UTILITIES ADVISORY COMMISSION
Regular Meeting
Wednesday, November 01, 2023
Council Chambers & Hybrid
6:00 PM

Pursuant to AB 361 Palo Alto City Council meetings will be held as "hybrid" meetings with the option to attend by teleconference/video conference or in person. To maximize public safety while still maintaining transparency and public access, members of the public can choose to participate from home or attend in person. Information on how the public may observe and participate in the meeting is located at the end of the agenda. Masks are strongly encouraged if attending in person. The meeting will be broadcast on Cable TV Channel 26, live on YouTube https://www.youtube.com/c/cityofpaloalto, and streamed to Midpen Media Center https://midpenmedia.org.

VIRTUAL PARTICIPATION CLICK HERE TO JOIN (https://cityofpaloalto.zoom.us/j/96691297246)
Meeting ID: 966 9129 7246 Phone: 1(669)900-6833

PUBLIC COMMENTS
Public comments will be accepted both in person and via Zoom for up to three minutes or an amount of time determined by the Chair. All requests to speak will be taken until 5 minutes after the staff's presentation. Written public comments can be submitted in advance to UACPublicMeetings@CityofPaloAlto.org and will be provided to the Council and available for inspection on the City's website. Please clearly indicate which agenda item you are referencing in your subject line.

PowerPoints, videos, or other media to be presented during public comment are accepted only by email to UACPublicMeetings@CityofPaloAlto.org at least 24 hours prior to the meeting. Once received, the Clerk will have them shared at public comment for the specified item. To uphold strong cybersecurity management practices, USB's or other physical electronic storage devices are not accepted.

TIME ESTIMATES
Listed times are estimates only and are subject to change at any time, including while the meeting is in progress. The Commission reserves the right to use more or less time on any item, to change the order of items and/or to continue items to another meeting. Particular items may be heard before or after the time estimated on the agenda. This may occur in order to best manage the time at a meeting or to adapt to the participation of the public.

CALL TO ORDER 6:00 pm to 6:05 pm

AGENDA CHANGES, ADDITIONS AND DELETIONS 6:05 pm to 6:10 pm
The Chair or Board majority may modify the agenda order to improve meeting management.

PUBLIC COMMENT 6:10 pm to 6:25 pm
Members of the public may speak to any item NOT on the agenda.

APPROVAL OF MINUTES - (Draft Minutes of October 11, 2023 will be Heard on December 6, 2023)

UTILITIES DIRECTOR REPORT 6:25 pm to 6:40 pm

NEW BUSINESS (there will be a 10 minute break during this section)

1. Discussion of Utilities Annual Report for FY23 *(**DISCUSSION** 6:40 pm – 7:10 pm)* Staff: Eric Wong

2. Winter 2023-24 Natural Gas Price Uncertainty Management Council Decision Implementation *(**DISCUSSION** 7:10 pm – 8:10 pm)* Staff: Karla Dailey

COMMISSIONER COMMENTS AND REPORTS FROM MEETINGS/EVENTS

FUTURE TOPICS FOR UPCOMMING MEETING - December 6, 2023

ADJOURNMENT

SUPPLEMENTAL INFORMATION
The materials below are provided for informational purposes, not for action or discussion during UAC Meetings (Govt. Code Section 54954.2(a)(3)).

INFORMATIONAL REPORTS

12-Month Rolling Calendar

Public Letter(s) to the UAC

PUBLIC COMMENT INSTRUCTIONS

Members of the Public may provide public comments to teleconference meetings via email, teleconference, or by phone.

1. **Written public comments** may be submitted by email to UACPublicMeetings@cityofpaloalto.org.
2. **Spoken public comments using a computer** will be accepted through the teleconference meeting. To address the Council, click on the link below to access a Zoom-based meeting. Please read the following instructions carefully.
    - You may download the Zoom client or connect to the meeting in- browser. If using your browser, make sure you are using a current, up-to-date browser: Chrome 30 , Firefox 27 , Microsoft Edge 12 , Safari 7 . Certain functionality may be disabled in older browsers including Internet Explorer.
    - You may be asked to enter an email address and name. We request that you identify yourself by name as this will be visible online and will be used to notify you that it is your turn to speak.
    - When you wish to speak on an Agenda Item, click on "raise hand." The Clerk will activate and unmute speakers in turn. Speakers will be notified shortly before they are called to speak.
    - When called, please limit your remarks to the time limit allotted. A timer will be shown on the computer to help keep track of your comments.
3. **Spoken public comments using a smart phone** will be accepted through the teleconference meeting. To address the Council, download the Zoom application onto your phone from the Apple App Store or Google Play Store and enter the Meeting ID below. Please follow the instructions B-E above.
4. **Spoken public comments using a phone** use the telephone number listed below. When you wish to speak on an agenda item hit *9 on your phone so we know that you wish to speak. You will be asked to provide your first and last name before addressing the Council. You will be advised how long you have to speak. When called please limit your remarks to the agenda item and time limit allotted.

CLICK HERE TO JOIN **Meeting ID: 966 9129 7246 Phone:1-669-900-6833**

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CITY OF PALO ALTO

Utilities Advisory Commission
Staff Report

From: Dean Batchelor, Director Utilities
Lead Department: Utilities

Meeting Date: November 1, 2023
Staff Report: 2307-1738

TITLE
Discussion of Utilities Annual Report for FY23

RECOMMENDATION
Staff recommends that the Utilities Advisory Commission review and comment as appropriate.

EXECUTIVE SUMMARY

This report for the Utilities Advisory Commission is an informational 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. This updated report has been prepared to keep the Utilities Advisory Commission apprised of the major issues that are facing the water, gas, electric, wastewater collection and fiber utilities. A separate quarterly report on the financial position is prepared consistent with when the City closes its books.

Items of special interest in this report are summarized below:

Vacancies and Staffing – Appendix B

- The Utilities Department has 49 vacant positions out of 253 authorized positions or a 19% vacancy rate at the end of June 2023 compared to 58 vacancies in March 2023.
- The highest number of vacancies are in Electric Operations (21 FTEs compared to 24 FTEs in March) and Electric Engineering (6 FTEs compared to 8 FTEs in March).
- Due to HR staffing constraints, Utilities has designated three HR liaisons from Utilities Administration to assist HR with some of the recruitments. Since then, the number of vacancies has decreased, and the recruitment timeline has shortened.

Electric Utility:

- Hydroelectric generation conditions have improved significantly. Total hydropower generation for FY 2022 was 230 GWh, which was 250 GWh (52%) below the long-term average. FY 2023 is projected to provide 95% of generation compared to the long-term average. (Section 1.1.2)
- Sales of renewable energy credits (RECs) for CY 2023 have resulted in $2.8M in net revenue. (Section 1.1.3)
- A number of construction projects are in progress or have been recently completed. (Section 1.2)
- A summary chart of quarterly electric outages is included in the report. (Section 1.4)

- FY 2023 actual electric sales were about 1% higher than forecasted, while actual sales revenues were about 16% higher than budgeted. The higher sales revenues were due to revenue from the Electric Hydro Rate Adjuster. (Section 1.5.1)

Gas Utility:

- High gas prices in December and January impacted customer bills. Prices decreased significantly starting in February and are expected to remain low through summer and fall. The City is offering resources to help customers with high utility bill costs, including free energy assessments through the Home Efficiency Genie, bill payment arrangements, and efficiency tips. City Council also voted in February 2023 to offer rebates to residential customers for high bills. Customers are asked to contact Utilities Customer Service Call Center for high bill assistance. (Section 2.1 and 7)
- Two gas main replacement projects are in progress (GS-14003 and GS-14003). (Section 2.2)
- Gas utility demand in FY 2023 was 7.9% higher than forecasted, while actual sales revenues were about 71.6% higher than budgeted. The higher revenue was due to increases in the market prices of gas commodity which were mostly passed through to customers and offset with higher supply costs. (Section 2.5.1)

Water Utility:

- As a result of the above average precipitation in December 2022 and January 2023, storage in the San Francisco Regional Water System filled. (Section 3.1)
- Palo Alto's two-day per week watering restriction expired in June with the expiration of the State's Emergency Regulation. (Section 3.1)
- The UAC received an update on the One Water planning effort in February. Palo Alto launched the One Water Plan with the goal of Council adoption of a One Water supply plan that is a 20-year adaptable roadmap for implementation of water supply and conservation portfolio alternatives. More stakeholder engagement meetings will be scheduled as the work progresses and the community can still weigh in on the evaluation criteria. (Section 3.1)
- Staff's preliminary projection of expected revenues and expenses together with transfers from the CIP Reserve, estimates the Operations Reserve will reach approximately target levels by the end of FY 2023. (Section 3.6)
- Water demand in FY 2023 2023 was about 12.3% lower than forecasted and water sales revenues were about 11.3% lower than budgeted. Sales were lower due to the water conservation efforts made throughout the drought periods, coupled with rainy weather during the winter and spring seasons. (Section 3.6.1)
- Construction is underway on a water main replacement in the Crescent Park, Barron Park, and Charleston Meadows neighborhoods. (Section 3.2)

Wastewater Utility:

- An overview of the status of the Regional Water Quality Control Plant (RWQCP) rehabilitation projects is provided, including an overview of the financing plan for the projects. The first project to begin construction will be the primary sedimentation tank rehabilitation. (Section 4.1)
- A sewer system rehabilitation project (SSR 30) was completed and replaced pipes in the Ventura, Research Park, Fairmeadow, and Midtown West neighborhoods. (Section 4.2)
- Actual wastewater sales revenues in FY 2023 were the same as expected. (Section 4.4.1)

Fiber Utility:

- On May 1, 2023, City Council approved Amendment Number 4 with Magellan for Fiber program management, organizational change management, network operations and technical support, and utility pole electric make-ready engineering (Staff Report: 2303-1215)[1] to support phase one construction of fiber-to-the-premises (FTTP).
- Although the phased build approach to FTTP will decrease the City's financial risk and increase Council's control over the speed of the buildout, the City does not have the inhouse staffing to fully pursue the fiber backbone project and first phase of FTTP while coordinating with electrification grid modernization efforts. These projects require significant staffing and specialized skill sets over the next few years. The City will continue utilizing internal staffing resources when available, however the City must also strategically invest in external resources for a successful roll-out.

Customer Programs:

- The new Heat Pump Water Heater program aims to retrofit 1,000 gas water heaters in single family homes in a year; customers can choose to pay for the project upfront or select an on-bill financing option with 0% interest rate. Both programs, the rebate program and the full service program are running more smoothly and customers are being served more quickly.
- The City continues to promote its multi-family and workplace EV charger programs.
- 20 large customer projects are in process with 2,000,000 kWh savings. The Key Account Representatives have been actively reaching out to engage customers through direct email and setting up face to face meetings.
- The city was able to provide 26 site assessments for small and medium business customers through the Business Energy Advisor program.
- 15% of all water customers have utilized the City's new WaterSmart online water management tool.

Communications:

- A digest of major outreach efforts is provided in Section 7, including extreme energy prices and high utilities bills, new EV chargers at Stanford Health Care, and water supply and conservation updates.

Legislative, Regulatory and Industry Activity:

- Major legislative, regulatory and Industry Activity items are summarized in Section 8.

[1] Staff Report 2303-1215 https://www.cityofpaloalto.org/files/assets/public/v/1/agendas-minutes-reports/reports/city-manager-reports-cmrs/2023/05-01-2023-id-2303-1215.pdf

Utilities Annual Report
FY 2023

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Figures

1 Electric Utility

The City's electric utility serves all residential and non-residential electric demands in Palo Alto at a lower cost than PG&E in surrounding communities. Its electric supply portfolio is 100% carbon neutral. The City maintains and operates an electric distribution system and one small natural gas generator but does not operate any transmission lines or any significant generating capacity on its own. Instead, the City belongs to Northern California Power Agency (NCPA) which operates its Calaveras hydroelectric generating plant and provides power scheduling services for its other generating resources. This carbon free power is supplied through power purchase agreements with various generation operators.

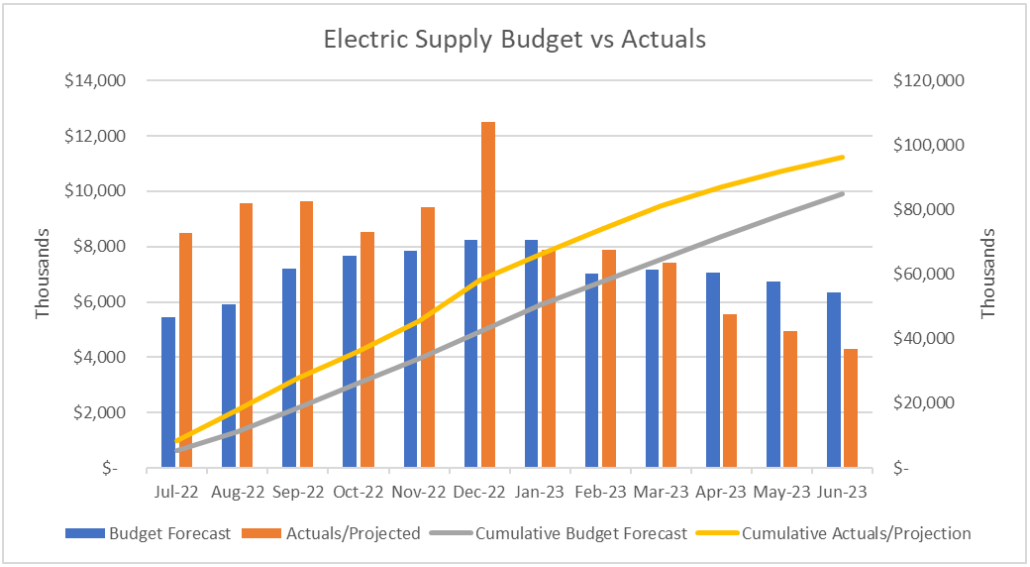
1.1 Electricity Supply and Transmission

Below is an update on electricity supply and transmission services.

1.1.1 Forecasted Supply Costs

The actual net supply cost through FY 2023 was $97.8 M. This represents a $2.5 M (2.7%) increase over FY 2022 actuals and $14.1 M (17%) over the FY 2023 Adopted Budget amount, with the increase primarily driven by higher than historical energy prices, higher transmission costs, and much lower than historical average hydro generation levels (particularly in the first half of the fiscal year). The cost increase relative to budget was partially offset by greater than projected revenue from resource adequacy (RA) capacity sales. With hydroelectric generation conditions improving significantly in recent months, the electric net supply cost for FY 2024 is projected to be $80.9 M.

Figure 1: FY 2023 Financial Plan Supply Cost Forecast vs. Actuals



1.1.2 Hydroelectric Conditions

The City receives power from two hydroelectric projects, the Calaveras project and the Western Base Resource contract for federal hydropower from the Central Valley Project.[2] The watershed for Western hydropower is primarily in the northern end of California, while the watershed for the Calaveras project is in the Central Sierras.

For water year 2021 to 2022 (October 2021 to September 2022), total precipitation was 63% of average for the Central Sierras watershed and 81% of average for the Northern Sierras watershed—the third straight year of well below average precipitation levels. Total hydropower generation for FY 2022 was 230 GWh, which is 250 GWh (52%) below the long-term average.[3]

However, water year 2022 to 2023 is on track to be one of the best precipitation years in memory, following the record storms across the state in December 2022 and early January 2023. As of August 15th, total precipitation was 159% of average for the Central Sierras and 122% of average for the Northern Sierras. Reservoir levels began the water year extremely low, but most reservoirs are now at or above average level for this time of year. As a result, hydro generation levels have improved dramatically, with total output recovering to 95% of the long-term average level for FY 2023 and projected to be 124% of the long-term average level for FY 2024.

Figure 2: Hydro Generation: FY 2022 and FY 2023 Actuals, FY 2024 Projected (GWh)

	FY 2022	FY 2023	FY 2024
Calaveras Generation (GWh)	61	202	144
Western Generation (GWh)	169	176	365
Total Hydro Generation (GWh)	230	378	509
% of Long-term Average Total	56%	92%	124%
Long-term Average Total Hydro (GWh)	410	410	410

1.1.3 REC Exchange Program

Under the REC Exchange Program, which was approved by Council in August 2020 (Staff Report #11556)[4], for CY 2023 staff has contracted to sell 160 GWh worth of in-state renewable energy (for $4.0M) and purchased 200 GWh worth of out-of-state renewable energy credits (RECs) costing $1.2M. The net revenue thus far in CY 2023 was $2.8M. The spread between in-state versus out-of-state REC prices have widened in CY 2023, due to the rise in value of in-state products. Additional REC Exchange transactions are planned for this fall.

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[2] The Calaveras project is a hydropower project located in Calaveras County that is maintained and operated by the Northern California Power Agency on behalf of the City and other project participants. The City is also one of several public entities with contracts with the Western Area Power Administration for "Base Resource" electricity, which is the hydroelectric power available from the federal government's Central Valley Project (operated by the Bureau of Reclamation) after accounting for power used for Central Valley Project operations and power delivered to certain "preference" customers.

[3] The long-term average forecast levels for both Western and Calaveras have been revised downward (about 10% each) in recent years to reflect the impact of climate change. These values may need to be revisited again in the coming years.

[4] Staff Report 11556 https://www.cityofpaloalto.org/files/assets/public/v/1/agendas-minutes-reports/reports/city-manager-reports-cmrs/year-archive/2020-2/id-11566.pdf

1.1.4 Renewable Energy Procurement

Utilities staff has been working with staff from the Public Works Department, the City of Santa Clara, and NCPA to negotiate a new power purchase agreement (PPA) to buy a small amount of electrical output (about 3 GWh/year in total) from an anaerobic digester facility, in order to satisfy the requirements of Senate Bill (SB) 1383. Similar to the recently approved Calpine Geothermal PPA, NCPA would be the counterparty to the PPA with the anaerobic digester facility, and the Cities of Palo Alto and Santa Clara would each receive a share of the output via Third Phase Agreements with NCPA. Contract negotiations between the parties are now at a fairly advanced stage, and staff plans to take these agreements to the City Council for consideration in the coming months.

Utilities staff also continue to regularly review new renewable energy generation proposals that NCPA receives through its ongoing Request for Proposals (RFP) process. Staff will present any contracts that it recommends for approval to the UAC at the appropriate time.

1.2 Capital Improvement Plan Status

The following capital projects are currently in progress or have been recently completed:

EL-17001 (East Meadow Circles 4/12kV Conversion)

- This project is scheduled to be completed in several phases. Phase 1 design is complete. Phase 2 & 3 (of 6) engineering design is currently in progress but is delayed due to staffing shortages.

EL-11003 (Rebuild Underground 15)

- This project is in the preliminary stages of engineering design. Project is delayed due to staffing shortage. This project has been put on hold due to other priorities.

EL-10006 (Rebuild Underground 24)

- This project is in design phase and scheduled to be completed in Dec 2024.

EL-16000 (Rebuild Underground 26)

- This engineering design for this project is currently in progress.

EL-19004 (Wood Pole Replacement)

- 50 poles have been replaced since July 2022. CPAU staff and contract consultants are continuously working on pole replacement designs for construction although the output is delayed this year because of staffing shortages.

EL-16003 (Substation Physical Security)

- This project is scheduled to be completed in several phases. Substation Security lighting contract was awarded in June 2022. The installation will be completed over a 2-year period. Construction is currently in progress. Substructure for 7 of the 9 substations will be completed by September 2023.

EL-17002 (Substation 60kV Breaker Replacement)

- This project is in the preliminary stages of engineering design. Project is delayed due to staffing shortage.

EL-21001 (Foothills Rebuild)

- This project will rebuild the approximately 11 miles of overhead line in Foothills Park, as necessary to mitigate the possibility of wildfire due to overhead electric lines. Staff has completed 7,000 feet of substructure work and design which will eliminate the corresponding 26 poles. Substructure for Phase 1 was completed in Spring 2022 and the substructure for Phase 2 was completed in June 2023. Phase 3 substructure installation is currently in progress and Phase 4 design is in progress.

EL-14005 (Reconfigure Quarry Feeders)

- Staff completed the design phase this year. Construction has been Completed.

EL-02011 (Electric Utility Geographic Information System (GIS))

- The project scope includes on-going maintenance/technical support of the existing GIS system and implementation of the new GIS platform, ESRI. Staff has completed the ESRI ArcGIS Portal, which is a web service for staff to view data. Electric data migration from AME to UNM is completed.

EL-16002 (Capacitor Bank Installation)

- This project is completed.

1.3 Rate and Bill Comparisons

For the median consumption level, the annual residential electric bill based on current rates is $1,000, about 37% lower than the annual bill for a PG&E customer with the same consumption and approximately 42% higher than the annual bill for a City of Santa Clara customer. The bill calculations for PG&E customers are based on PG&E Climate Zone X, which includes most surrounding comparison communities.

The figure below presents sample median residential bills for Palo Alto, PG&E, and the City of Santa Clara (Silicon Valley Power) for several usage levels. Rates used to calculate the monthly bills shown below were in effect as of January 1, 2023. The rates for Palo Alto include the current Electric Hydro Rate Adjuster (E-HRA) of $0.048/kWh to mitigate the high power costs cited above.

In an application submitted December 2022, PG&E has requested that the California Public Utilities Commission (CPUC) approve rate increases that would increase the PG&E residential bill by 19% in 2023. A CPUC decision is anticipated by June 2023. Also, over the next several years low-usage customers in PG&E territory are expected to continue to see higher percentage rate increases than high-usage customers, as PG&E compresses its tiers from the highly exaggerated levels that have been in place since the energy crisis. This is likely to make the bill for the median Palo Alto consumer look even more favorable compared to most PG&E customers. Even with the compressed tiers, bills for high usage Palo Alto consumers are projected to remain substantially lower than the bills for high usage PG&E customers.

Figure 3: Residential Monthly Electric Bill Comparison (Effective 1/1/2023, $/mo.)

Season	Usage (kwh)	Palo Alto	PG&E	Santa Clara
Winter	300	57.74	94.11	42.45
	(Median) 453	94.42	143.32	64.89
	650	143.94	221.07	93.78
	1200	282.18	438.13	174.44
Summer	300	57.74	94.11	42.45
	(Median) 365	72.31	123.41	51.98
	650	121.19	233.16	86.65
	1200	282.18	438.13	174.44

1.4 Reliability

CPAU tracks electric outages. A summary chart of these outages can be found below.

Figure 4: Electric Outage Reliability, FY 2022 to FY 2023

Outage Reliability	FY 2022				
	Q1	Q2	Q3	Q4	Total
System Average Interruption Duration Index (SAIDI)[5]	1.71	7.32	6.72	1.35	18.93
System Average Interruption Frequency Index (SAIFI)[6]	.01	.02	.16	.02	0.23
Customer Average Interruption Duration Index (CAIDI)[7]	180.18	323.65	41.48	88.70	81.91
Outage Reliability	FY 2023				
	Q1	Q2	Q3	Q4	Total
System Average Interruption Duration Index (SAIDI)[3]	81.69	7.38	111.90	1.09	198.60
System Average Interruption Frequency Index (SAIFI)[4]	0.61	.04	1.00	0.01	1.64
Customer Average Interruption Duration Index (CAIDI)[5]	134.77	190.12	110.80	121.48	121.15

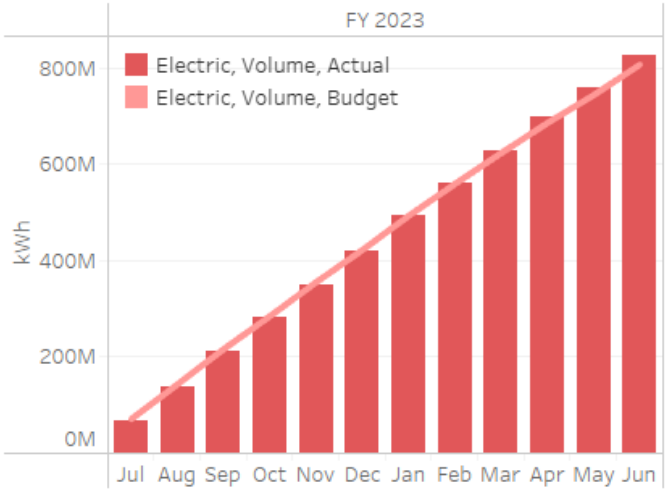
1.5 Financial Health

Below is a summary of the financial position for the electric utility.

1.5.1 Sales Forecasts vs. Actuals

Actual electric sales volumes in FY 2023 were about 2.2% higher than forecasted, while actual sales revenues were about 16% higher than budgeted in the FY 2023 Financial Plan. The higher sales revenues were due to additional revenue from the Electric Hydro Rate Adjuster (E-HRA) rate of $0.013/kwh, which was implemented effective on April 1, 2022, then increased to $0.048/kwh, effective January 1, 2023.

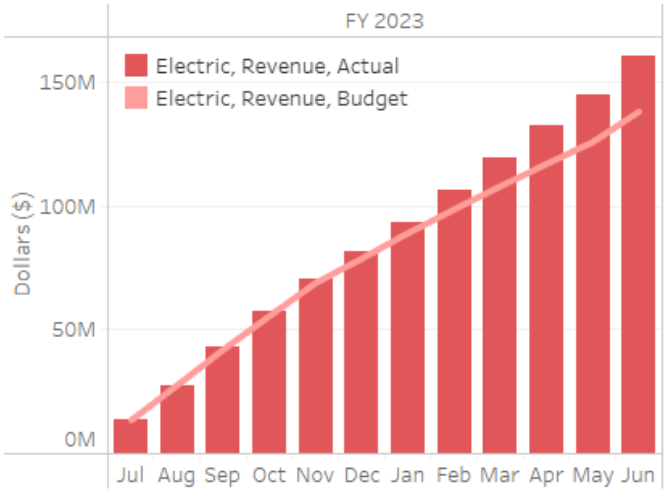
Figure 5: Electric Sales Volume (kWh), FY 2023



	Budget	Actual	Variance	Variance %
Jul	70,843,075	68,714,107	-2,128,968	-3.0%
Aug	143,490,414	137,955,513	-5,534,901	-3.9%
Sep	216,530,488	212,523,118	-4,007,370	-1.9%
Oct	285,000,379	283,731,353	-1,269,026	-0.4%
Nov	355,512,388	349,777,588	-5,734,800	-1.6%
Dec	422,521,674	420,246,488	-2,275,186	-0.5%
Jan	493,457,044	492,348,715	-1,108,329	-0.2%
Feb	559,600,816	559,508,387	-92,429	0.0%
Mar	623,774,102	627,770,580	3,996,478	0.6%
Apr	686,298,521	698,528,585	12,230,064	1.8%
May	744,244,852	760,568,622	16,323,770	2.2%
Jun	807,645,815	825,305,865	17,660,050	2.2%

[5] System Average Interruption Duration Index (SAIDI) - Measure of the total duration of an interruption for the average customer during a given time frame. SAIDI = (Sum of Customer Minutes Interrupted) / (Total Customers Served)
[6] System Average Interruption Frequency Index (SAIFI) - the average number of times a customer will experience an interruption during a given time frame. SAIFI = (Total Customers Interrupted) / (Total Customers Served)
[7] Customer Average Interruption Duration Index (CAIDI) - the average time to restore service. CAIDI = (Sum of Customer Minutes Interrupted) / (Total Customers Interrupted)

Figure 6: Electric Sales Revenue ($), FY 2023



	Budget	Actual	Variance	Variance %
Jul	13,513,230	13,628,650	115,420	0.9%
Aug	27,671,424	27,704,598	33,174	0.1%
Sep	42,113,367	42,832,607	719,240	1.7%
Oct	55,738,934	57,685,364	1,946,430	3.5%
Nov	69,091,600	70,784,072	1,692,472	2.4%
Dec	78,945,129	81,837,209	2,892,080	3.7%
Jan	89,256,511	93,474,507	4,217,996	4.7%
Feb	98,790,884	106,333,044	7,542,160	7.6%
Mar	108,176,360	119,440,373	11,264,013	10.4%
Apr	117,208,325	132,727,027	15,518,702	13.2%
May	126,064,507	145,030,175	18,965,668	15.0%
Jun	138,373,728	160,549,575	22,175,847	16.0%

1.5.2 Financial Position

The Electric Operations Reserves were at the minimum guideline level at the end of FY 2022 and were expected to drop below minimum in FY 2023, given higher than budgeted purchase costs resulting from low hydro conditions (necessitating more expensive market purchases) as well as increasing transmission costs. During Q4 FY23, the electric utility won litigation along with NCPA against the Bureau of Reclamation and was paid $23.9 million for overcharges related to the Central Valley Project Improvement Act (CVPIA). In addition to the litigation payment, the utility generated higher net income in June 2023 due to lower supply costs driven by strong hydro generation. Combined, these two changes have increased the operations reserve above minimum level. At the time of this report writing, the Operations Reserves are expected to end FY 2023 at approximately $55 million. The target reserve level (90 days of non-capital expenses) is $45 million, while the minimum is $31 million, and the maximum is set at $59 million. While the operations reserve is expected to finish the fiscal year in a strong position, $15 million was taken from the hydro stabilization reserve and $10 million was borrowed from the electric special projects reserves to stabilize the operations reserves over the past 2 years. Transfers back to these reserves are planned for FY 2024 and will bring the operations reserve back to the minimum level.

Supply purchase costs for FY 2023 were roughly 17% over budget, $97.7 million vs. $83.6 million budgeted. As a result of the multi-year drought, the City's hydro generation resources produced below average energy over the 9-month period, however, significant precipitation through the winter led to substantially more hydro generation during Q4 FY 2023, bringing the annual generation amount in line with historical average. Market prices have remained about 25% above the budget, averaging around $100/MWh, vs. $75/MWh in the budget.

FY 2023 sales volumes and revenues have exceeded the budget, largely driven by increased sales volumes and an increase to the hydroelectric rate adjuster.

2 Gas Utility

The City's gas utility serves all residential and non-residential gas demand in Palo Alto. The City maintains and operates a system of low-pressure gas lines for delivering gas but does not operate any transmission lines. Costs for the gas utility are split approximately two thirds for the operation, maintenance and capital improvement and one third for the cost of the gas commodity, PG&E gas transmission, compliance with the State's Cap and Trade Program and the City's Carbon Neutral Gas Program.

2.1 Gas Supply and Transmission

The gas market experienced huge volatility during FY 2023, especially in January 2023 when the gas commodity bidweek monthly price at the PG&E Citygate hub peaked of $49.5/mmbtu, due to a confluence of factors, including: (a) the historically cold weather in this region in December, (b) unusually low gas storage levels across the region, (c) constraints on the availability of natural gas supplies flowing into California, and (d) an increased reliance on natural gas in the electric power sector as a result of the ongoing drought's impact on hydroelectric supplies. The extreme market conditions this winter impacted most utilities throughout the Pacific and Rocky Mountain regions of the United States and were not unique to Palo Alto. Palo Alto's Mayor Lydia Kou sent a letter[8] to Governor Newsom in support of the request for a federal investigation of high natural gas prices. From December 2022 to February 2023, our communications team utilized various channels to inform our customers about high gas prices and resources to help customers with higher than anticipated bills, and to promote gas conservation and home electrification. These channels included publishing articles[9] on our city website, sending email newsletters/bill inserts, featuring an opinion column[10] in Palo Alto Online, and utilizing social media channels. The City instituted a "Winter Rebate"[11] on customers' utility bills to offset the extraordinarily high gas and electric utility costs that the region experienced this winter. This rebate was approved by

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[8] Letter from Mayor Kou https://www.cityofpaloalto.org/files/assets/public/v/1/city-manager/legislation/letter-to-ggn-on-natural-gas-prices.pdf

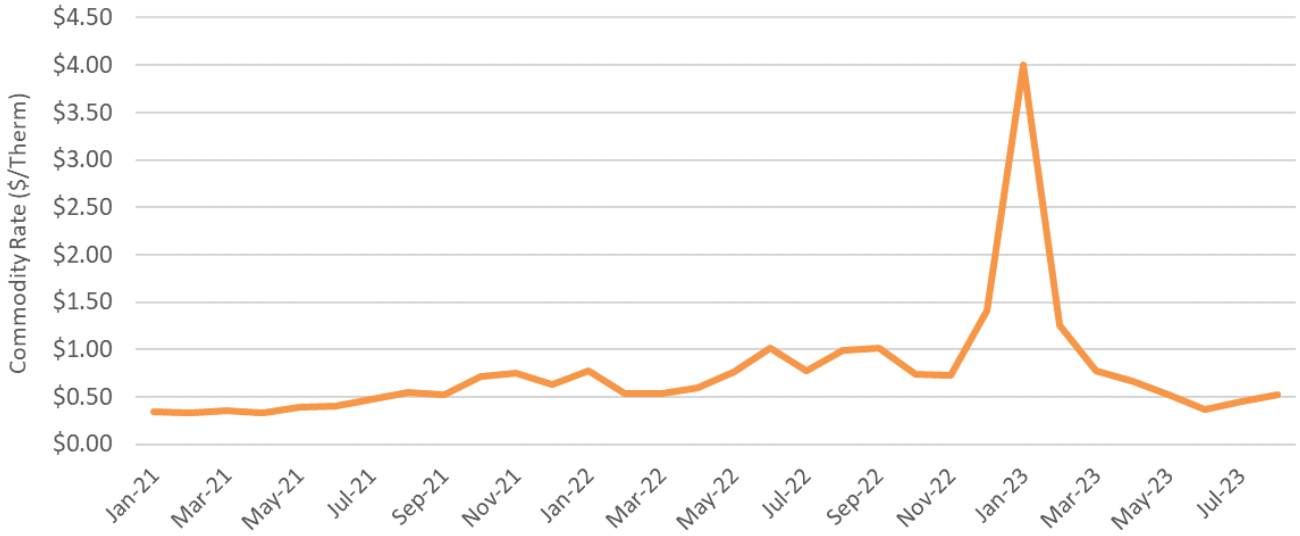
[9] Gas Articles https://www.cityofpaloalto.org/News-Articles/Utilities/Changes-to-the-City%E2%80%99s-Natural-Gas-Purchasing-Strategy

[10] Palo Alto Online February 8, 2023 https://www.paloaltoonline.com/news/2023/02/08/opinion-why-energy-prices-are-so-high-this-winter--and-how-to-get-help

[11] Winter Rebate https://www.cityofpaloalto.org/News-Articles/Utilities/Rebates-for-High-Winter-Energy-Costs

City Council in early April 2023 to provide needed financial relief to residents. The rebate was calculated based on a customer's January electric and/or gas utility bill costs. Prices fell dramatically heading into the summer to as low as $3.8/mmbtu in June 2023. The chart below shows Palo Alto's gas commodity rates from 2021 to present.

Figure 7: Palo Alto Gas Commodity Rates



Gas Commodity Cap Increase

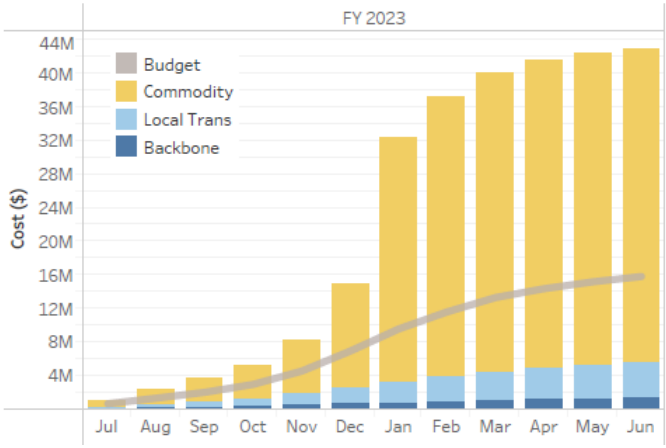
In early December, staff noticed the trend of rapidly increasing gas prices and suspected that the monthly market index price might surpass the gas commodity price cap of $2/therm. Staff recommended and the Council passed Resolution #10090[12], which doubled the gas commodity price cap to $4/therm, effective January 1, 2023. However, the actual January 2023 gas market commodity monthly price was $4.95/therm or approximately $0.95/therm higher than the updated price cap. Therefore, the gas utility was not able to fully recover the pass-through rates from customers, which led to $1.8 million negative impact on gas reserves.

2.1.1 Actual and Forecasted Supply Costs

Actual gas demand in FY 2023 was the same forecasted, while actual supply and transportation costs were about 171% higher than budgeted in the FY 2023 Financial Plan. Gas commodity prices were substantially higher than predicted in the FY 2023 financial plan due the unprecedented spike in gas commodity prices during the winter of 2022/23.

[12] Resolution 10090 https://portal.laserfiche.com/Portal/DocView.aspx?id=54921&repo=r-704298fc

Figure 8: Gas Supply Costs ($), Actual vs Budget, FY 2023



	Budget	Actual	Variance	Variance %
Jul	667,541	1,039,946	372,404	56%
Aug	1,326,950	2,372,146	1,045,196	79%
Sep	2,023,922	3,720,928	1,697,006	84%
Oct	2,973,482	5,128,714	2,155,232	72%
Nov	4,554,516	8,121,305	3,566,789	78%
Dec	6,941,541	14,871,738	7,930,197	114%
Jan	9,580,169	32,370,450	22,790,282	238%
Feb	11,616,917	37,188,600	25,571,682	220%
Mar	13,329,488	40,061,628	26,732,140	201%
Apr	14,381,131	41,501,522	27,120,391	189%
May	15,194,051	42,330,221	27,136,169	179%
Jun	15,832,287	42,854,864	27,022,577	171%

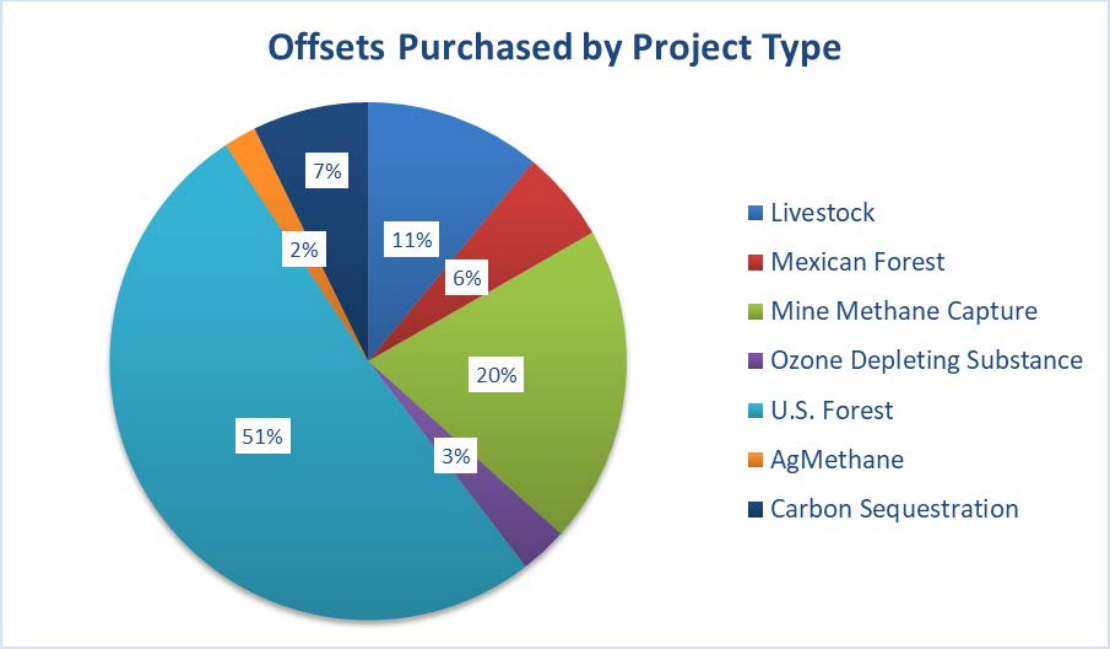
2.1.2 Carbon Neutral Gas Program

In December 2020, Council adopted Resolution #9930[13] maintaining the Carbon Neutral Natural Gas Plan to achieve carbon neutrality for the gas supply portfolio using high-quality carbon offsets with a cost cap of $19 per ton CO_2e.

Offsets are purchased to neutralize emissions equal to those caused by natural gas usage in Palo Alto. Staff purchased 60,000 carbon offsets for FY 2022 in January 2022 from a mixture of forestry and livestock projects at an average purchase price of $12.26 per metric ton, nearly double the price of historical average transaction prices. Staff purchased an additional 60,000 carbon offsets in June 2022 at an average price of $14.51 per ton CO_2e. As a result of the higher offset purchase costs, staff has updated the billing charge for offsets from $0.04/therm to $0.07/therm. The average purchase price of offsets purchased for the program is $7.66 per ton CO_2e. The figure below shows the composition of offset purchases. Staff is evaluating a process change to expedite the approval of new Verified Emission Reduction (carbon offset) counterparties and has delayed its regular winter purchase while staff assesses the process change. Staff delayed offsets procurement in the first half of 2023 due to shifting staffing responsibilities but intends to procure 60,000 – 120,000 offsets in Fall 2023.

[13] Resolution 9930 https://www.cityofpaloalto.org/files/assets/public/v/1/city-clerk/resolutions/resolutions-1909-to-present/2020/reso-9930.pdf

Figure 9: Offset Portfolio Composition



The following table provides a description of the projects.

Figure 10: Offset Project Descriptions

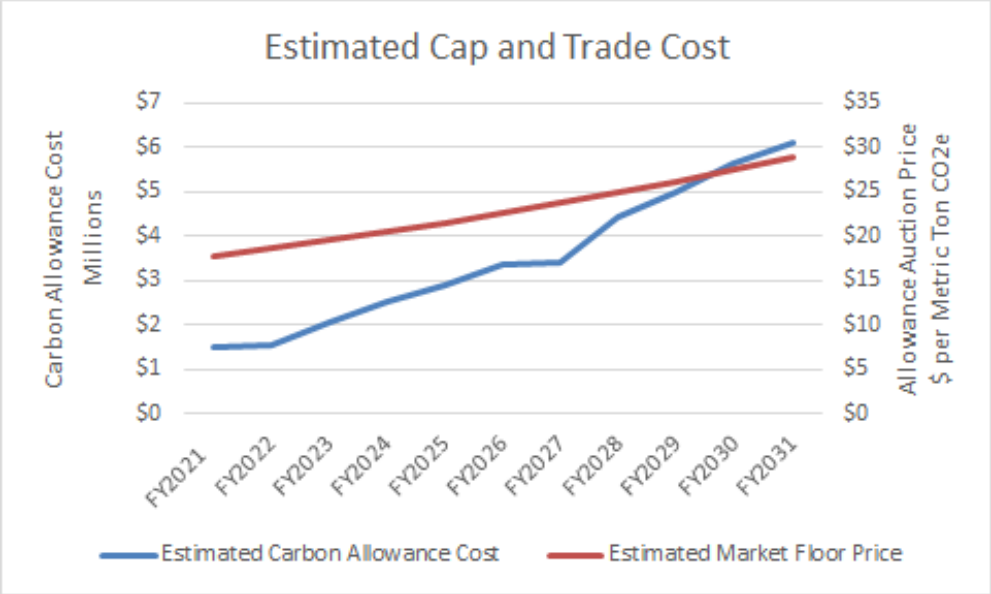
Project Name	Project Type	Description
Grotegut Dairy	Livestock	Grotegut Dairy is a 3,900 milk-cow operation in Newton, Wisconsin with a methane capture system.
Green Trees	U.S. Forest	GreenTrees Advanced Carbon Restored Ecosystem is reforestation of agricultural lands into native hardwood forest in Mississippi, Louisiana, Arkansas, and Illinois
San Juan Lachao	Mexican Forest	Protection of forests located in High Biological Value Zones which contain flora and fauna listed in the Mexican Endangered Species List and the International Union for Conservation of Nature's Red List of Threatened Species. Project in San juan Lachao near Palo Alto's Sister City of Oaxaca.
Blandin Forest	U.S. Forest	Blandin Native American Hardwoods Conservation and Carbon Sequestration project in Minnesota.
Pocosin+	U.S. Forest	These projects are all forested land that will not be disturbed by human development. Without this protection, the forests would be converted to grow wheat or corn. Forest conservation plays a vital role in protecting freshwater systems like lakes. The forests around the lakes act as natural water filters and purify the water for all who use it. The projects also support healthy populations of red wolf, bald eagle, black bear, and various bird species.
Refex ODS	Ozone Depleting Substance	The RemTec facility in Bowling Green, Ohio uses an argon arc plasma destruction device to achieve 99.99 percent removal. The majority of refrigerants originated in California, and all were sourced within the United States. The RemTec facility uses an argon arc plasma destruction device to achieve the required destruction and removal efficiency of 99.99 percent. The majority of ODS refrigerants originated in California, and all were sourced within the United States.
Methane Capture	Mine Methane Capture	This project is the first of its kind. Peabody Natural Gas, LLC removed methane from the North Antelope Rochelle Coal Mine before mining. The methane was compressed and transported to a natural gas pipeline and distributed to a national gas grid for use as fuel. Before implementation of the project, all the methane was vented to the atmosphere.
Virginia Conservation Forestry Program	U.S. Forest	The Virginia Conservation Forestry Program - Clifton Farm and Rich Mountain is a 9000+ acre improved forest management project in which the timber and carbon ownership and management rights have been transferred to The Nature Conservancy's Conservation Forestry Program. The program manages for multiple goals to include: Water quality protection, habitat diversity, high value forest products, and carbon sequestration. Co-benefits: Biodiversity, Watershed Protection, Climate Resilience, and Connectivity
Riverview Farm Anaerobic Digester	Livestock	Riverview is a carbon offset project generating emission reductions thought the capture and destruction of methane at a dairy farm in Minnesota. Under the baseline, manure managed in open lagoons led to the fugitive emission of methane to the atmosphere. In the project scenario, this methane is captured by an anaerobic digester and destroyed on site in the production of electricity. Co-benefits include job creation and the improvement of local air and water quality.
Big River / Salmon Creek Forests IFM	U.S. Forest	The Big River and Salmon Creek Forests are located in Mendocino County, CA and cover 16,000 acres of redwood and Douglas-fir forest. This project is a conservation-based forest management project. Co-benefits include the creation of 140 jobs, protection of 37 miles of streams, and improved water quality for local fish and bird species.

2.1.3 Cap and Trade Program

The gas utility has been regulated under California's greenhouse house (GHG) regulations since January 2015 with a GHG emissions cap that declines over time. The gas utility receives carbon allowances equal to the emissions allowed under the cap and is required to auction off a portion of the allowances (55% in 2022, increasing by 5% annually) through the state Cap and Trade Program. To meet its annual GHG compliance obligation, the City must purchase allowances based on actual gas use.

The auction floor price to either purchase or sell allowances increases annually by 5% plus inflation. Historically, allowances have traded at or near the floor price, but the clearing prices for allowances in the auction have increased significantly. The cost of compliance is anticipated to increase from $2.3 million in FY 2023 to $5.6 million in FY 2030, about an 18% increase per year on average, as shown in the following table:

Figure 11: Estimated Cap and Trade Costs



Revenues from the auction sale of gas utility allowances (currently about $2.3 million per year) must be used exclusively for the benefit of the ratepayers in that utility in accordance with California Code of Regulations (CCR Title 17, section 95893). Approved uses are 1) the funding of certain energy efficiency rebates, retrofits, and demand reduction programs, 2) funding for programs with demonstrated GHG reductions, 3) non-volumetric return to ratepayers, either on or off bill, and 4) certain administrative, outreach and educational costs related to items 1-3 above. Council adopted a policy on the use of allowance proceeds (Resolution #9487)[14], generally mirroring the regulations and requiring additional Council approval for rebates. Per the current regulations, the utility must either spend or rebate the funds received in any given year within 10 years (for example, funds received in 2020 must be spent by 2030, etc.).

As of the end of FY 2021, unspent funds related to Cap and Trade revenues were placed in a Cap and Trade reserve, until such time as they can be utilized per the dictates of applicable regulations. There was $6.7 million in this reserve available for use at the end of FY 2023.

2.1.4 Gas Transmission Line Capacity Valuation

Palo Alto contracts for capacity on the Redwood pipeline, the path from the California-Oregon border to PG&E's mid-pressure transmission system, at a cost lower than the market value. During the summer months, Palo Alto does not need all of the capacity to serve demand. The excess capacity is monetized by purchasing gas at the California-Oregon border and selling an equal amount of gas at the terminus of the pipeline. The variable cost of transporting the gas is much less than the gas price difference between the two points. The net benefit to the Gas Utility in FY 2023 was $307K, or a reduction of about 0.8% of the total gas commodity costs in FY 2023.

[14] Resolution 9487 - https://www.cityofpaloalto.org/files/assets/public/v/1/city-clerk/resolutions/reso-9487.pdf

2.1.5 Gas Prepay Valuation

On September 15, 2014, Council adopted Resolution #9451,[15] 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. The program has reduced about $877K, or 2.4% of the total gas commodity costs in FY 2023.

2.2 Capital Improvement Plan Status

The following capital projects are currently in progress:

GS-14003 – GMR 24A (Gas Main Replacement 24A)

- The GMR 24A project is completed and 2,450 linear feet of gas main was replaced along Shopping Center Way and Orchard Lane in Stanford Shopping Center. Easement documents are being finalized and submitted to the County for recording.

GS-14003 – GMR 24B (Gas Main Replacement 24B)

- The GMR 24B project will include gas pipes on University from Webster to Hwy 101 and surrounding streets, as well as Geng Rd and Town & Country Village. Staff received a notification from PHMSA on 3/31/23 that the City was not selected to receive a federal grant award, although the project was "Highly Recommended" and funding was provided to other "Highly Recommended" projects. The funding source for this project will be the remaining available budget under GS-14003. However, the City intends to submit another grant application as part of the next round of federal grants issued by PHMSA. The project was competitively solicitated and construction is expected to begin in February 2024.

2.3 Rate and Bill Comparisons

The figure below shows the bills for residential customers in Palo Alto and PG&E, at different levels of usage and rates, both on an annual basis. The PG&E bills are based on their Climate Zone X, which includes Menlo Park, Redwood City, Mountain View, Los Altos and Santa Clara. In FY23, the median residential customer in Palo Alto paid an annual gas bill of $1,064, which was 9% higher than what a PG&E customer with the same usage would pay, mainly due to unusually high gas commodity prices in January 2023 for Palo Alto.

Figure 12: Residential Natural Gas Bill Comparison ($/month)

Year/Month	Median Usage[16] (therms)	Palo Alto	PG&E Zone X	% Difference
FY 2022	402	$ 732	$ 807	(15%)
FY 2023	402	1,064	930	9%

[15] Resolution 9451 - https://www.cityofpaloalto.org/files/assets/public/v/1/city-clerk/resolutions/reso-9451.pdf

[16] Based on Palo Alto G-1 monthly median usage.

2.4 Reliability

The City of Palo Alto tracks all gas service interruptions. A summary chart of these interruptions can be found below. Gas service interruptions are usually due to repairs of broken or damaged gas services and mains. This kind of damage is often caused by excavation by outside parties digging in the City.

Figure 13: Gas Service Interruptions, FY 2023

Gas	Q1	Q2	Q3	Q4
Number of Breaks	9	4	3	7
Total Minutes	643	330	240	1560
Customers Affected	20	5	7	60

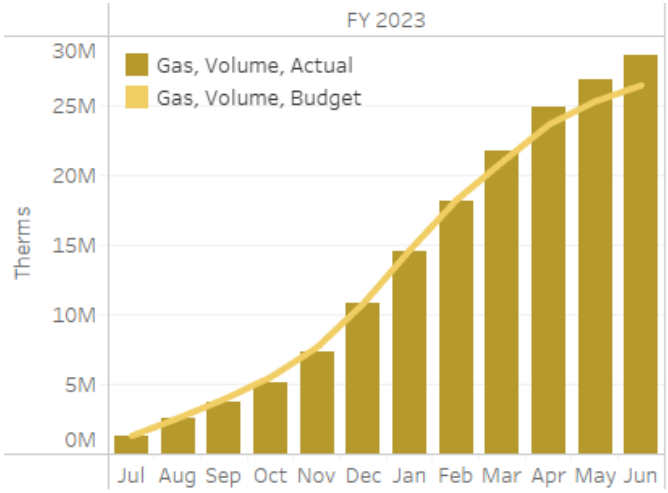
2.5 Financial Health

Below is a summary of the financial position for the gas utility.

2.5.1 Sales Forecasts vs. Actuals

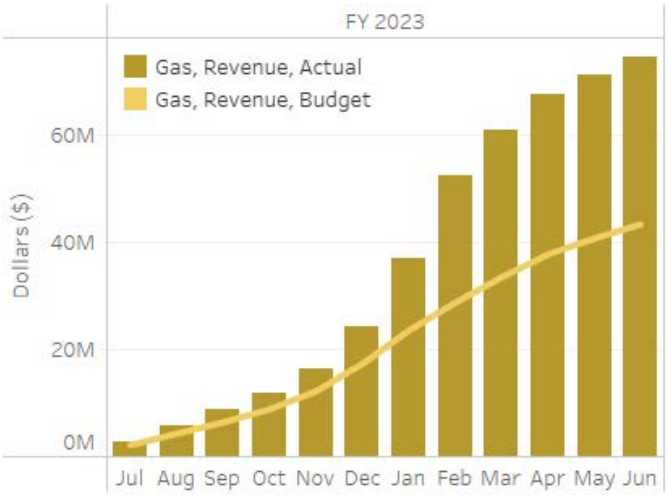
Actual gas sales volumes in FY 2023 were about 7.9% higher than forecasted, while actual sales revenues were about 71.6% higher than budgeted in the FY 2023 Financial Plan. The higher gas sales revenues were due to high gas market commodity prices, which are pass-through in nature and generally offset commensurately higher gas commodity purchase costs, although January 2023 gas prices were not fully passed through to customers.

Figure 14: Gas Sales Volume (Therms), FY 2023



	Budget	Actual	Variance	Variance %
Jul	1,312,955	1,262,859	-50,096	-3.8%
Aug	2,586,011	2,513,630	-72,381	-2.8%
Sep	3,959,010	3,752,636	-206,374	-5.2%
Oct	5,536,937	5,087,817	-449,120	-8.1%
Nov	7,677,156	7,345,028	-332,128	-4.3%
Dec	10,830,754	10,845,008	14,254	0.1%
Jan	14,661,699	14,593,581	-68,118	-0.5%
Feb	18,237,384	18,134,441	-102,943	-0.6%
Mar	21,007,402	21,721,970	714,568	3.4%
Apr	23,667,560	24,934,768	1,267,208	5.4%
May	25,338,314	26,913,439	1,575,125	6.2%
Jun	26,500,775	28,595,112	2,094,337	7.9%

Figure 15: Gas Sales Revenue ($), FY 2023



	Budget	Actual	Variance	Variance %
Jul	2,158,795	2,880,043	721,248	33.4%
Aug	4,300,965	5,667,235	1,366,270	31.8%
Sep	6,437,377	8,660,587	2,223,210	34.5%
Oct	8,858,281	11,790,572	2,932,291	33.1%
Nov	12,229,410	16,459,839	4,230,429	34.6%
Dec	17,353,217	24,182,976	6,829,759	39.4%
Jan	23,594,905	36,923,302	13,328,397	56.5%
Feb	28,790,851	52,679,517	23,888,666	83.0%
Mar	33,544,009	61,151,354	27,607,345	82.3%
Apr	37,840,973	67,578,393	29,737,420	78.6%
May	40,825,341	71,501,942	30,676,601	75.1%
Jun	43,469,893	74,612,483	31,142,590	71.6%

2.5.2 Financial Position

The FY 2023 ending Operations Reserve balance was $14.4 million. The gas commodity charge is a pass-through of market costs, typically, increased revenue offsets the increased cost; In January 2023, due to unprecedented and extreme gas prices, the revenue was not enough to offset the increased costs because the actual gas commodity price exceeded Palo Alto's price cap. This has put pressure on reserves in FY 2023. The Operations Reserve was expected to drop below the minimum guideline level in FY 2023, given higher than budgeted gas commodity prices that could not be passed through to customers, therefore $3.8 million were transferred from the CIP to the Operations Reserve to keep the reserve at a healthy level. Staff provided financial forecast projections, including reserve transfers, in April 2023 to Council (Staff Report 2303-1219)[17].

[17] Staff Report 2303-1219 https://www.cityofpaloalto.org/files/assets/public/v/1/agendas-minutes-reports/reports/city-manager-reports-cmrs/2023/04-17-2023-id-2303-1219.pdf

3 Water Utility

The Water Utility serves water to virtually all Palo Alto residential and non-residential customers. All potable water in the City is from the San Francisco Public Utilities Commission (SFPUC) Hetch Hetchy Water System. This system delivers high quality water from the Sierra Nevada and uses no pumping to deliver water to the City. Palo Alto uses a small amount of recycled water for irrigation of the Municipal Golf Course and a few other sites near the Regional Water Quality Control Plant. The City also maintains a system of reservoirs and wells that enable Palo Alto to serve water during an interruption of the Hetch Hetchy system. Costs for the Water Utility are split approximately half for the operation, maintenance and periodic replacement of Palo Alto's water system and half for the costs of the water purchased.

3.1 Water Supply and Transmission

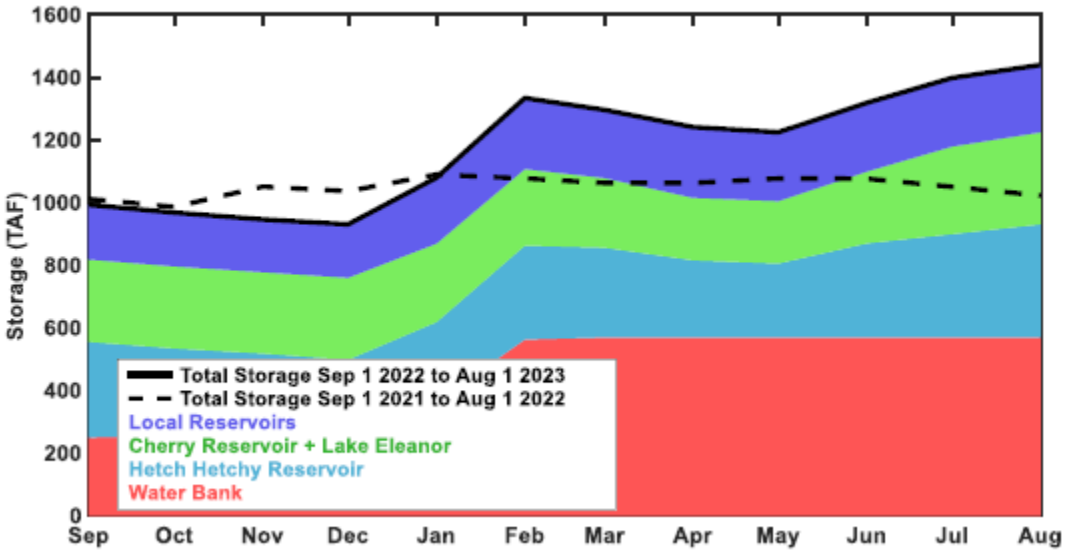
On November 10, 2022, Governor Newsom's senior Water-Policy Officials, the San Francisco Public Utilities Commission (SFPUC), and the Modesto and Turlock Irrigation Districts reached agreement on a Memorandum of Understanding to provide greater water flows and increased habitat for the Tuolumne River. The Bay Area Water Supply and Conservation Agency (BAWSCA) anticipates that this MOU will become a part of a larger voluntary agreement for the Sacramento-San Joaquin Delta. The agreement includes investments of $64M for habitat restoration. The next step is for the MOU signatories and others to work out the implementation details of a Bay-Delta-wide voluntary agreement for evaluation by the State Water Resources Control Board (SWRCB) as an alternative to the adopted Bay-Delta Plan. The SWRCB's schedule indicates development of the Tuolumne Specific Addendum Scientific Basis Report by fall 2023 and the Phase 1 Final Water Quality Control Plan by summer 2024. On May 18, 2023, the SWRCB held a scoping meeting for a Notice of Preparation for development of an environmental document related to the proposed Tuolumne River Voluntary Agreement. The scoping meeting initiates the SWRCB's evaluation of the proposed Tuolumne River Voluntary Agreement as an amendment to the adopted Bay Delta Plan.

In August 2018, Palo Alto's City Council voted to support the SWRCB's Bay-Delta Plan to have 40 percent of natural water in the Central Valley to enter the Delta from February to June and associated Southern Delta salinity objectives; and send a letter expressing this policy position to BAWSCA, California State Water Resources Control Board, SFPUC, and other stakeholders.

In order to plan for future reductions to existing water supply from climate change and regulatory uncertainties, the SFPUC is undertaking the Alternative Water Supply Plan. This plan will recommend projects to develop supplemental sources to improve long-term water supply reliability. The SFPUC is currently accepting comments on the draft plan.

Thirty-one atmospheric rivers from mid-December 2022 to the end of March 2023 meant higher than average precipitation and snow in the Sierras. As of July 1, 2023, the Regional Water System total storage operated by the San Francisco Public Utilities Commission (SFPUC) was at 98% of maximum storage and Water Bank was full. In the figure below, the solid black line shows storage in the Regional Water System for the past 12 months (color bands show contributions to total system storage) and the dashed black line shows total system storage for the previous 12 months. Regional Water System Storage is 1.44 Thousand Acre Feet (TAF) as of July 1, 2023.

Figure 16: Regional Water System Storage



On August 20, 2021, the SFPUC received curtailment orders for Tuolumne River diversions. The curtailments eliminate access to the Water Bank which, as shown in the figure above, provides much of the system storage. From October 2021 through May 2022, the State Board suspended the curtailments and reinstated them on June 8, 2022. On April 4, 2023, the SWRCB rescinded all orders imposing water right curtailment and reporting requirements, effective immediately.

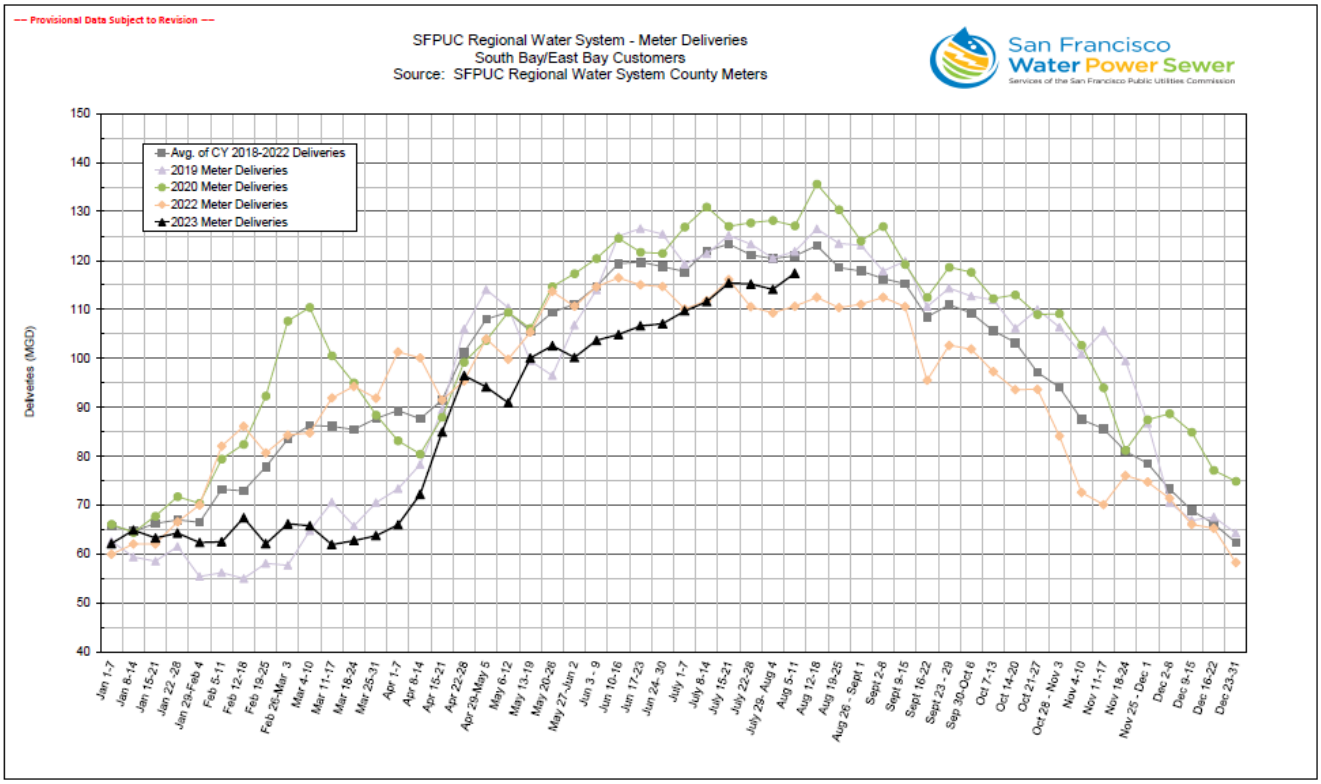
The SFPUC declared a local water shortage emergency by Resolution No. 21-0177 on November 23, 2021, calling for voluntary systemwide 10% water use reductions from FY 2019-2020 levels and increased the systemwide water use reduction to a voluntary systemwide 11% from FY 2019-2020 levels on May 24, 2022 via adoption of Resolution No. 22-0098. SFPUC increased the call for systemwide water use reduction in compliance with the SWRCB's May 24, 2022 emergency regulation requiring urban water suppliers to implement the demand reduction actions associated with water shortage level of 10% to 20% by June 10, 2022. On March 24th 2023, Governor Newsom issued Executive Order N-5-23 that eliminated the directive for Stage 2 of the Water Shortage Contingency Plans. The SWRCB's Emergency Regulation requiring Stage 2 Water Shortage Contingency Plan actions expired on June 10, 2023. On April 11, SFPUC rescinded the water shortage emergency declaration. The SFPUC's system-wide water use reduction of 11% expired along with the SWRCB's Emergency Regulation on June 10th. Palo Alto's water use restrictions track both the State's regulation and SFPUC's water use reduction request.

During droughts that require up to 20% cutbacks, water is allocated between San Francisco and the Wholesale Customers collectively based upon the Water Shortage Allocation Plan (or Tier One Plan) that is outlined in Palo Alto's water supply contract with San Francisco. The collective Wholesale Customer

share from the Tier One Plan is then allocated among Wholesale Customers based upon a formula in a negotiated and adopted "Tier Two Plan." Palo Alto's current water budget is based upon the results of the current Tier One and Tier Two Plans. Since January 2022, staff have been participating in a negotiation with the other Wholesale Customers to update the Tier Two Plan. Staff expects to finalize the updated Tier Two Plan in 2023.

The figure below shows water usage for the South Bay/East Bay (including Palo Alto) compared to several benchmarks including 2022. For the South Bay/East Bay region as well as systemwide, demand for the first seven months of 2023 has been below the average of the last five years.

Figure 17: SFPUC Water Deliveries



Valley Water, the groundwater manager in Santa Clara County, declared a water shortage emergency and adopted a 15% mandatory water use reduction for water retailers its agency serves. Valley Water called for the County, water retailers and cities to restrict ornamental landscape and lawn irrigation with potable water within their service or jurisdictional areas to no more than two days per week. Although Palo Alto purchases all of its potable water from SFPUC, and does not purchase any water from Valley Water, Palo Alto partners with Valley Water on a wide variety of water conservation programs. On June 20, 2022, the Palo Alto City Council restricted potable irrigation of ornamental landscapes and lawns to 2 days per week, except to ensure the health of trees and other perennial non-turf plantings. This restriction expired on June 10, 2023. The SWRCB also continues to prohibit the use of potable water for the irrigation of "non-functional turf" at commercial, industrial, and institutional sites other than to the extent necessary to ensure the health of trees and other perennial non-turf plantings.

On April 11, 2023, Valley Water rescinded the Water Shortage Emergency Condition and mandatory water use reduction of 15% compared to 2019 and replaced it with a call for voluntary water use reduction of 15% compared to 2019. Palo Alto is working with Valley Water on messaging to customers in the county to avoid confusion as much as possible. As such, the City's messaging will continue to emphasize the wise

use of water rather than specific water usage targets. Palo Alto staff is continuing to focus on education and outreach and providing resources to eliminate water waste and achieve efficient water use and completed the process of hiring a Water Waste Coordinator in October. The Water Waste Coordinator logged and followed-up on water waste reports. Palo Alto kicked off the WaterSmart Customer Portal and Residential Home Water Report Program and also re-engaged with Waterfluence software to target water efficiency for large landscape customers. Staff continues to promote water conservation rebate programs and resources through online outreach, bill inserts, and newsletters. After Palo Alto implemented water use restrictions in June 2022, for the billing months July 2022 through June 2023, compared with the same period from July 2019 to June 2020, the Palo Alto community reduced water usage by 13.7%.

Palo Alto launched the One Water Plan with the goal of Council adoption of a One Water supply plan that is a 20-year adaptable roadmap for implementation of water supply and conservation portfolio alternatives. In June 2022 the City Council approved a contract for this work with Carollo Engineers, Inc. In September and December 2022, staff conducted stakeholder engagement meetings with community members and City staff focusing on One Water community needs and priorities and water supply and conservation options and draft evaluation criteria. Additional stakeholder engagement meetings are planned with City staff, community members, and regional partners in fall 2023 to share initial results. The UAC received a status update in February 2023 (Staff Report #14974[18]) and staff plans to return to the UAC in the fall to provide an update and share initial results.

3.2 Capital Improvement Plan Status

The following capital projects are currently in progress:

WS-14001 - WMR 28 (Water Main Replacement 28)

- The WMR 28 project replaced 18,210 linear feet of water main, 230 water services, and 38 fire hydrants in the Crescent Park, Barron Park, and Charleston Meadows neighborhoods. Construction of this project was substantially completed in July 2023.

WS-07000 – California Avenue and Page Mill Road Turnouts

- The California Avenue and Page Mill Turnouts project upgrades the California Avenue Turnout and adds seismic restraints to the pressure reducing valve at Page Mill Road Turnout. The construction is delayed due to supply chain issues on the valves. Construction is anticipated to start in March 2024 after all material is delivered. The project duration is about 3 months.

3.3 Rate and Bill Comparisons

The figure below shows the water bills for single-family residential customers compared to what they would be under surrounding communities' rate schedules as of October 2022. CPAU is among the highest monthly bills of the group. Palo Alto's water bills at 9 CCF per month are 17% higher than the comparison group average.

[18] Staff Report #14974 – https:/www.cityofpaloalto.org/files/assets/public/v/1/agendas-minutes-reports/reports/uac-informational-reports/2023-informational-reports/02-01-2023-id-14974.pdf

Figure 18: Residential Water Bill Comparison ($/month)

As of August 2023						
Usage CCF/month	Palo Alto	Menlo Park	Redwood City	Mountain View	Santa Clara	Hayward
4	$53.20	64.31	$54.04	$46.95	$31.88	$41.03
(Winter median) 7	80.60	89.79	76.09	72.69	55.79	63.23
(Annual median) 9	103.68	106.78	90.79	89.85	71.73	78.03
(Summer median) 14	161.38	153.13	138.94	132.75	111.58	123.48
25	288.32	267.84	267.39	278.63	199.25	223.47

3.4 Reliability

The City of Palo Alto tracks all water service interruptions. A summary chart of these interruptions can be found below. Water service interruptions are usually due to repairs of broken or damaged water services and mains.

Figure 19: Water Service Interruptions, FY 2023

Water	Q1	Q2	Q3	Q4
Number of Breaks	10	12	6	2
Combined Minutes	1007	1050	690	100
Customers Affected	46	249	63	19

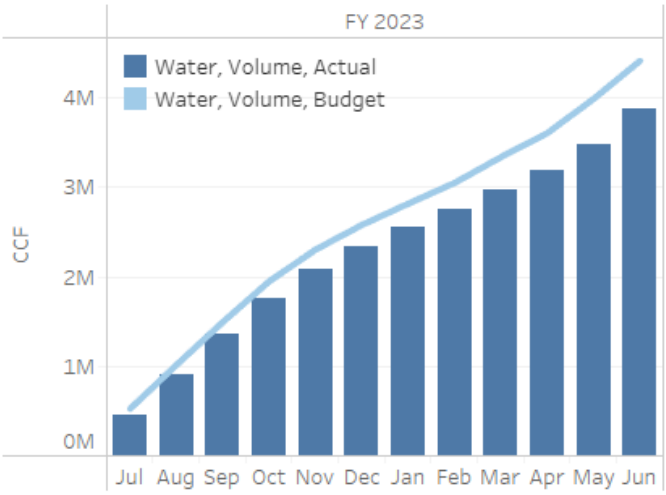
3.5 Financial Health

Below is a summary of the financial position for the water utility.

3.5.1 Sales Forecasts vs. Actuals

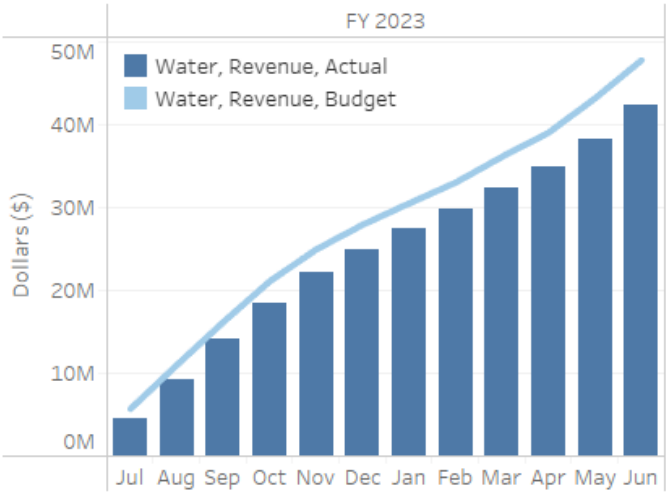
Actual water sales volumes in FY 2023 were about 12.3% lower than forecasted, and actual water sales revenues were about 11.3% lower than budgeted in the FY 2023 financial plan. Sales were lower due to the water conservation efforts made throughout the drought periods, coupled with rainy weather during the winter and spring seasons.

Figure 20: Water Sales Volume (CCF), FY 2023



	Budget	Actual	Variance	Variance %
Jul	525,621	449,495	-76,126	-14.5%
Aug	1,015,877	899,194	-116,683	-11.5%
Sep	1,495,168	1,353,746	-141,422	-9.5%
Oct	1,949,593	1,752,693	-196,900	-10.1%
Nov	2,304,080	2,088,591	-215,489	-9.4%
Dec	2,579,786	2,342,889	-236,897	-9.2%
Jan	2,817,563	2,560,576	-256,987	-9.1%
Feb	3,049,972	2,758,945	-291,027	-9.5%
Mar	3,338,241	2,963,826	-374,415	-11.2%
Apr	3,606,426	3,185,844	-420,582	-11.7%
May	3,989,188	3,481,616	-507,572	-12.7%
Jun	4,413,696	3,869,140	-544,556	-12.3%

Figure 21: Water Sales Revenue ($), FY 2023



	Budget	Actual	Variance	Variance %
Jul	5,702,307	4,505,935	-1,196,372	-21.0%
Aug	11,020,949	9,213,205	-1,807,744	-16.4%
Sep	16,220,635	14,080,336	-2,140,299	-13.2%
Oct	21,150,557	18,397,791	-2,752,766	-13.0%
Nov	24,996,281	22,106,371	-2,889,910	-11.6%
Dec	27,987,334	24,998,555	-2,988,779	-10.7%
Jan	30,566,906	27,546,364	-3,020,542	-9.9%
Feb	33,088,242	29,904,883	-3,183,359	-9.6%
Mar	36,215,587	32,330,771	-3,884,816	-10.7%
Apr	39,125,047	34,906,224	-4,218,823	-10.8%
May	43,277,519	38,233,670	-5,043,849	-11.7%
Jun	47,882,881	42,452,476	-5,430,405	-11.3%

3.5.2 Financial Position

The Water Operations Reserve was filled to the maximum guideline level at the end of FY 2022 as higher bid costs and delays in project schedules resulted in deferred main replacement projects over the past few years. The FY 2023 Water Utility CIP includes a main replacement (WMR 28) as well as one-time seismic reservoir upgrades (one upgrade is complete and a second and third are planned in FY 2024 and FY 2026). Due to the drought and water conservation efforts, staff projects the water utility's sales revenue to decline in FY 2023 by approximately $5.4 million compared with the prior year's Financial Plan projection, as shown above. In June 2023, the Council approved the FY 2024 Water Financial Plan[19] that included transfers of up to $3.746 million from the CIP Reserve to the Operations Reserve and $3 million from the Rate Stabilization Reserve to the Operations Reserve to address reduced sales revenue and

[19] FY 24 Water financial Plan - https://www.cityofpaloalto.org/files/assets/public/v/1/agendas-minutes-reports/reports/city-manager-reports-cmrs/attachments/06-19-2023-id-2302-0939-water-financial-plan-fy24-cc.pdf

capital needs of the water utility in FY 2023. Staff estimates that with expected revenues and expenses together with transfers from the CIP Reserve, the Operations Reserve will be within the guideline range at year end FY 2023 and each of the subsequent 5 years. Final FY 2023 reserve balances will not be available until Fall 2023.

4 Wastewater Utility

The Wastewater Utility includes the system of sewer pipes that collect and transport wastewater to the Regional Water Quality Control Plant (RWQCP) operated by the City of Palo Alto under a partnership agreement with several surrounding communities, as well as Palo Alto's share of the cost of operating the RWQCP. The RWQCP provides treatment and disposal of wastewater for Palo Alto. Costs for the Wastewater Utility are split approximately half for the operation, maintenance and periodic replacement of Palo Alto's sewer collection system and half for the costs of wastewater treatment at the RWQCP.

4.1 Wastewater Treatment Updates and Capital Planning Status

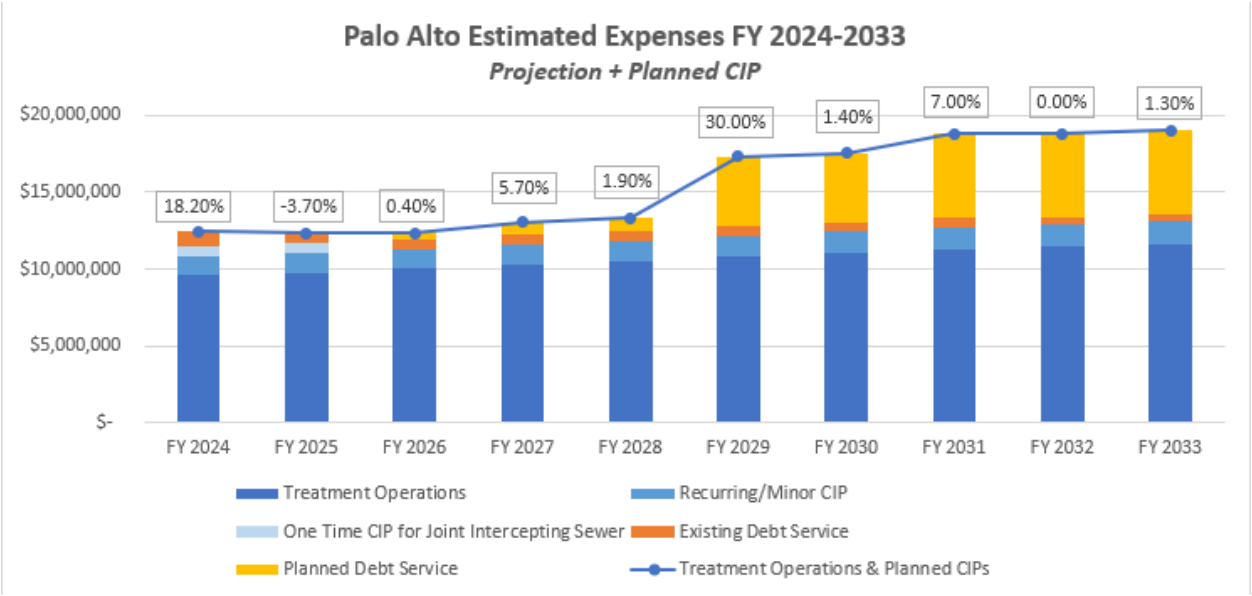
The RWQCP is operated by Palo Alto's Public Works Department and provides wastewater treatment to Palo Alto, Mountain View, Stanford, Los Altos, East Palo Alto and Los Altos Hills. The Palo Alto Wastewater Collection Utility pays its share (approximately 32% projected in FY 2024) of the costs for wastewater treatment and disposal. Capital costs for wastewater treatment are a major driver for cost increases for the Wastewater Treatment Utility and by extension for the Wastewater Collection Utility. The RWQCP is facing the need for major upgrades in coming years, due to aging equipment and changing environmental regulations. Rehabilitation and replacement of plant equipment that has been in use for over 40 years is necessary to ensure the City can continue to conduct wastewater treatment operations safely and in compliance with regulatory requirements for the discharge of treated wastewater 24 hours a day.

4.1.1 Treatment Cost Trends

RWQCP staff project treatment costs paid for by Palo Alto's Wastewater utility to increase by approximately 4.8% annually on average from FY 2024 through FY 2033. A key driver of the increases are capital projects, parts, materials and debt. The treatment capital expenses, including debt service costs, are increasing at an average of about 11.5% per year from FY 2024 through FY 2033 to keep up with ongoing replacement of aging equipment. Larger increases to capital expenses are expected to begin in FY 2026 in the form of new debt service for major projects to implement the Plant's capital program. The figure below shows Palo Alto's share of each component of estimated treatment costs. Major upcoming capital projects and estimated years for debt service to begin are reflected in the "Planned Debt Service" bar in the figure below and include:

- Joint Interceptor Sewer Rehabilitation (FY 2025)
- 1900 Embarcadero Road Purchase (FY 2024)
- Primary Sedimentation Tank Rehabilitation (FY 2025)
- Outfall Line Construction (FY 2027)
- Operations Building Remodel (FY 2028)
- Secondary Treatment Upgrades, Headworks Facility (FY 2029)

Figure 22: Palo Alto's Share of Estimated Wastewater Treatment Expenses (Projection and Planned CIP)



The figure above shows the ongoing annual CIP reinvestment ("Recurring/Minor CIP" and "Existing Debt Service") as well as treatment operations costs, which make up the majority of the treatment costs but are not growing as quickly as the planned debt service. Factors that are contributing to cost increases for treatment operations are rising salary and benefits costs, allocated charges for centralized city services needed to support wastewater treatment fund operations, increased water and air permitting fees from the Regional Water Quality Control Board and Bay Area Air Quality Management District, commodity rates to operate the facility, and chemical expenses.

4.1.2 Regional Water Quality Control Plant Capital Planning Status

The Long-Range Facilities Plan, completed in 2012, guides the capital plans for the RWQCP. The RWQCP is planning to begin an update to the Long-Range Facilities Plan in 2023. The RWQCP's current capital work in-progress includes an estimated $398 million in projects. The following table summarizes these ongoing projects and provides their status and costs.

Figure 23: Current RWQCP Capital Work In-Progress (based on RWQCP June 2023 Council Report)

Project	Status	Expense (million $)
Primary Sedimentation Tanks Rehabilitation and Equipment Room Electrical Upgrade	Construction	$19.4
New Outfall Pipeline	100% Redesign/ Re-evaluation for Future Levee Height	$17.8
Secondary Treatment Upgrades	Construction	$193
Advanced Water Purification System	90% Design	$55.9
New Laboratory and Environmental Services Building	Planning in Long Range Facilities Plan Update	$47.4
Horizontal Levee Pilot	60% Design	$2.1
Headworks Facility Replacement	Consultant Proposal Evaluation	$51.7
Joint Interceptor Sewer Rehabilitation	90% Design	$6.0
Other Projects in Progress	Various	$12.5
	Subtotal	$406

One of the largest projects listed above is the Headworks Facility Replacement, which involves replacement or rehabilitation of the parts of the facility that pump raw sewage to the main treatment works (the headworks), and rehabilitation of primary sedimentation tanks that separate out primary sludge. Additionally, the RWQCP anticipates regulations to limit nutrient discharges (on total nitrogen) into the San Francisco Bay. The current secondary treatment design cannot remove nitrogen and the Secondary Treatment Upgrades will address this regulatory change as well as address aging mechanical and electrical equipment that must be replaced.

The RWQCP plans to fund these capital projects through a combination of mechanisms including State Revolving Fund loans, and revenue bonds. In addition, Valley Water will be providing $16 million of funding for the Advanced Water Purification System. Additionally, Palo Alto was awarded a $12.9 million grant for the Advanced Water Purification System from the United States Bureau of Reclamation's WaterSMART program, which allocates Title XVI Program funding under the Water Infrastructure Improvements for the Nation (WIIN) Act.

4.2 Collection System Capital Improvement Plan Status

The following capital projects are currently in progress:

WC-17001 - SSR 30 (Sanitary Sewer Replacement 30)

- The SSR 30 project was completed in April 2023 and replaced approximately 9,649 linear feet of wastewater main and 195 sewer laterals in the Ventura, Research Park, Fairmeadow, and Midtown West neighborhoods.

WC-19001 - SSR 31 (Sanitary Sewer Replacement 31)

- The SSR 31 project replaces approximately 11,000 linear feet of wastewater main, sewer laterals, and manholes on El Camino Real and Page Mill Road. This project was approved by Council on 5/8/23. Construction has started on 7/31/23. The project duration is 10 months. Approximately 40% of the work will be performed during nighttime due to Caltrans' restriction to close 2 traffic lanes during daytime. Staff coordinated the schedule with Caltrans and County of Santa Clara to stay ahead of their street improvement/paving projects. The SSR 31 contractor is expected to work both day and night shifts during some months of the project duration to expedite the sewer replacement and avoid digging into Caltrans or County's newly paved streets.

4.3 Rate and Bill Comparisons

The figure below shows the wastewater monthly bill for residential customers in Palo Alto compared to what they would be under surrounding communities' rate schedules as of August 2023. Palo Alto's monthly sewer bill is lower than four of the six neighboring communities. Menlo Park in this table refers to the West Bay Sanitary District. Staff will report on future rate increases once they are adopted by the wastewater utilities.

Figure 24: Residential Wastewater Bill Comparison ($/month)

As of August 2023						
Palo Alto	Menlo Park	Redwood City	Mountain View	Los Altos	Santa Clara	Hayward
$48.64	$108.83	$89.28	$53.10	$51.47	$48.28	$38.58

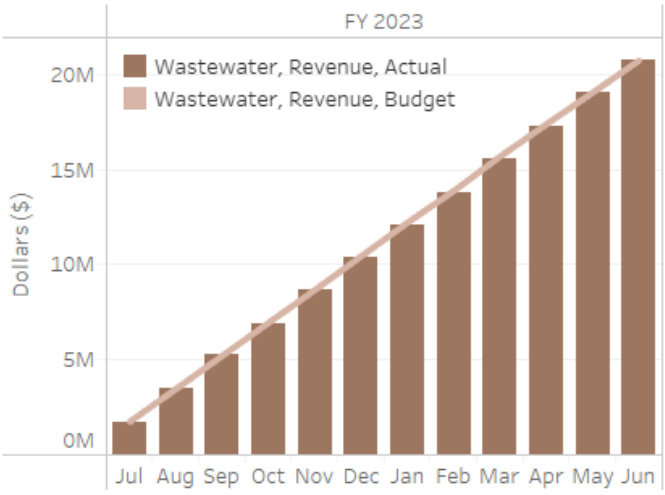
4.4 Financial Health

Below is a summary of the financial position for the wastewater utility.

4.4.1 Sales Forecasts vs. Actuals

Actual wastewater sales revenues in FY 2023 were the same as forecasted in the FY 2023 Financial Plan.

Figure 25: Wastewater Sales Revenue ($), FY 2023



	Budget	Actual	Variance	Variance %
Jul	1,739,132	1,685,896	-53,236	-3.1%
Aug	3,472,345	3,472,120	-225	0.0%
Sep	5,215,982	5,235,649	19,667	0.4%
Oct	6,950,749	6,918,097	-32,652	-0.5%
Nov	8,679,148	8,663,721	-15,427	-0.2%
Dec	10,450,161	10,379,774	-70,387	-0.7%
Jan	12,220,872	12,099,010	-121,862	-1.0%
Feb	13,890,027	13,816,974	-73,053	-0.5%
Mar	15,700,088	15,564,768	-135,320	-0.9%
Apr	17,396,820	17,316,138	-80,682	-0.5%
May	19,062,194	19,053,607	-8,587	0.0%
Jun	20,747,104	20,755,392	8,288	0.0%

4.4.2 Financial Position

The Wastewater Collection Operations Reserve was within the guideline range and the CIP Reserve had a balance of approximately $3.2 million at year end FY 2022. In June 2023, the Council approved the FY 2024 Wastewater Collection Financial Plan[20], which approved the transfer of up to $3.2 million from the CIP Reserve to the Operations Reserve and $0.34 million from the Rate Stabilization Reserve to the Operations Reserve to maintain the Operations Reserve at the minimum guideline level. Rising main replacement costs as well as the need to accelerate main replacement to prudently manage the City's infrastructure together with rising wastewater treatment costs is placing pressure on the wastewater utility's reserves. Final FY 2023 reserve balances will not be available until Fall 2023.

[20] FY24 Wastewater Collection Financial Plan - https://www.cityofpaloalto.org/files/assets/public/v/3/agendas-minutes-reports/reports/city-manager-reports-cmrs/attachments/03-07-2023-id-2302-0944-ww-financial-plan-lisa.pdf

5 Fiber Utility

The City offers a "Dark" fiber service providing a fiber connection from Palo Alto businesses to the downtown Internet Exchange. At the exchange, businesses select an internet service provider (ISP) for bandwidth and connection speed.

5.1 Fiber Utility Strategic Planning

On May 1, 2023 the Council approved the contract amendment with Magellan through March 2025 for the continued provision of consulting services for a multi-phased fiber optic network expansion plan, which includes program management of construction of the fiber backbone and phase 1 of Fiber-to-the-Premises (FTTP), network operations and technical support, and electrical make ready engineering in an amount not to exceed $2,473,600 (Staff Report #2303-1215[21]). Although the phased build approach to FTTP will decrease the City's financial risk and increase Council's control over the velocity of the buildout, the City does not have the in-house staffing to fully deploy the fiber backbone project and first phase of FTTP. These projects will require significant staffing and specialized skill sets over the next several years. Fiber backbone construction includes an estimated 28 miles of underground construction and 10 miles of aerial construction. Phase 1 for FTTP includes an estimated 18 miles of underground construction and 63 miles of aerial construction. In addition to construction, the City will be starting up a new internet service provider (ISP) business.

As the City solidifies staffing plans in parallel with contracted services, the Director of Information Technology, Darren Numoto, will take on the responsibilities of an Assistant Director for Palo Alto Fiber on an interim basis. As part of the FY 2024 proposed budget, staff will be bringing forward a recommendation to add four (4) new FTE positions for the dark fiber expansion and implementation of FTTP. These positions are Assistant Director, Outside Plant Manager, Marketing and Sales Manager and Network Architect/Senior Engineer. These positions will be recruited and filled as needed during the various stages of the project. The scope of services provided by Magellan and the associated compensation under the new amendment may decrease when the City hires internal FTEs and/or outsources specific activities.

5.2 Capital Improvement Plan Status

CPAU has initiated efforts to coordinate electrification grid modernization projects with fiber network expansion and fiber-to-the-premises (FTTP) projects to reduce construction costs, minimize community

[21] Staff Report 2303-1215 – https://www.cityofpaloalto.org/files/assets/public/v/1/agendas-minutes-reports/reports/city-manager-reports-cmrs/2023/05-01-2023-id-2303-1215_1.pdf

disruption, and optimize internal staffing resources. In the FY 2024 Fiber CIP budget, $20 million will be budgeted in the new Fiber-to-the-Premises (FO-24000) CIP and an additional $13 million will be budgeted in the Fiber Optics Network – System Rebuild (FO-16000) CIP for the new fiber backbone.

5.3 Reliability

There were no unplanned fiber outages or events to report in Q4 of FY 2023.

5.4 Financial Health

Below is a summary of the financial position for the fiber utility.

5.4.1 Fiber Sales

Actual dark fiber revenues for FY 2023 were $2.8 million, which is lower than the FY 2023 revenue forecast of $3.6 million. Due to some customer billing adjustments, a couple large credits were applied in FY 2023 which reduced total revenues by approximately $400,000. CPAU projects dark fiber licensing revenues to come in between $3.5 to $4.0 million in FY 2024.

Actual fiber expenses for FY 2023 were $2.7 million which is comprised of salaries and benefits ($1.6 million), contract expenses ($0.5 million), administration overhead ($0.3 million), and transfers to other utilities ($0.3 million).

5.4.2 Financial Position

The projected ending FY 2023 Fiber Optic Utility Rate Stabilization Reserve is $33.5 million.

6 Customer Programs (Efficiency and Sustainability)

The City's Utilities Department maintains a number of programs to help customers save money, use energy and water efficiently, and reduce carbon emissions. These programs are funded through a variety of funding sources, some of which are summarized below.

6.1 Customer Programs Updates

Below is a summary of the City's energy and water efficiency programs, as well as programs to encourage building electrification and adoption of electric vehicles. Summary descriptions of Utilities Customer Program are provided in Appendix D.

6.1.1 Energy and Water Efficiency

Energy & Water Efficiency Workshops

The City, in partnership with the Bay Area Water Supply and Conservation Agency (BAWSCA), offers landscape education classes throughout the year to introduce residents to the concepts of water-efficient and sustainable landscaping. Workshop topics include rain gardens, how to water trees, steps to take to convert lawns into drought-tolerant landscapes, and available rebates. During FY 2023, we held 5 webinars and 2 in-person workshops; attendance was strong, with 197 residents participating over the course of the year.

Please visit the BAWSCA website for a complete list of available classes and events at: https://bawsca.org/conserve/programs/classes[22]. All past Landscape Class Videos are available online at: https://bawsca.org/conserve/landscaping/videos/[23]. For updates on future events and workshops, please visit http://cityofpaloalto.org/workshops[24]

With collaboration from the Palo Alto City Library, City Manager's Office, Public Works, and the Utilities Department, an Earth Day event[25] was held on Saturday, April 22 at Rinconada Library. Over 100 attendees learned about different climate-friendly choices they can make in their home, including water saving landscaping and the advantages of going all electric.

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[22] BAWSCA Programs and Classes - https://bawsca.org/conserve/programs

[23] BAWSCA Landscaping Videos - https://bawsca.org/conserve/landscaping/videos/

[24] City of Palo Alto Workshops - https://www.cityofpaloalto.org/Departments/Utilities/Utilities-Workshops-and-Webinars

[25] Earth Day - https://www.cityofpaloalto.org/News-Articles/City-Manager/Celebrate-Earth-Day-and-Earth-Month-this-April

Residential Energy Efficiency and Water Conservation Advisory Service

The Home Efficiency Genie program continues to provide residents with professional advice and information to improve their home's efficiency and comfort, lower their energy and water usage including guidance on home electrification options. During FY 2023, the Genie performed 47 comprehensive in-home assessments, 38 Home Electrification Readiness Assessments (HERA) and 26 virtual assessments.

Water Conservation Programs for Residents and Businesses

CPAU partners with Valley Water to offer a robust portfolio of water conservation programs and rebates[26] for residents and businesses. On June 25, 2023, the City entered into a new cost-sharing agreement with Valley Water which includes $1.4M over 7 years to help the City deploy Advanced Water Metering Infrastructure and home water conservation reports.

The WaterSmart customer portal, an online water management tool, launched in November 2022. Through this program, home water reports are sent to most single-family customers on a quarterly basis. A control group of single-family customers currently do not get the reports. To date, 15% of all water customers have accessed the portal which provides information about their water consumption and personalized water conservation recommendations. The home water reports will be sent out on a monthly basis starting in July 2023. As water supply conditions have improved CPAU is focusing outreach on water conservation being a way of life and reducing water waste and continues to encourage participation in rebates and resources.

The Waterfluence program provides large commercial customers a monthly water budget that compares actual irrigation use to an ideal benchmark irrigation budget. Customers that are exceeding their suggested budget are eligible for a free landscape irrigation field survey. CPAU continues to engage Key Accounts on this resource to help them improve irrigation efficiency. During FY 2023, 47% of eligible customers, have accessed the Waterfluence portal.

Commercial & Industrial Energy Efficiency Program

As of August 1, 2023 , 2023, Enovity has 20 projects in process with 2,114,518 kWh savings. Key Account Representatives have been proactively engaging customers through direct email and face-to-face meetings. Key Account Managers are planning another Facility Managers Meeting on Zoom for November 7, 2023, following the high attendance of previous meetings on Zoom.

The key account program is increasingly focused on reengaging key accounts that have not historically partnered with the city on energy efficiency and electrification, especially commercial property owners. Identifying customer pain points and creating action plans to address them will help us develop a roadmap for better serving our key accounts and increasing their ESG commitment in the community.

The Enovity program total value is trending behind schedule due to higher commercial vacancy in the market. Many employers have remained fully remote and hybrid. This has led to a pause in facilities reinvestment and upgrading. In the short term, we expect this pattern to continue. Conversely, there are commercial customers that continue to expand their footprint, including Stanford, Google and Tesla. As

[26] Rebates - https://valleywater.dropletportal.com/overview/

they repurpose available space, some of the facilities may require retrofitting that coincide with electrification. Our next contract with Enovity will include a reevaluation of these market conditions.

Figure 26: Energy Efficiency Program Energy Savings

Project Name	Customer Facility Address	Project kWh Savings at Commitment	Project Cost at Commitment	Project Incentive at Commitment
1050 Arastradero LED Phase 2	1050 Arastradero	41,777	$37,100.00	$4,177.70
3165 Porter LED Phase 2	3165 Porter St	30,263	$47,381.00	$3,026.30
801 Welch LED	801 Welch	33,526	$44,492.00	$3,352.60
855 CA Chlr RCx	855 California	61,200	$5,000.00	$2,500.00
3375 Hillview Chlr Replacement	3375 Hillview	399,000	$350,000.00	$59,850.00
1189 Welch LED	1189 Welch	309,132	$50,000.00	$25,000.00
Tesla 3500 Deer Creek	3500 Deer Creek	0	$0.00	$0.00
3825 Fabian Way, SSL	3825 Fabian Way	0	$20,000.00	$3,150.00
PA Square Phase 1	3000 El Camino Real	70,436	$135,000.00	$7,043.60
Stanford Shopping Center LED	660 Stanford Shopping Center	187,143	$76,818.00	$18,714.30
CPI	811 Hansen Way	0	$0.00	$0.00
LPCH Main Ventilation Reduction	725 Welch Rd	0	$0.00	$0.00
1050 Arastradero Economizer	1050 Arastradero	51,450	$50,000.00	$8,495.00
855 CA Chlr RCx Phase II	855 California	26,754	$4,000.00	$2,000.00
CPI Power Supply	811 Hansen Way	0	$0.00	
LPCH Main LED	725 Welch Rd	748,037	$227,740.00	$74,803.70
875 Blake Wilbur Controls Upgrade	875 Blake Wilbur	123,800	$555,000.00	$53,170.00
1050 Arastradero HHW Valve	1050 Arastradero A	32,000	$20,000.00	$4,900.00
Stanford West Child Care Electrification	625 Clark Way	0	$0.00	$0.00
Cabana Hotel Electrification	4290 El Camino Real	0	$0.00	$0.00
		2,114,518	$1,622,531.00	$270,183.20

Business Energy Advisor

Since the Business Energy Advisor program launched in June 2022, we have completed 26 site assessments. This program initially was off to a slow start due to many staff changes, process improvements, and assessment report template updates. While working to streamline the processes for this program we simultaneously did a large marketing push including bill inserts, direct mailers, e-newsletters, social media posts, in person outreach, a call campaign, and targeted direct marketing to customers and property owners.

Now that the program is running smoothly, our goal is to increase participation over the next year, starting with completing 10 assessments each month. Another goal is to consistently complete assessment reports within a two-week period and help projects implementing efficiency measures move along more quickly. In year one, we complete 15 assessment reports and have one efficiency project in the works. Our next step is to catch up on assessment reports and guide those customers through their projects.

6.1.2 Building Electrification

Full-Service Heat Pump Water Heater Program

In October 2022, City Council approved a contract with Synergy to provide efficiency and electrification services to low-income residents in single-family homes and multifamily properties, and also to implement a new full-service heat pump water heater (HPWH) program. The goal for this first-of-its-kind program, in conjunction with a separate HPWH rebate, is the installation of 1,000 heat pump water heaters in 1 year. Two key design criteria for the full service HPWH program were to help customers make the switch as easy as possible and keep the upfront cost competitive with a gas water heater replacement. An on-bill

financing option is available for customers who choose to pay a lower upfront cost with a monthly payment of $20 for 5 years. As of June 30, 2023, we have received high interest level from customers, with 440 interest forms submitted; 147 site assessments and 16 installations were completed. The Home Efficiency Genie team has been serving as a single contact point for customers, from sending the site assessment agreement, to following up with customers on the project cost proposal and installation agreement. Customer site assessments and HPWH installations are provided by Synergy, and they have been ramping up their team of technicians to meet the program demands. CPAU staff have also coordinated with the City's Chief Building Official and Building Inspection Team to streamline the permitting of HPWHs installed through this program. So far, the program has come across a number of challenging HPWH installations that includes long circuit runs, electrical panels without additional capacity, complex condensate management, and water heater relocation requirements. The program team (CPAU staff, Synergy staff and Home Efficiency Genie program team) have been working closely to address these challenges and come up with solutions to facilitate future project installations.

In addition to providing a prescreened contractor to install HPWHs, CPAU also offers the option for customers to choose their own contractor and apply for a $2300 HPWH rebate if the equipment meets the program criteria and has been permitted. Between October 4, 2022 and June 30, 2023, we have processed 26 HPWH rebates. This is a significant jump from the 13 rebates processed between January 2022 to October 3, 2022 when HPWH rebates were between $1200 and $1500. There are a number of contributing factors to this increase: higher CPAU rebates, the newly enacted 30% federal tax credit for HPWH installations, and increased awareness of HPWH technology among residents from the publicity blitz both within and outside of Palo Alto.

Business Electrification Technical Assistance Program (BE TAP)

The Business Electrification Technical Assistance program launched in August 2022, providing free electrification assessments and technical assistance to implement building electrification projects to businesses. Though participation in this program was off to a slow start, customers have increasingly expressed more interest in electrification in recent months with 88% of customers who enrolled in the Business Energy Advisor program also completing an electrification assessment.

We have presented 13 electrification reports to customers, with many in the pipeline to be completed soon. Since implementing various processes improvements earlier this year, including but not limited to engineering calculations and report preparation, we have reached a consistent cadence for assessment report distribution to customers. This will allow us to decrease the customer's wait time to improve their experience and increase the number of reports we prepare in the coming year. There are currently two customers pursuing electrification projects, specifically installing heat pump HVAC units. We are working on ways to streamline the heat pump HVAC unit installation process, so we can increase the number of projects moving forward.

6.1.3 Electric Vehicle Programs

Palo Alto continues to facilitate the installation of EV charging infrastructure throughout the City to support mass EV adoption, with equitable access for multifamily and income-qualified residents, as well as workplaces, public parking lots and retail areas. Correspondingly, cross-departmental work is progressing on proposals for fleet electrification.

Financial Overview

FY 2023 EV program related expenses were $1.1M, of which $465k was for the second installment of the CALeVIP program, $272k in EV charger customer rebates, $45k for EVTAP (Electric Vehicle Technical Assistance Program) management by CLEAResult, $105k for customer education programs, and $193k for program management expenses. Revenues for the year is $0.935M. The LCFS funds is estimated to have a reserve balance of ~$7.05M at the end of FY 2023.

As outlined below the number of charger installations and associated rebate expenditure during the fiscal year has been lower than projected due to various hurdles faced by customers.

EV Technical Assistance Program (EVTAP)

- **Goal**: Offer technical assistance for the installation of EV chargers at nonprofits, schools, multifamily properties and small medium businesses. Facilitate the installation of 180-360 ports @ 60-90 sites (By 2024)
- **Progress:** EVTAP is a high touch program, that includes a series of site visits, technical evaluations, engineering reviews, designs, support with hardware selection and cost estimates that culminate in the landlord receiving contractor bids and assistance submitting a building permit, applying for incentives and project management of the installation. Projects going through EVTAP have been taking two years or more to reach completion.

In FY2023, **10** permit applications were submitted, and **2** installations were completed for a total of **15** new ports installed. Since program inception in 2019, **120+** sites have expressed interest in EVTAP and are working through the program, potentially translating into the installation of 500+ Level 2 ports and 300+ Level 1 ports. However due to each project taking much longer to complete than expected, staff is working to extend the contract to complete installations in the pipeline to hit original goals.

EV Charger Rebate Program

- **Goal**: Incentivize the installation of EV chargers at Non-Profits and Multifamily properties.
- **Progress:** Since the launch of this program in 2017, CPAU has facilitated the installations of 144 new EV charging ports/connectors at 19 sites. The breakdown of the installation sites: 8 MF and 11 non-profits (including 4 schools and 2 medical facilities). The average cost of each port was $10k and projects have averaged 12 months to complete. Now that more properties, especially multifamily properties are expressing more interest in installing EV chargers, there are 114 applicants to this program. With increased demand, staff is in the process of updating program participation requirements and terms and conditions, to lower rebate levels and put time limitations on rebate fund reservations.

California Electric Vehicle Infrastructure Project[27] (CALeVIP)

- **Goal**: Facilitate and Incentivize the installation of EV chargers at commercial sites.

As of June 2023, a total of $1.5M (out of $2M) was reserved by 10 site owners through CALeVIP, a commercial EV charging, matching grant program sponsored by the California Energy Commission (CEC). The proposed installations could lead to the installation of 128, Level 2 ports and 12 DC Fast Chargers. Still experiencing the aftermath of COVID, as well as permitting delays, installations are moving much slower

[27] CALeVIP -https://calevip.org/

than expected. Staff is working actively with the program administrator to fully reserve any available outstanding funds, and to encourage installations to materialize.

EV Awareness and Outreach

- **Goal:** Raise awareness about electric modes of transportation and their benefits
- **Progress:** Using the NCPA contracts and LCFS funds, CPAU contracted with Acterra[28] and Ride & Drive Clean[29] and during FY 2023, CPAU hosted 32 EV events including 20 virtual EV educational workshops and 12 in-person EV expos, totaling 998 and 1,645 participants in attendance, respectively. The contract with Ride and Drive Clean also included an EV discount campaign which offered limited time discounts on certain EV models, as well as an e-Bike discount campaign with Palo Alto Bicycles. We also offered bilingual Financial Incentive Clinics targeted towards lower income customers with one on one consultations. CPAU anticipates continuing this robust effort in FY 2024 with plans to offer over 30 online and in-person workshops.

City-Owned EV Chargers

- **Goal**: Install EV Charging Infrastructure for the public as well as City-fleet.
- **Progress**: As of the End of June 2023**:**
  - 124 – City-Owned Ports
  - 120 – Publicly accessible EV Charging ports
  - Newest chargers: 6 ports at renovated Junior Museum on 1451 Middlefield Rd.

Transformer Upgrade Rebate Program

- **Goal**: Provide discounts to defray the cost of utility distribution system upgrades, triggered by EV applications.
- **Progress**: Many older properties in Palo Alto, especially multifamily buildings, have limited electric capacity to accommodate EV chargers and building electrification. However, there has been an ongoing nationwide transformer supply shortage, delaying customer EV projects. In the meantime, the EV team is working closely with Engineering and is conducting a pre-screening of transformer loading for all commercial EV projects enrolled in EVTAP as well as proposing designs utilizing existing electric capacity. To date, uptake has been slow, however with many active EVTAP projects in the pipeline, we know that roughly half of the sites will require new transformers and Utilities is planning accordingly.

6.2 Innovation and Pilot Programs

CPAU's Program for Emerging Technologies, or PET, (www.cityofpaloalto.org/UTLInnovation[30]) provides the opportunity for local businesses and organizations to submit proposals for innovative and impactful

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[28] Acterra - https://www.acterra.org/

[29] Rida & Drive Clean - https://rideanddriveclean.org/

[30] Utilities Innovations - https://www.cityofpaloalto.org/Departments/Utilities/Business/Business-Programs/Program-for-Emerging-Technologies

products to CPAU for review as a prospective partner. The goal is to find and nurture creative products and services that will improve customer value, save natural resources, or reduce carbon emissions. From the program's inception in June 2012 through today, the program has received a total of 107 applications. The figure below in 6.2.2 summarizes the status of all applications through FY 2023.

Pending other priorities and sufficient resources, staff could work with local universities and accelerators to solicit high-quality applications closely aligned with CPAU's highest priorities in calendar year 2024.

6.2.1 Academic Collaborations

CPAU staff is working with Tim Hall, a Stanford Graduate Fellow for the summer to do a deep dive on the performance and forecast accuracy the largest electricity contract, a hydropower contract with the Western Area Power Authority (WAPA). Tim has been doing a phenomenal job analyzing recent performance of the resource and assessing the accuracy of the monthly federal forecast. Tim developed updates for several of the models and potential workflow changes to help manage this unique hydropower resource in a time of market volatility, electrification, and climate change. The final report will be wrapped into the evaluation of the WAPA resource in the spring of 2024. This evaluation will also come with a recommendation on what level to continue contracting for the WAPA hydroelectric resource, if at all.

6.2.2 Completed Projects

In FY 2023 CPAU has received three applications but declined all three since they did not fit with Utilities priorities at this time.

Figure 27: 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	0	4
FY 2016	14	0	9	0	5
FY 2017	10	0	7	0	3
FY 2018	10	0	9	0	1
FY 2019	9	0	5	0	4
FY 2020	8	0	3	0	5
FY 2021	2	0	1	0	1
FY 2022	8	0	8	0	0
FY 2023	3	0	3	0	0
TOTAL	107	0	78	0	29

7 Communications

This section summarizes communications highlights, updates on major campaigns and noteworthy events. Copies of ads and bill inserts are available online at http://cityofpaloalto.org/UTLbillinsert[31].

Storms and Power Outages: From December 31, 2022 through March 2023, the Bay Area experienced an unprecedented number of storms and over the course of a few weeks in January, more than 30 atmospheric rivers. The City activated its Emergency Operations Center (EOC) and mobilized teams for response to flooding, traffic control needs, emergency rescues, power outages, and other storm-related impacts. Utilities staff communicated reports of outages throughout the city during the multiple storm surges, providing continuous coverage and updates as information became available. Most power outages were caused by tree damage due to heavy winds and rain, causing trees or branches to fall on power lines or power poles, and lightning strikes. February and March also brought many exceptionally heavy windstorms, causing power outages for thousands of CPAU customers. Other utilities in the Bay Area did not fare as well as CPAU. In most cases, CPAU crews were able to restore service very quickly to all customers while hundreds of thousands of others in the Bay Area were without power for days to weeks. The response by CPAU staff demonstrates the dedication to safe, reliable, quality service, and the benefits of a locally-owned and operated public utility.

Rebates for High Winter Energy Costs: CPAU credited residential utility customer accounts with a "Winter Rebate" for the extraordinarily high gas and electric utility costs that the region experienced in the 2022-2023 winter. This rebate was approved by City Council in early April 2023 to provide needed financial relief to residents and was calculated based on a customer's January electric and/or gas utility bill costs. The fixed rebate for gas services ranges from $70 to $100 and the fixed rebate for electric services ranges from $20 to $65. Additional relief of $100 for electric and $100 for gas service was provided to residents enrolled in the Utilities Rate Assistance Program (RAP) and/or have a past due balance of greater than 180 days. An additional flat rate rebate is available through the end of October 2023 to residents who do not currently qualify for the utilities rate assistance program but have experienced financial hardship during this time. Those residents may apply for our "High Bill Financial Assistance" program. Information on all utilities financial assistance resources is available at cityofpaloalto.org/utilitiesassistance[32].

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[31] Utilities Bill Inserts - https://www.cityofpaloalto.org/Departments/Utilities/Customer-Service/Utilities-Bill-Pay/Bill-Inserts

[32] Utilities Financial Assistance - https://www.cityofpaloalto.org/Departments/Utilities/Residential/Utilities-Assistance

Utilities Rates Outreach: The City presented financial plans for fiscal year 2024 that included proposals for rate changes across all utilities except refuse service. The main reasons for rate increases this fiscal year were due to inflation and cost increases for construction, operations, energy, and water supplies; the City's delay of utility rate increases during the pandemic; revenues and reserves falling below minimum guidelines; and aging infrastructure. Effective July 1, 2023, the bill change for an average residential customer with six utility services is estimated at around $11 per month. The overall residential bill changes included a 5% decrease for electric, 8% increase for gas, 9% increase for wastewater, 5% increase for water, 5% increase for stormwater management, and no change for refuse service. Additionally, the San Francisco Public Utilities Commission (SFPUC) increased the wholesale water rate it charges the City from $4.75 to $5.21 per hundred cubic feet (CCF), effective July 1, 2023. The City automatically passes this commodity rate increase on to its customers. The City notified customers of this pass-through rate directly in accordance with government codes and the City's water utility rate schedule rules. Staff implemented a robust outreach initiative to inform customers of these rate changes and the reasons for the cost increases. This included conversations with the local media and direct communication with customers through utility bill inserts, email newsletters, website, social media, neighborhood, and business groups. CPAU reinforced the many programs and resources available to help customers use energy and water efficiently to keep utility bill costs low. www.cityofpaloalto.org/ratesoverview[33]

New Outage Management System: Staff began outreach about the new Outage Management System (OMS), scheduled for launch in late summer 2023. This will offer customers the ability to receive alerts and updates through text messages, phone calls and emails about power outages and other emergency notifications. Part of the outreach campaign involved encouraging people to ensure their contact information is up to date in our records to receive notifications. The new OMS will provide benefits such reduced outage durations, faster response time, web outage viewer, customer account log in for updates, hosted Integrated Voice Response (IVR), phone capacity rollover, no busy signals, streamlined field communications, and situational awareness for both employees and customers. www.cityofpaloalto.org/outages[34]

Advanced Metering Infrastructure (AMI) Project: CPAU began deploying Advanced Metering Infrastructure (AMI) meters in January 2023. The beta phase rollout included approximately 1,800 electric, gas and water meters. A phased rollout approach allows the City to test and validate the quality assurance of AMI meters and systems. Full deployment of AMI for residential customers is estimated in early 2024. Some AMI meters will be installed at all-electric homes with EV chargers and/or energy storage systems, allowing CPAU to gather data about EV customer charging patterns, all-electric home load shapes, and transformer loading which is essential for the grid modernization project. CPAU has been communicating directly with customers who will receive the meters to share resources and help with any questions or concerns. www.cityofpaloalto.org/ami[35]

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[33] Utilities Rates - https://www.cityofpaloalto.org/Departments/Utilities/Customer-Service/Utilities-Rates

[34] Outages - https://www.cityofpaloalto.org/Departments/Utilities/Utilities-Services-Safety/Outages

[35] AMI - https://www.cityofpaloalto.org/Departments/Utilities/Customer-Service/Meter-Reading-Info-Schedule/Advanced-Metering-Infrastructure-and-Smart-Grid

Home Water Reports Launch: Since the launch of the WaterSmart program, staff have embarked on a robust outreach campaign to encourage customers to log into their account and take advantage of the features such as leak alerts and access to water efficiency programs. The City began sending Home Water Reports to single-family residential customers in March 2023. The Home Water Reports include information on a customer's water use and comparisons to similar-sized Palo Alto households. Water savings from these reports will be evaluated through an efficiency study. www.cityofpaloalto.org/watersmart[36]

Full-Service Heat Pump Water Heater Pilot Program: The Palo Alto community has been rallying support for the City's new heat pump water heater installation program, including through organizing volunteer neighborhood canvassing campaigns. Early in the program's inception, CPAU began gathering contact information from residents expressing interest in participating or receiving more information on the program's full-service installation service once it fully launched. In the spring and summer of 2023, the City began working with a marketing consultant to expand outreach and further drive participation. The consultant is assisting staff in developing and implementing a broad communications and marketing plan for electrification which involves facilitating collaboration with staff, stakeholders, policymakers, and community partners. www.cityofpaloalto.org/switch[37]

Water Supply and Drought: Staff have been proactive about communicating current water supply conditions following heavy precipitation in early 2023, which effectively ended the State's historic drought. CPAU continues outreach about water supply conditions, water use restrictions, and resources for water use efficiency regardless of rain or drought. A key slogan is that "conservation is a California way of life." Staff work with the Bay Area Water Supply and Conservation Agency (BAWSCA), Valley Water, and other partners such as Canopy, to coordinate public education events throughout the year. www.cityofpaloalto.org/water[38]

Water Quality Report: Each year, CPAU publishes an annual Consumer Confidence Report on water quality conditions for the previous year. The 2022 report update is available in English, Spanish, and Chinese online at cityofpaloalto.org/WaterResources and in print upon request by contacting UtilitiesCommunications@cityofpaloalto.org or (650) 329-2479.

Gas Safety Outreach: Throughout the year, CPAU delivers a variety of outreach materials to the community about utility safety. An important element of our public awareness program is the annual distribution of our gas safety awareness brochure. Per Federal Department of Transportation regulations, we directly mail this information to all customers, non-customers living near a gas pipeline, public officials,

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[36] WaterSmart - https://www.cityofpaloalto.org/Departments/Utilities/Sustainability/Water-Efficiency/WaterSmart

[37] Heat Pump Water Heater Pilot Program - https://www.cityofpaloalto.org/Departments/Utilities/Sustainability/Water-Efficiency/WaterSmart

[38] Water Supply and Drought - https://www.cityofpaloalto.org/Departments/Utilities/Sustainability/Water-Efficiency/WaterSmart

emergency responders, excavators, contractors, and locators working in Palo Alto. Gas safety brochures are typically delivered in the fall. www.cityofpaloalto.org/safeutility[39]

Program and Event Support: CPAU hosted many events and workshops in 2022 and 2023 to spread awareness about customer programs for energy and water efficiency, electric vehicles (EV), electric bikes (including special discount campaign for EVs and eBikes), heat pump water heaters, and beneficial electrification. The communications team supported these efforts through comprehensive outreach via website, email newsletters, advertisements, and social media campaigns.

www.cityofpaloalto.org/workshops[40]

[39] Safety - https://www.cityofpaloalto.org/Departments/Utilities/Utilities-Services-Safety/Safety

[40] Utilities Workshops and Webinars - https://www.cityofpaloalto.org/Departments/Utilities/Utilities-Workshops-and-Webinars

8 Legislative, Regulatory and Industry Activity

California Municipal Utilities Association's (CMUA) CY 2022 Legislative Report[41] provides a summary of California's legislative activities during CY 2022. The CY 2023 activity summary report will be available in October 2023 and will be provided in the next UAC quarterly report.

California Grid Reliability for the Summer of 2023

The California Independent System Operator's (CAISO) 2023 Summer Loads and Resources Assessment[42] shows considerable improvement in resource availability this summer, driven by accelerated resource development and high hydro conditions within California. The summer 2022 assessment was less optimistic about conditions for the then approaching summer.

The 2023 assessment notes, the CAISO is approaching the summer of 2023 with a moderate surplus for meeting that 1-in-10 standard, even as demand for electricity continues growing. The 1-in-10 standard peak loads are projected to be 50 to 52 GW. A primary reason for the improved conditions is the substantial amount of new capacity that has been added to the grid in the past year, including just under 3 GW of 4-hour lithium-ion batteries, which have helped enhance reliability. Palo Alto's loads are expected to peak at 170 MW or 0.17 GW.

Though unlikely to be called upon, Palo Alto is part of the CAISO emergency load shedding program. In the event there are insufficient resources to meet loads on a hot day and CAISO needs to call a EEA3 load-shedding emergency, Palo Alto is obligated to shed part of its load. With a 0.34% share of CAISO's peak load, if CAISO triggers a 1000 MW state-wide load curtailment, Palo Alto will be obligated to shed 3.4 MW of load within the City.

California Electric Supply

- Energy Storage Systems (ESS) continue to take on a greater role in meeting the state's electrical needs. As of July 2023, more than 5 GW of battery storage capacity have been fully integrated into the electrical grid and are available for dispatch.

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[41] CMAU CY 22 Legislative Report - https://www.cityofpaloalto.org/files/assets/public/v/1/utilities/cmua_2022_legislative_session_report.pdf

[42] 2023 Sumer Loads and Resources Assessment - http://www.caiso.com/Documents/2023-Summer-Loads-and-Resources-Assessment.pdf

- ESS capacity has increased from 500 MW in 2020 to 5,000 MW in 2023, and the capacity will have to increase to 50 GW to support an additional 79 GW of new renewable generation needed to meet the state's 2045 greenhouse gas reduction goals (CAISO's Special Report on Battery Storage -July 2023[43]).
- Much of the additional renewable supplies are projected to come from out-of-state resources and offshore wind. Palo Alto also expects to contract for additional renewable and energy storage systems in the coming years to satisfy its anticipated load growth.
- The wholesale cost of serving the CAISO area load in CY 2022 rose by ~70% compared to CY 2021 due to substantially higher natural gas prices. The total cost for the CAISO footprint in CY 2022 was $21.6 billion, or about $95/MWh. After adjusting for natural gas price increases, the wholesale costs increased by 10% (July 2023 CAISO Report on Market Performance[44]). Palo Alto's costs were also substantially higher in CY 2022, but this was driven primarily by low hydroelectric supply.

CAISO Transmission and Electricity Markets

- Large investments in new transmission lines would be needed to access new renewable electric supply from out of state. If these investments are recovered through the CAISO transmission access charge (TAC), TAC rates would increase rapidly from the current 4 cents/kWh. To contain these transmission delivery costs, CAISO is exploring the implementation of a Subscriber Participating Transmission Owner (SPTO) model, whereby California load serving entities who contract for such out-of-state supplies will pay for the new transmission to deliver those resources to California, without the cost being borne by all loads through the CAISO-wide TAC rate.
- CAISO continues to successfully operate the Western Energy Imbalance Market (WEIM) whereby participants can buy and sell power close to real time on a west-wide basis (CA, OR, WA, BC, NV, AZ, NM, UT, WY, ID, MT). The incremental value harvested by WEIM in CY 2022 is estimated at $1.5 billion. Building on the success of operating the WEIM, the CAISO is working to implement an Extended Day Ahead Market (EDAM) on a west-wide basis. Palo Alto, through Northern California Power Agency (NCPA), participates in these forums to expand the electricity supply markets to optimally meet loads and the achieve the state's carbon reduction goals.

Electric Vehicles

- The California Air Resources Board (CARB) adopted the Advanced Clean Fleets regulation April 2023. The regulation will go into effect on January 1, 2024, starting with a 50% purchase requirement for public agency fleets. Starting on January 1, 2027, 100% of public agency fleet purchases will be required to be ZEV. There are a number of exemptions to address unavailability of vehicles, duty cycle, infrastructure delays, and mutual aid needs - but they are limited in scope and are unlikely to address every issue faced by utility fleets.

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[43] CAISO Special Report on Battery Storage - http://www.caiso.com/Documents/2022-Special-Report-on-Battery-Storage-Jul-7-2023.pdf

[44] CAISO 2022 Annual Reports on Market Issues & Performance - http://www.caiso.com/Documents/2022-Annual-Report-on-Market-Issues-and-Performance-Jul-11-2023.pdf

- NCPA and CMUA are leading an effort to advocate for AB 1594 (Garcia), which removes restrictions within the Advanced Clean Fleets (ACF) regulation that could restrict public utilities' purchase of necessary vehicles.

Hydrogen Initiative

- NCPA is actively engaged in exploring the feasibility of producing hydrogen with renewable electricity and then using the hydrogen to blend with natural gas to produce electricity using its current fleet of natural gas combustion turbines. A hydrogen production facility using electrolyzers is being planned at the Lodi natural gas combined cycle plant if federal grants could be obtained for such a project. NCPA is part of the state's $ARCH_2ES$ initiative to seek federal grant money to develop a regional hydrogen hub to build a self-sustaining hydrogen economy of producers, infrastructure, and users.
- Palo Alto is not a participant in NCPA's natural gas electricity generation fleet and hence not a direct beneficiary of this initiative.

Appendices

9 Appendix A: Energy Risk Management Program

This appendix provides a quarterly update on the City's Energy Risk Management Program.

9.1 Overview of Hedging Programs

The City's Utilities Department maintains a hedging program for its Electric and Gas Utilities. In the Gas Utility the program protects against short-term (intra-month) price spikes caused by weather or major incidents on the Western gas system. However, the City does not hedge its gas supply more than one month in advance, choosing instead to protect the Gas Utility's financial position by passing gas supply costs through to customers via a charge that varies monthly based on gas market prices. As a result, the Gas Utility's only market exposure is the amount by which gas demand deviates from forecasts within the month. This exposure is relatively small and can be managed using Gas Utility Operating Reserves. A risk assessment is performed each year as part of the Gas Utility financial planning process to ensure adequate reserves to cover all risks. The most recent Gas Utility Financial Plan was adopted June 21, 2021 (Staff Report #12240[45]).

The City has entered into long-term contracts for its Electric Utility to ensure that the City has carbon free electricity supplies equal to 100% of Palo Alto's annual electric demand. However, the output from these generating sources does not match Palo Alto's electric load. In the summer, the City has a surplus of carbon free energy and it has a deficit in the winter. This exposes the City to market risk, and staff maintains a hedging program to protect against this risk. In addition, hydroelectric generators make up approximately half the City's energy supply. During dry years these resources do not generate as much energy, creating an additional market exposure that must be hedged. Unlike the gas hedging program, which is operated by City staff, the electric hedging program is operated by the Northern California Power Agency (NCPA), a joint powers agency the City formed in partnership with several other California publicly owned electric utilities, with oversight by City staff.

9.2 Overview of Energy Risk Management Program

The hedging programs described above are conducted in accordance with the City's Energy Risk Management Program, which includes a set of Program Policies adopted by the City Council, Guidelines adopted by the City's Utilities Risk Oversight Coordinating Committee (UROCC), and Procedures approved by the Utilities Director. In addition, for the electric hedging program, NCPA maintains its own Risk Management Program. The City is able to provide policy level oversight of this program through its seat on the NCPA Risk Oversight Committee, which is held by the City's Risk Manager.

Per the Energy Risk Management Policies, the City Council must receive quarterly reports on the City's forward contract purchases, market exposure, credit exposure, counterparty credit ratings, transaction compliance, and other relevant data.

[45] Staff Report 12240 – https://www.city of paloalto.org/files/assets/public/v/3/agendas-minutes-reports/reports/city-manager-reports-cmrs/year-archive/2021/06-21-21-id-12240.pdf

9.3 Forward Deals

Palo Alto executed the following Electric and Gas transaction in Q4 of FY 2023.

Figure 28: Electric Energy Deals

Delivery Month	Deal Type	Total Energy (MWh)	Price ($/MWh)
Oct'23-Jan'24	Purchase	19,815	97

Figure 29: Electric Resource Adequacy Deals

Delivery Month	Deal Type	Avg RA (MW-mo)	Price ($/kW-mo)
Aug'23-Sep'23	Sale	18.58	63
Jan'24-Dec'24	Sale	57.01	24.5

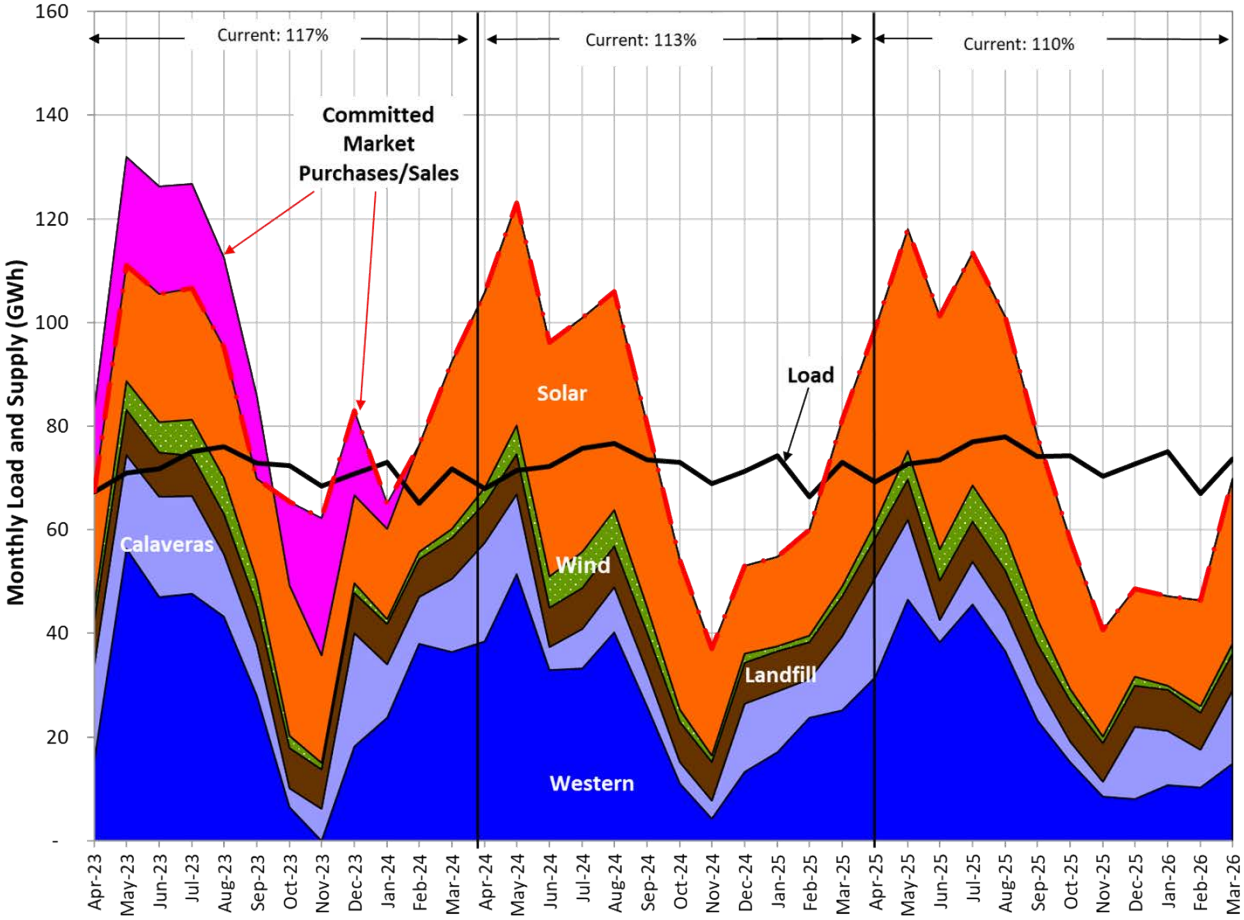
Figure 30: Gas Deals

Delivery Month	Deal Type	Total Volume (MMBtu)	Price ($/MMBtu)
May'23-Oct'23	Purchase	868,400	Malin Bidweek + Adder
May'23-Oct'23	Purchase	231,920	3.65
May'23-Oct'23	Sale	231,920	5.85

9.4 Market Exposure

The chart below shows the City's market exposure and committed purchases and sales to cover exposed positions. Additional purchases and sales will be executed for FY 2024 and FY 2025 in the coming months.

Figure 31: Electric Load Resource Balance, 2023 - 2025



9.5 Transaction Compliance

There are no transaction exceptions or violations to report.

10 Appendix B: Staffing and Vacancies

As of Q4 FY 2023, the Utilities Department has 49 vacant positions out of 253 authorized positions or a 19% vacancy rate. Below is a breakdown of the vacancies by division. The Electric Engineering and Operations (E&O) division continues to have the highest number and hardest positions to fill. Electric Engineering and Operations has a total of 27 vacancies or 30% vacancy percentage which is an improvement from the Q3 report of 32 vacancies or 36% vacancy rate. The City is actively recruiting for 38 vacant positions. Some positions are not designated for recruitment due to HR staffing constraints and other higher priority recruitments. Utilities has designated three HR liaisons from Utilities Administration to assist HR with some of the recruitments. With the three HR liaisons, CPAU will be able to post positions, schedule interviews, and make job offers at a faster pace after they are fully trained. CPAU have attended or will be attending engineering career fairs at Sacramento State University, Cal Poly San Luis Obispo, and San Jose State University.

Figure 32: Utilities Vacancies and Position Movements by Division, up to Q4 FY 2023

Division	Authorized FTEs	Vacant FTEs	Active Recruitments	Vacancy %
Administration	20.5	4	3	20%
Customer Service	23	5	1	22%
Resource Management	25.5	5	4	20%
Electric Operations	69	21	16	30%
Electric Engineering	21	6	6	29%
WGW Operations	70	5	5	7%
WGW Engineering	24	3	3	13%
Total	**253**	**49**	**38**	**19%**

11 Appendix C: Water Utility Annual Infrastructure Maintenance and Replacement Report

In each Quarterly Update the Utilities Department will provide a detailed overview of a single utility's investment and maintenance activity. An update on the Water and Electric Utilities were scheduled for this report, but the Electric annual report will be rescheduled to next quarter's report.

Water Utility Overview - 2022

Executive Summary

- The City continues to meet water quality standards and regulatory requirements
- Water Main Replacement program continues as planned
- Corte Madera Reservoir Replacement Project completed in April 2022
- Advanced Metering Infrastructure (AMI) program preparation started in 2022

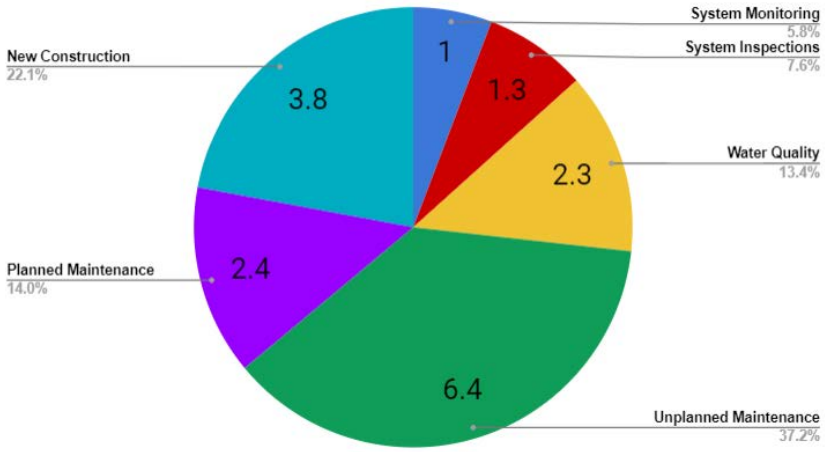
Infrastructure Overview

Key infrastructure replacement efforts in the next five years include:

- Regular mains, services, hydrants, and valve replacement
- Seismic upgrade of California Ave Turnout
- Repair and seismic retrofit of Dahl and Park Reservoirs

System Operations and Maintenance

Figure 1: FTE Breakdown by Maintenance Category



There are 17.2 Total FTE's working on Water System O&M.

- **Water Quality (2.4 FTE):**
  - ***Monitoring:** Weekly, monthly, quarterly, annual water quality sampling
  - ***System Flushing:** Flushing dead ends in the system to prevent bacterial accumulation
  - **Backflow Prevention (BFP) Program:** Ensuring water from easily contaminated end-uses does not enter water system
- ***System Monitoring (1 FTE):** 24-hour monitoring and management of the system to ensure it is operating safely, moving water in and out of reservoirs to preserve water quality
- **System Inspections (1.3 FTE):** Periodic field inspections of pump stations and other key system components
- **Planned Maintenance (2.4 FTE):** Test and maintain distribution system equipment required for operations such as station mechanical equipment, valves, and meters, and non-

Water Utility Goals

What are our goals and objectives?

-Minimize system failures
-Prevent property damage
-Protect the health and safety of staff and the community
-Maintain adequate storage and fire flow for fighting fires
-Meet or exceed Industry Best Management Practices for maximizing asset life and minimizing maintenance cost
-Meet or exceed regulatory requirements

How do we achieve those goals?

-Perform routine monitoring and inspections and respond with timely repairs
-Replace or repair assets as they reach the end of their useful life
-Perform hydraulic modeling analysis and test system performance
-Train and implement new techniques, tools, and procedures to increase productivity

emergency repair and replacement of degraded or damaged assets (e.g. hydrants, valves, mains, and services).

- ***Unplanned Maintenance (6.4 FTE):** Emergency response and infrastructure repairs and replacements requiring immediate attention.
- **New Construction (3.8 FTE):** Installation of new water services, valves, and meters for construction projects.

**Priority programs critical to daily operation*

Maintenance Status:

- Critical maintenance programs running smoothly
- BFP inspection program meets state requirements, needs evaluations as growth continues.
- Adapt Valve exercise program to enable digital data capture in the field.
- Large meter testing program is being created and will be implemented by 2024.

Table 1: Status of Drinking Water System Operation and Maintenance Programs

System Operation or Maintenance Program	**Status** Green = good Yellow = room for improvement	**Comments**
Water quality monitoring		City has a regular testing program to meet all regulatory requirements. This includes tests of disinfection effectiveness, water quality, and water physical characteristics.
System flushing		Flushing is performed to prevent stagnation of water in rarely used outlets like hydrants and blowoff valves. This flushing is done on a regular seasonal schedule. City is maintaining flushing requirements while being mindful of water conservation where possible.
Backflow prevention		Backflow Prevention Devices (BFDs) protect water quality by preventing water in a customer's system from flowing back into the City system. The City owns about 400 BFDs which are tested annually. Private BFD owners are required to test annually and submit results to the City. The City then reports this data to the State Water Resources Board. The City continues to work with customers to improve compliance and reporting rates have increased this year. This program continues to grow as more water services require backflow prevention, increased staffing and support would allow the program to look at more efficient testing protocols for both the City and our customers.
System monitoring		The City maintains 24-hour system monitoring. Sufficient staff have the experience, training, and certifications required to handle this function and ensure uninterrupted oversight in the event of an emergency.

Valve Exercise		Valves are being operated on a multi-year cycle and broken valves are repaired as they are discovered. Currently, valve exercising records are marked and maintained on physical utility grid map sheets, and records are submitted and digitally recorded when all valves on a particular grid have been exercised. On occasion, records for specific grids will take longer to submit for recordation, if the valving is difficult to access or requires additional traffic controls and/or staffing. The data presented in this scorecard lags actual field performance. WGW Operations is working to improve our ESRI interfaces to facilitate digital collection of data in the field. This will allow for real-time data and remove the current lags that can occur in data entry.
Meter Maintenance		Multiple one-time sampling projects have shown that most meters are in good shape. There are many meters due for replacement, and the mass replacement of older, small water meters with new advanced metering infrastructure (AMI) is in preparation. Meter exchanges for AMI will begin in 2023. Meter testing was performed by a third-party contractor.
Unplanned Maintenance		There are no backlogs of leaks or assets in need of repair. The City maintains an emergency on-call program to respond to and control water leaks or other system emergencies at any hour of the day or night.

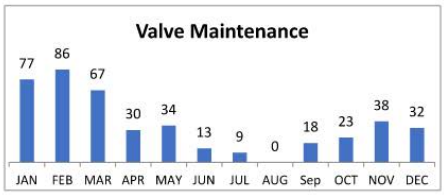
Table 2: Condition of Drinking Water System Assets

Asset Class	Quantity	Maintenance	Asset Condition
Water Receiving Stations (Turnouts)	5	Meter testing (every 2 years) Annual Maintenance (calibrate pressure transducer and analog gauges, exercise isolation valves and PRV's, clean out cover)	Most receiving stations currently require only minor and routine maintenance and are in good condition overall. Some minor improvement projects may be required in the next few years. California Ave turnout is scheduled for pipe replacement and rehabilitation in CY24. Page Mill Turnout is scheduled for valve restraint work in CY23, which will allow the completion of some annual maintenance items that have been deferred for two years, due to safety concerns.
Booster Stations / Pressure	7 / 6	Annual maintenance (calibrate upstream / downstream pressure	Most booster stations and pressure reduction stations require only minor and routine maintenance and are in

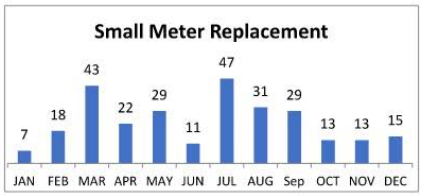
Reducing Stations		transducer, analog gauges, check pressure switches, exercise isolation valves and PRV's, cleaning). Mayfield and El Camino PS have VFD's which are maintained by Tesco. Weekly monitoring	good condition overall. Maintenance work for the five booster stations in the Foothills portion of the system was on hold to maintain full operation while Corte Madera Reservoir Construction was underway. Maintenance will continue in the Foothills booster stations now that Corte Madera is back in operation, including repainting all five of the booster stations in CY24. Minor improvement projects may be required in the next few years.
Reservoirs	7	Annual maintenance (climb tank, take physical reading of water level, check altitude valve, check screens, calibrate tank pressure transducer, analog gauges) Water quality monitoring	Several reservoirs have had recent seismic upgrades and general rehabilitation. The new Corte Madera Reservoir has been constructed and brought into service in CY2022. Dahl and Park Reservoirs are scheduled for repair and seismic retrofit in CY 2024-2028.
Emergency Wells	8	Annual maintenance, inspection, and testing of wells by Tesco, third party contractor. Routine inspection and water quality monitoring and monthly maintenance of systems performed by staff.	City wells were rehabilitated in 2013, but some maintenance is needed. City has begun evaluating adding generators for wells.
Water Valves	~6,500 valves	Operate every valve at least once every five years (1200 valves per year), repair / replace as needed Operate 120 critical valves in foothills annually	Valves are replaced on failure, or proactively when water mains in the area are replaced.
Water Mains and Services	~230 miles of main, ~20,000 services	Repair leaks as identified Monitor water quality	Water Main Replacement program continues as planned, prioritizing leaky pipes and seismically vulnerable pipes. Asbestos-Cement Pipe testing program is underway to help update replacement program as needed.

Water Meters	~20,000 small meters, 380 large meters	Sample test small meters, test / repair large meters annually	Replacement of oldest small water meters continues, informed by small meter testing. Large meter testing will begin in CY2023, which will help identify large meters in need of replacement. AMI meter upgrade project is currently under way in 2022 to replace many older small water meters.
Fire Hydrants	~2000 public hydrants	Maintenance	Hydrants are replaced upon failure.

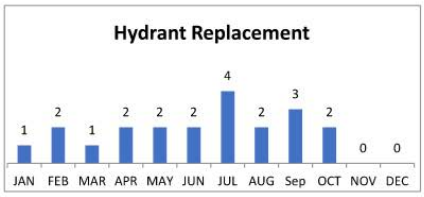
Figure 2: Water Maintenance and Inspection Charts



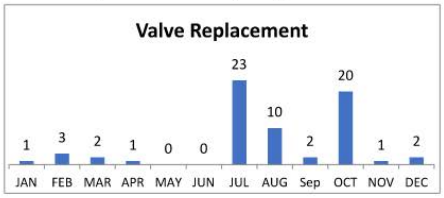
Valve data is delayed coming in from the field, Ops has averaged 3000 Water Valves maintained per year, we expect 2022 to rise to that level once all data is in. We are also working to impove data collection systems for faster reporting.



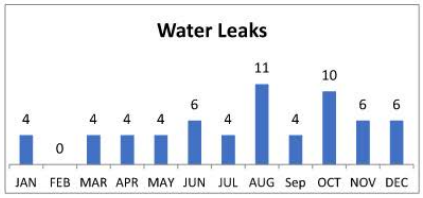
Small meters are replaced at the end of their lifecycle (20 years), this program is affected by the upcoming AMI process which will be replacing aproximately 8000 meters in the next 2 years.



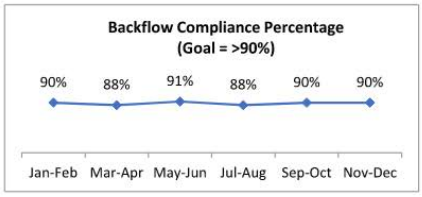
At this time hydrants are replaced only as needed, most replacements are due to being struck by vehicles.



Valves are replaced during Water Main Replacement Projects and when they are identified as leaking or broken during regular valve maintenance.



Water leaks include leaks that are the result of the natural movement in the earth causing stress on pipes and joins or material failure. They also include damage to pipe done by excavasion. They are treated as emergencies and worked immediatly to minimize the loss of this precious resource.



The Number of BFDs in the system continues to grow every year, at the close of 2022 there were 4603. Compliance is dependant on Customers testing their devices and submitting those tests to the City.

12 Appendix D: Utilities Customer Program Descriptions

The City's Utilities Department maintains a number of programs to help customers save money, use energy and water efficiently, and reduce carbon emissions. These programs are funded through a variety of funding sources, some of which are summarized below.

12.1 Customer Programs Overview

Below is a summary of the City's energy and water efficiency programs, as well as programs to encourage building electrification and adoption of electric vehicles.

12.1.1 Energy and Water Efficiency

Residential Energy Efficiency and Water Conservation Programs

The Home Efficiency Genie program provides residents with professional advice and information to improve their home's efficiency and comfort, lower their energy and water usage and get guidance on home electrification options. Even with the Genie returning to in-home comprehensive and diagnostic assessments in the fall of 2021, the virtual option developed during COVID continues to be a service that residents are interested in. The Home Electrification Readiness Assessment (HERA) was also amended to include a virtual version during COVID. Both the in-home and virtual versions continue to help residents assess home electrification upgrades that their home can accommodate and provide actionable next steps. During FY 2023 the Genie team provided 47 comprehensive in-home assessments and 26 virtual assessments. Those assessments also included 38 HERA to help residents evaluate their homes for electrification upgrade planning.

CPAU's Residential Energy Assistance Program (REAP) for income-qualified customers continues to reach our most vulnerable population offering energy and water efficiency improvements at no cost to the customer. Residents who are newly qualified for CPAU's Rate Assistance Program (RAP) are notified each month of their eligibility for these free upgrades installed by CPAU's vendor, Synergy. Multiple projects are being scheduled for REAP customers to take advantage of the free efficiency upgrades, with projects including building envelope improvements, furnace replacements with high efficiency models, and lighting upgrades to LEDs. Recently a new measure for high-efficiency toilets (HETs) was added.

For our multifamily (MF) property owners, CPAU continues to offer the Multi Family Plus (MF+) program which offers free energy efficiency upgrades installed by our vendor, Synergy. These upgrades include lighting upgrades to LEDs and whole building envelope upgrades. Recently a new measure for high-efficiency toilets (HETs) was added.

CPAU partners with Valley Water to offer a robust portfolio of water conservation programs and rebates for residents and businesses.

Commercial & Industrial Energy Efficiency Program

The Commercial and Industrial Energy Efficiency Program (CIEEP) offers free energy audits to businesses. These audits help businesses identify areas where they can save energy, such as improving lighting, controls, occupancy sensors, refrigeration systems, HVAC systems, and other equipment. Furthermore, CIEEP's can help provide technical assistance to businesses to help them implement energy efficiency measures. This can include

suggestions that help customers develop energy efficiency plans, provide information on energy-efficient technologies, and connecting businesses with contractors.

Business Customer Rebates, formerly Commercial Advantage Program

The Business Customer Rebate (BCR) remains the primary program for customers to apply for rebates for energy efficiency and electrification projects installed at customers sites. City of Palo Alto Utilities (CPAU) offers rebates to commercial, industrial, and public sector customers to upgrade their equipment to energy-efficient products. In May 2022, BCR was expanded to offer electrification rebates to incentivize customers to retrofit gas space heating, water heating and cooking equipment with efficient electric alternatives.

Business Energy Advisor

The Business Energy Advisor program provides consultation and on-site assessments from the Business Energy Advisor with custom recommendations for businesses to help them lower utility costs with more efficient equipment.

12.1.2 Building Electrification

Full-Service Heat Pump Water Heater Program

This program, launched in early 2023, aims to make it easier and more affordable for residents to switch to a heat pump water heater (HPWH). The program has a goal of installing 1,000 HPWHs in one year, by providing a prescreened contractor to install HPWH at single family homes at a cost comparable to a gas water heater installation and offering on-bill financing to lower the upfront cost. Customers also have the option to choose their own contractors and apply for a $2300 rebate if the equipment meets the program criteria and has been permitted.

Business Electrification Technical Assistance Program (BE TAP)

For commercial customers, staff partnered with CLEAResult in the launch of the Business Electrification Technical Assistance Program (BE TAP) in August 2022. This program offers free electrification assessment and technical assistance to implement building electrification projects to a variety of business types including but not limited to hotels, restaurants, churches, and office buildings. To date, program outreach activities include call campaigns, e-newsletters, in person door-to-door outreach, and utility bill inserts.

12.1.3 Electric Vehicles

Palo Alto continues to facilitate the installation of EV charging infrastructure throughout the City to support mass EV adoption, with equitable access for multifamily and income-qualified residents, as well as workplaces, public parking lots and retail areas. Correspondingly, cross-departmental work is progressing on proposals for fleet electrification.

Summary of All EV Programs for Multi-family (MF) Properties and Workplaces

- **Mission:** The EV team's mission is to facilitate the installation of EV chargers to support increased EV adoption with a priority on MF properties. To reach 80 by 30 S/CAP goals, it is imperative that there is enough charging infrastructure for residents, commuters and visitors. For residents, the priority is to close the MF EV access gap, as only 13% of EVs in Palo Alto are registered at MF buildings, while MF makes up 42% of households.
- **Goal of EV Programs:** Expand EV charging accessibility to 10% of MF households (about 1,100 homes) by 2025.

- **Why:** Most middle-income and low to moderate-income residents in Palo Alto live in MF housing. Of the 11,000 households living in MF, 23% have annual income levels which are under 400% Federal Poverty Levels. EVs provide significant lifetime household savings, and yet those who most need those savings have the hardest time gaining EV charging access due to the challenges associated with installing chargers at MF properties. Private industry is not adequately serving this market, whereas the City is well-positioned to support this hard to reach and slower to move customer segment, making meaningful use of available City funding sources for EV promotion.
- **Target Customer Segment:** MF property owners, Homeowners Associations (HOAs), nonprofits, owners of small medium businesses and buildings, as well large C&I customers.
- **What CPAU can provide:**
    - Trusted, neutral advisory services (rather than vendor sales services) with a direct connection to internal City staff to facilitate problems.
    - Technical assistance (site evaluation, including electrical capacity, business case development, project design, obtaining bids, preparing permit packages)
    - Incentives (both for charging equipment and distribution upgrades)
- **Strategy:** Facilitate development of shared Level 2 chargers in multi-family buildings as well as, as many Level 1 chargers as can be installed. Size electrical infrastructure to enable the building owner to add more EV charging ports in the future. Also, encourage the installation of low-power Level 2 chargers when appropriate as a grid-friendly strategy to increase EV charging options for as many EVs as possible.

EV Technical Assistance Program (EVTAP)

- **Goal**: Facilitate the installation of 180-360 ports @ 60-90 sites (By 2024)
- Offer technical assistance for the installation of EV chargers at Non-Profit and MF properties, involving a series of site visits, technical evaluations, engineering reviews, and design proposals, culminating in the landlord receiving contractor bids, followed by assistance submitting a building permit, applying for incentives and project management of the installation. Completed projects have taken up to 2 years to reach completion.

EV Charger Rebate Program

- **Goal**: Incentivize the installation of EV chargers at Non-Profits and Multifamily properties. CPAU currently offers up to $8,000 per port for up to 10 ports. Currently looking into lowering rebate levels due to increased demand for rebates and a decreased income from Low Carbon Fuel Standard credits (see 6.2.1). The program is also considering putting a time limitation on fund reservations, to accelerate projects reaching completion.

California Electric Vehicle Infrastructure Project

- **Goal**: Facilitate and incentivize the installation of EV chargers at commercial sites.

EV Awareness and Outreach

- **Goal**: Raise awareness, answer questions and encourage residents to consider transitioning to electrified modes of transportation, including electric cars, e-Bikes and other modes of clean transportation.

City-Owned EV Chargers

Goal: Install EV Charging Infrastructure for the public as well as City-fleet.

Transformer Upgrade Rebate Program

- **Goal**: Provide discounts to defray the cost of utility distribution system upgrades triggered by EV applications, costs that would otherwise be borne by the customers. With this program we are offering up to $100K for MF & non-profits and up to $10K for Single Family Homes

Many older properties in Palo Alto, especially multifamily buildings, have limited electric capacity to accommodate EV chargers and building electrification. Yet, there is a nationwide transformer supply shortage, potentially delaying customer EV projects. In the meantime, the EV team is working closely with Engineering and is conducting a pre-screening of transformer loading for all commercial EV projects enrolled in EVTAP as well as proposing designs utilizing existing electric capacity.

12.1.4 Funding Sources for Emissions Reductions

Energy efficiency and water efficiency programs have traditionally been funded by electric, gas, and water rate revenues. To fund emissions reduction programs, the City has developed multiple alternative funding sources:

- **Low Carbon Fuel Standard (LCFS) Program:** The City participates in the California Air Resources Board (CARB) LCFS program, receiving credits for the provision of low-carbon fuels (such as clean electricity and compressed natural gas) and must use the revenues from the sale of these credits for programs and other efforts promoting low-carbon vehicle adoption.
- **Cap and Trade Program:** The City's electric and gas utilities are required to participate in the State's cap and trade program, but these utilities receive some of the revenue from the auction of allowances for the program. The revenue must be used for emissions-reducing activities.
- **Public Benefits Funds:** Locally owned municipal utilities must collect a surcharge from their electric utility customers under section 385 of the Public Utilities Code (there is a similar requirement for gas utilities) to be used on cost-effective energy efficiency and conservation, low-income programs, renewable energy, and research and development.

The amount of revenue currently held in reserve for each revenue source and the projections for future revenue are shown below.

Figure 33: Potential Emissions Reduction Funding Sources

	Reserves ($000)	Projected Revenues ($000)			
	(July 1, 2023)	FY 2023	FY 2024	FY 2025	FY 2026
LCFS Program	7,000	935	1,200	1,400	1,600
Cap and Trade (Electric)	1,189	3,027	3,016	2,992	2,999
Cap and Trade (Gas)	6,731	2,102	3,074	3,487	3,898
Public Benefits	3,890	3,841	4,780	5,076	3,729

Expenditures for each revenue source are as follows:

- LCFS revenues have been used primarily to facilitate the installation of EV chargers in multi-family buildings and are expected to be used that way in the future unless the City's priorities shift. Some has been used for general promotion of EVs.
- Cap and Trade revenues have been used to purchase renewable energy and for the Advanced Heat Pump Water Heater pilot. More use of these revenues for electrification programs is expected in the future, though no specific approvals have been sought yet.
- Public Benefit funds are used for energy efficiency (including low-income programs) and building electrification.

APPROVED By:

Dean Batchelor, Director of Utilities
Staff: Eric Wong, Resource Planner

Utilities Advisory Commission
Staff Report

From: Dean Batchelor, Director Utilities
Lead Department: Utilities

Meeting Date: November 1, 2023
Staff Report: 2310-2144

TITLE
Winter 2023-24 Natural Gas Price Uncertainty Management Council Decision Implementation

RECOMMENDATION
This is an informational item. No action is requested.

EXECUTIVE SUMMARY
Palo Alto City Council (Council), at its regular meeting on September 18, 2023, adopted a resolution which modified the City's gas purchasing strategy for this upcoming winter. Council's decision was in response to the high energy prices that occurred last winter which resulted in dramatically high bills for Palo Alto customers.

The gas commodity charge is based on a monthly market-based index. This purchasing strategy change involves purchasing price caps, limiting the price of gas cost $2 per therm for a portion of City's anticipated gas needs. The impact on customers of what is, in essence, an insurance policy to mitigate the potential for a repeat of high winter gas prices, was limited by the Council action to a maximum 15 cents per therm.

Per Council's decision, staff implemented the capped-price winter natural gas purchasing strategy in October 2023 for the gas year November 2023-October 2024. Within the constraints set by Council, staff was able to purchase $2 per therm price caps for about half of Palo Alto's expected load for the months of December 2023, January 2024 and February 2024.

The cost of the price caps was $0.275 per therm and a total cost of $1.5 million. Spread out over the entire year, an adder of $0.055 per therm will be applied to the gas commodity charge passed through to customers. This represents approximately $1.81 on a typical residential customer's bill or an approximate 2.8% increase, not taking into account changes in the underlying commodity price which is still based on a market index.

The amended rate schedules associated with this implementation will be effective November 1, 2023. The website and rate schedules have been updated to reflect this change.

ATTACHMENTS
Attachment A: 09-18-2023 Staff Report 2306-1660

Attachment B: Presentation

Approved by:
Dean Batchelor, Director of Utilities
Staff: Karla Dailey, Acting Assistant Director of Utilities

CITY OF PALO ALTO

City Council Staff Report

From: City Manager
Report Type: ACTION ITEMS
Lead Department: Utilities

Meeting Date: September 18, 2023
Report Staff:2306-1660

TITLE
Public Hearing: Adoption of a Resolution Approving Capped-Price Winter Natural Gas Purchases for Winter 2023-24 and Amending the FY 2024 Gas Fund Budget to Fund These Purchases; Amending the Gas Utility Long-term Plan Objectives, Strategies and Implementation Plan; and Amending Rate Schedules G-1 (Residential Gas Service), G-2 (Residential Master-Metered and Commercial Gas Service), G-3 (Large Commercial Gas Service), and G-10 (Compressed Natural Gas Service); CEQA status: not a project under Public Resources Code 15378(b)(5) and exempt under Public Resources Code 15273(a)

RECOMMENDATION
The Finance Committee recommends that City Council (Council) adopt a resolution (Attachment A):

1. Implementing capped-price winter natural gas purchases for winter 2023-24 with a maximum commodity rate impact of 15 cents per therm;
2. Amending the FY 2024 Budget Appropriation in the Gas Fund (requires 2/3 approval) by:
    a. Increasing the Gas Operating Budget for Commodity Purchases by $2,000,000; and
    b. Increasing the Gas Operating Retail revenue estimate by $2,000,000
3. Amending the Gas Utility Long-term Plan (GULP) Objectives, Strategies and Implementation Plan (Attachment B) to implement the capped-price winter gas purchases intended to manage potential winter 2023 gas price spikes; and
4. Amending Rate Schedules G-1 (Residential Gas Service), G-2 (Residential Master-Metered and Commercial Gas Service), G-3 (Large Commercial Gas Service), and G-10 (Compressed Natural Gas Service) (Attachment C), effective November 1, 2023.

EXECUTIVE SUMMARY

Based on the Finance Committee's recommendation on August 15, 2023 (Finance Committee Aug 15, 2023[1]), staff is seeking Council approval to implement capped-price winter natural gas purchasing for winter 2023-24.

Capped-price winter gas purchasing involves continuing to purchase monthly gas at prices tied to a published market monthly index, but purchasing the gas with a price cap in place. Purchasing capped price gas functions as an insurance policy, in which the City will pay an additional charge to a gas supplier, in order to limit the price the City pays for gas to a maximum of $2 per therm, and thus avoiding exposure to extremely high market prices like those seen during winter 2022-23.

The City's current monthly market-price-based gas purchasing and pass-through commodity rate strategy has been in place since 2012 when the strategy was approved by Council (Council Approval of Pass-through Rates)[2]. Under this strategy, the City purchases baseload gas at prices tied to a published gas market monthly index, adjusted to account for delivery losses to the customer's meter and a municipal purchase discount.

This past winter (2022-23), natural gas prices rose dramatically across the western United States, resulting in high customer bills and numerous customer inquiries. In response, staff explored alternatives for mitigating the impact of similar market events in the future. Staff identified a gas procurement strategy – capped-price winter gas purchasing – that could limit the impact of another unexpected surge in prices and be implemented in time for this upcoming winter (2023-24).

The actual cost of this product cannot be precisely determined until staff receives proposals from eligible counterparties; staff estimates that implementing capped-price winter gas purchasing for winter 2023-24 could result in an additional cost of $1.93 million-$3.03 million and an increase of 4-6% in the median monthly residential customer gas bill over the year, assuming the product is available. Staff recommends Council approve a maximum customer commodity rate impact of 15 cents per therm on gas sales over a 12-month period. Staff recommends Council approve a maximum customer commodity rate impact of 15 cents per therm on gas sales over a 12-month period. Resulting in a percentage breakdown of an 8% increase on an annual bill. The City will purchase as much capped-price winter gas as is available and projected to be necessary to serve load while staying within the 15 cents per therm impact limit. The Council-approved $4 per therm maximum commodity charge will not change.

GULP is the vehicle by which the gas supply portfolio is managed consistently, transparently, and with input from Council. Council amended the GULP Objectives, Strategies, and Implementation

[1] https://cityofpaloalto.primegov.com/Portal/Meeting?meetingTemplateId=12741

[2] https://www.cityofpaloalto.org/files/assets/public/from-archive/agendas-minutes-reports/reports/city-manager-reports-cmrs/2012/final-staff-report-id-2552_gas-utility-long-term-plan-revisions.pdf

Plan most recently in 2017 (Staff Report #7967)[3]. Council adoption of staff's proposed capped price winter natural gas purchases to manage potential winter 2023 natural gas price spikes requires conforming changes to GULP which are reflected in Attachment B. Since 2017, there have been a number of other Council-approved changes to policies and operations that require conforming changes to GULP. For simplicity, those changes will be addressed in a separate future staff report.

BACKGROUND

Prior to the 2001 energy crisis, Palo Alto engaged in minimal short-term natural gas commodity hedging. Hedging is a risk management strategy used to achieve some level of cost stability despite fluctuations in commodity prices. The energy crisis sent market prices soaring, and the City's largely unhedged gas portfolio experienced gas supply cost shocks that required four major retail gas rate increases in FY 2001 (15%, 25%, 35% and 67%). In addition, $9 million was withdrawn from the Gas Supply Rate Stabilization Reserve (G-SRSR) leaving a near-zero balance.

In 2001, in direct response to the financial pain caused by gas rate increases experienced during the energy crisis, staff developed and Council approved a gas laddering strategy, whereby a portion of the City's gas needs would be purchased at fixed-prices and capped-prices over a 36-month time horizon. The goal of this purchasing strategy was to smooth or stabilize gas supply costs relative to the extremely volatile market. The gas laddering strategy was only applicable to residential and small commercial customers. Palo Alto's eight largest customers managed their own gas portfolio costs by electing either a monthly market-based commodity rate, a fixed rate for 12 or 24 months, or a custom rate.

In the summer of 2008, the credit crisis combined with increased gas supply from new shale developments sent market prices plummeting. As anticipated in a falling market, Palo Alto's average gas supply cost became higher than wholesale market prices, and commodity rates were therefore higher since some fixed-price gas was purchased prior to the price decline. This prompted a review of the laddering strategy.

In 2012, Council approved a new monthly market-price-based purchasing and pass-through commodity rate strategy. The City began purchasing gas at prices tied to a published gas market monthly index, adjusted to account for delivery losses to the customer's meter and a municipal purchase discount. That purchase price, which made up the commodity charge, was passed through in customer's retail gas rates. This monthly market-price-based purchasing and pass-through commodity rate strategy has remained in place since.

DISCUSSION

Winter 2022-23 Gas Prices

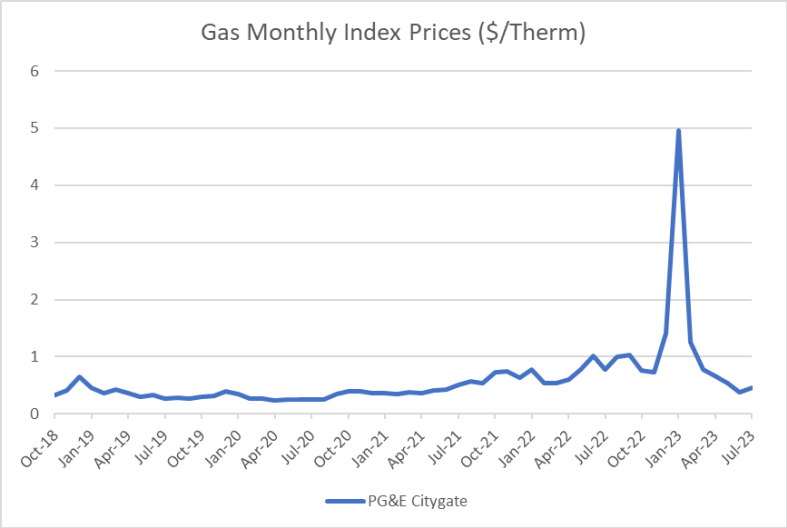
This past winter (2022-23), natural gas prices rose dramatically across the western United States due to a confluence of factors, including: (a) historically cold December temperatures, (b)

[3] https://www.cityofpaloalto.org/files/assets/public/agendas-minutes-reports/reports/city-manager-reports-cmrs/year-archive/2017/id-7967-6-5-17-ccm.pdf

unusually low regional gas storage levels, (c) constraints on the availability of natural gas supplies flowing into California, and (d) an increased reliance on natural gas in the electric power sector as a result of the ongoing drought's impact on hydroelectric supplies. Though fundamental conditions were influencing the increase in prices, those factors alone do not explain the unprecedented price spike. January natural gas prices were five times greater than November prices. In December 2022, Council increased the maximum allowed commodity rate passed through to customers from $2 per therm to $4 per therm, but the City's price to purchase January gas was $5 per therm, resulting in a $1.8M shortfall discussed in more detail below. The sudden and extreme increase in natural gas prices is under investigation by Federal Energy Regulatory Commission (FERC) and California Public Utilities Commission (CPUC). The preliminary timeline for these investigations to yield findings is in the spring of 2026, subject to change.

Figure 1 shows the published gas market monthly indexes from October 2018 through July 2023, including the winter 2022-23 price surge. The PG&E Citygate hub in Northern California is a delivery point for Palo Alto's gas purchases and the index on which the city gas commodity rates are based.

Figure 1



When staff began to see signs of higher gas prices in late November and early December 2022, attempts were made to inform customers in advance through utility bill messaging, website notices, social media, email newsletters, and other community forums. Customers were encouraged to take action and save energy to try to avoid surprisingly high utility bills. The gas market monthly index for January 2023 settled at just below $5 per therm, above the Council-approved maximum commodity rate for the first time in history.

Because the gas market monthly index exceeded the maximum Council-approved commodity rate, the full cost of January gas was not passed through to customers; instead about $1.84 million in reserves was withdrawn to cover the difference between the maximum commodity

rate and market purchase price. Even so, the impact on customer bills was significant, and the City received a large number of customer inquiries. The City responded by offering resources to help customers with higher than anticipated utility bill costs, including access to free home efficiency assessments through the Home Efficiency Genie and payment arrangements. In April 2023 Council approved gas and electric (Staff Report 2303-1209)[4] rebates of $2.4 million, funded by the City's General Fund, to compensate residential customers for the high energy bills they experienced.

Gas prices dropped and began to stabilize to levels under $1 per therm in March 2023, and monthly indexes as well as price forecasts for the upcoming winter 2023-24 have remained below the $1 per therm level to present. However, due to the dramatic rise in gas prices and resulting high customer bills, staff explored alternative gas procurement strategies that would limit the risk and impact of another unexpected surge in prices and could be implemented in time for this upcoming winter 2023-24.

Recommended Capped-Price Winter Gas Purchase

The capped-price winter gas purchasing alternative involves continuing to purchase monthly gas at prices tied to a published market monthly index, but also purchasing the gas needed for the coldest winter months with a price cap in place. The estimated cost of purchasing the price cap is $2.0 million-$3.0 million for December 2023-February 2024. This functions as an insurance policy and limits the price paid to a maximum of $2 per therm, a price consistent with the pre-winter 2022-23 Council-approved maximum commodity rate. For example, if the monthly index settles below $2 per therm, the City's purchase price would be the monthly index; on the other hand, if the monthly index settles at or above $2 per therm, the City's purchase price would be $2 per therm.

In order to minimize customer bill impacts, staff proposes spreading the cost of the price cap over the calendar year. Commodity charges are one part of the City's monthly gas volumetric and service charges[5], which are listed in the City's gas rate schedules and shown by month.

December, January, and February are typically the coldest and most expensive months for gas in California and the most at risk for dramatic rises in gas prices due to winter supply and demand and market fundamentals. These were the three months during this past winter 2022-23 when the market monthly indexes settled at the highest levels, from above $1.25 per therm to just shy of $5/therm. Given the cost of a $2 per therm price cap, staff only recommends purchasing gas with the price cap in place for the December, January, and February months and recommends continuing to purchase gas without the price cap for the other months of the year.

[4] https://cityofpaloalto.primegov.com/Portal/viewer?id=1954&type=0

[5] https://www.cityofpaloalto.org/files/assets/public/utilities/rates-schedules-for-utilities/residential-utility-rates/monthly-gas-volumetric-and-service-charges-residential.pdf

If approved by Council, the capped-price winter purchasing strategy will be implemented in accordance with the Energy Risk Management Policy[6], Guidelines, and Procedures. The City solicit bids from a list of pre-approved counterparties (Staff Report 14551)[7] for all natural gas purchases to ensure competitive pricing and consistent, robust contract terms. The amended rate schedules associated with this change will be effective November 1, 2023.

Finance Committee Review

Staff presented the two alternatives to the Finance Committee on August 15, 2023, seeking their recommendation on whether to maintain the current market-price-based gas purchasing and pass-through commodity rate strategy or implement the capped-price winter gas purchasing alternative for winter 2023-24. Their recommendation (by a vote of 3-0) for Council approval was to implement capped-price winter gas purchasing for winter 2023-24.

Alternative Strategies Not Recommended

The default alternative is to maintain the current market-price-based gas purchasing and pass-through commodity rate strategy for this upcoming winter 2023-24 with no price spike mitigation measures. Considerations for maintaining the current policy include: 1) energy market prices are inherently unpredictable and volatile, but gas prices (including for the upcoming winter) have come down significantly and stabilized since March 2023; 2) Palo Alto's commodity rates are generally less than PG&E's; and 3) this policy yields the lowest average supply cost over many years of implementation.

Considerations for revising the current strategy and implementing capped-price winter gas purchasing include: 1) reserve levels will be protected, protecting against the need for future rate increases; 2) customer costs will be higher if implemented over many years; 3) this acts as an insurance policy that adds cost but may not be used; 4) this is an uncommon strategy in gas markets, and thus the capped-price product may not be readily available from suppliers; and 5) this may result in an additional cost that is even greater than staff's estimate, if the market is very volatile, or lower than staff's estimate if the market is relatively stable.

Staff is presenting the capped-price winter gas purchasing alternative because it could be implemented in time for this upcoming winter. There are also other alternatives that could potentially be considered for the future. These alternatives, which would take additional resources and time to evaluate, plan, and implement, include: 1) establishing an additional special reserve to manage gas price spikes; 2) making a limited volume of fixed-price gas purchases; 3) reverting to a full laddering strategy; 4) investing in gas production assets; and 5) investing in gas storage.

[6] https://www.cityofpaloalto.org/files/assets/public/sustainability/policies-and-plans/attachment-c-energy-risk-management-policy-2018.pdf

[7] https://portal.laserfiche.com/Portal/DocView.aspx?id=59239&repo=r-704298fc&searchid=6445f704-ce44-46fc-adc1-0d9e3606c5af

Changes to GULP Needed if Council Adopts Capped Price Winter Gas Purchase Strategy

The 2017 GULP update included the change from a hedged portfolio to market-based retail gas rates. Those commodity rates have been in effect since 2013. Cost containment applied to winter 2023 gas purchases, if adopted, requires changes to GULP as shown in Table 1 below. The GULP Objectives, Strategies and Implementation Plans are attached. While some other items also need updates, staff is not proposing changes other than those associated with the gas purchasing strategy at this time for the sake of simplicity. Administrative updates will be brought to Council in a separate staff report.

Table 1: Market Price Transparency in GULP

GULP	Current	Proposed
Objective 1	Pass a market cost signal through to customers.	Pass a market supply cost signal through to customers with measures to protect against price spikes applied during winter months.
Strategy 1	a. Purchase natural gas at monthly and daily market index prices. b. Change gas supply rate monthly to reflect market prices.	a. Purchasing natural gas at monthly and daily market index prices; b. Changing gas supply rates monthly to reflect market prices; and c. Purchasing physical capped-price gas for some or all forecasted natural gas volumes for December through February, provided that the cost of the price caps results in no more than a 15 cents per therm impact on retail commodity gas rates.
Implementation Plan Item 1	a. Continue to implement market-based supply purchases and commodity rates.	Implement market-based supply purchases and commodity rates with measures to protect against price spikes applied during winter months by: a. Developing a new purchasing plan to be approved by the Director of Utilities; and c. Conducting customer communication and outreach.

FISCAL/RESOURCE IMPACT

There are no additional fiscal or resource impacts of maintaining the current market-price-based natural gas purchasing and pass-through commodity rate strategy.

There is a fiscal impact associated with implementing the capped-price winter natural gas purchasing alternative for winter 2023-24; no additional staff resources are needed. The cost of the price cap for December 2023-February 2024 is estimated at $0.175-$0.275 per therm, based on recent supplier quotes, resulting in an additional estimated gas supply cost of $2.0 million-$3.0 million to the City, assuming the capped price product is available on the market. Staff recommends an appropriation of $2.0 million in the FY 2024 Gas Operating budget in the Commodity Purchase category to increase the budget from $20.8 million to $22.8 million, which will be offset by increased retail gas prices and corresponding revenues from customers.

The commodity charge for customer gas rates would continue to be based on the monthly market price, which will include the cost of the December 2023-February 2024 purchase price cap, applied over 12 months. The estimated cost impact is $0.07-$0.11 per therm, which would result in an increase of 4-6% in the median monthly residential customer bill over the year if capped price purchases prove necessary and available. The increase would be 4-6% for the winter bill months (November 2023-March 2024) and 3-5% for the summer bill months (April 2024-October 2024).

Table 2 shows the median monthly residential customer bill and the projected impact based on the estimated cost of $0.07 per therm or $0.11 per therm for the price cap.

Table 2

Median Monthly Residential Bill - Projected Impact						
			Commodity Cost Increase		Commodity Cost Increase/Bill Estimate	
Season	Therms	Bill Estimate	$0.07	$0.11	$0.07	$0.11
Winter (Nov-Mar)	54	$ 99.80	$ 3.78	$ 5.94	4%	6%
Summer (Apr-Oct)	18	$ 40.52	$ 1.26	$ 1.98	3%	5%
Annual	33	$ 65.22	$ 2.31	$ 3.63	4%	6%

STAKEHOLDER ENGAGEMENT

The Finance Committee reviewed the alternatives presented by staff at its August 15, 2023 (Finance Committee Aug 15, 2023)[8] meeting and voted unanimously to recommend the capped price gas purchasing strategy to Council. If adopted by Council, the website will be updated to reflect the change in the commodity rate calculation in the Monthly Gas Volumetric and Service Charges[9] document. In addition, customers will be notified via bill inserts and social media.

[8] Finance Committee Staff Report https://cityofpaloalto.primegov.com/Portal/Meeting?meetingTemplateId=12741

[9] Monthly Gas Volumetric and Service Charges https://www.cityofpaloalto.org/files/assets/public/utilities/rates-schedules-for-utilities/residential-utility-rates/monthly-gas-volumetric-and-service-charges-residential.pdf

ENVIRONMENTAL REVIEW

Council's approval of capped-price winter natural gas purchasing for winter 2023-24, amendments to the FY 2024 Gas Fund budget appropriation and amendments to the Gas Utility Long-term Plan (GULP) Objectives, Strategies and Implementation Plan does not require California Environmental Quality Act review, since these actions do not meet the definition of a project under Public Resources Code Section 21065 and CEQA Guidelines Section 15378(b)(5), because these are administrative governmental activities which will not cause a direct or indirect physical change in the environment, and therefore, no environmental assessment is required. The Council finds that changing the Commodity Charge Cost Component of gas rates schedules to meet operating expenses, purchase supplies and materials, meet financial reserve needs and obtain funds for capital improvements necessary to maintain service is not subject to the California Environmental Quality Act (CEQA), pursuant to California Public Resources Code Sec. 21080(b)(8) and Title 14 of the California Code of Regulations Sec.15273(a). After reviewing the staff report and all attachments presented to Council, the Council incorporates these documents herein and finds that sufficient evidence has been presented setting forth with specificity the basis for this claim of CEQA exemption.

ATTACHMENTS

Attachment A: Resolution Approving Capped-Price Winter Natural Gas Purchase for Winter 2023-24 and Amending the FY24 Gas Fund Budget

Attachment B: GULP Revisions 2023 Winter Hedging

APPROVED BY:

Dean Batchelor, Director of Utilities

Staff: Karla Dailey, Acting Assistant Director

Jason Huang, Resource Planner

Attachment A

* NOT YET APPROVED *

Resolution No. _____

Resolution of the Council of the City of Palo Alto Approving Capped-Price Winter Natural Gas Purchases for Winter 2023-24 and Amending the FY 2024 Gas Fund Budget by $2,000,000 to Fund These Purchases; Amending the Gas Utility Long-term Plan Objectives, Strategies and Implementation Plan; and Amending Rate Schedules G-1 (Residential Gas Service), G-2 (Residential Master-Metered and Commercial Gas Service), G-3 (Large Commercial Gas Service), and G-10 (Compressed Natural Gas Service)

R E C I T A L S

A. On March 7, 2011, the Council adopted Resolution No. 9151, which approved the Gas Utility Long-term Plan Objectives, Strategies and Implementation Plan (the "Plan").

B. On April 23, 2012, the Council adopted Resolution No. 9244, which amended the Gas Utility Long-term Plan Objectives, Strategies and Implementation Plan (the "Plan").

C. The Council's Finance Committee has recommended the Council approve implementation of capped-price winter natural gas purchases for Winter 2023-24, which requires Council's approval of certain amendments to the Plan, which are attached and incorporated by reference as Exhibit A to this Resolution.

D. Resolution No. 9244 is intended to be amended to reflect the current version of the Plan.

E. Pursuant to Chapter 12.20.010 of the Palo Alto Municipal Code, the Council of the City of Palo Alto may by resolution adopt rules and regulations governing utility services, fees and charges.

F. Implementing capped-price winter natural gas purchasing requires amending the FY 2024 Gas Fund Budget by $2,000,000 to fund these purchases.

G. Implementing capped-price winter natural gas purchasing requires amending the Commodity Charge cost component of Rate Schedules G-1 (Residential Gas Service), G-2 (Residential Master-Metered and Commercial Gas Service), G-3 (Large Commercial Gas Service), and G- 10 (Compressed Natural Gas Service); attached and incorporated as Exhibits B through E to this Resolution.

H. On September 18, 2023, the City Council heard and approved the proposed gas rate increases at a noticed public hearing.

The Council of the City of Palo Alto does hereby RESOLVE as follows:

* NOT YET APPROVED *

SECTION 1. The Council hereby approves the amendments to the Gas Utility Long-term Plan Objectives, Strategies and Implementation Plan (GULP), attached to this Resolution as Exhibit A.

SECTION 2. Resolution No. 9244 is hereby amended in so far as the Plan, as amended, is hereby approved.

SECTION 3. The Council hereby approves increasing the FY 2024 Gas Fund budget and gas operating revenues by $2,000,000.

SECTION 4 Pursuant to Section 12.20.010 of the Palo Alto Municipal Code, Utility Rate Schedule G-1 (Residential Gas Service) is hereby amended to read as attached and incorporated to this Resolution as Exhibit B. Utility Rate Schedule G-1, as amended, shall become effective November 1, 2023.

SECTION 5. Pursuant to Section 12.20.010 of the Palo Alto Municipal Code, Utility Rate Schedule G-2 (Residential Master-Metered and Commercial Gas Service) is hereby amended to read as attached and incorporated to this Resolution as Exhibit C. Utility Rate Schedule G-2, as amended, shall become effective November 1, 2023.

SECTION 6. Pursuant to Section 12.20.010 of the Palo Alto Municipal Code, Utility Rate Schedule G-3 (Large Commercial Gas Service) is hereby amended to read as attached and incorporated to this Resolution as Exhibit D. Utility Rate Schedule G-3, as amended, shall become effective November 1, 2023.

SECTION 7. Pursuant to Section 12.20.010 of the Palo Alto Municipal Code, Utility Rate Schedule G-10 (Compressed Natural Gas Service Service) is hereby amended to read as attached and incorporated to this Resolution as Exhibit E. Utility Rate Schedule G-10, as amended, shall become effective November 1, 2023.

SECTION 8. The City Council finds as follows:

a. Revenues derived from the gas rates approved by this resolution do not exceed the funds required to provide gas service.

b. Revenues derived from the gas rates approved by this resolution shall not be used for any purpose other than providing gas service, and the purposes set forth in Article VII, Section 2, of the Charter of the City of Palo Alto.

SECTION 9. The Council finds that the fees and charges adopted by this resolution are charges imposed for a specific government service or product provided directly to the payor that are not provided to those not charged, and do not exceed the reasonable costs to the City of providing the service or product.

* NOT YET APPROVED *

SECTION 10. The Council finds that approving the changes to the FY 2024 Gas Fund budget appropriation and Plan does not meet the California Environmental Quality Act's (CEQA) definition of a project under Public Resources Code Section 21065 and CEQA Guidelines Section 15378(b)(5), because these actions are administrative governmental activities which will not cause a direct or indirect physical change in the environment, and therefore, no environmental assessment is required. The Council finds that changing the Commodity Charge cost component of gas rates to meet operating expenses, purchase supplies and materials, meet financial reserve needs and obtain funds for capital improvements necessary to maintain service is not subject to the California Environmental Quality Act (CEQA), pursuant to California Public Resources Code Sec. 21080(b)(8) and Title 14 of the California Code of Regulations Sec. 15273(a). After reviewing the staff report and all attachments presented to Council, the Council incorporates these documents herein and finds that sufficient evidence has been presented setting forth with specificity the basis for this claim of CEQA exemption.

INTRODUCED AND PASSED:

AYES:

NOES:

ABSENT:

ABSTENTIONS:

ATTEST:

_____
City Clerk

_____
Mayor

APPROVED AS TO FORM:

APPROVED:

_____
Assistant City Attorney

_____
City Manager

_____
Director of Utilities

_____
Director of Administrative Services

Exhibit A

Proposed Gas Utility Long-term Plan (GULP)
Objectives, Strategies and Implementation Plan

Adopted by Council on _____ via Resolution No. _____.

GULP Objectives:

1. Market price transparency – Pass a market supply cost signal through to customers with measures to protect against price spikes applied during winter months.
2. Supply Cost Management – Lower delivered gas cost over the long term.
3. Energy Efficiency – Ensure the deployment of all feasible, reliable, cost-effective energy efficiency measures.
4. Climate Protection – Reduce the carbon intensity of the gas portfolio in accordance with the Sustainability and Climate Protection Plan.
5. Parity with PG&E – At a reasonable cost, protect the City's interests and maintain access to transportation on par with PG&E's core customers.

GULP Strategies:

1. Pass a market supply cost signal through to customers with measures to protect against price spikes applied during winter months by:
   a. Purchasing natural gas at monthly and daily market index prices;
   b. Changing gas supply rates monthly to reflect market prices; and
   c. Purchasing physical capped-price gas for some or all forecasted natural gas volumes for December through February, provided that the cost of the price caps results in no more than a 15 cents per therm impact on retail commodity gas rates.
2. Lower delivered gas cost over the long term by:
   a. Acquiring pipeline assets that yield supply costs below market and meet operational needs;
   b. Taking advantage of the City's low cost of capital to acquire gas supply and assets; and
   c. Optimizing existing assets.
3. Ensure the deployment of all feasible, reliable, cost-effective energy efficiency measures by:
   a. Developing a ten-year gas efficiency plan every four years maintaining consistency with the electric energy efficiency goals update schedule; and
   b. Considering the impacts of electrification on gas demand.
4. Reduce the carbon intensity of the gas portfolio in accordance with the Climate Protection Plan by:
   a. Terminating the PaloAltoGreen Gas program established by Resolution 9405; and
   b. Designing and implementing the Carbon Neutral Gas Plan to achieve carbon reduction with no more than a 10 cent per therm rate impact.
5. At a reasonable cost, protect the City's interests and maintain access to transportation on par with PG&E's core customers by:
   a. Participating in the regulatory and legislative arenas when the potential impact on the City is aligned with the cost to intervene and the probability of success;
   a. Negotiating with PG&E for fair access to transportation and storage; and
   b. Exploring potential joint action with other public agencies.

ATTACHMENT A

GULP Implementation Plan:

1. Implement market-based supply purchases and commodity rates with measures to protect against price spikes applied during winter months by:
   a. Developing a new purchasing plan to be approved by the Director of Utilities; and
   b. Conducting customer communication and outreach.
2. Pursue below-market assets available through the Gas Transportation and Storage Settlement by:
   a. Evaluating the pipeline capacity reservation options available; and
   b. Contracting with PG&E for any pipeline capacity with an estimated cost below the forecasted market value.
3. Monitor the prepay market and prepare for implementation in preparation for a future MuniGas transaction.
4. Implement gas efficiency programs to meet the gas efficiency goals.
5. Track and report on gas efficiency by:
   a. Providing quarterly updates to the UAC about the gas efficiency programs; and
   b. Providing annual updates to Council on gas efficiency achievements compared to the goals and overall cost effectiveness.
6. Continue evaluating new gas efficiency technologies and undertake pilot studies where appropriate.
7. Pursue potential modifications to the Carbon Neutral Gas Plan by:
   a. Determining an acceptable premium, if any, to be paid for a local offset project if and when a certified project is identified; and
   b. Investigating alternatives to offsets, including methods involving voter approval.

RESIDENTIAL GAS SERVICE

UTILITY RATE SCHEDULE G-1

A. APPLICABILITY:

This schedule applies to the following Customers receiving Gas Service from City of Palo Alto Utilities:

1. Separately-metered single-family residential Customers;
2. Separately-metered multi-family residential Customers in multi-family residential facilities.

B. TERRITORY:

This schedule applies anywhere the City of Palo Alto provides Gas Service.

C. UNBUNDLED RATES:

	Per Service
Monthly Service Charge:	$14.01

Tier 1 Rates:	Per Therm
Supply Charges:	
1. Commodity (Monthly Market Based)	$0.10-$4.00
2. Cap and Trade Compliance Charge	$0.00-$0.25
3. Transportation Charge	$0.00-$0.25
4. Carbon Offset Charge	$0.00-$0.10
Distribution Charge:	$0.6807

Tier 2 Rates: (All usage over 100% of Tier 1)	
Supply Charges:	
1. Commodity (Monthly Market Based)	$0.10-$4.00
2. Cap and Trade Compliance Charge	$0.00-$0.25
3. Transportation Charge	$0.00-$0.25
4. Carbon Offset Charge	$0.00-$0.10
Distribution Charge:	$1.7406

D. SPECIAL NOTES:

1. Calculation of Cost Components

RESIDENTIAL GAS SERVICE

UTILITY RATE SCHEDULE G-1

The actual bill amount is calculated based on the applicable rates in Section C above and adjusted for any applicable discounts, surcharges and/or Taxes. On a Customer's bill statement, the bill amount may be broken down into appropriate components as calculated under Section C.

The Commodity Charge is based on the monthly natural gas Bidweek Price Index for delivery at PG&E Citygate, adjusted to account for delivery losses to the Customer's Meter. The Commodity Charge also includes adjustments to account for Council-approved programs implemented to reduce the cost of gas, including a municipal purchase discount[1], and a maximum $0.15/per therm cost for capped price winter natural gas purchases[2].
~~The Commodity Charge is based on the monthly natural gas Bidweek Price Index for delivery at PG&E Citygate, accounting for delivery losses to the Customer's Meter.~~

The Cap and Trade Compliance Charge reflects the City's cost of regulatory compliance with the state's Cap and Trade Program, including the cost of acquiring compliance instruments sufficient to cover the City's Gas Utility's compliance obligations. The Cap and Trade Compliance Charge will change in response to changing market conditions, retail sales volumes and the quantity of allowances required.

The Carbon Offset Charge reflects the City's cost to purchase offsets for greenhouse gases produced in the burning of natural gas. The Carbon Offset Charge will change in response to changing market conditions, changing sales volumes and the quantity of offsets purchased within the Council-approved per therm cap.

The Transportation Charge is based on the current PG&E G-WSL rate for Palo Alto, accounting for delivery losses to the Customer's Meter.

1 Adopted via Resolution 9451, on September 15, 2014.

2 Adopted via Resolution XXXX, on September 18, 2023.

The Commodity, Cap and Trade Compliance, Carbon Offset and Transportation Charges will fall within the minimum/maximum ranges set forth in Section C. Current and historic per therm rates for the Commodity, Cap and Trade Compliance, Carbon Offset and Transportation Charges are posted on the City Utilities website.[3]

~~1.~~2. Seasonal Rate Changes:

The Summer period is effective April 1 to October 31 and the Winter period is effective from November 1 to March 31. When the billing period includes use in both the Summer and the Winter periods, the usage will be prorated based on the number of days in each seasonal period, and the charges based on the applicable rates for each period. For further discussion of bill calculation and proration, refer to Rule and Regulation 11.

~~2.~~3. Calculation of Usage Tiers

Tier 1 natural gas usage shall be calculated and billed based upon a level of 0.667 therms per day during the Summer period and 2.0 therms per day during the Winter period, rounded to the nearest whole therm, based on meter reading days of service. As an example, for a 30 day bill, the Tier 1 level would be 20 therms during the Summer period and 60 therms during the Winter period months. For further discussion of bill calculation and proration, refer to Rule and Regulation 11.

{End}

3 Monthly gas and commodity and volumetric rates are available here, or by visiting https://www.cityofpaloalto.org/files/assets/public/utilities/rates-schedules-for-utilities/residential-utility-rates/monthly-gas-volumetric-and-service-charges-residential.pdf

RESIDENTIAL MASTER-METERED AND COMMERCIAL GAS SERVICE

UTILITY RATE SCHEDULE G-2

A. APPLICABILITY:

This schedule applies to the following Customers receiving Gas Service from the City of Palo Alto Utilities:

1. Commercial Customers who use less than 250,000 therms per year at one site;
2. Master-metered residential Customers in multi-family residential facilities.

B. TERRITORY:

This schedule applies anywhere the City of Palo Alto provides Gas Service.

C. UNBUNDLED RATES:

	Per Service
Monthly Service Charge:	$129.78

	Per Therm
Supply Charges:	
1. Commodity (Monthly Market Based)	$0.10-$4.00
2. Cap and Trade Compliance Charges	$0.00-$0.25
3. Transportation Charge	$0.00-$0.25
4. Carbon Offset Charge	$0.00-$0.10
Distribution Charge:	$0.8941

D. SPECIAL NOTES:

1. Calculation of Cost Components

The actual bill amount is calculated based on the applicable rates in Section C above and adjusted for any applicable discounts, surcharges and/or Taxes. On a Customer's bill statement, the bill amount may be broken down into appropriate components as calculated under Section C.

The Commodity Charge is based on the monthly natural gas Bidweek Price Index for delivery at PG&E Citygate, adjusted to account for delivery losses to the Customer's Meter. The Commodity Charge also includes adjustments to account for Council-approved programs implemented to reduce the cost of gas, including a municipal purchase discount[1], and a maximum $0.15/per therm cost for capped price winter natural

1 Adopted via Resolution 9451, on September 15, 2014.

RESIDENTIAL MASTER-METERED AND COMMERCIAL GAS SERVICE

UTILITY RATE SCHEDULE G-2

gas purchases[2].
~~The Commodity Charge is based on the monthly natural gas Bidweek Price Index for delivery at PG&E Citygate, accounting for delivery losses to the Customer's Meter.~~

The Cap and Trade Compliance Charge reflects the City's cost of regulatory compliance with the state's Cap and Trade Program, including the cost of acquiring compliance instruments sufficient to cover the City's Gas Utility's compliance obligations. The Cap and Trade Compliance Charge will change in response to changing market conditions, retail sales volumes and the quantity of allowances required.

The Carbon Offset Charge reflects the City's cost to purchase offsets for greenhouse gases produced in the burning of natural gas. The Carbon Offset Charge will change in response to changing market conditions, changing sales volumes and the quantity of offsets purchased within the Council-approved per therm cap.

The Transportation Charge is based on the current PG&E G-WSL rate for Palo Alto, accounting for delivery losses to the Customer's Meter.

The Commodity, Cap and Trade Compliance, Carbon Offset and Transportation Charges will fall within the minimum/maximum ranges set forth in Section C. Current and historic per therm rates for the Commodity, Cap and Trade Compliance, Carbon Offset and Transportation Charges are posted on the City Utilities website.[3]

{End}

2 Adopted via Resolution XXXX, on September 18, 2023
3 Monthly gas and commodity and volumetric rates are available here, or by visiting https://www.cityofpaloalto.org/files/assets/public/utilities/business/business-rates/monthly-gas-volumetric-and-service-charges-commercial.pdf

LARGE COMMERCIAL GAS SERVICE

UTILITY RATE SCHEDULE G-3

A. APPLICABILITY:

This schedule applies to the following Customers receiving Gas Service from the City of Palo Alto Utilities:

1. Commercial Customers who use at least 250,000 therms per year at one site;
2. Customers at City-owned generation facilities.

B. TERRITORY:

This schedule applies anywhere the City of Palo Alto provides Gas Service.

C. UNBUNDLED RATES:

	Per Service
Monthly Service Charge:	$593.79

	Per Therm
Supply Charges:	
1. Commodity (Monthly Market Based)	$0.10-$4.00
2. Cap and Trade Compliance Charges	$0.00-$0.25
3. Transportation Charge	$0.00-$0.25
4. Carbon Offset Charge	$0.00-$0.10
Distribution Charge:	$0.8852

D. SPECIAL NOTES:

1. Calculation of Cost Components

The actual bill amount is calculated based on the applicable rates in Section C above and adjusted for any applicable discounts, surcharges and/or Taxes. On a Customer's bill statement, the bill amount may be broken down into appropriate components as calculated under Section C.

The Commodity Charge is based on the monthly natural gas Bidweek Price Index for delivery at PG&E Citygate, adjusted to account for delivery losses to the Customer's Meter. The Commodity Charge also includes adjustments to account for Council-approved programs implemented to reduce the cost of gas, including a municipal

purchase discount[1], and a maximum $0.15/per therm cost for capped price winter natural gas purchases[2].
~~The Commodity Charge is based on the monthly natural gas Bidweek Price Index for delivery at PG&E Citygate, accounting for delivery losses to the Customer's Meter.~~

The Cap and Trade Compliance Charge reflects the City's cost of regulatory compliance with the state's Cap and Trade Program, including the cost of acquiring compliance instruments sufficient to cover the City's Gas Utility's compliance obligations. The Cap and Trade Compliance Charge will change in response to changing market conditions, retail sales volumes and the quantity of allowances required.

The Carbon Offset Charge reflects the City's cost to purchase offsets for greenhouse gases produced in the burning of natural gas. The Carbon Offset Charge will change in response to changing market conditions, changing sales volumes and the quantity of offsets purchased within the Council-approved per therm cap.

The Transportation Charge is based on the current PG&E G-WSL rate for Palo Alto, accounting for delivery losses to the Customer's Meter.

The Commodity, Cap and Trade Compliance, Carbon Offset and Transportation Charges will fall within the minimum/maximum ranges set forth in Section C. Current and historic per therm rates for the Commodity, Cap and Trade Compliance, Carbon Offset and Transportation Charges are posted on the City Utilities website.[3]

2. Request for Service

A qualifying Customer may request service under this schedule for more than one account or meter if the accounts are located on one site. A site consists of one or more contiguous parcels of land with no intervening public right-of- ways (e.g. streets).

3. Changing Rate Schedules

1 Adopted via Resolution 9451, on September 15, 2014.

2 Adopted via Resolution XXXX, on September 18, 2023.

3 Monthly gas and commodity and volumetric rates are available here, or by visiting https://www.cityofpaloalto.org/files/assets/public/utilities/business/business-rates/monthly-gas-volumetric-and-service-charges-commercial.pdf

LARGE COMMERCIAL GAS SERVICE

UTILITY RATE SCHEDULE G-3

Customers may request a rate schedule change at any time to any applicable City of Palo Alto full-service rate schedule.

{End}

COMPRESSED NATURAL GAS SERVICE

UTILITY RATE SCHEDULE G-10

A. APPLICABILITY:

This schedule applies to the sale of natural gas to the City-owned compressed natural gas (CNG) fueling station at the Municipal Service Center in Palo Alto.

B. TERRITORY:

Applies to the City's CNG fueling station located at the Municipal Service Center in City of Palo Alto.

C. UNBUNDLED RATES:

	Per Service
Monthly Service Charge:	$87.77

	Per Therm
Supply Charges:	
Commodity (Monthly Market Based)	$0.10-$4.00
Cap and Trade Compliance Charges	$0.00-$0.25
Transportation Charge	$0.00-$0.25
Carbon Offset Charge	$0.00-$0.10
Distribution Charge	$0.0145

D. SPECIAL CONDITIONS

1. Calculation of Cost Components

The actual bill amount is calculated based on the applicable rates in Section C above and adjusted for any applicable discounts, surcharges and/or Taxes. On a Customer's bill statement, the bill amount may be broken down into appropriate components as calculated under Section C.

The Commodity Charge is based on the monthly natural gas Bidweek Price Index for delivery at PG&E Citygate, adjusted to account for delivery losses to the Customer's Meter. The Commodity Charge also includes adjustments to account for Council-approved programs implemented to reduce the cost of gas, including a municipal purchase discount[1], and a

1 Adopted via Resolution 9451, on September 15, 2014.

COMPRESSED NATURAL GAS SERVICE

UTILITY RATE SCHEDULE G-10

maximum $0.15/per therm cost for capped price winter natural gas purchases[2].
~~The Commodity charge is based on the monthly natural gas Bidweek Price Index for delivery at PG&E Citygate, accounting for delivery losses to the Customer's Meter.~~

The Cap and Trade Compliance Charge reflects the City's cost of regulatory compliance with the state's Cap and Trade Program, including the cost of acquiring compliance instruments sufficient to cover the City's Gas Utility's compliance obligations. The Cap and Trade Compliance Charge will change in response to changing market conditions, retail sales volumes and the quantity of allowances required.

The Carbon Offset Charge reflects the City's cost to purchase offsets for greenhouse gases produced in the burning of natural gas. The Carbon Offset Charge will change in response to changing market conditions, changing sales volumes and the quantity of offsets purchased within the Council-approved per therm cap.

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{End}

2 Adopted via Resolution XXXX, on September 18, 2023.
3 Monthly gas and commodity and volumetric rates are available here, or by visiting https://www.cityofpaloalto.org/files/assets/public/utilities/business/business-rates/monthly-gas-volumetric-and-service-charges-commercial.pdf

Proposed Gas Utility Long-term Plan (GULP)
Objectives, Strategies and Implementation Plan
(applicable if Council approves winter gas cost containment alternative)

GULP Objectives:

1. Market price transparency – Pass a market supply cost signal through to customers with measures to protect against price spikes applied during winter months.
2. Supply Cost Management – Lower delivered gas cost over the long term.
3. Energy Efficiency – Ensure the deployment of all feasible, reliable, cost-effective energy efficiency measures.
4. Climate Protection – Reduce the carbon intensity of the gas portfolio in accordance with the Sustainability and Climate Protection Plan.
5. Parity with PG&E – At a reasonable cost, protect the City's interests and maintain access to transportation on par with PG&E's core customers.

GULP Strategies:

1. Pass a market supply cost signal through to customers with measures to protect against price spikes applied during winter months by:
   a. Purchasing natural gas at monthly and daily market index prices;
   b. Changing gas supply rates monthly to reflect market prices; and
   c. Purchasing physical capped price gas for some or all forecasted natural gas volumes for December through February, provided that the cost of the price caps results in no more than a 15 cents per therm impact on retail commodity gas rates.

2. Lower delivered gas cost over the long term by:
   a. Acquiring pipeline assets that yield supply costs below market and meet operational needs;
   b. Taking advantage of the City's low cost of capital to acquire gas supply and assets; and
   c. Optimizing existing assets.
3. Ensure the deployment of all feasible, reliable, cost-effective energy efficiency measures by:
   a. Developing a ten-year gas efficiency plan every four years maintaining consistency with the electric energy efficiency goals update schedule; and
   b. Considering the impacts of electrification on gas demand.
4. Reduce the carbon intensity of the gas portfolio in accordance with the Climate Protection Plan by:
   a. Terminating the PaloAltoGreen Gas program established by Resolution 9405; and
   b. Designing and implementing the Carbon Neutral Gas Plan to achieve carbon reduction with no more than a 10 cent per therm rate impact.
5. At a reasonable cost, protect the City's interests and maintain access to transportation on par with PG&E's core customers by:
   a. Participating in the regulatory and legislative arenas when the potential impact on the City is aligned with the cost to intervene and the probability of success;
   a. Negotiating with PG&E for fair access to transportation and stora
   b. Exploring potential joint action with other public agencies.

GULP Implementation Plan:

1. ~~Continue to i~~Implement market-based supply purchases and commodity rates with measures to protect against price spikes applied during winter months by:
   a. Developing a new purchasing plan to be approved by the Director of Utilities; and
   b. Conducting customer communication and outreach.

~~1.~~2. Pursue below-market assets available through the Gas Transportation and Storage Settlement by:
   a. Evaluating the pipeline capacity reservation options available; and
   b. Contracting with PG&E for any pipeline capacity with an estimated cost below the forecasted market value.

~~2.~~3. Monitor the prepay market and prepare for implementation in preparation for a future MuniGas transaction.

~~3.~~4. Implement gas efficiency programs to meet the gas efficiency goals.

~~4.~~5. Track and report on gas efficiency by:
   a. Providing quarterly updates to the UAC about the gas efficiency programs; and
   b. Providing annual updates to Council on gas efficiency achievements compared to the goals and overall cost effectiveness.

~~5.~~6. Continue evaluating new gas efficiency technologies and undertake pilot studies where appropriate.

~~6.~~7. Pursue potential modifications to the Carbon Neutral Gas Plan by:
   a. Determining an acceptable premium, if any, to be paid for a local offset project if and when a certified project is identified; and
   b. Investigating alternatives to offsets, including methods involving voter approval.

CITY OF PALO ALTO

Winter 2023-24 Natural Gas Price Uncertainty Management Council Decision Implementation

Utilities Advisory Commission

November 1, 2023

www.cityofpaloalto.org

Background

- In 2012, Council approved a monthly market-price-based natural gas purchasing and pass-through commodity rate strategy (Resolution 9244) due to falling market natural gas prices and resulting non competitiveness with PG&E
- City purchases gas at prices tied to a published market monthly index
- Customer gas rates include the commodity charge based on the published monthly index (commodity charge has a maximum per the customer gas rates schedule)
- Monthly prices remained under the previous Council-approved $2/therm maximum commodity charge until January 2023

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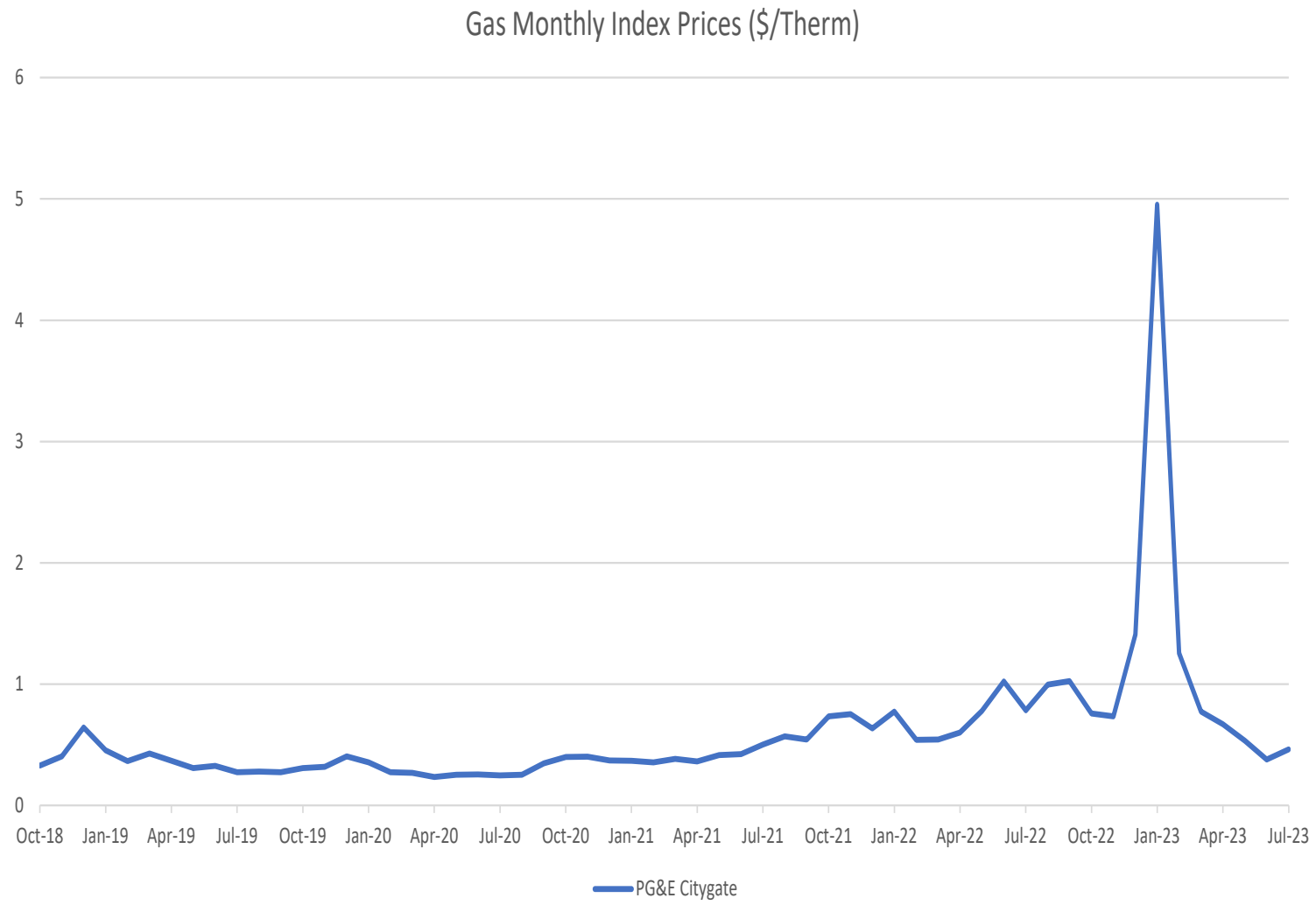
Winter 2022-23 Price Surge

- In late November 2022, gas prices started rising dramatically in CA
- Staff communicated to customers about the expected higher prices and in December 2022 Council increased the $2/therm maximum commodity charge to $4/therm
- Monthly index price for January 2023 settled at just below $5/therm
- Reserves ($1.84 million) were utilized to cover a portion of the price increase

Gas Monthly Index Prices



Alternative: Capped-Price Winter Gas Purchasing (Recommended by Finance Committee)

CITY OF PALO ALTO

- Continue purchasing gas at prices tied to a published market monthly index
- For some winter months, CPAU can also purchase gas with a price cap in place, which functions as an insurance premium and caps the price paid at $2/therm
  - If the monthly index settles below $2/therm, the price paid is the monthly index
  - If the monthly index settles at or above $2/therm, the price paid is $2/therm
- Commodity charge will continue to be tied to monthly market price plus an increase that spreads out the total Dec-Feb price cap cost over 12 months

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Considerations for Alternative: Capped-price Winter Gas Purchasing

- Will protect reserves from price spikes
- Will protect customers from price spikes
- Will be higher cost to customers if implemented over many years
- May be an insurance policy that adds cost and is not used
- Capped price product is uncommon and may not be readily available from suppliers
- Cost of product may be higher if market is very volatile or lower if market is stable

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Implementation and Resulting Cost of Price Cap/Customer Bill Impact

- Price cap $2/therm
- December 2023, January 2024 and February 2024
- $0.275/therm, 50% of baseload volumes (*estimate was $0.175-$0.275/therm)*
- $1.5M total cost *(estimate was $2M-$3M)*
- $0.055/therm increase applied to gas sales *(estimate was $0.07-$0.11/therm)*
- About $1.81 increase median monthly residential bill *(estimate was $2.31-$3.63)*
- About 2.8% increase *(estimate was 4%-6%)*

Other Alternatives – Potentially Considered for the Future

- Establish special reserve to manage gas price spikes
- Fixed-price gas purchases
- Full-laddering strategy
- Gas production assets
- Gas storage

Communication

- Gas tariffs uploaded November 1 https://www.cityofpaloalto.org/files/assets/public/v/6/utilities/rates-schedules-for-utilities/residential-utility-rates/g-1-effective-2023-07-01.pdf, https://www.cityofpaloalto.org/files/assets/public/v/6/utilities/rates-schedules-for-utilities/commercial-utility-rates/g-2-effective-2023-07-01.pdf, https://www.cityofpaloalto.org/files/assets/public/v/6/utilities/rates-schedules-for-utilities/commercial-utility-rates/g-3-effective-2023-07-01.pdf

- Rates page (explanation of the rate components) https://www.cityofpaloalto.org/files/assets/public/v/7/utilities/rates-schedules-for-utilities/residential-utility-rates/monthly-gas-volumetric-and-service-charges-residential.pdf

- Rates page https://www.cityofpaloalto.org/Departments/Utilities/Customer-Service/Utilities-Rates

- Planning a website news item

Council-adopted Motion

City Council (Council) adopts a resolution (Attachment A):

- Implementing capped-price winter natural gas purchases for winter 2023-24 with a maximum commodity rate impact of 15 cents per therm;

- Amending the FY 2024 Gas Fund Budget Appropriation (requires 2/3 approval) by:
  - Increasing the Gas Operating Budget by $2,000,000; and
  - Increasing the Gas Operating Revenues by $2,000,000

- Amending the Gas Utility Long-term Plan (GULP) Objectives, Strategies and Implementation Plan (Attachment B) to implement the capped-price winter gas purchases intended to manage potential winter 2023 gas price spikes; and

- Increasing gas rates by amending Rate Schedules G-1 (Residential Gas Service), G-2 (Residential Master-Metered and Commercial Gas Service), G-3 (Large Commercial Gas Service), and G-10 (Compressed Natural Gas Service) (Attachment C), effective November 1, 2023

FORECAST
12-MONTH ROLLING CALENDAR

	Utilities Advisory Commission	City Council
November 2023	- Utilities Annual Report FY23 - Recommendation on California Oregon Transmission Project - Winter 2023-24 Natural Gas Price Uncertainty Management Council Decision Implementation	* Approval of the Final 2023 Electric Integrated Resource Plan (FCM) * Palo Alto Fiber Project Study Session (FCM) * Solid Dieletric Switches RFQ (C) * WWMP Consulting Services WGW Engineering (C) * Ameresco PPA (C) * Update on the Palo Alto Fiber Plan Study Session (C) * Recommendation on California Oregon Transmission Project (FCM)
December 2023	- Reliability and Resiliency Strategic Plan Update - Discussion and Update on Projects from 2015 to 2020 in WGW and Electric - Preliminary Financial Forecast - Cross Bore Phase 3	* Approval of the Final 2023 Electric Integrated Resource Plan (C) * Recommendation on California Oregon Transmission Project (C) * Approval of Consultant Contract for Reliability and Resiliency Strategic Plan (C) * Adoption of Resolutions and Ordinances for Three Building Electrification Programs (C) * Tesla and Capacity PPP Project (C)

To be Scheduled

- Educational Update on any Type of New Technology or Terminology
- Projects with a Resiliency Component
- Quarterly Reports (Q1-3 Info Rpts)(*Q4 Discussion Summary of the year*)
  - Financial Report
  - Utilities Programs Update
    - Informational EV Charger Installation Updates
    - Informational Bucket 1 REC Sales Updates
    - Informational Fiber Updates
- Recycled Water Purple Pipe
- GM Update: Fiber Hut Count (update December 2023)
- DER discussion
- Second transmission line update
- 24/7 load following
- Distributed energy resources