

FORESTHILL PUBLIC UTILITY DISTRICT

WATER SYSTEM IMPROVEMENT REPORT UPDATE (6/13/15)

PROGRAM: SUGAR PINE DAM & RESERVOIR

Purchase Price by Foresthill Public Utility District Purchase: \$3.2M

Sugar Pine Dam and Reservoir is a valuable resource to the Community of Foresthill. The purchase from the Federal Bureau of Reclamation was dedicated to the Community on November 8, 2003.

BLM Construction Costs Information: The Federal Bureau of Land Management (BLM) paid \$27.9M for construction of the Sugar Pine Dam and 40-acre-foot Reservoir (1982) as a component of the Auburn-Folsom South Unit. Includes constructing Reservoir Recreational Facilities (1982) for \$2.4M; installing eight miles of Sugar Pine Pipeline consisting of 24” to 27” size ductile iron (1982) for \$8.99M and 10.1 miles of Foresthill Pipeline consisting of asbestos cement (1981); the Foresthill 40-acre Regulating Reservoir (1975) for \$356,700; and the Foresthill Water Treatment Building (1982) for \$1.04M.

STUDY #1: RADIAL GATES

LIFE EXPECTANCY: 50 YEARS	PRIORITY I	ESTIMATED COSTS: \$5M
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This is a priority. This activity is “shovel ready”. The Bureau of Reclamation District intended to install Radial Gates at the Dam when it was built in 1982. The Governor’s “California Water Action Plan” proposes increasing water storage capacity in its reservoirs in response to statewide drought conditions. This study proposes installing Radial Gates at the Dam to increase the water storage capacity of Sugar Pine Reservoir. Radial Gates would secure the water demands of the Foresthill Community. It would improve the potential for future water transfer sales and increase Repair and Replacement funding for future infrastructure needs.

Funding Goal: Completion of the Radial Gates depends upon funding/grant opportunities becoming available. The District applied (in FYE 2015) for a PCWA grant to use toward the cost of environmental studies.

UPDATE: ECORP, Inc. is contracted (in FYE 2015) for **\$325,000** to complete the required documentation for the Sugar Pine water rights permit extension. Their report will also address Radial Gates. Lidar Mapping of Sugar Pine was completed in FYE 2015. The detailed information will aid the Radial Gates and Water Rights Extension studies. The District saved money by joining the Lidar mapping flight with Nevada Irrigation District’s mapping.

STUDY #2: ROOF & REPAIRS AT SUGAR PINE BUILDING

LIFE EXPECTANCY: 30 YEARS	PHASE III	ESTIMATED COSTS: \$80,000
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The Building at Sugar Pine Dam/Reservoir contains sensitive monitoring equipment vital to safe and reliable operations. Equipment must be protected. **Funding Goal:** Build reserves. Completion depends upon adequate funding being available.

UPDATE: Activity in progress. District staff recently painted the Sugar Pine Building roof overhang and steam cleaned the exterior walls. The \$80,000 estimate covers roofing materials and installation recommended for completion in FYE 2017.

STUDY #3: SAFETY BUOY

LIFE EXPECTANCY: 10 YEARS	PHASE I	ESTIMATED COSTS: \$20,000
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This is a priority. Safety Buoy lines provide a barrier for protecting the public. The California State Division of Safety of Dams (DSOD) has recommended replacing the existing Safety Buoy line.

Funding Goal: District authorized up to **\$20,000** to replace Safety Buoy in FYE 2015.

UPDATE: Activity in progress. General Manager is obtaining estimates.

STUDY #4: SPALLING AT SPILLWAY REPAIRS

LIFE EXPECTANCY: 20 YEARS	ACTION DUE 19 Years	COST: \$89,337
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UPDATE: Repairs completed FYE 2014 for **\$89,337**. **Funding Goal:** Build reserves for next overhaul.

STUDY #5: BRUSH CLEARING

LIFE EXPECTANCY: Annual Clearing	PRIORITY: Continuous	ESTIMATED COSTS: \$45,000
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This is a priority. Annually brushy overgrowth hampers access to water system facilities and pipelines. It is important to do regular maintenance for safety inspections and handling customer service needs. Clearing also improves access by fire-fighting equipment for fire suppression activities.

Funding Goal: Budget for \$10,000 annually.

UPDATE: Activity in progress. Regular brush clearing maintenance is being completed by District staff "in house. Foresthill Fire District has cleared brushy areas along a major pipeline in FYE 2014 at no cost to the District. Denser overgrowth may still require hiring brush clearing professional services.

PROGRAM: REGULATORY EXPENSES

STUDY #6: PIEZOMETERS

LIFE EXPECTANCY: 40 YEARS	PHASE III	ESTIMATED COSTS: \$300,000
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Data is collected, reported and regulatory fees are paid associated with the Sugar Pine Dam operation. Replacing the aging Piezometers reduces regulatory expenses and preserves vital instrumentation data regarding pressure head elevation for Sugar Pine Dam. In 2014 the District re-established the Piezometers' maintenance plan. They are exhibiting signs of aging and some units should be replaced beginning in FYE 2017.

Funding Goal: Completion in FYE 2017 depends upon adequate funding being available.

STUDY #7: SCADA INSTRUMENTATION—PROCESS CONTROL AUTOMATION

LIFE EXPECTANCY: 5 YEARS	PHASE V	ESTIMATED COSTS: \$150,000
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The District should upgrade its instrumentation equipment to improve efficiency and streamline operations. This will enable staff to access information quickly and identify problems for responding 24/7. The present monitoring equipment is ten to thirty years old and obsolete. For example: the task of backwashing the water filter vessels is a “manual operation” requiring constant monitoring by a “certified operator”. Recommend hiring a consultant to recommend an efficient SCADA system integrating with the District’s computer network. It should offer remote sensing and access systems from any location.

Funding Goal: Build reserves. Completion in FYE 2019 depends upon adequate funding being available. The \$150,000 estimate includes the cost of an initial study by a consultant and conservative SCADA System upgrades as they become available.

STUDY #8: WATER RIGHTS EXTENSION

LIFE EXPECTANCY: 50 YEARS	PHASE I	ESTIMATED COSTS: \$325,000
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This is a priority. Permit Identification Number 015375 was issued on April 27, 1967 to the U.S. Bureau of Reclamation (reference: Application Number 21945, filed October 22, 1964). This permit authorizes the District’s operation, storage and delivery of water through the Sugar Pine Dam and Reservoir. On February 13, 2001, a petition was filed with the State Water Resources Control Board (SWRCB) for an extension of time to develop the project and apply the water to the proposed use. On April 20, 2001 the extension of time was issued.

Ten years later, on December 31, 2011, the extension of time expired. On December 26, 2011 the Foresthill PUD filed a second petition to extend time for completing construction of the project and putting the project’s yield to a beneficial use. It is anticipated that the SWRCB will require extensive environmental documentation prior to granting the request for an extension.

Funding Goal: ECORP, Inc. was contracted in FYE 2015 to complete this activity which addresses installing Radial Gates at the Dam (See Study #1) and their services is included in the \$325,000 contract amount.

UPDATE: Activity in progress.

STUDY #9: SANITARY SURVEYS: MILL CREEK, SHIRTTAIL CREEK, FORBES CREEK

LIFE EXPECTANCY: 5 YEARS	PHASE II	ESTIMATED COSTS: *\$25,000
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This is a priority. On April 22, 2014, the CDPH inspected the Foresthill PUD. Every five years the California Department of Public Health (CDPH) requires public water systems to complete Sanitary Surveys identifying potential problems in a water system for the purpose of protecting public health. The estimated cost of \$25,000 covers the Regulatory Expense. It does not include any repairs or costs of changing system operations. CDPH sets a strict timeline for correcting any violations that may be identified.

Funding Goal: Build reserves. Completion in FYE 2016 depends upon adequate funding being available.

STUDY #10: UPDATE MASTER PLAN

LIFE EXPECTANCY: 10 YEARS	ACTION DUE FYE 2020	ESTIMATED COSTS: \$50,000
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Updating the Water System Master Plan may be considered in the future.
Funding Goal: Build reserves. Completion depends upon adequate funding being available.

PROGRAM: TREATMENT PLANT

STUDY #11: FILTER REHAB (2 existing filters)

LIFE EXPECTANCY: 20 YEARS	ACTION DUE 19 Years	ESTIMATED COSTS: \$289,835
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UPDATE: Completed overhaul of two existing Filters in FYE 2014 for \$289,835.
Funding Goal: Build reserves and prepare for next overhaul due in 19 years.

STUDY #12: WATER FILTER TANKS (2 new filters)

LIFE EXPECTANCY: 30 YEARS	ACTION DUE 30 Years	ESTIMATED COSTS: \$2M
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The Water Treatment Plant has a capacity of generating three (3) million gallons of water per day. Each of the existing two (2) filters have a capacity of 1.5 million gallons. During high-peak/Summer water usage, the demand for filtered water is upward of 2.5 million gallons. That means if one of the water filter tanks fail, there may not be enough water to serve the Community's needs.
Funding Goal: Build reserves. Completion depends upon adequate funding being available.

STUDY #13: AUXILIARY GENERATORS (PLANT & BOOSTER PUMP STATIONS)

LIFE EXPECTANCY: 15 YEARS	PHASE IV	ESTIMATED COSTS: \$130,000
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Auxiliary Generators provide emergency backup power for the operations of the Water Treatment Plant and Pumping Plant functions if there is a power outage. The current auxiliary generators are 36 years old. If they fail, the entire Community could be without treated water. Recommend repairing or replacing the auxiliary generators in FYE 2019.
Funding Goal: Build reserves. Completion depends upon adequate funding being available.

STUDY #14: WATER STORAGE TANK (new)

LIFE EXPECTANCY: 50 YEARS

PRIORITY: I

ESTIMATED COSTS: \$2M

This is a priority. Adding a new 1 million gallon Water Storage Tank would ensure a reliable supply of stored water year around—important during the drought and fire suppression activities. After 46 years of service, all three (3) steel-bolted Water Storage Tanks are showing signs of wear. They have a storage capacity of 450,000 gallons each. These tanks were built in 1968 and purchased as surplus from the U.S. Navy. Steel-bolted tanks are temporary structures often used during wartime not generally intended for long-term use. The three (3) existing water storage tanks combined capacity is 1.2 million gallons which may be inadequate during peak periods. The stress on the existing Water Storage Tanks is evident by visible “elephant footing” and leaking. These tanks cannot be repaired and should be replaced soon.

Funding Goal: Financing from District’s water transfer sale in FYE 2015 and CIP Repair & Replacement Fund. The \$2M estimate includes a new tank and regulatory expenses. It does not include a land purchase should the District’s exiting property be found unsuitable.

UPDATE: Activity in progress. Brustad, Inc. is contracted for **\$75,000** in FYE 2015 to design and prepare site study for a new water storage tank.

STUDY #15: SECURITY SURVEILLANCE STUDY

LIFE EXPECTANCY: 5 YEARS

PHASE II

ESTIMATED COSTS: \$25,000

This is a priority. Providing adequate security and protection is a concern to avoid unlawful intrusions and water contamination unique to the water industry. In addition, National and State officials impose stringent requirements on water districts. The District should hire a consultant to review the current security system.

Funding Goal: The estimated costs for this activity are \$25,000. In FYE 2014 the District received a **\$5,000 grant** from Placer County Water Agency (PCWA). Completion in FYE 2016 depends upon additional funding being available.

UPDATE: Activity in progress. District will hire consultant for security system review.

STUDY #16: PUMP STATION CONTROLLER

LIFE EXPECTANCY: 10 YEARS

PHASE V

ESTIMATED COSTS: \$5,000

The Pump Station Controller is the primary interface with the automated pump station and the distribution system operator. This electronic device is critical to the proper operation of the upper pressure zone distribution system. The Controller allows the operator to check, evaluate and change system settings.

Funding Goal: Build reserves to replace Pump Station Controller in FYE 2019. Completion depends upon adequate funding being available.

UPDATE: In FYE 2014, the Pump Station Controller was replaced.

STUDY #17: REPAIR TREATMENT PLANT BUILDING

LIFE EXPECTANCY: 30 YEARS	PHASE IV	ESTIMATED COSTS: \$40,000
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The Treatment Plant building exterior is showing signs of wear and needs repairs.

Funding Goal: Build reserves. Completion depends upon adequate funding being available.

PROGRAM: TRANSMISSION & DISTRIBUTION

STUDY #18: GIS (LOCATE VALVES)

LIFE EXPECTANCY: 10 YEARS	PHASE V	ESTIMATED COSTS: \$100,000
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Leaking infrastructure results in a loss of District resources during the drought. Many assets of the FPUD consist of pipes, valves, fire hydrants, water meters, and other control devices—all connections are buried and hidden from view. The Public suffers when water service shutoffs occur and/or roadways are blocked. To efficiently remedy this problem, Field Staff must locate the problem and respond quickly. Currently, this cumbersome task is accomplished by consulting a wall map in the FPUD Shop and/or searching Plat Maps. This process is further complicated by mud flows and standing water, difficult terrain, bad weather, roadways paved over water lines, and broken or distorted location wires. The GIS/GPS Location System would improve customer services and provide GPS location and identification, mapping and a GIS database. The initial high cost would be offset by more efficient operations system-wide.

Funding Goal: Completion in FYE 2019 depends upon adequate funding being available.

STUDY #19: STEEL PIPE—TREATMENT PLANT TO TOWN (18,135 linear ft.)

LIFE EXPECTANCY: 50 YEARS	PHASE III	ESTIMATED COSTS: \$4M
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This is a priority. Much of the District’s pipeline between the Treatment Plant and Town is 50 years old and should prepare for replacing pipelines in future.

Funding Goal: Begin building reserves annually in FYE 2017. Completion will be expensive and depends upon adequate funding being available.

STUDY #20: REMAINING PIPES (DISTRIBUTION LINES OFF TRANSMISSION)

LIFE EXPECTANCY: 50 YEARS	PHASE IV	ESTIMATED COSTS: \$12M
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This is a priority. The District’s Distribution lines range in age from 25-50 years. It should prepare for replacing pipelines in future.

Funding Goal: Begin building reserves annually in FYE 2018. Completion will be expensive and depends upon adequate funding being available.

STUDY #21: ITRON RECEIVER/HANDHELDS

LIFE EXPECTANCY: 10 YEARS	Action Due: 9 years	ESTIMATED COSTS: \$15,000
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UPDATE: In FYE 2014, the Itron Receiver/Handhelds were purchased for \$15,000.
Funding Goal: Build reserves to replace units that wear out.

STUDY #22: PRESSURE RELIEF STATIONS

LIFE EXPECTANCY: 40 YEARS	PHASE III	ESTIMATED COSTS: \$20,000
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This is a priority. Pressure Reducing Stations control the force of water flowing throughout the District’s water delivery system. Rebuilding the Pressure Reducing Stations will improve function, protect the Distribution System and improve employee access to the stations.
Funding Goal: Build reserves. Completion depends upon adequate funding being available.

PROGRAM: ADMINISTRATION

STUDY #23: COMPUTERS—SOFTWARE, HARDWARE, WEBSITE

LIFE EXPECTANCY: 5 YEARS	Continuous Upgrades	ESTIMATED COSTS: \$18,500
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This is a priority. Information Technology (IT) Systems and software ensure the efficient operation of the District. Over time, these systems can become obsolete and should be routinely upgraded and/or replaced. The District will use a conservative and practical approach in doing this. Staff training will be necessary on new systems.
 Subjects for study: handheld devices such as tablets or smartphones, voice applications, scanning and indexing of District’s records into document management system, upgrading old PCs as needed, integration of data into future GIS/GPS Location System. Ensure secure access of data, physical premises and equipment. The estimated annual costs of \$4,000 do not reflect the costs of replacing all obsolete equipment.
Funding Goal: Build reserves to upgrade, repair or replace equipment as needed. Completion depends upon adequate funding being available.
UPDATE: Activity in process. Three obsolete computers replaced for \$2,500. Information Technology (IT) Systems of FPUD were upgraded in FYEs 2014 and 2015. The software is now standardized and a secure VPN Intranet has been established between District building sites. The District’s Website and Email System are reliable.

STUDY #24: FURNITURE/EQUIPMENT

LIFE EXPECTANCY: 15 YEARS	PHASE IV	ESTIMATED COSTS: \$5,000
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The District’s furniture and equipment depreciates over time from wear and tear and it will become necessary to replace these items. Many items were salvaged from Placer County at no cost.

Funding Goal: Build reserves. Completion in FYE 2018 depends upon adequate funding being available.

STUDY #25: ARCHIVE DISTRICT RECORDS

LIFE EXPECTANCY: 10 YEARS	PHASE IV	ESTIMATED COSTS: \$10,000
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This is a priority. Many historical records of the District are 60 years or older and must be preserved. For example: Some maps are “one of a kind” and unreplaceable. Hiring a service to scan these documents and make duplicate records would provide better security should original documents be lost or damaged.

Funding Goal: Build reserves. Completion in FYE 2018 depends upon adequate funding being available.

STUDY #26: REPAIR/RENOVATE OFFICE

LIFE EXPECTANCY: 50 YEARS	PHASE III	ESTIMATED COSTS: \$100,000+
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District Office has structural issues which should be inspected/repared. Existing work areas/storage are cramped with difficult access.

Funding Goal: Build reserves. Completion depends upon adequate funding being available.

UPDATE: Activity in progress. Board-appointed “ad hoc” Committee is reviewing options.

PROGRAM: EQUIPMENT/VEHICLES

Reliable Equipment and Rolling Stock are essential to the operations of a public water system.

STUDY #27: REPLACE SEVEN (7) VEHICLES IN FLEET

LIFE EXPECTANCY: 10 YEARS	PRIORITY: III	ESTIMATED COSTS: \$350,000
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Currently, the District possesses seven (7) vehicles in its Fleet--five (5) Pickup Trucks, One (1) Leak Truck and One (1) Dump Truck. Regular maintenance extends the useful life of equipment. However, normal wear and tear will require replacing older equipment.

Funding Goal: Build reserves. Spread out purchasing of replacement equipment and vehicles over next five fiscal years. Completion depends upon adequate funding being available.

STUDY #28: EMERGENCY RESPONSE UNIT & INVENTORY

LIFE EXPECTANCY: 10 YEARS	Continuous	ESTIMATED COSTS: \$20,000
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This is a priority. The District would benefit from an enclosed Mobile Emergency Response Unit/Emergency Inventory--a trailer containing an inventory of all the necessary equipment for use in responding to emergencies. Currently, the District's repair parts and inventory stock are stored in various locations. Centralizing the emergency equipment/inventory into one mobile unit would improve response time which equates to better customer service.

Funding Goal: Completion in FYE 2016 depends upon adequate funding being available.

STUDY #29: REPLACE BACKHOE

LIFE EXPECTANCY: 20 YEARS	PHASE II	ESTIMATED COSTS: \$120,000
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The District's Backhoe is used regularly for heavy-duty operations. It is old and unsafe. It should be replaced soon.

Funding Goal: Replacement in FYE 2016 depends upon adequate funding being available.

STUDY #30: FLATBED, EXCAVATOR & TRAILER

LIFE EXPECTANCY: 15 YEARS	PHASE I	ESTIMATED COSTS: \$150,000
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The District proposes purchasing a 1-TN Flatbed Truck with Dump Bed, Mini-Excavator and Trailer. This versatile equipment is commonly used in the water industry for the smaller jobs and would improve customer service. It is nimble and can be used throughout the public water system for making most emergency repairs, non-emergency maintenance and installations. It would save the cost of hiring a licensed "Class A" driver for hauling equipment and materials to most work sites. The Mini-Excavator which does not require a "Class A" driver.

Funding Goal: Purchase in FYE 2015 or FYE 2016 will depend upon adequate funding being available.

UPDATE: Activity in Progress. General Manager obtaining estimates to recommend purchase of equipment.

STUDY #31: FORKLIFT—RENTAL

LIFE EXPECTANCY: Annual Rental	Continuous	ESTIMATED COSTS: \$25,000
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This is a priority. The District currently uses a Forklift at the Treatment Plant to deliver and stock polymer product used in water treatment process. Recommend continuing renting a Forklift.

Funding Goal: Build reserves annually of \$5,000.