Cost of Service and Rate Study study results and findings



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Introduction

Starting in May 2021, the City of Castroville (City) retained Schneider Engineering, LLC (SE) to complete a cost of service and rate study for the City's electric, water, wastewater, and gas systems. Using data provided by Castroville, SE modeled and allocated the costs to run the City's utility department and supported functions, including general fund transfers. The goal when building, designing, and populating the model is to appropriately allocate costs to customers on the basis of how they contribute to costs inherent to running the system. Ideally, every customer pays their share of costs associated with serving that customer's particular load.

Background & Project Scope

When Castroville contracted with SE to complete the cost of service and rate study, several objectives were laid out to be completed over the course of the study. These included:

- Review current rate design and determine proof of revenues.
- Align each utility's revenues to City budgets and capital improvement plans.
- Evaluate rate competitiveness across all rate classes.
- Design and provide rate recommendations based on financial and competitive goals identified by the City.
- Review the City's wholesale power cost recovery mechanism to ensure adequate rate recovery.

The City had two main concerns when the project was introduced: growth westward coming out of San Antonio and the delayed investments in to the water and waste water systems. Development inquiries have grown recently, and City Management requested cost of service study be performed in anticipation of population growth. Each aspect of the project scope was met, and SE's recommendations resolve concerns with growth and infrastructure investments.

Cost of Service Study

The purpose of a cost of service study is to identify and assign costs related to the utility system to specific rate classes or customers, through the input data, relating to expenses and revenues for the each fund, and apply allocation factors, based on data provided by the City. The function of the expenses and allocation factors indicate from which particular customer class revenue should be generated. This, coupled with revenue data, provides insight as to which rate class is generating revenue and from which tariff revenue ought to be generated.

Methodology

To complete the cost of service and rate study for each utility, the City provided data relating to each department's operating expenses, revenue from customers, comprehensive annual financial reports, and customer usage statistics. The data used to develop the model was based on the City's fiscal year ending September 2020. SE entered the financial data and usage statistics into its proprietary cost of service model to develop a comprehensive assessment of revenue and costs statistics related to each utility system. Costs that were included and evaluated in the model included:

Wholesale costs

- Operation and maintenance expenses
- Depreciation of system components
- Capital improvement plan
- Transfers to other accounts
- Value of system components

Customer usage data specific to each utility were key in allocating costs across each of their respective rate classes.

Following the completion of the test year cost of service study, SE evaluated forecasts¹ provided by Castroville and made adjustments to the test year inputs and allocation factor to adjust outputs based on future budgetary needs. This is a key component of the process in that it ensures the fiscal viability of the utility for the next several years. An important goal for the City is for each utility to be as self-sufficient as reasonable, given the disparities in certificated areas served by each of the individual utilities. In anticipation of infrastructure improvements, City Management requested rates to be adjusted to cover utility specific expenses to the degree possible without imposing extraordinary rate increases on customers.

Electric System and Rate Study

Findings

The completed cost of service study will determine costs of providing service to each class of customer and help assist in design of electric rates for customers. Cost of service table below shows a comparison of projected costs to serve each customer class and percentage of revenue change to meet cost of service requirements.

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			Elect	tric			
					In	crease/(Decrease) to COS Allocation
	Alloca	ated Revenue	Actu	ial Revenue		\$	\$
Residential Inside	\$	1,357,231.00	\$	1,590,972.00	\$	(233,741.00)	-14.69%
Residential Inside Solar	\$	16,469.00	\$	8,705.00	\$	7,764.00	89.19%
Senior Residential Inside	\$	463,815.00	\$	492,379.00	\$	(28,564.00)	-5.80%
Senior Residential Inside Solar RC	\$	7,372.00	\$	(9.00)	\$	7,381.00	-82011.11%
Residential Outside	\$	10,314.00	\$	7,095.00	\$	3,219.00	45.37%
Senior Residential Outside	\$	4,784.00	\$	270.00	\$	4,514.00	1671.85%
Commercial Inside	\$	1,156,768.00	\$	1,550,655.00	\$	(393,887.00)	-25.40%
Commercial Outside	\$	18,325.00	\$	25,005.00	\$	(6,680.00)	-26.71%
Airport	\$	180,737.00	\$	19,006.00	\$	161,731.00	850.95%
City Cost Accounts	\$	109,877.00	\$	2,151.00	\$	107,726.00	5008.18%
	\$	3,325,692.00	\$	3,696,229.00	\$	(370,537.00)	-10.02%

The study indicates an overall net decrease of 10% from current rates to meet revenue requirements. The individual rate and revenue classes show a significant range, from a 82,000% over recovery to a 5000% under recover in revenues. These are almost all small rate classes,

¹ This included financial numbers from the City's budget process and capital improvement plans.

which can skew study results for those rate classes in particular but have a negligible impact on the overall results.

Rates

In the case of the electric department, rates needed to be set to support upcoming debt issuance, support electric department specific expenses, and simplify rate schedules. SE's recommendation is to combine "inside/outside" distinction and consolidate residential and commercial into respective rate classes and increase proportion of rate revenue from "customer charge." The effective rates under these proposed changes are reflected in Table 2___.

		C	Current										
				F	FY 2022		FY 2023		Y 2024	F	Y 2025	F	Y 2026
Dec. Incide	Cust. Charge	\$	9.21	\$	15.00	\$	15.00	\$	15.00	\$	15.00	\$	15.00
Res. Inside	Energy Charge	\$	0.1278	\$	0.1128	\$	0.1128	\$	0.1128	\$	0.1128	\$	0.1128
Res. Outside	Cust. Charge	\$	11.51	\$	15.00	\$	15.00	\$	15.00	\$	15.00	\$	15.00
Res. Outside	Energy Charge	\$	0.1597	\$	0.1128	\$	0.1128	\$	0.1128	\$	0.1128	\$	0.1128
Senior Inside	Cust. Charge	\$	8.75	\$	14.25	\$	14.25	\$	14.25	\$	14.25	\$	14.25
Seniorinside	Energy Charge	\$	0.1214	\$	0.1072	\$	0.1072	\$	0.1072	\$	0.1072	\$	0.1072
Senior Outside	Cust. Charge	\$	10.94	\$	14.25	\$	14.25	\$	14.25	\$	14.25	\$	14.25
Senior Outside	Energy Charge	\$	0.1518	\$	0.1072	\$	0.1072	\$	0.1072	\$	0.1072	\$	0.1072
Comm. Inside	Cust. Charge	\$	24.19	\$	35.00	\$	35.00	\$	35.00	\$	35.00	\$	35.00
comm. mside	Energy Charge	\$	0.1278	\$	0.1128	\$	0.1128	\$	0.1128	\$	0.1128	\$	0.1128
Comm. Outside	Cust. Charge	\$	30.24	\$	35.00	\$	35.00	\$	35.00	\$	35.00	\$	35.00
comm. Outside	Energy Charge	\$	0.1597	\$	0.1128	\$	0.1128	\$	0.1128	\$	0.1128	\$	0.1128

Natural Gas System and Rate Study

Findings

Similar to the electric study, the cost of service study for the natural gas system

will determine costs of providing service to each class of customer and help assist in design of natural gas rates for customers. Cost of service table below shows a comparison of projected costs to serve each customer class and percentage of revenue change to meet cost of service requirements.

Table 3

		Ga	S				
					I	nc. (Dec.) to C	OS Allocation
	Al	located Rev.	A	Actual Rev.		\$	%
Residential Inside	\$	267,238.97	\$	316,834.67	\$	(49,595.70)	-15.65%
Residential Outside	\$	19,713.20	\$	6,438.31	\$	13,274.89	206.19%
Commercial Inside	\$	158,733.94	\$	212,019.06	\$	(53,285.12)	-25.13%
Commercial Outside	\$	36,165.00	\$	34,954.63	\$	1,210.37	3.46%
City Accounts	\$	949.28	\$	529.80	\$	419.48	79.18%
Total	\$	482,800.38	\$	570,776.47	\$	(87,976.09)	-15.41%

The study indicates an overall net adjustment of -15.4% from current rates to meet revenue requirements.

Rates

The rates for the natural gas system are implemented well. SE recommends an increase proportion of rate revenue from "customer charge" and no change to pass-through charge methodology. These proposed changes are intended to support system expenses related to O&M, franchise fees, and transfers.

Table 4

		С	urrent					Pr	oposed				
				F	Y 2022	FY 2023		FY 2024		F	Y 2025	F	Y 2026
Dec. Incide	Cust. Charge	\$	11.76	\$	16.00	\$	16.00	\$	16.00	\$	16.00	\$	16.00
Res. Inside	Energy Charge	\$	0.0090	\$	0.0090	\$	0.0090	\$	0.0090	\$	0.0090	\$	0.0090
Res. Outside	Cust. Charge	\$	14.70	\$	21.00	\$	21.00	\$	21.00	\$	21.00	\$	21.00
Res. Outside	Energy Charge	\$	0.0113	\$	0.0113	\$	0.0113	\$	0.0113	\$	0.0113	\$	0.0113
Comm. Inside	Cust. Charge	\$	14.37	\$	21.00	\$	21.00	\$	21.00	\$	21.00	\$	21.00
comm. mside	Energy Charge	\$	0.0090	\$	0.0090	\$	0.0090	\$	0.0090	\$	0.0090	\$	0.0090
Comm. Outside	Cust. Charge	\$	17.97	\$	26.00	\$	26.00	\$	26.00	\$	26.00	\$	26.00
comm. Outside	Energy Charge	\$	0.0113	\$	0.0113	\$	0.0113	\$	0.0113	\$	0.0113	\$	0.0113

Water and Wastewater Systems and Rate Study

Findings

Similar to electric and natural gas, the completed cost of service study will determine costs of providing service to each class of customer and help assist in design of water and wastewater rates for customers. Cost of service table below summarizes the study's comparison of projected costs to serve each customer class and percentage of revenue change to meet cost of service requirements.

				Water			
) to COS Allocation		
	Alloc	ated Revenue	Actu	ual Revenue	\$	\$	
Residential Inside	\$	508,984.09	\$	837,957.43	\$ (328,973.34)	-39.26%	
Residential Outside	\$	90,988.05	\$	87,603.93	\$ 3,384.12	3.86%	
Commercial Inside	\$	341,451.00	\$	454,493.22	\$ (113,042.22)	-24.87%	
Commercial Outside	\$	53,156.01	\$	46,791.52	\$ 6,364.49	13.60%	
City Accounts	\$	91,416.28	\$	40,121.87	\$ 51,294.41	127.85%	
	\$	1,085,995.44	\$	1,466,967.97	\$ (380,972.53)	-25.97%	

Table 6

	·	١	Nast	ewater								
					Increase/(Decrease) to COS Allocati							
	Allo	cated Revenue	Actu	ual Revenue		\$	\$					
Residential Inside	\$	773,000.03	\$	507,613.60	\$	265,386.43	52.28%					
Residential Outside	\$	1,209.27	\$	1,555.56	\$	(346.29)	-22.26%					
Commercial Inside	\$	399,822.95	\$	229,720.71	\$	170,102.24	74.05%					
Commercial Outside	\$	138,471.67	\$	17,933.63	\$	120,538.04	672.13%					
Explicit Commercial	\$	6,195.68	\$	380.16	\$	5,815.52	1529.75%					
City Average Residential Inside	\$	11,794.08	\$	9,428.76	\$	2,365.32	25.09%					
	\$	1,330,493.67	\$	766,632.42	\$	563,861.25	73.55%					

Water and wastewater system required the most investment and is a top priority for City Management. Over the next 5 years, nearly \$14 million have been allocated to updating and expanding water and wastewater capabilities. According to the study, rates needed to have a net increase of approximately 50% to recover costs attributable to the water and wastewater system. Additionally, with several subdivisions slated to connect to both the water and wastewater systems in the coming years, ensuring the financial independence of both systems is paramount.

Rates

SE recommends an immediate increase to rates in order to provide the City with the ability to cover upcoming debt repayments. Infrastructure improvements will require large capital investments therefore the change in rate will provide the ability to alleviate concerns commonly seen from bond rating agencies. This has the potential to offer the City significant savings in bond repayment costs. Finally, the recommendation of increasing proportion of rate revenue from "customer charge" is seen positively by bond rating agencies. Table 7

		Сι	urrent												
				F	Y 2022	F	Y 2023	F	Y 2024	F	Y 2025	F١	Y 2026		
	Cust. Charge	\$	23.26	\$	30.00	\$	30.00	\$	30.00	\$	30.00	\$	30.00		
	0-5,000 Gal.	\$	4.75	\$	5.35	\$	5.35	\$	5.35	\$	5.35	\$	5.35		
	5,001-10,000 Gal.	\$	5.07	\$	5.67	\$	5.67	\$	5.67	\$	5.67	\$	5.67		
Res. Inside	10,001-20,000 Gal.	\$	5.60	\$	6.20	\$	6.20	\$	6.20	\$	6.20	\$	6.20		
Res. Inside	20,001-30,000 Gal.	\$	5.93	\$	6.53	\$	6.53	\$	6.53	\$	6.53	\$	6.53		
	30,001-40,000 Gal.	\$	6.35	\$	6.95	\$	6.95	\$	6.95	\$	6.95	\$	6.95		
	40,001-50,000 Gal.	\$	6.58	\$	7.18	\$	7.18	\$	7.18	\$	7.18	\$	7.18		
	Over 50,000 Gal.	\$	7.57	\$	8.17	\$	8.17	\$	8.17	\$	8.17	\$	8.17		
	Cust. Charge	\$	27.87	\$	35.00	\$	35.00	\$	35.00	\$	35.00	\$	35.00		
	0-5,000 Gal.	\$	5.92	\$	6.52	\$	6.52	\$	6.52	\$	6.52	\$	6.52		
	5,001-10,000 Gal.	\$	6.34	\$	6.94	\$	6.94	\$	6.94	\$	6.94	\$	6.94		
Res. Outside	10,001-20,000 Gal.	\$	7.00	\$	7.60	\$	7.60	\$	7.60	\$	7.60	\$	7.60		
Nes. Outside	20,001-30,000 Gal.	\$	7.41	\$	8.01	\$	8.01	\$	8.01	\$	8.01	\$	8.01		
	30,001-40,000 Gal.	\$	7.81	\$	8.41	\$	8.41	\$	8.41	\$	8.41	\$	8.41		
	40,001-50,000 Gal.	\$	8.22	\$	8.82	\$	8.82	\$	8.82	\$	8.82	\$	8.82		
	Over 50,000 Gal.	\$	9.46	\$	10.06	\$	10.06	\$	10.06	\$	10.06	\$	10.06		
	Cust. Charge	\$	29.07	\$	40.00	\$	40.00	\$	40.00	\$	40.00	\$	40.00		
	0-5,000 Gal.	\$	4.83	\$	5.43	\$	5.43	\$	5.43	\$	5.43	\$	5.43		
	5,001-10,000 Gal.	\$	5.17	\$	5.77	\$	5.77	\$	5.77	\$	5.77	\$	5.77		
Comm. Inside	10,001-20,000 Gal.	\$	5.71	\$	6.31	\$	6.31	\$	6.31	\$	6.31	\$	6.31		
comm. Inside	20,001-30,000 Gal.	\$	6.04	\$	6.64	\$	6.64	\$	6.64	\$	6.64	\$	6.64		
	30,001-40,000 Gal.	\$	6.37	\$	6.97	\$	6.97	\$	6.97	\$	6.97	\$	6.97		
	40,001-50,000 Gal.	\$	6.70	\$	7.30	\$	7.30	\$	7.30	\$	7.30	\$	7.30		
	Over 50,000 Gal.	\$	7.71	\$	8.31	\$	8.31	\$	8.31	\$	8.31	\$	8.31		
	Cust. Charge	\$	36.34	\$	45.00	\$	45.00	\$	45.00	\$	45.00	\$	45.00		
	0-5,000 Gal.	\$	6.04	\$	7.39	\$	7.39	\$	7.39	\$	7.39	\$	7.39		
	5,001-10,000 Gal.	\$	6.46	\$	7.81	\$	7.81	\$	7.81	\$	7.81	\$	7.81		
Comm Outside	10,001-20,000 Gal.	\$	7.14	\$	8.49	\$	8.49	\$	8.49	\$	8.49	\$	8.49		
Comm. Outside	20,001-30,000 Gal.	\$	7.55	\$	8.90	\$	8.90	\$	8.90	\$	8.90	\$	8.90		
	30,001-40,000 Gal.	\$	7.96	\$	9.31	\$	9.31	\$	9.31	\$	9.31	\$	9.31		
	40,001-50,000 Gal.	\$	8.38	\$	9.73	\$	9.73	\$	9.73	\$	9.73	\$	9.73		
	Over 50,000 Gal.	\$	9.64	\$	10.99	\$	10.99	\$	10.99	\$	10.99	\$	10.99		

Table 8

		C	Current					Pr	oposed				
				F	FY 2022		FY 2023		Y 2024	F	Y 2025	F	Y 2026
Res. Inside	Cust. Charge	\$	20.75	\$	30.00	\$	30.00	\$	30.00	\$	30.00	\$	30.00
Res. Inside	Usage Charge	\$	8.890	\$	9.999	\$	9.999	\$	9.999	\$	9.999	\$	9.999
Res. Outside	Cust. Charge	\$	25.93	\$	30.00	\$	30.00	\$	30.00	\$	30.00	\$	30.00
Res. Outside	Usage Charge	\$	11.110	\$	12.441	\$	12.441	\$	12.441	\$	12.441	\$	12.441
Comm. Inside	Cust. Charge	\$	29.39	\$	35.00	\$	35.00	\$	35.00	\$	35.00	\$	35.00
comm. mside	Usage Charge	\$	8.890	\$	9.999	\$	9.999	\$	9.999	\$	9.999	\$	9.999
Comm. Outside	Cust. Charge	\$	36.74	\$	40.00	\$	40.00	\$	40.00	\$	40.00	\$	40.00
Comm. Outside	Usage Charge	\$	11.110	\$	12.441	\$	12.441	\$	12.441	\$	12.441	\$	12.441

Financial Forecast

This combined financial forecast lays out revenues and expenses for each utility SE used as the basis for recommendations made to City Council. With the recommendations set forth, the City will be in a position to update, expand, and continue to reliably serve its current and future

citizens. Table 9 below includes all recommended rate adjustments to recover costs associated with increases in customers, O&M, and capital improvement plan funding. Table 9

		Re	evenues and E	Ξхр	enses							
	2020		2021		2022	2023		2024		2025	2026	
Rate Revenue			Budget				F	ore	cast Numbe	rs		
Water	\$ 1,466,968	\$	1,615,522	\$	1,746,734	\$	2,037,231	\$	2,264,493	\$	2,506,422	\$ 2,758,718
Wastewater	\$ 766,632	\$	843,684	\$	1,285,149	\$	1,492,261	\$	1,687,971	\$	1,842,131	\$ 2,072,821
Natural Gas	\$ 570,776	\$	628,577	\$	660,680	\$	672,493	\$	684,542	\$	694,635	\$ 707,142
Electric	\$ 3,700,398	\$	4,037,489	\$	3,532,182	\$	3,594,141	\$	3,657,253	\$	3,721,539	\$ 3,787,022
Revenue Total	\$ 6,504,775	\$	7,125,272	\$	7,224,745	\$	7,796,126	\$	8,294,258	\$	8,764,726	\$ 9,325,703
Expenses								-		-		
M&O												
Service Expenses	\$ (1,683,957)	\$	(2,665,878)	\$	(1,997,333)	\$	(2,122,237)	\$	(2,148,309)	\$	(2,174,821)	\$ (2,201,780)
Utility Admin.	\$ -	\$	-	\$	(1,256,014)	\$	(1,281,135)	\$	(1,306,757)	\$	(1,332,893)	\$ (1,359,550)
Resale	\$ (1,890,413)	\$	(2,190,064)	\$	(1,915,235)	\$	(1,970,709)	\$	(2,027,808)	\$	(2,086,580)	\$ (2,147,073)
Depreciation	\$-	\$	-	\$	-	\$	-	\$	-	\$	-	\$ -
M&O Total	\$ (3,574,370)	\$	(4,855,942)	\$	(5,168,582)	\$	(5,374,081)	\$	(5,482,875)	\$	(5,594,293)	\$ (5,708,404)
Non-operating Revenues (Expenses)								_				
Investment Income	\$-	\$	-	\$	-	\$	-	\$	-	\$	-	\$ -
Gain on Sale of Capital Assets	\$-	\$	-	\$	-	\$	-	\$	-	\$	-	\$ -
Interest and Fiscal Charges	\$ (171,033)	\$	(172,204)	\$	(171,634)	\$	-	\$	-	\$	-	\$ -
Bond Payment	\$ (731,033)	\$	(730,600)	\$	(502,000)	\$	(1,873,868)	\$	(1,795,776)	\$	(2,817,051)	\$ (2,815,678)
Non-operating Revenues (Expenses) Total	\$ (902,066)	\$	(902,804)	\$	(673,634)	\$	(1,873,868)	\$	(1,795,776)	\$	(2,817,051)	\$ (2,815,678)
Grants and Transfers								-		-		
Capital Grants and Contributions	\$-	\$	-	\$	-	\$	-	\$	-	\$	-	\$ -
Franchise Fee	\$-	\$	-	\$	(252,866)	\$	(272,864)	\$	(290,299)	\$	(306,765)	\$ (326,400)
Indirect Transfers	\$-	\$	-	\$	(387,625)	\$	(395,377)	\$	(403,285)	\$	(411,351)	\$ (419,578)
Transfers	\$ (847,745)	\$	(847,747)	\$	-	\$	-	\$	-	\$	-	\$ -
Grants and Transfers Total	\$ (847,745)	\$	(847,747)	\$	(640,491)	\$	(668,242)	\$	(693,584)	\$	(718,116)	\$ (745,977)
Net Rate Revenue		\$	518,779	\$	742,038	\$	(120,064)	\$	322,023	\$	(364,734)	\$ 55,644
Net Position, Beginning		\$	1,280,595	\$	1,799,374	\$	2,541,412	\$	2,421,347	\$	2,743,370	\$ 2,378,636
Net Position, End		\$	1,799,374	\$	2,541,412	\$	2,421,347	\$	2,743,370	\$	2,378,636	\$ 2,434,281

Summary and Conclusions

Castroville's utility systems are well positioned to meet its customers' need over the next several years. The City is projected to be very close, if not completely able, to meeting its cost of service needs should the market and operations and maintenance costs, accounting for historical inflation, remain relatively steady. Moreover, through adjusting rates, Castroville will be able to wholly carry out the projects requested on the capital improvement plan. While it is good policy to review and revise the cost of service study in several years to reflect changes to costs, market prices, and changes to customer behaviors, the City Council and Staff used the cost of service study as it should have – as one of many tools to ensure that the Utility provides reliable service at an affordable cost in a method that meets the needs and goals of the City and its residents.