

**TOWN OF GABBS
NYE COUNTY NEVADA**

WATER CONSERVATION PLAN



APRIL 2009



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INTRODUCTION

To satisfy NRS540.121 through 540.151, on behalf of the Town of Gabbs, the following plan is submitted to the Division of Water Resources for review, comment and final approval.

Gabbs currently operates one groundwater well and pumping facility for their potable water system. There is no redundancy in their supply and Gabbs is a remote location where response time for repairs and replacement of specialized equipment can take weeks. There is no stand-by power on the wellhead although emergency storage is available in the 500,000-gallon water storage tank. Groundwater levels in the vicinity of the municipal well have been steadily declining.

This conservation plan should identify specific measures that would reduce water consumption and not adversely affect the quality of life. Water conservation is a vital aspect of any water system in an arid climate where water resources are limited and drought cycles last for 7 to 10 years. Water conservation also prolongs the life of water system facilities by reducing stresses on groundwater aquifers, reducing chemical and electrical demands at pumping stations, reducing pump run times, and allowing room for growth by reducing the commitment to storage, pumping and water rights.

Developing water conservation strategies include planning objectives that will assist the Town of Gabbs when implementing a proposed program. They include:

- Public education;
- Adopting specific conservation measures and enforcing those measures;
- Management of water;
- Drought contingency plan.

I. Public Education

A. Provide public workshops to discuss:

1. Irrigation management and products
2. Watering schedules
3. Drought resistant plants
4. Water saving fixtures
5. Audit program

II. Conservation Measures

- A. Water rates
- B. Codes and Ordinances

- III. System Management
 - A. Meter testing and replacement
 - B. Leaks and system repairs
 - C. Non-potable water implementation

- IV. Drought Contingency Plan
 - A. Restrict irrigation and planting
 - B. Limit outdoor watering to non-turf areas
 - C. Increase water restriction times
 - D. Implement water wasting tariff
 - E. Implement incentives for conserving water

PUBLIC EDUCATION

- Irrigation Management would include listing of irrigation equipment such as drip systems and sprinklers with proper heads to avoid overshoot and reduce evaporation. Information about winterizing irrigation systems would be included. Avoiding watering on windy days will also prevent wasting water.

- Watering Schedules would incorporate assigning watering days during summer months with a “cool-down” period in the autumn. Watering between 1:00 pm and 5:00 pm would be prohibited because much of the water does not reach the root system due to evapotranspiration. Watering in the early morning and early evening reduces the effects of evapotranspiration and potentially watering when it is windy. Assigned watering days for residences based on odd and even addresses and commercial locations would be established. One day each week would be a recovery day where no watering is allowed. The goal of a two-day watering schedule is to provide deeper watering but watering less often to promote heartier plants and turf. The program would be voluntary.

- Drought Resistant plants include listing of turf alternatives, water-efficient landscaping through proper plant selection and xeriscape.

- Water Saving Fixtures would include a listing of household fixtures that operate with lower water demands than older fixtures such as low-flush toilets, shower heads, garbage disposals, washing machines and dish washers. Any new fixtures installed during remodeling should consider low demand fixtures. Incentives to replace older fixtures could result in rebates to water customers (see Implementation of Incentives, Page 5).

- Auditing programs will include water usage review for each service and maintain records of high water users including commercial customers. Water usage audits would also identify sprinkler irrigation run-times and outdoor watering habits. Landscaping could be evaluated as well. Vehicle washing would also be noted. Door hangers would be left at individual residences informing them of their water usage and any violations or potential violations based on their water usage for each month. USEPA teaching materials would be distributed to schools grades K through 12.

CONSERVATION MEASURES

- Water Rates in Gabbs are based on flat rates for residential use, commercial use and “large users” established by Nye County under Ordinance 292. Water use above the monthly maximum of 50,000 gallons for residences includes payment of an additional 50 cents per 1,000 gallons above 50,000. Commercial customers are charged \$75 per 50,000 gallons. “Large users pay \$128 per 75,000 gallons. Both commercial and “large users” pay an additional 60 cents per 1,000 gallons over the maximum. Water rates provide some incentive to conserve.
- Codes and Ordinances would be established to enhance and support conservation efforts that would allow enforcement of penalties to water wasters. They would also promote a volunteer “overhaul” of existing landscapes with more drought-resistant vegetation as well as replacement of older household fixtures. Incentives relating to water bills and rebates relating to replacement of older fixtures would also be considered.

SYSTEM MANAGEMENT

- Meter Testing and/or Replacement would be required in Gabbs. Each service is currently metered in the town; however, only commercial meters and approximately 2 residential meters are read. The accuracy of existing meters, including some of those that are currently being read is uncertain. One residential meter consistently records excessive water usage. Testing of existing meters can be accomplished with a meter testing kit that can be attached to an outside hose bib. The flow through the existing meter is then compared to the flow through the calibrated test meter. All meters that are deemed inaccurate or non-functioning should be replaced. A meter replacement program could target ten percent of the active meters or 14 meters each year to reduce initial costs.

- Leaks and System Repairs help reduce water demands on pumping. A system leak detection program has never been implemented. Leaks are fixed once they are visible. Public safety and safety to work crews is essential in identifying leaks as soon as possible. Public and private service interruption as well as contamination issues are also of importance. If a service line leak is observed, the entire service line from the main to the meter should be replaced as services are prone to repeated leaks. A log of leaks including location, size, type, date and extent of repairs should be maintained to identify potential areas within the system that may be susceptible to major repairs.

- Non-Potable Water Implementation could include un-treated groundwater from existing Well 8 where fluoride levels are at 8 mg/L. The Bureau of Safe Drinking Water has indicated that this well cannot be utilized as a back-up source of supply and as such, the well is currently utilized as a truck fill station with a standpipe. Although there would be significant capital costs associated with implementing this well for non-potable water use, it should be considered as a potable water conservation measure. The well would be piped, un-treated to a non-potable water storage tank located adjacent to the existing potable water storage tank to feed a pressurized non-potable distribution system. In this fashion, irrigation water could be accessible for hand watering at any time of the year and provide better operation of sprinkler systems. The tank size and mainline sizes would be smaller than the potable water system since it would only be providing irrigation water and water for other non-potable uses including the truck fill station. A separate distribution system would have to be constructed. Existing sprinkler systems would have to be disconnected and re-connected to the non-potable system. Based on Gabbs' 4-year average irrigation demand of 1,231 gallons per day per customer, a non-potable water storage tank size is estimated to be 160,000 gallons for 130 irrigation customers. Using 160,000 gallons per day over a 10-hour irrigation schedule (5 am to 10 am and 5 pm to 10 pm), Well 8 would have to be capable of pumping 267 gallons per minute. A 6-inch transmission main from the storage tank to town would be required. Smaller distribution mains could be incorporated throughout the town. The pipe and appurtenances would have to be purple in color to denote non-potable water. Several utilities in Nevada have been and are currently installing non-potable systems.

DROUGHT CONTINGENCY PLANNING

- Restrictions on Irrigation and Planting would be imposed to reduce outdoor water consumption. Planting of new turf or installing new landscaping would be prohibited. Restrictions would be enforced to maintain system viability.

- Limiting Outdoor Watering to Non-Turf areas would be imposed to maintain potable water system viability by restricting the amount of water utilized for outdoor watering. Limited hand watering and drip systems would be permitted.
- Water Restriction Times would be increased from 1:00 to 5:00 pm to 10:00 am to 7:00 pm. Enforcement of penalties for water wasting would be increased.
- Implementation of a Water Wasting Tariff would be initiated. Successive notices of negligent or wasteful use of water would result in discontinuation of service if such practices are not remedied within 48 hours of a notice. Water restrictions would be mandatory.
- Implementation of Incentives for conserving water would be initiated. Incentives could include reduced water bills associated with the amount of water being conserved. Rebates could be offered for modifying landscaping, installing low-flow toilets and shower heads, installing water-saving dishwashers and washing machines and other measures of conservation the utility may deem appropriate. Fixture units would have to qualify based on an approved list. A rebate application form would have to be developed by the utility administrative personnel.

SUMMARY

Public education and enforcement of ordinances are critical in developing an effective water conservation plan. Posted signs, flyers, notifications on billing statements, billing incentives and rebates and workshops with schools and the public will provide advance preparation for drought conditions and facilitate public participation.

Note: The attached letter includes an estimation of the amount of annual water conserved per household if the measures presented in this Conservation Plan are adopted and enforced.