

Water Rate Study for City of Lemoore

June 17, 2016

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Purpose

The purpose of this cost of service water study is to review and modify the existing water rate structure to set rates such that each customer class provides revenue to the water enterprise consistent with the cost to serve them. Additionally, overall operating costs, debt, assets, and revenue are analyzed to evaluate reasonableness of costs, and the need to increase overall revenue to fund significant improvements necessary for Lemoore's water system. These steps are conducted to be consistent with the requirements of California's Proposition 218.

Summary

Lemoore's existing rate structure is not based on cost of service. The City's current fixed monthly fee rate structure is based on the account and not on meter size, as opposed to grouping customers by similar profiles. Additionally, revenue has fallen over the past few years because of the drought (customers are using less water, but the infrastructure demand and operating costs remains constant); therefore, overall rates need to be increased to make up the shortfall, and also for needed infrastructure improvements.

System improvements are needed both for water quality and system reliability. The estimated cost of the improvements is substantial at \$39 million, projected to be spent over five years. Most of it will be paid with an anticipated bond issuance; however, some of the estimated costs will be paid from ongoing revenue. Approximately half of the funding will go towards water quality improvement, and the other half to system reliability. Water will be treated primarily for excessive trihalomethanes, a disinfection byproduct of added chlorine. Water will also be treated for trace amounts of arsenic, for better clarity, and for a better pH balance. System reliability improvements will include replaced pipelines, new wells, and new storage tanks. To cover anticipated costs, revenue needs to be increased 35% January 1, 2017, then 30% per year for the following three years.

New rates have been developed using cost of service methodology consistent with the American Water Works Association. Customers have been grouped together based on similar usage profiles, and system-operating costs have been assigned to customer classes as a function of cost to serve each class. Further, because of the extent of the revenue increases, the cost of service rate model was developed for each of the four years using the increased revenue needed in each successive year. New rates are weighted between fixed monthly and volumetric based on meter size and customer class. Volumes sold during 2015 are used as planning volumes over the entire four-year period, assuming volumes will not drop due to further conservation. City Council and customer communication began in March 2016 regarding the rate increases and has been on going through the rate study process.

See Attachment A for the existing rates and Attachment B for the proposed rates.



Existing Rates

Lemoore's existing rates are amongst the lowest in the Central Valley as shown in the bar chart on page ten. This is because water rates in Lemoore have not been increased since 2007, and no significant improvements have been made to the water system.¹ Because of the drought and reduced water sales, the revenue associated with the existing rates is not sufficient to cover existing operating expenses. Additionally, significant system improvements require an increase in revenue beyond the amount needed to cover current costs.

Lemoore's existing rate structure does not collect revenue such that each customer class provides revenue consistent with the cost to serve them. The primary reason is that customer classes have not yet been defined and therefore existing rates are not determined based on cost of service. For example, most customers pay the same fixed monthly fee of \$13.20, and most customers pay similar volumetric fees, ranging in a narrow, tiered, band from \$0.90 to \$0.95 to \$1.00 per hundred cubic feet (HCF). A review of water system billing data reveals that almost all residential water has been sold billed at the \$0.90 level. The existing rates also include between 300 and 700 cubic feet of water in the fixed monthly charge, depending on customer type.

Lemoore has approximately 60 customers still unmetered on flat monthly charges. These are mostly small businesses in the historic downtown area. Of the seven flat rate categories, only two are in use, "Multi-Family" and "Other Commercial."

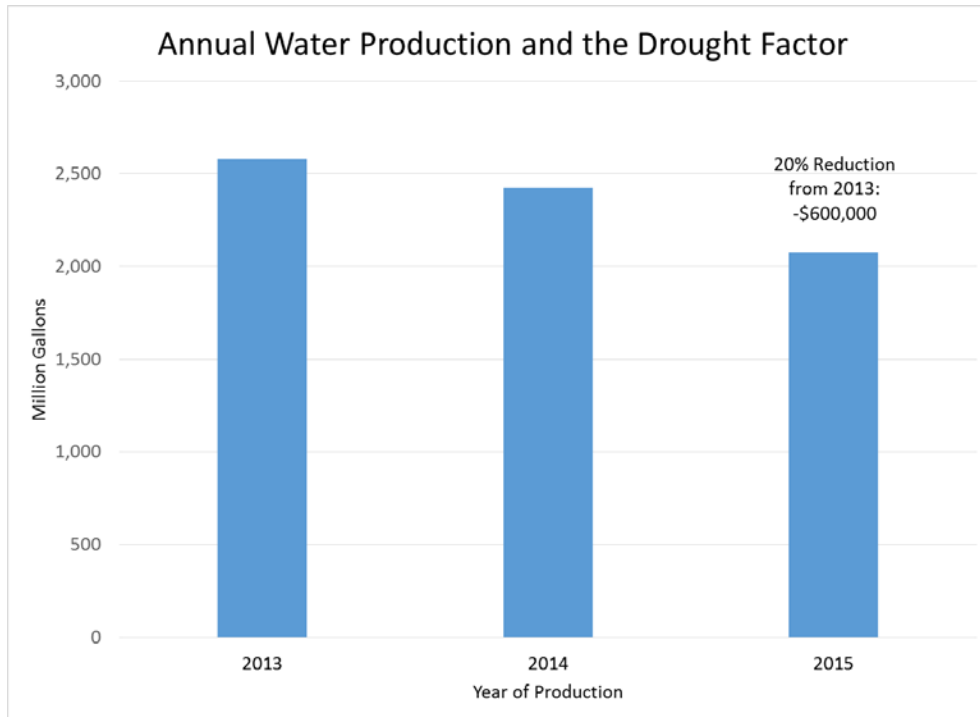
Water Conservation, Volume Projections and Unaccounted-For Water

Water production and sales decreased 20% during the last three years through 2015, reducing revenue by approximately \$600,000. For the purpose of revenue planning, 2015 volumes are assumed to be a baseload number that will not decrease further, as extensive conservation has already been achieved, combined with the significant demand of food processors that is flat, and the increase in rain this past winter. To the extent water sales are able to increase above the 2015 planning levels in the next few years, the Lemoore City Council will have the option to adjust accordingly by easing subsequent rate increases.

Lost and Unaccounted-for (LUAF) water was determined by measuring the differences each month of 2015 between water produced and water billed to customers. This was achieved by processing approximately 80,000 customer-billing cycles through a large Microsoft Excel workbook. The initial result was that LUAF is less than 10%, which is excellent.² The recommendation was made to test and calibrate meters on the water production wells. If the impellers on the production well meters are worn, they will cause low reading that will serve to reduce the LUAF value for the water system. City personnel should also continue to monitor customer meter billing multipliers to assure accuracy in billing statements.

¹ Resolution 2007-51, dated December 18, 2007.

² The American Water Works Association shows the typical range for LUAF to be 10 to 20% of water produced.



Water System Improvements

Lemoore is currently under an Alternate Compliance Order from the California State Water Resources Control Board to comply with total trihalomethanes (TTHM) maximum contaminant level requirements by October 31, 2017.³ As the City prepares to meet the TTHM requirements, it will also install measures to improve Lemoore’s water in other ways, including removal of slight levels of arsenic, removal of organic matter, improvement in clarity, and adjustment of pH. When the project is completed, all Lemoore water will be treated to a higher standard, whereas now, only chlorine is added to the water. It should be stated that Lemoore’s water is currently safe for drinking.

The estimated cost of needed improvements to the water system over the next five years is \$39 million, as estimated by Lemoore’s City engineer. (See Attachment C for detail). Approximately half of this amount is for water treatment equipment to improve the quality of Lemoore’s water. The other half is to improve the reliability such as, new/repared wells, added storage tanks, and replacement of old pipelines. The large magnitude of these improvements is unprecedented in the history of the system.

For revenue requirement planning purposes, \$30 million will be debt funding and the remaining \$9 million will be provided on a pay-as-go basis.

³ Compliance Order 03-12-14R-004, issued October 27, 2014. The TTHM limit is also known as the “Stage 2 Disinfection Byproduct Rule,” which was adopted June 21, 2012, by the State Water Board.



Revenue and Expense Evaluation

Rate-based revenues have been falling since Fiscal Year (FY) 2014/2015 because of the drought and water conservation. Expenses have stayed relatively flat. As a result of reduced water sales, at the end of FY 2015/2016, the water enterprise will experience an operating loss of approximately \$300,000. Consequently, for FY 2015/2016, revenue needs to be increased by nine percent, even before additional costs for system improvements.⁴ The need for system improvements cause the resultant increases to be substantially higher than nine percent. (See Attachment E for detail.)

The balance sheet for the water enterprise is healthy. Available cash at the end of FY 2014/2015 was \$3.9 million, approximately one times annual revenue. The only long-term debt is \$6.2 million for the loan to install photovoltaic panels. The cost of the loan payments should be offset by lower electricity costs.

Beginning in FY 2016/2017, personnel costs are increased to account for additional headcount needed. Going forward, other expenses are increased by two percent as a proxy for inflation, except the increase for electricity is higher based on actual trends. General government overhead and customer services are held constant pending the outcome of a cost allocation study. These are not expected to increase. The most substantial increase is for operations and maintenance costs associated with new water treatment facilities to be constructed, exceeding \$2.5 million per year when the project is finished.

Debt financing will likely be used for the construction and improvement of any water infrastructure projects that have a useful life of more than 10 years, to ensure inter-generational equity, so that the cost of infrastructure will be paid for across the user base that will benefit from the improvements. The bond payments would come from the revenue generated by the ratepayers of the water system.

Payments for bond funding are planned to begin in FY 2018/2019, and are then increased over two years by deferring principal payments and by capitalizing some interest in the first year. This allows rates to increase gradually over several years, rather than abruptly. The interest rate used in the calculation ranges up to five percent with most of the periods at five percent. For planning purposes, this is conservative to assure revenue is adequate to cover the bond payments in the event interest rates increase before the bonds are sold. The prospective amortization table may be seen in Attachment D.

Needed revenue is increased over a four-year period to allow customer-billing amounts to increase gradually, and to approximate the timing for investments to the water system. The increased contribution of rate-based revenue is very substantial, increasing by a factor of nearly three by FY2020/2021, compared to FY2015/2016.

⁴ $\$300,000/\$3,370,000 \times 100\% = 8.9\%$



Rate Design

The newly proposed rates are developed using the American Water Works Association Cost of Service rate setting methodology. This methodology first groups customers into classes with similar usage profiles to compare to the water infrastructure used to serve them. Customers were divided into groups as follows.

	Customer Count
Single-Family	6,325
Multi-Family	219
Schools / City	58
Commercial	114
Industrial - Regular	5
Industrial - Seasonal	4
Totals	6,725

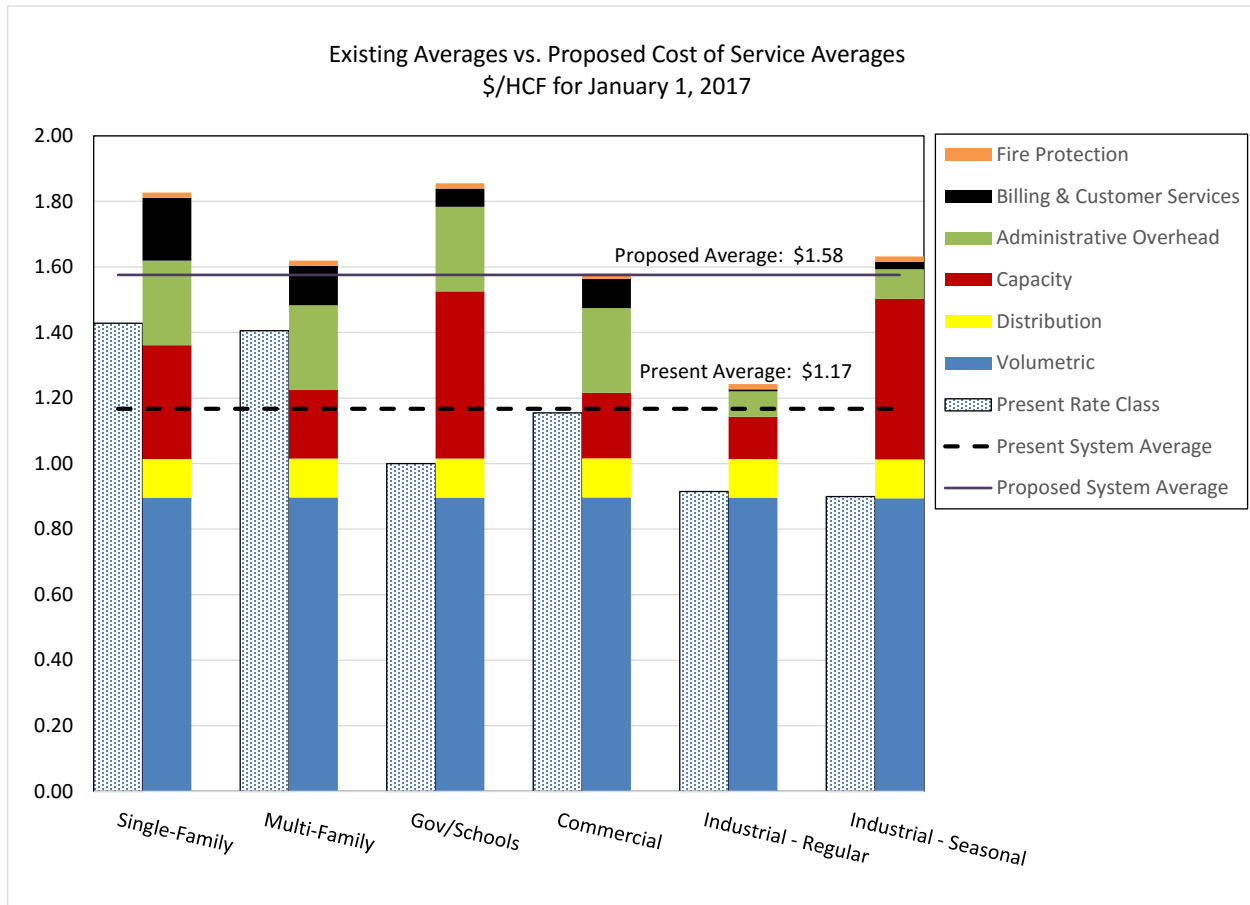
Rates and fees are then set to charge each group consistent with the cost incurred on the system to serve them. For Lemoore, because of the substantial increases over four years, the model was run four times, once for each year. Each time the revenue requirement was increased consistent with the revenue/expense projections. However, volume, capacity, and other weighting factors were held constant. The various components of the cost of service analysis are contained in Attachments F-1 through F-5, and are summarized here in the order.

<u>Attachment</u>	<u>Contents</u>
F-1	Cost of Service Table Summaries (2017-2020)
F-2	Functionalization and Classification Detail (2017-2020)
F-3	Volumetric and Capacity Allocation Factors
F-4	Weighting: Distribution, Administrative, Fire, and Billing
F-5	Fixed and Volumetric Rate Setting (2017-2020)

The City of Lemoore water system is generally one geographic area with water production and distribution interspersed, except for the North well production field five miles north of town. Some portion of water from the North field is able to flow to all of Lemoore's customers when needed. Therefore, the cost to distribute water from production to customer is calculated as the same for all customers, as a function of volume. Lemoore is supplied by nine producing water wells, four of which are in the North field. The water system also has the support of several water storage tanks benefiting all customers. Well #9 is an exception in that it is not connected into the water distribution system, but rather connected directly to Olam Foods. It is used only during the tomato-processing season. For rate setting purposes, the volume of water delivered to Olam from well #9 is included; however, the volumes from well #9 are removed from the peak capacity calculation because the well is operated outside the integrated water system, and including the peak contribution would escalate Olam's water cost unreasonably. Moving forward, it is the City's intent that industrial users will be required to receive water from the City's treated system, and that the City's water wells will be fully integrated with each other.



The cost of service results, illustrated below, shows a new average cost to be \$1.58 per Hundred Cubic Feet (HCF) compared to the existing average cost of \$1.17. The difference is the initial 35% increase to move revenue upward to cover existing operating costs and begin to cover the cost of infrastructure improvements.



A review of the existing averages compared to the proposed averages shows the biggest disproportionate changes are to the Government/Schools and the Industrial-Seasonal classes. The reason is that these two classes have the highest summer peaking usage compared to other classes. Cost of service methodology requires that each customer class compensate the system for standby capacity needed for each class in the months it is not used. Customer classes with lower capacity factors, such as Industrial-Regular, benefit because these customers have a very flat load profile across the months and therefore use the system very efficiently. The multi-family class is experiencing the lowest increase because the existing rate structure charges *each living unit* \$6.55 per month, whereas the cost of service rates are based on meter size and water flow, yielding a lower average amount.

The proposed billing structure consists of a fixed monthly fee and a volumetric fee for each customer class. The objective of the rate design is to create a fixed-volumetric combination for each customer class that approximates the cost of service to each class. All single-family homes are proposed to pay the same service fee, even though some have 1.5-inch meters required for fire



protection system. The rate design should not penalize residential customers required to have fire protection systems. The proposed monthly service fee is \$13.00, essentially the same as the existing \$13.20. The basis for \$13.00 is to achieve a balance between the fixed and volumetric component for single-family such that an average bill is approximately 50% fixed and 50% volumetric. One difference is that the new monthly fee does not include 700 cubic feet of water. These 700 cubic feet will now be billed volumetrically.

Beyond single-family, since instantaneous demand on the system is a function of meter size, it is appropriate to increase the fixed monthly service fee as a function of meter size. This is because larger demand on the system indicates the system capacity has to be adequate to handle that demand on a peak demand day. The proposed fixed monthly fees have been skewed slightly from the standard industry scale that is based on meter size. The monthly fees are held lower for the smaller meter sizes up to 1.5 inches, then ramped up based on meter size to the largest meter size of twelve inches. Monthly meter fees were kept lower for smaller customers to maintain a balance between the fixed and volumetric components. If not, the volumetric rate for the commercial and multi-family customer classes would have been disproportionately low to achieve the overall revenue contribution needed for these two classes. The following is the calculation of fixed monthly fees for 2017. The tables for 2018 through 2020 are provided in the Attachments F-5(b) through (d) at the back of this report.

Calculation of Fixed Monthly Service Fee and Revenue Year 2017						
Meter Size	Number of Accounts	Meter Size Multiplier*	Rate	Revenue (\$/Mo)	Revenue (\$/Yr)	
All Single Family	6,325	1.0	\$13.00	\$82,225	\$986,700	
Up to 1 1/2"	225	1.0	\$23.00	5,175	62,100	
2" and 2.5"	124	3.2	\$74.00	9,176	110,100	
3"	6	6.0	\$138.00	828	9,900	
4"	28	10.0	\$230.00	6,440	77,300	
6"	5	20.0	\$460.00	2,300	27,600	
8"	8	32.0	\$736.00	5,888	70,700	
10"	3	46.0	\$1,058.00	3,174	38,100	
12"	1	86.0	\$1,978.00	1,978	23,700	
Totals	6,725			\$117,184	\$1,406,200	

* Factors based on American Water Works Association 1" Base Scale

The volumetric rates were set in conjunction with the fixed monthly fees to achieve the appropriate cost of service result for each customer class. The following table shows the calculation of the volumetric rates for each customer class for 2017. The tables for 2018 through 2020 are provided in the Attachments F-5(b) through (d) at the back of this report.



Calculated Volumetric Rate to Meet Overall Revenue Requirement Year 2017						
Customer Class	Revenue Requirement	Less Fixed Revenue	Balance at Volumetric	Volume HCF	Calculated Rate / HCF	Fixed Percent of Total
Single-Family	\$1,882,002	\$986,700	\$895,302	1,030,000	\$0.87	52%
Multi-Family	463,075	191,500	271,575	286,000	\$0.95	41%
Schools / Govt	302,449	94,100	208,349	163,000	\$1.28	31%
Commercial	315,984	59,100	256,884	200,000	\$1.28	19%
Industrial - Regular	1,229,091	39,000	1,190,091	989,000	\$1.20	3%
Industrial - Seasonal	357,398	35,900	321,498	219,000	\$1.47	10%
Totals / Averages	\$4,550,000	\$1,406,300	\$3,143,700	2,887,000		
			\$4,550,000	\$1.58	per HCF overall average	

Customer Communication and Implementation of New Rate Structure

Anticipating the impact on water customers of the need for substantially increased revenue, extensive communication has occurred as follows.

City Council Workshop #1	March 15, 2016
City Council Workshop #2	April 19, 2016
Informal Citizen Meeting	June 6, 2016
City Council Meeting to issue notice	June 8, 2016
Mail date of notice to all customers	June 28, 2016
City Council Rate Hearing to approve rates	August 16, 2016 (planned)

Additionally, ratepayers received invitation postcards prior to the second workshop and prior to the citizen meeting. Presentations given at City Council have also been available on the City's website.

The highest number of customers affected by the rate increase is the single-family group with approximately 6,300 accounts. Accordingly, the following detailed analysis is provided for this class showing the impact on a typical single-family home of the increases. For comparison sake to other cities, the value of 15,000 gallons (2,005 cubic feet) per month is used for a typical summer month.⁵

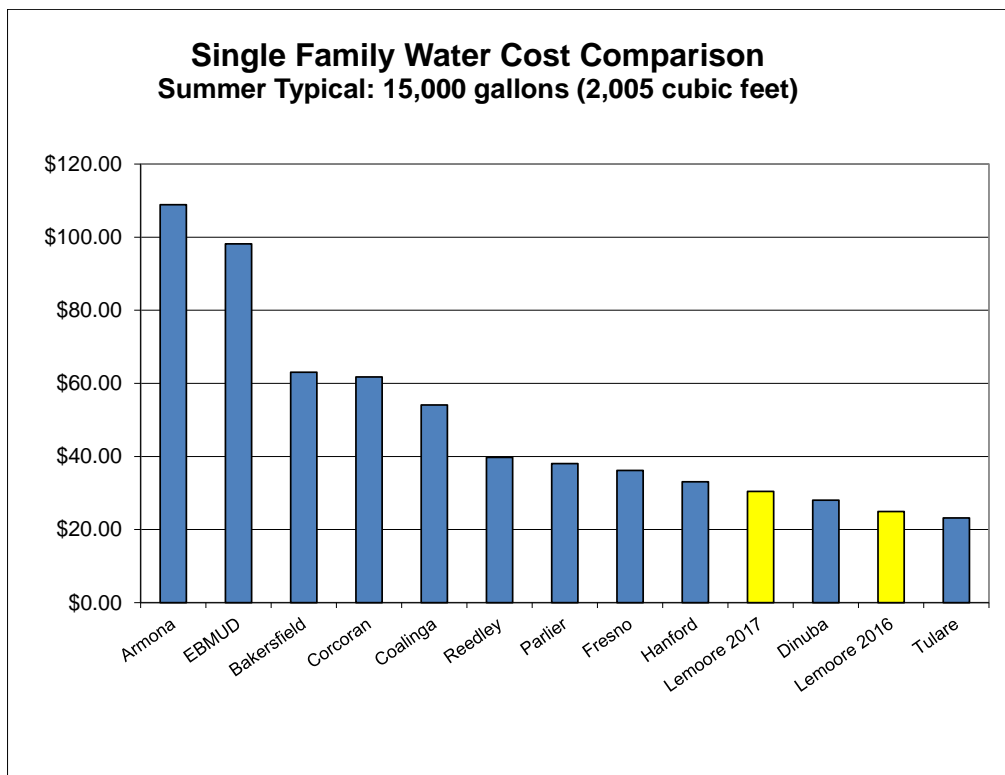
The average monthly cost to single-family homes will increase 22% in the first year, less than the system average of 35% percent. This lower amount is because of the cost of service adjustment to single-family rates. However, in subsequent years, the single-family amount will increase nearly as much as other customer classes. The table below shows the average single-family increases.

⁵ The actual value for an average metered residential customer in Lemoore is slightly higher, at 16,200 gallons per month, based on the average of non-zero usage accounts in July 2015.



Single Family: Proposed Water Cost Increases				
Cost Detail for 15,000 gallons (2,005 cubic feet)				
	Fixed Monthly	Usage	Total	Increase
Existing	\$13	\$12	\$25	
2017	\$13	\$17	\$30	22%
2018	\$17	\$22	\$39	28%
2019	\$22	\$28	\$50	28%
2020	\$29	\$35	\$64	29%

The bar chart below illustrates Lemoore’s current water cost compared to neighboring and other communities. It should be noted that Lemoore’s rate is on the lower end of the rate comparison. After the first increase, Lemoore will move only marginally on the comparison scale. The comparison for subsequent rate increases is not shown because over the next few years other cities’ rates will be increasing also. However, even if other rates did not increase over time, at \$64 per month in 2020, Lemoore would be approximately even with the present levels of Bakersfield and Corcoran.





Conclusion

Water quality improvement and repair to Lemoore's water system is overdue. Additional revenue is needed to cover existing operating costs because of reduced sales caused by the drought and water conservation. Substantial additional revenue is needed to improve water quality and upgrade the reliability of the system. The proposed rate increases over the next four years provide the planned revenue needed and also adjust rates to charge each customer class fairly according to the requirements of Proposition 218.



EXISTING WATER RATES FOR CITY OF LEMOORE

ATTACHMENT A-1

Dwelling Units/Use	Minimum Meter Charge per Unit	Water Included In Min Meter Charge per Unit/Use in cubic feet	Tiered Excess Water Use Charges per 100 cubic feet		
			\$0.90	\$0.95	\$1.00
Single Family	\$13.20	700	Up to 2800	Up to 5600	Above 5600
Duplexes/Triplexes	\$9.45	500	Up to 2000	Up to 4000	Above 4000
Apartments - 4 or more served by 1 meter	\$6.55	300	Up to 1200	Up to 2400	Above 2400
Mobile Home Parks	\$6.55	300	Up to 1200	Up to 2400	Above 2400
Two or more dwellings served by 1 meter	\$13.20	700	Up to 2800	Up to 5600	Above 5600
Two or more Uses served by 1 meter	\$13.20	700	Up to 2800	Up to 5600	Above 5600
Commercial Establishments	\$13.20	700	Up to 2800	Up to 5600	Above 5600
Industrial Uses	\$13.20	700	Up to 2800	Up to 5600	Above 5600
Large Volume Industrial Users	\$13.20	700	Up to 5,000,000	Above 5,000,000	
Schools on metered service	\$13.20	700	Up to 2800	Up to 5600	Above 5600
All others	\$13.20	700	Up to 2800	Up to 5600	Above 5600



EXISTING WATER RATES FOR CITY OF LEMOORE

ATTACHMENT A-2

2. Flat Rate Charges

Use	Monthly Rate
Single Family	\$31.95
Multi-Family	\$17.85 per unit
Large Grocery Stores	\$32.70
Small Grocery Stores	\$26.70
Other Commercial Establishments	\$20.55
Lemoore Elementary School	\$114.10
Lemoore High School	\$160.40



PROPOSED WATER RATES FOR CITY OF LEMOORE

ATTACHMENT B

City of Lemoore Water Rates and Charges					
<i>Average Increase all classes</i>			<i>30%</i>	<i>30%</i>	<i>30%</i>
Present Rates		Jan 1, 2017¹	Jan 1, 2018	Jan 1, 2019	Jan 1, 2020
Volumetric Rate For All Water² (\$/HCF)					
Residential Single Family	\$0.90	\$0.87	\$1.10	\$1.40	\$1.77
Multi Family	\$0.90	\$0.95	\$1.19	\$1.50	\$1.92
Government & Schools	\$0.96	\$1.28	\$1.72	\$2.28	\$2.97
Commercial	\$0.96	\$1.28	\$1.63	\$2.08	\$2.68
Industrial - Regular	\$0.91	\$1.20	\$1.58	\$2.08	\$2.75
Industrial - Seasonal Peak	\$0.90	\$1.47	\$2.02	\$2.72	\$3.61
Fixed Monthly Charges Based on Meter Size³ (\$/Mo)					
All Residential Single Family	\$13.20	\$13.00	\$17.00	\$22.00	\$29.00
All other up to 1.5"	\$13.20	\$23.00	\$30.00	\$39.00	\$51.00
2" up to 2.5"	\$13.20	\$74.00	\$96.00	\$124.00	\$162.00
3"	\$13.20	\$138.00	\$179.00	\$233.00	\$303.00
4"	\$13.20	\$230.00	\$299.00	\$389.00	\$505.00
6"	\$13.20	\$460.00	\$598.00	\$777.00	\$1,011.00
8"	\$13.20	\$736.00	\$957.00	\$1,244.00	\$1,617.00
10"	\$13.20	\$1,058.00	\$1,375.00	\$1,788.00	\$2,324.00
12"	\$13.20	\$1,978.00	\$2,571.00	\$3,343.00	\$4,346.00
Duplex, Triplex, Apts, Mobile HP ⁴					
Flat Rates for Non-Metered Customers (\$/Mo)					
Multi Family, Per Unit	\$17.85	\$24.00	\$31.00	\$40.00	\$52.00
Business and Retail	\$20.55	\$28.00	\$36.00	\$47.00	\$61.00
Notes:					
1. January 1, 2017 rate increases vary by rate class; however, the system average revenue increase is 35% above calendar year 2015 revenues.					
2. Present volumetric rates are tiered, \$0.90, \$0.95, and \$1.00. Rate shown is the average.					
3. Present fixed monthly charges include 300 to 700 cubic feet of water depending on customer type. New fixed charges do not include any volume of water.					
4. Present fixed monthly charges for duplex, triplex, apartments, and mobile home parks vary from \$6.55 per unit to \$9.45 per unit. New fixed charges are based on meter size only.					



ATTACHMENT C

City of Lemoore Water System Community Investment Projects							
Project Number	Project Description	FY 15/16 Budget	FY 16/17 Budget	FY 17/18 Budget	FY 18/19 Budget	FY 19/20 Budget	Total 5-Year CIP
9200	Water Line Reimbursement	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$50,000
9201	Water Emergency Trailer	63,000	-	-	-	-	63,000
9202	TTHM Project	-	18,400,000	-	-	-	18,400,000
9203	New Southeast Well	-	650,000	2,875,000	-	-	3,525,000
9204	Replace Well 8	-	80,000	2,150,000	-	-	2,230,000
9205	New Water Line N Field	4,000	497,000	5,450,000	-	-	5,951,000
9206	Remodel 40 G St. Building	-	60,000	-	-	-	60,000
9207	Fix Drainage 40 G St.	25,000	-	-	-	-	25,000
9208	Water Master Plan	500,000	-	-	-	-	500,000
9209	SCADA Upgrade	-	150,000	-	-	-	150,000
9210	New Northeast Well	6,000	-	675,000	3,375,000	-	4,056,000
9211	Repaint Water Tanks	-	-	60,000	60,000	60,000	180,000
9212	Install Cameras at Wells	-	-	-	102,000	-	102,000
9213	Rehab Well 10 (4)	-	170,000	-	-	-	170,000
9214	Rehab Well 4 (10)	-	170,000	-	-	-	170,000
9215	Replace Service Lines (1)	-	-	-	880,000	-	880,000
9216	Replace Service Lines (2)	-	-	225,000	-	-	225,000
9217	Replace 6" Water Line (1)	-	-	-	105,000	-	105,000
9218	Replace 6" Water Line (2)	-	-	-	-	104,000	104,000
9219	Replace 6" Water Line (3)	-	-	-	105,000	-	105,000
9220	Replace 8" Water Line (4)	-	-	-	-	120,000	120,000
9221	Replace 6" Water Line (5)	-	-	-	-	170,000	170,000
9222	Add Water Tank Well 7	-	1,100,000	-	-	-	1,100,000
9223	Rehab Well 14	-	-	-	-	90,000	90,000
9224	Install Chlorine Equipment	20,000	75,000	-	-	-	95,000
9225	Cedar Lane Water Line	-	-	-	175,000	-	175,000
TOTALS		\$628,000	\$21,362,000	\$11,445,000	\$4,812,000	\$554,000	\$38,801,000

Note: As of March 2016



ATTACHMENT D

City of Lemoore, California					
Water Revenue Bonds					
Series 2017					
PROSPECTIVE Net Debt Service Schedule as of April 21, 2016					
Provided Del Rio Advisors, LLC, Modesto, CA					
		Reserve Fund	1,991,000.00		
		Earnings Rate	2.00		
		Less:	Less:	Net	Net
Date	Periodic Debt Service	Capitalized Interest	Reserve Fund Earnings	Periodic Debt Service	Annual Debt Service
2/1/2017					
8/1/2017	735,900.00	(264,924.00)	(19,910.00)	451,066.00	
2/1/2018	735,900.00	(264,924.00)	(19,910.00)	451,066.00	902,132.00
8/1/2018	735,900.00	-	(19,910.00)	715,990.00	
2/1/2019	1,090,900.00	-	(19,910.00)	1,070,990.00	1,786,980.00
8/1/2019	730,575.00	-	(19,910.00)	710,665.00	
2/1/2020	1,255,575.00	-	(19,910.00)	1,235,665.00	1,946,330.00
8/1/2020	722,700.00	-	(19,910.00)	702,790.00	
2/1/2021	1,267,700.00	-	(19,910.00)	1,247,790.00	1,950,580.00
8/1/2021	711,800.00	-	(19,910.00)	691,890.00	
2/1/2022	1,276,800.00	-	(19,910.00)	1,256,890.00	1,948,780.00
8/1/2022	700,500.00	-	(19,910.00)	680,590.00	
2/1/2023	1,285,500.00	-	(19,910.00)	1,265,590.00	1,946,180.00
8/1/2023	685,875.00	-	(19,910.00)	665,965.00	
2/1/2024	1,300,875.00	-	(19,910.00)	1,280,965.00	1,946,930.00
8/1/2024	670,500.00	-	(19,910.00)	650,590.00	
2/1/2025	1,315,500.00	-	(19,910.00)	1,295,590.00	1,946,180.00
8/1/2025	654,375.00	-	(19,910.00)	634,465.00	
2/1/2026	1,334,375.00	-	(19,910.00)	1,314,465.00	1,948,930.00
8/1/2026	637,375.00	-	(19,910.00)	617,465.00	
2/1/2027	1,352,375.00	-	(19,910.00)	1,332,465.00	1,949,930.00
8/1/2027	619,500.00	-	(19,910.00)	599,590.00	
2/1/2028	1,369,500.00	-	(19,910.00)	1,349,590.00	1,949,180.00
8/1/2028	600,750.00	-	(19,910.00)	580,840.00	
2/1/2029	1,385,750.00	-	(19,910.00)	1,365,840.00	1,946,680.00
8/1/2029	581,125.00	-	(19,910.00)	561,215.00	
2/1/2030	1,406,125.00	-	(19,910.00)	1,386,215.00	1,947,430.00
8/1/2030	560,500.00	-	(19,910.00)	540,590.00	
2/1/2031	1,430,500.00	-	(19,910.00)	1,410,590.00	1,951,180.00
8/1/2031	538,750.00	-	(19,910.00)	518,840.00	
2/1/2032	1,448,750.00	-	(19,910.00)	1,428,840.00	1,947,680.00
8/1/2032	516,000.00	-	(19,910.00)	496,090.00	
2/1/2033	1,471,000.00	-	(19,910.00)	1,451,090.00	1,947,180.00
8/1/2033	492,125.00	-	(19,910.00)	472,215.00	
2/1/2034	1,497,125.00	-	(19,910.00)	1,477,215.00	1,949,430.00
8/1/2034	467,000.00	-	(19,910.00)	447,090.00	
2/1/2035	1,522,000.00	-	(19,910.00)	1,502,090.00	1,949,180.00
8/1/2035	440,625.00	-	(19,910.00)	420,715.00	
2/1/2036	1,545,625.00	-	(19,910.00)	1,525,715.00	1,946,430.00
8/1/2036	413,000.00	-	(19,910.00)	393,090.00	
2/1/2037	1,573,000.00	-	(19,910.00)	1,553,090.00	1,946,180.00
8/1/2037	384,000.00	-	(19,910.00)	364,090.00	
2/1/2038	1,604,000.00	-	(19,910.00)	1,584,090.00	1,948,180.00
8/1/2038	353,500.00	-	(19,910.00)	333,590.00	
2/1/2039	1,633,500.00	-	(19,910.00)	1,613,590.00	1,947,180.00
8/1/2039	321,500.00	-	(19,910.00)	301,590.00	
2/1/2040	1,666,500.00	-	(19,910.00)	1,646,590.00	1,948,180.00
8/1/2040	287,875.00	-	(19,910.00)	267,965.00	
2/1/2041	1,702,875.00	-	(19,910.00)	1,682,965.00	1,950,930.00
8/1/2041	252,500.00	-	(19,910.00)	232,590.00	
2/1/2042	1,737,500.00	-	(19,910.00)	1,717,590.00	1,950,180.00
8/1/2042	215,375.00	-	(19,910.00)	195,465.00	
2/1/2043	1,775,375.00	-	(19,910.00)	1,755,465.00	1,950,930.00
8/1/2043	176,375.00	-	(19,910.00)	156,465.00	
2/1/2044	1,811,375.00	-	(19,910.00)	1,791,465.00	1,947,930.00
8/1/2044	135,500.00	-	(19,910.00)	115,590.00	
2/1/2045	1,855,500.00	-	(19,910.00)	1,835,590.00	1,951,180.00
8/1/2045	92,500.00	-	(19,910.00)	72,590.00	
2/1/2046	1,897,500.00	-	(19,910.00)	1,877,590.00	1,950,180.00
8/1/2046	47,375.00	-	(19,910.00)	27,465.00	
2/1/2047	1,942,375.00	-	(2,010,910.00)	(68,535.00)	(41,070.00)
Totals	58,972,750.00	(529,848.00)	(3,185,600.00)	55,257,302.00	55,257,302.00



ATTACHMENT F-1 (a)

Water Enterprise Revenue Requirement Allocation Table FOR JANUARY 1, 2017							
Cost Component (\$/yr)	Total	Single-Family	Multi-Family	Gov/Schools	Commercial	Industrial - Regular	Industrial - Seasonal
Volumetric	\$2,585,450	\$922,156	\$256,401	\$146,080	\$179,373	\$885,622	\$195,819
Capacity	\$775,060	357,689	59,764	83,146	39,987	127,175	107,299
Distribution	\$343,200	122,410	34,035	19,391	23,811	117,560	25,994
Fire Protection	\$46,290	16,510	4,591	2,615	3,212	15,856	3,506
Customer Services & Billing	\$270,000	197,656	34,219	9,063	17,813	6,250	5,000
Administrative Overhead	\$530,000	265,876	73,926	42,118	51,717	76,603	19,760
Total Revenue Requirement	4,550,000	1,882,296	462,936	302,412	315,911	1,229,066	357,378
Revenues at Present Rates ¹	3,369,000	1,471,000	402,000	163,000	231,000	905,000	197,000
Balance/(Deficiency) of Funds	(1,181,000)	(411,296)	(60,936)	(139,412)	(84,911)	(324,066)	(160,378)
Summary Statistics							
Treated Water Sales (HCF) ¹	2,887,000	1,030,000	286,000	163,000	200,000	989,000	219,000
Cost of Service (\$/HCF)	1.58	1.83	1.62	1.86	1.58	1.24	1.63
Present Average Rate (\$/HCF)	1.17	1.43	1.41	1.00	1.16	0.92	0.90
Change (%)	35%	28%	15%	86%	37%	36%	81%
Cost of Service Detail by Customer Sector in \$/HCF							
	Total	Single-Family	Multi-Family	Gov/Schools	Commercial	Industrial - Regular	Industrial - Seasonal
Volumetric	\$0.90	\$0.90	\$0.90	\$0.90	\$0.90	\$0.90	\$0.89
Capacity	0.27	0.35	0.21	0.51	0.20	0.13	0.49
Distribution	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Fire Protection	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Billing & Customer Services	0.09	0.19	0.12	0.06	0.09	0.01	0.02
Administrative Overhead	<u>0.18</u>	<u>0.26</u>	<u>0.26</u>	<u>0.26</u>	<u>0.26</u>	<u>0.08</u>	<u>0.09</u>
Total	\$1.58	\$1.83	\$1.62	\$1.86	\$1.58	\$1.24	\$1.63
Notes:							
1. HCF is Hundred Cubic Feet. Baseline revenue and volumes are from Calendar 2015. Rates are set from these baseline references.							



ATTACHMENT F-1 (b)

Water Enterprise Revenue Requirement Allocation Table FOR JANUARY 1, 2018							
Cost Component (\$/yr)	Total	Single-Family	Multi-Family	Gov/Schools	Commercial	Industrial - Regular	Industrial - Seasonal
Volumetric	\$3,344,989	\$1,193,061	\$331,725	\$188,994	\$232,068	\$1,145,795	\$253,345
Capacity	\$1,236,313	570,556	95,331	132,628	63,783	202,859	171,155
Distribution	\$486,478	173,513	48,244	27,486	33,751	166,638	36,845
Fire Protection	\$47,220	16,842	4,683	2,668	3,276	16,175	3,576
Customer Services & Billing	\$270,000	197,656	34,219	9,063	17,813	6,250	5,000
Administrative Overhead	\$530,000	265,876	73,926	42,118	51,717	76,603	19,760
Total Revenue Requirement	5,915,000	2,417,504	588,128	402,956	402,408	1,614,320	489,682
Revenue at 2017 Rates	4,550,000	1,882,296	462,936	302,412	315,911	1,229,066	357,378
Balance/(Deficiency) of Funds	(1,365,000)	(535,208)	(125,192)	(100,544)	(86,497)	(385,254)	(132,305)
Summary Statistics							
Treated Water Sales (HCF) ¹	2,887,000	1,030,000	286,000	163,000	200,000	989,000	219,000
Cost of Service (\$/HCF)	2.05	2.35	2.06	2.47	2.01	1.63	2.24
Present Average Rate (\$/HCF)	1.58	1.83	1.62	1.86	1.58	1.24	1.63
Change (%)	30%	28%	27%	33%	27%	31%	37%
Cost of Service Detail by Customer Sector in \$/HCF							
	Total	Single-Family	Multi-Family	Gov/Schools	Commercial	Industrial - Regular	Industrial - Seasonal
Volumetric	\$1.16	\$1.16	\$1.16	\$1.16	\$1.16	\$1.16	\$1.16
Capacity	0.43	0.55	0.33	0.81	0.32	0.21	0.78
Distribution	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Fire Protection	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Billing & Customer Services	0.09	0.19	0.12	0.06	0.09	0.01	0.02
Administrative Overhead	<u>0.18</u>	<u>0.26</u>	<u>0.26</u>	<u>0.26</u>	<u>0.26</u>	<u>0.08</u>	<u>0.09</u>
Total	\$2.05	\$2.35	\$2.06	\$2.47	\$2.01	\$1.63	\$2.24
Notes:							
1. HCF is Hundred Cubic Feet. Rates are set from 2015 baseline volume.							



ATTACHMENT F-1 (c)

Water Enterprise Revenue Requirement Allocation Table FOR JANUARY 1, 2019							
Cost Component (\$/yr)	Total	Single-Family	Multi-Family	Gov/Schools	Commercial	Industrial - Regular	Industrial - Seasonal
Volumetric	\$4,461,514	\$1,591,293	\$442,452	\$252,078	\$309,531	\$1,528,250	\$337,909
Capacity	\$1,765,508	814,778	136,137	189,398	91,085	289,692	244,417
Distribution	\$614,328	219,113	60,923	34,710	42,621	210,432	46,528
Fire Protection	\$48,150	17,174	4,775	2,721	3,341	16,493	3,647
Customer Services & Billing	\$270,000	197,362	34,358	9,099	17,885	6,275	5,020
Administrative Overhead	\$530,000	265,876	73,926	42,118	51,717	76,603	19,760
Total Revenue Requirement	7,689,500	3,105,597	752,571	530,124	516,179	2,127,746	657,282
Revenue at 2018 Rates	5,915,000	2,417,210	588,267	402,993	402,481	1,614,346	489,703
Balance/(Deficiency) of Funds	(1,774,500)	(688,387)	(164,304)	(127,131)	(113,699)	(513,400)	(167,580)
Summary Statistics							
Treated Water Sales (HCF) ¹	2,887,000	1,030,000	286,000	163,000	200,000	989,000	219,000
Cost of Service (\$/HCF)	2.66	3.02	2.63	3.25	2.58	2.15	3.00
Present Average Rate (\$/HCF)	2.05	2.35	2.06	2.47	2.01	1.63	2.24
Change (%)	30%	28%	28%	32%	28%	32%	34%
Cost of Service Detail by Customer Sector in \$/HCF							
	Total	Single-Family	Multi-Family	Gov/Schools	Commercial	Industrial - Regular	Industrial - Seasonal
Volumetric	\$1.55	\$1.54	\$1.55	\$1.55	\$1.55	\$1.55	\$1.54
Capacity	0.61	0.79	0.48	1.16	0.46	0.29	1.12
Distribution	0.21	0.21	0.21	0.21	0.21	0.21	0.21
Fire Protection	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Billing & Customer Services	0.09	0.19	0.12	0.06	0.09	0.01	0.02
Administrative Overhead	<u>0.18</u>	<u>0.26</u>	<u>0.26</u>	<u>0.26</u>	<u>0.26</u>	<u>0.08</u>	<u>0.09</u>
Total	\$2.66	\$3.02	\$2.63	\$3.25	\$2.58	\$2.15	\$3.00
Notes:							
1. HCF is Hundred Cubic Feet. Rates are set from 2015 baseline volumes.							



ATTACHMENT F-1 (d)

Water Enterprise Revenue Requirement Allocation Table FOR JANUARY 1, 2020							
Cost Component (\$/yr)	Total	Single-Family	Multi-Family	Gov/Schools	Commercial	Industrial - Regular	Industrial - Seasonal
Volumetric	\$6,078,550	\$2,168,044	\$602,815	\$343,442	\$421,717	\$2,082,151	\$460,381
Capacity	\$2,373,228	1,095,239	182,998	254,592	122,439	389,409	328,550
Distribution	\$695,463	248,052	68,970	39,294	48,250	238,224	52,673
Fire Protection	\$49,110	17,516	4,870	2,775	3,407	16,822	3,720
Customer Services & Billing	\$270,000	197,362	34,358	9,099	17,885	6,275	5,020
Administrative Overhead	\$530,000	265,876	73,926	42,118	51,717	76,603	19,760
Total Revenue Requirement	9,996,350	3,992,089	967,936	691,320	665,415	2,809,485	870,105
Revenue at 2019 Rates	7,690,000	3,105,597	752,571	530,124	516,179	2,127,746	657,282
Balance/(Deficiency) of Funds	(2,306,350)	(886,492)	(215,365)	(161,196)	(149,235)	(681,739)	(212,823)
Summary Statistics							
Treated Water Sales (HCF) ¹	2,887,000	1,030,000	286,000	163,000	200,000	989,000	219,000
Cost of Service (\$/HCF)	3.46	3.88	3.38	4.24	3.33	2.84	3.97
Present Average Rate (\$/HCF)	2.66	3.02	2.63	3.25	2.58	2.15	3.00
Change (%)	30%	29%	29%	30%	29%	32%	32%
Cost of Service Detail by Customer Sector in \$/HCF							
	Total	Single-Family	Multi-Family	Gov/Schools	Commercial	Industrial - Regular	Industrial - Seasonal
Volumetric	\$2.11	\$2.10	\$2.11	\$2.11	\$2.11	\$2.11	\$2.10
Capacity	0.82	1.06	0.64	1.56	0.61	0.39	1.50
Distribution	0.24	0.24	0.24	0.24	0.24	0.24	0.24
Fire Protection	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Billing & Customer Services	0.09	0.19	0.12	0.06	0.09	0.01	0.02
Administrative Overhead	<u>0.18</u>	<u>0.26</u>	<u>0.26</u>	<u>0.26</u>	<u>0.26</u>	<u>0.08</u>	<u>0.09</u>
Total	\$3.46	\$3.88	\$3.38	\$4.24	\$3.33	\$2.84	\$3.97
Notes:							
1. HCF is Hundred Cubic Feet. Rates are set from 2015 baseline volumes.							



ATTACHMENT F-2 (a)

Functionalization and Classification of Revenue Requirement Year 2017									
Account Description	Total	Total (Calculated)	Volumetric	Capacity	Distribution	Fire Protection	Finance & Billing	Admin Overhead	Allocations
Electricity - Pumping	569,000	569,000	569,000	0	0	0	0	0	100% Variable
Personnel - PW	900,000	900,000	540,000	198,000	135,000	27,000	0	0	60/22/15/3/0 split
Contract Services	237,000	237,000	0	237,000	0	0	0	0	100% Capacity
Chemicals	408,000	408,000	408,000	0	0	0	0	0	100% Variable
Parts and Supplies	306,000	306,000	122,400	67,320	107,100	9,180	0	0	40/25/30/3/0 split
Repair and Maint	337,000	337,000	151,650	74,140	101,100	10,110	0	0	45/20/30/3/0 split
Customer Service & Billing	270,000	270,000	0	0	0	0	270,000	0	1:1
Administrative Overhead	530,000	530,000	0	0	0	0	0	530,000	1:1
Debt Service Existing	430,222	430,222	344,178	86,044	0	0	0	0	80/20
Capital Outlay Saving	562,778	562,778	450,222	112,556	0	0	0	0	80/20
Debt Service New	0	0	0	0	0	0	0	0	
Debt Service Coverage New	0	0	0	0	0	0	0	0	
Totals	4,550,000	4,550,000	2,585,450	775,060	343,200	46,290	270,000	530,000	



ATTACHMENT F-2 (b)

Functionalization and Classification of Revenue Requirement Year 2018									
Account Description	Total	Total (Calculated)	Volumetric	Capacity	Distribution	Fire Protection	Finance & Billing	Admin Overhead	Allocations
Electricity - Pumping	589,000	589,000	589,000	0	0	0	0	0	100% Variable
Personnel - PW	918,000	918,000	550,800	201,960	137,700	27,540	0	0	60/22/15/3/0 split
Contract Services	242,000	242,000	0	242,000	0	0	0	0	100% Capacity
Chemicals	416,000	416,000	416,000	0	0	0	0	0	100% Variable
Parts and Supplies	312,000	312,000	124,800	68,640	109,200	9,360	0	0	40/25/30/3/0 split
Repair and Maint	344,000	344,000	154,800	75,680	103,200	10,320	0	0	45/20/30/3/0 split
O&M Pretreatment/Filtering	500,000	500,000	365,000	135,000	0	0	0	0	73/27
Customer Service & Billing	270,000	270,000	0	0	0	0	270,000	0	1:1
Administrative Overhead	530,000	530,000	0	0	0	0	0	530,000	1:1
Debt Service Existing	430,222	430,222	258,133	172,089	0	0	0	0	60/40
Debt Service New	941,952	941,952	612,269	235,488	94,195	0	0	0	65/25/10
Debt Service Coverage New	421,826	421,826	274,187	105,457	42,183	0	0	0	65/25/10
Totals	5,915,000	5,915,000	3,344,989	1,236,313	486,478	47,220	270,000	530,000	



ATTACHMENT F-2 (c)

Functionalization and Classification of Revenue Requirement Year 2019									
Account Description	Total	Total (Calculated)	Volumetric	Capacity	Distribution	Fire Protection	Finance & Billing	Admin Overhead	Allocations
Electricity - Pumping	610,000	610,000	610,000	0	0	0	0	0	100% Variable
Personnel - PW	936,000	936,000	561,600	205,920	140,400	28,080	0	0	60/22/15/3/0 split
Contract Services	247,000	247,000	0	247,000	0	0	0	0	100% Capacity
Chemicals	424,000	424,000	424,000	0	0	0	0	0	100% Variable
Parts and Supplies	318,000	318,000	127,200	69,960	111,300	9,540	0	0	40/25/30/3/0 split
Repair and Maint	351,000	351,000	157,950	77,220	105,300	10,530	0	0	45/20/30/3/0 split
O&M Pretreatment/Filtering	1,000,000	1,000,000	650,000	350,000	0	0	0	0	65/35
Customer Service & Billing	270,000	270,000	0	0	0	0	270,000	0	1:1
Administrative Overhead	530,000	530,000	0	0	0	0	0	530,000	1:1
Debt Service Existing	430,222	430,222	258,133	172,089	0	0	0	0	60/40
Debt Service New	1,826,800	1,826,800	1,187,420	456,700	182,680	0	0	0	65/25/10
Debt Service Coverage New	746,478	746,478	485,211	186,620	74,648	0	0	0	65/25/10
Totals	7,689,500	7,689,500	4,461,514	1,765,508	614,328	48,150	270,000	530,000	



ATTACHMENT F-2 (d)

Functionalization and Classification of Revenue Requirement Year 2020									
Account Description	Total	Total (Calculated)	Volumetric	Capacity	Distribution	Fire Protection	Finance & Billing	Admin Overhead	Allocations
Electricity - Pumping	631,000	631,000	631,000	0	0	0	0	0	100% Variable
Personnel - PW	955,000	955,000	573,000	210,100	143,250	28,650	0	0	60/22/15/3/0 split
Contract Services	252,000	252,000	0	252,000	0	0	0	0	100% Capacity
Chemicals	432,000	432,000	432,000	0	0	0	0	0	100% Variable
Parts and Supplies	324,000	324,000	129,600	71,280	113,400	9,720	0	0	40/25/30/3/0 split
Repair and Maint	358,000	358,000	161,100	78,760	107,400	10,740	0	0	45/20/30/3/0 split
O&M Pretreatment/Filtering	2,500,000	2,500,000	1,675,000	825,000	0	0	0	0	67/33
Customer Service & Billing	270,000	270,000	0	0	0	0	270,000	0	1:1
Administrative Overhead	530,000	530,000	0	0	0	0	0	530,000	1:1
Debt Service Existing	430,222	430,222	322,667	107,556	0	0	0	0	75/25
Debt Service New	1,986,150	1,986,150	1,290,998	496,538	198,615	0	0	0	65/25/10
Debt Service Coverage New	1,327,978	1,327,978	863,186	331,995	132,798	0	0	0	65/25/10
Totals	9,996,350	9,996,350	6,078,550	2,373,228	695,463	49,110	270,000	530,000	



ATTACHMENT F-3

Volumetric and Capacity Allocation Factors

	Single-Family	Multi-Family	Schools/City	Commercial	Industrial - Regular	Industrial - Seasonal Peak		Industrial - Seasonal Peak	Totals without Well #9		
Month	Cubic Feet	Cubic Feet	Cubic Feet	Cubic Feet	Cubic Feet	Cubic Feet	Total	Less Well 9	Cubic Feet		
1	5,209,800	1,584,500	259,100	1,217,900	7,352,000	243,900			243,900	15,867,200	
2	5,096,000	1,764,300	340,300	1,126,600	8,060,400	324,300			324,300	16,711,900	
3	5,308,700	1,734,100	558,600	1,259,100	7,563,700	437,200			437,200	16,861,400	
4	7,835,200	2,156,300	1,176,500	1,487,600	8,781,000	226,600			226,600	21,663,200	
5	9,369,306	2,476,300	1,661,700	1,923,700	8,743,000	467,200			467,200	24,641,206	
6	9,694,900	2,658,900	1,852,000	1,991,600	8,391,100	393,000			393,000	24,981,500	
7	12,571,000	3,052,600	2,286,800	2,115,200	9,659,800	1,432,500			1,432,500	31,117,900	
8	11,971,700	2,969,100	2,260,900	1,923,400	8,528,000	5,489,400		-3,430,000	2,059,400	29,712,500	
9	11,665,500	3,078,300	2,416,000	2,112,400	9,168,400	6,119,300		-3,736,000	2,383,300	30,823,900	
10	10,053,000	2,608,100	1,778,100	2,060,500	7,630,700	5,183,600		-3,845,000	1,338,600	25,469,000	
11	7,970,000	2,371,200	1,140,200	1,415,000	7,533,800	1,252,300		-505,000	747,300	21,177,500	
12	<u>6,229,400</u>	<u>2,177,900</u>	<u>582,100</u>	<u>1,397,100</u>	<u>7,483,000</u>	<u>297,200</u>			<u>297,200</u>	<u>18,166,700</u>	
Totals	102,974,506	28,631,600	16,312,300	20,030,100	98,894,900	21,866,500	288,709,906		10,350,500	277,193,906	
% Allocation VOLUME	36%	10%	6%	7%	34%	8%	100%				
									Non Coincident Peak Total	31,744,800	
Averages CF	8,581,209	2,385,967	1,359,358	1,669,175	8,241,242				862,542	23,099,492	73%
Peak Factor	1.5	1.3	1.7	1.3	1.2				1.7	1.35	
Peak - Average	3,989,791	666,633	927,442	446,025	1,418,558				1,196,858	8,645,308	<u>27%</u>
% Allocation CAPACITY	46%	8%	11%	5%	16%				14%	100%	100.0%



WEIGHTING FACTORS FOR COST OF SERVICE MODELS (ALL YEARS)

ATTACHMENT F-4

	Billing & Cust Svcs				Administrative Overhead			
	Customer Count	Weighting Factor	Result	Allocation	Volumetric Allocation	Weighting Factor	Result	Allocation
Single-Family	6,290	1	6,290	73.1%	36%	1.0	0.36	50%
Multi-Family	219	5	1,095	12.7%	10%	1.0	0.10	14%
Schools / City	58	5	290	3.4%	6%	1.0	0.06	8%
Commercial	114	5	570	6.6%	7%	1.0	0.07	10%
Ind - Regular	5	40	200	2.3%	34%	0.3	0.10	14%
Ind - Seasonal	4	40	<u>160</u>	<u>1.9%</u>	8%	0.4	<u>0.03</u>	<u>4%</u>
Totals	6,690		8,605	100%	100%		0.71	100%
	Fire Protection Weighting				Distribution System Weighting			
	Volumetric Allocation %	Weighting Factor	Result	Allocation	Volumetric Allocation %	Weighting Factor	Result	Allocation
Single-Family	36%	1	0.36	35.7%	36%	1	0.36	36%
Multi-Family	10%	1	0.10	9.9%	10%	1	0.10	10%
Schools / City	6%	1	0.06	5.7%	6%	1	0.06	6%
Commercial	7%	1	0.07	6.9%	7%	1	0.07	7%
Ind - Regular	34%	1	0.34	34.3%	34%	1	0.34	34%
Ind - Seasonal	8%	1	<u>0.08</u>	7.6%	8%	1	<u>0.08</u>	<u>8%</u>
Totals	100%		1.00	100.0%	100%		1.00	100%



ATTACHMENT F-5 (a)

Calculation of Fixed Monthly Service Fee and Revenue Year 2017					
Meter Size	Number of Accounts	Meter Size Multiplier*	Rate	Revenue (\$/Mo)	Revenue (\$/Yr)
All Single Family	6,325	1.0	\$13.00	\$82,225	\$986,700
Up to 1 1/2"	225	1.0	\$23.00	5,175	62,100
2" and 2.5"	124	3.2	\$74.00	9,176	110,100
3"	6	6.0	\$138.00	828	9,900
4"	28	10.0	\$230.00	6,440	77,300
6"	5	20.0	\$460.00	2,300	27,600
8"	8	32.0	\$736.00	5,888	70,700
10"	3	46.0	\$1,058.00	3,174	38,100
12"	1	86.0	\$1,978.00	1,978	23,700
Totals	6,725			\$117,184	\$1,406,200

Calculated Volumetric Rate to Meet Overall Revenue Requirement Year 2017						
Customer Class	Revenue Requirement	Less Fixed Revenue	Balance at Volumetric	Volume HCF	Calculated Rate / HCF	Fixed Percent of Total
Single-Family	\$1,882,002	\$986,700	\$895,302	1,030,000	\$0.87	52%
Multi-Family	463,075	191,500	271,575	286,000	\$0.95	41%
Schools / Govt	302,449	94,100	208,349	163,000	\$1.28	31%
Commercial	315,984	59,100	256,884	200,000	\$1.28	19%
Industrial - Regular	1,229,091	39,000	1,190,091	989,000	\$1.20	3%
Industrial - Seasonal	357,398	35,900	321,498	219,000	\$1.47	10%
Totals / Averages	\$4,550,000	\$1,406,300	\$3,143,700	2,887,000		
			\$4,550,000		\$1.58	per HCF overall average



ATTACHMENT F-5 (b)

Calculation of Fixed Monthly Service Fee and Revenue Year 2018					
Meter Size	Number of Accounts	Meter Size Multiplier*	Rate	Revenue (\$/Mo)	Revenue (\$/Yr)
All Single Family	6,325	1.0	\$16.90	\$106,893	\$1,282,700
Up to 1 1/2"	225	1.0	\$29.90	6,728	80,700
2" and 2.5"	124	3.2	\$95.68	11,864	142,400
3"	6	6.0	\$179.40	1,076	12,900
4"	28	10.0	\$299.00	8,372	100,500
6"	5	20.0	\$598.00	2,990	35,900
8"	8	32.0	\$956.80	7,654	91,900
10"	3	46.0	\$1,375.40	4,126	49,500
12"	1	86.0	\$2,571.40	2,571	30,900
Totals	6,725			\$152,275	\$1,827,400

Calculated Volumetric Rate to Meet Overall Revenue Requirement Year 2018						
Customer Class	Revenue Requirement	Less Fixed Revenue	Balance at Volumetric	Volume HCF	Calculated Rate / HCF	Fixed Percent of Total
Single-Family	\$2,417,210	\$1,282,700	\$1,134,510	1,030,000	\$1.10	53%
Multi-Family	588,267	248,600	339,667	286,000	\$1.19	42%
Schools / Govt	402,993	122,100	280,893	163,000	\$1.72	30%
Commercial	402,481	76,600	325,881	200,000	\$1.63	19%
Industrial - Regular	1,614,346	50,700	1,563,646	989,000	\$1.58	3%
Industrial - Seasonal	489,703	46,600	443,103	219,000	\$2.02	10%
Totals / Averages	\$5,915,000	\$1,827,300	\$4,087,700	2,887,000	\$1.42	
			\$5,915,000	\$2.05	per HCF overall average	



ATTACHMENT F-5 (c)

Calculation of Fixed Monthly Service Fee and Revenue Year 2019					
Meter Size	Number of Accounts	Meter Size Multiplier*	Rate	Revenue (\$/Mo)	Revenue (\$/Yr)
All Single Family	6,325	1.0	\$21.97	\$138,960	\$1,667,500
Up to 1 1/2"	225	1.0	\$38.87	8,746	104,900
2" and 2.5"	124	3.2	\$124.38	15,424	185,100
3"	6	6.0	\$233.22	1,399	16,800
4"	28	10.0	\$388.70	10,884	130,600
6"	5	20.0	\$777.40	3,887	46,600
8"	8	32.0	\$1,243.84	9,951	119,400
10"	3	46.0	\$1,788.02	5,364	64,400
12"	1	86.0	\$3,342.82	3,343	40,100
Totals	6,725			\$197,957	\$2,375,400

Calculated Volumetric Rate to Meet Overall Revenue Requirement Year 2019						
Customer Class	Revenue Requirement	Less Fixed Revenue	Balance at Volumetric	Volume HCF	Calculated Rate / HCF	Fixed Percent of Total
Single-Family	\$3,105,597	\$1,667,500	\$1,438,097	1,030,000	\$1.40	54%
Multi-Family	752,571	323,100	429,471	286,000	\$1.50	43%
Schools / Govt	530,124	158,800	371,324	163,000	\$2.28	30%
Commercial	516,179	99,500	416,679	200,000	\$2.08	19%
Industrial - Regular	2,127,746	65,900	2,061,846	989,000	\$2.08	3%
Industrial - Seasonal	657,282	60,600	596,682	219,000	\$2.72	9%
Totals / Averages	\$7,689,500	\$2,375,400	\$5,314,100	2,887,000	\$1.84	
			\$7,689,500	\$2.66	per HCF overall average	



ATTACHMENT F-5 (d)

Calculation of Fixed Monthly Service Fee and Revenue Year 2020					
Meter Size	Number of Accounts	Meter Size Multiplier*	Rate	Revenue (\$/Mo)	Revenue (\$/Yr)
All Single Family	6,325	1.0	\$28.56	\$180,648	\$2,167,800
Up to 1 1/2"	225	1.0	\$50.53	11,369	136,400
2" and 2.5"	124	3.2	\$161.70	20,051	240,600
3"	6	6.0	\$303.19	1,819	21,800
4"	28	10.0	\$505.31	14,149	169,800
6"	5	20.0	\$1,010.62	5,053	60,600
8"	8	32.0	\$1,616.99	12,936	155,200
10"	3	46.0	\$2,324.43	6,973	83,700
12"	1	86.0	\$4,345.67	4,346	52,100
Totals	6,725			\$257,344	\$3,088,000

Calculated Volumetric Rate to Meet Overall Revenue Requirement Year 2020						
Customer Class	Revenue Requirement	Less Fixed Revenue	Balance at Volumetric	Volume HCF	Calculated Rate / HCF	Fixed Percent of Total
Single-Family	\$3,992,089	\$2,167,800	\$1,824,289	1,030,000	\$1.77	54%
Multi-Family	967,936	420,100	547,836	286,000	\$1.92	43%
Schools / Govt	691,320	206,400	484,920	163,000	\$2.97	30%
Commercial	665,415	129,400	536,015	200,000	\$2.68	19%
Industrial - Regular	2,809,485	85,600	2,723,885	989,000	\$2.75	3%
Industrial - Seasonal	870,105	78,800	791,305	219,000	\$3.61	9%
Totals / Averages	\$9,996,350	\$3,088,100	\$6,908,250	2,887,000	\$2.39	
			\$9,996,350	\$3.46	per HCF overall average	