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Connecting with Glendale

A message from General Manager Stephen M. Zurn:

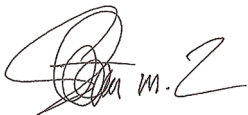


Glendale Water & Power works hard to maintain a positive connection with our customers and our community. We are driven to help our City and provide a reliable and affordable utility to help our customers thrive. Everything we do is designed to add value and make connections to the community we serve.

This past year, we took significant steps towards our connected future by investing in more renewable resources, installing electric vehicle charging stations, and making improvements to our electrical and water infrastructures.

We connected our customers and our businesses with money-saving programs that reduce water and electricity and help them save money on their utility bills. We connected our customers with newer infrastructure by replacing aging power lines and power poles and installing new water mains that strengthen our water system and power grid.

The connections we have made over this year have strengthened our partnerships with our community and all of our customers to give them the water and power they need to connect with the future. Thank you to all of our residents and businesses for their continued support.

A handwritten signature in black ink, appearing to read "Stephen M. Zurn". The signature is stylized and cursive.

Stephen M. Zurn
General Manager, Glendale Water & Power

FOCUSED ON GLENDALE



By The Numbers...

Water Maintains:

Population	205,536
Square Miles	31
Miles of Water Mains	395
Wells	13
Reservoirs	28
Treatment Plants	2
Booster Stations	28
Peak Day (million gallons)	34 (09/02/17)
Number of Services	34,181
Residential Gallons Per Day Usage	76
Water Sales (billion gallons)	7.8

Electric Maintains:

Population	205,536
Square Miles	31
Number of Distribution Miles	529
Number of Subtransmission Miles	58
Number of Poles	14,788
Number of Substations	14
Highest Peak in FY 2017-2018	344 (MW on 9/1/18 at 4:08 p.m.)
Number of Meters	88,849
Power Sales (MWh)	1,452,834

Connecting with Glendale

Connecting with Our Customers

Glendale Water & Power strives to provide excellent customer service. We are dedicated to delivering services that meet and exceed customers' needs. Our Customer Services section assisted over 95,000 customers over the telephone and by email, and an additional 91,000 customers at our office. On average, customers' telephone wait time was just over one minute. Billing and collection activities continued to outperform the industry on key metrics such as billing accuracy and minimal uncollectable accounts.

- More than 60% of the City of Glendale's municipal bill payments were received electronically through GWP's online web portal, automated interactive voice response system, mobile application, automatic bank draft program, payment services through customer banks, and "PayNearMe" that is available at participating 7-Eleven stores nationwide.
- Field Services inspected 22,873 electric and water meters throughout the City. Random annual reviews are performed to ensure the quality and accuracy of communications with metering equipment, validate the data being billed, and inspect the equipment for possible malfunctions or meter tampering that could lead to loss of revenue.
- Made improvements to the delivery of services to our customers as well as worked closer with them by holding community meetings to discuss electric, water, and sewer rate restructuring and adjustments.
- In preparation for the 2018 Electric and Water Rate Restructuring and Adjustments, staff completed a comprehensive series of rate tests for both electric and water. This testing included calculating various customer usage scenarios through the proposed rates and ensuring that our Customer Information System (CIS) was modified in accordance to the recommendations of the rate proposal. Staff was also educated on and participated in the City's community outreach meetings in order to answer questions and calculate customer usage under the proposed rates.

With continued efforts in efficiency, Customer Services and Utility Business Systems Support have streamlined and automated the routine delivery of meter readings for billing. This was accomplished through our Customer Information and Billing System (CIS) and our Meter Data Management System (IEE). These two systems are interfaced, enabling business processes to operate manually or be automated, as needed. Enabling this automation has allowed staff to dedicate time to tasks related to quality assurance of meter reading and field visits for customer service requests. Other related tasks, such as account credits, debits and transfers of account charges are being tested for future automation.

GWP Customer Services is exploring the interest in monthly billing for our bi-monthly residential customers. A Monthly Billing Pilot Program was initiated earlier this year and will conclude in the Spring of 2019. The program was offered to a controlled group of customers in an attempt to determine whether there is significant interest in converting to monthly billing. The program included mandatory enrollment in paperless billing as well as the requirement that payments be made through any of our automated payment options.

Customer Services uses the Advanced Meter Reading Infrastructure (AMI) system and program-generated reports to identify continuous water flow at single family residences, in order to alert our customers and assist them in identifying possible leaks. In addition, each report of water waste that is reported is verified and addressed, primarily by sending notification to property owners. For the 17/18 fiscal year, over 600 customer contacts were made, including field visits to further assist in water usage concerns. In addition, 8,000 automated water leak alerts were sent from the WaterSmart portal.

Business Process Review

GWP's Customer Service operation is a key function within GWP and is often the first encounter with the City residents may have. Because exceptional customer service is of paramount importance to us, GWP contracted a consultant to complete a business process review. The review reiterated proper steps to ensure that GWP is fully leveraging modernization technology capabilities and creating efficient and streamlined processes that enhance the customer experience and lead to increased satisfaction. In response to the findings of this process review, a team of Customer Services staff were assigned quality assurance and audit tasks to ensure excellent customer service practices and procedures throughout the department.



Connecting with Glendale

Connecting Through Education & Outreach

Conservation & Public Benefit Programs

The Conservation & Utility Modernization Section continues to educate about, and advocate 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 for programs that help them use energy and water wisely.

Through our various Public Benefit Programs, we accomplished the following:

- Provided 240 shade trees through our Tree Power Program
- Provided 1,100 incentives through our Smart Home Rebate Program
- Educated 1,500 sixth graders through our Living Wise Program and sent them home with energy and water saving conservation devices to install at home
- Provided 154,000 WaterSmart Reports to our residential customers to inform them about their water usage and provide them with tips to conserve water.
- Conducted 243 Small Business site surveys through our Smart Business Energy Upgrade Program, providing small businesses each up to \$2,000 in energy and water efficient upgrades.
- Installed two more electric vehicle charging stations, totaling eight now available in Glendale.
- Installed over 500 smart thermostats and In-Home Digital Displays.
- 11 of our key account customers participated in our Business Energy Solutions program and received incentives for implementing various energy efficiency projects.
- Provided six print reports to approximately 50,000 residential customers on their energy use and provided 75,000 customers with web-access to their electric usage.

Through Public Education and Outreach, we:

- Distributed over 1,500 shower timers to help our customers conserve water
- Educated over 700 customers in water efficient landscaping and turf removal through our free landscape classes
- Distributed over 800 water conservation kits to residential customers.



Connecting with Glendale

Connecting Through Modernization

As GWP focuses on modernization, we recognize the importance of the underlying technologies to provide better service to our customers and to increase efficiencies. GWP has worked to improve reliability and protect against disasters. Last year, virtualization and building of the SQL cluster virtual environment were important milestones to support the Glendale Modernization initiative. GWP continues to build upon this foundation by implementing high availability in many of our infrastructure computer systems. The SQL clusters and the virtualization environment are highly redundant and resilient against many different failure scenarios. The designs allow GWP to reduce downtime due to unplanned outages and planned maintenance, resulting in improved systems availability.

GWP is always planning for the future. An important component of the focus on reliability is being prepared for unplanned events and disasters. GWP has established disaster recovery and data protection plans and has begun putting these plans into action. For our important software applications, we have many layers of data protection in place. Should a major event happen, the goal is to bring online our major software applications and restore service as quickly as possible.

The SQL Virtual cluster environment now hosts a number of applications and databases for easy management, security, and support.

The following business systems were upgraded and/or migrated in FY 17/18:

- Customer Information and Billing System migrated to version 6.4.10.8 and the database was migrated from Informix to SQL Virtual cluster
- Online customer web payment and billing website and the Customer Service Field Mobile dispatch service order website were upgraded to Windows 2012 and IIS Microsoft version 8
- SAP Crystal Enterprise Business Intelligence Reporting. Now user can run custom created reports on demand or continue to have them automated through a web browser
- Energy Trading Risk Management System (ETRM)
- The ABB Tropos AMI/SCADA Mesh Network Control
- Implemented Veeam Back-up and replication

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 AMI to distribution feeders. We have 19 transformers and 33 Feeders in CVR mode with a combined savings of 10,893 MWH. The average percentage of savings by feeder was 2.2%.

Business System Automation

GWP continues to implement automation within the Customer Information and Billing System (CIS). The NorthStar Automation Platform is 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 base. It also allows instant email notification of successful and/or failed business processes. We automated several business processes this year including the entire billing process.



Connecting with Glendale

Connecting Through A Reliable Water Network

Glendale Water & Power annually treats and delivers more than 7 billion gallons of safe, reliable drinking water 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 and making system improvements to maintain quality. This includes:

- Taking more than 5,700 water quality samples per year to ensure that the water GWP delivers meets or exceeds all federal, state, and local water quality standards
- Managing a cross-connection control program to inspect and approve the installation of new backflow prevention assemblies
- Monitoring and testing nearly 2,200 existing backflow prevention assemblies to help ensure that contamination does not enter the system
- Pro-actively operating the water system to balance storage for emergencies while minimizing the age of the water in the system to maintain its quality
- Improving the water disinfection process at the City's Glorietta Wells by installing new treatment equipment
- Simplifying the maintenance of disinfectant levels in the distribution system by installing treatment equipment at the City's Cooks Canyon Pump Station

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.

Investing in the Future:

Investing in the future includes replacing aging infrastructure, rehabilitating water system assets that still work but need major reconditioning to extend their usefulness, and building new assets that improve the system.

- As part of GWP's ongoing Tank Rehabilitation Program, Rossmoyne 1666 potable water tank, Fern Lane recycled water tank, and Glendale High school recycled water surge tank were refurbished both inside and outside. The Tank Rehabilitation Program helps ensure water quality and extends the useful life of storage tanks.
- GWP completed the Slope Repair Project which repaired several access roads to water facilities located in the hills of Glendale, using a contractor that specializes in this type of work. This will ensure full access to water facilities for necessary maintenance and repairs.

- GWP's ongoing Pump Replacement Program replaces booster pumps that are past their useful life. Design and construction is proceeding for new replacement pumps at Western Pump Station and Glenoaks 968 Pump Station.
- The City has a computer hydraulic model that is a representation of how the water system operates under various scenarios. The model is currently being recalibrated to improve its accuracy and reliability. The model is a valuable planning tool that can predict the operation of the water system under various scenarios.



Connecting with Glendale

Connecting Through a Reliable Electric Network

Energy Supply

The Power Generation Section worked tirelessly through the summer of 2018 to keep Grayson Power Plant operational while considering alternatives to the Grayson Repowering Project. Normally, power plant equipment is overhauled on a planned schedule during the low demand periods in the winter months, but the existing equipment at Grayson breaks unexpectedly even after being maintained in the winter. To keep the lights on, GWP's team of dedicated operators, mechanics, and technicians worked long hours and around the clock to keep Grayson Power Plant operational during the hot summer months of 2018 providing the power Glendale's customers need.

Ongoing Investments at Grayson Power Plant Included:

- 1) Replacing the catalyst used to reduce emissions from Unit 9 NOx
- 2) Performing scheduled repair of the Unit 9 gas turbine compressor repairs per the manufacturers recommendations
- 3) Modifying and reloading the Unit 9 Sprint control software prior to planning and budgeting a full replacement of the Unit 9 controls systems
- 4) Repairing the Unit 9 Gas Compressor number 1A
- 5) Replacing the Unit 5 Boiler Stack
- 6) Replacing the Unit 4 Boiler Stack

Connecting with the Environment

Energy Management

- \$17.45M in revenue from off system sales in FY 17/18
- Exceeded 2017 Renewable Portfolio Standard soft target. Target: 27%; Actual: 37%
- Lowered GHG Emissions -- 20% lower than the previous 4-year average and 9% lower than 2016 average.
- Renegotiated a long term WSPP-based renewable agreement with Skylar Resources increasing clean energy deliveries from 50% to 75%
- Commissioned the 2 MW Battery Energy Storage System
- Successfully divested from San Juan coal power plant

Connecting with Reliable Infrastructure

Engineering

- Achieved American Public Power Association's RP3 designation, which confirms that GWP demonstrates proficiency in Reliability, Safety, Workforce Development, and System Improvement. Only 254 of more than 2,000 public power utilities hold an RP3 designation.
- Commissioned three new 34.5 kV transmission lines (Howard-Scholl, Rossmoyne-Fremont, and Howard-Fremont). These projects were completed to reroute the 34.5 kV transmission lines to avoid power interruptions during the proposed Grayson repower project.
- Completed installation of infrastructure to support new Tesla charging stations at the Americana.
- Completed physical infrastructure installation at the new Compressed Natural Gas (CNG) transit operations center to address engineering conflicts and to facilitate construction of the new Transit Operations Center building.
- Initiated efforts in support of the Grayson repower effort, including ensuring Unit 9 (which will remain in service throughout the repower) is independent of all systems that will be decommissioned.
- Executed a three-year Master Services Agreement (MSA) with Advanced Control Systems (ACS), GWP's SCADA vendor. SCADA is the "eyes and ears" of the electric utility that enables real-time visibility and control of GWP's electric grid and facilitates rapid restoration of customers, especially during abnormal conditions.

Connecting with Reliable Infrastructure

Accomplishments:

- Continue replacing aged underground high voltage cable
- Rebuilt Vault 1136 (Arden & Pacific) as part of the vault replacement program
- Completed the installation of underground substructure system, distribution cable and pole removals for the development at Fifth St. and Sonora
- Completed over 2000 electric service upgrade reconnects

Adams Hill 4kV/12kV Project:

- Rebuilt 121 poles for 12kV operation
- Replaced 70 dilapidated poles
- Replaced 33 various size distribution transformers
- #2 Tropic 4kV circuit ready to convert to 12kV operation
- This project will continue into 2020

34.5kV Transmission Lines:

- Re-cabled and rerouted the lines to three substations (Fremont, Howard, and Scholl)
- Installed, tested, and commissioned new wiring and components for the circuit protection of these new lines

