Searchlight Water System

Water Conservation Plan

July 2012

OVERVIEW

On February 16, 1988, the Las Vegas Valley Water District (LVVWD) became responsible for the operation, maintenance and administration of the Searchlight Water System through an Interlocal Agreement with Clark County. In 2002, LVVWD assumed full ownership of the system.

The Town of Searchlight has approximately 768 residents. There are 340 active water service accounts.

Searchlight is located approximately 60 miles south of Las Vegas and approximately 40 miles north of Laughlin. The town is within the Piute Valley Hydrologic Basin. Searchlight experiences a desert climate with hot summers, mild winters, and very little rainfall. Summer temperatures frequently surpass 100 degrees, while winter temperatures remain around 60 degrees. Daily low temperatures seldom drop below freezing. The area receives an average of less than eight inches of precipitation a year.

Water Sources and Allotment:
The LVVWD has existing permitted water rights in the Piute Valley and the adjacent Eldorado Valley Basin. The system's water rights (permits 36329, 43454, 51980, 59897, and 58651) total 4,353.95 acre-feet per year.

Water System
Currently, water is supplied to residents by two wells (S-1 and S-2). Well S-2 was drilled in 1990 and is the primary production well. The water table at Well S-2 has declined steadily over time. Should this trend continue, Well S-2 will be unable to meet projected future demands for Searchlight. Well S-1 was drilled in 1983 and serves as an emergency backup well, with limited resource and pumping capacity.

The LVVWD has applied for and received federal and state grant funding to help pay for infrastructure improvements costs on behalf of the Searchlight Water System. A new well, (S-3) has been drilled and developed and a 12-inch diameter, 26,600 linear-foot discharge pipeline has been installed. Preliminary tests have indicated that Well S-3 yields approximately 300 gallons per minute (gpm). The equipping project for Well S-3 is fully designed, as is a water treatment facility. However, due to current economic conditions, the LVVWD has been informed by both state and federal funding sources that there are insufficient grant funds available to fulfill current commitments. As such, these projects are on hold as design and construction costs will not be reimbursed until money becomes available to fund grant programs.

To meet the EPA Safe Drinking Water Act Revised Arsenic Rule of 0.010 mg/L, the LVVWD is continuously working to secure available funding to complete the system's water treatment facility. The Searchlight water system's average arsenic concentration is between 0.008-0.012 mg/L.

Historically, Searchlight's ability to pursue new system improvements has been constrained by limited or nonexistent cash reserves, insufficient revenues and higher operational costs that must be distributed among a very small customer base. The LVVWD will continue to pursue federal and state grant funding sources to complete existing and future system needs.

Conservation

Groundwater is the sole natural resource used to meet water demands in Searchlight, but there are other methods critical to managing and extending this physical resource – water conservation and sustainability principles in land development. Conservation initially involves no real infrastructure challenges or significant capital costs, yet it effectively provides an additional resource by freeing up water that was previously consumed inefficiently or wasted. In one sense, it is the cheapest source of water available to the community. It is also a resource over which the community has complete control, because future availability depends more on individual customer efforts and less on influences outside the community.

The condition of the Piute Basin is such that additional water resources may not be available or may be severely limited from time to time. Given this natural resource environment, conservation and sustainable practices are essential to a stable water system.

To this end, the LVVWD may reject, rescind, reduce, or terminate current or proposed uses of water where such use:

a) Is contrary to the LVVWD's obligation to assure reasonable use including, but not limited to, compliance with rules for water efficiency, drought, conservation and the use of non-potable water for irrigation.
b) May encumber or impair the District's ability to maintain an adequate level of service to other customers.
c) Compromises public health, welfare, or safety due to circumstances that limit the available water supply to the Searchlight Water System.

Searchlight is located within the unincorporated area of Clark County and is subject to the following ordinances:

Chapter 24.30—Waste of water from public water system
Chapter 24.34—Water use restrictions
Title 30—Comprehensive Development Code
Title 30—Turf Limitations

<u>Water Meters</u>

All Searchlight Water System customers have a water meter. All meters are functioning properly and require little maintenance. Water meters help identify customer water use, volumes and patterns. This information has provided a valuable tool in helping plan infrastructure needs for the area as well as in identifying system leaks and losses.

<u>Water Rates</u>

Due to minimal outdoor landscaping throughout the community, residential water use in Searchlight is extremely low; however, additional charges are in place to encourage water conservation. Customers currently pay a flat, daily service charge of $0.63 for the first 10,000 gallons of water use per month. If monthly consumption exceeds 10,000 gallons, an additional charge of $2.60 per 1,000 gallons is assessed. LVVWD consistently monitors the water system's funding, infrastructure and conservation needs as they relate to appropriate water rates.

Water Reuse

Treating effluent wastewater provides an opportunity for reuse in cases where a potable source is not required, such as irrigation. While the reuse of effluent is not currently occurring in Searchlight, the Clark County Water Reclamation District is planning to remove the pond lining from existing evaporation ponds as a component of a Waste Water System Improvements Project. Once complete, water will be able to infiltrate back into the aquifer and be reused for irrigation purposes.

The following sections represent additional conservation measures the LVVWD will pursue outside of County ordinances in an effort to promote water conservation in Searchlight.

Conservation Effectiveness Measures

The "gallons per capita per day" (GPCD) metric is used by some communities to measure water consumption and as a general means of establishing conservation goals and water-use benchmarks for tracking purposes. A variety of factors influence per capita use, including climate, demographics, building density, and local business or industrial water use.

Since implementation of the last Conservation Plan, the LVVWD has evaluated community response during the last five years. The LVVWD has maintained water pumpage and consumption records for the Searchlight Water System. The data is retrieved through the LVVWD's SCADA system. Using baseline and post-implementation readings, the District calculates water conservation data, which is regularly communicated to the community.

Table 1. Searchlight Water System (GPCD)

Year	Usage	Population	GPCD
2011	55,580,000	740	205

WATER CONSERVATION

The first Searchlight Conservation Plan was developed in 2006, before NRS required water suppliers to estimate the amount of water conserved as a result of plan adoption. As such, this plan does not detail the effectiveness of each measure included in the 2006 Conservation Plan. However, overall water use has decreased by 4 GPCD since 2006.

At a minimum, the District will use the following measures to continue to aid in water conservation for Searchlight:

1) Continue Leak Detection monitoring [4.5 GPCD]

In August 2008, 86 new Permalog Plus loggers were installed and programmed within the Searchlight Water System. These have improved the reliability of the water system by identifying possible leaks. By comparing pre- and post-project water pumpage and consumption records for the Searchlight Water System, it is estimated that approximately 777,500 gallons of water have been saved to date through the installation of the technology. It is anticipated that, as crews continue to survey the system on a regular basis, similar water savings will take place.

2) Educational Outreach [1 GPCD]

Online Resources – The LVVWD will provide conservation tips and information at LVVWD.com.

Water Watch Newsletter – The LVVWD will continue to publish the *Water Watch* quarterly newsletter that educates Searchlight residents on conservation issues and techniques specific to the area.

3) Continue Automatic Meter Reading Using FIREFLY System [5 GPCD]

Installation of FIREFLY equipment on all residential and commercial meters in Searchlight (approximately 340 meters) was completed on December 21, 2007. The equipment has proven valuable as it effectively improves water consumption monitoring and improves water management. In addition, it aids in the identification of water leakage and water loss at customer locations and in quantifying the amount of water lost in the system.

WATER SHORTAGE CONTINGENCY

In the event of a continued and sustained drought where water levels within the Searchlight wells reach depths that are critically low, the LVVWD will focus on reducing waste and non-essential use. The following specific measures are potential options for Searchlight's use in the event of an emergency.

Mandatory Watering Restrictions

Additional watering restrictions can be implemented to further reduce or even prohibit landscape watering to preserve system supplies and reduce demands on the system's wells. The nature and duration of the restrictions would be dictated by the situation.

Drought Surcharge

Drought surcharges are temporary pricing measures intended to encourage reductions in water consumption during drought conditions. Drought surcharges are a pricing strategy based on the economic law of demand that states as the price of a resource increases, the demand for the resource decreases, thereby balancing resources with customer demands. The LVVWD could implement a drought surcharge, which would be modified as needed based upon the community's ability to meet water demand reduction goals.

Implementation

The LVVWD, as the owner and operator of the Searchlight Water System, is committed to conservation and sustainability as part of its strategic planning process. Due to limited outdoor water use in the Searchlight area, water conservation through reduced system loss and continuous monitoring is the principal focus of the Searchlight Water Conservation Plan. Education of the customer base through monthly Town Advisory Board updates and online and printed materials will also be important to increasing water efficiency in Searchlight.

Timeline for Implementation

Conservation Measure	*Anticipated Completion*
Leak Detection	*Ongoing*
Educational Outreach	*Ongoing*
Continued use of FIREFLY system	*Ongoing*

Public Notice

As required by NRS 540.131, the Conservation Plan was presented to area residents and discussed at the May 9, 2012 Searchlight Town Advisory Board Meeting. Public comment was held from May 10 – 24, 2012 and the plan was made available to the public for inspection and comment at the Searchlight Community Center, Searchlight U.S. Post Office, the Las Vegas Valley Water District main offices and at http://www.lvvwd.com/smsys/searchlight.html.

Once finalized, the Conservation Plan will be available for public inspection during office hours at the following locations, as well as on LVVWD.com:

Las Vegas Valley Water District
1001 South Valley View Blvd.
Las Vegas, NV 89107.

Searchlight Community Center
200 Michael Wendell Way
Searchlight, NV 89046