Carlin'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 valve connection in the City of Carlin's water system are considered a waste of water and as such are not permitted.

3. Water from the City of Carlin'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 City 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 and every other day.

Stage 2 Drought or Emergency

1. Water from the City of Carlin'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 valve connection in the City of Carlin'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 be washed or hosed down with water supplied through the City of Carlin's potable water system unless required by health and safety requirements.
4. No washing of vehicles with hoses is permitted with the City of Carlin's water supplied through the City of Carlin's potable water system, except with hoses equipped with automatic shut off device or at facilities designated on the City of Carlin'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 City of Carlin'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 City of Carlin'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 be washed or hosed down with water supplied through the City of Carlin's potable water system unless required by health and safety requirements.
4. No washing of vehicles with hoses is permitted with the City of Carlin's water supplied through the City of Carlin's potable water system, except with hoses equipped with automatic shut off device or at facilities designated on the City of Carlin'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 City of Carlin's water system is 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 valve connection in the City of Carlin'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 be washed or hosed down with water supplied through the City of Carlin's potable water system unless required by health and safety requirements.
4. No washing of vehicles with hoses is permitted with the City of Carlin's water supplied through the City of Carlin's potable water system, except with hoses equipped with automatic shut off device or at facilities designated on the City of Carlin'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 1st through August 15th:
 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 16th through September 31st.
 - 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.

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 2008, the gross production less commercial sales, divided by the estimated population, is 288 gpcpd. When average annual consumption is significantly greater than 288 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, or 30 gpcpd.

Variable pricing analysis

The present residential water rate structure is a flat rate. Commercial accounts are billed at a base plus progressive unit charge basis. 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.



**DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
DIVISION OF WATER RESOURCES**

901 South Stewart Street, Suite 2002

Carson City, Nevada 89701-5250

(775) 684-2800 • Fax (775) 684-2811

<http://water.nv.gov>

February 26, 2014

Carlin Public Works Department
P.O. Box 340
Carlin, NV 89822

Re: Water Conservation Plan

Dear Sir or Madam:

Each water supplier that provides water for municipal, industrial, and domestic purposes is required to adopt a water conservation plan that must be updated every 5 years. Nevada Revised Statutes (NRS) §540.121 through NRS §540.151 define the required contents of water conservation plans and a copy of these statutes is enclosed for your reference. In addition to contents required by statute, the following should also be included:

- General description of water source (e.g. spring, well, stream),
- Total number of connections served, including any outstanding commitments,
- Annual amount of water served.

In addition to the benefits of water conservation for energy savings, water quality and the environment, water conservation planning is important for defining your system's response to drought. NRS §540.141(1)(d) requires that water conservation plans include a contingency plan for drought conditions that ensures a supply of potable water. In view of continuing conditions of below average precipitation throughout much of the state, your water conservation planning is timely and important.

Please review your water conservation plan for Carlin, City of; if it is older than five (5) years, then it will need to be updated. If you do not have a water conservation plan, then you will need to create one. All water conservation plans must be forwarded to the Division of Water Resources for review. If you have any questions, please contact the undersigned at (775) 684-2884.

Sincerely,

A handwritten signature in blue ink, appearing to read "KADavis".

Kim A. Davis, P.E.
Water Planning Engineer

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2014 MAR 17 PM 12:36
STATE ENGINEERS OFFICE

KAD/sw
Enclosure

WATER CONSERVATION

NRS 540.121 "Supplier of water" defined. As used in NRS 540.121 to 540.151, inclusive, "supplier of water" includes, but is not limited to:

1. Any county, city, town, local improvement district, general improvement district and water conservancy district;
2. Any water district, water system, water project or water planning and advisory board created by a special act of the Legislature; and
3. Any other public or private entity,
↳ that supplies water for municipal, industrial or domestic purposes. The term does not include a public utility required to adopt a plan of water conservation pursuant to NRS 704.662.

(Added to NRS by 1991, 520)

NRS 540.131 Plan of water conservation: Procedure for adoption and updating of plan; review of plan by Section; joint plans permitted by certain suppliers; duties of local governing body.

1. Except as otherwise provided in subsection 5, each supplier of water which supplies water for municipal, industrial or domestic purposes shall, on or before July 1, 1992, adopt a plan of water conservation based on the climate and the living conditions of its service area in accordance with the provisions of NRS 540.141, and shall update the plan pursuant to paragraph (c) of subsection 4. The provisions of the plan must apply only to the supplier's property and its customers. The supplier of water shall submit the plan to the Section for review by the Section pursuant to subsection 3.
2. As part of the procedure of adopting a plan, the supplier of water shall provide an opportunity for any interested person, including, but not limited to, any private or public entity that supplies water for municipal, industrial or domestic purposes, to submit written views and recommendations on the plan.
3. The plan must be reviewed by the Section within 30 days after its submission and approved for compliance with this section and NRS 540.141 before it is adopted by the supplier of water.
4. The plan:
 - (a) Must be available for inspection by members of the public during office hours at the offices of the supplier of water;
 - (b) May be revised from time to time to reflect the changing needs and conditions of the service area. Each such revision must be made available for inspection by members of the public; and
 - (c) Must be updated every 5 years and comply with the requirements of this section and NRS 540.141.
5. Suppliers of water:
 - (a) Who are required to adopt a plan of water conservation pursuant to this section; and
 - (b) Whose service areas are located in a common geographical area,
↳ may adopt joint plans of water conservation based on the climate and living conditions of that common geographical area. Such a plan must comply with the requirements of this section and NRS 540.141.
6. The board of county commissioners of a county, the governing body of a city and the town board or board of county commissioners having jurisdiction of the affairs of a town shall:
 - (a) Adopt any ordinances necessary to carry out a plan of conservation adopted pursuant to this section which applies to property within its jurisdiction;
 - (b) Establish a schedule of fines for the violation of any ordinances adopted pursuant to this subsection; and
 - (c) Hire such employees as it deems necessary to enforce the provisions of any ordinances it adopts pursuant to this subsection.

(Added to NRS by 1991, 520; A 2005, 2570; 2007, 1253)

NRS 540.141 Required provisions of plan or joint plan of water conservation; review by Section; posting of plans and joint plans on Internet website.

1. A plan or joint plan of water conservation submitted to the Section for review must include provisions relating to:
 - (a) Methods of public education to:
 - (1) Increase public awareness of the limited supply of water in this State and the need to conserve water.
 - (2) Encourage reduction in the size of lawns and encourage the use of plants that are adapted to arid and semiarid climates.
 - (b) Specific conservation measures required to meet the needs of the service area, including, but not limited to, any conservation measures required by law.