

# *Bear Lake Water Company Projects*

(Revised 2 Sep 2010)

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## **Background**

The Bear Lake Water Company is responsible for maintaining and operating the sources and delivery systems that supply water to almost two thousand properties in the Sweetwater Park Development. Included are 910 properties in the Sweetwater Golf Course Homeowners Association (HOA), 616 in the Sweetwater Park HOA, 421 in the Sweetwater Trailer Park HOA, and 30 properties in the Foxridge areas.

The system consists of five storage reservoirs at various elevations on the hill with a series of lift pumps to move water from wells in the valley to the reservoirs on the hill. The total lift to Reservoir 4, the highest Reservoir in the system, is 1145 feet, not counting the depth of the Well. Water from those reservoirs is then gravity fed to property throughout the Sweetwater development.

The system was developed more than thirty years ago and many of the waterlines in the system were originally installed using pipe that is no longer available or used in water systems of this type. Much of the piping is undersized for today's needs. Equally troublesome is the fact that in many places pipe was not installed deep enough to avoid freezing during cold winter months. Over the years, for example, cold winters (especially in years of little snow) have caused sections of pipe to freeze and crack during the winter, and then leak in multiple places once the spring thaw begins. The cost of repair often exceeds \$20,000 just to eliminate the leaks and to bring the system back into full operation. Those costs are in addition to the fact that a long section of frozen main-line will remain frozen until the spring thaw, leaving several cabins without water for as long as three months. Replacing long sections with new 8" diameter pipe buried at the proper depth to avoid freezing costs approximately \$350,000/mile at today's costs.

To correct these deficiencies the system is currently undergoing several upgrade projects to bring the system up to code, increase system capacity, and eliminate system freeze up and damage caused by winter weather.

In 2007 and 2008 the Water Company installed more than two miles of new, 8" diameter PVC pipe to replace older, shallow lines on Sweetwater hillside where freezing has been the greatest problem. All of the new lines are buried at depths greater than six feet to place them below the frost line. Road base was also added to a long section of Snowberry Drive to increase the effective depth of the water main in that area. A combination pump house, shop, and office were constructed at our new well site in the valley South of the Ideal Beach entrance along Sweetwater Parkway. During this period the company also increased the pump capacity at our three lift stations and increased the size of lines feeding fire hydrants in the Trailer Park area. The cost of Water Company projects from 2002 through 2008 was in excess of \$1.3 Million.

In 2009 and 2010 the Water Company fenced four of our five reservoirs for security purposes and will be fencing the remaining reservoir before the early part of 2011. Operation of the water system has been automated by installing an automatic control system which monitors reservoir levels and turns appropriate pumps on to refill reservoirs as water is used. It also turns pumps off at a pre-selected levels to prevent reservoirs from over flowing. A system maintained history of pump cycles and reservoir levels allows operating personnel to evaluate and make adjustments to improve system performance. The monitoring computer can be accessed remotely by operating personnel to check system conditions anytime during the day or night without having to drive the area and check individual reservoirs and pumps. System controls can also be adjusted remotely, if needed, to maintain proper reservoir levels.

### **Future Projects**

The following additional projects are scheduled as part of the ongoing upgrade and will be completed as quickly as funding allows:

- Increase the capacity of Reservoir No. 4 (and possibly Reservoir No. 3) either by installing a second tank at that location or replacing the existing tank with a new and larger version.
- Raise roads where existing lines meet code but are not deep enough to avoid freezing during winter.
- Replace waterlines where necessary to increase capacity and place those lines below the frost line.
- Replace waterlines throughout the Trailer Park to move them into the streets and out from under trailers in the park.
- Upgrade/repair miscellaneous isolation valves, pressure relief valves, etc.