CITY OF CASTROVILLE

2016 ELECTRIC, GAS, WATER AND WASTEWATER UTILITY COST OF SERVICE RATE STUDY AND LONG-TERM FINANCIAL FORECAST

October 2016

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CITY OF CASTROVILLE, TEXAS
CONSOLIDATED ELECTRIC, GAS, WATER and WASTEWATER
UTILITY COST OF SERVICE RATE STUDY AND LONG TERM FINANCIAL PLAN

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Acknowledgements

During the course of this rate study, several City of Castroville employees expended considerable time and effort in assisting the project team. These employees included the City Council, Marie Gelles, Ernesto Briones, Lawrence Heinrich and Kim Hanson. The project team owes a debt of gratitude to the hard work, dedication and professionalism of these individuals, without whom this project would not have been successfully completed.

The project team has relied upon the extensive data supplied by the City of Castroville. Thus, the integrity of the study is largely dependent upon the accuracy of this financial and volumetric data. Every effort has been made by the project team to validate and confirm the information contained herein prior to the preparation of the final study documents. This report presents no assurance or guarantee that the forecast contained herein will be consistent with actual results or performances. These represent forecasts based on a series of assumptions about future behavior, and are not guarantees. Any changes in assumptions or actual events may result in significant revisions to the forecast and its conclusions. The cash flow projections and debt service coverage calculations are not intended to present overall financial positions, results of operations, and/or cash flows for the periods indicated, in conformity with guidelines for presentation of a forecast established by the American Institute of Certified Public Accountants.

Section I

Section I - Introduction and Background

Project Background

In June 2016, the City of Castroville, Texas (City) engaged **Willdan Financial Services/ Economists.com ("Willdan")** to conduct a comprehensive rate study for their electric, gas, water, wastewater utilities. The City identified numerous objectives for this study, including but not limited to the following:

- A comprehensive analysis and evaluation of the electric, gas, water and wastewater systems' current cost of service and revenue requirements
- An estimate of current and forecast accounts, volumes and billing units for the ten year forecast period
- A forecast of operating expenses over the next decade, taking into consideration such factors as inflation, system growth, and implementation of capital projects
- A thorough review of each system's known capital improvement needs, as well as a determination of the need for funding capital requirements through the issuance of long-term debt
- The development of rate structures that would recover the City's cost of service, ensure just and reasonable treatment of identified customer classes, and maintain critical financial ratios

In conjunction with City staff, the project team evaluated several alternative rate structures which would enable the City to achieve these objectives while continuing to provide ratepayers with superior electric, gas, water and wastewater services. The analysis and recommendations presented in this study achieve all of the objectives outlined above.

Report Organization

The following sections of this report contain an in depth cost of service analysis for each of the utility's operating units, including the defined objectives specific to that utility. Each cost of service analysis calculates the overall cost of operating and maintaining the individual utility (electric, gas, water and wastewater) for the test year and the forecast period.

This report is organized into the following sections:

Section I – Introduction and Overview

- Outlines the background, general objectives and scope of this cost of service and rate study.
- Describes the organizational and managerial structure of the City.

Section II – Electric Rate Study

- Describes the methodology employed in an electric rate study.
- Compares the existing rate structure to rates charged by other similar electric utilities.
- Presents a comprehensive analysis of the City's electric customer usage, historical and forecast consumption, peak demand, and revenue requirement.
- Presents a rate structure projected to recover sufficient revenues to fund current and forecast electric operating and capital obligations. Also presented is an analysis of the impact on ratepayers.

Section III – Gas Rate Study

- Provides an overview of the management and organization of the City's gas services.
- Describes the existing rate structure, including a comparison to rates charged by other similar utilities.
- Presents both an historical and forecast overview of customer accounts and billing units, the current and forecast revenue requirement for the City's gas operations, and the proposed rate design alternatives.
- Presents a rate structure projected to recover sufficient revenues to fund current gas utility operating and capital obligations. Also presented is an analysis of the impact on ratepayers.

Section IV – Water and Wastewater Rate Study

- Describes the methodology employed in a water and wastewater rate study.
- Compares the existing rate structure to rates charged by nearby cities.
- Outlines the process of analyzing the current water and wastewater cost structure. The total current or "test year" revenue requirements are developed, and costs are functionalized between treatment, distribution/collection, administration and customer billing. Using the test year as a basis, costs are forecast for a period ten years into the future.
- Presents a rate structure projected to recover sufficient revenues to fund current water and wastewater operating and capital obligations. Also presented is an analysis of the impact on ratepayers.

City Background

Castroville, Texas is a historic town with a rich cultural heritage nestled in the Medina River Valley just 15 miles west of San Antonio. Prior to 1893, Castroville was the first county seat of Medina County. It is known as "The Little Alsace of Texas" because of its origins. The City has a total area of 2.5 square miles and according to the US Census Bureau the estimated population of 2,931 in 2015.

The town was founded in 1844 by Henri Castro, for whom the town is named. The first European emigrant settlers in this area were mostly Catholic farmers from Alsace, a region of France, brought over to fulfill Castro's contract to colonize vacant Texas Land. Calling themselves Alsatians, they were mostly of German decent speaking a dialect of German and French.

The first town colonized on the Medina River and west of San Antonio, Castroville and its fertile Texas land and invigorating climate was seen as having endless possibilities to the Europeans. Land in Europe was expensive and hard to come by and usually only promised to the first born son. Henri Castro and his "Free Texas Land" were a dream to these settlers.

The first settlers set sail for the America on November 4, 1843. The voyage lasted 66 days and they experienced hardships such as no laundry, no bath, cramped quarters and a cold climate. They landed in the port of Galveston on January 9, 1844 only to find out that they still must travel 200 miles inland to find their resting place. They began their long trek down the Spanish trail to San Antonio. They arrived in San Antonio and waited for their leader, Henri Castro. On September 1, 1844, Castro and 27 of the 700 original colonists started their journey to the site now known as Castroville. On September 3rd, the first colonists arrived at Castro's land grant on the Medina River.

They began constructing homes and the first Catholic Church which was named after the French King, St. Louis. On September 12th, the town was named Castro-Ville in honor of its founder. From this point on, the other colonists made the voyage west of San Antonio to Castroville and began cultivating their new land.

Mostly a farming community in the early days, the city of over 3,000 people now boasts agriculture, civic, commercial and industrial advancements. Castroville still has strong cultural ties to Alsace as many of its citizens are descendants of the original settlers who journeyed here from Alsace in 1844. It's the home to many who can trace their ancestry back to their sister city, Eguisheim, Alsace.

The Steinbach Haus (originally built between 1618 and 1648 in Wahlbach, France) was dismantled and reconstructed in Castroville in 1998. It was opened to the public in 2002.

City Government

The City operates under a Mayor-Council form of government. The Council consists of the Mayor and five Council members. The Board is comprised of five members possessing the same qualifications as elective officers of the City.

All changes to the City's electric, gas, water and wastewater rates must be approved by a vote of the City Council.

Table I-1 lists current serving City Council and City Senior Staff. The City utilizes standard governmental accounting procedures for its general and enterprise funds. The Fiscal Year begins on October 1st and ends on the following September 30th.

Table I-1

CITY OF CASTROVILLE, TX

CITY COUNCIL AND SENIOR STAFF - JULY 2016

City Council		Senior Staff	
Jeff Gardner	Mayor	Marie Gelles	City Administrator
Victor Ortiz Jr.	Mayor Pro Tem	Ernesto Briones	Finance Director
Jesus "Jesse" Mendoza	District 1	Law rence L Heinrich	Public Works Director
Kyle L McVay	District 2	Robert Koimn	Comm Dev Director
Phil King	District 3		
Eric Cherry	District 4		

Population – Historical, Current and Forecast

The City of Castroville has experienced slow population growth since 2000. The annual population growth rate between 2000 and 2015 was 0.63%. The City's population is forecast to remain stable over the next 5 to 10 years. **Chart I-2** shows historical, current and forecast population for the State of Texas, Medina County and the City of Castroville.

Chart I-2

CITY OF CASTROVILLE, TX

CURRENT AND FORECAST POPULATION

	State of Texas	% Annual Growth	Medina County	% Annual Growth	City of Castroville	% Annual Growth
2000	20,851,790		39,304		**2,664**	
2010	24,909,072	1.79%	46,006	1.59%	**2,680**	**0.06%**
2015	27,008,542	1.63%	48,417	1.03%	**2,931**	**1.81%**
P2020	29,108,012	0.50%	52,653	0.56%	**3,067**	**0.30%**
P2030	33,040,035	1.28%	59,694	1.26%	**3,477**	**1.26%**
P2040	36,877,046	1.10%	65,676	0.96%	**3,826**	**0.96%**
P2050	41,054,973	1.08%	70,896	0.77%	**4,130**	**0.77%**

Section II

Section II - Electric Rate Study

This section of the consolidated rate study presents a profile of the City's electric utility, the methodology used for developing the current and forecast cost of service, and rate recommendations.

The objective of this rate study is to provide the City and Council the critical information required to set a current and long-term rate policy that will recover sufficient revenues to fund operating and capital obligations while minimizing the impact on ratepayers. Additional objectives identified by the City for the electric rate study include but are not limited to the following:

- Calculate the overall cost of operating and maintaining the electric system in the test year FY 2017 and forecast for a 5-year period.
- Calculate the cost of service for each of the electric utility's defined customer classes. This requires allocating costs to customer classes based on the usage characteristics of each class.
- Prepare rate recommendations for City staff and management to evaluate. The primary objectives of the rate recommendations are to ensure that the City will recover sufficient revenues to fund all operating and capital obligations, to ensure the financial stability and viability of the electric utility, and to guarantee to the best extent possible that no customer class will be excessively burdened.

Electric Methodology

Determining an electric utility's total cost of service requires an analysis of both operating (O & M) and capital costs. The first step in the ratemaking process is known as **Functionalization,** which categorizes costs into the following functions:

Generation costs -- comprise the cost of electric purchased power costs

Transmission costs -- include the cost of transmitting electricity delivered to the City

Distribution costs -- comprise the cost of the local network that delivers electricity to customers (a.k.a. poles, wires, transformers, meters)

Customer costs -- include meter reading, billing and collection

Administration costs -- include general costs to staff and to administer the electric utility

The next step in the ratemaking process is **Classification** of the functionalized costs into the following three categories: **Capacity** or **Demand** costs which vary with meeting power demand (kW), including fixed production costs, transmission costs and a portion of distribution costs; **Energy** costs which vary with the level of energy consumption over time measured in kWh, including fuel and variable operations and maintenance expense; and **Customer** costs associated with the number of customers. Because of such factors as the numerous methods available to generate electricity (hydro, nuclear, oil, natural gas, coal, wind, geothermal, etc.), the various ways utilities can combine these resources, and the different cost allocation philosophies at the various US state public utility commissions, there is no single cost allocation philosophy that can be said to be the 'industry standard.' Therefore, the cost allocation methodology chosen for the City's rate design is consistent with cost allocation and rate design standards included in the National Association of Regulatory Commissioners (NARUC) *Electricity Cost Allocation Manual* (1992) and the Federal Energy Regulatory Commission *Handbook* (1983).

The final step in the ratemaking process is **Allocation** of the classified costs to customer classes. Demand costs are allocated to customer classes based on the **Coincident System Peak Responsibility Formula**, which allocates costs based on customer class demands in kW at the time of the system peak demand. This method recognizes the differences in the cost of providing service due to variations in the average and peak rates of use by a given customer class. It also recognizes customer related costs as a valid function.

Energy costs are allocated to customer classes based on annual kWh consumption and customer costs are allocated based on the number of customers.

The methodology described above and used to develop the cost of service and rate recommendations in this section is in wide use by a large number of municipalities, publicly owned and investor-owned utilities in the US.

CITY OF CASTROVILLE, TX
ELECTRIC COST OF SERVICE MODEL

10 Year Forecast
2017-2026

		Oct-15	Oct-16 2017	Oct-17 2018	2019	2020	2021	2022	2023	2024	2025	2026
MODEL Summary												
2016 08 23 -- Alt 1 - "Cost of Service"												
E.1 Residential - In												
Minimum Bill		$ 9.13	$ 9.40	$ 9.69	$ 9.98	$ 10.28	$ 10.69	$ 11.01	$ 11.34	$ 11.68	$ 12.03	$ 12.39
Energy per kWh	All kWh	0.1266	0.1304	0.1343	0.1383	0.1425	0.1482	0.1526	0.1572	0.1619	0.1668	0.1718
Residential Monthly Charges												
500 kWh												
Total Electric Charges		$ 72.43	$ 74.60	$ 76.84	$ 79.15	$ 81.52	$ 84.78	$ 87.32	$ 89.94	$ 92.64	$ 95.42	$ 98.28
			$ 2.17	$ 2.24	$ 2.31	$ 2.37	$ 3.26	$ 2.54	$ 2.62	$ 2.70	$ 2.78	$ 2.86
1,000 kWh												
Total		$ 135.73	$ 139.80	$ 144.00	$ 148.32	$ 152.77	$ 158.88	$ 163.64	$ 168.55	$ 173.61	$ 178.82	$ 184.18
			$ 4.07	$ 4.19	$ 4.32	$ 4.45	$ 6.11	$ 4.77	$ 4.91	$ 5.06	$ 5.21	$ 5.36
2,000 kWh												
Total		$ 262.33	$ 270.20	$ 278.31	$ 286.66	$ 295.25	$ 307.06	$ 316.28	$ 325.77	$ 335.54	$ 345.60	$ 355.97
			$ 7.87	$ 8.11	$ 8.35	$ 8.60	$ 11.81	$ 9.21	$ 9.49	$ 9.77	$ 10.07	$ 10.37

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CITY OF CASTROVILLE, TX
ELECTRIC COST OF SERVICE MODEL

10 Year Forecast
2017-2026

	Oct-15	Oct-16 2017	Oct-17 2018	2019	2020	2021	2022	2023	2024	2025	2026
MODEL Summary											
2016 08 23 -- Alt 1 - "Cost of Service"											
Revenues and Expenses											
Beginning Fund Balance	$ -	$ 120,936	$ 333,091	$ 572,166	$ 839,446	$ 956,615	$ 1,109,834	$ 1,296,985	$ 1,519,584	$ 1,779,189	
Electric Rate Revenues		3,956,885	4,098,149	4,243,849	4,394,603	4,591,179	4,757,712	4,926,304	5,100,729	5,281,186	5,467,880
Non-Rate Revenues		62,923	62,923	62,923	62,923	62,923	62,923	62,923	62,923	62,923	62,923
Total Revenues		**4,019,807**	**4,161,072**	**4,306,772**	**4,457,525**	**4,654,102**	**4,820,635**	**4,989,227**	**5,163,652**	**5,344,109**	**5,530,802**
COST OF SERVICE											
Operating Expense											
Personnel Services		176,904	184,540	192,591	201,085	210,051	219,520	229,527	240,108	251,302	263,151
Supplies		41,000	42,421	43,891	45,410	46,981	48,606	50,286	52,022	53,818	55,674
Purchased Power		2,234,666	2,234,666	2,301,706	2,370,757	2,441,880	2,515,136	2,590,590	2,668,308	2,748,357	2,830,808
Contracted Services		71,500	73,645	75,854	78,130	80,474	82,888	85,375	87,936	90,574	93,291
Repairs & Maintenance		22,500	23,175	23,870	24,586	25,324	26,084	26,866	27,672	28,502	29,357
Sub-Total		2,546,570	2,558,447	2,637,912	2,719,968	2,804,710	2,892,234	2,982,644	3,076,047	3,172,554	3,272,283
Transfers and Allocations											
Transfer to GF for ROW		27,128	27,942	28,780	29,643	30,533	31,449	32,392	33,364	34,365	35,396
Transfer Transfer to GF for ROW		307,522	316,748	326,250	336,038	346,119	356,502	367,197	378,213	389,560	401,246
Non-Departmental Allocation		67,887	69,924	72,021	74,182	76,407	78,700	81,061	83,492	85,997	88,577
Utility Administration Allocation		773,764	796,977	820,886	845,513	870,878	897,005	923,915	951,632	980,181	1,009,587
Allocations		-	-	-	-	-	-	-	-	-	-
Sub-Total		1,176,301	1,211,590	1,247,938	1,285,376	1,323,937	1,363,655	1,404,565	1,446,702	1,490,103	1,534,806
Total Operating Expenses		3,722,871	3,770,037	3,885,850	4,005,344	4,128,647	4,255,889	4,387,209	4,522,749	4,662,657	4,807,089
Net Revenues for Cap Outlays and Debt Service		296,936	391,035	420,922	452,181	525,455	564,746	602,018	640,903	681,452	723,714
Capital Outlays		176,000	178,880	181,846	184,902	158,049	161,290	164,629	168,068	171,610	175,258
Debt Service -- Current		-	-	-	-	-	-	-	-	-	-
Debt Service -- Future		-	-	-	-	250,237	250,237	250,237	250,237	250,237	208,531
Total Debt Service		-	-	-	-	250,237	250,237	250,237	250,237	250,237	208,531
Total Cost of Service		**3,898,871**	**3,948,917**	**4,067,696**	**4,190,246**	**4,536,932**	**4,667,416**	**4,802,075**	**4,941,053**	**5,084,504**	**5,190,877**
Net Cash Flow Available for Contingency		**120,936**	**212,155**	**239,075**	**267,279**	**117,169**	**153,219**	**187,152**	**222,598**	**259,605**	**339,925**
Percent of Revenues		3.0%	5.1%	5.6%	6.0%	2.5%	3.2%	3.8%	4.3%	4.9%	6.1%
Ending Fund Balance		120,936	333,091	572,166	839,446	956,615	1,109,834	1,296,985	1,519,584	1,779,189	2,119,114
Financial Ratios											
Debt Coverage		-	-	-	-	2.10	2.26	2.41	2.56	2.72	3.47
Days of Operating Expenses		12	32	54	76	85	95	108	123	139	161

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CITY OF CASTROVILLE, TX
ELECTRIC COST OF SERVICE MODEL

10 Year Forecast
2017-2026

	Oct-15	Oct-16 2017	Oct-17 2018	2019	2020	2021	2022	2023	2024	2025	2026
MODEL Summary											
2016 08 23 -- Alt 1 - "Cost of Service"											
Accounts and Usage											
Total Accounts		1,501	1,508	1,515	1,522	1,529	1,536	1,543	1,550	1,557	1,564
New Accounts			7	7	7	7	7	7	7	7	7
Avg. Annual Growth Rate			0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.4%
Total Consumption											
E.1 Residential - In		11,866,741	11,931,375	11,996,008	12,060,642	12,125,276	12,189,909	12,254,543	12,319,177	12,383,810	12,448,444
E.2 Residential - Out		91,068	91,068	91,068	91,068	91,068	91,068	91,068	91,068	91,068	91,068
E.3 Residential- Senior		3,219,217	3,219,217	3,219,217	3,219,217	3,219,217	3,219,217	3,219,217	3,219,217	3,219,217	3,219,217
E.4 Commercial - In		11,423,279	11,514,665	11,606,051	11,697,438	11,788,824	11,880,210	11,971,596	12,062,983	12,154,369	12,245,755
E.5 Commercial - Out		66,300	66,300	66,300	66,300	66,300	66,300	66,300	66,300	66,300	66,300
E.6 City Accounts		2,158,694	2,158,694	2,158,694	2,158,694	2,158,694	2,158,694	2,158,694	2,158,694	2,158,694	2,158,694
E.7 0		-	-	-	-	-	-	-	-	-	-
Total System		**28,825,299**	**28,981,319**	**29,137,339**	**29,293,359**	**29,449,379**	**29,605,398**	**29,761,418**	**29,917,438**	**30,073,458**	**30,229,478**

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CITY OF CASTROVILLE, TX
ELECTRIC COST OF SERVICE MODEL

Input Area -- Rate Calculator
Scen: 2016 08 23 -- Alt 1 - "Cost of Service"

				Oct-15	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
ELECTRIC RATES				Oct-15	Oct-16	Oct-17	Oct-18	Oct-19	Oct-20	Oct-21	Oct-22	Oct-23	Oct-24	Oct-25
Month of Adjustment (Oct = 1)					1	1	1	1	1	1	1	1	1	1
Annual Adjustment														
E.1	Residential - In				3.00%	3.00%	3.00%	3.00%	4.00%	3.00%	3.00%	3.00%	3.00%	3.00% 3
E.2	Residential - Out				3.00%	3.00%	3.00%	3.00%	4.00%	3.00%	3.00%	3.00%	3.00%	3.00%
E.3	Residential- Senior				3.00%	3.00%	3.00%	3.00%	4.00%	3.00%	3.00%	3.00%	3.00%	3.00%
E.4	Commercial - In				3.00%	3.00%	3.00%	3.00%	4.00%	3.00%	3.00%	3.00%	3.00%	3.00%
E.5	Commercial - Out				3.00%	3.00%	3.00%	3.00%	4.00%	3.00%	3.00%	3.00%	3.00%	3.00%
E.6	City Accounts				3.00%	3.00%	3.00%	3.00%	4.00%	3.00%	3.00%	3.00%	3.00%	3.00%
E.7	0				0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Outside City				25.00%	25.00%	25.00%	25.00%	25.00%	25.00%	25.00%	25.00%	25.00%	25.00%
ELECTRIC Monthly Charge														
E.1	**Residential - In**													
Minimum Bill				$ 9.13	$ 9.40	$ 9.69	$ 9.98	$ 10.28	$ 10.69	$ 11.01	$ 11.34	$ 11.68	$ 12.03	$ 12.39
Winter (Oct - April)														
Energy per kWh		1	1,500	0.1266	0.1304	0.1343	0.1383	0.1425	0.1482	0.1526	0.1572	0.1619	0.1668	0.1718
		1,501	Above	0.1266	0.1304	0.1343	0.1383	0.1425	0.1482	0.1526	0.1572	0.1619	0.1668	0.1718
Demand			kW	-	-	-	-	-	-	-	-	-	-	-
Summer (May - September)														
Energy per k\		All	kWh	0.1266	0.1304	0.1343	0.1383	0.1425	0.1482	0.1526	0.1572	0.1619	0.1668	0.1718
Demand			kW	-	-	-	-	-	-	-	-	-	-	-
E.2	**Residential - Out**													
Minimum Bill				$ 9.13	$ 11.75	$ 12.11	$ 12.47	$ 12.84	$ 13.36	$ 13.76	$ 14.17	$ 14.60	$ 15.04	$ 15.49
Winter (Oct - April)														
Energy per kWh		1	1,500	0.1266	0.1630	0.1679	0.1729	0.1781	0.1852	0.1908	0.1965	0.2024	0.2085	0.2147
		1,501	Above	0.1266	0.1630	0.1679	0.1729	0.1781	0.1852	0.1908	0.1965	0.2024	0.2085	0.2147
Demand			kW	-	-	-	-	-	-	-	-	-	-	-
Summer (May - September)														
Energy per k\		All	kWh	0.1266	0.1630	0.1679	0.1729	0.1781	0.1852	0.1908	0.1965	0.2024	0.2085	0.2147
Demand			kW	-	-	-	-	-	-	-	-	-	-	-

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CITY OF CASTROVILLE, TX
ELECTRIC COST OF SERVICE MODEL

Input Area -- Rate Calculator
Scen: 2016 08 23 -- Alt 1 - "Cost of Service"

			Oct-15	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
E.3 Residential- Senior													
Minimum Bill			$ 8.67	$ 8.93	$ 9.20	$ 9.48	$ 9.76	$ 10.15	$ 10.46	$ 10.77	$ 11.09	$ 11.43	$ 11.77
Winter (Oct - April)													
Energy per kWh	1	1,500	0.1203	0.1239	0.1276	0.1314	0.1354	0.1408	0.1450	0.1494	0.1538	0.1584	0.1632
	1,501	Above	0.1203	0.1239	0.1276	0.1314	0.1354	0.1408	0.1450	0.1494	0.1538	0.1584	0.1632
Demand		kW	-	-	-	-	-	-	-	-	-	-	-
Summer (May - September)													
Energy per k\			0.1203	0.1239	0.1276	0.1314	0.1354	0.1408	0.1450	0.1494	0.1538	0.1584	0.1632
Demand		kW	-	-	-	-	-	-	-	-	-	-	-
E.4 Commercial - In													
Minimum Bill			$ 23.97	$ 24.69	$ 25.43	$ 26.19	$ 26.98	$ 28.06	$ 28.90	$ 29.77	$ 30.66	$ 31.58	$ 32.53
Winter (Oct - April)													
Energy per kWh	1	1,500	0.1266	0.1304	0.1343	0.1383	0.1425	0.1482	0.1526	0.1572	0.1619	0.1668	0.1718
	1,501	Above	0.1266	0.1304	0.1343	0.1383	0.1425	0.1482	0.1526	0.1572	0.1619	0.1668	0.1718
Demand		kW	-	-	-	-	-	-	-	-	-	-	-
Summer (May - September)													
Energy per k\	1	1,500	0.1266	0.1304	0.1343	0.1383	0.1425	0.1482	0.1526	0.1572	0.1619	0.1668	0.1718
	1,501	Above	0.1266	0.1304	0.1343	0.1383	0.1425	0.1482	0.1526	0.1572	0.1619	0.1668	0.1718
Demand		kW	-	-	-	-	-	-	-	-	-	-	-
E.5 Commercial - Out													
Minimum Bill			$ 23.97	$ 30.86	$ 31.79	$ 32.74	$ 33.72	$ 35.07	$ 36.12	$ 37.21	$ 38.32	$ 39.47	$ 40.66
Winter (Oct - April)													
Energy per kWh	1	1,500	0.1266	$ 0.1630	$ 0.1679	$ 0.1729	$ 0.1781	$ 0.1852	$ 0.1908	$ 0.1965	$ 0.2024	$ 0.2085	$ 0.2147
	1,501	Above	0.1266	$ 0.1630	$ 0.1679	$ 0.1729	$ 0.1781	$ 0.1852	$ 0.1908	$ 0.1965	$ 0.2024	$ 0.2085	$ 0.2147
Demand		kW	-	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Summer (May - September)													
Energy per k\	All	kWh	0.1266	$ 0.1630	$ 0.1679	$ 0.1729	$ 0.1781	$ 0.1852	$ 0.1908	$ 0.1965	$ 0.2024	$ 0.2085	$ 0.2147
Demand		kW	-	-	-	-	-	-	-	-	-	-	-

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CITY OF CASTROVILLE, TX
ELECTRIC COST OF SERVICE MODEL

Input Area -- Rate Calculator
Scen: 2016 08 23 -- Alt 1 - "Cost of Service"

			Oct-15	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
E.6 City Accounts													
Minimum Bill			$ 23.97	$ 24.69	$ 25.43	$ 26.19	$ 26.98	$ 28.06	$ 28.90	$ 29.77	$ 30.66	$ 31.58	$ 32.53
Winter (Oct - April)													
Energy per k\	1	1,500	0.1266	0.1304	0.1343	0.1383	0.1425	0.1482	0.1526	0.1572	0.1619	0.1668	0.1718
	1,501	Above	0.1266	0.1304	0.1343	0.1383	0.1425	0.1482	0.1526	0.1572	0.1619	0.1668	0.1718
Demand		kW	-	-	-	-	-	-	-	-	-	-	-
Summer (May - September)													
Energy per k\	All	kWh	0.1266	0.1304	0.1343	0.1383	0.1425	0.1482	0.1526	0.1572	0.1619	0.1668	0.1718
Demand		kW	-	-	-	-	-	-	-	-	-	-	-
E.7	**0**												
Minimum Bill				$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Winter (Oct - April)													
Energy per k\	1	1,500		-	-	-	-	-	-	-	-	-	-
	1,501	Above		-	-	-	-	-	-	-	-	-	-
Demand		kW		-	-	-	-	-	-	-	-	-	-
Summer (May - September)													
Energy per k\	All	kWh		-	-	-	-	-	-	-	-	-	-
Demand		kW		-	-	-	-	-	-	-	-	-	-

Summary of Results -- Rate Calculator

Revenues Less Revenue Requirement											
Fuel Adjustment Revenues	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Base Revenues	3,956,885	4,098,149	4,243,849	4,394,603	4,591,179	4,757,712	4,926,304	5,100,729	5,281,186	5,467,880
Total Revenues	3,956,885	4,098,149	4,243,849	4,394,603	4,591,179	4,757,712	4,926,304	5,100,729	5,281,186	5,467,880
Less Cost of Service	3,835,948	3,885,994	4,004,774	4,127,323	4,474,010	4,604,494	4,739,152	4,878,131	5,021,581	5,127,955
Net Revenues	**120,936**	**212,155**	**239,075**	**267,279**	**117,169**	**153,219**	**187,152**	**222,598**	**259,605**	**339,925**
	3.1%	5.2%	5.6%	6.1%	2.6%	3.2%	3.8%	4.4%	4.9%	6.2%
Debt Coverage Calculation	-	-	-	-	**2.10**	**2.26**	**2.41**	**2.56**	**2.72**	**3.47**

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Section III

Section III - Gas Rate Study

This section of the consolidated rate study and long term financial plan focuses on the revenue and cost of service forecast for the City's natural gas utility. This section will include analysis of the City's cost of service for the purchase of natural gas and distribution to residential and commercial customer classes and the resulting rate recommendations.

Using cost of service and projected accounts as a base, revenues by customer class are forecast for the ten-year period. Total revenues include non-rate revenues from sources other than monthly natural gas fees. The forecast also includes recommendations for the rate adjustments that will be required to ensure that the utility recovers sufficient revenues to fund operating and capital expenses.

The PMUB's natural gas utility focuses on contracting for gas and distribution to residential and commercial accounts. Beginning in May 2016 the PMUB contracted with Constellation New Energy for the supply of natural gas and Oklahoma Natural Gas for transportation.

Gas Methodology

Determining a gas utility's total cost of service requires an analysis of both operating (O & M) and capital costs. The first step in the ratemaking process is known as **Functionalization,** which categorizes costs into the following functions:

Supply costs -- comprise the cost of gas purchased

Distribution costs -- comprises the cost of the local network that delivers gas to customers

Customer costs -- include meter reading, billing and collection

Administration costs -- include general costs to staff and to administer the gas utility.

The step in the ratemaking process is **Allocation** of the classified costs to customer classes. Supply costs are allocated to customer classes. Gas costs are allocated to customer classes based on annual consumption and customer costs are allocated based on the number of customers.

The methodology described above and used to develop the cost of service and rate recommendations in this section is in wide use by a large number of municipalities, publicly owned and investor-owned gas utilities in the US.

CITY OF CASTROVILLE
GAS COST OF SERVICE MODEL

	Oct-15	Oct-16 2017	Oct-17 2018	2019	2020	2021	2022	2023	2024	2025	2026

Forecast Summary
Scenario: ***2016 08 16 - Alt 1 - Cost of Service***

1 GAS Rates

	Oct-15	Oct-16	Oct-17	Oct-18	Oct-19	Oct-20	Oct-21	Oct-22	Oct-23	Oct-24	Oct-25
Residential - In											
Service Fee	$ 10.73	$ 13.09	$ 13.48	$ 13.89	$ 14.30	$ 14.73	$ 15.18	$ 15.18	$ 15.18	$ 15.18	$ 15.18
Usage Charge	8.22	10.03	10.33	10.64	10.96	11.29	11.63	11.63	11.63	11.63	11.63
Cost of Gas to City	3.19	7.09	7.30	7.52	7.75	7.98	8.22	8.47	8.72	8.98	9.25

2 Residential Inside Monthly Bill

			Oct-15	Oct-16	Oct-17	Oct-18	Oct-19	Oct-20	Oct-21	Oct-22	Oct-23	Oct-24	Oct-25
2,000 CF	Total	Base Charge	$ 10.73	$ 13.09	$ 13.48	$ 13.89	$ 14.30	$ 14.73	$ 15.18	$ 15.18	$ 15.18	$ 15.18	$ 15.18
		Usage Charge	16.44	20.06	20.66	21.28	21.92	22.57	23.25	23.25	23.25	23.25	23.25
			27.17	33.15	34.14	35.17	36.22	37.31	38.43	38.43	38.43	38.43	38.43
				5.98	0.99	1.02	1.05	1.09	1.12	-	-	-	-
4,000 CF	Total	Base Charge	$ 10.73	$ 13.09	$ 13.48	$ 13.89	$ 14.30	$ 14.73	$ 15.18	$ 15.18	$ 15.18	$ 15.18	$ 15.18
		Usage Charge	32.88	40.11	41.32	42.56	43.83	45.15	46.50	46.50	46.50	46.50	46.50
			43.61	53.20	54.80	56.44	58.14	59.88	61.68	61.68	61.68	61.68	61.68
				9.59	1.60	1.64	1.69	1.74	1.80	-	-	-	-
6,000 CF	Total	Base Charge	$ 10.73	$ 13.09	$ 13.48	$ 13.89	$ 14.30	$ 14.73	$ 15.18	$ 15.18	$ 15.18	$ 15.18	$ 15.18
		Usage Charge	49.32	60.17	61.98	63.83	65.75	67.72	69.75	69.75	69.75	69.75	69.75
			60.05	73.26	75.46	77.72	80.05	82.46	84.93	84.93	84.93	84.93	84.93
				13.21	2.20	2.26	2.33	2.40	2.47	-	-	-	-

3 Fund Balance, Revenues and Expenses

Revenues and Expenses

	Oct-15	Oct-16	Oct-17	Oct-18	Oct-19	Oct-20	Oct-21	Oct-22	Oct-23	Oct-24	Oct-25
Beginning Fund Balance		$ -	**10,633**	**33,268**	**109,386**	**190,694**	**277,408**	**369,751**	**450,685**	**518,143**	**571,558**
Gas Rate Revenues		$ 513,336	$ 539,642	$ 559,382	$ 579,795	$ 600,906	$ 622,738	$ 628,044	$ 631,811	$ 635,557	$ 639,281
City Cost of Gas Revenues		264,598	274,258	284,242	294,562	305,228	316,251	327,645	339,420	351,590	364,167
Non-Rate Revenues		14,886	14,886	14,886	14,886	14,886	14,886	14,886	14,886	14,886	14,886
Total Revenues		**792,820**	**828,786**	**858,510**	**889,243**	**921,020**	**953,876**	**970,574**	**986,117**	**1,002,032**	**1,018,334**

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CITY OF CASTROVILLE
GAS COST OF SERVICE MODEL

Forecast Summary
Scenario: ***2016 08 16 - Alt 1 - Cost of Service***

	Oct-15	Oct-16 2017	Oct-17 2018	2019	2020	2021	2022	2023	2024	2025	2026
4 COST OF SERVICE											
Operating Expense											
Personnel Services	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Supplies		4,000	4,148	4,301	4,460	4,624	4,795	4,971	5,153	5,342	5,538
Purchased Gas		275,000	285,175	295,713	306,626	317,928	329,631	341,750	354,298	367,292	380,746
Contracted Services		127,800	131,634	135,583	139,651	143,840	148,155	152,600	157,178	161,893	166,750
Repairs & Maintenance		5,000	5,150	5,305	5,464	5,628	5,796	5,970	6,149	6,334	6,524
Transfers out		271,887	280,044	288,445	297,098	306,011	315,192	324,647	334,387	344,418	354,751
Allocations		-	-	-	-	-	-	-	-	-	-
Total Expense		683,687	706,151	729,347	753,299	778,031	803,569	829,938	857,166	885,280	914,308
Net Revenues Available for Capital Outlays/Debt Service		109,133	122,635	129,163	135,945	142,989	150,307	140,637	128,952	116,753	104,026
Capital Outlays		98,500	100,000	53,045	54,636	56,275	57,964	59,703	61,494	63,339	65,239
Debt Service - Current and Future		-	-	-	-	-	-	-	-	-	-
Total Cost of Service		782,187	806,151	782,392	807,935	834,306	861,532	889,640	918,659	948,618	979,547
Contingency - Net In/(Dec) in Fund Balance		**$ 10,633**	**$ 22,635**	**$ 76,118**	**$ 81,308**	**$ 86,714**	**$ 92,343**	**$ 80,934**	**$ 67,458**	**$ 53,414**	**$ 38,787**
Percent of COS		1.4%	2.8%	9.7%	10.1%	10.4%	10.7%	9.1%	7.3%	5.6%	4.0%
Ending Gas Fund Balance		**$ 10,633**	**$ 33,268**	**$ 109,386**	**$ 190,694**	**$ 277,408**	**$ 369,751**	**$ 450,685**	**$ 518,143**	**$ 571,558**	**$ 610,345**
Revenue Adequacy Tests											
Debt Coverage		-	-	-	-	-	-	-	-	-	-
Ending Fund Balance		10,633	33,268	109,386	190,694	277,408	369,751	450,685	518,143	571,558	610,345
Days of Operating Expenses		29	91	300	522	760	1,013	1,235	1,420	1,566	1,672
5 Total Accounts											
Gas Accounts											
Total Accounts		857	863	869	875	881	887	893	899	905	911
New Accounts		-	6	6	6	6	6	6	6	6	6
Avg. Annual Growth Rate			0.70%	0.70%	0.69%	0.69%	0.68%	0.68%	0.67%	0.67%	0.66%

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CITY OF CASTROVILLE
GAS COST OF SERVICE MODEL

Forecast Summary
Scenario: ***2016 08 16 - Alt 1 - Cost of Service***

		Oct-15	Oct-16 2017	Oct-17 2018	2019	2020	2021	2022	2023	2024	2025	2026
6	**Annual Volume**											
	Gas Volume											
	Residential - In		17,902	17,950	17,998	18,045	18,093	18,140	18,188	18,235	18,282	18,329
	Residential - Out		267	267	267	267	267	267	267	267	267	267
	Commercial - In		15,972	16,160	16,346	16,530	16,711	16,891	17,069	17,245	17,419	17,591
	Commercial - Out		3,125	3,125	3,125	3,125	3,125	3,125	3,125	3,125	3,125	3,125
	City Accounts		53	53	53	53	53	53	53	53	53	53
	-		-	-	-	-	-	-	-	-	-	-
	-		-	-	-	-	-	-	-	-	-	-
	-		-	-	-	-	-	-	-	-	-	-
	Total System		37,319	37,555	37,788	38,020	38,249	38,476	38,701	38,924	39,145	39,365

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CITY OF CASTROVILLE
GAS COST OF SERVICE MODEL

Oct-15	Oct-16 / 2017	Oct-17 / 2018	2019	2020	2021	2022	2023	2024	2025	2026

Forecast Summary
Scenario: ***2016 08 16 - Alt 1 - Cost of Service***

1 **GAS Rates**

		Oct-15	Oct-16	Oct-17	Oct-18	Oct-19	Oct-20	Oct-21	Oct-22	Oct-23	Oct-24	Oct-25
Residential - In												
Service Fee		$ 10.73	$ 13.09	$ 13.48	$ 13.89	$ 14.30	$ 14.73	$ 15.18	$ 15.18	$ 15.18	$ 15.18	$ 15.18
Usage Charge	(Per 1,000 CF)	8.22	10.03	10.33	10.64	10.96	11.29	11.63	11.63	11.63	11.63	11.63
Cost of Gas to City		3.19	7.09	7.30	7.52	7.75	7.98	8.22	8.47	8.72	8.98	9.25
Residential - Out												
Service Fee		$ 10.73	$ 16.36	$ 16.85	$ 17.36	$ 17.88	$ 18.42	$ 18.97	$ 18.97	$ 18.97	$ 18.97	$ 18.97
Usage Charge	(Per 1,000 CF)	8.22	12.54	12.91	13.30	13.70	14.11	14.53	14.53	14.53	14.53	14.53
Cost of Gas to City		3.19	7.09	7.30	7.52	7.75	7.98	8.22	8.47	8.72	8.98	9.25
Commercial - In												
Service Fee		$ 13.11	$ 15.99	$ 16.47	$ 16.97	$ 17.48	$ 18.00	$ 18.54	$ 18.54	$ 18.54	$ 18.54	$ 18.54
Usage Charge	(Per 1,000 CF)	8.22	10.03	10.33	10.64	10.96	11.29	11.63	11.63	11.63	11.63	11.63
Cost of Gas to City		3.19	7.09	7.30	7.52	7.75	7.98	8.22	8.47	8.72	8.98	9.25
Commercial - Out												
Service Fee		$ 13.11	$ 19.99	$ 20.59	$ 21.21	$ 21.85	$ 22.50	$ 23.18	$ 23.18	$ 23.18	$ 23.18	$ 23.18
Usage Charge	(Per 1,000 CF)	8.22	12.54	12.91	13.30	13.70	14.11	14.53	14.53	14.53	14.53	14.53
Cost of Gas to City		3.19	7.09	7.30	7.52	7.75	7.98	8.22	8.47	8.72	8.98	8.98
City Accounts												
Service Fee		$ 13.11	$ 15.99	$ 16.47	$ 16.97	$ 17.48	$ 18.00	$ 18.54	$ 18.54	$ 18.54	$ 18.54	$ 18.54
Usage Charge	(Per 1,000 CF)	8.22	10.03	10.33	10.64	10.96	11.29	11.63	11.63	11.63	11.63	11.63
Cost of Gas to City		3.19	7.09	7.30	7.52	7.75	7.98	8.22	8.47	8.72	8.98	8.98

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CITY OF CASTROVILLE
GAS COST OF SERVICE MODEL

	Oct-15	Oct-16 2017	Oct-17 2018	2019	2020	2021	2022	2023	2024	2025	2026

Forecast Summary
Scenario: ***2016 08 18 - Alt 2 - Fund Bal Drawdown***

1 GAS Rates

	Oct-15	Oct-16	Oct-17	Oct-18	Oct-19	Oct-20	Oct-21	Oct-22	Oct-23	Oct-24	Oct-25
Residential - In											
Service Fee	$ 10.73	$ 11.53	$ 12.11	$ 12.47	$ 12.85	$ 13.23	$ 13.63	$ 14.04	$ 14.46	$ 14.90	$ 15.34
Usage Charge	8.22	8.84	9.28	9.56	9.84	10.14	10.44	10.76	11.08	11.41	11.75
Cost of Gas to City	3.19	7.09	7.30	7.52	7.75	7.98	8.22	8.47	8.72	8.98	9.25

2 Residential Inside Monthly Bill

2,000 CF	Total	Base Charge	$ 10.73	$ 11.53	$ 12.11	$ 12.47	$ 12.85	$ 13.23	$ 13.63	$ 14.04	$ 14.46	$ 14.90	$ 15.34
		Usage Charge	16.44	17.67	18.56	19.11	19.69	20.28	20.89	21.51	22.16	22.82	23.51
			27.17	29.21	30.67	31.59	32.54	33.51	34.52	35.55	36.62	37.72	38.85
				2.04	1.46	0.92	0.95	0.98	1.01	1.04	1.07	1.10	1.13
4,000 CF	Total	Base Charge	$ 10.73	$ 11.53	$ 12.11	$ 12.47	$ 12.85	$ 13.23	$ 13.63	$ 14.04	$ 14.46	$ 14.90	$ 15.34
		Usage Charge	32.88	35.35	37.11	38.23	39.37	40.55	41.77	43.02	44.32	45.64	47.01
			43.61	46.88	49.22	50.70	52.22	53.79	55.40	57.07	58.78	60.54	62.36
				3.27	2.34	1.48	1.52	1.57	1.61	1.66	1.71	1.76	1.82
6,000 CF	Total	Base Charge	$ 10.73	$ 11.53	$ 12.11	$ 12.47	$ 12.85	$ 13.23	$ 13.63	$ 14.04	$ 14.46	$ 14.90	$ 15.34
		Usage Charge	49.32	53.02	55.67	57.34	59.06	60.83	62.66	64.54	66.47	68.47	70.52
			60.05	64.55	67.78	69.81	71.91	74.07	76.29	78.58	80.93	83.36	85.86
				4.50	3.23	2.03	2.09	2.16	2.22	2.29	2.36	2.43	2.50

3 Fund Balance, Revenues and Expenses

Revenues and Expenses

Beginning Fund Balance		**$ 100,000**	**53,781**	**20,763**	**39,968**	**62,286**	**87,862**	**116,846**	**149,395**	**185,672**	**225,846**
Gas Rate Revenues		$ 456,485	$ 483,989	$ 502,469	$ 520,805	$ 539,769	$ 559,379	$ 579,659	$ 600,630	$ 622,317	$ 644,742
City Cost of Gas Revenues		264,598	274,258	284,242	294,562	305,228	316,251	327,645	339,420	351,590	364,167
Non-Rate Revenues		14,886	14,886	14,886	14,886	14,886	14,886	14,886	14,886	14,886	14,886
Total Revenues		**735,968**	**773,133**	**801,597**	**830,253**	**859,882**	**890,516**	**922,189**	**954,936**	**988,792**	**1,023,795**

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CITY OF CASTROVILLE
GAS COST OF SERVICE MODEL

Forecast Summary
Scenario: ***2016 08 18 - Alt 2 - Fund Bal Drawdown***

	Oct-15	Oct-16 2017	Oct-17 2018	2019	2020	2021	2022	2023	2024	2025	2026
4 **COST OF SERVICE**											
Operating Expense											
Personnel Services	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Supplies		4,000	4,148	4,301	4,460	4,624	4,795	4,971	5,153	5,342	5,538
Purchased Gas		275,000	285,175	295,713	306,626	317,928	329,631	341,750	354,298	367,292	380,746
Contracted Services		127,800	131,634	135,583	139,651	143,840	148,155	152,600	157,178	161,893	166,750
Repairs & Maintenance		5,000	5,150	5,305	5,464	5,628	5,796	5,970	6,149	6,334	6,524
Transfers out		271,887	280,044	288,445	297,098	306,011	315,192	324,647	334,387	344,418	354,751
Allocations		-	-	-	-	-	-	-	-	-	-
Total Expense		683,687	706,151	729,347	753,299	778,031	803,569	829,938	857,166	885,280	914,308
Net Revenues Available for Capital Outlays/Debt Service		52,281	66,982	72,250	76,955	81,851	86,948	92,252	97,770	103,513	109,487
Capital Outlays		98,500	100,000	53,045	54,636	56,275	57,964	59,703	61,494	63,339	65,239
Debt Service - Current and Future		-	-	-	-	-	-	-	-	-	-
Total Cost of Service		782,187	806,151	782,392	807,935	834,306	861,532	889,640	918,659	948,618	979,547
Contingency - Net In/(Dec) in Fund Balance		$ **(46,219)**	$ **(33,018)**	$ **19,205**	$ **22,318**	$ **25,576**	$ **28,984**	$ **32,549**	$ **36,277**	$ **40,174**	$ **44,248**
Percent of COS		-5.9%	-4.1%	2.5%	2.8%	3.1%	3.4%	3.7%	3.9%	4.2%	4.5%
Ending Gas Fund Balance		$ **53,781**	$ **20,763**	$ **39,968**	$ **62,286**	$ **87,862**	$ **116,846**	$ **149,395**	$ **185,672**	$ **225,846**	$ **270,094**
Revenue Adequacy Tests											
Debt Coverage		-	-	-	-	-	-	-	-	-	-
Ending Fund Balance		53,781	20,763	39,968	62,286	87,862	116,846	149,395	185,672	225,846	270,094
Days of Operating Expenses		147	57	110	171	241	320	409	509	619	740

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CITY OF CASTROVILLE
GAS COST OF SERVICE MODEL

Forecast Summary
Scenario: ***2016 08 18 - Alt 2 - Fund Bal Drawdown***

		Oct-15	Oct-16 2017	Oct-17 2018	2019	2020	2021	2022	2023	2024	2025	2026
5	**Total Accounts**											
	Gas Accounts											
	Total Accounts		857	863	869	875	881	887	893	899	905	911
	New Accounts		-	6	6	6	6	6	6	6	6	6
	Avg. Annual Growth Rate			0.70%	0.70%	0.69%	0.69%	0.68%	0.68%	0.67%	0.67%	0.66%
6	**Annual Volume**											
	Gas Volume											
	Residential - In		17,902	17,950	17,998	18,045	18,093	18,140	18,188	18,235	18,282	18,329
	Residential - Out		267	267	267	267	267	267	267	267	267	267
	Commercial - In		15,972	16,160	16,346	16,530	16,711	16,891	17,069	17,245	17,419	17,591
	Commercial - Out		3,125	3,125	3,125	3,125	3,125	3,125	3,125	3,125	3,125	3,125
	City Accounts		53	53	53	53	53	53	53	53	53	53
	-		-	-	-	-	-	-	-	-	-	-
	-		-	-	-	-	-	-	-	-	-	-
	-		-	-	-	-	-	-	-	-	-	-
	Total System		37,319	37,555	37,788	38,020	38,249	38,476	38,701	38,924	39,145	39,365

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CITY OF CASTROVILLE
GAS COST OF SERVICE MODEL

Oct-15	Oct-16 2017	Oct-17 2018	2019	2020	2021	2022	2023	2024	2025	2026

Forecast Summary
Scenario: ***2016 08 18 - Alt 2 - Fund Bal Drawdown***

1 **GAS Rates**

		Oct-15	Oct-16	Oct-17	Oct-18	Oct-19	Oct-20	Oct-21	Oct-22	Oct-23	Oct-24	Oct-25
Residential - In												
Service Fee		$ 10.73	$ 11.53	$ 12.11	$ 12.47	$ 12.85	$ 13.23	$ 13.63	$ 14.04	$ 14.46	$ 14.90	$ 15.34
Usage Charge	(Per 1,000 CF)	8.22	8.84	9.28	9.56	9.84	10.14	10.44	10.76	11.08	11.41	11.75
Cost of Gas to City		3.19	7.09	7.30	7.52	7.75	7.98	8.22	8.47	8.72	8.98	9.25
Residential - Out												
Service Fee		$ 10.73	$ 14.42	$ 15.14	$ 15.59	$ 16.06	$ 16.54	$ 17.04	$ 17.55	$ 18.08	$ 18.62	$ 19.18
Usage Charge	(Per 1,000 CF)	8.22	11.05	11.60	11.95	12.30	12.67	13.05	13.45	13.85	14.26	14.69
Cost of Gas to City		3.19	7.09	7.30	7.52	7.75	7.98	8.22	8.47	8.72	8.98	9.25
Commercial - In												
Service Fee		$ 13.11	$ 14.09	$ 14.80	$ 15.24	$ 15.70	$ 16.17	$ 16.66	$ 17.15	$ 17.67	$ 18.20	$ 18.75
Usage Charge	(Per 1,000 CF)	8.22	8.84	9.28	9.56	9.84	10.14	10.44	10.76	11.08	11.41	11.75
Cost of Gas to City		3.19	7.09	7.30	7.52	7.75	7.98	8.22	8.47	8.72	8.98	9.25
Commercial - Out												
Service Fee		$ 13.11	$ 17.62	$ 18.50	$ 19.05	$ 19.62	$ 20.21	$ 20.82	$ 21.44	$ 22.09	$ 22.75	$ 23.43
Usage Charge	(Per 1,000 CF)	8.22	11.05	11.60	11.95	12.30	12.67	13.05	13.45	13.85	14.26	14.69
Cost of Gas to City		3.19	7.09	7.30	7.52	7.75	7.98	8.22	8.47	8.72	8.98	8.98
City Accounts												
Service Fee		$ 13.11	$ 14.09	$ 14.80	$ 15.24	$ 15.70	$ 16.17	$ 16.66	$ 17.15	$ 17.67	$ 18.20	$ 18.75
Usage Charge	(Per 1,000 CF)	8.22	8.84	9.28	9.56	9.84	10.14	10.44	10.76	11.08	11.41	11.75
Cost of Gas to City		3.19	7.09	7.30	7.52	7.75	7.98	8.22	8.47	8.72	8.98	8.98

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Section IV

Section IV – Water and Wastewater Rate Study

This section of the consolidated rate study presents a profile of the City's water and wastewater utility. It includes the methodology used for developing the current and forecast cost of service, as well as the alternative rate design recommendations. The City identified numerous objectives for the water and wastewater rate study, including but not limited to the following:

- A comprehensive analysis and evaluation of the current cost of service and revenue requirements.
- An estimate of current and forecast accounts, volumes and billing units for the ten year forecast period
- A forecast of operating expenses over the next decade, taking into consideration such factors as inflation, system growth, and increases in staffing levels
- A thorough review of the water and wastewater systems' known capital improvement needs, as well as a determination of the need for funding capital requirements through the issuance of long-term debt
- A review of the adequacy and appropriateness of existing water and wastewater customer classes
- An evaluation of the current water and wastewater rate structures and revenue recovered versus the revenue requirement, both overall and for each customer class
- The development of alternative rate structures that would recover the PMUB's cost of service, ensure equitable, just and reasonable treatment of identified customer classes, and maintain critical financial ratios

Water and Wastewater Methodology

Determining a water utility's total cost of service requires an analysis of both operating and capital costs. The first step in the process is to allocate these costs to the following functions: **treatment** costs including supply and pumping; **distribution** costs; **customer** related costs such as meter reading, billing and collection; and **administration** costs. This process is known in ratemaking as **Functionalization.**

The next step in the ratemaking process is to allocate functionalized costs among the various customer classes. According to the American Water Works Association, one of the most widely used methods of allocating these costs is the **base-extra capacity method**. This method recognizes the differences in the cost

of providing service due to variations in the average rate of use and peak rate of use by a given customer class. It also recognizes customer related costs as a valid function.

In the base-extra capacity method, costs must be carefully classified into base and extra capacity costs, a process known as **Classification**. **Base** costs are those that tend to vary with the total quantity of water used, plus those operating expenses and capital costs associated with service under average load conditions. Chemicals are an example of variable base costs. **Extra capacity** costs are those associated with meeting requirements in excess of average flows. These may be subdivided into costs required for maximum day extra demand, maximum hour demand in excess of maximum day demand or other appropriate criteria. Expenses for meters and services and for customer billing and collecting are allocated directly to the **customer** cost component.

The base-extra capacity method is particularly well suited for use when developing the cost of service for publicly-owned utilities where certain expenses may benefit multiple utility operations. This methodology enables the costs to be allocated to each utility and proportioned appropriately to the cost components described above.

The final step in the process is to allocate these classified costs to customer classes based on the usage characteristics of each class. This process is known as **Allocation.** The final result of the allocation process is an identification of both the total cost of service for the utility and the specific cost of service for each customer class.

The methodology for developing the cost of service for wastewater operations is substantially the same. While the base-extra capacity allocation methodology does not apply, costs are functionalized between **treatment, collection, administration** and **customer**. These costs are then allocated to customer classes based on usage characteristics.

The methodology described above and used to develop the cost of service and rate recommendations in this section is recognized by the American Water Works Association and used by thousands of utilities throughout the United States in their rate setting process.

Water and Wastewater Revenue Requirement

The calculation of a revenue requirement differs from a utility's budget in that it represents only that amount that must be raised through the utility's user rates. This means that non-rate revenue (such as tap fees and interest) must be subtracted from the budgeted operating and capital expenditures to determine the net revenue requirement to be raised from rates.

As is typical for publicly owned utilities, the PMUB's water and wastewater system revenue requirements were developed using the cash basis of ratemaking. Under the cash basis, as defined by the AWWA Manual M-1, system revenue requirements consist of cash expenditures and other financial commitments (such as debt service coverage or reserves) that must be met through system operating revenues and other revenue sources. The following specific items are included in the revenue requirement raised from rates:

O&M Expenses

Operating Transfers

Capital Outlays

Debt Service – Current

Debt Service -- Forecast

Water and Wastewater Non-Rate Revenues

Although sales revenues constitute the majority of the revenue received by PMUB for water and wastewater service, a certain amount of revenue is accrued from non-rate sources. These revenues include other general revenues, penalties and tap fees revenues. These non-rate revenues are subtracted from the overall budget to determine the revenue requirement to be raised from rates.

Water Cost Functionalization

Once the total water and wastewater system costs have been identified, the next step in the rate development process is to isolate the costs associated with each system function. Some of these expenditures are a function of base water demand; others are based on the peak demands placed on the system. Certain costs are associated with serving customers regardless of the volume of water use or wastewater discharge. The basic steps used to allocate the PMUB's water revenue requirements include the following:

1. Each system's costs (revenue requirements) are categorized by utility function (i.e. treatment, distribution, administrative, customer). This process is known as *functionalization*.
2. Functionalized costs are classified based on the service characteristics or the types of demand served by the utility (base and maximum day). This process is known as *classification.*

3. Costs by service characteristic are allocated to customer classes in proportion to the service demands demonstrated by each class.

This three-step process allows for the allocation of system costs in the same terms as customer classes. The approaches described in this section follow standard industry practices. Water system costs are allocated to the following functions:

Treatment – the process by which raw water is converted to potable water

Distribution – the lines that carry water to individual customers' properties

Administration – miscellaneous overhead and other non-operating costs

Customer Billing – the processes involved in billing and providing other services to customers

Water System Cost Classification

The allocation of functionalized water system costs to service characteristics follows the base-extra capacity cost allocation method recommended by AWWA. Using this method, costs are defined and segregated into the following categories:

Base costs – capital costs and O&M expenses associated with service to customers under average demand conditions. Base costs tend to vary directly with the total quantity of water used.

Maximum Day/Extra Capacity costs – costs attributable to facilities that are designed to meet peaking requirements.

Customer Billing costs – costs associated with any aspect of customer service, including billing, accounting, and meter services.

According to AWWA Manual M-1 (p. 12), in the base-extra capacity method, care must be taken in separating costs between those devoted to base capacity and those devoted to extra capacity. The system's maximum day to average day ratio (known as the *system peaking factor*) is estimated to be 1.50. This means that facilities designed to meet maximum-day requirements, such as the treatment and distribution functions, are allocated 66.67% (1/1.50) to base, and 33.33% to extra capacity. All customer service-related costs are allocated 100% to billing. Administration costs are generally not directly-assignable to individual classifications. Therefore, it is standard rate-making practices to allocate these costs on an indirect basis (in which these costs are allocated to service characteristics in the same proportion as the directly allocated costs.)

Water Cost Allocation

Allocation of costs by service characteristic to customer classes is based on the proportionate usage levels of each class. For example, the residential customer class consumes the majority of water produced by the PMUB, therefore the residential class is allocated the majority of water system costs. Allocations to other customer classes for this and other service characteristics are performed in this same manner.

Wastewater System Cost Functionalization and Classification

Wastewater system costs must be functionalized and classified in the same manner as water system costs. Conforming to standard ratemaking methodology, wastewater system costs are allocated to the following functions:

Treatment – the process associated with treating wastewater discharges

Collection – the lines that transport wastewater from individual customers' properties to the wastewater treatment plant

Administration – miscellaneous overhead and other non-operating costs

Customer Billing – the processes involved in billing and providing other services to customers

The project team allocated operating budget line item expenses individually to system functions based on general guidelines, specific research and input from PMUB staff.

Wastewater Cost Allocation

Allocation of wastewater utility costs by service characteristic to customer classes is performed in the same manner as described for the water utility.

Water and Wastewater Rate Design

Rate design involves determining charges for each class of customers that will generate a desired level of revenue. The water and wastewater rates developed in this section are designed to recover the test year and forecast revenue requirement as described on the preceding pages. The three rate plan alternatives described on the following pages were presented to the Board for consideration following several meetings and preliminary discussions with Staff.

The rate plans presented in this section are designed to recover revenues sufficient to fund all operating and capital obligations in each of the forecast years for the current scheduled capital outlay and existing debt service over the forecast period, given the assumptions and variables provided.

CITY OF CASTROVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

Forecast Summary
Scenario: ***Alt 2 - Alt 1 plus addt'l WWTP debt***

1 **Water and Wastewater Rates**

Water Rates -- Residential

		Current	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Monthly Minimum Charge												
5/8"		$ 15.51	$ 19.39	$ 24.23	$ 30.29	$ 37.87	$ 39.76	$ 41.75	$ 43.83	$ 46.03	$ 48.33	$ 50.74
Volume Rate Per 1,000 Gal												
-	5,000	$ 3.65	$ 4.56	$ 5.70	$ 7.13	$ 8.91	$ 9.36	$ 9.82	$ 10.32	$ 10.83	$ 11.37	$ 11.94
5,001	10,000	3.90	4.88	6.09	7.62	9.52	10.00	10.50	11.02	11.57	12.15	12.76
10,001	20,000	4.31	5.39	6.73	8.42	10.52	11.05	11.60	12.18	12.79	13.43	14.10
20,001	30,000	4.56	5.70	7.13	8.91	11.13	11.69	12.27	12.89	13.53	14.21	14.92
30,001	40,000	4.81	6.01	7.52	9.39	11.74	12.33	12.95	13.59	14.27	14.99	15.74
40,001	50,000	5.06	6.33	7.91	9.88	12.35	12.97	13.62	14.30	15.02	15.77	16.55
50,001	Above	5.82	7.28	9.09	11.37	14.21	14.92	15.67	16.45	17.27	18.13	19.04
Plus:												

Wastewater Rates -- Residential

Base Chg		$ 14.31	$ 17.89	$ 22.36	$ 27.95	$ 34.94	$ 43.67	$ 45.85	$ 48.15	$ 50.55	$ 53.08	$ 55.74
Usage Chg	2,000 Above	6.13	7.66	9.58	11.97	14.97	18.71	19.64	20.62	21.66	22.74	23.88

Residential Monthly Bill -- 5/8" Meter

5,000 Gal Wtr Total	$ 66.46	$ 83.08	$ 103.84	$ 129.80	$ 162.26	$ 186.34	$ 195.65	$ 205.43	$ 215.71	$ 226.49	$ 237.82
5,000 Gal WW Increase -- $		16.62	20.77	25.96	32.45	24.08	9.32	9.78	10.27	10.79	11.32
Increase -- %		25.0%	25.0%	25.0%	25.0%	14.8%	5.0%	5.0%	5.0%	5.0%	5.0%
10,000 Gal Wt Total	85.96	107.45	134.31	167.89	209.86	236.32	248.14	260.55	273.57	287.25	301.61
5,000 Gal WW Increase -- $		21.49	26.86	33.58	41.97	26.46	11.82	12.41	13.03	13.68	14.36
Increase -- %		25.0%	25.0%	25.0%	25.0%	12.6%	5.0%	5.0%	5.0%	5.0%	5.0%
30,000 Gal Wt Total	205.31	256.64	320.80	401.00	501.25	557.24	585.10	614.36	645.07	677.33	711.20
10,000 Gal WW Increase -- $		51.33	64.16	80.20	100.25	55.99	27.86	29.26	30.72	32.25	33.87
Increase -- %		25.0%	25.0%	25.0%	25.0%	11.2%	5.0%	5.0%	5.0%	5.0%	5.0%

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CITY OF CASTROVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

Forecast Summary
Scenario: ***Alt 2 - Alt 1 plus addt'l WWTP debt***

Water Rates -- Commercial

		Current	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Monthly Minimum Charge												
	5/8"	$ 19.38	$ 24.23	$ 30.28	$ 37.85	$ 47.31	$ 49.68	$ 52.16	$ 54.77	$ 57.51	$ 60.39	$ 63.41
	3/4"	19.38	24.23	30.28	37.85	47.31	49.68	52.16	54.77	57.51	60.39	63.41
	1"	19.38	24.23	30.28	37.85	47.31	49.68	52.16	54.77	57.51	60.39	63.41
	1 1/2"	19.38	24.23	30.28	37.85	47.31	49.68	52.16	54.77	57.51	60.39	63.41
	2"	19.38	24.23	30.28	37.85	47.31	49.68	52.16	54.77	57.51	60.39	63.41
Volume Rate Per 1,000 Gal												
-	5,000	$ 3.65	$ 4.56	$ 5.70	$ 7.13	$ 8.91	$ 9.36	$ 9.82	$ 10.32	$ 10.83	$ 11.37	$ 11.94
5,001	10,000	3.90	4.88	6.09	7.62	9.52	10.00	10.50	11.02	11.57	12.15	12.76
10,001	20,000	4.31	5.39	6.73	8.42	10.52	11.05	11.60	12.18	12.79	13.43	14.10
20,001	30,000	4.56	5.70	7.13	8.91	11.13	11.69	12.27	12.89	13.53	14.21	14.92
30,001	40,000	4.81	6.01	7.52	9.39	11.74	12.33	12.95	13.59	14.27	14.99	15.74
40,001	50,000	5.06	6.33	7.91	9.88	12.35	12.97	13.62	14.30	15.02	15.77	16.55
50,001	Above	5.82	7.28	9.09	11.37	14.21	14.92	15.67	16.45	17.27	18.13	19.04

Wastewater Rates -- Commercial

			Current	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Monthly Minimum Charge													
	5/8"		$ 20.27	$ 25.34	$ 31.67	$ 39.59	$ 49.49	$ 61.86	$ 64.95	$ 68.20	$ 71.61	$ 75.19	$ 78.95
	3/4"		20.27	25.34	31.67	39.59	49.49	61.86	64.95	68.20	71.61	75.19	78.95
	1"		20.27	25.34	31.67	39.59	49.49	61.86	64.95	68.20	71.61	75.19	78.95
	1 1/2"		20.27	25.34	31.67	39.59	49.49	61.86	64.95	68.20	71.61	75.19	78.95
	2"		20.27	25.34	31.67	39.59	49.49	61.86	64.95	68.20	71.61	75.19	78.95
Usage Chg	2,000	Above	6.13	7.66	9.58	11.97	14.97	18.71	19.64	20.62	21.66	22.74	23.88

2 **Commercial Monthly Bill -- 2" Meter**

	Current	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
15,000 Gal Wt Total	$ 190.90	$ 238.63	$ 298.28	$ 372.85	$ 466.06	$ 544.16	$ 571.37	$ 599.94	$ 629.94	$ 661.43	$ 694.50
15,000 Gal Wt Increase -- $		47.73	59.66	74.57	93.21	78.10	27.21	28.57	30.00	31.50	33.07
Increase -- %		25.0%	25.0%	25.0%	25.0%	16.8%	5.0%	5.0%	5.0%	5.0%	5.0%
30,000 Gal Wt Total	350.00	437.50	546.88	683.59	854.49	996.91	1,046.75	1,099.09	1,154.05	1,211.75	1,272.34
30,000 Gal Wt Increase -- $		87.50	109.38	136.72	170.90	142.42	49.85	52.34	54.95	57.70	60.59
Increase -- %		25.0%	25.0%	25.0%	25.0%	16.7%	5.0%	5.0%	5.0%	5.0%	5.0%

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CITY OF CASTROVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

Forecast Summary
Scenario: ***Alt 2 - Alt 1 plus addt'l WWTP debt***

3 **Fund Balance, Revenues and Expenses**

	Current	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
	Unrestricted										
Beginning Utility Fund Balance	$ 4,139,073	$ 2,974,854	$ 2,273,063	$ 2,026,303	$ 2,287,002	$ 2,716,699	$ 3,154,246	$ 3,811,752	$ 4,739,992	$ 5,848,550	
90 day min(all 4)	$ 1,627,470										
Available FB for Drawdown	$ 2,511,603										
Revenues and Expenses											
Water Rate Revenues	1,101,434	1,384,188	1,713,776	2,150,838	2,296,623	2,420,900	2,551,776	2,689,597	2,834,732	2,987,566	
WW Rate Revenues	691,516	874,491	1,105,688	1,397,827	1,766,930	1,900,130	2,017,076	2,140,967	2,272,203	2,411,212	
Non-Rate Revenues	64,120	64,120	64,120	64,120	64,120	64,120	64,120	64,120	64,120	64,120	
Total Revenues	1,857,070	2,322,800	2,883,584	3,612,785	4,127,673	4,385,150	4,632,972	4,894,684	5,171,056	5,462,898	
Operating Expenses	1,199,737	1,275,213	1,369,981	1,363,460	1,441,570	1,542,388	1,541,659	1,594,609	1,701,850	1,706,779	
Utility Admin/Transfers	655,635	666,551	677,794	689,375	701,303	772,336	786,753	801,603	816,898	832,651	
Net Revenues Available for Capital Outlays/Debt Service	1,698	381,036	835,809	1,559,951	1,984,801	2,070,426	2,304,559	2,498,472	2,652,309	2,923,468	
Capital Outlays	290,975	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	
Total Operating Expense/Capital Outlays/Transfers	2,146,347	2,141,763	2,247,775	2,252,835	2,342,873	2,514,724	2,528,413	2,596,212	2,718,747	2,739,431	
Net Revenues Available for Debt Service	(289,277)	181,036	635,809	1,359,951	1,784,801	1,870,426	2,104,559	2,298,472	2,452,309	2,723,468	
Debt Service	874,942	882,827	882,570	1,099,252	1,355,104	1,432,879	1,447,053	1,370,232	1,343,751	1,316,472	
Total Cost of Service	3,021,289	3,024,590	3,130,345	3,352,087	3,697,976	3,947,603	3,975,466	3,966,444	4,062,498	4,055,902	
Contingency--Net Inc/(Dec) in Fund Balance	**(1,164,219)**	**(701,791)**	**(246,760)**	**260,699**	**429,697**	**437,547**	**657,506**	**928,240**	**1,108,558**	**1,406,996**	
Percent of COS	-38.5%	-23.2%	-7.9%	7.8%	11.6%	11.1%	16.5%	23.4%	27.3%	34.7%	
Ending Utility Fund Balance reflecting w/ww only	2,974,854	2,273,063	2,026,303	2,287,002	2,716,699	3,154,246	3,811,752	4,739,992	5,848,550	7,255,546	
Revenue Adequacy Tests											
Debt Coverage	0.00	0.43	0.95	1.42	1.46	1.44	1.59	1.82	1.97	2.22	
Days of Expenditures in Fund Balance - W WW Only (Goal is 90 day min for all utilities)	359	274	236	249	268	292	350	436	525	653	
Days of Expenditures in Fund Balance - All Utilities	249	180	155	177	196	215	253	307	367	452	

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CITY OF CASTROVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

Forecast Summary
Scenario: ***Alt 2 - Alt 1 plus addt'l WWTP debt***

	Current	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
5 Total Accounts											
Water Accounts											
Total Accounts		1,292	1,297	1,302	1,307	1,312	1,317	1,322	1,327	1,332	1,337
New Accounts		-	5	5	5	5	5	5	5	5	5
Avg. Annual Growth Rate			0.39%	0.39%	0.38%	0.38%	0.38%	0.38%	0.38%	0.38%	0.38%
Wastewater Accounts											
Total Accounts		1,166	1,171	1,176	1,181	1,186	1,191	1,196	1,201	1,206	1,211
New Accounts		-	5	5	5	5	5	5	5	5	5
Avg. Annual Growth Rate			0.43%	0.43%	0.43%	0.42%	0.42%	0.42%	0.42%	0.42%	0.41%
6 Annual Volume											
Water Volume											
Residential Inside		78,552,000	78,552,000	78,552,000	78,552,000	78,552,000	78,552,000	78,552,000	78,552,000	78,552,000	78,552,000
Residential Outside		8,300,000	8,300,000	8,300,000	8,300,000	8,300,000	8,300,000	8,300,000	8,300,000	8,300,000	8,300,000
Commercial Inside		35,118,692	35,654,038	36,181,464	36,701,313	37,213,901	37,719,525	38,218,460	38,710,966	39,197,285	39,677,644
Comm Inside No Sewer		-	-	-	-	-	-	-	-	-	-
Commercial Outside		2,184,000	2,184,000	2,184,000	2,184,000	2,184,000	2,184,000	2,184,000	2,184,000	2,184,000	2,184,000
All City Accounts		16,351,000	16,351,000	16,351,000	16,351,000	16,351,000	16,351,000	16,351,000	16,351,000	16,351,000	16,351,000
Other 1		-	-	-	-	-	-	-	-	-	-
Other 2		-	-	-	-	-	-	-	-	-	-
Total System		140,505,692	141,041,038	141,568,464	142,088,313	142,600,901	143,106,525	143,605,460	144,097,966	144,584,285	145,064,644
Wastewater Billing Units											
Residential Inside		48,720,670	48,720,670	48,720,670	48,720,670	48,720,670	48,720,670	48,720,670	48,720,670	48,720,670	48,720,670
Residential Outside		108,000	108,000	108,000	108,000	108,000	108,000	108,000	108,000	108,000	108,000
City Average Res Inside		48,000	48,000	48,000	48,000	48,000	48,000	48,000	48,000	48,000	48,000
Explicit Avg Resid		1,836,000	1,836,000	1,836,000	1,836,000	1,836,000	1,836,000	1,836,000	1,836,000	1,836,000	1,836,000
Commercial Inside		30,479,597	31,469,195	32,458,792	33,448,389	34,437,987	35,427,584	36,417,181	37,406,779	38,396,376	39,385,973
Commercial Outside		87,000	87,000	87,000	87,000	87,000	87,000	87,000	87,000	87,000	87,000
Explicit Commercial		108,000	108,000	108,000	108,000	108,000	108,000	108,000	108,000	108,000	108,000
Other 4		-	-	-	-	-	-	-	-	-	-
Total System		81,387,267	82,376,864	83,366,462	84,356,059	85,345,656	86,335,254	87,324,851	88,314,448	89,304,046	90,293,643

Other Fund Balance Projections:

Fund 24 Water Acquisition Fund
Beginning Fund Balance $ 296,907

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CITY OF CASTROVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

Input Area -- Rates Input

Scenario: Alt 2 - Alt 1 plus addt'l WWTP debt

			Current	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Water Rates													
Elasticity Adjustment on Volume				0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Month of Adjustment (Oct = 1)				1	1	1	1	1	1	1	1	1	1
				Oct-16	Oct-17	Oct-18	Oct-19	Oct-20	Oct-21	Oct-22	Oct-23	Oct-24	Oct-25
Annual Adjustment													
Base Charge (all classes)				25.00%	25.00%	25.00%	25.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Residential Inside				25.00%	25.00%	25.00%	25.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Residential Outside				25.00%	25.00%	25.00%	25.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Commercial Inside				25.00%	25.00%	25.00%	25.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Comm Inside No Sewer				25.00%	25.00%	25.00%	25.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Commercial Outside				25.00%	25.00%	25.00%	25.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
All City Accounts				25.00%	25.00%	25.00%	25.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Other 1				25.00%	25.00%	25.00%	25.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Other 2				25.00%	25.00%	25.00%	25.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Other 3				0.00%	25.00%	25.00%	25.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
NTMWD increase to pass through to volumetric charge				9.71%	9.90%	10.90%	9.83%	9.34%	8.54%	7.21%	5.20%	3.20%	2.25%
Edwards Aquifer Authority Surcharge (Pass Thru)				0.025									
eff. NTMWD vol charge given actual gal cons.			$ -	$ 16.93	$ 18.54	$ 20.48	$ 22.41	$ 24.42	$ 26.41	$ 28.22	$ 29.58	$ 30.43	$ 31.01
Residential Inside													
Base Charge	5/8"		$ 15.51	$ 19.39	$ 24.23	$ 30.29	$ 37.87	$ 39.76	$ 41.75	$ 43.83	$ 46.03	$ 48.33	$ 50.74
Base Charge	3/4"		15.51	19.39	24.23	30.29	37.87	39.76	41.75	43.83	46.03	48.33	50.74
Base Charge	1"		15.51	19.39	24.23	30.29	37.87	39.76	41.75	43.83	46.03	48.33	50.74
Base Charge	1 1/2"		15.51	19.39	24.23	30.29	37.87	39.76	41.75	43.83	46.03	48.33	50.74
Base Charge	2"		15.51	19.39	24.23	30.29	37.87	39.76	41.75	43.83	46.03	48.33	50.74
Usage Charge	-	5,000	3.65	4.56	5.70	7.13	8.91	9.36	9.82	10.32	10.83	11.37	11.94
	5,001	10,000	3.90	4.88	6.09	7.62	9.52	10.00	10.50	11.02	11.57	12.15	12.76
	10,001	20,000	4.31	5.39	6.73	8.42	10.52	11.05	11.60	12.18	12.79	13.43	14.10
	20,001	30,000	4.56	5.70	7.13	8.91	11.13	11.69	12.27	12.89	13.53	14.21	14.92
	30,001	40,000	4.81	6.01	7.52	9.39	11.74	12.33	12.95	13.59	14.27	14.99	15.74
	40,001	50,000	5.06	6.33	7.91	9.88	12.35	12.97	13.62	14.30	15.02	15.77	16.55
	50,001	Above	5.82	7.28	9.09	11.37	14.21	14.92	15.67	16.45	17.27	18.13	19.04
Residential Outside				25%									
Base Charge	5/8"		$ 15.51	$ 24.23	$ 30.29	$ 37.87	$ 47.33	$ 49.70	$ 52.18	$ 54.79	$ 57.53	$ 60.41	$ 63.43
Base Charge	3/4"		15.51	24.23	30.29	37.87	47.33	49.70	52.18	54.79	57.53	60.41	63.43
Base Charge	1"		15.51	24.23	30.29	37.87	47.33	49.70	52.18	54.79	57.53	60.41	63.43
Base Charge	1 1/2"		15.51	24.23	30.29	37.87	47.33	49.70	52.18	54.79	57.53	60.41	63.43
Base Charge	2"		15.51	24.23	30.29	37.87	47.33	49.70	52.18	54.79	57.53	60.41	63.43
				25%									
Usage Charge	-	5,000	3.65	5.70	7.13	8.91	11.14	11.70	12.28	12.89	13.54	14.22	14.93
	5,001	10,000	3.90	6.09	7.62	9.52	11.90	12.50	13.12	13.78	14.47	15.19	15.95
	10,001	20,000	4.31	6.73	8.42	10.52	13.15	13.81	14.50	15.23	15.99	16.79	17.63
	20,001	30,000	4.56	7.13	8.91	11.13	13.92	14.61	15.34	16.11	16.92	17.76	18.65
	30,001	40,000	4.81	7.52	9.39	11.74	14.68	15.41	16.18	16.99	17.84	18.73	19.67
	[illegible]	50,000	5.06	7.91	9.88	12.35	15.44	16.21	17.02	17.88	18.77	19.71	20.69
		Above	5.82	9.09	11.37	14.21	17.76	18.65	19.58	20.56	21.59	22.67	23.80

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CITY OF CASTROVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

Input Area -- Rates Input

Scenario: ***Alt 2 - Alt 1 plus addt'l WWTP debt***

			Current	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Commercial Inside													
Base Charge	5/8"		$ 19.38	$ 24.23	$ 30.28	$ 37.85	$ 47.31	$ 49.68	$ 52.16	$ 54.77	$ 57.51	$ 60.39	$ 63.41
Base Charge	3/4"		19.38	24.23	30.28	37.85	47.31	49.68	52.16	54.77	57.51	60.39	63.41
Base Charge	1"		19.38	24.23	30.28	37.85	47.31	49.68	52.16	54.77	57.51	60.39	63.41
Base Charge	1 1/2"		19.38	24.23	30.28	37.85	47.31	49.68	52.16	54.77	57.51	60.39	63.41
Base Charge	2"		19.38	24.23	30.28	37.85	47.31	49.68	52.16	54.77	57.51	60.39	63.41
Base Charge	3"	New	19.38	24.23	30.28	37.85	47.31	49.68	52.16	54.77	57.51	60.39	63.41
Base Charge	4"	New	19.38	24.23	30.28	37.85	47.31	49.68	52.16	54.77	57.51	60.39	63.41
Base Charge	6"	New	19.38	24.23	30.28	37.85	47.31	49.68	52.16	54.77	57.51	60.39	63.41
Usage Charge	-	5,000	3.65	4.56	5.70	7.13	8.91	9.36	9.82	10.32	10.83	11.37	11.94
	5,001	10,000	3.90	4.88	6.09	7.62	9.52	10.00	10.50	11.02	11.57	12.15	12.76
	10,001	20,000	4.31	5.39	6.73	8.42	10.52	11.05	11.60	12.18	12.79	13.43	14.10
	20,001	30,000	4.56	5.70	7.13	8.91	11.13	11.69	12.27	12.89	13.53	14.21	14.92
	30,001	40,000	4.81	6.01	7.52	9.39	11.74	12.33	12.95	13.59	14.27	14.99	15.74
	40,001	50,000	5.06	6.33	7.91	9.88	12.35	12.97	13.62	14.30	15.02	15.77	16.55
	50,001	Above	5.82	7.28	9.09	11.37	14.21	14.92	15.67	16.45	17.27	18.13	19.04
Comm Inside No Sewer													
Base Charge	5/8"		$ 19.38	$ 24.23	$ 30.28	$ 37.85	$ 47.31	$ 49.68	$ 52.16	$ 54.77	$ 57.51	$ 60.39	$ 63.41
Base Charge	3/4"		19.38	24.23	30.28	37.85	47.31	49.68	52.16	54.77	57.51	60.39	63.41
Base Charge	1"		19.38	24.23	30.28	37.85	47.31	49.68	52.16	54.77	57.51	60.39	63.41
Base Charge	1 1/2"		19.38	24.23	30.28	37.85	47.31	49.68	52.16	54.77	57.51	60.39	63.41
Base Charge	2"		19.38	24.23	30.28	37.85	47.31	49.68	52.16	54.77	57.51	60.39	63.41
Base Charge	3"		19.38	24.23	30.28	37.85	47.31	49.68	52.16	54.77	57.51	60.39	63.41
Base Charge	4"		19.38	24.23	30.28	37.85	47.31	49.68	52.16	54.77	57.51	60.39	63.41
Base Charge	6"		19.38	24.23	30.28	37.85	47.31	49.68	52.16	54.77	57.51	60.39	63.41
Usage Charge	-	5,000	3.65	4.56	5.70	7.13	8.91	9.36	9.82	10.32	10.83	11.37	11.94
	5,001	10,000	3.90	4.88	6.09	7.62	9.52	10.00	10.50	11.02	11.57	12.15	12.76
	10,001	20,000	4.31	5.39	6.73	8.42	10.52	11.05	11.60	12.18	12.79	13.43	14.10
	20,001	30,000	4.56	5.70	7.13	8.91	11.13	11.69	12.27	12.89	13.53	14.21	14.92
	30,001	40,000	4.81	6.01	7.52	9.39	11.74	12.33	12.95	13.59	14.27	14.99	15.74
	40,001	50,000	5.06	6.33	7.91	9.88	12.35	12.97	13.62	14.30	15.02	15.77	16.55
	50,001	Above	5.82	7.28	9.09	11.37	14.21	14.92	15.67	16.45	17.27	18.13	19.04
Commercial Outside				25%									
Base Charge	5/8"		$ 19.38	$ 30.28	$ 37.85	$ 47.31	$ 59.14	$ 62.10	$ 65.21	$ 68.47	$ 71.89	$ 75.48	$ 79.26
Base Charge	3/4"		19.38	30.28	37.85	47.31	59.14	62.10	65.21	68.47	71.89	75.48	79.26
Base Charge	1"		19.38	30.28	37.85	47.31	59.14	62.10	65.21	68.47	71.89	75.48	79.26
Base Charge	1 1/2"		19.38	30.28	37.85	47.31	59.14	62.10	65.21	68.47	71.89	75.48	79.26
Base Charge	2"		19.38	30.28	37.85	47.31	59.14	62.10	65.21	68.47	71.89	75.48	79.26
Base Charge	3"		19.38	30.28	37.85	47.31	59.14	62.10	65.21	68.47	71.89	75.48	79.26
Base Charge	4"		19.38	30.28	37.85	47.31	59.14	62.10	65.21	68.47	71.89	75.48	79.26
Base Charge	6"		19.38	30.28	37.85	47.31	59.14	62.10	65.21	68.47	71.89	75.48	79.26
				25%									
Usage Charge	-	5,000	3.65	5.70	7.13	8.91	11.14	11.70	12.28	12.89	13.54	14.22	14.93
	5,001	10,000	3.90	6.09	7.62	9.52	11.90	12.50	13.12	13.78	14.47	15.19	15.95
	10,001	20,000	4.31	6.73	8.42	10.52	13.15	13.81	14.50	15.23	15.99	16.79	17.63
	20,001	30,000	4.56	7.13	8.91	11.13	13.92	14.61	15.34	16.11	16.92	17.76	18.65
	30,001	40,000	4.81	7.52	9.39	11.74	14.68	15.41	16.18	16.99	17.84	18.73	19.67
	[illegible]	[illegible]0,000	5.06	7.91	9.88	12.35	15.44	16.21	17.02	17.88	18.77	19.71	20.69
		[illegible]bove	5.82	9.09	11.37	14.21	17.76	18.65	19.58	20.56	21.59	22.67	23.80

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CITY OF CASTROVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

Input Area -- Rates Input

Scenario: ***Alt 2 - Alt 1 plus addt'l WWTP debt***

			Current	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
All City Accounts													
Base Charge	5/8"		$ 19.38	$ 24.23	$ 30.28	$ 37.85	$ 47.31	$ 49.68	$ 52.16	$ 54.77	$ 57.51	$ 60.39	$ 63.41
Base Charge	3/4"		19.38	24.23	30.28	37.85	47.31	49.68	52.16	54.77	57.51	60.39	63.41
Base Charge	1"		19.38	24.23	30.28	37.85	47.31	49.68	52.16	54.77	57.51	60.39	63.41
Base Charge	1 1/2"		19.38	24.23	30.28	37.85	47.31	49.68	52.16	54.77	57.51	60.39	63.41
Base Charge	2"		19.38	24.23	30.28	37.85	47.31	49.68	52.16	54.77	57.51	60.39	63.41
Base Charge	3"		19.38	24.23	30.28	37.85	47.31	49.68	52.16	54.77	57.51	60.39	63.41
Base Charge	4"		19.38	24.23	30.28	37.85	47.31	49.68	52.16	54.77	57.51	60.39	63.41
Base Charge	6"		19.38	24.23	30.28	37.85	47.31	49.68	52.16	54.77	57.51	60.39	63.41
Usage Charge	-	5,000	3.65	4.56	5.70	7.13	8.91	9.36	9.82	10.32	10.83	11.37	11.94
	5,001	10,000	3.90	4.88	6.09	7.62	9.52	10.00	10.50	11.02	11.57	12.15	12.76
	10,001	20,000	4.31	5.39	6.73	8.42	10.52	11.05	11.60	12.18	12.79	13.43	14.10
	20,001	30,000	4.56	5.70	7.13	8.91	11.13	11.69	12.27	12.89	13.53	14.21	14.92
	30,001	40,000	4.81	6.01	7.52	9.39	11.74	12.33	12.95	13.59	14.27	14.99	15.74
	40,001	50,000	5.06	6.33	7.91	9.88	12.35	12.97	13.62	14.30	15.02	15.77	16.55
	50,001	Above	5.82	7.28	9.09	11.37	14.21	14.92	15.67	16.45	17.27	18.13	19.04
Other 1													
Base Charge	5/8"		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Base Charge	3/4"		-	-	-	-	-	-	-	-	-	-	-
Base Charge	1"		-	-	-	-	-	-	-	-	-	-	-
Base Charge	1 1/2"		-	-	-	-	-	-	-	-	-	-	-
Base Charge	2"		-	-	-	-	-	-	-	-	-	-	-
Base Charge	3"		-	-	-	-	-	-	-	-	-	-	-
Base Charge	4"		-	-	-	-	-	-	-	-	-	-	-
Base Charge	6"		-	-	-	-	-	-	-	-	-	-	-
Usage Charge	-	10,000	-	-	-	-	-	-	-	-	-	-	-
	10,001	15,000	-	-	-	-	-	-	-	-	-	-	-
	15,001	20,000	-	-	-	-	-	-	-	-	-	-	-
	20,001	30,000	-	-	-	-	-	-	-	-	-	-	-
	30,001	Above	-	-	-	-	-	-	-	-	-	-	-
Other 2													
Base Charge	5/8"		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Base Charge	3/4"		-	-	-	-	-	-	-	-	-	-	-
Base Charge	1"		-	-	-	-	-	-	-	-	-	-	-
Base Charge	1 1/2"		-	-	-	-	-	-	-	-	-	-	-
Base Charge	2"		-	-	-	-	-	-	-	-	-	-	-
Base Charge	3"		-	-	-	-	-	-	-	-	-	-	-
Base Charge	4"		-	-	-	-	-	-	-	-	-	-	-
Base Charge	6"		-	-	-	-	-	-	-	-	-	-	-
Usage Charge	-	10,000	-	-	-	-	-	-	-	-	-	-	-
	10,001	15,000	-	-	-	-	-	-	-	-	-	-	-
	15,001	20,000	-	-	-	-	-	-	-	-	-	-	-
	20,001	30,000	-	-	-	-	-	-	-	-	-	-	-
	30,001	Above	-	-	-	-	-	-	-	-	-	-	-

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CITY OF CASTROVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

Input Area -- Rates Input

Scenario: Alt 2 - Alt 1 plus addt'l WWTP debt

Wastewater Rates

			Current	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Annual Adjustment													
Base Charge -- All Classes				25.00%	25.00%	25.00%	25.00%	25.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Volume Charge													
Residential				25.00%	25.00%	25.00%	25.00%	25.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Residential Outside				25.00%	25.00%	25.00%	25.00%	25.00%	5.00%	5.00%	5.00%	5.00%	5.00%
City Average Res Inside				25.00%	25.00%	25.00%	25.00%	25.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Explicit Avg Resid				25.00%	25.00%	25.00%	25.00%	25.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Commercial Inside				25.00%	25.00%	25.00%	25.00%	25.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Commercial Outside				25.00%	25.00%	25.00%	25.00%	25.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Explicit Commercial				25.00%	25.00%	25.00%	25.00%	25.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Other 4				25.00%	25.00%	25.00%	25.00%	25.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Other 5				25.00%	25.00%	25.00%	25.00%	25.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Residential													
Base Charge	5/8"	(Wtr Mtr Size)	$ 14.31	$ 17.89	$ 22.36	$ 27.95	$ 34.94	$ 43.67	$ 45.85	$ 48.15	$ 50.55	$ 53.08	$ 55.74
	3/4"		14.31	17.89	22.36	27.95	34.94	43.67	45.85	48.15	50.55	53.08	55.74
	1"		14.31	17.89	22.36	27.95	34.94	43.67	45.85	48.15	50.55	53.08	55.74
	1 1/2"		14.31	17.89	22.36	27.95	34.94	43.67	45.85	48.15	50.55	53.08	55.74
	2"		14.31	17.89	22.36	27.95	34.94	43.67	45.85	48.15	50.55	53.08	55.74
Usage Charge	2,000	Above	6.13	7.66	9.58	11.97	14.97	18.71	19.64	20.62	21.66	22.74	23.88
	na	na	-	-	-	-	-	-	-	-	-	-	-
Residential Outside				25%									
Base Charge	5/8"		$ 14.31	$ 22.36	$ 27.95	$ 34.94	$ 43.67	$ 54.59	$ 57.32	$ 60.18	$ 63.19	$ 66.35	$ 69.67
	3/4"		14.31	22.36	27.95	34.94	43.67	54.59	57.32	60.18	63.19	66.35	69.67
	1"		14.31	22.36	27.95	34.94	43.67	54.59	57.32	60.18	63.19	66.35	69.67
	1 1/2"		14.31	22.36	27.95	34.94	43.67	54.59	57.32	60.18	63.19	66.35	69.67
	2"		14.31	22.36	27.95	34.94	43.67	54.59	57.32	60.18	63.19	66.35	69.67
				25%									
Usage Charge	2,000	Above	6.13	9.58	11.97	14.97	18.71	23.38	24.55	25.78	27.07	28.42	29.84
	na	na	-	-	-	-	-	-	-	-	-	-	-
City Average Res Inside													
Base Charge	5/8"		$ 14.31	$ 17.89	$ 22.36	$ 27.95	$ 34.94	$ 43.67	$ 45.85	$ 48.15	$ 50.55	$ 53.08	$ 55.74
	3/4"		14.31	17.89	22.36	27.95	34.94	43.67	45.85	48.15	50.55	53.08	55.74
	1"		14.31	17.89	22.36	27.95	34.94	43.67	45.85	48.15	50.55	53.08	55.74
	1 1/2"		14.31	17.89	22.36	27.95	34.94	43.67	45.85	48.15	50.55	53.08	55.74
	2"		14.31	17.89	22.36	27.95	34.94	43.67	45.85	48.15	50.55	53.08	55.74
	3"		14.31	17.89	22.36	27.95	34.94	43.67	45.85	48.15	50.55	53.08	55.74
	4"		14.31	17.89	22.36	27.95	34.94	43.67	45.85	48.15	50.55	53.08	55.74
	6"		14.31	17.89	22.36	27.95	34.94	43.67	45.85	48.15	50.55	53.08	55.74
Usage Charge	2,000	Above	6.13	7.66	9.58	11.97	14.97	18.71	19.64	20.62	21.66	22.74	23.88
	na	na	-	-	-	-	-	-	-	-	-	-	-

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CITY OF CASTROVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

Input Area -- Rates Input

Scenario: Alt 2 - Alt 1 plus addt'l WWTP debt

			Current	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Other 4													
Base Charge	5/8"		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	3/4"		-	-	-	-	-	-	-	-	-	-	-
	1"		-	-	-	-	-	-	-	-	-	-	-
	1 1/2"		-	-	-	-	-	-	-	-	-	-	-
	2"		-	-	-	-	-	-	-	-	-	-	-
	3"		-	-	-	-	-	-	-	-	-	-	-
	4"		-	-	-	-	-	-	-	-	-	-	-
	6"		-	-	-	-	-	-	-	-	-	-	-
Usage Charge	-	Above	-	-	-	-	-	-	-	-	-	-	-
	na	na	-	-	-	-	-	-	-	-	-	-	-
Other 5		Equiv											
Base Charge	5/8"	1.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	3/4"	1.67	-	-	-	-	-	-	-	-	-	-	-
	1"	2.67	-	-	-	-	-	-	-	-	-	-	-
	1 1/2"	3.33	-	-	-	-	-	-	-	-	-	-	-
	2"	6.67	-	-	-	-	-	-	-	-	-	-	-
	3"	10.00	-	-	-	-	-	-	-	-	-	-	-
	4"	13.33	-	-	-	-	-	-	-	-	-	-	-
	6"	33.33	-	-	-	-	-	-	-	-	-	-	-
Usage Charge	-	Above	-	-	-	-	-	-	-	-	-	-	-
	na	na	-	-	-	-	-	-	-	-	-	-	-

Summary of Results -- Rate Calculator	2017	2018	2019	2020	2021					
Net Revenues Available for Contingency and Coverage										
Water	(260,523)	91,381	367,492	594,662	428,081	416,943	545,918	690,097	798,583	981,312
Wastewater	(903,696)	(793,171)	(614,252)	(333,963)	1,617	20,604	111,588	238,144	309,975	425,684
Total	(1,164,219)	(701,791)	(246,760)	260,699	429,697	437,547	657,506	928,240	1,108,558	1,406,996
Debt Coverage W WW Only	0.00	0.43	0.95	1.42	1.46	1.44	1.59	1.82	1.97	2.22
Days of Fund Balance W/WW only	359	274	236	249	268	292	350	436	525	653
Debt Coverage All Utilities	4.75	4.83	5.04	4.13	2.94	2.92	2.96	3.20	3.40	3.63
Days of Fund Balance All Utilities	249	180	155	177	196	215	253	307	367	452

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Notes on Rate Recommendations

The forecast and recommendations presented in this study represent a combination of the best information available from the City and the project team's expertise. However, this forecast relies in part on assumptions about future events and events beyond the control of the project team. The forecast and recommendations contained in this study may be subject to revision if any of the following events occurs:

- Actual growth in accounts and consumed volumes is less than (or significantly greater than) forecast
- Capital improvement plan funding costs increase significantly due to the rising cost of materials or other factors
- An unforeseen event impacts the City, such as a recession, natural catastrophe or terrorist attack
- Budget levels or priorities change significantly from those forecast in this study

It should be noted that none of these events are foreseen by the project team or the city at this time.

If any of these events occur the City may be compelled to consider further adjustments to its electric, water, wastewater and/or gas rates.

Appendix A

City of Castroville, Texas

2016 Electric, Gas, Water and Wastewater

Rate Study and Financial Forecast

City Council Briefing

October 2016

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Presentation Format

- Introduction
- Electric Rate Study
- Natural Gas Rate Study
- Water/WW Rate Study
- Presentation Summary

Utility Rate Plans
Overall Goals

- Fund all operating expenses
- Provide means to finance Capital Improvement Plan
- Ensure that each utility is fully self-sustaining
- Minimize impact of any rate adjustments on ratepayers

Electric Utility
Analysis and Recommendations

Proposed Electric Rate Plan

	Oct-15	Effective Oct-16	Effective Oct-17	Effective Oct-18	Effective Oct-19	Effective Oct-20
E.1 Residential - In						
Minimum Bill	$ 9.13	**$ 9.40**	$ 9.69	$ 9.98	$ 10.28	$ 10.69
Energy per kWh	0.1266	**0.1304**	0.1343	0.1383	0.1425	0.1482
E.2 Residential - Out						
Minimum Bill	9.13	**11.75**	12.11	12.47	12.84	13.36
Energy per kWh	0.1266	**0.1630**	0.1679	0.1729	0.1781	0.1852
E.3 Residential- Senior - In *						
Minimum Bill	8.67	**8.93**	9.20	9.48	9.76	10.15
Energy per kWh	0.1203	**0.1239**	0.1276	0.1314	0.1354	0.1408
E.4 Commercial - In						
Minimum Bill	23.97	**24.69**	25.43	26.19	26.98	28.06
Energy per kWh	0.1266	**0.1304**	0.1343	0.1383	0.1425	0.1482
E.5 Commercial - Out						
Minimum Bill	23.97	**30.86**	31.79	32.74	33.72	35.07
Energy per kWh	0.1266	**0.1630**	0.1679	0.1729	0.1781	0.1852

* Resid. Senior -Out rates are 5% less than Resid. Out

Electric Rate Proposal -- Impact on Monthly Residential - Inside and Outside Bills

Residential INSIDE Monthly Charges

KWh		Oct-15	Effective Oct-16	Effective Oct-17	Effective Oct-18	Effective Oct-19	Effective Oct-20
500							
	Total	$ 72.43	$ 74.60	$ 76.84	$ 79.15	$ 81.52	$ 84.78
	Increase		2.17	2.24	2.31	2.37	3.26
1,000							
	Total	135.73	139.80	144.00	148.32	152.77	158.88
	Increase		4.07	4.19	4.32	4.45	6.11
2,000							
	Total	262.33	270.20	278.31	286.66	295.25	307.06
	Increase		7.87	8.11	8.35	8.60	11.81

Residential OUTSIDE Monthly Charges

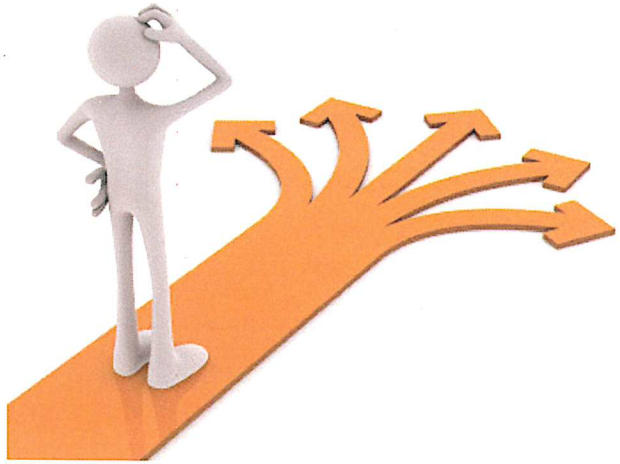
500							
	Total	$ 72.43	$ 93.25	$ 96.05	$ 98.93	$ 101.90	$ 105.98
	Increase		20.82	2.80	2.88	2.97	4.08
1,000							
	Total	$ 135.73	$ 174.75	$ 179.99	$ 185.39	$ 190.96	$ 198.59
	Increase		39.02	5.24	5.40	5.56	7.64
2,000							
	Total	$ 262.33	$ 337.75	$ 347.88	$ 358.32	$ 369.07	$ 383.83
	Increase		75.42	10.13	10.44	10.75	14.76

Average Residential Electric Usage = 1,000 kWh per month

Gas Utility
Analysis and Recommendations

2 Rate Plan Alternatives Based on Funding Approach

- Alternative 1: Rate Pay Full Gas Utility Cost of Service
- Alternative 2: Drawdown Fund Balance by $100,000 to reduce magnitude of rate adjustment
- Both alternatives - Outside Residential and Commercial Rates 25% higher than Inside City Rates Beginning in FY17



Gas Alt 1 - Cost of Service Recommended Rate Plan

		Oct-15	Effective Oct-16	Effective Oct-17	Effective Oct-18	Effective Oct-19	Effective Oct-20
Cost of Gas to City VARIES MONTHLY		$ 3.19	**$ 7.09**	$ 7.30	$ 7.52	$ 7.75	$ 7.98
Residential - In							
Service Fee		$ 10.73	**$ 13.09**	$ 13.48	$ 13.89	$ 14.30	$ 14.73
Usage Charge	(Per 1,000 CF)	8.22	**10.03**	10.33	10.64	10.96	11.29
Residential - Out							
Service Fee		$ 10.73	**$ 16.36**	$ 16.85	$ 17.36	$ 17.88	$ 18.42
Usage Charge	(Per 1,000 CF)	8.22	**12.54**	12.91	13.30	13.70	14.11
Commercial - In							
Service Fee		$ 13.11	**$ 15.99**	$ 16.47	$ 16.97	$ 17.48	$ 18.00
Usage Charge	(Per 1,000 CF)	8.22	**10.03**	10.33	10.64	10.96	11.29
Commercial - Out							
Service Fee		$ 13.11	**$ 19.99**	$ 20.59	$ 21.21	$ 21.85	$ 22.50
Usage Charge	(Per 1,000 CF)	8.22	**12.54**	12.91	13.30	13.70	14.11
City Accounts							
Service Fee		$ 13.11	**$ 15.99**	$ 16.47	$ 16.97	$ 17.48	$ 18.00
Usage Charge	(Per 1,000 CF)	8.22	**10.03**	10.33	10.64	10.96	11.29

Gas Alt 1 - Cost of Service
Impact on Residential Rates

	Oct-15	Effective Oct-16	Effective Oct-17	Effective Oct-18	Effective Oct-19	Effective Oct-20
Residential INSIDE Monthly Charges						
Cost of Gas to City Per CF VARIES MONTHLY	$ 3.19	**$ 7.09**	$ 7.30	$ 7.52	$ 7.75	$ 7.98
2,000 CF	$ 27.17	$ 33.15	$ 34.14	$ 35.17	$ 36.22	$ 37.31
Increase		**5.98**	**0.99**	**1.02**	**1.05**	**1.09**
4,000 CF	$ 43.61	$ 53.20	$ 54.80	$ 56.44	$ 58.14	$ 59.88
Increase		**9.59**	**1.60**	**1.64**	**1.69**	**1.74**
Residential OUTSIDE Monthly Charges						
Cost of Gas to City Per CF VARIES MONTHLY	$ 3.19	$ 7.09	$ 7.30	$ 7.52	$ 7.75	$ 7.98
2,000 CF	$ 27.17	$ 41.43	$ 42.68	$ 43.96	$ 45.28	$ 46.63
Increase		**14.26**	**1.24**	**1.28**	**1.32**	**1.36**
4,000 CF	$ 43.61	$ 66.51	$ 68.50	$ 70.56	$ 72.67	$ 74.85
Increase		**22.90**	**2.00**	**2.06**	**2.12**	**2.18**

Average Residential Gas Usage = 2,000 CF per month

Gas Alt 2 - Fund Balance Drawdown
Recommended Rate Plan

		Oct-15	Effective Oct-16	Effective Oct-17	Effective Oct-18	Effective Oct-19	Effective Oct-20
Cost of Gas to City VARIES MONTHLY		$ 3.19	**$ 7.09**	$ 7.30	$ 7.52	$ 7.75	$ 7.98
Residential - In							
Service Fee		$ 10.73	**$ 11.53**	$ 12.11	$ 12.47	$ 12.85	$ 13.23
Usage Charge	(Per 1,000 CF)	8.22	**8.84**	9.28	9.56	9.84	10.14
Residential - Out							
Service Fee		$ 10.73	**$ 14.42**	$ 15.14	$ 15.59	$ 16.06	$ 16.54
Usage Charge	(Per 1,000 CF)	8.22	**11.05**	11.60	11.95	12.30	12.67
Commercial - In							
Service Fee		$ 13.11	**$ 14.09**	$ 14.80	$ 15.24	$ 15.70	$ 16.17
Usage Charge	(Per 1,000 CF)	8.22	**8.84**	9.28	9.56	9.84	10.14
Commercial - Out							
Service Fee		$ 13.11	**$ 17.62**	$ 18.50	$ 19.05	$ 19.62	$ 20.21
Usage Charge	(Per 1,000 CF)	8.22	**11.05**	11.60	11.95	12.30	12.67
City Accounts							
Service Fee		$ 13.11	**$ 14.09**	$ 14.80	$ 15.24	$ 15.70	$ 16.17
Usage Charge	(Per 1,000 CF)	8.22	**8.84**	9.28	9.56	9.84	10.14

Gas Alt 2 - Fund Balance Drawdown Impact on Residential Rates

	Oct-15	Effective Oct-16	Effective Oct-17	Effective Oct-18	Effective Oct-19	Effective Oct-20
Residential INSIDE Monthly Charges						
Cost of Gas to City Per CF VARIES MONTHLY	$ 3.19	**$ 7.09**	$ 7.30	$ 7.52	$ 7.75	$ 7.98
2,000 CF	$ 27.17	$ 29.21	$ 30.67	$ 31.59	$ 32.54	$ 33.51
Increase		**2.04**	**1.46**	**0.92**	**0.95**	**0.98**
4,000 CF	$ 43.61	$ 46.88	$ 49.22	$ 50.70	$ 52.22	$ 53.79
Increase		**3.27**	**2.34**	**1.48**	**1.52**	**1.57**
Residential OUTSIDE Monthly Charges						
Cost of Gas to City Per CF VARIES MONTHLY	$ 3.19	**$ 7.09**	$ 7.30	$ 7.52	$ 7.75	$ 7.98
2,000 CF	$ 27.17	$ 36.51	$ 38.34	$ 39.49	$ 40.67	$ 41.89
Increase		**9.34**	**1.83**	**1.15**	**1.18**	**1.22**
4,000 CF	$ 43.61	$ 58.60	$ 61.53	$ 63.38	$ 65.28	$ 67.24
Increase		**14.99**	**2.93**	**1.85**	**1.90**	**1.96**

Average Residential Gas Usage = 2,000 CF per month

Gas Alt 1 and Alt 2 – Comparison of Impact on Residential Rates

	Oct-15	Effective Oct-16	Effective Oct-17	Effective Oct-18	Effective Oct-19	Effective Oct-20
Residential Monthly Charges						
Cost of Gas to City Per CF VARIES MONTHLY	$ 3.19	**$ 7.09**	$ 7.30	$ 7.52	$ 7.75	$ 7.98
2,000 CF						
Alt 1 - Cost of Service	$ 27.17	$ 33.15	$ 34.14	$ 35.17	$ 36.22	$ 37.31
Alt 2 - Fund Bal Drawdown	27.17	29.21	30.67	31.59	32.54	33.51
		3.94	**3.47**	**3.58**	**3.68**	**3.80**
4,000 CF						
Alt 1 - Cost of Service	$ 43.61	$ 53.20	$ 54.80	$ 56.44	$ 58.14	$ 59.88
Alt 2 - Fund Bal Drawdown	43.61	46.88	49.22	50.70	52.22	53.79
		6.32	**5.58**	**5.74**	**5.92**	**6.09**
6,000 CF						
Alt 1 - Cost of Service	$ 60.05	$ 73.26	$ 75.46	$ 77.72	$ 80.05	$ 82.46
Alt 2 - Fund Bal Drawdown	60.05	64.55	67.78	69.81	71.91	74.07
		8.71	**7.68**	**7.91**	**8.14**	**8.39**

Average Residential Gas Usage = 2,000 CF per month

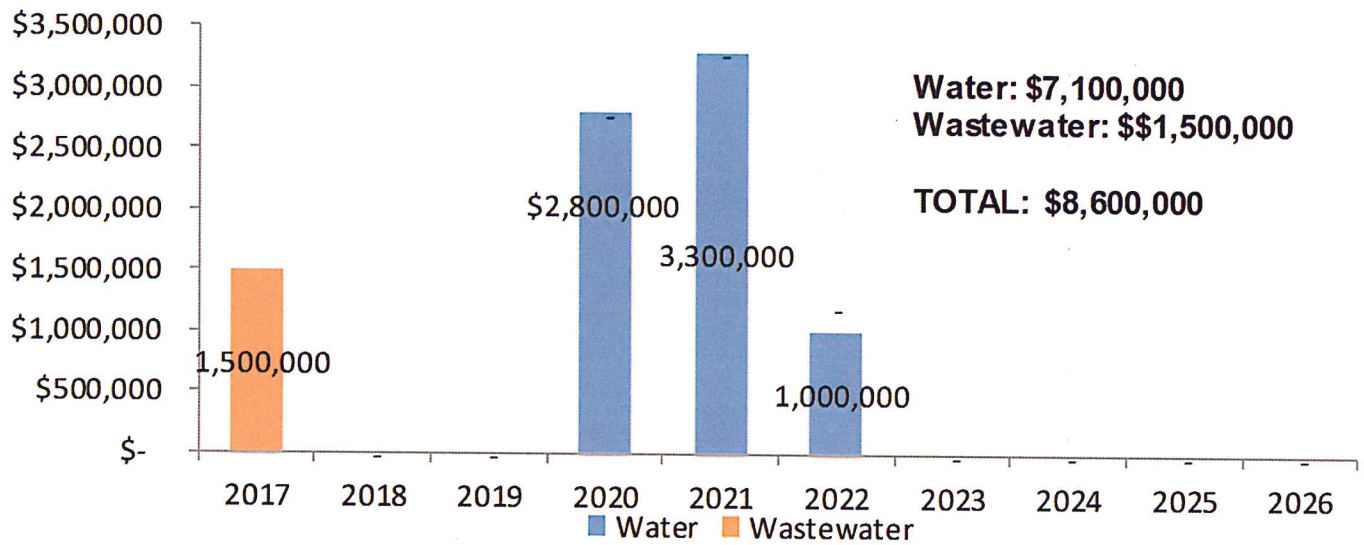
Water and Wastewater Utility Analysis and Recommendations

5 Year Water and Wastewater Capital Improvement Plan

Project	FY17	FY18	FY19	FY20	Total By Project
Water Projects					
Water Line Replacement	$2,000,003	already issued- 2015			$2,000,003
Hwy. 90 Looping	$150,000				$150,000
Airport Plant/Distribution			**$3,300,000**	$0	$3,300,000
Cross Hill Distribution		$0	$0	**$1,000,000**	$1,000,000
Eastside Elev Storage Tank		**$2,800,000**	$0	$0	$2,800,000
Wastewater Projects					
East Side Lift Station	$3,050,000	already issued- 2015A			$3,050,000
WWTP Improvement	$7,330,745	already issued- 2015B			$7,330,745
WWTP Additional Funding Needed	$1,500,000	Issue in FY 2017			$1,500,000
Total By Year	$14,030,748	$2,800,000	$3,300,000	$1,000,000	
Total by Impact Fees	$150,000				$150,000
Total By Utility Debt		**$2,800,000**	**$3,300,000**	**$1,000,000**	**$7,100,000**
Total By TWDB Loan	$11,880,745				$11,880,745

Forecast Schedule for New Bond Issues

- FY 2017 $1,500,000 for additional costs of WWTP Expansion
- FY 2018 (moved to FY 2020) - Elevated Water Storage Tank: $2.80 Million
- FY 2019 (FY 2021) - Airport Plant/Distribution: $3.30 Million
- FY 2020 (FY 2022) - Cross Hill Distribution: $1.00 Million
- Total over next four years + $7.10 Million in new Water Debt



Water: $7,100,000
Wastewater: $$1,500,000

TOTAL: $8,600,000

Water and Wastewater Forecast
Cost of Service

	2017	2018	2019	2020	2021
Operating	$ 1,199,737	$ 1,275,213	$ 1,369,981	$ 1,363,460	$ 1,441,570
Transfers / Allocations	655,635	666,551	677,794	689,375	701,303
Capital Outlays	290,975	200,000	200,000	200,000	200,000
Debt Service	874,942	882,827	882,570	1,099,252	1,355,104
Total Cost of Services	**$ 3,021,289**	**$ 3,024,590**	**$ 3,130,345**	**$ 3,352,087**	**$ 3,697,976**

Alternative 1 –Fund Balance Drawdown
Proposed Water Rate Plan

Scenario: Alt 2 - Alt 1 plus addt'l WWTP debt	Effective Date of Rate Adjustment						
	Current	Oct-16	Oct-17	Oct-18	Oct-19	Oct-20	Oct-21
			WATER Rates				
Minimum Charge -- Residential Inside							
All Meters	$ 15.51	$ 19.39	$ 24.23	$ 30.29	$ 37.87	$ 39.76	$ 41.75
Minimum Charge -- Commercial Inside							
All Meters	19.38	24.23	30.28	37.85	47.31	49.68	52.16
Volume/1,000 Gal -- All Rate Classes - Inside							
0 -- 5,000	3.65	4.56	5.70	7.13	8.91	9.36	9.82
5,001 10,000	3.90	4.88	6.09	7.62	9.52	10.00	10.50
10,001 20,000	4.31	5.39	6.73	8.42	10.52	11.05	11.60
20,001 -- 30,000	4.56	5.70	7.13	8.91	11.13	11.69	12.27
30,001 -- 40,000	4.81	6.01	7.52	9.39	11.74	12.33	12.95
40,001 -- 50,000	5.06	6.33	7.91	9.88	12.35	12.97	13.62
50,001 -- Above	5.82	7.28	9.09	11.37	14.21	14.92	15.67

For Outside Accounts, Add 25% Surcharge to all rate components beginning October 2016

Alternative 1 – Fund Balance Drawdown
Proposed Wastewater Rate Plan

Scenario:		Effective Date of Rate Adjustment						
Alt 2 - Alt 1 plus addt'l WWTP debt	Current	Oct-16	Oct-17	Oct-18	Oct-19	Oct-20	Oct-21
			WASTEWATER Rates				
Residential Inside -- Min. & Volume Charges							
Minimum Chg (includes 2,000 Gallons)	$ 14.31	$ 17.89	$ 22.36	$ 27.95	$ 34.94	$ 43.67	$ 45.85
Volume Rate per 1,000 Gal. (Over 2,000)	6.13	7.66	9.58	11.97	14.97	18.71	19.64
(Based on Winter Avg)							
Commercial Inside-- Min. & Volume Charges							
Minimum Charge	$ 20.27	$ 25.34	$ 31.67	$ 39.59	$ 49.49	$ 61.86	$ 64.95
Volume/1,000 Gal	6.13	7.66	9.58	11.97	14.97	18.71	19.64

For Outside Accounts, Add 25% Surcharge to all rate components beginning October 2016

Alt 1 Proposed Water/WW Rate Plan
Impact on Monthly Residential Charges

Scenario:

Alt 2 - Alt 1 plus addt'l WWTP debt

	Current	Effective Date of Rate Adjustment Oct-16	Oct-17	Oct-18	Oct-19	Oct-20	Oct-21
Residential Monthly Bills							
5,000 Water, 5,000 WW	$ 66.46	$ **83.08**	$ 103.84	$ 129.80	$ 162.26	$ 186.34	$ 195.65
Difference		**16.62**	20.77	25.96	32.45	24.08	9.32
10,000 Water, 5,000 WW	85.96	**107.45**	134.31	167.89	209.86	236.32	248.14
Difference		**21.49**	26.86	33.58	41.97	26.46	11.82

Summary of Results -- Rate Calculator	2017	2018	2019	2020	2021
Net Revenues Available for Contingency and Coverage					
Water	(260,523)	91,381	367,492	594,662	428,081
Wastew ater	(903,696)	(793,171)	(614,252)	(333,963)	1,617
Total	**(1,164,219)**	**(701,791)**	**(246,760)**	**260,699**	**429,697**
Debt Coverage W WW Only	**0.00**	**0.43**	**0.95**	**1.42**	**1.46**
Days of Fund Balance W/WW only	359	274	236	249	268
Debt Coverage All Utilities	**4.75**	**4.83**	**5.04**	**4.13**	**2.94**
Days of Fund Balance All Utilities	**249**	**180**	**155**	**177**	**196**

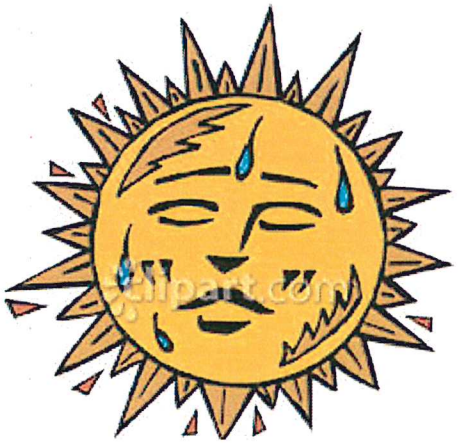
Impact on Average Residential Ratepayer on Consolidated Bill for all Four Utilities

		Effective Date of Rate Adjustment					
		Current	Oct-16	Oct-17	Oct-18	Oct-19	Oct-20
Residential Monthly Bill 5,000 Gallons Water & WW							
5,000 Gal Wtr & WW	Total	$ 66.46	**$ 83.08**	$ 103.84	$ 129.80	$ 162.26	$ 186.34
Electric Rates - Residential							
Average Usage 1000 kWh	Total for Minimum and kWh	$ 135.73	**$ 139.80**	$ 144.00	$ 148.32	$ 152.77	$ 158.88
Gas Rates -- Residential							
2,000 CF	Total for Base and Usage	$ 27.17	**$ 29.21**	$ 30.67	$ 31.59	$ 32.54	$ 33.51
Consolidated Billing for 5,000 gallons water; 5,000 gallons wastewater; 1,000 kWh Electric; 2,000 CF Gas							
	Total for all utilities	$ 229.36	**$ 252.08**	$ 278.51	$ 309.71	$ 347.56	$ 378.72
	Increase -- $		**22.72**	26.42	31.20	37.85	31.17

Regular Revenue and Expense Reviews are recommended in order to adjust rate plan for changes in CIP, Expenses, Growth, Usage, etc.

Presentation Summary
How Will Rate Plan Benefit City and Citizens?

- Rate plan is necessary to enable the City to recover all of its costs
- Without rate plan, the City will be selling its service at below cost and will be unable to contribute to General Fund
- Adoption of rate plan will ensure that the City is able to continue to maintain a financially healthy utility



Questions?

City of Castroville, Texas

2016 Electric, Gas, Water and Wastewater

Rate Study and Financial Forecast

Staff Worksession

October 2016

WILLDAN | Economists.com

Presentation Format

- Introduction
- Electric Rate Study
- Natural Gas Rate Study
- Water/WW Rate Study
- Presentation Summary

Facts about Utility Rates in Texas and USA

- Average electric, water and wastewater utility has been increasing rates 3-6% per year; trend expected to continue
- Natural Gas costs have decreased yet remain highly volatile
- Many reasons for increases are beyond a utility's ability to influence
- 30-40% of utilities charge rates that do not cover their costs

Utility Rate Plans
Overall Goals

- Fund all operating expenses
- Provide means to finance Capital Improvement Plan
- Ensure that each utility is fully self-sustaining
- Minimize impact of any rate adjustments on ratepayers

City of Castroville
Initial Observations

- Previous annual rate adjustments have contributed to the financial health and stability of the utility

- However, due to increasing costs, rate adjustments are necessary to ensure all operating costs are covered and identified capital requirements are funded

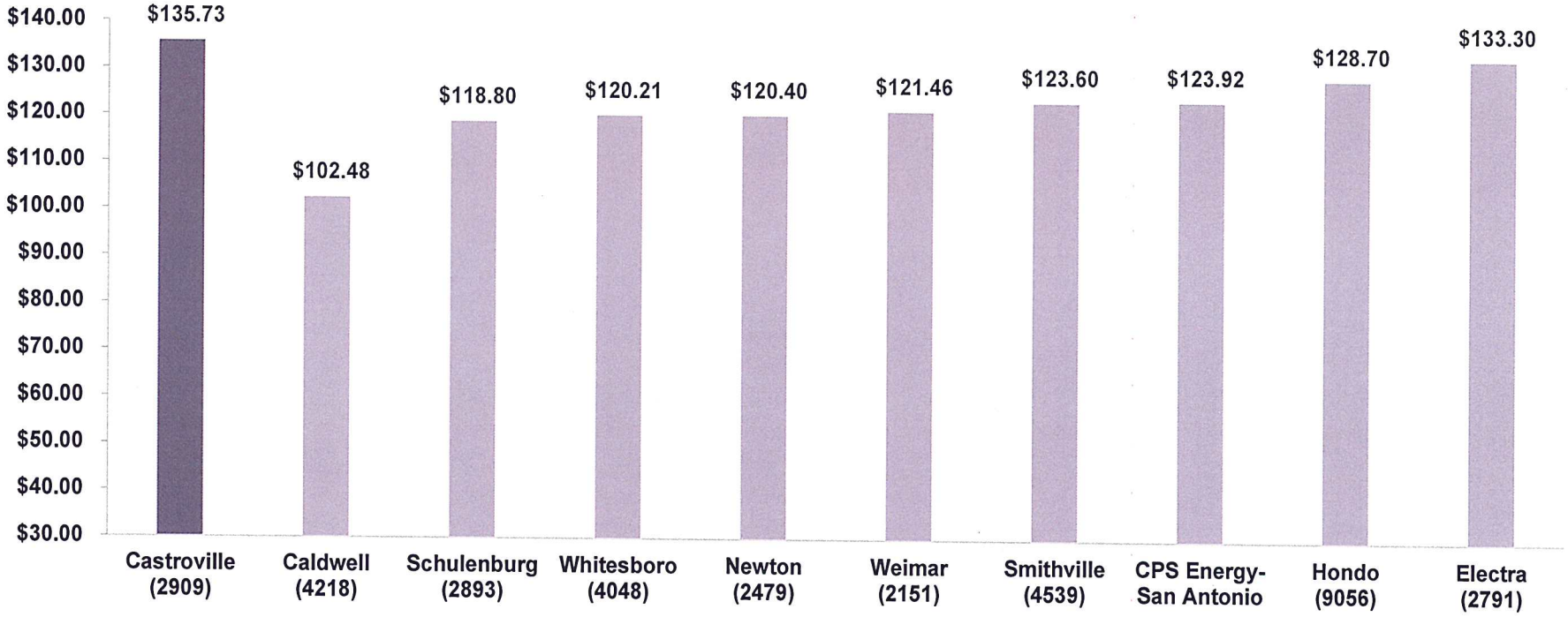
Electric Utility
Analysis and Recommendations

Current Electric Rates
Effective October 1, 2015

	Resdential Inside	Residential Outside	Residential Senior	Commercial Inside	Commercial Outside
Minimum Bill	$ 9.13	$ 9.13	$ 8.67	$ 23.97	$ 23.97
Metered Usage $ per kWh	0.1266	0.1266	0.1203	0.1266	0.1266

Residential - Sr. Account get a 5% discount off rates

Electric Monthly Residential Charges for 1,000 kWh Usage

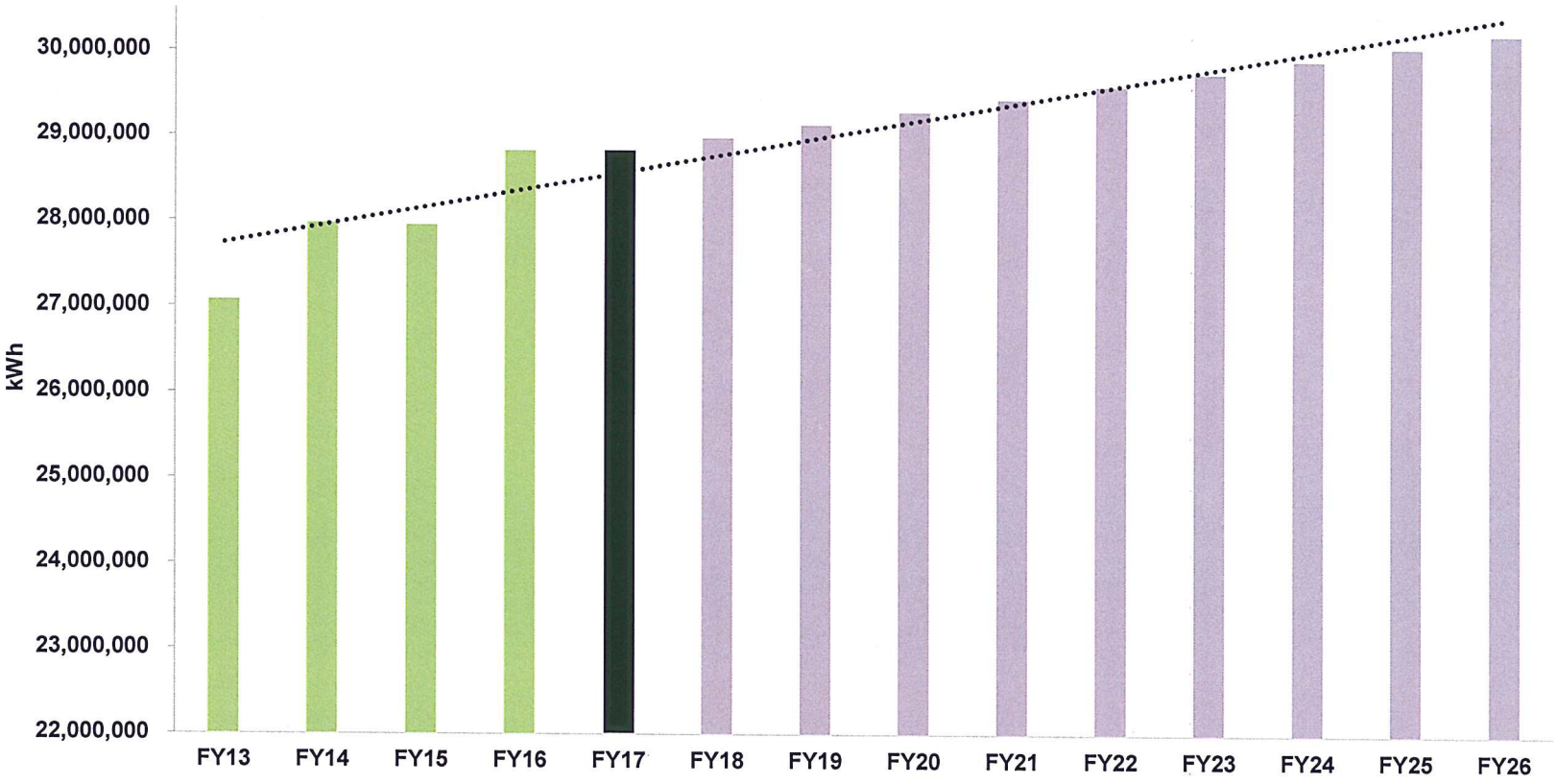


Population of each City indicated in parentheses

Electric Test Year Customers and Usage

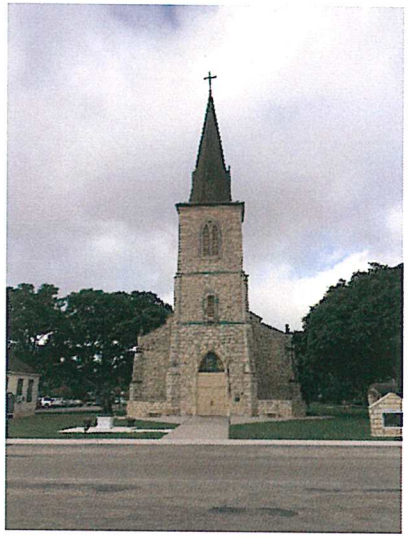
	July 2016	Usage -- kWh August 2015 - July 2016	Percent of Total Usage
Residential - In	913	11,866,741	41.17%
Residential - Out	8	91,068	0.32%
Residential- Senior	271	3,219,217	11.17%
Commercial - In	248	11,423,279	39.63%
Commercial - Out	3	66,300	0.23%
City Accounts	51	2,158,694	7.49%
Total	**1,494**	**28,825,299**	**100.00%**

Electric Historical and Forecast Sales

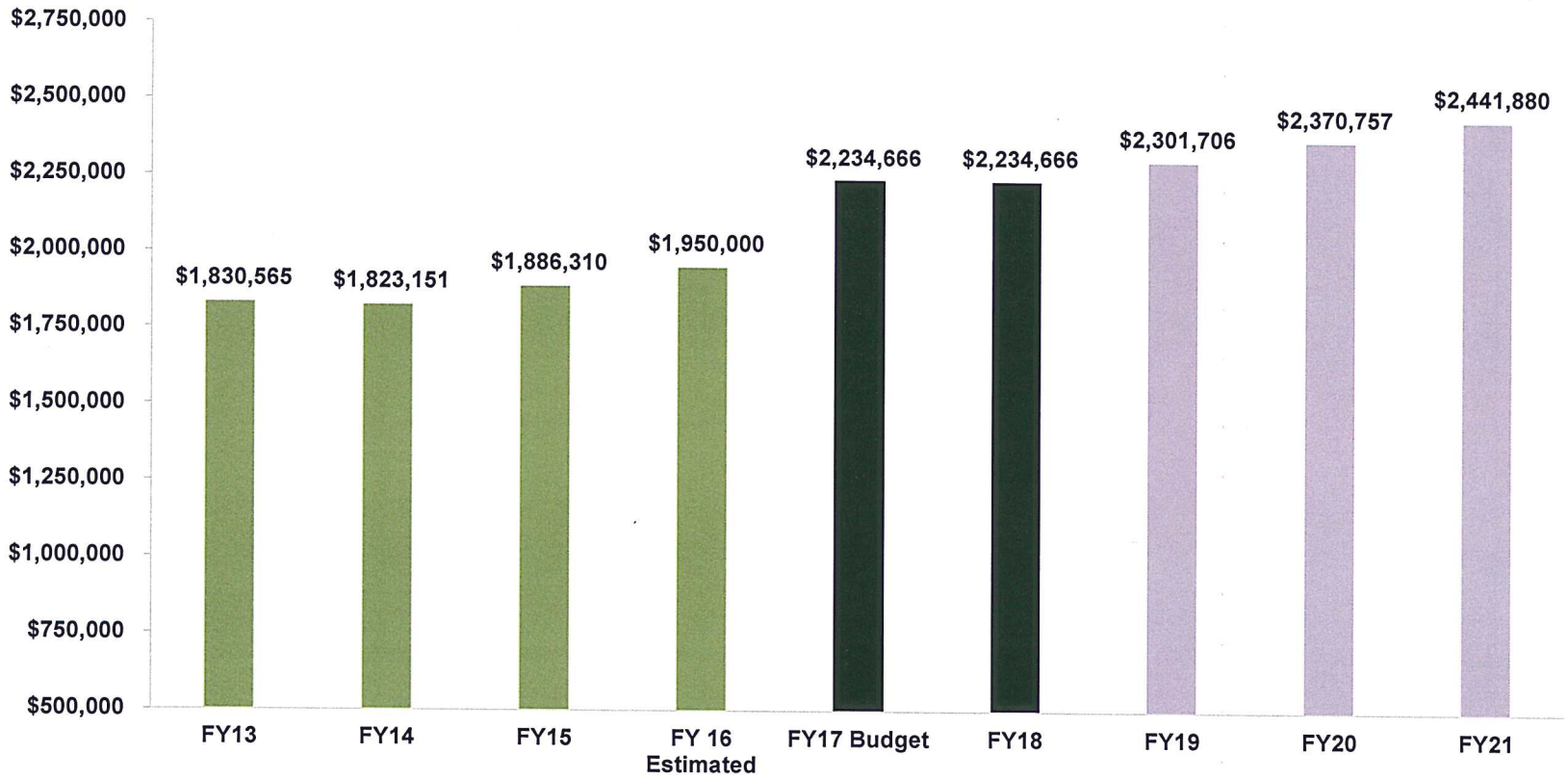


Electric Utility 5 Year Financial Forecast Primary Assumptions

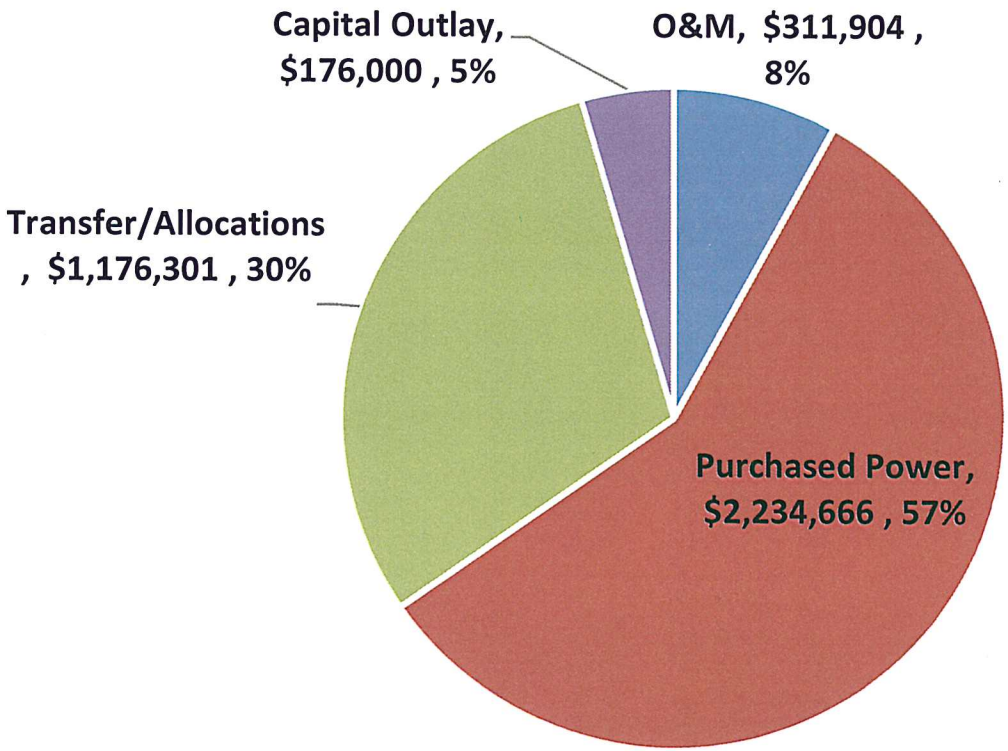
- Account growth is expected to increase by 5 Residential and 2 Commercial accounts per year
- Outside Residential and Commercial Rates 25% higher than Inside City Rates Beginning in FY17
- Most personnel/operating costs increase 3.0 – 8.0% per year
- CPS Contract has Pricing Term changes effective October 2016 -- Electric Supply Costs expected to increase 13% in FY17 and remain flat in FY18
- City issues $2.6 million bond in FY 2020 to fund capital improvements



CPS Contracted Electric Supply Costs



FY 2017
Electric Cost of Service



Total = $3,898,871

Electric Utility CIP and Forecast Schedule for New Bond Issues

- FY 2020 – Country Village District: $1.1 Million
- FY 2021 – River Bluff District: $2.5 Million
- Total Electric Debt Issued in FY 2020 = $2.6 Million

Electric Utility
Forecast Net Revenue Requirement

	2017	2018	2019	2020	2021
Operating Expense	$ 311,904	$ 323,781	$ 336,206	$ 349,211	$ 362,830
Purchased Power	2,234,666	2,234,666	2,301,706	2,370,757	2,441,880
Transfers/Allocations	1,176,301	1,211,590	1,247,938	1,285,376	1,323,937
Debt Service	-	-	-	-	250,237
Capital Outlays	176,000	178,880	181,846	184,902	158,049
Total Cost of Service	**$ 3,898,871**	**$ 3,948,917**	**$ 4,067,696**	**$ 4,190,246**	**$ 4,536,932**
Less Non-Rate Revs	(62,923)	(62,923)	(62,923)	(62,923)	(62,923)
Net Revenue Rqmt	**$ 3,835,948**	**$ 3,885,994**	**$ 4,004,774**	**$ 4,127,323**	**$ 4,474,010**

Proposed Electric Rate Plan

	Oct-15	Effective Oct-16	Effective Oct-17	Effective Oct-18	Effective Oct-19	Effective Oct-20
Residential - In						
Minimum Bill	$ 9.13	**$ 9.40**	$ 9.69	$ 9.98	$ 10.28	$ 10.69
Energy per kWh	0.1266	**0.1304**	0.1343	0.1383	0.1425	0.1482
Residential - Out						
Minimum Bill	9.13	**11.75**	12.11	12.47	12.84	13.36
Energy per kWh	0.1266	**0.1630**	0.1679	0.1729	0.1781	0.1852
Residential- Senior						
Minimum Bill	8.67	**8.93**	9.20	9.48	9.76	10.15
Energy per kWh	0.1203	**0.1239**	0.1276	0.1314	0.1354	0.1408
Commercial - In						
Minimum Bill	23.97	**24.69**	25.43	26.19	26.98	28.06
Energy per kWh	0.1266	**0.1304**	0.1343	0.1383	0.1425	0.1482
Commercial - Out						
Minimum Bill	23.97	**30.86**	31.79	32.74	33.72	35.07
Energy per kWh	0.1266	**0.1630**	0.1679	0.1729	0.1781	0.1852

Electric Rate Proposal -- Impact on Monthly Residential - Inside and Outside Bills

Residential INSIDE Monthly Charges

KWh		Oct-15	Effective Oct-16	Effective Oct-17	Effective Oct-18	Effective Oct-19	Effective Oct-20
500							
	Total	$ 72.43	$ 74.60	$ 76.84	$ 79.15	$ 81.52	$ 84.78
	Increase		2.17	2.24	2.31	2.37	3.26
1,000							
	Total	135.73	139.80	144.00	148.32	152.77	158.88
	Increase		4.07	4.19	4.32	4.45	6.11
2,000							
	Total	262.33	270.20	278.31	286.66	295.25	307.06
	Increase		7.87	8.11	8.35	8.60	11.81

Residential OUTSIDE Monthly Charges

500							
	Total	$ 72.43	$ 93.25	$ 96.05	$ 98.93	$ 101.90	$ 105.98
	Increase		20.82	2.80	2.88	2.97	4.08
1,000							
	Total	$ 135.73	$ 174.75	$ 179.99	$ 185.39	$ 190.96	$ 198.59
	Increase		39.02	5.24	5.40	5.56	7.64
2,000							
	Total	$ 262.33	$ 337.75	$ 347.88	$ 358.32	$ 369.07	$ 383.83
	Increase		75.42	10.13	10.44	10.75	14.76

Average Residential Electric Usage = 1,000 kWh per month

Gas Utility
Analysis and Recommendations

Current Gas Rates

	Residential Inside	Residential Outside	Commercial Inside	Commercial Outside
Service Fee	$ 10.73	$ 10.73	$ 13.11	$ 13.11
Usage Charge (per 1,000 CF)	8.22	8.22	8.22	8.22
Cost of Gas to City	VARIES MONTHLY			

Comparison of Average Price Per MCF – CY 2014

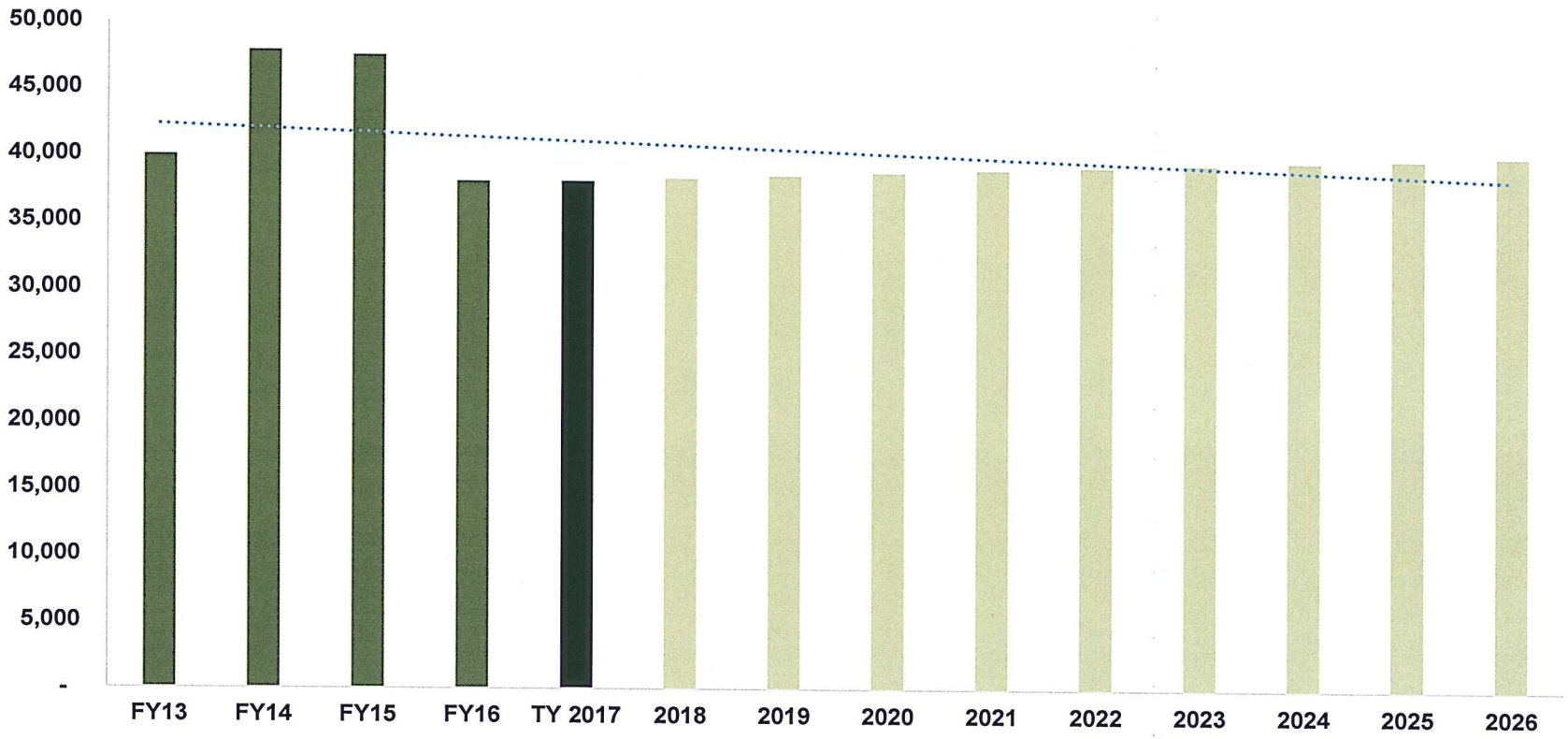
* Municipally Owned Distribution Systems

Source: : Railroad Commission of Texas – CY 2014 Average Price of Gas for Municipally and Investor Owned Systems

Gas Test Year Customers and Usage

	July 2016	Usage - MCF August 2015 - July 2016	Percent of Total Usage
Residential - In	747	17,902	47.97%
Residential - Out	9	267	0.71%
Commercial - In	85	15,972	42.80%
Commercial - Out	12	3,125	8.37%
City Accounts	4	53	0.14%
Total	**857**	**37,319**	**100.00%**

Gas Historical and Forecast Sales



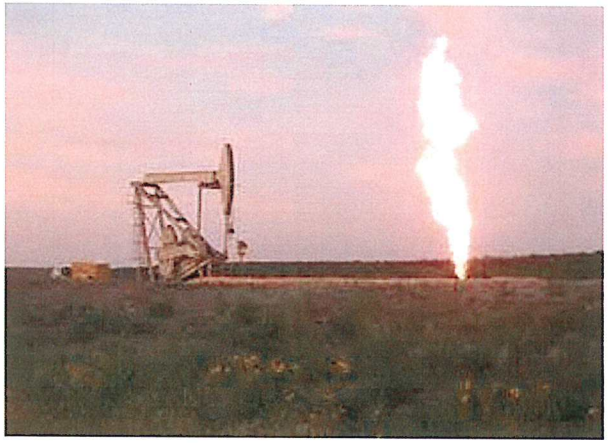
Total Gas Sales Decreased 20% in FY 2016

Gas Department
Primary Assumptions

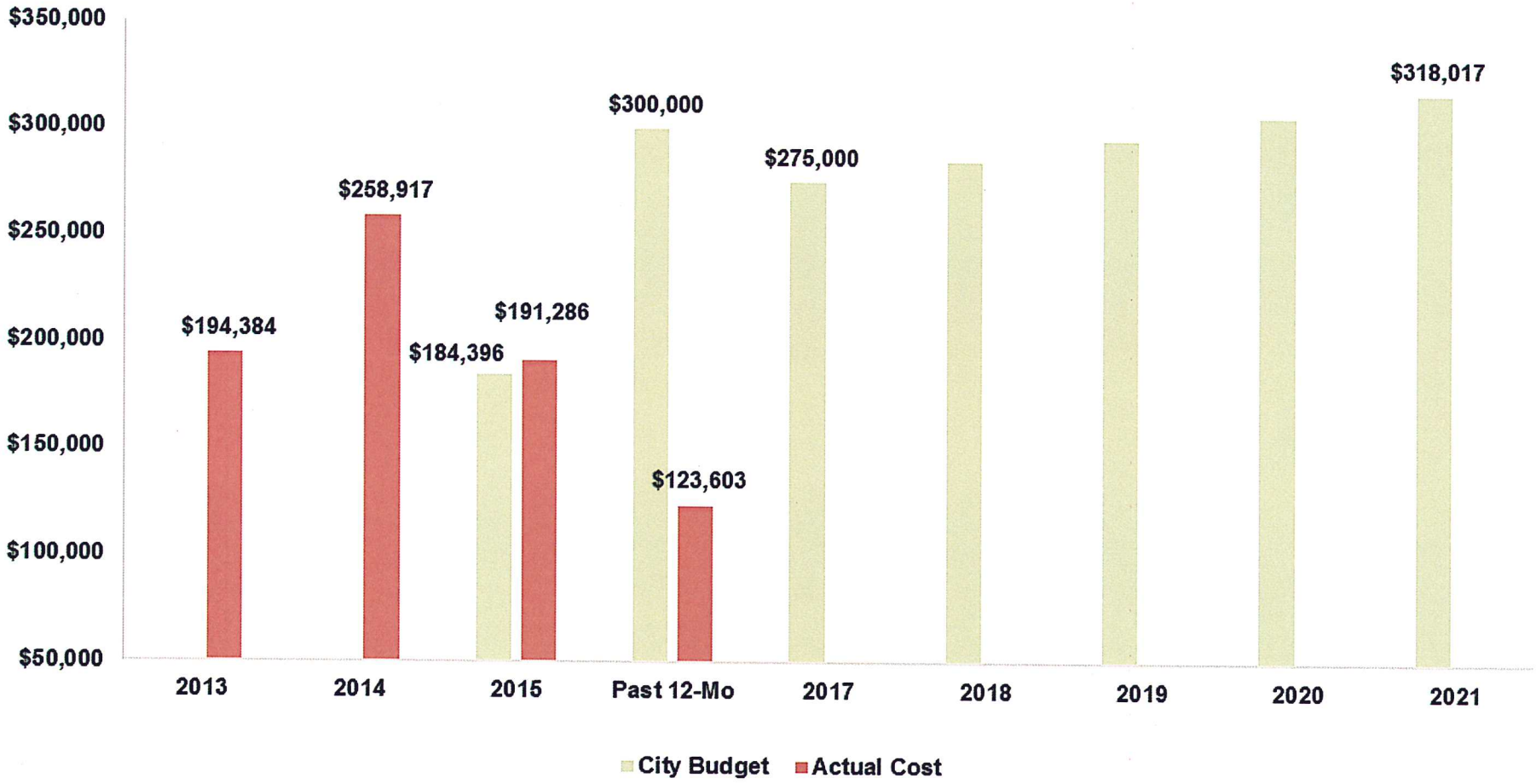
- Account growth is expected to increase by 4 Residential and 2 Commercial accounts per year
- Most personnel/operating costs increase 3.0 – 8.0% per year
- Cost of Gas to City is based on FY2017 Budget
- Utilities System Maintenance and Line Testing/Repair are funded from Rate Revenue

City Purchased Gas Supply

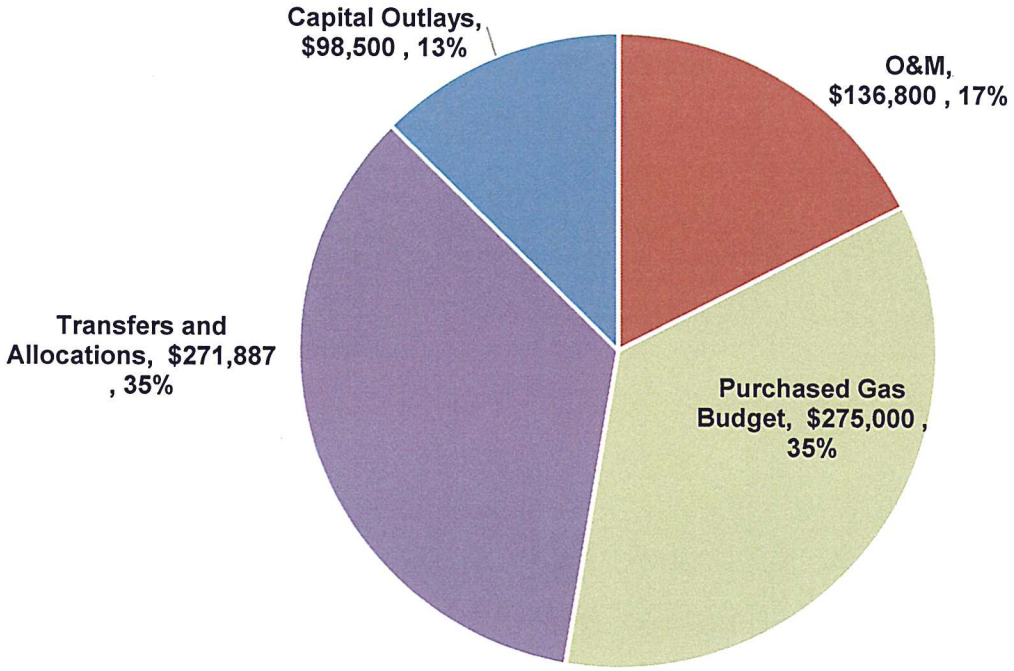
- Current Supply Contract is with West Texas Gas Marketing, Inc. and is effective December 1, 2015 – November 30, 2016
- Contract Price is based on the First of the month East Texas – Houston Ship Channel index price as published in "Inside FERC's – Gas Market Report, under the table entitled, Market Center Spot Gas Prices, plus $.65 per MMBtu
- Spot Gas Prices are highly volatile and currently at historic lows. Futures settlement prices between September 2016 and September 2018 vary up to 20%



West Texas Contracted Gas Supply Costs and Budget



Gas Cost of Service
FY 2017



Total = $782,187

Gas Department
Forecast Net Revenue Requirement

	2017	2018	2019	2020	2021
Operating Expense	$ 136,800	$ 140,932	$ 145,189	$ 149,574	$ 154,092
Purchased Gas	275,000	285,175	295,713	306,626	317,928
Transfers/Allocations	27,128	27,942	28,780	29,643	30,533
Capital Outlays	98,500	100,000	53,045	54,636	56,275
Debt Service	-	-	-	-	-
Total Cost of Service	$ 782,187	$ 806,151	$ 782,392	$ 807,935	$ 834,306
Less Non-Rate Revenues	(14,886)	(14,886)	(14,886)	(14,886)	(14,886)
Net Revenue Rqmt	**$ 767,301**	**$ 791,265**	**$ 767,506**	**$ 793,049**	**$ 819,420**

2 Rate Plan Alternatives Based on Funding Approach

- Alternative 1: Rate Pay Full Gas Utility Cost of Service
- Alternative 2: Drawdown Fund Balance by $100,000 to reduce magnitude of rate adjustment
- Both alternatives - Outside Residential and Commercial Rates 25% higher than Inside City Rates Beginning in FY17

Gas Alt 1 - Cost of Service Recommended Rate Plan

		Oct-15	Effective Oct-16	Effective Oct-17	Effective Oct-18	Effective Oct-19	Effective Oct-20
Cost of Gas to City VARIES MONTHLY		$ 3.19	**$ 7.09**	$ 7.30	$ 7.52	$ 7.75	$ 7.98
Residential - In							
Service Fee		$ 10.73	**$ 13.09**	$ 13.48	$ 13.89	$ 14.30	$ 14.73
Usage Charge	(Per 1,000 CF)	8.22	**10.03**	10.33	10.64	10.96	11.29
Residential - Out							
Service Fee		$ 10.73	**$ 16.36**	$ 16.85	$ 17.36	$ 17.88	$ 18.42
Usage Charge	(Per 1,000 CF)	8.22	**12.54**	12.91	13.30	13.70	14.11
Commercial - In							
Service Fee		$ 13.11	**$ 15.99**	$ 16.47	$ 16.97	$ 17.48	$ 18.00
Usage Charge	(Per 1,000 CF)	8.22	**10.03**	10.33	10.64	10.96	11.29
Commercial - Out							
Service Fee		$ 13.11	**$ 19.99**	$ 20.59	$ 21.21	$ 21.85	$ 22.50
Usage Charge	(Per 1,000 CF)	8.22	**12.54**	12.91	13.30	13.70	14.11
City Accounts							
Service Fee		$ 13.11	**$ 15.99**	$ 16.47	$ 16.97	$ 17.48	$ 18.00
Usage Charge	(Per 1,000 CF)	8.22	**10.03**	10.33	10.64	10.96	11.29

Gas Alt 1 - Cost of Service Impact on Residential Rates

	Oct-15	Effective Oct-16	Effective Oct-17	Effective Oct-18	Effective Oct-19	Effective Oct-20
Residential INSIDE Monthly Charges						
Cost of Gas to City Per CF VARIES MONTHLY	$ 3.19	**$ 7.09**	$ 7.30	$ 7.52	$ 7.75	$ 7.98
2,000 CF	$ 27.17	$ 33.15	$ 34.14	$ 35.17	$ 36.22	$ 37.31
Increase		**5.98**	**0.99**	**1.02**	**1.05**	**1.09**
4,000 CF	$ 43.61	$ 53.20	$ 54.80	$ 56.44	$ 58.14	$ 59.88
Increase		**9.59**	**1.60**	**1.64**	**1.69**	**1.74**
Residential OUTSIDE Monthly Charges						
Cost of Gas to City Per CF VARIES MONTHLY	$ 3.19	$ 7.09	$ 7.30	$ 7.52	$ 7.75	$ 7.98
2,000 CF	$ 27.17	$ 41.43	$ 42.68	$ 43.96	$ 45.28	$ 46.63
Increase		**14.26**	**1.24**	**1.28**	**1.32**	**1.36**
4,000 CF	$ 43.61	$ 66.51	$ 68.50	$ 70.56	$ 72.67	$ 74.85
Increase		**22.90**	**2.00**	**2.06**	**2.12**	**2.18**

Average Residential Gas Usage = 2,000 CF per month

Gas Alt 2 - Fund Balance Drawdown
Recommended Rate Plan

		Oct-15	Effective Oct-16	Effective Oct-17	Effective Oct-18	Effective Oct-19	Effective Oct-20
Cost of Gas to City VARIES MONTHLY		$ 3.19	**$ 7.09**	$ 7.30	$ 7.52	$ 7.75	$ 7.98
Residential - In							
Service Fee		$ 10.73	**$ 11.53**	$ 12.11	$ 12.47	$ 12.85	$ 13.23
Usage Charge	(Per 1,000 CF)	8.22	**8.84**	9.28	9.56	9.84	10.14
Residential - Out							
Service Fee		$ 10.73	**$ 14.42**	$ 15.14	$ 15.59	$ 16.06	$ 16.54
Usage Charge	(Per 1,000 CF)	8.22	**11.05**	11.60	11.95	12.30	12.67
Commercial - In							
Service Fee		$ 13.11	**$ 14.09**	$ 14.80	$ 15.24	$ 15.70	$ 16.17
Usage Charge	(Per 1,000 CF)	8.22	**8.84**	9.28	9.56	9.84	10.14
Commercial - Out							
Service Fee		$ 13.11	**$ 17.62**	$ 18.50	$ 19.05	$ 19.62	$ 20.21
Usage Charge	(Per 1,000 CF)	8.22	**11.05**	11.60	11.95	12.30	12.67
City Accounts							
Service Fee		$ 13.11	**$ 14.09**	$ 14.80	$ 15.24	$ 15.70	$ 16.17
Usage Charge	(Per 1,000 CF)	8.22	**8.84**	9.28	9.56	9.84	10.14

Gas Alt 2 - Fund Balance Drawdown Impact on Residential Rates

	Oct-15	Effective Oct-16	Effective Oct-17	Effective Oct-18	Effective Oct-19	Effective Oct-20
Residential INSIDE Monthly Charges						
Cost of Gas to City Per CF VARIES MONTHLY	$ 3.19	**$ 7.09**	$ 7.30	$ 7.52	$ 7.75	$ 7.98
2,000 CF	$ 27.17	$ 29.21	$ 30.67	$ 31.59	$ 32.54	$ 33.51
Increase		**2.04**	**1.46**	**0.92**	**0.95**	**0.98**
4,000 CF	$ 43.61	$ 46.88	$ 49.22	$ 50.70	$ 52.22	$ 53.79
Increase		**3.27**	**2.34**	**1.48**	**1.52**	**1.57**
Residential OUTSIDE Monthly Charges						
Cost of Gas to City Per CF VARIES MONTHLY	$ 3.19	**$ 7.09**	$ 7.30	$ 7.52	$ 7.75	$ 7.98
2,000 CF	$ 27.17	$ 36.51	$ 38.34	$ 39.49	$ 40.67	$ 41.89
Increase		**9.34**	**1.83**	**1.15**	**1.18**	**1.22**
4,000 CF	$ 43.61	$ 58.60	$ 61.53	$ 63.38	$ 65.28	$ 67.24
Increase		**14.99**	**2.93**	**1.85**	**1.90**	**1.96**

Average Residential Gas Usage = 2,000 CF per month

Gas Alt 1 and Alt 2 – Comparison of Impact on Residential Rates

	Oct-15	Effective Oct-16	Effective Oct-17	Effective Oct-18	Effective Oct-19	Effective Oct-20
Residential Monthly Charges						
Cost of Gas to City Per CF VARIES MONTHLY	$ 3.19	**$ 7.09**	$ 7.30	$ 7.52	$ 7.75	$ 7.98
2,000 CF						
Alt 1 - Cost of Service	$ 27.17	$ 33.15	$ 34.14	$ 35.17	$ 36.22	$ 37.31
Alt 2 - Fund Bal Drawdown	27.17	29.21	30.67	31.59	32.54	33.51
		3.94	**3.47**	**3.58**	**3.68**	**3.80**
4,000 CF						
Alt 1 - Cost of Service	$ 43.61	$ 53.20	$ 54.80	$ 56.44	$ 58.14	$ 59.88
Alt 2 - Fund Bal Drawdown	43.61	46.88	49.22	50.70	52.22	53.79
		6.32	**5.58**	**5.74**	**5.92**	**6.09**
6,000 CF						
Alt 1 - Cost of Service	$ 60.05	$ 73.26	$ 75.46	$ 77.72	$ 80.05	$ 82.46
Alt 2 - Fund Bal Drawdown	60.05	64.55	67.78	69.81	71.91	74.07
		8.71	**7.68**	**7.91**	**8.14**	**8.39**

Average Residential Gas Usage = 2,000 CF per month

Water and Wastewater Utility Analysis and Recommendations

City of Castroville
Current Water/WW Rate Structure

Water Base Rates - Inside and Outside

Minimum Charge		
Residential	$	15.51
Commercial		19.38

Water Volume Rates - Inside & Outside

Volume Rate (per 1,000 Gallons)		
0 - 5000	$	3.65
5001 - 10000		3.90
10001 - 20000		4.31
20001 - 30000		4.56
30001 - 40000		4.81
40001 - 50000		5.06
50001 - Above		5.82

Wastewater Base Rate - Inside & Outside

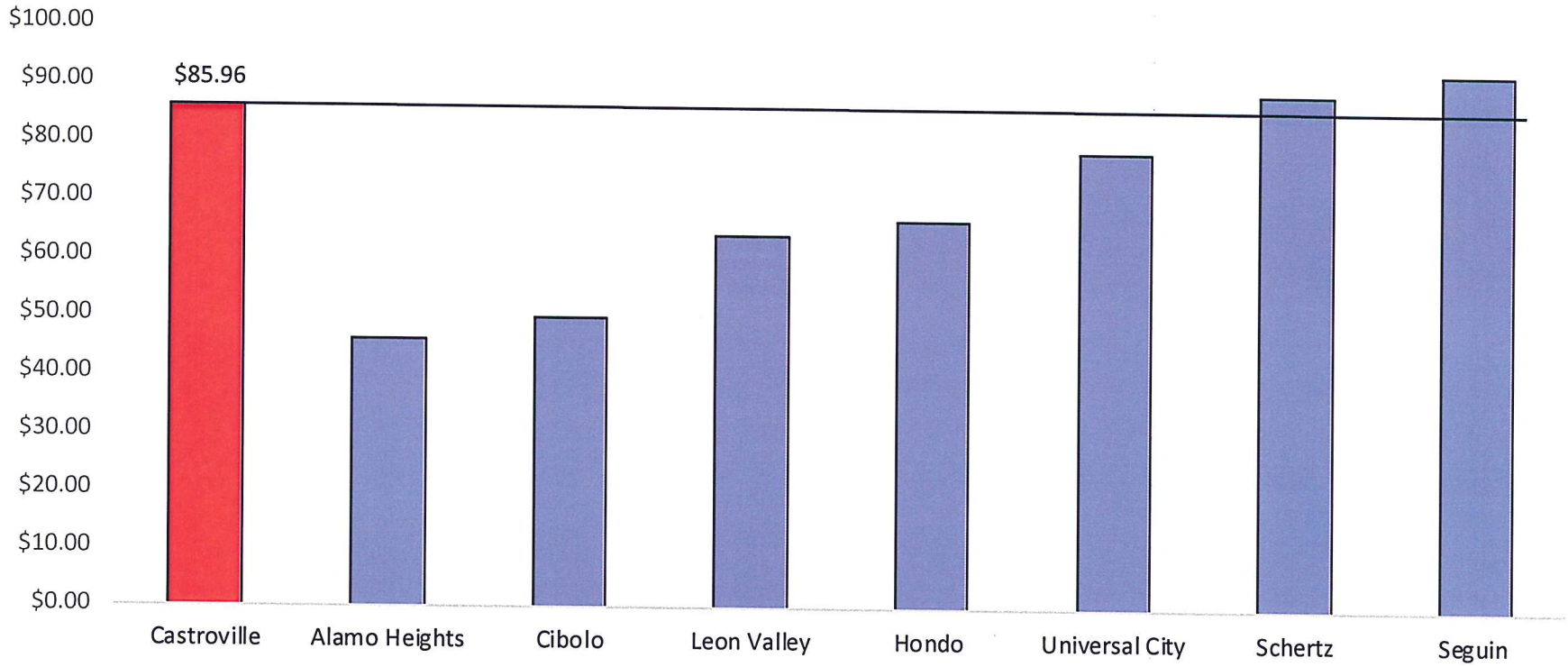
Minimum Charge - includes first 2,000 Gallons		
Residential	$	14.31
Commercial		20.27

Wastewater Volume Rates - Inside & Outside

Volume Rate per 1,000 Gallons over 2,000	$	6.13

Residential volume charges are based on average of monthly. w ater usage during November through February w ith exception of highest month

Monthly Residential Charge Comparison
10,000 Gallons Water & 5,000 Gallons WW



Current Water and Wastewater Accounts

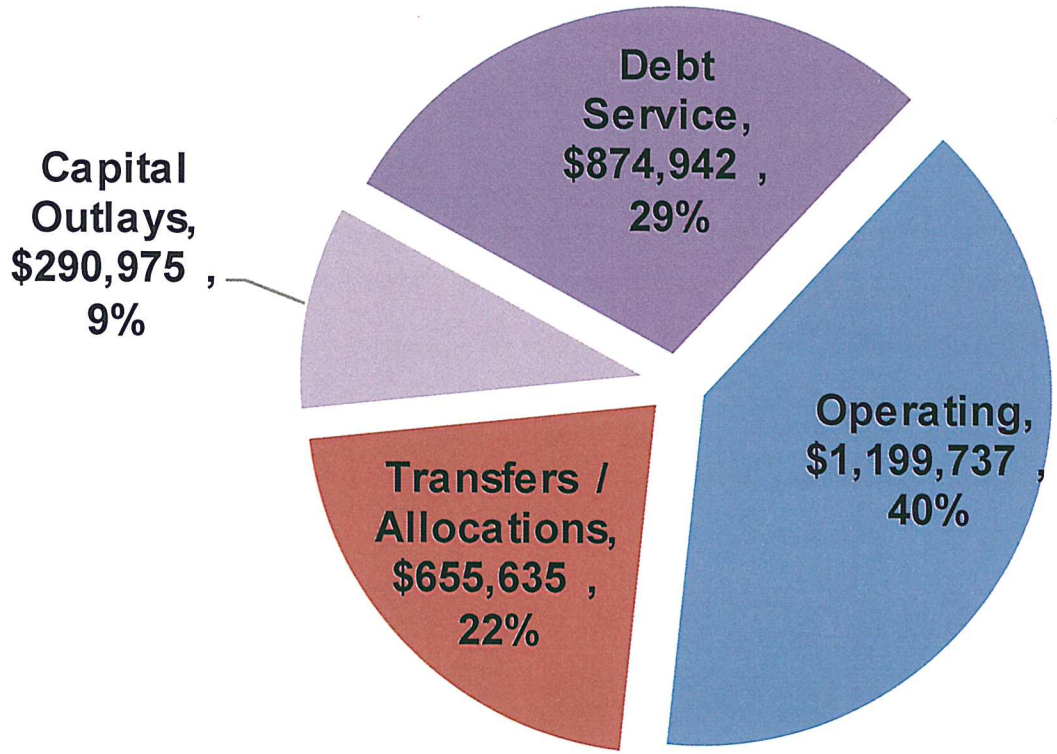
WATER Accounts	
Residential Inside	1,019
Residential Outside	59
Commercial Inside	164
Comm Inside No Sew	-
Commercial Outside	13
All City Accounts	37
Total	**1,292**

WASTEWATER Accounts	
Residential Inside	970
Residential Outside	2
City Average Res Insi	2
Explicit Avg Resid	34
Commercial Inside	154
Commercial Outside	2
Explicit Commercial	2
Total	**1,166**

Key Assumptions Driving W/WW Forecast Revenue Requirement & Rate Plan

- Account and consumption growth expected to be nominal
- Most personnel & operating expenses increase 3-5% per year
- One additional WW employee to be added in conjunction with the WWTP expansion
- CIP funded through debt issued in FY 2015-FY2016, impact fees and $7.1 million in new debt over next five years for Water related projects
- Although CIP calls for water projects funded through debt to be implemented in FY 2018 – FY 2020, model defers debt 2 years in order for rate revenues to meet debt coverage

Water and Wastewater
Test Year Cost of Service



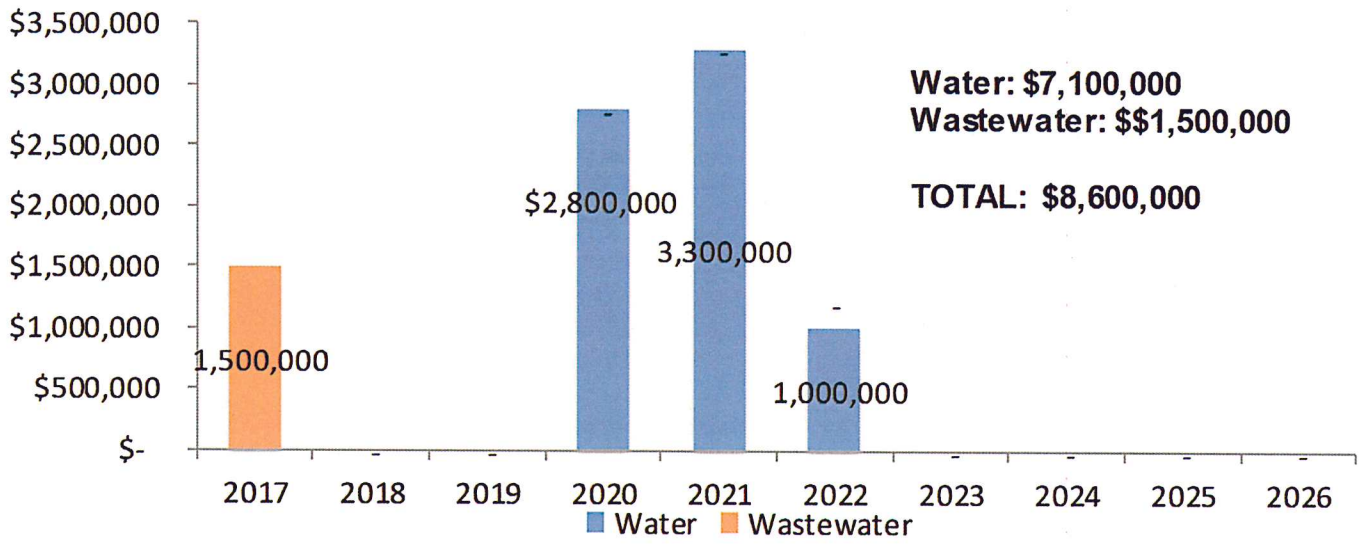
Total Cost of Service
$3,021,289

5 Year Water and Wastewater Capital Improvement Plan

Project	FY17	FY18	FY19	FY20	Total By Project
Water Projects					
Water Line Replacement	$2,000,003	already issued- 2015			$2,000,003
Hwy. 90 Looping	$150,000				$150,000
Airport Plant/Distribution			**$3,300,000**	$0	$3,300,000
Cross Hill Distribution		$0	$0	**$1,000,000**	$1,000,000
Eastside Elev Storage Tank		**$2,800,000**	$0	$0	$2,800,000
Wastewater Projects					
East Side Lift Station	$3,050,000	already issued- 2015A			$3,050,000
WWTP Improvement	$7,330,745	already issued- 2015B			$7,330,745
WWTP Additional Funding Needed	$1,500,000	Issue in FY 2017			$1,500,000
Total By Year	$14,030,748	$2,800,000	$3,300,000	$1,000,000	
Total by Impact Fees	$150,000				$150,000
Total By Utility Debt		**$2,800,000**	**$3,300,000**	**$1,000,000**	**$7,100,000**
Total By TWDB Loan	$11,880,745				$11,880,745

Forecast Schedule for New Bond Issues

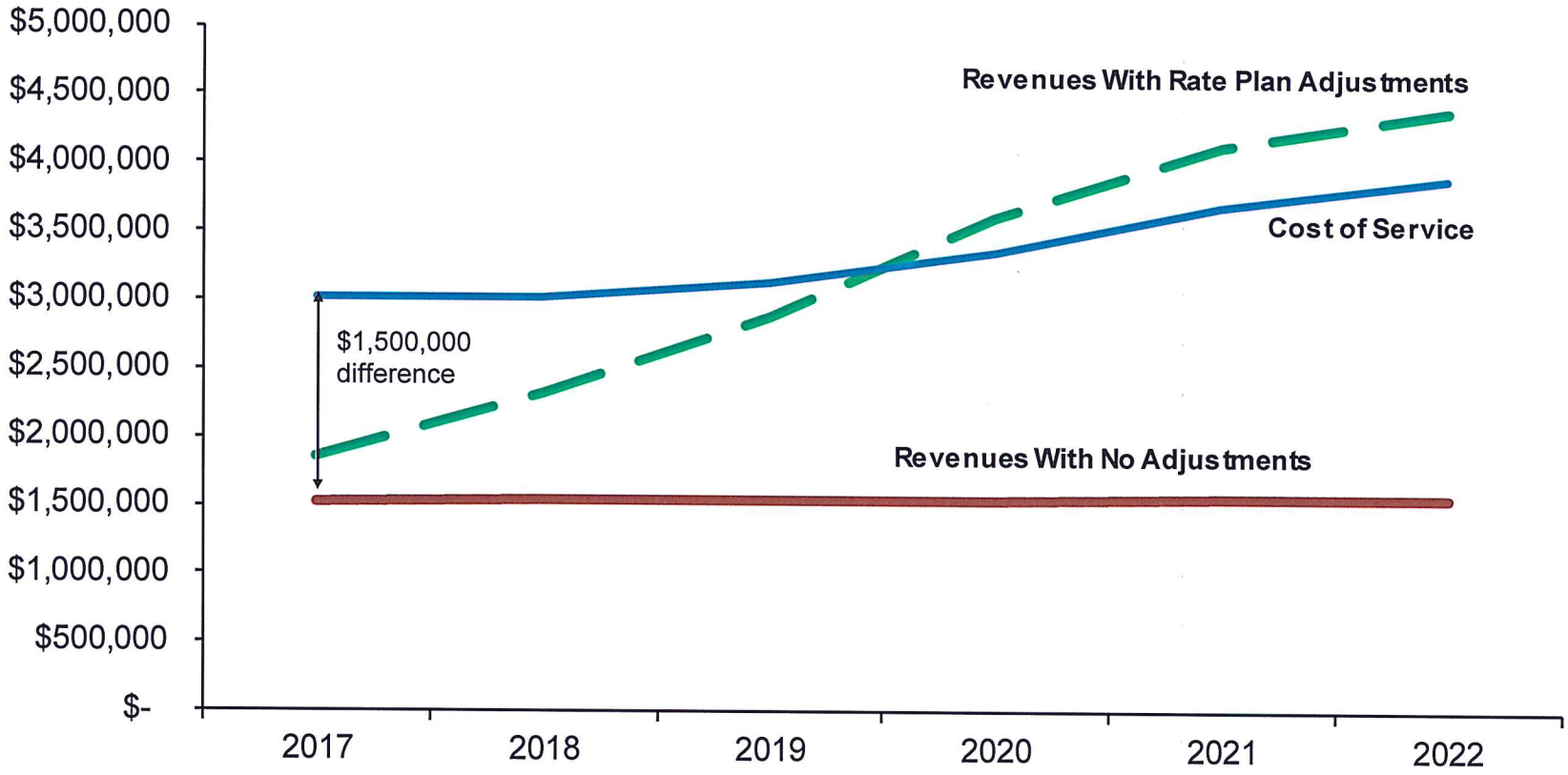
- FY 2017 $1,500,000 for additional costs of WWTP Expansion
- FY 2018 (moved to FY 2020) - Elevated Water Storage Tank: $2.80 Million
- FY 2019 (FY 2021) - Airport Plant/Distribution: $3.30 Million
- FY 2020 (FY 2022) - Cross Hill Distribution: $1.00 Million
- Total over next four years + $7.10 Million in new Water Debt



Water: $7,100,000
Wastewater: $$1,500,000

TOTAL: $8,600,000

Water/Wastewater Cost of Service and Revenues With & Without Rate Adjustments



Adjustments Need To Be Aggressive, Draw On Fund Balance & Defer CIP

- If lender reviews W/WW separately from other utilities, W/WW debt revenues would need to improve to attain acceptable debt coverage ratio to issue new debt
- Suggest all major CIP projects and debt plans be deferred by 2 years and new debt deferred until FY 2020 if possible
- Alternative 1 assumes deferral of new debt until FY 2020, positive cash flow for water and wastewater by FY 2020

Water and Wastewater Forecast
Cost of Service

	2017	2018	2019	2020	2021
Operating	$ 1,199,737	$ 1,275,213	$ 1,369,981	$ 1,363,460	$ 1,441,570
Transfers / Allocations	655,635	666,551	677,794	689,375	701,303
Capital Outlays	290,975	200,000	200,000	200,000	200,000
Debt Service	874,942	882,827	882,570	1,099,252	1,355,104
Total Cost of Services	**$ 3,021,289**	**$ 3,024,590**	**$ 3,130,345**	**$ 3,352,087**	**$ 3,697,976**

Alternative 1 –Fund Balance Drawdown
Proposed Water Rate Plan

Scenario: Alt 2 - Alt 1 plus addt'l WWTP debt	Current	Oct-16	Oct-17	Oct-18	Oct-19	Oct-20	Oct-21
		Effective Date of Rate Adjustment					
			WATER Rates				
Minimum Charge -- Residential Inside							
All Meters	$ 15.51	$ 19.39	$ 24.23	$ 30.29	$ 37.87	$ 39.76	$ 41.75
Minimum Charge -- Commercial Inside							
All Meters	19.38	24.23	30.28	37.85	47.31	49.68	52.16
Volume/1,000 Gal -- All Rate Classes - Inside							
0 -- 5,000	3.65	4.56	5.70	7.13	8.91	9.36	9.82
5,001 10,000	3.90	4.88	6.09	7.62	9.52	10.00	10.50
10,001 20,000	4.31	5.39	6.73	8.42	10.52	11.05	11.60
20,001 -- 30,000	4.56	5.70	7.13	8.91	11.13	11.69	12.27
30,001 -- 40,000	4.81	6.01	7.52	9.39	11.74	12.33	12.95
40,001 -- 50,000	5.06	6.33	7.91	9.88	12.35	12.97	13.62
50,001 -- Above	5.82	7.28	9.09	11.37	14.21	14.92	15.67

For Outside Accounts, Add 25% Surcharge to all rate components beginning October 2016

Alternative 1 – Fund Balance Drawdown
Proposed Wastewater Rate Plan

Scenario:		Effective Date of Rate Adjustment						
Alt 2 - Alt 1 plus addt'l WWTP debt	Current	Oct-16	Oct-17	Oct-18	Oct-19	Oct-20	Oct-21
			WASTEWATER Rates				
Residential Inside -- Min. & Volume Charges							
Minimum Chg	$ 14.31	$ 17.89	$ 22.36	$ 27.95	$ 34.94	$ 43.67	$ 45.85
Volume/1,000 Gal	6.13	7.66	9.58	11.97	14.97	18.71	19.64
(Based on Winter Avg)							
Commercial Inside-- Min. & Volume Charges							
Minimum Charge	$ 20.27	$ 25.34	$ 31.67	$ 39.59	$ 49.49	$ 61.86	$ 64.95
Volume/1,000 Gal	6.13	7.66	9.58	11.97	14.97	18.71	19.64

For Outside Accounts, Add 25% Surcharge to all rate components beginning October 2016

Alt 1 Proposed Water/WW Rate Plan
Impact on Monthly Residential Charges

Scenario:

Alt 2 - Alt 1 plus addt'l WWTP debt

	Current	Effective Date of Rate Adjustment Oct-16	Oct-17	Oct-18	Oct-19	Oct-20	Oct-21
Residential Monthly Bills							
5,000 Water, 5,000 WW	$ 66.46	$ **83.08**	$ 103.84	$ 129.80	$ 162.26	$ 186.34	$ 195.65
Difference		**16.62**	20.77	25.96	32.45	24.08	9.32
10,000 Water, 5,000 WW	85.96	**107.45**	134.31	167.89	209.86	236.32	248.14
Difference		**21.49**	26.86	33.58	41.97	26.46	11.82

Summary of Results -- Rate Calculator	2017	2018	2019	2020	2021
Net Revenues Available for Contingency and Coverage					
Water	(260,523)	91,381	367,492	594,662	428,081
Wastew ater	(903,696)	(793,171)	(614,252)	(333,963)	1,617
Total	**(1,164,219)**	**(701,791)**	**(246,760)**	**260,699**	**429,697**
Debt Coverage W WW Only	**0.00**	**0.43**	**0.95**	**1.42**	**1.46**
Days of Fund Balance W/WW only	359	274	236	249	268
Debt Coverage All Utilities	**4.75**	**4.83**	**5.04**	**4.13**	**2.94**
Days of Fund Balance All Utilities	**249**	**180**	**155**	**177**	**196**

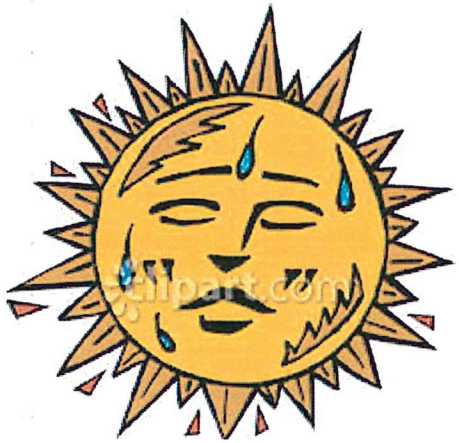
Impact on Average Residential Ratepayer on Consolidated Bill for all Four Utilities

		Effective Date of Rate Adjustment					
		Current	Oct-16	Oct-17	Oct-18	Oct-19	Oct-20
Residential Monthly Bill 5,000 Gallons Water & WW							
5,000 Gal Wtr & WW	Total	$ 66.46	**$ 83.08**	$ 103.84	$ 129.80	$ 162.26	$ 186.34
Electric Rates - Residential							
Average Usage 1000 kWh	Total for Minimum and kWh	$ 135.73	**$ 139.80**	$ 144.00	$ 148.32	$ 152.77	$ 158.88
Gas Rates -- Residential							
2,000 CF	Total for Base and Usage	$ 27.17	**$ 29.21**	$ 30.67	$ 31.59	$ 32.54	$ 33.51
Consolidated Billing for 5,000 gallons water; 5,000 gallons wastewater; 1,000 kWh Electric; 2,000 CF Gas							
	Total for all utilities	$ 229.36	**$ 252.08**	$ 278.51	$ 309.71	$ 347.56	$ 378.72
	Increase -- $		**22.72**	26.42	31.20	37.85	31.17

Regular Revenue and Expense Reviews are recommended in order to adjust rate plan for changes in CIP, Expenses, Growth, Usage, etc.

Presentation Summary
How Will Rate Plan Benefit City and Citizens?

- Rate plan is necessary to enable the City to recover all of its costs
- Without rate plan, the City will be selling its service at below cost and will be unable to contribute to General Fund
- Adoption of rate plan will ensure that the City is able to continue to maintain a financially healthy utility



Next Steps

- Schedule Public Hearing if needed and adopt rate plan
- Complete and submit Rate Study Report

CITY OF CASTROVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

Forecast Summary
Scenario: ***Alt 2 - Alt 1 plus addt'l WWTP debt***

1 **Water and Wastewater Rates**
Alt 2 - Alt 1 plus addt'l WWTP debt

			Current	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Water Rates -- Residential													
Monthly Minimum Charge		**5/8"**	$ 15.51	$ 19.39	$ 24.23	$ 30.29	$ 37.87	$ 39.76	$ 41.75	$ 43.83	$ 46.03	$ 48.33	$ 50.74
Volume Rate Per 1,000 Gal													
-	5,000		$ 3.65	$ 4.56	$ 5.70	$ 7.13	$ 8.91	$ 9.36	$ 9.82	$ 10.32	$ 10.83	$ 11.37	$ 11.94
5,001	10,000		3.90	4.88	6.09	7.62	9.52	10.00	10.50	11.02	11.57	12.15	12.76
10,001	20,000		4.31	5.39	6.73	8.42	10.52	11.05	11.60	12.18	12.79	13.43	14.10
20,001	30,000		4.56	5.70	7.13	8.91	11.13	11.69	12.27	12.89	13.53	14.21	14.92
30,001	40,000		4.81	6.01	7.52	9.39	11.74	12.33	12.95	13.59	14.27	14.99	15.74
40,001	50,000		5.06	6.33	7.91	9.88	12.35	12.97	13.62	14.30	15.02	15.77	16.55
50,001	Above		5.82	7.28	9.09	11.37	14.21	14.92	15.67	16.45	17.27	18.13	19.04
Plus:													
Wastewater Rates -- Residential													
Monthly Minimum Charge			$ 14.31	$ 17.89	$ 22.36	$ 27.95	$ 34.94	$ 43.67	$ 45.85	$ 48.15	$ 50.55	$ 53.08	$ 55.74
Usage Chg	**2,000**	**Above**	6.13	7.66	9.58	11.97	14.97	18.71	19.64	20.62	21.66	22.74	23.88
Residential Monthly Bill -- 5/8" Meter													
5,000 Gal Wtr	Total		$ 66.46	$ 83.08	$ 103.84	$ 129.80	$ 162.26	$ 186.34	$ 195.65	$ 205.43	$ 215.71	$ 226.49	$ 237.82
5,000 Gal WW	Increase -- $			16.62	20.77	25.96	32.45	24.08	9.32	9.78	10.27	10.79	11.32
	Increase -- %			25.0%	25.0%	25.0%	25.0%	14.8%	5.0%	5.0%	5.0%	5.0%	5.0%
10,000 Gal Wtr	Total		85.96	107.45	134.31	167.89	209.86	236.32	248.14	260.55	273.57	287.25	301.61
5,000 Gal WW	Increase -- $			21.49	26.86	33.58	41.97	26.46	11.82	12.41	13.03	13.68	14.36
	Increase -- %			25.0%	25.0%	25.0%	25.0%	12.6%	5.0%	5.0%	5.0%	5.0%	5.0%

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CITY OF CASTROVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

Forecast Summary
Scenario: ***Alt 2 - Alt 1 plus addt'l WWTP debt***

		Current	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Electric Rates - Residential	**2016 08 18 -- Alt 1 - "Cost of Service"**											
Minimum Bill		$ 9.13	$ 9.40	$ 9.69	$ 9.98	$ 10.28	$ 10.69	$ 11.01	$ 11.34	$ 11.68	$ 12.03	$ 12.39
Energy per kWh	**All kWh**	0.1266	0.1304	0.1343	0.1383	0.1425	0.1482	0.1526	0.1572	0.1619	0.1668	0.1718
Average Usage												
1000 kWh	**Total**	$ 135.73	$ 139.80	$ 144.00	$ 148.32	$ 152.77	$ 158.88	$ 163.64	$ 168.55	$ 173.61	$ 178.82	$ 184.18
			$ 4.07	$ 4.19	$ 4.32	$ 4.45	$ 6.11	$ 4.77	$ 4.91	$ 5.06	$ 5.21	$ 5.36
Gas Rates -- Residential	**2016 08 18 - Alt 2 - Fund Bal Drawdown**											
Service Fee		$ 10.73	$ 11.53	$ 12.11	$ 12.47	$ 12.85	$ 13.23	$ 13.63	$ 14.04	$ 14.46	$ 14.90	$ 15.34
Usage Charge	**per 1000 CF or MCF**	8.22	8.84	9.28	9.56	9.84	10.14	10.44	10.76	11.08	11.41	11.75
Cost of Gas to City (pass thru)		3.19	7.09	7.30	7.52	7.75	7.98	8.22	8.47	8.72	8.98	9.25
Residential Inside Monthly Bill												
2,000 CF	**Total** **Base Charge**	$ 10.73	$ 11.53	$ 12.11	$ 12.47	$ 12.85	$ 13.23	$ 13.63	$ 14.04	$ 14.46	$ 14.90	$ 15.34
	Usage Charge	16.44	17.67	18.56	19.11	19.69	20.28	20.89	21.51	22.16	22.82	23.51
(does not include Cost of Gas to City - pass thru)		27.17	29.21	30.67	31.59	32.54	33.51	34.52	35.55	36.62	37.72	38.85
			$ 2.04	$ 1.46	$ 0.92	$ 0.95	$ 0.98	$ 1.01	$ 1.04	$ 1.07	$ 1.10	$ 1.13

Does not include Cost of Gas to City (added to bill as a pass thru)

Consolidated Billing for 5,000 gallons water; 5,000 gallons wastewater; 1,000 kWh Electric; 2,000 CF Gas

	Current	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Total	$ 229.36	$ 252.08	$ 278.51	$ 309.71	$ 347.56	$ 378.72	$ 393.81	$ 409.54	$ 425.93	$ 443.03	$ 460.85
		$ 22.72	$ 26.42	$ 31.20	$ 37.85	$ 31.17	$ 15.09	$ 15.73	$ 16.39	$ 17.09	$ 17.82
		9.9%	10.5%	11.2%	12.2%	9.0%	4.0%	4.0%	4.0%	4.0%	4.0%

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CITY OF CASTROVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

Forecast Summary
Scenario: ***Alt 2 - Alt 1 plus addt'l WWTP debt***

		Current	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
3	**Fund Balance, Revenues and Expenses**											
		Unrestricted										
	Beginning Fund 200 Balance Available for Operations	$ 4,139,073	$ 2,841,826	$ 2,100,567	$ 1,884,758	$ 2,199,482	$ 2,527,835	$ 2,894,692	$ 3,492,639	$ 4,371,516	$ 5,441,504	
	90 day min(all 4)	$ 1,627,470										
	Available FB for Drawdown	$ 2,511,603										
	Revenues and Expenses											
	Electric Rate Revenues Alt 1	$ 3,956,885	$ 4,098,149	$ 4,243,849	$ 4,394,603	$ 4,591,179	$ 4,757,712	$ 4,926,304	$ 5,100,729	$ 5,281,186	$ 5,467,880	
	Gas Rate Revenues Alt 1	513,336	539,642	559,382	579,795	600,906	622,738	628,044	631,811	635,557	639,281	
	Water Rate Revenues Alt 1	1,101,434	1,384,188	1,713,776	2,150,838	2,296,623	2,420,900	2,551,776	2,689,597	2,834,732	2,987,566	
	WW Rate Revenues Alt 2	691,516	874,491	1,105,688	1,397,827	1,766,930	1,900,130	2,017,076	2,140,967	2,272,203	2,411,212	
	Total Rate Revenues	6,263,171	6,896,471	7,622,695	8,523,063	9,255,639	9,701,480	10,123,199	10,563,104	11,023,679	11,505,939	
	Utility Svcs & Non-Rate Revenues (Electric)	62,923	62,923	62,923	62,923	62,923	62,923	62,923	62,923	62,923	62,923	
	Utility Svcs & Non-Rate Revenues (Gas)	14,886	14,886	14,886	14,886	14,886	14,886	14,886	14,886	14,886	14,886	
	Utility Svcs & Non-Rate Revenues (Water)	35,761	35,761	35,761	35,761	35,761	35,761	35,761	35,761	35,761	35,761	
	Utility Svcs & Non-Rate Revenues (WW)	28,360	28,360	28,360	28,360	28,360	28,360	28,360	28,360	28,360	28,360	
	Total Utility Svcs & Non-Rate Revenues	141,929	141,929	141,929	141,929	141,929	141,929	141,929	141,929	141,929	141,929	
	Total Revenues	6,405,100	7,038,399	7,764,624	8,664,992	9,397,568	9,843,409	10,265,128	10,705,033	11,165,608	11,647,868	
1A	Electric Operating Expenses	2,546,570	2,558,447	2,637,912	2,719,968	2,804,710	2,892,234	2,982,644	3,076,047	3,172,554	3,272,283	
	Gas Operating Expenses	411,800	426,107	440,902	456,201	472,020	488,377	505,291	522,779	540,861	559,558	
	Water Operating Expenses	458,232	473,662	520,611	506,717	555,829	605,771	594,693	615,327	668,024	659,204	
	WW Operating Expenses	741,505	801,551	849,371	856,743	885,741	936,616	946,966	979,282	1,033,825	1,047,576	
	Total Op Exp	4,158,107	4,259,767	4,448,795	4,539,629	4,718,300	4,922,999	5,029,594	5,193,435	5,415,265	5,538,620	
1B	Electric Utility Admin/Transfers	1,176,301	1,211,590	1,247,938	1,285,376	1,323,937	1,363,655	1,404,565	1,446,702	1,490,103	1,534,806	
	Gas Utility Admin/Transfers	271,887	280,044	288,445	297,098	306,011	315,192	324,647	334,387	344,418	354,751	
	Water Utility Admin/Transfers	505,267	511,672	518,269	525,063	532,062	539,271	546,696	554,343	562,220	570,334	
	WW Utility Admin/Transfers	150,368	154,879	159,525	164,311	169,240	233,066	240,058	247,259	254,677	262,317	
	Total Op Exp/ Utility Admin/Transfers	2,103,823	2,158,184	2,214,177	2,271,849	2,331,251	2,451,183	2,515,966	2,582,691	2,651,419	2,722,208	
	Net Revenues Available for Capital Outlays/Debt Service	143,170	620,448	1,101,652	1,853,514	2,348,017	2,469,227	2,719,568	2,928,907	3,098,924	3,387,040	
1C	Electric Capital Outlays	176,000	178,880	181,846	184,902	158,049	161,290	164,629	168,068	171,610	175,258	
	Gas Capital Outlays	98,500	100,000	53,045	54,636	56,275	57,964	59,703	61,494	63,339	65,239	
	Water Capital Outlays	190,975	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	
	WW Capital Outlays	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	
	Total Capital Outlays	565,475	478,880	434,891	439,538	414,324	419,254	424,332	429,562	434,948	440,497	
	Total Operating Exp, Capital Outlays & Transfers	6,827,405	6,896,831	7,097,863	7,251,016	7,463,875	7,793,436	7,969,891	8,205,688	8,501,632	8,701,325	
	Net Revenues Available for Debt Service	(422,305)	141,568	666,760	1,413,976	1,933,693	2,049,973	2,295,237	2,499,346	2,663,976	2,946,543	
1D	Electric Debt Service	-	-	-	-	250,237	250,237	250,237	250,237	250,237	208,531	
	Gas Debt Service	-	-	-	-	-	-	-	-	-	-	
	Water Debt Service	243,244	243,235	243,167	460,157	716,413	794,676	800,229	765,591	741,666	712,477	
		631,698	639,592	639,403	639,095	638,691	638,203	646,824	604,641	602,085	603,995	

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CITY OF CASTROVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

Forecast Summary
Scenario: ***Alt 2 - Alt 1 plus addt'l WWTP debt***

	Current	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Total Debt Service		874,942	882,827	882,570	1,099,252	1,605,340	1,683,116	1,697,290	1,620,469	1,593,988	1,525,002
Total Cost of Service		7,702,347	7,779,658	7,980,433	8,350,268	9,069,215	9,476,552	9,667,181	9,826,157	10,095,620	10,226,327
Contingency--Net Inc/(Dec) in Fund Balance		**(1,297,247)**	**(741,259)**	**(215,809)**	**314,724**	**328,353**	**366,857**	**597,947**	**878,877**	**1,069,988**	**1,421,541**
Percent of COS		-16.8%	-9.5%	-2.7%	3.8%	3.6%	3.9%	6.2%	8.9%	10.6%	13.9%
Electric Fund Balance Drawdown		-	-	-	-	-	-	-	-	-	-
Gas Fund Balance Drawdown		(100,000)	-	-	-	-	-	-	-	-	-
Water Fund Balance Drawdown		(260,523)	-	-	-	-	-	-	-	-	-
WW Fund Balance Drawdown		(903,696)	(793,171)	(614,252)	(333,963)	-	-	-	-	-	-
Total Fund Balance Drawdown		(1,264,219)	(793,171)	(614,252)	(333,963)	-	-	-	-	-	-
Ending Utility Fund Balance		2,841,826	2,100,567	1,884,758	2,199,482	2,527,835	2,894,692	3,492,639	4,371,516	5,441,504	6,863,045

Revenue Adequacy Tests

Debt Coverage	4.75	4.83	5.04	4.13	2.94	2.92	2.96	3.20	3.40	3.63
Days of Expenditures in Working Capital/Fund Balance (Goal is 90 day min for all utilities)	249	180	155	177	196	215	253	307	367	452

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