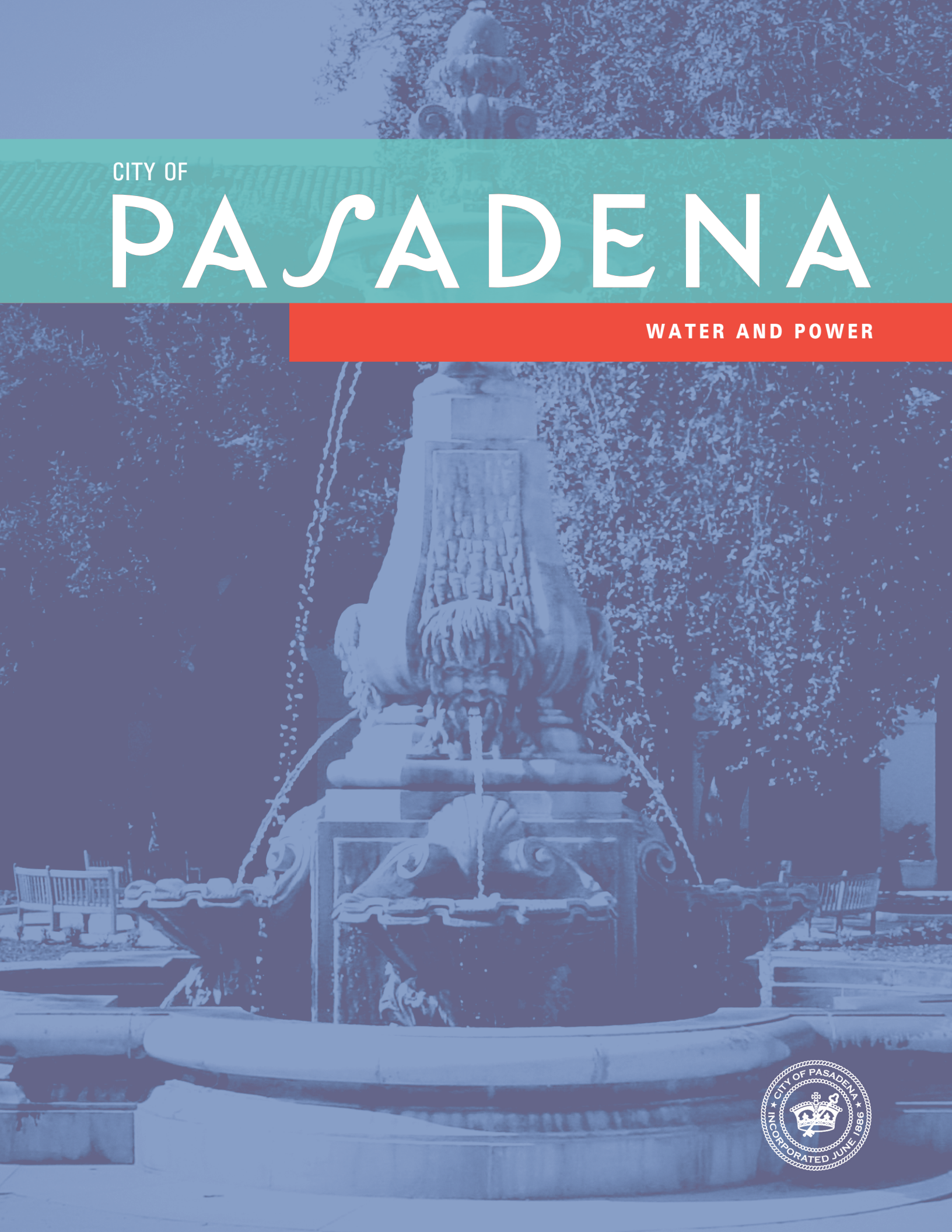
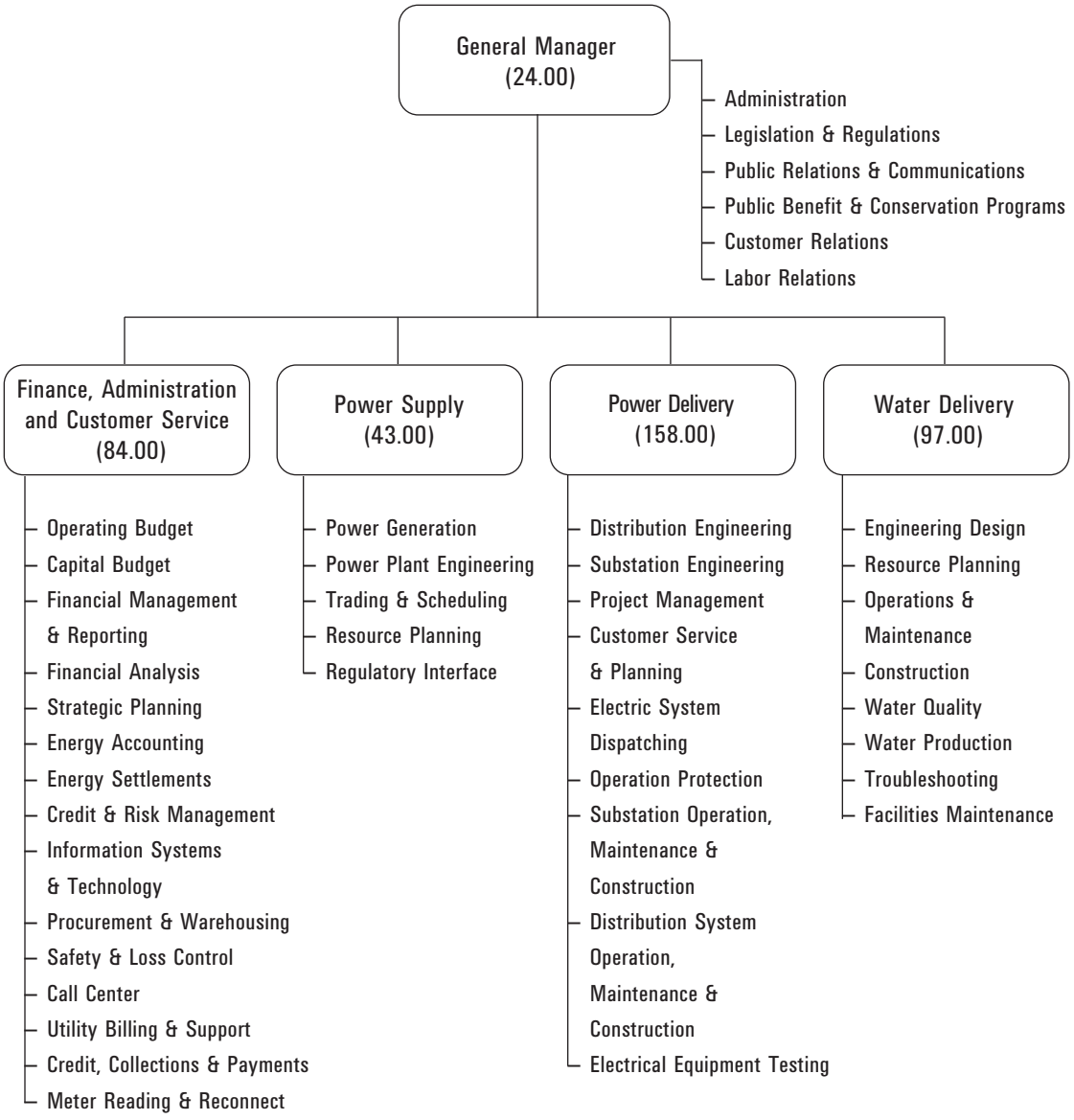
CITY OF

PASADENA

WATER AND POWER



CITY OF PASADENA
WATER AND POWER



MISSION STATEMENT

Pasadena Water and Power (PWP) Department 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 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 supply is 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. Through the on-going implementation of the Water Distribution System Master Plan, the water infrastructure is continually maintained and improved to ensure water quality and adequate fire flow.

Similarly, implementation of the Electric Distribution System Master Plan outlines on-going investment in 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 maintained the Reliable Public Power Provider (RP3®) "Diamond" designation from the American Public Power Association (APPA) for providing the highest degree of reliable, safe, electric services.

An electric distribution system inspection program that is consistent with California Public Utilities Commission Order 165 has been implemented. 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 Master Plans and Integrated Resource Plans (IRP) 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 6 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 the strategic marketing of programs and services further supports these goals.

FISCAL YEAR 2017 ACCOMPLISHMENTS

Pasadena Water and Power accomplished the following during FY 2017:

POWER DIVISION

Resources:

- Completed construction of Phase II of the Glenarm Repowering Project (GT-5), with commissioning and commercial operation achieved on December 20, 2016;
- Maintained electric system reliability during a 1.5 month pipeline shutdown by the Southern California Gas Company using an alternative solution of liquefied natural gas to fuel the power plant;
- Achieved a Renewable Energy Portfolio Standard (RPS) of over 30.0 percent in Calendar Year (CY) 2016;
- Reduced GHG emissions by approximately 40.0 percent compared to 1990 levels;
- Prepared and submitted the greenhouse gas (GHG) report to the California Air Resources Board (CARB) for CY 2015 emissions;
- Executed the Intermountain Power Plant (IPP) Renewal Project Agreement to reserve a 20 MW share of the IPP coal-to-natural gas repowering project. The Agreement may be terminated as early as November, 2019;
- Executed a ten (10) year contract with Falls Creek H P Limited Partnership for the purchase of Portfolio Content Category 3 Renewable Energy Certificates (RECs). Deliveries began in June 2017;
- Executed a four year contract with Powerex Corp. for the purchase of Portfolio Content Category 1 and Category 2 bundled renewable energy. Deliveries began in February 2017;
- Began receiving power from three renewable energy projects through agreements with the Southern California Public Power Authority (SCPPA): Summer Solar (online July 2016 – 32.5 percent of 20 megawatts (MW); Antelope Big Sky Ranch (online August 2016 – 32.5 percent of 20 MW); Puente Hills (landfill gas, online January 2017 – 30.2 percent of 43 MW); and;
- Following the 2014 AB 2514 (Skinner)-mandated Energy Storage Report, continued to assess the feasibility of energy storage projects – which have not shown to be cost-effective at this time due to the high cost and small capacity.

Infrastructure:

- Provided new or upgraded electric service to approximately 600 residential and 100 commercial customers, and installed approximately 24 new private property vaults;
- Repaired or replaced approximately 10 underground vaults and pull boxes;
- Completed the engineering design to install an oil containment system at the Del Mar substation;
- Completed 17 kV circuit extension in Hastings Ranch;
- Completed 4kV to 17 kV circuit conversion on Magnolia Street for the Alpine Underground Utility District;
- Replaced a damaged 34-1 subtransmission line cable and upgraded the line differential protection relay;
- Replaced approximately 30 distribution transformers and 6 switches;
- Replaced a circuit switcher and circuit breaker, respectively, at Glenarm and Santa Anita substations;
- Replaced circuit breakers for two power plant gas turbines;
- Completed Arc Flash detection schemes at Villa and Glenarm substations;
- Completed civil construction in Paloma Street for expansion of the distribution system;

- Completed private property conversions for Hill Street Underground District;
- Began private property conversions for the Alpine Street Underground District;
- Completed the civil installation and restoration of electrical circuits for the La Loma Bridge rehabilitation project;
- Completed 34-5B subtransmission line remediation;
- Replaced approximately 5 miles of underground cable and overhead conductors;
- Replaced 11 power poles;
- Installed power quality meters at Santa Anita, Chester, Villa, and Glenarm substations;
- Upgraded 27 Distribution Automation (DA) devices;
- Upgraded and maintained the Power Geographic Information System (GIS);
- Upgraded the remote terminal unit (RTU) to improve the communication between two power plant gas turbines (GT3 and GT4) and the Supervisory Control and Data Acquisition (SCADA) system;
- Upgraded the California Independent System Operator (CAISO) Remote Intelligent Gateway (RIG) router and communication circuit;
- Began construction of the security wall at the T.M. Goodrich substation;
- Began construction of the back-up Dispatch Center;
- Improved and enhanced the outage notification and data integration of the Outage Management System (OMS);
- Continued to add automation to the distribution system with the installation of underground/overhead fault indicators and underground switches featuring new relays and overcurrent protection;
- Received the Tree Line USA Award for power line clearance practices for the 15th consecutive year; and
- Maintained APPA's prestigious Reliable Public Power Provider (RP3®) "Diamond" designation for providing the highest degree of reliable and safe electric service.

WATER DIVISION

Resources and Water Quality:

- Improved the management of water resources by executing four water lease agreements with three neighboring water agencies for the sale and/or storage of available Pasadena groundwater;
- Submitted a grant application under Proposition 1 to fund a portion of Phase I of the Non-potable Water Project;
- Conducted a public hearing and received City Council approval of the 2016 Public Health Goals Report on Water Quality – a report required every three years by the Environmental Protection Agency.

Infrastructure:

- Continued the implementation of the Water Distribution System Master Plan and recommendations in the Water IRP;
- Maintained PWP's Geographic Information System (GIS) to improve management of water infrastructure assets;
- Completed final construction of the Jones and Sunset reservoir disinfection facilities;
- Inspected, assessed, and designed upgrades to the Arroyo Booster Station. Estimated completion in FY 2018;
- Assessed Sunset Reservoir No. 1 for needed improvements. Estimated completion in FY 2022;
- Updated and calibrated a new hydraulic water model to identify deficiencies and vulnerabilities in the water system for documentation and prioritization in the Master Plan;
- Completed environmental documentation and preliminary design for a new well that will enhance groundwater cleanup at the Monk Hill sub-basin;
- Continued work on the Arroyo Seco project, including installation of two temporary equipment support bridges. Obtained permits for the Consolidated Design Review from the Los Angeles Department of Public Works and the City of Pasadena;
- Replaced approximately 2.5 miles of aging water mains as part of the on-going Water Main Replacement Program;

- Replaced approximately 1,000 small and 30 large water meters with new Automatic Meter Reads (AMR) to enhance the collection of meter data for billing; and
- Replaced eighteen water meter boxes and vaults, and repaired/ replaced steel plates as part of the continued Water Meter Vault Replacement Program.

CONSERVATION, DISTRIBUTED RESOURCES, AND CUSTOMER PROGRAMS

Power:

- Made significant enhancements to income-qualified service offerings including free energy and water retrofits; turf removal services; and refrigerator replacements;
- Continued to provide cost-effective incentives for energy efficiency and customer-owned solar photovoltaic systems; and
- Continued to exceed goals for cumulative energy-savings.
- Projected FY 2017 results include:
    - Over 12.7 GWh of first-year energy savings; and
    - 0.5 MW of additional solar installations.

Water:

- In June 2015, received City Council approval to declare a Level 2 water supply shortage in response to the recent California potable water reduction mandate. FY 2016 water demand was Pasadena's lowest since 1952. While FY 2017 demand is expected to be somewhat higher than FY 2016, it will still be at least 19.0 percent lower than 2013 levels;
- Continued to aggressively promote water conservation and provide generous incentives for the installation of water efficiency devices;
- Enhanced "Laundry to Landscape", an innovative greywater landscape workshop series and rebate program featuring clothing washer retrofits that produce landscape irrigation; and
- Launched a smart irrigation controller installation pilot program for customers with high water usage.

MANAGEMENT AND ADMINISTRATION

Legislative and Regulatory:

- Tracked and monitored 461 state legislative bills and over 40 regulatory proceedings related to California GHG emission reductions, renewable energy requirements, energy efficiency, electric vehicles, net energy metering, regionalization of California's electric grid, natural gas pipeline safety, water quality, drought response, and water tax/public goods charge;
- Closely monitored legislation related to natural gas pipeline safety, drought, and water conservation issues;
- Tracked and monitored four federal legislative bills and policy issues related to physical and cyber security, drought relief, hydropower development, and municipal finance; as well as various environmental and energy regulations advanced at both the Environmental Protection Agency (EPA) and the Federal Energy Regulatory Commission (FERC);
- Actively engaged in hearings and markups of six state and two federal bills, rules, or other initiatives that would affect the cost and operations of municipal electric systems;
- Maintained compliance with over 450 evolving NERC standards with 1200+ requirements through monitoring, self-certification, and improved policies and procedures;
- Successfully completed a Western Electricity Coordinating Council (WECC) electric grid reliability spot audit of PWP's Transmission Protection System Maintenance and Testing program;
- Provided comments on two NERC and FERC-proposed initiatives, standards, and definitions;
- Completed an internal audit of compliance with NERC and WECC reliability standards; and
- Made upgrades to the NERC compliance management system for validating critical infrastructure protection analysis, and for reporting and verifying compliance with NERC reliability standards.

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;
- Issued $119,440,000 in Electric Revenue Bonds to refinance the line of credit associated with the power plant upgrade, eliminate higher cost long-term debt, and to fund future capital projects;
- Issued $15,395,000 in Water Revenue Bonds to refund higher interest bonds;
- Received an upgraded credit rating of AA+/stable from Standard and Poor for the Water System. The rating was affirmed by Fitch Ratings;
- Created a Water Rates Focus Group comprised of public rate payers to discuss future water rates and rate structures;
- Continued to manage PWP's Energy Portfolio Risk Management Program (Program) in compliance with the Energy and Credit Risk Management Policy and other City Council-approved policies. Retained a consulting firm to conduct an independent assessment of the Program;
- Received an Award of Merit from the American Public Power Association (APPA) for PWP's FY 2015 Annual Report;
- Completed and published PWP's FY 2016 Annual Report;
- Processed approximately 400 annual purchase orders valued at over $10 million;
- Continued to participate on the Enterprise Resource Planning (ERP) Operations and Innovation Team to assess performance of the new ERP system and develop future goals and priorities;
- Answered more than 102,000 customer calls;
- Produced and mailed over 580,000 bills and almost 54,000 final notices;
- Processed 187,300 Interactive Voice Response (IVR)/ Interactive Web Response (IWR) credit card transactions;
- Conducted almost 700,000 electric and water meter reads with 99.0 percent accuracy;
- Processed over 8,000 online requests to start, stop, and disconnect service;
- Completed over 31,500 field service orders to start, stop, disconnect, or reconnect utility services;
- Maintained bad debt expense below 0.5 percent;
- Conducted a successful test of a new upgrade to the RouteSmart meter reading software. Full scale testing will be conducted after the Water Encoder Receiver Transmitter (ERT) replacement project has been completed;
- Continued to upgrade medium commercial meters for conversion to the MV-90 data system to enhance load data analysis. This project will continue throughout FY 2017;
- Issued a Request for Proposals for a Needs Assessment to replace the existing Customer Information System; and
- Filed Pasadena's Transmission Revenue Requirement (TRR) with the Federal Energy Regulatory Commission (FERC) and received unprotested approval. This resulted in $1.4 million in additional collectable revenue with minimal associated legal and administration costs.

Buildings and Technology:

- Conducted a major analysis of PWP's materials management process and implemented enhancements that improve the adequacy of stock levels and accuracy of recorded inventory;
- Simplified and improved data protection and outage restoration performance by deploying Cohesity Hyperconverged Secondary Storage as the primary backup appliance for the VMware environment;
- Participated in the City's Enterprise Land Management System Replacement Project to identify a process for automating the Water and Electric utility services permit application solution;
- Improved mobile GIS functionality and the asset management process by performing a major upgrade of the GIS system and migration to ArcGIS/ArcFM v 10.2.1;
- Enhanced the Outage Management System to include new features and capabilities such as enhanced voicemail

recognition to outbound campaigns, improved map accuracy, and monthly reliability reporting; and

- Collaborated with other City staff in completing PWP's Cyber Security Policy and participated in a table top exercise to comply with NERC Critical Infrastructure Protection standards.

FISCAL YEAR 2018 ADOPTED BUDGET

Operating and Capital Budget:

PWP's FY 2018 Adopted Budget has been developed to reflect changes in the utility industry and to provide funding for multiple priorities, including achieving RPS goals, supporting critical operations, maintaining programs that support water conservation, local solar generation and energy efficiency, and to ensure sufficient net income to support future capital investments.

Power Fund:

The Power Fund budget is based on a projected retail revenue increase of about $3.5 million, which is a result of planned rate increases to the transmission services charge in June 2017, and proposed rate increases to the distribution and customer charges in FY 2018. The increases are offset by an anticipated decrease of 3.7 percent in retail sales. Net Income is expected to be impacted by current regulations and initiatives, lower General Fund transfers and internal service charges, and change in cost allocation between Power and Water funds from a split of 75.0 percent (Power)/25.0 percent (Water) to 65.0 percent/35.0 percent in FY 2018.

Water Fund:

The Water Fund budget is based on a projected retail revenue increase of about $1.3 million, which is mainly a result of an estimated 5.7 percent anticipated increase in retail sales. Net Income is expected to be impacted by the change in cost allocation mentioned above and higher internal service changes.

Personnel

The FY 2018 Adopted Budget is comprised of a total of 406.00 FTEs, which is 37.00 FTEs less than FY 2017 Revised Budget due to the elimination of vacant positions.

YEAR-OVER-YEAR BUDGET CHANGES

Power Operating Fund

- Operating Transfer In decreased by about $2.0 million due to a decrease in reimbursement from the Underground Utility Fund for expenditures related to Underground Capital Projects;
- Non-Operating Revenues increased by about $3.5 million mainly due to an anticipated increase in contributions from customer driven projects;
- FY 2018 personnel costs decreased by approximately $3.6 million primarily due to the elimination of 27.60 vacant FTE positions, budget reduction on encumbered FTE positions, defunding of 1.00 vacant FTE position, and change in cost allocation between Power and Water funds. A total of 18.80 of the 27.60 vacant positions eliminated are from the Operating Fund in sections of Finance, Admin and Customer Services; Power Delivery and Power Supply; while 8.80 FTEs are from the Capital Fund in the Power Delivery section. The decreases are offset by cost increases in salaries, Public Employees' Retirement System (PERS) costs, medical and other benefits;
- Services and Supplies decreased by about $7.8 million primarily due to cost decreases in purchased power, gas and fuel, other contract services, consulting services, materials and supplies, legal fees, utility rebates, fiscal agent/bank fees and change in cost allocation between Power and Water funds. The decreases are offset by projected cost increases in transmission and direct installation rebates;
- Equipment expense decreased by approximately $1.5 million due to a reduction of planned purchase of new and/or replacement vehicles and equipment;

- Internal Service Charges decreased by about $1.1 million mainly due to reallocation of cost shifting from Power Operating Fund to Water Fund and Power Capital Fund;
- Debt Service increased by approximately $2.2 million mainly due to the issuance of 2016A Electric Revenue/Refunding Bonds;
- Depreciation Expense increased by about $1.1 million mainly due to an anticipated increase in completion of capital projects; and
- The General Fund Transfer decreased by about $1.0 million due to a projected decrease in retail revenues in FY 2017.

Water Operating Fund

- Non-Operating Revenues increased by about $2.7 million due to funding increases of $1.5 million from Proposition 84 Integrated Regional Water Management grant, $0.7 million from State of California grant for direct installation rebates, and $1.0 million from customer driven projects. The increases are offset by a reduction of about $0.5 million in reimbursement of groundwater treatment services from Jet Propulsion Laboratory (JPL);
- FY 2018 personnel costs increased by approximately $2.2 million mainly due to cost increases in salaries, CalPERS, medical and other benefits, and the reallocation of costs from Power Fund and Water Capital Fund. The increases are offset by budget reduction of encumbered FTE positions and the elimination of 8.40 vacant FTE positions. A total of 4.90 of the 8.40 eliminated vacant FTE positions are from the Operating Fund in sections of Finance, Admin and Customer Services and Water Delivery; while 3.50 FTEs are from the Capital Fund in the Water Delivery section;
- Services and Supplies increased by approximately $2.7 million primarily due to cost increases in purchased water resulting from a projected increase in retail sales and increased rates for water purchased from the Metropolitan Water District, direct installation rebates and the change in cost allocation between Power and Water funds. The increases are offset by decreases in cost of chemical and filtering materials and legal fees;
- Internal Service Charge increased by about $0.3 million mainly due to the reallocation of costs from Power Fund to Water Fund and between Water Operating and Capital funds; and
- The amount of reimbursement from the Water Fund to the General Fund, which is based on a cost study of the services provided by the General Fund to the Water Fund, is increased by $30,000 for Consumer Price Index (CPI) adjustment.

FUTURE OUTLOOK

PWP's focus has been to strategically integrate technology and leverage industry best practices to build a strong infrastructure and increase investment in sustainable, renewable resources.

Power System:

At the end of CY 2016, PWP met the City's RPS goal of 30.0 percent - exceeding the State requirement of 25.0 percent. Approximately 30.0 percent of PWP's retail sales were met with RPS-eligible renewable energy resources. Additionally, PWP has reduced GHG emissions by approximately 40.0 percent compared to 1990 levels and has set a target of 60.0 percent in its 2015 Integrated Resource Plan. PWP continually explores new opportunities to procure renewable resources to augment its RPS and reduce GHG obligation.

In November, 2016, PWP received approval from the California Energy Commission to participate in the Intermountain Power Plant (IPP) Renewal Project. The project features conversion of IPP's long-standing coal generation process to natural gas which will result in cleaner energy deliveries to Pasadena.

Continued legislative and regulatory uncertainty brings new challenges in meeting California's ambitious environmental mandates. The passage of SB 32 (Pavley), which calls for more aggressive GHG reductions and AB 197 (Garcia), which focuses on quantifying and regulating the social costs associated with

stationary GHG emitters such as power plants, require utilities like PWP to continually reassess and modify resource planning and reporting to ensure compliance. Additionally, the effect of the new federal administration's policies regarding environmental regulations is uncertain at this time and PWP continues to monitor developments.

The FY 2018 Power Delivery Capital Improvement Program (CIP) includes ongoing work to provide new and upgraded electric services; civil and electrical design and construction; electrical design and construction to extend 17kV distribution circuits and to upgrade various 4kV distribution circuits to 17kV; ongoing replacement of substation batteries, circuit breakers, underground cables, power poles, transformers and switches; ongoing replacement, reinforcement and repair of underground infrastructure - including vaults and pull boxes; construction of an oil containment system at the Villa substation; seismic upgrades at Santa Anita, Villa, and Chester substations; completion of the Hill Avenue Underground District project; and private property underground conversions for the Alpine Street Underground District.

Upcoming Power Delivery--related facilities and technology projects include completion of a backup Dispatch Center; upgrading of the SCADA system at the primary Dispatch Center; ongoing work to expand the fiber optic network, including the West Network buildout; upgrade of protection/control relays for two subtransmission lines; ongoing work to automate distribution circuits; and specifications development for deployment of both Advanced Metering Infrastructure (AMI) and an asset management system. Ongoing maintenance will continue for the SCADA, GIS, and OMS systems.

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:

The FY 2018 Water System Capital Improvement Plan continues to support the goals outlined in the Water System Master Plan, and focuses on the replacement of Pasadena's aging water infrastructure to improve water pressure for fire suppression, water quality, supply reliability, security, and sustainability. Also, through its meter and vault replacement programs, PWP plans to replace 2,650 aging meters and 10 vaults during the year - with the overall program goal of replacing 37,000 city meters over the course of fifteen years.

Upgrades to the Arroyo booster station are expected to begin in FY 2018 while design and environmental documentation for the demolition and replacement of Sunset Reservoir No. 1 will continue through the year. In addition, completion is expected for a new groundwater well at Monk Hill/Arroyo location as well as respective repairs and electrical upgrades to Garfield and Woodbury wells. PWP is also planning an upgrade to the water facility security system and expects to complete the scope of work during FY 2018.

Work will continue on two major water conservation projects during the year. Design, permitting, and funding efforts will continue for Phase 1 of the Non-potable Water Project, a 20-year recycled water project that could provide up to 10.0 percent of Pasadena's water supply at full build-out. Also, construction is scheduled to begin on the Arroyo Seco Canyon Project, which features increased spreading of water runoff in the Arroyo Seco to restore habitat and improve recreational use of the area. These projects are each subject to ongoing legal and funding challenges.

PWP will also finalize an update to the 2020 Water Master Plan, a comprehensive evaluation of the water system that ensures adequate production and distribution of water in existing and future condition.

The Water Division continues to develop compliance strategies to keep up with the ever-changing state and federal water quality requirements. Future capital improvements to the water supply and delivery infrastructure may result from further changes to those requirements.

Water Conservation:
Due to improving drought conditions, Pasadena's state-mandated 28.0 percent conservation target ended in early June 2016. However, to plan for the recurring nature of California droughts, Pasadena's Level 2 Water Shortage Plan and associated Water Waste Ordinance continue to remain in effect to help ensure both short and long-term water supply reliability. PWP will continue to encourage customers to reduce water usage by offering enhanced incentives, public education workshops, public school programs, and online instructional videos. PWP has also secured grant funding to enhance conservation program offerings in FY 2018.

Public Benefits:
PWP will continue to update incentive levels and aggressively evaluate and market programs to achieve broad participation and maximize results. At the current funding level, PWP expects to meet all energy efficiency goals in FY 2018 and beyond.

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 climate protection and water awareness in response to California's state-of-emergency drought. 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 legislation results in a corresponding 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 continue to 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 and recommend electric and water rate adjustments to support operating and capital plans in 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. PWP will conduct a cost-of-service analysis in FY 2018 to examine the current electric rate structure which has been negatively impacted by increasing interest in distributed generation, and will recommend necessary adjustments and/or design changes to ensure that costs remain aligned with revenue. Similarly, a water rate redesign was completed in FY 2017 and will be introduced through the public hearing process in FY 2018.

Other priorities include replacing the current utility billing system with a more robust and state-of-the-art system that will allow more flexibility in creating and changing rates as regulatory policies change. PWP will be evaluating options following the completion of a need assessment started in late FY 2017.

Focus will also continue on outreach efforts to encourage customers to enroll in "e-bill" and other online services, department-wide implementation of the ERP system, and enhanced building and data security.

SUMMARY OF APPROPRIATIONS BY EXPENSE CATEGORY

(In Thousands)

Expenditure Category	FY 2016 Actuals	FY 2017 Adopted	FY 2017 Revised	FY 2018 Adopted
Personnel	$36,691	$46,684	$46,684	$45,243
Services & Supplies	134,413	149,746	149,850	144,759
Internal Service Charges	9,379	9,962	9,962	9,154
Operating Expense	31,065	33,041	33,041	34,426
Operating Transfers Out	19,604	19,830	19,830	18,880
Capital Outlay	1,707	1,922	2,788	1,318
Debt Service – Interest only	8,527	11,957	11,957	14,012
Non-Operating Expense	47	(327)	(327)	173
Water and Power Total	**$241,433**	**$272,815**	**$273,785**	**$267,965**

SUMMARY OF APPROPRIATIONS BY DIVISION

(In Thousands)

Division	FY 2016 Actuals	FY 2017 Adopted	FY 2017 Revised	FY 2018 Adopted
Power	$193,463	$219,974	$220,578	$209,340
Water	47,970	52,841	53,207	58,625
Water and Power Total	**$241,433**	**$272,815**	**$273,785**	**$267,965**

SUMMARY OF APPROPRIATIONS BY FUND

(In Thousands)

Fund	FY 2016 Actuals	FY 2017 Adopted	FY 2017 Revised	FY 2018 Adopted
106 - New Year's Day Genl Fund Events	$24	$25	$25	$24
401 - Light and Power Fund	185,130	210,499	210,556	201,088
402 - Water Fund	47,255	52,134	52,181	57,613
410 - Public Benefit Fund	7,317	8,235	8,235	7,922
411 - Power Capital Projects Fund	999	1,220	1,767	310
412 - Water Capital Projects Fund	708	702	1,021	1,008
Water and Power Total	**$241,433**	**$272,815**	**$273,785**	**$267,965**

SUMMARY OF FTEs BY DIVISION

Division	FY 2016 Actuals	FY 2017 Adopted	FY 2017 Revised	FY 2018 Adopted
Power	309.00	315.00	315.00	274.04
Water	124.00	128.00	128.00	131.96
Water and Power Total	**433.00**	**443.00**	**443.00**	**406.00**

PERFORMANCE MEASURES

	PM #	Description	FY 2016 Actuals	FY 2017 Target	FY 2017 Mid-Yr Actual	FY 2018 Target
Objective	**A**	Bad debts against billing revenue will be minimal.				
Maintain Fiscal Responsibility	**1**	The Power Fund bad debt expense will not exceed .5% of total Power operating revenues.	0.377%	0.500%	0.389%	0.500%
	2	The Water Fund bad debt expense will not exceed .5% of total Water operating revenues.	0.415%	0.500%	0.154%	0.500%
Note:	**A1-A2**	Mid-year actuals based on estimates.				
Objective	**B**	The City will continue investment in the water distribution infrastructure to maintain efficient and reliable operations.				
Improve and maintain facilities & infrastructure	**1**	3 miles of mains will be upgraded each fiscal year	2.97	3.00	1.10	3.00
	2	3,000 valves will be exercised each fiscal year	3,213	6,000	2,294	3,000
	3	2,650 water meters will be replaced each fiscal year	4,099	2,800	430	2,650
	4	10 vaults will be replaced each fiscal year	3	3	12	10
Notes:	**B1-B4**	Metric goals based on FY 2018 Capital Improvement Plan and infrastructure upgrades proposed in Water Master Plan				
	B1	Main replacement planned for Hammond Street reduced due to Public Works moratorium				
	B3	In FY 2016 2,537 failed AMR meters were replaced and 1,562 non-AMR meters were replaced with AMR technology				
	B3	Meter replacements scheduled for Q3 and Q4 will yield 2,000 total replacements in FY 2017				
Objective	**C**	The City will continue investment in the electric distribution system to maintain efficient and reliable operations.				
Improve and maintain facilities & infrastructure	**1**	5 circuit breakers will be replaced	2	2	0	5
	2	10 underground vaults will be repaired or replaced.	20	2	5	10
	3	2 substation switches will be installed.	0	2	0	2
	4	3 miles of underground cable will be replaced.	3.16	6.00	1.66	3.00
	5	10 underground switches will be replaced.	20	20	3	10
	6	40 distribution transformers will be replaced.	34	60	22	40
Notes:	**C1-C3**	Measures for System Infrastructure Replacement				
	C4-C6	Measures for System Reliable Capacity				
	C1	2 Circuit breaker replacements are scheduled for Q3 and Q4				
	C2	Additional damaged vaults identified and repaired in FY 2017				
	C3-C6	Substation switches installation and underground cable, underground switches, and transformers replacement delayed due to resource limitations and prioritization of customer-driven projects.				
Objective	**D**	Maintain compliance with NERC and WECC electric reliability standards.				
Increase conservation and sustainability	**1**	Count of regulatory violations or notices received	N/A	N/A	N/A	0
Notes:	**D1**	NERC - North American Electric Reliability Corporation; WECC - Western Electricity Coordinating Council				
	D1	New in FY 2018				

	PM #	Description	FY 2016 Actuals	FY 2017 Target	FY 2017 Mid-Yr Actual	FY 2018 Target
Objective	**E**	The City will encourage conservation and efficient use of energy and water.				
Increase conservation and sustainability	**1**	Energy consumption will be reduced by 13,500 MWh	14,036	12,750	13,468	13,500
	2	Provide efficiency rebates or direct-installation services to at least 1,500 customers	N/A	1,500	939	1,500
	3	Conservation programs will result in 180 acre-feet of water savings.	459.72	180.00	19.43	180.00
	4	Daily per capita water consumption shall not exceed 169 gallons.	132.65	190.00	161.51	169.00
Notes:	**E1**	Strong participation in commercial lighting promotion in FY 2017				
	E3-E4	Based on goals set forth by Environmental Urban Accords SB X 7-7 (20 X 2020) and California Best Management Practices (BMP) 10-year average baseline from 1994-2005 is 211 gallons per capita daily.				
	E4	FY 2017 GCPD based on residential water sales of 15,189 BU ÷ population of 166,545 ÷ count of days in Q1 and Q2				
Objective	**F**	The City-owned power utility will meet the Renewable Portfolio Standard (RPS) goals identified in the Integrated Resource Plan.				
Increase conservation and sustainability	**1**	Achieve RPS of 33% by the end of calendar year 2017 and 40% by the end of calendar year 2020.	29.6%	30.0%	32.8%	33.0%
Notes:	**F1**	Based on 2012 City Council approved Integrated Resource Plan to reach 40% RPS by 2020.				
	F1	Senate Bill 107 required 20% RPS by 2010; SBX1-2 requires 33% RPS by 2020, with 25% RPS compliance by 2016.				
	F1	Senate Bill 350, enacted in October 2015, requires 50% RPS by 2030.				
Objective	**G**	Maintain minimal interruptions to electric power delivery.				
Promote quality of life & local economy	**1**	System Average Interruption Duration Index (SAIDI) will be less than 120 minutes	54.546	120.00	6.52	<120
	2	System Average Interruption Frequency Index (SAIFI) will be less than 1 interruption per year.	0.102	<1	0.04	<1
Notes:	**G1-G2**	SAIDI and SAIFI are industry standards for measurement of system reliability.				
	G1-G2	Based on Public Power Utilities average, using IEEE standard, as reported to the Energy Information Administration (EIA)				
	G1-G2	Actual reported is measurement in normal operating conditions, excluding Major Event Days (MED)				
Objective	**H**	Maintain minimal local power plant outages.				
Promote quality of life & local economy	**1**	Maintain 97% generation availability of local power plant.	N/A	N/A	N/A	97%
Notes:	**H1**	New in FY 2018				
	H1	3 year historical average of local power plant generation availability is 95% (GT-2 excluded)				

	PM #	Description	FY 2016 Actuals	FY 2017 Target	FY 2017 Mid-Yr Actual	FY 2018 Target
Objective	**I**	Residential and commercial electric and water customers will receive excellent service.				
Promote quality of life & local economy	**1**	Meter readings will be 99% accurate.	99%	99%	99%	99%
	2	The average Call Center telephone response time will be 30 seconds of less, after the call leaves IVR.	173.5	N/A	N/A	30.00
	3	Increase unique website visits to average 12,000 per month	N/A	N/A	N/A	12,000
Notes:	**I2**	Call Center response time was not reported in FY 2017				
	I3	New in FY 2018				
Objective	**J**	Pasadena's water supply will be safe and in compliance with State and Federal regulations.				
Ensure public safety	**1**	Maintain 100% compliance with primary drinking water regulations.	100%	100%	100%	100%
	2	Number of chemical and bacteriological analyses will not be less than 36,000 per year.	37,181	36,000	21,301	36,000
Note:	**J2**	80-90% analyses represent State and Federal mandates. 10-20% analyses represent process control and customer requests.				
Objective	**K**	Promote a safety conscious workforce and safe work place.				
Ensure public safety	**1**	Require managers and supervisors to take OSHA 30 hr. course- 100% compliance	N/A	100%	0%	100%
	2	Achieve 70% (250/355) response rate on annual employee safety survey to identify areas of needed education on general work-safety practices	N/A	70%	65%	70%
	3	Train employees on ergonomic best work practices- 80% training compliance	N/A	80%	80%	80%
	4	Minimize ergonomic injuries to less than 25% of total Water and Power workplace injuries	N/A	25%	N/A	25%
	5	Perform proactive ergonomic evaluations of workstations for new employees that are not ergonomically arranged- 100% compliance	N/A	100%	15%	100%
Notes:	**K1**	Pending coordination with SCPPA to schedule OSHA training in FY 2017				
	K4	Pending official workers comp reporting for FY 2017				
	K5	Ergonomic evaluations delayed in FY 2017 due to vendor turnover				

THIS PAGE INTENTIONALLY LEFT BLANK.