

# SQUAW VALLEY MUTUAL WATER COMPANY

## NEWSLETTER PIPELINE



Winter 2017/2018

P.O. Box 2276, Olympic Valley, CA 96146-2276

## **OLD PIPES EQUAL A CALL FOR NEW PIPES**

The Squaw Valley Municipal Water Company is a non-profit organization and its Board is all volunteer. There are no full-time employees. Board members run and supervise the system with the help of full time assistance from contract employees of the Squaw Valley Public Service District (SVPSD) and consulting engineers.

This newsletter will survey the history of capital improvements, what work has been done to bring the system up to a current acceptable standard, what remains to be done, and what the cost is to finish the replacements.

This newsletter is based on a recent interview with John Johnson, a Public Works Contractor and resident of Squaw Valley who has served on the Board of the Mutual since 2013. He is current President of the Mutual and devotes at least 10 hours a week to supervising and maintaining the current system as well as additional time to evaluate the future needs of the distribution system.

Our Mutual has a long term working relationship with Shaw Engineering. In particular, Steve Brigman of Shaw Engineering, a principle and is an expert in small water systems like ours. John Johnson and Dave Stepner along with other Board members have been working with Shaw Engineering to evaluate each component of our system to determine what must be replaced. The good news is since 2013 about 60% of the system has been upgraded and replaced. Interestingly, during that work, we discovered the system had been losing about a third of our water production to an old and outdated leaking water distribution system.

One of the benefits of our upgraded systems is we have used 8" main pipes (the old were 6" and smaller) which allowed for prompt fire suppression of a propane-fueled house fire that occurred on Christy Lane last month. We are also adding fire hydrants as new pipe is being installed for additional fire suppression safety.

## **WHAT HAS BEEN THE HISTORY OF CAPITAL IMPROVEMENTS?**

As with many small developments and rural water districts keeping up with maintenance and repairs was difficult for the first 60 years of the Mutual. The system became obsolete. With individual repair costs of up to \$30,000 per main leak or blowout, the Mutual Board began looking at what needed to be done. It was a daunting task when the realization dawned that there had been no capital fund investment for the first 60 years and that virtually the entire system needed upgrading.

Evaluation by engineers led to some of the following disclosures: the original pipe was asbestos-cement with a maximum useful life of 40 to 50 years, many "mains" were significantly undersized (some as small as 2"), many lines were in locations that allowed the water within them to stagnate, many lines were in locations where repair access was almost impossible, the system was arranged in such a way that controlling the flow was difficult with no cross sections for water diversion in case of leaks or repairs, and there was no access to backup water supply from the SVPSD system.

The first work completed was in 2014 based on a \$4 million loan from the Department of Agriculture. Although more work was needed, this was the maximum loan allowed our district. However, it allowed about 60% of the highest priority needs of the distribution system to be replaced.

Our repayments have been prompt and the financial safeguards (including sinking fund of one year for repayments) have been instituted so we have proved our credit worthiness. This financial foundation over the last five years has been important as one of the ways to finish our current needed projects is to refinance or add another loan.

Mindful that another 40% of the system is obsolete, the Board began a capital improvement fund and began prioritizing yearly projects to rebuild parts of the system before there were major failures. Over the last 3 years most of the smaller projects have been completed so that now we have a needed replacement down to about 40%.

So far, we have stayed ahead of major system failures, but the Board continues to be concerned about making progress. Steve Brigman has worked with us throughout this replacement process and knows our system intimately. He has been instrumental in directing the sequence of replacements and upgrades. Also, SVMWC President John Johnson has supervised all this work and been "in the trenches" so he knows the condition of the pipes as replaced. In some instances, the old lines had to be abandoned in place because of their condition and location.

## **HOW HAVE CURRENT CAPITAL NEEDS BEEN EVALUATED?**

John Johnson, working with Shaw Engineering, has now completed an entire review of the whole working system. Our system has two ground wells in the Meadow and one Horizontal well high in the valley above the homes serviced. There are two tanks located near the Horizontal well. The most consistent source of water comes from the high Horizontal well. It has been constant even in the drought years. The system is a gravity fed distribution system. Although sequencing is involved, our three wells fill the upper tank above the lots

served. From the tank, water flows downhill through the distribution system to our customers.

Shaw Engineering has identified parts of the system that are due for replacement. This was done by determining the age and composition of the pipes and components. A “Capital Improvement Plan” was developed in January 2016 and has been refined over the last year. Estimates of pipe longevity are based on industry standards. In some cases, they have lasted longer but sometimes fail prematurely. As the Board oversees the daily status, priorities sometimes change. For example, if there is a problem with a pump or the tank system this would always be a priority.

One of the problems identified by the system engineering analysis was that our system was not designed all at one time. It was built piece meal as lots were sold. As a consequence, impact on the overall system was not logically designed. Accordingly, as replacement is occurring it is being done in conformity to current system design standards and component size.

Goals of the Capital Improvement Plan are to simplify the system wherever possible, to get better flow by increasing the size of the mains (to 8”), to use high quality PVC pipe to replace the asbestos pipe, to make cross connections for better control of the system, to add fire hydrants for better fire suppression and to create an intertie with the SVPSD water for back up (for example, if we needed to fight a forest fire).

Aging pipe can affect water quality due to breaks in the system. Also, although not a direct health problem, the asbestos is not considered desirable. The aging asbestos-cement pipe softens with time and repair enter patches create places where plant and tree roots can infiltrate. Aging pipe with sections spliced in to stop holes are themselves likely to produce leaks in the system. In our porous soil these leaks from fixed joints are absorbed into the soil so they are not visible on inspection. With the replacement done so far, it is suspected replacement of these old “jointed” pipes has greatly reduced the water lost from the system through leakage.

## **COST AND FINANCING OF FUTURE CAPITAL EXPENDITURES**

The cost of completing all priority capital expenditures is currently estimated to be \$2.6 million. This would bring all components of SVMWC’s water distribution system to current acceptable standards. This would complete our goals of bringing the finest purity drinking water to your door, stabilizing the system, and creating stable support for a water flow sufficient to suppress fires throughout the system.

The amounts allocated to our Capital Improvement Fund are not accruing fast enough to meet the time deadlines to replace the remaining aging pipe and systems. There are three ways to fund a Capital Improvement Plan on a time deadline that will beat potential system failures.

The first way of funding would be either to expand our current loan or to get another one (which might be better as interest rates are better) through the Department of Agriculture Water Loan Plan.

The second method would be private funding through a bank or equity fund. These sources have been traditionally reluctant to loan to small water systems like ours.

The last method of fund raising would be to do an assessment on all lot owners. We are currently exploring the first method of funding. **However, we are interested in input from our customers about preferences in funding. Please come to the annual members meeting September 1, 2018 10am if you want to comment.**

### **WATER LEAKS ON HOMEOWNER SYSTEMS**

Our computer water reading devices can give us clues about whether a homeowner is having a leak on their property. Breaking pipes in winter can do major damage to a home. We try to send notices to property owners we suspect have a leak. But our ability is only as good as the contact information we have from the home owner. A good reason to give us a current email contact.

It is important to realize with metered cost-based pricing that the homeowner will be billed for any water usage. That includes leaks in the irrigation systems or home.

### **DETECTION DEVICES FOR WATER OR PROPANE LEAKS**

There are commercially available devices that can communicate with an absent property owner that their pipes or propane system is leaking. It is worth knowing these exist. For more information Google search for the available commercial devices.

### **PAY-PAL REMINDER**

For those using Pay-Pal there is a 3% fee which we are charged for the account. If you pay by Pay-Pal please add 3% to your payment amount to cover this charge to SVMWC.

### **WARNING: TEST YOUR BACK-FLOW PREVENTER SYSTEM**

Backflow preventers prevent stagnant, bacteria filled water from entering the system that delivers drinking water to all of us. If you have a sprinkler system (inside the house or for landscape) you must test it and retest it every year to keep our water supply safe. The same problem arises with boilers that warm hydronic water systems. They must be separated from the drinking water and that is the function of the back-flow preventer system. The same is true of indoor fire prevention sprinkler systems as they also trap water that can stagnate and grow potentially dangerous bacteria. California State Law mandates that these backflow systems must be tested every year. Failure to do so could result in your water being disconnected from the delivery system to protect all users.