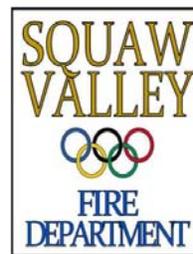




SQUAW VALLEY PUBLIC SERVICE DISTRICT



REDUNDANT WATER SUPPLY – PREFERRED ALTERNATIVE EVALUATION: Phase 1 - Water Supply Feasibility Summary and Gap Analysis – FINAL

DATE: November 21, 2014

TO: District Board Members

FROM: Mike Geary, General Manager

SUBJECT: Redundant Water Supply / Preferred Alternative Evaluation: Phase I: Water Supply Feasibility Summary and Gap Analysis – FINAL

BACKGROUND: The development of a reliable water supply has been identified as the District's number one goal in many of its long-term Strategic Plans, including its current Plan, which reads:

***Goal 1 – Water Supply.** Develop and maintain a high quality water supply that meets the needs of our community today and in the future.*

Based on conclusions of the District's 2009 *Alternative / Supplemental Water Supply and Enhanced Utilities Feasibility Study* (2009 Study), the Board approved a proposal from Farr West Engineering for a single-phase evaluation to identify a redundant water supply preferred project alternative from Martis Valley in September, 2013.

However, the District's Water & Sewer Committee and the Board of Directors directed staff to re-evaluate the conclusions of the 2009 Study and perform additional fatal-flaw analyses of local sources of water supply. In response, two conditional phases of analysis were added and the three-phase project was approved at the Board's October, 2013 meeting for \$225,000.

The *Redundant Water Supply / Preferred Alternative Evaluation* is composed of three phases and is scheduled for completion in December, 2015. The phases are:

1. Phase I: Water Supply Feasibility Summary and Gap Analysis
2. Phase II: Evaluation of Water Supply Source(s) from Phase I Gap Analyses
3. Phase III: Preferred Alternative Evaluation

Additional background is provided in the attached Board Reports from:

- February, 2014 – presentation of the DRAFT Phase I Technical Memo: *Water Supply Feasibility Summary and Gap Analysis*.
- October, 2013 – approval of revised three-phase scope of work and current contract with Farr West Engineering.
- September, 2013 – approval of funding contract with DWR and original single-phase scope of work, which was later cancelled and replaced with the revised scope noted above.

The DRAFT version of this Technical Memo was presented on February 25, 2014, and this FINAL version includes responses to comments from the public and the District's Board of Directors at the February, 2014 meeting.

Changes made to the DRAFT version to create the FINAL version are inclusion of new information from the:

1. Water Supply Assessment (WSA) for the *Village at Squaw Valley* Specific Plan,
2. Executive Summary from the recently published FINAL version of the *Olympic Valley Creek / Aquifer Interaction Study*, and
3. Additional information from the Silver Creek Ridge Well on the North Flank.

DISCUSSION: The ultimate goal of this three-phase evaluation is to identify a water supply source that is available if our primary source of supply is compromised and unusable. The redundant water supply sought is an emergency, back-up water supply for the public health and safety of the District's customers.

If the preferred alternative water supply source identified has capacity greater than our Redundant Water Supply Needs, then we intend to use the source to meet our Supplemental Water Supply Needs as well. See the definitions of the District's *Redundant Water Supply Needs* and its *Supplemental Water Supply Needs*, below.

The approach to evaluate water supply sources is to prioritize alternatives by considering feasibility, location, environmental impact, and cost.

In the end, we will identify a preferred alternative by ranking feasible alternatives using relevant criteria.

Satisfactory criteria for feasibility are that the supply source identified is able to meet our Redundant Water Supply Needs and be more resilient to existing threats to our current drinking water supply.

Threats considered include long-term drought and groundwater contamination.

Other criteria considered to assess feasibility include water quantity, water quality, required infrastructure, and the costs of operation and maintenance required of the preferred alternative.

The preferred location of the supply source is local to, or near, Squaw Valley. The reasons are straightforward: less cost, less infrastructure, less controversy and less opposition.

Considerations of the project's cost and its environmental impact are also straightforward: less of each is best.

Some of the questions asked during the evaluation of potential water supply sources are:

- Is there sufficient supply to meet our Redundant Water Supply Needs?
- Is there sufficient supply to meet our Supplemental Water Supply Needs?
- Is the supply source vulnerable to the same threats as our existing water supply source? Is it more resilient to impacts from long-term drought or contamination than our existing wells? Will the new source(s) produce water when our existing wells are affected by drought?
- How is the water quality? What are the treatment requirements?
- What is the cost to develop the supply source?
- What is the cost to operate & maintain the infrastructure required to produce, convey and store water from the supply source?
- What are the environmental impacts to develop the supply source?
- Are there regulatory or legal constraints?

Phase I of the evaluation is called *Water Supply Feasibility Summary and Gap Analysis*. It summarizes all known current and past studies prepared by the District and others evaluating alternative/additional water supplies in and near Squaw Valley and reports the purpose, findings, and conclusions of each. The first phase also:

- Evaluates the feasibility of developing an alternative water supply source in each of the six areas in the Squaw Creek watershed, based on the conclusions of these studies.
- Identifies any of these local areas that have been under-evaluated or under-investigated for further evaluation in Phase II – these areas are the “gaps”.
- Defines the District's *Redundant Water Supply Needs* as the quantity of water necessary to maintain indoor water use patterns for its customers.
- Defines the District's *Supplemental Water Supply Needs* as the difference

between maximum water supply and ultimate water demands projected at buildout of Placer County's 1983 *Squaw Valley General Plan & Land Use Ordinance*. Here, *maximum water supply* refers to the maximum amount of water that can sustainably be produced from the West Aquifer in addition to new water supply expected from the East Aquifer as part of the conditions of service for Phase II of the Resort at Squaw Creek.

The six areas in the Squaw Creek watershed evaluated in Phase I were:

1. West Aquifer
2. East Aquifer
3. North Fork Squaw Creek
4. South Fork Squaw Creek
5. North Flank
6. South Flank

The Phase I evaluation concludes that potential water supply in the West Aquifer and East Aquifer, in excess of the supply already anticipated to be developed, do not satisfy the project's goals and will not be evaluated further as feasible water supply source alternatives in either Phases II or III of this project. Further investigations in the West Aquifer and East Aquifer will not be pursued because, by definition, they do not provide *supply source redundancy*. It is expected that new wells in the aquifer will be impacted the same as our existing wells by long-term drought or contamination and won't provide the redundancy required. The potential sources would likely be temporary and not provide a long-term solution.

Moreover, for the East Aquifer, the Olympic Valley Creek / Aquifer Interaction Study advises that additional pumping from the East Aquifer will have a greater environmental impact on Squaw Creek and should not be considered for a long term water supply source.

The Phase I Technical Memorandum concludes that the areas (gaps) identified for further evaluation in Phase II are:

1. North Fork of Squaw Creek (Shirley Canyon)
2. South Fork of Squaw Creek (ski area)
3. North Flank of the valley (horizontal wells)
4. South Flank of the valley (horizontal wells)
5. Squaw Creek surface water retention (dam Squaw Creek, surface water storage)
6. Wastewater recycling / reuse
7. Alpine Springs County Water District

ALTERNATIVES: This item is informational but the conclusions of the attached Phase I Technical Memo provide direction to staff on how to proceed with identification of a source for redundant water supply. Although no formal action is requested of the Board of Directors, staff requests support and direction to proceed with the evaluation and identification of a redundant water supply based on the conclusions and findings of the attached memo.

FISCAL/RESOURCE IMPACTS: The Board authorized staff to enter into a Funding Agreement with the State of California's Department of Water Resources as part of the Local Groundwater Assistance Grant Program for \$225,000 to reimburse the District for the evaluation.

The DWR grant will reimburse expenses incurred by the District to perform the evaluation to a maximum of \$225,000. The contract with Farr West Engineering is estimated to cost the same. Internal expenses for staff to participate in the preparation of the evaluation and administer both the consultant and DWR grant contract have been budgeted for \$50,000 and are expected to be much less.

Currently, Farr West is on budget with 87% of the total authorized budget remaining to complete Phases II & III.

RECOMMENDATION: Staff requests the Board vote on the following motion:

The Board of Directors accepts and affirms the findings and conclusions of the Technical Memo for Phase I of the Redundant Water Supply / Preferred Alternative Evaluation: Water Supply Feasibility Summary and Gap Analysis and hereby directs staff to proceed with evaluations of water supply sources only in areas recommended in the Phase I Technical Memo.

- ATTACHMENTS:**
- Redundant Water Supply - Preferred Alternative Evaluation: Phase 1 Technical Memo - *Water Supply Feasibility Summary and Gap Analysis* – FINAL.
 - February 25, 2014 – Board Report – Phase 1 Technical Memo – DRAFT
 - October 29, 2013 – Board Report – Farr West Engineering Scope of Work (revised – three-phase)
 - September 24, 2013 – Board Report – Farr West Engineering Scope of Work (original – single-phase) and Funding Agreement with the State of California's Department of Water Resources as part of the Local Groundwater Assistance Grant Program under the Local Groundwater Management Assistance Act of 2000 for \$225,000

DATE PREPARED: November 15, 2014