

ENGINEERING COMMITTEE
CALAVERAS COUNTY WATER DISTRICT
September 10, 2014

The Engineering Committee of CALAVERAS COUNTY WATER DISTRICT met at the CCWD offices in San Andreas, California, at 2:00 p.m.

The following Directors/Committee Members were present:

Jeff Davidson
Dennis Dooley

Also present:

| | |
|--------------------|--------------------------------------|
| Bill Perley | Director of Utility Services |
| Charles Palmer | District Engineer |
| Tami Bennett-Kirby | Administrative Technician II |
| Joel Metzger | Customer/Community Relations Manager |
| Dennis Mills | Board of Directors Candidate |
| Russ Thomas | Board of Directors Candidate |
| Glen (Bud) Andrew | Property Owner |
| Kevin Gause | Property Owner |

Interim General Manager Larry Diamond was not in attendance.

PUBLIC COMMENT: None

MINUTES: The Minutes of June 3, 2014 and July 1, 2014 were approved as presented by a motion by Director Dooley second by Director Davidson.

WATER & SEWER SERVICE / WATER METER AT VACANT LOT. Glen Andrew, property owner of 7927 Kirby Street in Valley Springs, APN #070-024-081, has requested that the District provide water service to his lot. However, CCWD records indicate that service was never established at that location. Mr. Andrew and Joel Metzger, CCWD Customer/Community Relations Manager, each presented background information regarding this issue.

Director Davidson and Bill Perley reviewed the comments and notations referenced on the copy of the 1973 Building Permit Application provided by Mr. Andrew, which stated the property on Kirby Street had been occupied for 1-1/2 years and also reflected a Final Inspection' date. Only a foundation existed when Mr. Andrew purchased the property; that existing foundation has since been removed by him. Back in 1973 there may not have been a District policy to begin receiving and paying for water service as exists presently. Although the District has no record of service ever being provided to the lot, Mr. Andrew feels that the previous meter (removed and recycled by CCWD)

could have been a "Rancho meter". Ultimately the committee concurred that the references on the permit application seemed to indicate service was once available to the lot. It was suggested by the committee to create a new District policy providing a deadline for those property owners who have vacant lots with meters, but are not yet paying for monthly service, to present to the full Board. Mr. Andrew's situation will then be brought to the Board; consulting with legal counsel if necessary. Mr. Andrew will be notified when this item is agendized.

WATER & SEWER SERVICE / TERMINATION OF WATER AND SEWER SERVICES TO VACANT LOT. Kevin Grouse, property owner of 1206 Sequoia Street in Arnold, a vacant lot adjacent to his home, APN 026-027-069, has requested that base water and sewer services be terminated. Services were established to this lot in 1987; current policy prohibits termination of service. After discussion Mr. Gause expressed his interest in being able to transfer his water/sewer capacity to another party who may be interested in purchasing for their own use. The committee expressed their intentions to have a Transfer policy within the next couple of months.

STATUS UPDATE OF CAPITAL RENOVATION AND REPLACEMENT (R&R) PROGRAM. Bill Perley provided a summarized status update of the R&R Program.

- EP / Mill Woods Wastewater Consolidation – Completed with installation of 3,000 gallon tank at the top of the hill.
- EP / Fly-In Acres Water System – Area 2 is almost completed with all meter installations; Area 1 should be completed within the next couple of days. All have been pressure-tested; District staff is coordinating with the plumbers in the area for connections to the system.
- EP / Reach 3A Water Transmission Line - Received the 90% plans; still require District Engineer review. District has submitted application to USDA who has agreed to fund \$1.25M. Project is expected to cost \$4M; USDA is also offering 3.25% / 40 year financing which can be repaid with no prepayment penalty. Would like to get this project under construction in Spring 2015.
- EP / Big Trees Redwood Tank Replacement ** -- Grant project; We have a consultant working on the design and we're working with the State Parks department to resolve their easement concerns. Project is on schedule, anticipating construction in late Spring 2015 or earlier if plans can be completed before the end of 2014.
- CC / Lift Station #22 Replacement ** -- Currently out to bid; bid opening is scheduled for September 23, 2014.
- CC / Waste Discharge Permit -- Still working on the Permits. Pipeline is already in the ground; planning on purchasing a pump which will allow us to feed raw water directly to the wetlands and keep the recycled water out. The District is attempting to get a General Irrigation Permit like the one at Jenny Lind. Will also use pump to apply to the sprayfield eliminating the need for chlorination.
- All Areas / Tank Management Plan – We have a Tank Management Plan which is underway with HDR; primarily dealing with our steel tanks that are

experiencing some corrosion issues. The steel tanks require inspections, cleanings, and re-coatings as necessary.

OTHER BUSINESS:

- Ebbetts Pass / Blagen Mill Pond Restoration – Received permit from California Fish & Game department to do work on the Mill Pond; presently working on Aquatic Life study. Sediment control is a possibility to prevent carryover to White Pines.
- West Point / Wilseyville Wastewater Consolidation Study – 100% Grant funded; currently involved in the environmental process. Most of the engineering is complete. Charles Palmer has been to the site multiple times with the archeologist and the wetlands consultant. Should be wrapped up by the end of the year.
- CCWD Standards / Capacity Charge Update / Passive Purge System ** -- Bill Perley indicated he should be getting in the reports any day for Jenny Lind and Copper Cove

FUTURE AGENDA ITEMS: None

SETTING OF NEXT MEETING: TBA

There being no further business, the meeting adjourned at approximately 3:15 p.m.

Respectfully submitted,

Tami Bennett-Kirby
Administrative Technician II

CCWD Renovation & Replacement Projects

(List as recommended by Bill Perley)

WATER PROJECTS

FY 14-15

Reach 3A Construction

Reach 1 Design

FY 15-16

Reach 1 Construction

Mill Pond Dredging Construction

JL A-B Transmission Design

FY 16-17

Larkspur Tank Construction

CC Clearwell Construction

WASTEWATER PROJECTS

FY 14-15

Upper Cross Country construction

Poker Flats 8,12,13 bypass design

CC Reclaim Pump station construction

FY 15-16

Poker Flats 8,12,13 bypass construction

Arnold Clarifier design

CALAVERAS COUNTY WATER DISTRICT
ESTIMATED COSTS FOR CAPITAL RENOVATION AND REPLACEMENT PROJECTS
(Engineering Committee Meeting February 11th, 2015)

| <u>WASTEWATER PROJECTS</u> | <u>ESTIMATED PROJECT COST</u> | <u>EXPECTED GRANT FUNDS</u> | <u>REQUIRED R&R FUNDS</u> |
|---|-----------------------------------|---------------------------------|-----------------------------------|
| Copper Cove | \$ 1,700,000 | \$ - | \$ 1,700,000 |
| Copper Cove | \$ 400,000 | \$ - | \$ 400,000 |
| Arnold Sewer | \$ 600,000 | \$ - | \$ 600,000 |
| West Point | \$ 4,750,000 | \$ 4,750,000 | \$ - |
| Poker Flat | \$ 1,425,000 | \$ - | \$ 1,425,000 |
| Arnold Sewer | \$ 875,000 | \$ - | \$ 875,000 |
| Copper Cove | \$ 300,000 | \$ - | \$ 300,000 |
| Subtotal | \$ 10,050,000 | \$ 4,750,000 | \$ 5,300,000 |
| <u>WATER PROJECTS</u> | | | |
| Big Trees | \$ 1,250,000 | \$ 870,000 | \$ 380,000 |
| Ebbetts Pass | \$ 5,000,000 | \$ 1,300,000 | \$ 3,700,000 |
| Ebbetts Pass | \$ 1,000,000 | \$ - | \$ 1,000,000 |
| Ebbetts Pass | \$ 5,000,000 | \$ - | \$ 5,000,000 |
| West Point | \$ 1,000,000 | \$ - | \$ 1,000,000 |
| Sheep Ranch | \$ 500,000 | \$ - | \$ 500,000 |
| Jenny Lind | \$ 4,000,000 | \$ - | \$ 4,000,000 |
| Ebbetts Pass | \$ 1,250,000 | \$ - | \$ 1,250,000 |
| Subtotal | \$ 19,000,000 | \$ 2,170,000 | \$ 16,830,000 |
| <u>TANK RENOVATION/REPAIR/PAINTING</u> | | | |
| All Areas | \$ 150,000 | \$ - | \$ 150,000 |
| Jenny Lind | \$ 50,000 | \$ - | \$ 50,000 |
| Ebbetts Pass | \$ 750,000 | \$ - | \$ 750,000 |
| Wallace | \$ 300,000 | \$ - | \$ 300,000 |
| Hunters | \$ 450,000 | \$ - | \$ 450,000 |
| Copper Cove | \$ 250,000 | \$ - | \$ 250,000 |
| Copper Cove | \$ 250,000 | \$ - | \$ 250,000 |
| Forest Meadows | \$ 250,000 | \$ - | \$ 250,000 |
| Sheep Ranch | \$ 250,000 | \$ - | \$ 250,000 |
| Wallace | \$ 200,000 | \$ - | \$ 200,000 |
| Subtotal | \$ 2,900,000 | \$ - | \$ 2,900,000 |

CALAVERAS COUNTY WATER DISTRICT
DESCRIPTION OF CAPITAL RENOVATION AND REPLACEMENT PROJECTS

(Engineering Committee Meeting February 11th, 2015)

WASTEWATER PROJECTS

Copper Cove Lift Station #22

The existing Copper Cove Lift Station #22, constructed in 1974 and in continuous operation for the past 40-years, is at the end of its life cycle. CCWD identified replacement of this lift station in its capital improvement plan as necessary to update the facility to current standards, assure reliability, safety and safeguard against sewer spills. The plans were originally prepared in 2008, and the District retained the design firm NV5 to update the plans in July 2014. The project was advertised and put out for public bid starting on August 7, 2014 and a bid opening was held on September 23, 2014. CCWD received seven bids with Myers & Sons being the lowest responsive and responsible bidder in an amount of \$1,112,000. Myers & Sons was awarded a construction contract by the Board on October 8, 2014, is purchasing equipment and materials and will be mobilizing to the site to start construction by April 2015.

Copper Cove Reclamation Plant

The District has conflicting WDRs and NPDES permit requirements that put the facility in violation. The District has worked directly with technical staff at the Regional Board to solve the problem and came up with a very workable solution. The Regional Board issued two Time Schedule Order (TSO's) that allow the District to temporarily continue to operate its treatment facility. Before the TSO's expire in 2016, the District plans to eliminate the NPDES permit. Since the NPDES permit is far more stringent and only required to discharge tertiary effluent to Saddle Creek's wetlands, the District plans to supply the wetlands with raw water instead of treated effluent and eliminate the NPDES permit. The District has already purchase and will install a vertical turbine pump at the tertiary plant to supply raw water to the wetlands. The NPDES permit will be rescinded by the Regional Board, and the District will obtain new WDRs and coverage under a general irrigation order for the golf course.

Avery Lift Station

The Avery Main Lift Station is located near Avery Middle School on the corner of Moran Rd and Segale Rd. The existing vertical turbine pumps are not typically used for sewer service and plug/cause on-going maintenance problems. The project will replace existing vertical turbine pumps with a two stage booster pump system. The booster pumps are designed for solids handling consisting of two sewer pumps operated in series to achieve a high head/lift condition. The electrical system will be upgraded with all new motor controls.

West Point Wilseyville Consolidation

The West Point and Wilseyville sewer treatment facilities are operated under waste discharge requirements (WDRs) last issued by the Central Valley RWQCB in 1993 and 1998, respectively. The District will be required to update its WDRs in the future and correct facility deficiencies. The District secured a \$200,000 planning grant on April 30, 2013 to evaluate alternatives, define a preferred project, and submit a financial assistance application for construction/implementation. The preferred project will consolidate treatment facilities by transferring sewage from Wilseyville to the West Point plant via a lift station and force main. Also, the project will add SCADA systems, a sludge drying facility and, if mandated by the Regional Board to do so, install synthetic liners in the effluent storage ponds. On December 17, 2014, the Board approved reimbursement and authorizing resolutions for the District to apply to the CWSRF, Small Community Grants program for a \$4,750,000 principal forgiveness loan for construction/implementation of the project.

Poker Flat Lift Station 8, 12 & 13 Bypass

The project will mitigate risk of a line break discharging raw sewage into Lake Tulloch. Currently, sewer flows from Poker Flat LS#8 to LS#12 via a 6" PVC force main crossing through Lake Tulloch. From LS#12 the sewer is pumped to LS#13 and then pumped a third time to reach Connors Main Lift Station. The existing force main in Lake Tulloch poses a significant risk of a potential line break and spill. The project will abandon the existing force main and construct a new force main (approximately 4,300 feet) to bypass around the lake and tie directly into Connors Main Lift Station. The existing LS#8 will be upgraded to handle the longer force main length and general rehabilitation including new pumps, PG&E service upgrade, new electrical control panel and wetwell overhaul/replacement.

Arnold Sewer / Secondary Clarifier

Originally constructed around 1985 (30 years), the existing clarifier has a 26-ft diameter and relatively shallow depth of only 10-ft. Its performance is very poor and washout of solids occurs during peak wet weather flows. The mechanical equipment and weirs are in poor/deteriorating condition. The project consists of construction of a new secondary clarifier (estimated 36-ft diameter) including associated pumps, yard piping, control valves, excavation and site work. Also, the existing electrical system is at full capacity will require upgrades.

Poker Flat Lift Station 15&18 Electrical Upgrades

Existing lift station "dry cans" contain sewer pumps, motors and electrical panels located underground in a deep confined space that requires continuous air monitoring during personnel entry. Also, the old electrical panels have not been evaluated for each flash hazard. For both LS#15 and LS#18, the plan is to remove the old electrical panels from the "dry cans" and install new electrical panels above ground to allow easier access for maintenance and improve safety for staff.

WATER PROJECTS

Big Trees South Zone Redwood Tanks

The project consists of replacing the Redwood tanks BT#60K and BT#1 with 150,000 gallon and 80,000 gallon steel tanks, respectively, and constructing 750 feet of new 8-inch diameter water line. The new 150,000-gallon tank and water line will be located on easements within State Park property; the water line will be located along an existing fire road and replaces an existing tank fill/draw line. The existing Redwood tanks are planned to be demolished. In addition, the project includes construction and/or replacement of two (2) pressure regulating stations. The project is in the Hazard Mitigation Plan and being partially funded by a FEMA/Cal-OES grant.

Ebbetts Pass Reach 3A Water Transmission Line

The project consists of replacing 19,000 feet of 12-inch diameter water transmission line and replacing numerous pressure reducing stations. The Reach 3A water line is located in Arnold starting near Lakemont Drive, follows Hwy 4 in front of the Meadowmont Shopping Center and continuing along the edge of the golf course to Pine Drive, then transitions to Oak Circle, Sequoia Street, Fir Street to the intersection of Dunbar Rd and Hwy 4. The water line follows Blagen Rd to White Pines and then traverses uphill cross country through SPI property to a water storage tank. The pipeline originally installed in 1965, consists of ¼-inch wall steel pipe with a thin cement mortar lining and operates at pressures in excess of 250-psig. The pipeline is corroded and at the end of its useful life (50 years). Failures are frequently occurring and threatened to damage public/private property and cause area wide service interruptions.

Ebbetts Pass Reach 1 Water Transmission Line

Reach 1 starts at the water plant at Hunter Dam Rd and continues along State Route 4 in a westerly direction through Hathaway Pine, Red Apple Ranch to Forest Meadows and terminating approximately 6,000-feet downhill from the main entrance of Forest Meadows. Installed in 1965, the existing 8-inch diameter steel cylinder pipe is being replaced due to its high operating pressure, age, poor condition and frequency of recent failures and repairs. Field staff has observed that many failures are the result of corroded pipe ends/joints. The project consists of construction of 24,000 feet of new 10-inch ductile iron transmission line and replacement of ten (10) pressure reducing stations.

West Point Backup Water Filter

The District's water treatment plants in Jenny Lind, Hunters and Copper Cove have multiple filters, but the West Point Water Treatment Plant has only one (1) filter. Water code requires treatment system redundancy. In the event of a significant maintenance problem with the filter, the District has no backup means of supplying treated water to the community. This occurred in 2013 when a valve actuator that controls the water level in the filter failed to operate properly. The District proposes to purchase a backup filter system consisting of a trailer mounted, prepackage membrane filtration unit.

Sheep Ranch Water Treatment Plant

The current Sheep Ranch treatment system was installed in 1980 and consists of a small dual media pressure filter (a cylindrical vessel 4-ft in diameter and 5-ft in depth) permitted for a maximum flow of 30-gal/min. While the existing filter has remained in service for the past 35 years, this treatment technology is now obsolete and due to be replaced to ensure the District can continue to provide safe water for the community. The remote location of this facility means that the treatment equipment must operate reliably, require limited operator attention and have very few if no maintenance problems. The District is proposing to purchase a small skid mounted membrane treatment unit to replace the existing pressure filter.

Jenny Lind A-B Transmission Line

During a heat wave in July 2006, the Tank A pump station was not able to sustain customer water demands and keep Tank B full; consequently, Tank B completely drained causing an area wide service interruption for 900 homes. The problem was a combination of issues: a prolonged heat wave that triggered record water use, electrical surges disabled control panels, and pipeline bottlenecks that limit water pumped to Tank B. In response, CCWD implemented several mitigation measures that reduced water demands on Tank B by 275,000-gpd. However, the existing 1970's era 8-inch Tank A-B transmission line was not replaced because of the high capital costs and remains a bottleneck. The project consists of replacing 20,000 feet of existing 8-inch diameter water main with a larger size to improve transmission from Tank A to Tank B.

Ebbetts Pass Techite Line Replacement

The 14-inch diameter Techite line is 8,000 feet and located on Meko Drive. It serves as a transmission and distribution line. From the Big Trees #4 and #5 tank site, water is pumped via the Techite line to Big Trees Tank #8 near Meko Drive and Hwy 4. Techite was a thin walled fiberglass composite pipe material manufactured by Amoco Reinforced Plastics Co. from 1973 to 1980. This pipe was later found to be a defective material. The Techite line on Meko Drive had catastrophic leaks in the past and, as early as 1988, CCWD planned to replace it. The project will replace the Techite line with 8,000-ft of new 8-inch C900 PVC or ductile iron pipe. Since this line is located on Meko Drive at the end of the Ebbetts Pass water system, the Techite line servers fewer customers and is not as high a priority as other projects, such as Reach 3A, Reach 1 and the A-B transmission line, which impact significantly more customers.

Tank Projects (Renovation/Repair/Painting)

The District owns and operates thirty five (35) water storage tanks including two (2) elevated tanks. The tanks consist of different materials of construction including Redwood, welded steel and glass coated bolted steel. The welded steel storage tanks are in submerged conditions and in many cases the air space inside the tank above the water level is permeated with chlorine causing the roof rafters, columns and welded connections to rust/corrode. The primary method of preventing steel corrosion is epoxy paint; in addition, cathodic protection can be used as secondary means of limiting steel corrosion. In general, preventative maintenance is more cost effective than deferring maintenance until structural repairs and/or complete replacement become necessary. Steel repairs, sand blasting and painting can be very costly; a relatively small 165,000 gallon tank at the Jenny Lind water plant cost \$190,000 to replace the roof and re-paint interior and exterior. Also, the logistics of removing a tank from service for repairs and painting can be complex as service to our customers cannot simply be shutoff to perform this work and, in many cases, temporary tanks will be used to maintain service.

The District is required by the State to maintain its tanks in good condition and clean and inspect all its water storage tanks at least once every 5-years, which is done on a rotational basis with approximately five (5) tanks being cleaned and inspected annually. Based on our inspections, it is known that several welded steel tanks owned by the District have steel corrosion and are in need of maintenance with the next 3-years, as tabulated below.

List of Tanks Recommended for Repair/Painting

| <u>Location</u> | <u>Diameter</u> | <u>Height</u> | <u>Capacity</u> |
|-------------------------------------|-----------------|---------------|-------------------|
| Jenny Lind Water Plant Clearwell #2 | 52' | 12' | 190,000 gallons |
| Ebbetts Pass Sawmill Tank | 120' | 36' | 3,000,000 gallons |
| Wallace Elevated Tank | - | - | 224,000 gallons |
| Hunters Water Plant Clearwell | 90' | 21' | 1,000,000 gallons |
| Copper Cove Tank B | 65' | 32' | 750,000 gallons |
| Copper Cove Water Plant Clearwell | 70' | 12' | 250,000 gallons |
| Forest Meadows Larkspur Lane | 30' | 30' | 150,000 gallons |
| Sheep Ranch Water Plant Clearwell | 30' | 15' | 75,000 gallons |
| Wallace Ground Level Tank | - | - | 60,000-gallons |

Also, the District has twelve (12) Trident Water Filters of welded steel construction that required periodic overhaul/rehabilitation. In 2006, two (2) filters at the Jenny Lind Water Plant were gutted, sandblasted, painted and completely rebuilt. Many of the filters have cathodic protection that is due to be replaced; the cathodes are \$7,000 each.