

TANK FARM PROPOSED IMPROVEMENTS

Introduction

This letter provides the background and benefits of the proposed improvement project at San Jose Water Company's (SJWC) Tank Farm Station and justification for additional land purchase at that site. The current Tank Farm Station consists of a bolted steel tank located within an easement on Redwood Estates Services Association (RESA) property along Summit Road between Woolaroc Drive and Hutchison Road.

Project Background

Redwood Mutual Water Company (RMWC) constructed the existing 100,000 gallon bolted steel tank in 1998 to provide service to Mountain Charlie Waterworks (now Summit West Mutual Water Company), Ridge, and Stage Coach Mutual Water Companies. It is also our understanding that the original tank construction costs were funded by the Red Cross. In 2006, SJWC acquired the RMWC water system. The existing 100,000 gallon tank at Tank Farm Station was included in this transaction along with an easement of 1,032 square feet over RESA property.

RMWC recognized the need for additional water storage and prior to SJWC's acquisition was already developing plans to install additional tanks near Tank Farm Station along Summit Road. RMWC's intent was to increase the available storage capacity to 1,000,000 gallons by constructing a series of tanks and it was for this reason that RMWC referred to this site as Tank Farm.

The SJWC/RMWC purchase/sale agreement of the RMWC property and facilities that collectively were the water system included an "option to acquire an easement over not more than one acre of vacant land within the Tank Farm Parcel for installation of additional water storage tanks and related equipment, not to exceed one million gallons in storage capacity" subject to conditions including the requirement that the exercise of the option be completed within ten (10) years following the closing date of RMWC acquisition (Section 9.5 (b) of SJWC purchase agreement) and that the "purchase price for the easement shall be one dollar (\$1.00)". Due to the expiration of the easement option in 2016, SJWC was unable to exercise the option to purchase an easement at Tank Farm for one dollar.

In 2016, SJWC completed a master plan of the entire Mountain System service area, which includes Redwood Estates, and concluded that the additional storage originally planned by RWMC at the Tank Farm site was the best long-term solution to address deficiencies facing the service area. For this reason, SJWC has offered to purchase additional land at and adjacent to Tank Farm Station for the purpose of expanding and improving the existing infrastructure and thereby improving the quantity, quality, and reliability of water delivered to customers in Redwood Estates.



Past Improvements by SJWC for the Benefit of Redwood Estates

Since the 2006 acquisition, SJWC has continued to improve the service area in and around RESA to improve system reliability and redundancy. The following is a partial list of Improvements completed by SJWC since the acquisition:

- Replaced over 5,300-ft of buried pipe
- Installed a new 300 horsepower 2,500-gpm backup pump at 7-mile station to supply the RESA and surrounding mutuals when local surface water supplies are unavailable
- Constructed a 99,000 gallon glass fused bolted steel tank at Pavilion station
- Installed two 375-gpm pumps at Pavilion station
- Updated the Supervisory Control and Data Acquisition system across the system
- Refurbished existing booster pump equipment at all pump stations
- Installed standardized generator receptacles at all critical installation points
- Purchased two 135 kW backup generators for emergency response
- Replaced all residential water meters
- Installed a surge tank at Oakmont Station
- Performed electrical upgrades at Oakmont Station to allow for pumping all three booster pumps simultaneously

Proposed Future Improvements within Redwood Estates

Improvements at Tank Farm are part of a series of improvements to the water system to serve Redwood Estates. The goal of all improvements is to provide the following to all residents within Redwood Estates:

1. 40 to 125 psi service pressure to each residential service
2. Minimum fire flow of 1,000 gpm for 2 hours at 20 psi for all fire hydrants.
3. Reduce system vulnerability to seismic and other possible natural disaster events
4. Ensure all water quality and service regulatory requirements are met

Planned future improvements include:

1. Install two tanks and a pressure system at Tank Farm
2. Replace Beatrice Station Reservoir with a new tank
3. Replace Locust Station Reservoir with a new tank



4. Replace approximately 12,000 linear feet of pipelines within Redwood Estates.

Identification of an Area of Land for Acquisition by SJWC at Tank Farm

SJWC commissioned a topographic boundary survey for the Tank Farm site in 2017. This survey was used to determine an area at Tank Farm that would provide the necessary land for the construction of tanks and related infrastructure to afford water system improvements for SJW customers within and around Redwood Estates.

A preliminary site plan was prepared based on the topographic survey to identify future infrastructure improvements and identify an exact footprint for acquisition. An area of 38,935 square feet (0.893 acres) was determined to be sufficient for future improvements at Tank Farm. This area includes the existing SJWC easement area of 1,032 square feet. A map of the proposed acquisition area is available at the RESA offices.

SJWC Offer to Purchase Land from RESA

SJWC commissioned an appraisal by Valbridge Property Advisors, a national appraisal firm to appraise the value of land at Tank Farm Station. Valbridge appraised an area of 39,000 square feet at \$245,000 (\$272,222/acre) as of October 24, 2016. SJWC proposes to purchase the identified area of 38,935 square feet (.893 acres) based on the appraised per acre value.

The area of land being sought for acquisition is less than the maximum area included in the SJWC option to purchase an easement (1 acre or less) defined in the Purchase/Sales Agreement for acquisition of RMWC in 2006 (option purchase price of \$1.00).

Scope of Work for Improvements at Tank Farm

Pending the purchase of additional land, SJWC is planning to construct two new 350,000 gallon tanks (anticipated diameter: 56-ft, height: 30-ft, color: green), a new pressure system, generator, and disinfectant residual injection system at the site. The existing 100,000 gallon tank would remain in service. These improvements will allow SJWC to consolidate storage at Tank Farm and allow for the eventual retirement of two existing reservoirs: one on McLuckie Lane (known as Bayview Station, previously referred to as Reservoir #4 by RMWC) and the other near the intersection of Summit Road and Bayview Drive (known as Summit Station, previously referred to as Reservoir #5 by RMWC). The Tank Farm site will be fenced with a 6-foot tall fence with green slats similar to the existing SJWC fence around the Pavilion Station tank (adjacent to the fire station and the RESA Pavilion). The fence will be set back 20' from the front property line and about 30' from the edge of pavement along Summit Road. Fencing along the sides and rear of the site will be set along or inside the property line.



Schedule of Improvements at Tank Farm

Estimated construction start date: 2020

Estimated completion date: 2021

Benefits

These planned improvements at Tank Farm Station will benefit Redwood Estates customers in the following ways:

- **Increased Fire Flow:** Santa Clara County Fire Department (SCCFD) requires all future improvements in Redwood Estates be designed for 1,000-gallons per minute (gpm) fire flow capacity at 20-pounds per square inch (psi) for at least 2 hours. At present, all hydrants in the Redwood Estates service area are unable to meet this requirement. The Tank Farm project is one of several steps SJWC is taking to improve the existing fire flow conditions and meet SCCFD requirements. The new tanks and pressure system will allow for sufficient storage capacity and flow rates to meet this requirement where possible. Although the proposed tanks and pressure system installation at Tank Farm will provide the capacity to meet the minimum flow rates, the distribution pipes would need to be of adequate size to convey the flow to the fire hydrants throughout the system. For this reason, there are plans to replace certain pipes within Redwood Estates with larger pipes.
- **Increased Service Pressure:** Currently some customers along Irma Lyle Drive, Dorothy Way, and Bayview Drive and adjacent areas have static water pressure below 40-psi at the point of service (typically the meter). The construction of a pressure system in addition to the proposed tanks will allow for increased pressure to be delivered to customers in these areas and to ensure all customers along these streets have at least 40-psi static pressure.
- **System Reliability:** A new stationary standby diesel motor driven electrical generator will be installed as part of the improvements planned for Tank Farm to ensure that the station is capable of operating for an extended period of time during a loss of PG&E power. In addition, newly constructed facilities and water storage tanks will comply with current seismic and building code requirements, including flexible inlet/outlet piping and freeboard requirements, to improve reliability for continuation of potable and fire protection water in the event of an earthquake. The existing Bayview and Summit reservoirs (Reservoirs #4 and #5) have multiple seismic deficiencies and are prone to failure in an earthquake event.
- **Improved Water Quality:** The existing storage sites are not optimally configured and result in higher than desirable water age in Bayview reservoir (Reservoir #4) located



along McLuckie Lane. With increased water age comes the potential for water quality problems (i.e. low disinfectant residuals and formation of disinfectant by-products).¹ By consolidating storage at Tank Farm with mixing and disinfectant injection systems, water age will be significantly reduced, which will in turn improve water quality and allow SJWC to more reliably meet all state water quality requirements.

Retirement of Existing Stations:

The existing stations identified as Bayview and Summit reservoirs (Reservoirs #4 and #5), identified in the enclosed figure, will be completely retired after improvements at Tank Farm Station are complete. Costs related to retirement of these facilities are expected to be substantial for removal of all visible facilities, and any environmental remediation. Bayview and Summit Station are anticipated to be retired in 2023. After retirement, these parcels could then potentially be sold and developed in accordance with County Planning Department regulations. If RESA would like to purchase the parcels at Bayview and Summit reservoirs (Reservoirs #4 and #5), SJWC would be open to an offer based on an appraised value.

Questions & Answers

A variety of questions regarding the SJWC proposal were raised at the regular monthly RESA Board meeting held on April 19, 2017. Questions raised include the following:

1. How will the new tanks benefit Redwood Estates?

The new tanks will provide additional storage to meet fire flow demands, increase service pressure to some customers, and improve system reliability and quality of water. Approximately 23 customers will experience an increase in pressure.

2. How will fire flow be improved within Redwood Estates by the new infrastructure at Tank Farm?

Currently all fire hydrants in Redwood Estates (less than 50 hydrants total) flow at less than 1,000-gpm at 20-psi for 2 hours which is below the Santa Clara County Fire Department (County Fire) minimum fire flow standard. There are at least 6 hydrants within Redwood Estates that provide minimal flow and are deemed inadequate for use in fighting fires.

This project, in conjunction with other pipeline replacements within RESA, will ensure compliance with the fire flow rate and volume required by County Fire for all residents above the reservoir on Locust Drive (known as Locust reservoir, previously referred to as Reservoir #2 by RMWC). This will improve the fire flow protection to approximately 137 services/homes in the Redwood Estates area.

¹ USEPA, *Effects of Water Age on Distribution System Water Quality* (2002)



3. *Will new tanks improve pressure for Redwood Estates services?*

Yes, this project will ensure all Redwood Estate customers above Locust Drive will be provided with a static service pressure of 40-psi or greater at all times. Customers served from Locust reservoir (Reservoir # 2) will continue to receive service from existing storage facilities at the same service pressures they currently see today.

4. *Does the existing tank serve Redwood Estates and will the new tank serve Redwood Estates?*

The existing tank at Tank Farm was constructed by RMWC to serve Mountain Charlie Waterworks (now Summit West Mutual Water Company), Ridge, and Stagecoach Mutual water companies. In 2009, three homes along Summit Road were provided individual water services from Tank Farm; however, these homes are not part of Redwood Estates. Currently, there are no individual services within Redwood Estates served by Tank Farm.

SJWC plans to consolidate water storage at Tank Farm with new tanks and a pressure system, as originally envisioned by RMWC, principally to improve service in Redwood Estates. This new infrastructure will indirectly also benefit the existing water mutuals and the water customers outside of RESA currently served by Tank Farm in that the reliability will be improved. This is an unintended consequence of the improvements being performed for the benefit of our customers within RESA.

5. *Number of expected operator visits per day / per week. Time of visits?*

Site visits to Tank Farm will be similar to all other SJWC facilities currently serving Redwood Estates. SJWC standard practice is to have an operator or security staff visit each station once a day either for visual inspection or routine activities associate with equipment operation. Visits for response to alarm conditions or troubleshooting will be as necessary and will be similar to what is experienced today at the numerous sites serving the community. Most routine visits are typically made during normal working hours (0800 – 1700 hrs). Security personnel visit on a random schedule.

6. *What noise can be expected?*

Noise from Tank Farm improvements will be minimal. Noise from the pumping equipment will be mitigated by the building structures the units will be housed within. There will be a weekly 1-hour generator test, similar to other SJWC generators currently in service throughout Redwood Estates. SJWC generators are designed to ensure noise does reach above 55dB at the property line, in accordance with County Planning standards. As a comparison a vacuum cleaner operates around 70 dB at 10 feet.²

² California Department of Transportation, *Technical Noise Supplement* (Sept 2013)



7. *Will there be new water mains installed in Summit Road and surrounding areas (i.e. larger pipes) related to the tank installation?*

Yes, pending CPUC approval, SJWC plans to install a 12-inch pipeline through Redwood Estates in an effort to simplify the existing undersized and aging piping network. These new mains will ensure SJWC can provide adequate flow and pressure to meet County Fire flow requirements and customer demands.

SJWC is also planning a number of other system wide improvements in RESA and along Old Santa Cruz Highway to improve the quantity, quality, and reliability of the water system. These improvements include the following:

- Replacement of approximately 3,800 linear feet of 2-inch mains with an 8-inch ductile iron pipeline along Mountain View Court, La Verne Drive, June Court, and Locust Drive.
- Replacement of approximately 1,970 linear feet of 6-inch PVC mains with a 12-inch ductile iron pipeline along Broadway Road from Madrone Drive to Beatrice Circle. This will increase the capacity of the water main along this alignment to meet fire flow requirements and move water more efficiently into Locust reservoir (Reservoir #2).
- Replacement of approximately 6,400 linear feet of 8-inch mains with a 12-inch ductile iron pipeline along Old Santa Cruz Highway. The existing pipeline is a portion of the Montevina pipeline that crosses the San Andreas Fault without any seismic protection. The replacement pipeline will include specially engineered pipe joints to withstand large levels of ground deformation and significantly improve the reliability of the water system in Redwood Estates.

8. *Does the construction of a tank impact the future setbacks for future development on the adjacent parcel?*

It is unlikely that construction of new tanks as proposed by SJWC will impact other properties adjacent to it. However setback requirements are ultimately determined by the County Planning Department, not SJWC.

9. *How many residents are expected to receive higher pressure as a result of the proposed project?*

The parcels around Bayview and Summit would see pressure in excess of 40 psi following improvements. Approximately 23 customers will experience an increase in pressure.

10. *When Tank Farm is developed for additional tanks and Bayview Station and Summit Station are retired how will service be improved?*



Improvements at Tank Farm will benefit Summit Zone and Bayview Zone customers. Available fire flow for this entire area will increase and all of these customers will either be served by the new Tank Farm Tank or a Tank Farm Pressure System depending on their service elevation.

11. When Tank Farm is developed for additional tanks and Bayview Station and Summit Station are retired how will service to residences served by Bayview Station and Summit Station change?

Customers currently served by Summit and Bayview reservoirs (Reservoir #4 and #5) will continue to receive water from Tank Farm, either by gravity or through the new pressure system that will be also be serving water from Tank Farm.

12. When Tank Farm is developed for additional tanks and Bayview Station and Summit Station are retired what will happen to the Bayview Station and Summit Station properties.

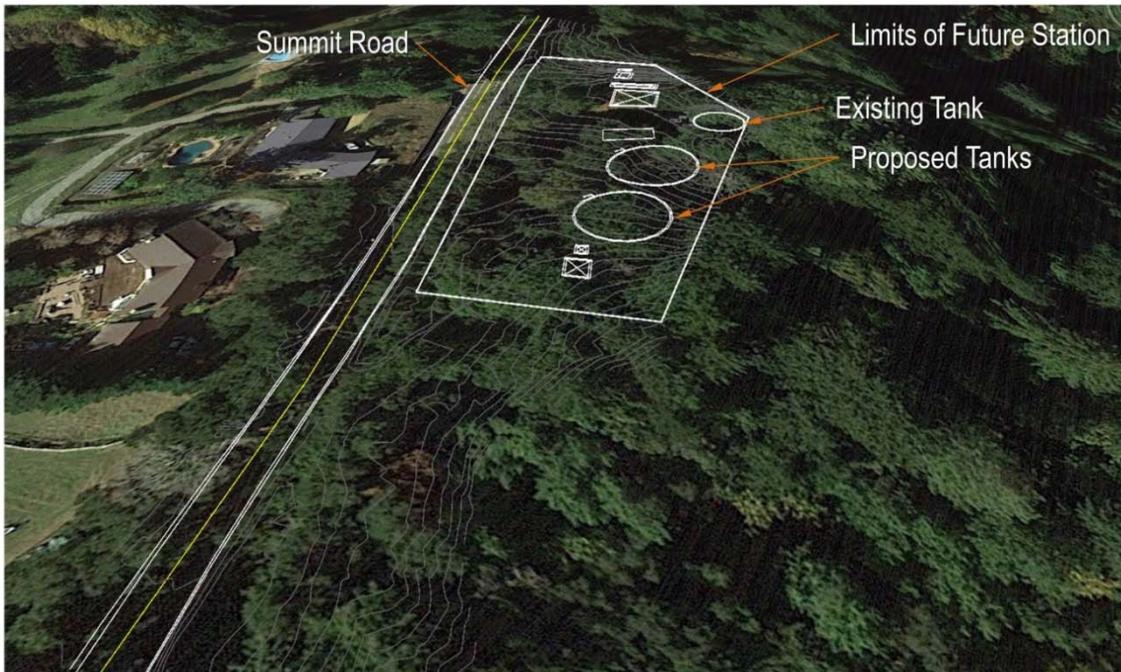
The SJWC Bayview Station and Summit Station properties (Reservoirs #4 and #5) were acquired by SJWC in fee title ownership with the acquisition of the Redwood Mutual Water Company assets. The facilities are planned to be retired and removed to prepare the property for sale. SJWC expects the retirement costs and remediation costs to exceed the value of the land after retirement. Sale of the land will be a way to recoup the significant retirement costs.

13. Following development of Tank Farm will the Tank Farm tanks serve residents below Locust Station?

The pressure zone boundary between Locust and Bayview zone is not expected to change at this time. A future project to address aging infrastructure at Beatrice and Locust reservoirs (Reservoir #1 and #2), fire flow deficiencies, and service pressures from these reservoirs is currently being evaluated by SJWC. However, there are no plans for improving this until 2022 at the earliest.

14. Can the tanks be moved further back away from the road?

Given the topography at the Tank Farm station, the proposed tank location cannot be moved any further back from the road. As illustrated in the Google Earth image on the following page, beyond the proposed limits of the new Tank Farm site the ground is very steep, making any tank installation infeasible.



Steep Slope along Edge of Proposed Tank Farm Improvements

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15. What effects will construction of Tanks have on Redwood Estates roads?

Construction access would most likely be via Summit Road.

16. Could San Jose Water Co. acquire the property via eminent domain and how would condemnation occur?

SJWC is a publicly regulated utility. Public utilities are endowed with powers of eminent domain and the ability to expropriate private property for public use with payment of fair compensation.

If an eminent domain action were pursued, SJWC would present an offer to acquire property based on an appraisal. If the offer is rejected, then the action would be taken to a court for a judge to decide the validity of the action and what is fair compensation.

17. How will my water bill be affected by the planned improvements

The costs associated with improvements to the water system are distributed equally to all customers within the SJWC service area regardless of customer location.