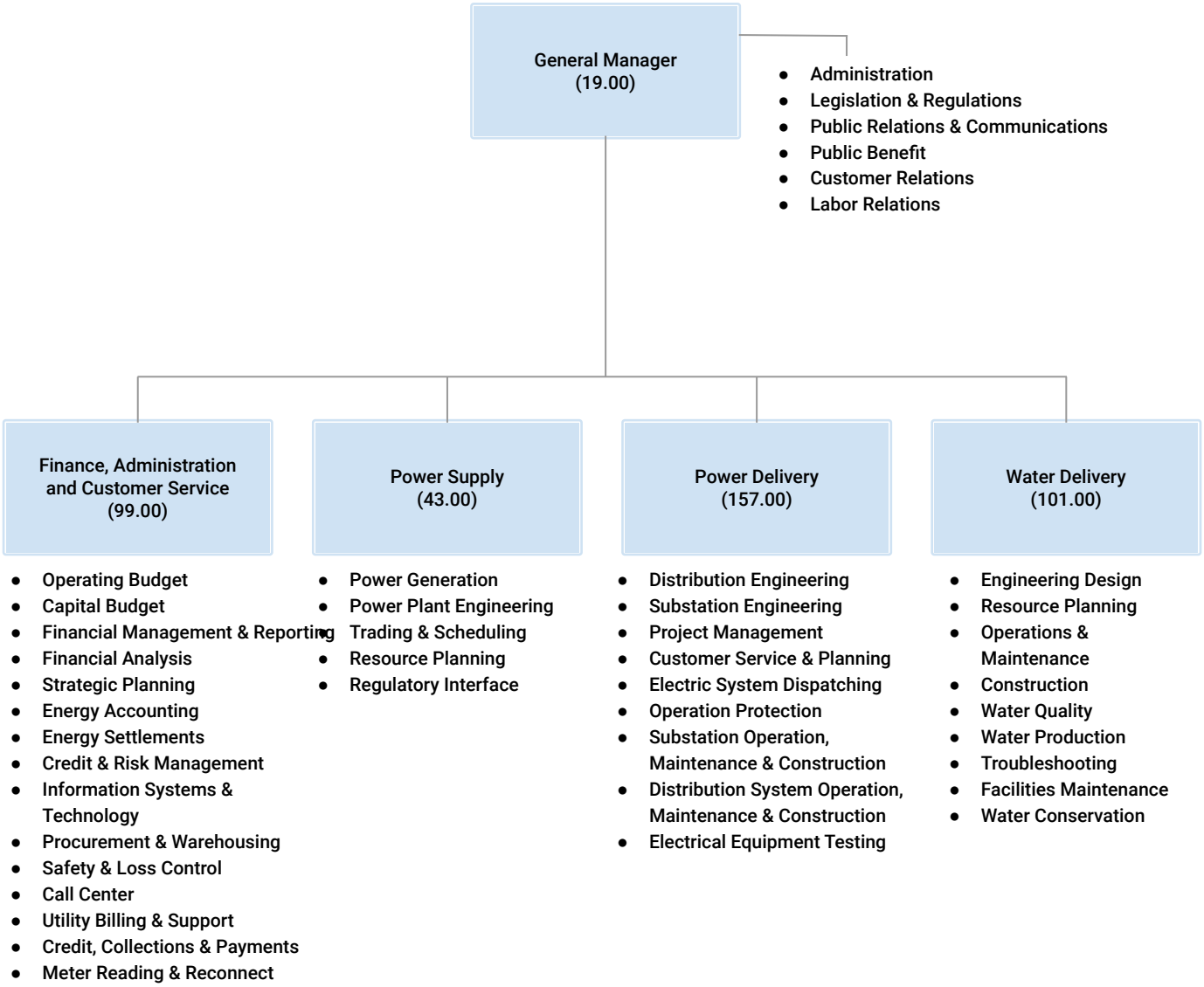
WATER AND POWER


General Manager
(19.00)
Administration
Legislation & Regulations
Public Relations & Communications
Public Benefit
Customer Relations
Labor Relations
Finance, Administration and Customer Service
(99.00)
Operating Budget
Capital Budget
Financial Management & Reporting
Financial Analysis
Strategic Planning
Energy Accounting
Energy Settlements
Credit & Risk Management
Information Systems & Technology
Procurement & Warehousing
Safety & Loss Control
Call Center
Utility Billing & Support
Credit, Collections & Payments
Meter Reading & Reconnect
Power Supply
(43.00)
Power Generation
Power Plant Engineering
Trading & Scheduling
Resource Planning
Regulatory Interface
Power Delivery
(157.00)
Distribution Engineering
Substation Engineering
Project Management
Customer Service & Planning
Electric System Dispatching
Operation Protection
Substation Operation, Maintenance & Construction
Distribution System Operation, Maintenance & Construction
Electrical Equipment Testing
Water Delivery
(101.00)
Engineering Design
Resource Planning
Operations & Maintenance
Construction
Water Quality
Water Production
Troubleshooting
Facilities Maintenance
Water Conservation

MISSION STATEMENT

Pasadena Water and Power ("PWP") is committed to providing safe and reliable water and power with superior customer service at reasonable rates.

PROGRAM DESCRIPTION

PWP is a community-owned utility that supplies water and electricity to residents and businesses in Pasadena and nearby outlying areas. PWP's priorities include the following:

- Provide citizens with the highest quality water and electric services at competitive rates;
- Promote energy efficiency and water conservation through extensive public outreach, education, and rebate programs; and
- Support the City's environmental goals to secure sustainable resources and reduce the environmental impacts of water and power procurement.

DEPARTMENTAL RELATIONSHIP TO CITY COUNCIL GOALS

Ensure Public Safety:

Safe and reliable water and power services are essential to public safety. PWP continues its commitment to delivering high quality water by monitoring, sampling, and testing in accordance with all applicable laws and regulations. The ongoing implementation of the Water System and Resources Plan ("WSRP") (formerly, the Water Distribution System Master Plan) includes continual maintenance and improvement of water infrastructure to ensure the highest water quality and adequate fire flow.

Similarly, implementation of the Power System Master Plan ("PSMP"), which is currently being revised, outlines ongoing upgrades and improvements that ensure the safety and reliability of the underground and overhead electrical infrastructure. PWP also complies with the reliability standards of the North American Electric Reliability Corporation ("NERC"), and has again earned the American Public Power Association's ("APPA") Reliable Public Power Provider (RP3) "Platinum" designation for providing the highest degree of reliable, safe, electric services.

PWP has implemented an Electric Distribution System Inspection Program that is consistent with California Public Utilities Commission Order 165. This program further ensures safety for employees and the public, and enhances the reliability and useful life of the power distribution system.

PWP also continues to focus on improving emergency response capabilities and customer communication throughout the utility.

Improve, Maintain, and Enhance Public Facilities and Infrastructure:

PWP builds, maintains, and operates necessary infrastructure to produce, secure, and reliably deliver water and power to residents and businesses in Pasadena, and to neighboring communities in its service territory. The City Council-adopted WSRP, and the PSMP Power Integrated Resource Plans guide, respectively, investment in water and power distribution systems, and resource development and procurement. PWP continues to make efficient use of Pasadena's natural resources while enhancing and improving the environment.

Maintain Fiscal Responsibility and Stability:

PWP is committed to improving efficiencies and facilitating appropriate management decisions related to costs. Decision support systems are continually being evaluated and improved to ensure that necessary information is always available, while long- term historical trends and future-oriented financial plans are employed to support any necessary strategic changes.

Increase Conservation and Sustainability:

PWP's activities directly impact six of the 21 Urban Environmental Accords action items including energy efficiency, renewable resources, greenhouse gas ("GHG") emissions, water conservation, tree canopy, and clean vehicles.

Support and Promote the Quality of Life and the Local Economy:

Reliable and competitively-priced water and electric services provide a core foundation that supports Pasadena's quality of life and local economy. PWP's focus on customer service and strategic marketing of its programs and services further supports these goals.

FISCAL YEAR 2020 ACCOMPLISHMENTS

POWER DIVISION

Resources:

- Received approval from the California Energy Commission ("CEC") for the 2018 Power Integrated Resources Plan ("IRP") on August 14, 2019. PWP's IRP was developed in collaboration with community stakeholders and became the second in California to achieve compliance with the stringent requirements of the recently enacted Senate Bill ("SB") 100;
- Joined the Clean Fuel Reward Program ("CFR"), a modification to the Low Carbon Fuel Standard ("LCFS"), on March 20, 2020. This will allow PWP to continue receiving LCFS credits which help offset EV infrastructure expansion costs and contribute to the overall advancement of EV adoption;
- Achieved Renewable Portfolio Standard ("RPS") of 37.5 percent for Calendar Year ("CY") 2019;
- Implemented the Green Power rate to incentivize more participation and support investment in renewable energy;
- Reduced Greenhouse Gas ("GHG") emissions by over 45 percent below 1990 levels and completed and filed the GHG emissions report to the California Air Resources Board ("CARB") for CY 2019;
- Completed the Marengo Charging Plaza in collaboration with Tesla. Featuring 24 Tesla Superchargers and 20 universal fast chargers, this location has become the largest electric vehicle ("EV") fast-charging plaza in the United States;
- Installed 34 EV charging stations at Holly Street Garage to support City fleet and employee vehicles;
- Published specifications and received City Council approval to award a contract for extensive repairs to Gas Turbine ("GT") 2, which has been out of service since 2012 due to a failure of the power turbine blade. The project, which also includes control system retrofits for GT-1 and GT-2, will restore approximately 22 MW of local generation and improve system reliability;

- Submitted comments to legislative and regulatory bodies on various power supply-related regulations including the RPS, Power Content Label ("PCL"), GHG emissions, and the LCFS; and
- Highlighted PWP's efforts on RPS compliance, GHG goals, EV adoption, and infrastructure achievements at various industry workshops, regulatory hearings, conferences, and other public events.

Infrastructure:

Power System Reliability:

- Maintained APPA's prestigious Reliable Public Power Provider ("RP3®") "Platinum designation for providing the highest degree of reliable and safe electric service;
- Maintained compliance with applicable North American Electric Reliability Corporation ("NERC") standards and related requirements;
- Implemented the Wildfire Mitigation Plan, which was approved by the City Council in late CY 2019;
- Continued the development of the new Power Delivery Master Plan, a comprehensive 20-year planning guide that will drive future priorities for system expansion, operational methods, emerging technologies, and regulatory changes;
- Completed protection upgrades and Supervisory Control and Data Acquisition ("SCADA") control for two sub-transmission lines and five substation circuit breakers;
- Replaced three 17 kV circuit breakers at Santa Anita substation, including full protection and control upgrades;
- Documented responsibilities related to newly installed cyber assets that may impact the bulk electric system located at TM Goodrich ("TMG") receiving station. Implementation is expected by late spring or summer 2020 pending signed acceptance by Southern California Edison;
- Developed an engineering model to identify low voltage zones and overloaded transformers without the use of live metering data; and
- Upgraded 35 kV Potential Transformer ("PT") fuses on nineteen circuit breakers.

Power Transmission and Distribution Infrastructure Improvements:

- Repaired or replaced approximately 22 underground vaults and one pull box;
- Replaced approximately 140 power poles;
- Installed or replaced approximately 100 transformers, 55 distribution switches, and 12 miles of underground cable;
- Completed the installation of a new 34 kV sub-transmission line between Chester and Glenarm substations; and
- Completed two 4 kV to 17 kV feeder voltage conversions.

Power Substation Infrastructure Improvements:

- Upgraded the protection and controls for one 220 kV line at TMG receiving substation;

- Initiated a feasibility study to install a phase-shifting transformer at the interconnection with Los Angeles Department of Water and Power;
- Completed construction of seismic upgrades for Chester and Villa substations; and
- Completed engineering design for the seismic upgrade of the 34 kV switch rack and three capacitor banks at TMG receiving station.

Customer Service and Support:

- Provided new or upgraded electric service to approximately 700 residential and commercial customers, and installed approximately 30 new private property vaults.

Emerging Technologies and System Automation:

- Continued the design of various Electric Vehicle Service Equipment ("EVSE") installations throughout Pasadena to support transportation electrification efforts;
- Completed the installation of new Automatic Transfer Switches ("ATS"), including full SCADA visibility and control, for the Rose Bowl and Cal Trans;
- Upgraded and maintained the Power Geographic Information System ("GIS") and developed an application to generate circuit maps directly from GIS;
- Completed the installation of four new SCADA-connected overhead electronic fuse systems;
- Completed the installation of eleven new Satec Power Quality Meters;
- In coordination with the Department of Information Technology ("DoIT"), completed the installation of the Northwest Fiber Optic Expansion Project, featuring installation of new fiber optic cable along Linda Vista Avenue to support future Distribution Automation ("DA") projects;
- Completed an upgrade, including SCADA interfacing, of receiving station Remote Terminal Units ("RTUs");
- Converted legacy annunciator systems to SCADA for six substations;
- Completed the design and construction of security surveillance, access control, and area lighting at TMG and Brookside substations;
- Installed and commissioned a video wall for the Backup Dispatch Center;
- Deployed an electronic inspection program that captures underground infrastructure inspection data using tablets and a 360 degree camera system; and
- Continued to test recently implemented mass communication software to assist with automated notifications of planned and unplanned outages, and emergency reporting.

WATER DIVISION

Supply:

- Initiated projects for new and replacement wells at the Monk Hill Basin using existing water rights, and evaluated inoperable wells for potential abandonment to avoid additional contamination and reduce the financial liability of deferred maintenance and repair;

- Continued work on the Arroyo Seco multi-benefit water supply project, with FY 2020 focus that included design rework, initiating the Environmental Impact Report ("EIR") development process, and conducting CEQA public meetings;

- Completed the Water System and Resources Plan ("WSRP") which combines resource and infrastructure planning into one comprehensive guide. The WSRP addresses existing system deficiencies and facility requirements to meet demands through 2045, as well as provide integrated resource planning, feasibility, and technical studies related to the selection and construction of new water supplies and correlated demand-side programs. The Plan also identifies and selects cost-effective and feasible water resources projects, and provides technical data to support the 2020 Urban Water Management Plan;

- Completed a project to convert the Jones Reservoir water disinfection from a chlorine process to chloramines in order to better match the blend of water imported from the Metropolitan Water District of Southern California ("MWD");

- Partnered with the cities of Burbank and Glendale to award a contract for water quality laboratory services; and

- Published the Public Health Goals ("PHG") report as required every three years by the California Environmental Protection Agency ("CalEPA"). The PHG details the occurrence of chemicals in treated water that have concentrations greater than the enforceable limits as well as public health risks, treatment methods, and associated implementation costs. PWP's published goals routinely meet or exceed the standards established by the CalEPA.

Distribution:

- Completed construction of the Arroyo Booster Station upgrades with testing and commissioning expected to be completed in July 2020;

- Replaced approximately 1,200 aging water meters (3 percent of Pasadena's total) to improve accountability of system water use;

- Provided adequate pipeline pressure and services to complete approximately 50 customer-driven development projects;

- Continued to implement the Water Main Replacement Program, and replaced deficient mains in Washington Boulevard, Romney Drive, Midlothian Drive, Wesley Avenue, Pasadena Avenue, Glenrose Avenue, and Asbury Road. This ongoing maintenance ensures that required pressure, pipe velocity, and fire flow criteria are maintained; and water quality is sustained;

- In preparation for the "Sunset Complex" Reservoir Replacement Project, installed a 24-inch transmission main in Orange Grove Boulevard that distributes drinking water between Sunset and Jones Reservoirs, and constructed valves to facilitate the use of the Orange Grove line while the Sunset reservoirs are out of service;

- Procured three emergency standby generators to provide temporary power to vulnerable water booster pumps;

- Launched a Global Positioning System ("GPS") program that enhances data use and streamlines the documentation of water assets. The survey-grade Global Navigation Satellite System ("GNSS") receivers and associated applications provide accurate and readily-available needed for locating water mains, valves, and other essential appurtenance;

- As part of the Water Meter Replacement Program, replaced approximately 35 service connections and five water meter vaults, and repaired or replaced steel plates; and

- Began work on the Local Non-potable Water Project, which features evaluation and conversion of existing abandoned drinking water pipelines to non-potable lines for irrigation and water recharge purposes at schools, parks, and other public landscapes.

Storage:

- Completed preliminary design work for the "Sunset Complex" reservoir replacement project which will replace two 100+ year old reservoirs and include new pump stations, water treatment and disinfection facilities, and landscape enhancements; and
- Conducted inspections on three reservoirs.

Facilities and Services:

- Initiated the Computerized Maintenance Management System ("CMMS") engagement/assessment/ implementation plan which is expected to be completed in early FY 2021. The system will be compatible with GIS and other software and will improve water asset management; and
- Continued to implement projects to improve the appearance of water facilities, including construction of the new Coniston Community Demonstration Garden at Sheldon Reservoir which features the Hugels regenerative landscape technique.

Regulatory Compliance:

- Participated in the California Division of Drinking Water compliance inspection which resulted in compliance requirements for three of the City's reservoirs;
- Actively participated on several state and federal legislative initiatives and policy issues related to water resources, management, and infrastructure;
- Completed in an inundation study and compliance report for the California Dam Safety Program; and
- Participated in regulatory reforms for laboratory accreditation.

CONSERVATION, DISTRIBUTED RESOURCES, AND CUSTOMER PROGRAMS

Power:

- Further enhanced the existing residential EV and EV charger programs with additional incentives, including new bonus rebates for income qualified customers. The popular program, which was introduced to the community through the extensive multiple award-winning "Power Up Pasadena" advertising campaign in FY 2019, issued over 400 EV notification rebates and approximately 60 Level 2 Charger rebates during the year. PWP continues its community outreach efforts to encourage more widespread adoption of EV technology which helps meet state and local clean transportation targets;
- Successfully launched six new residential all-electric appliance rebates, which provide customers with alternative options for space and water heating, cooking, and laundry equipment, while simultaneously supporting sustainability efforts;
- Continued to market the Home Improvement Program, which provides no-cost home energy efficiency upgrades to over 500 residential electric customers per year; and
- Continued to provide and promote various energy efficiency programs, incentives, rebates, and direct installation services in an effort to meet the City Council-adopted energy savings goal of 13.5 GWh per year.

Water:

- Expanded the growing Laundry-to-Landscape ("L2L") Greywater Program to include single family residential customers. Approximately 60 customers received greywater system installations in FY 2020;
- Completed the Coniston and Washington Marengo community demonstration gardens, featuring rainwater capture, drought tolerant plants and drip irrigation;
- Hosted the four-part Regenerative Landscape Workshop Series for PWP single family residential customers, demonstrating soil health practices, water efficient garden design, rainwater capture, carbon sequestration, and native planting design;
- Received two grants from the Bureau of Reclamation collectively valued at almost $160,000 for development of a Spray-to-Drip Irrigation Conversion Program, and construction of Hugels nature-based water efficiency solutions at City water facility sites; and
- Installed four outdoor Hydration Stations at City parks, and launched a Hydration Station Rebate Program.

MANAGEMENT AND ADMINISTRATION

Legislative and Regulatory:

- Tracked and monitored numerous state legislative bills and regulatory proceedings related to California GHG emission reductions, renewable energy requirements, distributed generation, electric vehicles, net energy metering, forced procurement, natural gas, water use efficiency, drought, clean drinking water, and water supply reliability;
- Monitored several federal legislative bills and policy issues related to water supply infrastructure, drought relief, advanced refunding bonds, climate change, and municipal pole attachments; as well as various environmental and energy regulations advanced at both the Environmental Protection Agency ("EPA") and FERC); and
- Maintained compliance with 41 applicable NERC standards with 780+ requirements through monitoring, self-certification, and improved policies and procedures.

Finance, Administration, and Customer Service:

- Completed operating and capital budgets that ensure constant utility reliability and excellent customer service;
- Developed, recommended, and evaluated an overall financial strategy to support PWP's business strategies and maximize the value of the utility;
- Continued to implement City Council-approved rate actions designed to better support the water and electric usage needs of today's sustainability-minded customer while covering the utility's ongoing fixed, operating, and capital investment costs;
- Filed the 2020 update to PWP's Transmission Revenue Balancing Adjustment account with FERC;
- Completed a petition with FERC to revise PWP's Base Transmission Revenue Requirement;
- Ensured compliance with the Energy and Credit Risk Management policy, including the requirement that the utility's financial exposure is limited to the amount of its reserves;
- Maintained participation in the wholesale energy market and ensured ongoing compliance with mandated requirements;

- Completed and published PWP's FY 2019 Annual Report;
- Following comprehensive vendor selection processes, awarded major contracts for the Customer Information System ("CIS") Project, collectively valued at over $15 million:
    - Cloud-based CIS
    - Project Management, Quality Assurance, and Testing Services
    - System Implementation Services
    - Customer Self-Service Portal ("CSS")
    - Electronic Bill Payment and Presentment ("EBPP") services
- Issued approximately 400 annual purchase orders valued at almost $9 million;
- Implemented the payroll module of the Tyler Munis Enterprise Resource Planning ("ERP") system within PWP and conducted extensive staff training. Also continued to actively participate in the City's ERP Operations and Innovation Team to improve business functionality of the system and develop future goals and priorities;
- Answered almost 84,000 customer calls;
- Produced and mailed almost 600,000 bills and almost 75,000 final notices;
- Processed over 230,000 Interactive Voice Response ("IVR")/ Interactive Web Response ("IWR") credit card transactions, a 0.9 percent increase over the prior year;
- Conducted over 770,000 electric and water meter reads with 99.0 percent accuracy;
- Processed almost 8,500 online requests to start, stop, and disconnect service; and
- Completed over 32,000 field service orders to start, stop, disconnect, or reconnect utility services.

Buildings and Technology:

- Managed inbound and outbound utility materials requisitions valued at over $15 million to keep field crews productive and responsive to emergencies and operational needs.

COVID-19 Response:

- The Water and Power Department continued to provide high quality, reliable service during the COVID-19 response. Specific actions were taken to ensure the safety of staff responsible for providing essential services such as water system operations, power plant operations and management of power distribution systems. These actions included assignment of key employees to separate work shifts, providing necessary Personal Protective Equipment and critical sanitation and hygiene services for all work locations;
- Provided support services for the City of Pasadena's initiative to issue one-time rebate checks for electric customers for the amount of the Utility Undergrounding Surtax collected between April 2018 and March 2020;
- Implemented the City Council approved program to stop collection of the Utility Undergrounding Surtax for a period of six months to lower customers' utility bills;
- Suspended water and power service shut-offs to provide relief; and

- Temporarily stopped the collection of late fees and delinquent changes.

FISCAL YEAR 2021 ADOPTED BUDGET

Operating and Capital Budget:

PWP continues to experience significant budgetary challenges due to continuous changes in the electric and water industries. The impacts of distributed energy generation and battery storage for electricity are placing pressure on revenues due to reduced retail sales and require that PWP's electric rates remain competitive with new alternative resources. Local water supplies are constrained by limited resources and water quality requirements. Increasing regulation and legislative actions create upward pressure on costs to produce and deliver affordable and reliable energy and water. PWP will continuously review its fiscal strategy, priorities and opportunities to increase revenues and reduce expenses in order to maintain a balanced budget to deliver reliable water and power and continue the support of vital City services.

Power Fund:

The Power Fund budget is based on a projected retail revenue decrease of about $11.5 million, which is mainly due to an anticipated decrease of 6.5 percent in retail sales ("MWh"). Net Income is expected to be impacted by current regulations and initiatives, higher gas and fuel costs, Internal Service Charges, and depreciation expenses.

Water Fund:

The Water Fund budget is based on a projected retail revenue increase of about $5.1 million mainly due to an anticipated increase of 0.6 percent in retail sales (billing unit) and the approved Distribution and Customer ("D&C") rate increase. Net Income is expected to be impacted by higher purchased water costs, Internal Service Charges, and depreciation expense.

Personnel

The FY 2021 Adopted Budget is comprised of a total of 419.0 Full Time Equivalents ("FTEs"), an increase of 2.0 FTEs over the FY 2020 Revised Budget. The FTEs are attributed to additional staff needed for the Power Delivery and Finance and Administration groups.

YEAR-OVER-YEAR BUDGET CHANGES

Power Operating Fund

- Cap and Trade ("Cap & Trade") Retail Revenues increased by about $0.3 million due to an increase in sale of compliance allowances in the Limited Use Holding Account;
- Renewable Energy Credit ("REC") Sales decreased by about $0.6 million due to the sale of Portfolio Content Category 0 ("PCC0") credits in excess of PWP's compliance requirements;
- Low Carbon Fuel Standard ("LCFS") Revenues increased by about $1.2 million due to the sale of credits from California Air Resources Board ("CARB") at no cost to PWP;
- Operating Transfer In decreased by about $0.2 million due to a decrease in reimbursement from the Underground Utility Fund for expenditures related to Underground Capital Projects;
- Investment Earnings increased by about $3.8 million primarily due to pooled investments and Stranded Investment Reserve ("SIR");

- FY 2021 Personnel costs increased by approximately $1.0 million primarily due to cost increases in salaries, Public Employees' Retirement System ("PERS"), pension and other post-employment benefits ("OPEB") adjustments, and an increase of 1.7 new FTEs with fund allocations as follows:
    - 1.2 FTE - Operating Fund in sections of Information Technology and Power Delivery
    - 0.5 FTE - Capital Fund in sections of Power Delivery
    - The fiscal impact of the new FTEs is about $0.2 million

  The increases are partially offset by a change in cost allocation between the Power Operating and Capital funds, and a decrease in Workers Compensation;
- Services and Supplies decreased by about $7.3 million mainly due to cost decreases in purchased power; gas, fuel, and transmission; other contract services; and rebates. These decreases are offset by increases in electricity usage at electric vehicle charger locations and expenses associated with the LCFS program;
- Equipment expense decreased by approximately $0.2 million due to a reduction of the planned purchase of new and/or replacement vehicles and equipment;
- Internal Service Charges increased by about $0.3 million primarily due to an increase in Cost Allocation Plan ("CAP") and Information Technology-related expenses;
- Debt Service decreased by approximately $0.1 million mainly due to a decrease in interest expense;
- Depreciation expense increased by about $0.3 due to an increase in the number of capital projects completed during the year; and
- The General Fund Transfer increased by about $0.6 million, the result of a projected increase in FY 2020 retail revenues.

Water Operating Fund

- Intergovernmental Revenues decreased by about $0.3 million mainly due to a decrease in grant funding for the Water and Energy Direct Install Program ("WeDIP");
- Miscellaneous Revenues decreased by about $0.4 million primarily due to a decrease in capital contributions from third parties;
- Non-Operating Revenues increased by about $0.3 million due to an increase in reimbursement of groundwater treatment services from Jet Propulsion Laboratory ("JPL");
- FY 2021 Personnel costs increased by approximately $1.0 million mainly due to cost increases in salaries, Public Employees' Retirement System ("PERS"), pension and other post-employment benefits ("OPEB") adjustments, and cost allocation between the Water Operating and Capital funds. An increase of 0.3 FTE is allocated to the Operating Fund in the Information Technology;
- Services and Supplies increased by approximately $1.7 million primarily due to cost increases in purchased water, electric, and other contract services;
- Equipment expense decreased by approximately $1.0 million due to a reduction in planned purchases of new and/or replacement vehicles and equipment;
- Internal Service Charges increased by about $0.1 million, mainly due to an increase in CAP expense;

- Debt Service decreased by approximately $0.1 million due to a decrease in interest expense;
- Depreciation expense increased by about $0.4 million resulting from an increase in capital projects completed in FY 2020; and
- The reimbursement of cost of services provided by General Fund to Water Fund is approximately the same as prior year and based on a cost-of-services study conducted by the City.

FUTURE OUTLOOK

In FY 2021, PWP will continue to update and implement its resource and capital plans for both the Water and Power utilities. The reality of budgetary constraints will determine how PWP establishes and funds priorities for procuring energy and water and the necessary level of capital investment to meet those priorities. To stabilize revenues, PWP is actively engaged in the development and production of new products and services, including EV charging infrastructure and the electrification of components of transportation and commercial enterprises. Replacement of the utility billing system will be the initial investment in automation and operational technology solutions to improve efficiencies and service to customers. PWP expects significant ongoing challenges to manage industry changes, higher costs, and customer demands.

Power System:

PWP continues to invest in renewable energy resources that meet accelerating state targets in an operationally and fiscally advantageous manner, and are aligned with long-term goals established by the IRP. Having achieved an RPS of 37.5 percent at the end of CY 2019, PWP is forecasting to meet almost 40 percent of retail sales through RPS-eligible renewable resources by the end of CY 2020. California continues to increase and accelerate its statewide RPS and drive policies toward a carbon free electric grid. With SB 100 now signed into law, the RPS mandate has increased to 60 percent by 2030, with a goal to achieve carbon free energy resources by 2045. PWP's new 2018 IRP focuses on meeting targets through practical investments that manage financial exposure to ratepayers, and features a mix of short and long-term resources that will be evaluated annually to ensure that they continue to meet Pasadena's specific needs. PWP will also continue to focus on expanding the Pasadena EV market to support GHG reduction goals and increase utility revenues.

The FY 2021 Power Delivery Capital Improvement Program ("CIP") includes ongoing work to provide new and upgraded electric services; civil and electrical design, and construction to extend 17 kV distribution circuits and upgrade various 4kV distribution circuits to 17 kV; ongoing replacement of circuit breakers, underground cables, power poles, transformers and switches; ongoing replacement, reinforcement, and repair of underground infrastructure - including vaults and pull boxes; seismic upgrades at substations; and continued work on utility underground infrastructure projects.

Power Delivery facilities and technology projects for FY 2021 include design for the Primary Dispatch Center remodeling project; ongoing work to expand the fiber optic communication network; upgrade of protection/control relays for sub-transmission lines and 17 kV feeders; ongoing work to automate distribution circuits; installation of an Automatic Transfer Switch ("ATS") for the City Yards and Emergency Operations Center ("EOC") to enhance system reliability; and the completion of the Power Delivery Master Plan, a comprehensive long-term planning guide for Power Distribution System maintenance and future Power-related capital projects and priorities. Ongoing maintenance will also continue for the SCADA, GIS, and Outage Management ("OMS") systems.

New infrastructure projects planned for FY 2021 include the installation of a new 34 sub-transmission line between Santa Anita and Oak Knoll to enhance load flow within the sub-transmission system; undergrounding of portions of the overhead distribution system within high fire threat areas to mitigate wildfires; feasibility studies to upgrade aging equipment at Fair Oaks substation; and installation of a new control house at Glenarm Receiving Station.

PWP will also continue to expand the network of EVSE installations throughout Pasadena, with planned locations that include Del Mar parking garage, South Lake Shopper's Lane, Gateway Charging Plaza/Art Center, Jackie Robinson Park Sports Complex, and Victory Park Community Center. The City continues to work with local stakeholders to identify potential locations for new EV charging infrastructure projects.

As always, timely response to customer requests for new or upgraded service will continue to be a priority, as will the development and implementation of training programs for engineering and field personnel.

Water System:

PWP will continue to implement the recommendations of the new Water Systems and Resources Plan ("WSRP") which guides the adequate production and distribution of water under current and future conditions.

Supply

To support supply reliability, PWP is planning to abandon inoperable or unreliable wells and construct up to four new or replacement wells. In FY 2021, emphasis will continue on identifying new sites to support the phase out of the older wells. A new well-head treatment process will also be designed to remove volatile organic compounds from existing wells.

Environmental review, design, and permitting for the Arroyo Seco Canyon Project, which will provide ecological benefits to the Arroyo Seco, is expected to be completed before the end of CY 2020. PWP is also pursuing new elements for an integrated water supply program in the area, including pump-back from the Devil's Gate Reservoir. Habitat enhancement that integrates the services of conservation-focused local youth watershed stewards will also continue, as will support for community-led efforts in the area.

Work will also continue on the Local Non-potable Water Project, which features the conversion of existing abandoned drinking water pipelines to non-potable lines to be used for irrigation and water recharge at schools, parks, and other public landscape areas.

Distribution and Storage

PWP will continue the installation of new and replacement water distribution mains, new gate valves, water services, and fire hydrants at various locations throughout the city, which will improve water flows for fire protection and water quality. The replacement of 19th century water mains will continue through the year, with projects anticipated to be completed in Washington Boulevard, Colorado Boulevard, Altadena Drive, Fillmore Street, Marengo Avenue, and San Gabriel Boulevard. In addition, through the ongoing meter and vault replacement program, PWP plans to replace 650 failed meters and five vaults, with an overall program goal of 38,000 replacements over the next twenty-five years.

Upgrades to the Arroyo booster station will be tested and commissioned in summer 2020.

Design for the demolition and replacement of the 130-year-old Sunset Reservoir #1 will continue in FY 2021 as the "Sunset Complex" project continues to make progress. The new reservoir location, which will be constructed under a design-build process, will feature multiple reservoirs, a new treatment system, pipelines, parking area, and aesthetic improvements.

In order to continuously improve emergency water system maintenance preparedness, and better support fire protection efforts, PWP will continue generator connection installations at several booster stations. Assessment and design for the stationary generators will begin in FY 2021 while the survey-grade Global Navigation Satellite System ("GNSS") receivers program will continue to provide immediate and accurate data.

Facilities and Services

A Request for Proposals ("RFP") will be issued in FY 2021 for a Computerized Maintenance Management System ("CMMS") to manage an extensive database of utility-related asset and services information. The ideal solution will combine asset management and work order functions in one system, which will improve the utility services planning process and facilitate more efficient execution of work. The Water Operations group is also exploring sites for the construction of an operations shop to provide storage space and a location at which to perform a variety of essential construction-related tasks.

PWP will also assess options for the procurement of a Laboratory Information Management System "LIMS" that will enable its water quality laboratory to effectively manage samples and associated data, integrate instruments into the software, and reduce transcription errors.

Hugels, a regenerative landscaping technique that PWP is applying at select water facilities through a grant from the Bureau of Reclamation, will continue to be implemented in FY 2021 with projects underway at Sheldon Reservoir and upcoming at Linda Vista Booster Station.

The Water Division continues to develop compliance strategies to address state and federal water quality requirements and protect the health of the community. Future capital improvements to the water supply and delivery infrastructure may result from further changes to those requirements.

Water Conservation:

Forty percent of Pasadena's water supply comes from the Raymond Basin Aquifer and PWP continues to focus on strategies that ensure its ongoing health. Despite recently improved drought conditions, Pasadena will continue to maintain its Level 1 Water Shortage to encourage conservation as a way of life, and explore methods of improving groundwater recharge. PWP will also maintain its successful public outreach program which includes education; workshops; school programs; and money-saving efficiency retrofits, devices, and incentives; to reinforce a conservation-focused public mindset and help achieve state and local targets.

Public Benefits:

PWP continues to streamline processes and enhance offerings on various energy efficiency programs to improve customer experience and increase overall cost effectiveness. As trends evolve and focus shifts, PWP consistently reevaluates its current programs to ensure that they continue to provide value to customers to maximize participation. With continued program funding, PWP is in a position to meet current and future energy efficiency goals while also incorporating elements of carbon reduction through its customer programs. For example, PWP has increased incentives in its residential transportation electrification program and is now offering rebates for all-electric appliances. Additional programs are being developed to encourage all-electric equipment in commercial building retrofits and new construction projects.

Legislative Programs:

In recent years, the California Legislature has proposed hundreds of utility-related bills each legislative session. PWP anticipates an increase in this trend due to a growing focus on environmental protection, water conservation, transportation electrification, and wildfire mitigation. Water, energy, and environmental policy issues are generally very technical in nature and legislators rely heavily on the technical expertise of regulatory agencies to develop policies and procedures for implementation, compliance, and enforcement of these laws. In essence, an increase in utility-related legislation drives an increase in regulatory proceedings that also require monitoring and advocacy such as participation in hearings and submission of written comments. PWP continues to prioritize action items based on urgency and relevancy.

Financial Programs:

PWP will focus on its financial health and stability by implementing appropriate measurements, controls, and procedures while maintaining a contribution to the City's General Fund to support vital public services.

PWP will continue to monitor financial results, including the recently-implemented electric and water rate adjustments, to ensure adequate cost recovery during an environment of continual change. The economic impacts of new regulations and initiatives associated with GHG, distributed generation, demand reduction, feed-in tariff, smart grid and metering, electric vehicle programs, time-of-use rates assessment, and the development and purchase of renewable resources will continue to impact the Power Fund while the Water fund will continue to be challenged by reduced sales due to mandated conservation efforts and related reductions in water usage.

Other priorities include implementing the new utility billing system, following multiple major contract awards in FY 2020, and preparing the organization and customers for the extensive associated changes. The new solution integrates existing billing functionality with improved customer self-service and data tracking features. It also supports rate structures for emerging technologies such as electric vehicles, solar, and battery storage; allows more flexibility in creating and changing rates as regulatory policies change; and improves the customers' experience with managing their accounts, making online payments and accessing information.

Focus will also continue on outreach efforts to encourage customers to access available online information and services, and continued enhancement of facility and data security programs.

SUMMARY TABLES

SUMMARY OF APPROPRIATIONS BY EXPENSE CATEGORY

(In Thousands)

Expenditure Category	FY 2019 Actuals	FY 2020 Adopted	FY 2020 Revised	FY 2021 Adopted
Personnel	$44,166	$50,572	$50,572	$52,626
Services & Supplies	145,279	152,237	152,296	146,684
Internal Service Charges	9,308	10,164	10,164	10,521
Operating Expense	42,144	41,914	41,914	42,995
Capital Outlay	810	1,265	2,179	949
Debt Service	13,140	12,179	12,179	11,988
Operating Transfers Out	19,503	19,282	19,282	19,894
Non-Operating Expense	(425)	737	737	(41)
Water and Power Total	**$273,925**	**$288,350**	**$289,323**	**$285,616**

SUMMARY OF APPROPRIATIONS BY DIVISION

(In Thousands)

Division	FY 2019 Actuals	FY 2020 Adopted	FY 2020 Revised	FY 2021 Adopted
Power	$214,725	$223,890	$224,413	$218,734
Water	59,200	64,460	64,910	66,882
Water and Power Total	**$273,925**	**$288,350**	**$289,323**	**$285,616**

SUMMARY OF APPROPRIATIONS BY FUND

(In Thousands)

Fund	FY 2019 Actuals	FY 2020 Adopted	FY 2020 Revised	FY 2021 Adopted
401 - Light and Power Fund	$209,223	$215,710	$215,769	$211,181
402 - Water Fund	58,632	63,775	63,775	66,740
410 - Public Benefit Fund	5,260	7,600	7,600	6,746
411 - Power Capital Projects Fund	242	580	1,044	807
412 - Water Capital Projects Fund	568	685	1,135	142
Water and Power Total	**$273,925**	**$288,350**	**$289,323**	**$285,616**

SUMMARY OF FTEs BY DIVISION

Division	FY 2019 Adopted	FY 2020 Adopted	FY 2020 Revised	FY 2021 Adopted
Power	280.68	278.56	278.56	280.20
Water	137.32	138.44	138.44	138.80
Water and Power Total	**418.00**	**417.00**	**417.00**	**419.00**