Calaveras Public Utility District

District Presentation

Mokelumne Hill Townhall

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March 16, 2023

Calaveras PUD Challenges

District Challenges:

- District is spread over large geographical area with only 2,000 service connections.
  - More infrastructure per service connection than a typical water utility
- Most of District Infrastructure built pre-1971 (50+ years old)
- Because of the age of infrastructure, we spend a lot of time and effort responding to reactive maintenance and have difficulty with preventative maintenance.
  - Being reactive can contributes to higher water loss (Feb 2023 produced 16 million gallons and sold 11 million gallons)
  - Lack of Preventative Maintenance can lead to downtime of revenue generating equipment such as hydro-generators and water meters that have slowed with age.
  - Reactive Maintenance includes but not limited to:
    - Service line leaks, main leaks, hydro station electrical components wearing out, fixing road washouts.
  - Preventative Maintenance includes but not limited to:
    - Main replacement, Service Line Replacement, Water Meter Replacement, Pressure Reducing valve maintenance and replacement of diaphragms on a routine schedule.
    - Preventative Maintenance usually is a program. (Main Replacement Program, Meter Replacement Program, etc…) (these programs will be developed in a 5-year CIP and 20-year AMP

How is CPUD addressing these challenges?

District Challenges:

- District is spread over large geographical area with only 2,000 service connections.
  - District cannot solve our geographical issues; however, District is working on grant packages with the State Revolving Fund to improve the current infrastructure as to require less staff time due to less emergency response associated with newer infrastructure.
- Most of District Infrastructure built pre-1971 (50+ years old)
  - District has applications in with the State Revolving Fund to improve and replace District Infrastructure that is past its useful lifespan. Current Distribution Projects identified in a Water Feasibility Study is nearly $40 million in Distribution System Projects which we expect to be 100% funded for approved projects.
- Because of the age of infrastructure, we spend a lot of time and effort responding to reactive maintenance and have difficulty with preventative maintenance.
  - District is currently in progress with a new Water Master Plan that will help the District develop a 5-year Capital Improvement Program and included in the scope of work is a 20-year Asset Management Program. These programs will serve as a foundation on how the District manages its facilities moving forward. Water Master plan is funded through the State Revolving Fund.

Debt Service Ratio

Debt Service Ratio: ($2 Million Loan)

- What is it?
  - When an agency issues debt, the agency has an obligation to maintain a Debt Service Ratio greater than what is in the loan documents. (Contractual Obligation)
  - Current Debt Service Ratio is 1.20
- How is Debt Service Ratio calculated?
  - Total Revenue is subtracted by Total Operational Expenses

    $2.632m – $2.587m = Net Income of $45,000 (FY 21-22)
  - Net Revenue is then divided by yearly Debt Payment

    $45,000/(Yearly Debt Payment of $132,964) = 0.34 Debt Service Ratio

**Not maintaining an adequate Debt Reserve Ratio can cause loan default and limit the ability for the District to obtain funding for future projects.*

**Fiscal Year 2021-2022 was used in this slide; rate study uses fiscal year 2022-2023*

District Capital Expenditures

Recent Capital Projects.

- Sunset Water Main Replacement (San Andreas) (Complete)
- Court Street Water Main Installation (San Andreas) (Complete)
- New SCADA Installation and Integration (Jeff Davis WTP) (Complete)
- Clearwell Tank Project (Pending)
  - New 500,000 Gallon Baffled Tank (For Disinfection Credits)
  - New 24” Ductile Water main from Filter Effluent to Clearwell and from Clearwell to Effluent Distribution Water Meter
  - New Filter Effluent Water Meter and Distribution Water Meter
  - New Plant Effluent Control Valve
  - New Electrical MCC (Electric components at JD WTP all up to date)
  - New PLC at Railroad Flat Pump Station.
- Main Office Improvements (Almost Complete)
  - Remodeled Board/Training Room
  - Enclosed in the Superintendent’s Office
  - Replaced District Furniture and Carpet
- Business Server Replacement (Complete)
- New Billing Software to Replace old billing software that was outdated and will soon be versioned out. (non-support) (Complete)
- Water Meter Reading Software (Pending)
  - Software that will scale up from direct read to radio read at a future date.

Capital Outlay (Approved January 2022, Amended and carried forward for FY 22-23)

Capital Outlay ($4.1 Million) 18-Month Budget

- Water Treatment Plant Improvements (Clearwell Tank Project)
  - $3.5 Million (expected to finish project near budget)
- Equipment and Vehicles
  - $165,000 (Actual Expenditure was $156k)
- Software
  - $51,102 (expected below $50K)
- Building Improvements
  - $79,000 (Budget amended 9/22 as actual was $80k)
- Water Distribution Improvements
  - $300,000 (Expected to receive grants on Distribution Improvement)
- For Fiscal Year 22-23 added an Equipment Lease to Replace District's 1994 Backhoe (Yearly lease expected to be $36k)

*Expected actual expenditure to be near $3.9m

Dam Expenses (Regulatory)

Regulatory Expenses: Expected Future 5-year total $750,000

- California Division Safety of Dams (5-year expected $325,000)
  - Current Yearly Permit is $65,000 (Combined for all 3 dams)
- Emergency Action Plans (EAP) (5-year expected $100,000)
  - Must be updated annually and republished every 5 years
  - Each EAP is independent in cost and range from $15,000 to $65,000 for each, every 5 years, and the District must maintain 3 EAPs.
- Inundation Maps (5-year expected $100,000)
  - Must be included as part of an EAP, the more impact downstream the more calculations go into modeling the impact.
  - Each Inundation map can cost from $15,000 to $75,000 with our 3 dams, depends on the distance of flood downstream and the degree of hazard.
- Part 12D Inspection (5-year expected $100,000+)
  - Required every 5 years, detailed inspection of dam with potential failure modes. Most Recent Cost was $65,000 in 2022. (New Part12D requirements in 2023 will make this inspection more intensive and will be north of $100k in 2027)
- Dam Safety Engineer (5-year expected $125,000)
  - District required to have a Dam Safety Engineer on staff or retainer.
  - Typcial cost per year is up to $15,000 for reporting, inspections, and for staff guidance when staff observes anything unusual at the dams.

Middle Fork Dam Project Facilities

View of Middle Fork Dam

Dam Expenses (Capital)

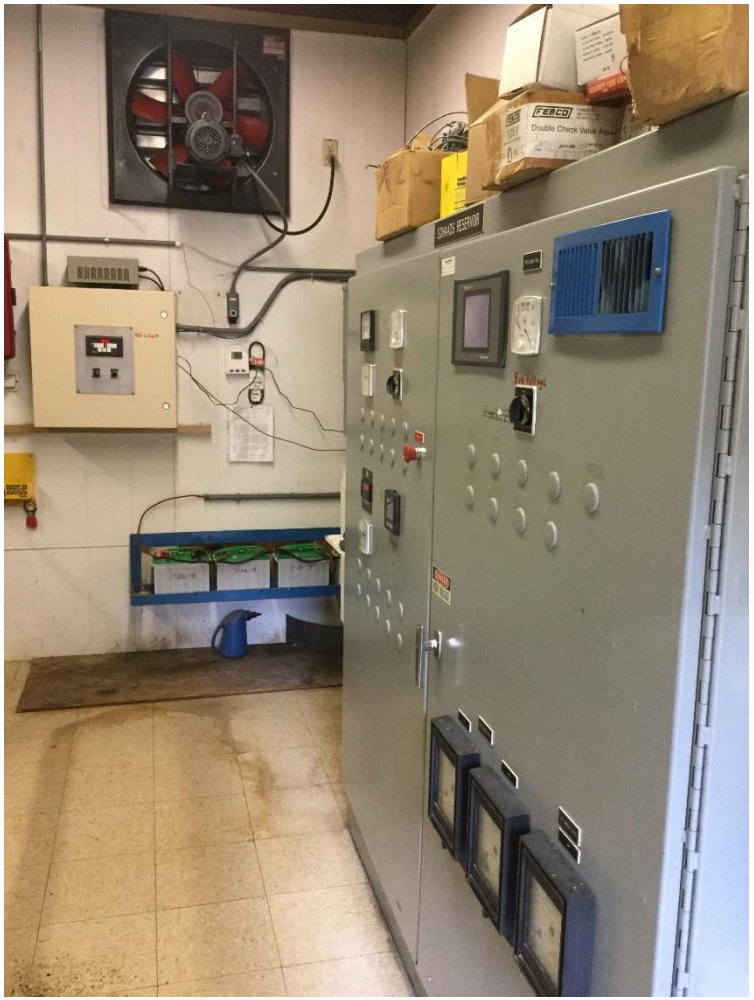
Capital Expenses: Expected 5-year total $380,000

- Middle Fork Spillway
  - Due to age and condition FERC/CA-DSOD may require replacement or rehab
  - Potential Maximum Flood Analysis (PFMA) – Spillway must accommodate the PFMA
  - Engineering Estimate on new spillway ($2.0 million)
- Middle Fork Penstock
  - Condition Assessment Report by 2024
  - Replacement of Penstock (Estimate $225,000)
- Middle Fork Powerhouse
  - Electric upgrades (Estimate $155,000)
- Jeff Davis Reservoir and Redhawk Dam
  - Nothing Planned for Capital Projects

Spillway and Log Boom

Powerhouse and 27” Penstock at Middle Fork Dam

Inside the Powerhouse



South Fork Pump Station

Project Facilities:

5-year Electrical total ($1.35m) at current electric rate.

- 2 – 400hp pumps
  - Maximum flow with both pumps on 3400 gpm
- Pumps against 700 feet of head to feed water into Jeff Davis Reservoir
- Electric rates for pumping have climbed 81.4% due to rising distribution rates with PGE and higher wholesale rates with CPPA.
  - July 1, 2021, rate $0.09 Kw/hr ($148,877/yr)
  - January 2023 rate $0.1633 Kw/hr ($270,128/yr)
- Site needs Electrical Upgrades, Diversion structure repairs, and SCADA telemetry. Est: $385,000 Capital

South Fork Pump Station

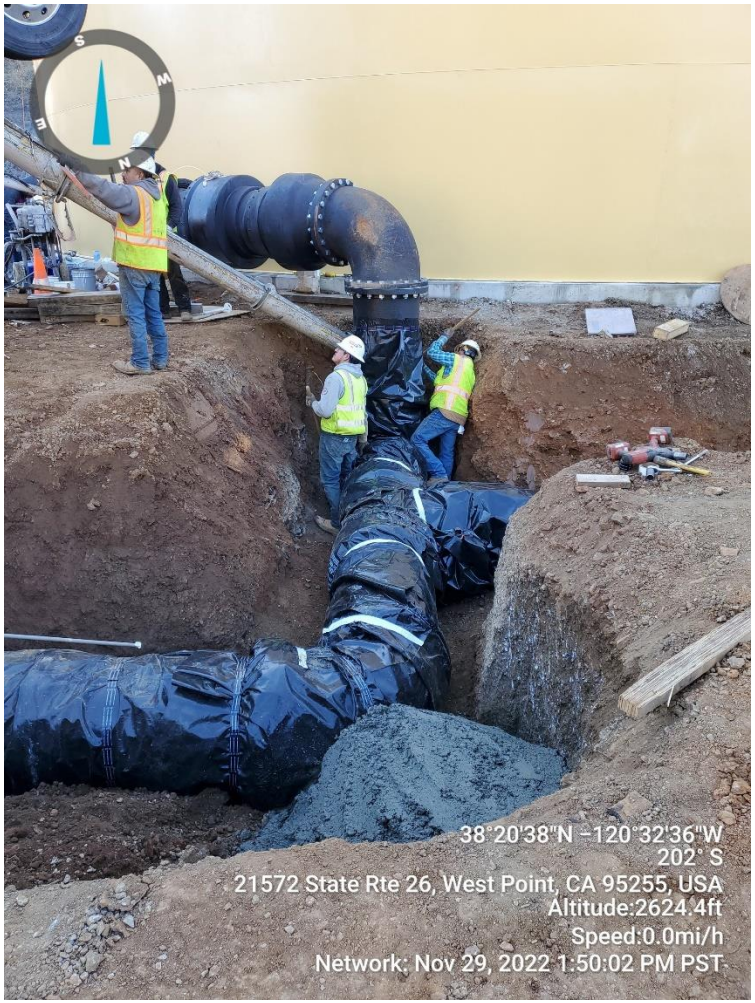
Jeff Davis WTP Improvements

Clearwell Tank Project:

- New 500,000 Clearwell
  - Resilient Supply of water for fire protection
  - Replaces old 50+ year old Clearwell Tank
    - Old Tank lacked baffling for Disinfection credits
    - Old Tank was failing with major metal loss on the tank floor
    - Roof beams are collapsing and engineers unsure how long until total tank failure
- Replaced from just downstream of the filters to the tanks and downstream of the new tank to the new distribution meter
- Replaced the filtered water meter
- Replaced the control valve for plant flow control
- Installed new flow meter to measure water leaving the tanks
- Installed new electric control center
- Installed process control equipment to measure water quality
- Installed booster control logic for automating the control of the railroad flat booster pumps
- Installed new facility drainage to nearly eliminate the threat of future site flooding
- Old clearwell tank being evaluated with SRF planning grant for rehab, rebuild, or complete teardown.

Clearwell Tank Project (Slide 1)

Clearwell Tank Project (Slide 2)



Clearwell Tank Project (Slide 3)

Clearwell Tank Project (Slide 4)

Clearwell Tank Project (Slide 5)

Clearwell Tank Project (Slide 6)

Thank you, comments or questions?

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w/photo credits to CPUD staff and WGA