

MEMORANDUM

TO: UTILITIES ADVISORY COMMISSION

FROM: UTILITIES DEPARTMENT

DATE: AUGUST 7, 2019

SUBJECT: Utilities Quarterly Update – 3rd Quarter of Fiscal Year 2019

This update, on water, gas, electric, wastewater collection and fiber utilities, efficiency programs, legislative/regulatory issues, utility-related capital improvement programs, operations reliability impact measures and a utility financial summary, is for the Council and Utilities Advisory Commission's (UAC's) information. This update has been prepared to keep the UAC and Council apprised of the major issues that are facing the water, gas, electric, wastewater collection and fiber utilities.

Items of special interest for FY 2019 include:

- Hydroelectric generation for Q3 of FY 2019 was above average, and was expected to be significantly above average in Q4, but due to below average generation in Q1 and Q2, the City's generation is anticipated to be only 18% above load, as compared to 10% above load in an average hydro year. Costs through Q3 were 6% (\$3.9 million) below budget. (pages 3, 4, 8)
- Gas market prices spiked in the winter of 2018-2019, temporarily raising costs to consumers. However, staff began purchasing discounted gas from MuniGas that will reduce annual costs by about \$1 million per year in the long term. Savings since November 2018 from the MuniGas purchase are \$530,000. (pages 9-10)
- Cumulative precipitation and snowpack is above average in the Hetch Hetchy watershed for the year to-date, so no shortages are projected. Storage in the regional water system is 86% full. (page 12)
- An update on rebuild work on the dark fiber network and an update on the Fiber to the Node RFP is provided. On June 24 the Council approved reissuance of the RFP and assignment of the UAC to serve in the sole advisory role on fiber, sunsetting the Fiber and Wireless Citizen Advisory Committee. (pages 14-15)
- CPAU received the American Public Power Association's 2019 Energy Innovator Award for its Home Efficiency Genie Program. (page 16)
- CPAU has restarted its refrigerator recycling program and has an ambitious schedule of events scheduled for 2019, including events related to water efficiency, building electrification, and electric vehicles. (pg 17)
- A digest of major outreach efforts is provided on pages 17-19, including outreach related to the Great Race for Saving Water, utilities rate changes, gas safety outreach, and the PG&E Public Safety Power Shutdown Program.
- Several pilot and sustainability programs are summarized on pages 18-21, including an update on the multifamily heat pump furnace retrofit pilot, an update on EV rebate programs, and a new induction cooktop loaner program.
- Major legislative and regulatory items are summarized on pages 22-24. Major topics include electric utility wildfire liability, electric system reliability, Federal small cell rules, and a PG&E gas rate case.

- FY 2019 Costs are projected to be substantially lower for the electric utility, but so are revenues. The overall impact on the electric utility is favorable, an improvement in net position of \$4.6 million. (page 25)
- The winter spike in gas prices led to a modest impact on gas utility reserves, even though sales were up for the year relative to projections. (page 25)
- Water utility revenues were below forecasts due to high precipitation, but costs were also lower due to a difference between the forecasted and adopted SFPUC wholesale water rate. This difference will not occur in the future, since staff has adopted a rate mechanism to pass through the wholesale water rate to customers. Any surplus reserves will be reserved for future CIP expenditures. (page 25)
- Costs and revenues for the Wastewater Collection utility are roughly in line with forecasts (page 26)

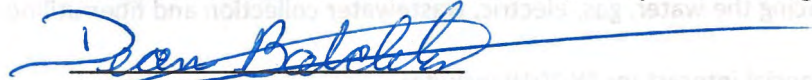
Attachment:

Attachment A: Utilities Fiscal Year 2019 Third Quarter Report

REVIEWED BY:

JONATHAN ABENDSCHEIN, Asst. Director, Utility Resource Mgmt.

APPROVED BY:



DEAN BATCHELOR

Director of Utilities

Utilities Quarterly Update

Third Quarter of Fiscal
Year 2019

August 2019

Quarterly Update for Third Quarter of FY 2019
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Utilities Quarterly Update
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i. Electricity

Electric Supplies

Western Area Power Administration (Western) Issues

Water year¹ 2019 has been an above-average precipitation year that resulted in above-average reservoir levels across the state. For Q3 of fiscal year (FY) 2019, Western delivered 72 GWh to the City (113% of long-term average levels, which is about 2.5x the amount that was delivered in Q3 of FY 2018). For FY 2019, Western is projected to supply 383 GWh (4% above long-term average supply levels, and 7% above FY 2018 levels).

Calaveras Hydroelectric Project Issues

As of June 30, 2019, the total project was at 189,000 ac-ft of storage, or full capacity, at NSMR (New Spicer Meadows Reservoir). Project historical average storage for NSMR for the end of June is ~148,469 ac-ft, while end-of-June storage for the most recent wet year, 2017, was 185,695 ac-ft.

For Q3 FY 2019, the Calaveras project generated ~58 GWh (62% above long-term average levels, and about 2.8 times the amount that was delivered in Q3 of FY 2018). In FY 2019, the Calaveras project is projected to generate 188 GWh (47% above long-term average levels, and 67% above FY 2018 supply levels).

Electric Load and Resource Balance

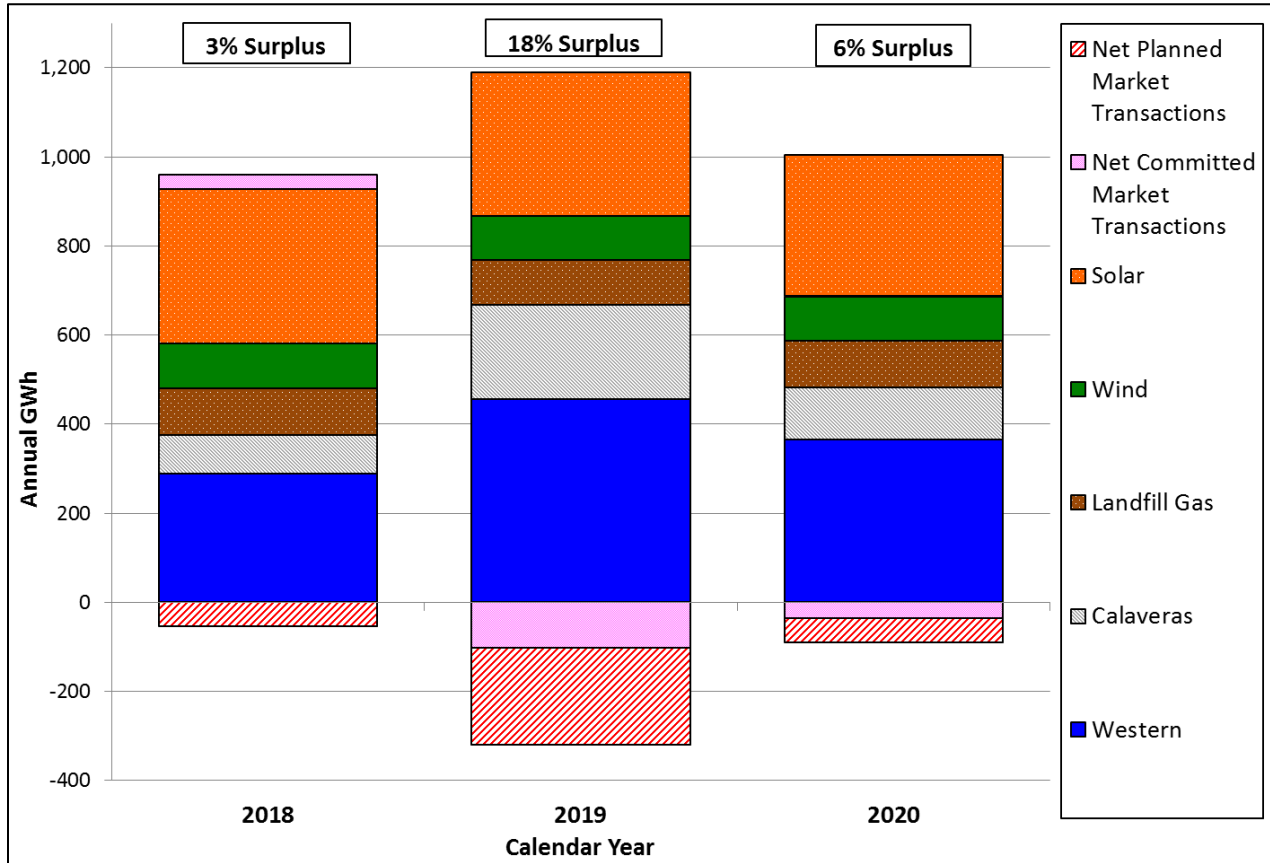
In CY 2018, due to somewhat below average levels of hydro output, the City made some energy purchases on the market to manage a small portfolio energy deficit. Palo Alto's electric supply portfolio for CY 2019 is currently seeing significant volumes of surplus energy, largely owing to an above-average hydro year. Due to the availability of surplus energy, as well as the feedback provided by the UAC at its June 5, 2019 meeting, Palo Alto plans to sell Bucket 1 RPS resources that exceed the City's load on an annual basis for CY 2019. Since these are effectively REC-only transactions, they will not impact the load-resource balance (and are therefore not reflected in Figure 1 or Figure 2 below); however, they are expected to change Palo Alto's RPS level, but without affecting compliance. CY 2020 is currently projected to be a better hydro year than CY 2018 as well. Overall electric supply resources were equal to load in CY 2018, and are expected to be surplus to load by 18% for CY 2019, and by 6% for CY 2020. However, some periods are expected to see significant surplus positions while other periods see deficit positions (see Figure 2 below, representing the monthly load and resource balance for CY 2019).

Some of the surplus positions will be sold as generic energy ahead of the prompt month while the rest will be settled in the spot market through the California Independent System Operator.

¹A "water year" is defined as the 12-month period from October 1 through September 30.

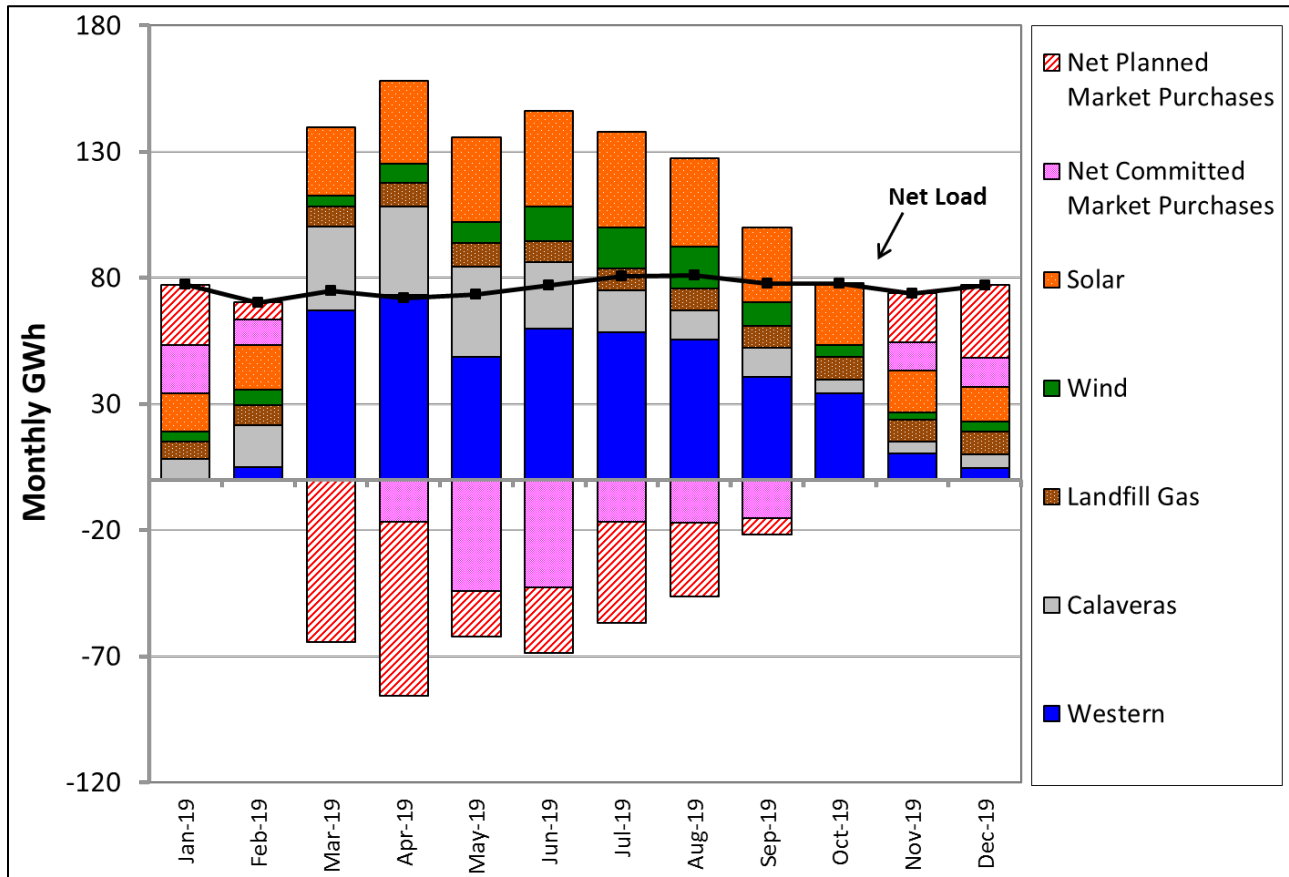
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Figure 1: Electric Supply Resource Actual and Projection, 2018 to 2020 (as of July 6, 2019)



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Figure 2: CY 2019 Monthly Electric Supply Resource Projection (as of July 6, 2019)



Electric Market Price History and Projections

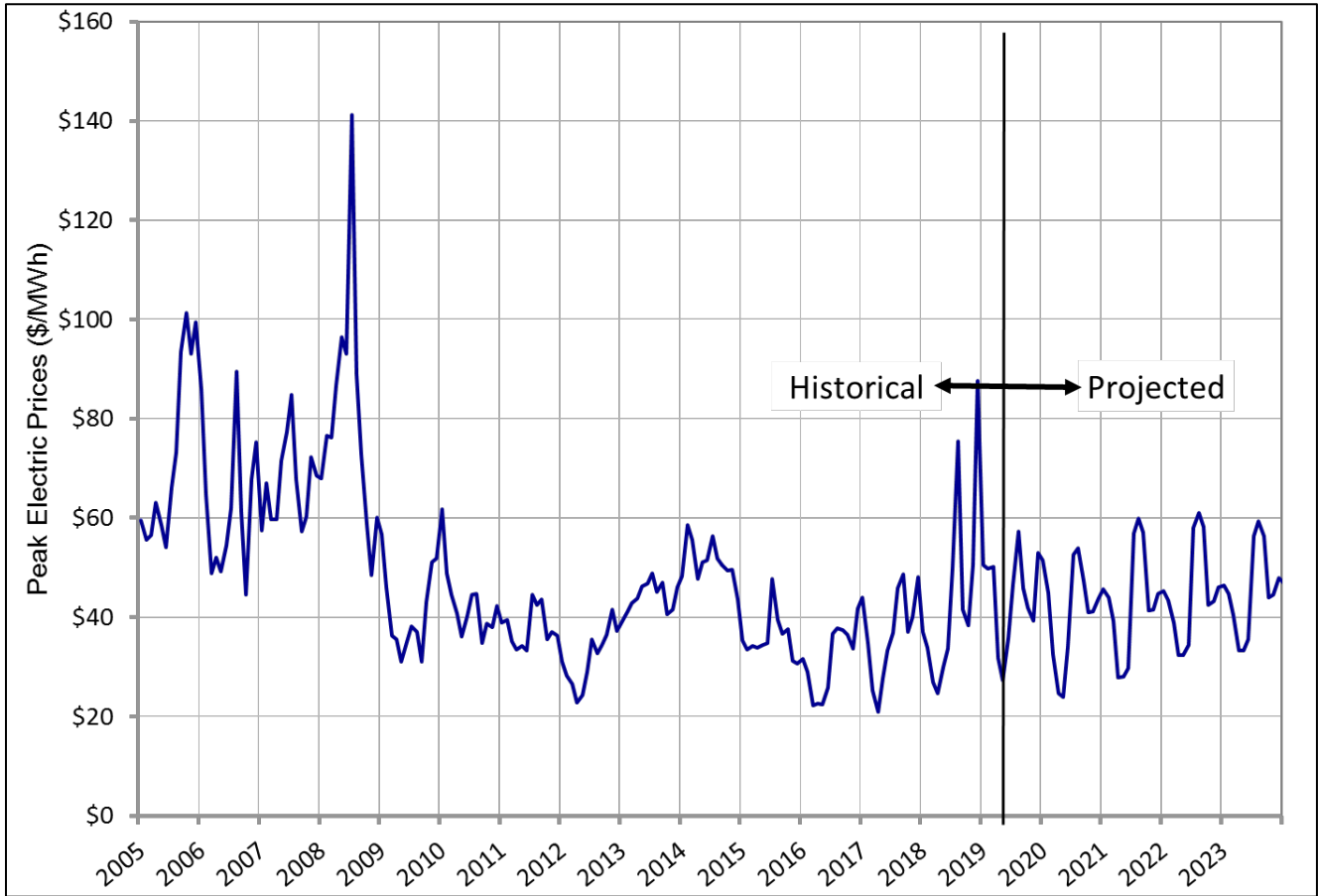
As of June 28, 2019, the price for on-peak energy for August 2019 in Northern California was \$57.23 per megawatt-hour (MWh)², while the prices for September and October 2019 were \$45.83/MWh and \$41.97/MWh, respectively. These values are approximately \$3.2/MWh (or 6%) lower than they were at the time of the last quarterly report.³ On-peak prices for calendar year strips are in the range of \$40/MWh to \$45/MWh for 2019 through 2021. These prices are approximately \$0.70/MWh higher than they were at the time of the last quarterly report. Figure 3 below illustrates historical monthly on-peak prices and projected monthly forward prices for Northern California from 2005 through 2023.

² Note that \$57.23 per megawatt-hour is equal to 5.723 cents per kilowatt-hour.

³ Market prices for the previous quarterly report were from February 27, 2019.

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Figure 3: Northern California Peak Electric Prices (as of June 28, 2019)



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Electric Budget and Portfolio Performance

Electric Load, Generation, and Supply Cost Summary Compared to Budget Estimates

Table 1 and Figure 4 below summarize the City’s electric supply sources through Q3 FY 2019. Load was about 3.9% lower than budget. Hydro generation from Calaveras and Western were 14.9% above budget forecasts, and solar generation was 7.4% above budget forecast. Supply is typically greater than loads during years with average hydro generation. CPAU had to sell power on the spot market due to higher than expected generation from all resources. Net market sales through Q3 FY 2019 were roughly 94 GWh, or 13.8% of load.

Table 1: Q3 FY 2019 Electric Load and Generation Compared to Budget Projections

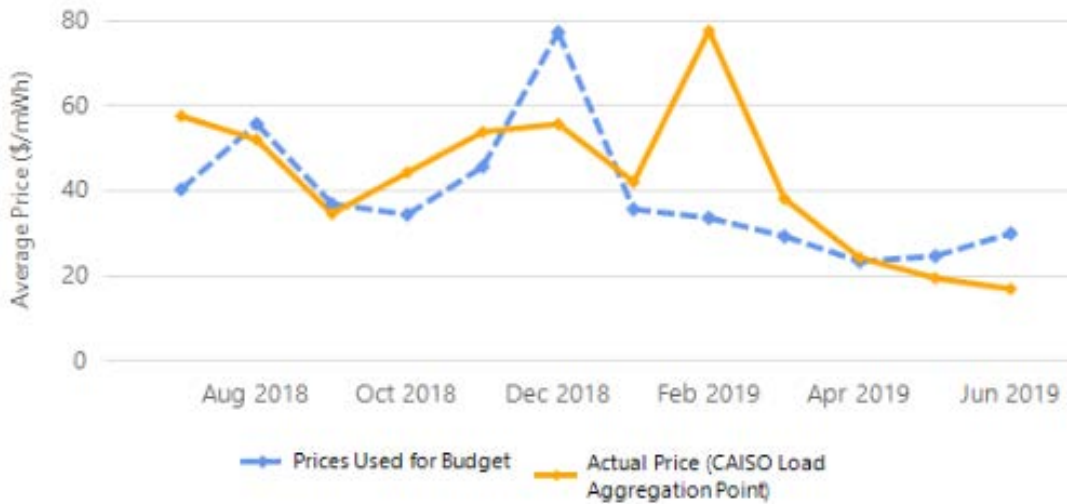
	Year To Date		Amounts Over(+)/Under(-) Budget	Month by Month Budget Variance
Load	683 GWh		-28 GWh	
Generation Source	Generation Year To Date	% of Portfolio	Amounts Over(+)/Under(-) Budget	Month by Month Budget Variance
Calaveras	91 GWh	13%	35 GWh	
Forward Market	76 GWh	11%	70 GWh	
Landfill	72 GWh	11%	-4 GWh	
Solar	231 GWh	34%	16 GWh	
Spot Market	-70 GWh	-10%	-164 GWh	
Western	202 GWh	30%	3 GWh	
Wind	81 GWh	12%	16 GWh	
Total Supply	683 GWh	100%	-28 GWh	

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Electric Market Prices

Figure 5 shows monthly market prices. Electric market prices have been slightly higher than budget through Q3 FY 2019.

Figure 5: Q3 FY 2019 Electric Market Prices



ii. **Natural Gas**

Gas Supply Retail Rates

The commodity portion of CPAU’s retail gas rates for all customers varies every month depending on the market price of natural gas. Figure 6 below shows the actual commodity rates charged from FY 2013 through Q3 FY 2019. There was a temporary commodity price spike during the winter months due to low regional gas storage and colder than expected temperatures, which led to increased demand and prices. Gas commodity prices have since returned back to normal.

Figure 6: CPAU’s Gas Commodity Rates—FY 2013 through Q3 FY 2019



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These rates can also be found on the web at: <http://www.cityofpaloalto.org/civicax/filebank/documents/30399>.

Muni Gas Prepay

On September 15, 2014, Council adopted Resolution #9451 authorizing the City’s participation in a natural gas purchase from Municipal Gas Acquisition and Supply Corporation (MuniGas) for the City’s entire retail gas load for a period of at least 10 years. The MuniGas transaction includes a mechanism for municipal utilities to utilize their tax-exempt status to achieve a discount on the market price of gas. We anticipate this pricing mechanism will reduce the City’s gas commodity cost by about \$1 Million per year, saving gas customers approximately 10% on the commodity portion of their gas costs. The program has reduced \$530K in commodity costs for customers since its inception in November 2018.

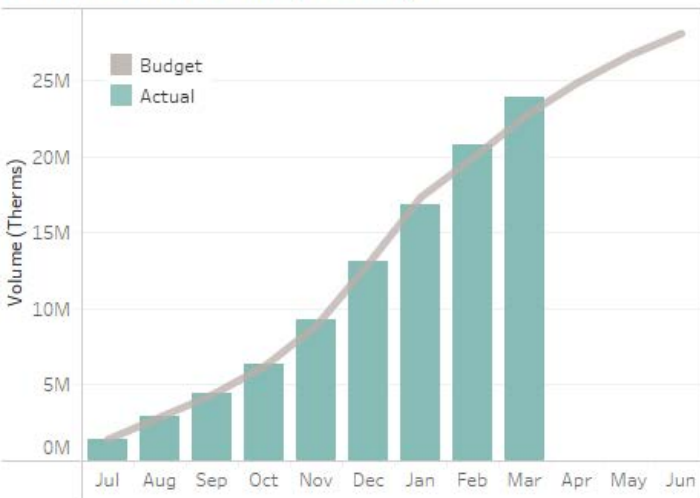
Gas Budget and Portfolio Performance

Supply Volumes and Costs: Budget vs. Actual

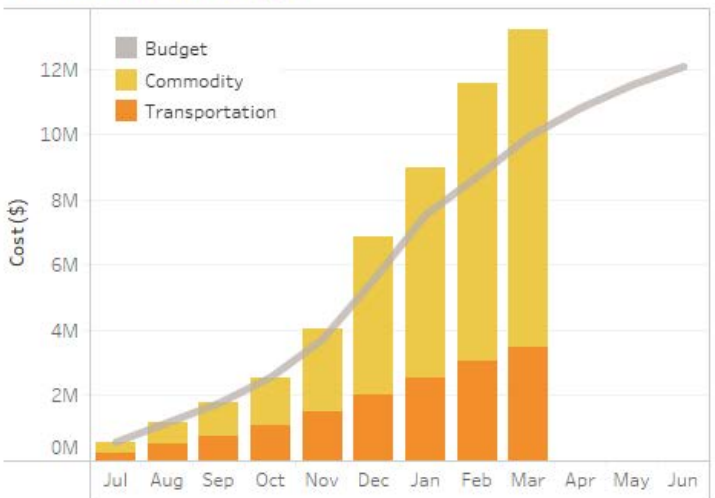
Figure 7 compares actual natural gas supply volumes and costs with the FY 2019 budget. Natural gas use through Q3 FY 2019 was 5.7% higher than the budget forecast, however, costs were 32.9% higher than budget due to high commodity prices during November, December and February.

Figure 7: Natural Gas – Budget vs. Actual

Cumulative Volumes (Therms)



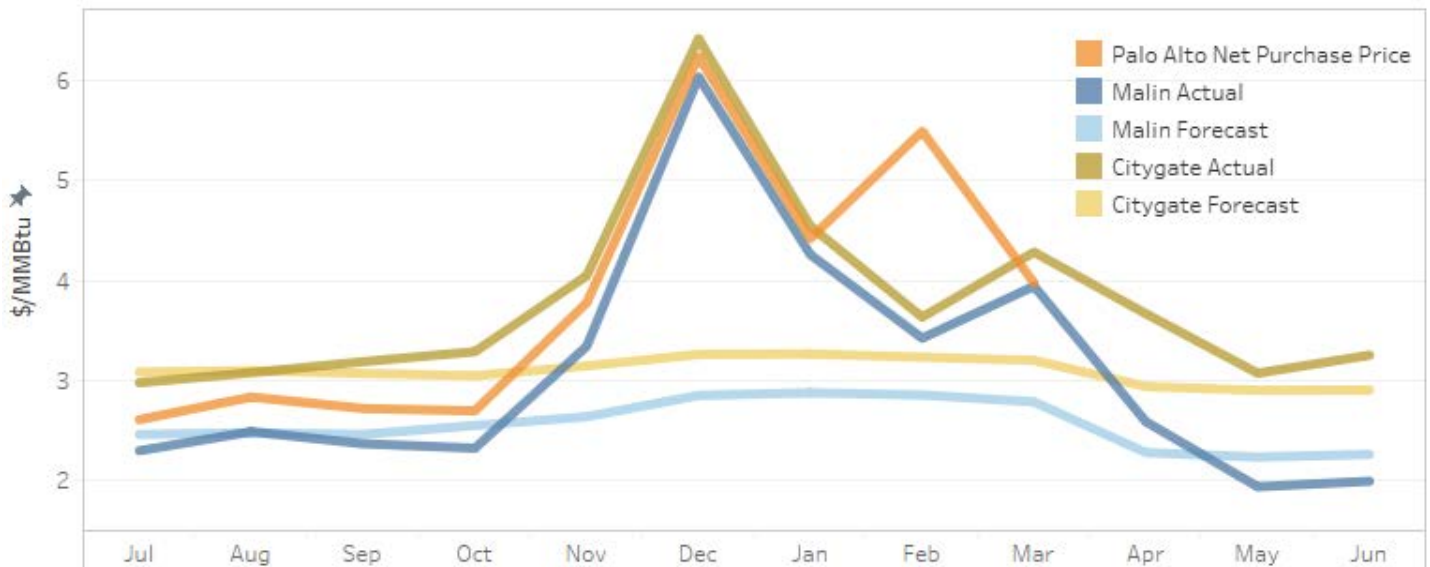
Cumulative Costs (\$)



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Figure 8 shows actual gas prices at Malin, PG&E Citygate and Palo Alto Net Purchase Cost. Natural Gas prices were higher than average this winter nationwide and anticipated to return to normal through the end of FY 2019.

Figure 8: Natural Gas Prices (\$/MMBtu) – Malin, Citygate and Palo Alto Net Purchase Costs

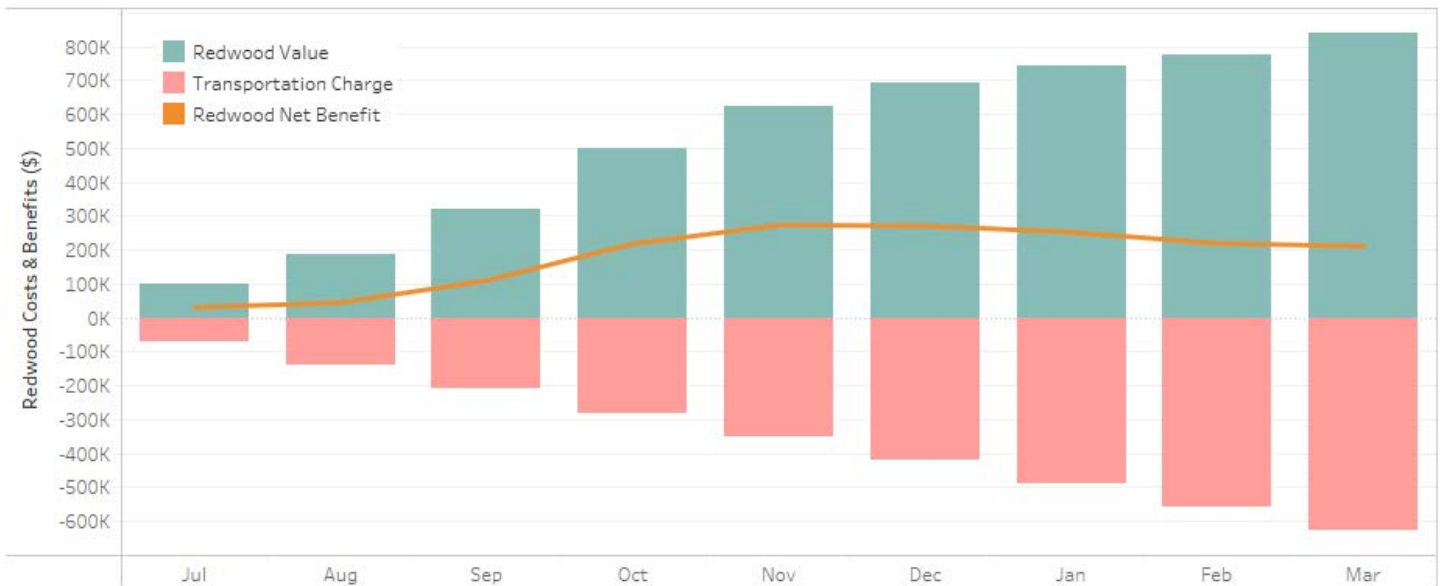


Value of CPAU’s Share of Redwood Pipeline Capacity

Figure 9 shows the value of the Redwood gas transmission line at month-ahead market prices and the volumetric cost of using that transmission line. The Redwood pipeline allows the City to buy gas at the receipt point of Malin, Oregon and transport the gas to “PG&E Citygate”, which is normally a higher priced receipt point. The City’s share of the Redwood pipeline was a net benefit to the Gas Utility of \$212K through Q3 FY 2019. This is the difference between the cumulative value of Redwood capacity of \$ 840K (the difference of the monthly index prices at the ends of the Redwood pipeline in Malin, Oregon and PG&E Citygate) and the cumulative transportation cost of using the Redwood pipeline of \$628K.

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Figure 9: Cumulative Redwood Pipeline Cost vs. Market Benchmarks

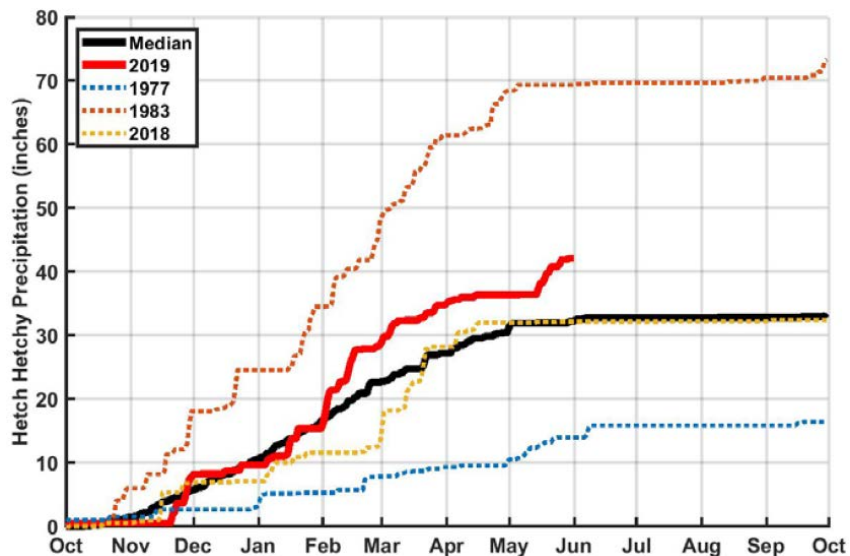


iii. Water

Water Availability

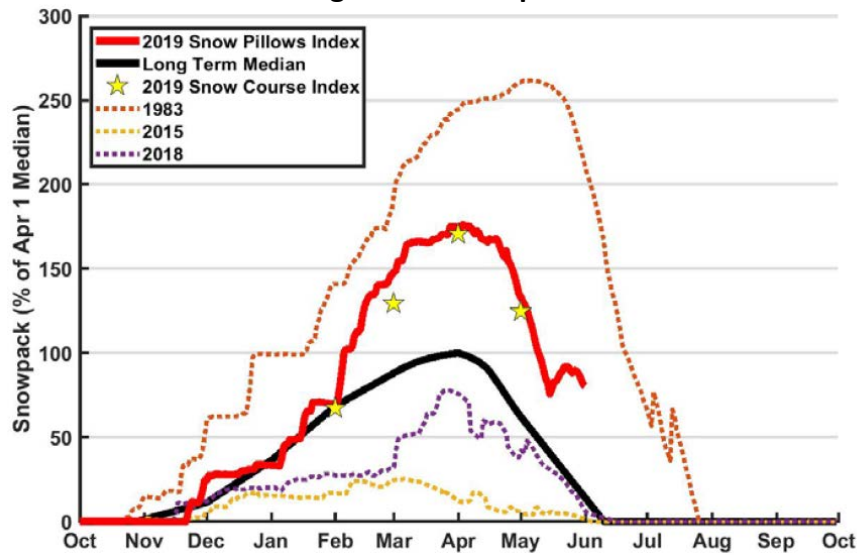
As of June 1, the total Regional Water System storage was 86% full. Plentiful precipitation and snowpack, as shown in the figures below, resulted in adequate water supply.

Figure 10 : Hetch Hetchy Cumulative Precipitation



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Figure 11: Snowpack



Recycled Water Strategic Plan

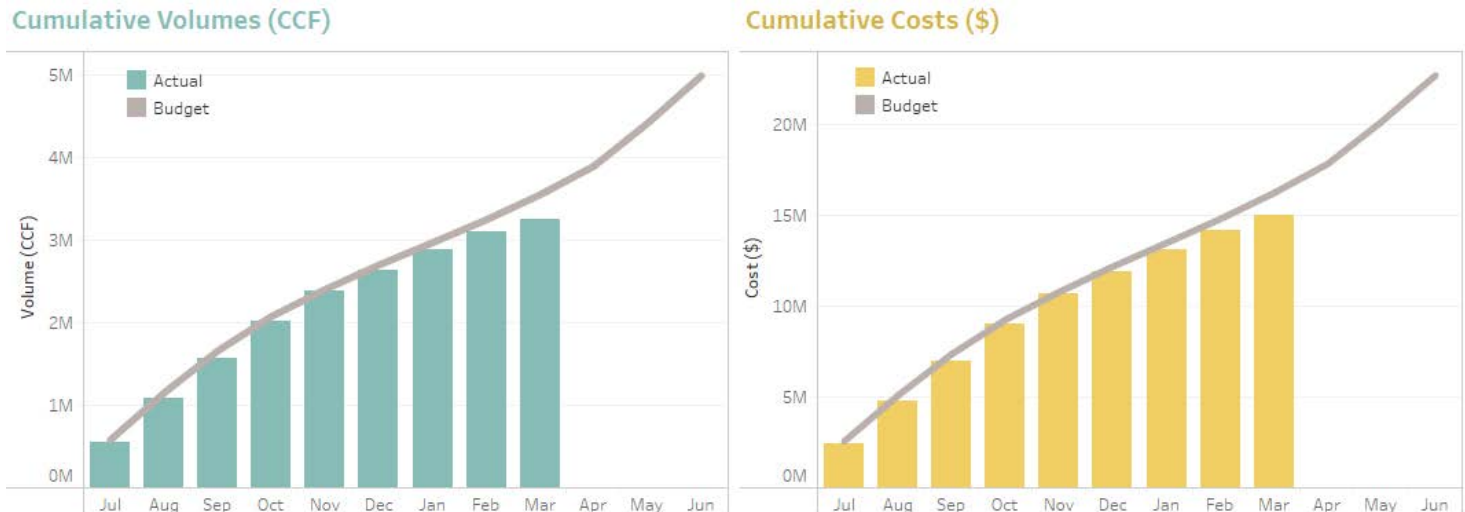
Work continues on the Northwest County Recycled Water Strategic Plan (see [Staff Report 6700](#)). Ninety percent is being funded by the SCVWD (not to exceed \$1.8 million) and the remaining ten percent is being paid by all the partners of the Regional Water Quality Control Plant. The UAC discussed the business plan for the non-potable Phase 3 pipeline to Stanford Research Park at its August meeting and other water reuse alternatives at its October meeting. Preliminary results and a potential Regional Water Quality Control Plant treated effluent transfer to Valley Water will be discussed with the UAC in September.

Water Budget and Portfolio Performance

Supply Volumes and Costs: Budget vs. Actual

Figure 12 below compares actual water supply volumes and costs to the FY 2019 budget projections. Actual water supply volumes and costs through Q3 FY 2019 were 5.8% and 5.2% lower than budget respectively.

Figure 12: Water Consumption and Cost – Budget vs. Actual

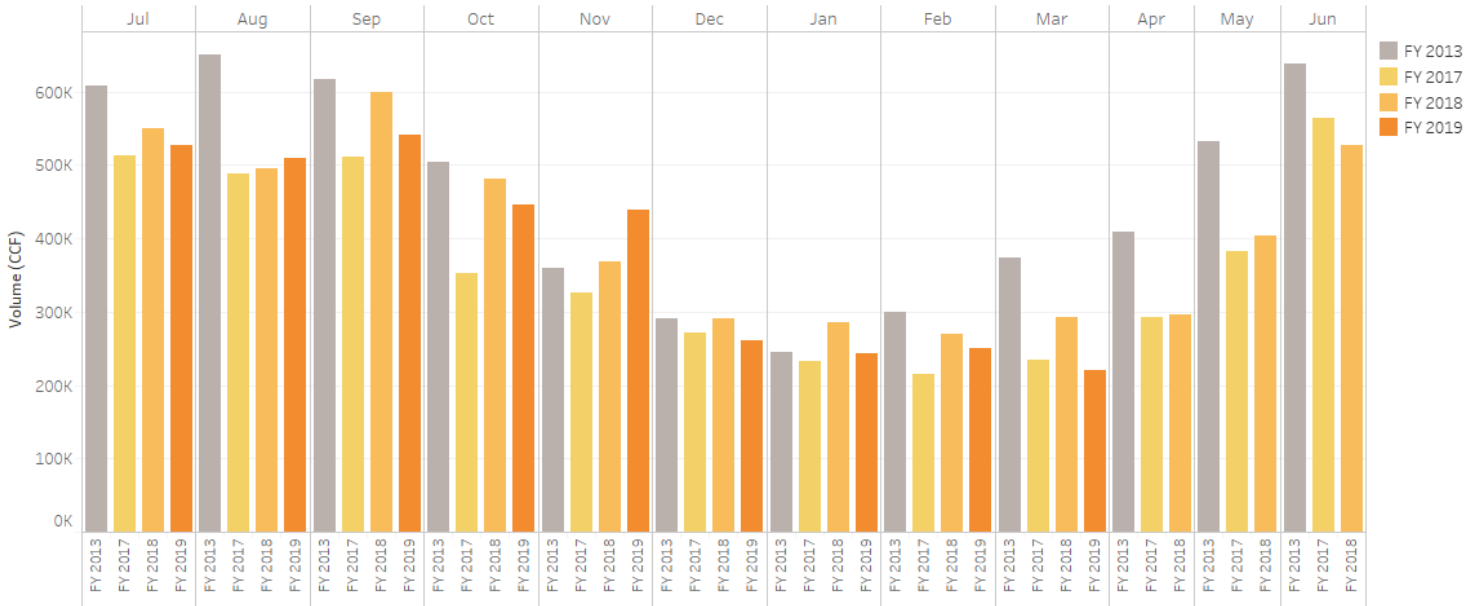


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Water Use

Water use through Q3 FY 2019 was slightly lower compared to FY 2018. A factor in the decrease can be attributed to increased precipitation during the Spring season. **Figure 13** below shows the monthly water purchases from SFPUC in FY 2019, compared with FY 2013, FY 2017 and FY 2018.

Figure 13: Potable Water Use



iv. Fiber Optics

Commercial Dark Fiber Service

The total number of commercial dark fiber customers at the end of FY 2019 Q3 was 95 accounts (94 commercial accounts and 1 City account). The total number of active dark fiber service connections serving commercial and City customers is 206 (some customers have multiple connections). Commercial customers generate approximately 81% of the dark fiber license revenues. The remaining 19% of licensing revenues is from City departments.

Fiber Optic Network Rebuild Project

The rebuild project will install new aerial duct or substructure (conduit and boxes), in addition to fiber backbone cable to increase capacity for sections of the dark fiber ring that are at or near capacity. This project will allow CPAU to meet customer requests for services. The project areas primarily cover the Stanford Research Park, Palo Alto Internet Exchange (PAIX)/Equinix at 529 Bryant, and Downtown areas. This project basically “overlays” new fiber over existing fiber routes in the network. Existing fiber will continue to serve City facilities and commercial dark fiber customers.

Rebuild Work Completed

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The route from PAIX at 529 Bryant to the Park Boulevard Substation has been completed. This phase of the project included substructure work, fiber pulling and cabinet installation. The new fiber installed for the backbone rebuild is 312-count single-mode fiber (2 x 144-count single-mode fiber, plus 24-count single-mode fiber).

Rebuild Work Scheduled in 2019-2020

- Field investigation of the path from Park Boulevard Substation to Hansen Way Substation and then to Hanover Substation to determine the level of substructure work required to continue the new fiber backbone. Completed February 2019.
- Complete design of the new fiber backbone from Park Boulevard Substation to the Stanford Research Park area. Originally scheduled to be completed by end of March 2019; updated schedule – design start date September 2019; expected completion November 2019.
- Install substructure for the new fiber path from Park Boulevard Substation to the Stanford Research Park area. Originally scheduled to begin April/May 2019; updated schedule – begin substructure work April 2020.
- Install dark fiber cable beginning June 2019; updated schedule – begin Installation of fiber cable July 2020.

All scheduled rebuild work noted above is tentative and subject to change. Changes in schedule are due to staffing constraints in engineering and higher competing priority projects.

The estimated cost for the rebuild is between \$500,000 and up to \$1,000,000 for substructure work. Another \$250,000 for the overhead portion of the work is allocated for the project. CPAU crews will perform the equipment installation, cable pulling and terminations. CPAU's substructure contractor will install the conduit and boxes.

Request for Proposal for Phased Fiber Expansion

Staff is currently working on the following tasks related to fiber expansion:

On June 24, 2019, staff recommended to the Council ([Staff Report #9620](#)):

- (1) The Re-issuance of the Fiber-to-the-Node (FTTN) Request for Proposals to Begin a Multi-phase Fiber Network Expansion to Support Advanced Metering Infrastructure (AMI), Supervisory Control and Data Acquisition (SCADA) Systems, and Wireless Communication Technologies for City Staff; and
- (2) The Sunsetting of the Fiber and Wireless Citizen Advisory Committee (CAC) and Assignment of the Utilities Advisory Commission (UAC) to Assume the Sole Advisory Role as the Public Input Forum for Fiber and Wireless Expansion for Proposed Phases 1 and 2.

The Council adopted the following Motion:

MOTION: Council Member DuBois moved, seconded by Council Member Kniss to:

- A. Approve the reissuance of a Fiber-to-the-Node (FTTN) Request for Proposals (RFP) to begin a multiphase fiber network expansion to support Advanced Metering Infrastructure (AMI), Supervisory Control and Data Acquisition (SCADA) systems, and wireless communication technologies for City operations. Additional tasks in the reissued RFP (to address AMI, SCADA, and FTTN) will include detailed engineering designs, construction cost estimates and construction bid support services, and:
 - a. Direct Staff to return to Council with cost sharing plan; and

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- B. Approve the assignment of the Utilities Advisory Commission (UAC) to assume the sole advisory role and serve as the public input forum for fiber and wireless expansion initiatives, and the sunseting of the Fiber and Wireless Citizen Advisory Committee (CAC).

MOTION PASSED: 6-1, Tanaka no

v. Efficiency Programs

City of Palo Alto Utilities Earns National Energy Innovator Award

City of Palo Alto Utilities was honored with the national 2019 Energy Innovator Award for our Home Efficiency Genie program. Utilities Director Dean Batchelor accepted the award on June 11 from the American Public Power Association (APPA). Since its launch in July 2014, the Home Efficiency Genie program has provided Palo Alto residents with free energy and water efficiency advice over the phone, and subsidized, comprehensive in-home assessments for utility efficiency improvements. Residents receive customized recommendations and independent, impartial advice for efficiency project estimates from contractors. The Genie House Call program has generated a high level of trust in the community and recently received a high Net Promoter Score: 9 out of 10 Genie House Call customers would recommend the program.



SunShares Solar Group Buy

For the fifth year in a row, the City of Palo Alto is participating in Bay Area SunShares, a solar group-buy program administered by Building Council for Climate Change (BC3). Residents and employees of companies in our community are eligible for the program's discounts of roughly 15% on rooftop solar. Three solar installers (Solar Technologies, SkyTech Solar, and PetersenDean) have been vetted and selected through an RFP process. Car dealerships are still being selected but at least one dealership will be available to offer the Nissan Leaf at discounted prices. The program runs for a limited time: registration opens on August 1 and closes on

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November 30. CPAU will be holding a free educational workshop on Saturday September 21. Contracts for PV installations must be signed by December 31, 2019.

New Refrigerator Recycling Program

Thanks to a grant from the Bay Area Air Quality Management District (BAAQMD), Utilities is offering Palo Alto residents or businesses a \$50 rebate, applied to their utility bill, to recycle old refrigerators or freezers that are 32 cubic feet or less. The contractor who was selected for this program, Appliance Recycling Centers for America (ARCA,) is a U.S. Environmental Protection Agency Responsible Appliance Disposal certified recycler. This means that they can recycle the chemicals found in old refrigerators and freezers, preventing them from being released as greenhouse gas emissions in landfills and into the atmosphere. For more information on this program, go to:

https://www.cityofpaloalto.org/gov/depts/utl/residents/save_energy_n_water/rebates/refrigerator_recycling.asp

Events and Workshops – www.cityofpaloalto.org/workshops

- Electrification Expo – October 10
- Landscape Workshop with BAWSCA (topic TBD) – October 5
- Landscape Workshop with BAWSCA (topic TBD) – September 28
- SunShares Workshop – September 21
- Silicon Valley Safety and Preparedness Fair – July 27
- MSC Open House – July 5
- Community Appreciation Event for Upgrade Downtown Construction – June 11
- Facilities Managers Meeting - June 6 - at VMWare - presentations on the VMWare Microgrid Project, Decarbonization, Distributed Energy Resources, EV chargers installation options, and utility rate changes.
- Maintaining Native Gardens and Leak Detection - June 1
- Is an Electric Vehicle Right for You - May 28
- Irrigation Equipment Upgrades and Landscape Water Use Efficiency - May 11
- Recycled Water Strategic Meeting – April 30
- Great Race for Saving Water & Earth Day Festival – April 13

vi. Communications Highlights

This section summarizes communications highlights, updates on major campaigns and noteworthy events. Copies of all current and past ads and bill inserts are available online at cityofpaloalto.org/UTLbillinsert

[Preparing for Seismic Hazards & Other Emergencies](#) - Utilities worked with the City's Office of Emergency Services on public outreach about earthquake safety and emergency preparedness following the recent earthquakes in Southern California. Following unfortunate incidents like a natural disaster, it is important to remind ourselves and community members to be prepared for emergencies at any time. The City offers many resources to help people [stay informed](#) and [ready](#).

[PG&E Public Safety Power Shutoff Program](#) - Pacific Gas and Electric (PG&E) is informing utility customers throughout the Bay Area about the company's Public Safety Power Shutoff Program. The company plans to shut off major power lines in the event of extreme fire conditions. Information is available on the [PG&E website](#). While PG&E does not directly serve electricity to Palo Alto utility customers, the City intakes

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electricity from PG&E's transmission system. Staff are coordinating with PG&E and partner agencies such as the Northern California Power Agency (NCPA) to understand the impacts to publicly owned utilities that are transmission-dependent on PG&E infrastructure.

[Municipal Service Center Open House](#) - The City hosted an Open House on Friday, July 5 to showcase some of the "behind the scenes" work that we do for the Palo Alto community. The event included special project demonstrations from Utilities and other departments in the City, with games, prizes, music, food, and a dunk tank for City management. Attendees were able to learn about services the City provides to the community in a fun environment. View photos in our [online album](#)

[Utilities Rate Changes](#) - On June 17, the Palo Alto City Council approved [rate changes](#) for the electric, gas, wastewater collection and water utilities. These new rates became effective on July 1, 2019. Communications provided public outreach throughout the rate proposal phase and after the rates were adopted. This [Utility Bill Insert](#) is being delivered to customers in the month of July.

[2018 Water Quality Report Now Available](#) - Every year, CPAU produces a consumer confidence report on water quality conditions for the previous calendar year. The report on water quality conditions for 2018 is now available online at cityofpaloalto.org/waterqualityreport or in print by request. Customers can contact us to request a printed copy. This report is also available in [Spanish](#) and [Chinese](#).

[Upgrade Downtown Project Now Complete](#) - The Upgrade Downtown construction project along University Avenue is now complete. After all the work was complete, the City repaved University Avenue. Staff hosted a community appreciation event on June 11 to thank everyone (businesses in particular) for their patience and cooperation during construction.

[Annual Walking and Mobile Gas Leak Surveys in Progress](#) - This routine [inspection of our gas distribution system](#) is conducted every year to ensure the safety of all who live and work in Palo Alto.

[Recycled Water Strategic Plan Public Meeting](#) – On April 30, Utilities, Public Works, and Valley Water hosted a public meeting to request input on possible projects the City could explore for expanding use of recycled water from the Regional Water Quality Control Plant. The information presented was similar to the material provided to the UAC in October 2018 and to City Council at a December 2018 study session. The discussion included options for both non-potable and potable uses of recycled water.

[Great Race for Saving Water and Earth Day Festival](#) - On April 13, the City hosted the 6th annual Great Race for Saving Water and Earth Day Festival at the Palo Alto Baylands. This fun run/walk and community festival brings together dozens of non-profit organizations, businesses, schools, environmental and other public agencies to share resources for climate action and sustainability. The event attracts thousands of community members. This year, the City and partners hosted a special ribbon-cutting ceremony before the race to celebrate completion of a major flood control project along the San Francisquito Creek.

[Media Coverage of Palo Alto's Energy Resources](#) – A local reporter for the Palo Alto Weekly has recently been publishing blog posts ("A New Shade of Green") about CPAU's energy portfolio. After speaking with communications and resource planning staff, she is writing articles about how we procure energy resources, what is considered renewable versus non-renewable energy, what is Consumer Choice Aggregation (CCA),

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related legislation that could impact publicly owned utilities and CCAs, and what it means to be carbon neutral.

Visit from the Chinese Wuhan Environmental Protection Bureau - On March 13, a delegation from the Wuhan Environmental Protection Bureau in China visited the City to learn about our climate action and sustainability initiatives. Utilities and Public Works staff met with the delegates for a couple of hours to share information on past, current and future programs for energy and water efficiency services, renewable energy, carbon neutral electric and gas portfolios, as well as long-term plans for sustainable utility resource management.

vii. Innovation and Pilot Programs

Program for Emerging Technologies

CPAU’s Program for Emerging Technologies, or PET, (www.cityofpaloalto.org/UTLIInnovation) provides the opportunity for local businesses and organizations to submit proposals for innovative and impactful products to CPAU for review as a prospective partner. The goal is to find and nurture creative products and services that will manage and better use electricity, gas, water and fiber optic services. From the program’s inception in June 2012 through the third quarter of FY 2019, the program has received a total of 85 applications. Table 3 below summarizes the status of all applications through the third quarter of FY 2019. In the third quarter of FY 2019, CPAU submitted two letters of support for start-ups with innovative solutions for electricity distribution system optimization and management. CPAU is also in the process of wrapping up a one-year pilot with the start-up UrbanLeap-- a platform for streamlining intake, ranking, and tracking of innovative pilot projects within local governments.

Table 3: Status to date of all applications to the Program for Emerging Technologies

Deadline	Total Received	Under Review	Declined/Closed	Active	Completed
FY 2013	13	0	11	0	2
FY 2014	15	0	11	0	4
FY 2015	15	0	11	1	3
FY 2016	14	0	9	0	5
FY 2017	10	0	7	0	3
FY 2018	10	0	9	0	1
FY 2019	8	2	3	1	2
TOTAL	85	2	61	2	20

Electrification Activities

Heat Pump Water Heater Pilot Program

The City launched a Heat Pump Water Heater (HPWH) pilot program in late Spring 2016 to encourage residents to replace their gas water heaters with efficient HPWHs. The pilot program website provides information such as rebate levels (up to \$1,500), qualifying models that meet the minimum efficiency standard required by the California Energy Commission and installation considerations. In May 2017, the program was

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expanded to include rebates (at a lower rate) for new construction projects as well. The HPWH pilot website was updated with a new look and feel in December 2017. As of June 2019, the City has paid rebates for 40 HPWHs.

To increase awareness about HPWHs, customers with solar PV on their homes were mailed an “Act Before I Leak” sticker that is intended to be placed on existing water heater to remind customers to consider replacing their water heater with a HPWH when it is time for new one.



The City has partnered with BayREN, a non-profit organization representing local governments from nine counties in the Bay Area, to implement a regional HPWH market transformation program. This program has been awarded grant funding from BAAQMD and will provide contractor training, consumer messaging, and a mid-stream HPWH incentive to distributors throughout the Bay Area. The regional program approach can catalyze market transformation and address the many persistent barriers that cannot be addressed on a local scale. This program is expected to launch in fall 2019. Other key partners in this HPWH market transformation program include local governments and CCAs and non-profit organizations.

EV Charger Rebate Program and New EV Solutions and Technical Assistance Program

The City launched an EV Charger Rebate Program in January 2017. The program currently offers incentives of up to \$18,000 for multi-unit dwellings (MUDs) and up to \$30,000 for schools and nonprofits to upgrade electrical infrastructure and install EV chargers also known as Electric Vehicle Supply Equipment (EVSEs) for communal use. To date, 28 properties have applied to participate in the EV Charger Rebate Program, yet only 7 sites have successfully completed EVSE installations (3 projects at MUDs and 4 projects at non-profits). Despite many interested properties, participation in this program has been slow, as the majority of these customers become overwhelmed due to the lack of knowledge about EVSE’s as well as the multi-step process involved in installing commercial EVSEs.

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To address this matter, in September 2018, CPAU issued an RFP for EV Solutions and Technical Assistance. The contract was executed this June. With this new program, the City will use Low Carbon Fuel Standard (LCFS) funds to accelerate and make EV charging accessible for our many residents living at multi-unit dwellings (MUDs), with top priority given to low income properties, followed by other multifamily properties as well as other harder to reach segments of the market such as schools, nonprofits and small to medium sized businesses (SMB). The end-to-end services offered will include assisting qualifying customers in understanding the requirements and steps for installing EVSE as well as conduct site visits, provide electric load calculations, design, review and oversee installation of EV chargers at qualifying locations. The program is expected to launch in fall 2019.

EV Education and Outreach

On April 13, CPAU co-sponsored its third EV Ride and Drive Event with Acterra, at the Great Race for Saving Water and Earth Day Festival, providing 80 rides. This number was dramatically lower than previous Ride and Drive events, indicating that the EV trend has hit a tipping point and many customers already have experience driving an EVs. In comparison, at last September's Ride and Drive during National Drive Electric Week, over 520 test rides/drives were conducted in a three hour period. Also, at last year's Great Race and Earth Day Festival, 164 rides were conducted. Survey results continue to indicate that people who had a "very positive" perception of EVs, jumped from 65% to 88% after the test drives, and 74% of participants indicated that their test drive helped accelerate the timing of their future EV purchase/lease.

On May 23, CPAU co-hosted its third EV workshop with Stanford's Health Improvement Program which has attracted 90 attendees. Stanford surveyed previous EV Workshop attendees and found that 13% of attendees went on to purchase an EV after attending our workshop, adding 53 more EVs to the Bay Area. The latest [ICCT \(International Council On Clean Transportation\) white paper on EV markets](#), reports that EV adoption rates in Palo Alto are still the most aggressive in the country with the latest numbers showing that 1 in 3 new vehicles are EVs. At this time, staff plans to continue sponsoring 2 EV Ride and Drives as well as 2 workshops a year.

Multifamily Gas Furnace to Heat Pump Retrofit Pilot Program

In July 2018, CPAU was awarded a 2018 Climate Protection Grant in the amount of \$296,220 from BAAQMD to implement a Multifamily Gas Furnace to Heat Pump Retrofit Pilot program. Association for Energy Affordability (AEA) was selected as the consultant and implementation vendor to facilitate the installation of high efficiency air source heat pumps at up to three low-income apartment buildings to replace existing in-unit gas wall furnaces. Heat pump systems are far more energy efficient than gas furnaces, eliminate GHG emissions associated with gas-fired space heaters, while improving air quality within the dwelling units. This two year pilot will identify the technical and logistical hurdles of retrofitting the gas wall furnaces with heat pump units, and will document the retrofit cost, energy savings and avoided GHG emissions in a case study.

Induction Cooktop Loaner Program

In June 2019, CPAU entered into an agreement with Acterra to administer an Induction Cooktop Loaner Program. Most homeowners have strong emotional attachment to their gas cooktop, which can become a key barrier to disconnecting the gas meter to their homes. This program aims to demystify induction cooking among Palo Alto residents through first-hand experience cooking with a portable induction cooktop unit. Acterra will manage the day to day administration of the loaner program from their Palo Alto office. Residents can borrow the loaner kit for up to three weeks, and are asked to provide feedback on induction cooking through a short survey when they return the loaner kit.

viii. Legislative and Regulatory Issues

While the City operates on the Fiscal Year (July through June), the State legislature operates on the calendar year and the federal government, on the Federal Fiscal Year (October to September). In order to provide accurate and timely information, CPAU Legislative staff notes here current issues we are working on at the time of this report, regardless of each entity's operating year.

State legislation

The State legislature is more than halfway through with the first year of a two-year session. Bills have passed their houses of origin, died, or become two-year bills, meaning they will not be taken up in 2019. Importantly for CPAU, many of the bills we are tracking have become two-year bills. We note below a high-level summary of the few key bills that are still viable in 2019.

Water

AB 756 (Garcia): *Public water systems: perfluoroalkyl and polyfluoroalkyl substances*. Authorizes the Water Board to order a public water system to monitor for PFAS chemicals and establishes a separate customer notification process as a result of any confirmed detection. (A similar federal bill is noted below).

SB 134 (Hertzberg): *Water conservation: water losses: enforcement*. Prohibits the Water Board from imposing liability for violation of the performance standards for the volume of water losses except as part of the enforcement of an urban water use objective.

Electricity

AB 56 (Garcia, E.): *Electricity: procurement by the California Alternative Energy and Advanced Transportation Financing Authority*. Authorizes an existing state entity to procure energy on behalf of IOUs, CCAs, and ESPs in order to meet gaps in procurement. While all references to POUs were deleted, CPAU continues to monitor the bill as it sets new precedent in establishing the State as a central buyer for energy procurement.

SB 676 (Bradford): *Transportation electrification: electric vehicles: grid integration*. Mandates that larger POUs (those that must file Integrated Resource Plans) establish Electric Vehicle grid integration strategies and quantify how our current and planned programs, including rates and investments, further those strategies.

State regulatory proceedings

Below, staff notes the issues we are currently tracking or engaging in with various agencies:

California Air Resources Board

Low carbon fuel standard cost containment; SF-6 regulations

California Energy Commission

Renewables Portfolio Standard enforcement procedures

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California Public Utilities Commission

While the CPUC maintains jurisdiction over IOUs and not POUs, we engage in some of their efforts through our trade association, the California Municipal Utilities Association, and our JPA, the Northern California Power Agency. These include proceeding related to: A potential statewide pole database; IOU deenergization practices; and IOU wildfire mitigation reporting.

State Water Board

Proposed framework for performance standards for water loss

California Department of Forestry and Fire Protection

Vegetation management rules

Wildfire-related proceedings

As a result of recent electric line-ignited wildfires, the State developed two new bodies. CPAU follows their proceedings and engages, when applicable, through CMUA and NCPA.

- *The Governor's Wildfire Strike Force* [issued a report](#) related to climate change, preventing wildfires, and cost allocation. From the report, the Governor intends to pursue legislation this year. We hear such legislation may include an enhanced review process for POU and IOU wildfire mitigation plans.
- *The Commission on Catastrophic Wildfire Cost and Recovery* held workshops and submitted a final report to the legislature regarding cost allocation, liability, and similar issues. While [the report](#) contains a recommendation to replace the strict liability application of inverse condemnation with a fault-based negligence standard, we do not anticipate the legislature taking up that issue this year.

PG&E Rate Case

On November 17, 2017 PG&E filed its 2019 Gas Transmission and Storage (GT&S) application, requesting a rate increase. If adopted without changes, PG&E's rate proposal would increase Palo Alto's costs by \$1.8M per year or 13%. The proposed cost increases are largely due to the 2015 Aliso Canyon storage leak and the resulting storage field regulations effective in the near future. Additionally, PG&E's storage facilities will require significant upgrades. Part of PG&E's plan involves retiring older storage fields that will be too expensive to operate under the new rules and relying heavily on Independent Storage Providers (ISPs) to provide the needed storage services on the system. Palo Alto is a party to the proceeding and has joined a coalition of other parties with similar interests. The hearing concluded in October. The Administrative Law Judge was replaced, so a decision has been delayed.

Federal legislation

Noted below are high-level summaries of federal bills we are tracking. Due to the highly political nature of the current Congress, and the Republican Senate majority, we do not expect most of the below bills will pass.

Federal small cell/wireless items

H.R. 530 (Eshoo): *Accelerating Broadband Development by Empowering Local Communities Act of 2019*. Would overturn 2018's FCC actions limiting the ability of local governments to regulate the deployment of small cell

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wireless infrastructure on local poles. The City submitted a [letter of support](#) for this measure; a press release [is here](#). H.R. 530 has not had a committee hearing.

S.1699 (Thune/Shatz): *STREAMLINE Small Cell Deployment Act*. A repeat of a former bill of the same name, this bill attempts to increase 5G deployment by, among other items, mandating a shorter timeframe for local governments to process permits and capping local fees. This bill has not had a hearing; a press release [is here](#).

CPAU also monitors news from the Federal Communications Commission related to pole attachment regulations and the preemption of local regulations.

Federal water bills

H.R. 1497 (DeFazio): *The Water Quality Protection and Job Creation Act of 2019* authorizes over \$23 billion to improve wastewater infrastructure nationally, and address the current crisis in the West due to ongoing drought and increased stormwater control issues. A press release [is here](#); the bill has not been heard in committee.

S. 1790: *National Defense Authorization Act for Fiscal Year 2020*. Requires EPA to set drinking water limits for PFAS and requires the Defense Secretary to finalize a cooperative agreement with states and local water utilities to add testing, removal, and remedial actions for PFAS contamination stemming from the Department of Defense.

S. 1932: *Drought Resiliency and Water Supply Infrastructure Act*. Extends funding for water recycling, groundwater storage, and desalination projects and creates a new loan program for water agencies to spur investment in new water supply projects.

ix. Utility Financial Summary

This section describes the unaudited actual financial results for FY 2019 for all Utilities funds. The Council-adopted long-term [Financial Plans](#) for the Electric, Gas, Wastewater Collection, and Water Funds have been updated for FY 2020 during the budget review process.

Electric Utility Overview

Sales for FY 2019 are projected to be 5.4% lower than forecasted in the FY 2019 Financial Plan, with revenues consequently lower than originally projected by about 3.4%. Total expenses are expected to decrease similarly by 6% relative to the forecast in the FY 2019 Financial Plan. The net effect appears to be an improvement in the net position of the utility in FY 2019 – a loss of \$2 million rather than \$6.6 million. However, this is deceptive, because it relates to the way capital construction work in progress was accounted for in the FY18 Financial Plan compared to the FY19 Financial Plan. The updated forecast shows a smaller loss, but that is offset by a decrease in the starting reserves for FY 2019, meaning there is expected to be little difference between the FY 2019 year-end net position of the utility under the previous forecast and the year-end net position under the current forecast.

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The lower starting reserves noted above means that the Electric Supply Operations Reserve was below the reserve minimum guideline level at the end of Q3 FY 2019. In the FY18 and FY19 Financial Plans, several proposed transfers from the Hydro Rate Stabilization (\$1 million) and Rate Stabilization reserves (\$9 million) were proposed and approved, as well as an additional \$10 million from the Electric Special Projects (ESP) reserve as a short term loan. The City executed the ESP transfer but has not executed the other transfers. After they are performed, the Electric Supply Operations Reserves will be above minimum levels.

The Electric Utility CIP Reappropriation and Commitment Reserves totaled \$12 million at the end of Q3 FY 2019.

Gas Utility Overview

Sales for the Gas Utility in FY 2019 are projected to be slightly higher than last year's forecast, with the current projection being 6.7% above the projections from the FY 2019 Financial Plan. Revenue is also projected to be slightly higher than forecasted; current projection is 1.7% higher than the projection from the FY 2019 Financial Plan.

With increased gas purchases due to higher gas usage there is a corresponding increase in expenses of 3.4% higher than the forecast in the FY 2019 Financial Plan. Due to a gas price spike in the winter, not all gas supply costs were passed through to the customers. Gas supply costs are passed to customers using a rate adjuster that changes monthly, but the gas price spikes occurred within the month. This will modestly impact gas utility reserves.

The Gas Operations Reserve was within guideline levels at the end of Q3 FY 2019 and the Rate Stabilization Reserve is projected to be exhausted by the end of 2020 to help smooth rate increases over several years. The Gas Utility CIP Re-appropriation and Commitment Reserves totaled \$7.5 million at the end of Q3 FY 2019.

Water Utility Overview

Water usage has continued its post-drought recovery anticipated in the FY 2019 Financial Plan. Water usage is projected to plateau and slowly decline in the future, as seen in previous drought recovery years. Revenue is similar to the projection from the FY 2019 Financial Plan. Expenses are projected to be lower than anticipated in the Financial Plan, primarily due to changes in the timing of CIP expenditures.

Some CIP projects budgeted in FY 2019 or earlier, including one main replacement and seismic water system upgrades, are now projected to be completed in FY 2020. These CIP expenditure changes together with operations expense decreases have a net effect on the FY 2019 expense projections of a decrease of \$10.6 million or 19.1% from the total expenses projected in the FY 2019 Financial Plan. The 2020 Financial Plan recommends moving some of these CIP funds to the CIP Reserve for use in future years, while some of the funds will be used for rate stabilization in FY 2020. The Water Operations Reserve was above the target guidelines at the end of Q3 2019, however staff anticipates a transfer to the CIP reserve will bring the Operations Reserve below the maximum level. Additionally, if sales do not materialize due to weather or other factors, reserves may drop within the guideline range.

The Water Utility CIP Reappropriation and Commitment Reserves totaled over \$20.4 million at the end of Q3 FY 2019.

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Wastewater Collection Utility Overview

Staff projects wastewater revenue in FY 2019 to be 0.4% higher than forecasted in the FY 2019 Financial Plan. This is the net effect of increasing revenue from sales and decreasing income from connection fees and interest. Staff estimates 1% lower costs in FY 2019 than forecasted. This is the net effect of expected decreases in operations and other costs while treatment costs are projected to increase. Staff projects the Wastewater Collection Operations Reserve to be within the target guideline levels for FY 2019.

The Wastewater Collection Utility CIP Reappropriation and Commitment Reserves totaled \$5.4 million at the end of Q3 FY 2019.

Fiber Optic Utility Overview

Fiber sales and expenses in FY 2019 are projected to be 8% and 24% lower than projected in the FY 2019 budget. Fiber sales are projected to be \$4.6 million compared to \$5.0 million forecasted due to loss of one reseller customer via acquisition. The total number of active dark fiber connections has decreased 8% from 224 in Q1 FY 2018 to 206 in Q3 FY 2019. Fiber expenses are also projected to be \$1 million lower than forecasted due to delays of the ongoing Fiber Optic System Rebuild CIP project.

The total Fiber Optic Utility Rate Stabilization and Emergency Plant Reserves totaled \$27.6 million at the end of Q3 FY 2019. The projected Fiber Optic Utility Rate Stabilization and Emergency Plant Reserves at the end of FY 2019 is \$29 million.

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Table 4: Utilities Financials, Projected for FY 2019

	Sales Volumes	Revenue \$,000	Expense \$,000	Net Reserve Change \$,000
Electric Utility				
Financial Plan	910,883 MWh	164,336	(170,938)	(6,602)
FY 19 Projected	861,466 MWh	158,672	(160,650)	(1,978)
Change from Financial Plan	(49,417) MWh (5.4%)	(5,664) (3.4%)	10,288 (6%)	4,624
Gas Utility				
Financial Plan	27,289,000 therms	36,361	(38,728)	(2,367)
FY 19 Projected	29,111,543 therms	36,972	(40,058)	(3,085)
Change from Financial Plan	1,822,543 therms 6.7%	611 1.7%	(1,330) 3.4%	(718)
Water Utility				
Financial Plan	4,707,000 CCF	49,619	(55,449)	(5,830)
FY 19 Projected	4,448,428 CCF	49,470	(44,872)	4,599
Change from Financial Plan	(258,572) CCF (5.5%)	(148) (0.3%)	10,577 (19.1%)	10,429
Wastewater Collection Utility				
Financial Plan		20,444	(23,113)	(2,669)
FY 19 Projected		20,530	(22,873)	(2,343)
Change from Financial Plan		86 0.4%	240 (1%)	326
Fiber Optic Utility				
Financial Plan		4,990	(4,165)	825
FY 19 Projected		4,566	(3,165)	1,401

Table 5: Operations Reserves, as of Q3 FY 2019 (\$000)

	Electric Supply	Electric Distribution	Gas	Water	Wastewater Collection	Fiber Optic *
Beginning	9,537	10,363	8,638	20,924	7,415	26,040
Change	1,918	6,130	1,663	(4,138)	(1,359)	579
Q3 FY 19 Ending	11,455	16,493	10,301	16,786	6,056	26,619
Reserve Minimum	17,554	10,880	5,533	7,197	2,775	687
Reserve Maximum	35,108	16,055	11,067	14,498	6,939	1,374

* For Fiber Optics, the Reserve is the Rate Stabilization (not the Operations) Reserve

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Residential Bill Comparisons

Table 6: Residential Electric Bill Comparison (\$/month)

As of May 1, 2019					
Season	Usage (KWh/mo)	Palo Alto	PG&E	Santa Clara	Roseville
Summer (May-Oct)	300	\$38.61	\$68.92	\$35.89	\$66.84
	365 (Median)	49.22	87.14	43.95	81.33
	650	104.17	167.05	79.29	152.37
	1200	210.20	321.27	147.48	306.58

Table 7: Residential Natural Gas Bill Comparison (\$/month)

As of May 1, 2019				
Season	Usage (therms per month)	Palo Alto	Menlo Park, Redwood City, Mountain View, Los Altos, and Santa Clara (PG&E Zone X)	Roseville (PG&E Zone S)
Summer (Jun-Oct)	15	\$24.42	\$19.62	\$20.06
	18 (Median)	27.12	23.54	25.78
	30	43.23	46.25	48.67
	45	65.27	74.86	77.28

Table 8: Residential Water Bill Comparison (\$/month)

As of May 1, 2019						
Usage CCF/month	Palo Alto	Menlo Park	Redwood City	Mountain View	Santa Clara	Hayward
4	\$44.99	\$50.55	\$54.04	\$37.47	\$23.92	\$35.20
(Winter median) 7	67.71	72.46	76.09	58.08	41.86	56.62
(Annual median) 9	86.59	87.07	90.79	71.82	53.82	70.90
(Summer median) 14	133.79	125.41	138.94	106.17	83.72	108.51
25	237.63	210.78	267.39	222.94	149.50	201.02

Based on the FY 2013 BAWSCA survey, the fraction of SFPUC as the source of potable water supply was 100% for Palo Alto, 95% for Menlo Park, 100% for Redwood City, 87% for Mountain View, 10% for Santa Clara and 100% for Hayward.

Table 9: Residential Wastewater Collection (Sewer) Bill Comparison (\$/month)

As of May 1, 2019						
Palo Alto	Menlo Park	Redwood City	Mountain View	Los Altos	Santa Clara	Hayward
\$38.66	\$93.83	\$78.24	\$40.80	\$37.36	\$42.91	\$32.85

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Table 10: Median Residential Overall Bill Comparison (\$/month)

As of May 1, 2019						
Utility and Usage	Palo Alto	Menlo Park	Redwood City	Mountain View	Santa Clara	Hayward
Electricity (365 kWh/mo)	\$ 49.22	\$ 87.14	\$ 87.14	\$ 87.14	\$43.95	\$ 87.14
Gas (18 th/mo)	27.12	23.54	23.54	23.54	23.54	23.54
Wastewater	38.66	93.83	78.24	40.80	42.91	32.85
Water (9 CCF/mo)	86.59	87.07	90.79	71.82	53.82	70.90
TOTAL	201.59	291.58	279.71	223.30	164.22	214.43

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Table 11: Q3 FY 2019 Reserve Report from the City's Financial System ('000)

City Of Palo Alto
Utility Fund Reserve
Q3 Reserve Report - Detail
as of March 31, 2019 - UNAUDITED

	Beginning Reserve Balance as of 7/01/18 FY 2019	Changes to Reserves Summary ASD	Current Projected Reserve Balance as of 3/31/2019 FY 2019	Addl Changes to Reserves to 3/31/2019 Util	Current Projected Reserve Balance for 3/31/2019 FY 2019 (Util)
Electricity					
Supply/Dist Operations	\$ 19,900	\$ 8,048	\$ 27,948		
CIP Reappro/Commit	13,975	(1,934)	12,041		
Hydro Stabilization	11,400	-	11,400		
CIP Reserve	880	-	880		
Rate Stabilization	9,011	-	9,011		
Public Benefit	681	-	681		
ESP	41,665	-	41,665		
GASB 68 Pension Rsrv	(29,511)	-	(29,511)		
GASB 75 OPEB Rsrv	(14,168)	-	(14,168)		
All Others	4,453	2,444	6,897		
Net Capital Investment	193,313	3,350	196,663		
Total	\$ 251,599	\$ 11,908	\$ 263,507		
Gas					
Operations Reserve	\$ 8,638	\$ 1,663	\$ 10,301		
CIP Reserve	3,820	-	3,820		
Rate Stabilization	7,090	(3,499)	3,591		
CIP Reappro/Commit.	7,511	37	7,548		
GASB 68 Pension Rsrv	(13,278)	-	(13,278)		
GASB 75 OPEB Rsrv	(6,235)	-	(6,235)		
All Others	1,957	3,090	5,047		
Net Capital Investment	98,213	2,177	100,390		
Total	\$ 107,716	\$ 3,468	\$ 111,184		
Water					
Operations Reserve	\$ 20,924	\$ (4,138)	\$ 16,786		
CIP Reserve	2,726	-	2,726		
Rate Stabilization	4,069	-	4,069		
CIP Reappro/Commit.	11,042	9,376	20,418		
GASB 68 Pension Rsrv	(12,455)	-	(12,455)		
GASB 75 OPEB Rsrv	(4,350)	-	(4,350)		
All Others	3,503	1,847	5,350		
Net Capital Investment	93,490	1,451	94,941		
Total	\$ 118,949	\$ 8,536	\$ 127,485		
Fiber Optic					
Rate Stabilization	\$ 26,040	\$ 579	\$ 26,619		
CIP Reappro/Commit.	1,776	66	1,842		
GASB 68 Pension Rsrv	(1,855)	-	(1,855)		
All Others	1,123	(8)	1,115		
Net Capital Investment	8,750	165	8,915		
Total	\$ 35,834	\$ 802	\$ 36,636		
WasteWater Collection					
Operations Reserve	\$ 7,415	\$ (1,359)	\$ 6,056		
CIP Reserve	978	-	978		
Rate Stabilization	342	-	342		
CIP Reappro/Commit.	1,206	4,223	5,429		
GASB 68 Pension Rsrv	(7,449)	-	(7,449)		
GASB 75 OPEB Rsrv	(2,384)	-	(2,384)		
All Others	62	331	393		
Net Capital Investment	87,133	(1,049)	86,084		
Total	\$ 87,303	\$ 2,146	\$ 89,449		