FY 2024 GAS UTILITY FINANCIAL PLAN

FY 2024 TO FY 2028

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SECTION 1: DEFINITIONS AND ABBREVIATIONS

ABS: Acrylonitirile butydene styrene, a plastic gas main material

AMI: Advanced Metering Infrastructure

CARB: California Air Resources Board

CIP: Capital Improvement Program

CNG: Compressed Natural Gas

CPAU: City of Palo Alto Utilities Department

CPUC: California Public Utilities Commission

Cross-bore: A cross-bore exists when one utility line has been drilled or "bored" through a portion of another line. Gas cross-bores can occur in sewer lines as a result of "horizontal boring" construction practices.

Distribution: transportation of gas to customers.

GMR Program: Gas Main Replacement Program

Local Transportation: transportation of gas to Palo Alto across PG&E's distribution system from PG&E City Gate.

Malin: a delivery hub referred to in gas purchase contracts and located in Malin, Oregon, where the northern end of PG&E's Redwood Transmission Pipeline is located.

MMBtu: Millions of British thermal units, a unit of gas measurement equal to ten therms. Commonly used for high volume gas measurement. Wholesale purchases of gas from suppliers are typically measured in MMBtu.

O&M: Operations and Maintenance

PE or **HDPE:** Polyethylene, a gas main material (more specifically, High-Density Polyethylene)

PG&E: Pacific Gas and Electric

PG&E Citygate, or **Citygate:** a delivery hub referred to in gas purchase contracts. Any gas delivered to PG&E's distribution system (such as gas delivered at the southern end of PG&E's Redwood Transmission Pipeline) is said to have been delivered at PG&E Citygate.

PVC: Polyvinyl chloride, a plastic gas main material

Summer: April 1 to October 31

Therms: The standard unit of measurement for natural gas sales to customers, equal to 100,000 British thermal units. Therms measure the heating value of the gas, rather than its volume.

Transmission: transportation of gas between major gas delivery hubs via a gas transmission pipeline, such as PG&E's Redwood pipeline.

UAC: Utilities Advisory Commission, an appointed body that advises the City Council on CPAU issues.

Winter: November 1 to March 31

SECTION 2: EXECUTIVE SUMMARY AND RECOMMENDATIONS

This document presents a Financial Plan for the City's Gas Utility for the next five years. This Financial Plan provides revenues to cover the costs of operating the utility safely over that time while adequately investing for the future. It also addresses the financial risks facing the utility over the short term and long term and includes measures to mitigate and manage those risks.

SECTION 2A: OVERVIEW OF FINANCIAL POSITION

Gas commodity costs were extremely high in FY 2023 due to unprecedented supply and demand conditions throughout the western United States. These commodity costs are not projected to recur in FY 2024, and staff plans to propose hedging alternatives to Council that could mitigate futures increases. Staff is proposing to increase the distribution component of the gas rates in FY 2024 to ensure the utility is recovering its costs of operations. Revenues were already below costs after keeping rate increases low through the pandemic, but construction inflation and other factors have driven costs up. The distribution rate increase is projected to increase overall customer bills approximately 8% if supply costs remain the same in FY 2024 as they were in FY 2023, though staff does not expect this. This 8% increase in customer bills results from increasing the distribution component of the rates 21% to fully recover distribution costs and avoid decreasing reserves further. Even with this distribution rate increase, staff expects average annual customer gas bills to decline 13% in FY 2024 compared to FY 2023 because gas supply costs were extremely high in FY 2023, particularly in the winter. FY 2024 annual gas supply costs are forecasted to be about 36% lower than FY 2023. Gas market prices are uncertain, however, and these forecasts can change.

From FY 2024 through FY 2028 gas supply costs are projected to increase by only 1% per year (though this forecast is uncertain)[1] and distribution operational costs are projected to increase by about 4% per year, leading to average overall costs for the gas utility to increase about 3% per year. Total gas bills (including both commodity and distribution components) are forecasted to rise at a slightly higher average rate, 4% per year. However, because distribution rates are currently below costs, distribution **rates** will have to increase faster than distribution **costs** to ensure full cost recovery. The commodity component of the rates is forecasted to increase no more than 1% per year on average, but the distribution component is expected to increase 6% per year on average, for a net 4% per year on average over the forecast period.

Gas commodity costs are extremely uncertain, and changes in commodity costs are passed directly to customers through a month-varying rate adjuster (capped at $4/therm). This Financial Plan projects that increasing gas utility distribution operational costs will cause distribution rates (all costs excluding commodity, transportation, or environmental rate components, which includes operational costs, capital costs, overhead, transfers, and other similar costs) to increase

[1] This results from a projected gradual decline in the main component of gas supply costs, the cost of gas purchased in the market (the "commodity" charge), combined with significant increases in smaller components of commodity costs: gas transportation and environmental charges. The net result is a gradual increase in costs. However, forecasting commodity costs if very uncertain. For more detail gas supply rate design and the sources for these forecasts, see Section 4G: Gas Supply Pass-Through Rates and Section 6A: Gas Purchase Costs

customer bills by 6% per year on average over the forecast period, with higher rate increases in FY 2024 and FY 2025. The significantly higher rate changes are due to the fact that distribution revenues are currently approximately 20% below distribution costs, leading to a need for distribution rate increases to exceed distribution cost increases. Distribution rates are not high enough to recover costs because the utility minimized rate increases in FY 2021 and FY 2022 to minimize the impact of gas rate increases on a community struggling to manage the economic impact of the pandemic.

As shown in Table 1, below, total gas utility costs are projected to be 20% higher in FY 2024 than they were in FY 2022. This is primarily due to higher long-term commodity prices, which are projected to be 25% higher than FY 2022 and are forecasted to remain approximately at those levels through the forecast period (though these forecasts are uncertain). Staff projects operations costs to increase by about 2.6% on average annually through the forecast period primarily due to salary and benefit increases both in the gas utility and for administrative functions provided by the City's General Fund staff.

Capital Improvement Program (CIP) costs vary from year to year and staff projects the two-year average CIP costs to increase by about 10% on average over the forecast horizon. While CPAU has historically planned a new gas main replacement project every year, higher than expected bid proposals have required resizing and redesign of some projects. Since FY 2020, staff has been budgeting for a new, larger main replacement project every other year, and this revised main replacement schedule has allowed CPAU to reasonably meet its main replacement needs while addressing challenges in the construction market and optimizing staffing resources. However, replacement costs continue to rise and holding the gas main replacement program budget steady results in a reduction of the rate of main replacement over time. This Financial Plan addresses these challenges in a way that will allow CPAU to meet its main replacement needs by increasing main replacement budget beginning in FY 2025 and including a 3% annual construction inflationary increase thereafter. Table 1 shows the Gas Utility expenses over the period of this Financial Plan. Staff is also controlling costs by applying for grant funding for the upcoming main replacement project and is currently awaiting a response on a Natural Gas Distribution Infrastructure Safety and Modernization grant opportunity.

Table 1: Gas Utility Expenses for FY 2022 to FY 2028 (Thousand $'s)

Expenses ($000)	FY 2022 (act.)	FY 2023 (est.)	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
Commodity Costs	24,103	48,057	29,948	28,556	29,625	30,289	31,178
Operations	23,225	26,590	26,101	27,393	28,276	28,363	29,134
Capital Projects	4,674	8,217	7,036	10,347	7,500	10,150	7,818
TOTAL	52,002	82,863	63,085	66,296	65,401	68,802	68,130

In order to move towards full cost recovery while minimizing rate impacts, the Financial Plan includes the rate trajectory shown in Table 2.

Table 2: Projected Gas Rate Trajectory for FY 2024 to FY 2028

Projection	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
Current (FY 2024) Financial Plan	8%	7%	5%	5%	5%
FY 2023 Financial Plan	4%	4%	4%	3%	N/A
FY 2022 Financial Plan	5%	5%	0%	N/A	N/A

The unprecedented and extreme gas prices in FY 2023 impacted the gas utility's reserves significantly, and very high double-digit rate increases would be required to return reserves to within guidelines. Staff is proposing to allow the Gas Operations Reserve to be below the risk assessment levels for two fiscal years and below the minimum guideline for three. If costs exceeded available reserves during this time, the gas utility could explore borrowing from another City fund or other short-term financing. See Section 5E: Risk Assessment and Reserves Adequacy for more information.

The gas utility's transfer to the City's General Fund is another component of the City's gas rates. City voters first authorized the transfer in 1950, and in November 2022 voters approved Measure L, affirming the continuation of this practice by amending the Municipal Code. The measure states that each year the City Council may transfer from the gas utility to the general fund an amount up to 18% of the gross revenues of the gas utility,[2] though Council may choose to transfer a lesser amount. This Financial Plan proposes an 18% transfer, $7,191,000 for FY 2023, which aligns with the voter-approved changes codified in PAMC 2.28.185. Although Council will formally direct the FY 2024 transfer amount next year, Staff has provided preliminary projections for FYs 2024 – 2026: Alternative 1 proposes transferring 18% of gross revenue as voters approved in Measure L, and Alternative 2 proposes a transfer between 15.5% and 11.1% annually through FY 2026.

Additional details are shown in Section 5G: Alternative Gas Increase Plans.

Table 3 shows the projected reserve transfers over the forecast period. As noted above, staff is proposing to allow the Gas Operations Reserve to be below the risk assessment levels for two fiscal years and below the minimum guideline for three. The Gas Utility Reserves Management Practices (Attachment B, Section 8) require returning Operations reserves to within minimum guidelines (60 days of O&M and commodity expense) within one year unless an alternative plan is approved by Council.

[2] 18% of the gross revenues of the gas utility received "during the fiscal year two fiscal years before the fiscal year of the transfer." (Section 2.28.185, Palo Alto Municipal Code).

Table 3: Operations, Rate Stabilization and CIP Reserve Starting and Ending Balances, Revenues, Transfers To/(From) Reserves, Capital Program (CIP) Contribution To/(From) Reserves, and Reserve Guideline Levels for FY 2023 to FY 2028 ($000)

		FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
	Starting Reserve Balances						
1	Operations Reserve*	11,300	3,666	4,169	3,983	8,536	13,101
2	CIP Reserve	3,820	-	-	-	-	-
3	Cap and Trade Reserve	6,732	8,834	11,908	15,395	19,294	23,623
4	Debt Service Reserve	434	434	434	434	-	-
	Revenues						
5	Total Revenues	70,468	63,223	65,479	68,993	72,516	76,622
6	Cap and Trade	2,102	3,074	3,487	3,898	4,329	4,776
	Transfers						
7	Operations Reserve*	1,718	(3,074)	(3,487)	(3,464)	(4,329)	(4,776)
8	CIP Reserve	(3,820)	-	-	-	-	-
9	Cap and Trade Reserve	2,102	3,074	3,487	3,898	4,329	4,776
10	Debt Service Reserve				(434)		
	Expenses						
11	Total Non-CIP Expenses	(71,704)	(55,684)	(55,318)	(57,374)	(57,800)	(59,122)
12	Planned Distribution CIP	(10,217)	(7,036)	(10,347)	(7,500)	(10,150)	(11,818)
	Ending Reserve Balances						
1+5+6+7+11+12	Operations Reserve*	3,666	4,169	3,983	8,536	13,101	18,784
2+8	CIP Reserve	-	-	-	-	-	-
3+9	Cap and Trade	8,834	11,908	15,395	19,294	23,623	28,398
4+10	Debt Service Reserve	434	434	434	-	-	-
	Operations Reserve Guidelines						
13	Minimum	13,394	10,044	10,055	10,450	10,575	11,504
14	Maximum	26,788	20,089	20,111	20,900	21,151	23,008
	CIP Reserve Guidelines						
15	Minimum	10,217	7,036	10,347	7,500	10,150	11,818
16	Maximum	17,253	17,383	17,847	17,650	21,968	26,261

*Operations Reserve represents the Gas Supply Fund Rate Stabilization Reserve and the Gas Distribution Fund Operations Reserve combined.

SECTION 2B: SUMMARY OF PROPOSED ACTIONS

Staff proposes the following actions for the Gas Utility in FY 2023:

1. Transfer up to 18% of gas utility gross revenues received during fiscal year 2021 to the general fund; and
2. Transfer up to $3.82 million from the CIP Reserve to the Operations Reserve; and
3. Amend the Gas Utility Reserve Management Practices reflected in Appendix C: Gas Utility Reserves Management Practices, section 11.

Staff proposes the following actions for the Gas Utility in FY 2024:

1. Transfer up to ___% of gas utility gross revenues received during fiscal year 2022 to the general fund; and

2. Increase distribution rates by 21.4% (for an estimated 8% increase to total rates) for FY 2024, primarily reflecting increases to capital expenditures and increased operations costs. See *Section 3B: Current and Proposed Rates* for more details.

Staff requests that Council determine the FY 2024 General Fund transfer and has provided two alternatives for determining the amount of the transfer, which are shown in Section 5G: Alternative Gas Increase Plans. At their March 1, 2023 and March 21, 2023 meetings, respectively, the UAC and Finance Committee recommended transferring 15.5% of gas utility revenues received during FY 2022 to the General Fund in FY 2024, and all rate and cost discussions in this Financial Plan reflect that recommendation.

SECTION 3: DETAIL OF FY 2023 RATE AND RESERVE PROPOSALS

SECTION 3A: RATE DESIGN

The Gas Utility's rates are evaluated and implemented in compliance with cost of service requirements set forth in the California Constitution and applicable statutory law. The Gas Utility's proposed rates are based on the methodology from the March *2019 Natural Gas Cost of Service and Rates Study*.

The City's natural gas rates are based on the 2019 Natural Gas Cost of Service and Rates Study, updated with current and proposed operating costs. During the COVID-19 pandemic, usage amongst customer classes dropped to reflect people working and staying at home rather than going to the workplace. Similarly, businesses operated at minimum staffing conditions or fully remote. Costs related to salaries and benefits, administrative functions provided by the City's General Fund staff, and supply costs are increasing. In order to move towards full cost recovery while minimizing rate impacts, staff recommends a distribution rate increase to all customer classes of 21.4%, which staff estimates will result in an approximate 8% system average rate increase. If, after recovery from the pandemic, usage and/or spending projections change, staff may suggest a re-balancing of rates at that time.

Distribution rates typically comprise approximately 70% of the overall rate, which consists of both gas supply and distribution components (though in FY 2023 it accounted for about 40% due to unprecedented supply cost increases). Supply-related costs include the cost of the natural gas itself (the "commodity" rate), gas transmission, and gas environmental charges, and these are a fluctuating component of the Gas Utility's expenses. Commodity rates, which typically make up approximately 30% of overall retail gas rates, vary significantly due to changes in market conditions. Staff monitors market prices monthly and automatically incorporates market prices into monthly supply rate adjustments, which are passed directly to customers as a line item on their utility bills.

The overall rate changes (commodity plus distribution) referenced in this report are based on current gas market forecasts that indicate that the commodity portion of the overall rate is unlikely to continue at the unprecedented level observed in FY 2023. Current gas market forward prices indicate that average annual commodity costs are likely to decline 36% in FY 2024 from FY 2023. This is consistent with current gas market forecasts from various sources, including

forward gas contracts on exchanges and forecasts from suppliers, but staff cautions that these forecasts can change rapidly due to changing weather, economic factors, or gas supply constraints.

Staff recommends increasing the distribution component of the rates by 21.4%, which equates to an 8% increase to total rates, if commodity rates remained unchanged from FY 2023 (which, as noted above, staff does not project to be the case). Table 6 below shows both the proposed increase in distribution rates (about 21%) and the net impact on rates including commodity costs (about 8% overall, as distribution is about 40% of total rate revenue in FY 2023). From FY 2023 to FY 2024, the distribution portion of customer gas bills will increase 8%, and the commodity portion of the bill is projected to decline 22%. The result is that customers should see a 13% overall **decrease** in their bills in FY 2024 over the prior year, if, as forecasted above, commodity rates drop 36% from FY 2023 to FY 2024.

Table 4: Cost of Service (COSA) Distribution Revenue Requirement by Customer Class

Cost of Service Analysis FY 2024	Proposed Distribution Rate Increase	Forecasted Commodity Rate Change	Net Change for Combined Commodity and Distribution Rate
G1 – Residential	21%	-36%	-13%
G2 - Small Commercial			
G3 - Large Commercial			
Total			

Rate impacts of these changes are outlined in Section 3B: Current and Proposed Rates.

SECTION 3B: CURRENT AND PROPOSED RATES

Gas rates have two drivers: 1) Supply costs – these are costs related to the purchase of gas supply, transmission costs to bring the gas to Palo Alto's meters, and environmental costs, such as the purchase of cap and trade allowances for gas burned and carbon neutral offsets; and 2) Distribution costs. Supply costs are charged to customers via four pass-through rate components related to supplying gas to customers: 1) gas commodity, which represents the cost of buying gas in the markets, 2) gas transportation, which represents the cost of transporting purchased gas to Palo Alto, 3) Cap and Trade compliance, which represents the cost of mandated participation in the State's cap and trade program, and 4) carbon offset charge, which represents the cost of buying offsets for the City's Carbon Neutral Gas Portfolio.

On July 1, 2012 CPAU restructured its rates so that the commodity component of the rates varied monthly to match changes in gas market prices.[3] In January 2015, the Council adopted a new rate component to collect the costs of purchasing allowances for the purpose of compliance with the

[3] Staff Report 2812, 5/17/2012: http://archive.cityofpaloalto.org/civica/filebank/blobdload.asp?BlobID=31395

State's cap-and-trade program.[4] This component changes depending on the cost of allowances and gas demand.

Another component of the City's supply costs is the Transportation Charge, which is the cost that PG&E charges CPAU for transporting gas to Palo Alto via PG&E's pipelines. This charge applies to Palo Alto and other cities and agencies who procure natural gas for resale. In October 2016, the Council adopted a resolution changing the Local Transportation rate (which had been collapsed into the Distribution rate in 2015 to streamline bill presentation), to be reflected on the bill as a pass-through of PG&E's Gas Transportation Rate to Wholesale/Resale Customers (G-WSL) charge to Palo Alto.[5] PG&E's G-WSL rate is currently $0.15/therm as shown in the "Transportation Charge" column of the linked schedule of monthly rates and has a cap of $0.25/therm, which went into effect on July 1, 2022. The transportation charge continues to increase as PG&E collects costs related to improving storage facilities, decommissioning older facilities, increased costs resulting from wildfire mitigation, accounting for and greenhouse gas mitigation costs. Based on PG&E's estimates, prices are going to continue to escalate between 6% and 22% between 2023 and 2026. Current and historic per therm rates for the Transportation Charges are posted on the City Utilities website.[6]

In December 2016, Council approved a carbon neutral gas plan, with a goal of achieving a carbon neutral gas portfolio by FY 2018.[7] Costs associated with the carbon neutral gas plan are passed directly to customers as well, although the maximum rate impact is $0.10 per therm. All gas supply, transmission, and environmental costs are passed through to customers as monthly prices change. Three years' worth of history of these supply rate components can be found on Palo Alto's website.[8]

CPAU has four rate schedules: one for separately metered residential customers (G-1), one for small commercial and master-metered multi-family residential customers (G-2), one for customers using over 250,000 therms per year (G-3), and a specific schedule for the City's Compressed Natural Gas (CNG) station (G-10). To recover distribution costs, all customers pay a monthly service charge, which funds meter reading, billing, and other customer service costs, as well as a portion of Operations and Maintenance (O&M) costs. All customers are also assessed a distribution charge based on each therm of gas used. Separately metered residential customers are charged on a tiered basis, differentiated by season. During the winter months, the first 2 therms per day (60 therms for a 30 day billing period) are charged a base price per therm, and all additional units charged a higher price per therm. During the summer months, the first tier level is 0.667 therms per day, or 20 therms for a 30 day billing period. Commercial customers pay a uniform price for each therm used.

Table 5 shows the current monthly service charges for all rate schedules. Table 6 shows the consumption charges related to distribution. As mentioned earlier, commodity charges change

[4] Staff Report 5397, 1/26/2015: https://www.cityofpaloalto.org/civicax/filebank/documents/45537
[5] Staff Report 7260 10/17/2016 http://www.cityofpaloalto.org/civicax/filebank/documents/54165
[6] Monthly Gas Commodity & Volumetric Rates http://www.cityofpaloalto.org/civicax/filebank/documents/30399
[7] Staff Report 7533 12/05/2016 http://www.cityofpaloalto.org/civicax/filebank/documents/54882
[8] Monthly Gas Commodity & Volumetric Rates http://www.cityofpaloalto.org/civicax/filebank/documents/30399

monthly, and transportation charges are tied to the PG&E G-WSL rate schedule. Some recent commodity price history is discussed in *Section 6A: Gas Purchase Costs.*

Table 5: Current and Proposed Monthly Service Charges

Rate Schedule	Current (as of 1/1/23)	Proposed for FY 2024	Change ($)	Change (%)
G-1 (Residential)	$ 11.54	$ 14.01	$ 2.47	21.4%
G-2 (Small Commercial)	106.90	129.78	22.88	21.4%
G-3 (Large Commercial)	489.12	593.79	104.67	21.4%
G-10 (CNG)	72.30	87.77	15.47	21.4%

Table 6: Current and Proposed Gas Distribution Charges

	Current (as of 1/1/23)	Proposed for FY 2024	Change ($)	Change (%)
G-1 (Residential)				
Tier 1 Rates	$ 0.5607	$ 0.6807	$ 0.1200	21.4%
Tier 2 Rates	1.4338	1.7406	0.3068	21.4%
G-2 (Residential Master-Metered and Small Commercial)				
Uniform Rate	0.7365	0.8941	0.1576	21.4%
G-3 (Large Commercial)				
Uniform Rate	0.7292	0.8852	0.1560	21.4%
G-10 (CNG)				
Uniform Rate	0.0120	0.0145	0.0025	20.8%*

*Adjusted downward due to rounding

SECTION 3C: BILL IMPACT OF PROPOSED RATE CHANGES

Table 7 shows the impact of the proposed July 1, 2023 rate changes on the median residential bill for representative average winter and summer bills, with average winter bills forecasted to be significantly lower and summer bills higher. The average annual gas bill for the median residential customer is projected to be 13% lower in FY 2024 than FY 2023. However, since customer gas usage varies and the price of commodities changes monthly, the actual change may vary. Table 7 shows a representative winter period (November thru March) and summer period (April through October) bill comparison.

Table 7: Impact of Proposed Gas Rate Changes on Residential Bills

Usage (Therms/month)	Bill under Current Rates	Bill under Proposed Rates	Change	
			$/mo.	%
Winter Commodity Prices based on:	Average Actual Commodity Cost Nov. 2022 – Jan. 2023	Average Forecast Commodity Cost Nov. 2023 – Jan. 2024		
30	$ 98.98	$ 66.53	$(32.45)	-33%
54 (median)	168.93	108.54	(60.39)	-36%
80	262.18	175.25	(86.92)	-33%
150	527.32	371.99	(155.34)	-29%
Summer (Based on May 2022 Commodity Prices)				
10	$ 27.41	$ 31.08	$ 3.67	13%
18 (median)	40.11	44.74	4.63	12%
30	67.89	75.83	7.94	12%
45	104.80	117.34	12.54	12%

Table 8 shows the impact of the proposed July 1, 2023 rate changes on various representative commercial customer bills. The overall increases for the G-2 and G-3 classes are projected to be about -13% on an annual basis, assuming gas commodity prices decline as described in Section 6A: Gas Purchase Costs.

Table 8: Impact of Proposed Gas Rate Changes on Commercial Bills[9]

Usage (Therms/month)	Bill under Current Rates	Bill under Proposed Rates	Change
			%
500	$ 1,282	$ 1,146	-11%
5,000	11,855	10,295	-13%
10,000	23,604	20,460	-13%
50,000	117,609	101,802	-13%

SECTION 3D: PROPOSED RESERVE TRANSFERS

This Financial Plan includes a proposed transfer of up to $3.82 million from the CIP Reserve to the Operations Reserve in FY 2023, bringing the CIP Reserve to zero. These funds will be used to cover some of the costs for planned CIP. The CIP Reserve has a minimum level of 12 months of budgeted CIP expense (more details are in Section 6 of Appendix C: Gas Utility Reserves Management Practices). In FY 2024, the minimum level is $7.04 million. According to the Reserves Management Practices, if at the end of any fiscal year, the minimum guideline is not met, staff shall present a plan to the City Council to replenish the reserve. Due to the extreme

[9] Commodity prices for bills under current rates are based on the average actual commodity prices from July 2022 through February 2023 and projections for March 2023 to June 2023. Commodity prices for bills under the proposed rates are based on staff's forecast for July 2023 through June 2024.

impact of the supply cost spikes during the winter of FY 2023 on the Gas Utility's reserves, balances needed to replenish the CIP Reserve are not projected to become available until FY 2028. In FY 2028, this Financial Plan projects that the Operations Reserve will reach target levels, and staff plans to transfer amounts above the target level at year end FY 2028 or sooner to the CIP Reserve and continue to replenish the reserve with available funds until the CIP Reserve is within the target range.

Also in FY 2023, staff forecasts $2.102 million in revenue from sales of allowances related to California's cap-and-trade program. These funds are committed for specific programs that reduce greenhouse gas and are tracked separately in the Cap and Trade Reserve. Staff requests Council authorization to transfer up to the $2.102 million from the Rate Stabilization Reserve to the Cap and Trade Reserve. Staff also recommends amending the Gas Utility Reserves Management Practices (see Appendix C: Gas Utility Reserves Management Practices) to authorize staff to perform this transfer each year into the future without a separate resolution.

In FY 2026, the final debt service payment is expected on the 2011 Utility Revenue Refunding Bonds, Series A. At that time, the $0.434 million in the debt service reserve will be returned to the Operations Reserve.

The impact of these proposed transfers on reserves levels can be seen in Table 3 above and in *Appendix A: Gas Utility Financial Forecast Detail*.

SECTION 4: UTILITY OVERVIEW

This section provides an overview of the utility and its operations. It is intended as general background information and to help readers better understand the forecasts in *Section 5: Utility Financial Projections* and *Section 6: Details and Assumptions*.

SECTION 4A: GAS UTILITY HISTORY

On September 22, 1917, the City of Palo Alto issued a bond to purchase the property of Palo Alto Gas Company and continue it as a municipal enterprise. At the time, the system was comprised of 21 miles of mains, 1,900 meters, and was valued at $65,500. PG&E supplied the gas, which was synthesized from coal at its Potrero gasification facility. Almost immediately the City faced challenges. Losses were at nearly 25% according to PG&E's master meter, and PG&E had filed with the Railroad Commission (the forerunner to today's CPUC) to increase rates by nearly 72.5%. Despite these initial hurdles, Palo Alto's system grew tremendously, and by 1924 revenues had exceeded those of the electric utility. Sales were such that the annual reports of the time noted gas usage "appears to be greater than that of any other city in the state, showing that gas is a very popular form of fuel in Palo Alto." Just prior to the acquisition of the neighboring town of Mayfield's gas system (centered around today's California Avenue) in 1929, the miles of main in service and customer connections had doubled.

Notable changes to the gas supply itself came in 1930, when PG&E ceased supplying purely manufactured (or coal) gas from its Potrero Hill facility in San Francisco and instead switched to natural gas. In 1935, a supplementary butane injection system (later retired) was purchased from

Standard Oil to mitigate large wintertime peaks. Gas sales were at 248,658 million cubic feet (MCF) with 4,849 active services.

Early gas mains in Palo Alto were made of steel, but in the 1950s, like many other utilities, CPAU switched to ABS plastic. CPAU switched to PVC plastic in the early 1970s, but around 100 miles of ABS mains had already been installed. A 1990 evaluation of the system found a steadily increasing rate of gas leaks associated with those mains, something that other gas utilities had also been experiencing. To reduce leaks, CPAU accelerated its main replacement program from 7,000 feet (1.3 miles) of replacements per year to 20,000 feet (3.8 miles) per year. This would enable the utility to replace all of its ABS and its most vulnerable steel and PVC mains with polyethylene (PE) mains over the course of the following 36 years.[10] The Gas Utility has replaced all but .11 miles of ABS gas mains, which consists of mainly short sections of pipelines in various locations throughout the City. These sections will be replaced as the distribution mains around them are replaced. The majority of ABS, Taenite, and K40 gas services were replaced in 2020. The only ABS, Tenite and K40 gas services remaining are on moratorium streets; these services will be replaced as the street moratorium expires. The Gas Utility completed the replacement of approximately 22,000 linear feet of PVC gas main and over 250 natural gas services in FY22 under the Gas Main Replacement Project 23. This is an example of how local control of its Gas Utility has provided Palo Alto residents with substantial benefits. During the 1990s and 2000s, while CPAU was increasing its main replacement rate to ensure a robust gas distribution system, PG&E was underspending on safety-related infrastructure, according to a past audit.[11]

In the 1990s, while grappling with the issues surrounding its distribution system, CPAU was also participating in major changes to the structure of the gas industry in California. Until 1988 CPAU had a formal policy of setting its rates equal to PG&E's rates and successfully did so with the exception of one year in the mid-1970s. At times this led to inadequate revenue (1974 to 1981) as PG&E, the City's only gas supplier, regularly filed requests with the CPUC to increase the wholesale gas supply rates charged to the Gas Utility. In the 1990s, as the CPUC began deregulating the natural gas industry in California, the Gas Utility began purchasing gas from suppliers other than PG&E. In 1997 the CPUC adopted the "Gas Accord,"[12] which enabled the Gas Utility (along with other local transportation-only customers) to obtain transmission rights on PG&E's Redwood transmission pipeline running from Malin, Oregon into California.

In 2000/2001 the California energy crisis occurred, causing major disruptions to the Gas Utility's supply costs. Wholesale gas prices rose over 500% between January 2000 and January 2001. The Council approved drawing down reserves to provide ratepayer relief and, for two years following the crisis, CPAU rates were above PG&E's as reserves were replenished. In April 2001 the Council approved a hedging practice of buying fixed price gas one to three years into the future. After reaching a low point in October 2001, prices continued to rise, and the CPAU hedging strategy frequently resulted in a wholesale supply cost advantage compared to PG&E until prices began to decline steeply in mid-2008. At that point the Gas Utility's wholesale supply costs became

[10] Staff Report CMR:183:90. *Infrastructure Review and Update,* March 1, 1990

[11] *Focused Financial Audit of The Pacific Gas & Electric Company's Gas Distribution Operations*, Overland Consulting, made available through a CPUC Administrative Law Judge's ruling on A12-11-009/I13-03-007 on 5/31/2013

[12] CPUC decision 97-08-055. Since then, the Gas Accord has been amended four times, with the most recent being Gas Accord V, application A.09-09-013

higher than market gas prices due to fixed price contracts entered into prior to 2008. As a result the Gas Utility's wholesale supply costs were higher than PG&E's for several years. In 2012 Council approved a plan to formally cease the hedging strategy and purchase all gas on the short-term ("spot") markets. As of July 1, 2012, the commodity portion of the gas rates changes every month based on the spot market gas price. In January 2015, the Council adopted a new rate component to collect the costs of purchasing allowances for the purpose of compliance with the State's cap-and-trade program.[13] As of November 1, 2016, the Council adopted a resolution changing the Local Transportation rate (which had been collapsed into the Distribution rate in 2015 to streamline bill presentation), to be a pass-through of PG&E's Gas Transportation Rate to Wholesale/Resale Customers (G-WSL) charge to Palo Alto.[14] In December 2016, Council approved a carbon neutral gas plan, with a goal of achieving a carbon neutral gas portfolio by FY 2018.[15] The City's gas utility has been carbon neutral since FY 2018 through the purchase of offsets.

SECTION 4B: CUSTOMER BASE

CPAU's Gas Utility provides natural gas service to the residents, businesses, and other gas customers in Palo Alto. Close to 23,800 customers are connected to the natural gas system, approximately 21,500 (90%) of which are residential and 2,300 (10%) of which are non-residential. In a normal year, residential customers consume about 10 to 11 million therms of gas per year, roughly 40% of the gas sold, while non-residential customers consume 60% (about 15 to 18 million therms). Residential customers use gas primarily for space heating (46% of gas consumed) and water heating (42%), with the remainder consumed for other purposes such as cooking, clothes drying, and heating pools and spas.[16] Non-residential customers use gas for space and water heating (73% of gas consumed), cooking (20%), and industrial processes (6%).[17]

The Gas Utility receives gas at the four receiving stations within Palo Alto where CPAU's distribution system connects with Pacific Gas and Electric's (PG&E's) system. These receiving stations are jointly operated by CPAU and PG&E. CPAU purchases gas from various natural gas marketers, with PG&E providing only local transportation service (transportation from the PG&E City Gate gas delivery hub to Palo Alto). CPAU also has transmission rights on PG&E's transmission pipeline from Malin, Oregon to PG&E City Gate, allowing it to purchase lower priced gas at that location. CPAU does not produce or store any natural gas, and purchases gas in the monthly and daily spot markets. The cost of the purchased gas is passed through directly to customers through a rate adjuster that varies monthly with market (Bidweek) prices. In a similar fashion, the costs for local transportation is tied to PG&E's G-WSL rate schedule, and it varies when and if PG&E changes its rate schedule. The cost of purchased gas and PG&E local transportation service usually account for roughly one third of the utility's expenditures.

[13] Staff Report 5397, 1/26/2015: https://www.cityofpaloalto.org/civicax/filebank/documents/45537
[14] Staff Report 7260 10/17/2016 http://www.cityofpaloalto.org/civicax/filebank/documents/54165
[15] Staff Report 7533 12/05/2016 http://www.cityofpaloalto.org/civicax/filebank/documents/54882
[16] http://energyalmanac.ca.gov/naturalgas/overview.html
[17] Source: Statewide Commercial End Use Study, California Energy Commission report, 2006. Statistics shown are for end users in PG&E Climate Zone 4 (the Peninsula) where Palo Alto is located.

SECTION 4C: DISTRIBUTION SYSTEM

To deliver gas from the receiving stations to its customers, the utility owns 210 miles of gas mains (which transport the gas to various parts of the city) and close to 23,800 gas services (which connect the gas mains to the customers' gas lines). These mains and services, along with their associated valves, regulators, and meters, represent the vast majority of the infrastructure used to deliver gas in Palo Alto. CPAU has an ongoing CIP to repair and replace its infrastructure over time, the expense of which normally accounts for around 15 to 20% on average of the utility's expenditures. Costs for main replacements have been going up in recent years.

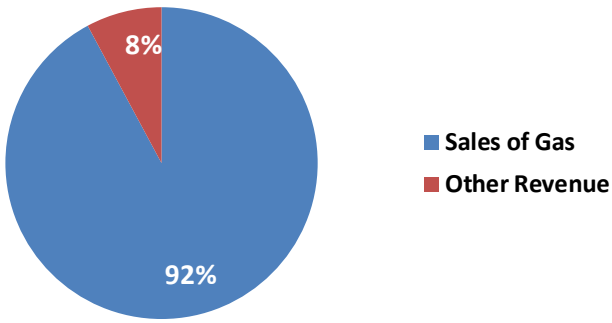
In addition to the CIP, the Gas Utility performs a variety of maintenance activities related to the system, such as monitoring the system for leaks, testing and replacing meters, monitoring the condition of steel pipe, and building and replacing gas services for buildings being built or redeveloped throughout the city. The utility also shares the costs of other system-wide operational activities (such as customer service, billing, meter reading, supply planning, energy efficiency, equipment maintenance, and street restoration) with the City's other utilities. These maintenance and operations expenses, as well as associated administration, debt service, rent, and other costs, make up roughly half of the utility's expenses.

In addition to these ongoing activities, CPAU has conducted a program to find and replace cross-bores over the last several years. Currently, an average of $0.7 million is estimated per year for the cross-bore program through FY 2028.

SECTION 4D: COST STRUCTURE AND REVENUE SOURCES

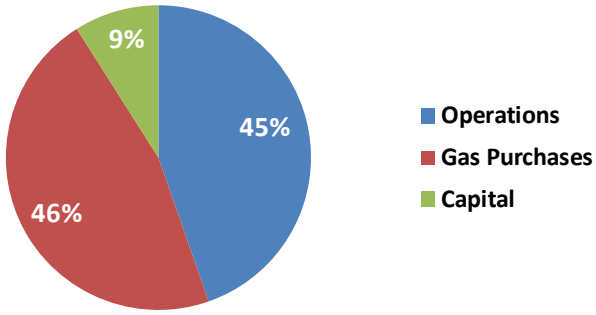
As shown in Figure 1, the Gas Utility receives about 92% of its revenue from sales of gas and the remainder from capacity and connection fees, interest on reserves, and other sources. *Appendix A: Gas Utility Financial Forecast Detail* shows more detail on the utility's cost and revenue structures.

Figure 1: Revenue Structure (FY 2022)



As shown in Figure 2, in FY 2022, gas purchase costs accounted for about 46% of the Gas Utility's costs. This percentage can vary widely from year to year, as this cost is based upon market purchases, and includes costs related to cap and trade. Operational costs in FY 2022 represented 45% of expenses and capital investment was responsible for the remaining 9%. CIP is on average about 15 to 20% of expenses, but as main replacement projects are only occurring every other year, the percentage swings more.

Figure 2: Cost Structure (FY 2022)



SECTION 4E: RESERVES STRUCTURE

CPAU maintains six reserves for its Gas Utility to manage various types of contingencies and track program spending. The summary below describes each of these briefly. See *Appendix C: Gas Utility Reserves Management Practices* for more detailed definitions and guidelines for reserve management:

- **Reserve for Commitments:** A reserve equal to the utility's outstanding contract liabilities for the current fiscal year. Most City funds, including the General Fund, have a Commitments Reserve.
- **Reserve for Re-appropriations:** A reserve for funds dedicated to projects re-appropriated by the City Council, nearly all of which are capital projects. Most City funds, including the General Fund, have a Re-appropriations Reserve.
- **Capital Improvement Program (CIP) Reserve:** The CIP reserve can be used to accumulate funds for future expenditure on CIP projects. This CIP can also act as a contingency reserve for the CIP. This type of reserve is used in other utility funds (Electric, Water, and Wastewater Collection) as well.
- **Rate Stabilization Reserve:** This reserve is intended to be empty unless one or more large rate increases are anticipated in the forecast period. In that case, funds can be accumulated to spread the impact of those future rate increases across multiple years. This type of reserve is used in other utility funds (Electric, Water, and Wastewater Collection) as well.
- **Operations Reserve:** This is the primary contingency reserve for the Gas Utility and is used to manage yearly variances from budget for operational gas costs. This type of reserve is used in other utility funds (Electric, Water, and Wastewater Collection) as well.
- **Unassigned Reserve:** This reserve is for any funds not assigned to the other reserves and is normally empty.
- **Cap and Trade Reserve:** This reserve tracks unspent or unallocated revenues from the sale of carbon allowances freely allocated by the California Air Resources Board to the gas utility, under the State's Cap and Trade Program.

SECTION 4F: COMPETITIVENESS

Table 9 presents residential bills for Palo Alto and PG&E for Calendar Years 2021 and 2022 compared to winter months in 2022 – 2023 during the recent supply price spikes at median usage levels. The annual gas bill for the median residential customer for CY 2022 was $821, about 11% lower than the annual bill for a PG&E customer with the same consumption. PG&E's distribution rates for gas have increased to collect for needed system improvements for pipeline safety and maintenance.

The bill calculations for PG&E customers are based on PG&E Climate Zone X, an area which includes the surrounding communities.

Table 9: Residential Natural Gas Bill Comparison ($/month or year)

Year/Month	Median Usage (therms)[18]	Palo Alto	PG&E Zone X	% Difference
CY 2021	402	$ 631.28	$ 701.60	(14%)
CY 2022	402	821.33	868.62	(11%)
November 2022	32	62.64	76.93	(19%)
December 2022	69	175.06	171.96	2%
January 2023	76	393.57	217.25	81%

Historically, Palo Alto's residential gas bills have been competitive relative to PG&E. During January 2023, bills increased significantly relative to PG&E. Staff is looking into reasons why gas prices spiked this winter and why PG&E's gas rates did not rise as rapidly as Palo Alto's gas rates during the recent market price spikes. Governor Newsom has requested that the Federal Electric Regulatory Commission start an investigation of winter gas prices. The Mayor sent a letter to the Governor on February 7, 2023 expressing the City's support for pursuing these investigations. Similar investigations are underway by the California Public Utilities Commission (CPUC) in collaboration with the California Energy Commission and California Independent System Operator (CAISO). Staff is also in the process of doing a more extensive competitiveness review of commercial customer bills and will provide updates in the future.

SECTION 4G: GAS SUPPLY PASS-THROUGH RATES

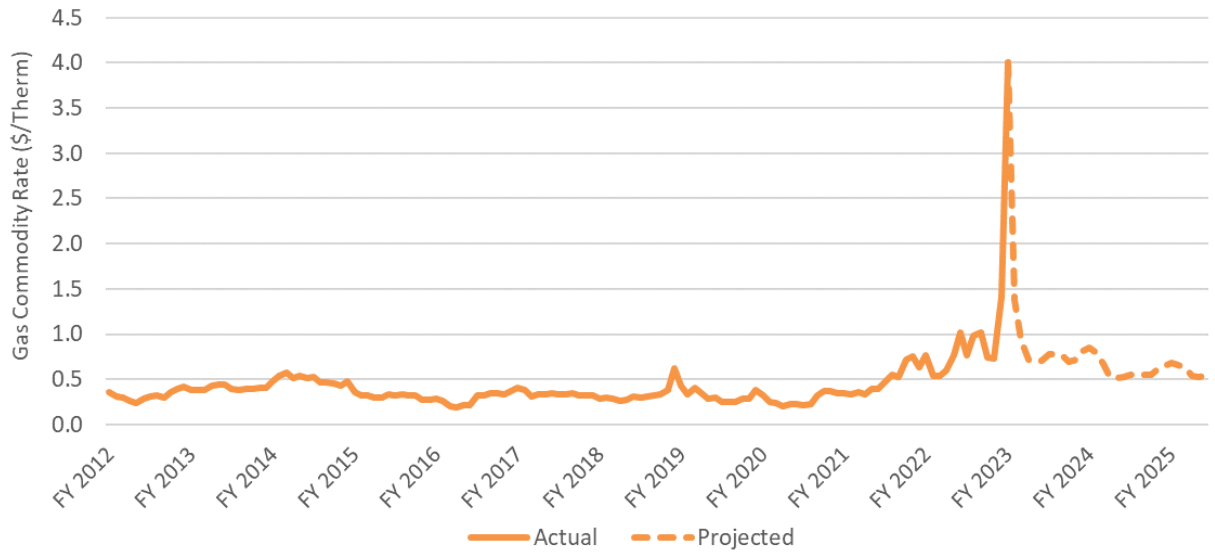
The City has four pass-through rates related to supplying gas to customers: 1) gas commodity, which represents the cost of buying gas in the markets, 2) gas transportation, which represents the cost of transporting purchased gas to Palo Alto, 3) Cap and Trade compliance, which represents the cost of mandated participation in the State's cap and trade program, and 4) carbon offset charge, which represents the cost of buying offsets for the City's Carbon Neutral Gas Portfolio. Gas commodity rates are forecasted to decline slightly over the forecast period, but increases in other rate components are forecasted to lead to a net gradual increase in total gas supply costs over the forecast period.

[18] Median usage data based on CY 2022

For the gas commodity charge, starting in July 2012, CPAU replaced a "laddering" hedging strategy for purchasing gas supplies with a strategy to buy gas on the short-term, or "spot" markets and pass the commodity cost to customers on a monthly basis. Prior to December 2018, commodity prices had generally fluctuated in a fairly narrow band, averaging around $0.32/therm. Over the last few years, a variety of factors combined that led to more variability in prices: Regional temperatures were cooler than normal, but in addition, gas supplies stored in underground facilities have been lower than normal, as well as constrained due to problems with the Aliso Canyon facility in southern California. There have been periodic pipeline constraints at both the northern and southern California borders. While there was not an actual constriction on supply, the confluence of all these factors drove up the bidweek prices for all California delivery points. There has continued to be a bit more volatility in the market, and while the gas market price trend appears slightly downward over time, commodity prices are not projected to decrease to FY 2022 levels. Figure 3 shows the City's actual commodity rates through December 2022, and projected rates through FY 2025. Note that while gas commodity costs might be forecasted to decline slightly, increases in other gas supply components (transportation, environmental charges) are expected to offset that, leading to a gradual increase in overall gas supply costs.

Natural gas prices through the forecast period are projected to remain higher than the very low levels seen in in FY 2022 and earlier due to a number of factors. These factors include inflation, the war in Ukraine, and growth in LNG exports due to global demand. Prices are also forecasted to be higher in the region due to more reliance on natural gas for power generation due to low or unpredictable hydro conditions, continued likelihood of extreme or unexpected weather events, lower gas storage levels, constraints on the transportation of gas, and overall increased market volatility resulting in pricing premiums.

Figure 3: Palo Alto Gas Commodity Rates, Actual and Projected, FY 2012 - FY 2025



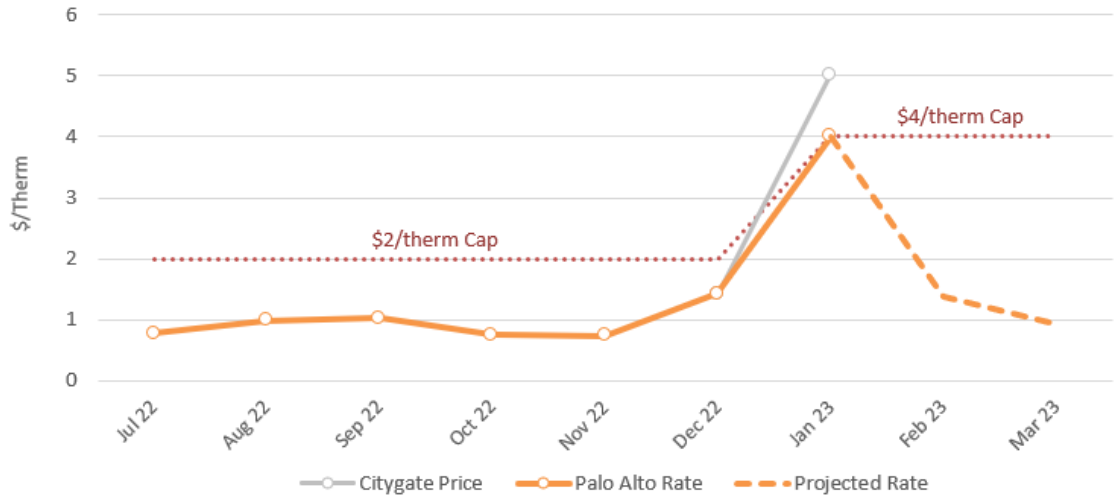
During winter 2022/2023, gas commodity prices at the monthly and daily Citygate indexes were abnormally high. In mid-December, Citygate daily index prices settled higher than $5/therm, the

highest natural gas spot prices since December 2000. Several trends occurring simultaneously contributed to prices rising to these levels including widespread below-normal temperatures, high natural gas consumption, reduced natural gas flows, transmission pipeline constraints, and low natural gas storage levels in the Pacific region. These extreme market conditions impacted most utilities throughout the Pacific and Rocky Mountain regions of the United States.

Staff anticipated that the Citygate commodity price for January 2023 would exceed the Commodity rate cap of $2/therm, based on the monthly forward price data that suggested it would settle around $3.5/therm. The City Council approved staff's recommendation to double the commodity rate cap to $4/therm (see Reso #10090) effective January 1, 2023. The settled commodity price at Citygate index for January 2023 was around $5/therm - even higher than the updated rate cap. Due to the rate cap, CPAU was not able to recover the full costs of January 2023 supply purchases from customers, but the impact to the gas reserves was far less than if the commodity rate cap had stayed at $2/therm.

Figure 4 below shows the actual and projected Palo Alto gas commodity rates and the settled Citygate price on January 2023. The projected commodity rates in February 2023 and beyond are expected to be lower than January 2023, but are not expected to decline to FY 2022 levels.

Figure 4: Palo Alto Gas Commodity Rates, Commodity Rate Caps, and Citygate Actual Prices



SECTION 5: UTILITY FINANCIAL PROJECTIONS

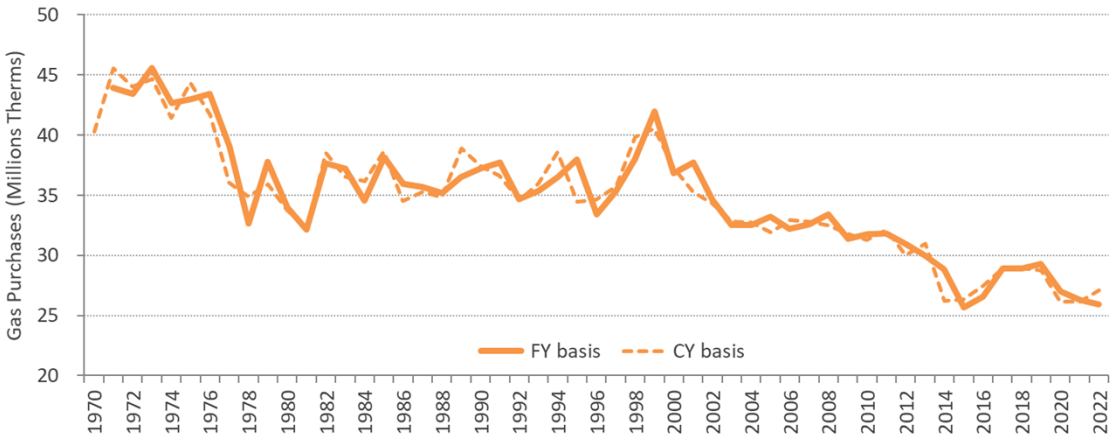
SECTION 5A: LOAD FORECAST

Gas usage in Palo Alto is volatile, varying with both economic and weather conditions. As shown in Figure 5, in the early 1970s, gas purchases reached over 45 million therms per year. Usage dropped dramatically in the 1976/1977 drought when customers saved significant amounts of (hot) water by upgrading to efficient showerheads. During the 1980s and 90s average gas usage was around 36 million therms per year. Usage dropped again in the early 2000s. In FY 2001, gas prices escalated during the California energy crisis and Palo Alto's rates increased by nearly 200%.

From 2003 to 2011, usage decreased by 2.3% mainly as a result of continued customer investments in energy efficiency.

In 2014 and 2015, unusually warm winters, as well as ongoing drought, caused gas usage to tumble to historic lows. In 2017 and 2018, as the drought eased, gas usage increased again, but appeared to have stabilized. The COVID pandemic resulted in gas usage decreasing again, mainly in the commercial sectors as a result of many businesses operating staff remotely. Gas usage decreased by about 12% in 2020 and 2021, compared with 2019.

Figure 5: Historical Gas Supply Purchases

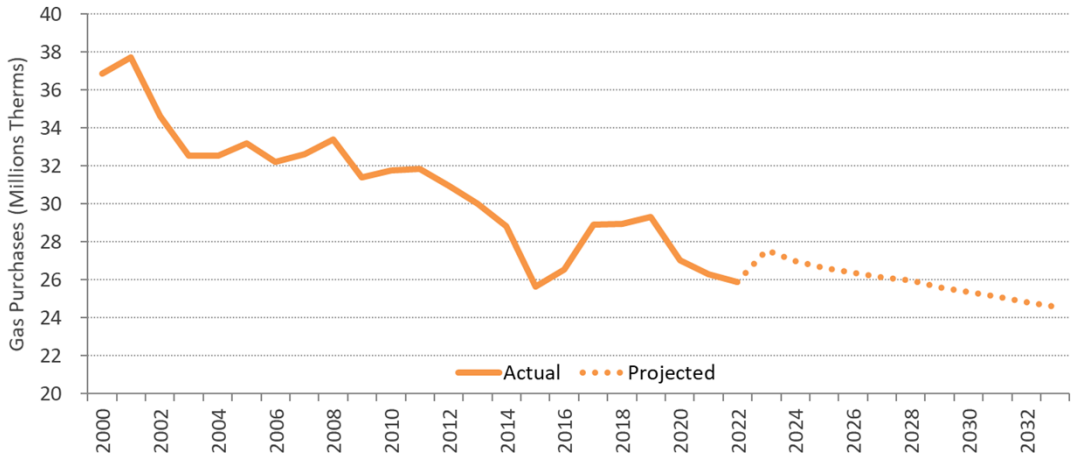


The ongoing pandemic recovery, as well as usage declines similar to what has been seen in the electric utility, leads to questions of how long the trend of reduced consumption in gas will last. As seen with prior economic and drought-related gas usage declines in the past, it is likely that consumption will not come back to pre-conservation/pandemic levels but will likely become a long-run usage decline. Further changes, such as the voluntary replacement of gas appliances with electric appliances, building electrification of new construction as mandated by the 2019 Reach Code, and customer behavior are also expected to lower long run usage, and this forecast will be revised accordingly as more customers adopt these measures.[19] In addition, separate strategic planning and financial analysis will be performed separate from this Financial Plan to address a financial and infrastructure strategy for the gas utility during a transition to an electrified community. Any insights from separate analyses will be integrated into future Financial plans.

Based on billing data through the end of 2022, gas usage has shown modest recovery with the return of winter heating. It is too early in the winter heating season to tell what the trend will continue to be. However, long term declining gas consumption will put upward pressure on rates, as a generally increasing cost to operate and distribute gas will be spread across fewer units of sale.

[19] The City's Sustainability and Climate Action Plan (S/CAP) is currently being updated. As building electrification goals in the S/CAP are updated, they will be modeled in this load forecast or alternative load forecasts.

Figure 6: Gas Supply Purchases Forecast



SECTION 5A: FY 2018 TO FY 2022 COST AND REVENUE TRENDS

Figure 7 and *Appendix A: Gas Utility Financial Forecast Detail* show how costs have changed during the last five years as well as how staff project costs to change over the next five years.

While the gas utility strives to maintain a steady rate of funding for main replacement over time, this funding pattern was disrupted from FY 2015 to FY 2020. In FY 2015, no funding for gas main replacement was budgeted due to the fact that staff was completing a prior major gas main replacement project, the largest in utility history, which completed replacement of most of the ABS gas mains in Palo Alto. The next main replacement to be budgeted involved replacements of gas mains on University Avenue, a project that evolved into the Upgrade Downtown project involving a coordinated replacement of several different types of infrastructure to avoid multiple disruptions to the business district. This multi-year planning effort did not allow for design of other new projects, and the hiatus in starting a new main replacement project allowed the Gas Utility to temporarily keep rates lower. In FY 2021 the gas utility returned to routine funding for main replacement for the gas utility, though gas main replacement investment is likely to become more complex as the City plans for a transition to an electrified community.

Revenues have fluctuated but generally matched expenses in the years between FY 2018 and FY 2022. The absence of new budget for main replacement projects for several years, as well as the availability of relatively large reserves, reduced the need for rate increases until FY 2019.

The last adjustment to gas distribution rates was a 3% increase to the total system average gas rate (supply rates plus distribution rates) in July 2022. The commodity cost and revenue increases in FY 2022 were the result of higher market commodity prices. Figure 4 in Section 4G shows the gas commodity prices and Figure 3 Palo Alto's gas commodity rates. Gas supply costs are passed through to customers, and change month to month with a cap of $4/therm.

Figure 7 shows the actual overall system average rate change from FY 2018 through FY 2023 (shown in grey) and the projected overall system average rate change for FY 2024 through FY

2028 (shown in red) both excluding supply-related rate changes. The rate increases only include the needed increase for the distribution rate as a percentage of the base gas utility sales revenue.

Figure 7: Gas Utility Expenses, Revenues, Rate Changes Excluding Supply-Related Changes
Actual Costs through FY 2022 and Projections through FY 2028

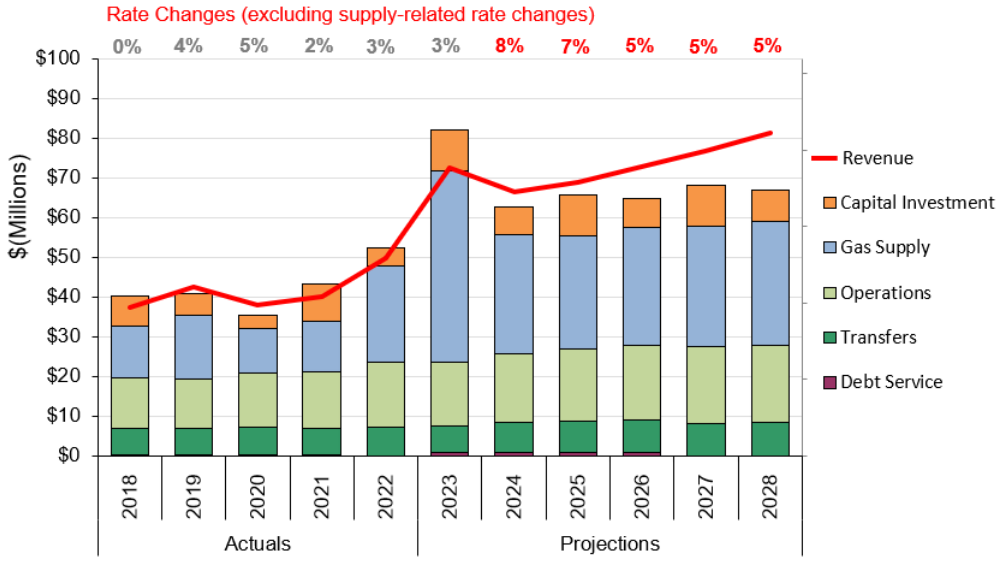
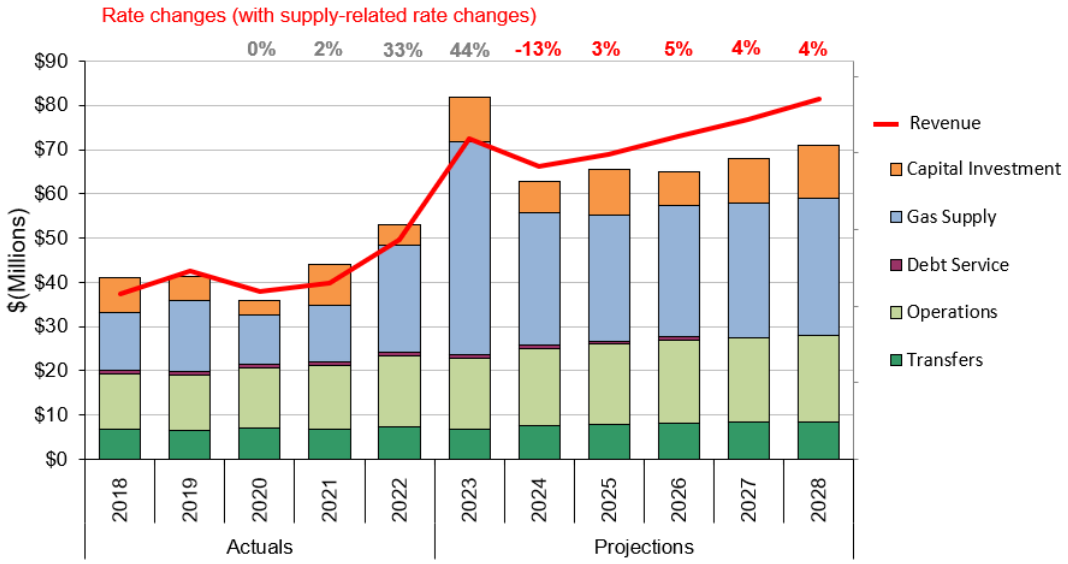


Figure 8 shows the actual overall system average rate change from FY 2018 through FY 2023 (shown in grey) and the projected overall system average rate increase for FY 2024 through FY 2028 (shown in red) including the supply-related rate changes. The rate changes include the overall change in the rate as a percentage of the base sales revenue for the gas utility. Because staff expects the spike in gas market commodity prices in FY 2023 not to continue, the projected FY 2024 costs are much lower in FY 2024. This is effectively an overall decrease in the system average rate despite rising costs for operating and capital costs for the distribution system.

Figure 8: Gas Utility Expenses, Revenues, Rate Changes Including Supply-Related Changes
Actual Costs through FY 2022 and Projections through FY 2028



SECTION 5B: FY 2022 RESULTS

Sales revenues were higher than projected in the FY 2023 Financial Plan by about $3.6 million, due to higher revenue from higher gas commodity rates, but other sources of funds were lower by $0.7 million. On the expense side, purchase costs came in about $4.4 million higher than projected due to increased market commodity costs. Operational expenses were about $0.9 million higher than projected, with increases in Salary and Benefits and Allocated Charges. Total FY 2022 expenses were $52.7 million compared to $47.3 million projected in the FY 2023 Financial Plan. Table 10 summarizes the variances from forecast.

Table 10: FY 2022 Actual Results vs. FY 2023 Financial Plan Forecast ($000)

	Net Cost/(Benefit)	Type of Change
Sales Increase due to Commodity Price Increases	(3,624)	Revenue Increase
Lower Interest Income and Non-Sales Revenues	721	Revenue Decrease
Higher Gas Purchase Costs	4,396	Cost Increase
Higher O&M and Customer Services Costs	941	Cost Increase
Net Cost / (Benefit) of Variances	**2,435**	

SECTION 5C: FY 2023 PROJECTIONS

Current projections indicate that sales revenues will be higher than last year's forecast by about $23.4 million, due to higher projected commodity costs. Other revenues and transfers are projected to be nearly $1 million lower. Operations costs estimated to be lower by about $0.6 million due to lower transfers. Gas purchase costs greatly increased due to higher than expected market commodity prices. Not all gas commodity costs were passed through to customers, leading to a $5 million variance for FY 2023 that significantly impacted the Operations Reserve. Table 11 summarizes the projected variances from the FY 2023 Financial Plan.

Table 11: FY 2023 Projected Results vs. FY 2023 Financial Plan Forecast ($000)

	Net Cost/ (Benefit)	Type of Change
Sales Increase due to Commodity Price Increases	(23,411)	Revenue Increase
Lower Interest Income and Non-Sales Revenues	963	Revenue Decrease
Higher Gas Purchase Costs	28,045	Cost Increase
Lower O&M and Customer Services Costs	(565)	Cost Decrease
Net Cost / (Benefit) of Variances	**5,031**	

SECTION 5D: FY 2024-FY 2028 PROJECTIONS

Figure 7 above shows overall costs for the Gas Utility increasing by over 50% from FY 2022 to FY 2023 due to the supply cost increases discussed above. Costs are projected to decline in FY 2024 and increase by 3% annually on average throughout the rest of the forecast period.

Gas commodity costs are the most variable component and represent the largest estimated jump in costs from FY 2022 to FY 2023. Staff projects commodity costs to approximately double from FY 2022 to FY 2023 and then decline in FY 2024, though not to FY 2022 levels. For the remainder of the five-year forecast period from FY 2024 through FY 2028, total gas supply costs are

projected to increase gradually, with gas commodity costs projected to decline gradually, offset by significant increases in transportation and environmental costs. Commodity price forecasts that far into the future are highly uncertain. Market prices could increase or decrease. Cap and Trade allowance costs are increasing by 15.7% annually from FY 2024 to FY 2028.[20] Staff projects transmission costs to increase steadily at 4-6% annually from FY 2024 to FY 2028.[21] Carbon offset products are also increasing at 7% per year on average.[22]

Staff anticipates annual capital expenditures will fluctuate during the forecast period due to planning for larger main replacement construction projects every other year instead of smaller projects annually. This main replacement schedule allows CPAU to meet its main replacement needs while addressing challenges in the current construction market and optimizing current staffing resources. Averaging the cost of CIP over these two-year cycles, costs are expected to increase by around 10.9% on average annually from FY 2024 through FY 2028.

General inflationary increases for operating expenses are around 2 to 3% per year. Salaries and benefits expenses are projected to rise at 2 to 8% per year, per similar assumptions used in the City's Long-Range Financial Forecast.

As shown in Figure 9, this Financial Plan projects to utilize all funds from the CIP Reserve in FY 2023 in order to partially fund the CIP budget. Because of the sharp rise in commodity costs, there will be no available funds to replenish the CIP Reserve until around FY 2028. By FY 2026, staff expects gas fund costs to align more closely with revenues and this will allow the Operations Reserve to begin to replenish. In FY 2027 and FY 2028 the Operations Reserve reaches levels within the guideline range. Once those reserve balances are available, staff will consider transfers to replenish the CIP Reserve. Per the Reserves Management Practices (Appendix C), Section 6, any rate plan that does not return CIP reserves to minimum levels within one year requires Council approval.

Figure 10 shows the year end FY 2022 CIP Reserve levels and shows the reduction to zero by the end of FY 2023. At the end of FY 2022 there were also balances in the CIP Reappropriations and Commitments Reserves, which is common because capital projects often cover multiple years. Figure 10 also shows an assumption that the level of funding in the CIP Reappropriations and Commitments Reserves will be the same during the forecast period as at year end FY 2022. However, even with the CIP Reserve together with the CIP Reappropriations and Commitments Reserves, staff does not expect that the reserve balances will reach the minimum level of 12 months of budgeted CIP expense.

[20] Based on allowance broker quotes.

[21] The transportation rates for calendar years 2022-2026 reflect the rates in the September 30, 2021 prepared testimony (A.21-09-018) regarding PG&E's 2023 Gas Transmission & Storage (GT&S) Cost Allocation and Rate Design (CARD), afterward a 3% escalation rate is applied.

[22] Based on carbon offset provider quotes.

Figure 9: Gas Utility Reserves
Actual Reserve Levels for FY 2022 and Projections through FY 2028

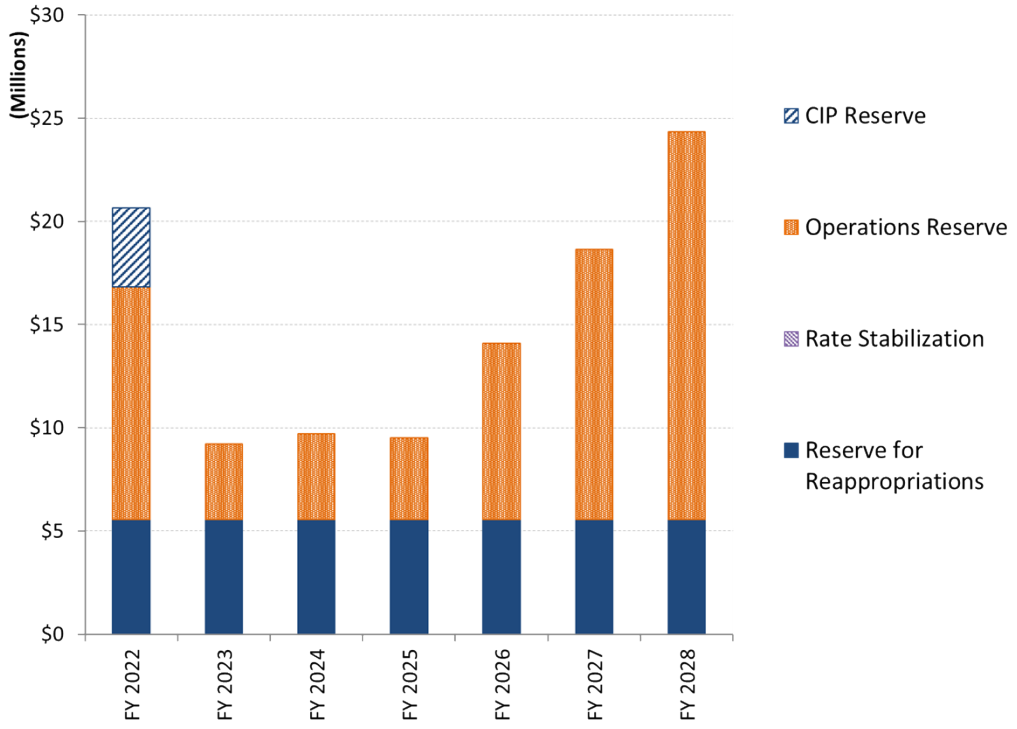
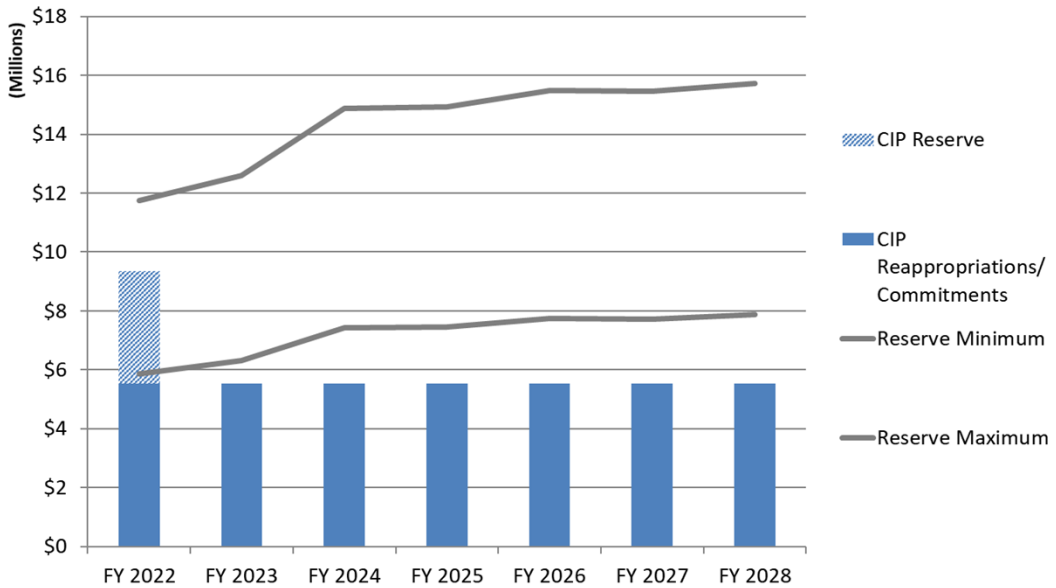


Figure 10: Gas CIP Actual Reserve Levels for FY 2022 and Projections through FY 2028



Staff is evaluating when to implement a fixed funding amount that will be provided from the Operations Reserve to the CIP Reserve to fund capital improvements. This approach will provide stability to the Operations Reserve by providing for a steady funding stream for CIP work and by reflecting fluctuations due to CIP such as project delays or accelerations in the CIP Reserve; ultimately, this should result in more stable customer rates. The use of the CIP Reserve in this way will isolate fluctuations due to CIP delays or accelerations and allow those to be viewed together in the CIP Reserve. Conversely, other trends or factors affecting the Operations Reserve will be easier to identify and communicate. Without this change, both CIP costs and revenues flow solely through the Operations Reserve.

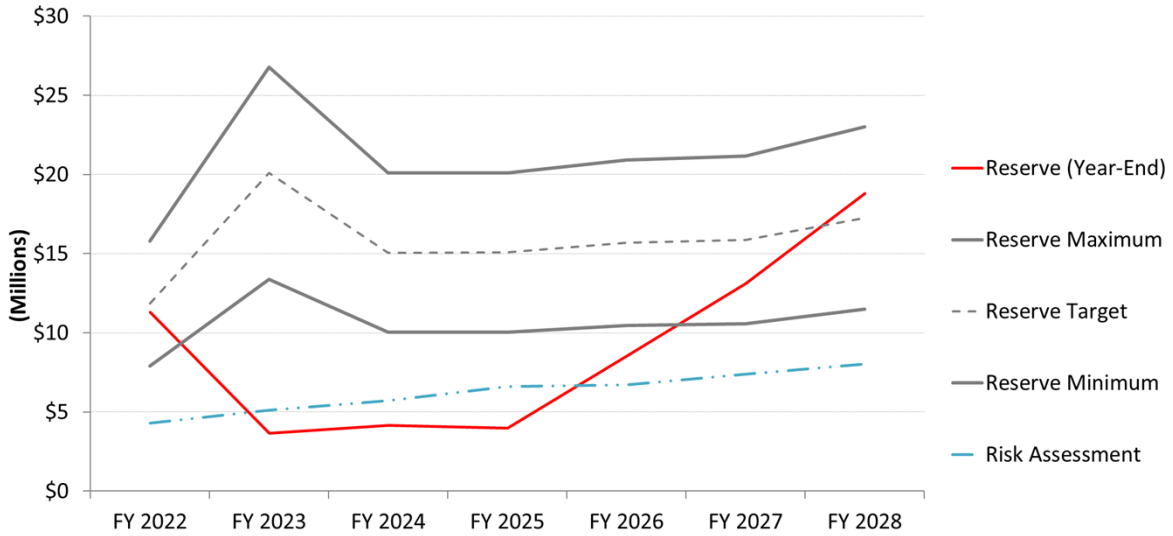
Because of the substantial impacts to gas reserves due to recent increases in supply costs, CIP fixed funding will not be implemented at this time, and possibly not within the 5-year planning horizon. Staff will continue to evaluate as ending reserve balances become available.

SECTION 5E: RISK ASSESSMENT AND RESERVES ADEQUACY

As noted earlier, unprecedented and extreme gas prices in FY 2023 and unexpected expenses in FY 2022 significantly impacted the gas utility's reserves, and double-digit rate increases would be required to return reserves to within guidelines. Staff is proposing to allow the Gas Operations Reserve to be below the risk assessment levels for two fiscal years and below the minimum guideline for three.

This Financial Plan projects the Gas Utility's primary contingency reserve, the Operations Reserve, to be below guideline levels at the end of FY 2023 through FY 2026 and then return to within the guideline range by the end of FY 2027 and increase to approximately target levels by the end of the forecast period. Per the Reserves Management Practices (Appendix C) any rate plan that involves returning the Operations Reserve to within guideline levels in more than one year requires Council approval. Figure 11 shows the Operations Reserve alongside the guideline levels.

Figure 11: Operations Reserve Adequacy



Forecasted Operations Reserve levels also drop below the short-term risk assessment for the Utility at the end of FY 2023 through FY 2025, return to above the short-term risk assessment level by the end of FY 2026, and remain above this level for the remainder of the forecast period. Table 12 summarizes the risk assessment calculation for the Gas Utility through FY 2028. The risk assessment includes the revenue shortfall that could accrue due to:

1. Lower than forecasted distribution sales revenue; and
2. An increase of 10% of planned system improvement CIP expenditures for the budget year.

Table 12: Gas Risk Assessment ($000)

	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
Total non-commodity revenue	$26,328	$32,014	$35,518	$37,972	$40,519	$43,327
Max. revenue variance, previous ten years	16%	16%	16%	16%	16%	16%
Risk of revenue loss	$4,222	$5,134	$5,696	$6,089	$6,498	$6,948
CIP Budget	$9,050	$5,825	$9,100	$6,400	$9,050	$10,685
CIP Contingency @10%	$905	$583	$910	$640	905	$1,069
Total Risk Assessment value	**$5,127**	**$5,716**	**$6,606**	**$6,729**	**$7,403**	**$8,016**

SECTION 5F: LONG-TERM OUTLOOK

It is difficult to predict commodity costs in the long-term (5 to 35 years) as a variety of trends can impact them positively or negatively. For example, advancements in gas extraction technology like fracking may lead to increased supplies of gas, but also face increased scrutiny for their environmental effects. Additionally, factors such as pipeline capacity for transporting natural gas, storage levels impacted by weather and changes in demand, and injection or withdrawal activity also play a role in determining commodity costs. On the demand side, a continued shift from coal to natural gas for electricity generation, an expansion of liquified natural gas export capabilities, or an increase in manufacturing in the U.S. might drive up natural gas prices, but other factors, such as generally more mild winters or an increased drive towards electrification, might drive gas demand lower. It is also difficult to predict the magnitude of the additional cost impacts associated with the State's cap-and-trade program over the long term. In the face of this uncertainty, CPAU is able to protect the financial position of the Gas Utility by continuing its current strategy of passing these costs directly to its customers via month-varying rate adjustment mechanisms, though the City plans to evaluate a potential winter hedging program. The City pursues a policy of purchasing offsets to make gas usage in Palo Alto carbon neutral. The cost is not to exceed $0.10/therm.

Future CIP investment needs for the Gas Utility may be lower than in the past, although costs per foot for main replacement have increased substantially. The Gas Utility has replaced nearly all of its ABS gas mains and its most problematic steel and PVC mains as well. The PE pipe being used now is expected to have at least a fifty-year lifetime, and there is growing evidence that it may last much longer than that. This would result in lower CIP investment over the long term. CPAU is continuing to study and develop its future main replacements priorities and strategy.

Long-term state or local climate goals will also have a major impact on the Gas Utility. The Global Warming Solutions Act, Assembly Bill 32, set a goal of reducing greenhouse gas (GHG) emissions

to 1990 levels by 2020. In its December 2007 Climate Protection Plan, the City set a goal of lowering emissions to 15% below 2005 levels by 2020. As a community Palo Alto achieved these goals in 2012 even with continued use of natural gas for heating, cooking, and industrial processes. However, to achieve the recently adopted Sustainability and Climate Action Plan (S/CAP) goal of an 80% reduction in carbon emissions by 2030, or the State's adopted goal of an 80% reduction in emissions by 2050, extensive electrification of gas-using appliances is necessary. Extensive electrification could result in stranded investment and higher rates as the costs of the distribution system are recovered over a lower sales base. It is instructional that, in the recent discussion draft of its scoping plan update, CARB says, to meet those goals, natural gas use would have to be "mostly phased out."[23] Staff has begun to evaluate how to manage potential impacts of these trends. Staff expects gas utility costs associated with electrification including safely decommissioning gas pipes. This Financial Plan includes $4 million in FY 2028 for these costs, although detailed cost estimates are not yet available. These costs are expected to grow as staff studies them in more detail, and alternative funding sources may be required. The S/CAP Goals and Key Actions and Work Plan will include strategic planning for the gas utility for managing the transition to an electrified community, and this is also a strategic planning priority for the Utilities Department.

SECTION 5G: ALTERNATIVE GAS INCREASE PLANS

The gas utility's transfer to the City's General Fund is a component of the City's gas rates. City voters first authorized the transfer in 1950, and in November 2022 voters approved Measure L, affirming the continuation of this practice by amending the Municipal Code. Specifically, section 2.28.185, "Natural Gas Utility Transfer" states:

> Each fiscal year the City Council may transfer from the natural gas utility to the general fund an amount equal to 18% of the gross revenues of the gas utility received during the fiscal year two fiscal years before the fiscal year of the transfer. At its discretion, the City Council may decide to transfer a lesser amount. The projected cost of the transfer shall be included in the City's retail natural gas rates as part of the cost of providing gas service.

The attached Financial Plan proposes an 18% transfer, $7,191,000 for FY 2023, which aligns with the voter-approved changes codified in PAMC 2.28.185. Measure L authorized Council to make the transfer annually, and granted Council the ability to approve a lower amount. Although Council will formally direct the FY 2024 transfer amount next year, Staff has provided preliminary projections for FYs 2024 – 2026: Alternative 1 proposes transferring 18% of gross revenue as voters approved in Measure L, and Alternative 2 proposes a transfer between 15.5% and 11.1% annually through FY 2026.

Staff prepared Alternative 2's lower transfer percentages in response to recent increases in gas distribution rates and supply costs; this alternative is projected to create FY 2024 - 2026 transfers similar to the annual 2% to 3% growth rate in the transfer prior to Measure L. To illustrate, Alternative 2 links the FY 2024 – 2026 transfers to the Consumer Price Index (CPI). CPI**Error!**

[23] *Climate Change Scoping Plan, First Update, Discussion Draft for Public Review and Comment*, California Air Resources Board, October 2013, pg. 88.

Reference source not found. is projected to be 3% long term, though staff projects 5% CPI increases in FY 2024 and FY 2025. Table 15 shows a 6% per year projection as the maximum proposed increase under Alternative 2; actual increases for the years shown would be capped at 6% or CPI, whichever is less.

Error! Reference source not found. 16**Error! Reference source not found.** shows the amount of the transfer both in dollars and as a percentage of utility revenue for each fiscal year, as well as the projected rate of annual growth in the transfer. **Error! Reference source not found.** below shows the distribution rate increases (as a percentage of the total bill, excluding supply cost changes) associated with each alternative.

Table 13: Proposed / Projected Transfers as % of Gross Revenues Two FY Prior[24]

	Proposed		Projected			
	FY 2023	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**FY 2028**
Gas Utility Gross Revenue Two Fiscal Years Prior ($000)						
Alternative 1	39,950	49,721	72,570	66,927	71,878	78,305
Alternative 2				66,269	69,453	75,133
Percent of gas utility gross revenue to transfer						
Alternative 1	18.0%	18.0%	18.0%	18.0%	18.0%	18.0%
Alternative 2		15.5%	11.1%	12.9%	13.1%	12.8%
Transfer amount ($000)						
Alternative 1	7,191	8,934	13,063	12,047	12,938	14,095
Alternative 2		7,707	8,080	8,565	9,078	9,623
Change in Transfer (%)						
Alternative 1	-1%	24%	46%	-8%	7%	9%
Alternative 2		6%	6%	6%	6%	6%

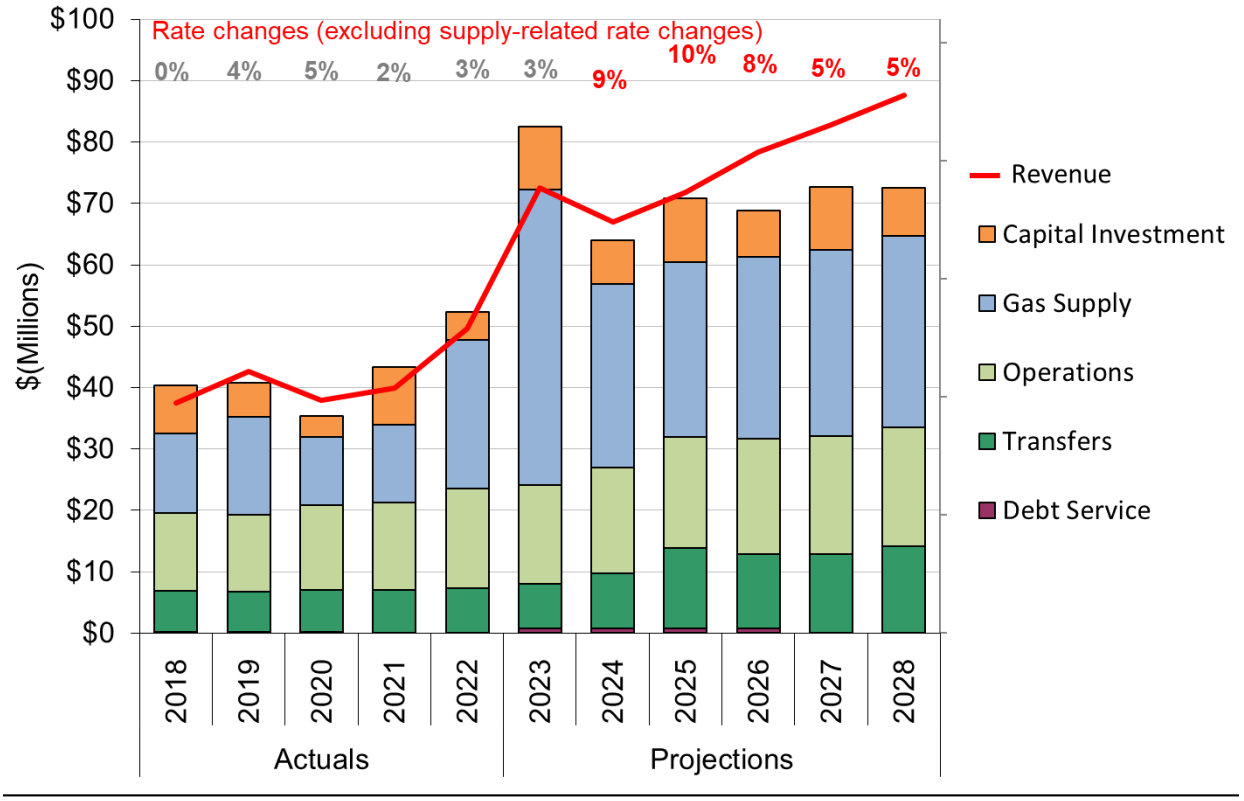
Table 14: Summary of Rate Changes for Alternatives (Excludes Supply Rate Changes)

	FY 2023	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**FY 2028**
Alternative 1	4%	9%	10%	8%	5%	5%
Alternative 2		8%	7%	5%	5%	5%

[24] Measure L authorizes a transfer based on 18% (or a lesser percentage if approved by Council) of the revenue for two fiscal years prior, so the FY 2024 transfer is based on FY 2022 revenue.

Figure 12: Gas Utility Expenses, Revenues, and Rate Changes Excluding Supply-Related Rate Changes (Alternative 1)

Actual Costs through FY 2022 and Projections through FY 2028



SECTION 6: DETAILS AND ASSUMPTIONS

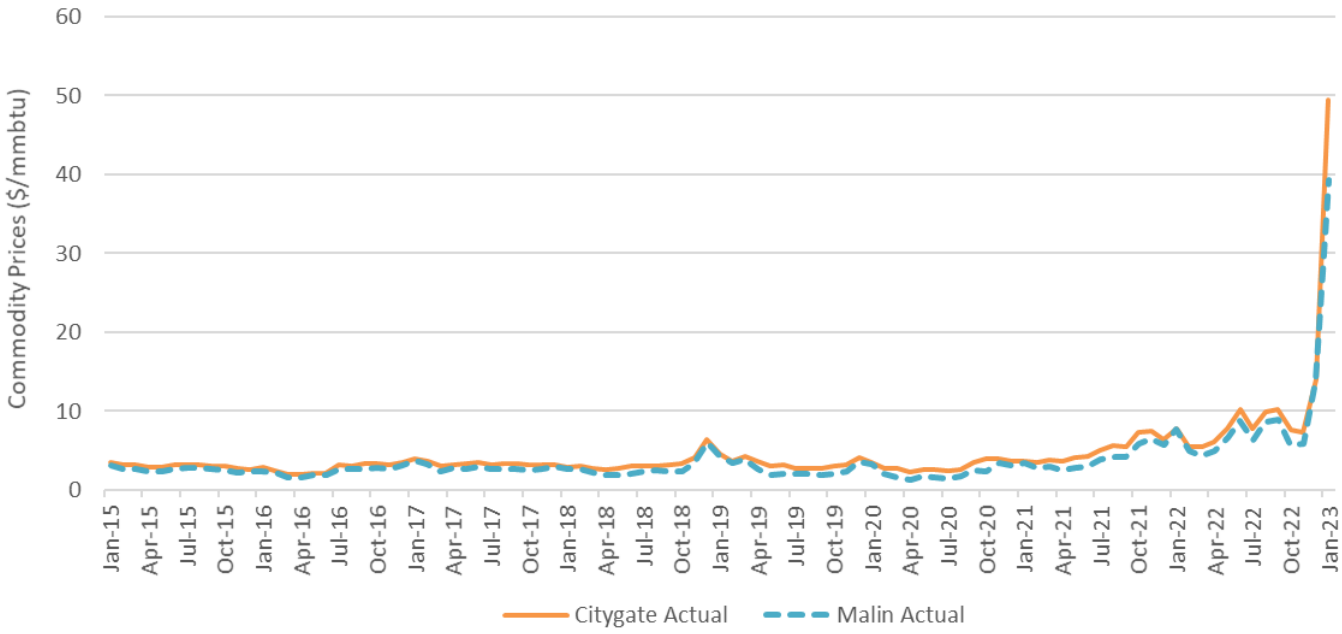
SECTION 6A: GAS PURCHASE COSTS

The Gas Utility purchases much of its gas for delivery at Malin, Oregon which is almost always less expensive than delivery at PG&E Citygate, even including the costs of transmission from Malin to Citygate. The Gas Utility purchases gas on a month-ahead and day-ahead basis in the spot market. The years from FY 2009 through FY 2022 have seen gas prices in a relatively narrow but low band. Starting in late 2021, and becoming more acute starting in the summer of 2022, lower levels of natural gas in storage, along with colder than normal weather and transmission pipeline constraints on both the northern and southern borders of California has created short-term price spikes and increased volatility, as shown in Figure 13.

These market conditions exacerbated and caused unprecedented price spikes during December 2022 and January 2023 when Citygate prices reached as high as $49.52 on the monthly index and up to $57.07 on the daily index. Details of this event was described in Section 4G: Gas Supply Rates. This event has greatly increased the commodity costs in FY 2023, estimated at about $22 million or 327% above budgeted, through January 2023. The commodity costs are a pass-through to customers, and the gas utility was able to recover most of the costs. To mitigate impacts of

future short-term spikes for customers, the gas utility plans to investigate the possibility of a winter hedging program, with the goals to mitigate risks for the gas utility and bring price stability to ratepayers.

Figure 13: Gas Commodity Monthly Market Prices at Malin and PG&E Citygate

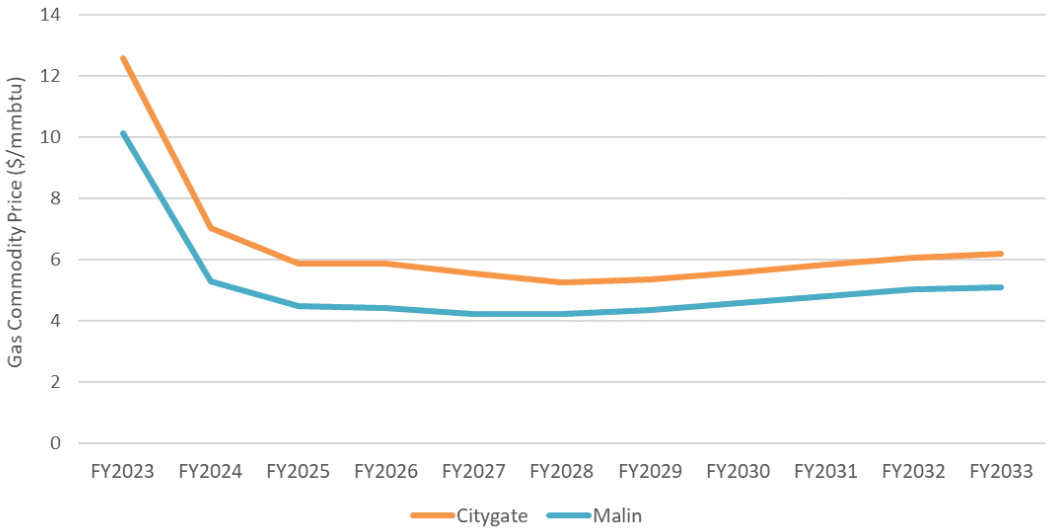


Even as supply conditions improve, relieving the high prices seen in the winter of 2022/2023, natural gas prices through the forecast period are projected to remain higher than the very low levels seen in previous years due to a number of factors described in Section 4G: Gas Supply Rates.

On September 15, 2014, Council adopted a resolution (Reso. #9451) authorizing the City's participation in a natural gas purchase from Municipal Gas Acquisition and Supply Corporation (MuniGas) for the City's entire retail gas load for a period of at least 10 years. The MuniGas transaction includes a mechanism for municipal utilities to utilize their tax-exempt status to achieve a discount on the market price of gas. As of November 1, 2018, gas began flowing under this program, reducing the City's gas commodity cost by about $1 million per year and saving gas customers approximately $0.03 per therm on the commodity portion of their bills.

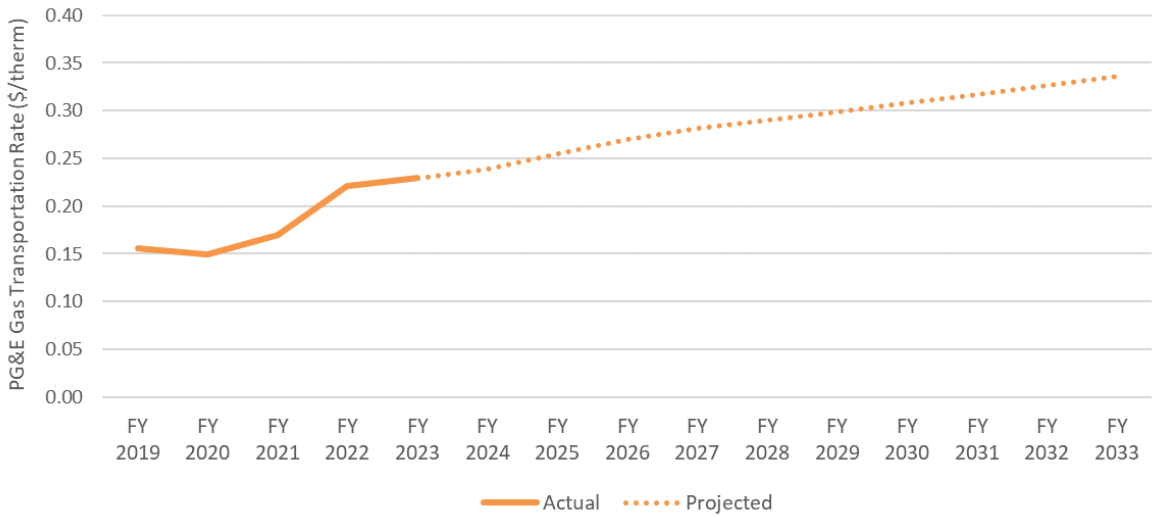
Gas commodity costs are forecasted to stay fairly steady over the next several years, but forecasts of commodity costs are very uncertain. Figure 14 shows the projected gas prices used to generate this forecast. Projections for transmission costs associated with transporting gas over PG&E's Redwood transmission pipeline (from Malin, Oregon to the PG&E Citygate) are based on rates adopted in the most recent update to the Gas Accord.

Figure 14: Annual Average Wholesale Gas Market Price Projections



PG&E's Local transportation rates have increased over the past few years and are projected to slowly increase annually in future years. Figure 15 shows the average annual PG&E gas transportation rates without the Cap-and-Trade exemption rates for actuals up to Q2 of FY 2023 and projected up to FY 2033.

Figure 15: PG&E Gas Local Transportation Rates, Actual and Projected



For Cap and Trade compliance costs, 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 (60% in 2022, increasing by 5% annually) of the allowances through the state Cap and Trade Program. To meet its annual GHG compliance obligation, the gas utility must purchase allowances based on actual gas load. Proceeds of allowance sales must be used within 10 years of their receipt, and Palo Alto is developing programs and plans to utilize them.

The auction price to either purchase or sell allowances also increases annually by 5% plus inflation. Given the rate of increased allowance purchases and the increasing market prices, these costs are anticipated to increase from $1.5 million in FY 2022 to $6.8 million in FY 2030, about an 18% increase per year on average.

The City also has a Carbon Neutral Natural Gas plan (Staff Report 7441[25]) whereby carbon offsets are purchased in an amount equal to the emissions generated by the communities' natural gas use. These high-quality carbon offsets support projects that reduce the amount of GHGs in the atmosphere, such as forest maintenance or capturing methane from dairy farms. Purchasing carbon offsets is a good first step towards reducing carbon in the atmosphere, but the longer-term goal is to reduce the community's use of natural gas by maximizing efficiency and switching to high-efficiency electric appliances where possible. The costs for these offsets are projected to increase from $2.2 million in FY 2022 to $2.9 million in FY 2030.

SECTION 6B: OPERATIONS

Operations costs include the Customer Service, Demand Side Management, Operations and Maintenance (including Engineering), Resource Management, and Administration categories in Figure 16, below. Debt service, rent, and transfers are also included in Operations costs (excluding the General Fund equity transfer). *Appendix D: Description of Gas Utility Cost Categories* includes detailed descriptions of the activities associated with these cost categories. Operations costs are generally projected to increase by 2 to 3% per year on average. Salary and benefits, inflation, and other assumptions match those used in the City's long-range financial forecast.

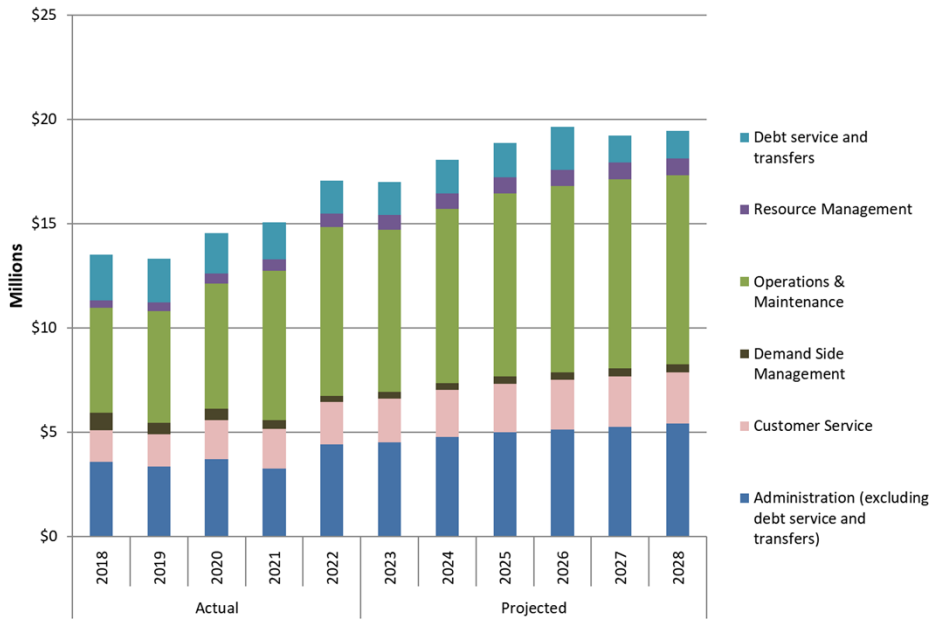
Operations costs include funding for the cross-bore program. In the 1970s CPAU, like many other utilities, adopted horizontal drilling as an alternative to trenching when installing new gas services. This created the possibility of cross-bores, which can happen when a gas service is bored through a sewer lateral. Though cross-bores are very rare, they can create a dangerous situation when a contractor attempts to clear a blocked sewer line, because if the cross-bored gas service is damaged during the line, clearing it can result in a gas leak. CPAU has been inspecting new gas services since 2001, and in 2011 began video inspections of the sewer laterals at the location of horizontally-drilled gas services installed before 2001. This inspection program has cost roughly $1 million per year since FY 2012 and decreased in FY 2023 with the completion of Phase III of the cross-bore inspection project. While a majority of sewer laterals have been inspected, staff has come across several services which are not able to be scoped, either due to infiltration by roots or broken/collapsed pipe segments. Staff has included $0.6 million to $0.8 million per year in additional funding between FY 2024 and FY 2028 to complete the inspections within the next 5 years.

During FY 2021, administration costs, that include charges for administrative functions provided by the City's General Fund staff, were lower than usual because of the impacts of the pandemic

[25] https://www.cityofpaloalto.org/civicax/filebank/documents/54588

increasing vacancies as well as with cost reduction measures implemented across the City departments.

Figure 16: Actual and Projected Operational Costs



SECTION 6C: CAPITAL IMPROVEMENT PROGRAM (CIP)

The Gas Utility's CIP consists of the following programs and budgets:

- The Gas Main Replacement Program, under which the Gas Utility replaces aging gas mains and mains ranked to have the greatest risk scores within the system.
- Customer Connections, which cover the cost when the Gas Utility installs new services or upgrades existing services at a customer's request in response to development or redevelopment. The Gas Utility charges a fee to these customers to cover the cost of these projects.
- Ongoing Projects, which cover the cost of routine meter, regulator, and service replacement, minor projects to improve reliability or increase capacity, and other general improvements.
- Tools and Equipment, which cover the cost of capitalized equipment, such as directional boring, gas pipeline maintenance and emergency equipment.
- One-time Projects, which represent occasional large projects that do not fall into any other category.

Table 15 shows the current status of these project categories and future projected spending.

Table 15: Budgeted Gas CIP Spending ($000)

Project Category	Current Budget*	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
Gas Main Replacement	12,237	4,725	8,000	5,300	7,950	4,000
Gas Tools and Equipment	59	100	100	100	100	100
Ongoing Projects	1,541	1,000	1,000	1,000	1,000	1,000
Customer Connections	1,042	1,211	1,247	1,100	1,100	1,100
Electrification Transition		-	-	-	-	4,000
TOTAL	14,880	7,036	10,347	7,500	10,150	10,200

*Includes unspent funds from previous years carried forward or reappropriated into the current fiscal year

Gas Main Replacements

The Gas Main Replacement (GMR) Program is the largest budgeted category in the gas fund and is used to replace ageing natural gas infrastructure throughout the City. This program improves safety and reliability of the natural gas system by replacing pipe material and components, prior to failure, with reliable polyethylene pipe and fittings.

The GMR Program completed a major milestone in 2013 with the replacement of gas mains made from Acrylonitrile-Butadiene-Styrene (ABS) plastic with Polyethylene (PE) pipe. The City's 2015 Distribution Integrity Management Plan (DIMP) identified ABS pipe and components as suitable for replacement due to the pipe's brittleness and difficulty of repair. There are 0.1 miles of remaining ABS in the system, which is scattered throughout the City in very small sections.

After the replacement of ABS pipe, CPAU's 2015 Risk Assessment identified PVC pipe material as the next pipe material to be reviewed for replacement. In general, CPAU replaces about 4 miles (1.9% of the system) of pipe on each GMR project, accounting for approximately 75% of PVC and 25% of steel. The pipelines are replaced with PE pipe.

With the ongoing discussions and direction from City Council related to electrification of homes and neighborhoods throughout the City and transitioning away from natural gas, it will be necessary at some point to scale back the rate of replacement of the existing gas system. Staff is working to develop an efficient phasing plan for electrification and the scaling back of the gas infrastructure. However, staff believes it is necessary to continue the current efforts to replace older and higher-risk materials within the gas system to maintain safety and system integrity. This investment is recommended until a more defined plan on electrification and the transition away from natural gas is completed. That transition plan may involve aggressive electrification in areas with PVC pipe to avoid future investments in PVC pipe replacement. The priority for the gas utility fund is continued safe operation to manage the overall risk and continue the reliable and safety delivery of natural gas throughout the City. In the short term that requires investing in replacement of highest risk PVC pipe, prioritizing areas of the gas system that will be needed the longest during the transition to an electrified community, and gradually that will be integrated with a strategy to aggressively electrify neighborhoods and abandon PVC pipe rather than replace it.

Several factors are contributing to an increase in construction costs in the Bay Area, such as a greater focus on infrastructure improvement by many municipal agencies and the higher demand for utility contractors within these fields. The current budget for the GMR program has held

steady over the last few years, which results in a reduction of replacement due to the steady increase in the replacement cost. CPAU recently posted the Gas Main Replacement 24A Project for competitive bidding and resulted in one contractor submitting a bid for almost two times the engineering estimate, even after it was bid a second time. Future GMR projects will require a budget increase to maintain a similar rate of PVC and steel main replacement. Currently, CPAU plans to replace as many aging mains as possible within its current budget. However, if this trend of higher construction cost continues, the Gas Utility may require larger CIP budgets and as a result, an increase in rates to maintain an adequate rate of replacement to relieve the risks of PVC and steel pipe in the system.

This Financial Plan addresses these challenges in a way that will allow CPAU to meet its main replacement needs. This plan includes approximately $12 million to $13 million starting in FY25 and includes a 3% annual construction cost inflationary increase. This will assist in keeping up with the increasing cost of replacement of PVC mains and steel mains as needed. Additionally, the GMR project schedule for gas will be staggered with water and wastewater (water and wastewater construction every even year and gas construction every odd year), which will ease scheduling difficulties for inspection coverage due to shared inspection staff across water, wastewater, gas, and large development services projects.

Construction of the GMR 24A commenced during January 2023 and is anticipated to be completed in March 2023 (FY 2023). However, work will also continue on GMR 24B in FY 2024 and into FY 2025. The GMR 24B project is awaiting a response to an application submitted for a Natural Gas Distribution Infrastructure Safety and Modernization grant opportunity. CPAU intends to apply each year for the grant funding opportunity, which would assist with the replacement of PVC and steel distribution mains in the gas system. If CPAU determines that grant funding is not likely to be awarded, CPAU will evaluate the merit of continuing to apply for the grant.

Tools and Equipment, Ongoing Projects, and Customer Connections

Staff estimates ongoing projects, tools and equipment, and customer connections to cost approximately $2.2 million through the end of the forecast period. In practice, these projects can fluctuate dramatically depending on prices of material, system conditions and the pace of development and redevelopment in the city. It is worth noting that fee revenue pays for the Customer Connections program, so when costs go up fees will be adjusted as well.

Aside from customer connections and transfers from other funds, the CIP plan for FY 2023 to FY 2028 is funded by utility rates. Appendix B: Gas Utility Capital Improvement Program (CIP) Detail shows the details of the plan.

SECTION 6D: DEBT SERVICE

The Gas Utility currently makes debt service payments on one bond issuance, the 2011 Series A Utility Revenue Refunding Bonds. This bond issuance was to refinance the $18 million principal remaining on the Utility Revenue Bonds, 2002 Series A issued for the Gas and Water Utilities to finance various improvements to the distribution systems. $9.4 million of this issuance was

secured by the net revenues of the Gas Utility. Table 16 shows debt service for this bond for the financial forecast period. Debt service on this bond will continue through 2026.

Table 16: Gas Utility Debt Service

	FY 2024	FY 2025	FY 2026
2011 Utility Revenue Refunding Bonds, Series A	802	799	802

The 2011 bonds include two covenants stating that 1) the Gas Utility will maintain a debt coverage ratio of 125% of debt service, and 2) that the City will maintain "Available Reserves"[26] equal to five times the annual debt service. This Financial Plan complies with these covenants throughout the forecast period, as shown in Table 19 and Table 20.

Table 17: Debt Service Coverage Ratio ($000)

	FY 2024	FY 2025	FY 2026
Revenues	66,297	68,966	72,891
Expenses (Excluding CIP and Debt Service)	(54,882)	(54,519)	(56,572)
Net Revenues	11,415	14,447	16,319
Debt Service	802	799	802
Coverage Ratio	1423%	1807%	2036%

Table 18: Debt Service Minimum Reserves ($000)

	FY 2023	FY 2024	FY 2025	FY 2026
Gas and Water Utilities [a]	28,383	20,108	23,904	18,266
Debt Service [b]	1463	1459	1454	1457
Reserves Ratio [c]	35x	25x	30x	23x

a) CIP, Rate Stabilization, Operations, and Unassigned Reserves
b) Gas and Water Utility's share of the debt service on the 2011 bonds.
c) Calculated using combined Gas and Water Utility reserves. The actual reserves ratio for the 2011 bonds is calculated based on the combined Electric, Gas, and Water Utility reserves and total debt service and is higher than shown here.

The Gas Utility's reserves and net revenue are also pledged as security for the bond issuances listed in Table 19, even though the Gas Utility is not responsible for the debt service payments. The Gas Utility's reserves or net revenues would only be called upon if the responsible utilities are unable to make their debt service payments. Staff does not currently foresee this occurring.

[26] Available Reserves as defined in the 2011 bonds include the reserves for the Water, Electric, and Gas Utilities

Table 19: Other Issuances Secured by Gas Utility's Revenues or Reserves

Bond Issuance	Responsible Utilities	Annual Debt Service ($000)	Secured by Gas Utility's	
			Net Revenues	Reserves
1999 Utility Revenue Bonds, Series A	Wastewater Collection Wastewater Treatment Storm Drain	$1,207	No	Yes
2009 Water Revenue Bonds (Build America Bonds)	Water	$1,977*	No	Yes
**Net of Federal interest subsidy*				

SECTION 6E: EQUITY TRANSFER

The equity transfer is discussed in Section 5G: Alternative Gas Increase Plans

SECTION 6F: REVENUES

The Gas Fund receives most of its revenues from sales of gas, but about 8% comes from other sources including interest income, service connection and capacity fees, and sales of allowances related to California's cap-and-trade program. The Cap and Trade compliance charge is another revenue item related to the cap-and-trade program that is collected in customers' bills. While the State provides CPAU with a certain number of free allowances each year, the Gas Utility is required to sell a portion of those in accordance with the regulations. In order to have enough allowances to cover customers' natural gas emissions, CPAU must buy allowances at market, and subsequently passes through the cost of those allowances to customers. The regulations do not allow the revenue derived from the sale of the free allowances to offset allowance purchases, thus the pass-through rate component. These funds are transferred to the Cap and Trade Reserve (see Section 3D: Proposed Reserve Transfers for more details).

This Financial Plan bases sales revenue projections on the load forecast in *Section 5A: Load Forecast.* Except where stated otherwise, these load forecasts are based on normal weather. Weather can vary substantially, however, and this can affect revenues substantially. Also, changes in customer behavior, as well as changes to more efficient gas appliances, or switching to electric appliances, will modify these forecasts. Staff continually evaluates forecasts to see when new trends emerge.

SECTION 6G: COMMUNICATIONS PLAN

The FY 2024 gas utility communications strategy covers these primary areas: natural gas market supply costs, supply and demand, operations, infrastructure, safety, efficiency, carbon neutrality, and cost containment measures. The City of Palo Alto Utilities (CPAU) communication methods include the website, utility bill inserts, messaging on bills and envelopes, email newsletters, print and digital ads in local publications, and participation in community outreach events.

Since moving to market pricing for commodity rates several years ago, monthly gas rates can fluctuate for CPAU customers based on a variety of factors affecting the market. Staff post the

monthly rates online at www.cityofpaloalto.org/RatesOverview and provide additional updates as necessary via other communication channels. During the FY 2023 winter, utilities across the region saw extremely high gas market prices projected for January and February; much higher than last year's winter prices, and the highest since the 2001 energy crisis. Staff have engaged in a robust and proactive outreach campaign to try to inform customers in advance about the extremely high gas rates to help avoid surprisingly high bills, emphasizing the importance of saving energy to keep utility costs low. Consistent with the Utilities Strategic Plan, CPAU is instituting cost containment as an ongoing priority that is part of our annual cycle. To keep customers apprised of its rates the status and accomplishments of capital improvement projects, the City maintains a network of project web pages. Print and digital ads, social media and email blasts drive traffic to the website.

CPAU promotes gas use efficiency incentives year-round, but most heavily during winter months to impact heating activities. Programs such as the Home Efficiency Genie and commercial energy efficiency programs help residents and businesses better understand energy usage, activities and/or upgrades they can implement to improve efficiency and keep utility costs low. The MyCPAU online account management portal provides customers with direct access and more information about utility account and consumption data.

CPAU communicates about safety for all utility services year-round including the need to call USA (811) before digging to check for underground utility lines. Staff also emphasize the importance of contacting CPAU to check for potential sewer and gas line cross-bores prior to clearing a sewer line. Every year, CPAU publishes an updated gas safety awareness brochure and mails it to all customers in Palo Alto as well as other stakeholders. CPAU will continue to promote messaging about safety, rates, and more, through a variety of marketing and media channels. Staff talk with business customers at special facilities meetings, attend neighborhood safety and emergency preparedness fairs and offer presentations to school and community groups. While print materials and webpages still feature prominently, CPAU is increasing use of other outreach channels such as email newsletters, direct mail, newspaper inserts, social media and online videos. The Gas Safety Public Awareness Plan contains saved copies of all outreach materials and activity logs.

APPENDICES

Appendix A: Gas Financial Forecast Detail

Appendix B: Gas Utility Capital Improvement Program (CIP) Detail

Appendix C: Gas Utility Reserves Management Practices

Appendix D: Description of Gas Utility Cost Categories

Appendix E: Gas Utility Communications Samples

APPENDIX A: GAS FINANCIAL FORECAST DETAIL

	City of Palo Alto Gas Utility	($'000)	($'000)	($'000)	($'000)	($'000)	($'000)	($'000)	($'000)	($'000)	($'000)	($'000)
	Fiscal Year	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
1	**RATE CHANGE (%)**	**0%**	**4%**	**5%**	**2%**	**3%**	**3%**	**8%**	**7%**	**7%**	**5%**	**5%**
2	TOTAL SYSTEM AVERAGE RATE ($/Therm)	$ 1.203	$1.340	$ 1.289	$ 1.417	$1.802	$2.524	$2.175	$ 2.281	$ 2.479	$ 2.613	$ 2.756
3	SUPPLY COMPONENTS ($/Therm)	$ 0.597	$0.412	$ 0.513	$ 0.896	$1.678	$1.129	$1.070	$ 1.125	$ 1.161	$ 1.207	$ 1.260
4	SALES IN THOUSAND THERMS	28,314	29,110	26,610	25,451	25,426	26,501	26,670	26,310	26,058	25,805	25,658
5	CHANGE IN RETAIL SALES REVENUE	910	1,492	1,817	953	1,191	1,492	5,669	4,330	4,486	3,205	3,448
6												
7	**Utilities Retail Sales**	34,056	39,017	34,294	36,071	45,816	66,881	58,013	60,010	64,595	67,430	70,702
8	**Service Connection & Capacity Fees**	1,078	997	902	840	475	1,167	1,211	1,247	1,100	1,100	1,133
9	**Other Revenues & Transfers In**	1,740	2,023	2,159	2,559	2,915	3,910	6,684	7,739	8,851	10,050	11,367
10	**Interest plus Gain or Loss on Investment**	568	597	578	479	427	612	361	456	588	955	1,398
11	**Total Sources of Funds**	37,442	42,634	37,933	39,950	49,634	72,570	66,269	69,453	75,133	79,535	84,599
12												
13	**Purchases of Utilities:**											
14	**Supply Commodity & Cap and Trade**	9,698	12,470	8,376	9,891	20,591	43,796	23,489	21,757	22,494	22,925	23,636
15	**Supply Transportation**	3,223	3,487	2,727	2,859	3,513	4,261	6,459	6,799	7,131	7,364	7,542
16	**Total Purchases**	12,921	15,958	11,102	12,750	24,103	48,057	29,948	28,556	29,625	30,289	31,178
17												
18	**Administration (CIP + Operating)**	3,574	3,353	3,711	3,248	4,403	4,512	4,759	4,982	5,121	5,261	5,410
19	**Customer Service**	1,529	1,563	1,872	1,904	2,035	2,110	2,267	2,343	2,388	2,424	2,475
20	**Demand Side Management**	829	536	550	417	306	316	338	350	358	365	374
21	**Engineering (Operating)**	351	400	666	571	659	480	516	533	544	552	564
22	**Operations and Maintenance**	4,673	4,957	5,334	6,600	7,422	7,296	7,815	8,250	8,395	8,533	8,486
23	**Resource Management**	357	401	463	551	668	694	748	771	785	795	811
23	**Supply and Distribution Operations**	11,313	11,211	12,596	13,291	15,493	15,408	16,442	17,229	17,592	17,931	18,121
24	**Debt Service Payments**	203	179	155	135	108	804	802	799	802	-	-
25	**Rent**	602	621	645	471	481	494	507	521	532	543	555
26	**Transfers to General Fund**	6,699	6,601	6,942	6,847	7,240	7,191	7,622	8,080	8,565	9,078	9,623
27	**Other Transfers Out**	808	704	521	512	277	693	727	764	787	810	835
28	**Capital Improvement Programs**	7,804	5,567	3,342	9,283	4,674	10,217	7,036	10,347	7,500	10,150	7,818
29	**Total Uses of Funds**	40,349	40,840	35,304	43,288	52,002	82,863	63,085	66,296	65,401	68,802	68,130
30												
31	**Into/ (Out of) Reserves**	(2,907)	1,793	2,629	(3,339)	(2,368)	(10,293)	3,184	3,156	9,732	10,733	16,469
32												
33	**Reappropriations + Commitments**	8,674	11,251	3,662	9,086	5,541	5,541	5,541	5,541	5,541	5,541	5,541
34	**Plant Replacement**	0	0	0	0	0	0	0	0	0	0	0
	Debt Service Reserve	795	795	804	434	434	434	434	434	0	0	0
35	**CIP Reserve**	3,820	3,820	3,820	3,820	3,820	0	0	0	0	0	0
36	**Rate Stabilization**	7,090	2,533	8,419	2,766	0	0	0	0	0	0	0
37	**Operations Reserve**	8,638	9,966	13,450	11,981	11,300	2,724	2,834	2,504	8,771	15,175	22,869
	Cap and Trade Reserve			0	4,542	6,731	8,834	11,908	15,395	19,293	23,623	28,398
38	**Unassigned**	0	0	0	0	0	0	0	0	0	0	0
39	**Total Reserves**	29,017	28,365	30,155	32,630	27,827	17,534	20,718	23,874	33,605	44,339	56,808
40												
41	**Short Term Risk Assessment Value**	4,051	4,138	3,940	4,625	4,291	5,127	5,716	6,690	7,096	7,833	8,118
42												
43	**Operations Reserve Guidelines**											
44	**Min (60 Days Commodity + O&M)**	5,727	6,173	5,254	6,051	7,780	13,549	10,104	10,159	10,537	10,715	11,700
45	**Target (90 Days Commodity + O&M)**	8,590	9,260	7,881	9,076	11,670	20,324	15,157	15,239	15,805	16,073	17,549
46	**Max (120 Days Commodity + O&M)**	11,454	12,346	10,508	12,102	15,560	27,098	20,209	20,318	21,074	21,431	23,399
47												

APPENDIX B: GAS UTILITY CAPITAL IMPROVEMENT PROGRAM (CIP) DETAIL

Project #	Project Name	Reappropriated / Carried Forward from Previous Years /Accrual (A)	Current Year Estimate (B)	Current Year Funding (B-A)	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
GAS MAIN REPLACEMENT PROGRAM									
GS-13001	Gas Main Replacement - Project 23	2,282,610	2,282,304	-	-	-	-	-	-
GS-14003	Gas Main Replacement - Project 24	1,955,001	9,955,001	8,000,000	-	-	-	-	-
GS-15000	Gas Main Replacement - Project 25			-	4,725,000	8,000,000	-	-	-
GS-XXXXX	Gas Main Replacement - Project 26			-	-	-	5,300,000	7,950,000	-
GS-XXXXX	Gas Main Replacement - Project 27	-	-	-	-	-	-	-	4,000,000
GS-18000	Gas ABS/Tenite Replacement Project	-		-	-	-	-	-	-
Subtotal, Gas Main Replacement Prog.		**4,237,611**	**12,237,305**	**8,000,000**	**4,725,000**	**8,000,000**	**5,300,000**	**7,950,000**	**4,000,000**
TOOLS AND EQUIPMENT									
GS-13002	Gas Tools and Equipment	9,096	59,096	50,000	100,000	100,000	100,000	100,000	100,000
Subtotal, Tools and Equipment		**9,096**	**59,096**	**50,000**	**100,000**	**100,000**	**100,000**	**100,000**	**100,000**
ONGOING PROJECTS									
GS-11002	Gas Distribution System Improvements	410,796	910,796	500,000	500,000	500,000	500,000	500,000	500,000
GS-80019	Gas Meters and Regulators	129,987	629,987	500,000	500,000	500,000	500,000	500,000	500,000
Subtotal, Ongoing Projects		**540,783**	**1,540,783**	**1,000,000**	**1,000,000**	**1,000,000**	**1,000,000**	**1,000,000**	**1,000,000**
CUSTOMER CONNECTIONS (FEE FUNDED)									
GS-80017	Gas System, Customer Connections	124,408	1,042,486	1,166,894	1,210,900	1,247,200	1,100,000	1,100,000	1,100,000
Subtotal, Customer Connections		**124,408**	**1,042,486**	**1,166,894**	**1,210,900**	**1,247,200**	**1,100,000**	**1,100,000**	**1,100,000**
ELECTRIFICATION TRANSITION									
GS-XXXXX	Electrification Transition								4,000,000
Subtotal, Electrification Transition									**4,000,000**
GRAND TOTAL		**4,911,898**	**14,879,670**	**10,216,894**	**7,035,900**	**10,347,200**	**7,500,000**	**10,150,000**	**10,200,000**
Funding Sources									
Connection/Capacity Fees				1,166,894	1,210,900	1,247,200	1,100,000	1,100,000	1,100,000
Other Utility Funds (Asset Mgmt, GIS Systems)									
Utility Rates				9,050,000	5,825,000	9,100,000	6,400,000	9,050,000	9,100,000

CIP-RELATED RESERVES DETAIL	**6/30/2022 Actual**
Reappropriations & Commitments	4,150,829

APPENDIX C: GAS UTILITY RESERVES MANAGEMENT PRACTICES

The following reserves management practices shall be used when developing the Gas Utility Financial Plan:

Section 1. Definitions

a) "Financial Planning Period" – The Financial Planning Period is the range of future fiscal years covered by the Financial Plan. For example, if the Financial Plan delivered in conjunction with the FY 2015 budget includes projections for FY 2015 to FY 2019, FY 2015 to FY 2019 would be the Financial Planning Period.
b) "Fund Balance" – As used in these Reserves Management Practices, Fund Balance refers to the Utility's Unrestricted Net Assets.
c) "Net Assets" - The Government Accounting Standards Board defines a Utility's Net Assets as the difference between its assets and liabilities.
d) "Unrestricted Net Assets" - The portion of the Utility's Net Assets not invested in capital assets (net of related debt) or restricted for debt service or other restricted purposes.

Section 2. Supply Fund Reserves

The Gas Utility's Supply Fund Balance is reserved for the following purposes:
a) For existing contracts, as described in Section 4 (Reserve for Commitments)
b) For operating and capital budgets re-appropriated from previous years, as described in Section 5 (Reserve for Re-appropriations)

Section 3. Distribution Fund Reserves

a) For existing contracts, as described in Section 4 (Reserve for Commitments)
b) For operating and capital budgets re-appropriated from previous years, as described in Section 5 (Reserve for Re-appropriations)
c) For cash flow management and contingencies related to the Gas Utility's Capital Improvement Program (CIP), as described in Section 6 (CIP Reserve)
d) For rate stabilization, as described in Section 7 (Rate Stabilization Reserve)
e) For operating contingencies, as described in Section 8 (Operations Reserve)
f) Any funds not included in the other reserves will be considered Unassigned Reserves and shall be returned to ratepayers or assigned a specific purpose as described in Section 9 (Unassigned Reserves)

Section 4. Reserve for Commitments

At the end of each fiscal year the Gas Supply Fund and Gas Distribution Fund Reserve for Commitments will be set to an amount equal to the total remaining spending authority for all contracts in force for the Wastewater Collection Utility at that time.

Section 5. Reserve for Reappropriations

At the end of each fiscal year the Gas Supply Fund and Gas Distribution Fund Reserve for Reappropriations will be set to an amount equal to the amount of all remaining capital and

non-capital budgets, if any, that will be re-appropriated to the following fiscal year for each fund in accordance with Palo Alto Municipal Code Section 2.28.090.

Section 6. CIP Reserve

The CIP Reserve is used to manage cash flow for capital projects and acts as a reserve for capital contingencies. Staff will manage the CIP Reserve according to the following practices:

The following guideline levels are set forth for the CIP Reserve. These guideline levels are calculated for each fiscal year of the Financial Planning Period based on the levels of CIP expense budgeted for that year.

Minimum Level	12 months of budgeted CIP expense
Maximum Level	24 months of budgeted CIP expense

a) Changes in Reserves: Staff is authorized to transfer funds between the CIP Reserve and the Reserve for Commitments when funds are added to or removed from the Reserve for Commitments as a result of a change in contractual commitments related to CIP projects. Any other additions to or withdrawals from the CIP reserve require Council action.

b) Minimum Level:
   i) Funds held in the Reserve for Commitments may be counted as part of the CIP Reserve for the purpose of determining compliance with the CIP Reserve minimum guideline level.
   ii) If, at the end of any fiscal year, the minimum guideline is not met, staff shall present a plan to the City Council to replenish the reserve. The plan shall be delivered by the end of the following fiscal year, and shall, at a minimum, result in the reserve reaching its minimum level by the end of the next fiscal year. For example, if the CIP Reserve is below its minimum level at the end of FY 2017, staff must present a plan by June 30, 2018 to return the reserve to its minimum level by June 30, 2019. In addition, staff may present, and the Council may adopt, an alternative plan that takes longer than one year to replenish the reserve, or that does so in a shorter period of time.

c) Maximum Level: If, at any time, the CIP Reserve reaches its maximum level, no funds may be added to this reserve. If there are funds in this reserve in excess of the maximum level staff must propose to transfer these funds to another reserve or return them to ratepayers in the next Financial Plan. Staff may also seek Council approval to hold funds in this reserve in excess of the maximum level, if they are held for a specific future purpose related to the CIP.

Section 7. Rate Stabilization Reserve

Funds may be added to the Rate Stabilization Reserve by action of the City Council and held to manage the trajectory of future year rate increases. Withdrawal of funds from the Rate Stabilization Reserve requires Council action. If there are funds in the Rate Stabilization Reserve at the end of any fiscal year, any subsequent Gas Utility Financial Plan must result in the withdrawal of all funds from this Reserve by the end of the Financial Planning Period.

Section 8. Operations Reserve

The Operations Reserve is used to manage normal variations in costs and as a reserve for contingencies. Any portion of the Gas Utility's Fund Balance not included in the reserves described in Section 4-Section 7 above will be included in the Operations Reserve unless this reserve has reached its maximum level as set forth in Section 8 d) below. Staff will manage the Operations Reserve according to the following practices:

a) The following guideline levels are set forth for the Operations Reserve. These guideline levels are calculated for each fiscal year of the Financial Planning Period based on the levels of Operations and Maintenance (O&M) and commodity expense forecasted for that year in the Financial Plan.

Minimum Level	60 days of O&M and commodity expense
Target Level	90 days of O&M and commodity expense
Maximum Level	120 days of O&M and commodity expense

b) Minimum Level: If, at the end of any fiscal year, the funds remaining in the Operations Reserve are lower than the minimum level set forth above, staff shall present a plan to the City Council to replenish the reserve. The plan shall be delivered within six months of the end of the fiscal year, and shall, at a minimum, result in the reserve reaching its minimum level by the end of the following fiscal year. For example, if the Operations Reserve is below its minimum level at the end of FY 2014, staff must present a plan by December 31, 2014 to return the reserve to its minimum level by June 30, 2015. In addition, staff may present, and the Council may adopt, an alternative plan that takes longer than one year to replenish the reserve.

c) Target Level: If, at the end of any fiscal year, the Operations Reserve is higher or lower than the target level, any Financial Plan created for the Gas Utility shall be designed to return the Operations Reserve to its target level by the end of the forecast period.

d) Maximum Level: If, at any time, the Operations Reserve reaches its maximum level, no funds may be added to this reserve. Any further increase in the Gas Utility's Fund Balance shall be automatically included in the Unassigned Reserve described in Section 9, below.

Section 9. Unassigned Reserve

If the Operations Reserve reaches its maximum level, any further additions to the Gas Utility's Fund Balance will be held in the Unassigned Reserve. If there are any funds in the Unassigned Reserve at the end of any fiscal year, the next Financial Plan presented to the City Council must include a plan to assign them to a specific purpose or return them to the Gas Utility ratepayers by the end of the first fiscal year of the next Financial Planning Period. For example, if there were funds in the Unassigned Reserves at the end of FY 2015, and the next Financial Planning Period is FY 2016 through FY 2020, the Financial Plan shall include a plan to return or assign any funds in the Unassigned Reserve by the end of FY 2016. Staff may present an alternative plan that retains these funds or returns them over a longer period of time.

Section 10. Intra-Utility Transfers Between Supply and Distribution Funds

The Gas Utility records costs in two separate funds: the Gas Supply Fund and the Gas Distribution Fund. At the end of each fiscal year staff is authorized to transfer an amount equal to the difference between Gas Supply Fund costs and Gas Supply Fund Revenues, from the Gas Distribution Fund Operations Reserve to the Gas Supply Fund, or vice versa. Such transfers shall be included in the ordinance closing the budget for the fiscal year.

Section 11. Cap and Trade Program Reserve

This reserve tracks revenues from the sale of carbon allowances freely allocated by the California Air Resources Board to the gas utility, under the State's Cap and Trade Program. Funds in this Reserve are managed in accordance with the City's Policy on the Use of Freely Allocated Allowances under the State's Cap and Trade Program (the Policy), adopted by Council Resolution 9487 in January 2015. At the end of each fiscal year staff is authorized to transfer all revenues from the sale of allocated carbon allowances to this reserve.

APPENDIX D: DESCRIPTION OF GAS UTILITY COST CATEGORIES

This appendix describes the activities associated with the various cost categories referred to in this Financial Plan.

Customer Service: This category includes the Gas Utility's share of the call center, meter reading, collections, and billing support functions. Billing support encompasses staff time associated with bill investigations and quality control on certain aspects of the billing process. It does not include maintenance of the billing system itself, which is included in Administration. This category also includes CPAU's key account representatives, who work with large commercial customers who have more complex requirements for their gas services.

Resource Management: This category includes gas procurement, contract management, rate setting, and tracking of legislation and regulation related to the gas industry.

Operations and Maintenance: This category includes the costs of a variety of distribution system maintenance activities, including:

- surveying the gas system (50% of the system each year) and repairing any leaks found;
- investigating reports of damaged mains or services and perform emergency repairs;
- building and replacing gas services for new or redeveloped buildings; and
- testing and replacing meters to ensure accurate sales metering.

This category also includes a variety of functions the utility shares with other City utilities, including:

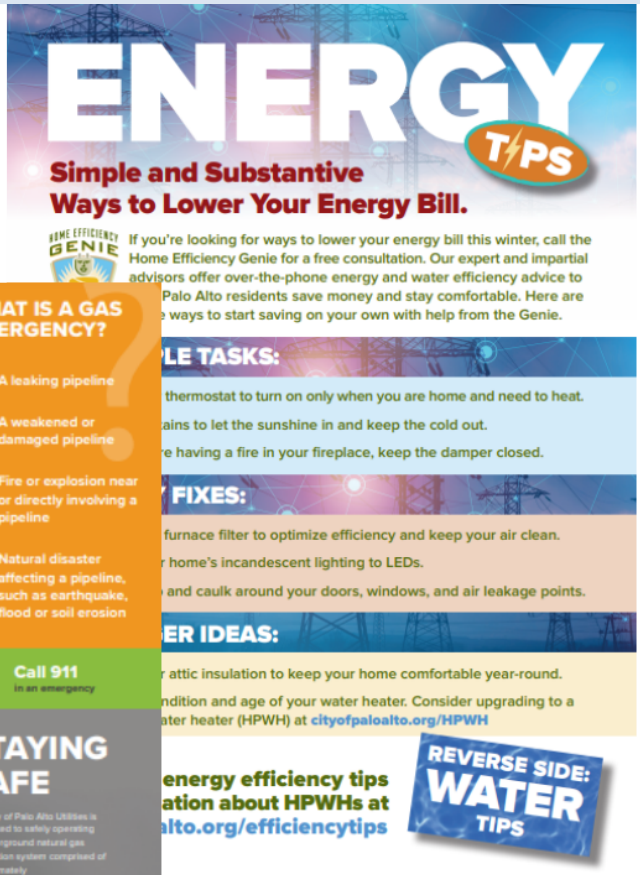
- the Field Services team (which does field research of various customer service issues);
- the Cathodic Protection team (which monitors and maintains the systems that prevent corrosion in metal pipes and reservoirs); and
- the General Services team (which manages and maintains equipment, paves and restores streets after gas, water, or sewer main replacements, and provides welding services, including certified gas line welding services)

Administration: Accounting, purchasing, legal, and other administrative functions provided by the City's General Fund staff, as well as shared communications services and Utilities Department administrative overhead and billing system maintenance costs.

Demand Side Management: Includes the cost of administering gas efficiency programs and the direct cost of rebates paid.

Engineering (Operating): The Gas Utility's engineers focus primarily on the CIP, but a small portion of their time is spent assisting with distribution system maintenance.

APPENDIX E: GAS UTILITY COMMUNICATIONS SAMPLES



KEEP EMERGENCY SUPPLIES HANDY

Your easily accessible kit should include:

- Bottled water (a 7-day supply of 1 gallon person per day)
- 7-day supply of food for all members of your household, including pets
- Alternative cooking fuels/camping stoves
- Flashlights and batteries
- Battery-operated radio
- First-aid kit
- Extra fuses (if you have a fuse box)
- Multi-purpose extinguishers
- Manual can opener
- Tarps, raingear and warm clothing

Always have cash on hand, gasoline in your car and a standard or cell phone because ATMs, gas pumps and cordless phones may not work during a power outage.

PROTECT YOURSELF AND YOUR FAMILY

Storms and power outages can be dangerous. Follow these guidelines to keep yourselves safe:

- Stay away from all downed power lines and poles.
- Watch out for nearby power lines when you use a ladder or work on your roof.
- Stay inside your car if a power line falls across it when you're in it. Warn others away and wait for rescue personnel. If you must get out due to fire or other danger, hop with both feet together or jump out without touching the vehicle and the ground at the same time.
- If you smell gas, do not turn any lights or appliances on or off. Do not look for a gas leak yourself. Leave the area and call 911 or report it immediately to City of Palo Alto Utilities at (650) 329-2579.

IF THE POWER GOES OUT

- Call us at (650) 496-6914 with the phone number associated with your utility account to report the outage.
- Line busy? Try multiple times as you may have info others don't.
- Have online access? You can check the status of known outages at cityofpaloalto.org/outageinfo
- Follow us on Twitter at twitter.com/PAUtilities for updates.
- Be aware our crews are working 24 hours a day to restore service.

MINIMIZE PROPERTY DAMAGE FROM INTERRUPTED POWER

- Do not connect an emergency or recreational vehicle generator to house wiring. Unless installed safely, you could damage property and endanger the lives of utility workers working to repair power lines.
- Keep your refrigerator and freezer closed. Tightly sealed doors will normally keep food safe for several hours.
- Install surge protectors for all sensitive electronic equipment.
- Turn off all appliances to avoid damage from a power surge when power is restored.
- Leave one light on to show when power

COOPERATE WITH UTILITY CREWS

To restore service during an outage as well as perform routine maintenance, utility crews need access to the power lines and poles on your property. We appreciate your cooperation!