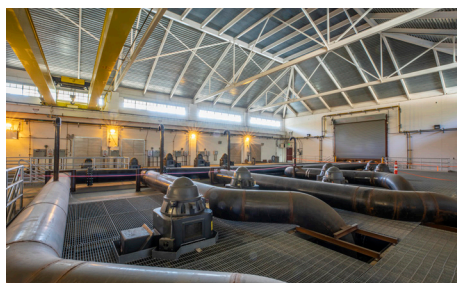
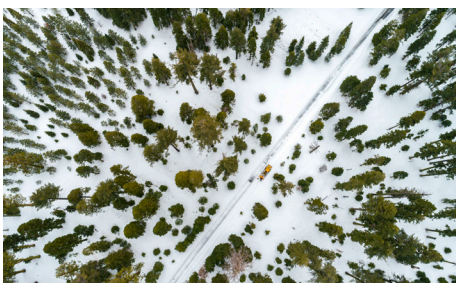




2019 Year-End Report

Accomplishments and View of the Horizon





2019

YEAR END REPORT

Accomplishments and View of the Horizon

Placer County Water Agency (PCWA) is the primary water resource agency for Placer County, California, with a broad range of responsibilities including water resource planning and management, retail and wholesale supply of drinking water and irrigation water, production of hydroelectric energy, and environmental stewardship.

Contents

Administrative Services Department.....	1
SIGNIFICANT ACCOMPLISHMENTS FOR 2019	1
PLANNED PROJECTS AND ANTICIPATED CHALLENGES FOR 2020	6
Customer Services Department	11
SIGNIFICANT ACCOMPLISHMENTS FOR 2019	11
PLANNED PROJECTS AND ANTICIPATED CHALLENGES FOR 2020	18
Energy Marketing Department.....	21
SIGNIFICANT ACCOMPLISHMENTS FOR 2019	21
ANTICIPATED CHALLENGES FOR 2020	25
Field Services Department.....	27
SIGNIFICANT ACCOMPLISHMENTS FOR 2019	28
PLANNED PROJECTS AND ANTICIPATED CHALLENGES FOR 2020	34
Financial Services Department.....	39
SIGNIFICANT ACCOMPLISHMENTS FOR 2019	40
PLANNED PROJECTS AND ANTICIPATED CHALLENGES FOR 2020	44
Legal Department.....	47
SIGNIFICANT ACCOMPLISHMENTS FOR 2019	47
PLANNED PROJECTS AND ANTICIPATED CHALLENGES FOR 2020	48
Power System Department.....	51
SIGNIFICANT ACCOMPLISHMENTS FOR 2019	52
PLANNED PROJECTS AND ANTICIPATED CHALLENGES FOR 2020	53
Strategic Affairs Department.....	57
SIGNIFICANT ISSUES IN 2019	57
Technical Services Department.....	65
YEAR END SUMMARIES OF THE DEPARTMENT	65
SIGNIFICANT ACCOMPLISHMENTS FOR 2019 AND ANTICIPATED CHALLENGES AHEAD ...	67



Administrative Services Department

Administrative Services is comprised of Human Resources and Risk and Safety Services. In addition to the work of these programs, the department also supports the Board of Directors and General Manager on Agency-wide issues; provides administrative assistance and consultation to Agency departments; ensures a consistent organizational identity and public image; facilitates organizational effectiveness and employee recognition; and, serves as the steward of the Agency's workplace culture.

Human Resources is responsible for recruitment and talent acquisition; employee orientation, training and development; compensation and benefits administration; performance management; organizational design; payroll; workforce planning; employee and labor relations; labor negotiations; policy development and documentation; and, the administration of human resources rules, policies and Memoranda of Understanding.

Risk and Safety Services is responsible for managing and mitigating the Agency's exposure to risk. This is achieved by purchasing property and liability insurance to protect Agency assets, actively managing liability and Workers' Compensation claims, and implementing safety and loss control programs. This division also has responsibility for records retention and records archives.

SIGNIFICANT ACCOMPLISHMENTS FOR 2019

Human Resources

Payroll and Benefits

- Transitioned the Agency's life insurance and disability coverage from Lincoln Financial to Cigna resulting in a premium savings of over \$30,000 per year.
- Conducted the annual Health Benefits Fair for Agency employees and their families.
- Revised the vacation sell-back and compensatory time off (CTO) cash-out programs to ensure full compliance with all regulatory requirements.
- Implemented a Roth Supplemental Income 457 Plan which allows employees to make retirement savings investments on an after-tax basis.
- Coordinated and tracked 39 employee leaves of absence, ensuring compliance with the various complex leave-specific legislative mandates, including the Federal Family Medical Leave Act (FMLA), Americans with Disabilities Act (ADA), the California Family Rights Act (CFRA), and Pregnancy Disability Leave (PDL) requirements.



The annual Health Benefits Fair draws a crowd of employees and their families

Training

- Conducted the eighth annual “Administrative Services World Tour” with Agency departments to share benefits-related information, provide policy updates and highlight available resources.
- Completed the third full year of *The Training Wave*, a lunch-hour training program for employees which offers sessions on a variety of topics such as leadership/supervision, safety, financial planning and personal growth.
- Provided an in-house three-day symposium for current and future leaders entitled “Leadership Learning.”
- Provided a one-day workshop for supervisors entitled “Stepping Up to Supervision.”



*Come and hear about the 2020 health insurance rates
and more!!*

- Provided refresher training to departmental ambassadors on the new hire on-boarding process to enhance the experience of new employees as they receive their introduction and orientation to the Agency.
- Conducted the training class “Prevention of Sexual Harassment, Discrimination, Retaliation and Abusive Conduct” for all managers and supervisors, as required every two years by the State of California, pursuant to AB 1825, AB 2053 and SB 1343.
- Conducted the training class “Local Government Ethics” for all managers and Board members, as required every two years by the State of California, pursuant to AB 1234.
- Conducted the training class “Harassment Prevention/ Maintaining a Respectful Work Environment” for all non-supervisory and non-managerial employees, as required by the State of California, pursuant to SB 1343.
- Developed and presented a completely new organizational effectiveness training program called “Building Blocks for Workplace Collaboration,” which is provided to all new hires at the Agency. A form of organizational effectiveness training has been used at the Agency for decades to properly orient new employees to the culture of PCWA.
- Completed the first full year of a training and development forum for Agency supervisors called the Supervisors Roundtable. This quarterly discussion group was created to address supervisory questions, challenges and training needs.



Shelley L. and Michael W. presented at the new Building Blocks for Workplace Collaboration training. Newly hired employees participate in a workshop to gain familiarity with the principles which serve as the foundation of the Agency's workplace culture.

Staffing

- Conducted recruitment and selection processes for 30 regular, 19 temporary, and four student intern positions.
- As a component of workforce and succession planning, designed an internal job fair for interested employees highlighting Agency career development activities. This job fair will be conducted in spring of 2020.
- Provided retirement counseling and processed the retirements of five Agency employees with a combined 80 years of Agency service.
- Researched “best practices” to include in the Agency’s on-boarding program for new hires in order to enhance the orientation experience for new employees, as well as the hiring departments. These “best practices” will be implemented in 2020.

Human Resources Programs

- Planned and prepared a display in the Business Center lobby in acknowledgment of Public Service Recognition Week, which occurs annually each May.
- Researched and implemented improvements to the Agency’s performance management system to integrate professional best practices and work-flow efficiencies in order to provide meaningful tools, processes and outcomes for managers, supervisors and employees.
- Created a library of checklists to be used as resources by managers and supervisors including *Becoming the Supervisor*, *Difficult Conversations*, *Hiring Interviews*, and *Performance Management*.
- Orchestrated an Agency-wide initiative to transition from United Way charitable support to a Community Giveback program in which the Agency identifies and sponsors one local community program each quarter of the calendar year.



Administrative staff recognizes the retirement of Lacey Burge, a long-tenured employee of Human Resources.

- Implemented AdastraGov labor costing and position budgeting software, which can be used to cost out labor negotiations proposals and forecast staffing expenditures.
- Staff spoke on a variety of human resources, labor relations, and leadership topics at several regional and national conferences, including the International Public Management Association, the Western Region Intergovernmental Personnel Assessment

- Council, Personnel Testing Council of Northern California, California Special Districts Association, and the General Manager Leadership Summit.
- Founded the Human Resources Manager Network, an organization of public sector human resources managers in Placer, Nevada, El Dorado, Yolo and Sacramento counties. Organized, hosted and facilitated the inaugural meetings at PCWA.



Risk and Safety Services

Risk Management

- Successfully marketed the Power System property insurance portfolio to the world insurance market, which resulted in the Agency becoming the founding member of the hydro-electric insurance tower at the Association of California Water Agencies (ACWA) Joint Powers Insurance Authority (JPIA).
- Staff was elected as the Vice President of the Municipal Insurance Cooperative (MIC) Joint Powers Authority (JPA), which was established to allow public agencies to self-insure Workers' Compensation coverage while providing for the "group" purchase of Excess Workers' Compensation insurance.
- Created a multi-department vehicle insurance database to track the registration and insurance coverage for all Agency vehicles.

Safety

- Secured the services of a safety consultant to advise and assist the Safety Committee with Agency-wide safety programs.
- Created several formal written safety programs including *Bloodborne Pathogens, Fall Protection, Fire Prevention and Hot Work, and Wild Fire Respiratory Protection*.

Records Retention and Records Archives

- Updated the Agency's Records Retention Schedule to ensure that physical and electronic documents are maintained as long as legally and operationally required.



The Safety Committee meets on a monthly basis to discuss and implement safe practices in the workplace.

PLANNED PROJECTS AND ANTICIPATED CHALLENGES FOR 2020

Human Resources

Training

- Continue to enhance and promote the Agency's Virtual Leadership Academy, a self-paced training program designed to develop current and future leaders of the organization.
- Continue to conduct the training class "Harassment Prevention/ Maintaining a Respectful Work Environment" for all non-supervisory and non-managerial new hires, as required by the State of California, pursuant to SB 1343.

Staffing

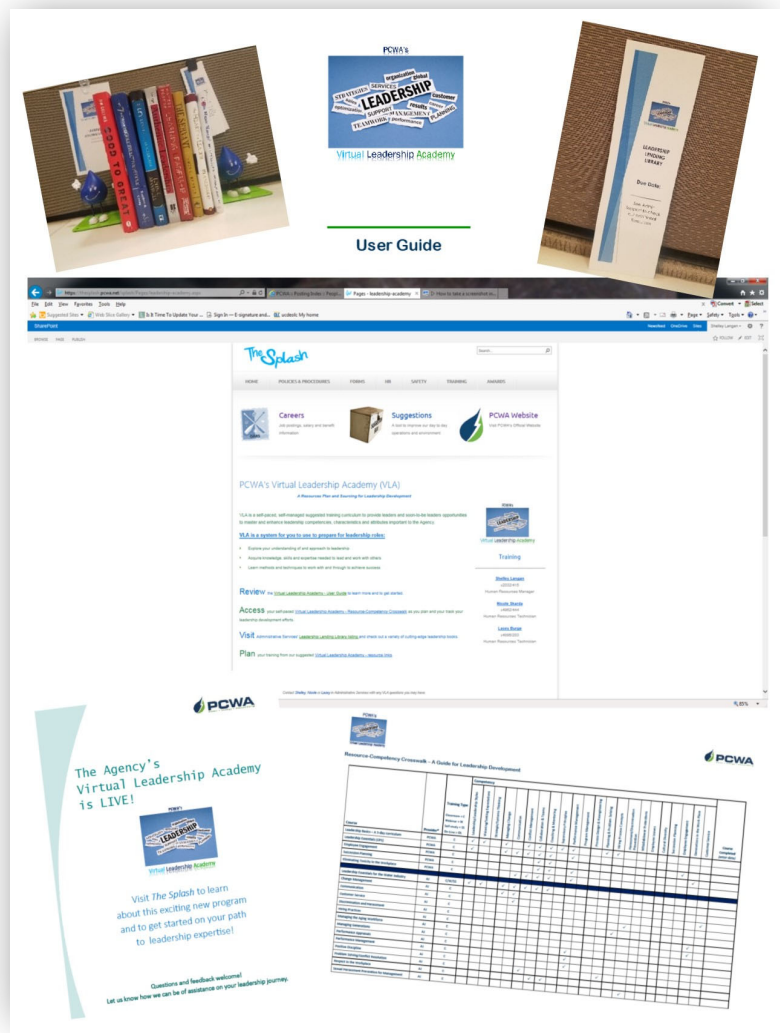
- Conduct an internal job fair for interested employees highlighting Agency career development opportunities.
- Refresh the Agency's on-boarding program for new hires to enhance the orientation experience for new employees, as well as the hiring departments.
- Update the recruitment video which is used to showcase the Agency's workplace culture and market employment opportunities at PCWA.

Human Resources Programs

- Pursuant to the current Memorandums of Understanding (MOUs) for the Water Systems Bargaining Unit and Power System Bargaining Unit, conduct a salary survey of Water Systems and Power System job classifications and reach agreement with Local 39 on survey results and implementation.
- Conduct stakeholder meetings with the management team and the Board of Directors in preparation for the 2020 labor negotiations.
- Complete the collective bargaining process with Local 39 and reach agreement on new MOUs for the Water Systems Bargaining Unit and the Power System Bargaining Unit by December 31, 2020.
- Explore opportunities to replace manual processes with technology solutions in order to improve efficiency and service delivery to the Agency.
- Design and implement an interview question bank to serve as a resource to hiring supervisors and managers.

Payroll and Benefits

- Implement the electronic delivery of the 1095-C tax documents (which substantiate health insurance coverage) to all employees, and the 1094-C compliance form to the Internal Revenue Service (IRS), as required by the Affordable Care Act.



The Virtual Leadership Academy provides a do-it-yourself roadmap to learning leadership practices.

- Configure, test, troubleshoot and implement the new W-4 Federal tax withholding form as required by the IRS.
- Revise and publish the Confidential Employee Compensation Plan and the Management Compensation Plan reflecting changes to compensation and benefits programs adopted by the Agency's Board of Directors.

Risk and Safety Services

Risk Management

- Collaborate with Placer County on the creation of a Local Hazard Mitigation Plan.

Safety

- Collaborate with the Agency's Information Technology Division in leveraging the new telephone system to create a warning/alert process for active shooter, shelter in place and building evacuation.
- Create a safety training platform on *The Splash*, the Agency's intranet site, to announce and enroll Agency employees in safety training.
- Create and deliver a Defensive Driver Training Program for Agency employees.

Records Retention and Records Archives

- Provide training to departments on the Agency's revised Records Retention Schedule and Policy.



Customer Services Department

The Customer Services Department is comprised of Customer Service, Facility Maintenance, Water Efficiency, and Public Affairs. Customer Service is responsible for customer contact, account billing and collections, new accounts, and mail distribution. Facility Maintenance is responsible for the ongoing maintenance of facilities, building access, and security systems. Water Efficiency is responsible for meter reading, testing, repair, replacement, and water use efficiency programs. Public Affairs is responsible for customer communications including the newsletter, social media, multimedia, press releases, government affairs, and legislative tracking.

SIGNIFICANT ACCOMPLISHMENTS FOR 2019

Contact Center and Utility Billing

- Increased average number of payments processed through the website to 4,700 per month in 2019 from 3,700 per month in 2018.
- Total front counter transactions (bill payments) decreased to 4,200 in 2019 from 4,300 in 2018.
- Processed on average, 1,300 payments per month through the Interactive Voice Response (IVR), which is consistent with the prior year.
- Responded to approximately 46,000 customer calls and created 14,000 work orders in 2019.

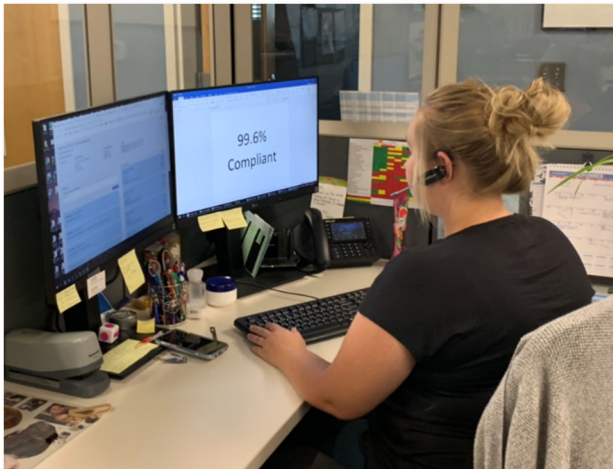


A new and advanced phone system was implemented in 2019.

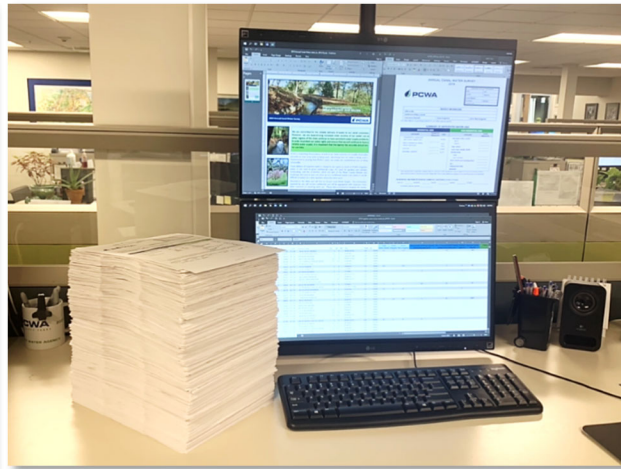


Nicky G. assists customers with transactions at the front counter.

- Assisted developers and customers to complete facility agreements, 22 infill projects, 12 restore projects and 13 Lot Size Variances.
- Successful completion, implementation and administration of year two of the Sustainable Irrigation Pilot Program (SIPP) grant for western Placer County.



Kirsty B. works to increase the state required Backflow Program to 99.6 percent compliance.



Annual canal surveys that were entered into a spreadsheet for data collection and analysis.

- Partnered with IT department and successfully implemented a new and advanced phone system for the contact center.
- Successfully implemented an untreated water canal allocation with 100 percent response and sold an additional 21.5 miners' inches of summer water and 21 miners' inches of winter water.
- Streamlined and revamped the administration portion of the state-mandated Backflow Program and increased the number of devices that are in compliance to 99.6 percent compliance. We have a total of 6,100 devices.
- Completed annual irrigation canal survey of 4000 customers.
- Partnered with Technical Services to administer the reimbursement of the Newcastle irrigation line customers.
- Responded to Public Safety Power Shut-off inquiries from the public, including inbound and outbound notifications to affected customers.
- Hired and trained three new Customer Service Representatives.



Three new Customer Service Representatives in 2019. (Left to right: Jaimie R., Customer Contact; Trista M., Collections; and Michelle S., Billing)

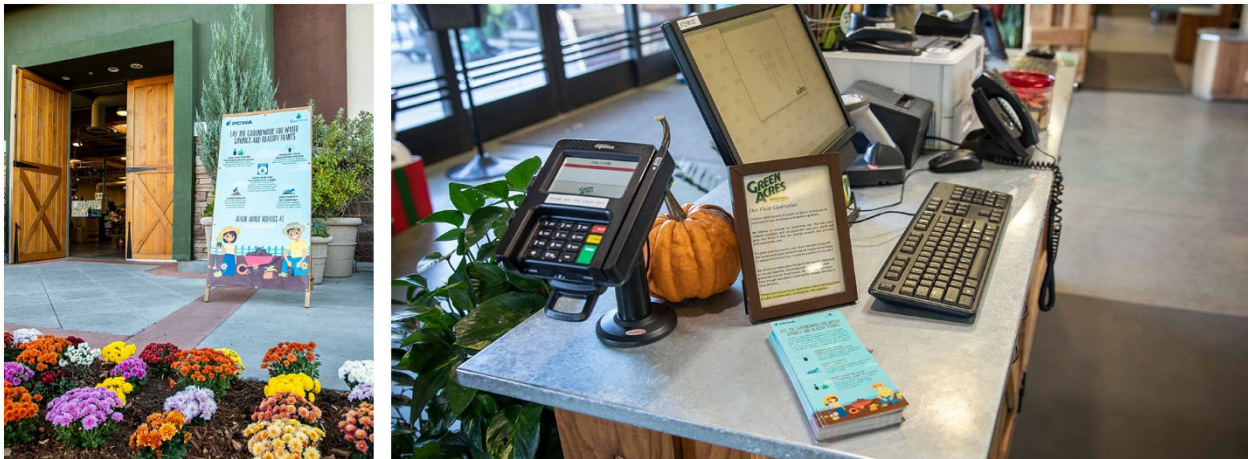
Water Efficiency

- Performed 435 Water Wise House Calls and Water Wise Business Calls.
- Provided \$140,000 in Water Efficiency rebates to customers including 201 Irrigation Rebates, 54 Turf Rebates, 318 High Efficiency Toilet rebates, and 16 High Efficiency Washing Machine rebates.

- Hosted the fifth annual Mulch Mayhem event at Sierra College and donated 400 cubic yards of mulch to local residents.
- Hired a new Water Efficiency Specialist.
- Hired student Intern for Water Efficiency.
- Three department Water Efficiency Specialists obtained Qualified Water Efficient Landscaper (QWEL) certifications.
- Tested 64 large meters and 96 intermediate meters. Repaired and calibrated 47 percent of the large meters and 25 percent of the intermediate size meters.
- Updated all Water Efficiency Standard Operating Procedures to maintain efficiency and provide consistency in workflows among the whole team.
- Participated in the Career Day job shadow program for the third year in a row.
- Submitted the Department's first Water Sense report to the Environmental Protection Agency's (EPA) Water Sense program.
- Collected two months of hourly consumption data for Technical Services as a part of their annual Summer Study of peak daily demand to inform design criteria and Lot Size Variance Study tracking.
- Produced 30 second Public Service Announcements for social media and Agency promotion for Water Wise House Calls, Fix a Leak Week, and How to Clean a Meter Box.
- Transferred meter part inventory to the Field warehouse for accuracy and efficiency.
- Assisted Field Services by acquiring three new types of work orders resulting in 121 work orders completed by Water Efficiency staff.
- Continued participation in nine public outreach events including the Master Gardener's Garden Faire, the Mandarin Festival, and the Colfax Chambers Winter Fest.



Linda H. promotes the Fall Planting partnership with Green Acres during a Studio 40 television segment.



Promotional materials were displayed at local nurseries as part of the Fall Planting partnership efforts.

- Updated and created web-based applications for the Water Efficiency Rebate Program, which simplified the process for customers and staff.
- Created work orders for each rebate type to track staff work and quantify rebates in the program.
- Started participation in the Regional Water Meter Replacement Planning Study to explore feasibility and strategy for long-term meter replacement and AMI integration.
- Continued exploration and propagation for a small Advanced Metering Infrastructure (AMI) fixed network pilot. Installed 213 – 100W Itron endpoints and a data collector on the Midas Water Tank.



PCWA staff promote the Fall Planting partnership and engage with the community at Green Acres in Rocklin.

- Partnered with Regional Water Authority to host a Qualified Water Efficient Landscaper (QWEL) training in Placer County in the fall of 2019.
- Partnered with the City of Auburn and provided leadership to five Rocklin Boy Scouts to retrofit the Maidu Fire



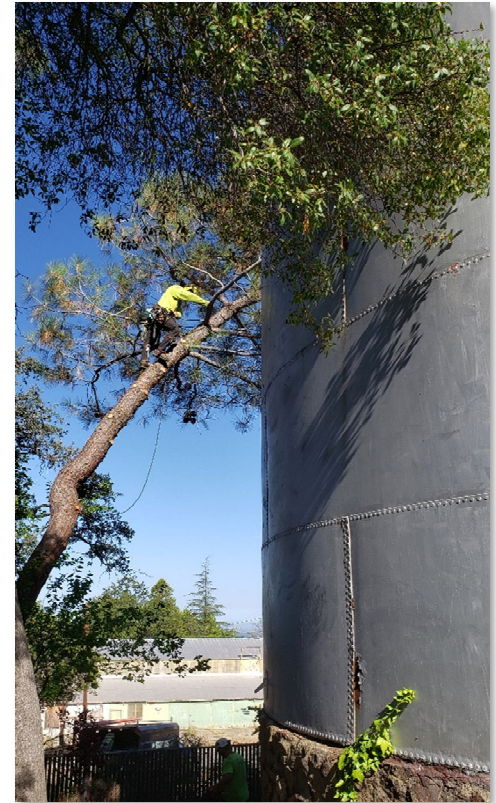
Two boy scouts stand proudly with landscape architect of Yamasaki Landscaping, and Chief Battalion of Auburn City Fire Department, after planting over 300 fire-wise, water-wise plants and shrubs as part of the landscape makeover project at the Maidu Fire Station.

Station landscape to a water-wise, fire-wise landscape, and promotion of a water efficiency presentation at an after school program.

- Established new software truncation codes for the newly deployed high-resolution registers and endpoints that are used by the Advanced Meter Reading and Billing software to determine which raw data digits are used for billing purposes.
- Updated work flows for Fire Line Bypass meters.

Facilities Maintenance

- Identified, inventoried, and developed a maintenance plan for agency automatic gate operators.
- Coordinated removal of hazardous trees at Agency facilities.
- Worked with Engineering to identify HVAC units to be replaced in 2020.
- Worked with Engineering on replacement of HVAC unit at 498 Maidu and a new unit install at 496 Maidu.
- Upgraded Administrative Services HVAC with a safe unit disconnect, a new thermostat, additional supply and return lines and vents, and complete balance of airflow in each office area.



Hazardous tree removal at Herrington Drive Tank

- Procured and installed an Automated External Defibrillator (AED) in the Sierra Center for a more rapid first response if ever needed.

Public Affairs and Multimedia Services

- Worked with Water Efficiency Division to expand educational outreach activities with local schools, including:
 - ChangeMakers program at Skyridge Elementary School
 - “Fix-a-Leak” Week at Del Oro High School
 - WaterSpots Video Contest at local middle and high schools



Rodney L. installing under the counter ice maker



Ross B. and Matt Y. presented students from Whitney High School certificates and a check from Regional Water Authority for their winning video submission in the WaterSpots Video Contest.



Brie C. shares tips on photography in the field with students at Skyridge Elementary School, before challenging them to a photo scavenger hunt outdoors.

- Implemented “Profiles in Water” campaign in newsletter, highlighting the way different PCWA stakeholders use PCWA water.
- Redesigned layout of customer newsletter, reducing costs by nearly 40 percent.



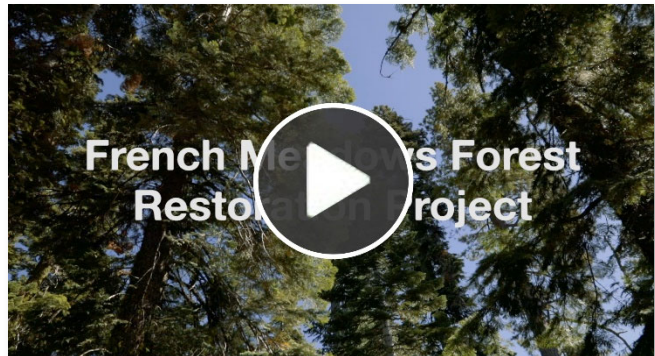
Each edition of the customer newsletter in 2019, featuring the “Profiles in Water” campaign on the front page, highlighted members of the community, from Rocklin to Colfax.

- Collaborated with regional and statewide partners on legislative and regulatory matter. Highlight in 2019 was the defeat of the water tax.
- Increased social media activity with nearly 200 posts to both Facebook and Twitter. Audience on Facebook increased 33 percent, while Twitter audience increased 10 percent. PCWA's Facebook page now has more than 800 followers, and Twitter has nearly 700.
- Assisted other Agency departments with promotional materials, videos, and communication materials. Highlights include, but are not limited to, the following:

- Career Technical Education Day, hosted by Technical Services
- Building Blocks, the new employee on-boarding program, hosted by Administrative Services
- PCWA Poster for Associated General Contractors of California Conference
- Educational videos related to:
 - PCWA's Canal System
 - French Meadows Forest Restoration Project
 - "Beat-the-Leak" Week
 - Water Wise House Calls
 - Keeping Water Meters clear
 - Long Ravine Pipeline Project, and other construction projects



With a reach of nearly 5500 people and 8300 impressions, the video "A Day-in-the-Life of a Canal Operator" received the most engagement on Facebook in 2019. This video features PCWA employee, Justin R.



The French Meadows Forest Restoration Project video is posted on PCWA's YouTube page and has received nearly 800 views on this platform. On Twitter, the video has received over 3000 impressions and nearly 100 engagements, making it the most popular post on this platform.

- Prepared and submitted nomination for California Special Districts Association's Innovative Project of the Year Award. The French Meadows Forest Restoration Project was the award recipient.
- Earned media coverage in Association publications including:

- *California Special Districts (CSDA),*
- *California Water & Power (CMUA), and*
- *ACWA News (ACWA)*



The new Water Wise House Call video features a customer who contacts PCWA for help after noticing an unusual "spike" in her bill.

- Updated Agency Artwork Log.
- Photo documented Agency water system from Lake Spaulding to served communities.
- Employed first summer intern in the Public Affairs Division.

PLANNED PROJECTS AND ANTICIPATED CHALLENGES FOR 2020

Contact Center and Utility Billing

- Complete Payment Card Industry (PCI) compliance facility changes, implement internal process changes and educate customers on new policies and procedures related to PCI.
- Partner with Technical Services and IT department to begin emailing canal water customers' outage notifications in addition to sending letters.
- Finalize implementation of 'Pay Bill by Text' and 'E-Bill.'
- Finalize and Implement new answering service for the Agency.
- Continue the plan to expand monthly billing to additional billing cycles.
- Research cloud based IVR option for outbound notifications.
- Implement new water shutoff procedures consistent with SB 998.

Water Efficiency

- Continue to promote and work with the EPA WaterSense Program.
- Start a cycle route evaluation to ensure efficiency and inform long term planning for billing and meter reading.
- Start a hydrant meter pilot using cellular endpoints to track hydrants location and potential water theft.

- Trial online Water Wise House Call scheduling.
- Evaluate all Water Efficiency rebate programs for effectiveness and water savings.
- Develop and prioritize a list of problematic meters that need upgrades such as bypasses.
- Update large meter vault covers for safety of staff and efficiency of meter reading.
- Evaluate temporary employee needs for ongoing route maintenance.
- Consider bi-annual or quarterly continuous flow follow up in the Badger Cellular Pilot.
- Work with inter-Agency team to develop AMI implementation goals and next steps.
- Identify department goals and needs for data obtained by AMI.
- Continue participation in the Regional Water Meter Replacement Planning Study to explore feasibility and strategy for long term meter replacement and AMI integration.

Facilities Maintenance

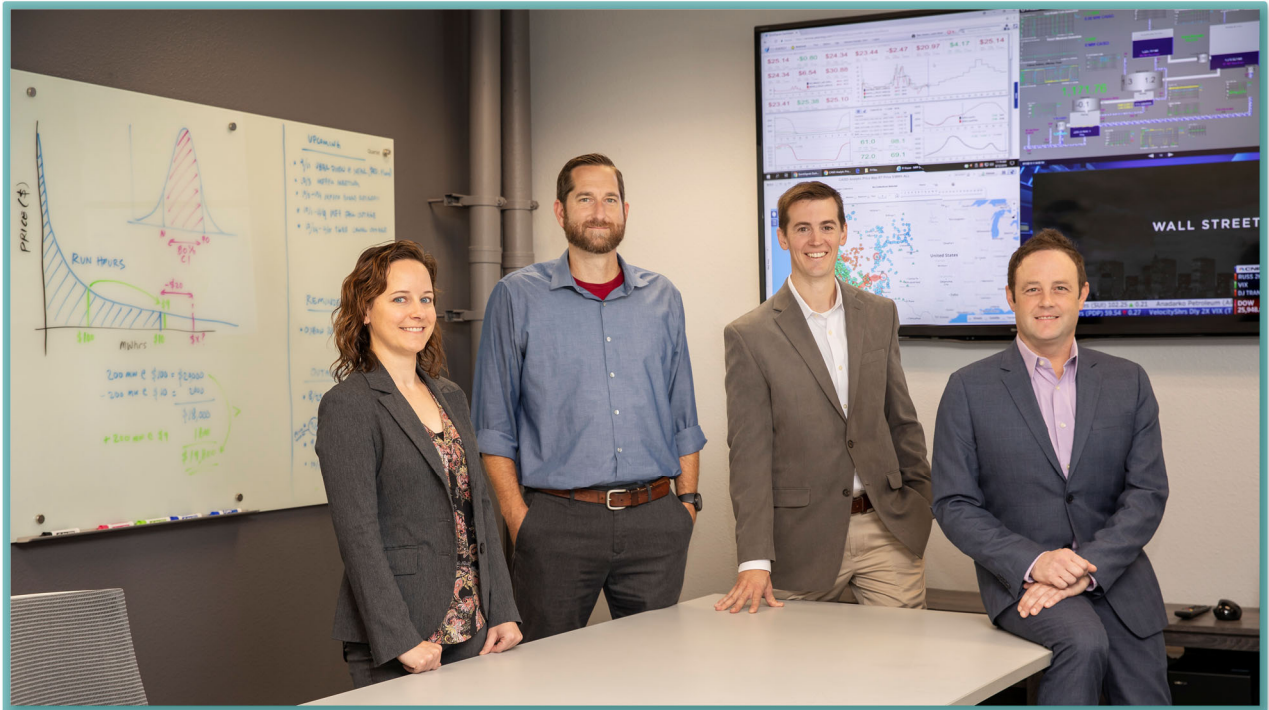
- Continue removal of dead trees at Agency facilities.
- Start the Phase 1 replacement of the fluorescent lighting fixture ballasts at Maidu to increase energy efficiency.
- Develop and begin implementing a roofing preventative maintenance and inspection plan.
- Upgrade access control at Foresthill and Maidu.
- Move 12 standalone card readers to Gentec System.
- Evaluate economies of scale and storage for agency supply purchases for savings and efficiency.
- Restore all alarm phone lines after phone system upgrade.



Hazardous trees to be removed at Newcastle Tank site.

Public Affairs and Multimedia

- Update New Employee Orientation video to reflect changes in administration.
- Explore potential for expanding social media reach by using new social media platforms (i.e. Nextdoor).
- Develop a monthly Public Affairs Report/Employee Newsletter.
- Launch Customer Newsletter campaign detailing the history/significance of PCWA.



Energy Marketing Department

The Energy Marketing Department is responsible for the management of all energy products and sales from the Agency's Middle Fork Project (MFP). This includes planning, analysis, and optimization of water supplies and energy market trends; management of water storage, flows, and generation based on operating plans, forecasts, contract provisions and limitations, and hydrologic conditions; and marketing and sales of energy products in the California Independent System Operator (CAISO) and bilateral energy markets.

As the certified Scheduling Coordinator for the Middle Fork Project, the Department is also responsible for scheduling Middle Fork Project power sales, monitoring compliance with Federal Energy Regulatory Commission (FERC) resource management license requirements, and ensuring that MFP operations continue to remain in compliance with North American Electric Reliability Corporation (NERC) safety and reliability requirements.

SIGNIFICANT ACCOMPLISHMENTS FOR 2019

Hydrology and Operations Planning

Water Year 2019 was hydrologically a favorable year for water supply and hydropower conditions. Although the water year started out with a dry October through December, January and February soaked the region with precipitation in excess of 200 percent of average. Due to a persistent cold weather pattern, the snowpack in the American River Basin jumped from a low of 64 percent of average in early January to near record levels in February and March. By April 1, the snowpack was at 200 percent of average. With the change in the weather to a wet pattern in early January, hydropower generation was ramped up and continued to run at nearly maximum output through the remainder of the water year as the precipitation and snowpack continued to accumulate. Mild spring temperatures helped to manage the snowmelt runoff in a controlled manner allowing Middle Fork American River Project (MFP) reservoirs to fill to near full capacity. Total water year runoff for the Middle Fork Project was at 146 percent of average. The 480,000 acre-feet of runoff ranks tenth in annual volume of runoff over the history of the project. A heat event or warmer springtime temperatures would have produced earlier runoff and caused the Hell Hole Reservoir to spill. Instead, reservoir storage levels were managed to within five feet of the storage capacity at 98 percent full in late June.

Even with the high runoff and water storage conditions, the Hell Hole Core Raise Project commenced in July. The Energy Marketing staff worked closely with the project management and Federal Energy Regulatory Commission approval staff to provide reservoir projections allowing for an earlier than expected start of the dam excavation. Other forecasting efforts included collaboration with the California-Nevada River Forecast Center (CNRFC) to refine the MFP basin runoff model. These refinements include recalibration of model parameters, development of new sub-basins, and development of new river forecasting nodes. Additionally, staff has developed new snowpack analysis tools and can monitor the volume of water stored in the snowpack on a daily basis. These additional resources provide greater temporal and spatial resolution for the Energy Marketing Department and continues to improve on the reservoir, river, and water supply forecasting capabilities for MFP energy marketing and operations planning.

Energy Markets

Energy market prices in 2019 were primarily driven by weather events and natural gas prices. Energy markets experienced record breaking prices starting in February due to late winter cold weather that developed along the entire west coast. Natural gas storage levels were extremely low at the time, and pushed power prices up to historic levels. Monthly revenues for February 2018 were in excess of \$10 million. This would turn out to be the highest energy market prices of the year, with an average energy price of \$73.97 per megawatt hour (MWhr).

Although an ever increasing prevalence of solar generation in the state has an impact on energy prices year round, the greatest influence of solar on market prices occur during the spring months when power demand is at its lowest. Solar generation pushes prices lower during the middle part of the day when the sun is shining the brightest. Unfortunately, the peak demand for power does not occur until the sun sets and the grid must rely on more expensive resources to meet power demand over the evening peak. This causes energy prices to swing dramatically from one hour to the next.

Hydro generation can also play a significant role in energy price formation in the springtime. During wet years, such as 2017, hydro generators may run at maximum capacity around the clock to limit spill conditions. Hydro generation, coupled with solar generation can lead to extremely low prices in wet years. 2019 was an above average water year and many hydro generators started running their power houses around the clock by late spring to avoid spill conditions in early summer. Most hydro facilities started running their excess water through their power houses a few months later than the MFP, and for the most part, almost all the hydro resources in the state spilled water from their reservoirs. Since the MFP forecasted a wet spring earlier than most, we were able to avoid spilling Hell Hole Reservoir. This is a significant accomplishment

as most of our peers faced spill conditions while the MFP did not. Energy prices during the spring months of 2019, March through May, were almost identical to 2018. With an average price of \$24.85 MWhr.

Since the beginning of 2015, natural gas prices have been relatively low ranging from \$2.00 to \$3.50 per MMBtu, varying seasonally. At the same time there has been growing concern regarding the health of the natural gas delivery system in the state. Aging infrastructure has been neglected for decades, leaving it susceptible to equipment failures and pipeline limitations.

By the summer of 2018, such failures were realized in Southern California which limited pipeline delivery capability to roughly 60 percent of capacity. During peak power demand days in the summer of 2018, natural gas reached scarcity pricing levels, and the normal price of \$3.00 jumped up to \$38.84 per MMBtu. This dramatic price increase caused power prices to surge to record levels in July and August of 2018.

Heading into 2019, natural gas storage inventories levels were at all-time lows after a hot 2018 summer, and a rather cold start to the 2019 winter. As mentioned above, natural gas prices in February of 2019 were at all-time high as storage inventories were at their all-time lows. As we moved into the spring months, the weather turned very mild, gas demand for residential heating reduced, and storage inventories began to recover. This recovery in storage dropped natural gas prices back down to normal levels, and by the time the summer season arrived, natural gas scarcity no longer posed a threat to high energy prices.

Unlike the previous two California summers, in 2019 extreme west wide heat events did not occur and the California generation supply stack was healthy, due in part by robust hydro generation availability. As we moved into the summer months, energy prices started dropping ever lower due to lack of summer weather demand, and a continued rebound in natural gas storage. Energy prices in the summer of 2019 were 45 percent lower than prices in the summer of 2018.

It is hard to predict what power prices will do in 2020. The one thing we can count on is prices will be volatile. Most of this price volatility comes from extreme weather events that are unpredictable, and problems that arise in the natural gas market stemming from an aging natural gas infrastructure and the high probability of impairments.

Energy Contracting

From 2013 to 2017, PCWA worked under one Power Purchase Agreement with Pacific Gas & Electric (PG&E) for the sale of all MFP energy products such as Resource Adequacy (RA) capacity, renewable energy credits (RECs), and carbon-free attributes.

Once again, this year, Energy Marketing staff solicited buyers and marketed MFP RA and RECs to be delivered in 2020. Due to the hard work of building positive business relationships over the past several years, Energy Marketing staff was able to contract 100 percent of the available RA capacity and RECs for delivery period 2020.

Prices for both RA and RECs have increased for 2020 and beyond. Both markets have been oversupplied for the past several years leading to muted prices. The supply stack has gradually eroded on the RA front, and RECs are increasing in value due to higher market demand. Combined, revenue for these two energy products will be 35 percent higher in 2020 compared to 2018. This upward price trend will likely continue over the next several years.

Scheduling Coordinator

On January 1, 2018, PCWA took over the Scheduling Coordinator (SC) responsibilities of the MFP in the California Independent System Operator (CAISO) market. This allows PCWA to interact directly with the CAISO on day-to-day activities that were either previously managed by PG&E or where PG&E was an intermediary used to access the CAISO and energy markets. PCWA now has a direct financial relationship with the CAISO and is paid generation revenues weekly. Energy Marketing staff directly enter bids, upload monthly and annual supply plans, enter and manage outages, respond to data requests and regulatory filings, and manage the unit characteristics with the CAISO. Finally, PCWA participates in the CAISO stakeholder initiative process for market design changes, ensuring a proper defense to the value of the MFP and associated energy products, and provides a voice in the CAISO rule making process.

Forward Markets

For the past five years, the Energy Marketing Department has only been able to sell power in the CAISO spot market. There are advantages and disadvantages to being subject to spot market prices only, but as the expertise of the Energy Marketing grows, so does our ability to venture into other markets. For the past two years, staff have been exploring entry into the forward energy markets. Entry into forward market transactions required an update to the Energy Risk Management Policy outlining roles and responsibilities for multiple PCWA departments, as well as defined checks and balances as it pertains to energy risk management. In May of 2019, the policy was updated, and master agreements with trading counterparties were executed. The Energy Marketing Department is now authorized to make sales in futures markets.

PG&E Wildfire Mitigation

PG&E's troubles has been well published. So far, the impact to the MFP has been minimal. The PSPS events that shut off power in Placer County, occurred during the month of October when the MFP was down for annual maintenance. But starting in May of 2019, PG&E performed preventative maintenance on the MFP 230kv and 60kv lines, which caused our powerhouses to be unavailable to the market during those transmission outages. These outages totaled 14 days, and the cost to the MFP for being unavailable to the market was minimal. We expect more transmission outages due to wildfire mitigation maintenance to occur in coming years. We will be working closely with PG&E to schedule these transmission outages to mute the economic impact to the MFP.

ANTICIPATED CHALLENGES FOR 2020

2019 was a busy and productive year for the Energy Marketing Department with new challenges on the horizon for 2020. There are several CAISO market initiatives Energy Marketing staff will participate in, such as integrating Energy Imbalance Market members into the CAISO day ahead market, and pushing back against the department of market monitoring and its attempt to create a system wide market mitigation procedure that would lower energy prices as a whole.

Another issue we will be following is how the CAISO and California Public Utilities Commission deal with a perceived shortage of RA capacity in 2020 and beyond. This is a complex issue, that has many causes and many solutions, but in short, California finds itself in a situation where there is not enough generation instate to meet peak summer demands when the sun goes down. This shortage of RA points to elevated prices for this product for many years to come. Since 2018, RA prices have increased by 400 percent.



Field Services Department

The Field Services Department consists of three operational divisions: Field Administration, Raw Water Operations and Maintenance, and Treated Water Maintenance.

Field Administration oversees and provides departmental wide support in coordinating, monitoring, compiling and distributing a variety of operational data and schedules; synchronizing crew operations with outside entities and utilities; interfacing with other Agency departments; attending meetings and communicating updated information, safety trainings and policies to support the Department in staying abreast of current Agency issues and goals.

Raw Water Operations and Maintenance is responsible for in-house raw water renewal and replacement projects, service installations, system maintenance and repairs throughout the Agency on canals and raw water pipelines. Raw Water Operations and Maintenance also provides construction support to all other Agency departments. Raw Water Operations and Maintenance includes the following functions:

Canal Operations controls all canal water flows and adjustments to the raw water system throughout the County while working closely with other utilities, entities and stakeholders including, but not limited to PG&E, Nevada Irrigation District (NID) and South Sutter Irrigation District. This crew also handles after-hours customer calls and emergencies as they apply to the raw water system.

Canal Cleaning is comprised of seasonal employees, in addition to permanent employees, who have the responsibility for annual cleaning of debris out of the Agency's 165-mile canal system in only 90 days.

Vegetation Management is vital to the control of algae and aquatic weeds. This crew has the responsibility of treating canals for the removal and control of aquatic vegetation to assure capacity and deliveries in the raw water system. These practices ensure an adequate and reliable water supply to all Agency water treatment plants, several private treatment plants, and over 4,000 raw water customers. Additionally, Vegetation Management maintains various Agency owned properties, earthen dams and 165-miles of canal berms. Vegetation Management also works to control invasive weeds and rodents and helps promote the growth of native grasses and plants.

Treated Water Maintenance is responsible for all treated water service installations, various main replacement projects, and repairs throughout the County. Treated Water Maintenance handles treated water duties including emergency leak repairs and 24-hour, stand-by personnel to respond to emergencies and customer concerns. This crew also provides support for all other Agency departments related to construction. Treated Water Maintenance includes the following functions:

Fleet Maintenance is responsible to repair and maintain a variety of vehicles and equipment while staying abreast of current and new rules, regulations and laws; maintain and update the vehicle and equipment replacement plan; and write and review vehicle and equipment specifications to stay current with changes both inside and outside the Agency. Currently, this group is responsible to maintain 109 vehicles and 95 pieces of equipment.

Warehouse is responsible for the timely acquisition, tracking, dispensing and financial reporting of material support services. Values of current inventoried products are nearly \$822,000, excluding fuel. These products, along with support services, are provided to the personnel of the following operational areas: Treated Water Maintenance, Raw Water Operations and Maintenance, Canal Operations, Vegetation Management, Fleet Maintenance, Water Efficiency, and Drinking Water Operations. Additionally, the Warehouse personnel provide support services to the entire Agency in the form of uniform rentals, acquisition of safety gear, forklift certification, and fuel supply services.

SIGNIFICANT ACCOMPLISHMENTS FOR 2019

Field Administration

- Provided update to Department Safe Practices Handbook, required biennially.
- Performed contracted roadway maintenance on Maidu Drive, Auburn, installing a micro-pave overlay and complete striping of the roadway, pedestrian crossings, and vehicle parking areas.
- Made improvements to the Department safety program, adding additional training and testing tools for identifying soil types in excavations.
- On-boarded and trained five new permanent employees and fourteen seasonal employees, also promoted three staff to higher job classifications.
- Worked with Admin Services to create an entry level position for Canal Operations and Vegetation Management Crews (Maintenance Worker 1) which allows new hires to train into those positions when skilled/experienced applicants are unavailable or not a good fit.

- Expanded the use of electronic dispatching with all 811 USA locates through a joint effort with GIS department, saving staff time, improved documentation and ability to research historical USA locate tickets and pictures.

Raw Water Operations and Maintenance



Raw Water Maintenance crew nearing completion of the Rock Springs Flume Replacement Project

- Worked with Treated Water to replace Penryn Flume No. 1 (639 feet long and 27 feet high) with 24-inch C-900 pipe.
- Replaced flume steel on Rock Springs and Tailrace Flumes for a total of 583 feet of flume steel replaced. Alpine flume (length 102 feet) also to be replaced in December.
- Replaced the wood understructure of the 280-foot long Moonshine Flume.

- Lined and repaired 12,243 linear feet of canal using 1,968 yards of gunite as part of PCWA's Capital Gunite Project, improving the overall canal system.
- Re-built the support and protective structure for 4-inch Treated Water Monte Vista pipe crossing.



Left: Crews prepare a section of the Boardman Canal for gunite lining.

Right: The newly finished gunite lining will prevent leakage and aid in canal cleaning efforts.

- Made improvements in western Placer County, which included replacing two large CMP culverts with new HDPE coated CMP, improving the earthen vehicle crossings on the Moore Canal.
- Worked with PCWA's Engineering Division and Department of Safety of Dams (DSOD) on Mammoth Reservoir Improvement planning that will include replacing the leaking low-level outlet valve, adding an electric actuator to the valve and adding PLC/SCADA controls to enable remote monitoring and control for our Operations team. Project construction will be completed in 2020 by Field Services staff.
- Working on a WaterSmart Grant with United State Bureau of Reclamation to install five automated canal head gates to increase operational efficiency on the canal system. To date the gates have been ordered and frames for the gates are currently being fabricated. All five of the new automated gates will be installed by Raw Water staff.

Canal Operations

- Scheduled and coordinated outages for Raw Water Operations and Maintenance crews to conduct maintenance programs (e.g., gunite, flume repair, leak repairs, etc.) and capital improvement projects.
- Scheduled, coordinated, and re-routed flows for the six-week annual PG&E Lower and Upper Drum Canal outages.
- Worked around the clock at times to coordinate with other crews and PG&E to keep critical water supplied to our treatment plants and customers during the multiple Public Safety Power Shutoff events this year. This was a new challenge when the events occurred during the scheduled PG&E fall outage and our water options were already limited.
- Operated and maintained the reliable flow of water through the Agency's 165 miles of canal and raw water pipelines. This involves patrolling the canals during storm events to eliminate blockages and prevent property damage.
- Successfully completed both summer and winter water orifice changes on-time.



This section of the Shirland Canal was clogged with debris after water flows resumed, following a strong winds during PG&E's PSPS event in late October.

- Successfully operated the newly acquired western Placer canal system providing crucial water to rice farmers and cattle ranchers in Lincoln, receiving positive feedback from our customers on both the operations and maintenance of the canals.
- Managed water throughout the hottest summer months without utilizing the American River Pump Station, saving the Agency thousands in pumping costs.
- Coordinated and scheduled the lowering of our reservoirs to accommodate requested outlet valve testing and inspections with DSOD.

Vegetation Management

- Skillfully handled dynamic labor requirements of dense vegetation removal and algae control treatments due to heavy rainfall in the winter of 2018 and hot summer temperatures.
- Successfully managed the three-month task of canal cleaning on the majority of our 165 miles of open canal. Despite hiring nine seasonal crew positions for canal cleaning we ended the 90-day period with only a crew of five.
- Coordinated with Raw Water Operations and Maintenance to prepare canals and berms for gunite work.
- Managed a contract to facilitate the use of goats for control of vegetation on various Agency properties.
- Worked with Agency Right-of-Way Technician to gain access and do necessary vegetation maintenance on the West Perry Spill, improving performance of the spill and limiting Agency liability for potential flooding.
- Updated weed-control spray program and rodent baiting on Agency dams and right-of-way's to ensure positive DSOD inspections.



Vegetation Management crews use large equipment, where possible, to clean canals more efficiently.

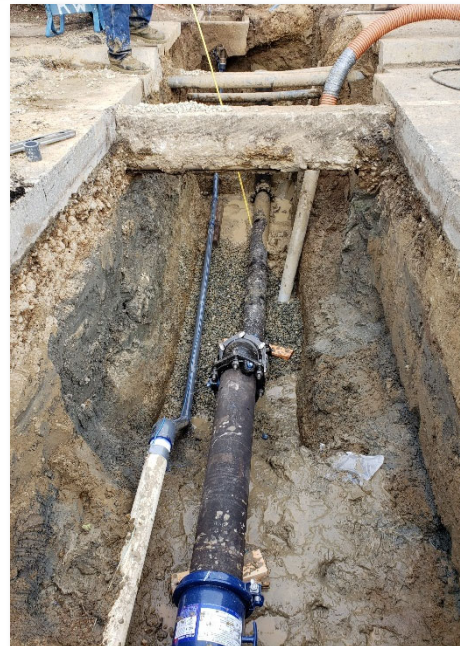
Treated Water Maintenance

Treated Water Maintenance

- Replaced 400 feet of 6-inch steel main with 6-inch DIP on East Towle Road and Alta Bonnynook Road in Alta, due to water quality and leak history.
- Replaced 400 feet of 4-inch steel on Channing Way, Auburn, with 6-inch DIP, due to leak history, water quality and fire protection.
- Installed 680 feet of 24-inch C-905 PVC and 60-feet of 16-inch blow off line during Phase I of the Penryn Flume abandonment and Raw Water Siphon installation.
- Replaced 80 feet of 16-inch CCML main with 12-inch on Whitney Boulevard, due to major leak and to relocate the main from below an 18-foot deep golf cart/course access tunnel and to reroute it over the golf cart tunnel.
- Completed temporary and permanent repair on two major leaks on Clover Valley Road, in Rocklin, replacing two 16-inch tee's and installing a new 16-inch isolation valve.
- Rehabilitated water services and a wharf hydrant on Culver Street, Colfax, in advance of a pending City of Colfax roadway restoration project.
- Lowered two fire hydrants and two 2-inch water services on Sunset Boulevard to assist the City of Rocklin in advance of the installation of a storm drain.



Above: Treated Water Maintenance crews prepare to isolate and make repairs to a 12-inch PCS main break in Rocklin Road.



Right: Treated Water Maintenance crews lower fire hydrants and water service connections to accommodate a storm drain installation by the City of Rocklin.



Treated Water Maintenance crews excavate to expose, identify, and make repairs to a 6-inch main line leak in the French Meadows water system.

- Made numerous leak repairs in the French Meadows Campgrounds water system.
- Located the majority of the French Meadows Water System to help safeguard the system from incurring potential damage during the Forest Restoration Project.
- Assisted on numerous in-house projects including, but not limited to, raising pressure-reducing stations and hauling various equipment and materials.
- Repaired roughly 306 leaks in the system.
- Performed roughly 10,525 USA utility locate requests.
- Leak detected 12.52 miles of water main as part of our annual leak detection efforts.
- Continued valve turning/maintenance program.

Fleet Maintenance

- Placed 16 new vehicles and five new pieces of equipment into service. Prepared 24 vehicles and five pieces of equipment for surplus auction.
- Smog-tested 36 vehicles and smoke-tested 17 trucks.
- Performed 36 inspections as required by California's Basic Inspection of Terminal program, managed by the California Highway Patrol.
- Responded to 42 roadside service calls.
- Completed 317 repairs and 157 services on a fleet of 204 vehicles and equipment.



Fleet Maintenance mechanics making repairs and performing routine vehicle maintenance ensures maximum vehicle performance, longevity, and safety.

Warehouse

- Reorganized and updated the shelving storage systems, as well as the item barcodes to alleviate errors in the issuing of parts and supplies.
- Implemented a practice of banding the lumber stored outside to limit the amount of warping of the materials from the sun.
- Maintained an inventory valued at \$822,000, with only \$211 in variances during the year. That equates to a 0.03 percent variance to this point; the industry standard is one percent.



Warehouse staff conducts Agency-wide in-house forklift certification training.

PLANNED PROJECTS AND ANTICIPATED CHALLENGES FOR 2020

Field Administration

- Continue identifying and improving efficiencies within the Department and practicing “Safety First” in everything we do.
- On-board and train two new Treated Water Maintenance positions.
- Utilize new technology in field locate devices to update GIS maps with higher accuracy.
- Complete “Canal Flows App”, allowing Canal Operations crews to electronically log canal flows and spill amounts, viewable in real-time by all staff, and eliminate current paper documents.
- Analyze possible need for backup generators at Maidu yard and Rock Springs reservoir during PG&E annual maintenance outages.

Raw Water Operations and Maintenance

Raw Water Operations and Maintenance

- Increase system reliability by guniting both lined and unlined canals, potentially lining over 12,000 linear feet of canal with gunite.
- Replace Spring Valley Box Flume - currently in talks with property owners.
- Replace understructure of Crow’s Flat, Rock Springs, and Pulp Mill #1 Flumes.

- Replace flume steel on Crow's Flat and Pulp Mill #1 Flumes.
- Replace Liz Taylor Flume with pipe (will need to work with Union Pacific Railroad).

Canal Operations

- Continue to explore ways to maximize and improve the operation of the canal system.
- Refine operational methods and efficiency in western Placer County seasonal water deliveries.
- Increase cross-training and operational awareness across the different areas of responsibility.
- Explore/establish options to deal with PSPS events with as little effect on customers as possible.

Vegetation Management

- Operate equipment and lead temporary employees to remove debris from canals in advance of the 2020 summer irrigation season.
- Continue with and improve algae and vegetation control efforts system-wide.
- Explore how to most effectively use equipment/assets to reduce vegetation removal contracts (goats, etc.).

Treated Water Operations and Maintenance

Treated Water Maintenance

- Replace 400-feet of 4-inch steel main with 8-inch Ductile Iron Pipe, on Broadview Avenue, in Auburn, from Robie Drive to Placerado Avenue, due to leak history and to improve water quality.
- Replace 210-feet of 6-inch steel main with 6-inch Ductile Iron Pipe, on Commercial Street, in Auburn, from Lincoln Way to Maple Street, due to leak history and to improve water quality.
- Replace 440-feet of 6-inch of CCML main with 8-inch Ductile Iron Pipe, on Kennedy Court, in Rocklin, from Argonaut Avenue to the end of Kennedy Court, due to leak history and to improve water quality.
- Replace 160-feet of 4-inch steel main with 6-inch Ductile Iron Pipe, from Awali Avenue to 420 Racetrack Street, due to leak history and to improve water quality.
- Reduce water loss by utilizing additional staff to repair leaks in a timelier manner and by increasing pipe replacement totals on in-house pipe replacement projects.

Fleet Maintenance

- Maintain 204 Agency vehicles and equipment, according to set service intervals.
- Replace 17 vehicles and 7 pieces of equipment in Fiscal Year 2020.

Warehouse

- Utilize available yard storage space to purchase bulk materials at cost savings.
- Complete scheduled bi-annual inventory of entire warehouse.
- Complete Agency wide forklift safety training.
- Evaluate parts inventory to better assist in emergency and high frequency repair situations.



Financial Services Department

The Financial Services Department performs a variety of financial activities for the Agency including accounting, analysis, purchasing, reconciling and reporting. The Department also provides these services for the Middle Fork Project Finance Authority (MFPFA).

The Financial Services Department's primary customers are the other Agency Departments, including the General Manager's Office, in which we serve by providing sound financial management and a system of internal controls over Agency resources. The Department is ultimately accountable to the Agency's Board of Directors, Agency customers and the community.

Financial Services is responsible for all Agency accounting needs, which include capital asset, grant and project accounting. Additionally, this function performs cash, investment, and debt management and administration, establishment and implementation of internal control activities such as internal audit, accounts payable processing, non-utility invoicing, financial reporting and disclosure, and coordination with various external auditors.

Analysis performs a variety of analysis and financial projections, including power settlements and budget monitoring and analysis. This area is also responsible for the development, implementation and review of financial plans.

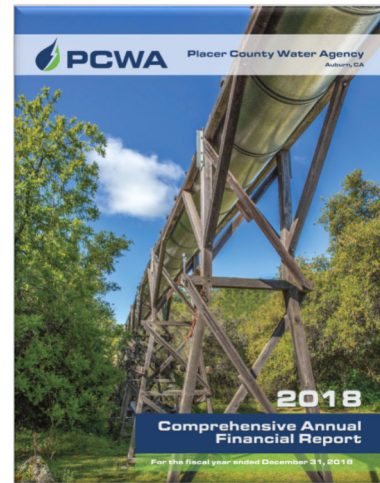
Procurement performs a variety of functions to assist departments in acquiring products and services needed by the Agency in a timely and cost-effective manner, which includes securing competitive pricing, as well as maintaining a system of checks and balances such as obtaining appropriate approvals for purchases. To fulfill these functions, the Procurement team consults with and assists Agency staff with purchasing needs, understanding and adhering to procedures and regulations, contract negotiation, development and management, as well as the generation of purchase orders, and soliciting formal bids and request for proposals.

Energy Risk Management institutes, supervises, and reviews all energy risk management activities. Energy Risk Management is comprised of the middle and back office functions that provide risk oversight and support with a wide range of activities necessary to execute and settle transactions and risk control efforts (e.g. billing, data collection, transaction entry, bookkeeping and accounting, contract administration, etc.). Additionally, Energy Risk Management ensures state and federal compliance with the Energy Information Administration (EIA), Department of Energy (DOE) and Western Renewable Energy Generation Information System (WREGIS).

SIGNIFICANT ACCOMPLISHMENTS FOR 2019

Financial Services

- Submitted an application for, and anticipate receiving, the Agency's 13th consecutive Comprehensive Annual Financial Report (CAFR) Award from the Government Finance Officers Association (GFOA).
- Continued to transition increasingly substantial banking activities to U.S. Bank.
- Implemented improvements to the Chart of Accounts to aid in user efficiency and increase financial reporting consistency and transparency.
- Transitioned to full load energy with the Western Area Power Administration (WAPA) for three PCWA interconnection points. By transitioning to a Full Load WAPA customer from a Dual Supply customer with PG&E for these three meters, PCWA can take advantage of wholesale energy prices, and is expected to achieve an average cost savings of \$200,000 per year.
- Completed the 2025 WAPA Marketing Plan application (30 year plan). As a result, PCWA's Base Resource allocation will increase from .0382 percent to .0414 percent beginning in 2025, which should result in lower electricity costs for the three WAPA interconnection points.
- Performed financial analysis to determine the potential cost savings of utilizing Auburn Tunnel Pump Station 1 (WAPA powered) instead of Auburn Tunnel Pump Station 2 (PG&E powered). This analysis compared energy costs of the energy needs to run Auburn Tunnel Pump Station 1 versus Auburn Tunnel Pump Station 2, which is a PG&E meter. We concluded that utilizing Auburn Tunnel Pump Station 1 could achieve cost savings of more than \$100,000 annually.
- Established procedures for more timely account reconciliations to improve the accuracy of internal and interim financial reporting and analysis.
- Continued evaluation of current and upcoming Governmental Accounting Standards Board pronouncements to determine impacts to financial reporting and disclosure requirements.
- Revised the Financial Assistance Program Policy to incorporate substantive matters within the Board Resolution 08-16, "Distribution and Use of Net Power Sale Revenues from the Middle Fork American River Hydroelectric Project."



The CAFR is available at pcwa.net

- Administered the 2019 Financial Assistance Program grant awards totaling \$165,000 to eligible Districts to fund eight projects that support the Agency's County-Wide Master Plan.
- Drafted and prepared for Board approval, an updated Capital Asset Policy, which includes an increase in the capitalization threshold required to capitalize costs to \$10,000. The higher threshold will increase efficiency by eliminating the need to process and track immaterial items in the capital asset accounting records.
- Revised and prepared for Board approval, the General Financial Policy Guidelines, which were originally adopted in March 2005. The 2005 policy included a variety of policy areas that over the years either:
 - The existing policies have been revised such as the Purchasing Policy, the Budget Policy or Investment Policy, or
 - Individual policies have been developed and approved such as the Reserve Policy and Debt Management Policy.

The revised policy, now titled Revenue and Expense Policy Guidelines, focuses on revenue and expense policies not addressed elsewhere to help ensure consistent process application and increased transparency of revenue and expense transactions.

- Received an unmodified, "clean" audit opinion from the external auditors related to the Agency's 2018 financial statements

Analysis

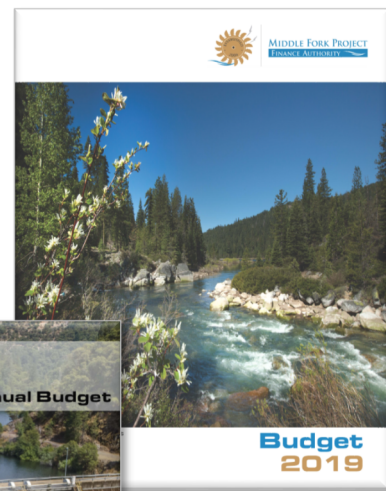
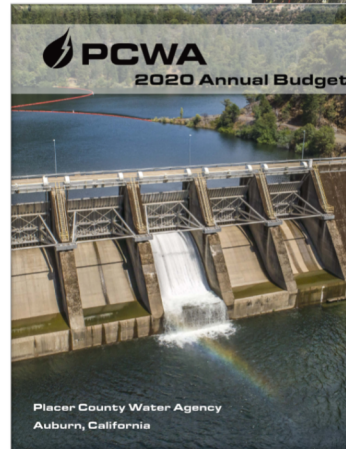
- In July 2019, commenced refinancing the Middle Fork Project Finance Authority 2006 Revenue Bonds, a taxable issuance, when the estimates suggested a refinancing could provide \$1.1 million in present value savings. The actual refinancing and present value savings will be decided by market conditions. The major components of refinancing completed in 2019 include:
 1. Discussed the refinancing with the County Treasurer (bond holder).
 2. Researched if tax-exempt bonds could be used to refund the 2006 Bonds, which the bond counsel determined was unlikely.
 3. Engaged financial advisor, bond and disclosure counsel to manage the capital market process.
 4. Evaluated the economics of a direct or private placement agreement and solicited three banks for proposals, which resulted in one response. However, the terms were not favorable.
 5. Determined that bond insurance would be needed for a public sale.
 6. Determined that an independent Financial Feasibility Report would be needed to provide an independent market evaluation with price forecasts and regulatory

risk assessments, and sent out a request for proposal. A firm was selected and work commenced.

- Organized the closeout of the Federal Emergency Management Agency application for costs related to the 2017 storm damage at the American River Pump Station by analyzing and compiling source documentation to support Agency expenses.
- Reviewed a biomass proposal at the request of Technical Services, met with the consultant to understand the assumptions and prepared an analysis document based on the revised report information.

Budget

- Coordinated with other departments on the development of the annual Agency and MFPFA budgets.
- Improved the Agency's Cost Allocation Plan (CAP) by revising certain cost allocations to better reflect the actual incurrence of expenses shared between Divisions and with capital projects; the Agency's CAP is used to share Agency Wide operating costs with Power Division, Water Division and capital projects through service level support (SLS).
- Improved budget presentation transparency by developing an enhanced budget presentation which is a more visually engaging and informative layout.



Budgets are available at pcwa.net

Procurement

- Revised and implemented the Procurement Card (P-Card) Policy to provide additional delegation of purchasing authority and responsibility within a framework of accountability and controls.
- Updated the Purchasing Manual to improve continuity and provide guidance for Agency purchasers.
- Generated \$196,000 in surplus property sales proceeds which is returned to the Routine Capital Reserve for future use.

- Established a central surplus property storage location at the Business Center to allow for the quick removal, storage, and disposal of surplus property items.
- Contracted with a new auction company for the sale of surplus property that provides improved market penetration across the United States and lower commission rates and fees, both of which should provide additional monies to the Agency.

Energy Risk Management

- Utilized deal-capture functions in Decipher for the forward market initiative program in coordination with Energy Marketing's energy transactions.
- Established and scheduled Risk Oversight Committee (ROC) meetings per Energy Risk Management (ERM) Policy and kept all ROC members and the General Manager updated on Risk Oversight matters related to energy marketing risk.
- Developed and successfully implemented ERM Procedures after receiving approval from the ROC and General Manager.
- Worked closely with energy consultants to develop a counterparty Credit Scoring Model necessary to limit credit exposure through credit assessment. Additionally, established processes to monitor counterparty credit limits and collateral thresholds.
- Established and implemented the middle and back office functions of the forward market financial transaction process to capture the netting of costs and revenues, which is utilized for evaluating invoice accuracy for newly established energy counterparties.
- Developed a ROC Dashboard of energy risk management reporting requirements, including Value at Risk (VaR) for quarterly compliance, as well as other monitoring elements in accordance with ERM Policy.
- Teamed up with Energy Marketing to review and renew energy data subscriptions and entered into those with the most favorable economic terms and conditions for the Agency.
- Performed numerous time sensitive analyses to support Energy Marketing on potential forward market transactions including energy pricing, hedging and contract negotiation.
- Maintained PCWA's Energy Risk Management methods and processes in accordance with industry standards.

PLANNED PROJECTS AND ANTICIPATED CHALLENGES FOR 2020

Financial Services

- Continue providing excellent reporting to achieve the GFOA's Comprehensive Annual Financial Report Award.
- Commence an initiative to review the Agency's capital asset data and make revisions as deemed necessary.
- Continue to maintain robust financial reporting and internal controls to receive a clean, unmodified audit opinion.
- Analyze the financial implications of implementing new accounting pronouncements, such as GASB 87 - Leases

Analysis

- Continue to refinance the MFPFA 2006 Revenue Bonds with an anticipated final pricing date in March 2020.
- Analyze new PG&E Time of Use (TOU) and financial implications.
- Collaborate with Technical Services and outside consultants to expand the Long Range Financial Plan.

Procurement

- Implementation of the P-Card module in Central Square to increase efficiencies in the Agency's P-Card Program by streamlining transaction management, approvals, and payable functions.
- Transition Agency software from Exigis to Ebix for insurance certificate tracking and compliance.

Energy Risk Management

- Continue to strive for effective communications between front, middle, and back offices of energy transactions.
- Evaluate credit risk of unrated counterparties.
- Perform risk/reward analysis to support Energy Marketing on Resource Adequacy buyback and future proposed forward transaction strategies.
- Continue to perform necessary analysis to ensure all energy transactions comply with ERM Policy and Procedures.
- Assist with feasibility analysis to ensure successful project refinance.



Legal Department

The Legal Department is responsible for assisting all of the Agency's various departments on diverse legal matters, and provides specific in-depth assistance on longer-term matters as needed.

SIGNIFICANT ACCOMPLISHMENTS FOR 2019

Bay-Delta Water Quality Control Plan Update

- Assisted PCWA staff with efforts to protect PCWA water supplies and interests in the American River watershed, including the development of voluntary agreements for flow and non-flow actions in the American River as an alternative to the State Water Resources Control Board's (SWRCB) unimpaired flow approach to water management.
- Continued coordination with northern California water interests as part of a collaborative effort to protect northern California water supplies as part of the SWRCB's Bay-Delta Water Quality Control Plan Update.

Delta Conveyance

- Continued participation in the administrative proceedings before the SWRCB regarding the petitions filed by the California Department of Water Resources (DWR) and United States Bureau of Reclamation (USBR) to add new north Delta diversions to the state and federal water projects.

FERC License - Middle Fork Project

- Successfully coordinated and directed effort before the Federal Energy Regulatory Committee for a finding that the California State Water Resources Control Board waived its Clean Water Act section 401 authority to issue a water quality certification for the project.

PG&E Bankruptcy and Related Matters

- Continued monitoring and participation in the federal PG&E bankruptcy proceeding and various proceedings before the California Public Utilities Commission to protect PCWA's water supply and other interests.

Water Supply Contract – United States Bureau of Reclamation

- Participated in preliminary discussions with the United States Bureau of Reclamation for a long-term renewal of the Agency's CVP water service contract and acted as the

Agency's lead negotiator for a Water Infrastructure Improvements for the Nation (WIIN) Act repayment conversion contract.

Legislation

- Participated on the ACWA State Legislative Committee and the California Municipal Utilities Association's legislative efforts, providing input/feedback on diverse pieces of legislation affecting PCWA customers and resources.

PLANNED PROJECTS AND ANTICIPATED CHALLENGES FOR 2020

PG&E Bankruptcy

As the PG&E Bankruptcy proceedings continue, we will continue to monitor the proceedings to ensure PCWA's water supplies from the Drum-Spaulding Project are protected. We also expect to monitor and participate in other proceedings and efforts to monitor the status of PG&E, both as a result of the bankruptcy proceedings and before the California Public Utilities Commission to be prepared in the event there are any significant changes to PG&E as a company and/or in its operations that affect the people of Placer County.

Bay-Delta Water Quality Control Plan Update – Voluntary Agreements

In December 2018, the SWRCB adopted the Bay-Delta Plan Amendments for the Lower San Joaquin River and South Delta. The amendments include, among other things, an unimpaired flow range for each of the major tributaries to the lower San Joaquin River. An effort to reach voluntary settlements on these tributaries failed, as agreements were not reached on the Stanislaus or Merced Rivers, which resulted in the SWRCB adopting the Plan Amendments as proposed by staff.

In the Sacramento River watershed, there are proposed voluntary agreements on the Sacramento River and all its major tributaries. As part of its approval of the Plan Amendments, the SWRCB acknowledged the effort to reach agreement and directed staff to include those agreements in its analysis as an alternative to the unimpaired flow approach. There have been significant efforts, in 2019, to develop and analyze these agreements, which will continue in 2020 to ensure the agreements are included as an alternative to the unimpaired flow approach. In the event the SWRCB does not accept the voluntary agreements, PCWA will need to be prepared to protect PCWA's interests and investments in the American River watershed. PCWA expects to continue to work closely with its northern Californian partners in the Plan Amendment process.

Legislation

PCWA continues to actively monitor and participate in legislative processes to advance and protect PCWA's interests. Given the significant recent wildfires and issues related to PG&E, PCWA expects legislative activity related to wildfire prevention and responsibility and, perhaps, directed specifically towards PG&E. The Legal Department will continue to assist PCWA's other departments in protecting PCWA's interests on these various and diverse issues.



Power System Department

The Power System Department consists of four functional areas: operations, maintenance, engineering, and administration. The Department operates and maintains the Middle Fork American River Project (MFP), which is made up of five hydroelectric power plants, two large reservoirs, seven dams, twenty-one miles of tunnel, and numerous associated facilities. The Department works with regulatory and resource agencies such as the Federal Energy Regulatory Commission (FERC), the State Division of Safety of Dams (DSOD), the Western Electricity Coordinating Council (WECC), the North American Electric Reliability Corporation (NERC), and the United States Forest Service to ensure the safety of Project facilities, protection of water supply and the environment, reliable production of electrical energy, and the availability of recreation facilities. It also plans and carries out many rehabilitation and improvement projects in order to keep the MFP in good operating condition for water storage and reliable electricity production, as well as improving response to safety, security and environmental needs.

Operations Division consists of Hydro Station and Roving Operators. The 24/7 control room remote operation functions of the MFP continue to be provided under contract by the Northern California Power Agency (NCPA) at their Dispatch Center in Roseville. Hydro Roving Operators are responsible for the entire MFP while on day shift, and provide standby coverage at night. Hydro Station Operators cover the upper end of the MFP. Hydro Operators perform inspections, local operation of the MFP as needed, and operational preventive maintenance.

Maintenance Division consists of a civil, mechanical, and electrical maintenance sections. The skilled trades of this Division such as Hydro Plant Mechanics, Hydro Electrical Machinists, Hydro Plant Electricians, and Hydro Electrical Technicians, perform preventive and corrective maintenance, as well as equipment modifications and capital improvement projects for MFP facilities.

Engineering Division provides maintenance engineering and technical support to the Operations and Maintenance Divisions, project managers for capital improvement projects, and compliance support for the MFP's FERC License, WECC/NERC Reliability Standards, and OSHA Safety Standards requirements.

Administration Division provides support to the Operations, Maintenance, and Engineering Divisions. Administrative support by this staff includes budget management, contracts and procurement for routine operations and capital improvement projects, spare parts inventory, and support for maintenance of MFP documentation and drawings.

SIGNIFICANT ACCOMPLISHMENTS FOR 2019

- The Hell Hole Dam core raise construction project started in July. During the initial project start in June 2018, the contractor found material conditions were different than those shown on the original design drawings. As the Board is aware, work was stopped and a new project was developed to rebuild the top twenty feet of the 410-foot tall dam. The work went smoothly this year, and 60 percent of the core and filter raise was completed. The remaining work will be completed in 2020.



In order to raise the clay core, crews had to excavate about 30 feet off the top of the dam to reach the existing core.

- Completed commissioning of the MFP Communications System upgrades for the lower project. The reflector towers at Bunker Hill and Red Star Ridge failed last winter under snow load. The contractor plans to demo and replace the towers and complete the upper project in 2020.
- Replaced the generator excitation system on the French Meadows generating unit. The original 55-year old system was replaced with a modern fully digital electronic system.



The French Meadows Power House generator excitation transformer and disconnect switch, shown here.

- Completed engineering design and specifications for HVAC system upgrades at Middle Fork, Ralston, and Oxbow powerhouses.
- Completed engineering design and specifications for replacement of the Oxbow generating unit excitation system in the fall of 2020. The new generator excitation system is a duplicate of the one installed this year at French Meadows.

- Modification of the low level outlet works at LL Anderson Dam had been planned for this year. FERC's environmental department held up construction throughout last year and into this year, delaying construction for another year. The project is expected to be built in 2020. The project includes installation of a micro hydroelectric unit on the outlet to provide continuous power to the new communications site constructed there.
- Completed modifications to the FFC. Modifications included construction of new training/meeting room space, a new designated central files location, a secure SCADA office, and improved office storage facilities.
- Upgraded the turbine governor at Oxbow Powerhouse from analog to digital controls during the fall 2019 annual maintenance outage.

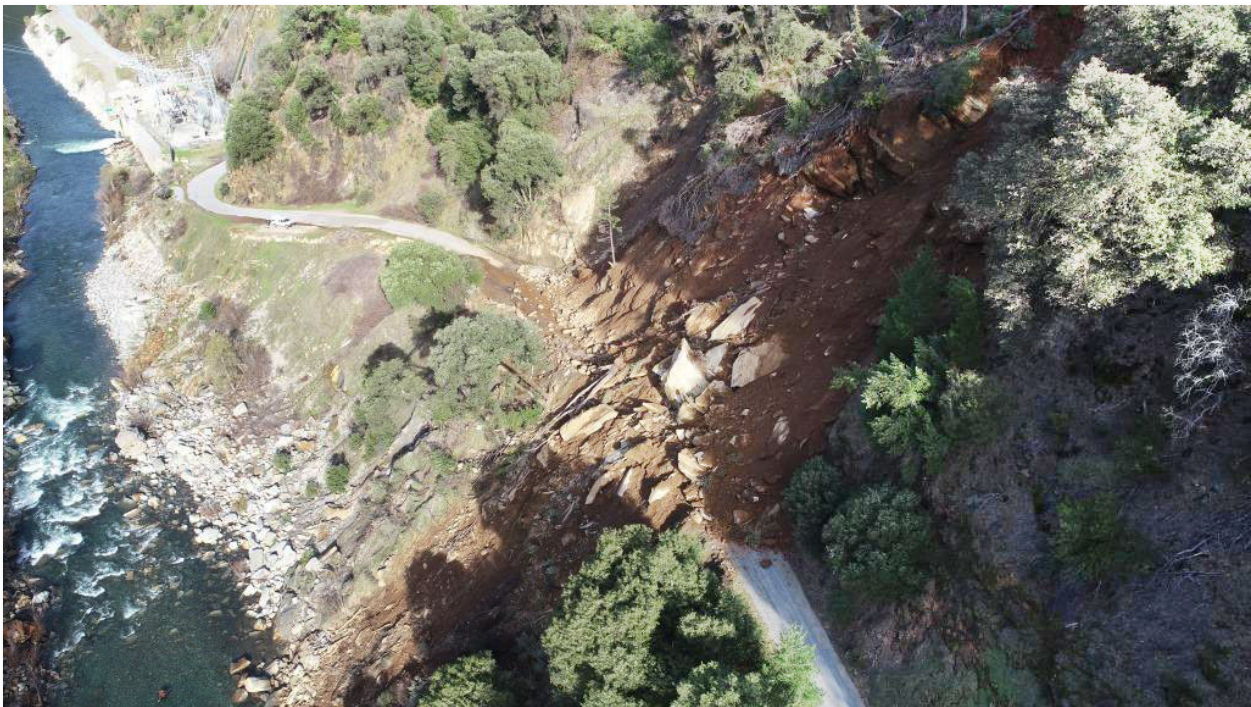


The Oxbow Power House turbine governor cabinet, before and after upgrade.

PLANNED PROJECTS AND ANTICIPATED CHALLENGES FOR 2020

- Construction season two of the Hell Hole Dam core raise construction project will be completed in 2020.
- Final construction and commissioning of the upper MFP Communications System upgrade will be completed in 2020. The system will bring much needed expanded digital bandwidth and system redundancy.
- The Oxbow generating unit excitation system will be replaced in fall 2020.
- Once specifications are completed, bids will be sought to purchase a main transformer and generator circuit breakers for the Middle Fork Switchyard upgrades. Power transformers typically require a lead time of 12 to 18 months for construction and delivery. Construction at the powerhouse switchyard is planned for 2021.

- Modification of the low level outlet works at LL Anderson Dam is planned for 2020. The project includes installation of a micro hydroelectric unit on the outlet to provide continuous power to the new communications site that was constructed near the spillway in 2019. The modifications will meet the minimum flow release requirements of the new FERC license.
- HVAC systems will be upgraded at Middle Fork, Ralston, and Oxbow powerhouses.
- The MFP's FERC License expired in 2013. The license has been renewed annually by FERC since then with the same terms and conditions. It is possible the new license will be issued in late 2019 or 2020. With the new license will come all new terms and conditions, and will start the clock on required infrastructure and recreation improvements, each with an implementation timeline.
- In anticipation of the new FERC license, modifications will be made to the Interbay Dam Low Level Outlet to accommodate increased minimum flows required under the new license.
- The Forest Service finally cleared the slide on Blacksmith Flat Road (FR23) near Ralston Powerhouse late in 2018. In January 2019 a major slide blocked the road again. Not having access to the upper project via this road has significantly increased windshield time to Hell Hole for both summer and winter operations. The Agency will continue to impress upon the El Dorado National Forest the importance of opening this road



An aerial view of the mudslide shows a large mass of debris that wiped out the hillside and road beneath, blocking an important, and quicker route for crews to access the upper Middle Fork American River Project facilities.



Strategic Affairs Department

Strategic Affairs is responsible for assisting the General Manager and the Board of Directors with strategic partnerships and contracts, long-term planning, and legislative, legal and regulatory defense of the Agency's assets and water rights. These efforts include collaboration with federal and state agencies, local governments, citizens, and nonprofit organizations to meet the Agency's goals. It also includes support to the Middle Fork Project Finance Authority.

The Department participates in various cross-departmental team projects, such as land development projections, and water system infrastructure planning and financing.

SIGNIFICANT ISSUES IN 2019

Statewide Water Issues

State Water Resource Control Board – Bay Delta Plan Update

The State Water Resources Control Board recently noticed a process to review the Water Quality Control Plan (WQCP) for the Sacramento San Joaquin Bay Delta (Delta). This process will redefine the minimum water quality parameters that must be maintained by responsible parties to maintain Delta health. In past proceedings, the latest of which culminated with SWRCB Decision 1641, northern California had reached settlement agreements regarding its portion of the share of water necessary for Delta health. Staff continues to believe that voluntary settlement agreements are the most effective and efficient way of providing water for the Delta while transferring water to parties south of the Delta for other beneficial uses. The outcomes of voluntary agreements are generally more durable and more beneficial to the environment and water users than a strictly regulatory approach that is favored by some in the state government.

The WQCP update will be an intense technical and legal effort involving PCWA in-house science and legal resources, as well as a technical consulting team. The American River Water Supplies Joint Defense and Cost Sharing agreement will be a useful vehicle for continuing to share costs and resources across the seven local participating water agencies. It is likely that costs to participate in the WQCP process will amount to approximately \$200,000 annually for each participating agency, and may continue for three to five years. If litigation is required to resolve the Agency's issues, costs will likely increase substantially.

The current SWRCB staff proposal to improve the health of the Bay Delta ecosystem relies on a pattern of reservoir releases from major tributaries to the Delta of between 40 and 65 percent of natural flow in the January through June period of every year. This proposal by SWRCB staff

is devastating to water management in the state, leaving reservoirs consistently lower and unable to sustain significant parts of the state's economy during dry periods. In addition, because reservoirs are key to maintaining water temperatures for salmon and steelhead in streams like the American River, lower reservoirs mean warmer temperatures and increased likelihood of decimating local salmon runs. The SWRCB adopted the staff proposal on the San Joaquin River, leading to litigation that will take years to sort out. The staff proposal for the Sacramento River has been released, but no formal action has been taken by the SWRCB.

In an effort to reduce the damage of the SWRCB staff proposals, the Governor's Office invited key stakeholders from river systems throughout the state to work on a compromise solution that would balance the needs of local salmon runs, water supplies for homes and farms, and the Delta ecosystem. Strategic Affairs staff continues to participate in these discussions representing the interests of the Agency and its customers, using the Agency's FERC settlement and the Water Forum Agreement as baselines for discussion. For PCWA's customers and the residents of Placer County in general, the SWRCB proposal could lead to permanent water use restrictions that could have dramatic impacts on property values and the quality of life associated with living in suburban and rural settings.

The Water Forum Agreement (Agreement), signed in the year 2000 by a broad coalition of environmental, business, government and water utility organizations, has been thoroughly tested as a result of the drought. For the most part, for the portions of the Agreement under local control, the Agreement has been a resounding success. All water agency signatories have abided by their "Purveyor Specific Agreements" to either limit their withdrawals from the American River, including Folsom Reservoir, switch sources to groundwater, or, in PCWA's case, release additional water from storage to aid the aquatic species in the lower American River. Habitat enhancement projects implemented by the staffs of the Water Forum, U.S. Fish and Wildlife Service, and the Bureau of Reclamation (USBR) have continued to be successful in providing additional habitat for all species.

The obvious weakness in the Agreement has been the management of Folsom Reservoir storage levels. In times of drought, Delta water quality requirements and Sacramento River endangered species take priority and water needed to flush the Delta and provide for minimal levels of exports for basic public use and safety has predominantly been withdrawn from Folsom Reservoir, as water is saved in Shasta Reservoir for purposes of maintaining a cold-water pool to protect endangered Sacramento River winter-run Chinook salmon. The effects on Folsom Reservoir have been dramatic, with lake levels reaching historic lows two years in a row during the 2013-2015 drought, and threatening the water supplies of half a million people including those in the cities of Roseville and Folsom, and the service area of the San Juan Water

District. Because of low water levels, and the resulting lack of cool water, it is likely that the entire year's class of threatened American River juvenile steelhead perished in 2015.

The Water Forum collaborative has set about to fix the problem of dangerously low Folsom Reservoir levels by revising the American River Flow Management Standard. Chief among the modifications is an end-of-year reservoir storage target of between 250,000 and 300,000 acre-feet (AF). This is sufficient storage to guarantee local water supplies should the subsequent year be dry, as well as provide habitat and water temperature benefits to the lower American River. A joint group of environmental and water purveyor stakeholders is working with the USBR to finalize the new Flow Management Standard. This initiative is intended to form the backbone of a voluntary settlement agreement that will provide an alternative to the SWRCB proposal.

The RiverArc Project

One important element of the Water Forum Agreement is the general philosophy of reducing surface water diversions from the American River in dry years. For some purveyors, this paradigm results in a shift to groundwater in dry years, but for those purveyors with limited access to groundwater, a new source of surface water was contemplated as part of the aforementioned Water Forum Agreement. To that end, the cities of Roseville and Sacramento and PCWA commenced work in the early 2000s on a plan to build a new diversion structure on the Sacramento River, near the international airport, and the related infrastructure necessary to bring that water to our respective service areas.

Throughout the 1990s and into the 2000s, Placer County experienced rapid growth in the western portion of the county, and the need for water supply infrastructure to serve the area was increasing rapidly. At about the time a draft environmental document for the new diversion facility was completed, the Great Recession began and the bottom fell out of the California housing market. Understandably, the need for the Sacramento River facility and its associated infrastructure diminished dramatically, as did the available financing to accomplish its construction.

As a result of the drought, additional water utilities in the region, many of which previously relied entirely on the American River supplies, have become interested in diversifying their portfolios to include additional sources of water. A dozen local water agencies are now moving forward with the planning phases of the new RiverArc project, which is a reimagining of the original Sacramento River Water Supply Reliability Study. The new project utilizes existing diversion structures and state-of-the-art fish screen facilities owned by Natomas Mutual Water Company to convey water from the Sacramento River to a treatment facility near Rio Linda.

From that location water utilities can deliver water to their service areas through new or existing transmission infrastructure.

This new design is modular in nature and staff believes that the ability to phase construction is key to successful implementation. The pace of the region's economic recovery and the related growth in new urban and suburban development has been moderate at best. Large infrastructure projects of this nature have become increasingly difficult for local agencies to finance and therefore projects that can be built in phases as water demands grow enjoy significant advantages. For RiverArc, the initial construction of the raw water pipeline, a smaller modular water treatment facility and a treated water pipeline that connects to the regional cooperative pipeline will provide important backbone infrastructure for regional water supply reliability and emergency back-up purposes. As demands grow, treatment plant capacity and transmission infrastructure can be added.

The Legislature is contemplating a climate resiliency bond for the November 2020 general election that will likely include some water elements. The RiverArc partners recently hired a Sacramento firm to advocate on behalf of the project for inclusion in the bond package for the ecosystem benefits to the lower American river.

Regional Water Bank

The construction of the RiverArc project backbone infrastructure provides a significant opportunity to leverage the region's unused groundwater potential to create a regional conjunctive use project and water bank. PCWA and Sacramento Suburban Water District's (SSWD) partnership to provide SSWD MFP water in wetter years has been an unqualified success in terms of recovering groundwater levels. As successful as this program has been, it is a small part of a regional effort that could yield tens of thousands of acre-feet of additional water supplies for local agencies and the lower American River.

The expansion of the region's conjunctive use program is dependent on the continued availability of surface water in wetter years, and region wide shifts to groundwater in the driest years. With the RiverArc backbone infrastructure in place, participating agencies north of the American River will have access to American River water from Folsom Reservoir, Sacramento River water from the new facilities, and a robust reserve of groundwater for use during times of drought or emergency. For PCWA, in particular, the RiverArc infrastructure and water banking program will create a redundant supply for the planned development in western Placer County that is not easily served from our treatment plants and surface water sources farther to the east.

The regional water bank technical effort is currently being funded by a combination of federal grants and technical assistance (USBR) and local matching funds and in-kind contributions. The water banking program is intended to proceed in conjunction with the RiverArc project, in a phased manner that provides benefits in proportion to investments.

Central Valley Project (CVP) WIIN Act Repayment Contract

This past year PCWA, Sacramento County, the City of Roseville and the Sacramento Municipal Utility District continued with a cooperative effort to negotiate renewed long-term CVP water supply contracts. While awaiting a Basis of Negotiation (BON) from the Commissioner of the Bureau of Reclamation to be issued to the regional director to negotiate, execute, and administer contracts within specific parameters, the American River partners prepared by soliciting and hiring a consultant to provide the expertise needed to process the environmental documentation to navigate the NEPA process. The issuance of the BON has been delayed, but a new opportunity emerged through the Water Infrastructure Improvements for the Nation Act (WIIN Act). Section 4011 of the WIIN Act outlines the authority provided to the Secretary to convert existing long-term or interim renewal water supply contracts into repayment contracts. A condition of the repayment contract requires Contractor's repayment of their remaining construction costs obligations in either a lump sum or by accelerating prepayment. PCWA currently has a credit with USBR, so no payment is due to satisfy this condition. A repayment contract is beneficial for two reasons. The first benefit is that the conversion to a repayment contract is considered a non-discretionary action by USBR which does not require an environmental review through the NEPA process. This alone can save the partners up to two million dollars in costs that were anticipated for the NEPA review for the long-term renewal process. The second benefit is that the repayment contract remains in effect in perpetuity with no termination date. The renewal of CVP water supply contracts are uncertain in future years and a repayment contract provides the certainty needed for a continued CVP water supply contract. The collaboration to draft a repayment contract was completed in November and PCWA's contract is expected to be ready for consideration and execution in January of 2020.

French Meadows Forest Restoration Project

A diverse partnership is advancing the 28,000 acre French Meadows Forest Restoration Project (Project), a collaborative, all-lands approach to restore forest health and resilience to reduce the risk of high-severity wildfire around French Meadows Reservoir, a critical municipal watershed. The Project involves clearing underbrush, thinning smaller trees, removing biomass to energy facilities, reforestation, restoring meadows and prescribed fire. Key to success of the Project is a strategic partnership and innovative funding. Partners include PCWA, the United States Forest Service (USFS), The Nature Conservancy, Placer County, American River



Partners of the French Meadows Forest Restoration Project completed their first season of work in 2019.

Conservancy, the Sierra Nevada Conservancy, and the Sierra Nevada Research Institute at the University of California, Merced. With limited USFS resources already engaged on other projects in the American River watershed, the partnership rolled up their sleeves to design, manage, and fund the Project.

This project began implementation in June of 2019. At least a thousand acres of headwaters lands will be treated by the end of the

year. There are at least four more years of work ahead to treat the remaining acres and then begin a prescriptive fire burn plan.

Conclusion

The Agency is moving forward with a host of water supply reliability projects and programs in an extremely challenging regulatory environment. At the Board's direction, staff continues to work collaboratively with our regional partners in developing strategies to secure this area's water rights and entitlements, while also investing in conservation and alternative supplies. We are now better positioned as a region to effectively and efficiently serve our current and future customers while successfully stewarding our local environmental resources.



Andy Fecko received the California Special District Association's Innovative Project of the Year Award for the French Meadows Forest Restoration Project.



Drinking Water Operations Division



Information Technology Division



Engineering Division

Technical Services Department

The Technical Services Department consists of three divisions: the Engineering Division, the Drinking Water Operations Division, and the Information Technology Division.

Engineering is responsible for project management, long-term planning, coordination and processing of land development activities, property and right-of-way acquisition, environmental compliance, design, construction management and inspection of the Agency's water and power system projects, Geographic Information Systems, and providing general technical support across the Agency.

Drinking Water Operations (DWO) is responsible for treatment, storage, pumping and distribution of drinking water to PCWA customers and for maintenance of the facilities used in providing this service. This division is responsible for computer and communications technology in support of the drinking water system Supervisory Control and Data Acquisition (SCADA) system. A critical function of DWO is to ensure compliance with water quality regulations.

Information Technology (IT) is responsible for maintaining the Agency-wide business network and related hardware and software, as well as website design and maintenance. This includes cybersecurity, which is an ever-increasing responsibility to keep PCWA and its customers safe from cyber-attacks. Additionally, this division is responsible for desk-top phones, cellular phones, and wide-area communications.

YEAR END SUMMARIES OF THE DEPARTMENT

Water Production & Distribution

The Drinking Water Operations Division produced more than 10.0 billion gallons of high quality potable water through September; estimated to be 11.8 billion gallons by the end of 2019. The peak month was July, where the treatment plants produced 1.7 billion gallons. The following were necessary to produce and distribute this much drinking water:

- Testing of over 5,000 backflow prevention devices
- Inspecting 20 storage tanks
- Responding to 92 customer calls
- Over \$500,000 of electricity
- Over 500,000 gallons of liquid chemicals
- Over 60,000 pounds of dry chemicals
- Over 19,000 pounds of activated carbon
- Over 2,000 water samples taken to the lab
- Over 1,500 tons of sludge hauled to a landfill

IT Support

The Information Technology Division shifted from the Administrative Services Department to the Technical Services Department in June 2019. This shift allowed the division greater access and alignment with project management and other short-term and long-term strategic objectives. During 2019, in addition to the daily support of over 400 computers, the IT Division has successfully:

- Replaced two aging domain controllers with a new industry-standard platform
- Upgraded the Agency's enterprise resource planning software (*Naviline*) to a new version, upgraded *Cognos 10* to *Cognos Analytics 11*, and shutdown a legacy server
- Completed the implementation of the new Agency-wide telephone system which will integrate the Foresthill, Maidu, and Ferguson campuses into one system
- Deployed new network fiber at the Maidu site to upgrade and improve network speeds, including additional fiber to support future projects such as VoIP, SCADA, and the pending physical security project
- Hired a new Information Technology Manager



PCWA's main server room

Capital Infrastructure Program (CIP)

Throughout 2019, the Engineering Division:

- Managed over 70 CIP projects in the water and power systems
- Inspected 48 construction projects
- Completed eight construction contracts worth \$6 million

The largest construction contract completed in 2019 was the \$1.9 million Clover Valley Reservoir Supply Pipeline. This project included construction of a new intake structure on the Antelope Canal and a 24-inch pipeline installed underground and through an existing culvert beneath the railroad, where it discharges into the Clover Valley Reservoir. This project halted many decades of erosion of the previous unlined portion of the canal, significantly reducing the amount of sediment being deposited into the reservoir.

Land Development

As of November 2019, the Agency committed 430 Units of Capacity (UOC) to new residential and commercial connections. This will generate approximately \$8.3 million dollars of revenue for the Water Connection Charge fund. A year-to-year summary of UOC commitments is as follows:

- 2013 – 1,032 UOCs
- 2014 – 1,651 UOCs
- 2015 – 1,243 UOCs
- 2016 – 669 UOCs
- 2017 – 665 UOCs
- 2018 – 592 UOCs
- 2019 – 430 UOCs (through November)

These commitments from 2019 are for 24 projects that will construct 3.9 miles of new pipelines. The projects are located as follows:

- Rocklin - 14 projects
- Loomis - 3 projects
- Auburn - 3 projects
- Colfax - 3 projects
- Unincorporated Placer County - 1 project

SIGNIFICANT ACCOMPLISHMENTS FOR 2019 AND ANTICIPATED CHALLENGES AHEAD

Because projects and efforts of Technical Services span multiple years and cover a range of functions, year-end accomplishments and challenges ahead are discussed together under each topic.

Drinking Water Quality

The Drinking Water Operations Division always strives to keep the consumer at the forefront of every operational decision. Not only is the division continuing to stay consistent with Title 22 requirements by monitoring disinfection by-products and bi-product precursors, they have also added inorganic and organic monitoring to finish the Unregulated Contaminant Monitoring Rule (UCMR) 4 testing requirements, which is planned to be completed by the summer of 2020.

Taste and odor, harmful algal blooms, per- and poly-fluoroalkyl substances (PFAS), and the Lead and Copper Rule have been at the forefront of media attention in recent years. We have monitored our water quality, both at the source and after treatment, to ensure these concerns do not become a problem for our customers. Powdered activated carbon has been used at several treatment plants in response to heightened organic loading, which has proven effective.

Requirements under UCMR 5 will be effective in 2020, with more stringent requirements on sludge testing and disposal, aging infrastructure, keeping up with growth in our service areas, and support of neighboring agencies. Drinking Water Operations is committed to keeping pace with evolving requirements and advancing technologies.



The interior of the Sunset Tank was recoated to prevent rust and corrosion.

IT Strategic Plan

During the second half of 2019, the IT Division commenced work on an IT Strategic Plan that includes goals, objectives, and prioritized projects that are planned over the next several years. The plan focuses on three main areas: cybersecurity, disaster recovery/business continuity, and enterprise resource planning.

Cybersecurity Program

Over the next year, the IT Division will be working closely with all PCWA departments to strengthen existing cybersecurity programs and establish new ones. The program will include security awareness training for all employees. A defense in depth strategy will also be developed which will utilize our current infrastructure and technology while adding additional layers of protection including an external cybersecurity 24-hour monitoring service. The main objective is to protect our employee's and customer's data.

Disaster Recovery and Business Continuity

One of the most important aspects of IT infrastructure is the ability to continue to operate in the event of an outage and quickly recover after a disaster. The IT Division will be working with all other departments to identify recovery point objectives and recovery time objectives. These

objectives will determine how often each data element is backed up and what type of redundancy is required. Cloud utilization will become a key piece of our critical infrastructure.

Enterprise Resource Planning (ERP) System

The current ERP platform PCWA utilizes is assumed to be at its end of life in 2025. The IT Division will lead a needs assessment, which will include gathering requirements and business process analysis with all Agency divisions. Afterwards, the IT Division will explore upgrading to the current ERP platform and adding additional modules, if needed. If the upgrade path will not meet the Agency's needs, other options will be evaluated.

Water Infrastructure

Approximately 12 miles of treated water mains in the system are older than 80 years. Over 15 miles of mains installed in the 1960's in the Sunset-Whitney area of Rocklin have experienced destructive leaks that Field Services has been repairing. Under the current renewal and replacement program, just over three miles of treated water mains were replaced from 2015 to 2019 at a cost of \$11.7 million, averaging less than one mile per year and \$4 million per mile. At this rate, it will take over 600 years to replace all pipes in the treated water system.

Completion of the Long Ravine Pipeline project replaced approximately one third of the remaining three miles of riveted steel pipe in our untreated water system. Design is currently under way on the Hayford Siphon project, which will replace half of the remaining two miles of riveted steel pipe. Construction is anticipated to begin in late 2020.

Recently completed upgrades at the Alta Water Treatment Plant (WTP) will greatly increase the reliability and remaining life of that plant. The next plants to be rehabilitated include the Bowman WTP, Phase 1 of which is currently under construction, and the Colfax WTP, PCWA's oldest plant originally constructed in 1958. A major overhaul of the mechanical equipment is anticipated in the next 5 to 10 years at PCWA's largest plant, Foothill WTP.



The Rocklin Road Tank was recoated to extend its useful life.



Foundation for the new connection between the Ophir Road Pump Station and PG&E's South Canal.

In 2020, construction of two key projects are planned for completion. The first is the South Canal Intertie project that establishes a new buy-point for the future Ophir WTP. The second is the grading and drainage at the Ophir WTP site, which will complete permitted wetland work for the future construction project. With the

South Canal project clearing the required Federal Energy Regulation Commission regulations, these combined projects will address all state and federal permits. This advance work will streamline the process to construct the water treatment plant in the future.

Master Planning for Increased Capacity & Consolidations

The last update of the Agency's capital plan for capacity generating projects to keep pace with development was in 2017. That plan contemplated the completion of the Ophir WTP in 2020, with upfront funding contributions coming from the cities of Roseville and Lincoln as project partners. As a result of reduced demands sustained from the drought and opportunities with Roseville to share in capacity to leverage existing resources, it is now anticipated that the Ophir WTP can be pushed back in time. Lincoln recently completed a capital plan that does not contemplate investments in the first phase of the Ophir WTP. Staff anticipates updating the capital plan in 2020 to incorporate these changes in circumstances.

In addition to planning for western Placer County, staff has made progress in plans for capacity and anticipated community water system consolidations in the foothills along Interstate 80 above Auburn. PCWA currently has four permitted water systems in these communities, served by the Alta WTP, the Monte Vista WTP, the Colfax WTP, and the Applegate WTP, respectively. The currently drafted masterplan assumes future replacement and expansion of the Colfax WTP, along with pipelines extending downhill to consolidate the Applegate WTP and other small community water systems in between. The masterplan assumes extending the Alta water system with a pipeline to serve the communities of Dutch Flat and Monte Vista, such that the Monte Vista WTP could be abandoned. The Alta WTP has just undergone expansion adequate to serve these demands.

These concepts will be developed into capital plans that include cost estimates, timelines, and financing. The resulting plans, along with proposed water connection charges, are planned to be presented to stakeholders and the Board of Directors in 2020 for consideration.



A new metering station under construction for the City of Lincoln. The City's new 5-million gallon storage tank is shown under construction in the background.

MFP Relicensing & Water Rights Extension

There was a lot of activity on the Middle Fork American River Project (MFP) relicensing front in 2019, spurred by a D.C. Circuit Court (U.S. Court of Appeals) ruling that rejected the commonly used workaround of the one-year statutory limit on State action on the 401 Water Quality Certification by allowing multiple cycles of withdrawal-and-resubmittal of applications. Following this ruling, the Agency requested, and FERC determined, that the California State Water Resources Control Board (SWRB) had waived its authority to issue a Water Quality Certificate for the MFP. The SWRB and a group of non-governmental organizations requested that FERC rehear that ruling, which FERC ultimately denied. This determination, and subsequent rehearing request denial, was the last step prior to FERC issuing the new license for the MFP. The new license, which is anticipated to be issued during Fall 2019 or early 2020, will contain a suite of operations and Capital Improvement requirements that will require a substantial increase in effort and funding in 2020 and beyond.

The American River Water Rights Extension Project has been focused on preparing the modeling and environmental documents required to enter into a Warren Act Contract with the U.S. Bureau of Reclamation for storage of water in and conveyance of water through Folsom Reservoir. A Warren Act Contract is required to put the Agency's water rights to full beneficial use due to the mitigation required for diverting 120,000 acre-feet of water from the American River. The Warren Act Contract requires National Environmental Policy Act (NEPA) and federal Endangered Species Act (ESA) compliance. Modeling and environmental effects analyses used for NEPA/ESA compliance will also be used for California Environmental Quality Act compliance, which staff anticipates completing in 2020.

Operation and maintenance of the Moore and Pleasant Grove (also known as Turkey Farm or Aitken Ranch) dams in Auburn Ravine requires a California Department of Fish and Wildlife (CDFW) Streambed Alteration Agreement (SAA). The SAA will contain best management practices and avoidance/protection measures that will ensure that terrestrial and aquatic resources are protected during operation and maintenance of the Auburn Ravine facilities. Agency staff have recently submitted a very detailed SAA application to CDFW and anticipate permit issuance in early 2020, pending permit term negotiations.



Career Technical Education Day, held in October, gives high school students an opportunity to see the inner workings of the Agency and its infrastructure. Students learned first-hand from staff about a variety of careers PCWA offers, and the importance of each role. Nearly 50 high school students attended from Colfax, Foresthill, Placer, Del Oro, Lincoln, and Granite Bay High Schools. This event is headed by the Technical Services Department, with assistance from other agency departments.