# 2022
## CAPITAL IMPROVEMENT PROGRAM
## SIX-MONTH PROJECT STATUS UPDATE

ENGINEERING DEPARTMENT
and
HYDROELECTRIC DEPARTMENT

- Overview Of The CIP Process for 2022
  - Project Review Committee
  - Prioritization Scoring of Selected Projects
- Status of Projects Included in the 2022 CIP Budget
  - Engineering
  - Hydroelectric

# Projects Included in the 2022 CIP Water Budget

| Project # | Project | 2022 Budget Amount* | 2022 Expenditures |
|---|---|---|---|
| 2322 | David Way Pump Station* | $ 262,990.00 | $ 127,896.24 |
| 2568 | Lake Wildwood Treatment Plant | $ 350,000.00 | $ - |
| 7032 | Hemphill Diversion Structure | $ 4,025,000.00 | $ 336,046.95 |
| 2603 | Banner Tank Isolation Valves | $ 60,000.00 | $ - |
| 2504 | Main Office Ramp Repairs | $ 80,000.00 | $ 2,411.17 |
| 6962 | Christian Life way Pipeline | $ 500,000.00 | $ - |
| 2602 | DS Canal Shotgun Culverts | $ 80,000.00 | $ - |
| 2182 | North Day Road Pipeline | $ 80,000.00 | $ 850.00 |
| 2373 | Pet Hill Extension | $ 120,000.00 | $ - |
| 2550 | Sugarloaf Reservoir | $ 200,000.00 | $ - |
| 2604 | Alta Hill Reservoir | $ 150,000.00 | $ 25,740.59 |
| 2624 | Squirrel Creek Siphon | $ 800,000.00 | $ 2,580.00 |
| 6971 | Alta Sierra Tank Site* | $ 1,552,161.86 | $ 215,472.68 |
| | Total 2022 Project Budget* | $ 8,260,151.86 | |
| | Total Expenditures 2022 | | $ 710,997.63 |

*** Includes budget amendments pending Board approval at an upcoming Board of Directors meeting.**

# David Way Pump Station

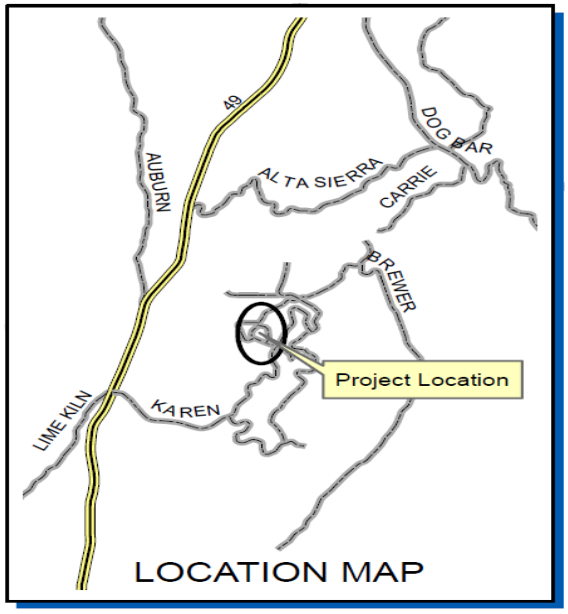
**Project No. 2322**

**Purpose:** The David Way Pump Station, built in 1969, is badly deteriorated, has exceeded its life expectancy, lacks fire flow capabilities and a back-up pump.

**Solution:** The Project includes installation of a new pre-manufactured pump station with separate pumps for domestic demand and fire flow, with two pumps to provide redundancy to the domestic demands.

**Current Project Status:** Pump station is ready for delivery once the new generator is received. The prefabricated station and generator will be delivered the first half of December 2022. Maintenance will hire a crane company to offload the station and connect it to the existing foundation and piping. PG&E will relocate their existing power to the site during the installation period.

**Budget:** The 2022 budget for this Project was $75,000. An amendment to $252,990 to cover encumbered expenses from 2021 is pending Board approval.



# Lake Wildwood Treatment Plant Upgrades

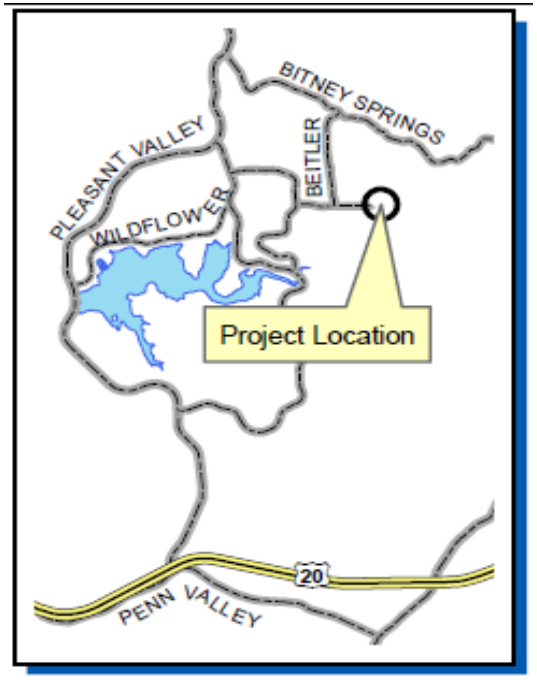
**Project No. 2568**

**Purpose:** The Lake Wildwood Treatment Plant's pumps need to be replaced. Both pumps are not available if one clear well is out of service.

**Solution:** The Project includes upgrades to replace the backwash pumps and install a common pump header system with valves. New under drains, splitter box, shotcrete berms and ramp will also be installed.

**Current Status:** The Project is on hold pending resolution of the E. George to Lake Wildwood BEP Project. Economic and operational analysis of BEP system and Plant reconstruction and operation has been developed for the purpose of selecting a preferred alternative.

**Budget:** The 2022 budget for this Project is $350,000.



# Hemphill Diversion Fish Passage Project

**Project No. 7032**

**Purpose:** The Hemphill Diversion Structure is an impediment to the passage of migrating fish that spawn in Auburn Ravine. The impediment needs to be eliminated while maintaining water deliveries to customers served by this canal.

**Solution:** The Project includes removal of the diversion structure, site stabilization, and construction of a nature-like, roughen rock ramp in-stream fish passage, installation of a fish screen, and improvements to a portion of the Hemphill canal. The EIR was adopted, and the project approved by the Board on July 28, 2021.

**Current Status:** LSA Permit has been issued. Awaiting the 401 and 404 Permits. Received Certificate of Inclusion from PCCP. Construction is anticipated July 2022 through November 2023 – Contract awarded to Westcon Construction for $2,546,684. Environmental construction support contract to be issued. Awarded a Wildlife Conservation Board, Prop. 68, cost sharing grant (40 WCB/60 NID).

**Budget:** The 2022 budget for this Project is $4,025,000.

# Banner Tank Isolation Valves

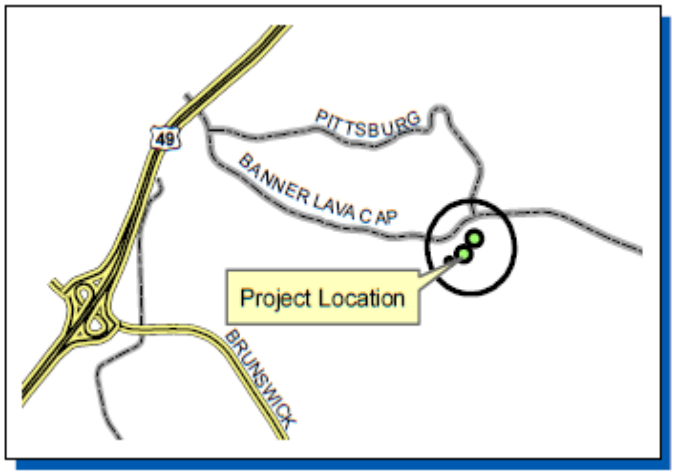
**Project No. 2603**

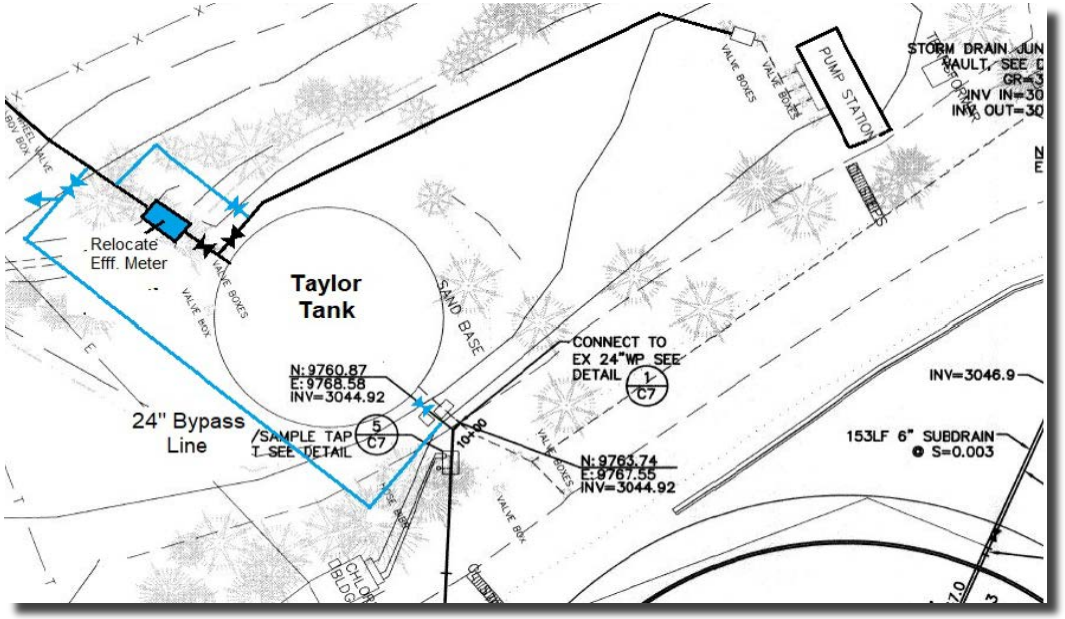
**Purpose:** The Taylor tank cannot be isolated for longer than 24-48 hours for maintenance and repairs as there is no isolation valve to keep the Banner Taylor pumps in water. Additionally, there is no influent isolation valve to Taylor Tank and cannot get chlorine contact time when using the old bypass pipe.

**Solution:** The Project includes installation of new isolation valves and a bypass line. The bypass line will be 24-inch pipe and valves.

**Current Project Status:** Project is currently on hold pending Operation's investigation of Taylor tank. Project Scope for isolation valves may vary from "no project", to a complete 30" bypass of Taylor tank, to a new 30" manifold on Boreham lane.

**Budget:** The 2022 budget for this Project is $60,000.



# Main Office Ramp Repair

**Project No. 2504**

**Purpose:** The existing ramp to the Administration offices is failing and requires extensive reconstruction.

**Solution:** The Project will replace the existing ramp and bring it up to current design standards.

**Current Project Status:** Morrison Structures is revising the plans for ADA requirements. New ADA parking has been designed and forwarded to maintenance for review. ADA and fire code analysis performed and incorporated into new title sheet per City of Grass Valley review comments. Second plan check submittal to City of Grass Valley is anticipated the second week in July 2022.

**Budget:** The 2022 budget for this Project is $80,000

# Christian Life Way

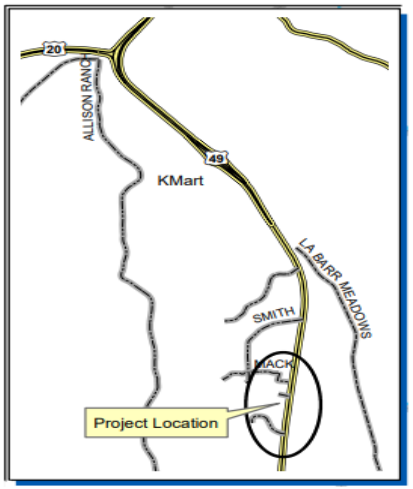
## Project No. 6962

**Purpose:** The existing pipeline at Christian Life Way is undersized, has reached the end of its useful life, it is difficult to access, the existing right of way is inadequate and requires new route for accessibility.

**Solution:** The Project will replace approximately 1500 LF of 4-inch pipe with 8-inch pipe from N. Mack Road to Durden Court.

**Current Project Status:** Existing pipeline along SR49 will be impacted by Caltrans Highway 49 widening project. Coordination with Caltrans is ongoing as Caltrans refines their ROW impacts and acquisition needs. Several NID customers along SR49 will be affected. Maintenance would like the existing pipe along SR49 moved to a dirt road behind Bethel Church, which will require easements on three parcels. Opportunities may exist to partner with Caltrans to exchange easements and move NID facilities away from the state ROW. The Smith Road PRV station will also need to be moved to La Bar Meadows Road and the existing SR49 pipeline crossing at Smith Road will need to be extended to the east to accommodate the widening into the highway cut slope.

**Budget:** The 2022 budget for this Project is $500,000.



# DS Canal Shotgun Culverts

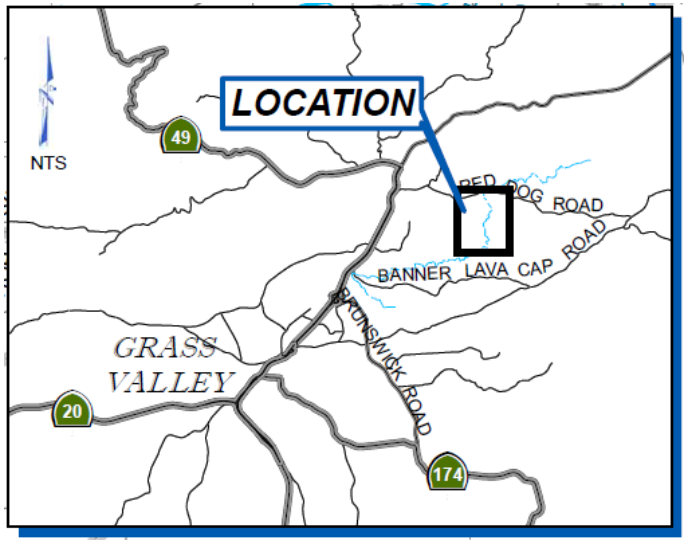
**Project No. 2602**

**Purpose:** The DS Canal Shotgun Culverts are deteriorated and in need of replacement. When the South Yuba Canal goes down during the water season, meeting demand for high flows during summertime raw water sales and treatment plant flows becomes an issue.

**Solution:** The Project will replace the existing shotgun culverts at Banner Mountain Trail with a single concrete box culvert or arch pipe.

**Current Project Status:** Field survey is complete and NID easement and County RW are being established. Preliminary engineering has started with possible alignment options dependent on the easement width and desired skew of the box culvert. Downstream berm protection is needed to stop ongoing scour that has removed approximately 2' of the berm. A trash rack will also be investigated as part of the project. Anticipate order for a precast box culvert in 2022 with installation by contractor in fall of 2022. An encroachment permit from Nevada County will be required.

**Budget:** The 2022 budget for this Project is $80,000.



# North Day Road Pipeline

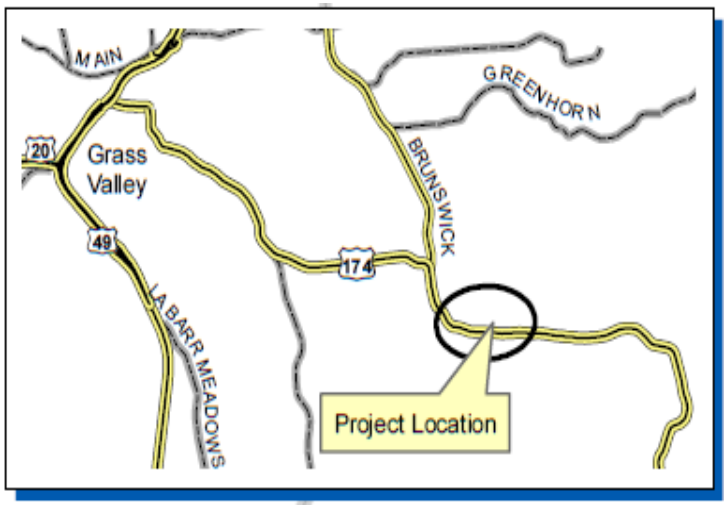
## Project No. 2182

**Purpose:** The North Day Road Pipeline has exceeded its life expectancy and is badly deteriorated. The pipeline currently runs inside of private property lines and against large trees. The mainline has been broken by tree roots, and from property owners working on their property.

**Solution:** The Project will replace approximately 3,790 LF of A.C. Pipeline within existing roadway.

**Current Project Status:** Appraiser has been contracted to determine amount of just compensation for the easements needed on twelve properties. Offer packages for the required easements will be presented to property owners in the next few months. Plan is to obtain all easements by the end of 2022. Design/Construction plans are 95% complete. Construction to start in 2023.

**Budget:** The 2022 budget for this Project is $80,000.



# Pet Hill Extension

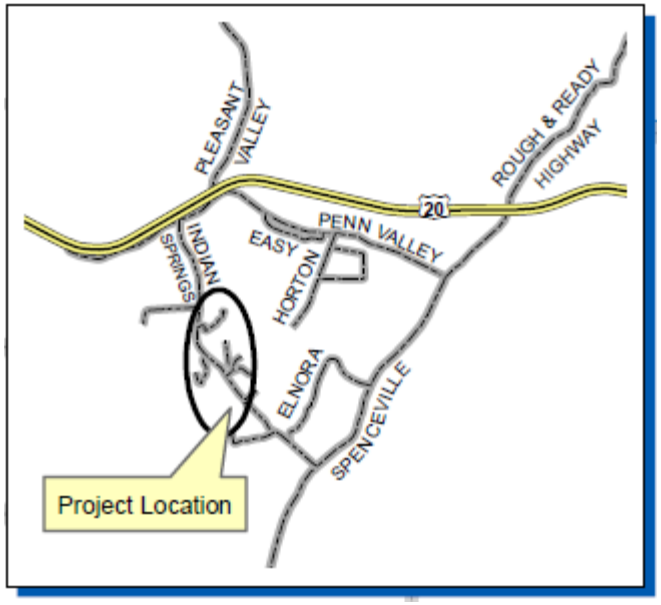
## Project No. 2373

**Purpose:** The Pet Hill Canal travels down rubber lined sections that limit flow and cause overtopping along side of a private driveway. Gate valve plugs cause a disruption in water flow to customers.

**Solution:** The Project will replace the undersized head gate and pipe and improve approximately 800 ft section of the canal with encasement.

**Current Project Status:** Plans under review. Categorical Exemption is anticipated. Design anticipated July – September 2022, and Construction in the Fall of 2022.

**Budget:** The 2022 budget for this Project is $120,000.



# Sugarloaf Reservoir

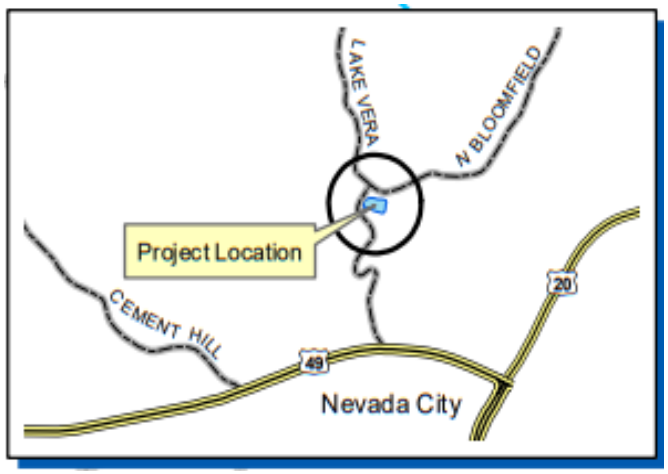
**Project No. 2550**

**Purpose:** A sinkhole appeared on the top of the south embankment of the reservoir, showed structural weakness, and water was leaking through portions of the dry side of the embankment. Operations has determined that this reservoir should be abandoned, as the cost to repair it would exceed the minor benefit of its continued operation.

**Solution:** The Project includes installation of a new, permanent bypass and abandonment of the reservoir.

**Current Project Status:** Project design complete, work to commence after Alta Hill Reservoir Project.

**Budget:** The 2022 budget for this Project is $200,000.



# Alta Hill Reservoir

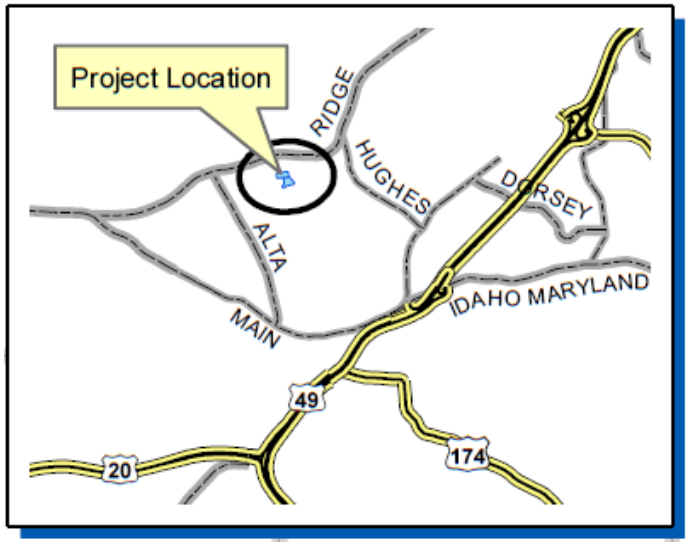
## Project No. 2604

**Purpose:** Toe of the berm at the Alta Hill Reservoir is leaking, causing damage to property owner's backyard for over ten years. Repairs attempted but unable to stop leak. A temporary bypass was installed to reduce the reservoir level.

**Solution:** The Project includes installation of a bypass and fill in the reservoir. Install a new gaging station downstream of the reservoir outlet.

**Current Project Status:** Reservoir has been dried out. Partial rebar has been delivered. Ground has been prepared for excavation of splitter box. Maintenance is waiting for pipe to be delivered. Anticipate project to be completed in fall 2022.

**Budget:** The 2022 budget for this Project is $150,000.



# Squirrel Creek Siphon

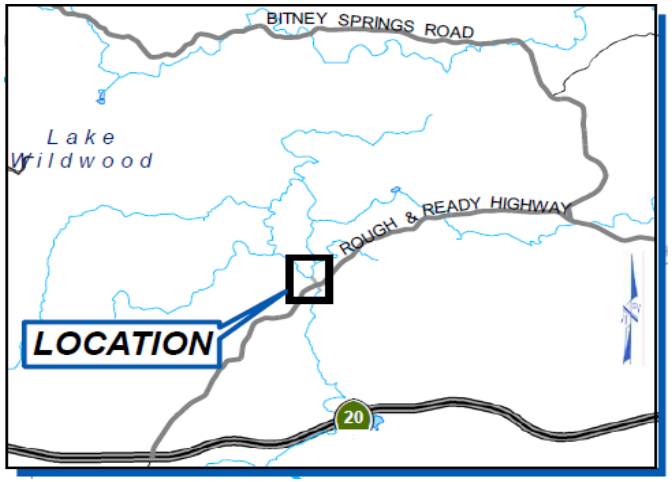
**Project No. 2624**

**Purpose:** Leaks discovered in winter 2021-2022 that included running water down hillside embankment on south side of Rough & Ready Highway and extremely deteriorated exposed pipe across squirrel creek that was also found leaking.

**Solution:** Replacement of failing portion of 24" diameter steel pipe (total length ~740 feet long), assessment of existing support structures (pipe support over squirrel creek) and inlet/outlet structures, and assessment of potential additional easement needs. Replacement of aerial pipe section over squirrel creek. The buried portion of pipe will require sleeving of new pipe within the old pipe, or total replacement of buried pipe. Construction to be done during off season with no flow in pipe (October 15 to April 15).

**Current Project Status:** Design under second review by Engineering Department. Will be sent to other departments for their review in July 2022. Once design/plans are completed, it will be sent out to bid to local contractors. Project anticipated to be awarded in August, construction to start in fall 2022.

**Budget:** The 2022 budget for this Project is $800,000.



# Alta Sierra Reservoir Replacement

**Project # 6971**

**Scope:** The Alta Sierra Reservoir is being replaced with a 3-million-gallon concrete tank. The reservoir was originally used for raw water storage before being reconstructed into a treated water facility utilizing Hypalon lining and cover. The Hypalon liner was vulnerable to damage from the sun and vandalism, and over time required repair and patching, requiring isolation from the system to repair. The new tank is expected to be in service by April 2022.

**Current Project Status:** The tank has been filled and is in service. Leakage tests are in progress. Electrical and drainage piping in progress. Final color has been applied to the tank, and landscaping design has started. Anticipated completion in August 2022.

**Budget:** The 2022 budget for this Project of $1,552,161 to cover encumbered expenses from 2021 is pending Board approval

# Projects Included in the 2022 CIP Hydroelectric Budget

| Project # | Project | 2022 Budget Amount | 2022 Expenditures |
|---|---|---|---|
| 2094 | Scotts Flat Spillway Repair & Upgrades | $ 1,000,000.00 | $ 101,922.38 |
| 2362 | CPPH Tranformer Replacement | $ 150,000.00 | $ - |
| 2353 | CPPH Turbine Overhaul | $ 150,000.00 | $ - |
| 2595 | Scotts Flat Dam Wave Erosion Protection | $ 75,000.00 | $ - |
| 2339 | Rucker Creek Spill Gate Replacement* | $ 125,000.00 | $ - |
| 2383 | CPPH Rewind | $ 150,000.00 | $ - |
| 2393 | Rollins Powerhouse Governor Replacement | $ 150,000.00 | $ - |
| 2599 | Christmas Tree Spillgate Replacement | $ 50,000.00 | $ - |
| 2359 | Bowman North Dam Upstream Lining Repair | $ 100,000.00 | $ - |
| 2394 | Rollins Powerhouse Relay Protection Upgrade* | $ 425,000.00 | $ 16,671.36 |
| 2596 | Sawmill Dam Outlet Pipe Rehabilitation | $ 100,000.00 | $ - |
| 2404 | Fall Creek Flume Improvements | $ 320,000.00 | $ 156,203.01 |
| 2581 | Combie North Capacitor Bank Upgrade | $ 75,000.00 | $ - |
| 2598 | CPPH RTU Replacement | $ 200,000.00 | $ - |
| 2544 | Dutch Flat #2 PH Cooling Water Upgrade | $ 75,000.00 | $ - |
| 2597 | Jackson Lake Dam Toe Slope Protection | $ 20,000.00 | $ - |
| 2576 | Fall Creek Diversion Flume Improvements | $ 100,000.00 | $ - |
| 2600 | Bowman Spaulding Canal Lining Repair Boxcar* | $ 100,000.00 | $ - |
| 2405 | Hydroelectric Field Office Radio Tower | $ 350,000.00 | $ 24,779.83 |
| 2240 | Dutch Flat #2 PH Fire Supression Upgrade | $ 125,000.00 | |
| 6943 | Combie South Access Road | $ 200,000.00 | $ 36,246.93 |
| 2432 | New Hydroelectric Office Design | $ 250,000.00 | |
| 2486 | Dutch Flat 2 Powerhouse Backup Generator Upgrade* | $ 105,000.00 | $ 10,092.28 |
| 2552 | Scotts Flat Powerhouse Fire Detection Upgrade* | $ 30,000.00 | $ 3,944.78 |
| 2553 | Combie North Powerhouse Fire Detection Upgrade* | $ 30,000.00 | $ 1,880.00 |
| 2554 | Combie South Powerhouse Fire Detection Upgrade* | $ 30,000.00 | $ 1,880.00 |
| | **Total Hydroelectric 2022 CIP Budget** | **$ 4,485,000.00** | |
| | **Total Expenditures 2022** | | **$ 353,620.57** |

* Includes budget amendments pending Board approval at an upcoming Board of Directors meeting.

# Scotts Flat Spillway Repair and Upgrades

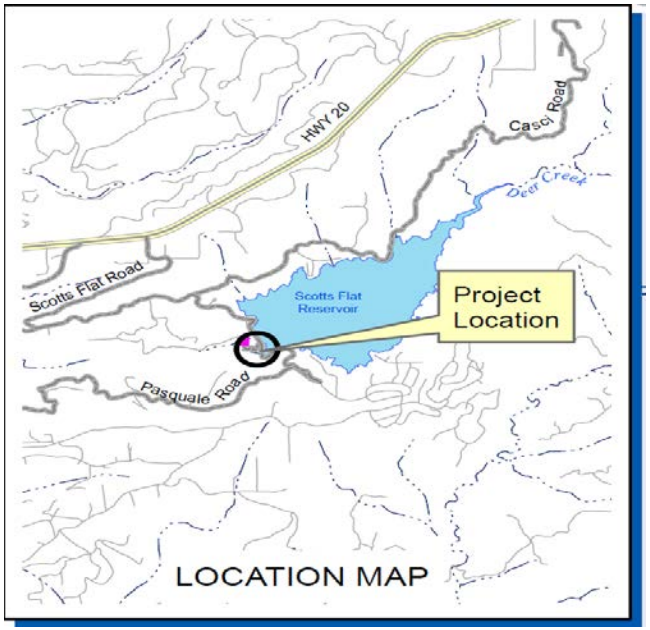
**Project No. 2094**

**Purpose:** Upgrade the Scotts Flat Spillway as necessary to safely pass the probable maximum flood as required by DSOD and FERC.

**Solution:** Requires studies and hydraulic modeling of alternatives; design of modifications of spillway chute, chute walls, and the terminal energy dissipation structure; construction of design.

**Current Project Status:** The Physical Hydraulic Modeling, Alternative Study, and Geotechnical Design Reports are due to the District in June-July 2022. They will address the needs of Alternative 3, replacement of the entire spillway chute with new chute and vertical side walls. Then the District needs to review the Geotechnical Design Report and negotiate with HDR about re-organizing the consulting team, the scope, the approach, and schedules for the design.

**Budget:** The 2022 budget for this Project is $1,000,000.



# Scotts Flat Spillway Repair and Upgrades

**Project No. 2094**

**Photos of the physical model taken during FERC witness testing:**

# Scotts Flat Spillway Repair and Upgrades

Project No. 2094

Model testing (video)

# Scotts Flat Spillway Repair and Upgrades

**Project No. 2094**

**Model testing (video)**

# Chicago Park Powerhouse Transformer Replacement

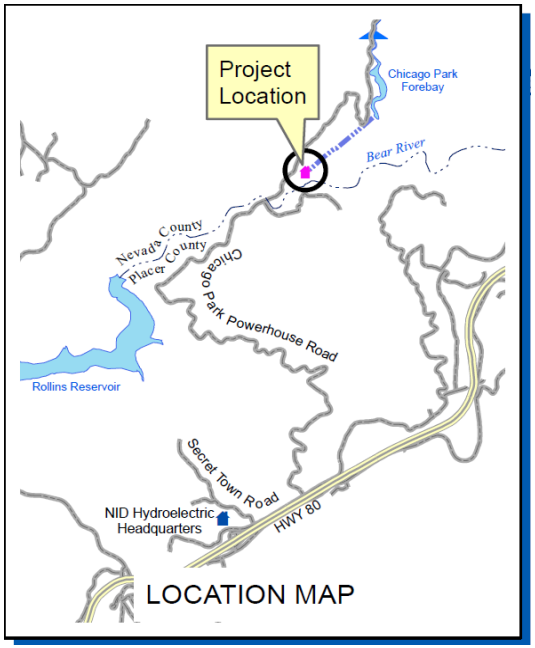
## Project No. 2362

**Purpose:** Improve facility efficiency and performance by replacing or upgrading the existing main transformer (original 1960's vintage) at Chicago Park Powerhouse.

**Solution:** Requires replacing or upgrading the existing main transformer and appurtenances.

**Current Project Status:** NID is reviewing proposals to complete Phase 1 of the project, which consists of developing a detailed project scope. NID expects to award a contract for this work in July/August.

**Budget:** The 2022 budget for this Project is $150,000.



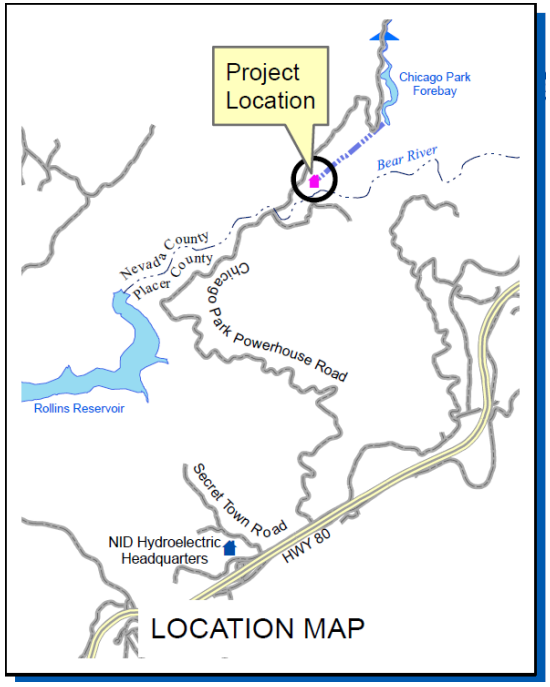
# Chicago Park Powerhouse Turbine Overhaul — Project No. 2353

**Purpose:** Improve facility efficiency and performance by replacing or upgrading the existing turbine (original 1960's vintage) at Chicago Park Powerhouse.

**Solution:** Replace or upgrade the existing turbine and appurtenances.

**Current Project Status:** NID is reviewing proposals to complete Phase 1 of the project, which consists of developing a detailed project scope. NID expects to award a contract for this work in July/August.

**Budget:** The 2022 budget for this Project is $150,000.



# Scotts Flat Dam Wave Erosion Protection

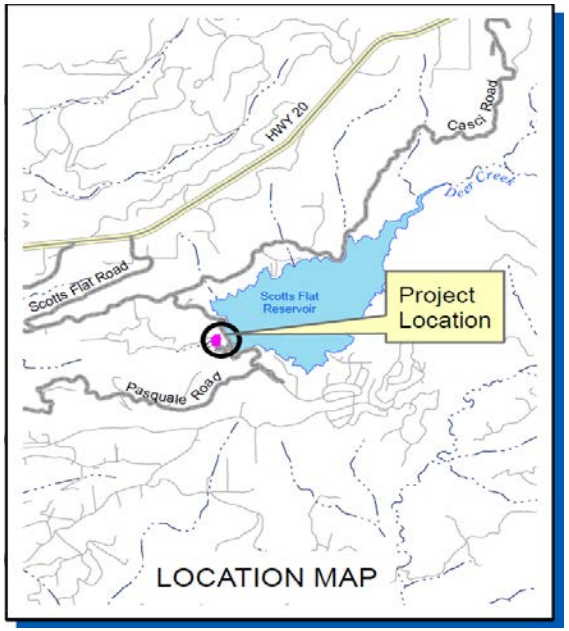
**Project No. 2595**

**Purpose:** Protect the Scotts Flat Dam from erosive wave action during a probable maximum flood (PMF) event.

**Solution:** Design and install new erosion protection at/near the crest of the upstream face of Scotts Flat Dam to protect the dam from wave action during a PMF event.

**Current Project Status:** As DSOD recommends against using concrete K-rails, the District has changed plans to using riprap for both slope protection and the short-wave dike at the upstream edge of the dam crest. AECOM has been asked to evaluate the wave action and adequacy of the riprap. DSOD dam alteration permit application is required for these riprap additions. Hydroelectric plans to defer the construction so that the necessary change in the wave protection scheme due low PMF freeboard can be made at the same time.

**Budget:** The 2022 budget for this Project is $75,000.



# Rucker Creek Spillgate Replacement

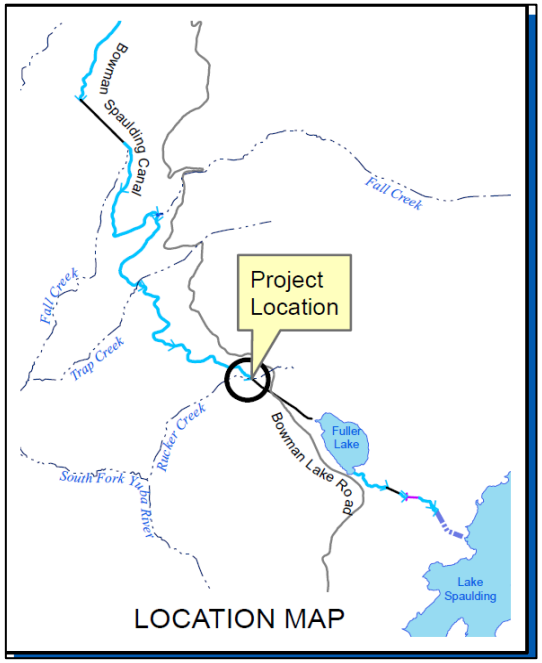
**Project No. 2339**

**Purpose:** Improve canal operational efficiency and reduce safety hazards related to operator callouts during storm events.

**Solution:** Replace existing radial gate at Rucker Creek Diversion with an overshot gate to improve personnel safety and operational performance.

**Current Project Status:** Engineering is working with Hydro to develop specifications for the new gate and a preliminary construction plan. Engineering has contacted gate manufacturer's for quotes and estimate of lead times. FERC review of project design will be required prior to construction.

**Budget:** The 2022 budget for this Project was $250,000. A budget amendment is pending Board approval to $125,000 offset other budget amendments.



# Chicago Park Powerhouse Rewind

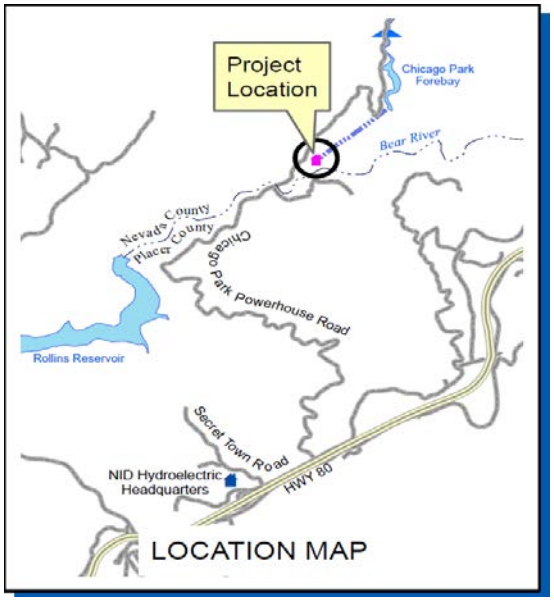
**Project No. 2383**

**Purpose:** Improve generator efficiency and ensure safe plant operation by disassembling, cleaning, and rebuilding the onsite generator.

**Solution:** Replace deteriorated generator windings, insulation, poles, and other generator appetences. The last rewind was completed in 1991, and test results are showing signs of needing to complete another.

**Current Project Status:** NID is reviewing proposals to complete Phase 1 of the project, which consists of developing a detailed project scope. NID expects to award a contract for this work in July/August.

**Budget:** The 2022 budget for this Project is $150,000.



# Rollins Powerhouse Governor Replacement

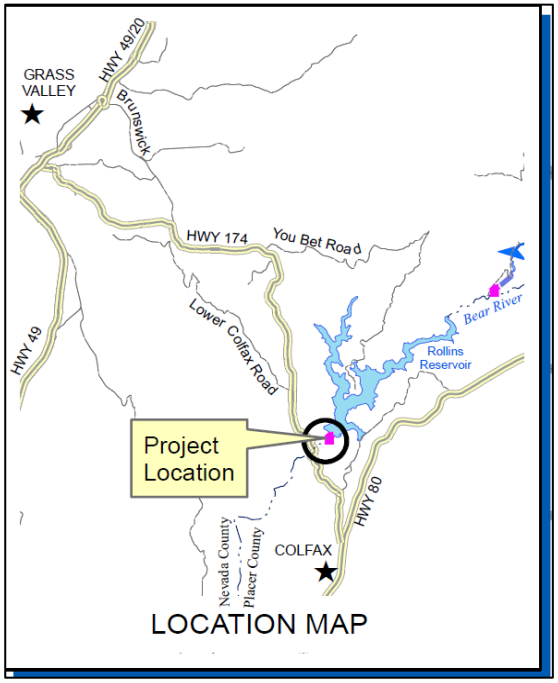
**Project No. 2392**

**Purpose:** Improve facility efficiency and performance by replacing or upgrading the existing mechanical governor (original 1980's vintage) at Rollins Powerhouse.

**Solution:** Replace or upgrade the existing governor and appurtenances.

**Current Project Status:** Hydro to begin project scoping in 2022.

**Budget:** The 2022 budget for this Project is $150,000.



# Christmas Tree Spillgate Replacement

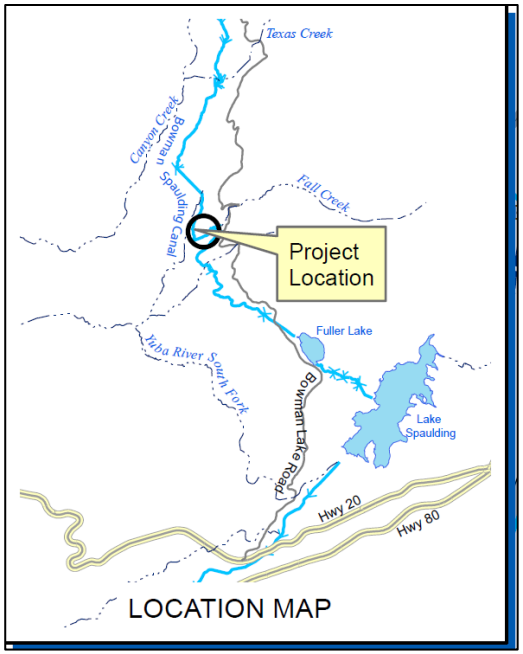
**Project No. 2599**

**Purpose:** Improve canal operational efficiency and reduce safety hazards related to operator callouts during storm events.

**Solution:** Replace existing radial gate at Christmas Tree Spill with an overshot gate to improve personnel safety and operational performance.

**Current Project Status:** Engineering will begin the project after completion of the Rucker Creek Spill Gate Replacement Project (FATR# 2339) so that standards can be developed for system consistency.

**Budget:** The 2022 budget for this Project is $50,000.



# Bowman North Dam Upstream Lining Repairs

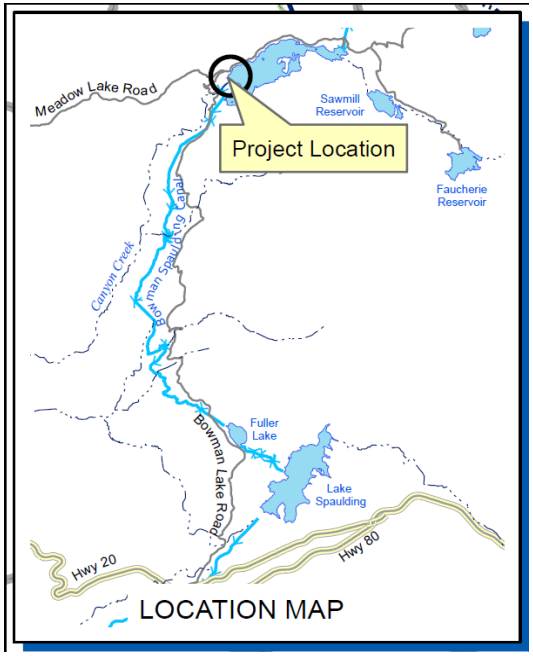
**Project No. 2359**

**Purpose:** Repair and/or replace damaged lining on the upstream face of Bowman North Dam to minimize its leakage.

**Solution:** Design and construction of repair and replacement of damaged concrete lining panels and joints.

**Current Project Status:** Work is being planned for 2022 to make repairs to the upstream lining of the dam. Inspections with ROV and divers were completed in June 2022.

**Budget:** The 2022 budget for this Project is $100,000.



# Rollins Powerhouse Relay Protection Upgrade

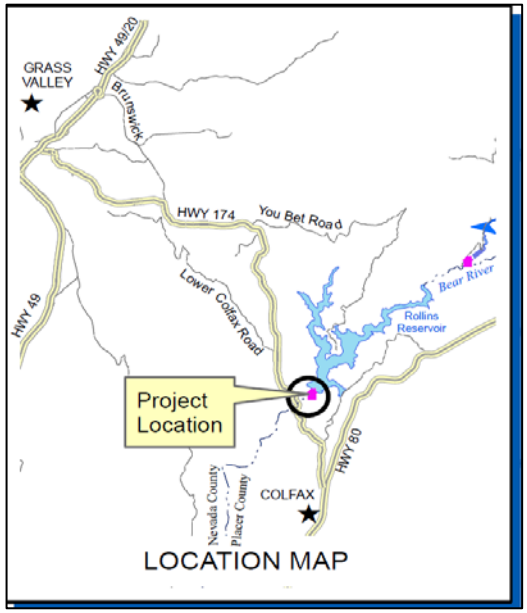
**Project No. 2394**

**Purpose:** Provide improved high voltage protection for RPH by upgrading the relay system. This will improve plant efficiency and better protect onsite equipment.

**Solution:** Upgrade protective relay system by removing original (1980's vintage) electro-mechanical relays and installing new programmable, multi-function relays and annunciators.

**Current Project Status:** NID is awaiting submittals for the next phase of design (expected in June). A new task order has been executed for additional drafting work to update existing drawings with as-found conditions so that accurate drawings are used as a basis for design. Project has been delayed due to supply chain issues causing significant issues in obtaining necessary project materials. Coordination with PG&E has been on hold. Construction is now scheduled for 2023.

**Budget:** The 2022 budget for this Project was $250,000. An amendment to $425,000 to cover encumbered expenses from 2021 is pending Board approval.



# Sawmill Dam Outlet Pipe Rehabilitation

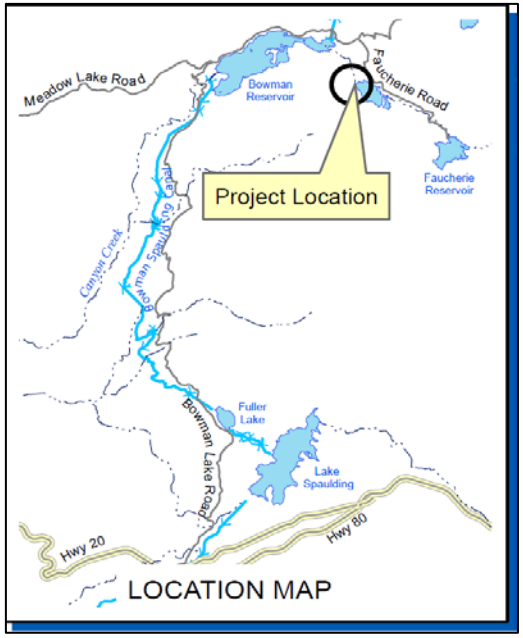
**Project No. 2596**

**Purpose:** Repair or replace damaged sections of the lining on the upstream dam face of the Sawmill Dam to minimize leakage through the dams.

**Solution:** Design and construction of repairs or replacement of the concrete panels and/or joints on the upstream face lining.

**Current Project Status:** A LiDAR scanning inside the 21” riveted-plate outlet pipe is to be proposed by Rhino Engineering Solutions. There has been difficulty in retaining this type of specialty vendor’s service.

**Budget:** The 2022 budget for this Project is $100,000.



# Fall Creek Flume Improvements

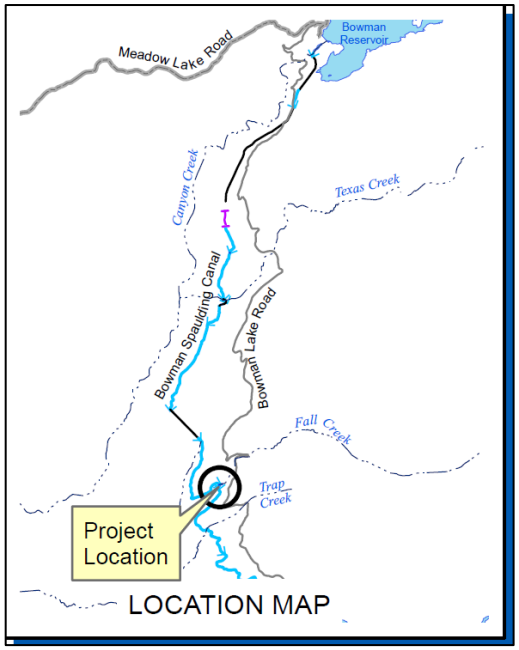
**Project No. 2404**

**Purpose:** Make structural enhancements to improve the reliability of the Fall Creek Flume on the Bowman-Spaulding Canal.

**Solution:** Replace flume sheets and associated hardware.

**Current Project Status:** Construction was completed during the annual Bowman-Spaulding Canal outage in June 2022. A change order was approved and executed on 06/10/2022 to obtain more time for PG&E to complete the work during the 2022 annual outage.

**Budget:** The 2022 budget for this Project was $150,000. An amendment to $380,000 to cover encumbered expenses from 2021 is pending Board approval.

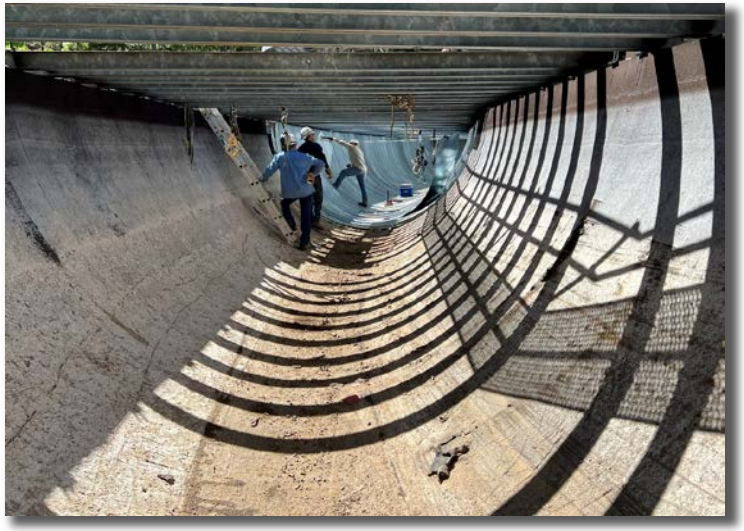


# Fall Creek Flume Improvements

**Project No. 2404**

## Before and After Photos

## Construction Photos



# Combie North Capacitor Bank Upgrade

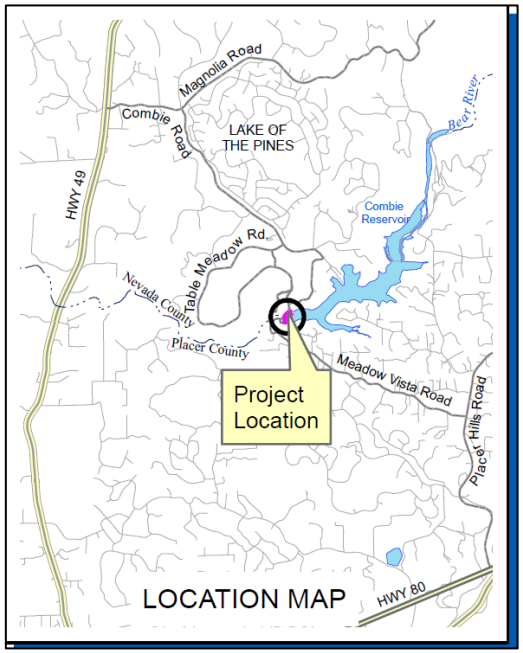
**Project No. 2581**

**Purpose:** Replace existing capacitor bank at Combie North Powerhouse to improve the reliability and efficiency of power generation of the facility for variable flow conditions. The existing arrangement limits generation to specific flow condition which, when not met, cause flow to be bypassed.

**Solution:** Design and support the installation of a new capacitor bank for Combie North Powerhouse.

**Current Project Status:** Hydro is working with an engineering consultant to design a new capacitor bank for the Combie North Powerhouse. Once the design is complete, Hydro will order necessary project materials in 2022 and will complete construction in 2023.

**Budget:** The 2022 budget for this Project is $75,000.



# Chicago Park Powerhouse
# RTU Replacement

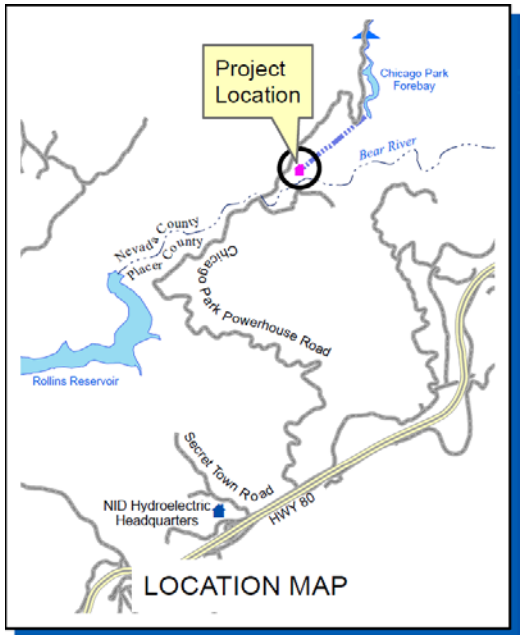
**Project No. 2598**

**Purpose:** Replace obsolete hardware for critical SCADA systems.

**Solution:** Specify, procure, and install new remote terminal unit (RTU) for Chicago Park Powerhouse to provide modern, onsite SCADA alarming.

**Current Project Status:** NID Engineering has developed a draft scope of work for the project which is being reviewed by Hydro. Once finalized, NID will request engineering design and integration support from a consultant. Construction is planned for the Fall of 2022.

**Budget:** The 2022 budget for this Project is $200,000.



# Dutch Flat #2 Powerhouse Cooling Water Upgrade

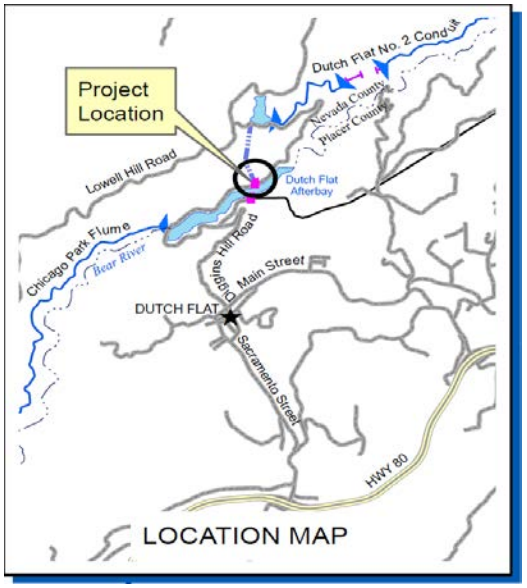
**Project No. 2544**

**Purpose:** Improve facility efficiency and performance by upgrading the cooling water system at Dutch Flat #2 Powerhouse. Being able to collect accurate, real-time cooling water data is necessary to better understand unit function and performance and can help identify preventative maintenance tasks to prevent failures and unit downtime.

**Solution:** Upgrade with a modern system that can be integrated into the balance of plant programmable logic controller. Scope includes replacing cooling water piping, replacing analog gauges with new HMI screen, adding new flowmeters and pressure transmitters, etc.

**Current Project Status:** Design will begin in 2022. Currently refining As-Built drawings from CPPH for use on DFPH project. Once a bill of materials is developed, long lead time materials will be purchased. Construction by Hydro Maintenance is scheduled for 2023.

**Budget:** The 2022 budget for this Project is $75,000.



# Jackson Lake Dam Toe Slope Protection

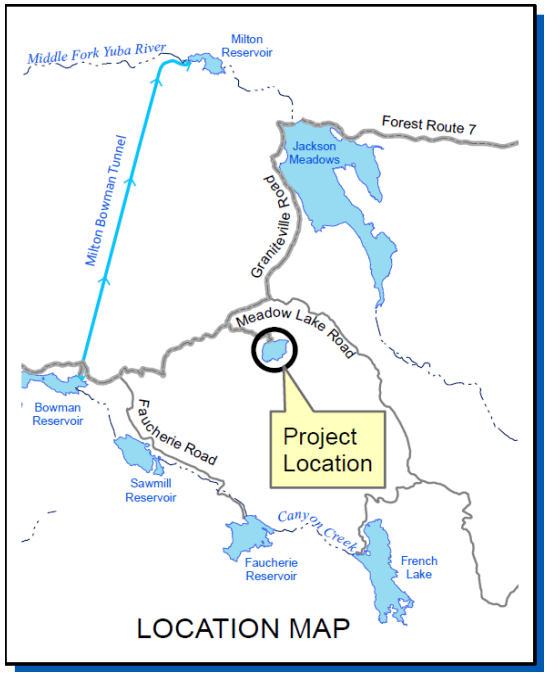
**Project No. 2597**

**Purpose:** Stabilize the slopes near the downstream outlet of Jackson Lake Dam.

**Solution:** Design and construct stabilization measures to ensure the long-term stability of the toe slopes near the downstream outlet end.

**Current Project Status:** A District meeting with environmental consultants has decided to remove the debris pile just downstream of the outlet and to replace the weir flow measurement structure 100' downstream. A complete conceptual design is scheduled to be completed in June 2022 that will be used to obtain the necessary environmental permits. The 100% design needs to be submitted to DSOD and FERC for approvals before the construction, scheduled for 2023.

**Budget:** The 2022 budget for this Project is $20,000.



# Fall Creek Diversion Flume Improvements

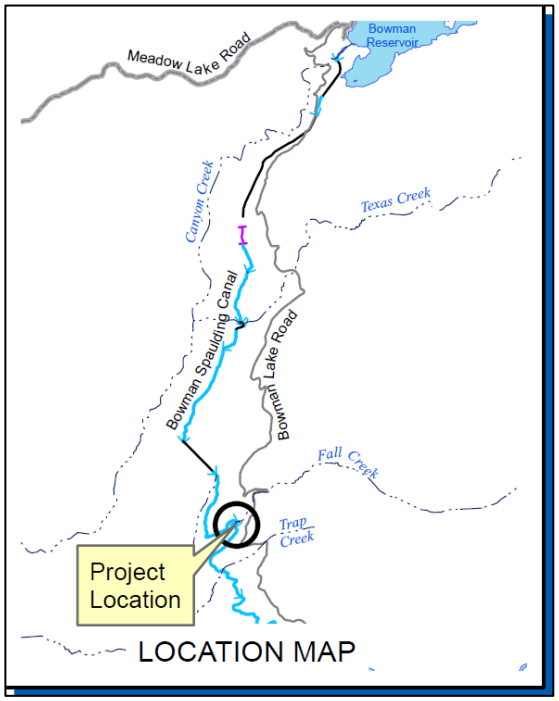
**Project No. 2576**

**Purpose:** Make structural enhancements to improve the reliability of the Fall Creek Diversion Flume.

**Solution:** Replace flume sheets and associated hardware.

**Current Project Status:** Hydro has obtained a quote for necessary project materials for purchase in 2022.

**Budget:** The 2022 budget for this Project is $100,000.



# Bowman-Spaulding Canal Lining
# Repair at Boxcar Spill

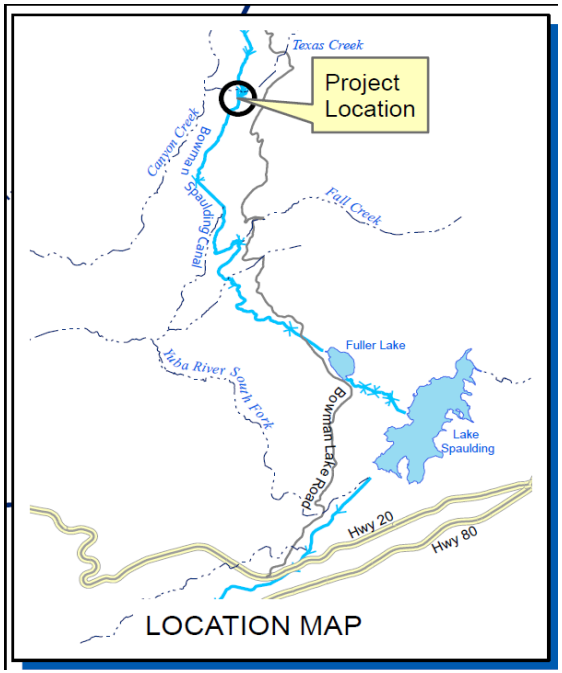
**Project No. 2600**

**Purpose:** Prevent further erosive damage by repairing the damaged shotcrete liner.

**Solution:** Repair deteriorated shotcrete liner of the Bowman-Spaulding Canal.

**Current Project Status:** Damaged areas were assessed during the annual Bowman-Spaulding Canal outage in 2022 to plan for future repairs.

**Budget:** The 2022 budget for this Project was $400,000. An amendment to $100,000 to offset other budget amendments is pending Board approval.



# New Hydroelectric Field Office 2
# Radio Tower

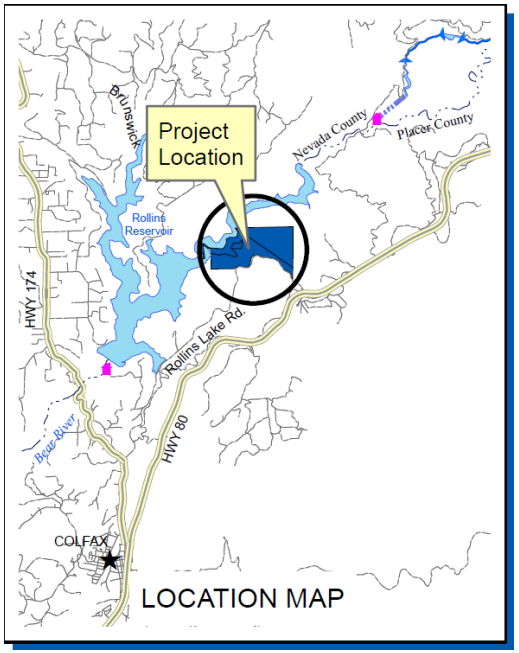
**Project No. 2405**

**Purpose**: Provide a communication link for remote NID facilities to bring SCADA data to Hydro HQ.

**Solution:** Construct a new microwave radio tower at the site of NID Hydro's future field office. Includes design, permitting, earthworks, tower build, and equipment installation.

**Current Project Status:** The line-of-sight study has been reviewed by District staff. The findings of this study were used to update the NID Hydroelectric Department SCADA Wide Area Network Report to plan future communications improvement projects. NID will start planning for the new radio tower in 2022.

**Budget:** The 2022 budget for this Project is $350,000.



# Dutch Flat #2 Powerhouse Fire Suppression System Upgrade

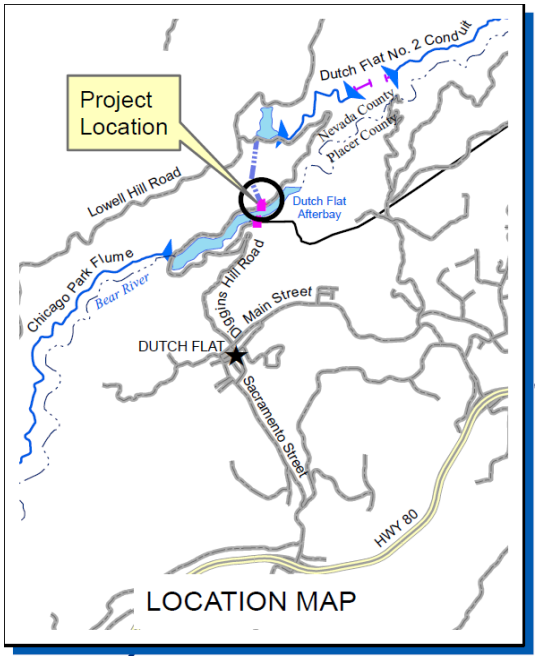
**Project No. 2240**

**Purpose:** Provide fire detection and suppression systems at Dutch Flat #2 Powerhouse to enhance onsite safety and mitigate potential damage to the facility in the event of a fire.

**Solution:** Upgrade the existing CO2 fire suppression system to protect the generator and meet current NFPA codes. Design and install a new clean agent suppression system in the control room. Provide fire detection throughout the facility for early detection.

**Current Project Status:** Project on hold pending the completion of the Chicago Park Powerhouse Fire Suppression System Upgrade Project (FATR# 2164). Hydro will transfer the project to Engineering.

**Budget:** The 2022 budget for this Project was $250,000. An amendment to $125,000 to offset other budget amendments is pending Board approval.



# Combie South Access Road

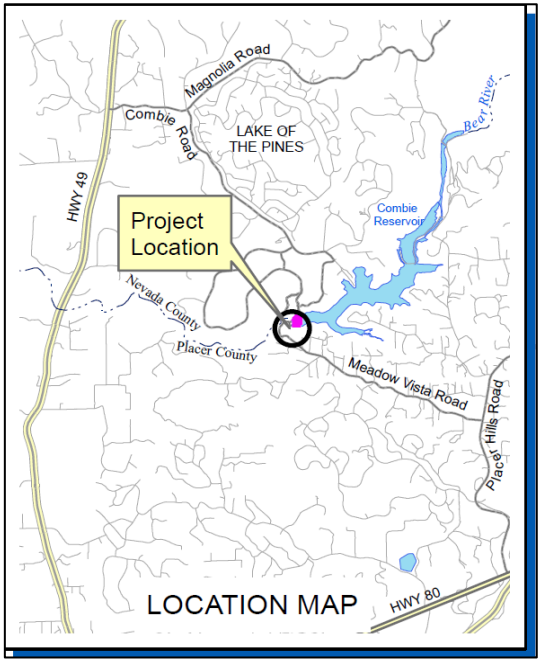
**Project No. 6943**

**Purpose:** Provide adequate access to the Combie South Powerhouse from Meadow Vista.

**Solution:** Plan and design a new access road to the Combie South Powerhouse. Includes identifying necessary land acquisitions, completing survey and design work, and construction. Access road shall meet fire safe standards and will be secured with a new gate.

**Current Project Status:** Discussions with NID and Arroyo on May 6, 2022, culminated into a verbal agreement with NID's counteroffer. ROW to send a formal written offer to Arroyo and Knapp in July 2022. NID Construction planned for 2022.

**Budget:** The 2022 budget for this Project is $200,000.



# New Hydroelectric Office Design

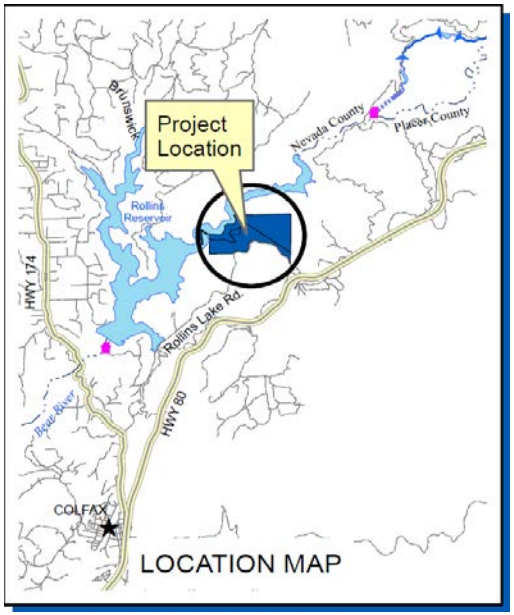
**Project No. 2432**

**Purpose:** Provide a new office building for the Hydroelectric Department to meet the needs of anticipated future growth required by NID's new FERC license. The new office space should provide additional parking, improved office spaces, and expanded shop and warehouse spaces to adequately store and maintain equipment.

**Solution:** Design and construct a new office building on property owned by NID on Rollins Lake Road to meet the growing needs of the Hydroelectric Department.

**Current Project Status:** The new maintenance facility and storage yard draft predesign by the architect is complete. The three energy/carbon concept studies are complete; forest carbon sequestration, pumped storage, and solar field. A draft Energy Management Strategy Summary has been received and is under review. Once all efforts are completed, findings will be summarized to present options and alternatives for developing the site into various levels of renewable energy generation and carbon zero footprint.

**Budget:** The 2022 budget for this Project is $250,000.



# Dutch Flat #2 Powerhouse Backup Generator Upgrade

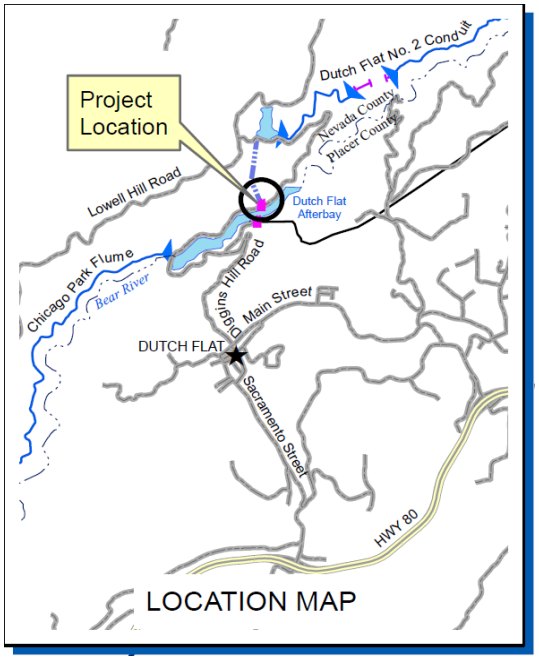
**Project No. 2483**

**Purpose:** Provide an onsite backup power source for the Dutch Flat #2 Powerhouse.

**Solution:** Design and installation of new backup generator at Dutch Flat #2 Powerhouse.

**Current Project Status:** Design is in progress. A bill of materials has been developed. An RFQ has been sent to two suppliers. A third is being contacted. One supplier has reported a lead time of 300 working days. Installation planned for Fall of 2022 during annual plant outage; however, may be delayed due to lead-time of materials.

**Budget:** The 2022 budget for this Project will be $105,000. Due to Districts obligation to match grant funds a budget amendment request is pending Board approval.



# Scotts Flat Powerhouse Fire Detection Upgrade

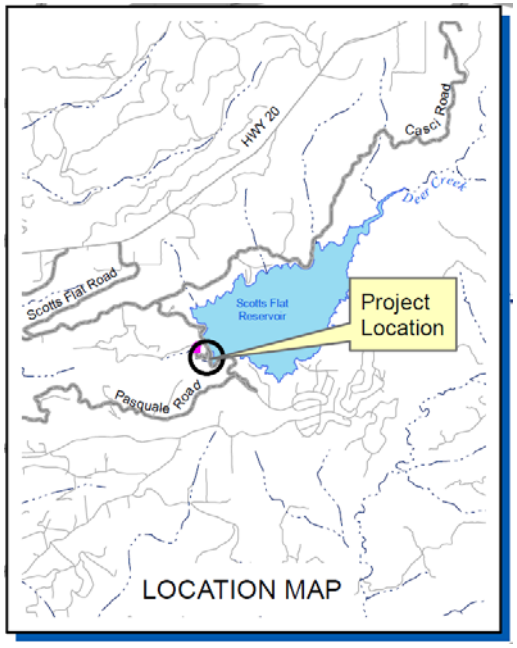
**Project No. 2552**

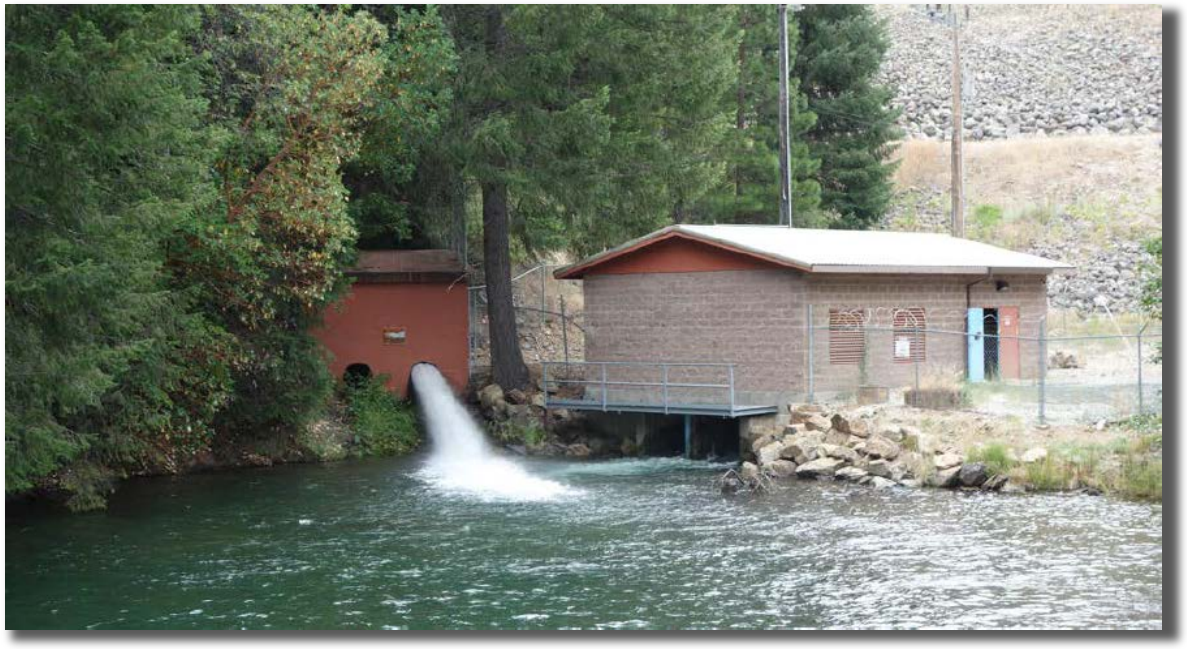
**Purpose:** Provide remote fire detection abilities for Scotts Flat Powerhouse to trigger an emergency response to the normally unmanned facility in case of fire.

**Solution:** Install new smoke and/or heat detection systems in the Scotts Flat Powerhouse that includes alarming and callout features to notify staff in case of fire while unoccupied.

**Current Project Status:** NID is awaiting the 90% design submittal for the new fire detection systems to submit to the District's insurance provider for review and approval. Design will be completed during the first half of 2022.

**Budget:** The 2022 budget for this Project will be $30,000. An amendment to cover encumbered expenses from 2021 is pending Board approval.



# Combie North Powerhouse
# Fire Detection Upgrade

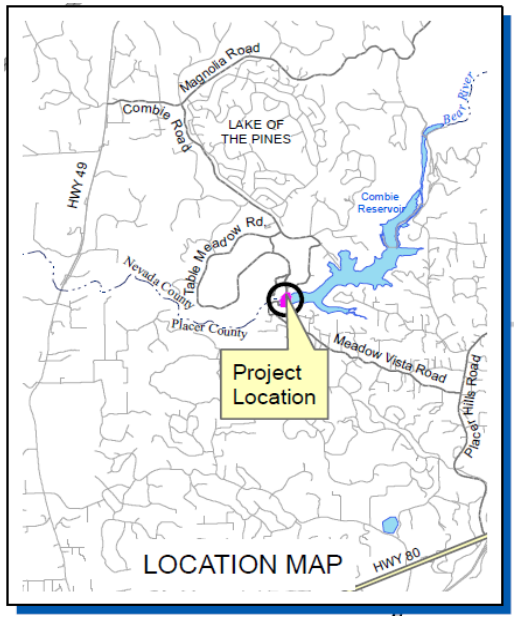
**Project No. 2553**

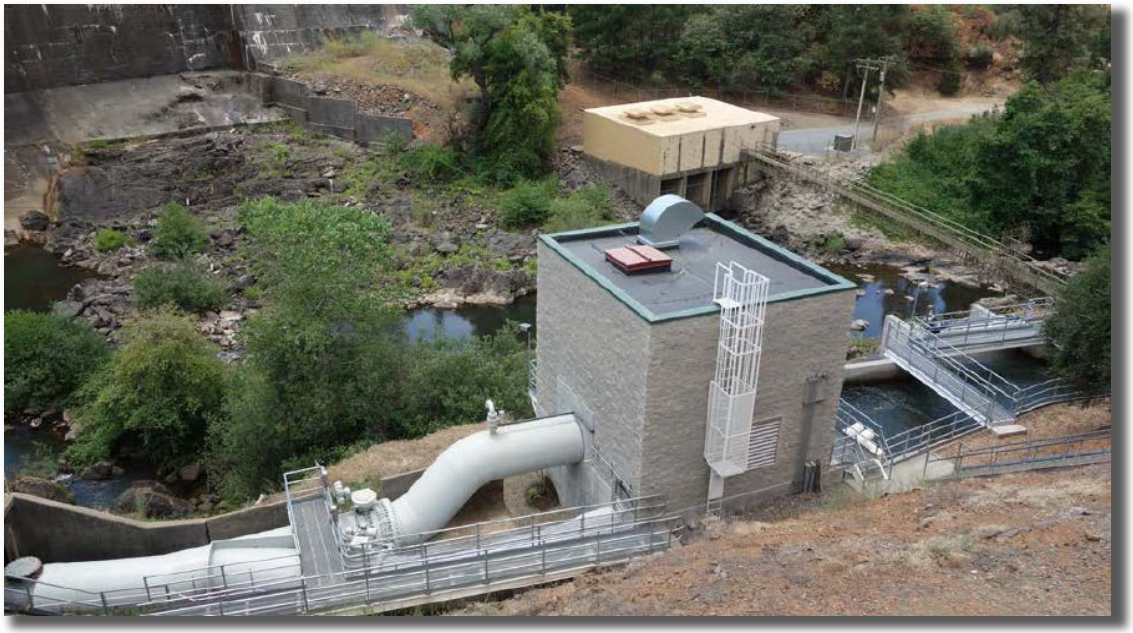
**Purpose:** Provide remote fire detection abilities for Combie North Powerhouse to trigger an emergency response to the normally unmanned facility in case of fire.

**Solution:** Install new smoke and/or heat detection systems in the Combie North Powerhouse that includes alarming and callout features to notify staff in case of fire while unoccupied.

**Current Project Status:** NID is awaiting the 90% design submittal for the new fire detection systems to submit to the District's insurance provider for review and approval. Design will be completed during the first half of 2022.

**Budget:** The 2022 budget for this Project will be $30,000. An amendment to cover encumbered expenses from 2021 is pending Board approval.



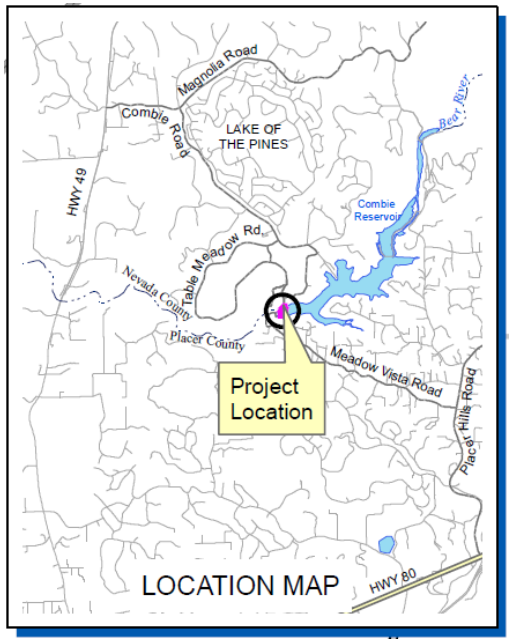



# Combie South Powerhouse
# Fire Detection Upgrade

**Project No. 2554**

**Purpose:** Provide remote fire detection abilities for Combie South Powerhouse to trigger an emergency response to the normally unmanned facility in case of fire.

**Solution:** Install new smoke and/or heat detection systems in the Combie South Powerhouse that includes alarming and callout features to notify staff in case of fire while unoccupied.

**Current Project Status:** NID is awaiting the 90% design submittal for the new fire detection systems to submit to the District's insurance provider for review and approval. Design will be completed during the first half of 2022.

**Budget:** The 2022 budget for this Project will be $30,000. An amendment to cover encumbered expenses from 2021 is pending Board approval.