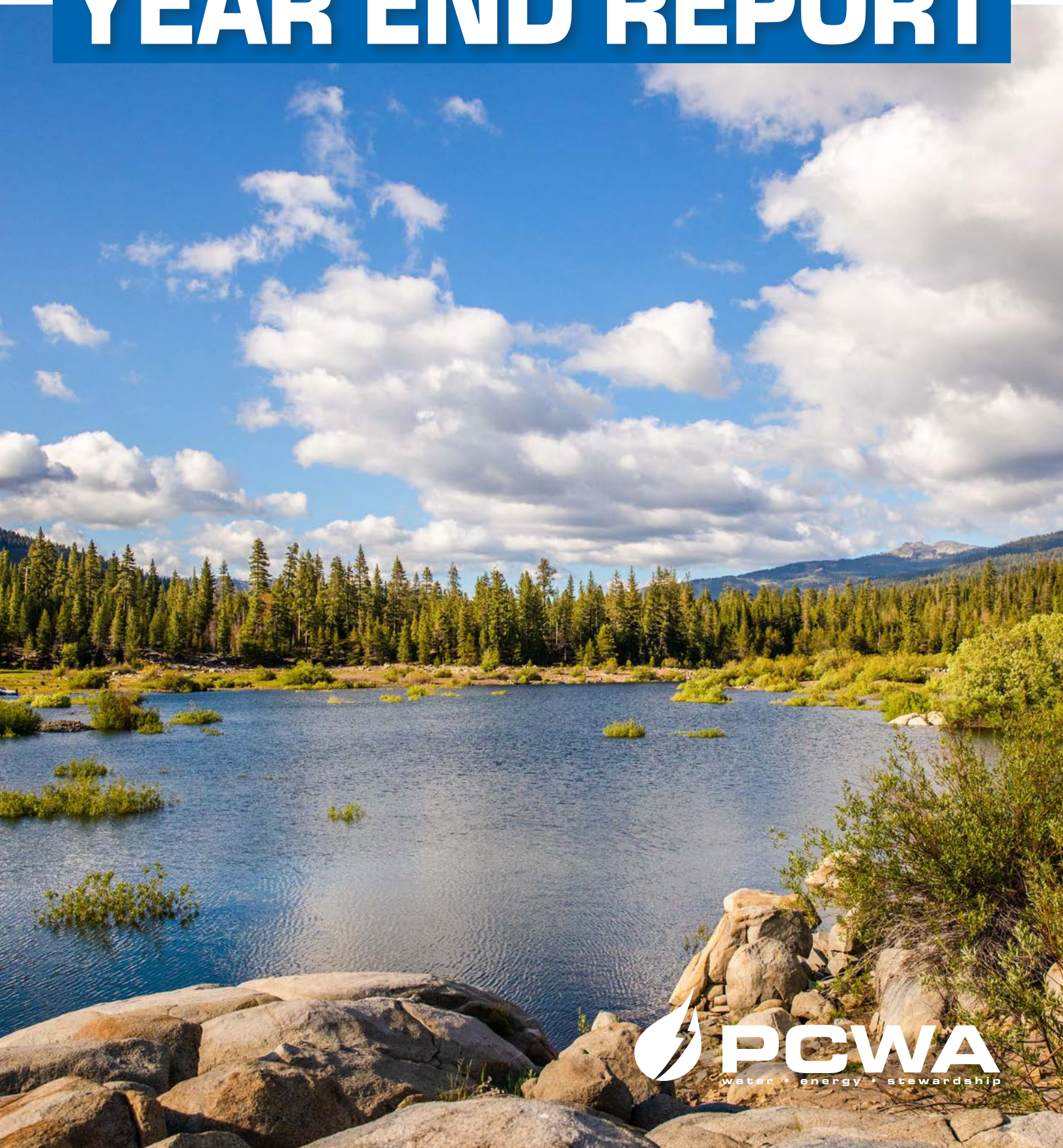
2022
YEAR END REPORT



Cover photo: French Meadows Reservoir

CONTENTS

“PCWA is committed to unyielding advocacy for reliable and sustainable water supply to its customers. This last year challenged PCWA in several ways. We were confronted with the need to invest $425 million over the next 25 years through the renewal and replacement program to keep our water treatment plants and pipelines running for the next generation. We appreciate the investments in this cause, being made by our customers, which will go directly into our infrastructure.

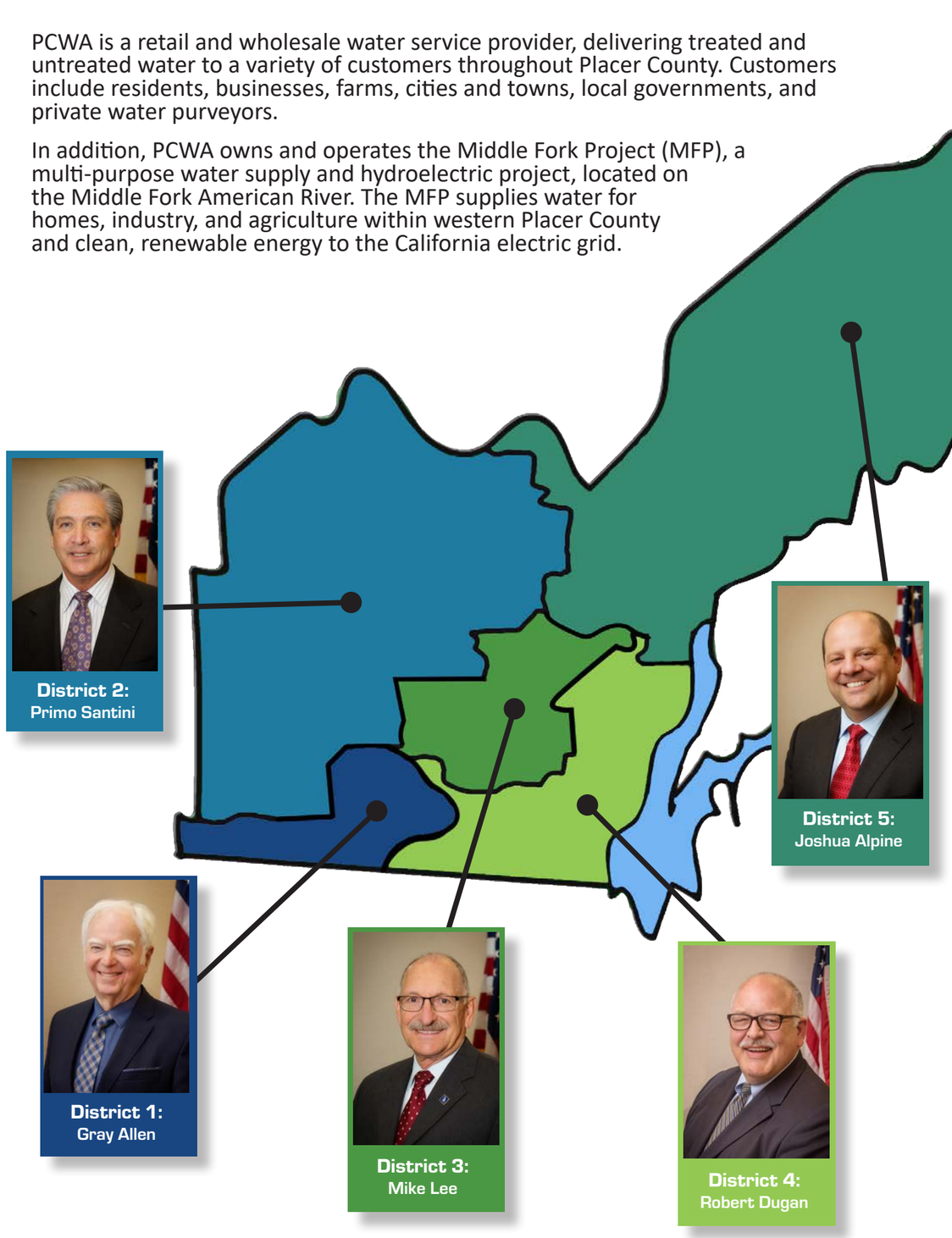
In September we were hit with the Mosquito Fire, which has devastated both our power system facilities and the environment of our headwaters. The consequences are already being realized in lost production of clean energy, sediment flowing into our reservoirs, and failed roads. We are advocating on behalf of our citizens for federal support to the US Forest Service, so that they may take necessary actions towards restoration.”

— Robert Dugan, 2023 Board Chairman

ABOUT THE AGENCY

PCWA is a retail and wholesale water service provider, delivering treated and untreated water to a variety of customers throughout Placer County. Customers include residents, businesses, farms, cities and towns, local governments, and private water purveyors.

In addition, PCWA owns and operates the Middle Fork Project (MFP), a multi-purpose water supply and hydroelectric project, located on the Middle Fork American River. The MFP supplies water for homes, industry, and agriculture within western Placer County and clean, renewable energy to the California electric grid.



District 2:
Primo Santini

District 5:
Joshua Alpine

District 1:
Gray Allen

District 3:
Mike Lee

District 4:
Robert Dugan

The Agency's district boundaries coincide with the Placer County supervisorial districts. There are five districts within its boundaries.

PCWA At-A-Glance

Agency created in **1957**

Five-member Board of Directors, elected by the people of Placer County, and serving **4-year** terms.

1,500 square miles of service area

Provides water service to **41,000+** customers

236,900 acre-feet of water delivery capacity

343,000 acre-feet of reservoir storage capacity

223.75 megawatts of installed generation capacity

623 miles of treated water pipeline

8 water treatment plants delivering safe drinking water

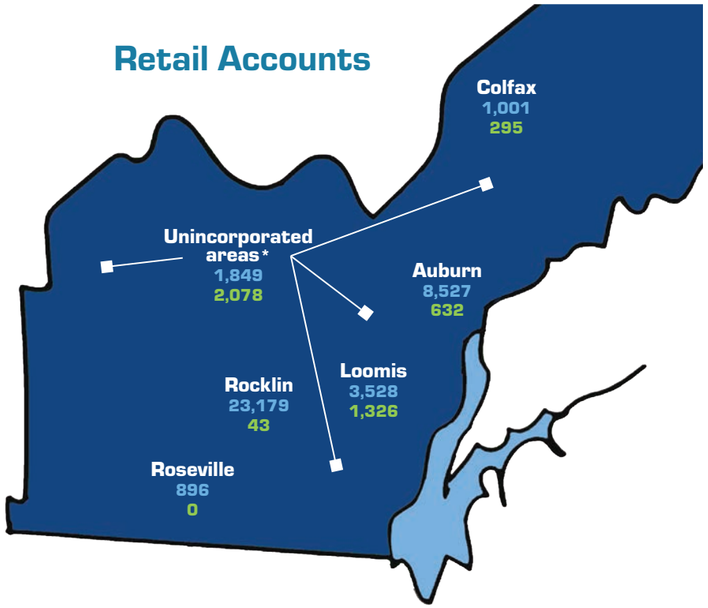
170 miles of canal

5 powerhouses supplying clean hydro-electric energy to the CA grid

BY THE NUMBERS

Customer Overview

Retail Accounts



38,980
Treated Water Accounts
▲ 4.3% in 2022

4,374
Untreated Water Accounts
▲ 0.6% in 2022

Wholesale Accounts

8
Treated Water Accounts

11
Untreated Water Accounts

*Unincorporated areas include:

Alta	Weimar	Penryn
Dutch Flat	Applegate	Granite Bay
Gold Run	Newcastle	West Placer

Treated Water Customer(s)
Untreated Water Customer(s)

Staffing

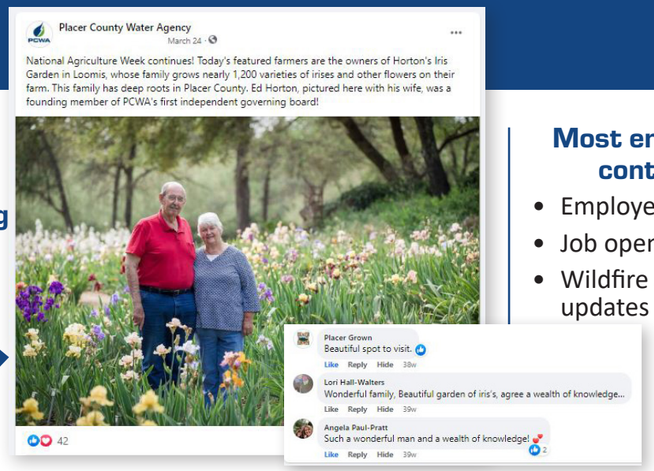
Social Media Engagement

Facebook

Followers

1,414
↗17% in 2022

Most engaging post



Most engaging content

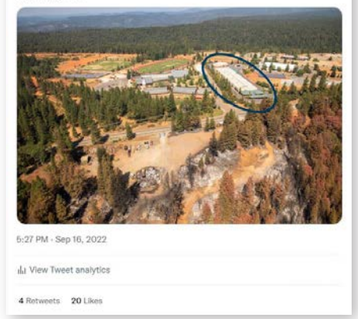
- Employees
- Job openings
- Wildfire and storm updates

Twitter

Followers

914
↗8% in 2022

Top tweet



Top topics

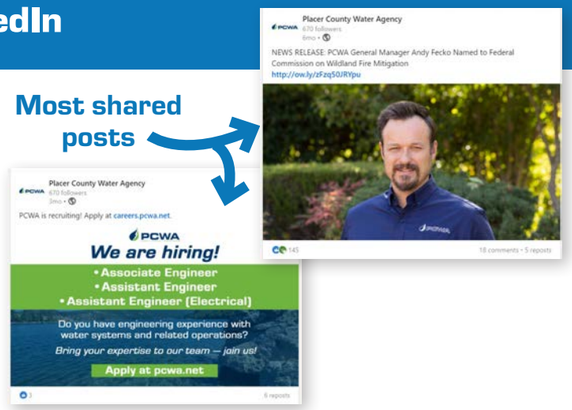
- Mosquito Fire updates
- Damages to the Boardman Canal after storms
- Presentations by PCWA's General Manager

LinkedIn

Followers

670
↗37% in 2022

Most shared posts

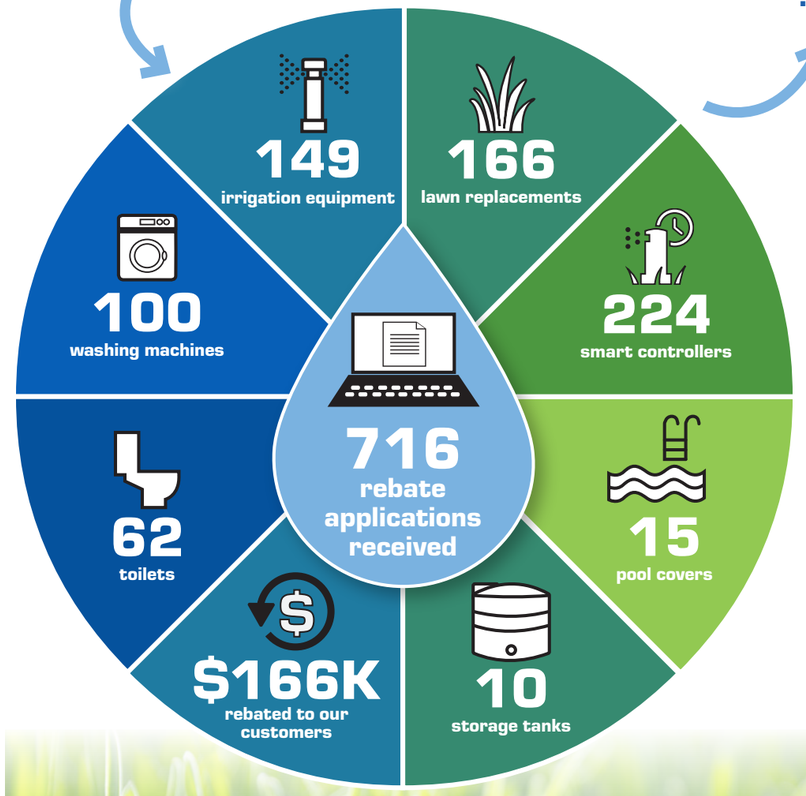


Popular posts

- News Release: General Manager Named to Federal Commission on Wildland Fire Mitigation
- Recruitment Posts
- Water Education Foundation's article on water supply

Water Efficiency Rebates

How many rebate programs did customers participate in during 2022?

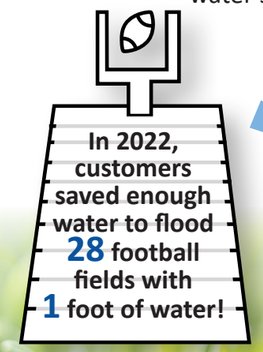


...and how much water did they save?

7.8M gallons of **outdoor** water savings!

1.3M gallons of **indoor** water savings!

9+M gallons of **combined** water savings!



Customers converted **92,000** square feet of lawn to water-wise landscape!

Financial Snapshot

Water Division Credit Outlook*

AAA
Standard & Poor's rating

4.56
Debt service coverage ratio
Ideal ratio = 2 or higher

11%
Debt ratio

Agency Assets and Net Position*

$686M
Investments in capital assets

$95M
Agency reserves

$203M
Cash & investments

$29M
Capital assets currently under construction

$73M
Outstanding debt

$4M
Retirement commitments

Agency Performance

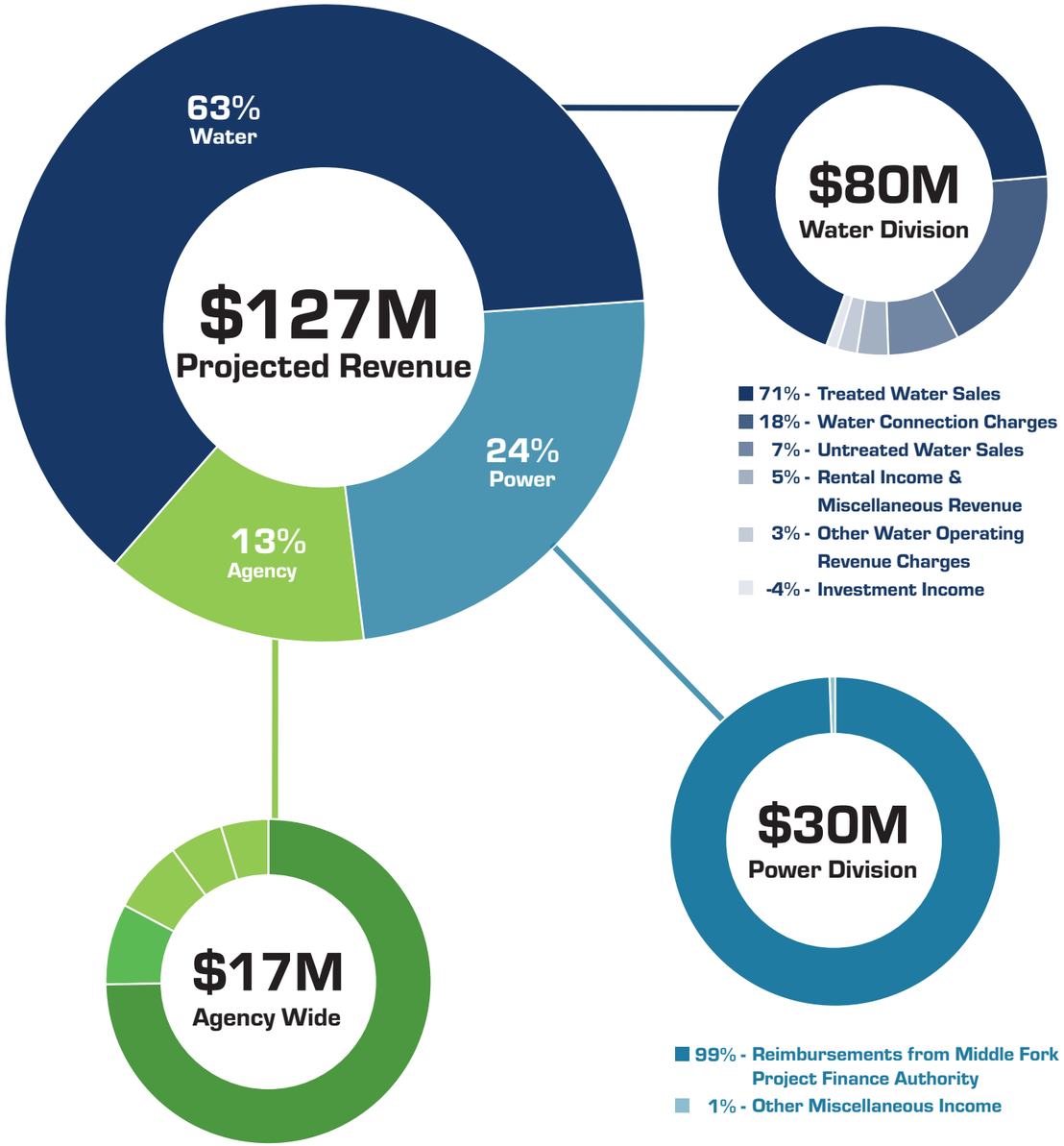
$129M
Agency revenue

$79M
Operating budget

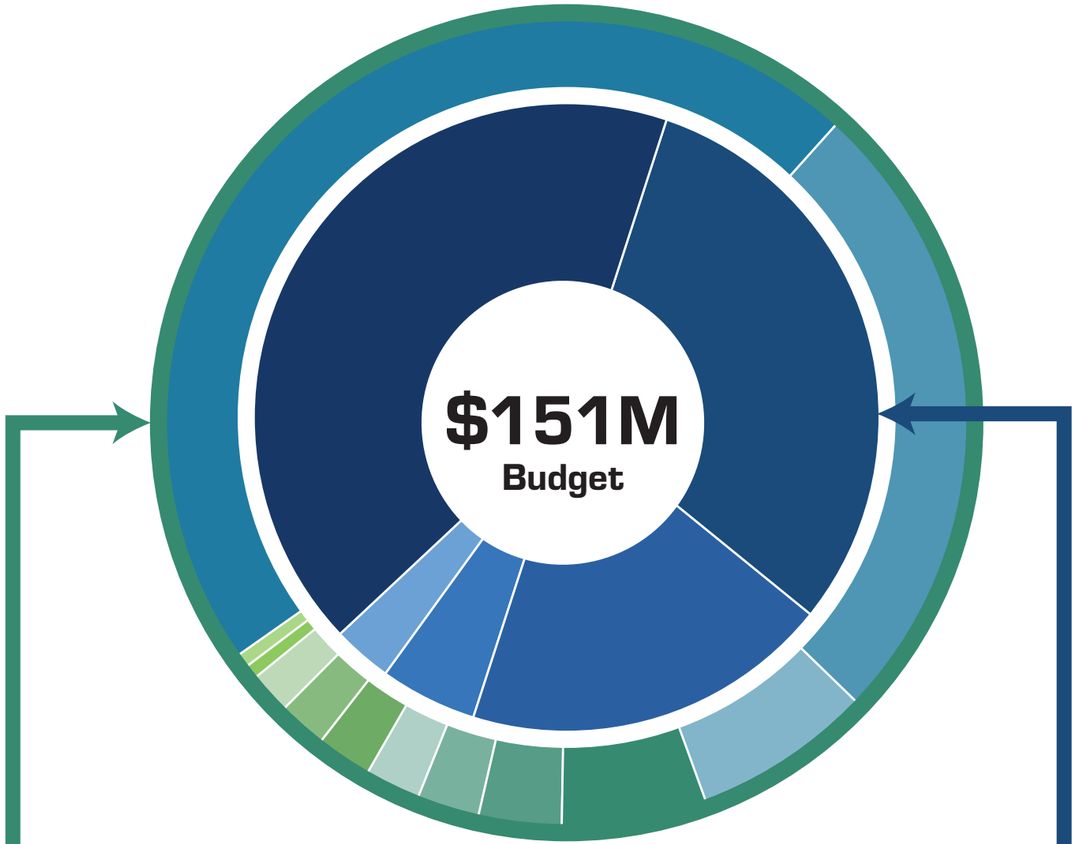
$72M
Funded 2022 Budget Capital Investment Program

* As of January 1, 2022

2022 Projected Agency Revenue Sources by Division



2022 Adjusted Agency Budget



Total Combined Budget

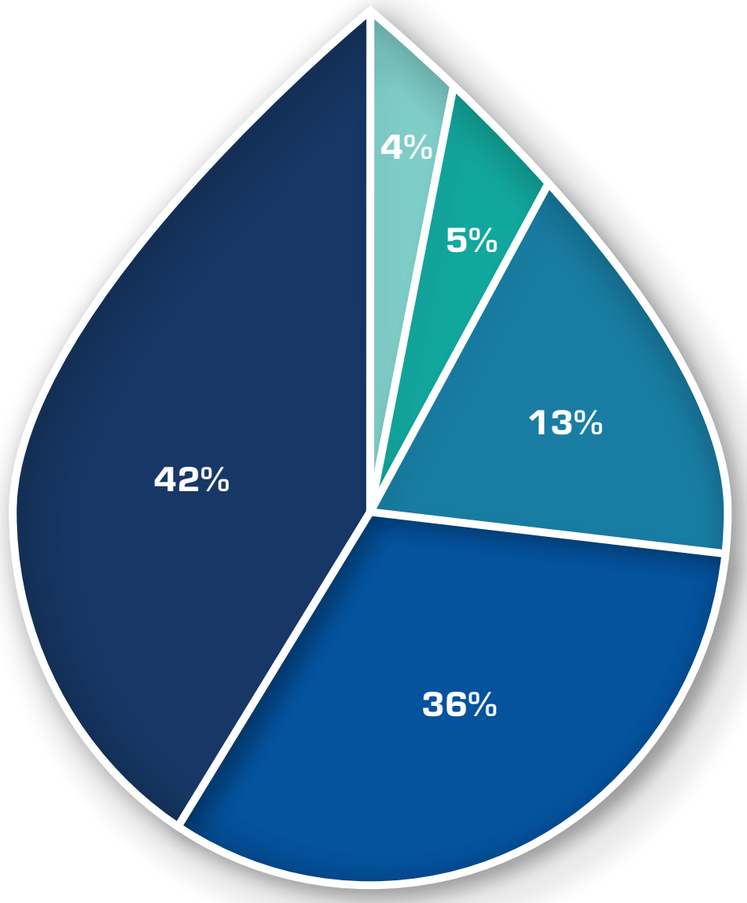
47% - Capital Investment Program	$70.6M
25% - Personnel Services (Salary & Benefits)	$38.4M
7% - Operating Services	$11.0M
6% - Contracted Services	$8.7M
3% - Water Purchases	$5.0M
3% - Routine Capital	$4.0M
2% - Cost Share Partnership	$3.5M
2% - Operating Supplies	$3.2M
2% - FERC License Condition Implementation	$2.8M
2% - Insurance	$2.5M
1% - Chemicals	$0.9M
<1% - Electricity - MFP Water Pumping	$0.7M

Total Budget

42% - Capital Projects	$64.0M
31% - Water Division	$46.7M
19% - Power Division	$29.0M
5% - Debt Service	$7.8M
3% - Agency Wide	$3.8M

Where Water Rates Go At-a-Glance

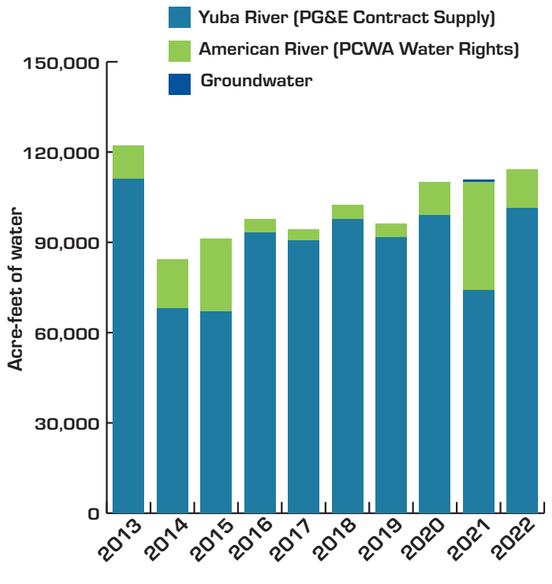
- 42% - Operations & Maintenance
- 36% - Capital Projects
- 13% - Administration
- 5% - Engineering
- 4% - Customer Services



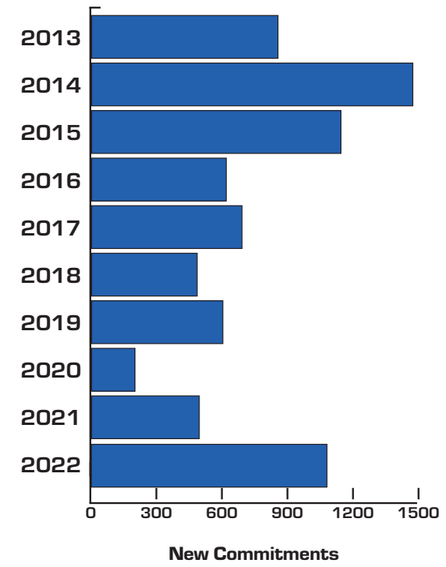
Treated Water Production

Water Supply Resiliency

Hydrologic Variability and Utilization of Multiple Water Supply Sources



Yearly Commitments to New Treated Water Service



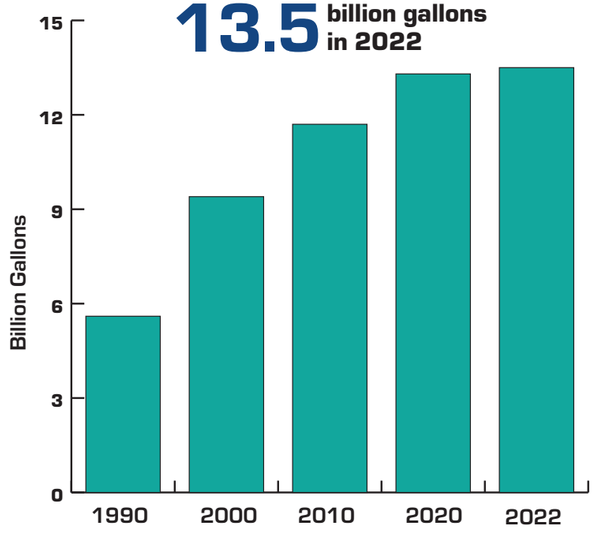
*Expressed as household equivalent water use

Decade over decade, annual drinking water production has increased to meet the demands of Placer County's growing population.

Year	Population Served by Retail Water System
1990	49,391
2000	67,321
2010	91,648
2020	108,225
2022	112,030

Annual Drinking Water Production

13.5 billion gallons in 2022



Middle Fork Project Energy Production

Green Energy

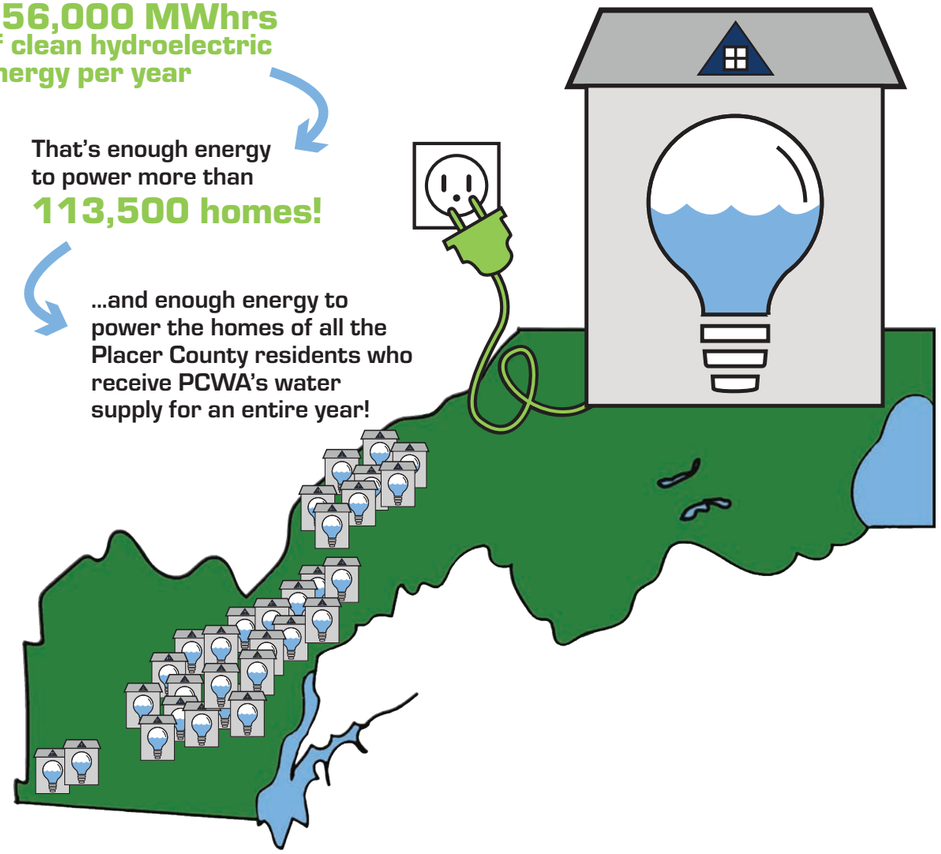
Since 2013 PCWA's hydropower project has produced an average of

756,000 MWhrs
of clean hydroelectric energy per year

That's enough energy to power more than

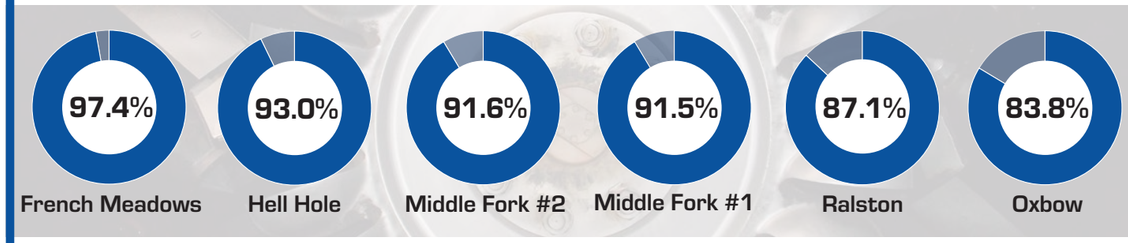
113,500 homes!

...and enough energy to power the homes of all the Placer County residents who receive PCWA's water supply for an entire year!



Reliable Energy

Percentage of hours hydroelectric generating units were available to be connected to California's energy grid:



*Unavailable hours include preventive and corrective maintenance, capital improvement projects, and operational impacts from the Mosquito Fire.

STORYLINES

Mosquito Fire Impacts

The Mosquito Fire was the largest fire in California in 2022. Placer County communities and PCWA's Middle Fork American River Hydroelectric Project have been severely impacted as a result.

76,788 Acres burned **&** **50** Days of active fire

11,000+ People evacuated from their homes and communities, inluding **35** PCWA employees

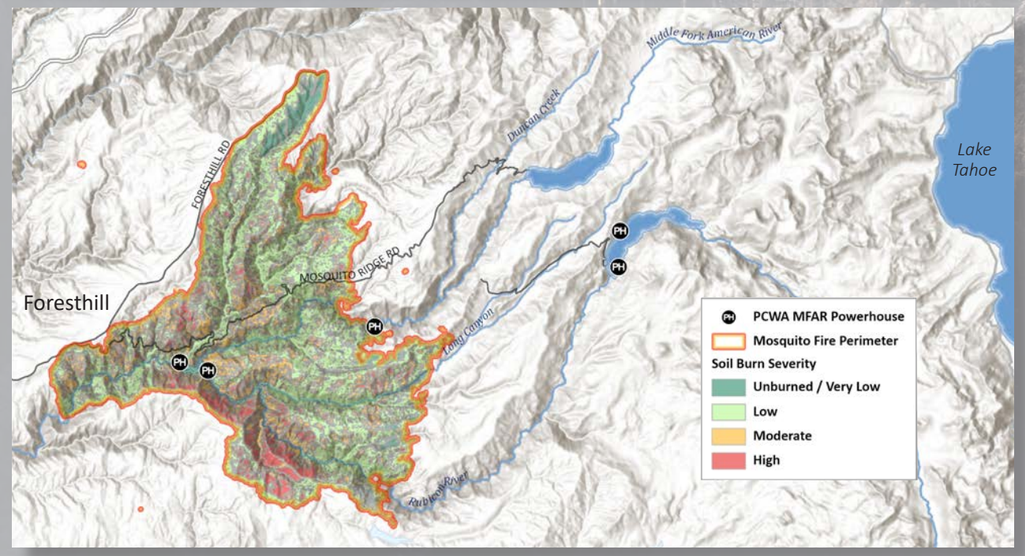
428 Air quality index reported in areas of Placer County, reaching "hazardous" conditions

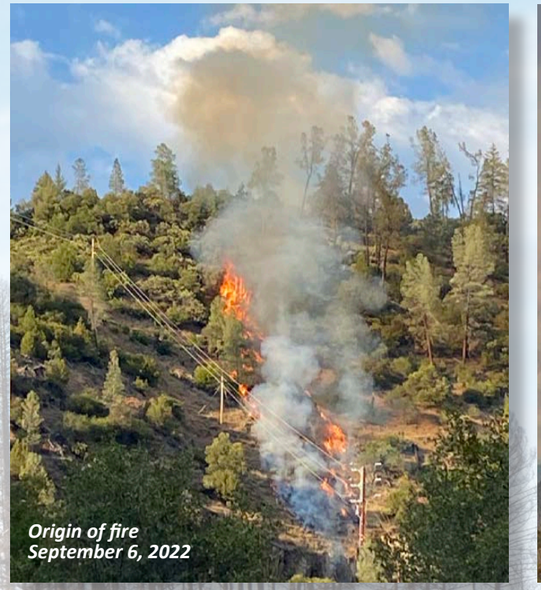
116 Days (in 2022 alone) PCWA hydropower facilities not able to transmit clean energy to the California electric grid

$10Ms Tens of millions of dollars lost in power production sales

Up to **600,000** Cubic yards of new sediment estimated to accumulate into PCWA reservoirs

Soil burn severity: **9%** high **25%** moderate **66%** low/very low

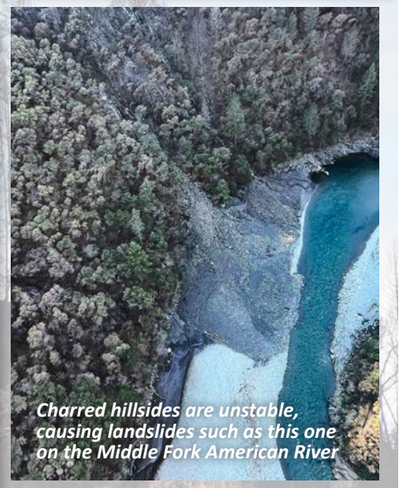




Origin of fire September 6, 2022

Pyrocumulus clouds as seen from Auburn, 16 miles away September 8, 2022

Photo by CalFire at 41,000+ acres burned



Charred hillsides are unstable, causing landslides such as this one on the Middle Fork American River

A special acknowledgment to the following agencies for their tireless efforts:

2022 Year End Report - Storylines

Where Does Your Water Come From?

P These are two critical pump stations that bring PCWA water from the American River to our canals and treatment facilities to deliver water to our customers.

M This is one of 11 buy-points for PCWA's contract with PG&E for water from the Yuba River. These buy-points deliver water to communities from Alta down to west Placer County.

Yuba River Supply
PG&E's Drum-Spaulding Hydroelectric Project
125,400 AF of contract water

American River Supply
PCWA's Middle Fork American River Hydroelectric Project
120,000 AF of water rights

Lake Spaulding

Yuba River

Alta

Monte Vista

Colfax

Applegate

Upper Foothill Ag

PG&E Canal

Auburn

Auburn Ravine

Auburn Tunnel

P Ophir Road Pump Station

P American River Pump Station

M

North Fork American River

French Meadows Reservoir

Hell Hole Reservoir

Middle Fork American River

Rubicon River

South Fork American River

Folsom Reservoir

Lincoln

West Placer Ag

Loomis

G West Placer County

Rocklin

Lower Foothill Ag

Groundwater Supply
G Wells
2,000 AF
Proposed 5,000 AF at build-out

Roseville

Sacramento River Supply
Proposed Sacramento River Project
35,000 AF of Central Valley Project Water

Cal Am

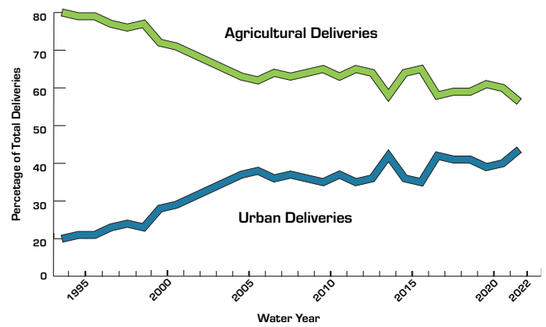
San Juan Water District

Sacramento Suburban Water District

Sacramento River

American River

Comparison of Urban and Agricultural



Investments in Your Community Water Systems

It will cost $425 million over the next 25 years to accomplish long-term infrastructure reliability, according to a recent, independent analysis of the Agency's water system.

In 2022, $11.26 million was invested through PCWA's **Renewal and Replacement Program**. This program helps to ensure the system's reliability and sustainability for existing and future customers.

Raw Water Transmission & Distribution
Projects related to the untreated water system, which includes 170 miles of canals and pipelines, pressure reducing stations, valves, meters, pump stations, buildings, electrical systems and instrumentation, and other components.

$6.9M

Water Treatment
Projects related to our eight water treatment plants and their processes that result in producing potable drinking water from source water supplies.

$2.2M

Treated Water Transmission & Distribution
Projects related to the treated water system, which includes over 615 miles of pipeline and treated water mains, pressure reducing stations, valves, meters, pump stations, buildings, electrical systems and instrumentation, and other components.

$1.2M

Other/Miscellaneous
Projects related to groundwater management, planning, Supervisory Control and Data Acquisition (SCADA), security, telecommunications, and other miscellaneous projects.

$715K

Untreated Water Storage
Projects related to the storage of untreated water, including, but not limited to our eight reservoirs, dams, and related equipment.

$171K

Treated Water Storage
Projects related to the storage of treated water, including, but not limited to our 24 storage tanks, tank mixers and vents, and related equipment.

$73K

Total Investments in 2022..... $11.26M

Sample projects from 2022. See more project highlights on the following pages.

PROJECT HIGHLIGHTS

Hayford Siphon Replacement Project

Purpose: To replace an aging intake structure and piped section of the Boardman Canal, known as the Hayford Siphon.
Cost: $4,055,882
Project type: Raw Water Transmission & Distribution

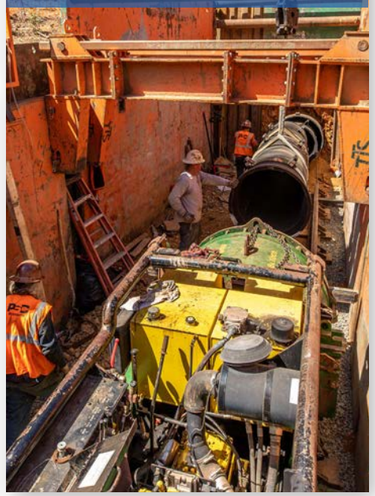
The original siphon was approximately 2,900 feet long and dates back to 1894.

The original inlet structure had reached the end of its useful life.

The new inlet structure and gunite lining will reduce leakage and increase the reliability of this canal.

This overhead view shows the inlet site. The new retaining wall stabilizes the surrounding hillside and allows for maintenance access to the inlet structure. The wall is approximately 125 feet long and 10 feet high.

The Hayford Siphon parallels and eventually crosses under the railroad tracks. A boring pit was constructed to allow for the new alignment under the tracks.



Crews bore underground to install steel casing pipe. Once installed, a smaller carrier pipe was inserted through it.

Boardman Canal Repairs

Purpose: To repair a section of the Boardman Canal, which was damaged during a winter storm event.
Cost: $793,380
Project type: Raw Water Transmission & Distribution

A portion of the canal was washed out during the storm, creating a large erosion channel down the adjacent hillside.

Crews immediately made temporary repairs, including installing inlet/outlet structures and two pipes to ensure water deliveries.

Permanent repairs included:
- Building a new gunite section of the canal
- Constructing a concrete block wall along the embankment
- Stabilizing and filling the erosion channel

Over **1,600** tons of large rock was installed for slope protection

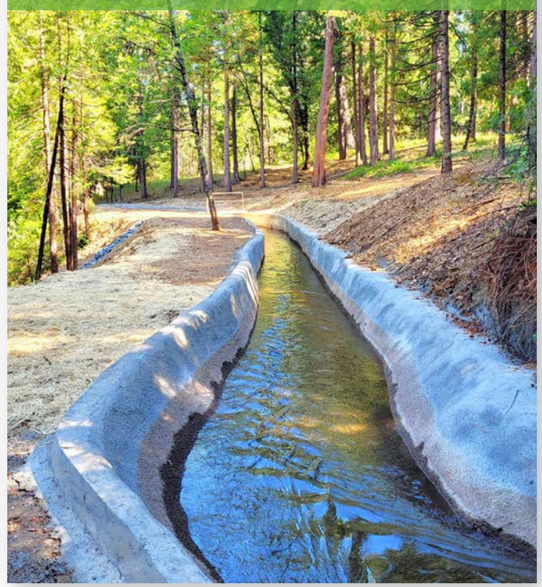
Pulp Mill Flume #1 Maintenance Project

Purpose: To maintain canal system infrastructure by replacing a 75-foot wood and tin flume, which was damaged during a winter storm event, with a newly aligned open channel canal.
Cost: $171,892
Project type: Raw Water Transmission & Distribution

Pulp Mill Flume #1 was destroyed by several fallen trees during a severe winter storm.

Crews removed old sections of the canal and flume to build the new section of gunite canal.

Extensive excavation was required to prepare for newly aligned section of canal.

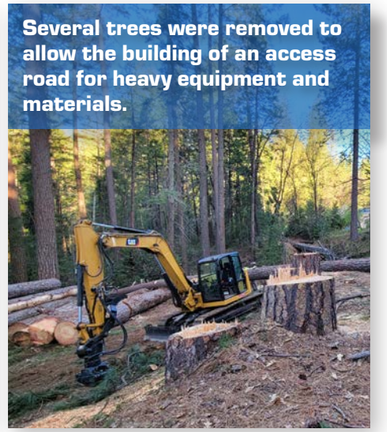


The newly aligned section of Pulp Mill Canal is complete and water restored.

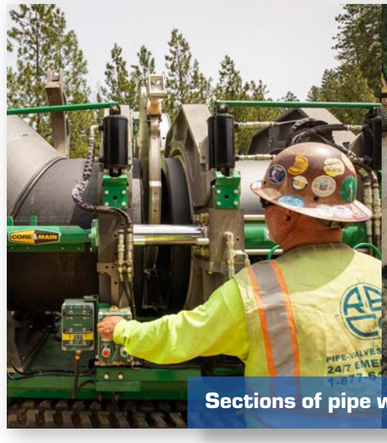
Pulp Mill Flume #2 Replacement Project

Purpose: To replace a wood and tin flume, which was destroyed during a winter storm event, with a buried section of siphon.
Cost: $532,104
Project type: Raw Water Transmission & Distribution

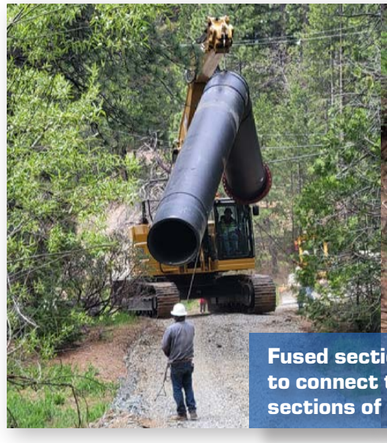
The flume was destroyed by a fallen tree during a winter storm.



Several trees were removed to allow the building of an access road for heavy equipment and materials.



Sections of pipe were fused together in a clearing to form the siphon.



Fused sections of pipe were hoisted into place to connect the upstream and downstream sections of canal.

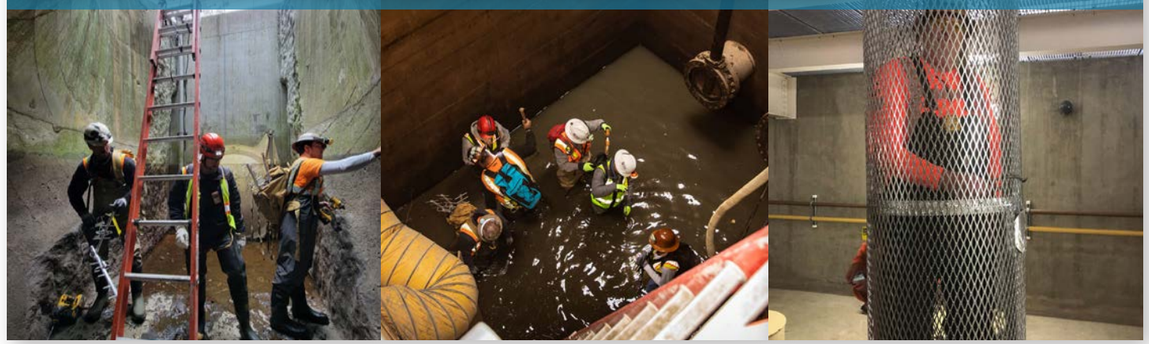
A new inlet structure was built and trash rack installed to prevent debris from entering the siphon.

Auburn Tunnel Inspection

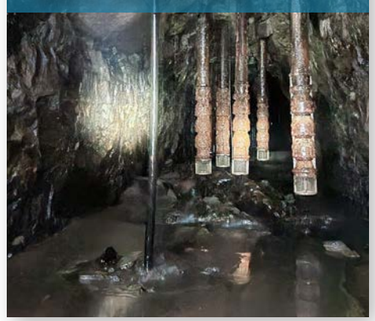
Purpose: To inspect and evaluate the condition of the Auburn Tunnel and two sets of pumps, and to remove any debris near the vicinity of the pumps. The pumps extend from the Ophir Road pump station down to the tunnel. The tunnel is key to maintaining water supply for the Foothill Water Treatment Plant and supplies canals with untreated water.
Cost: $320,000
Project type: Raw Water Transmission & Distribution

Construction of the Auburn Tunnel was completed in 1965. It is three miles long, and runs from the American River in Auburn to the Auburn Ravine in Newcastle. It is largely an earthen tunnel drilled through rock, containing smaller sections that are piped or concrete lined.

Inspection crews entered the tunnel from one of three locations: the inlet near the American River, the outlet near the Auburn Ravine, or a well shaft at the Ophir Road pump station.



The first set of pumps were unobstructed and clear from debris and sediment.



Sediment buildup surrounded the bases of the second set of pumps.

To clear sediment from the pump bases, crews used buckets to remove debris.

2nd Street Pipeline Maintenance Project

Purpose: To perform system maintenance by replacing two large sections of 1930's-era steel and 1960's-era asbestos concrete main with new pipe. The old pipes were abandoned due to leak history, water quality, and reliability issues. The new pipes will help provide safe, reliable, and potable water for domestic use and increase firefighting capabilities in the area.
Cost: $300,000 (Projected)
Project type: Treated Water Transmission & Distribution

Crews installed 780 feet of new water main pipe in this Newcastle neighborhood.

Locating wire is attached to the new pipe and mapped in a GIS database.

This new PVC pipe ranges from 4-inches to 8-inches in diameter for system demand and will help maintain water quality.

2,240 linear feet
new water main installed

Backfilling the excavation in small lifts of road-base is necessary to achieve optimal sub-grade compaction.

Viber-plate compaction equipment assists in compacting the final lift.

Robie Drive Pipe Maintenance Project

Purpose: To replace and up-size the water main in a neighborhood on the rim of the American River cCanyon. This multi-year, multiphase maintenance project will increase firefighting capabilities, improve water quality, increase reliability, and reduce the annual number of leaks.
Cost: $194,474
Project type: Treated Water Transmission & Distribution

It is important to "bed" the bottom of the excavation trench with sand prior to installing new pipe.

Crews install a bell joint restraint and a tapping saddle with corporation stop for a new water service lateral and meter.

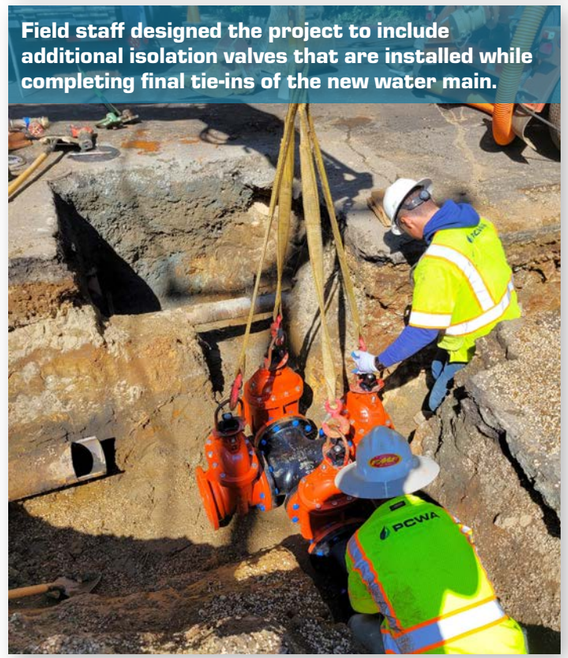
Crews install the new section of 8-inch PVC mainline.

Brook Road Pipe Maintenance Project

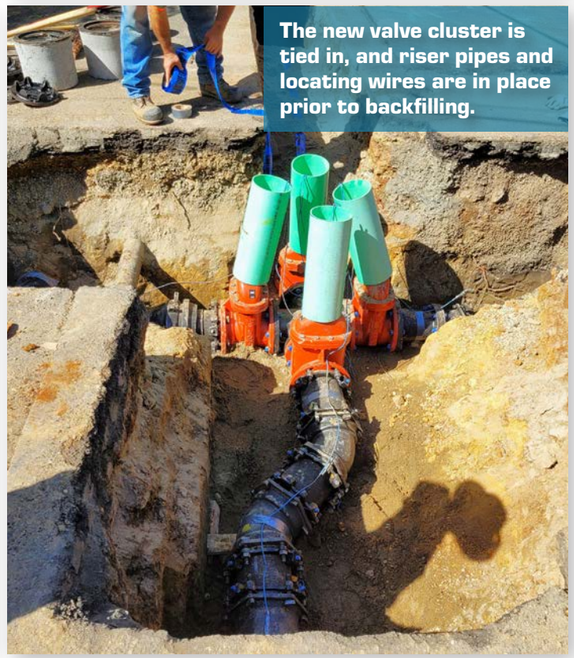
Purpose: To replace 454 feet of 1940's-era steel main with ductile iron pipe. This maintenance project will increase durability, sustainability, and reliability in the neighborhood's aging water system.
Cost: $150,638
Project type: Treated Water Transmission & Distribution

Rocky soil creates difficulties while excavating which can slow the process and increase costs.

Side dump loader buckets assist in efficiently backfilling the pipe zone with sand.



Field staff designed the project to include additional isolation valves that are installed while completing final tie-ins of the new water main.



The new valve cluster is tied in, and riser pipes and locating wires are in place prior to backfilling.

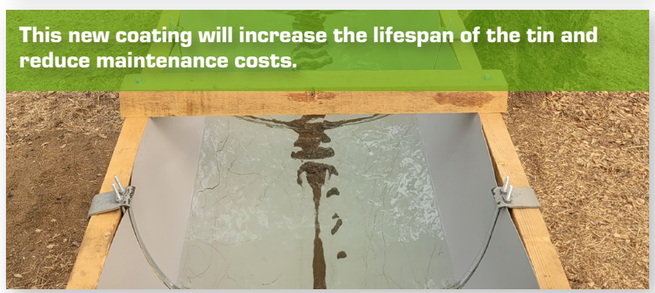
Flume Tin & Understructure Replacement Projects

Purpose: To repair or replace deteriorating flume tin and failing wood understructures to increase the lifespan and reduce future maintenance costs. Work is done year-round, as weather permits.
Cost: $309,418
Project type: Raw Water Transmission & Distribution

Buffalo Ranch Flume Replacement Project

Purpose: To rehabilitate a 111-foot long flume on the Lower Greeley Canal by replacing its tin and understructure. Maintenance on these flumes is vital to the integrity of the canal system.
Cost: $48,663
Project type: Raw Water Transmission & Distribution

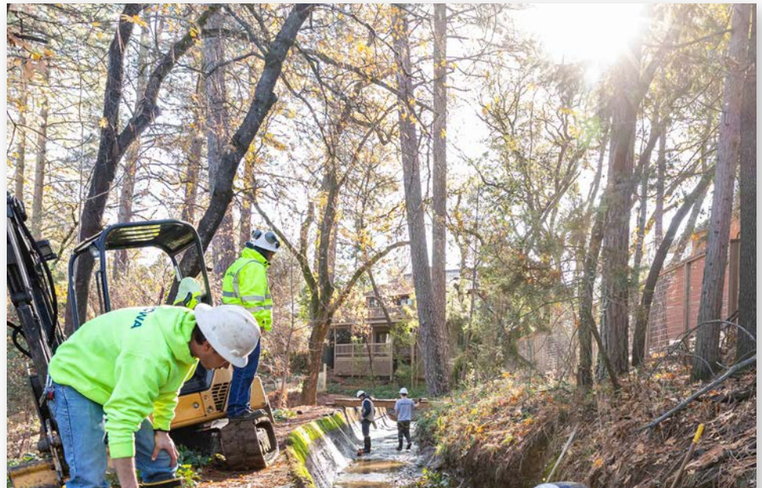

The crew replaces one section at a time to allow for 1-day outages to keep water flowing to customers.


This new coating will increase the lifespan of the tin and reduce maintenance costs.


Completely rebuilt flume (lumber and tin).

Gunite Projects

Purpose: To line or reline sections of canal with gunite to help avoid water loss from ground absorption and leaks, and to minimize canal cleaning needs. Work is done year-round, as weather permits.
Cost: $1,330,000
Project type: Raw Water Transmission & Distribution

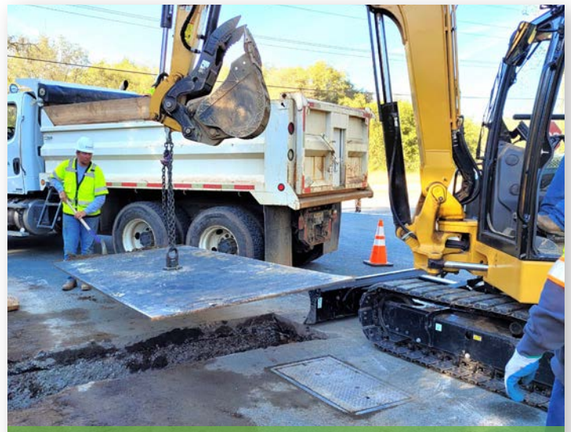

Open canal systems are exposed to surrounding elements, including dirt, sticks, and rocks. Over time, debris accumulates in canals, reducing their capacity. Regular cleaning is necessary for flow regulation and when repairs and maintenance are needed.


Canal cleaning is necessary to prepare for gunite application.

Auburn Mobile Home Village Consolidation Project

Purpose: To provide this failing public water system with a reliable, safe, domestic water supply. This community was consolidated into PCWA's Auburn-Bowman water system.
Cost: $424,836 (Paid in full through grant funding from the State Water Resources Control Board.)
Project type: Consolidation

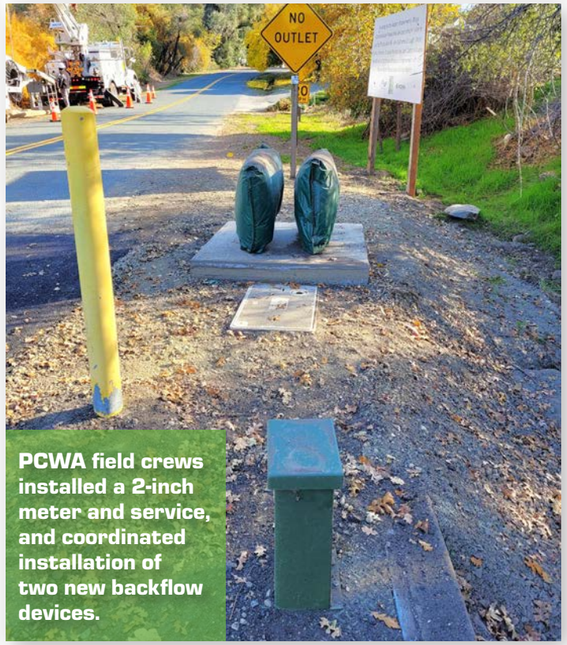
Prior to consolidation, this community had experienced contaminated drinking water from their well and distribution system.



Crews set road plates to assist with vehicle access over excavations.

These two new backflow devices will prevent cross contamination and protect water quality.

This new bypass will allow crews to work on the meter without turning off water supply to the community.

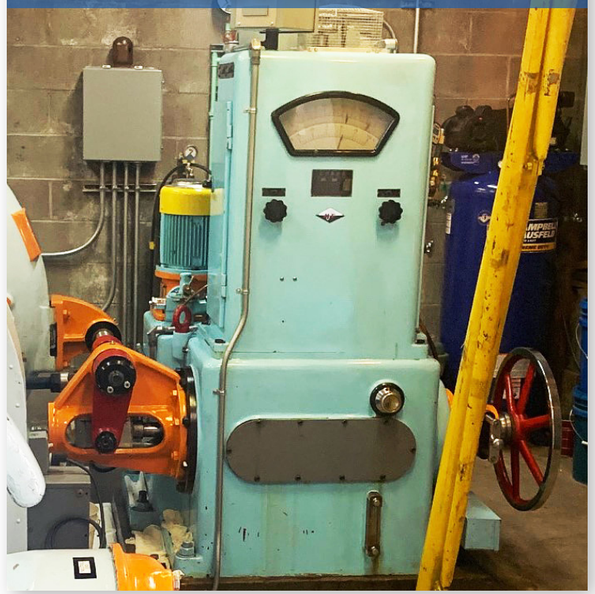


PCWA field crews installed a 2-inch meter and service, and coordinated installation of two new backflow devices.

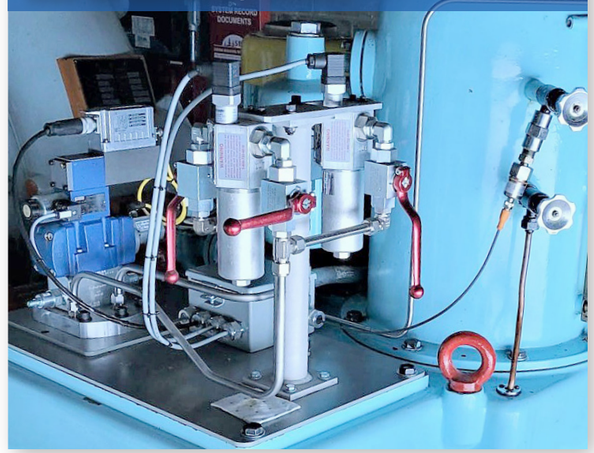
Hell Hole Governor Replacement Project

Purpose: To replace outdated, mechanical governor controls with a new, modern electro-hydraulic control system. This upgrade dramatically improves reliability, ease of repair, and real-time monitoring of the Hell Hole Powerhouse.
Cost: $275,000
Project type: Power Generation

The original mechanical governor was installed in 1984, along with a horizontal shaft francis hydro-turbine, producing up to 750 kilowatts.

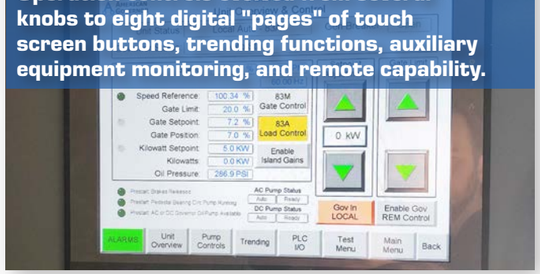


PCWA crews fabricated mounting plates for the new electro-hydraulic controls assembly, instead of the old cabinet. Fun Fact! This is the fifth governor upgrade the PCWA Hydro Operations & Maintenance team has successfully installed.



The old control cabinet housed a complicated series of linkages, electric motors, and hydraulic valves. Due to the age of the equipment, lack of spare parts and no factory support, the controls became increasingly difficult to maintain and hold the settings required to run efficiently.

Operation controls evolved from several knobs to eight digital "pages" of touch screen buttons, trending functions, auxiliary equipment monitoring, and remote capability.



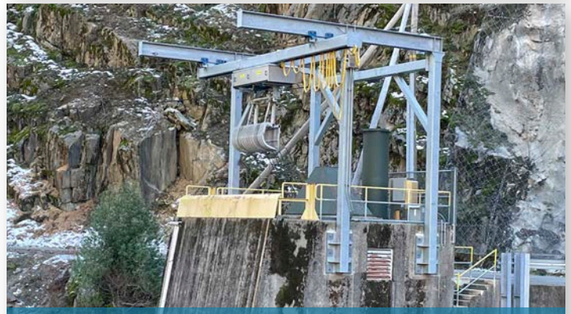
New technology replaces the entire mechanical controls assembly with a small stack of electro-hydraulic valves.

Ralston Tunnel Trash Rake Replacement Project

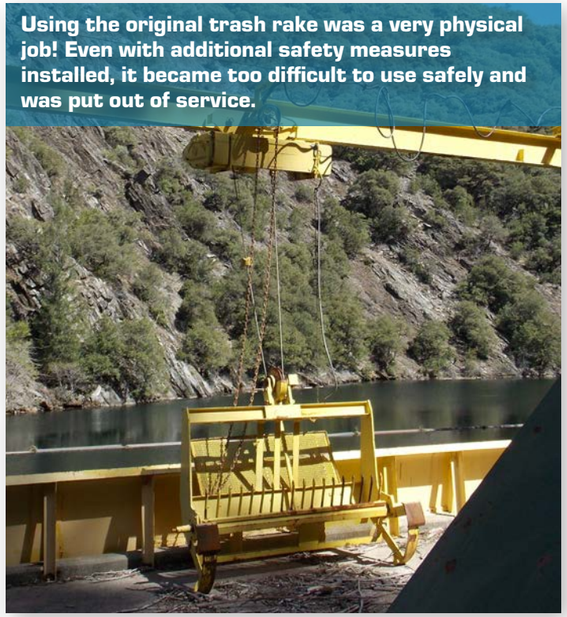
Purpose: To replace the trash rake equipment which did not meet current safety standards and presented a physical challenge to operate. The trash rake is used to remove sticks and debris from the intake of Ralston Tunnel, which helps keep water velocities down, prohibits sediment mounds from forming, and protects the tunnel and the powerhouse downstream from potentially harmful debris.
Cost: $777,000
Project type: Power Generation

The original trash rake was installed in the 1970s as part of the original construction of the Middle Fork Project.

The new trash rake was designed to lift and remove up to 2000 lbs of debris in one pick! This required building from the ground up, removing the entirety of the old equipment and installing a suitable structure.



The new, automated trash rake will clean the entire intake in about 30 minutes, with the push of a button. It can run on a timer or be controlled remotely by operators.



Using the original trash rake was a very physical job! Even with additional safety measures installed, it became too difficult to use safely and was put out of service.

The new rake features a hydraulic claw that automatically opens and closes to "grab" any debris on the face of the intake structure. The rake can pick up everything from rocks to sticks and large woody debris—even plastic tarps!

Oxbow Powerhouse Transformer and Generator Protection Upgrade

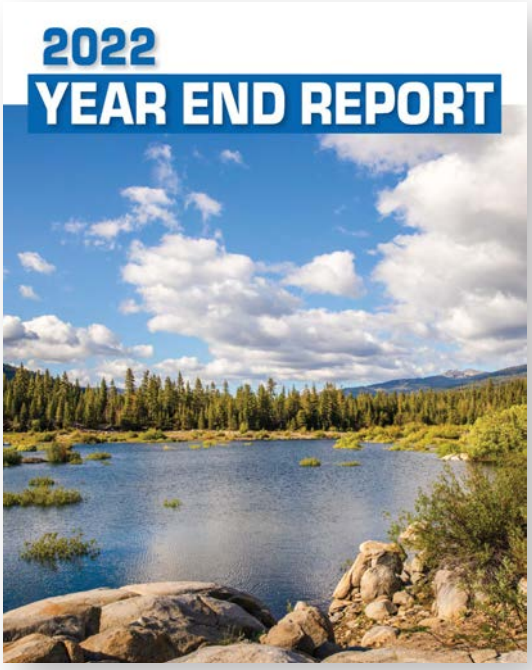
Purpose: To replace relay equipment used to monitor and protect powerhouse equipment. Relays monitor functions such as electrical voltage, current, frequency, and temperature. If a relay detects a problem, it can alert operators or even completely disconnect the powerhouse from the grid, thus protecting the equipment from unexpected damage.
Cost: $339,000
Project type: Power Generation

The original electro-mechanical relays were the best available in 1960! While the 55 year-old equipment was working, it is now obsolete. The new relays will last for many years to come.

Two new control board panels house the new relays. The panels were fabricated and assembled by PCWA's hydro electrical crew, who terminated over 550 connections and used more than a mile of wire!

The new panels installed after heavy modification and fabrication to the existing control board. The new relays are redundant (each relay has its own back up relay). Even with this added redundancy, our teams used 25% less space than the original installation. That's a big deal in a crowded control room!

The new microprocessor based relays provide real-time data displays, event reporting capability and are easy to test and adjust settings . Unlike the old relays, they do not require mechanical adjustments or periodic tuning.



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