

Together We Aspire, Together We Grow



2015 – 2016 Annual Report

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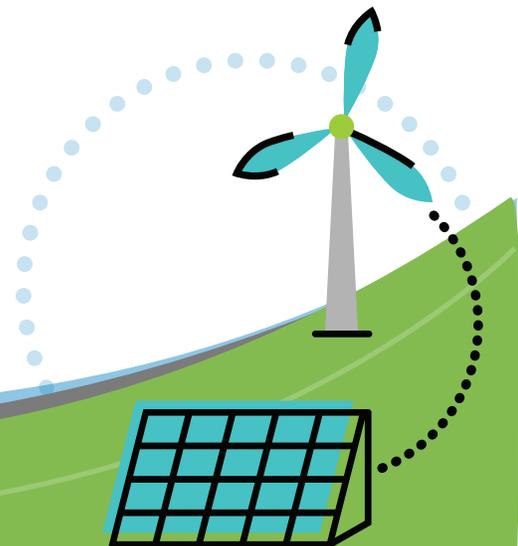
Table of Contents

2015 - 2016 Annual Report

General Manager's Message	1
Water Quality	2
Reliable Power Service	3
Power Management	4
Customer Service	5
Financial Statements: Electric Utility	11
Operating Statistics: Electric Utility	56
Financial Statements: Water Utility	70
Operating Statistics: Water Utility	104



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A Message from Stephen M. Zurn, General Manager of Glendale Water & Power



Glendale Water & Power is a diversified energy and water provider that delivers superior service to its customers and the Glendale community. For over 100 years, GWP has successfully delivered safe, secure, reliable and efficient solutions that are environmentally and economically sound. In Fiscal Year 2015-2016 we achieved a number of accomplishments

and we set the foundations for the continued growth and success of GWP.

We have restructured our Strategic Plan and developed a more concise set of objectives that better match our current business model and our overall departmental mission. We now have a plan that challenges all of us to excel and it is the spirited discipline and drive of our employees that makes our strategic planning process and the resulting plan work. Our Strategic Plan requires that all of our business units look ahead and work together as one company to move our strategic objectives forward.

We continue to invest in our energy infrastructure to best serve our existing and new customers. We recently completed the upgrade of our Grandview Substation Project and modernized the facility to meet the demand of this unique commercial and residential community. Looking forward, we have several opportunities under development to address current and future needs especially in relation to upgrading/replacing aging equipment and to modernize our utility to better meet the needs of the entire community. Primarily this involves the re-powering, upgrade and continued modernization of the Grayson Power Plant and the Utility Operations Center. This comprehensive effort to upgrade the current 1940's era plant will be one of the largest projects ever undertaken by GWP. However, it is one that is essential for us to continue to provide safe and reliable power to our customers, develop more renewable energy options and to remain energy self-sufficient and not dependent on outside entities for our critical power supply needs. We are laying the foundation for the continued success of the utility and we will continue our tireless efforts to drive this success by focusing on long-term, sustainable growth and development opportunities. We will remain

aggressive and disciplined, aspiring and careful, in our quest for enduring value, sustainability and reliability.

In our Water Division we have also continued to put a great deal of emphasis and effort into upgrading and maintaining the quality of our infrastructure. Our Capital Improvement Project Plan has centered on addressing the needs in our core water distribution system to ensure reliability and safety. In addition we completed the Water Master Plan which provided a system wide assessment and laid the groundwork for us to develop our capital program for the next 10 years and beyond.

As California's drought continues, we have faced this seemingly endless challenge with a combination of careful resource planning, mandatory conservation restrictions and increasing our conservation outreach and education. Glendale met the State's goal of 20% conservation through our extensive outreach campaign that stressed the importance of conservation now and for the future.

Our employees continue to identify new opportunities to connect with each other, our customers and our community all in a focused effort aimed at turning our combined aspirations into reality. We aspire to excel in everything we do, especially in their continued efforts to provide outstanding customer service to our City. As we move forward to implement our plan, modernize our utility and meet the needs of our community in a cost effective and environmentally conscious manner, I am grateful for the leadership of the City Council and the efforts and support of all of our employees.

Stephen M. Zurn
General Manager, Glendale Water & Power

Water Quality – Safe, reliable drinking water

As a steward of public health, Glendale Water & Power treats and delivers more than 7 billion gallons of safe, reliable drinking water annually and the GWP team works diligently to ensure that it meets or exceeds all state and federal drinking water standards. This work includes continuously monitoring water quality in the distribution system including taking more than 5,700 water quality samples per year to ensure that water GWP delivers meets or exceeds all federal, state, and local water quality standards. GWP's Water Quality Section also manages a cross-connection control program to inspect and approve the installation of new backflow prevention assemblies and to monitor and test nearly 2,200 existing backflow prevention assemblies to help ensure that contamination doesn't enter the system from fire service line connections, irrigation connections and water services to industrial and commercial customers.

To help maintain water quality during the unprecedented drought of 2015-2016, GWP's Water Operations Section worked to optimize water storage and production in the system to match the lower water demands while ensuring sufficient supply for firefighting purposes. In addition to being a steward of public health, GWP's Water Division also enables the high level of public safety provided in the City of Glendale by operating and maintaining over 3,100 fire hydrants throughout the City and by ensuring there is enough water supply for their use.

Water Reliability: Service to Count On

The Water Division team of dedicated professionals provides safe and reliable service 24 hours per day 365 days per year. This includes responding to water main breaks and customer outages, monitoring and operating 14 wells, 28 tanks and reservoirs, 26 pump stations, and 6 pressure reducing stations.

Glendale Water & Power completed its Water Master Plan providing a roadmap for water system upgrades and rehabilitation projects over the next 25 years. Formation of the plan included assessing the condition of existing water facilities, prioritizing replacements and upgrades, and analyzing the distribution system for ways to optimize operation of the facilities to reduce costs while improving reliability. Completion of the plan also provides an analysis of the costs to make the needed upgrades and replacements which is essential for future rate planning.

To improve water distribution we:

- Completed the drilling of a new production well in the San Fernando Basin.
- Installed a permanent chromium removal facility at the Glendale Water Treatment Plant after the conclusion of the groundbreaking research study's GWP completed over the last 15 years.
- Worked with the Metropolitan Water District of Southern California during the shutdown of one of their main feeders to re-route water from another direction to mitigate impacts to Glendale's system and minimizing the impact to our customers.

Every Drop Counts:

- During the unprecedented drought of 2015, GWP's customers saved over 2.1 billion gallons of water and cut their water use by 21% compared to 2013 levels.
- Water conservation has become a "California way of life" and GWP continues to provide training and outreach on the best ways to save water.
- GlendaleWaterWiseGardening.com can help you transform your water guzzling landscape into a water efficient one.



Reliable Power Service - Power Supply

Glendale Water & Power continues its designation as an American Public Power Association Diamond Reliable Public Power Provider

Grandview substation:

A new state of the art Gas Insulated Substation (GIS) was constructed at the old Grandview substation location while preserving the existing building's original design. This 69kV/12kV substation has an installed capacity of 50MVA, with two 25MVA transformers supporting six 12kV feeders. As part of this project, three new distribution vaults and two transmission vaults were installed as well as about 1,500 feet of substructures to interconnect them. This includes a portion of the substructures needed for the future Montrose - Grandview upgrade to 69kV line.

Vault Replacement (refurbishment) Project:

Many of the underground vaults in GWP's electric distribution system are over 40 years old and are deteriorated. Replacing the deteriorated vaults is very expensive and time consuming. GWP implemented a substantially less expensive and faster method to resolve this issue by using a new state of the art system. In this method, a new vault is built in-situ inside the old vault with composite material that meets the structural requirements for the vaults. No excavation is needed for this work and hence the impact on traffic and the adjoining communities is minimal. This method costs about \$150,000 and takes two weeks to complete, whereas a typical vault replacement will cost about \$450,000 and about six weeks to complete. GWP completed refurbishing two vaults in the fiscal year using this technology.

12kV Conversion Project:

GWP has an ongoing program to convert 4kV distribution feeders to 12kV system for added capacity and increased reliability. During the last fiscal year, GWP converted portions of six feeders to 12kV that covered about 6.69 circuit-miles of overhead and underground circuits.

Accomplishments:

- Decreased carbon obligation associated with 2015 power supply by 16% from 2014 CO2
- Met and exceeded 2015 RPS target. Soft target for 2015 = 20%; Actual = 35%
- Successfully negotiated and executed the new 50-year contract with WAPA for Hoover Dam energy; extending the current contract through 2067
- Obtained approval for 2MW Battery Energy Storage System; Scheduled commissioning date: April 2017
- Successfully negotiated and executed the Sylmar Services Agreement with LADWP providing the Glendale with 115 MW of firm transmission through the Sylmar Switching Station.
- Successfully negotiated and executed the Balancing Authority Area Services Agreement with LADWP providing Glendale regulation and contingency reserve services.
- \$16 million in revenue from off-system sales.



Power Management – Engineering: Reliable Power Service

We continue to improve our power generators reliability by implementing continuous preventative maintenance and replacement of equipment. As our Grayson Power Plant ages, these improvements are temporary fixes until we are ready to begin work on repowering our Grayson Power Plant and the GWP Utility Operations Center and having a more modernized power plant that meets the needs of our community and gives our customers the benefits of owning their own utility in their City.

- Unit #8A, B/C Heat Recovery Steam Generators – Replaced evaporators that were leaking due to accelerated corrosion and thermal stresses.
- Unit #8A, B/C – Heat Recovery Steam Generators Economizers – purchased replacement harps to be installed before June 30, 2017. The existing economizers were by-passed in place.
- Unit #8A, B/C – Gas Turbines Inlet Housing and Filters – purchased replacement to be installed before June 30, 2017. The existing inlet filter housings have been subjected to severe atmospheric corrosion and require replacement.

- Unit #4 Boiler Water Wall Tubes – replaced entire boiler water wall tubes including refractory, insulation and casing. The old water wall tubes were prone to failure due to tube thinning, hydrogen embrittlement and local heat spots due to non-metallic deposits.
- Unit #1 Turbine-Generator – The unit has undergone inspection and overhaul after more than 50,000 hours of operation. This inspection and overhaul was done to extend the operational life of the machine for at least 5 more years. It consisted of replacing parts found to be defective, adjustments of machine tolerances, machine alignment, installation of new vibration monitoring system and general cleaning.
- Unit #2 Full Static Excitation System – replaced legacy exciter circa 1941 with modern equivalent for more reliable operation.

Power Supply: Portfolio Diversity

California's mandate increased the RPS goal for electric utilities from 33% of retail sales by 2020 to 50% by 2030.



Customer Service: Responsive Service

The Customer Services Division provided outstanding customer service by responding to 104,000 telephone calls and e-mails in the past year, a 7 percent decrease over the prior year. An additional 92,000 customers visited our local office to either make a payment or to discuss their account face to face with one of our customer service utility representatives.

More than half (52%), of the City of Glendale's Municipal Bill payments were received electronically by Glendale Water and Power which provides account management and billing for electric, water, rubbish, sewer, and hazardous waste services, as well as CUPA Fire Permits and industrial waste charges. These electronic payments were received through customer use of GWP' s online web portal, automated interactive voice response system, mobile app, automated bank draft program, payment services from other customer banks, and through PayNearMe located at all 7-Eleven stores nationwide.

The outstanding communication backhaul and network supporting the AMI system, combined with the maintenance

of the meters in the field, contributed to an increase in GWP's efficiency. 95% of customer service requests were completed remotely using the AMI system, a 4% increase from last year. Remote functionality enables Customer Service to restore, disconnect, and process move-in or out requests directly from within the office; allowing for almost all residential electric service request to be completed the same-day.

Using the AMI system to analyze hourly usage, Customer Services conducted over 1,300 customer requested site visits, assisting customers with understanding their consumption as well as detecting customer side water leaks.

Customer Services assisted in implementing recommendations resulting from the GWP Meter Shop Inventory and Controls Audit performed last year. These recommendations included reviewing and updating essential electric meter data in the Customer Information System ensuring accurate billing and minimizing potential revenue loss.



Utility Modernization

GWP is developing and implementing new and innovative energy efficiency, load management, and demand response programs for its customers. Our customers are eager to take advantage of the many benefits and new programs a modernized utility system offers. Trends in utilities are leading towards providing digital communications that give customers real time and near real time usage information to help them take charge of their energy use. Finally, a modernized electric grid greatly expands data acquisition and data sharing across business units, lowering system losses, preventing energy theft and dramatically improving outage and asset management, reducing maintenance and capital costs with the goal of keeping downward pressure on consumer prices. Our Conservation and Utility Modernization Section continues to integrate and upgrade the utility business systems in an effort to automate and implement more efficient business processes.

The following projects were completed:

Business System Automation – GWP implemented the Automation Platform within the Customer Information and Billing System. It's a powerful tool to streamline business processes, improve customer service efficiency, and free valuable staff time by automating manual business processes. This tool enables users to schedule and run routine tasks on a regular or event driven bases. It also allows instant emails notifications of successful and/or failed business processes.

Conservation Voltage Reduction (CVR) Program - GWP continues to work with Dominion Voltage Inc. (DVI) to expand its CVR program system wide. CVR conserves electricity by operating electric customer voltage in the lower half of ten percent (10%) voltage band required by equipment standards using the voltage data collected from the Advanced Meter Reading Infrastructure (AMI), to distribution feeders. GWP predicts that a full scale CVR program could save a minimum 14,500 MWH a year.

Meter Data Analytics – GWP worked with Detectent, Inc. and deployed the Meter Data Analytics program solution in September of 2015. The program integrates large amounts of customer-related data from various intelligent devices to allow GWP to monitor energy loss, theft detection, water leaks, and irregular usage patterns to enhance system efficiencies and reduce costs.

Energy Trading and Risk Management Program (ETRM) – GWP completed the installation of a new ETRM system in July of 2015. This system records all of GWP's energy transactions, including electricity, transmission, natural gas, gas transport, renewable credits, and carbon allowances and offsets. This new system helps automate reporting for regulatory compliance and risk management, streamline settlements and allow GWP to better manage our portfolio resources, both near and long term.

Virtualization of the GWP Modernization Systems

GWP successfully implemented a virtualized environment to support the new Glendale Modernization systems and migrated existing systems from physical to virtual servers. The virtual environment now hosts and support a number of applications including the new Energy Trading and Risk Management System (ETRM), Operational Reporting System (ORS), Meter Data Analytics Software, In Home Display Portal, Data Warehouse, and all GWP Corporate and mapping systems.

GWP My Connect Mobile App – Successfully registered 3,500 customers and they are using the app to view and pay their bills, see their usage and connect with GWP. WE are looking into launching the commercial version of this application in the next Fiscal Year.



Public Benefits Programs: Using Resources Wisely

The GWP Conservation and Utility Modernization Section continues to educate and advocated for responsive use of natural resources and green energy sources. Public education is a critical part of our conservation strategy. Through our customer education and outreach efforts our customers learn better ways of conserving, saving money and applying to programs that help them use the tools provided to make simple changes.



- We distributed over 150,000 water conservation brochures that included tips and information on California's ongoing drought and water conservation.
- We distributed over 13,000 shower timers
- More than 300 customers attended water efficient landscape classes offered throughout the year.

- We attended over 40 community events to help distribute information to customers and assist customers with conservation and program questions. Responsive Service & Leadership in Shaping Glendale's Future

Through our programs we help educate and engage our customers about conservation so that they continue to save energy and water and save money through our Public Benefit Programs.

- GWP has a long history of providing programs that specifically target our low-income customers for bill relief and energy savings.
- Provided 200 shade trees to support a cleaner, healthier, and more beautiful Glendale, while helping residents save energy.
- Provided 1,800 incentives to promote the purchase of approved energy and water saving appliances and home improvement devices.
- Mailed out 300,000 Home Energy Reports that include insightful messaging and information and targeted action steps for each household to help the customer reduce electricity consumption.
- Educated over 1,453 sixth grade science students through our Living Wise program in areas of energy and water conservation through a hands on curriculum.
- Mailed out over 211,000 reports (includes print and email). WaterSmart reports that include a summarized water usage report and targeted action steps to help customers save water.

