

Tonopah Public Utilities Water System

Water Conservation Plan

Background / System Information

The Tonopah Public Water System (PWS NV000237) serves customers within the Tonopah and surrounding areas. The existing service area in the Town of Tonopah is approximately six square miles. The complete service area including the Tonopah Airport, well field and transmission line is approximately 32 square miles. The estimated population served (in 2014) is 2593. All residential customers are metered. The 223 commercial services are all metered. Residential and commercial customers are billed on a flat fee rate plus a per 1,000 gallon rate.

The system is located in the Lower Smoky and Ralston Valleys. The entire water system (Town and Airport) is fed by ten (10) groundwater wells using submersible motors (Four (4) wells are currently off line and inactive). The existing water system (Town and Airport) currently utilizes nine (9) storage tanks totaling 4.105 million gallons. Full-time disinfection is in place. The Distribution system currently has nine (9) pressure zones each controlled with Pressure Reducing Valves throughout town. Wastewater collected from the area is treated at the Tonopah Public Utilities' treatment facility located west of town. In the easterly section of town there are individual septic systems within the utilities service area. The effluent flows from the treatment facility into eight (8) rapid infiltration basins. A small component of the effluent undergoes additional physical and chemical treatment consisting of finer screening and disinfection at the Reclaimed Water facility. The use of reclaimed water is a water conservation measure in that it eliminates the need to use potable water for that same use. This reclaimed water is of sufficient quality to be safely used for construction purposes that includes dust control, soil compaction and flushing wastewater collection lines. Reclaimed water is delivered to Users at a Truck Fill Station located south of the Cemetery. The Truck Fill Station consists of a cardlock facility, a truck fill stand pipe and a catch basin.

The original Conservation Plan for the system was developed in 1992 and last reviewed 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 within the Town of Tonopah 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 Tonopah Public Utilities 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.
- Periodically, educational literature is placed on water bills, or displayed on the Town's message board. Educational materials are also available at Tonopah Public Utilities office.

Lawn sizes and use of arid and semiarid plants

Town owned areas, Residential areas and Commercial area customers are encouraged to promote the use of drip irrigation and climate-appropriate plant materials.

Specific water conservation measures

- Nye County has adopted Tonopah Town Ordinance 22.28 - Water and Sewer Regulations (copy enclosed). The Ordinance applies to structures which are renovated as well as all new construction.
 - a) Copies of the Ordinance are furnished to local suppliers and contractors.
- All meters 8" 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 required.
- Tonopah Town Ordinance 22.28 Water and Sewer Regulations 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 in place for over thirty (30) years. These meters are read monthly.
- Tonopah Public Utilities estimates an additional 5% water savings with the low flow fixtures, meter checkups, meter replacements and informational handouts for new accounts. This savings would equate to a savings of 9.5 gallons per person per day.

Plan to identify and reduce leakage

- The Tonopah Public Utilities has in place a capital improvement plan to replace distribution lines at the anticipated life-cycle end.
- Tonopah Public Utilities audits production vs. sales on a monthly basis to determine the amount of unaccounted water and infrastructure leakage index. Tonopah Public Utilities also compares current to historical same-month production. When production increases unexpectedly, a leak survey is initiated.
- 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 72 hours after proper marking via 811 Call Before You Dig.

Reuse of effluent

Treated wastewater, otherwise known as effluent, is typically discharged from the wastewater treatment plant into the ground via a series of infiltration basins. A small component of the effluent undergoes additional physical and chemical treatment consisting of finer screening and disinfection, producing reclaimed water for reuse. The reclaimed water is of sufficient quality to be safely used for construction purposes that includes dust control, soil compaction and flushing wastewater collection lines. The reclaimed water is delivered to Users at a Truck Fill Station located south of the Cemetery. The Truck Fill Station consists of a cardlock facility, a truck fill stand pipe and a catch basin.

Drought contingency plan

Nevada is an arid state and the Town of Tonopah 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 this plan is to manage the available resources to insure a continued supply of potable water during periods of drought. Tonopah Public Utilities monitors water levels continuously by utilizing the SCADA system. Well levels are physically monitored quarterly with a water level meter and all results are reported to the State Engineer.

In the event a water scarcity condition exists or is likely to exist, Tonopah Public Utilities shall proclaim the existence of a drought or emergency condition. Tonopah Public Utilities shall also declare water use restrictions appropriate for the proclaimed drought or emergency stage within the service area, each described as follows:

Stage 1

1. Water from Tonopah Public Utilities 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 water system are considered a waste of water and as such are not permitted.
3. Water from Tonopah Public Utilities 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 Tonopah Public Utilities 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 11:00 am and 5:00 pm

Stage 2 (Shall include restrictions listed in Stage 1, as well as:)

1. No hard surfaces including sidewalks, driveways, parking areas or decks may be washed or hosed down with water supplied through Tonopah Public Utilities potable water system unless required by health and safety requirements.
2. No washing of vehicles with hoses is permitted with Tonopah Public Utilities water supplied through Tonopah Public Utilities potable water system, except with hoses equipped with automatic shut off device or at facilities designated on Tonopah Public Utilities billing records as a commercial vehicle wash.
3. Water used for watering vegetation, including lawns, landscaping, and gardens shall be limited as follows:
 - a. Residences with even numbered addresses: as identified by Nye County Planning, Wednesday & Saturday.
 - b. Residences with odd numbered addresses: as identified by Nye County Planning. Tuesday & Sunday.
 - c. Commercial and Industrial Customers, as identified by Tonopah Public Utilities, Tuesday & Friday.
 - d. All watering of lawns, landscaping, and gardens is prohibited between the hours of 11:00 am and 5:00 pm
4. No use of water for decorative purpose shall be permitted.

Stage 3 (Shall include restrictions listed in Stage 1 and Stage 2, as well as:)

1. Water from Tonopah Public Utilities' potable water system used for general construction or maintenance activities, including dust control, compaction and concrete curing, shall be considered a waste of water and as such is not permitted.

Stage 4 (Shall include restrictions listed in Stage 1, 2, 3, as well as:)

1. Water from Tonopah Public Utilities 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 Tonopah Public Utilities 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 Tonopah Public Utilities potable water system unless required by health and safety requirements.
4. No washing of vehicles with hoses is permitted with Tonopah Public Utilities water supplied through Tonopah Public Utilities potable water system, except with hoses equipped with automatic shut off device or at facilities designated on Tonopah Public Utilities billing records as a commercial vehicle wash.
5. Water used for watering vegetation, including lawns, landscaping, and gardens shall be limited as follows:
 - a. No watering from November through February;
 - b. Watering will only be allowed one day per week during March, April and May.
 - c. Watering will be allowed two days per week from June 1st through August 15th:
 1. Residences with even numbered addresses: as identified by Nye County Planning, Wednesday & Saturday.
 2. Residences with odd numbered addresses: as identified by Nye County Planning, Tuesday & Sunday.
 3. Commercial and Industrial Customers, as identified by Tonopah Public Utilities, Tuesday & Friday.
 - d. One day per week August 16th through October;
 - e. All watering of lawns, landscaping, and gardens is prohibited between the hours of 11:00 am and 5:00 pm

6. No use of water for decorative purpose is permitted.
7. Water from Tonopah Public Utilities' 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 shall be prohibited from June 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. 100% of residential services are now metered.

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 2014, the gross production less commercial sales, divided by the estimated population, is 35,895 gpcpd. When average annual consumption is significantly greater than 35,895 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.

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.

Variable pricing analysis

The present residential water rate structure is billed monthly on a flat fee plus a per 1000 gal. rate and a flat fee for sewer. Commercial accounts are billed monthly on a flat fee plus a per 1000 gal. rate for water and a flat fee plus a per 1000 gal. rate for sewer. Tonopah Public Utilities may impose an emergency rate increase designed to reduce usage. There are no plans to change the rate structure only to promote conservation at this time. A rate increase went into effect July 01, 2009, which promoted conservation on the part of the residents. The rate structure in place in Tonopah does promote conservation of water as residents are charged more if they use more water. Rates are 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 rate changes, in terms of gpcpd, will be used in future analyses. In addition to these measures, Tonopah Public Utilities is following the Public Awareness Program.