

MEMORANDUM

TO: UTILITIES ADVISORY COMMISSION

FROM: UTILITIES DEPARTMENT

DATE: April 12, 2016

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SUBJECT: Staff Recommendation that the Utilities Advisory Commission Recommend that the City Council Adopt: (1) a Resolution Approving the Fiscal Year 2017 Gas Utility Financial Plan; and (2) a Resolution Increasing Gas Rates by Amending Rate Schedules G-1 (Residential Gas Service), G-1-G (Residential Green Gas Service), G-2 (Residential Master-Metered and Commercial Gas Service), G-2-G (Residential Master-Metered and Commercial Green Gas Service), G-3 (Large Commercial Gas Service), G-3-G (Large Commercial Green Gas Service), G-10 (Compressed Natural Gas Service) and G-10-G (Compressed Natural Green Gas Service)

RECOMMENDATION

Staff requests that the Utilities Advisory Commission (UAC) recommend that the Council:

1. Adopt a resolution (Attachment A) approving the fiscal year (FY) 2017 Gas Utility Financial Plan (Attachment B); and
2. Adopt a resolution (Attachment C) increasing gas rates by amending Rate Schedules G-1 (Residential Gas Service), G-1-G (Residential Green Gas Service), G-2 (Residential Master-Metered and Commercial Gas Service), G-2-G (Residential Master-Metered and Commercial Green Gas Service), G-3 (Large Commercial Gas Service), G-3-G (Large Commercial Green Gas Service), G-10 (Compressed Natural Gas Service) and G-10-G (Compressed Natural Green Gas Service)

EXECUTIVE SUMMARY

The FY 2017 Gas Utility Financial Plan includes projections of the utility's costs and revenues for FY 2017 through FY 2026. Costs have risen over the past several years and revenues have not kept pace. Gas rates have not been adjusted since July 2012. A rate increase of 24% is required to increase revenues to cover projected FY 2017 costs, but staff proposes utilization of reserves and a series of rate increases over the next three years to minimize the impact to customers. The proposed FY 2017 Gas Utility Financial Plan includes an 8% gas rate increase on July 1, 2016 followed by rate increases of 9% and 7% in FY 2018 and FY 2019, respectively, so that revenues cover costs by FY 2019. In addition, the plan includes proposed transfers to the Operations

Reserve of \$1.5 million and \$5.3 million from the Rate Stabilization Reserve in FY 2016 and FY 2017, respectively, to ensure that there are appropriate financial reserves for contingencies. These actions will reduce the Rate Stabilization Reserve to zero by the end of FY 2017.

Gas Utility expenses are projected to increase by roughly 4.4% annually from FY 2016 to FY 2026 due primarily to higher operations and maintenance expenses and increasing gas supply costs. In the short term, some of these costs are related to the cross-bore inspection program, as well as cap-and-trade allowance purchase costs. In addition, capital improvement program (CIP) costs have increased as the economy has improved. Gas supply costs are currently very low and can vary significantly, but are projected to rise steadily over the forecast horizon; however, those costs are passed on to customers with the monthly-varying, market-based commodity rate. Besides costs increases, the gas rate increase projections are also negatively affected by the downward trend in gas usage over the last several years.

BACKGROUND

Every year staff presents the UAC with Financial Plans for its Electric, Water, Gas, and Wastewater Collection Utilities and recommends any rate adjustments required to maintain their financial health. These Financial Plans include a comprehensive overview of the utility's operations, both retrospective and prospective, and are intended to be a reference for UAC and Council members as they review the budget and staff's rate recommendations. Each Financial Plan also contains a set of Reserves Management Practices describing the reserves for each utility and the management practices for those reserves.

The UAC reviewed preliminary financial forecasts at its February 3, 2016 meeting. Staff has revised the preliminary projections presented at that meeting.

DISCUSSION

Staff's annual assessment of the financial position of the City's gas utility is completed to ensure adequate revenue to fund operations. This includes making long-term projections of market conditions, the physical condition of the system, and other factors that could affect utility costs, and setting rates adequate to recover these costs. The current rate proposals are also based on the cost of service methodology described in the 2012 Gas Utility Cost of Service Study completed by Utility Financial Solutions.

Proposed Actions for FY 2016

This year's Gas Utility Financial Plan includes the following proposed actions for FY 2016:

1. Reduce the \$3.4 million transfer from the Rate Stabilization Reserve to the Operations Reserve proposed in the FY 2016 Gas Financial Plan to \$1.5 million.

Proposed Actions for FY 2017

This year's Gas Utility Financial Plan also includes the following proposed actions for FY 2017:

1. Transfer \$5.3 million from the Rate Stabilization Reserve to the Operations Reserve; and
2. Amend gas rate schedules (see Attachment D) to increase rates by approximately 8%.

The reserve transfers will enable staff to maintain sufficient funds in the Gas Operations Reserve levels while spreading the required rate increases for the gas utility over several years. These proposed actions are described in more detail in the FY 2017 Gas Financial Plan (Attachment B).

Staff proposes to adjust gas rates as shown in Table 1 and Table 2, below, effective July 1, 2016. These changes are projected to increase the system average gas rate by roughly 8%. These rate changes are included in the proposed amended rate schedules in Attachment D.

Table 1: Gas Consumption Charges in \$/CCF (Current and Proposed)

	Current (7/1/12)	Proposed (7/1/16)	Change	
			\$/Therm	%
G-1 (Residential)				
Tier 1 Rates	0.4392	0.5021	0.0629	14.3%
Tier 2 Rates	0.9546	1.0407	0.0861	9.0%
G-2 (Residential Master-Metered and Small Commercial)				
Uniform Rate	0.6147	0.6855	0.0708	11.5%
G-3 (Large Commercial)				
Uniform Rate	0.6071	0.6775	0.0704	11.5%
G-10 (Compressed Natural Gas)				
Uniform Rate	0.0509	0.0963	0.0454	89.2%

Table 2: Current and Proposed Monthly Service Charge

Rate Schedule	Monthly Service Charge (\$/month)		Change	
	Current (7/1/12)	Proposed (7/1/16)	\$/mo	%
G-1 (Residential)	\$9.88	\$10.32	\$0.44	4.5%
G-2 (Res. Master-Metered and Small Commercial)	\$74.86	\$78.23	\$3.37	4.5%
G-3 (Large Commercial)	\$361.18	\$377.43	\$16.25	4.5%
G-10 (CNG)	\$50.65	\$52.93	\$2.28	4.5%

Bill Impact of Proposed Rate Changes

Table 3 shows the impact of the proposed July 1, 2016 rate changes on the median residential bill. The average increase is roughly 8% based on commodity prices in March 2016, but some customers may see slightly higher or lower increases due to slight changes in the composition of the utility's costs, as well as prevailing market prices.

Table 3: Impact of Proposed Gas Rate Changes on Residential Bills

Usage (Therms/month)	Bill under Current Rates	Bill under Proposed Rates	Change	
			\$/mo.	%
Winter (Using March 2016 commodity prices)				
30	\$ 29.67	\$ 32.00	\$ 2.33	8%
54 (median)	45.40	49.34	3.84	8%
80	72.96	78.89	5.94	8%
150	155.21	167.17	11.96	8%
Summer (Using July 2015 commodity prices)				
10	\$ 17.70	\$ 18.77	\$ 1.07	6%
18 (median)	23.95	25.52	1.57	7%
30	38.49	41.05	2.56	7%
45	57.95	61.80	3.85	7%

Table 4 shows the impact of the proposed July 1, 2016 rate changes on various representative commercial customer bills.

Table 4: Impact of Proposed Gas Rate Changes on Commercial Bills
(Using March 2016 commodity prices)

Usage (Therms/month)	Bill under Current Rates	Bill under Proposed Rates	Change
			%
G-2 (Residential Master-Metered and Small Commercial)			
500	492	531	8%
5,000	4,250	4,608	8%
10,000	8,426	9,137	8%
G-3 (Large Commercial)			
25,000	21,049	22,825	8%
50,000	41,736	45,272	8%

FY 2017 Financial Plan's Projected Rate Adjustments for the Next Five Fiscal Years

Table 5 shows the projected rate adjustments over the next five years and their impact on the annual median residential gas bill.

Table 5: Projected Rate Adjustments, FY 2017 to FY 2021

	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Gas Utility	8%	9%	7%	4%	1%
Estimated Bill Impact (\$/mo)*	\$2.52	\$3.19	\$2.70	\$1.65	\$0.43
* estimated impact on median residential gas bill, which is currently \$32.93.					

Changes from Prior Financial Forecasts

After presenting the preliminary financial forecast to the UAC on February 3, 2016, continuing warmer winter weather has caused staff to lower its projections for FY 2016 sales and

revenues, and thus increase its FY 2017 rate projection from 7% to 8% as shown in Table 6 below.

Staff has projected future gas rate increases for several years. Table 6 compares current rate projections to those projected in the last two year's Financial Plans. As shown, the FY 2017 rate projections are somewhat higher than projected last year. In the FY 2015 Financial Plan, the reduction in gas usage due to warm weather and drought had not occurred and the additional costs for cross-bore investigations beyond FY 2017 had not been planned.

Table 6: Projected Gas Rate Trajectory for FY 2017 to FY 2026

Projection	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
Preliminary Financial Forecast (presented to the UAC in Feb. 2016)	7%	5%	5%	5%	3%	N/A	N/A	N/A	N/A	N/A
Current (FY 2017 Financial Plan)	8%	9%	7%	4%	1%	1%	1%	1%	1%	1%
Last year (FY 2016 Financial Plan)	7%	4%	4%	4%	3%	3%	N/A	N/A	N/A	N/A
Two years ago (FY 2015 Financial Plan)	0%	3%	3%	4%	3%	N/A	N/A	N/A	N/A	N/A

Gas Bill Comparison with Surrounding Cities

Table 7 presents winter and summer residential bills for Palo Alto and PG&E at several usage levels for commodity rates in effect as of July 2015 (to illustrate a summer month bill) and March 2016 (to illustrate a winter month bill). The annual gas bill for the median residential customer for calendar year 2015 was \$420.86, about 15% lower than the annual bill for a PG&E customer with the same consumption. PG&E's distribution rates for gas have increased substantially 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 7: Residential Monthly Gas Bill Comparison

Season	Usage (therms)	Palo Alto	PG&E Zone X	% Difference
Winter (March 2016)	30	31.25	40.23	-22%
	(Median) 54	48.34	72.42	-33%
	80	77.16	117.37	-34%
	150	163.10	245.51	-34%
Summer (Jul 2015)	10	17.75	12.47	42%
	(Median) 18	24.04	22.60	6%
	30	38.64	43.44	-11%
	45	58.18	69.50	-16%

Monthly gas bills for commercial customers for various usage levels for rates in effect as of March 1, 2016 are shown in Table 8. Bills for CPAU customers at the usage levels shown are around 9% lower for smaller commercial customers and 4 to 17% higher for larger commercial customers than for PG&E customers. This is a substantial improvement over the calendar year 2013 bill comparison, when commercial gas bills for CPAU customers were 27-44% higher than for PG&E customers. This is primarily attributable to PG&E's increased distribution rates as the commodity rates for CPAU and PG&E are very similar, both being based on spot market gas prices.

**Table 8: Commercial Monthly Average Gas Bill Comparison
(for Rates in Effect Mar. 1, 2016)**

Usage (therms/mo)	Gas Bill (\$/month)		% Difference
	Palo Alto	PG&E	
500	518	572	-9%
5,000	4,510	4,953	-9%
10,000	9,231	8,859	4%
50,000	44,711	38,104	17%

NEXT STEPS

The Finance Committee is scheduled to review the FY 2017 Gas Financial Plan on May 17, 2016. The City Council will consider adopting the Financial Plan and amending the rate schedules as part of the FY 2017 budget review and adoption process.

RESOURCE IMPACT

Normal year sales revenues for the Gas Utility are projected to increase by roughly 8% (\$2.2 million) as a result of the proposed rate increases, not including fluctuations in commodity revenue/cost. See the attached FY 2017 Gas Financial Plan for a more comprehensive overview of projected cost and revenue changes for the next ten years.

POLICY IMPLICATIONS

The proposed gas rate adjustments are consistent with Council-adopted Reserve Management Practices that are part of the Financial Plan, and were developed using a cost of service study and methodology consistent with industry accepted cost of service principles.

ENVIRONMENTAL REVIEW

The UAC's review and recommendation to Council on the FY 2017 Gas Financial Plans and rate adjustments does not meet the California Environmental Quality Act's definition of a project, pursuant to Public Resources Code Section 21065, thus no environmental review is required.

ATTACHMENTS

- A. Resolution of the Council of the City of Palo Alto Approving the FY 2017 Gas Utility Financial Plan
- B. Proposed FY 2017 Gas Utility Financial Plan
- C. Resolution of the Council of the City of Palo Alto Adopting a Gas Rate Increase and Amending Rate Schedules G-1, G-1-G, G-2, G-2-G, G-3, G-3-G, G-10 and G-10-G
- D. Amended Rate Schedules G-1, G-1-G, G-2, G-2-G, G-3, G-3-G, G-10 and G-10-G (proposed changes shown in in redline/strikeout)

PREPARED BY:

ERIC KENISTON, Acting Rates Manager

CE. 7/1

REVIEWED BY:

JANE RATCHYE, Assistant Director, Resource Management

APPROVED BY:



ED SHIKADA

Interim Director of Utilities

* NOT YET APPROVED *

Resolution No. _____

Resolution of the Council of the City of Palo Alto Approving the
FY 2017 Gas Utility Financial Plan

R E C I T A L S

A. Each year the City of Palo Alto (“City”) regularly assesses the financial position of its utilities with the goal of ensuring adequate revenue to fund operations. This includes making long-term projections of market conditions, the physical condition of the system, and other factors that could affect utility costs, and setting rates adequate to recover these costs. It does this with the goal of providing safe, reliable, and sustainable utility services at competitive rates. The City adopts Financial Plans to summarize these projections.

B. The City uses reserves to protect against contingencies and to manage other aspects of its operations, and regularly assesses the adequacy of these reserves and the management practices governing their operation. The status of utility reserves and their management practices are included in Reserves Management Practices attached to and made part of the Financial Plans.

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

SECTION 1. The Council hereby adopts the FY 2017 Gas Utility Financial Plan.

SECTION 2. The Council hereby approves the transfer of \$1.5 million in FY 2016 from the Rate Stabilization Reserve to the Operations Reserve, as described in the FY 2017 Gas Utility Financial Plan approved via this resolution.

SECTION 3. The Council finds that the adoption of this resolution does not meet the California Environmental Quality Act’s (CEQA) definition of a project under Public Resources Code Section 21065, and therefore, no environmental assessment is required.

INTRODUCED AND PASSED:

AYES:

NOES:

ABSENT:

ABSTENTIONS:

ATTEST:

* NOT YET APPROVED *

City Clerk

Mayor

APPROVED AS TO FORM:

APPROVED:

Senior Deputy City Attorney

City Manager

Director of Utilities

Director of Administrative Services

**FY 2017 GAS
UTILITY
FINANCIAL PLAN
FY 2017 TO FY 2026**

GAS UTILITY FINANCIAL PLAN

FY 2017 TO FY 2026

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SECTION 1: DEFINITIONS AND ABBREVIATIONS

ABS: Acrylonitrile butyene styrene, a plastic gas main material

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 ten 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

From FY 2017 through FY 2026, non-commodity costs are projected to increase at roughly 3.5% per year. In the short term, some of these costs are related to the cross-bore inspection program, as well as cap-and-trade allowance purchase costs. In addition, capital improvement program (CIP) costs have increased as the economy has improved, and CPAU is also planning new gas main replacement projects after completing a large multi-year gas main replacement project. The Gas Utility expenses over the period of this financial plan are shown in Table 1 below.

Table 1: Gas Utility Expenses for FY 2015 to FY 2026 (Thousand \$'s)

Expenses (\$000)	FY 2015 (act.)	FY 2016 (est.)	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
Commodity costs	10,519	9,258	12,337	13,293	13,770	14,338	14,834	15,380	16,013	16,600	17,178	17,613
Operations	18,529	19,738	21,792	22,443	23,541	23,548	24,535	25,553	26,631	27,755	28,929	30,257
Capital Projects	1,832	6,889	6,305	5,985	6,115	6,301	6,488	6,680	6,879	7,083	7,293	7,509
TOTAL	30,881	35,886	40,434	41,721	43,426	44,188	45,857	47,613	49,522	51,438	53,400	55,380

To ensure that revenues cover these rising costs, the financial plan includes the rate trajectory shown in Table 2. There was no rate increase in FY 2016 since new gas main replacement projects were not added in FY 2014 and FY 2015 in order to complete a multi-year project to replace the last of the ABS plastic mains in Palo Alto. An 8% increase is projected for FY 2017, followed by 9% and 7% increases for FY 2018 and FY 2019. An 8% increase in FY 2017 is equivalent to \$2.52 per month for the median residential customer's monthly gas bill, based on commodity prices as of February 2016.

Table 2: Projected Gas Rate Trajectory for FY 2017 to FY 2026

Projection	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
Current Financial Plan	8%	9%	7%	4%	1%	1%	1%	1%	1%	1%
FY 2016 Financial Plan	7%	4%	4%	4%	3%	3%	N/A	N/A	N/A	N/A

The Gas Rate Stabilization Reserve is used to smooth rate increases over several years. This Financial Plan projects that these reserves will be exhausted by the end of FY 2017. The Gas CIP Reserve can be used to offset one-time unanticipated capital costs. Table 3 shows the projected reserve transfers over the forecast period.

Table 3: Transfers To/(From) Reserves for FY 2016 to FY 2026 (\$000)

Reserve	FY 2016	FY 2017	FY 2018 to FY 2026
Rate Stabilization	(1,531)	(5,275)	-
Operations	1,531	5,275	-

SECTION 2B: SUMMARY OF PROPOSED ACTIONS

Staff proposes the following actions for the Gas Utility in FY 2016:

1. Amend the \$3.4 million transfer proposed in the FY 2016 Gas Financial Plan to \$1.5 million, based on ending Operations Reserve levels.

Staff proposes the following actions for the Gas Utility in FY 2017:

2. Increase rates as shown in *Section 3B: Current and Proposed Rates*. These changes are projected to increase rates by 8%, assuming monthly commodity prices are constant. However, should commodity prices rise, relative bill increases will be higher, and conversely lower if commodity prices should fall.
3. Transfer \$5.3 million from the Rate Stabilization Reserve to the Operations Reserve. See *Section 3B: Current and Proposed Rates* for more details.

SECTION 3: DETAIL OF FY 2017 RATE AND RESERVE PROPOSALS

SECTION 3A: RATE DESIGN

The Gas Utility's rates are evaluated and implemented in compliance with cost of service requirements. The Gas Utility's current rates are based on the methodology from the April 2012 *Gas Utility Cost of Service Study* completed by Utility Financial Solutions¹. Staff tentatively plans to review this cost of service study in the next year or two unless any major changes occur to the utility's operations or customer base that would necessitate an earlier study. Before any such update, staff will review current rates and the scope of the study with the UAC and Council to determine UAC and Council policy priorities.

SECTION 3B: CURRENT AND PROPOSED RATES

On July 1, 2012 CPAU restructured its rates so that the commodity component varied monthly to match changes in gas market prices². In addition, monthly service charges were increased to recover the cost of providing gas service to customers. 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 program³. This component will change depending on the cost of allowances and gas demand. At the same time, two bill components (Local

¹ Staff Report 2812, 5/17/ 2012 <http://archive.cityofpaloalto.org/civica/filebank/blobdload.asp?BlobID=31395>

² Staff Report 2812, 5/17/2012: <http://archive.cityofpaloalto.org/civica/filebank/blobdload.asp?BlobID=31395>

³ Staff Report 5397, 1/26/2015: <https://www.cityofpaloalto.org/civica/filebank/documents/45537>

transportation and Administration) were collapsed into the Distribution rate to streamline bill presentation.

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 schedules for the Compressed Natural Gas station (G-10). All customers pay a monthly service charge, which represents meter reading, billing, and other customer service costs, as well as a portion of operations and maintenance cost. All customers are also charged for 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 CCF, 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 4 shows the current and proposed monthly service charges for all rate schedules. Table 9 shows the consumption charges related to distribution charges. As mentioned earlier, commodity charges change monthly. Some recent commodity price history is discussed in *Section 6A: Gas Purchase Costs*.

Table 4: Current and Proposed Monthly Service Charges

Rate Schedule	Monthly Service Charge (\$/month)		Change	
	Current (7/1/12)	Proposed (7/1/16)	\$/mo	%
G-1 (Residential)	\$9.88	\$10.32	\$0.44	4.5%
G-2 (Small Commercial)	\$74.86	\$78.23	\$3.37	4.5%
G-3 (Large Commercial)	\$361.18	\$377.43	\$16.25	4.5%
G-10 (CNG)	\$50.65	\$52.93	\$2.28	4.5%

Table 5: Current and Proposed Gas Distribution Charges

	Current (7/1/12)	Proposed (7/1/16)	Change	
			\$/Therm	%
G-1 (Residential)				
Tier 1 Rates	0.4392	0.5021	0.0629	14.3%
Tier 2 Rates	0.9546	1.0407	0.0861	9.0%
G-2 (Residential Master-Metered and Small Commercial)				
Uniform Rate	0.6147	0.6855	0.0708	11.5%
G-3 (Large Commercial)				
Uniform Rate	0.6071	0.6775	0.0704	11.5%
G-10 (Compressed Natural Gas)				
Uniform Rate	0.0509	0.0963	0.0454	89.2%

SECTION 3C: BILL IMPACT OF PROPOSED RATE CHANGES

Table 6 shows the impact of the proposed July 1, 2016 rate changes on the median residential bill. The average increase is roughly 8% based on March 2016 commodity rates, but some customers may see slightly higher or lower increases due to slight changes in the composition of the utility's costs, as well as prevailing market prices.

Table 6: Impact of Proposed Gas Rate Changes on Residential Bills

Usage (Therms/month)	Bill under Current Rates	Bill under Proposed Rates	Change	
			\$/mo.	%
Winter (Using March 2016 commodity prices)				
30	\$ 29.67	\$ 32.00	\$ 2.33	8%
54 (median)	45.40	49.34	3.84	8%
80	72.96	78.89	5.94	8%
150	155.21	167.17	11.96	8%
Summer (Using July 2015 commodity prices)				
10	\$ 17.70	\$ 18.77	\$ 1.07	6%
18 (median)	23.95	25.52	1.57	7%
30	38.49	41.05	2.56	7%
45	57.95	61.80	3.85	7%

Table 7 shows the impact of the proposed July 1, 2016 rate changes on various representative commercial customer bills.

Table 7: Impact of Proposed Gas Rate Changes on Commercial Bills
(Using March 2016 commodity prices)

Usage (Therms/month)	Bill under Current Rates	Bill under Proposed Rates	Change
			%
G-2 (Residential Master-Metered and Small Commercial)			
500	492	531	8%
5,000	4,250	4,608	8%
10,000	8,426	9,137	8%
G-3 (Large Commercial)			
25,000	21,049	22,825	8%
50,000	41,736	45,272	8%

SECTION 3D: PROPOSED RESERVE TRANSFERS

In the FY 2016 Financial Plan, several transfers between reserves were discussed for FY 2016. CIP related funds were transferred out of the Reappropriations Replacement into the CIP Reserve, and \$3.4 million was proposed to be transferred from the Rate Stabilization Reserve into the Operations Reserve.

As lower expenses in FY 2015 resulted in higher ending reserve balances than initially projected, staff recommends reducing the \$3.4 million transfer from the Rate Stabilization Reserve in FY 2016 to \$1.5 million, and proposes transferring \$5.3 million in FY 2017. For FY 2016, staff proposes a \$3.4 million transfer from the Rate Stabilization Reserve. This transfer will exhaust the Rate Stabilization Reserve, as planned for and discussed in *Section 5E: FY 2017-FY 2026 Projections* Section 4E: Reserves Structure, and is included in the financial projections in this Financial Plan. It will enable CPAU to maintain adequate Operations Reserve levels while moderating the pace of increase in gas rates. The impact of these transfers on reserves levels can be seen 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 comprised 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 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 Public Utilities Commission) 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 customers 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.⁴ As of 2015 the Gas Utility had replaced approximately 99 miles of ABS, as well as some sections of steel where cathodic protection was not effective. Current main replacement projects will target the last ~800 feet of remaining ABS main as well as tackling PVC replacement. A PVC risk analysis to determine the appropriate footage of annual PVC replacement for future CIP projects is currently being conducted. 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.⁵

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,"⁶ 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 as a result 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 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.

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 23,400 customers are connected to the natural gas system, approximately 21,700 (93%) of which are residential and 1,700 (7%) of which are non-residential. Residential customers consume about 10 to 12 million therms of gas per year,

⁴ Staff Report CMR:183:90. *Infrastructure Review and Update*, March 1, 1990

⁵ *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

⁶ 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

roughly 45% of the gas sold, while non-residential customers consume 55% (about 14 to 15 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 spas⁷. Non-residential customers use gas for space and water heating (73% of gas consumed), cooking (20%), and industrial processes (6%).⁸

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 a 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 prices. The cost of purchased gas and PG&E local transportation service accounts for roughly one third of the utility's expenditures.

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 23,400 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 accounts for around 15 to 20% 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, \$3 million is budgeted for the cross-bore program over the next three years. However, the ongoing cross-bore investigation may require additional funding, or extend for longer into the future, as the remaining sewer lines are more difficult to examine than the majority of the wastewater collection system that has been examined to date.

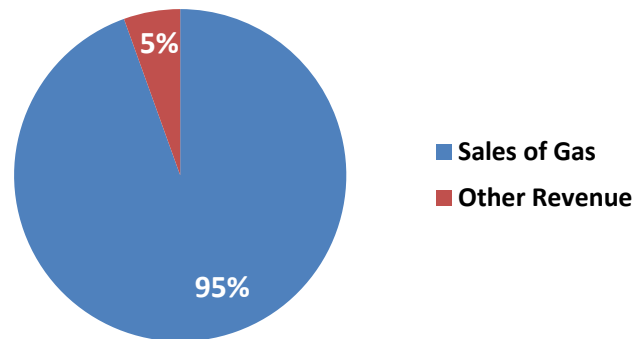
⁷ <http://energyalmanac.ca.gov/naturalgas/overview.html>

⁸ 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 4D: COST STRUCTURE AND REVENUE SOURCES

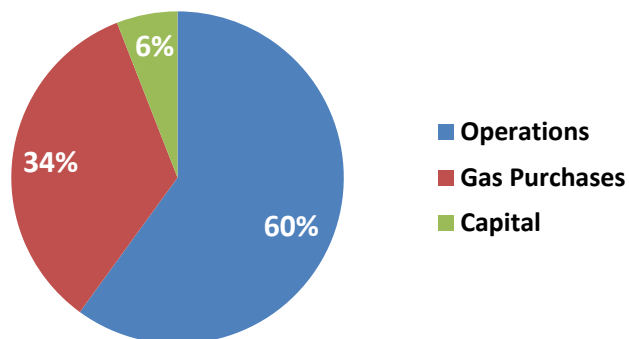
As shown in Figure 1, the Gas Utility receives 95% of its revenue from sales of gas and the remainder from capacity and connection fees, interest on reserves, and other sources. *Appendix A: Gas Utility Financial Forecast Detail* shows more detail on the utility's cost and revenue structures.

Figure 1: Revenue Structure (FY 2015)



As shown in Figure 2, in FY 2015, gas purchase costs accounted for roughly 34% of the Gas Utility's costs. This percentage can vary widely from year to year, as this cost is based upon market purchases. Operational costs represented roughly 60%, and capital investment was responsible for the remaining 6%. The percentages for FY 2015 are skewed by the fact that CIP, which is normally about 20% of expenses, was reduced in FY 2014 and FY 2015 to allow for a backlog of projects to be completed.

Figure 2: Cost Structure (FY 2015)



SECTION 4E: RESERVES STRUCTURE

CPAU maintains six reserves for its Gas Utility to manage various types of contingencies. These are summarized below, but 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 Reappropriations:** A reserve for funds dedicated to projects reappropriated by the City Council, nearly all of which are capital projects. Most City funds, including the General Fund, have a Reappropriations Reserve.
- **Capital Improvement Program (CIP) Reserve:** The CIP reserve can be used to accumulate funds for future expenditure on CIP projects and is anticipated to be empty unless a major one-time CIP expenditure is expected in future years. 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.

SECTION 4F: COMPETITIVENESS

Table 8 presents winter and summer residential bills for Palo Alto and PG&E at several usage levels for commodity rates in effect as of July 2015 (to illustrate a summer month bill) and March 2016 (to illustrate a winter month bill). The annual gas bill for the median residential customer for calendar year 2015 was \$420.86, about 15% lower than the annual bill for a PG&E customer with the same consumption. PG&E's distribution rates for gas have increased substantially 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 8: Residential Monthly Natural Gas Bill Comparison (\$/month)

Season	Usage (therms)	Palo Alto	PG&E Zone X	% Difference
Winter (March 2016)	30	31.25	40.23	-22%
	(Median) 54	48.34	72.42	-33%
	80	77.16	117.37	-34%
	150	163.10	245.51	-34%
Summer (Jul 2015)	10	17.75	12.47	42%
	(Median) 18	24.04	22.60	6%
	30	38.64	43.44	-11%
	45	58.18	69.50	-16%

Table 9 shows the monthly gas bills for commercial customers for various usage levels for rates in effect as of March 1, 2016. Bills for CPAU customers at the usage levels shown are around 9% lower for smaller commercial customers and 4 to 17% higher for larger commercial customers than for PG&E customers. This is a substantial improvement over the calendar year 2013 bill comparison, when commercial gas bills for CPAU customers were 27% to 44% higher than for PG&E customers. This is primarily attributable to PG&E's increased distribution rates as the

commodity rates for CPAU and PG&E are very similar, both being based on spot market gas prices.

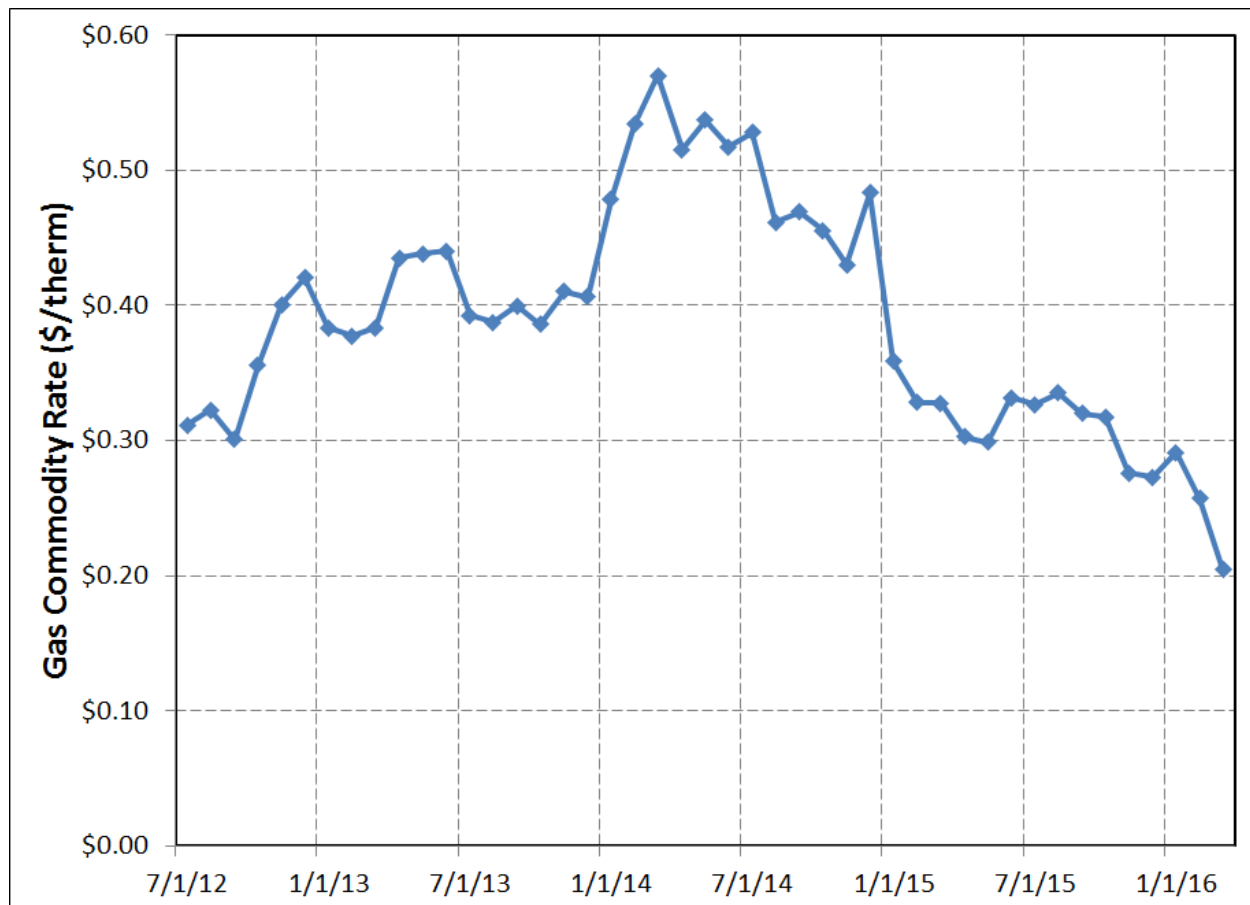
Table 9: Commercial Monthly Average Gas Bill Comparison (for Rates in Effect Feb. 1, 2016)

Usage (therms/mo)	Gas Bill (\$/month)		% Difference
	Palo Alto	PG&E	
500	518	572	-9%
5,000	4,510	4,953	-9%
10,000	9,231	8,859	4%
50,000	44,711	38,104	17%

SECTION 4G: GAS SUPPLY RATES

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. The actual commodity prices are shown in Figure 3. As shown, commodity prices have steadily fallen for the last two years.

Figure 3: Gas Commodity Rates from July 2012 through March 2016



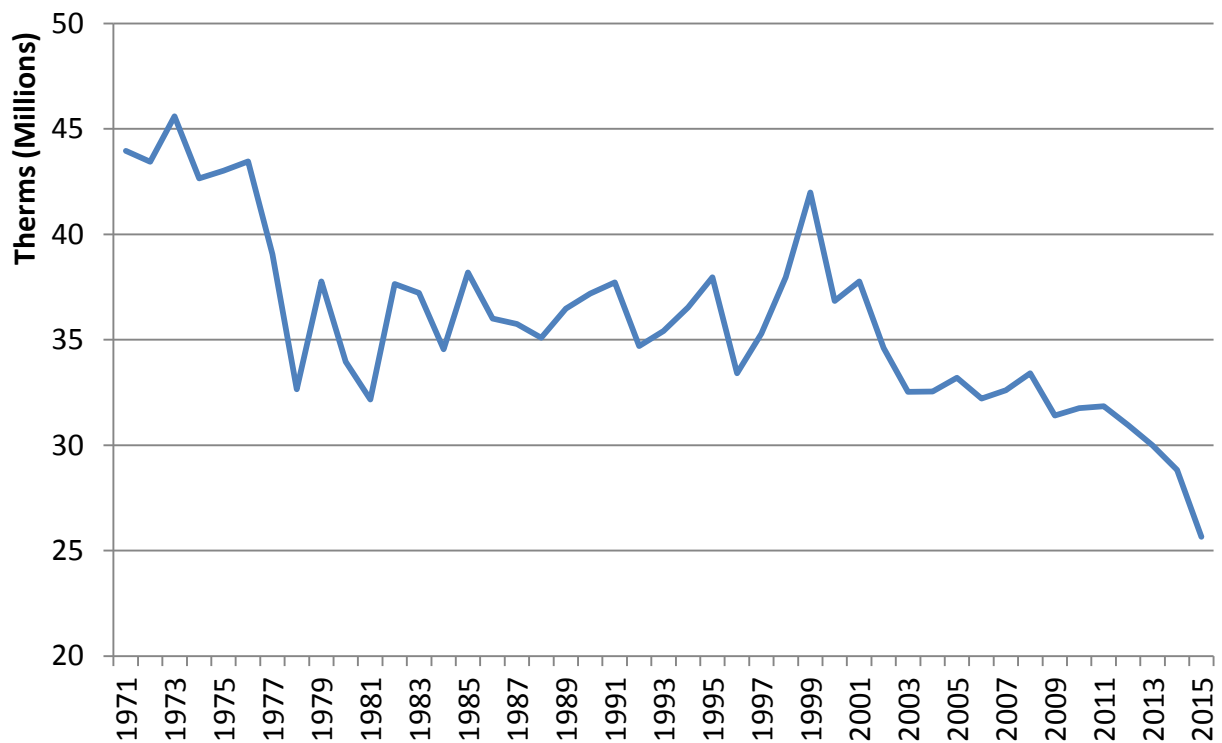
SECTION 5: UTILITY FINANCIAL PROJECTIONS

SECTION 5A: LOAD FORECAST

Gas usage in Palo Alto is volatile, varying with both economic and weather conditions. As shown in Figure 4, in the early 1970's, 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 2000's. 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.

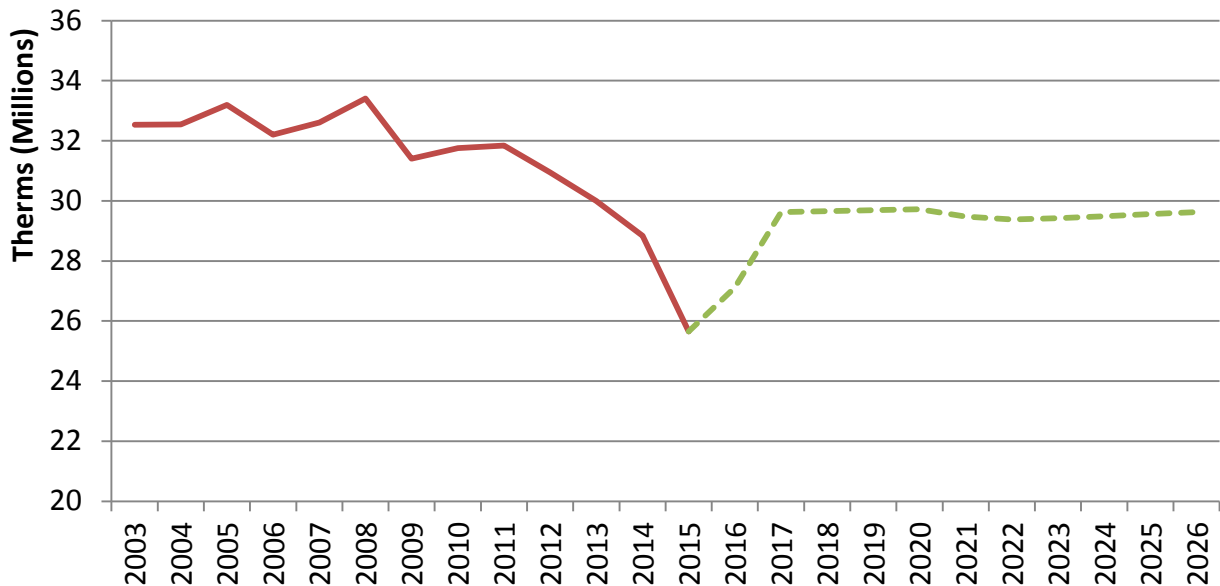
In FY 2015 an unusually warm winter, as well as ongoing drought, have again caused gas usage to tumble to historic lows. Gas usage was 25.6 million therms in FY 2015.

Figure 4: Historic Gas Consumption



Gas consumption, as denoted by the dotted line in Figure 5, is projected to recover somewhat and stay stable over the forecast period, although changes such as replacement of gas appliances with electric appliances or customer behavior may result in lower long run usage.

Figure 5: Forecast Gas Consumption



SECTION 5A: FY 2011 TO FY 2015 COST AND REVENUE TRENDS

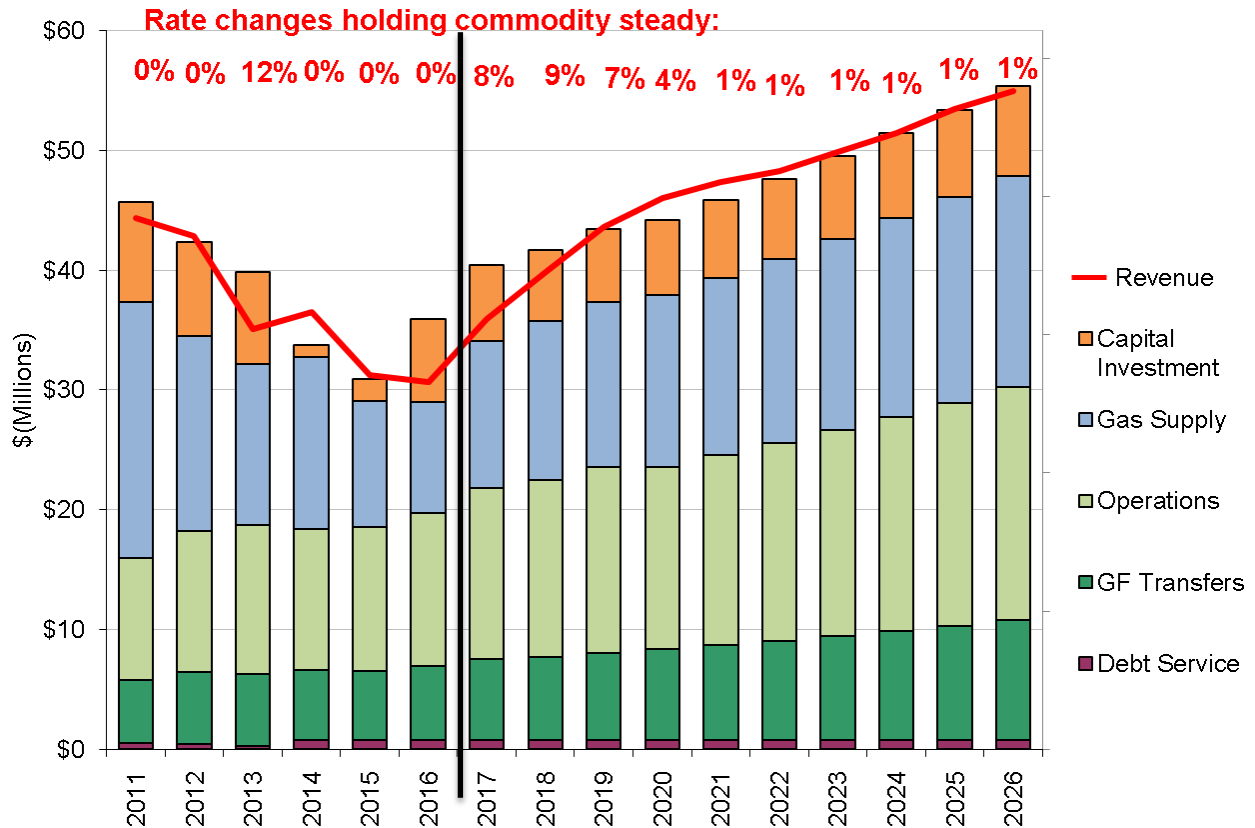
Figure 6 and *Appendix A: Gas Utility Financial Forecast Detail* how costs have changed during the last five years as well as how they are projected to change over the next decade.

The annual expenses for the gas utility decreased substantially between 2011 and 2015 due to lower gas sales. Market prices for gas supplies are shown in Figure 3 above. FY 2014 and 2015 were notable for a temporary hiatus in most CIP budgeting, to permit the completion of a backlog of projects which had previously been budgeted for. This budgetary hold allowed for backlogged gas main replacement projects to be started, which consumed capital reserves. Starting in FY 2012, additional funding for gas cross-bore inspections increased Operations costs.

Revenues are below expenses, and the projected rate trajectory will bring revenues in line with costs by FY 2019. As shown in Figure 6 below, revenues were below cost in FY 2011 and FY 2013 and are projected to be below cost in FY 2016. Reduced budgeting for new CIP in FY 2014 and FY 2015, as well as the availability of relatively large reserves, forestalled the need for rate increases until now. However, since Rate Stabilization Reserves are projected to be depleted by FY 2017, the Gas Utility must increase rates to cover costs.

As shown in Figure 6, the last gas rate adjustment was in July 2012 when rates were increased by 12%. However, this was at the same time that the commodity rates were changed to a market-based, monthly pass-through cost—and commodity rates (and usage) fell, so revenues actually declined in FY 2013 after the rate increase.

Figure 6: Gas Utility Expenses, Revenues, and Rate Changes:
Actual Costs through FY 2015 and Projections through FY 2026



SECTION 5B: FY 2015 RESULTS

Sources of funds for FY 2015 were lower than projected by \$4.8 million, but expenses related to Purchases and Operations and Maintenance activities came in well below expected budget. Total FY 2015 expenses were \$30.9 million compared to projections of \$34.9 million in the FY 2015 Financial Plan. Table 10 summarizes the variances from forecast.

Table 10: FY 2015, Actual Results vs. Financial Plan Forecast

	Net Cost/(Benefit)	Type of change
Sales revenues lower than forecast	5,427,000	Revenue decrease
Other revenues and interest were higher than forecasted	(628,000)	Revenue increase
Purchase costs lower than forecast	(3,212,000)	Cost savings
Operations & maintenance, Customer service and other savings	(760,000)	Cost savings
Net Cost / (Benefit) of Variances	\$827,000	

SECTION 5C: FY 2016 PROJECTIONS

Current projections indicate that sales revenues continue to be lower than forecast, at this time projected to be \$4.7 million. However, Purchase cost reductions of \$4.2 million offset most of this. Table 11 summarizes the current projected variances from FY 2016 Financial Plan.

Table 11: FY 2016, Projected Results vs. Financial Plan Forecast

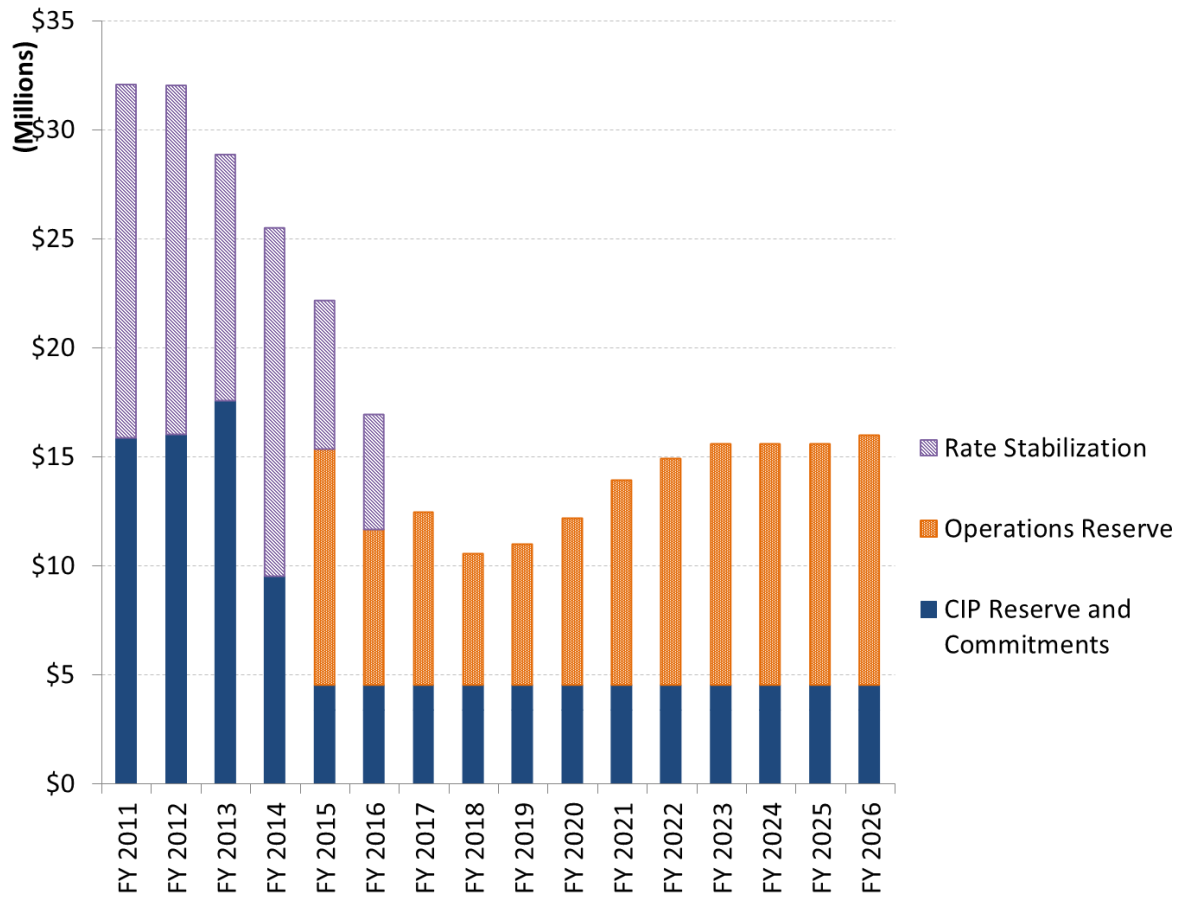
	Net Cost/ (Benefit)	Type of change
Sales revenues lower than forecast	4,719,000	Revenue decrease
Purchase costs lower than forecast	(4,171,000)	Cost savings
Operations & maintenance, Customer service and other savings	(1,843,000)	Cost savings
Capital improvement budgets higher	1,216,000	Cost increase
Other revenues and interest lower than forecasted	611,000	Revenue decrease
Net Cost / (Benefit) of Variances	\$531,000	

SECTION 5D: FY 2017-FY 2026 PROJECTIONS

As can be seen in Figure 6 above, costs for the Gas Utility are projected to rise in FY 2017, then are projected to increase at a bit less than 3.5% per year through FY 2026. In Operations, this is due to an additional \$1 million for cross-bore inspections (this expense is projected to continue for at least three years), as well as general inflationary increases of around 2.6% per year. Salaries and benefits expenses are projected to rise at nearly 4% per year, per the City's Long Range Financial Plan. CIP programs are projected to increase, then stabilize at around \$6 million per year in FY 2018, then grow at around 2% per year thereafter. Gas commodity costs are the most variable component. At the time the budget was developed in December 2015, gas supply prices were projected to increase by around 3 to 4% per year, but recently gas prices have hit near record lows. Since this is a pass-through cost to customers, the risk of these costs being higher or lower than expected has a minimal impact on reserves.

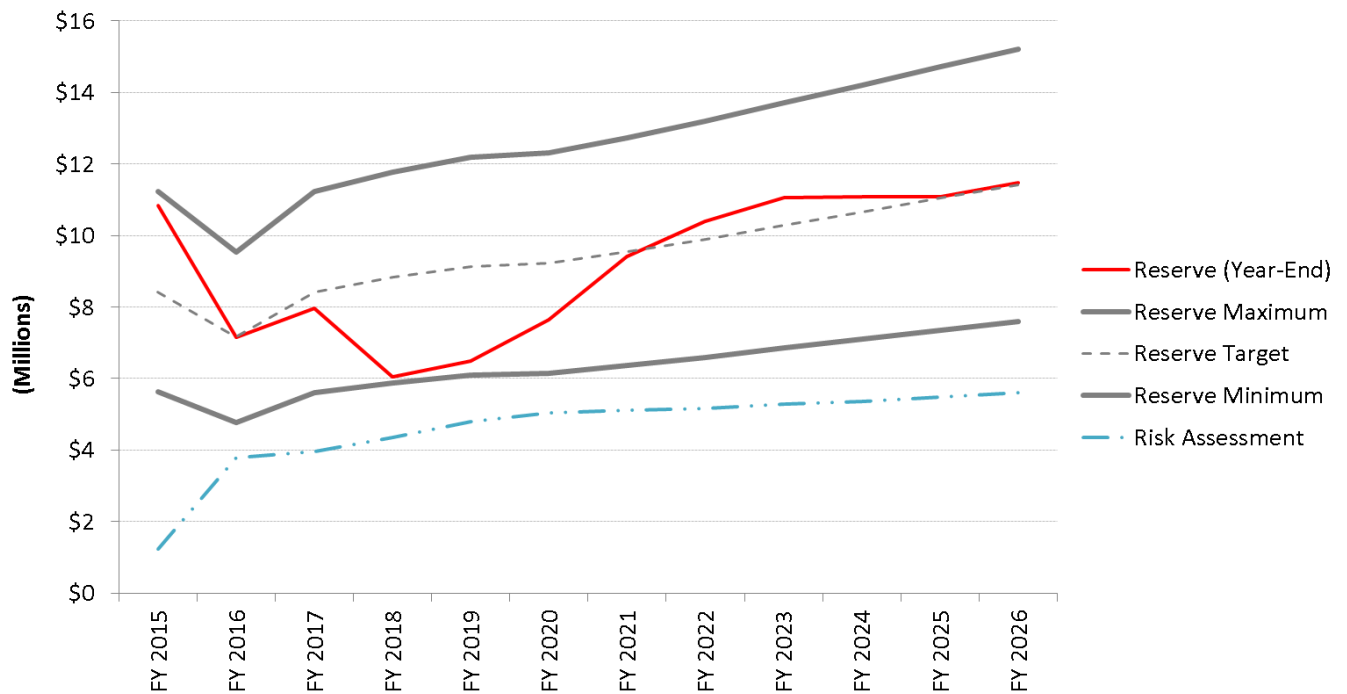
As shown in Figure 7, the Rate Stabilization Reserves are projected to be depleted by FY 2017.

Figure 7: Gas Utility Reserves
Actual Reserve Levels for FY 2011 and Projections through FY 2026



SECTION 5E: RISK ASSESSMENT AND RESERVES ADEQUACY

The Gas Utility's primary contingency reserve, the Operations Reserve, is projected to be right at the approved minimum guideline level in FY 2018 and FY 2019, barring either short-run budget savings and/or larger future increases. Figure 8 shows the Operations Reserve recovering to the target level by FY 2021 with the projected rate trajectory.

Figure 8: Operations Reserve Adequacy

Forecast Operations Reserve levels also exceed the short-term risk assessment for the Utility. Table 12 summarizes the risk assessment calculation for the Gas Utility through FY 2021. The same methodology is used for FY 2022 through FY 2026 as well. 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 2017	FY 2018	FY 2019	FY 2020	FY 2021
Total non-commodity revenue	\$21,587	\$24,256	\$26,956	\$28,370	\$28,781
Max. revenue variance, previous ten years	16%	16%	16%	16%	16%
Risk of revenue loss	\$3,462	\$3,890	\$4,323	\$4,549	\$4,615
CIP Budget	\$5,076	\$4,720	\$4,811	\$4,958	\$5,105
CIP Contingency @10%	\$508	\$472	\$481	\$496	\$511
Total Risk Assessment value	\$3,969	\$4,362	\$4,804	\$5,045	\$5,126

Finally, the CIP Reserve was created at the end of FY 2015 to act as a contingency reserve for capital improvement projects. Current guidelines state that the balance of this reserve should fall between 12 and 24 months of budgeted CIP expense.

At the end of FY 2016, the sum of the CIP Reserve and existing Commitments was a bit below \$5 million, as shown in Figure 7. However, based upon FY 2016's CIP budget, the minimum reserve level is \$6.9 million. As such, this reserve is technically below the minimum level, but the Risk assessment reserve level for the Operations Reserve is also set to handle a 10% increase to CIP costs should that arise. As such, staff does not recommend an additional increase to rates to fund this reserve at this time. If any CIP funds budgeted in FY 2016 are not used or committed by the end of the fiscal year, those funds flow to the Operations Reserve and those funds could be used to fund the CIP reserve, so increasing rates for this contingency is premature. Staff is in the process of reviewing this reserve and the appropriateness of the current minimum and maximum guideline levels.

SECTION 5F: ALTERNATE SCENARIOS

At the UAC's February 2016 meeting, it was suggested that staff prepare two alternate scenarios for rate increases. The first ("Target") scenario keeps the Operations Reserve at or near the Target level throughout the forecast period as shown in Figure 9 below. The second ("Minimum") has no rate change in FY 2017 and lets the Operations Reserve stay at minimum for five years as shown in Figure 10 below. Both options as well as the proposed rate adjustments are shown in Table 13.

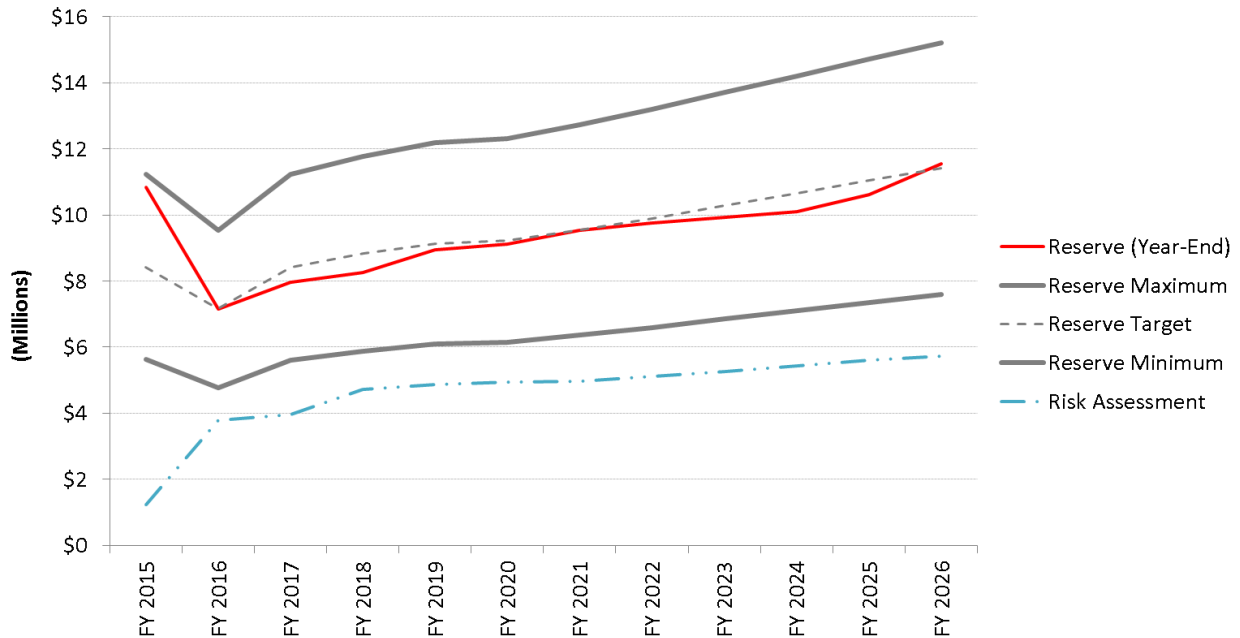
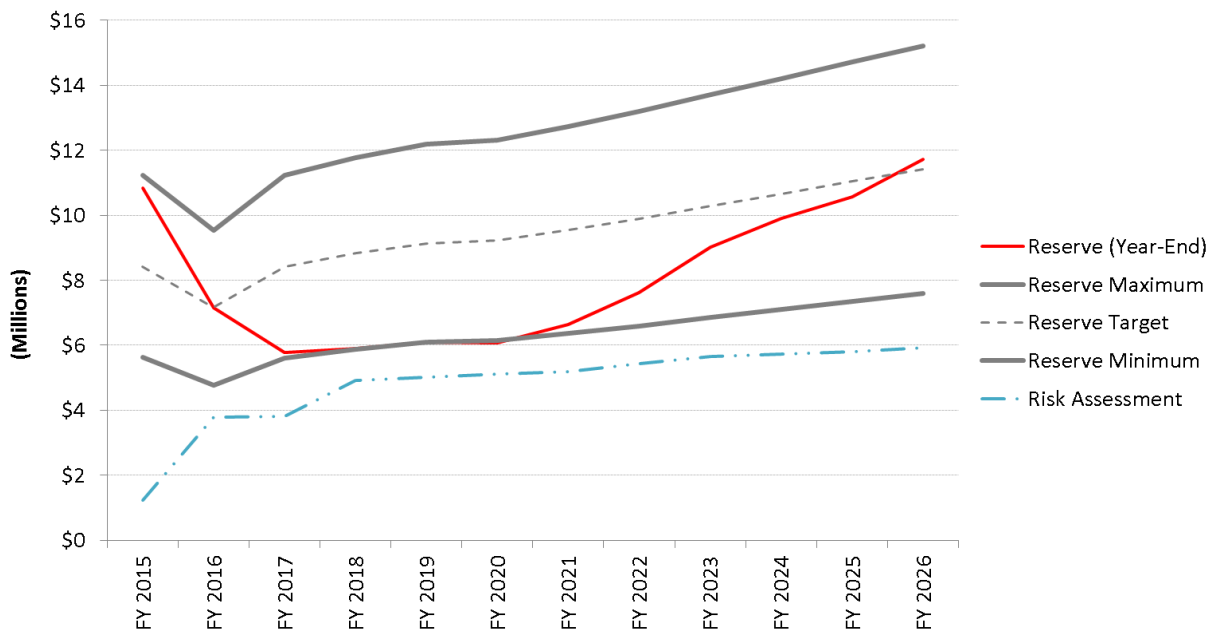
Table 13: Projected Gas Rate Trajectory for FY 2017 to FY 2026

	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
Proposed	8%	9%	7%	4%	1%	1%	1%	1%	1%	1%
Target	8%	16%	2%	1%	1%	2%	2%	2%	2%	1%
Minimum	0%	24%	1%	1%	1%	4%	3%	1%	1%	1%

The Target scenario does not change the FY 2017 proposed rate increase, but a 16% rate increase in FY 2018 would be needed to bring reserves to target levels. Figure 9 shows that the Operations Reserve levels for the Target scenario.

The Minimum scenario avoids a rate increase in FY 2017, but requires a significant increase in FY 2018 (24%). If sales are lower than expected or costs rise, then this rate increase would be even higher. Figure 10 shows that the Operations Reserve levels for the Minimum scenario.

Staff recommends an 8% gas rate increase in FY 2017 to moderate the rate increases that are projected in FY 2018 while keeping the Gas Operations Reserve at healthy levels.

Figure 9: Operations Reserve at Target**Figure 10: Operations Reserve at Minimum**

SECTION 5G: LONG-TERM OUTLOOK

In the longer term (5 to 35 years out) it is very difficult to predict the Gas Utility's commodity costs. A variety of long-term trends could affect commodity costs either positively or negatively. Continuing improvement in gas extraction technology, such as fracking, could continue to create generous supplies of gas, but these technologies are also under greater scrutiny with respect to their environmental impacts. On the demand side, a continued shift from coal to natural gas for electricity generation or an increase in manufacturing in the U.S. might drive up

natural gas prices, but other factors, such as generally more mild winters, 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.

Future CIP investment needs for the Gas Utility may be lower than in the past, although costs per foot for main replacement may increase 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 considering performing a study in the near future to develop its future main replacements priorities and strategy.

Long-term state or local climate goals could also have a major impact on the Gas Utility. The Global Warming Solutions Act, Assembly Bill 32 (AB32), set a goal of reducing greenhouse gas (GHG) emissions to 1990 levels by 2020 and then maintaining those reductions. 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. If stricter goals are enacted at the state or local level, however, it could lead to "electrification", or consumer switching from gas-using appliances to electric-using appliances for heating, cooking and processes. If significant amounts of electrification occurred, stranded investment and higher rates could be required as the costs of the distribution system are recovered over a lower sales base. One example of a stricter standard has been stated by the Governor—reducing GHG emissions to 80% below 1990 levels by 2050.⁹ This goal, or less ambitious interim state goals, would require legislation to implement. But 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."¹⁰ Legislation has been recently passed addressing the Governor's 2030 climate goals of 50% renewable generation, 50% reduction in transportation fuels, and a doubling of energy efficiency. A few bills have already been introduced on post-2020 GHG emission reduction goals and the GHG cap-and-trade market. As stewards of the Gas Utility, the City should continue to stay aware of developments in state climate planning, participate as a stakeholder, and consider these types of impacts and ways to mitigate them when developing its own sustainability goals.

⁹ Executive Orders S-3-05 and B-16-2012.

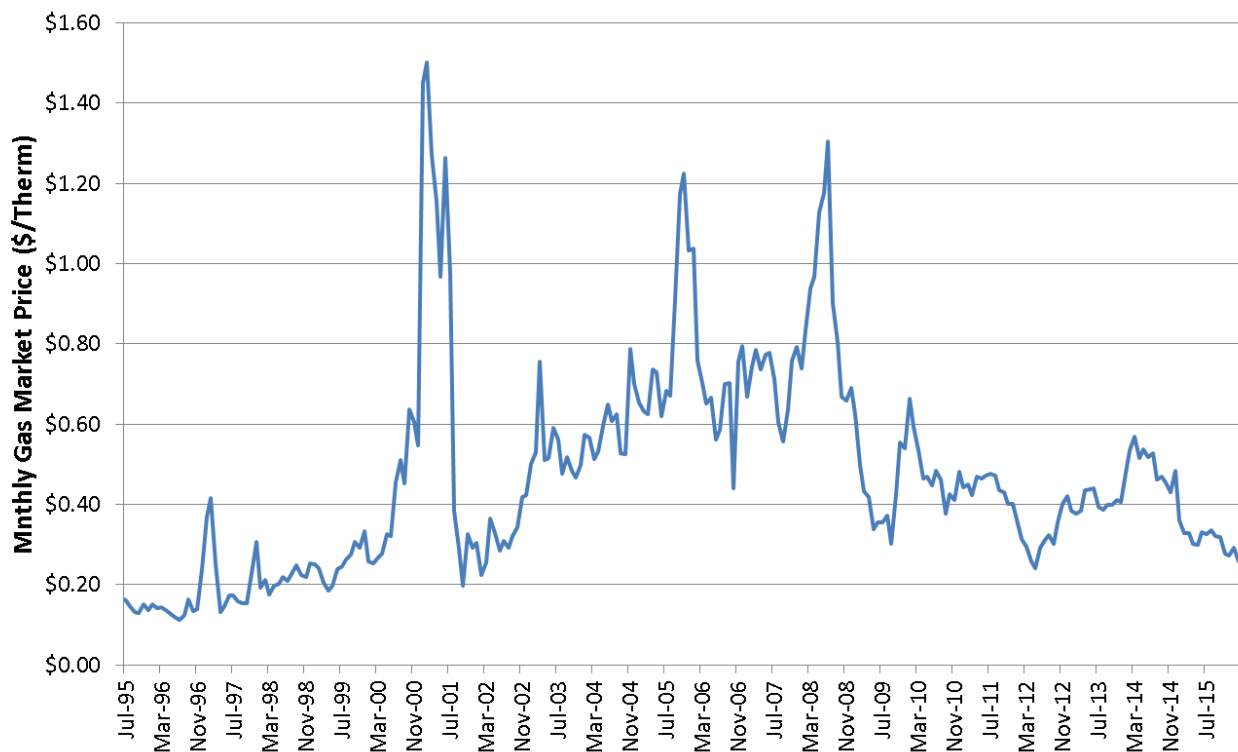
¹⁰ *Climate Change Scoping Plan, First Update, Discussion Draft for Public Review and Comment*, California Air Resources Board, October 2013, pg 88.

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 cheaper than delivery at PG&E City Gate, even including the costs of transmission from Malin to City Gate. Gas is purchased on a month-ahead and day-ahead basis in the spot market. The last few years have seen gas prices in a relatively narrow but low band, and prices for the last year in particular have been lower than most projections. High levels of natural gas in storage, along with warmer than normal weather on the West coast has kept prices low, as shown in Figure 11.

Figure 11: Gas Market Prices at PG&E Citygate



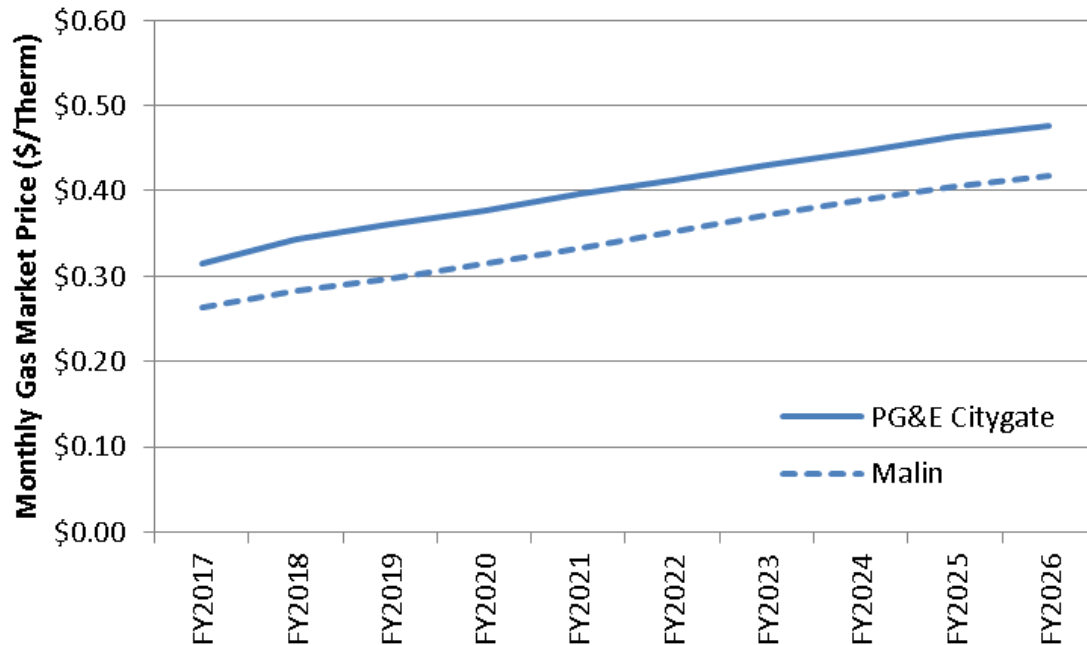
Future gas commodity costs are expected to increase steadily over the next several years. Figure 12 shows the projected gas prices used to generate this forecast. Projections for transmission costs associated with transporting gas over PG&E's Redwood transmission pipeline (from Malin, Oregon to the PG&E Citygate) are based on rates adopted in the most recent update to the Gas Accord.

Local transportation costs decreased on January 1, 2015 due to the expiration of a temporary adder to PG&E's local transportation rate,¹¹ but in December 2014 PG&E applied to the CPUC to more than double local transportation costs. Staff is tracking PG&E's application and, based on

¹¹ California Public Utilities Commission Advice Letter 3430-G, effective January 1, 2014. Also see CPUC Decision 12-12-30 regarding the Pipeline Safety Enhancement Plan Adder.

discussions to date, expects that nearly all of the proposed increase in local transportation costs will be approved. Staff projects these costs to escalate at 3% per year in subsequent years. As these charges are dictated by PG&E and are outside of Palo Alto's control, staff may propose making these costs a pass-through charge, similar to the commodity charge, in FY 2018.

Figure 12: Wholesale Gas Price Projections



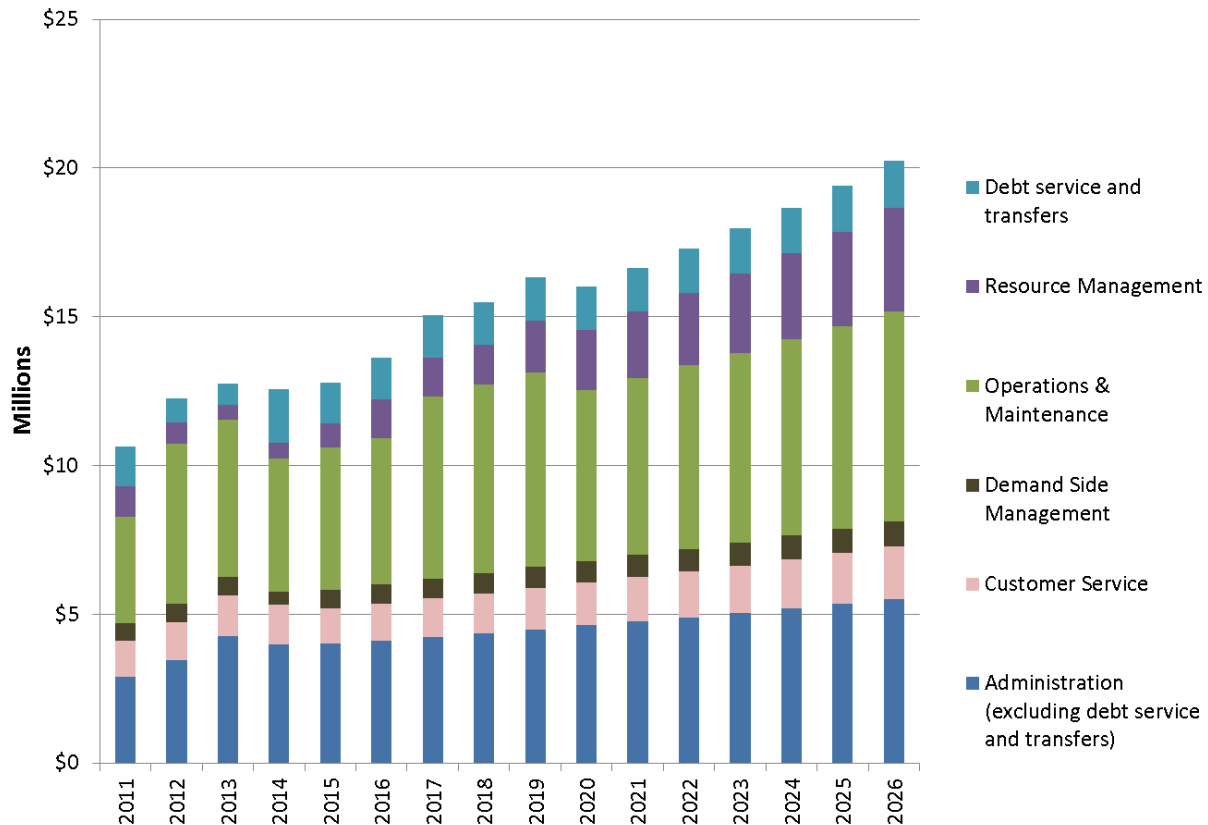
SECTION 6B: OPERATIONS

Operations costs include the Customer Service, Demand Side Management, Operations and Maintenance (including Engineering), Resource Management, and Administration categories in Figure 13, 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 projected to increase by 2 to 4% per year. Salary and benefits, inflation, and other assumptions match those used in the City's long-range financial forecast.

Operations costs for FY 2017 to FY 2019 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. 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 \$3 million in additional funding between FY 2017 and FY 2019 for this program, but the program will likely require additional funding in future years to complete.

Figure 13: Historical and Projected Operational Costs



SECTION 6C: CAPITAL IMPROVEMENT PROGRAM (CIP)

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

- The Gas Main Replacement Program, under which the Gas Utility replaces aging gas mains
- Customer Connections, which covers 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 covers 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 covers the cost of capitalized equipment, such as directional boring equipment.
- One-time Projects, which represents occasional large projects that do not fall into any other category.

Table 14 shows the current status of these project categories and future projected spending.

Table 14: Budgeted Gas CIP Spending

Project Category	Current Budget*	Spending, Curr. Yr	Remain. Budget**	Committed	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
One Time Projects	150	(9)	141	125	-	-	-	-	-
Gas Main Replacement	8,097	(367)	7,730	3,580	4,191	3,811	3,878	4,000	4,121
Tools And Equipment	291	(76)	214	-	100	100	100	100	100
Ongoing Projects	918	(193)	726	76	785	809	833	858	884
Customer Connections	953	(576)	377	38	1,229	1,265	1,303	1,342	1,383
TOTAL	10,409	(1,222)	9,187	3,818	6,305	5,985	6,115	6,301	6,488

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

**Equal to CIP Reserves (Reserve for Reappropriations + Reserve for Commitments).

The Gas Main Replacement (GMR) Program is in the process of reaching a major milestone, the replacement of the last gas mains made from ABS plastic. The program to replace ABS and other low-performing materials in the system started in the 1990s (see *Section 4A: Gas Utility History* for more detail). CPAU temporarily slowed down its new CIP appropriations in this category in FY 2014 and 2015 in order to finish the last major ABS main replacement project and to catch up on a backlog of projects that has accumulated due to staffing issues. With the replacement of all ABS mains with PE plastic, the material most at risk for failure is removed leaving only PVC plastic, steel (wrapped, with cathodic protection), and PE mains. The next focus of the GMR program will be PVC mains. CPAU is considering updating the Gas System Master Plan to determine which areas of the system to prioritize. The plan will help CPAU determine whether the pace of main replacement (approximately three miles of main each year, or 1.5% of the system) needs to be increased, decreased, or whether it needs to remain the same.

The current budget for gas main replacement assumes the current pace of main replacement, but does not take into account the recent rise in costs for main replacement, which have increased from the levels seen during the recent recession. Several factors may be contributing to this. Economic recovery in the Bay Area, as well as a greater focus on infrastructure improvement by many municipal agencies and utilities could be creating high demand for contractors in these fields. Newer, more leak resistant pipe materials may have ongoing greater costs. CPAU has seen the replacement cost per linear foot increase by 25 to 50% over the last couple of years. Currently CPAU plans to complete as much main replacement as possible within its current budget, provided there are no safety concerns. However, if this trend of higher cost continues, the Gas Utility may require larger CIP budgets, and as a result, larger rate increases.

Ongoing Projects, Tools and Equipment, and Customer Connections are projected to cost approximately \$0.8 million in FY 2017 and increase by 3% per year through the end of the forecast period. In practice, these projects can fluctuate dramatically depending on system conditions and the pace of development and redevelopment in the city. It is worth noting that the Customer Connections program is paid for through fee revenue, so when costs go up, so does fee revenue.

Aside from customer connections and some transfers from other funds, the CIP plan for FY 2017 to FY 2021 is funded by utility rates. The details of the plan are shown in *Appendix B: Gas Utility Capital Improvement Program (CIP) Detail*.

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. Debt service for this bond for the financial forecast period is shown in Table 15. Debt service on this bond will continue through 2026.

Table 15: Gas Utility Debt Service

	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
2011 Utility Revenue Refunding Bonds, Series A	803	802	800	800	802	804	805	803	800	803

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”¹² equal to five times the annual debt service. The current financial plan complies with these covenants throughout the forecast period, as shown in Table 16 and

Table 17.

Table 16: Debt Service Coverage Ratio (\$000)

	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
Revenues	35,938	39,825	43,628	46,051	47,336	48,323	49,891	51,465	53,429	54,696
Expenses (Excluding CIP and Debt Service)	-33,310	-34,933	-36,511	-37,086	-38,566	-40,128	-41,838	-43,552	-45,307	-47,068
Net Revenues	2628	4892	7117	8965	8770	8195	8053	7913	8,122	7,628
Debt Service	803	802	800	800	802	804	805	803	800	803
Coverage Ratio	327%	610%	890%	1121%	1094%	1019%	1000%	985%	985%	985%

Table 17: Debt Service Minimum Reserves (\$000)

	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
Gas Utility ^a	9,543	7,647	7,849	9,712	11,191	11,901	12,270	12,298	12,327	12,742
Debt Service ^b	803	804	803	802	801	801	802	803	800	803
Reserves Ratio ^c	12x	10x	10x	12x	14x	15x	15x	15x	15x	15x

a) CIP, Rate Stabilization, Operations, and Unassigned Reserves

b) Gas Utility's share of the debt service on the 2011 bonds.

c) Calculated using only Gas Utility reserves. The actual reserves ratio for the 2011 bonds is calculated based on the combined Electric, Gas, and Water Utility reserves and debt service and is higher than shown here.

¹² Available Reserves as defined in the 2011 bonds include the reserves for the Water, Electric, and Gas Utilities

The Gas Utility's reserves and net revenue are also pledged as security for the bond issuances listed in Table 18, 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.

Table 18: 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
1995 Series A Utility Revenue Bonds	Storm Drain	\$680	Yes	No
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 City calculates the equity transfer from its Gas Utility based on methodology adopted by Council in 2009 that has remained unchanged since¹³. Each year it is calculated according to the 2009 Council-adopted methodology, and does not require additional Council action.

SECTION 6F: REVENUES

The Gas Fund receives most of its revenues from sales of gas, but about 5% comes from other sources. The largest of these comes from service connection and capacity fees, followed closely by sales of allowances related to California's cap-and-trade program. Another revenue item related to the cap-and-trade program is collected in customer's 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 customer's 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.

Sales revenue projections are based 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

¹³ For more detail on the ordinance adopting the 2009 transfer methodology, see CMR 280:09, Budget Adoption Ordinance for Fiscal Years 2009 and 2010; and CMR 260:09, Finance Committee Report explaining proposed changes to equity transfer methodology.

appliances, will modify these forecasts. Forecasts are continually evaluated to see when new trends emerge.

SECTION 6G: COMMUNICATIONS PLAN

The FY 2017 communications strategy covers four primary areas: operations, infrastructure, safety, efficiency, renewables and rates. Since moving to market pricing for commodity rates, changes to the commodity rates are posted monthly on the City's website. Gas use efficiency incentives are promoted year-round, but most heavily during winter months to impact heating activities. Promotional methods include community outreach events, print ads in local publications, utility bill inserts, messaging on the bills and envelopes, website pages, email blasts, videos for the web and local Comcast channels, Home Energy Reports and the use of social media.

To keep customers apprised of the status and accomplishments of capital improvement projects, a network of project web pages are maintained. Traffic is driven to the website via print and digital ads, social media and email blasts. Safety topics are emphasized year-round. CPAU is engaging in several campaigns and programs in FY 2017 to promote gas utility efficiency and renewable energy. The Georgetown University Energy Prize competition is a friendly, national campaign to encourage communities to reduce energy use. Energy savings from reduced gas and electric consumption qualify to help Palo Alto compete for a \$5 million prize at the end of a two-year campaign. Since adoption of a carbon neutral electric supply portfolio, CPAU launched a new voluntary renewable natural gas carbon offsets program, PaloAltoGreen Gas. Much of our programmatic promotional activity will center around customer education and encouragement to sign up for participation in PaloAltoGreen Gas. Other new programs include home efficiency services and online tools to help customers manage their energy use.

Stepping up efforts to promote gas safety education, staff is focusing outreach around youth, the importance of calling USA (811) before digging for anyone who may excavate in and around Palo Alto, such as plumbers and contractors, potential sewer and gas line crossbores, keeping fats, oils and greases out of drains, and ensuring clear access to meters. For younger "customers-to-be," CPAU created a Home Safety Detective campaign that includes special tool kits to help them identify home safety problems. Staff provides safety kits to youth and adults at school presentations, neighborhood safety and emergency preparedness fairs and other community outreach events. Meter access awareness is highlighted through use of materials featuring photos of some unusual ways people obstruct access to their meters, including using them as bike racks and building storage sheds around them.

CPAU will continue to promote safety, infrastructure, operations, efficiency and rate adjustment messages through a variety of marketing and media channels. Every year, CPAU publishes an updated gas safety awareness brochure which is mailed to all customers in Palo Alto, as well as plumbers, contractors and excavators that may work in and around the area. Staff talks with business customers at special facilities meetings, attends neighborhood safety and emergency preparedness fairs and offers presentations to school and community groups. While print materials and website pages still feature prominently, CPAU is turning the outreach

emphasis to direct mail, newspaper inserts, social media, online videos and cable TV. Copies of all outreach materials and logs of activities are saved in the Gas Safety Public Awareness Plan that is reviewed at least once per year by the Department of Transportation.

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)															
Fiscal Year		2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
1	RATE CHANGE (%)*	0%	0%	12%	0%	0%	0%	8%	9%	7%	4%	1%	1%	1%	1%	1%	1%
2	SALES IN THOUSAND THERMS	30,914	30,447	28,901	28,117	28,881	27,261	28,653	28,680	28,711	28,743	28,511	28,412	28,461	28,522	28,590	28,658
3																	
4	Utilities Retail Sales	42,855	41,034	33,759	34,843	29,515	28,608	33,259	37,038	40,365	42,408	43,293	43,965	45,170	46,396	47,584	48,622
5	Service Connection & Capacity Fees	516	592	731	654	602	655	1,017	1,048	1,079	1,110	1,145	1,145	1,145	1,145	1,145	1,145
6	Other Revenues & Transfers In	203	103	830	313	666	1,026	1,373	1,517	1,975	2,328	2,635	2,920	3,221	3,529	4,313	4,834
7	Interest plus Gain or Loss on Investment	821	1,119	(239)	706	450	376	288	223	210	205	264	293	355	396	387	368
8	Total Sources of Funds	44,396	42,847	35,081	36,517	31,233	30,665	35,938	39,825	43,628	46,051	47,336	48,323	49,891	51,465	53,429	54,969
9																	
10	Purchases of Utilities:																
11	Supply Commodity	20,732	15,356	12,461	12,992	9,537	6,693	9,393	10,141	10,598	11,131	11,621	12,145	12,741	13,288	13,825	14,219
12	Supply Transportation	706	879	994	1,333	982	2,566	2,944	3,152	3,172	3,207	3,213	3,234	3,272	3,312	3,353	3,394
13	Total Purchases	21,438	16,235	13,455	14,325	10,519	9,258	12,337	13,293	13,770	14,338	14,834	15,380	16,013	16,600	17,178	17,613
14																	
15	Administration (CIP + Operating)	2,895	3,473	4,273	3,988	4,007	4,114	4,243	4,370	4,497	4,629	4,764	4,902	5,045	5,192	5,343	5,499
16	Customer Service	1,230	1,270	1,358	1,338	1,195	1,232	1,286	1,335	1,384	1,435	1,486	1,539	1,594	1,651	1,711	1,772
17	Demand Side Management	563	614	630	438	632	648	665	683	701	720	739	759	779	799	821	842
18	Engineering (Operating)	280	333	340	352	369	380	396	411	425	440	455	471	487	504	522	540
19	Operations and Maintenance	3,297	5,032	4,940	4,119	4,403	4,534	5,720	5,918	6,116	5,320	5,502	5,690	5,885	6,087	6,295	6,512
20	Resource Management	1,039	729	506	516	808	1,302	1,327	1,350	1,751	2,006	2,223	2,434	2,665	2,904	3,149	3,498
21	Debt Service Payments	488	406	296	805	804	804	803	802	801	801	803	804	805	803	800	803
22	Rent	230	230	219	419	431	443	455	467	480	492	505	519	532	546	561	574
23	Transfers to General Fund	5,304	6,006	5,971	5,811	5,730	6,126	6,722	6,945	7,220	7,535	7,883	8,255	8,653	9,078	9,533	10,019
24	Other Transfers Out	614	170	207	606	151	154	158	163	167	171	176	180	185	190	195	200
25	Capital Improvement Programs	8,325	7,821	7,620	1,026	1,832	6,889	6,305	5,985	6,115	6,301	6,488	6,680	6,879	7,083	7,293	7,509
26	Total Uses of Funds	45,704	42,320	39,814	33,743	30,881	35,886	40,418	41,721	43,426	44,188	45,857	47,613	49,522	51,438	53,400	55,380
27																	
28	Into/ (Out of) Reserves	(1,308)	528	(4,733)	2,773	352	(5,221)	(4,480)	(1,896)	202	1,864	1,479	710	369	28	29	(410)
29																	
30	Reappropriations + Commitments	17,174	19,211	19,363	11,305	6,491	6,491	6,491	6,491	6,491	6,491	6,491	6,491	6,491	6,491	6,491	6,491
31	Plant Replacement	1,000	1,000	1,000	0	0	0	0	0	0	0	0	0	0	0	0	0
32	CIP Reserve	0	0	0	0	1,591	1,591	1,591	1,591	1,591	1,591	1,591	1,591	1,591	1,591	1,591	1,591
33	Rate Stabilization	16,188	15,992	11,318	15,981	6,806	5,275	0	0	0	0	0	0	0	0	0	0
34	Operations Reserve	0	0	0	0	10,847	7,158	7,952	6,056	6,258	8,121	9,600	10,310	10,679	10,707	10,736	11,151
35	Unassigned	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	Total Reserves	34,362	36,203	31,681	27,286	25,735	20,514	16,034	14,138	14,340	16,203	17,682	18,392	18,761	18,789	18,818	19,233
37																	
38	Short Term Risk Assessment Value					1,226	3,789	3,969	4,362	4,766	5,005	5,085	5,134	5,247	5,365	5,487	5,612
39																	
40	Operations Reserve Guidelines																
41	Min (60 Days Commodity + O&M)					5,620	4,772	5,618	5,889	6,090	6,151	6,368	6,599	6,851	7,103	7,361	7,603
42	Target (90 Days Commodity + O&M)					8,429	7,158	8,426	8,833	9,135	9,227	9,552	9,898	10,277	10,654	11,041	11,405
43	Max (120 Days Commodity + O&M)					11,239	9,543	11,235	11,778	12,180	12,302	12,736	13,198	13,703	14,206	14,721	15,207
44																	

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

Project #	Project Name	Reappropriated / Carried Forward from Previous Years	Current Year Funding	Budget Amendments	Spending, Current Year	Remaining in CIP Reserve Fund	Commitments	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
ONE TIME PROJECTS												
GS-09000	Gas Station 1 Rebuild	-	-	-	-	-	-	-	-	-	-	-
GS-08000	Gas Station 2 Rebuild	-	-	-	-	-	-	-	-	-	-	-
GS-10000	Gas Station 3 Rebuild	4	-	-	-	4	-	-	-	-	-	-
GS-11001	Gas Station 4 Rebuild	-	-	-	-	-	-	-	-	-	-	-
GS-13003	COBUG emissions equipment	-	-	-	-	-	-	-	-	-	-	-
GS-15001	Security at Receiving Stations	150,000	150,000	(150,000)	(9,459)	140,541	125,000	-	-	-	-	-
Subtotal, One-time Projects		150,004	150,000	(150,000)	(9,459)	140,545	125,000	-	-	-	-	-
GAS MAIN REPLACEMENT (GMR) PROGRAM												
GS-08011	GMR - Project 18	-	-	-	-	-	-	-	-	-	-	-
GS-09002	GMR - Project 19	526,621	-	(30,410)	(68,899)	427,312	427,312	-	-	-	-	-
GS-10001	GMR - Project 20	2,311,602	-	(13,981)	(23,297)	2,274,324	2,274,325	-	-	-	-	-
GS-11000	GMR - Project 21	867,159	-	(20,512)	(100,049)	746,598	832,416	-	-	-	-	-
GS-12001	GMR - Project 22	295,985	4,033,001	(493,001)	(175,008)	3,660,977	3,000	-	-	-	-	-
GS-13001	GMR - Project 23	-	620,650	-	-	620,650	42,500	3,550,650	-	-	-	-
GS-14003	GMR - Project 24	-	-	-	-	-	-	640,000	3,100,000	-	-	-
GS-15000	GMR - Project 25	-	-	-	-	-	-	-	711,000	3,200,000	-	-
GS-16000	GMR - Project 26	-	-	-	-	-	-	-	-	678,200	3,300,000	-
GS-20000	GMR - Project 27	-	-	-	-	-	-	-	-	-	700,000	3,400,000
GS-20001	GMR - Project 28	-	-	-	-	-	-	-	-	-	-	721,000
Subtotal, Gas Main Replacement Program		4,001,367	4,653,651	(557,904)	(367,253)	7,729,861	3,579,553	4,190,650	3,811,000	3,878,200	4,000,000	4,121,000
TOOLS AND EQUIPMENT												
GS-13002	General Shop Equipment/Tools	130,931	100,000	(113,062)	(46,069)	71,800	-	100,000	100,000	100,000	100,000	100,000
GS-01019	Global Positioning System	73,578	-	(70,768)	(641)	2,169	-	-	-	-	-	-
GS-02013	Directional Boring Machine	-	-	-	-	-	-	-	-	-	-	-
GS-03007	Directional Boring Equipment	-	-	-	-	-	-	-	-	-	-	-
GS-03008	Polyethylene Fusion Equip.	29,168	-	-	-	29,168	-	-	-	-	-	-
GS-14004	Gas Distribution System Model	140,742	87,690	(87,690)	(29,544)	111,198	-	-	-	-	-	-
Subtotal, Tools and Equipment		374,419	187,690	(271,520)	(76,254)	214,335	-	100,000	100,000	100,000	100,000	100,000

Gas Utility Capital Improvement Program (CIP) Detail (continued)

Project #	Project Name	Reappropriated / Carried Forward from Previous Years	Current Year Funding	Budget Amendments	Spending, Current Year	Remaining in CIP Reserve Fund	Commitments	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
ONGOING PROJECTS												
GS-11002	Gas System Improvements	151,021	292,669	(66,397)	(114,635)	262,658	76,036	231,913	238,870	246,036	253,417	261,020
GS-03009	System Ext. - Unreimbursed	284,821	192,675	(284,095)	(35,809)	157,592	-	198,500	204,455	210,590	216,908	223,415
GS-80019	Gas Meters and Regulators	736,596	344,690	(733,487)	(42,523)	305,276	-	355,030	365,681	376,652	387,952	399,591
Subtotal, Ongoing Projects		1,172,438	830,034	(1,083,979)	(192,967)	725,526	76,036	785,443	809,006	833,278	858,277	884,025
CUSTOMER CONNECTIONS (FEE FUNDED)												
GS-80017	Gas System Extensions	(252,428)	950,000	255,428	(575,893)	377,107	37,880	1,228,500	1,265,355	1,303,315	1,342,415	1,382,688
Subtotal, Customer Connections		(252,428)	950,000	255,428	(575,893)	377,107	37,880	1,228,500	1,265,355	1,303,315	1,342,415	1,382,688
GRAND TOTAL		5,445,800	6,771,375	(1,807,975)	(1,221,826)	9,187,374	3,818,469	6,304,593	5,985,361	6,114,793	6,300,692	6,487,713
Funding Sources												
Connection Fees			639,600	255,428				1,017,000	1,047,510	1,078,935	1,111,303	1,144,642
Utility Rates			6,131,775	(2,063,403)				5,287,593	4,937,851	5,035,857	5,189,389	5,343,070
CIP-RELATED RESERVES DETAIL		6/30/2015 (Actual)				9/30/2015						
Reappropriations		2,100,800				5,368,905		5,076,093	4,720,006	4,811,478	4,958,277	5,105,025
Commitments		3,345,000				3,818,469						

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:

- a) 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

- b) 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.
- c) Minimum Level:
- 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.
 - 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.
- d) 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.

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.



KEEP CALM AND DIG SAFE

CITYOFPALOALTO.ORG/SAFETYUTILITY

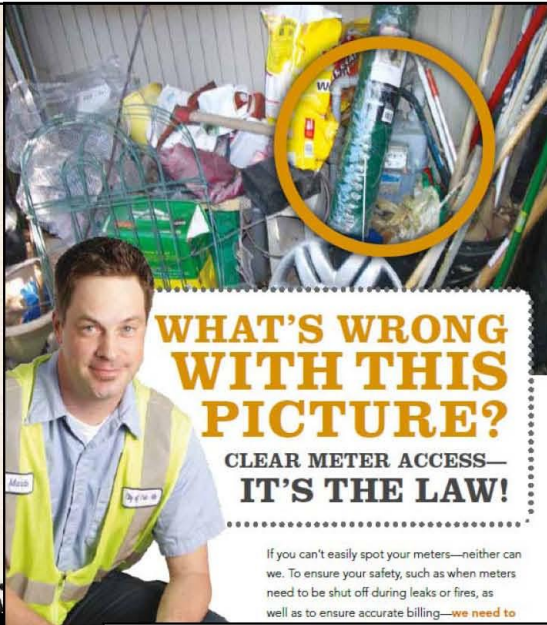
CALL BEFORE YOU DIG

Make sure it is safe before you:

- Plant a tree
- Stake a sapling tree
- Dig a trench
- Build or repair a fence or deck
- Pour a building foundation
- Dig up sprinklers
- Replace a driveway or walkway

Avoid costly accidents & dangerous conditions

Call Underground Service Alert (USA) at 811 48 hours prior to any excavation. USA is a free service.



WHAT'S WRONG WITH THIS PICTURE?

CLEAR METER ACCESS—IT'S THE LAW!

If you can't easily spot your meters—neither can we. To ensure your safety, such as when meters need to be shut off during leaks or fires, as well as to ensure accurate billing—we need to

FALL SEASON MEANS COOLER WEATHER

COOLER WEATHER

Visit us online for a free energy assessment of your home or business. CPAU provides energy efficiency services, rebates and programs.

Sign up for My Utility online account.

Insulating your home or business by sealing windows, reducing gas and electricity for heating can reduce your energy bill.

THE CITY OF PALO ALTO HAS ENERGY ASSISTANCE

SOLUTIONS FOR CUSTOMERS ON LIMITED BUDGETS



WE CAN HELP YOU SAVE ENERGY AND MONEY

Customers facing challenging economic times can use our programs and services to help cope with utilities costs. If you're overwhelmed by your utility bills, the City of Palo Alto Utilities (CPAU) can help.

Residential Energy Assistance Program (REAP)

TOILET OR SINK BACKING UP? CALL THE CITY FIRST!

CALL (650) 496-6995 AND WE'LL BE OUT ON THE DOUBLE (FOR FREE)



- 1 Call the City Utilities BEFORE you call your plumber to have your sewer cleared.
- 2 The City will come out right away to verify there

www.cityofpaloalto.org/utilities

CITY OF PALO ALTO UTILITIES
Inspired by a brighter tomorrow.



CLOGS PIPES!

It's a whole different world under our city!

I'm part of a team who are in the trenches (literally) every day keeping your gas, water and sewer pipelines operating safely and efficiently. You're on my team, too! For example, when you put rags, wipes, diapers or grease in the trash, instead of down drains and toilets, that means we all have fewer sewer back-ups to deal with.

So let's work as a team to keep our City's underground utilities operating well.

Get important gas and sewer safety tips: www.cityofpaloalto.org/safetutility

Learn about what we're working on: www.cityofpaloalto.org/utilityprojects



—Filberto "Fil" Castro
City of Palo Alto Utilities
Installer/Repairer

* NOT YET APPROVED *

Resolution No. _____

Resolution of the Council of the City of Palo Alto Increasing Gas Rates by Amending Rate Schedules G-1 (Residential Gas Service), G-1-G (Residential Green Gas Service), G-2 (Residential Master-Metered and Commercial Gas Service), G-2-G (Residential Master-Metered and Commercial Green Gas Service), G-3 (Large Commercial Gas Service), G-3-G (Large Commercial Green Gas Service), G-10 (Compressed Natural Gas Service Service) and G-10-G (Compressed Natural Green Gas Service)

R E C I T A L S

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

B. On ____, 2016, the City Council heard and approved the proposed rate increase.

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

SECTION 1. Pursuant to Section 12.20.010 of the Palo Alto Municipal Code, Utility Rate Schedule G-1 (Residential Gas Service) is hereby amended to read as attached and incorporated. Utility Rate Schedule G-1, as amended, shall become effective July 1, 2016.

SECTION 2. Pursuant to Section 12.20.010 of the Palo Alto Municipal Code, Utility Rate Schedule G-1-G (Residential Green Gas Service) is hereby amended to read as attached and incorporated. Utility Rate Schedule G-1-G, as amended, shall become effective July 1, 2016.

SECTION 3. Pursuant to Section 12.20.010 of the Palo Alto Municipal Code, Utility Rate Schedule G-2 (Residential Master-Metered and Commercial Gas Service) is hereby amended to read as attached and incorporated. Utility Rate Schedule G-2, as amended, shall become effective July 1, 2016.

SECTION 4. Pursuant to Section 12.20.010 of the Palo Alto Municipal Code, Utility Rate Schedule G-2-G (Residential Master-Metered and Commercial Green Gas Service) is hereby amended to read as attached and incorporated. Utility Rate Schedule G-2-G, as amended, shall become effective July 1, 2016.

SECTION 5. Pursuant to Section 12.20.010 of the Palo Alto Municipal Code, Utility Rate Schedule G-3 (Large Commercial Gas Service) is hereby amended to read as attached and incorporated. Utility Rate Schedule G-3, as amended, shall become effective July 1, 2016.

SECTION 6. Pursuant to Section 12.20.010 of the Palo Alto Municipal Code, Utility Rate Schedule G-3-G (Large Commercial Green Gas Service) is hereby amended to read as

* NOT YET APPROVED *

attached and incorporated. Utility Rate Schedule G-3-G, as amended, shall become effective July 1, 2016.

SECTION 7. Pursuant to Section 12.20.010 of the Palo Alto Municipal Code, Utility Rate Schedule G-10 (Compressed Natural Gas Service Service) is hereby amended to read as attached and incorporated. Utility Rate Schedule G-10, as amended, shall become effective July 1, 2016.

SECTION 8. Pursuant to Section 12.20.010 of the Palo Alto Municipal Code, Utility Rate Schedule G-10-G (Compressed Natural Green Gas Service Service) is hereby amended to read as attached and incorporated. Utility Rate Schedule G-10-G, as amended, shall become effective July 1, 2016.

SECTION 9. The City Council finds as follows:

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

SECTION 10. The Council finds that the fees and charges adopted by this resolution are charges imposed for a specific government service or product provided directly to the payor that are not provided to those not charged, and do not exceed the reasonable costs to the City of providing the service or product.

SECTION 11. The Council finds that the adoption of this resolution changing gas rates to meet operating expenses, purchase supplies and materials, meet financial reserve needs and obtain funds for capital improvements necessary to maintain service is not subject to the California Environmental Quality Act (CEQA), pursuant to California Public Resources Code Sec. 21080(b)(8) and Title 14 of the California Code of Regulations Sec. 15273(a). After reviewing the staff report and all attachments presented to Council, the Council incorporates these documents herein and finds that sufficient evidence has been presented setting forth with specificity the basis for this claim of CEQA exemption.

* NOT YET APPROVED *

INTRODUCED AND PASSED:

AYES:

NOES:

ABSENT:

ABSTENTIONS:

ATTEST:

City Clerk

Mayor

APPROVED AS TO FORM:

APPROVED:

Senior Deputy City Attorney

City Manager

Director of Utilities

Director of Administrative Services

RESIDENTIAL GAS SERVICE

UTILITY RATE SCHEDULE G-1

A. APPLICABILITY:

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

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

B. TERRITORY:

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

C. UNBUNDLED RATES:

Per Service

Monthly Service Charge:\$~~910.3288~~

Tier 1 Rates:

Per Therm

Supply Charges:

1. Commodity (Monthly Market Based)..... \$0.10-\$2.00
2. Cap and Trade Compliance Charge\$0.00-\$0.25

Distribution Charge:.....\$0.~~50214392~~

Tier 2 Rates: (All usage over 100% of Tier 1)

Supply Charges:

1. Commodity (Monthly Market Based)..... \$0.10-2.00
2. Cap and Trade Compliance Charge\$0.00-\$0.25

Distribution Charge:.....
.....\$~~01.0407954~~

6

D. SPECIAL NOTES:

1. Calculation of Cost Components

The actual bill amount is calculated based on the applicable rates in Section C above and

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CITY OF PALO ALTO
UTILITIES

Supersedes Sheet No G-1-1
dated ~~42~~-1-201~~35~~

Effective ~~72~~-1-201~~56~~
Sheet No G-1-1

RESIDENTIAL GAS SERVICE

UTILITY RATE SCHEDULE G-1

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

The Commodity Charge is based on the monthly natural gas Bidweek Price Index for delivery at PG&E Citygate, accounting for delivery losses to the Customer's Meter. The Cap and Trade Compliance Charge reflects the City's cost of regulatory compliance with the state's Cap and Trade Program, including the cost of acquiring compliance instruments sufficient to cover the City's Gas Utility's compliance obligations. The Cap and Trade Compliance Charge will change in response to changing market conditions, retail sales volumes and the quantity of allowances required. The Commodity and Cap and Trade Compliance Charges will fall within the minimum/maximum ranges set forth in Section C.

2. Seasonal Rate Changes:

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

3. Calculation of Usage Tiers

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

{End}

CITY OF PALO ALTO UTILITIES

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Supersedes Sheet No G-1-2
dated ~~4-2-1-2013~~⁵



CITY OF PALO ALTO
UTILITIES

Effective ~~7-2-1-2015~~⁶
Sheet No G-1-2

RESIDENTIAL GREEN GAS SERVICE

UTILITY RATE SCHEDULE G-1-G

A. APPLICABILITY:

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

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

B. TERRITORY:

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

C. UNBUNDLED RATES:

Per Service

Monthly Service Charge:\$~~910.3288~~

Tier 1 Rates:

Per Therm

Supply Charges:

1. Commodity (Monthly Market Based)..... \$0.10-\$2.00
2. Cap and Trade Compliance Charges\$0.00-\$0.25

Distribution Charge:.....\$0.~~50214392~~

PaloAltoGreen Gas Charge..... \$0.1200

Tier 2 Rates: (All usage over 100% of Tier 1)

Supply Charges:

1. Commodity (Monthly Market Based)..... \$0.10-2.00
2. Cap and Trade Compliance Charges.....\$0.00-\$0.25

Distribution Charge:.....\$~~01.04079546~~

PaloAltoGreen Gas Charge..... \$0.1200

D. SPECIAL NOTES:

1. Calculation of Cost Components

The actual bill amount is calculated based on the applicable rates in Section C above and

CITY OF PALO ALTO UTILITIES

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Supersedes Sheet No G-1-G-1
dated ~~72~~-1-201~~45~~



CITY OF PALO ALTO
UTILITIES

Effective ~~27~~-1-201~~56~~
Sheet No **G-1-G-1**

RESIDENTIAL GREEN GAS SERVICE

UTILITY RATE SCHEDULE G-1-G

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

The Commodity Charge is based on the monthly natural gas Bidweek Price Index for delivery at PG&E Citygate, accounting for delivery losses to the Customer's Meter. The Cap and Trade Compliance Charge reflects the City's cost of regulatory compliance with the state's Cap and Trade Program, including the cost of acquiring compliance instruments sufficient to cover the City's Gas Utility's compliance obligations. The Cap and Trade Compliance Charge will change in response to changing market conditions, retail sales volumes and the quantity of allowances required. The Commodity and Cap and Trade Compliance Charges will fall within the minimum/maximum ranges set forth in Section C.

2. Seasonal Rate Changes:

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

3. Calculation of Usage Tiers

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

4. PaloAltoGreen Gas Program Description and Participation

PaloAltoGreen Gas provides for the reduction of green-house gas (GHG) emissions associated with a Customer's Gas usage, through the purchase of certified environmental offsets, with a preference to projects located in California. Purchases are made to match 100% of the therm usage at the Customer's premises every month.

Customers choosing to participate shall fill out a PaloAltoGreen Gas Program application provided by the Customer Service Center.

{End}

CITY OF PALO ALTO UTILITIES

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Supersedes Sheet No G-1-G-2
dated ~~72~~-1-201~~45~~



CITY OF PALO ALTO
UTILITIES

Effective ~~27~~-1-201~~56~~
Sheet No **G-1-G-2**

RESIDENTIAL MASTER-METERED AND COMMERCIAL GAS SERVICE

UTILITY RATE SCHEDULE G-2

A. APPLICABILITY:

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

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

B. TERRITORY:

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

C. UNBUNDLED RATES:

Per Service

Monthly Service Charge:\$7~~84~~.~~2386~~

Per Therm

Supply Charges:

1. Commodity (Monthly Market Based)..... \$0.10-\$2.00
2. Cap and Trade Compliance Charges \$0.00-0.25

Distribution Charge:\$0.6~~855~~~~147~~

D. SPECIAL NOTES:

1. Calculation of Cost Components

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

The Commodity Charge is based on the monthly natural gas Bidweek Price Index for delivery at PG&E Citygate, accounting for delivery losses to the Customer's Meter. The Cap and Trade Compliance Charge reflects the City's cost of regulatory compliance with the state's Cap and Trade Program, including the cost of acquiring compliance instruments sufficient to cover the City's Gas Utility's compliance obligations. The Cap and Trade Compliance Charge will change in response to changing market conditions, retail sales volumes and the quantity of allowances required. The Commodity and Cap and Trade Compliance Charges will fall within the minimum/maximum ranges set forth in Section C.

{End}

CITY OF PALO ALTO UTILITIES

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Supersedes Sheet No G-2-1
dated ~~72~~-1-201~~25~~



CITY OF PALO ALTO
UTILITIES

Effective ~~27~~-1-201~~56~~
Sheet No **G-2-1**

RESIDENTIAL MASTER-METERED AND COMMERCIAL GREEN GAS SERVICE

UTILITY RATE SCHEDULE G-2-G

A. APPLICABILITY:

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

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

B. TERRITORY:

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

C. UNBUNDLED RATES:

1. 100% Renewable/Full Green option: Per Service

Monthly Service Charge:\$7~~84~~.~~2386~~

Per Therm

Supply Charges:

1. Commodity (Monthly Market Based)..... \$0.10-\$2.00
2. Cap and Trade Compliance Charges \$0.00-0.25

Distribution Charge:\$0.6~~855~~~~147~~

PaloAltoGreen Gas Charge..... \$0.1200

2. 100 Therm block option: Per Service

Monthly Service Charge:\$7~~84~~.~~2386~~

Per Therm

Supply Charges:

1. Commodity (Monthly Market Based)..... \$0.10-\$2.00
2. Cap and Trade Compliance Charges \$0.00-0.25

Distribution Charge:\$0.6~~855~~~~147~~

PaloAltoGreen Gas Charge (per 100 therm block)..... \$12.00

CITY OF PALO ALTO UTILITIES

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Supersedes Sheet No G-2-G-1
dated ~~7~~2-1-201~~4~~5



CITY OF PALO ALTO
UTILITIES

Effective ~~2~~7-1-201~~5~~6
Sheet No G-2-G-1

RESIDENTIAL MASTER-METERED AND COMMERCIAL GREEN GAS SERVICE

UTILITY RATE SCHEDULE G-2-G

D. SPECIAL NOTES:

1. Calculation of Cost Components

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

The Commodity Charge is based on the monthly natural gas Bidweek Price Index for delivery at PG&E Citygate, accounting for delivery losses to the Customer's Meter. The Cap and Trade Compliance Charge reflects the City's cost of regulatory compliance with the state's Cap and Trade Program, including the cost of acquiring compliance instruments sufficient to cover the City's Gas Utility's compliance obligations. The Cap and Trade Compliance Charge will change in response to changing market conditions, retail sales volumes and the quantity of allowances required. The Commodity and Cap and Trade Compliance Charges will fall within the minimum/maximum ranges set forth in Section C.

2. Request for Service

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

3. PaloAltoGreen Gas Program Description and Participation

PaloAltoGreen Gas provides for the reduction of green-house gas (GHG) emissions associated with a Customer's gas usage, through the purchase of certified environmental offsets, with a preference to projects located in California. Purchases are made to match 100% of the therm usage at the Customer's facility every month (the 100% Renewable/Full Green option), or in 100 therm blocks.

Customers choosing to participate shall fill out a PaloAltoGreen Gas Program application provided by the Customer Service Center.

{End}

CITY OF PALO ALTO UTILITIES

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CITY OF PALO ALTO
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Sheet No **G-2-G-2**

LARGE COMMERCIAL GAS SERVICE

UTILITY RATE SCHEDULE G-3

A. APPLICABILITY:

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

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

B. TERRITORY:

This schedule applies anywhere the City of Palo Alto provides natural gas service.

C. UNBUNDLED RATES:

Per Service

Monthly Service Charge: \$3~~7761.4318~~

Per Therm

Supply Charges:

1. Commodity (Monthly Market Based)..... \$0.10-\$2.00
2. Cap and Trade Compliance Charges \$0.00-0.25

Distribution Charge:\$0.6~~775071~~

D. SPECIAL NOTES:

1. Calculation of Cost Components

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

The Commodity Charge is based on the monthly natural gas Bidweek Price Index for delivery at PG&E Citygate, accounting for delivery losses to the Customer's Meter. The Cap and Trade Compliance Charge reflects the City's cost of regulatory compliance with the state's Cap and Trade Program, including the cost of acquiring compliance instruments sufficient to cover the City's Gas Utility's compliance obligations. The Cap and Trade Compliance Charge will change in response to changing market conditions, retail sales volumes and the quantity of allowances required. The Commodity and Cap

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Sheet No **G-3-1**

LARGE COMMERCIAL GAS SERVICE

UTILITY RATE SCHEDULE G-3

and Trade Compliance Charges will fall within the minimum/maximum ranges set forth in Section C.

2. Request for Service

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

3. Changing Rate Schedules

Customers may request a rate schedule change at any time to any applicable City of Palo Alto full-service rate schedule. ~~Customers served under this rate schedule may elect Gas Direct Access at any time.~~

{End}

CITY OF PALO ALTO UTILITIES

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LARGE COMMERCIAL GREEN GAS SERVICE

UTILITY RATE SCHEDULE G-3-G

A. APPLICABILITY:

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

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

B. TERRITORY:

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

C. UNBUNDLED RATES:

1. 100% Renewable/Full Green option: Per Service

Monthly Service Charge: \$3~~7761.43~~¹⁸

Per Therm

Supply Charges:

1. Commodity (Monthly Market Based)..... \$0.10-\$2.00
2. Cap and Trade Compliance Charges \$0.00-0.25

Distribution Charge:\$0.6~~7750~~⁷¹

PaloAltoGreen Gas Charge:.....\$0.1200

2. 100 Therm block option: Per Service

Monthly Service Charge: \$3~~7761.43~~¹⁸

Per Therm

Supply Charges:

1. Commodity (Monthly Market Based)..... \$0.10-\$2.00
2. Cap and Trade Compliance Charges \$0.00-0.25

Distribution Charge:\$0.6~~7750~~⁷¹

PaloAltoGreen Gas Charge (per 100 therm block):.....\$12.00

D. SPECIAL NOTES:

CITY OF PALO ALTO UTILITIES

Issued by the City Council



LARGE COMMERCIAL GREEN GAS SERVICE

UTILITY RATE SCHEDULE G-3-G

1. Calculation of Cost Components

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

The Commodity Charge is based on the monthly natural gas Bidweek Price Index for delivery at PG&E Citygate, accounting for delivery losses to the Customer's Meter. The Cap and Trade Compliance Charge reflects the City's cost of regulatory compliance with the state's Cap and Trade Program, including the cost of acquiring compliance instruments sufficient to cover the City's Gas Utility's compliance obligations. The Cap and Trade Compliance Charge will change in response to changing market conditions, retail sales volumes and the quantity of allowances required. The Commodity and Cap and Trade Compliance Charges will fall within the minimum/maximum ranges set forth in Section C.

2. Request for Service

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

3. PaloAltoGreen Gas Program Description and Participation

PaloAltoGreen Gas provides for the reduction of green-house gas (GHG) emissions associated with a Customer's gas usage, through the purchase of certified environmental offsets, with a preference to projects located in California. Purchases are made to match 100% of the therm usage at the Customer's facility every month, (the 100% Renewable/Full Green option), or in 100 therm blocks.

Customers choosing to participate shall fill out a PaloAltoGreen Gas Program application provided by the Customer Service Center.

{End}

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CITY OF PALO ALTO
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Sheet No **G-3-G-2**

COMPRESSED NATURAL GAS SERVICE

UTILITY RATE SCHEDULE G-10

A. APPLICABILITY:

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

B. TERRITORY:

Applies to location at the Municipal Service Center in City of Palo Alto.

C. UNBUNDLED RATES:

Per Service

Monthly Service Charge:\$5~~20.93~~65

Per Therm

Supply Charges:

Commodity (Monthly Market Based)..... \$0.10-\$2.00

Cap and Trade Compliance Charges..... \$0.00 to \$0.25

Distribution Charge.....\$0.0~~963~~509

D. SPECIAL CONDITIONS

1. Calculation of Cost Components

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

The Commodity charge is based on the monthly natural gas Bidweek Price Index for delivery at PG&E Citygate, accounting for delivery losses to the Customer's Meter. The Cap and Trade Compliance Charge reflects the City's cost of regulatory compliance with the state's Cap and Trade Program, including the cost of acquiring compliance instruments sufficient to cover the City's Gas Utility's compliance obligations. The Cap and Trade Compliance Charge will change in response to changing market conditions, retail sales volumes and the quantity of allowances required. The Commodity and Cap and Trade Compliance Charges will fall within the minimum/maximum range set forth in Section C.

{End}

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Sheet No. **G-10-1**

COMPRESSED NATURAL GREEN GAS SERVICE

UTILITY RATE SCHEDULE G-10-G

A. APPLICABILITY:

This schedule applies to the wholesale sale of natural gas to the City-owned compressed natural gas (CNG) fueling station at the Municipal Service Center in Palo Alto under the PaloAltoGreen Gas Program:

B. TERRITORY:

The City-owned compressed natural gas (CNG) fueling station located at the Municipal Service Center in City of Palo Alto.

C. UNBUNDLED RATES:

Per Service

Monthly Service Charge:\$5~~20.93~~65

Per Therm

Supply Charges:

Commodity (Monthly Market Based)..... \$0.10-\$2.00

Cap and Trade Compliance Charges..... \$0.00 to \$0.25

Distribution Charge.....\$0.09~~63~~509

PaloAltoGreen Gas Charge.....\$0.1200

D. SPECIAL CONDITIONS

1. Calculation of Cost Components

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

The Commodity charge is based on the monthly natural gas Bidweek Price Index for delivery at PG&E Citygate, accounting for delivery losses to the Customer's Meter. The Cap and Trade Compliance Charge reflects the City's cost of regulatory compliance with the state's Cap and Trade Program, including the cost of acquiring compliance instruments sufficient to cover the City's Gas Utility's compliance obligations. The Cap and Trade Compliance Charge will change in response to

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COMPRESSED NATURAL GREEN GAS SERVICE

UTILITY RATE SCHEDULE G-10-G

changing market conditions, retail sales volumes and the quantity of allowances required. The Commodity and Cap and Trade Compliance Charges will fall within the minimum/maximum range set forth in Section C.

2. PaloAltoGreen Gas Program Description and Participation

PaloAltoGreen Gas provides for the reduction of green-house gas (GHG) emissions associated with a Customer's Gas usage, through the purchase of certified environmental offsets, with a preference to projects located in California. Purchases are made to match 100% of the therm usage at the Customer's premises every month.

Customers choosing to participate shall fill out a PaloAltoGreen Gas Program application provided by the Customer Service Center.

{End}

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