

Notes from Board Meetings

March 14, 2009

December 20, 2008

This special Board Meeting focused on Auerbach Engineering's Final Report on the Master Plan for the Squaw Valley Mutual Water Company. As reported in earlier newsletters (see them posted on our website www.svmwc.com) this report details what the water company needs to do to bring our infrastructure up to a safe and modern standard. We discussed how to pay for the redwood tank replacement, the number one recommendation.

January 3, 2009

We hired Shaw Engineering to begin the tank design. We already had the geotechnical work and surveying done before the snowfall. The goal is to have the tank built in the summer of 2009.

The Board adopted two approaches to pay for the special assessment needed to raise \$504,000, the estimated cost of replacing the redwood tank. The options were to pay the full assessment of \$1804 by March 16 or an 8-year plan with a \$305 per year payment at 6.5% compounded interest and a \$50 service fee to handle the extra bookkeeping. We also agreed that the letter would offer Members the opportunity to lend SVMWC funds in \$50,000 increments at 4.5 % interest. These funds would reduce our expensive, bank offered 6.5% interest rates to pay the difference between what is collected from the special assessment and tank construction cost.

Shaw Engineering presented an update on the tank design for a welded steel tank, 24 feet high, on the same site as the redwood tank. The 38-foot diameter tank will hold 160,000 gallons of water.

The Board heard a series of appeals from the two special assessment payment options. Two appeals were granted for six monthly payments, to be completed before September, without interest but with a \$10 handling charge.

The members expressed interest in additional discussion about how future special assessments will be handled. The Board acknowledged that timing is a concern in difficult economic times, and that an annual assessment based upon our crucial need for capital improvements should be a discussion at the next Annual Meeting. One option Members could consider is an increase in our annual assessment to reflect needed capital improvements for health and fire safety, and possibly billing twice yearly to avoid payment problems for Members. The Board appointed Director Ken Bossung to chair the Finance Master Plan Committee that will research these issues.

Update on Assessments

As of April 7, we have collected \$309,456.34 from Members representing 232 lots of our 281 Member parcels. More than half of these members (159) paid in full. Seventy-one Members paid the first installment, and 2 have paid the first of the 6 monthly installments.

That leaves 49 lots unpaid. As noted in the letter, they will be counted as participating in the 8-year plan.

Grant Application

The SVMWC applied for \$504,000 in stimulus funds offered by the State of California. We should know by mid-April if we qualify and the nature of the grant. The money would be used to pay for the redwood tank replacement. The special assessment funds collected would be applied to the next capital project on the Master Plan list. The offer of the grant came out after the special assessment letter had been sent out. In addition, the redwood tank needs to be replaced this summer and if we didn't get the grant, then we would not have had enough time to assemble the needed funds before the project started.

Lawrence Livermore Labs Studying Squaw Valley Aquifer

The State of California is concerned about the potential impact of climate change on water supply. Most of the water supply starts in alpine valleys and flows through rivers to the urban and agricultural regions. Squaw Valley is an ideal research subject because of its many production and monitoring wells, and 6,000-foot elevation.

Global climate models suggest that likely changes include decrease snow-pack (50% loss for 2.3^o C increase) and earlier snow-pack melting (30-40 days earlier by 2100) as well as more rain-on-snow events. The question is how will the alpine aquifers store and release snowmelt as base flow to streams in such changed climatic conditions. The recharge mechanisms, storage capacity, and residence time of groundwater in alpine basins is poorly understood.

The age of the groundwater is assessed through tritium-helium ratios. An atom of ³He is produced for every atom of tritium that decays. The results of this study show that groundwater ages are highly variable, but production wells are pumping recently recharged water. The monitoring wells closer to the creek show groundwater residence of greater than 30 years.

Measuring the recharge temperature using noble gases such as Xenon, Krypton, Argon and Neon compared to the field temperature allows the researcher to speculate on the flow of water into the aquifer. The findings suggest that water flows through the three faults in the valley and contributes groundwater to the basin. Snowmelt travels through soil before reaching groundwater.

Another technique is to study stable isotopes of hydrogen and temperature. The hydrogen isotope composition of stream water shows a seasonal change in water sources. Stream water collected in April-May shows a narrow range of hydrogen isotope compositions. Starting in June the stream water hydrogen isotope composition begins to look similar to the groundwater in production wells. This change indicates a shift from surface runoff to ground water for the base flow in the stream. Radon (²²²Rn) studies confirm this finding.

The current computer modeling and management strategies for the Squaw Valley aquifer are based on the idea that aquifer recharge is coming from the north (Shirley Canyon) and south forks of Squaw Creek. However, the LLL studies using dissolved inorganic carbon suggest that groundwater is coming from forested areas with well developed soils as opposed to bare rock. Recharge is thought to occur predominantly along the surrounding forested hills rather than the barren granite in the upper watershed. The implications of this finding need to further

study. For more information contact singleton20@ltnl.gov.

Stationarity

A new word and concept "stationarity" is creeping into the water planning vocabulary. It can have a large impact on how we position our water system for the future.

Stationarity is the idea that natural systems fluctuate within an unchanging envelope of variability. If we just know the boundary conditions, we can plan for the future. Water engineers have been planning the size and functionality of water systems based on our past experience. What was the maximum and minimum amount of pumping over the last 20 years? How much water did customers use averaged over the past years? What is the fire danger that we have to prepare for by having sufficient water stored and pipes to deliver the needed flow? These are just a few of the issues that make up a water delivery plan.

Today's water planners declare that the idea of stationarity is no longer valid. Major changes in the watershed (e.g. tree cutting in Shirley canyon to develop Solitude and Shirley Lake ski runs) have changed stream conditions that are important for aquifer recharge. The trapezoidal channel built to carry Squaw Creek past the Ski Corp parking lot has probably changed the recharge pattern at the head of the valley. Climate "wierding" - greater oscillations in temperature and precipitation - are due in part to multidecadal changes in ocean currents as well as the more local changes. As these effects are acting at different area scales (Squaw Valley to Pacific Ocean) and different time scales (tens to thousands of years) the interactions are complex and probabilistic. Uncertainties are large and the knowledge base needed to deal with these issues changes rapidly. This makes predicting water availability very difficult.

The current thinking is to try adaptive management also known as learning by doing. Adaptive management requires collecting data on what is happening and building conservative amounts of water storage. We can't have static prescriptive management in response to dynamic conditions, so we have to learn as we go along, using the best information and best judgment we can find.

For more information see www.science.org for an article on page 573 in Science, Vol 319, 1 February 2008.

Water Use

John Collins, operations manager reported on the last five months of water production/use (in gallons).

	<u>2008/09</u>	<u>2007/08</u>
October	2,930,000	2,018,000
November	1,297,000	1,583,000
December	1,831,000	1,722,000
January,	2,027,000	3,761,000
February	2,094,000	2,196,000

All samples taken in during the last five months were negative for Total Coliform and E. Coli. Samples for the presence of lead in the water were taken in September and November and met all federal and state standards.

Water Conservation

As the outdoor water season begins, please conserve water.

Plant native plants that require less water.

Water lawns only once a week.

Don't water in the middle of the day or when it is windy. Most of the water will evaporate and not help the plants.

With our sandy and thin soils, deep watering only recharges the aquifer and we have had to pay the cost of electricity to pump the water uphill!

Squaw Valley Mutual Water Co. Board of Directors

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Or visit our website: www.svmwc.com

Newsletter Editor: Margot Garcia
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Comments and ideas for articles are always
welcome.

Board Meetings Coming Up

Sunday, May 24, 8:00 am

Adopting budget, contracts for Office
Manager and Operations Manager.
Appointing nominating committee.
Opening bid for construction of
Redwood tank replacement.

Wednesday, July 22, 2009, 5:00 pm

Reports on operations, tank construction
And finances.
Financial Master Plan
Prepare for Annual Meeting

September 5, 2009 Annual Members Meeting:

9:00 Board Meeting
10:00 Member Meeting
 Reports
 Discussion of Assessments
 Election of Board
12:00 New Board Meeting - Elect officers

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