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RAFTELIS

March 29, 2018

San Elijo Joint Powers Authority
2695 Manchester Avenue
Cardiff by the Sea, CA 92007
Attention: Mr. Paul Kinkel, Director of Finance & Administration

Subject: Recycled Water Rate Review and Update

Dear Mr. Kinkel:

The San Elijo Joint Powers Authority (SEJPA) engaged Raftelis Financial Consultants, Inc. (Raftelis) to conduct a cost of service analysis and calculate recycled water rates in a recycled water rate study (Study). This analysis serves as a review and update of Raftelis' calculation of rates in Fiscal Year Ending (FYE) 2014 and 2016 using a Cash Basis approach to calculating the rates.

1. Introduction

The SEJPA owns and operates a recycled water utility, which in September 2000 commenced service to Santa Fe Irrigation District (SFID), the San Dieguito Water District (SDWD), and the City of Del Mar (together the "participating water agencies"). In 2011, SEJPA began providing interruptible service to the Encinitas Ranch Golf Authority (ERGA), as part of a three-way agreement between SEJPA, SDWD, and ERGA. In October 2012, SEJPA began providing recycled water service to Olivenhain Municipal Water District (OMWD).

The original recycled water system includes tertiary treatment, transmission, storage, and distribution facilities. In 2013, SEJPA completed construction of an advanced water purification (AWP) facility that reduces the Total Dissolved Solids (TDS) and expands recycled water production by 22 percent. Controlling TDS reduces the hardness of the recycled water, and was instrumental in expanding service to cooling towers and other salt-sensitive uses.

In 2017, SEJPA and OMWD completed construction on the Village Park Recycled Water Project. This joint agency project included the construction of 8 miles of pipelines, the conversion of an existing 1 million-gallon potable water steel reservoir to recycled water, and the connection of up to 26 new customer sites. Pipeline and reservoir construction has been completed, and work continues for the connection of new customers to the system.

Recycled water produced by SEJPA is used to offset potable water demands, which improves the region's water reliability. SEJPA's recycled water system has the capacity to deliver 3 million gallons per day (mgd) or approximately 1,800 to 2,000 acre-feet per year (AFY). Recycled water sales have been as high as 1,562 AFY; however, FYE 2016's sales have declined to approximately 1,368 AFY. SEJPA attributes this reduction to strong water conservation messaging that resulted in conservation of both potable and recycled water. Other recycled water suppliers have experienced similar reductions during that period.

While SEJPA supports water use efficiency, its recycled water system will be most cost-effective for all users when its average annual delivery rates are closer to the full system design capacity.

SEJPA's agreements with SFID, SDWD, OMWD, and the City of Del Mar include "minimum annual purchase volumes", and the interruptible service agreement with ERGA includes a minimum annual delivery volume. These minimum volumes set a revenue floor resulting in sustainability. Table 1-1 below lists the minimum purchase commitments for each agency:

Table 1-1 – Minimum Purchase Commitments for SEJPA Recycled Water

Water Purveyors	Minimum Purchase Volume (AFY)				
	FYE 2017	FYE 2018	FYE 2019	FYE 2020	FYE 2021
Santa Fe Irrigation District	450	450	450	450	450
City of Del Mar	120	120	120	120	120
Olivenhain Water District	85	100	125	155	185
San Dieguito Water District	400	400	400	400	400
ERGA	200	200	200	200	200
Total	**1,255**	**1,270**	**1,295**	**1,325**	**1,355**

Providing direct interruptible service to ERGA's Golf Course storage pond has resulted in operational efficiencies for the SEJPA. In addition, the interruptible service coupled with a large water storage pond at the golf course improves system hydraulics, and allows the SEJPA to serve additional customers. In its supply agreement with OMWD, SEJPA has provided for an "infrastructure credit" or "rent back," as OWMD has constructed the recycled water distribution infrastructure within its service area. Without this infrastructure (valued at approximately $10.2 million), the SEJPA could not provide recycled water service to OMWD's customers. In a similar fashion, the SEJPA purchased a recycled water pipeline from SFID with loan payments of $450 per AF sold through the pipeline, which includes interest that varies from 1.0% to 2.5%. Since its construction, approximately 155 AF has been delivered through the SFID pipeline.

The original recycled water sales agreements tied the price of recycled water to 85% of the potable water rate. During FYE 2014 and FYE 2015, the SEJPA decoupled the price of recycled water from the potable water rates, and developed a single unified rate for all uninterruptible service customers. This rate was based on cost of service. The ERGA interruptible contract extends to June 30, 2024 (with an option to extend), and includes annual rate increases of 4%. In addition to the revenue from customers, the SEJPA also receives incentives from the Southern California Metropolitan Water District (MWD) and the San Diego County Water Authority (CWA) to develop recycled water supplies. These incentives are $250 and $200 per AF from MWD and CWA, respectively.

2. Assumptions

The purpose of the study is to provide recommendations for SEJPA recycled water wholesale pricing for FYE 2018, 2019, and 2020. Based on the structure of current wholesale agreements, water rate adjustments will occur on the first day of each fiscal year (i.e., July 1, 2018). Furthermore, the existing agreements have a floor and ceiling provision that range bounds future water rate increases between 3% and 5%. The last rate increase, implemented in 2016, applied a 4% annual rate escalation over a two-year period. The 2016 Study also provided long range financial forecasting that supported future rates rising between 3% and 5% annually.

In developing this Study, revenues and expenses associated with the recycled water program were based on actual and budgeted revenues and expenses, as well as forward looking assumptions that impact the financial models. Actual revenue and expense data were obtained from audited financial statements, and forward looking assumptions were based on estimates, current year budgets, and discussions with staff from the SEJPA and water purveyors regarding future trends. Assumptions include inflation factors, future recycled water sales, potential grant funding, and payment terms for proposed new debt.

1. Recycled Water Demand

The Study assumes that the recycled water program will experience an increase in new water sales over the term of the study as a result of new customers within the existing service areas of SDWD, SFID, OMWD, and Del Mar.

Projected usage changes across the Study period were developed with input from the SEJPA and the local water districts. As noted earlier, usage reduction in FYE 2016 was likely due to conservation efforts in response to drought messaging. More typical usage levels returned in FYE 2017, and usage for FYE 2018 has been tracking above average, which is likely due to drier than normal weather coupled with the addition of new customer sites.

Over the last 12 months, 18 new customer sites have been added and additional sites are planned over the next three years. **Table 2-1** lists the SEJPA's projected usages for the customer base during the study period. The table also provides the total revenue-generating AF by using ERGA's minimum contracted delivery volume of 200 AFY.

Table 2-1 –Actual and Projected Recycled Water Usage

Customer	Usage in Acre Feet						
	Actual Usage			Forecast Usage			
	FYE 2015	FYE 2016	FYE 2017	FYE 2018*	FYE 2019	FYE 2020	FYE 2021
Santa Fe Irrigation District	524	492	490	534	540	545	550
City of Del Mar	136	118	123	120	125	128	129
Olivenhain Water District	144	86	141	191	200	210	212
San Dieguito Water District	402	350	390	430	440	460	465
Revenue based on AF	**1,206**	**1,046**	**1,144**	**1,275**	**1305**	**1,343**	**1,356**
Encinitas Ranch Golf Authority (ERGA)	356	322	289	300	300	300	300
Total Usage	**1,562**	**1,368**	**1,433**	**1,575**	**1,605**	**1,643**	**1,656**
Less: ERGA Interruptible Supply (over 200 AF)	-156	-122	-89	-100	-100	-100	-100
Total Revenue Generating Usage	**1,406**	**1,246**	**1,344**	**1,475**	**1,505**	**1,543**	**1,556**

* FYE 2018 Recycled Water usage is based on 8 months of actual usage data.

Table 2-2 –Actual and Projected Recycled Water Revenue

Customer	Revenue						
	Actual			Forecast (3.8% Increase)			
	FYE 2015	FYE 2016	FYE 2017	FYE 2018*	FYE 2019	FYE 2020	FYE 2021
Santa Fe Irrigation District	724,137	666,806	657,814	782,844	821,880	861,011	902,666
City of Del Mar	171,062	162,720	170,647	175,920	190,250	202,219	212,002
Olivenhain Water District	184,389	117,226	196,209	280,006	304,400	331,766	347,816
San Dieguito Water District	527,789	542,403	556,629	630,380	669,680	726,725	761,883
Revenue based on AF	**1,607,377**	**1,489,155**	**1,581,299**	**1,869,150**	**1,986,210**	**2,121,721**	**2,224,367**
Encinitas Ranch Golf Authority	225,736	237,024	248,876	258,830	269,183	279,951	291,149
MWD/CWA Incentives	702,675	615,600	644,805	708,750	720,000	720,000	720,000
Total Revenue	**2,535,788**	**2,341,779**	**2,474,980**	**2,836,730**	**2,975,393**	**3,121,672**	**3,235,516**

2. Inflation

Assumed inflationary factors for operations and maintenance (O&M) costs are shown in **Table 2-3**. In examining program costs, it was determined that some costs do not fluctuate significantly with the change in recycled water produced and delivered by the utility. Some of these "fixed" costs have historical variances due to the focus on increasing the service area, insurance increases, and the timing of certain costs such as repair parts and miscellaneous expenses. The two primary expenses that fluctuate with water production and delivery are power (utilities) and chemicals (supplies). To develop future operating expenses, these costs were multiplied by both an inflationary factor and by the anticipated production percentage increase. Rent associated with the usage of OMWD distribution infrastructure varies dependent on the number of acre-feet delivered to OMWD. **Table 2-3** lists Study inflation factors by operating expense type.

Table 2-3 –Inflation Factors

Operating Expense	Type of Expense	Inflation and Assumption Factors
Utilities	Variable	4.0%
Infrastructure Rent	Variable	Unit price fixed; dependent on units delivered
Supplies	Variable	3.0%
All other costs	Fixed	3.0%

3. Operating Expenses

The Study was based on a review of the utility's O&M expenses. Section 4 discusses debt service and Section 5 outlines reserve requirements. **Table 3-1** shows the O&M expenses inflated across the study period using the inflation factors described in **Table 2-3** beginning with FYE 2018. For Utilities (which consists primarily of Power costs) and Supplies (primarily Chemical costs), these expenses are influenced by both water production and delivery (sales), as well as inflation. Capital Outlay is an expense category for repair and replacement items that are considered capital not operational for financial reporting purposes. Capital outlay for FYE 2019 is planned at $15,000 and is assumed to increase at 3.0% annually.

Table 3-1 – Operating and Maintenance Expenses

Operating Expenses	Actual FYE 2016	Actual FYE 2017	Est. Actual FYE 2018	Projected FYE 2019	Projected FYE 2020	Projected FYE 2021
Personnel Costs	$567,376	$537,467	$524,025	$542,798	$559,082	$575,854
Utilities	271,007	277,749	316,468	356,123	379,137	397,525
Contracted Services	206,241	135,405	243,196	247,283	254,701	262,343
Supplies	100,951	105,305	116,741	123,191	129,891	134,881
Repair Parts	60,113	53,449	41,048	55,000	56,650	58,350
Miscellaneous	17,671	21,455	18,140	25,468	26,232	27,019
Infrastructure Rent	41,180	63,473	90,450	94,500	101,250	102,195
Permit/Purveyor Fees	24,811	25,099	24,070	24,792	25,536	26,302
Insurance	16,520	17,472	17,578	18,105	18,648	19,208
Capital Outlay	42,640	15,315	12,399	15,000	15,450	15,913
Total Operating Expenses	**$1,348,510**	**$1,252,189**	**$1,404,115**	**$1,502,260**	**$1,566,577**	**$1,619,590**

4. Debt Service

4.1 Current Debt

SEJPA's Recycled Water Program currently has three outstanding loans: The State Revolving Fund (SRF), which funded the original recycled water infrastructure in 1999; the Municipal Finance Corporation Loan, which funded the advanced water purification facility (AWP) in 2012, and the SFID Pipeline Loan (SFID) in FYE 2013, which funded the purchase of the recycled water pipeline in the Santa Fe Irrigation District.

The SRF Loan has a remaining balance of $1,650,000 and final payment will be made in August 2020 (FYE 2021). The AWP Loan has a remaining balance of $1,519,541 and payments will extend through FYE 2032. The SFID loan has a remaining balance of $438,339 and payment is based on AF conveyed through the pipeline with any remaining loan balance due in FYE 2033.

4.2 Capital Expenses and Proposed Debt

The SEJPA has plans for capital projects during the study period that will be funded by bond issuance, SRF loan, or other means. Planned projects include recycled water pipelines and onsite storage estimated at $3.1 million.

The SEJPA has secured grant funding of approximately $525,000 for the planned capital projects, thus the remaining amount to be funded from the Wastewater Fund is estimated to be $2.5 million. The Study assumes that this capital expense will incurred during FYE 2018 through 2021 and paid back over a five-year period.

Table 4-1 – Capital Debt (Existing and Proposed)

Debt	FYE 2016	FYE 2017	FYE 2018	FYE 2019	FYE 2020	FYE 2021
State Revolving Fund Loan	$834,675	$834,675	$834,675	$834,675	$834,675	$834,675
Municipal Finance Corporation Loan	148,153	148,153	148,153	148,153	148,153	148,153
SFID Reimbursement Agreement	12,667	11,719	15,000	15,000	15,000	15,000
Total Debt Service	**995,495**	**994,547**	**997,828**	**997,828**	**997,828**	**997,828**

5. Reserve Requirements and Goals

There are multiple cash reserves that a utility may utilize. Examples are bond, operating and maintenance, and asset repair and replacement (R&R) reserves.

The SEJPA currently has a bond reserve to satisfy SRF loan requirements in the amount of $630,000. This bond reserve funds are intended to be available for system repairs to ensure the delivery and sale of recycled water. These funds are held in the Recycled Water Debt Reserve Fund, and when the loan is paid off, these funds are available for R&R reserve goals.

The Recycled Water Cost of Service Study prepared by GHD, Inc. dated April 2013 suggested a range from about $3.0 million to $3.5 million R&R reserve by FYE 2022 with a $3.3 million target goal. Rate calculations (Section 6) provide an allowance for R&R funding of approximately $3.1 million by FYE 2022.

6. Rate Calculation

It is the goal of the SEJPA to set recycled water rates such that program revenues cover operating expenses, debt service payments, and fund reserves.

In developing the rate calculations, funds available for R&R reserve goals were the difference between expenses and revenues received. Three rate scenarios were evaluated to determine the viability to meet expense demand and reserve goal funding needs. As shown in Table 7.1, Cash Fund Balances, the R&R reserve is underfunded. The R&R reserve is funded by the excess revenues over expenses in each of the rate scenarios; hence, the percentage varies.

As noted in Section 1, the SEJPA provides both uninterruptible and interruptible recycled water service. To normalize the rate calculation, recycled water sales to ERGA are assumed to be 200 AFY, which is the minimum required delivery per agreement. Furthermore, the Study assumes the SEJPA will qualify for MWD and CWA incentives ($450 per AF) through FYE 2025 for water sales up to 1,600 AF annually.

Tables 6-1, 6-2, and 6-3 below consider future rate increases of 3.0%, 3.8%, and 4.6%, respectively.

Table 6-1 – 3.0% Rate Calculation for Recycled Water with MWD and CWA Incentives

	Est. Actual FYE 2018	FYE 2019	FYE 2020	FYE 2021
Operating Expenses	$1,404,115	$1,502,260	$1,566,577	$1,619,590
Debt Service	997,828	997,828	997,828	997,828
Repair & Replacement Funds Available	424,452	454,245	529,960	576,530
Total costs to be recovered	$2,826,395	$2,954,333	$3,094,365	$3,193,948
Total AF for Calculation	1,475	1,505	1,543	1,556
Cost per AF	$1,916	$1,960	$2,005	$2,052
Less: MWD and CWA Incentives	-450	-450	-450	-450
Price per AF to Customers	$1,466	$1,510	$1,555	$1,602
Increase Year over Year		**3.0%**	**3.0%**	**3.0%**

Table 6-2 – 3.8% Rate Calculation for Recycled Water with MWD and CWA Incentives

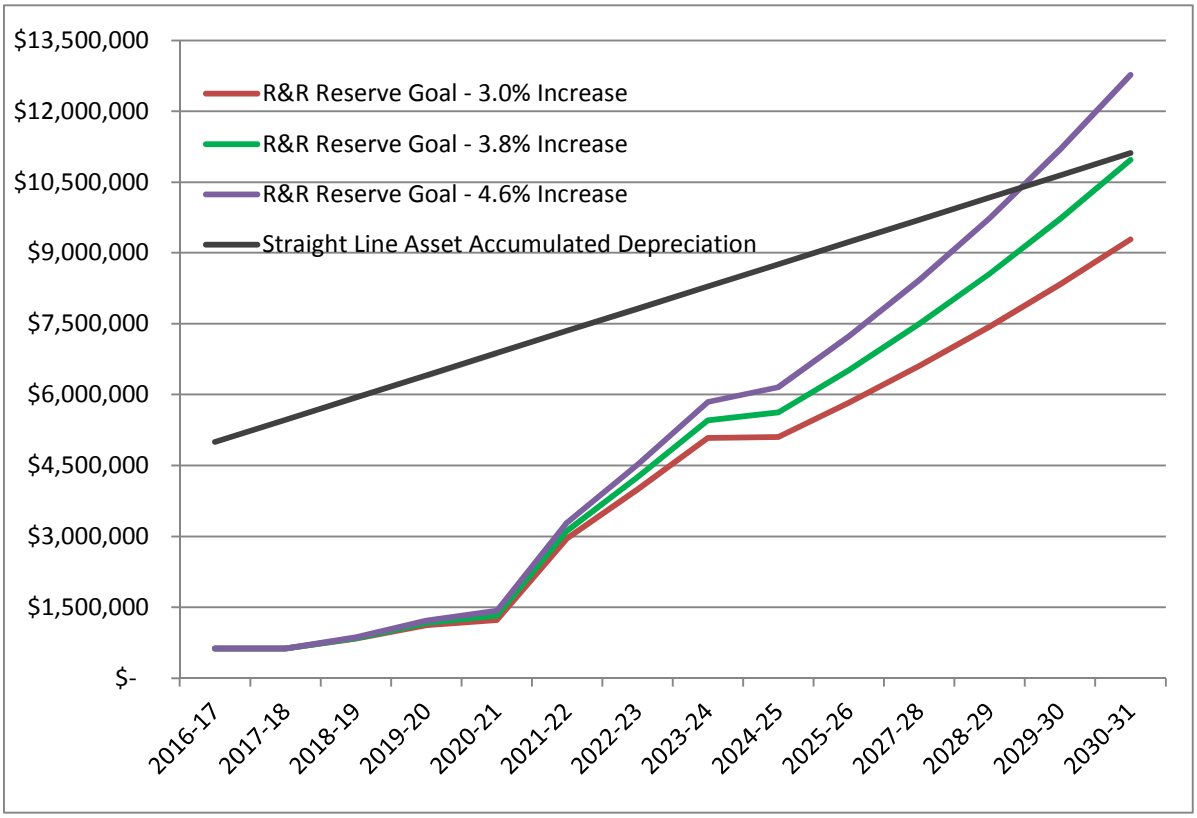
	Est. Actual FYE 2018	FYE 2019	FYE 2020	FYE 2021
Operating Expenses	$1,404,115	$1,502,260	$1,566,577	$1,619,590
Debt Service	997,828	997,828	997,828	997,828
Repair & Replacement Funds Available	424,252	467,748	567,415	635,813
Total costs to be recovered	$2,826,195	$2,967,836	$3,131,820	$3,253,231
Total AF for Calculation	1,475	1,505	1,543	1,556
Cost per AF	$1,916	$1,972	$2,030	$2,090
Less: MWD and CWA Incentives	-450	-450	-450	-450
Price per AF to Customers	$1,466	$1,522	$1,580	$1,640
Increase Year over Year		**3.8%**	**3.8%**	**3.8%**

Table 6-3 – 4.6% Rate Calculation for Recycled Water with MWD and CWA Incentives

	Est. Actual FYE 2018	FYE 2019	FYE 2020	FYE 2021
Operating Expenses	$1,404,115	$1,502,260	$1,566,577	$1,619,590
Debt Service	997,828	997,828	997,828	997,828
Repair & Replacement Funds Available	424,252	485,447	604,440	694,277
Total costs to be recovered	$2,826,195	$2,985,535	$3,168,845	$3,311,695
Total AF for Calculation	1,475	1,505	1,543	1,556
Cost per AF	$1,916	$1,984	$2,054	$2,128
Less: MWD and CWA Incentives	-450	-450	-450	-450
Price per AF to Customers	$1,466	$1,534	$1,604	$1,678
Increase Year over Year		**4.6%**	**4.6%**	**4.6%**

The 3.8% rate scenario provides R&R reserve balance of about $3.1 million in FYE 2022, $5.0 million by FYE 2025, and $11.0 million by FY 2031 which approximates the straight-line depreciation. This is similar to the funding goals stated in the 2013 Study. Based on the three future rate scenarios, the 3.8% rate provides adequate reserve goal balances at the lowest rate increase.

Graph 6-1 – Projected R&R Reserve Goals – 3.0%, 3.8% and 4.6% Rate Increases



6.1 Uninterruptible Customer Rate ($/AF)

The uninterruptible customer rate is intended to recover the costs associated with providing uninterruptible service. This requirement was determined to be 3.8 percent greater than the prior year's rate. The rate was calculated by dividing the total expenses by the total uninterruptible recycled water AF usage, plus the contractual minimum water AF usage for interruptible service. For FYE 2018 this rate is $1,466 per AF shown in **Table 6-2** above.

6.2 Interruptible Customer Rate ($/AF)

The interruptible recycled water rate was calculated in Raftelis' September 2015 Cost of Service Report. In 2017, SEJPA and ERGA negotiated a seven-year service agreement that provides interruptible service to the Encinitas Ranch Golf Course from FYE 2018 through FYE 2024 that includes the provision of a minimum 200 AFY and an annual rate increase of 4 percent.

7. Cash Fund Balances

To determine whether the proposed rates provide sustainability, Cash Fund Balances were analyzed to confirm adequate cash reserves. The operating cash reserve goal is based on 90 days of operating expense plus one year's debt service. The R&R cash reserve goal includes the Debt Reserve Requirement as discussed in Section 5.

Table 7-1 below shows the actual and estimated cash balances for the Recycled Water Fund:

Table 7-1 – Cash Fund Balances

	Est. Actual FYE 2018	Projected FYE 2019	Projected FYE 2020	Projected FYE 2021
Operating Cash Reserve Goal	1,348,857	1,373,393	1,389,472	1,402,725
(Under) Funded	(247,583)			
Operating Cash	1,101,274	1,373,393	1,389,472	1,402,725
Debt Reserve	630,000	630,000	630,000	630,000
R&R Reserve	-0-	215,186	536,372	696,218
Total Cash	**$1,731,274**	**$2,118,579**	**$2,555,844**	**$2,728,943**

The Operating Cash Reserve Goal is less than 90 days of operating expense for FYE 2018; resulting in the R&R Reserve Goal not funding until FYE 2019. The Study indicates that the Operating Cash Reserve Goal is met in FYE's 2019, 2020 and 2021.

8. Conclusion

Based on the analysis shown in the Study, Raftelis recommends a 3.8% annual increase in rates for the uninterruptible customers for the proposed 3-year period. Larger rate increases could be justified by the analysis, however customer usage could be impacted by pricing, and the potential reduction in usage could more than offset the revenue increase of the higher rate. This effort also revealed that increasing recycled water sales, without substantial capital investment, provides the greatest benefit to the financial foundation of the utility. Conversely, should future sales decrease, the rates may need to be increased to meet the revenue requirements. The recycled water utility does include safe guards such as minimum purchase contracts with the water districts and ERGA, which provides protection from significant declines in water sales. The utility also receives financial incentives from MWD and CWA that help meet the programs financial needs. These incentives have an expiration date of FYE 2025, but can be retired early based on certain financial measurements. Based on information provided, it does not appear that these incentives will expire during the review period of this Study. However, this situation

should be monitored annually as financial events such as receiving grant funding or significant deviations of the price of recycled water from potable water rates can reduce or eliminate incentives in any year. Loss of incentive funding will erode R&R funding goals and likely require a review of future recycled water rates.

Raftelis' staff is grateful for the opportunity to work with and the support of SEJPA's staff.

Sincerely,

Raftelis Financial Consultants, Inc.

Sudhir Pardiwala
Executive Vice President