

Control Number: 49154



Item Number: 63

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### Docket No. 49154 SOAH Docket No. 473-19-5677.WS

2019 DEC 20 PM 1:01
PUBLIC UTILITY COMMISSION

RATEPAYERS' APPEAL OF THE DECISION BY LAGUNA MADRE WATER DISTRICT TO CHANGE RATES

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PUBLIC UTILITY COMMISSION

**OF TEXAS** 

### SOUTH PADRE ISLAND GOLF COURSE'S DIRECT TESTIMONY

TO THE HONORABLE JUDGE SIANO AND JUDGE SOTO:

COMES NOW, **South Padre Island Golf Course ("SPI")** and files this its Direct Testimony, and would respectfully show the following:

#### ı. PROCEDURAL HISTORY

1.1. On January 29, 2019, South Padre Island Golf Course via the undersigned SPI Golf Homeowners JV, Inc. ("SPI") filed a petition against Laguna Madre Water District ("LMWD") to appeal the LMWD's board of directors raw water rates charged for untreated irrigation water ("raw water"). On February 28, 2019, LMWD filed a motion for summary dismissal for lack of jurisdiction. On March 6, 2019, the staff of the Public Utility Commission of Texas ("PUC Staff") filed a second motion to dismiss for lack of jurisdiction, and SPI filed a response to the motions to dismiss on April 16, 2019. On April 23, 2019, the Public Utility Commission of Texas ("PUC") Administrative Law Judge issued Order No. 5 denying both motions to dismiss. The PUC issued a referral order on June 21, 2019, referring the case to the State Office of Administrative Hearings (SOAH) for assignment to an Administrative Law Judge ("SOAH ALJ") to conduct a hearing and issue a proposal for decision, if necessary. The PUC has jurisdiction over this case under the Texas Water Code §12.013. SOAH has jurisdiction over matters relating to the conduct of

the hearing in these proceedings pursuant to Texas Government Code §2003.049. At an open meeting on August 8, 2019, the PUC adopted a preliminary order.

1.2. On September 9, 2019, the SOAH ALJ adopted the parties' agreed procedural schedule by SOAH Order No. 4. On December 12, 2019, the parties filed a second agreement modifying the deadlines in the procedural schedule, as allowed by SOAH Order No. 4. That agreement establishes a deadline of December 20, 2019 for filing SPI's Direct Testimony or Statement of Position. Therefore, this direct testimony is timely filed.

# II. SOUTH PADRE ISLAND GOLF COURSE'S DIRECT TESTIMONY

2.1. Attached hereto as Exhibit "A" is the Prefiled Testimony of Billy R. Bradford

Jr. on behalf of South Padre Island Golf course.

Respectfully submitted,

ROYSTON, RAYZOR, VICKERY & WILLIAMS, L.L.P.

By: /s/ James H. Hunter, Jr.

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ATTORNEYS FOR RATEPAYER

#### Certificate of Service

I hereby certify, that a true and correct copy of the above and foregoing document was served via facsimile, certified mail/regular U.S. first class mail, and/or e-mail upon the following counsel of record on this the 20<sup>th</sup> day of December 2019.

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# EXHIBIT "A"

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3	PREFILED TESTIMONY OF BILLY R. BRADFORD JR.
4	ON BEHALF OF
5	SOUTH PADRE ISLAND GOLF COURSE
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7	<b>DECEMBER 20, 2019</b>
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1	Q.	Please state your name and business address and contact information.
2	A.	My name is Billy R. Bradford Jr. I am a partner in Hales-Bradford, L.L.P., which
3		merged with Haynie & Company on December 2, 2019, a full-service accounting
4		firm located at 855 West Price Road, Suite 25, Brownsville, Cameron County,
5		Texas. My telephone number is (956) 542-9196, my fax number is (956) 544-
6		1860, and my email address is billybjr@halesbradford.com.
7		
8	Q.	What is your education and professional background?
9	A.	I received by BBA in Accounting from Abilene Christian University in 1981. I
10		have been a licensed Certified Public Accountant since 1985. My primary
11		practice is forensic accounting and litigation support. I have also been involved in
12		policy making for utility districts for decades. Among other positions, I have
13		served as the Past Chairman and Presiding Officer of the Texas Water
14		Development Board; I am a former Board Member and Chairman of the
15		Brownsville Public Utilities Board, and I am a former Board Member and
16		Chairman of the Southmost Regional Water Authority. In my various capacities
17		on the aforementioned Boards, I have studied, calculated and participated in
18		analyzing and setting rates for raw and treated water. A true and correct copy of
19		my CV setting forth my education, experience and qualifications, is attached as
20		Exhibit 1.
21		

Q. What is the purpose of you	r testimony?
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A. The purpose of my testimony is to address the ways in which the raw water rates charged by Laguna Madre Water District are unjust, unreasonable, and discriminatory; to show that many of the facts and assumptions upon which the methodology was based are seriously flawed; and to show the accepted bases and methodology for accurately and fairly calculating raw water rates in the Rio Grande Valley.

A.

# Q. Please provide some background on the Laguna Madre Water District and its customers.

Based upon the information supplied by the Laguna Madre Water District, which includes the direct testimony of the District's consultant, Dan Jackson, and the documentation attached thereto, which includes the independent audit of the District's financial statements for year 2018, conducted by Carr Rigs, LLP, the District has annual projected ad valorem tax revenues equal to or exceeding its average annual debt amortization for the life of all outstanding debt. See Exhibit 2, 2018 Audit by Carr Riggs Ingram. The District has approximately 6,500 customers, all of whom are property tax payers or governmental entities within the District. There are only three (3) raw water users in the District, one of whom does not pay for its water and another who uses only a few thousand gallons per year. The third raw water user, The South Padre Island Golf Course, is by far the largest raw water user by volume. Despite being the largest user of raw water by

1		volume, Mr. Jackson readily admits in his direct testimony that the income
2		generated by the raw water users account for less than one percent (1 %) of the
3		District's revenue.
4		
5	Q.	Please provide some background on the South Padre Island Golf Course.
6	A.	The South Padre Island Golf Course is located within the Laguna Madre Water
7		District (see map attached to the 1996 Agreement between the District and SPI
8		Golf's predecessor in interest, Delos Partners Management Group, L.P., attached
9		as Exhibit 3). SPI Golf and its predecessor have been paying ad valorem taxes to
10		the District since 1996. In addition, since 1996, SPI Golf and its predecessor have
11		been paying the District for the supply of raw water at a unit rate per 1,000
12		gallons. While the cost of raw water is significant to SPI Golf, the District's total
13		raw water sales account for less than one percent (1%) of the District's revenues.
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2		to the South Padre Island Golf Course for raw water.
3	A.	I have been advised that in 1994, the initial raw water rate charged by the Laguna
4		Madre Water District to the South Padre Island Golf Course was \$0.05 per 1,000
5		gallons (the "unit" price). In 1996, by virtue of a 1996 agreement between the
6		District and SPI Golf Course's predecessor in interest the unit price increased to
7		\$0.32. Then it went up to \$0.43 in 2000, and up to \$0.48 in about 2014/2015 per
8		the 2014/2015 Rate Study. The rate was increased to \$0.80 in 2017, in
9		anticipation of the Port Isabel Reclamation Project, which was intended to
10		produce raw water from the affluent of the District's Port Isabel Wastewater
11		Plant. The plan was to treat wastewater that could be introduced into the raw
12		water reservoir, which would be very expensive. Ultimately, as Mr. Jackson and
13		certain District management employees have testified, that plan never
14		materialized and the Port Isabel reclamation facilities were never built. In August

2017, as a consequence, the rate was returned to \$0.55, which was based upon

Mr. Jackson's 2014/2015 rate study, a copy of which is attached as Exhibit 4.

Then in early 2018, without notice to the South Padre Island Golf Course, the

Laguna Madre Water District voted, without a current rate study, to raise the raw

"draft" of his 2018 rate study to the Directors of the District at a June or July 2018

meeting. See Exhibit 5, excerpts of the deposition of Dan Jackson, at pp. 12-16.

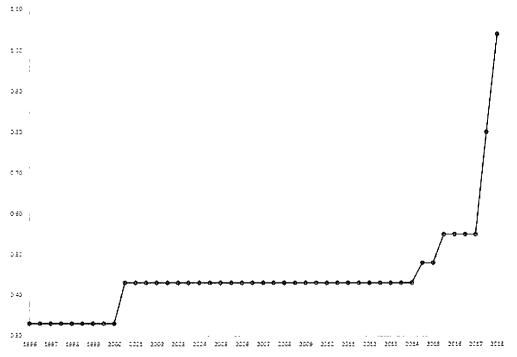
In that presentation, he recommended a rate of \$0.80-\$0.85 per unit. *Id*, at pp 16.

water rate to \$0.80. Mr. Jackson testified in his deposition that he presented a

Please provide the historical rates charged by Laguna Madre Water District

At the conclusion of his presentation, Mr. Jackson was instructed by one or more of the Board members to "go back and look at raw water rates again". *Id.*, at pp. 15, lines 13-24. Jackson did as he was instructed: He went back and revised his 2018 rate study, resulting in the final 2018 rate study attached to his direct testimony. In that final study, Jackson recommended a rate increase to \$1.04 per unit, or rate \$0.24 higher than his original recommendation. Id., at pp. 16, lines 2-6. The current \$1.04 current rate represents a 30% increase from the previous rate, and an 89% increase from the \$0.55 rate from the year before. Below is chart illustrating the rate history from 1996 to the present.

#### Raw Water Rates 1996 to 2018



1	Q.	What are common and accepted industry methods of calculating and
2		establishing raw water rates in Texas?
3	A.	I agree with Mr. Jackson that the Cost Utility Method and Cash Basis Method are
4		the two (2) generally accepted methods of calculating water rates in Texas.
5		However, I disagree with Mr. Jackson's opinion that the Cost Utility Method is
6		the proper method for a public utility to employ in calculating raw water rates.
7		The reason is that the Cost Utility Method emphasizes a return on investment
8		which is more appropriate for a private entity seeking a profit on investment.
9		When a District Board Member asked whether the District could make a profit,
10		Mr. Jackson properly answered that that is not how it works as the District is a
11		nonprofit entity. See Exhibit 5, excerpts of the deposition of Dan Jackson, at pp.
12		15, lines 16-18. I agree. In contrast, the Cash Basis Method uses a return on
13		investment factor more suitable for a public entity, such as the District. This
14		disagreement notwithstanding, I have analyzed and employed both methodologies
15		based on the District's records. As will be shown later, the raw water rates
16		recommended by Jackson and charged by the District are based upon incorrect
17		facts and assumptions which result in grossly excessive raw water rates which are
18		neither just nor reasonable. In short, the raw water rate recommendations, which
19		have historically been in line with treated water rates charged to the District's
20		approximately 6,500 customers, increased exponentially in 2018.
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1	Q.	What is involved in the Laguna Madre Water District's operations for river
2		water, drinking water, and sewer water?
3	A.	According to the materials supplied by the District, Mr. Jackson and the District
4		employees who were deposed, the river water operations consist of three un-
5		manned pump houses located at the Rio Grande River source, at Rice Road, and
6		in Los Fresnos, Texas. The raw water is supplied from the Rio Grande River
7		through 26-mile pipeline (ranging from 36 inches to 42 inches) that connects to
8		the District's three reservoirs. Treated water operations consist of converting
9		river water into drinking water at two treatment plants, and distributing it through
10		110 miles of pipeline to customers, metering the water at the place of use, and
11		invoicing and collections for its approximate 6,500 customers. Sewer operations
12		consist of collecting wastewater from most of the water customers, pipelining it to
13		one of four treatments plants, treating the affluent, and then disposing of the
14		treated affluent.
15		
16	Q.	What are Laguna Madre Water District's annual expenditures, and how
17		much of that is for personnel?
18	A.	In round numbers, the District's expenditures are \$7,000,000 annually, of which
19		\$4,600,000 (or 65%) is for personnel.
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1	Q.	Do you agree or disagree with Mr. Jackson's allocation of expenditures in his
2		calculation of raw water costs? If you disagree, please explain why you
3		disagree.
4	A.	I disagree. Jackson claims that river water costs the District over \$2,000,000
5		annually. This is over twenty times a reasonable allocation in accordance with
6		generally accepted accounting principles. This represents 43% of the District's
7		expenditures on people, 28% of the District's entire expenditures for drinking and
8		sewer water combined; and over 50% of the District's expenditures on water.
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1	Q.	What were Laguna Madre Water District's revenues and expenditures for
2		2018?
3	A.	According to the District's 2018 Independent Audit, and again, using round
4		numbers, the District had general fund revenues of \$9,600,000 and expenditures
5		of \$6,900,000.
6		
7	Q.	What are Laguna Madre Water District's costs to procure water, and
8		operate, run, and maintain its facilities and systems?
9	A.	According to the independent 2018 Audit conducted by Carr Riggs, the District,
10		had expenditures of \$6.9 million. Of this amount, \$4.6 million was worker costs,
11		\$0.9 million was materials and supplies, \$0.7 million was in utilities, \$0.3 million
12		were repairs and maintenance, \$0.2 million was insurance, and \$0.2 million was
13		rounding and other.
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15	Q.	Of the foregoing costs, what is used in the supply and transmission of <u>raw</u>
16		water?
17	A.	As far as worker costs, there is no need for dedicated employees, and therefore
18		the allocation of \$15,000 for a part-time employee is more than sufficient.
19		Therefore, approximately \$15,000 of the \$4.6 million should be allocated to raw
20		water. As far as materials and supplies, all that is needed is oil and gas to pump
21		the water. Therefore, approximately \$10,000 of the \$0.9 million should be
22		allocated to raw water. Only three meters are used for the raw water, one at each

pump house. Therefore, approximately \$14,000 of the \$0.7 million should be allocated to raw water. Repairs and maintenance related to raw water cost \$46,500 according to the 2018 Audit. The above ground infrastructure related to raw water accounts for one percent of all above ground infrastructure. Therefore, it is more than sufficient to allocate \$7,000 to raw water. Finally, with respect to

revenue, \$2,000 should be allocated to raw water.

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Q. Do you agree or disagree with Jackson's allocation of the expenditure of "Water Plant" in his calculation of raw water costs? If you disagree, please explain the basis for such disagreement.

rounding errors, in light of the South Padre Island Golf Course's percentage of

I disagree. Jackson's allocated cost of \$544,000 to the delivery of raw water to South Padre Island Golf Course. Jackson arrived at this figure by adding 25% of the costs associated with two water treatment plants and 25% of the cost of distribution expenses. South Padre Island Golf Course is the only raw water customer; the District has approximately 6,500 other customers who use treated water and wastewater services. The figures do not segregate costs between water and sewer. We do not have all of Jackson's records, drafts, and work papers, but his use of 25% of "Water Plant" and 25% of Distribution to determine Operations and Maintenance for his calculation of the raw water rate has no rational basis.

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1	Q.	How should Operations and Maintenance be apportioned between raw water
2		and other water?
3	A.	The cost of raw water is obtained by dividing the amount of Expenditures
4		associated with providing raw water to South Padre Island Golf Course divided by
5		the amount of raw water used by the District. The cost of raw water is
6		approximately \$105,000. In his testimony, Jackson cites the District's "Account
7		01 Water Plant," as being \$1,440,534. Of that amount, \$390,000 is for chemicals.
8		He admits in his deposition that chemicals are not related to supply and
9		transmission. He then cites "Account 03 Distribution" which has a value of
10		\$739,372. He also cites "Account 07 Administration," which has a value of
11		\$513,104. Eventually exactly 25% of all of these numbers became a charge to
12		raw water, and Jackson's number for Operations and Maintenance for raw water.
13		This also includes administration costs as a separate line item in the table on page
14		33 of Jackson's testimony. A more reasonable allocation would be 10% of the
15		cost of the Water Plant (after subtracting the cost of chemicals), \$0 to \$100 for
16		Distribution, and a like amount for administration costs in that the water plant
17		already includes over \$500,000 for people costs, most of which is administration-
18		related. Note that he previously allocated 10% of these costs to Operations and
19		Maintenance for raw water. See Exhibit 6, August 9, 2000 letter from Dan
20		Jackson to William W. Vaughan III. There is no dispute that the distribution of
21		raw water to the South Padre Island Golf Course is gravity fed through a line
22		running less than 200 yards from the District's raw water reservoir to the Golf

# Prefiled Testimony of Billy R. Bradford Jr. Page 14

**December 20, 2019** 

1	Course's standpipe and pump house. The Golf Course has its own pump house.
2	See Exhibit 7, excerpts of the deposition of Carlos Galvan, at pp. 57, 70-71. By
3	comparison, treated water travels up to 110 miles through lines, lift stations, pump
4	stations, etc. It appears that Jackson manipulated the numbers and allocations to
5	get the rate the District board wanted him to get after the rate recommended in his
6	2018 draft report wasn't high enough. Therefore, if you take \$1,440,534, less
7	\$390,000 worth of chemicals, you get \$1,050,534, of which 10% is \$105,053.40.
8	this is the true cost of Maintenance and Operations attributable to raw water.
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Page 1	5
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1	Q.	Please provide some detail on the three pump houses.
2	A.	I do not have personal knowledge of the pump houses other than what the
3		District's Manager, Carlos Galvan, testified to. See Exhibit 7, excerpts of the
4		deposition of Carlos Galvan, at pp. 43-48. One is at the Rio Grande River source,
5		the second on Rice Road, and the third at the Los Cuates pump house. I was
6		informed that on December 12, 2019, South Padre Island Golf Course employee
7		Oscar Senna visited each of the three pump houses on three (3) separate occasions
8		during peak business hours and no Laguna Madre Water District employees were
9		present. This is significant because \$4.6 million of the \$7 million cost for water
10		and sewer is for the District's 77 employees. Jackson's apportionment of
11		\$544,000 of Operations and Maintenance to raw water assets is simply
12		indefensible. On the following pages are photographs of the pumphouses taken
13		on December 12, 2019.
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# Old Port Road, Los Fresnos (Cuates Pump Station)

- Spent about 15 minutes during both visit and no personnel was to be seen.
- Walked the perimeter of the fenced area and was never approached by anyone.



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### Rice Tract Rd **Pump Station**

- · Top photo is from google earth, as you can see the area with road name is not even a road but a drawn-out area that google uses.
- · Pump station had no workers present during the two visits that were made.
- · On the second visit I was there 30 minutes and no
- · The photo of the gate shows an old gate that looks like it hadn't been open for some time. Gate barely looked functional.
- · The photos on the right show what should be a road to the water station. When traveling down this road I had to turn on my 4-wheel drive for me not to get stuck.











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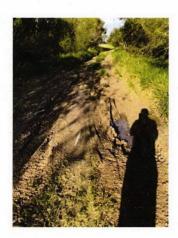
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## On the River Pump Station

- The pump station along the river we were unable to get to.
- I drove as far down on this road as I could but any further, I would have gotten stuck.







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1	Q.	How should rate-setting be done for a small Texas public water utility
2		district?
3	A.	Rate-setting for a small publically owned water utility districts is much easier than
4		determining prices for any commercial business. The water utility is a monopoly;
5		it does not have to compete for its customers. It sells two life essential products—
6		water and sewer. Costs for a water utility are predictable. A rate-setter can look
7		at the audit for the prior years and add one or two percent. It is easy to see from
8		the District's audits from 2014 to 2018 to see that Total Expenditures increased
9		less than 1% per year, and that revenue increased \$2,000,000 (5%). That is a
10		mere \$300,000 over five (5) years. All that a publicly owned water utility needs
11		is to have slightly more cash coming in than cash going out. Its required revenues
12		are annual expenses, capital outlays, and debt service.
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1	Q.	What rate making methodology does Dan V. Jackson use for calculating
2		water rates for Laguna Madre Water District?
3	A.	Dan V. Jackson testified that the rates he recommended are designed to recover
4		the revenue requirements, which means covering expenditures. Interestingly, this
5		is the very essence of a Cash Basis Method, the method used most by taxpayer-
6		owned government utilities. The Cash Basis Method takes the sum of (1)
7		operations and maintenance, (2) capital outlays, and (3) debt service, and divides
8		it by the number of units being produced. However, Jackson used a different
9		method for calculating the raw water rate—the Utility Method. Jackson allocates
10		costs between raw and treated water for one customer alone - South Padre
11		Island Golf Course. This allocation is made by Jackson alone every few years.
12		
13	Q.	What is the Utility Basis Method and what is it used for?
14	A.	The Utility Basis Method is widely used for investor-owned utilities, as it allows
15		for a rate of return on assets purchased with invested capital. Depreciation is
16		substituted for capital outlays and return on investment is substituted for debt
17		service. This is not an appropriate method to use when the ratepayer is paying or
18		has already paid for the assets as a taxpayer.
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1	Q.	Has Laguna Madre Water District been covering its expenditures? If so,
2		please explain the basis for your findings.
3	A.	Yes. In 2014, the District was operating at a 10.4% profit (page 68 of the 2018
4		Independent Audit). Jackson's 2014/2015 Rate Study recommended no change in
5		water rates through 2017. See Exhibit 4, the 2014/15 Rate Study. The lone
6		exception to this was the aforementioned increase in raw water rates in
7		anticipation of the Port Isabel Reclamation Project (which never materialized).
8		
9	Q.	In your opinion, has Jackson correctly applied the Utility Basis Method?
10	A.	No. His calculations demonstrate a calculated, result-oriented effort to produce a
11		rate that is unreasonable, unjust and discriminatory.
12		
13	Q.	Please describe any disagreements you have with Jackson's calculation of
14		operating expenses.
15	A.	Jackson cites the District's "Account 01 Water Plant," as being \$1,440,534. Of
16		that amount, \$390,000 is for chemicals. He admits in his deposition that
17		chemicals are not related to supply and transmission. He then cites "Account 03
18		Distribution" which has a value of \$739,372. He also cites "Account 07
19		Administration," which has a value of \$513,104. Eventually exactly 25% of all of
20		these numbers became a charge to raw water, and Jackson's number for
21		Operations and Maintenance for raw water. This also includes administration
22		costs as a separate line item in the table on page 33 of Jackson's testimony. A

more reasonable allocation would be 10% of the cost of the Water Plant (after subtracting the cost of chemicals), \$0 to \$100 for Distribution, and a like amount for administration costs in that the water plant already includes over \$500,000 for people costs, most of which is administration-related. There is no dispute that the distribution of raw water to the South Padre Island Golf Course is gravity fed through a line running less than 200 yards from the District's raw water reservoir to the Golf Course's standpipe and pump house. The Golf Course has its own pump house. See Exhibit 7, excerpts of the deposition of Carlos Galvan, at pp. 57, 70-71. By comparison, treated water travels up to 110 miles through lines, lift stations, pump stations, etc. It appears that Jackson manipulated the numbers and allocations to get the rate the District board wanted him to get after the rate recommended in his 2018 draft report wasn't high enough.

A.

### Q. What is the correct cost of operating expenses for raw water?

Using generally accepted accounting principles, operating costs are allocated on the basis of revenue received. Since we know from Jackson's and District management testimony that the South Padre Island Golf Course accounts for less than 1% of the District's revenue, I will use 1% for illustrative purposes. An allocation of 1% of the \$1,440,000 cost of the "Water Plant" less the \$390,000 worth of chemicals not used for raw water is the correct cost of operating expenses for raw water. This calculation results in a total \$18,300 for Operations for raw water.

1	Q.	Does Laguna Madre Water District allocate costs between water and
2		wastewater?
3	A.	Yes.
4		
5	Q.	Does Laguna Madre Water District allocate costs between treated water and
6		raw water?
7	A.	Not unless it is dealing with the Golf course. In fact, it was not until Jackson was
8		asked to revise the draft report of his 2018 rate study that he attempted to do so
9		for the first time. There is no evidence that this allocation has been used for the
10		calculation of treated water rates.
11		
12	Q.	What was the financial condition of the District in 2014?
13	A.	In 2014 the District was operating at a 10.4% profit (see page 68 of Exhibit 2).
14		Profits from the sale of water were more than offsetting the losses from
15		furnishing wastewater collection and treatment. Jackson's 2014/2015 Rate
16		Study recommended no change to water rates through 2017, with the exception of
17		an increase in raw water rates in anticipation of the Port Isabel Reclamation
18		Project, which was intended to produce raw water from the effluent of the
19		District's Port Isabel Wastewater Plant. The plan was to treat wastewater that
20		could be introduced into the raw water reservoir, which would be very expensive.
21		Ultimately, that plan was scrapped and the Port Isabel reclamation facilities were
22		never built. Note that the District's profit in 2018 was 27%.

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1	Q.	How much water does the District use annually, and what water rights
2		does it own?
3	A.	The District was granted water rights by the State of Texas for 7,500 acre feet per
4		year from the Rio Grande River. The District uses 5,000 acre feet of water per
5		year. With the District's current rate of growth, it has sufficient water rights to
6		last several decades or generations. Therefore, the marginal cost for the District
7		to obtain 50% more raw water from the Rio Grande River is \$0. This is likely
8		why the District is providing free raw water to a "large agricultural customer" in
9		exchange for an easement. See Exhibit 7, excerpts of the deposition of Carlos
10		Galvan, at pp. 21-23. Therefore, this "large agricultural customer" is not a true
11		potential customer as claimed by Jackson, and he cannot use this "large
12		agricultural customer" to justify his use of the Utility Method Basis of rate-
13		making for only raw water.
14		
15	Q.	What rates did Jackson's 2018 draft and final rate studies recommend?
16	A.	Initially, Jackson recommended no increase to the \$0.80 raw water rate. However
17		after presenting his draft 2018 Rate Study to the Board of Directors of the
18		District, he was told to take another look at raw water rates. The Directors asked

him if they could make a profit, to which he testified that he responded by

entity. After being ordered to do so by the Board of Directors, Jackson

explaining that it is not generally how it works since the District is a non-profit

recommended a 7% increase in rates for treated water for 2018 and a 2% annual

Page	25

1		increase in rates thereafter. For raw water, he recommended a rate of \$1.04 (a
2		30% increase from the \$0.80 rate and an 89% increase from the \$0.55 rate in
3		effect from October 2017 through March 2018). See Exhibit 5, excerpts of the
4		deposition of Dan Jackson, at pp. 12-16. Astonishingly, in his direct testimony
5		Jackson proposed a method to get to a higher rate—a rate of \$1.22 or \$1.23.
6		
7	Q.	How should the raw water rate be calculated?
8	A.	"Costs of goods sold" for every business in the world is determined in
9		accordance with Generally Accepted Accounting Principles ("GAAP"). "Costs of
10		goods sold" should be added to a fair and reasonable profit to come up with a fair
11		and reasonable (i.e., non-discriminatory raw water rate).
12		
13	Q.	Is there an acceptable alternative to GAAP Accounting?
14	A.	As an alternative to GAAP Accounting, the IRS permits Cash Basis accounting
15		when a company does not hold inventory. A similar concept is used by
16		government-owned and taxpayer-financed utilities. The District uses the Cash
17		Basis Method for all customers <u>except</u> for the South Padre Island Golf Course.
18		The Cash Basis Method consists of dividing the sum of Operations and
19		Maintenance, Capital Outlays, and Debt Service by the number of units of raw
20		water produced—1,650,000 gallons.
21		

1	Q.	Could you explain in greater detail the basis for your opinion that the Utility
2		Basis Method of calculating water rates is not an appropriate method to use
3		by the District for its one or two raw water users?
4	A.	The Utility Basis Method is widely used by investor owned utilities (private
5		money), because it allows for a rate of return on assets purchased with invested
6		capital. Depreciation is substituted for Capital Outlays and Return on Investment
7		is substituted for Debt Service. The Utility Basis Method is not appropriate for
8		customers who are paying, or have already paid, for the assets with their tax
9		dollars. In the case of the South Padre Island Golf Course, it is located within the
10		District and pays property taxes, meaning it has paid for the assets belonging to
11		the District.
12		
13	Q.	Should comparable rates be considered when setting raw water rates for the
14		District?
15	A.	Yes. In fact, Jackson used comparable rates in his 2014/2015 Rate Study and in
16		his 2018 Rate Study, but only for treated water rates. He compiled data into two
17		charts to show how low the District's rates compared. Inexplicably, he testified in
18		his deposition that comparable rates are irrelevant. See Exhibit 5, excerpts of the
19		deposition of Dan Jackson, at pp. 21-25.
20		
21		
22		

1	Q.	What are comparable rates for raw water in the Rio Grande Valley?
2	A.	South Padre Island Golf Course provided me with a summary of rates charged by
3		other publicly-owned utility and water districts in the Rio Grande Valley - whose
4		source of water is the Rio Grande River. Palm View Golf Course in McAllen,
5		Texas, Howling Trails Golf Course in Mission, Texas, Tierra del Sol Golf Course
6		in Pharr, Texas, and Tierra Santa Golf Club in Weslaco, Texas all receive free
7		raw or irrigation water. McAllen Country Club pays \$0.04 per 1,000 gallons of
8		raw water. Cimarron Country Club in Mission, Texas pays \$0.18 per 1,000
9		gallons of raw water. Harlingen Country Club in Harlingen, Texas pays \$750 per
10		year for raw water. Valley International Country Club in Brownsville, Texas pays
11		\$250 per year for raw water. The highest rate I was provided with is paid by
12		Tony Butler Golf Course in Harlingen, Texas at \$14,000 per year for raw water.
13		The town of Bay View, which neighbors the South Padre Island Golf Course,
14		pays \$15 per acre foot of raw water. The South Padre Island Golf Course is
15		paying grossly more per 1,000 gallons than any other raw water customer in the
16		region, at \$1.04 per 1,000 gallons, or \$339 per acre foot of raw water. Below are
17		the comparables in chart form:
18		
19		
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### South Padre Island Golf Club

Golf Course Water Rate Study 11/15/2018

Golf Course	Location	Water Source	Quoted Cost	Cost/10	000 Gal
Valley International C.C.	Brownsville	PUB Resaca	\$250/Year	Annual	Flat Rate
Harlingen Country Club	Harlingen	Mud District	\$750/Year	Annual	Flat Rate
Tony Butler	Harlingen	Harlingen Irrigation District/Raw Water	\$14,000/ Year	Annual	Flat Rate
McAllen Country Club	McAllen	Hidalgo Country water improvement District 2 & 3	11.55/Acre Ft	\$	0.035
Palm View	McAllen	City Effluent	Free	\$	
Cimarron Country Club	Mission	Irrigation District/Raw Water	.18/1000 Gal	\$	0.180
Howling Trails Golf Course	Golf Course Mission River Water		Free	\$	-
Tierra del Sol	Pharr	Irrigation District	Free	\$	-
Tierra Santa Golf Club	Weslaco	Irrigation District/Raw	Free	\$	•
Water District	Location	Water Source	Quoted Cost	Cost	1000 Gal
Harlingen Irrigation District	Harlingen	Unknown	\$10/Acre Ft	5	0.031
San Benito Irrigation District	San Benito	Unknown	\$11/Acre FT	\$	0.034
Bay View Irrigation District	Bay View	Unknown	\$24.40/Acre FT	5	0.075

1	Q.	Did you have any other disagreements with Jackson's use of the Utility Basis
2		Method? If so, please explain the basis for such disagreement.

A. In his 2018 Rate Study, Jackson claims that the possible sale of raw water to a

"large agricultural user" justifies his use of the Utility Basis Method for

calculating the raw water rate. This logic is flawed because District employees

have testified that they provide free raw water to this "large agricultural user," and

therefore, the South Padre Island Golf Course continues to be the only customer

to whom the Utility Basis Method applies.

9

10

11

12

- Q. For argument's sake, could the Utility Basis Method be applied accurately and fairly to arrive at a fair, just and reasonable rate for raw water? If so, how would you apply the Utility Basis Method based on the financials the District provided?
- 14 A. Yes. The Utility Basis can be applied fairly if real numbers applicable to the 15 supply of raw water are used in the calculations. As discussed above, the 16 District's Operations and Maintenance Costs, according to Jackson, total 25% of 17 the cost of the "Water Plant" and "Distribution." "Water Plant" costs are for 18 operating two water treatment plants, \$500,000 worth of personnel costs, 19 \$390,000 dollars-worth of chemicals that Jackson testified are not applicable to 20 the transmission and supply of raw water, and \$180,000 worth of electricity. By 21 comparison, in 2000, Jackson allocated only 10% of the "Water Plant" costs to 22 raw water. See Exhibit 6, August 9, 2000 letter from Dan Jackson to William W.

Q.

A.

Vaughan III. This was in response to a complaint about his increase of the raw		
water rate to \$0.43 from \$0.32. There is no justification for the jump from 10%		
to 25% of these costs being allocated to raw water. Further, Jackson		
apportions 25% of the cost of "Distribution" to raw water. On Page 48 of his		
2018 Rate Study, Jackson defines distribution as the lines that carry water to		
individual customers. That is for drinking water being delivered through a 110-		
mile system. That is not for raw water. The "Distribution" costs are \$739,372.		
The amount of that cost allocated to raw water should be zero, and at most, 1%		
based on the share of revenue for which the South Padre Island Golf Course		
accounts. Distribution of raw water to the South Padre Island Golf Course is done		
via a gravity fed line that runs less than ten feet in length. There is simply no		
justification for a 25% allocation of "Distribution" to raw water, totaling		
\$544,977. In 1996, Jackson wrote that he estimated \$150,000 for Operations and		
Maintenance, and in 2000 he used \$67,438 for Operations and Maintenance.		
Today, he uses \$544,000 for Operations and Maintenance allocated to raw water.		
In your opinion, what is the true cost of operating a raw water line to supply		
and deliver raw water to customers?		
Of the river water transmitted through the line, only one percent (1%) by revenue		
value, is sold as Raw Water. In accordance with GAAP Accounting, operating		

costs should be allocated on the basis of Revenue Received. Therefore, a 1%

allocation of the \$1,440,000 less the \$390,000 cost of chemicals would be

# Prefiled Testimony of Billy R. Bradford Jr. Page 31

**December 20, 2019** 

1	appropriate. \$1,440,000 less \$360,000 is \$1,080,000. One percent (1%) of
2	\$1,080,000 is \$10,800. When this figure is added to the maintenance cost of
3	\$46,500, the total Operations and Maintenance costs is \$57,300. Another way to
4	arrive at the Operations and Maintenance cost is to multiply Jackson's 2000
5	number of \$67,436 by 170%, the percentage by which the District's costs have
6	increased since 1996. This calculation results in total Operations and
7	Maintenance costs of \$114,600. Finally, if actual numbers from Page 15 of the
8	2018 Independent Audit are used, there is \$94,000 worth of Operations and
9	Maintenance. All of these figures are dramatically less than the \$544,000 for
10	Operations and Maintenance that Jackson allocated to raw water.
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1	Q.	Does return on investment have any place in the calculation of raw water
2		rates for the Laguna Madre Water District?
3	A.	No. This number should be \$0 because the South Padre Island Golf Course and
4		other taxpayers have paid 100% of the cost of the assets. All \$68 million of the
5		retained earnings were paid for by the District's taxpayers or governmental
6		entities within the District. Jackson's assertion that this return on investment is
7		included to account for customers outside of the District who are not taxpayers is
8		disingenuous as there are no customers outside of the District. In Jackson's
9		2014/2015 Rate Study, he did not include a return on investment. Return on
10		investment is a profit. On Page 48 of his 2014/2015 Rate Study, Jackson wrote
11		that rates developed are designed to cover required revenues, without mention of
12		return on investment.
13		
14	Q.	If the Judge in this case determines it is just and reasonable to include return
15		on investment in the calculation of raw water rates, how should such rate of
16		return be calculated?
17	A.	I would first say that here is no justification for Jackson's 6% rate of return.
18		Justifiable rates include the rate the District earns on its invested cash, the rate the
19		District is paying on its most recently funded debt, and the rate calculated as the
20		District's weighted cost of capital. In 2000, Jackson used the weighted cost of
21		capital—the weighted average of the District's outstanding Bonds—which today,

for the District, would be 2.75%. Jackson's value of \$12,106,000 for capital is

highly inflated. This includes \$2,644,000 worth of water rights—a number he came up with by assigning a \$352 per acre foot value to each of the District's 7,500 acre feet of rights. This number is not real, and is not included in the 2018 Audit balance sheet. Regardless, the water rights and inventory have \$0 cost of capital associated with them. If I was required to justify a return on investment, the only reasonable way to do it is to multiply the \$9,915,191 worth of assets (not including water rights) by the maximum rate of return of 2.75%, which results in a figure of \$272,000 for return on investment.

A.

# Q. How has Jackson erred, if at all, in his allocation of depreciation to raw water?

In his 2018 Study, Jackson used \$279,000 for his Depreciation figure. In his deposition, he has testified that in the past 29 years he never calculated a real number for depreciation. That is his explanation for understating depreciation (based on my calculations) by 223%. According to Jackson, the transmission lines cost \$8.25 million and the Los Cuates pump station rebuild cost \$6.3 million. Depreciation on \$14 million over 50 years is \$280,000—almost exactly the figure used in Jackson's 2018 Study. However, his testimony now is that Depreciation is \$623,000. He claims he has now received and reviewed a detailed list of raw water assets from the District. The basis for his Depreciation figure is flawed. To begin with, the Los Cuates pump station investment of \$6.3 million is an infrastructure asset, for which the 2018 Audit specifies 50 years

# Prefiled Testimony of Billy R. Bradford Jr.

D_~	24
Page	; J4

1	worth of depreciation. In excess of \$4 million is identified as pipe having in all
2	other cases a 50-year life. This results in an overstatement of associated
3	depreciation of \$183,000. Second, the list includes \$1.2 million worth of pick-up
4	and other trucks associated 100% with raw water assets. There is no justification
5	for apportioning 100% of these costs to raw water, since as discussed, the water is
6	gravity fed to the South Padre Island Golf Course. There is no need for the use of
7	\$1.2 million worth of trucks for the raw water to get to the South Padre Island
8	Golf Course—this accounts for overstated depreciation of \$45,000. At most, 1%
9	of the \$1.2 million worth of trucks should be apportioned to raw water
10	Depreciation costs. Third, the list includes a residential line on Beach Blvd.
11	worth \$400,000. This line is 100% dedicated to the distribution of treated water
12	and results in an overstatement of Depreciation by \$8,000. The administration
13	building, warehouse, boom truck, and other equipment are allocated 100% to raw
14	water. This has no relation to raw water delivery or direct costs, and amounts to
15	overstated depreciation of \$107,000.
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- 1 Q. How should the Utility Basis be used to calculate the raw water rate if the
  2 Judge finds that it is appropriate?
- A. While not agreeing that the Utility Basis is appropriate for taxpayer owned

  utilities, the raw water rate would be \$105,000 of Operations and Maintenance,

  plus \$280,000 of Depreciation, plus \$275,000 of Return on Investment—

  \$660,000—divided by 1,650 units of 1,000 gallons, which equals \$0.40 per unit.

  See Utility Basis Schedule with footnotes below.

Utility Basis

In Thousands

Catagories	1996	٥		2000 (3(1)		2015 ③	20:	18 (Study)(	<b>3</b>		2018 (i) aluculati	on
O&M	\$	150	\$	67	\$	•	\$	580	()	\$	105	1
Admin		-						132	G		-	1
Depreciation		215		217		-		279	0		280	0
ROI		560		322		<del>-</del>		<u>683</u> (	$\widehat{m{arphi}}$	·	275	<b>3</b>
Total	\$	925	<u>\$</u>	606	\$_	865	\$	1,674		\$	660	
Divided by Water		2,921		1,412		1,602		1,650			1,650	
Cost Per 1000 Gal	\$	0.32	\$	0.43	\$	0.54	\$	1.01		\$	0.40	

<sup>1.</sup> All numbers are from Exhibit C to 1996 Agreement. The number of 8,961 acre feet for the capacity of the water line was converted to Units (of 1,000 gallons) by multiplying by 326 being the number of Units in one acre foot. This Agreement is attached as Exhibit 3

<sup>2.</sup> All numbers are from attachments to Letter of Aug 9, 2000, pages 250 to 256 from testimony. Water usage number was converted from acre feet to Units of 1,000 gallons.

<sup>3.</sup> We know per the 2014/15 STUDY completed by Jackson that the Price or raw water was \$0.54. We know that the volume of water in 2014 was 1,602,374 (page 27of 2014/15 STUDY. Multiply 1603 times 0.54 equals costs of \$865,000. The allocation among catagories does not affect the price. Price equals total costs divided by volume

<sup>4.</sup> All values from page 33 (page 37 of Jackson's Testimony)

# Prefiled Testimony of Billy R. Bradford Jr. Page 36

December 20, 2019

1 5. Jackson uses 25% of Account 01 Water Plant, and 25% of account 0.3 Distribution. SPI asserts that this is excessive. Jackson only allocated 10% of Water Plant and zero of distribution in Aug 2000. 6. Not used in prior years. On page 254 Jackson does not use Distribution. 7. This number from the Study appears reasonable. The new value of \$623,000 he cites in his testimony is clearly erroneous. 8. ROI was calculated in 2018 by Jackson using an arbitrary 6%. In 1996, 2000 and 2014/15 he used LMWD's "weighted cost of capital". This is 2.75% for 2018. This rate is obtained by dividing 2018 interest on all outstanding bonds by the outstanding principle of all outstanding bonds (per 2018 Audit Page 39) 9. The capital upon which the 6% is assessed calculates to be \$11,380,000. (ie 6% of 11,380,000 is \$682,800). In all prior years, Jackson used Net Book Value of the line and minor additions. The extent of the additions makes it clear that the 2018 methodology has changed. 10. SPI uses estimates that we assert are reasonable. 11. An allocation of 10% of Water Plant after subtracting \$390,000 of cost for chemicals. In 2000 Jackson used an allocation of 10% of Water 12. Jackson did not include administrative costs in 1996 or 2000. A zero allocation is appropriate in that administrative cost are in include with \$500,00 of personnel costs within the Water Plant Account. 13. \$14,000,000 of Raw Water Assets depreciated over 50 years. The Audit report page 26 lists 50 years for infrastructure asset. See page 301. Jackson uses \$13,926,172 as the total Capital Cost and 50 years for depreciation. See page 3 attached. 14. 2.75 % being LMWD's weight cost of capital . The invested Rate Base is multiplied by this rate. In 1996, 2000 and on page 29 of his testimony Jacksond uses \$9.9 million for the net book value of Raw Water assets for depreciation. 15 See Exhibit 6 2 3 5

#### Q. How should the Cash Basis be used to properly calculate the raw water rate?

- A. The raw water rate would be \$105,000 of Operations and Maintenance, plus
- 3 \$161,000 of Capital Outlays (figures taken from Jackson's testimony), plus
- 4 \$339,000 of Debt Service—\$605,000—divided by 1,650 units of 1,000 gallons,
- 5 which equals \$0.37. See Cash Basis Schedule below.

Cash Basis In Thousands

2

ltem	SPI		1996 & 2000 Methodology (a)		Jackson 2019 2018 Study			Jackson Testimony	
O&M	\$ 105 (	1	144 🕃	\$	544	Q	\$	544	O
Capital Outlay	161 (		161 🕣		161	0		36	3
Debt Service	 339 (	1	339 🗿	-	339	0	_	<del>-</del>	
Total	\$ 605	1	644	<u>\$</u> _	1,044		<u>\$</u>	580	
Divided by Water	1,650	l	1,650		1,650			1,650	
Cost Per 1000 Gal	\$ 0.37	ļ	0.39	\$	0.63		\$	0.35	

<sup>1. 10 %</sup> of Account: 01-Water Plant. (\$1,440,000 - \$390,000 (Chemicals))

<sup>1</sup>a. 10% of water plant.

<sup>2.</sup> From Jackson's testimony. See page page 117.

<sup>3.</sup> From Jackson's testimony. See page Page 276

<sup>4.</sup>From Jackson's testimony. See page Page 37

1	Q.	How should Generally Accepted Accounting Principles be used to properly
2		calculate the raw water rate?
3	A.	The raw water rate would be \$100,000 of Operations and Maintenance, plus
4		\$270,000 of Return on Investment—\$370,000—divided by 1,650,000, which
5		equals <b>\$0.22.</b>
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1	Q.	How should the comparable rate method be used to properly calculate the
2		raw water rate?
3	A.	The raw water rate would be equal to or less than \$0.35 based on the
4		comparables.
5		
6	Q.	Does this conclude your testimony?
7		Yes, however I reserve the right to amend my testimony and opinions as
8		additional information is received and to provide opinions during the hearing on
9		the merits of this cause, or deposition testimony depending on questions asked
10		during said deposition.
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#### BILLY R. BRADFORD, JR.

4803 Lakeway Brownsville, Texas 78520 956-542-9196

#### **Employment History**

Public Accounting

Haynie & Company

Brownsville, Texas 2019 - Present

Hales-Bradford, LLP

Brownsville, Texas 1985 - 2019

Arthur Andersen & Co. Dallas, Texas 1981 - 1985

#### **Community Involvement**

The Valley Baptist Legacy Foundation

Board Member 2015 - Present

Brownsville Public Utilities Board

Past Board Member 1997 - 2005

Rotary Club of Brownsville Sunrise

President 1989 - 1990

Southmost Regional Water Authority

Past Chairman of Board

Brownsville Medical Center

Past Governing Board Member

Valley Regional Medical Center

Past Chairman of Board

Texas Water Development Board

Past Chairman of Board

#### **Professional Organizations**

Texas Society of

President 1991-1992

Certified Public Accountants, Rio Grande Valley Chapter Member since June 1, 1985

American Institute of

Certified Public Accountants

Member since December 31, 1985

Education

Abilene Christian University

Bachelor of Business Administration

1981 Graduate

Exhibit 1

**SPI 0043** 

#### **Compliance and Other Matters**

As part of obtaining reasonable assurance about whether the Laguna Madre Water District's financial statements are free of material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

#### **Purpose of this Report**

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the entity's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

CARR, RIGGS & INGRAM, LLC

Caux Rigge & Ingram, L.L.C.

Brownsville, Texas February 6, 2019

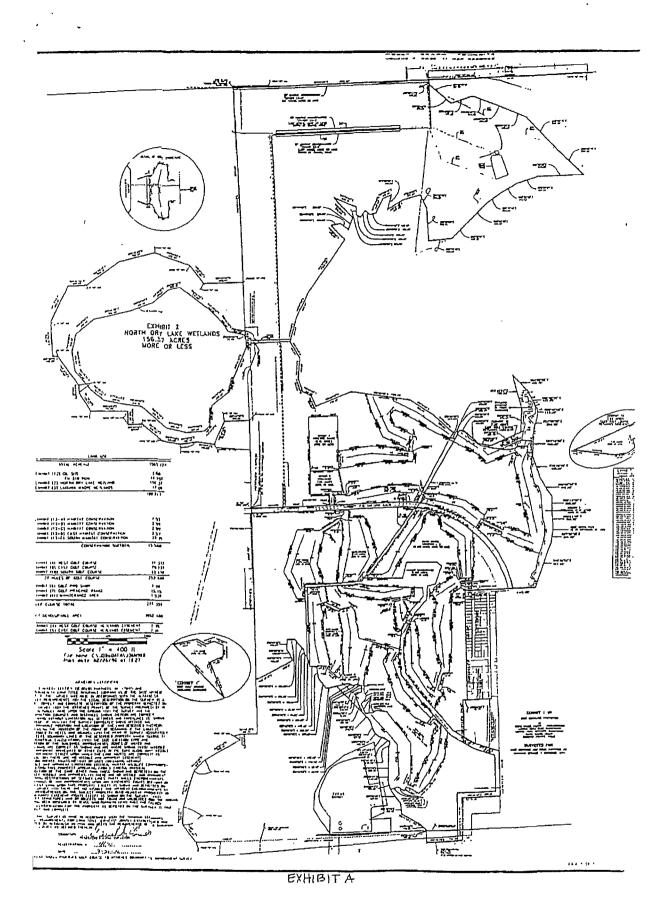


Exhibit 3

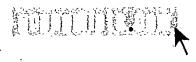


# LAGUNA MADRE WATER DISTRICT

# 2014 WATER AND WASTEWATER RATE STUDY AND LONG-TERM FINANCIAL PLAN

February 2015 FINAL

Prepared by:



Portland - Dallas - Phoenix - Tampa

Dallas Office Address: 5500 Democracy Drive, Ste. 130 Plano, Texas 75024 (972) 378-6588 (972) 378-6988 fax www.economists.com

Project Manager: Dan V. Jackson

#### LAGUNA MADRE WATER DISTRICT WATER AND WASTEWATER RATE STUDY AND LONG-TERM FINANCIAL PLAN

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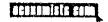
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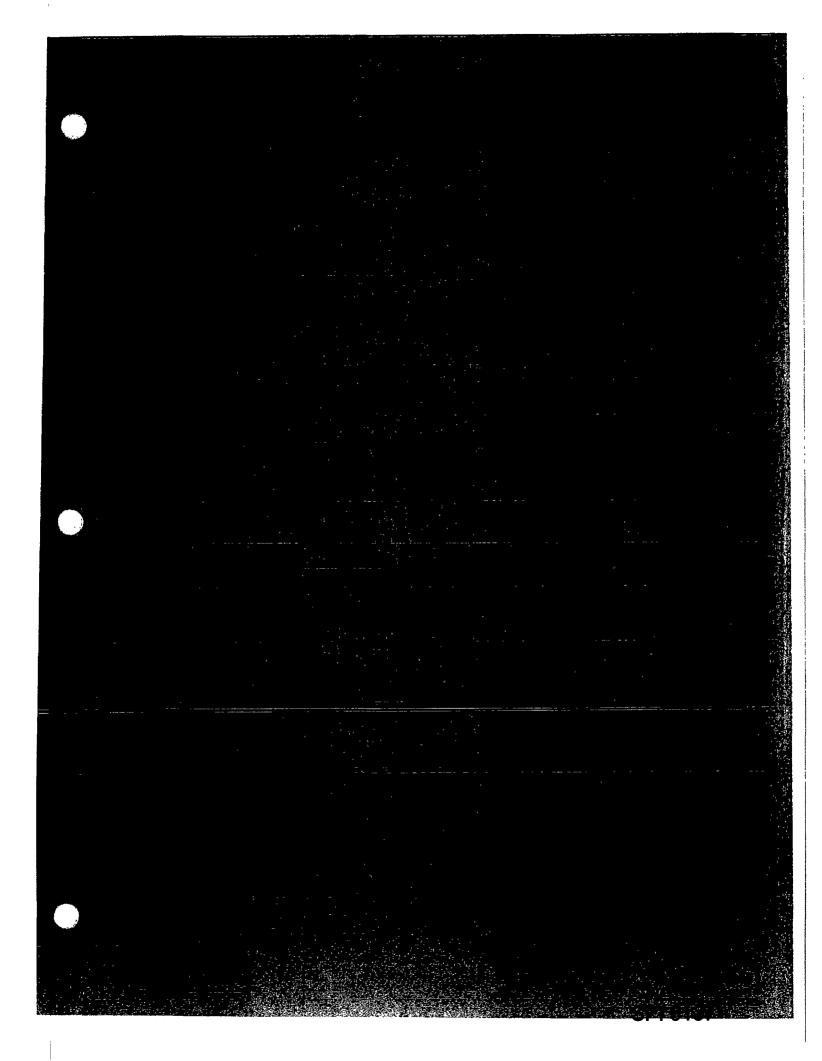


# **Acknowledgements**

During the course of this study, several individuals provided invaluable perspective and considerable time and effort in assisting the project team. These professionals included the District's Board of Directors, Carlos Galvan, Charles Ortiz, Minnie Mata, Jane Kirkpatrick, and Daisy Bodden. The participation of these individuals was critical to the success of this study, and the project team owes a debt of gratitude to them for their hard work, dedication and professionalism.

The project team has relied upon the extensive data supplied by the District. Thus, the integrity of the study is targety dependent upon the accuracy of this 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.





## **Executive Summary**



In August 2014 the Laguna Madre Water District ("the District") engaged **Economists.com** to prepare a water and wastewater rate study and long-term financial plan. Over the past decade the District has faced many operational and financial challenges. These challenges have included:

- The growth of homes, hotels, restaurants and other accounts in its service area
- The increasing scarcity of water supply and the persistent drought in the Rio Grande Valley
- The need to fund a significant level of capital improvements to ensure the continued high quality of service

The purpose of this study is to assess the District's current rate structure and its ability to recover sufficient revenues to finance operating and capital expenditures over the next decade.

#### **Rate Comparison**

In order to illustrate the relative burden of the District's ratepayers, the District's water and wastewater rates were compared to surrounding communities in the Rio Grande Valley. The number of representative cities was limited to allow the data in this analysis to be manageable and easily analyzed.

**Table ES-1** and **Chart II-7** summarize the data collected for this analysis. The comparison is for 10,000 gallons of water usage, and 5,000 gallons of wastewater usage. These totals are standard for rate comparisons in Texas, although it should be noted that under the District's rate charging methodology, 10,000 gallons of water results in 7,500 gallons of wastewater charge.

The tables reveal that ratepayers in the District pay among the lowest rates in the Rio Grande Valley for residential water and wastewater service. The District's ratepayers also pay significantly less than the state average for water and wastewater service.

Finally, widely-respected organizations such as the *Raftelis Group* and the *American Water Works Association Research Foundation* have stated that they expect the average water and wastewater rate to rise 5.0% annually over the next decade. Increasing costs will continue to place pressure on water and wastewater managers throughout the United States to adjust rates accordingly.

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Table ES-1

COMPARISON OF MONTHLY RESIDENTIAL CHARGES										
City	10,000 Water	5,000 WW	Total							
LMWD •	25.90	21,10	47.00							
Brownsville	29.53	23.69	53.22							
Donna	43,56	25.21	68.77							
Edinburg	28.21	18.76	46.97							
Hartingen	19.90	21.03	40.93							
Los Fresnos	51,23	30,99	82.22							
McAllen	18 65	16.00	34 65							
Mercedes	33,33	23.00	56.33							
Mission	25.42	15.20	40.62							
harr	28.15	19.90	48.05							
Raymondville	52.53	23,36	75.89							
San Benito	40.82	30.68	71.50							
San Juan	28.55	18 60	47.15							
<b>N</b> eslaco	42 72	24.30	67.02							
State of Texas	52 33	25.44	77.77							
^Base fee \$6 50 w/\$ Base fee is \$10 41 a	.49 per gal for Senior C 61 per gal for Senior C nd includes 2000 gal fo for over 65, disabled or	ilizens r over 65, disabled or	veieran							

One issue that arose during the course of the project team's review was the appropriateness of the District's current minimum charge. As shown in Table II-5, for 5/8" (primarily residential) meters, the District charges \$11.90 for water and \$12.35 for wastewater. Further, the District provides an allowance of 4,000 gallons in its minimum charge. **Table ES-2** compares the District's policy with other utilities in the Rio Grande Valley.

Table ES-2

LAGUNA MADRE WATER DISTRICT COMPARISON OF MONTHLY MINIMUM CHARGES										
Monthly Minimum Charge										
City	. !	Nater	Was	tewater						
Gallons = 0										
Brownsville	\$	10,52	\$	7.19						
Donna		13 54		_						
McAllen		5 6 5		9.00						
Mercedes		па		na						
Pharr		16 50		15.00						
San Juan		12 05		11.00						
Westaco		15 62		15 45						
Gailons = 1,000										
Mission		9.22		7 95						
Gallons = 2,000										
Los Fresnos		19 31		20.67						
Raymondville		20,45		17.18						
San Benito		20 59		29.09						
Gallons = 3,000										
Hartingen		7 93		2.18						
Edinburg		10.78		8.05						
Gallons = 4,000										
LMWD		11 90		12.35						

#### Customers and Meters – Current Year and Forecast

According to standard utility ratemaking methodology, in order to allocate revenue requirements equitably among system users, customers must be classified into relatively homogeneous groups with similar usage characteristics or service demands. Costs are then allocated to the customer classes in proportion to each class' usage characteristics.

As stated in Section I of this report, the District defines customer classes by meter size, beginning with 5/8" and including 1", 2", 4" and 6" meters. Account growth was robust during the period 2000-2010, but has been significantly weaker since 2011.

**Table ES-3** presents the project team's ten-year forecast of future water and wastewater connections by defined customer class. The tables reveal that the project team is forecasting a modest growth rate of approximately 40 new accounts per year. The totals are the same for water and wastewater because of the expectation that all future accounts will have both water and wastewater service. The tables further show that water accounts are forecast to reach a total of 6,498 by FY 2024 or an annual growth rate of 0.71%. Wastewater accounts are forecast to reach a total of 5,768 by FY 2025, or an annual growth rate of 0.67%. The addition of these new connections will result in both non-recurring connection fees and increasing monthly water revenues.

Table ES-3

LAGUNA MADRE WATER DISTRICT FORECAST TOTAL ACCOUNTS WATER and WASTEWATER Customer Classes												
	5/8" Meter	1" Meter	2" Meter	4" Meter	6" Meter	8" Meter	Total					
	1.16.20 Medifythe	enter de la company	-1-1-4-KNG 6-14-1									
2011	4,623	1,039	472	72	30	_	6,237					
2012	4,583	1,062	231	74	30	0	5,980					
2013	4,595	1,071	231	75	30	1	6,002					
Aug 13-Jul14	4,618	1,055	278	75	31	1	6,058					
2015	4,617	1,085	288	76	31	1	6,098					
2018	4,667	1,095	298	82	35	1	6,178					
2017	4,692	1,100	303	<i>"</i> 85	37	1	6,218					
2018	4,717	1,105	308	88	· 39	1	6,258					
2019	4,742	1,110	313	91	41	1	6,298					
2020	4,767	1,115	318	94	43	1	6,338					
2021	4,792	1,120	323	97	45	1	6,378					
2022	4,817	1,125	328	100	47	1	6,418					
2023	4,842	1,130	333	103	49	1	6,458					
2024	4,867	1,135	338	106	51	1	6,498					
	WASTEWATER TO	tal Accounts	,			•						
2011	4,295	779	212	69	30	-	5,385					
2012	4,246	792	214	71	30	0	5,354					
2013	4,248	797	214	72	30	1	5,362					
Aug 1 3-Jul 14	4,260	798	214	71	30	1	5,374					
2015	4,298	808	220	74	32	1	5,433					
2016	4,298	813	225	77	34	1	5,448					
2017	4,323	818	230	80	36	1	5,488					
2018	4,348	823	235	83	38	1	5,528					
2019	4,373	828	240	86	40	1	5,568					
2020	4,398	833	245	89	42	1	5,608					
2021	4,423	838	250	92	44	1	5,648					
2022	4,448	843	255	95	46	1	5,688					
2023 2024	4,473 4,498	848 853	260 265	98 101	48 50	1	5,728 5,768					



#### **Customer Water and Wastewater Usage – Historical and Forecast**

**Table ES-4** presents the District's historical and forecast water consumption and billing units. The District's billing system only tabulates billing unit totals net of minimum volumes. This means that the numbers in Table III-7 represent only consumption for which volume charges are assessed.

The table reveals that usage declined from its high in the dry year of 2011. Usage is forecast to increase nominally in each year of the next decade.

Table ES-4

FORECAST TOTAL BILLED CONSUMPTION NET OF MINIMUMS												
	5/8" Meter	1" Meter	2" Meter	4" Meter	6" Meter	8" Meter	Total					
[	411, 15, 25, 17, 15, 15, 15, 15, 15, 15, 15, 15, 15, 15	credinglier (Left)	Fat District									
2011	396,110,200	186,943,300	122,515,100	223,951,400	46,220,400	-	975,740,400					
2012	385,062,000	182,022,700	74,398,200	213,190,500	40,147,500	53,000	894,873,900					
2013	361,885,100	172,010,900	63,761,300	207,469,700	39,023,500	2,600	844,153,100					
Aug13-Jul14	332,942,800	156,709,100	79,626,900	195,093,900	52,272,200	. 100	816,645,000					
2015	333,844,205	157,070,181	80,318,106	198,944,438	53,958,400	. 100	824,135,429					
2016	334,743,182	157,430,434	81,003,414	202,721,864	55,593,503	100	831,492,496					
2017	335,639,751	157,789,864	81,682,973	206,430,190	57,181,889	100	838,724,767					
2018	336,533,932	158,148,477	82,356,925	210,073,076	58,727,345	100	845,839,855					
2019	337,425,744	158,506,279	83,025,406	213,653,867	60,233,175	100	852,844,571					
2020	338,315,204	158,863,275	83,688,548	217,175,634	61,702,276	100	859,745,038					
2021	339,202,332	159,219,471	84,346,477	220,641,203	63,137,213	100	866,546,796					
2022	340,087,146	159,574,872	84,999,314	224,053,180	64,540,262	100	873,254,874					
2023	340,969,664	159,929,482	85,647,174	227,413,978	65,913,459	100	879,873,858					
2024	341,849,904	160,283,309	86,290,171	230,725,832	67,258,632	100	886,407,948					
	WASTEWATER	Billing Units										
2015	218,846,028	76,531,277	28,364,251	137,477,232	28,714,603	75	489,933,466					
2016	220,126,429	77,004,862	29,008,893	143,050,633	30,509,265	75	499,700,157					
2017	221,406,829	77,478,447	29,653,535	148,624,034	32,303,928	75	509,466,848					
2018	222,687,230	77,952,031	30,298,177	154,197,435	34,098,590	75	519,233,539					
2019	223,967,630	78,425,616	30,942,819	159,770,837	35,893,253	75	529,000,230					
2020	225,248,030	78,899,200	31,587,461	165,344,238	37,687,916	· 75	538,766,921					
2021	226,528,431	79,372,785	32,232,103	170,917,639	39,482,578	75	548,533,612					
2022	227,808,831	79,846,370	32,876,745	176,491,040	41,277,241	75	558,300,303					
2023 2024	229,089,231	80,319,954	33,521,387	182,064,442	43,071,904	75	568,066,994					

#### Cost of Service and Net Revenue Requirement

Table ES-5 presents the District forecast Net Revenue Requirement for the ten-year period. The table reveals that the total revenue requirement is expected to increase by an average annual rate of 5.4% over the next decade. The primary reasons for this are the debt service from the CIP and the increases in operating expenses.

Table ES-5

	LAGUNA MADRE WATER DISTRICT CURRENT AND FORECAST NET REVENUE REQUIREMENT												
ENARIO:	2015 02 27 Alternative 1 Pi Reclamation												
	Operating Expenses	Capital Outlays		Current Debt Service		Future Debt Service		Total Cost of Service	····	Less Non-Rate Revenues	Net Revenue Requirement		
	计划 医自动放大型的现在分词					,							
2015		322,250	\$	232,609	\$	-	\$	3,539,712	\$	349,477	\$ 3,190,236		
2016	3,105,600	331,918		232,470		-		3,669,988		252,835	3,417,153		
2017	3,515,624	341,875		232,124		-		4,089,623		255,818	3,833,805		
2018	3,658,250	352,131		231,571		-		4,241,952		258,839	3,983,113		
2019	3,806,933	362,695		232,540		379,770		4,781,938		261,900	4,520,037		
2020	3,961,945	373,576		231,113		379,770		4,946,404		265,003	4,681,400		
2021	4,123,574	384,783		230,994		379,770		5,119,121		268,150	4,850,971		
2022	4,292,119	396,327		232,512		379,770		5,300,728		271,343	5,029,385		
2023	4,467,894	408,217		231,932		379,770		5,487,813		274,583	5,213,230		
2024	4,651,228	420,463		223,680		759,540		6,054,911		277,872	5,777,039		
	WASTEWATER Re		nt 🤼										
2015	3,525,442	454,250		439,671		•		4,419,363		197,129	4,222,234		
2016	3,669,965	467,878		439,410		•		4,577,252		99,428	4,477,824		
2017	3,820,629	481,914		438,756		-		4,741,299		101,363	4,639,936		
2018	3,977,717	496,371		437,709				4,911,798		103,346	4,808,451		
2019	4,141,523	511,262		439,540		90,815		5,183,140		105,381	5,077,759		
2020	4,312,354	526,600		436,843		90,815		5,366,612		107,467	5,269,145		
2021	4,490,533	542,398		436,618		90,815		5,560,364		109,606	5,450,758		
2022	4,676,398	558,670		439,488		90,815		5,765,371		111,801	5,653,570		
2023	4,870,302	575,430		438,392		90,815		5,974,938		114,052	5,860,886		
2024	5,072,614	592,693		422,794		181,629		6,269,730		116,362	6,163,368		
	TOTAL Revenue Re												
2015	6,510,295	776,500		672,280		=		7,959,075		546,606	7,412,469		
2016	6,775,565	79 <del>9</del> ,795		671,880		-		8,247,240		352,263	7,894,977		
2017	7,336,253	823,789		670,880		-		8,830,922		357,181	8,473,741		
2018	7,835,967	848,503		669,280		-		9,153,750		362,186	8,791,564		
2019	7,948,455	873,958		672,080		470,585		9,965,077		367,281	9,597,797		
2020	8,274,299	900,176		667,956		470,585		10,313,016		372,470	9,940,546		
2021	8,614,107	927,182		667,612		470,585		10,679,485		377,756	10,301,729		
2022	8,968,517	954,997		672,000		470,585		11,066,098		383,143	10,682,955		
. 2023	9,338,196	983,647		670,324		470,585		11,462,751		388,635	11,074,116		
2024	9,723,842	1,013,156		646,474		941,169		12,324,642		394,234	11,930,407		

Section IV and Appendix A present all calculations behind the development of the net revenue requirement in detail. The following primary assumptions were utilized in the development of this forecast:

- Most personnel and operating expenses were forecast to increase approximately 3.0% per year.
- The District is not expected to add significant numbers of additional personnel in the next decade.
- Certain expenses, such as chemicals, electricity, gasoline, insurance and workers compensation, are forecast
  to increase at rates exceeding the inflation rate. This is because historically these cost categories have been
  subjected to higher than average increases.
- Certain expenses are increased proportionately as the District's customers and billing units increase.
- The District is forecast to construct and place into operation a reclamation facility at the Port Isabel Wastewater Treatment Plant in FY 2017. This reclamation facility will be used to offset the District's needs for water rights. All capital and construction costs are assumed to be funded through tax bonds, which do not impact the District's rate structure. District personnel have estimated that the operating costs for this facility will be \$1.43 per 1,000 gallons, which results in an initial annual cost of \$283,209. These costs are forecast to increase by approximately 3.0% per year.
- There is no assumption for seawater desalination costs in this ten-year forecast. For the purposes of this study,
  if a seawater facility is constructed, it would be beyond the ten year timeframe of this cost of service study.
- Capital outlay expenditures are forecast to increase at a rate of 3.0% per year.
- The District's CIP over the next five years is estimated to be \$8,613,000 for the water system and \$27,184,640 for the wastewater system. Estimates for the remaining years 6-10 are based on averaging the first five years.
- Further, the District is forecast to issue revenue bonds totaling \$4,600,000 for the water system and \$1,100,000 for the wastewater system in the next five years. Similar totals are forecast for the remaining years 6-10.
- The District currently has one revenue bond, a Series 2007 issue that funded both water and wastewater system improvements.
- Future revenue debt is assumed to have a 20-year term, 4.0% interest rate and level principal and interest payments.

#### **Revenues under Existing Rates**

As outlined in Section II, The District adopted its current rate structure in December 2014. However, as **Chart ES-6** illustrates, the District's current rate structure will not be sufficient to fund all operating and capital obligations over the ten-year period. He chart shows that without some form of rate adjustments, the cost of service will consistently be greater than revenues. The District's revenues are forecast to increase nominally due to future account growth, but this increase will not be sufficient to fund cost increases.

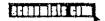
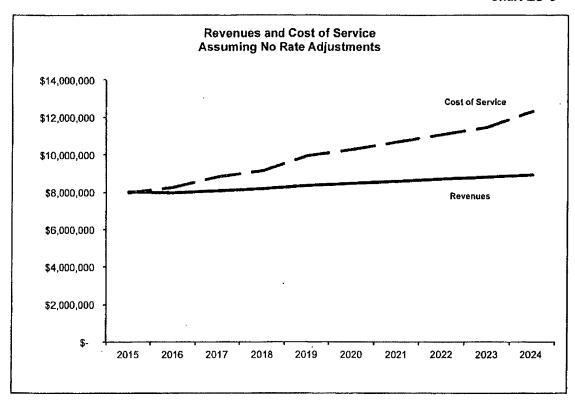


Chart ES-6



#### Rate Plan Alternative 1 – Status Quo

The proposed rate plan assumes that the District chooses to maintain the same rate structure that currently exists. There would be no changes to the gallon allowance or the rate blocks. Under this scenario a series of annual rate adjustments would be made to all customer classes.

The rate plan for the water utility is presented in **Table ES-7**, and for the wastewater utility is in **Table ES-8**. An analysis of the impact of the rate plan on average usage for each meter size is presented in **Table ES-9**. The following is notable about this rate plan:

- No change in water rates is recommended for 2015, 2016 or 2017. The first water rate adjustment would be in effect on January 1 2018.
- Wastewater rate adjustments are recommended to take effect on January 1 of each of the next five years.
- The reason for the larger wastewater rate adjustments is to ensure that within five years the wastewater rates fully fund the cost of service, as outlined earlier in this section.
- For a 5/8" customer, the average increase for 10,000 gallons of usage in January 2015 would be between \$2 and \$3 per month each year for the five-year period.

Table ES-7

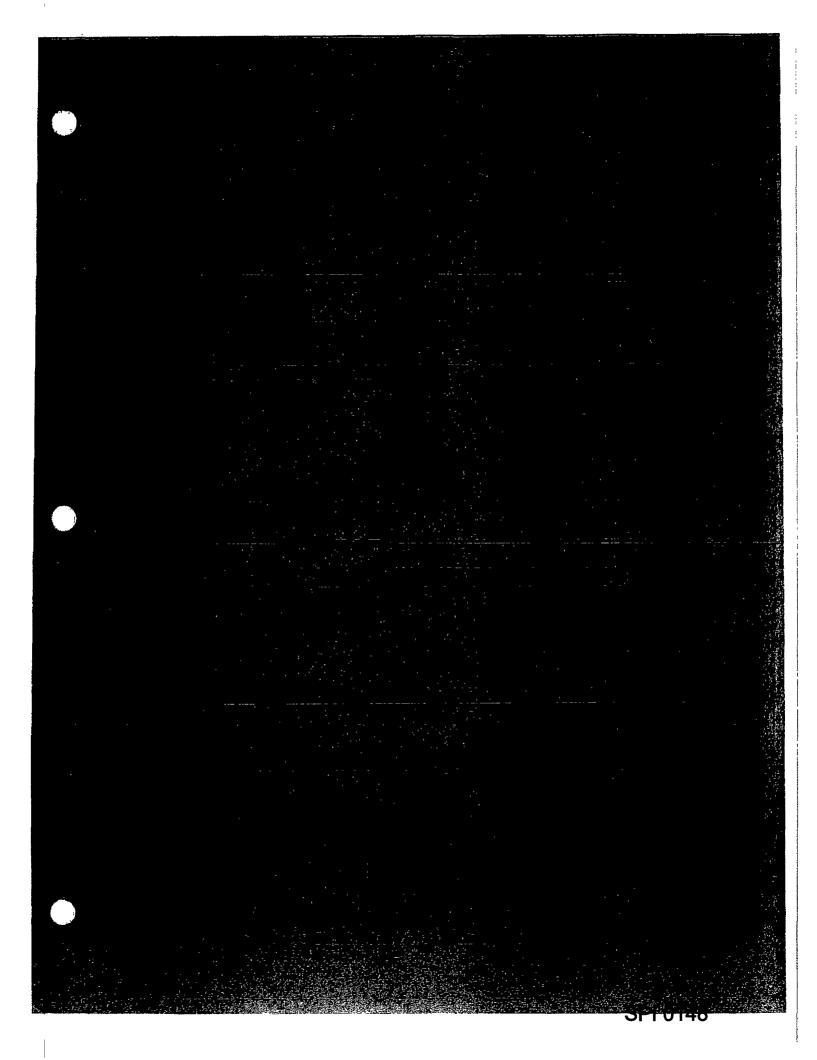
			LAGUNA MADRE							
			Itomative:	2016 02 27 Altern						
		<b>化聚型催亡处理</b> (第一一个)	医环境性神经病 医二氏性	数型が正式がある。 Effective	-:- ::	Effective		el colivo		Effective
		Prlor	Effective Jan-16	Jan-16		Jan-17		Jan-18		Jan-19
				, , , , , , , , , , , , , , , , , , ,		***************************************				
Monthly Charge		5 11.90	11.90	\$ 11.90	) <b>s</b>	11.90	5	12 26	s	12 62
Usage Charge Por	1 800 Gal	***************************************	11.00	* (1,5)	•	71.55	•	,220	•	.2 02
4,001	10,000	2.40	2,40	2.40	1	2.40		2 47		2.55
10,001	20,000	3.78	3.78	3,78		3.78		3 89		4.01
20,001	Above	5.39	6,35	5.39		539		5.55		5.72
20,001	ADOVA	3.53	0.00	3.0.	,	333		0,00		5,14
		CALLOSATARA								
Monthly Charge		\$ 16,48	23.07	\$ 23 07	\$	23,07	\$	23 76	\$	24 47
Usage Charge Per	1,000 Gal									
6,001	20,000	2.52	2.52	2.52		2.52		2.60		2.67
20,001	40,000	3.78	3.78	3,78	3	3,78		3,89		4.01
40,001	Above	5.32	5.32	5.32	2	5.32		5,48		5.64
	•									
Monthly Charge		79.33		\$ 111.06		111.06	5	114 39	s	117 82
Usage Charge Per	4 000 Gal	* 15.55		171,00	•	111.00	•	.,,,,,	•	
26,001	100.000	2.63	2.63	2.63	1	2.63		2.71		2.79
100,001	200,000	3.95	3,96	3.95		3.95		4 07		4 19
200,001	Above	5.90	5.50 5.50	5.90		5.9D		6.08		6.26
200,001	MOOVE	5.90	8.50	5.90		5,80		0.00		0,20
		ALCOYOTH A RE	1. 建筑工艺等的							•
Monthly Charge		\$ 299.03 \$	418.64	\$ 418 64	\$	418 64	\$	431.20	\$	444.14
Usage Charge Per	1,000 Gal									
101,001	600,000	2.76	2.76	2,76	l	2.76		2.84		2.93
500,001	1,000,000	4.14	4.14	4.14	1	4.14		4,28		4 39
1,000,001	Above	5.69	6.69	5 69	•	5.69		5.86		6,04
		Lolle Birth Coll of Season	e hill proper streets							
Monthly Charge		560 00		\$ 784.00	S	784 00	\$	807.52	\$	831 75
Usage Charge Per	1 finn Gal	÷ 555 65 •	, 53,40	- ,0400	₹.	, 54, 00	•	JJJL	•	
101,001	600,000	2.60	2.60	2.60	1	2 60		2.68		2.76
600,001	1,000,000	3.90	3.90	3 90		3 90		4.02		4.14
1,000,001	Above	5.2 <b>5</b>	5.26	5.25		5 25		5.41		5.57

Table ES-8

,				U	AGUNA MADRE	WATER	RDISTRICT						
	•			Altern		WAST	EWATER RATE	ive 1 S.≒A	Pi Reclamation	<b>1</b>	<u>Car</u> yl (South	ម៉ាងខ្មែ	
		Pri	or		Effective Jan-15		Effective Jan-16		Effective Jan-17		Effective Jan-18		Effective Jan-19
		5/8" Meter											
Monthly Charge		\$	12 35	\$	12.36	\$	12.35	\$	13,46	\$	14.67	\$	15,99
Usage Charge Per	1,000 Gal												
4,001	10,000		2 50		2.50		2.50		2.73		2 97		3,24
10,001	20,000		3 80		3.88		3.88		4.23		4.61		5.02
20,001	Above		5 50		5,50		5,50		6 00		6 53		7.12
		1" Meter											
Monthly Charge		\$	15,59	\$	21.83	\$	21 83	\$	23 79	\$	25,94	\$	28,27
Usage Charge Per	1,000 Gal												7
6,001	20,000		2.73		2.73		2.73		2.98		3 24		3 54
20,001	40,000		4.10		4.10		4.10		4 47		4.87		5.31
40,001	Above		6,12		6.12		6 12		6.67		7 27		7.93
		2" Meter											
Monthly Charge Usage Charge Per	1,000 Gal	\$	106 04	\$	148,46	\$	148.46	\$	161 82	\$	176.39	\$	192.26
28,001	100,000		2 97		2.97		2 97		3.24		3 53		3 85
100,001	200,000		4.46		4.46		4,46		4.86		5,30		578
200,001	Above		6.18		6.18		6 18		6.74		7 34		8 00
		4" Mater											
Monthly Charge		\$	243 26	\$	340.56	s	340.56	s	371,21	s	404.62	\$	441.04
Usage Charge Per	1,000 Gal	•		•		•		•		•		-	
101,001	600,000		3 09		3,09		3.09		3 37		3.67		4 00
500,001	1,000,000		4 63		4.63		4 63		505		5 60		6.00
1,000,001	Above		6.30		6,30		6.30		6.87		7 49		8.16
		6" Mater											
Monthly Charge		\$	400.00	\$	660.00	\$	560.00	5	610.40	5	665 34	\$	725 22
Usage Charge Per	1,000 Gal	*1		•				•		•		•	
101,001	500,000		2,70		2.70		2.70		2,94		3,21		3 50
500,001	1,000,000		4 05		4.05		4.05		4.41		4.81		5.24
1,000,001	Above		5 40		5.40		5.40		5.89		6.42		6.99

Table ES-9

	MONTHLY Gallons	Prior	Effective Jan-16	Effective Jan-16	Effective Jan-17	Effective Jan-18	Effective Jan-19
Low	5,000	\$ 28.53	\$ 28,53	\$ 28.53	\$ 29.81 1.28	\$ 31.63 1.82	\$ 33.59 1.96
Average	10,000	49 90	49.90	49.90 -	52.02 2.12	55.13 3.10	58,46 3.34
High	30,000	211.95	211.95 -	211.95 -	220.41 8.46	233.16 12.76	246.85 13.69
		<b>为在1100年第</b>		:			
Average	20,000	96 02	108.85 12.83	108.85	113,39 4.54	120.09 6.70	127.30 7.20
High	40,000	233.12	245.95 12.83	245,95	256.02 10.08	271.03 15.01	287,14 16 11
		老性學是	<b>的情况是</b>				
Average	50,000	306.81	380.96 74.15	380.96 -	399,33 18.37	424 66 25.33	451.95 27.29
High	100,000	549.68	623.83 74.15	623.83	652.23 28.40	692.43 40.20	735.70 43.27
			5				•
Average	200,000	1,050.04	1,266.95 216.91	1,266.95	1,318, <b>4</b> 6 51,51	1,395.44 76.98	1,478.10 82.66
High	400,000	2,065.54	2,282.45 216.91	<b>2,282.45</b> -	2,375.67 93.22	2,514.69 139.01	2,663.96 149.28
		ULLE STATE	经移物层 有容認				,
Average	300,000	1,885,00	2,269.00 384.00	2,269.00 -	2,355.85 86,85	2,489.64 133.79	2,633.12 143.48
High	600,000	3,503.75	3,887.75 384.00	3,887.75	4,038.39 150.64	4,269.00 230,61	4,516.39 247.39



#### SECTION I

### Introduction



#### **Background and Study Objectives**

In August 2014 the Laguna Madre Water District ("the District") engaged **Economists.com** to prepare a water and wastewater rate study and long-term financial plan. Over the past decade the District has faced many operational and financial challenges. These challenges have included:

- The growth of homes, hotels, restaurants and other accounts in its service area
- The increasing scarcity of water supply and the persistent drought in the Rio Grande Valley
- The need to fund a significant level of capital improvements to ensure the continued high quality of service

The purpose of this study is to assess the District's current rate structure and its ability to recover sufficient revenues to finance operating and capital expenditures over the next decade.

In order to achieve these objectives, the project team performed the following scope of services:

- 1) Reviewed the District's water and wastewater system operating and capital costs for the current and future years. Forecast these costs for a period ten years into the future, taking into account the significant additional capital requirements outlined in Section IV.
- 2) Forecast expected growth in the District's service area and assessed its impact on both revenues and expenses.
- 3) Provided alternative recommended water and wastewater rate structures by defined customer class for both the current year and a forecast period ten years into the future.
- 4) Analyzed and provided a set of recommendations for raw water charges
- 5) Ensured that the recommended rates under all alternatives meet generally accepted ratemaking standards, as deline ated by such organizations as the American Water Works Association and the Texas Commission on Environmental Quality. The rates should be just and reasonable, in line with the District's operating and capital costs, and applied in a fair and equitable manner to all customer classes.

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6) Developed a comprehensive rate model that calculates water and wastewater rates for the current year and forecast period.

The project team visited the District several times during the course of this project in order to gather data and obtain critical background information for use in this study. Additional telephone conferences and fax/data transfers took place during the course of the study. Throughout this engagement, District officials and advisors were kept continuously apprised of the project team's progress.

This study presents a summary of the methodology and calculations behind the recommendations presented by the project team to the District. All aspects of the scope of services have been completed.

#### **Report Organization**

This report is organized into the following sections:

**Section II – Introduction --** outlines the background, objectives and scope of this water and wastewater rate study and long-term financial plan.

**Section II -- Demographic Profile** - presents a demographic profile for the Laguna Madre Water District. This includes a comparison of the surrounding area's current monthly charges for water and wastewater service. It also analyzes the District's current rate structure including the volumes included in the monthly charges.

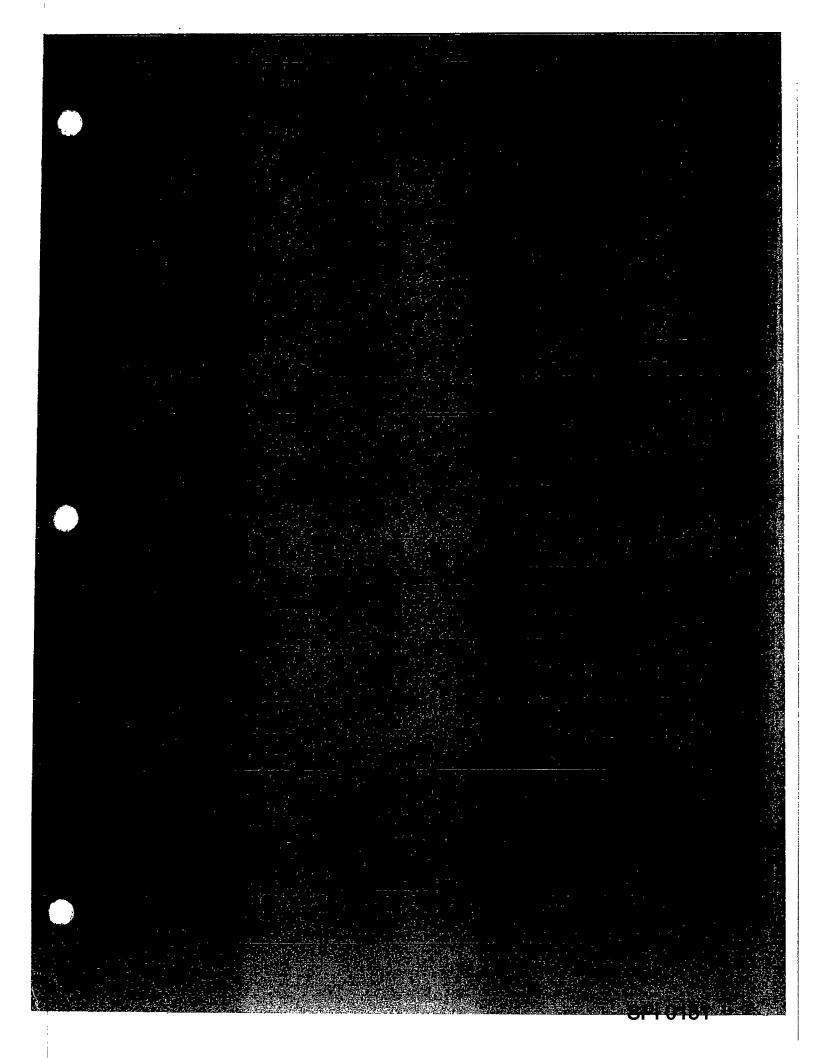
Section III – Test Year and Forecast Volumes – analyzes the District's water and wastewater customer base. Presents current year and forecast volumes by defined customer class. Also analyzes the peak day requirements for each customer class.

Section IV – Test Year and Forecast Volumes and Revenue Requirements -- outlines the process of developing the water and wastewater cost structure. The total current or "test year" revenue requirements are compiled, and costs are functionalized between treatment, distribution, administration and customer billing. Using the test year as a basis, costs are forecast for a period ten years into the future.

**Section V – Rate Plan Alternatives** – analyzes the ability of the current rate structure to fund all operating and capital requirements over the next decade, including the need to fund a portion of the District's long term capital improvements plan through revenue bonds. Presents alternative rate and financial plans for the District to incorporate to ensure that all long-term goals are achieved.

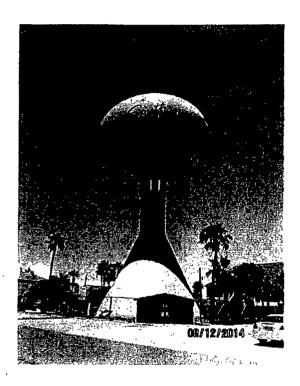
Appendix A — presents a hard copy printout of the interactive Microsoft Excel spreadsheet model developed for the District to calculate current and future water and wastewater revenue requirements and rates. The model automatically generates all calculations based on a set of defined user inputs. A copy of this model will be provided to the District so that staff may use it as a tool for future rate development.

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**SECTION III** 

## **Test Year and Forecast Volumes**



The first step in analyzing the District's current and projected expenses and revenue requirements is to examine current and historical water and wastewater utility conditions. Correspondingly, the analysis of the District's existing rate structure for water and wastewater service begins with a thorough review of patterns of usage, both for the system as a whole and for specified customer classes.

Customer billing records provided by District staff present detailed data on the number and usage levels by customer class for each billing period, as well as water and wastewater revenues. Additionally, District staff expended considerable effort in generating specific usage reports for use by the project team during the preparation of this study. The volumetric data presented in this section is derived primarily from these sources. The project team appreciates the level of effort and professionalism displayed by District staff in fulfilling these data requests.

#### Customers and Meters – Current Year and Forecast

According to standard utility ratemaking methodology, in order to allocate revenue requirements equitably among system users, customers must be classified into relatively homogeneous groups with similar usage characteristics or service demands. Costs are then allocated to the customer classes in proportion to each class' usage characteristics.

As stated in Section I of this report, the District defines customer classes by meter size, beginning with 5/8" and including 1", 2", 4" and 6" meters. **Table III-1** presents the forecast average number of water and wastewater customers for each class for the test year, which encompasses the period October 2014 through September 2015. The chart reveals that in the test year there are **6,138** water customers and **5,408** wastewater active accounts.

Table III-1

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WATER A	AND WASTEWATE	WATER DISTRICT ER CUSTOMER ACCO EAR 2015	DUNTS
	idelline (1986)	Wastewate	R/Accounts.
5/8" Meter	4,642	5/8" Meter	4,273
1" Meter	1,090	1" Meter	808
2" Meter	293	2" Meter	220
4" Meter	79	4" Meter	74
6" Meter 8" Meter	33 1	6" Meter 8" Meter	32 1
Total	6,138	Total	5,408

**Table II-2** presents historical customer accounts for 2000, 2005 and annually for 2011 through 2015. The chart shows that account growth was robust during the period 2000-2010, but has been significantly weaker since 2011.

Table III-2

		ADRE WATER DI AL TOTAL ACCO		
	Wate	er Er	Wastew	ater //
	Total	New	Total	New
2000	3,728		3,605	
2005	5,201	1,473	4,872	1,267
2011	6,237	1,036	5,385	513
2012	5,980	(25 <del>7</del> )	5,354	(32)
<b>2O</b> 13	6,002	22	5,362	8
Aug13-Jul14	6,058	56	5,374	12
Test Year 2015	6,138	80	5,408	34



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**Table III-3** presents the project team's ten-year forecast of future water connections by defined customer class, while **Table III-4** presents the ten-year forecast of future wastewater connections. The tables reveal that the project team is forecasting a modest growth rate of approximately 40 new accounts per year. The totals are the same for water and wastewater because of the expectation that all future accounts will have both water and wastewater service. The tables further show that water accounts are forecast to reach a total of 6,498 by FY 2024 or an annual growth rate of 0.71%. Wastewater accounts are forecast to reach a total of 5,768 by FY 2025, or an annual growth rate of 0.67%. The addition of these new connections will result in both non-recurring connection fees and increasing monthly water revenues.

Should these new water and wastewater connections not be realized, or be connected at a slower pace than that outlined in this forecast, revisions may be required to the project team's financial and rate recommendations.

Table III-3

LAGUNA MADRE WATER DISTRICT FORECAST TOTAL ACCOUNTS WATER Customer Classes								
	5/8" Meter	1" Meter	2" Meter	4" Meter	6" Meter	8" Meter	Total	
i	()任何可以因为自己	Bullius his bag	· · · · · · · · · · · · · · · · · · ·					
2011	4,623	1,039	472	72	30	-	6,237	
2012,	4,583	1,062	231	74	30	0	5,980	
2013	4,595	1,071	231	75	30	1	6,002	
Aug13-Jul14	4,618	1,055	278	75	31	1	6,058	
2015	4,617	1,085	288	76	31	. 1	6,098	
2016	4,667	1,095	298	82	35	1	6,178	
2017	4,692	1,100	303	85	37	1	6,218	
2018	4,717	1,105	308	88	39	1	6,258	
2019	4,742	1,110	313	91	41	1	6,298	
2020	4,767	1,115	318	94	43	1	6,338	
2021	4,792	1,120	323	97	45	1	6,378	
2022	. 4,817	1,125	328	100	47	1	6,418	
2023	4,842	1,130	333	103	49	1	6,458	
2024	4,867	1,135	338	106	51	1	6,498	
	Jarenden (	tel fræðiðitæs						
2012	(40)	22	(241)	2	-	0	(257)	
2013	12	9	(0)	1	-	1	. 22	
ug13-Jui14	23	(15)	47	0	1	-	56	
2015	25	5	5	3	2	-	40	
2 <b>0</b> 16	25	5	5	3	2	•	40	
2017	25	5	5	3	2	-	40	
2018	25	5	5	3	2	-	40	
2019	25	5	5	3	2	-	40	
2020	25	5	5	3	2	-	40	
2021	25	5	5	3	2	-	40	
2022	25	5	5	3	2	-	40	
2023	25	5	5	3	2	-	40	
2024	25	5	5	3	2	-	40	



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Table III-4

#### LAGUNA MADRE WATER DISTRICT FORECAST TOTAL ACCOUNTS **WASTEWATER Customer Classes** 4" Meter 6" Meter 8" Meter Total 5/8" Meter 1" Meter 2" Meter **WASTEWATER Total Accounts** 4,295 5,385 5,354 4,246 5.362 4,248 Aug13-Jul14 5,374 4,260 5,433 4,298 4,298 5,448 5,488 4,323 4,348 5,528 4,373 5,568 5,608 4,398 4,423 5,648 5,688 4,448 5,728 4,473 4,498 5,768 **WASTEWATER Annual New Accounts** (32) (49)(0)Aug13-Jul14 (1) 3



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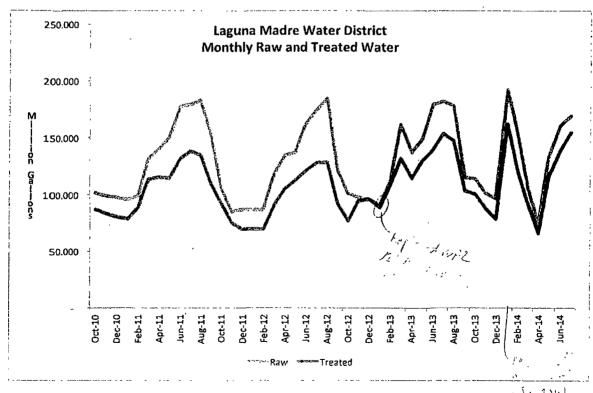
#### **Raw and Treated Water Production**

Table III-5 and Chart III-6 presents the District's historical water usage over the past decade. The District's treated water production has nominally increased during the period 2011-2014. Raw water production is larger due to a combination of raw water usage by large irrigation customers and transportation and production losses.

Table III-5

LAGUNA MADRE WATER DISTRICT RAW AND TREATED WATER PRODUCTION					
-	Raw Water Production	Treated Water Production			
FY 2011	1,612,718,000	1,281,794,000			
FY 2012	1,489,526,000	1,155,579,000			
FY 2013	1,605,218,000	1,386,532,000			
Last 12 Mths	1,602,374,000	1,371,922,000			

Table III-6



· 19. 201-1

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#### **Customer Water Usage – Historical and Forecast**

**Table III-7** presents the District's historical and forecast water consumption and billing units. The District's billing system only tabulates billing unit totals net of minimum volumes. This means that the numbers in Table III-7 represent only consumption for which volume charges are assessed.

The table reveals that usage declined from its high in the dry year of 2011. Usage is forecast to increase nominally in each year of the next decade. Table III-7 and Chart III-8 on the following page reveal that the 5/8" customer class is the larges user, followed by the 4" customer class.

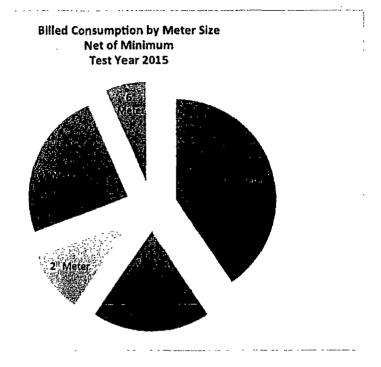
Chart III-9 presents average monthly water consumption by meter size. These totals have been adjusted to include minimum volumes.

Table III-7

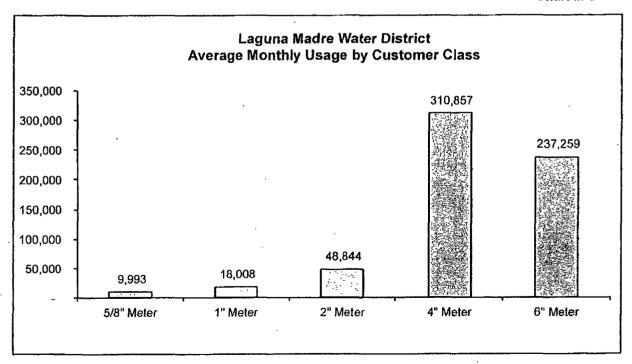
FORECAST TOTAL BILLED CONSUMPTION NET OF MINIMUMS										
	5/8" Meter	1" Meter	2" Meter	4" Meter	6" Meter	8" Meter	Total			
	M. E. C.M.									
2011	396,110,200	186,943,300	122,515,100	223,951,400	46,220,400	_	975,740,400			
2012	385,062,000	182,022,700	74,398,200	213,190,500	40,147,500	53,000	894,873,900			
2013	361,885,100	172,010,900	63,761,300	207,469,700	39,023,500	2,600	844,153,100			
Aug13-Jul14	332,942,800	156,709,100	79,626,900	195,093,900	52,272,200	100	816,645,000			
2015	333,844,205	157,070,181	80,318,106	198,944,438	53,958,400	100	824,135,429			
2016	334,743,182	157,430,434	81,003,414	202,721,864	55,593,503	100	831,492,498			
2017	335,639,751	157,789,864	81,682,973	206,430,190	57,181,889	100	838,724,767			
2018	336,533,932	158,148,477	82,356,925	210,073,076	58,727,345	100	845,839,855			
2019	337,425,744	158,506,279	83,025,406	213,653,867	60,233,175	100	852,844,571			
2020	338,315,204	158,863,275	83,688,548	217,175,634	61,702,276	100	859,745,038			
2021	339,202,332	159,219,471	84,346,477	220,641,203	63,137,213	100	866,546,796			
2022	340,087,146	159,574,872	84,999,314	224,053,180	64,540,262	100	873,254,874			
2023	340,969,664	159,929,482	85,647,174	227,413,978	65,913,459	100	879,873,858			
2024	341,849,904	160,283,309	86,290,171	230,725,832	67,258,632	100	886,407,948			
	WASTEWATER	Billing Units	-,	· · · · · · · · · · · · · · · · · · ·						
2015	218,846,028	76,531,277	28,364,251	137,477,232	28,714,603	75	489,933,466			
2016	220,126,429	77,004,862	29,008,893	143,050,633	30,509,265	75	499,700,157			
2017	221,406,829	77,478,447	29,653,535	148,624,034	32,303,928	75	509,466,848			
2018	222,687,230	77,952,031	30,298,177	154,197,435	34,098,590	75	519,233,539			
2019	223,967,630	78,425,616	30,942,819	159,770,837	35,893,253	75	529,000,230			
2020	225,248,030	78,899,200	31,587,461	165,344,238	37,687,916	75	538,766,921			
2021	226,528,431	79,372,785	32,232,103	170,917,639	39,482,578	75	548,533,612			
2022	227,808,831	79,846,370	32,876,745	176,491,040	41,277,241	75	558,300,303			
2023	229,089,231	80,319,954	33,521,387	182,064,442	43,071,904	75	568,066,994			



Chart III-8



#### Chart III-9



RELADIBLE CAME

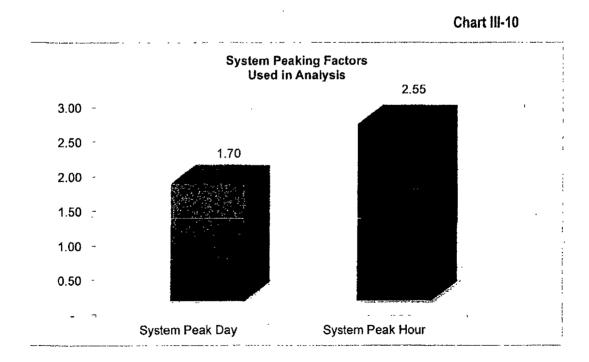
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#### **Peaking Factors**

The cost of providing water to customers depends not only on the amount of water each class uses, but also on how that usage occurs over time. The maximum-day and maximum-hour peaking requirements of a water utility's customers are an important influence on the utility's costs. Because water utilities attempt to meet all of the demands of their customers, water systems are sized to meet customers' peak requirements. Therefore, during off-peak periods, there are usually significant costs associated with the unused capacity of the system. These costs must be allocated in proportion to the contribution of each customer class to the system peak, in order to develop equitable cost-based rates. Thus, it is necessary to determine the peak rate of use relative to the average rate of use for each class. This ratio is called a **Peaking Factor**.

The calculation of peaking factors for individual classes relies on available pumping and consumption information as well as professional judgment. If customer meters could record daily flow rates for each customer, more refined information could be obtained on peaking factors. This is not feasible because of the enormous cost that would be imposed on the utility. Therefore, it is accepted practice in the water industry to develop peaking factor estimates based on standard formulas using system peak day information and monthly customer class use records. This is a conservative methodology, since customer class peaking factors based on peak months will inevitably be lower than the system-wide peaking factor, which is based on the peak day.

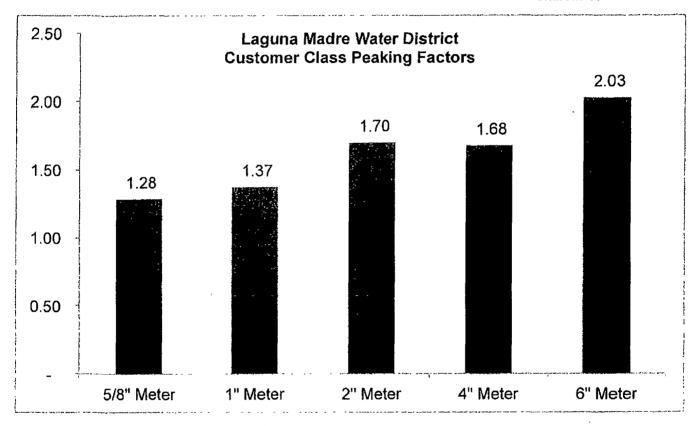
The system peak to average ratios used in the cost of service analysis are presented in **Chart III-10**. These are based on a study prepared for the District in 2012 by CDM-Smith.



etanomiele tam

Based on AWWA guidelines, the customer class peaking factors calculated in this study are for non-coincidental peaks. The individual customer class peaking factors developed for this analysis are presented in **Chart III-11** below. A general rule of thumb is that the higher the peaking factor for a given customer class, the higher that customer class' per unit cost of water service. It is clear that as meter sizes increase, so does the peaking factor.

Chart III-11



#### **Wastewater Treatment Plant Flows**

**Table III-12** presents total influent flows and strengths at each of the District's wastewater treatment plants. The strength factors are used as a critical input to recommended BOD and TSS rates per lb for high strength sewage.

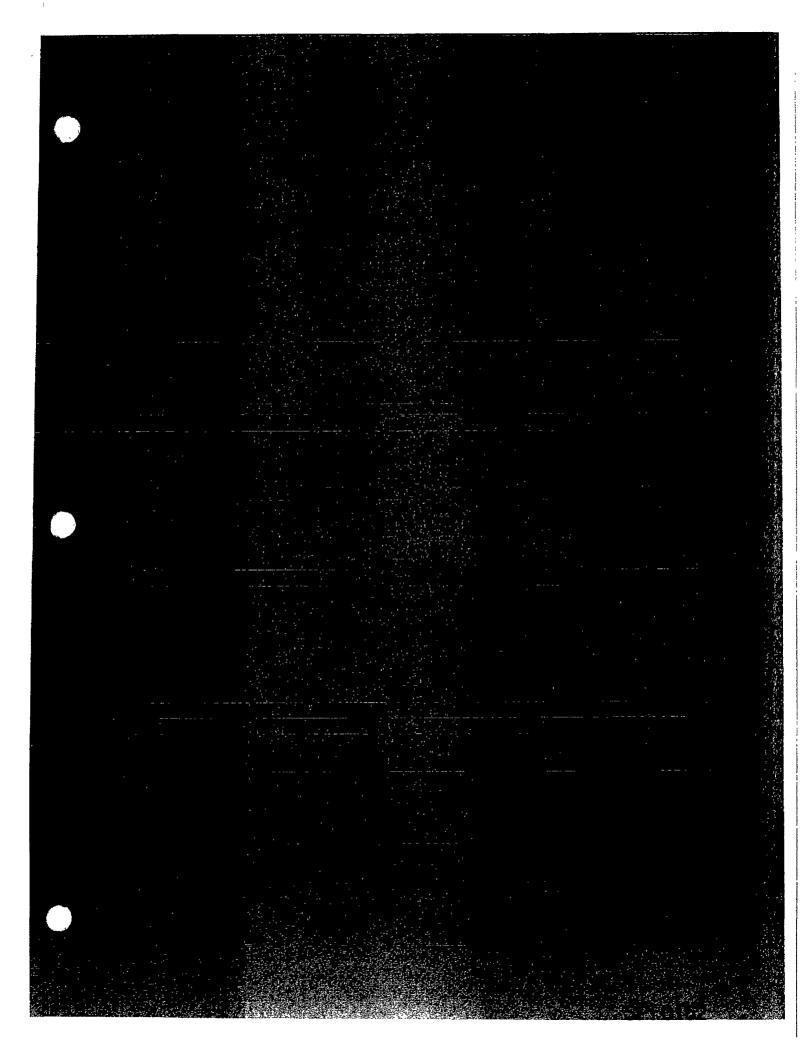
Table III-12

							LE WATER DISTRI R PLANT INFLUEN						
*****	Total Gallons	t isspel BOD mg/i	TSS mg/l	Ar Total Gallons	dy Bowle BOD mg/l	TSS mg/l	Total Gallons	ila Blança - } BOD mg/l	TSS mg/l	Total Gallons	una Vista BOD mg/t	TSS mg/l	Total Gallons
2010	251,748,200	•	-	233,123,000		-	239,129,000	-		166,802,000		•	\$90,802,200
2011	258,246,900	198	132	201,315,000	202	156	199,107,500	181	193	140,472,000	160	146	799,141,400
2012	237,962,200	203	132	187,203,700	169	120	392,765,000	176	117	143,569,000	150	130	981,600,900
2013	232,874,100	204	133	155,729,000	137	82	356,773,400	176	118	137,706,000	137	165	\$82,8\$2,500
folal 2011-2013	725,883,200	202	132	544,247,700	172	123	948,646,900	177	133	421,847,000	149	147	2,643,624,800



08/12/2014





**SECTION IV** 

# Test Year and Forecast Revenue Requirement



that must be raised from rates:

This section of the water and wastewater rate study and long-term financial plan focuses on the District's test year and forecast revenue requirements. For the purposes of rate design, the test year consists of the District's current fiscal year, October 1 2014 through September 30 2015. The figures presented in this section are based on the District's adopted FY 2015 budget.

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 District's water and wastewater rates. This means that non-rate revenue (such as interest income, and connection fees) must be subtracted from the budget operating and capital expenditures to determine the net revenue requirement to be raised from rates.

As is typical for publicly owned utilities, the District's 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 City's revenue requirements

O&M expenses
Capital Outlays
Debt Service

Because the District is an independent governmental and financial entity, there are no funds transfers to be included in the revenue requirement. All data used in the development of the revenue requirements was obtained from the financial statements, budgets and other information provided by District staff.

The revenue requirement and cost of service calculations contained in this section are presented in detail in the comprehensive water and wastewater cost of service rate model in Appendix A.



### Operating Expenses and Capital Outlays

**Table IV-1** presents the District's test year 2015 forecast of operating expenses and capital outlays for the water and wastewater system. The forecast is based on the District's Board-approved FY 2015 budget.

Operating expenses represent personnel, chemicals, electricity and other day-to-day expenses incurred by the District. Capital outlays typically reflect the acquisition of various tractors, dump trucks, pick-up trucks, computer equipment, and so on. These expenses are separate and distinct from the major capital improvements (i.e. water system expansion, well purchases, etc.) funded through the District's long-term debt.

The table reveals that the water system's test year operating expenses and capital outlays are forecast to be \$7,286,795, of which \$3,307,104 is for the water utility and \$3,979,672 is for the wastewater utility. Details behind these calculations can be found in the rate model presented in Appendix A.

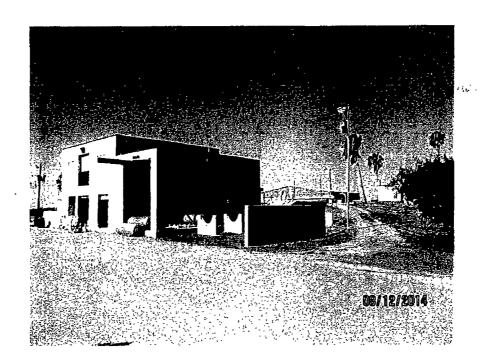


Table IV-1

		WATER DISTRICT (PENSES/CAPITAL OUTLAYS			
SCENARIO:	2015 02 27 Alternative 1 F	PI Reclamation			
	FY 2015 Budget	Pro-Allemen Pro-Allemen	WASTEWATERS Expenses		
01 Water Plant					
Operating	\$ 1,302,431 ·	\$ 1,302,431	\$ -		
Capital Outlays	100,500	100,500			
Total _	1,402,931	1,402,931	-		
02 Lift Station					
Operating	435,595	-	435,595		
Capital Outlays	77,500	<u> </u>	77,500		
Total	513,095	•	513,095		
03 Construction/Main	tenance				
Operating	543,862	543,862	-		
Capital Outlays	52,000	52,000			
Total	595,862	595,862	-		
04 Collections					
Operating	405,818	-	405,818		
Capital Outlays	140,000	-	140,000		
Total	545,818	-	545,818		
05 Maintenance					
Operating	323,970	161,985	161,985		
Capital Outlays	240,000	120,000	120,000		
Total	563,970	281,985	281,985		
DC Inherston					
06 Laboratory Operating	224,920	-	224,920		
Capital Outlays	6,000	<del></del>	6,000		
Total	230,920	•	230,920		
07 Administration					
Operating	861,921	430,961	430,961		
Capital Outlays	86,000	43,000	43,000		
Total	947,921	473,961	473,961		
08 Wastewater Plant					
Operating	1,320,548	•	1,320,548		
Capital Outlays	61,000	-	61,000		
Total	1,381,548	•	1,381,548		
10 Finance					
Operating	859,757	429,879	429,879		
Capital Outlays	8,000	4,000	4,000		
Total .	867,757	433,879	433,879		
11 Electrical					
Operating	231,473	115,737	115,737		
Capital Outlays	5,500	2,750	2,750		
Total	236,973	118,487	118,487		
Water Source Alternativ	es				
Operating					
Capital Outlays	•	-	•		
Total		<del></del> _	<del></del>		
		•	-		
Total Operating/Capital	Outlays				
Operating	6,510,295	2,984,854	3,525,442		
Capital Outlays	776,500	322,250	454,250		
Total	7,286,795	3,307,104	3,979,692		



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**Table IV-2** presents a forecast of operating expenses and capital outlays for the ten-year period FY 2015 – FY 2024. The following assumptions were used in the development of this forecast:

- Most personnel and operating expenses were forecast to increase approximately 3.0% per year.
- The District is not expected to add significant numbers of additional personnel in the next decade.
- Certain expenses, such as chemicals, electricity, gasoline, insurance and workers compensation, are forecast
  to increase at rates exceeding the inflation rate. This is because historically these cost categories have been
  subjected to higher than average increases.
- Certain expenses are increased proportionately as the District's customers and billing units increase.
- The District is forecast to construct and place into operation a reclamation facility at the Port Isabel Wastewater Treatment Plant in FY 2017. This reclamation facility will be used to offset the District's needs for water rights. All capital and construction costs are assumed to be funded through tax bonds, which do not impact the District's rate structure. District personnel have estimated that the operating costs for this facility will be \$1.43 per 1,000 gallons, which results in an initial annual cost of \$283,209. These costs are forecast to increase by approximately 3.0% per year.
- There is no assumption for seawater desalination costs in this ten-year forecast. For the purposes of this study, if a seawater facility is constructed, it would be beyond the ten year timeframe of this cost of service study.
- Capital outlay expenditures are forecast to increase at a rate of 3.0% per year.

The table reveals that the District's water utility's operating expense and capital outlays are forecast to increase from \$3,307,104 to \$5,071,691 by FY 2024. This represents an annual increase of 4.87%. The District's wastewater utility's operating expense and capital outlays are forecast to increase from \$3,979,692 to \$5,665,307 by FY 2024. This represents an annual increase of 4.00%. The District's combined operating expense and capital outlays are forecast to increase from \$7,286,795 to \$10,736,998 by FY 2024. This represents an annual increase of 4.40%.

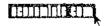
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Table IV-2

#### LAGUNA MADRE WATER DISTRICT FORECAST OPERATING COSTS AND CAPITAL OUTLAYS

SCENARIO:	2015 02 27 Alternative 1 PI Reclams	ation		
	Operating		Capital	
	Expenditures		Outlays	 Total
	VIX.ERESTERACION 等於實際			
2015	\$ 2,984,854	\$	322,250	\$ 3,307,104
2016	3,105,600		331,918	3,437,518
2017	3,515,624		341,875	3,857,499
2018	3,658,250		352,131	4,010,381
2019	3,806,933		362,695	4,169,628
2020	3,961,945		373,576	4,335,521
2021	4,123,574		384,783	4,508,357
2022	4,292,119		396,327	4,688,446
2023	4,467,894		408,217	4,876,111
2024	4,651,228		420,463	5,071,691
	WASTEWATER Expenses			
2015	\$ 3,525,442	\$	454,250	\$ 3,979,692
2016	3,669,965		467,878	4,137,842
2017	3,820,629		481,914	4,302,543
2018	3,977,717		496,371	4,474,088
2019	4,141,523		511,262	4,652,785
2020	4,312,354		526,600	4,838,954
2021	4,490,533		542,398	5,032,931
2022	4,676,398		558,670	5,235,068
2023	4,870,302		575,430	5,445,732
2024	5,072,614		592,693	5,665,307
	NOTALLOPE AUTOLES PER SESSE			
2015	\$ 6,510,295	\$	776,500	\$ 7,286,795
2016	6,775,565		799,795	7,575,360
2017	7,336,253		823,789	8,160,042
2018	7,635,967		848,503	8,484,470
2019	7,948,455		873,958	8,822,413
2020	8,274,299		900,176	9,174,475
2021	8,614,107		927,182	9,541,288
2022	8,968,517		954,997	9,923,514
2023	9,338,196		983,647	10,321,843
2024	9,723,842		1,013,156	10,736,998



### Capital Improvement Plan

The District has developed a comprehensive long-term capital improvements plan for the next decade. The purpose of the CIP is to rehabilitate and maintain the existing system, expand the system to service new growth, and to develop new water resources.

The capital improvement plan is an integral part of any long-term rate and financing plan. The District finances its capital improvements through a combination of existing funds, tax funded long-term debt, and revenue-funded long-term debt. Only the revenue bonds impact the District's rate plan.

**Table IV-3** on the following pages presents the District's CIP. The CIP involves repairs and upgrades to the raw water transmission system, the District's water treatment plants and distribution system. The wastewater CIP includes the Port Isabel Reclamation Facility as well as expenditures intended to rehabilitate the wastewater collection system and wastewater treatment plants.

**Table IV-4** on the following pages presents the assumptions for how the District will finance the CIP. Much of the CIP is expected to be financed through tax bonds and existing funds. Notably, the reclamation facility is expected to be funded entirely through tax bonds. However, as shown in the table, the District will also require periodic issuances of revenue bond debt in order to complete its CIP.

Chart IV-5 and Table IV-6 summarize the CIP. The charts reveal that the District's CIP over the next five years is estimated to be \$8,613,000 for the water system and \$27,184,640 for the wastewater system. Estimates for the remaining years 6-10 are based on averaging the first five years.

Further, the District is forecast to issue revenue bonds totaling \$4,600,000 for the water system and \$1,100,000 for the wastewater system in the next five years. Similar totals are forecast for the remaining years 6-10.

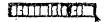


Chart IV-5

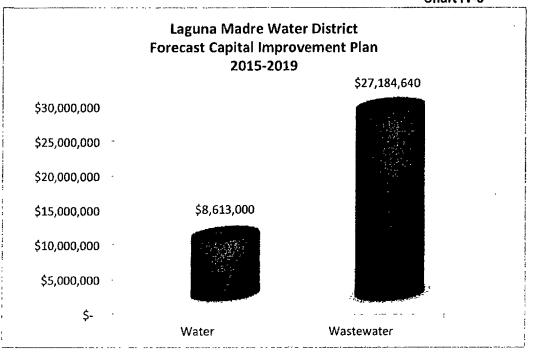


Table IV-6

		GUNA MADRI ECAST REVI		R DISTRICT OND ISSUES			
	W	/ater	W	astewater		Total	
2015	\$	-	\$	-	\$	-	
2016		_		-		-	
2017		-		_		_	
2018	4	1,600,000		1,100,000		5,700,000 -	
2019		-		-		-	
2020		-		-	-		
2021				-		=	
2022		-		-		-	
2023	4	1,600,000		1,100,000		5,700,000	
2024		-		-		-	
Total	g	,200,000	•	2,200,000		11,400,000	

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#### **Current and Forecast Debt Service**

**Table IV-7** presents current and forecast debt service assuming the bond issues outlined in the previous section. The District currently has one revenue bond, a Series 2007 issue that funded both water and wastewater system improvements. Future revenue debt is assumed to have a 20-year term, 4.0% interest rate and level principal and interest payments.

These assumptions are preliminary in nature and subject to change. Should the District's Board choose to issue more or less revenue debt than assumed in this study, or should different financing terms be available at the time the debt is issued, then the rate plans contained in this study may require revision.

Table IV-7

		DRE WATER DISTRICT ORECAST DEBT SERVICE			
CENARIO:	2015 02 27 Alternative 1 PI R	,			
	WW & SS Revenue	•	Total Debt		
	Bonds Series 2007	Future Debt	Service		
	Warren Janes Hor		,4 <u>1</u>		
2015	\$ 232,609	\$ -	\$ 232,609		
2016	232,470	-	232,470		
2017	232,124	-	232,124		
2018	231,571	-	231,571		
. 2019	232,540	379,770	612,310		
2020	231,113	379,770	610,883		
2021	230,994	379,770	610,764		
2022	232,512	379,770	612,282		
2023	231,932	379,770	611,702		
2024	223,680	759,540	983,220		
	WASTEWATER Debt Service		STATE OF THE PARTY		
2015	439,671	A STATE OF THE STA	439,671		
2016	439,410	-	439,410		
2017	438,756	•	438,756		
2018	437,709	-	437,709		
2019	439,540	90,815	530,355		
2020	436,843	90,815	527,658		
2021	436,618	90,815	527,433		
2022	439,488	90,815	530,303		
2023	438,392	90,815	529,206		
2024	422,794	181,629	604,423		
	TOTAL Debt Service				
2015	672,280	-	672,280		
2016	671,880	-	671,880		
2017	670,880	-	670,880		
2018	669,280	-	669,280		
2019	672,080	470,585	1,142,665		
2020	667,956	470,585	1,138,541		
2021	667,612	470,585	1,138,197		
2022	672,000	470,585	1,142,585		
2023	670,324	470,585	1,140,909		
2024	646.474	941,169	1,587,643		



#### **Non-Rate Revenues**

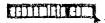
In addition to its revenue from rates, the District also receives revenue from non-rate sources. These sources include but are not limited to:

- Bulk water sales
- Raw water sales
- Tap fees
- System Development Charges
- Interest
- Equipment Sales
- Rental Fees

The forecast of future revenues from these non-rate sources is presented in **Table IV-8**. These revenues are offset from the total cost of service to determine the District's Net Revenue Requirement to be Raised from Rates.

Table IV-8

LAGUNA MADRE WATER DISTRICT FORECAST NON-RATE REVENUES										
SCENARIO: 2015 02 27 Alternative 1 Pi Reclamation										
		Total	1.,.,.,.	Water	· 76.1.	Wastewater				
2015	\$	546,606	\$	349,477	\$	197,129				
2016		352,263		252,835		99,428				
2017		357,181		255,818		101,363				
2018		362,186		258,839		103,346				
2019		367,281		261,900		105,381				
2020		372,470		265,003		107,467				
2021		377,756		268,150		109,606				
2022		383,143		271,343		111,801				
2023		388,635	•	274,583		114,052				
2024		394,234		277,872		116,362				



## **Net Revenue Requirement**

**Table IV-9** presents the District forecast Net Revenue Requirement for the ten-year period. The table reveals that the total revenue requirement is expected to increase by an average annual rate of **5.4%** over the next decade. The primary reasons for this are the debt service from the CIP and the increases in operating expenses.

Table IV-9

		CORRENTA	ND FORECAST NET	REVENUE REQU	)KEN	NEM I						
ENARIO:	2015 02 27 Alternative 1 PI Reclamation											
	Operating Expenses	Capital Outlays	Current Debt Service	Debt		Total Cost of Service		Less Non-Rate Revenues	Net Revenue Requirement			
	2012年13年13日, <b>第四月18</b> 22	รัติเกิรสอีกโลก์ และเรื	4555-100 CB									
2015	\$ 2,984,854				\$	3,539,712	\$	349,477	\$ 3,190,235			
2016	3,105,600	331,918	232,470	_	•	3,669,988	•	252,835	3,417,153			
2017	3,515,624	341,875	232,124	-		4.089,623		255,818	3,833,805			
2018	3,658,250	352,131	231,571	-		4,241,952		258,839	3,983,113			
2019	3,806,933	362,695	232,540	379,770		4,781,938		261,900	4,520,037			
2020	3,961,945	373,576	231,113	379,770		4,946,404		265,003	4,681,400			
2021	4,123,574	384,783	230,994	379,770		5,119,121		268,150	4,850,971			
2022	4,292,119	396,327	232,512	379,770		5,300,728		271,343	5,029,385			
2023	4,467,894	408,217	231,932	379,770		5,487,813		274,583	5,213,230			
2024	4,651,228	420,463	223,680	759,540		6,054,911		277,872	5,777,039			
	WASTEWATER Re	venue Requireme	nt?\\\\									
2015	3,525,442	454,250	439,671	-		4,419,363		197,129	4,222,234			
2016	3,669,965	467,878	439,410			4,577,252		99,428	4,477,824			
2017	` 3,820,629	481,914	438,756	-		4,741,299		101,363	4,639,936			
2018	3,977,717	496,371	437,709	-		4,911,798		103,346	4,808,451			
2019	<i>4</i> ,141,523	511,262	439,540	90,815		5,183,140		105,381	5,077,759			
2020	4,312,354	526,600	436,843	90,815		5,366,612		107,467	5,259,145			
2021	4,490,533	542,398	436,618	90,815		5,560,364		109,606	5,450,758			
2022	4,676,398	558,670	439,488	90,815		5,765,371		111,801	5,653,570			
2023	4,870,302	575,430	438,392	90,815		5,974,938		114,052	5,860,886			
2024	5,072,614	592,693	422,794	181,629		6,269,730		116,362	6,153,368			
	TOTAL Revenue Re	•										
2015	6,510,295	776,500	672,280	-		7,959,075		546,606	7,412,469			
2016	6,775,565	799,795	671,880	-		8,247,240		352,263	7,894,977			
2017	7,336,253	823,789	670,880	-		8,830,922		357,181	8,473,741			
2018	7,635,967	848,503	669,280	-		9,153,750		362,186	8,791,564			
2019	7,948,455	873,958	672,080	470,585		9,965,077		367,281	9,597,797			
2020	8,274,299	900,176	667,956	470,585		10,313,016		372,470	9,940,546			
2021	8,614,107	927,182	667,612	470,585		10,679,485		377,75 <del>6</del>	10,301,729			
2022	<b>8,9</b> 68,517	954,997	672,000	470,585		11,066,098		383,143	10,682,955			
2023	9,338,196	983,647	670,324	470,585		11,462,751		388,635	11,074,116			
2024	9,723,842	1,013,156	646,474	941,169		12,324,642		394,234	11,930,407			

### Water System Cost Functionalization and Classification

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 normal water demand; others are based on peak demands placed on the system. Some costs are associated with serving customers regardless of the volume of water use.

The basic steps used to allocate water system revenue requirements are as follows:

- 1. Water costs (revenue requirements) are categorized by utility function. This process is known as functionalization.
- 2. Functionalized costs are classified based on the types of demand served by the utility (referred to here as service characteristics). This process is known as *classification*.
- 3. Costs by service characteristic are allocated to customer classes in proportion to the respective class's service demands. This process is known as *allocation*.

The approaches described in this section follow standard industry practices. The project team allocated operating budget line item expenses individually to system functions based on general guidelines, specific research and input from District staff. Water system costs are allocated to the following functions:

Supply/Transmission – the transportation of raw water to the treatment facility

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

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/Maximum Hours costs – costs attributable to facilities that are designed to meet peaking requirements, either on a max day or a max hour basis.

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. 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 practice 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.)

Table IV-10 summarizes water cost functionalization and Table IV-11 presents cost classification for the test year.

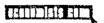


Table IV-10

# LAGUNA MADRE WATER DISTRICT TEST YEAR WATER COST FUNCTIONALIZATION

SCENARIO:

2015 02 27 -- Alternative 1 -- Pl Reclamation

Function		Revenue equirement	Percent
Supply/Transmission	\$	450,363	14.1%
Treatment		1,250,374	39.2%
Distribution		614,268	19.3%
Administration		613,656	19.2%
Customer		261,575	8.2%
Total	· \$	3,190,235	85.9%



Table IV-11

LAGUNA MADRE WATER DISTRICT	
<b>TEST YEAR COST CLASSIFICATION</b>	

SCENARIO: 2015 02 27 -- Alternative 1 -- Pl Reclamation

SCENARIO. 201	JUL EI AII	Emative 1 1 ) Nov	
Function		Revenue equirement	Percent
Base	\$	1,560,292	48.91%
Maximum Day		876,409	27.47%
Maximum Hour		477,832	14.98%
Customer		275,702	<u>8.64</u> %
Total	\$	3,190,235	100.0%

## **Water System Cost Allocation**

Allocation of costs by service characteristic to customer classes is based on the proportionate use levels of each characteristic by each class. **Table IV-12** presents the test year allocation of water costs by customer class, while **Table IV-13** presents a ten-year forecast of this same allocation.

Table IV-12

		VATER DISTRICT		
SCENARIO:	2015 02 27 Al	ternative 1 PI Rec	clamation	
		Revenue		
Function	Re	equirement	Percent	
5/8" Meter	. \$	1,162,185	36.4%	
1" Meter		545,288	17.1%	
2" Meter		355,379	11.1%	
4" Meter		836,115	26.2%	
6" Meter		291,219	9.1%	
Total	- \$	3,190,235	100:0%	

Table IV-13

			F			RE WATER D ER COST AL	 		
SCENARIO:	2015 02 2	27 Alternativ	/e 1 -	- PI Reclama	ation	•			
Year		5/8" Meter		I" Meter		2" Meter	4" Meter	 5" Meter	 Total
2015	\$	1,162,185	\$	545,288	\$	355,379	\$ 836,115	\$ 291,219	\$ 3,190,235
2016		1,236,990		579,676		379,890	902,729	317,816	3,417,153
2017		1,379,374		645,632		425,426	1,020,511	362,805	3,833,805
2018		1,424,686		666,070		441,250	1,067,973	383,073	3,983,113
2019		1,607,574		750,729		499,960	1,220,382	441,325	4,520,037
2020		1,655,843		772,424		517,079	1,272,389	463,596	4,681,400
2021		1,706,725		795,310		535,116	1,326,926	486,823	4,850,971
2022		1,760,409		819,472		554,140	1,384,194	511,097	5,029,385
2023		1,815,672		844,338		573,773	1,443,281	536,091	5,213,230
2024		2,002,313		930,206		635,193	1,608,476	600,767	5,777,039



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### Wastewater System Cost Functionalization and Classification

Conforming to standard ratemaking methodology, the District's wastewater system costs are allocated to the following functions:

Treatment – the costs associated with treating wastewater discharges

Collection – the sewer 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

As was the case for the water system cost allocation process, wastewater utility operating budget line item expenditures are allocated individually to functions. The rate model in Appendix A presents a detailed listing of the cost allocations by line item.

Allocation of wastewater system costs by service characteristic to customer classes is performed in the same manner as described for the water system. The total wastewater system functionalized costs are presented in **Table IV-14**. Allocated costs by customer class for the test year are summarized in **Table IV-15**. The ten-year forecast of wastewater system costs by customer class is presented in **Table IV-16**.

Table IV-14

TEST YEA	LAGUNA MADRE WATER DISTRICT TEST YEAR WASTEWATER COST FUNCTIONALIZATION									
SCENARIO:	SCENARIO: 2015 02 27 Alternative 1 PI Reclamation									
Function	Revenue	Requirement	Percent							
Treatment	\$	2,024,208	47.9%							
Collection		1,330,681	31.5%							
Administration		650,508	15.4%							
Customer		216,836	<u>5.1</u> %							
Total		4,222,234	100.0%							

Table IV-15

# LAGUNA MADRE WATER DISTRICT TEST YEAR COST ALLOCATION

SCENARIO: 2015 02 27 -- Alternative 1 -- PI Reclamation

Function		Revenue equirement	Percent
5/8" Meter	\$	1,974,043	46.8%
1" Meter	•	657,802	15.6%
2" Meter	<u>.</u>	240,030	5.7%
4" Meter		1,116,356	26.4%
6" Meter	•	233,955	5.5%
Total		4,222,234	100.0%

Table IV-16

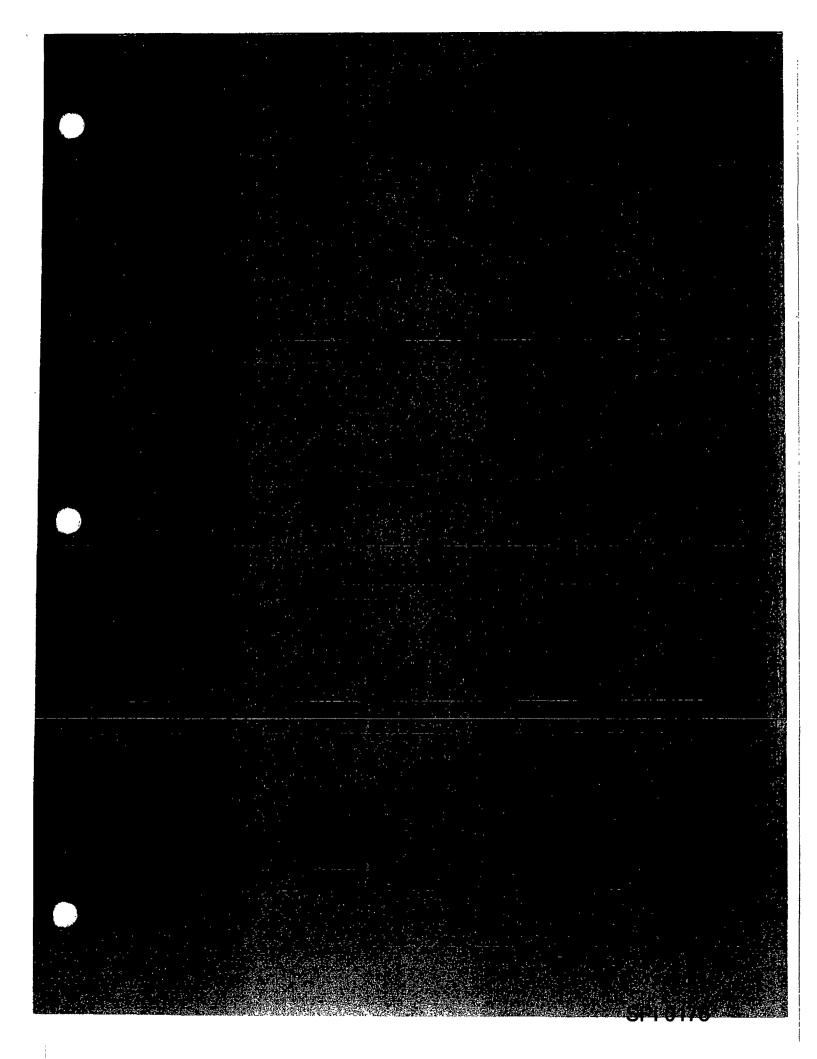
# LAGUNA MADRE WATER DISTRICT FORECAST WASTEWATER COST ALLOCATION

SCENARIO: 2015 02 27 -- Alternative 1 -- Pi Reclamation

Year	5	/8" Meter	 <u>1" I</u>	Meter	 2" Meter		4" Meter	 6" Meter	 Total
2015	\$	1,974,043	\$	657,802	\$ 240,030	\$	1,116,356	\$ 233,955	\$ 4,222,234
2016		2,067,131		688,719	255,402	•	1,208,007	258,515	4,477,824
2017		2,115,629		704,780	265,491		1,275,744	278,240	4,639,93
2018		2,166,171		721,525	275,978		1,346,035	298,689	4,808,451
2019		2,258,354		752,927	292,399		1,447,683	326,342	5,077,759
2020		2,312,360		770,820	303,703		1,523,698	348,507	5,259,145
2021		2,369,856		789,903	315,634		1,603,581	371,726	5,450,758
2022		2,431,139		810,280	328,252		1,687,728	396,11 <del>1</del>	5,653,570
2023		2,493,428		830,968	341,165		1,774,072	421,191	5,860,886
2024		2,588,608		863,237	359,151		1,889,026	453,282	6,153,368

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#### SECTION V

# Rate Plan Alternative



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 revenue requirements presented for the test year and generate revenues that approximately equal the operating and capital costs required by the District.

After extensive discussions with the District's staff and Board of Directors, the project team has developed a single rate plan alternative for the District to evaluate in setting rate policy for the next decade. The alternative is as follows:

Alternative 1 – Status Quo – Under this alternative, the

District maintains its existing rate structure and gallon allowance. A series of annual adjustments are implemented that are forecast to enable the District to fund all existing and future operating and capital requirements.

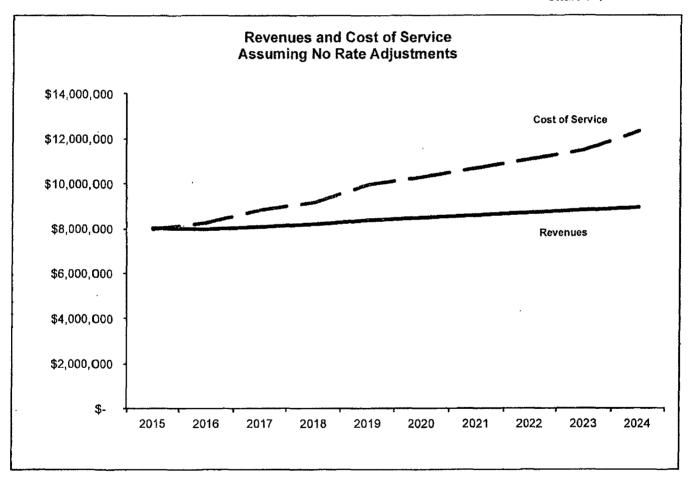
The purpose of these alternatives is to provide District staff and the Board with sufficient information to set the most reasonable and prudent financial course for the District.

#### **Revenues under Existing Rates**

As outlined in Section II, The District adopted its current rate structure in December 2014. However, as **Table V-1** illustrates, the District's current rate structure is not sufficient to fund all operating and capital obligations over the tenyear period. It is sufficient for FY 2015; however increases to expenses and the capital needs of the CIP will require further adjustments in future years.

The chart shows that without some form of long-term rate adjustment plan, the cost of service will consistently be greater than revenues. The District's revenues are forecast to increase nominally due to future account growth, but this increase will not be sufficient to fund cost increases.







### **Cost of Service Analysis**

**Table V-2** compares revenues and cost of service for the water and the wastewater utility. The table reveals that in the current year, water revenues are recovering in excess of their cost of service, and wastewater revenues are recovering less than their cost of service. This carries significant implications for the recommended rate plans under both alternatives presented in this study. It means that the recommended rate adjustments will be higher for wastewater than water, with the goal for both water and wastewater rates to recover their respective cost of service within 5 years.

Table V-2

LAGUNA MADRE WATER DISTRICT NET REVENUE ANALYSIS									
WATER WASTEWATER TOTAL									
Rate Revenues *	\$	4,822,866	\$	3,413,129	\$	8,235,995			
Operating Expenses		2,984,854		3,525,442		6,510,295			
Capital Outlays		322,250		454,250		776,500			
Debt Service	,	232,609		439,671	,	672,280			
Total Cost of Service		3,539,712		4,419,363	,	7,959,075			
Net Revenues		1,283,154		(1,006,233)		276,920			



#### Alternative 1 – Status Quo

The proposed rate plan assumes that the District chooses to maintain the same rate structure that currently exists. There would be no changes to the gallon allowance or the rate blocks. Under this scenario a series of annual rate adjustments would be made to all customer classes.

The rate plan for the water utility is presented in **Table V-3** and for the wastewater utility is in **Table V-4**. An analysis of the impact of the rate plan on average usage for each meter size is presented in **Table V-5**. **Table V-6** summarizes total revenues under Alternative #1 for each of the next five years. Details behind the calculations are contained in Appendix A.

The following is notable about this rate plan:

- As shown in Table V-4, no change in water rates is recommended for 2015, 2016 or 2017. The first water rate
  adjustment would be in effect on January 1 2018.
- Wastewater rate adjustments are recommended to take effect on January 1 of each of the next five years.
- The reason for the larger wastewater rate adjustments is to ensure that within five years the wastewater rates fully fund the cost of service, as outlined earlier in this section.
- For a 5/8" customer, the average increase for 10,000 gallons of usage in January 2015 would be between \$2 and \$3 per month each year for the five-year period.

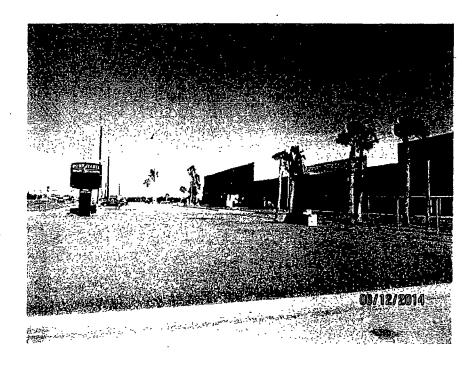


Table V-3

		Ai	iternative:	2016 02 27 Altornal	live 1	Pi Reclamation				
		<b>希腊尼尔斯斯拉德拉尔</b>						1987年5月1日 1987年5月1日		S. 9 18 Tan 20
			Effective	Effective	ctive Effective			Nective		ffective
		Prior	Jan-15	Jan-16		Jan-17		Јап-18		Jan-19
		SISTUDIAN SON SEE	3/X 616543533							
Monthly Charge		\$ 11 90 \$	11.50	\$ 11.90	\$	11.90	\$	12.26	. \$	12 62
Usage Charge - Per	1,000 Gal			,					i	
4,001	10,000	2 40	2,40	2.40		2.40		2 47	]	2 55
10,001	20,000	3,78	3.78	3.78		3.78		3 89	1	4.01
20,001	Above	6 39	6.39	5 39		5.39		555		572
-		HALLD AGEST TO SEE								
Monthly Charge		5 16.48 \$		\$ 23.07	5	23.07	\$	23,76	\$	24.47
Usage Charge Per	1.000 Gal				-					
6,001		2.52	2.62	2 52		2 52		2 60		2 67
20,001	40,000	3.78	3.78	3.78		3,78		3 89		4 01
40,001	Aboye	5,32	6,32	5.32	•	5 32		5 48		5 64
Monthly Charge		\$ 79.33	111.06	\$ 111.06	S	111.06	\$	114 39	\$	117.82
Usage Charge - Per	1.000 Gal									
26,001	100,000	2 63	2,63	2 63		2.63		2.71		2 79
100,001	200,000	3 95	3,96	3 95		3.95		4.07		4,19
200,001	Above	5 90	6.90	5 90		5.90		6.08		6 26
		GELDOMA EARNS FOR						•		•
Monthly Charge		\$ 299.03	418.64	\$ 418.64	\$	418.64	s	431 20	\$	444,14
Usage Charge - Per	1 860 Gal	÷ 255.55 ¥	710.01	, ,,,,,,,	•	1.0.5	•		•	
101,001	500,000	2.76	2.76	2.76		2.76		2.84		2 93
600,001	1,000,000	4.14	4.14	4.14		4.14		4 26		4.39
1,000,001	Above	5 69	5.69	5 69		5.69		5 86		6.04
			i nik e zastado kierrak kord							
Monthly Charge		\$ 560.00	784.00	\$ 784.00	4	784.00	•	807.52	\$	831 75
	1 AAA C-)	g 580.00 \$	704,00	704.00	•	104.00	•	30, 100	•	00110
Usage Charge Per		2.50	2.60	2.00		2.60		2 68		2.76
101,001	600,000	2.60		2 60	_					4.14
600,001	1,000,000	3 90	3.90	3.90 5.25		3.90		4 02		4.14 5.57

Contraction of the Contraction o



Table V-4

				Alte	rnative:	201	5 02 27 Alternat	lve 1	Pl Reclamation	3			
					-	WA	STEWATER RATI	ES -		٠,٠-,-		风门	的職性執行
		Pri	or		Effective Jan-15	_	Effective Jan-16		Effective Jan-17		Effective Jan-18		Effective Jan-19
		5/8" Moler							-				
Monthly Charge	•	\$	12 35	\$	12.36	\$	12.35	\$	13,46	\$	14.67	\$	15.99
Usage Charge Per	1,000 Gal	•							İ	i			
4,001	10,000		2 50		2.50		2 50		2.73	i =	2.97		3.24
10,001	20,000		3.88		3.88		3 88		4.23	<i>j</i>	4 61		5.02
20,001	Above		5.50		6.60		5.50		600		6 53		7.12
		1" Meter											
Monthly Charge		\$	15 59	\$	21.83	\$	21 83	\$	23.79	\$	25.94	\$	28 27
Usaga Charge Per	1,000 Gal												
6,001	20,000		2 73		2.73		2.73		2,98		3,24		3 54
20,001	40,000		4 10		4.10		4 10		4.47		4.87		5,31
40,001	Above		6.12		6.12		6.12		6 67		7.27		7.93
1	-	2" Meter											
Monthly Charge		\$	106 04	\$	148.46	\$	148 46	\$	161,82	\$	176.39	\$	192.26
Usage Charge Per	1,000 Gal												
26,001	100,000		2.97		2.57		2 97		3.24		3 53		3 85
100,001	200,000		4.46		4,46		4,46		4.86		5.30		5 78
200,001	Above		6.18		6.18		6 18		6.74		7.34		8.00
		4" Meter											
Monthly Charge		\$	243,26	\$	340.5\$	\$	340,56	\$	371 21	\$	404.62	\$	441.04
Usage Charge Per													
101,001	\$00,000		3.09		3,0\$		3.09		3 37		3 67		4.00
800,001	1,000,000		4 53		4.63		4 63		5.05		5.50		6,00
1,000,001	Above		6 30		6.30		6.30		6.87		7,49		8 16
		6" Meter											
Monthly Charge		\$	400.00	\$	660,00	\$	560,00	\$	610.40	\$	665.34	\$	725,22
Usage Charge Per		•											
101,001	500,000		2.70		2.70		2.70		2,94		3.21		3 50
600,001	1,000,000		4.05		4.06		4.05		4.41		4.81		5.24
1,000,001	Above		5.40		5.40		5,40		5.89		6 42		6.99



Table V-5

	WATER DISTRICT				itive 1 Pl Reclamati		
	MONTHLY	超越黑黑线的場	Effective	Effective	と記述していた。 Effective	Effective	Effective
	Gallons	Prior	Jan-16	Jan-16	Jan-17	Jan-18	Jan-19
		SUNLLASSES.	(14)[[]]([]]([]]([]]([])				
Low	5,000	\$ 28.53	\$ 28,53	\$ 28.53	\$ 29.81	\$ 3163 \$	33 59
	•		•	-	1,28	1 82	1.96
Average	10 000	49,90	49.90	49.90	52.02	55.13	58 46
			•		2.12	3 10	3 34
High	30,000	211 95	211.95	211.95	220.41	233,16	246.85
			٠	•	8.46	12 76	13 69
			<b>经外面的公司</b>				
Average	20,000	96.02	105.86	108 85	113 39	120 09	127.30
			12.83	-	4 54	6.70	7.20
High	40,000	233,12	245.95	245 95	256 02	271.03	287 14
			12.83	•	10.08	15.01	16.11
		逐步以此是空间。	學是信息時代				
Average	50 000	306.81	380.96	380 96	399,33	424.56	451.95
			74.16	•	18 37	25.33	27.29
High	100.000	549,68	623,83	623 83	652 23	692.43	735 70
			74,15	•	28.40	40.20	43.27
		果如此事情的					
Average	200 000	1,050.04	1,266.95	1,266 95	1,318.46	1,395,44	1,478 10
			218.91	-	51.51	76.98	82.66
High	400,000	2,065 54	2,282.45	2,282 45	2,375.67	2,514.69	2,663 96
			216.91	•	93.22	139.01	149.28
		<b>ANTINGE</b>	總統領和北京領				
Average	300 000	1,885.00	2,269.00	2,269.00	2,355.85	2,489.64	2,633,12
			384,00	•	86.65	133.79	143.48
High	600 000	3,503 75	3,887.76	3,887.75	4,038,39 150.64	4,269 00 230.61	4,516.39

Table V-6



		LAG	UNA 1	MADRE WATER	DIST	RICT				
		•	Alte	rnative:	2018	02 27 Altern	ative	1 ~ Pi Reclama	tion	
	18.00	開發於都由	والإراج	計・デジュニク・ジ	((3)=)	きょりきき ールコリュ	ومايدا	OVERAGE TO		A
***		2015		2016		2017	T	2018		2019
Rate Revenues Non-Rate Revenues	[ <sub>s</sub>	4,698,182 349,477	\$	4,878,521 252,835	\$	4,945,986 255,818	\$	5,113,262 258,839	\$	5,336,623 261,900
Total Revenues		5,047,659		5,131,357		5,201,804		5,372,101		5,598,523
WASTEWATER Revenues	ļ.									
Rate Revenues Non-Rate Revenues		3,254,6 <b>87</b> 197,129		3,437,268 99,428		3,720,056 101,363		4,138,303 103,346		4,601,702 105,381
Total Revenues		3,451,816		3,536,696		3,821,419		4,241,650		4,707,083
TOTAL Revenues										
Rate Revenues		7,952,869		8,315,790		8,666,042		9,251,585		9,938,325
Non-Rate Revenues		546,606		352,263		357,181		362,186		367,281
Total Revenues		8,499,475		8,668,053		9,023,223	k.	\$,613,751		10,305,606

#### **Raw Water Rate**

The District has a limited number of customers who purchase raw water from the water treatment plant reservoirs for irrigation purposes. The cost of providing this water incorporates O&M for the transmission portion of the distribution system as well as replacement costs for the 36" line that transports raw water to the District.

**Table V-7** presents the project team's recommendations for a 5-year implementation schedule of raw water rates. It should be noted that the rate is forecast to increase significantly when the Port Isabel Reclamation Facility comes online.

Table V-7



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LAGUNA MADI Raw Water Rat		
	1,0	00 Gal
Current	\$	0.48
Jan-15		0.54
Jan-16		0.55
Jan-17		0.76
Jan-18		0.78
Jan-19		0.79

# **Wastewater Strength Charges**

Many wastewater utilities implement surcharges to industrial and other specific customers who deliver high strength sewage to their wastewater treatment plants. High strength is typically defined as BOD and TSS levels that exceed the design parameters of the plant.

**Table V-8** presents the recommendations for BOD and TSS per lb. charges for the District to implement. Details behind the calculations can be found in the rate model contained in Appendix A.