San Antonio Water System

Comprehensive Cost of Service and Rate Design Study

Final Report

November 19, 2004

Submitted by:

RFC
RAFTELIS FINANCIAL CONSULTING, PA

In Association With:

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November 19, 2004

Mr. Dan Crowley
San Antonio Water System
Post Office Box 2449
San Antonio, Texas 78298-2449

Dear Mr. Crowley:

Raftelis Financial Consulting, PA, ("RFC") is pleased to submit the attached final report regarding the comprehensive cost of service study that was conducted for the San Antonio Water System ("SAWS") with the assistance of City Staff and Rhonda Harris, President of Pro-Ops, Inc. RFC and Pro-Ops were engaged to assist City Staff and the Rates Advisory Committee ("RAC") in modeling various rate structure alternatives for both water and wastewater and to identify the most appropriate rate structure. The attached report documents the process involved in identifying the rate structure alternatives and details the methodology used to conduct the cost of service study based on the chosen alternative. In addition, the report summarizes the resulting rates and customer impacts from the chosen rate structure.

The resulting water and wastewater rates incorporate suggested methodologies from the AWWA M-1 Rate Manual in addition to SAWS Staff and RAC input and policies. In addition to incorporating the AWWA rate setting methodology, the final rate structure had to balance various objectives in order to address the needs of the water and wastewater customers, SAWS Staff, and RAC members.

RFC appreciates the level of effort provided by SAWS Staff in assisting RFC in conducting this analysis. We have enjoyed working with SAWS staff and we appreciate the opportunity to assist SAWS on this very important project. We hope to be able to continue to provide our services to SAWS in the near future.

Sincerely,

Harold Smith
Vice President

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I. Background

A. System Background

The San Antonio Water System ("SAWS") is responsible for providing water and wastewater services to approximately 300,000 customers within the City of San Antonio (the "City") and portions of the surrounding metropolitan area. SAWS is also responsible for the operation of the chilled water and steam plant that provides centralized heating and cooling water for buildings in the Hemis Fair Park area, and for complying with federal permit requirements related to stormwater runoff. SAWS is currently structured around several core business areas: Water Supply, Water Delivery, Wastewater, Conservation, Recycled Water, Stormwater, and Chilled Water and Steam.

Water supply is provided by water pumped from the Edwards Aquifer, which provides raw water for approximately 1.2 million people. SAWS water service area is established by state permit and includes most of the City of San Antonio, plus several suburban municipalities and adjacent areas in Bexar County. SAWS also provides wholesale water to several smaller utilities located within the service area. Wastewater treatment is provided at four Water Recycling Centers with a combined capacity of approximately 160 mgd. The wastewater service areas follow the natural watersheds and, in total, include a somewhat larger area than the water service area. SAWS also provides wastewater treatment for area military bases and suburban municipalities which operate and maintain their own collection systems.

SAWS is in the midst of addressing a number of crucial issues. Foremost among these are the limitations on withdrawals of water from the Edwards Aquifer and the capital improvements necessary to reduce or eliminate sanitary sewer overflows ("SSO") during wet weather events.

While the Edwards Aquifer has historically served as the sole source of water for the City, SAWS began securing water from other sources in February 2002. In 1993, the Texas legislature adopted Senate Bill 1477 which established the framework for the regional management of the Edwards Aquifer, specifically establishing the Edwards Aquifer Authority (the "EAA"). The EAA has responsibility for issuing withdrawal permits in order to limit pumping from the aquifer. The EAA was also charged with implementing initiatives regarding conservation, recycled water, critical period strategies, etc. Due to limitations on the withdrawals from the Edwards Aquifer, SAWS has plans to obtain additional water supply sources from several water districts. In addition, recent state Legislature has enabled SAWS to enter into an agreement with the Lower Colorado River Authority for additional water supply sources for the next 80 years. While SAWS has implemented both a water supply charge and an EAA fee to recover expenses associated with obtaining water supply sources, SAWS will have to incur significant capital expenditures in future years in order to ensure adequate water supply sources are available to meet future water demand. SAWS estimates spending approximately $227 million per year on water supply projects over the next several years.

SAWS maintains 4,100 miles of water mains and 4,900 miles of sewer mains. SAWS' current pipe replacement rate is approximately 200 years, which is significantly higher than the expected useful life of much of the pipe in place. Approximately 15% of SAWS water and sewer mains are older than 50 years old. In order to replace aging infrastructure, SAWS has estimated that it will need to spend approximately $110 million per year for the next ten years, which is a significant increase from capital expenditures incurred in prior years. As a result, SAWS will have to issue additional debt in order to finance these expenditures.

B. Engagement

SAWS is governed by the San Antonio Water System Board of Trustees ("Board") which is comprised of the mayor and six members which are appointed by the City Council. Each member serves a four-year term. The Board has ultimate authority over SAWS which includes setting rates and charges, sale of revenue bonds, approval of extensions, improvements, additions to the SAWS system (the "System"), etc. The general operations of the System are under the supervision of the President/Chief Executive Officer who is employed by the Board. The Director of Financial Services is responsible for the accounting and financial planning of SAWS. In addition, the Board has been assisted by a Rates Advisory Committee ("RAC"), which is comprised of 16 citizens who are responsible for reviewing SAWS' current rates and charges. The RAC members ensure diversity and that all members of society are considered when SAWS rates and charges are determined and implemented.

Raftelis Financial Consulting, PA ("RFC") was engaged by SAWS to work with SAWS staff ("Staff") and RAC members to determine the rate and corresponding financial impact on SAWS and its ratepayers in the coming years as a result of the replacement of aging infrastructure and the securing of additional water supply sources. Successful implementation of plans to address these issues requires the understanding and support of SAWS customers. As such, development of fair and equitable water and wastewater rates that meet the financial and pricing objectives of SAWS are the primary goals of this study. In addition, effective communication of the basis for those objectives and the rates to community leaders and customers is an integral part of this effort. For this purpose, SAWS engaged RFC to conduct a comprehensive cost of service study, similar in scope to the one conducted in 1996. RFC was to perform the following tasks:

1) Determine the cost of service;
2) Review the existing rate structure and determine potential alternative rate structures;
3) Calculate preliminary rates under each alternative;
4) Assist the RAC in determining the appropriate rate structure;
5) Calculate final rates under the chosen alternative; and
6) Participate in public involvement initiatives.

Conceptual Design

During the initial phases of the Study, RFC worked with Staff and the RAC in an effort to identify and prioritize the pricing objectives that should be addressed by the SAWS rate structures. As a result of this effort, the following twelve pricing objectives, listed in order of descending priority, were identified:

Essential	**Important**
1) Financial Sufficiency	7) Affordability to Disadvantaged Customers
2) Conservation/Demand Management	8) Equitable Contribution from New Customers
3) Revenue Stability	9) Economic Development
Very Important	**Least Important**
4) Legality	10) Consistency of Customer Impacts
5) Cost of Service Based Allocations	11) Ease of Implementation
6) Rate Stability	12) Simple to Understand and Update

During the conceptual design phase of the Study, RFC reviewed the current rate structure to determine viable alternatives which would address the previously identified pricing objectives. The results of this analysis were then presented to SAWS and the RAC and are detailed below.

C. Water Rate Structures

Existing Water Rate Structure

SAWS existing residential water rate structure is comprised of a monthly meter charge, based on meter size, and an increasing volume charge which includes four blocks. The increasing block rate structure is modified during the months of July through October to reflect seasonal rates for usage during peak months. To determine the seasonal rates, a rate differential of 1.08 is applied to the non-seasonal second and third block rates and a rate differential of 1.29 is applied to the non-seasonal fourth block rate. No differential is applied to the non-seasonal first block rate. Both the seasonal and non-seasonal fourth block rates include a $.09 conservation component that is applied towards funding operations and maintenance costs associated with conservation efforts. In addition, an outside-City rate differential of 1.3 (or 130%) is applied to both the monthly meter charge and the volumetric charges for customers residing outside of the City limits.

The current general water service rate structure and the wholesale rate structure are comprised of a monthly meter charge, based on meter size, and an increasing volume charge, which includes five blocks. Both of these rate structures are individualized, using each customer's annual average consumption to determine the base that serves as the first block cut-off. The base is equal to 90% of the customer's average annual water consumption. Blocks 2 through 5 are defined as follows:

Block 2 – 100% to 125% of Base;

Block 3 – 125% to 150% of Base;

Block 4 – 150% to 200% of Base; and

Block 5 – Over 200% of Base.

An outside-City rate differential of 1.3 (or 130%) is applied to both the monthly meter charge and the volumetric charges for customers residing outside of the City limits.

The current water landscape irrigation service rate structure has a monthly meter charge, based on meter size, and an increasing volume charge, which includes three blocks. The irrigation rate structure is applied to all customers with irrigation meters, to 29% of usage of the commercial and industrial water service customers, and to 20% of the usage of apartments. In addition, an outside-City rate differential of 1.3 (or 130%) is applied to both the monthly meter charge and the volumetric charges for customers residing outside of the City limits.

The monthly meter charges for both the general class and the irrigation service include a conservation component which varies based on meter size. The revenues recovered from these charges are used to offset operations and maintenance expenses associated with conservation efforts.

Opportunity for Improvements

The residential rate structure was developed to encourage water conservation in order to reduce future capital costs associated with obtaining additional water supply sources. While the residential rate structure has succeeded in reducing water consumption, the rate structure needs to be updated to ensure that both the monthly meter charge and the volumetric rates are recovering the appropriate costs. The general water service rate structure and the wholesale water service rate structures were developed to encourage water conservation by enticing customers to use less water in order to reduce their base. However, the current structures may not reward customers for conserving water during peak months. In addition, the outside-City differential could be re-calculated using AWWA industry standards to increase equity and defensibility. In addition, members of the RAC expressed interest in a uniform flat rate structure for all customer classes. As a result, RFC identified four water rate structure options that are explained in more detail below.

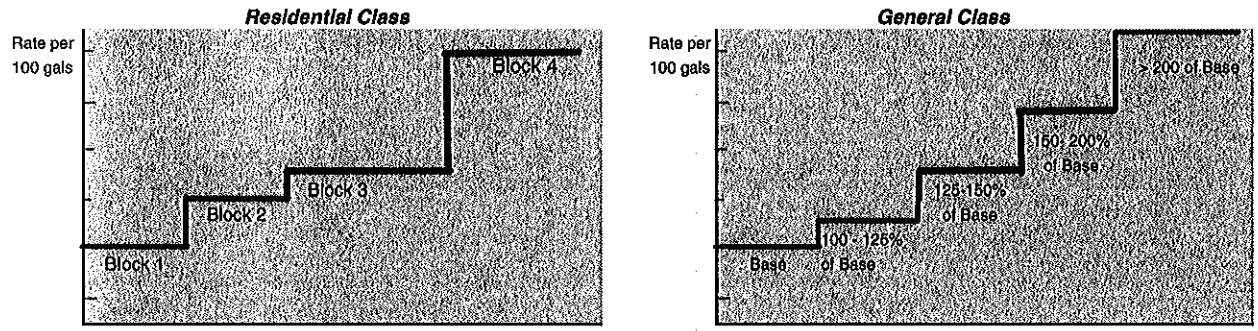
Option 1: Revised Current Structure:

The first option represented the alternative that is most similar to the current rate structures. This option assumed the current increasing block rate structures for all customer classes would remain the same. However, RFC would recalculate the monthly meter charges and the volumetric charges based on an up-to-date cost of service analysis. The new cost of service analysis would be for calculating revised monthly meter charges and volumetric rates for each customer class using fiscal year 2004 operating and maintenance costs and allocation factors and category information developed with assistance from Staff. The existing outside-City differential of 1.3

would remain unchanged but would be applied to the recalculated charges in order to derive the outside-City rates. In addition, the existing differentials applied to the non-seasonal rates to determine seasonal rates for the residential customers would remain unchanged.

The monthly meter charge would be established to recover the costs associated with billing, meter maintenance and replacement, and a portion of the fixed costs associated with available capacity. If the monthly meter charge included costs in excess of those required to perform billing, maintain meters, or provide available capacity, then the monthly meter charge would be recovering charges that should be recovered from the volume charges. Since all customers pay the monthly meter service charge, regardless of usage, a higher than necessary monthly meter charge will adversely affect those customers that use less water than the average customer. This is important since one of SAWS' objectives is the affordability of their water rates to disadvantaged customers. The volume charges would be established using cost of service principles with the existing rate structure. A graphical representation of the rate structures for Option 1 is shown below in Exhibit 1.

Exhibit 1
Rate Structures under Option 1



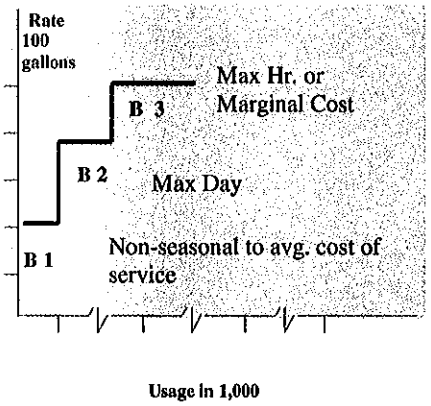
Option 2: Cost of Service Based Rate Structures

The second option would incorporate several changes. First, the number of blocks for the residential customers would be reduced from four to three and the number of blocks for the general and wholesale customers would be reduced from five to three. RFC would perform a bill frequency analysis to determine block cutoffs for residential customers. The block cut-offs for the general and wholesale water rate structures would be modified to include 100% of the winter average water consumption in the base (versus the current 90% of average annual consumption). The rates for each block for all customer classes would be calculated using one of the cost of service methodologies advocated by the American Water Works Association ("AWWA"). In particular, RFC would use the base/extra capacity approach, considering the costs that contribute to the City's peak system demands, to ensure that each of the rates are set to recover the appropriate costs. The first block would recover costs associated with the average cost of service. The second block would recover costs associated with max day demand. The third

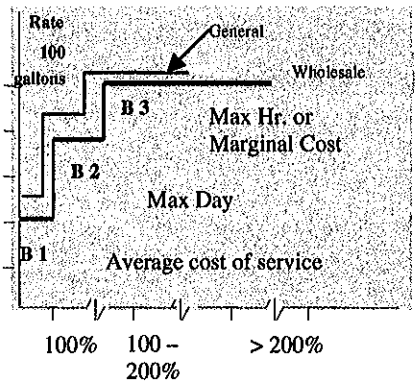
block would either recover costs associated with max hour demand or marginal cost. The rate for the third block would also serve as the irrigation rate since this block represents discretionary usage. A graphical representation of the proposed volumetric rate structures for Option 2 are shown below in Exhibit 2.

Exhibit 2
Rate Structures under Option 2

Residential



General & Wholesale Customers



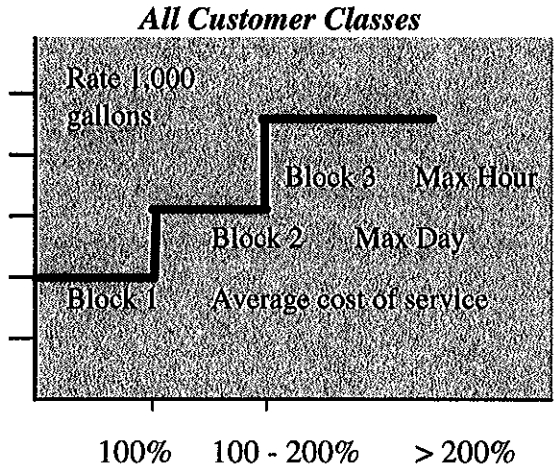
Option 2 would also include recalculating the monthly meter charge for each customer class based on a new cost of service analysis. The monthly meter charge would be calculated as outlined in Option 1 so as to ensure that appropriate costs are recovered from this charge.

The final modification to the existing rate structures under Option 2 would be to develop an outside-City cost differential that is based on the utility approach, a methodology commonly used by investor-owned utilities and approved by the AWWA. The utility approach incorporates operating and maintenance expenses, a depreciation allowance, and a return on assets. A depreciation allowance represents repair and replacement costs on assets utilized by outside-City customers. A rate of return represents a return on the investment that the system's owners (the inside-City customers) have made in the system assets used for serving outside-City customers. This methodology would ensure equity and defensibility.

Option 3 – Individualized Rate Structure for all Customer Classes

Option 3 is similar to Option 2, however, all customer classes would have individualized rate structures based on their average winter usage. Again, RFC would calculate the three volume rates using the base/extra capacity cost of service approach to ensure that each of the rates is set to recover the appropriate costs. The first block would be set at 100% of each customer's average winter usage. The second block would include all consumption between 100% and 200% of each customer's average winter usage, and the third block would cover usage above 200% of each customer's average winter usage. A graphical representation of the proposed rate structure for Option 3 is shown in Exhibit 3.

Exhibit 3
Rate Structures under Option 3

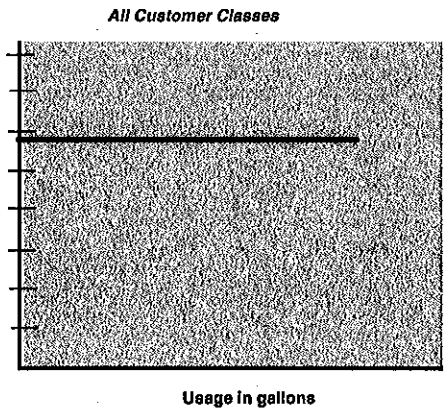


As with Option 2, the monthly meter charge would be calculated under a cost of service approach to ensure that the appropriate costs are recovered from this charge. The outside-City differential would also be recalculated as described in Option 2.

Option 4 – Flat Uniform Rate for all Customer Classes

During the conceptual design presentation, members of the RAC requested that preliminary rates be calculated using a flat uniform rate structure. Under this structure all customers would be charged the same volumetric rate per unit of consumption regardless of the customer's class or peak demands they place on the system. The base charges would be calculated using the same methodology described in Option 1. A graphical representation of the proposed rate structure for Option 4 is shown in Exhibit 4.

Exhibit 4
Rate Structures under Option 4



D. Wastewater Rate Structures

Existing Wastewater Rate Structures

Both the existing residential and general wastewater rate structures are comprised of a minimum charge, which includes the first 1,496 gallons, and a volumetric rate for usage over 1,496 gallons. Different minimum and volumetric rates are assessed to residential and general class wastewater customers. The minimum charge is assessed regardless of the assumed wastewater discharge. The assumed volume of wastewater discharged by each residential customer is based on each customer's average water consumption during a three month period between November 15th and March 15th. The assumed monthly volume for general service customers is based on their actual monthly water usage. In addition, an outside-City rate differential of 1.2 (or 120%) is applied to both the minimum charge and the volumetric charge for customers residing outside of the City limits.

Opportunity for Improvements

A minimum charge that includes a volume allowance results in customers that actually discharge less than the allowance paying more than the cost to provide the service that they received. The equity and affordability of wastewater rates could be increased by replacing the minimum charge with a monthly meter charge that includes no usage allowance and modifying the volumetric charge. In addition, the outside-City differential could be re-calculated using AWWA industry standards to increase equity and defensibility. As a result, we have identified two wastewater rate structure options, which are explained in more detail below.

Option 1: Revised Rate Structure

Option 1 involved leaving the current wastewater rate structures intact but recalculating the minimum charges and volumetric rates. Projected wastewater revenue requirements would be identified and a minimum and volumetric rate would be calculated. The existing outside-City differential of 1.2 would be applied to the recalculated rates to determine the rates for those customers residing outside the City limits.

Option 2: Modified Rate Structure

Option 2 involved eliminating the minimum charge and replacing it with a base charge that does not include a usage allowance. The base charge would recover certain costs such as billing and collection costs, customer service costs, and a portion of debt service costs. In addition, a uniform volumetric rate would be determined and assessed to all customers, regardless of customer class. The uniform rate would be applied to each customer's monthly water usage but the maximum usage would be restricted to a percentage of the customer's winter average water usage. In addition, an outside-City differential would be determined using the utility approach, similar to that described in Option 2 for the water rate structure.

After review of the rate structure options presented by RFC, Staff, and the RAC directed RFC to calculate preliminary rates under each of the options, plus an additional water rate structure option, such that the relative merits of each option could be more readily assessed. Following the direction of staff and the RAC, RFC developed a financial tool that used SAWS consumption data from calendar year 2002, fiscal year 2003 budget data and industry standard cost of service methodology (which is detailed in next section of this report) to calculate preliminary rates under each rate structure option. On July 30, 2003, RFC presented to the RAC information on the relative impacts on customer bills of the various rate structure options. In addition to the rate impact information, RFC also presented a preliminary assessment of the degree to which each rate structure option addressed the previously identified pricing objectives. This assessment was presented in the form of a "report card" that assigned letter grades to each option indicating their effectiveness in addressing each pricing objective. The report cards for both the water and wastewater options are shown in Exhibits 5 and 6.

Exhibit 5

Report Card for Water Options

Classif.	Objective	Current Grade	PRELIMINARY GRADE			
			Option 1	Option 2	Option 3	Option 4
Essential	Financial Sufficiency	C	A	A	A	A
	Conservation/Demand Management	A-	A	A	A+	C
	Revenue Stability	C	C	B-	C-	B+
Very Important	Legality	B	B	A-	B	B
	Cost of Service Based Allocations	C	A-	A-	A	C-
	Rate Stability	B-	B-	B	C+	B+
Important	Affordability to Disadvantaged Customers	A-	A	A-	A+	C
	Equitable Contribution from New Customers	B	N/A	N/A	N/A	N/A
	Economic Development	B-	B-	B	B	B
Least Important	Consistency of Customer Impacts	N/A	A	A-	B-	C+
	Ease of Implementation	A	A	A-	C+	A-
	Simple to Understand and Update	C	B-	B+	C	A-

Exhibit 6
Report Card for Wastewater Options

Classif.	Objective	Current Grade	PRELIMINARY GRADE Option 1	PRELIMINARY GRADE Option 2
Essential	Financial Sufficiency	B+	A	A
	Conservation/Demand Management	N/A	N/A	N/A
	Revenue Stability	A	A	B
Very Important	Legality	B	B	A-
	Cost of Service Based Allocations	C	B	B
	Rate Stability	B-	B-	B-
Important	Affordability to Disadvantaged Customers	A-	B	A-
	Equitable Contribution from New Customers	B	N/A	N/A
	Economic Development	B-	B	B+
Least Important	Consistency of Customer Impacts	N/A	A	B+
	Ease of Implementation	A	A	B
	Simple to Understand and Update	B-	B-	C+

Water Rate Structure Recommendation

Based on the assessment of preliminary water rates, RFC and SAWS staff indicated that Option 2 was the most viable alternative. Option 2 was considered to be the most effective, or one of the most effective, options in addressing three of the pricing objectives: Financial Sufficiency, Legality and Economic Development. It also received consistently high ratings in all of the other categories and was considered to be relatively effective with respect to the pricing objectives that SAWS and the RAC ranked as the highest priority: Financial Sufficiency, Conservation/Demand Management and Revenue Stability. With respect to the remaining pricing objectives, Option 2 should perform better than any one of the other three rate structure options and did not receive the lowest ranking under any of the objectives. Therefore, it appeared that Option 2 was better able to effectively address all of the pricing objectives than any one of the other options.

Wastewater Rate Structure Recommendation

As previously discussed, RFC also calculated preliminary wastewater rates under each of the two wastewater rate options and prepared a wastewater rate structure report card. Based on the analysis used to prepare this report card, RFC recommended wastewater rate structure as outlined in Option 2, which assesses wastewater rates based on each customer's monthly water consumption up to a maximum percentage (which for the purposes of the preliminary rate calculation was set at 100%) of each customer's average winter water consumption. While there was not much differentiation between the ratings of the two wastewater option on the report card, the fact that Option 2 was rated higher with respect to Legality led RFC to recommend Option 2.

Since Option 2 would not result in customers receiving wastewater charges reflecting monthly wastewater discharge greater than monthly water consumption, it is believed that there is less chance for disputes and potential litigation relating to wastewater charges. Yet, the major drawback to wastewater Option 2 is that it could result in greater revenue volatility than Option 1; however, if 150% of each customer's average winter consumption is used to set the maximum charge, the revenues would be more stable.

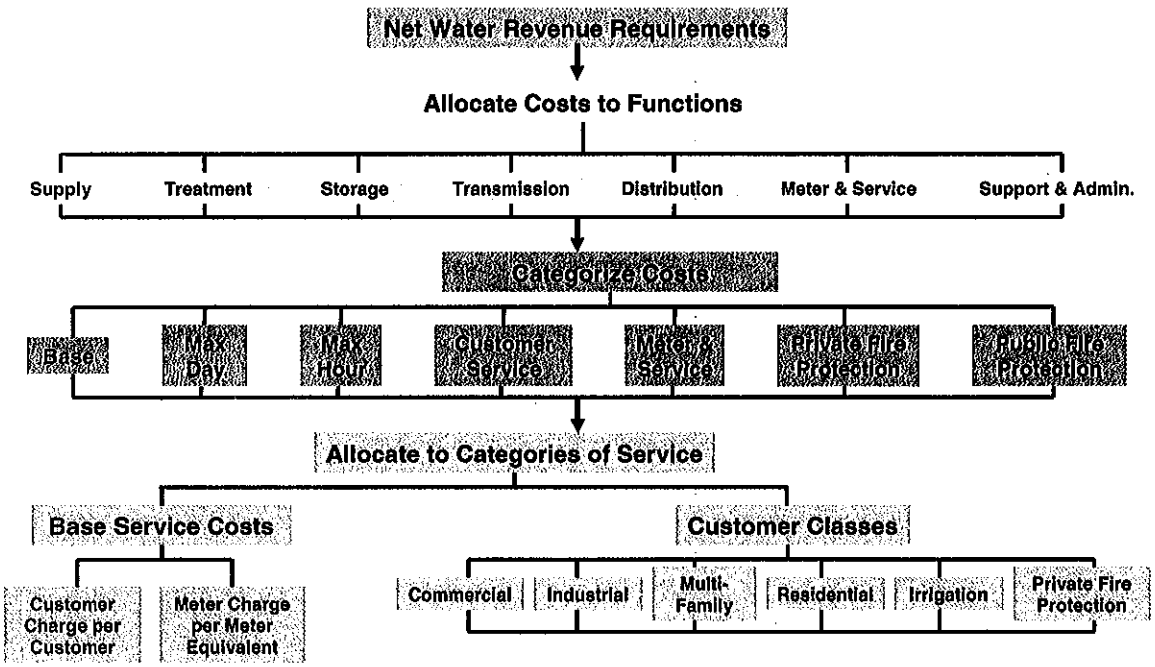
The analysis of rate structure options also indicated that the status quo, Option 1 for both water and wastewater, would be an acceptable option if SAWS and the RAC decide to avoid potential rate shocks associated with a change in rate structure. While Option 1 did not appear to be as effective at meeting SAWS pricing objectives, if rates are recalculated using current cost and demand data, revenues generated from rates would be sufficient to meet the utility's needs.

RFC presented the alternatives, the scorecards, and recommended rate structures to the RAC. Thirteen of the fourteen RAC members voted on the alternatives and Water Option 1 and Wastewater Option 1 received the majority of the votes, seven and eight votes, respectively. As such, SAWS instructed RFC to calculate 2004 rates under Option 1 using the updated cost of service analysis.

II. Cost of Service Methodology

One of the key objectives of the study was to evaluate the consistency of the existing water rate structure with the actual cost of service for each of the existing customer classes. In order to evaluate this, a Rate Model was developed using Microsoft Excel. Exhibit 7 depicts the general rate-setting process used for establishing cost of service-based rates.

Exhibit 7
Cost of Service Schematic



A. Revenue Requirements

SAWS staff prepares an electronic data file titled "OperatingExpenseData2004byCoreBusiness" that allocates operations and maintenance costs by core business. Within each core business, the O&M expenses are further allocated using two different categories: accounts and cost centers. Accounts categorize expenses into general categories such as salaries, insurance, utilities, etc., whereas cost centers categorize expenses by departments such as financial services, purchasing, water production, etc.

SAWS staff also prepares an electronic data file titled "MYFP CY 2004" which calculates the majority of the revenue requirements other than O&M expenses. This file was used to obtain the following information for each core business:

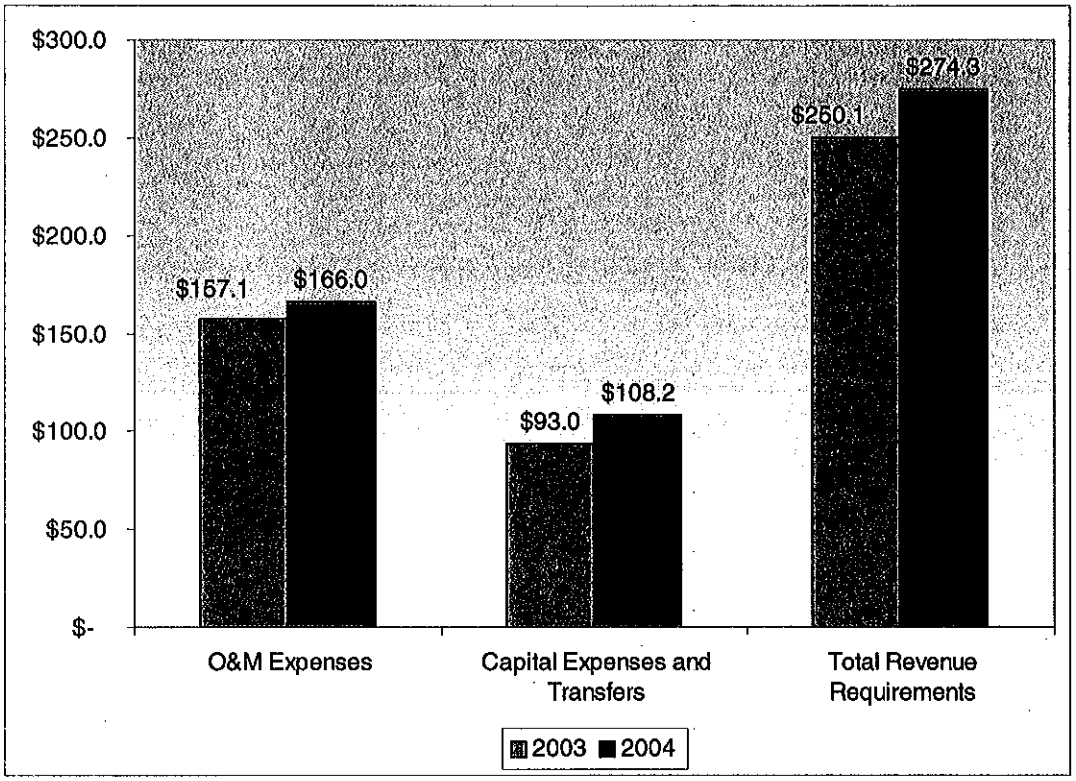
- Operating reserves;
- Debt service;
- Commercial paper;
- Notes payable;
- Rate funded capital outlay; and
- Rate funded CIP projects.

The Rate Model uses the information from both the "OperatingExpenseData-2004byCoreBusiness" and the "MYFP CY 2004" files to determine the revenue requirements for FY 2004 which serve as the test year. While the majority of the revenue requirements are obtained from these two files, the Rate Model calculates a few remaining revenue requirements which include transfers to the repair and replacement fund and transfers to the City. Transfers to the repair and replacement fund are equal to 25% of the total senior debt service costs and transfers to the City are equal to 2.77% of the total revenue requirements.

Several adjustments were made in order to accurately allocate the total revenue requirements between core businesses. One such adjustment recognized that the water supply core business is partially subsidized by water delivery. Staff estimated that for FY 2004, water delivery would subsidize approximately $8.3 million of water supply's O&M expenses. In addition, conservation would subsidize approximately $280,000 of water supply's O&M expenses. Furthermore, water supply will subsidize approximately $7.7 million of recycled water's O&M and capital expenses. And finally, recycled water revenue requirements are reduced by approximately $2 million since this amount is funded directly by the San Antonio Electric Utility. All of these adjustments are made in order to determine the total revenue requirements for the test year to be recovered by each core business.

As shown by the chart in Exhibit 8, the resulting revenue requirements to be recovered from each core business increased from $250.1 million in FY 2003 to $274.3 million in FY 2004 which is a 9.8% increase. The majority of this difference is due to an increase in capital expenses and transfers. As mentioned earlier, SAWS anticipates incurring significant capital expenditures to replace aging infrastructure and to secure additional water supply sources. As a result, SAWS' capital improvement plan from FY 2003 to FY 2004 increased from $92 million to $207 million, respectively, which is a 125% increase. The capital improvements will be funded through debt and with other sources, and therefore, are causing the revenue requirements recovered from rates to increase in FY 2004.

Exhibit 8
Revenue Requirements



B. Water Delivery Rates

i. Allocation to Functional Categories

The next step in the cost of service methodology is to allocate the water delivery test year revenue requirements into the following functional categories.

- Source of supply,
- Treatment,
- Transmission,
- Distribution,
- Storage,
- Customer Service/Billing,
- Meters,
- Administration/General,
- Fire Protection, and;
- Conservation

The water delivery test year revenue requirements were allocated to the functional categories listed above based on allocation factors developed by Staff. For example, data was gathered on various system assets like the percentage of transmission mains versus distribution mains and the percentage of total system assets in each functional category. Operational data was also gathered to determine appropriate allocation percentages for budget line items. SAWS staff and RFC reviewed each revenue requirement line item for the test year to ensure that the appropriate allocation percentage was applied. The resulting allocations for each functional category are shown in Exhibit 9. Refer to Appendix A for a detailed list of the allocation factors.

Exhibit 9

[redacted] Allocation of Revenue Requirements to Functional Categories

Functional Categories	Revenue Requirements
Source of Supply	$ 11,632,757
Treatment Plant	$ 1,393,885
Transmission	$ 18,162,303
Distribution	$ 28,649,757
Storage	$ 3,055,140
Customer Service/Billing	$ 8,336,369
Meter	$ 12,950,502
Fire Protection	$ 3,615,197
Conservation	$ 10,680,095
TOTAL	$ 98,476,006

Once the costs were allocated to functional categories, system peaking factors were used to allocate these costs to base, max day, and max hour categories. System peaking factors for the past five years were obtained from SAWS' 2002 Comprehensive Annual Financial Report ("CAFR"). The 2002 CAFR provided average day, max day and max hour information which was used to calculate a five-year average max day and max hour peaking factor. These system peaking factors were then used to determine the allocation between base, max day, and max hour. However, the peaking factors were slightly modified to more appropriately allocate the overall costs. The SAWS water system is somewhat unique in that it has a non-centralized water supply system. Water from the Edwards Aquifer is withdrawn at many sites in the service area. The well water is minimally treated and then distributed to the surrounding area. As a result there is little difference between the transmission and distribution systems. Many assets that serve in the traditional transmission role are listed as distribution assets. By not modifying the peaking factors, too many costs would have been allocated to max hour, which would have skewed the calculated rates. The table in Exhibit 10 shows the calculated percentages and the modified percentages, in addition to an allocation code which corresponds to the methodology used to allocate the costs in each functional category.

Exhibit 10
Summary of Peaking Factors

System Peaking Factors			
	Calculated	Modified	Sum
Max Day:	1.73		
Max Hour:	2.70		
Base:	100.0%	100.0%	100.0%
Base:	57.9%	65.0%	
Max Day:	42.1%	35.0%	100%
Base:	37.0%	60.0%	
Max Day:	26.9%	30.0%	
Max Hour:	36.1%	10.0%	100%
Base	37.0%	40.0%	
Max Hour	63.0%	60.0%	100%

The modified system peaking factors were then applied to the total revenue requirements of each functional category. As mentioned, certain system peaking factors were applied to various functional categories, which are noted by the allocation code. Exhibit 11 below shows the functional categories, the allocation code, and the system peaking factors used to allocate the functional categories to base, max day, and max hour.

Exhibit 11
Allocation of Functional Categories

	Allocation Percentages						
Functional Categories	Base Average	Extra Capacity Max Day	Max Hour	Meter Charges	Conservation	Fire Protection	Total
Source of Supply	100.0%	0.0%	0%	0%	0%	0%	100%
Treatment Plant	65.0%	35.0%	0%	0%	0%	0%	100%
Transmission	65.0%	35.0%	0%	0%	0%	0%	100%
Distribution	60.0%	30.0%	10%	0%	0%	0%	100%
Storage	40.0%	0.0%	60%	0%	0%	0%	100%
Customer Service/Billing	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	100%
Meter	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	100%
Fire Protection	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100%
Conservation	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100%

The allocation percentages in the chart above are applied to the revenue requirements that have been categorized by function in order to determine costs associated with base, max day, and max hour. Certain functional categories such as customer service/billing costs, meter costs, fire protection costs, and conservation costs are not allocated to base, max day or max hour. Instead these costs are separated and excluded from the next step in the cost of service methodology

because these costs are recovered directly from the monthly meter charge. (Conservation is recovered from both the monthly meter charge and volume charge in a specific manner). The next step includes further allocating the base, max day, and max hour costs by customer class to determine the revenue requirements to be recovered by the volume charge for each customer class.

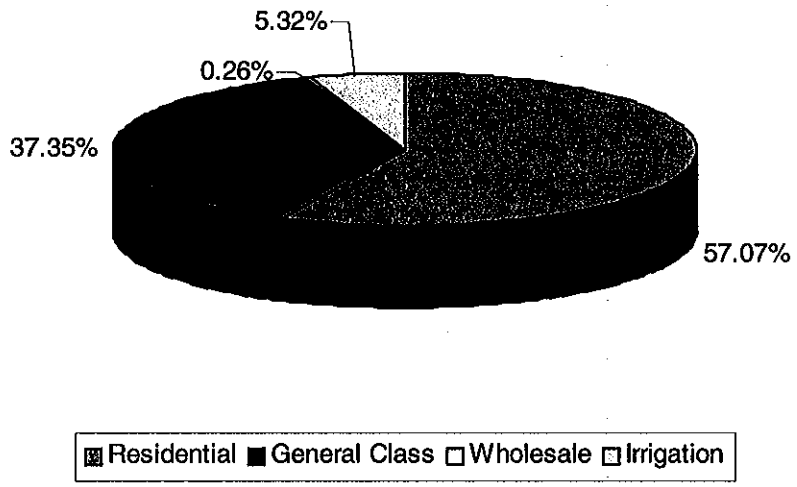
As with many of the cost of service studies, SAWS does not have access to system capacity factor data. It is typical for cities to lack this data since acquiring it requires the installation of special meters for prolonged periods to measure the usage patterns of different customer classes. In the absence of measured capacity factors, it was necessary to develop capacity factors based on existing data. RFC developed estimates of these factors using procedures outlined in AWWA's M1 Rate Manual. In particular, the process involved using SAWS monthly peaking data and high-level assumptions regarding customer class usage patterns. Using these data and assumptions, we calculated draft capacity factors. We then compared the draft capacity factors to those used in the 1996 B&V study as well as factors that we have encountered for other systems. In general, the draft factors were reasonable, and therefore, used in the analysis. There were a few modifications which are summarized below:

- Residential – not modified;
- Commercial – max day increased from 1.40 to 1.75 – in reviewing data it appeared inappropriate for the Commercial class to have a lower max day than the industrial class;
- Industrial – not modified;
- Municipal – not modified;
- Apartment – max day and max hour increased by 0.05 – slight modification to make the class consistent with the other classes;
- Wholesale – not modified;
- Irrigation – increased max hour from 2.00 to 4.00 and max day from 4.00 to 8.00 – max hour increased because irrigation appears to have a greater max day than residential and max hour increased to keep the ratio consistent between max day and max hour based on review of data.

The capacity factors for each customer class are multiplied by the average consumption for each class in order to determine the base, max day, and max hour allocation percentages. SAWS' projected water consumption for each customer class for FY 2004, which is shown in Exhibit 12, was used in this calculation. Therefore the allocation to base, max day, and max hour takes into account the total consumption per customer class and the demand each customer class places on the system.

Exhibit 12

Projected water consumption for FY 2004



The resulting allocations of costs to base, max day, and max hour for each customer class determine the percentage of total costs to be allocated to each customer class for the test year and for all future years. The resulting percentages are then applied to the total revenue requirements in the Rate Model for FY 2004 to determine the revenue requirements to be recovered by each customer class for the water delivery volumetric charges.

Exhibit 13

Cost Allocations to Customer Classes

Customer Class	BASE	MAX DAY	MAX HOUR	TOTALS	% of Total
Residential	$ 24,745,540	$ 8,637,427	$ 2,532,609	$ 35,915,576	58%
General Service	$ 15,592,232	$ 3,962,773	$ 929,550	$ 20,484,556	33%
Wholesale	113,783	19,858	4,658	$ 138,299	0%
Irrigation	2,304,634	2,413,297	754,785	$ 5,472,716	9%
Total	**$ 42,756,189**	**$ 15,033,356**	**$ 4,221,603**	**$ 62,011,148**	**100%**

ii. Calculation of Rates

Water Delivery Monthly Meter Charge

The existing monthly meter charge is assessed to each customer and varies depending on the customer's meter size. The revised monthly meter charge was developed to include a billing component and a "readiness-to-serve" component. The costs determined from the allocation of revenue requirements to functional categories were used to calculate the monthly meter charge.

The customer service/billing category was used to determine the billing component and the meter costs, fire protection costs, and conservation costs categories were used to calculate the readiness-to-serve component.

The billing component recovers expenses associated with billing, collection, and customer service. This component is the same for all customers regardless of meter size, but does vary based on whether the customer is located inside or outside of the City. The customer service/billing costs determined from the allocation to functional categories are divided by the total number of SAWS customers to calculate the monthly billing component.

In addition to the meter repair and replacement costs and the fire protection costs, the "readiness-to-serve" component recovers a portion of debt service costs (approximately 25%) allocated to the water utility. Conceptually, this charge can be thought of as recovering a portion of the costs needed to provide the basic infrastructure required to provide service. The "readiness-to-serve" component varies based on meter size by reflecting the difference in potential demand that can be placed on the system by larger meters. To determine the demand based on meter size, AWWA industry standard meter ratios were used. These ratios were applied to the number of meters of each size to calculate the equivalent meters. In addition, the calculation of equivalent meters included an adjustment to reflect the outside-City differential. The total readiness-to serve costs were then divided by the number of equivalent meters to calculate the "readiness-to-serve" component.

To calculate the total monthly meter charge per meter size, the billing component is added to the "readiness-to-serve" component. The calculated rate is applicable to all customer classes. However, the monthly meter charge for the general class and irrigation customers includes an additional component which recovers a portion of the conservation costs. Approximately 55% of the conservation costs are to be recovered through the monthly meter charge for the general and irrigation class customers. (The 55% is based on the current ratio of conservation revenues generated from monthly meter charges to volume charges). This portion of the conservation costs are divided by the number of equivalent general class and irrigation customers, based on the existing ratios between the conservation meter charges. The resulting conservation monthly meter charge is added to the billing component and the "readiness-to-serve" component to calculate the total monthly meter charge for the general and irrigation classes. The remaining water delivery revenue requirements were recovered from a volumetric charge.

B. Volume Charge

Water Deliver Volume Charges

The customer class cost allocation percentages which were calculated through the cost of service methodology and are shown in Exhibit 13 were applied to the remaining revenue requirements to determine the revenue requirements to be recovered from each customer class. These costs are then further allocated to the blocks for each customer class based on the percentage of consumption occurring in each block for each customer class. The costs in each block are then

divided by the equivalent consumption for each block for each customer class, which has been adjusted to reflect seasonality ratios (for the residential class) and the outside-City differential. The results of this calculation are the cost of service based rates for each block for each customer class.

It should also be noted that revenue requirements for the residential class include the remaining portion of the conservation costs that are not recovered from the base charge. These costs are allocated directly to the fourth block for residential customers only.

Water Supply Volume Charges

The water supply revenue requirements were used to determine volume charges under two scenarios. Option One assumed the water supply rate structure would remain the same and, therefore, would be comprised of one volumetric charge. Option Two assumed that the water supply rate structure would be modified to include a two-tiered volumetric rate structure. As mentioned previously, several adjustments were made to determine the total revenue requirements to be recovered by the water supply charge, which included the shortfall not recovered from recycled water. Option One calculated the water supply charge by dividing the total water supply revenue requirements by the total projected 2004 water consumption.

Option Two was structured to recover the majority of O&M expenses and capital costs in the first tier and a small portion of the costs in the second tier, representing a marginal cost rate. All operating costs were allocated to the first tier. Those capital costs relating to future water sources to augment the total capacity of the SAWS water system were allocated to the second tier and the remainder of costs was allocated to the first tier. Due to the small rate differential, Staff decided not to pursue Option Two at this time. As a result, the water supply rate structure will remain the same, but the charge will increase based on the increase in water supply revenue requirements for FY 2004. It is likely that the percentage of costs allocated to the second tier under this methodology would increase substantially as more projects to augment current capacity are constructed and come into service.

EAA Volume Charge

SAWS estimated that approximately $7.6 million of the FY 2004 O&M budget is to be recovered from the EAA volume charge. The EAA charge is assessed to all water delivery customers. To calculate the revised FY 2004 rate, the $7.6 million was divided by the total water consumption. The resulting rate is shown in the final section of this report and well as in Appendix A.

C. Wastewater Charges

The wastewater charges for the residential, general, and wholesale classes were determined using a different methodology than that used to calculate the water delivery, water supply, and EAA rates. Due to the billing methodology and the inability of Bexar Met to compile accurate billing

data for the customers SAWS serves, SAWS was unable to provide projected wastewater usage by customer class for FY 2004. (We recommend that SAWS attempt to gather accurate wastewater billing data from its own system and work with Bexar Met to compile accurate wastewater billing data for the Bexar Met customers that SAWS serves.) Therefore, wastewater rates were calculated by applying an across the board rate increase. The wastewater revenue requirements were determined using the same data files used for the determining the water delivery revenue requirements. SAWS provided a file for projecting wastewater O&M expenses for FY 2004 and data on projected debt service, capital outlays, etc. The total revenue requirements for FY 2004 were then offset by projected interest earned, revenues from customer penalties, and revenues from high-strength surcharges. The net revenue requirements for FY 2004 were then compared to the estimated revenues generated by each customer class under the current rates. The shortfall identified was used to determine the percentage increase in rates needed to ensure that the rates fully recovered the revenue requirements. It was determined that an increase of approximately 16% would be needed to recover the projected net revenue requirements for FY 2004.

SAWS, along with the RAC, had decided to pursue wastewater Option 1, which included leaving the existing wastewater rate structure in place, which included different monthly minimum charges and volume charges for each customer class. However, RFC recommended that the residential and general classes be charged the same rate and charge. Therefore, the proposed monthly minimum charge and the volume charge for FY 2004 were calculated assuming that these charges would be the same for the residential and general customer classes. However, the wholesale class would continue to have a separate monthly minimum charge and volume charge. This recommendation was based on the fact that, with the exception of high-strength wastewater, the cost to treat wastewater generated by residential and general use customers is essentially the same. With respect to high-strength wastewater, the additional costs associated with treating these waste streams are recovered through high-strength surcharges.

III. Policy Changes

The calculated volume charges for each customer class were modified due the certain policy overlays. The calculated Block 1 rate for the general class was less than the existing Block 1 rate. In an effort to achieve consistent rate impacts, it was determined that the Block 1 rate for the general class should remain at the existing rate of $0.0900 per 100 gallons.

The volumetric rate of the conservation component is recovered from the fourth block from residential customers. Currently the conservation component is $0.0900 per 100 gallons. The calculated conservation component was slightly less than this amount. It was determined that the volumetric conservation component should be maintained at $0.0900.

The existing three-tiered irrigation rate structure has volumetric rates of $0.1200, $0.1900, and $0.2590 per 100 gallons. While the irrigation rates calculated using the cost of service methodology were materially less than the existing rates, SAWS determined that it was more appropriate to charge a similar amount for irrigation water as is charged for non-essential consumption for the residential class. Therefore, the 3rd block for irrigation was set equal to the 4th block for the residential (seasonal) class (less the $0.0900 conservation component). The rest of the irrigation rates were calculated based on the 3rd block irrigation rate and the relationships between blocks established by the cost of service methodology. In addition, the rate for the 3rd block of the irrigation class became the rate for the 5th block of the general class.

By implementing each of the policy overlays mentioned above, excess revenues would be generated. In order to develop rates that don't generate excess revenues, it was determined that the implied excess revenues should be applied towards reducing volume rates. Therefore, the majority of the implied excess revenues were applied towards reducing the Block 1 rate for the residential customers since this block has the largest amount of consumption and a slight reduction in the rate has the most significant impact in reducing the implied excess revenues. The implied excess revenues were also used to slightly reduce the 2nd, 3rd, and 4th blocks for the residential class. Since the 4th block for the residential class is used to determine the 3rd block for irrigation and the 5th block for the general class, a reduction in the rate affects several customer classes. In addition, the 2nd, 3rd, and 4th block rates for the general class were also slightly reduced. (The first block was not altered since the policy overlay set this rate to the existing rate of $0.0900 per 100 gallons). Also, SAWS determined that $400,000 of the implied excess revenues should be used to increase funding for the affordability program.

It was also determined that a portion of the excess revenues should be reserved in order to mitigate any loss of revenues resulting from price elasticity. At times, water utilities project revenues under the premise that water, as a commodity, displays totally inelastic demand. In other words, utilities sometimes assume that rate increases will not affect consumption levels. Water does in fact have fairly inelastic demand as demonstrated by many studies performed to calculate the effectiveness of pricing in reducing demand. However, it has been shown that increases in water rates do result in a slight decrease in consumption. A report sponsored by the

California Urban Water Conservation Council found that elasticity for single-family residential customers ranges from -0.1 to -0.3 in the winter and from -0.2 to -0.5 in the summer.[1] (An elasticity of -0.1 indicates that if the price increases 100%, demand will decrease 10%.) In addition, the US Army Corps of Engineers compiled a list of studies with elasticities from over -**1.0 to under -0.2.**[2] To simplify the analysis, RFC decided to use the average of the elasticities, -0.175, for the SAWS study (for example, if prices were increased by 100%, it was assumed that consumption would decrease by 17.5%). Applying this elasticity factor to SAWS demand, it was determined that demand may slightly decrease resulting in lost revenues of approximately $800,000. Therefore, $800,000 of the excess amount expected to be under the policy overlays was reserved for decreases in demand.

[1] David Mitchell, M. Cubed, and W. Michael Hanemann, "Setting Urban Water Rates for Efficiency and Conservation," California Urban Water Conservation Council, October 1994, p. 4.
[2] William O. Maddaus, "Water Conservation," American Water Works Association, 1987, p. 66.

IV. Final Results

The resulting rates, after integrating the policy overlays, are shown below for the various customer classes. The exhibits show the existing rates and the calculated rates. Additional schedules are provided in Appendix A of this report.

Exhibit 14

Residential (5/8" meter) Non-Seasonal Rates

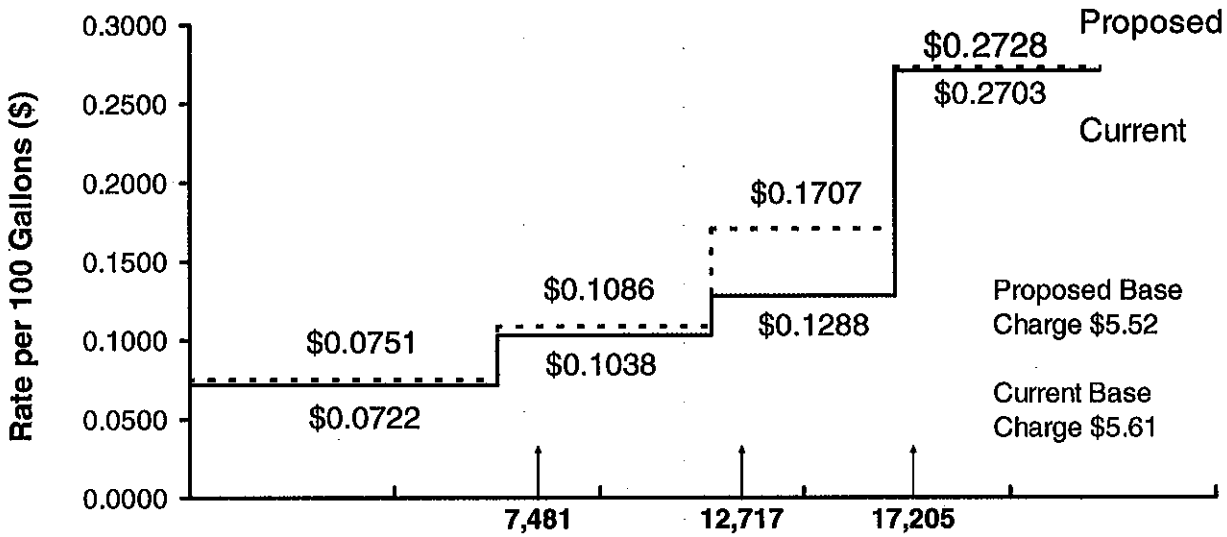


Exhibit 15
General (2" meter) Rates

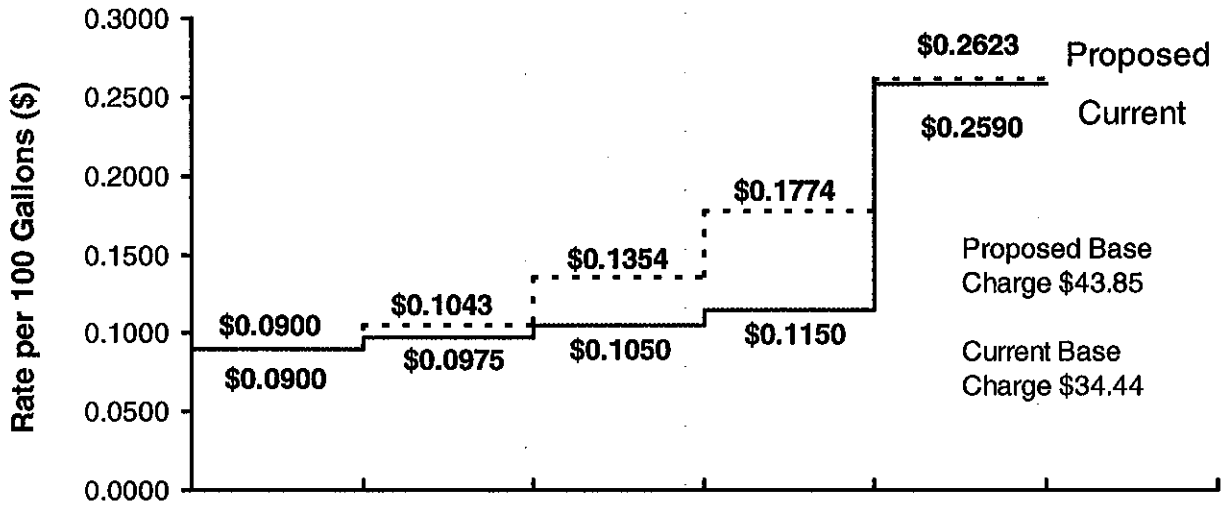


Exhibit 16
Wholesale (6" meter) Rates

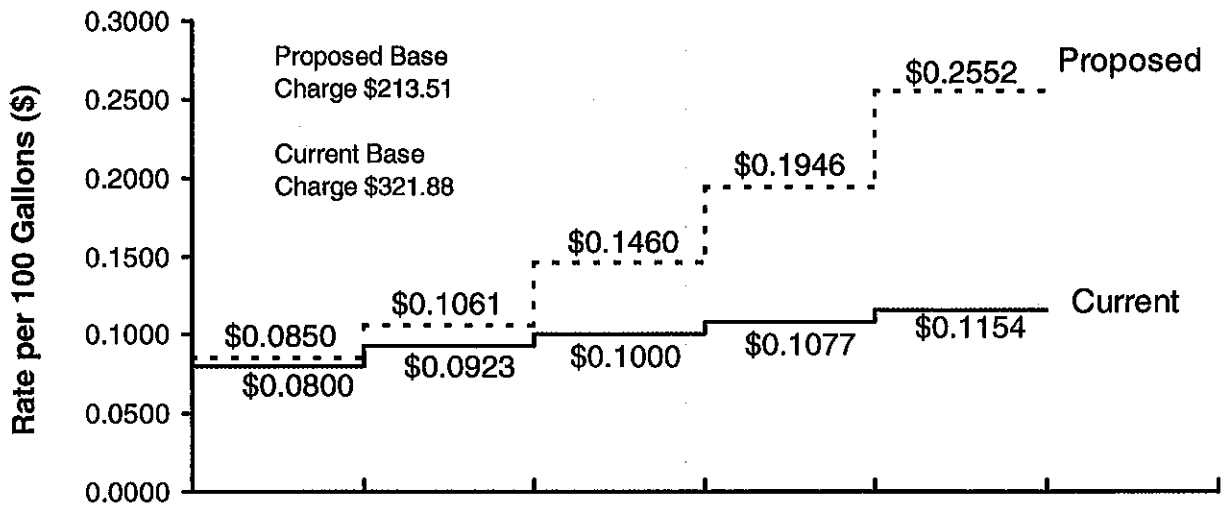


Exhibit 17
Irrigation (1" meter) Rates

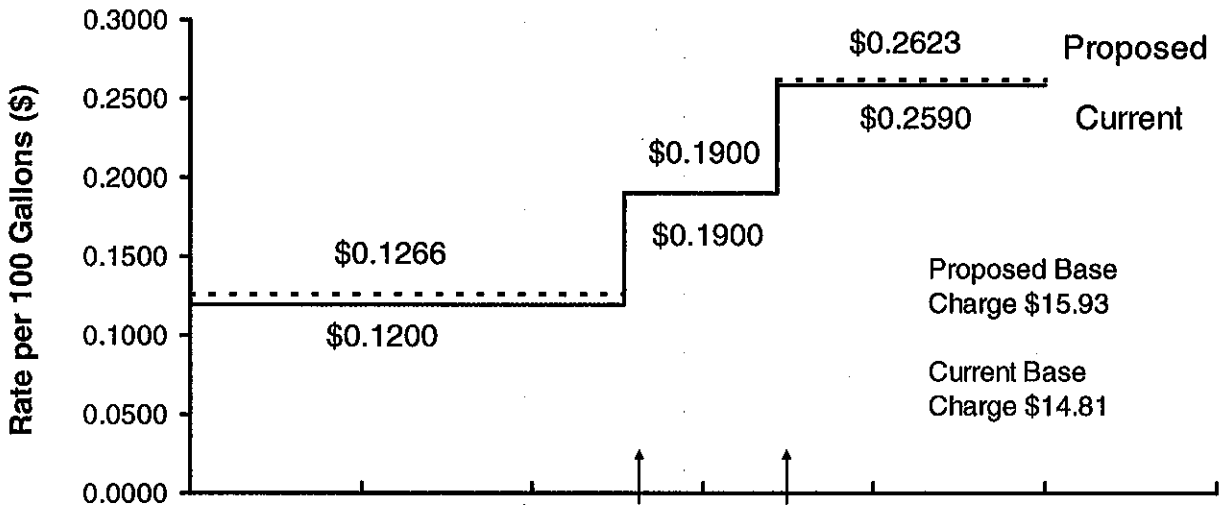
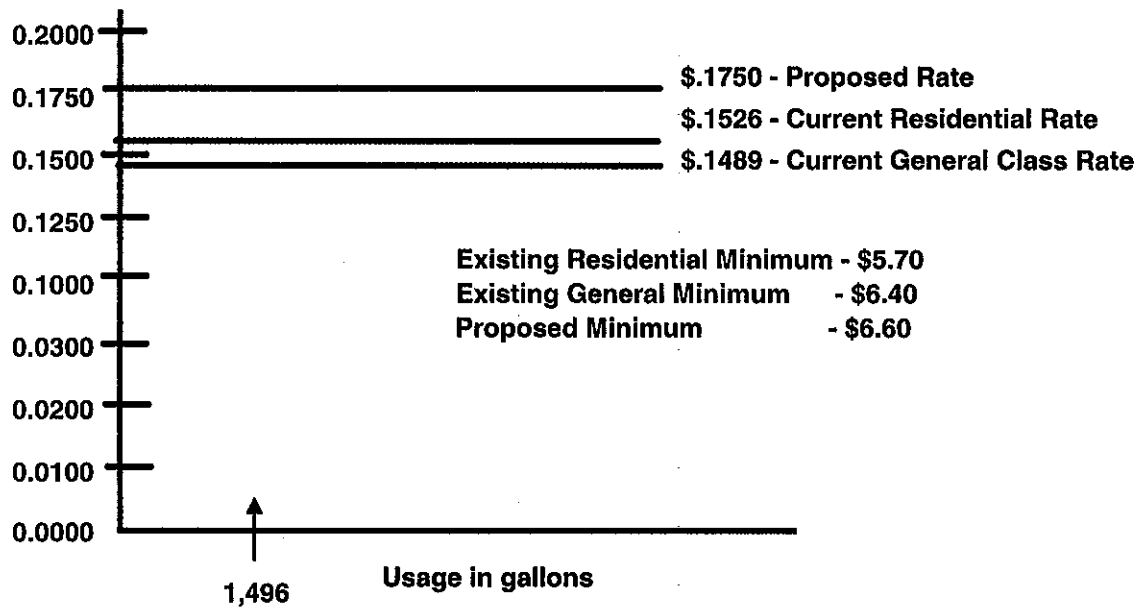


Exhibit 18
Wastewater Rates



The resulting rate for the water supply fee of $0.1100 per 100 gallons is shown below. The proposed FY 2004 rate is approximately 30% higher than the current rate. This increase is due to water supply becoming more self-sufficient and due to increasing capital costs. The EAA fee is also increasing by approximately 28%.

Exhibit 19
Other Water Rates (per 100 gallons)

	2003	2004
Water Supply Fee	$ 0.0844	$ 0.1100
% Change		*30.3%*
EAA Fee	$ 0.0117	$ 0.0149
% Change		*27.7%*

Customer Impacts

One of the most important components of the rate study was an analysis of how the proposed rate structure would impact the monthly bills of water and wastewater customers. RFC worked closely with Staff to ensure that appropriate revenue requirements would be recovered, while monitoring related impacts on customers. As discussed earlier, increased O&M expenses and capital costs require a user charges to recover additional revenue. These factors are contributing to an increase in the water delivery, wastewater, water supply, and EAA charges. Customer impacts for each customer class are shown in Exhibit 20. Monthly bills were calculated for each customer class assuming various consumption levels and meter sizes. The exhibit shows a monthly bill for water delivery, wastewater, and a combined monthly bill which includes water supply and EAA charges. As shown in Exhibit 20, the customer impacts will vary based on each customer's consumption patterns.

Exhibit 20
Customer Impacts

Residential Customer Non-Seasonal (Inside-City)

	Water only			Wastewater Only			All Inclusive (water, wastewer, water supply, EAA)		
	5/8" Meter			5/8" Meter			5/8" Meter		
Consumption	Current	Draft Final 2004	Percent Change	Current	Draft Final 2004	Percent Change	Current	Draft Final 2004	Percent Change
3,500	$8.14	$8.15	0.1%	$13.34	$15.36	15.2%	$24.84	$27.88	12.2%
7,500	$11.03	$11.16	1.2%	$13.34	$15.36	15.2%	$31.57	$35.88	13.7%
10,000	$13.63	$13.87	1.8%	$13.34	$15.36	15.2%	$36.57	$41.72	14.1%
15,000	$19.39	$20.72	6.9%	$13.34	$15.36	15.2%	$47.13	$54.81	16.3%
20,000	$29.78	$32.11	7.8%	$13.34	$15.36	15.2%	$62.33	$72.45	16.2%
37,500	$77.08	$79.85	3.6%	$13.34	$15.36	15.2%	$126.45	$142.04	12.3%
75,000	$178.45	$182.15	2.1%	$13.34	$15.36	15.2%	$263.84	$291.18	10.4%

Residential Customer Seasonal (Inside-City)

	Water only			Wastewater Only			All Inclusive (water, wastewer, water		
	5/8" Meter			5/8" Meter			5/8" Meter		
Consumption	Current	Draft Final 2004	Percent Change	Current	Draft Final 2004	Percent Change	Current	Draft Final 2004	Percent Change
3,500	$8.14	$8.15	0.1%	$13.34	$15.36	15.2%	$24.84	$27.88	12.2%
7,500	$11.03	$11.16	1.2%	$13.34	$15.36	15.2%	$31.57	$35.89	13.7%
10,000	$13.85	$14.11	1.9%	$13.34	$15.36	15.2%	$36.80	$41.96	14.0%
15,000	$20.09	$21.52	7.2%	$13.34	$15.36	15.2%	$47.83	$55.61	16.3%
20,000	$32.90	$35.43	7.7%	$13.34	$15.36	15.2%	$65.45	$75.76	15.8%
37,500	$93.98	$97.08	3.3%	$13.34	$15.36	15.2%	$143.34	$159.27	11.1%
75,000	$224.85	$229.19	1.9%	$13.34	$15.36	15.2%	$310.24	$338.22	9.0%

General Use Inside-City

	Water only			Wastewater Only			All Inclusive (water, wastewer, water supply, EAA)		
	5/8" Meter AAC = 10,000								
Consumption	Current	Draft Final 2004	Percent Change	Current	Draft Final 2004	Percent Change	Current	Draft Final 2004	Percent Change
5,000	$13.24	$12.63	-4.6%	$11.62	$12.73	9.6%	$29.66	$31.61	6.6%
10,000	$17.82	$17.27	-3.0%	$19.06	$21.48	12.7%	$46.48	$51.25	10.2%
15,000	$23.12	$24.28	5.0%	$26.51	$30.23	14.1%	$64.04	$73.25	14.4%
25,000	$44.70	$47.97	7.3%	$41.40	$47.73	15.3%	$110.12	$126.92	15.3%
50,000	$109.45	$113.54	3.7%	$78.62	$91.48	16.4%	$236.11	$267.47	13.3%
Consumption	Current	Draft Final 2004	Percent Change	Current	Draft Final 2004	Percent Change	Current	Draft Final 2004	Percent Change
	2" Meter AAC= 50,000								
20,000	$52.44	$62.57	19.3%	$ 33.95	$ 38.98	14.8%	$ 105.61	$ 126.53	19.8%
30,000	$61.44	$71.57	16.5%	$ 48.84	$ 56.48	15.6%	$ 139.10	$ 165.52	19.0%
50,000	$79.82	$90.29	13.1%	$ 78.62	$ 91.48	16.4%	$ 206.47	$ 244.22	18.3%
75,000	$106.35	$125.34	17.9%	$ 115.85	$ 135.23	16.7%	$ 294.25	$ 354.25	20.4%
100,000	$149.50	$178.18	19.2%	$ 153.07	$ 176.98	16.9%	$ 398.64	$ 482.06	20.9%
150,000	$279.00	$309.33	10.9%	$ 227.52	$ 266.48	17.1%	$ 650.62	$ 763.16	17.3%
250,000	$538.00	$571.63	6.3%	$ 376.42	$ 441.48	17.3%	$ 1,154.59	$ 1,325.36	14.8%
	6" Meter AAC= 500,000								
50,000	$304.71	$341.06	11.9%	$78.62	$91.48	16.4%	$431.37	$494.99	14.7%
100,000	$349.71	$386.06	10.4%	$153.07	$178.98	16.9%	$598.85	$689.94	15.2%
250,000	$484.71	$521.06	7.5%	$376.42	$441.48	17.3%	$1,101.31	$1,274.79	15.8%
500,000	$713.46	$753.21	5.6%	$748.67	$878.98	17.4%	$1,942.48	$2,256.69	16.2%
1,000,000	$1,410.27	$1,632.17	15.7%	$1,493.17	$1,753.98	17.5%	$3,864.14	$4,635.15	20.0%
2,000,000	$4,000.27	$4,255.17	6.4%	$2,982.17	$3,503.98	17.5%	$8,903.84	$10,257.15	15.2%
	8" Meter AAC= 5,000,000								
2,500,000	$2,641.47	$2,709.29	2.6%	$3,726.67	$4,378.98	17.5%	$8,769.89	$10,210.77	16.4%
5,000,000	$4,928.97	$5,030.79	2.1%	$7,449.17	$8,753.98	17.5%	$17,181.64	$20,029.77	16.6%
8,000,000	$8,157.10	$9,423.42	15.5%	$11,916.17	$14,003.98	17.5%	$27,756.87	$33,419.40	20.4%
10,000,000	$11,897.10	$13,820.42	16.2%	$14,894.17	$17,503.98	17.5%	$36,398.27	$43,814.40	20.4%

Wholesale Customer Outside-City

	Water only			Wastewater Only			All Inclusive (water, wastewer, water		
	Current	Draft Final 2004	Percent Change	Current	Draft Final 2004	Percent Change	Current	Draft Final 2004	Percent Change
	6" meter	AAC= 1,500,000							
Consumption									
1,500,000	$1,539.66	$1,520.04	-1.3%	$2,265.31	$2,914.50	28.7%	$5,246.01	$6,308.04	20.2%
2,000,000	$2,025.12	$2,174.51	7.4%	$2,998.81	$3,860.15	28.7%	$6,945.33	$8,532.66	22.9%
3,000,000	$3,123.29	$4,287.63	37.3%	$4,465.81	$5,751.44	28.8%	$10,471.20	$13,786.06	31.7%

Irrigation Customer Inside-City

	Water only			All Inclusive (water, wastewer, water		
	Current	Draft Final 2004	Percent Change	Current	Draft Final 2004	Percent Change
Consumption	Meter size: 1					
10,000	$26.81	$28.83	7.5%	$ 36.42	$ 41.32	13.5%
25,000	$58.79	$61.24	4.2%	$ 82.80	$ 92.46	11.7%
75,000	$188.29	$192.39	2.2%	$ 260.34	$ 286.06	9.9%
	Meter size: 2					
25,000	$78.42	$89.64	14.3%	$102.43	$120.86	18.0%
100,000	$272.67	$286.36	5.0%	$368.74	$411.26	11.5%
250,000	$661.17	$679.81	2.8%	$901.34	$992.06	10.1%

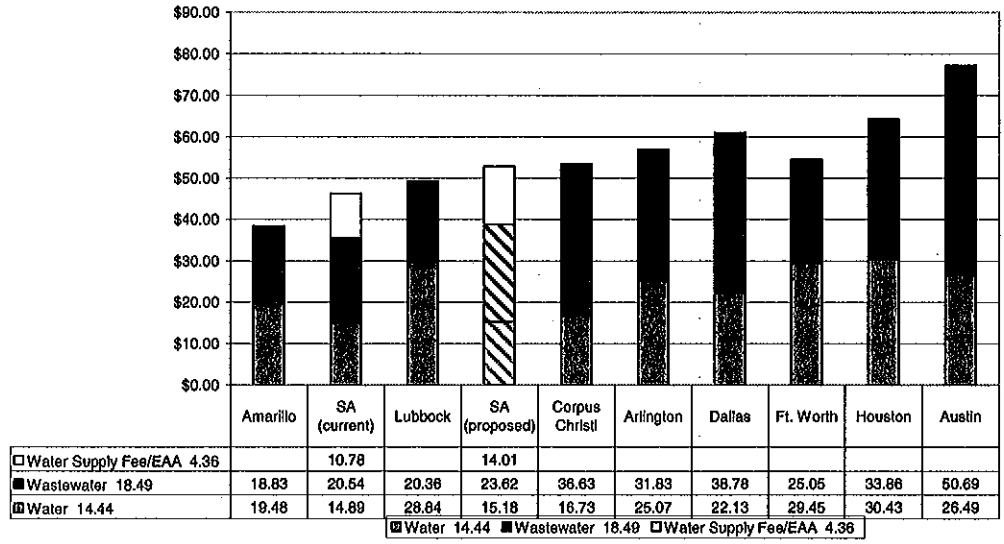
Comparison with other Communities

Exhibits 20 and 21 provide a comparison of water, wastewater, water supply, and the EAA bills for representative residential and general customers, with other comparable, regional communities. The calculated monthly bills for the representative communities include anticipated rate increases for FY 2004 (if available). In addition, if a utility imposes a water supply fee, this fee is included in the calculation. The residential rate comparison is based on 11,220 gallons of water and wastewater usage and assumes a meter size of 5/8". The general class comparison is based on 374,000 gallons of water and wastewater usage and assumes a 2" meter.

Comparing water and sewer bills with other representative communities can provide insights regarding a utility's pricing policies related to water and sewer services. However, care should be taken in drawing conclusions from such a comparison, as higher bills may not necessarily mean the utilities are operated and managed poorly. Many factors affect the level of costs and the pricing structure employed to recover those costs. Some of the most prevalent factors include geographic location, demand, customer constituency, level of treatment, level of grant funding, age of system, level of general fund subsidization, and rate setting methodology.

The proposed increases in rates for FY 2004 result in a combined increase of approximately 14% for residential customers and 17% for general class customers. (Combined impacts will vary based on each customer's consumption level and meter size). As shown by the rate comparison, while the rates for residential customers are increasing, the combined monthly bill is relatively low when compared to monthly bills of other comparable communities. The combined monthly bill for the general class is also comparable to monthly bills of other communities.

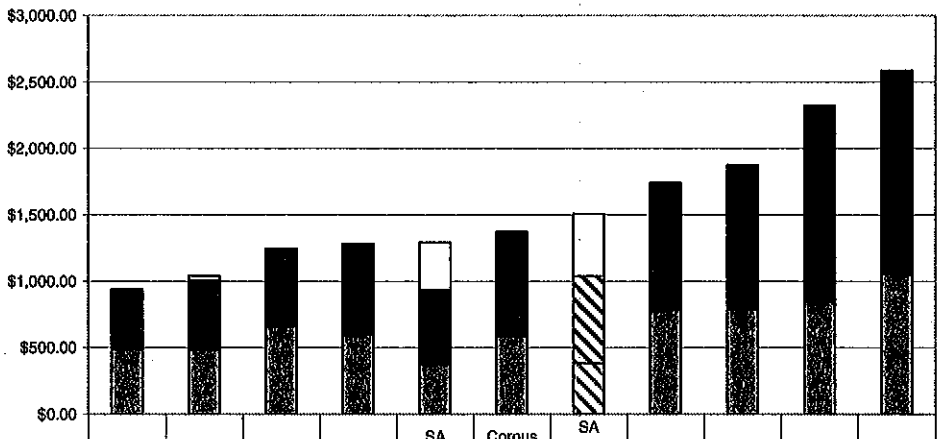
Exhibit 21
[redacted] Residential Rate Comparison



	Amarillo	SA (current)	Lubbock	SA (proposed)	Corpus Christi	Arlington	Dallas	Ft. Worth	Houston	Austin
Water Supply Fee/EAA 4.36		10.78		14.01						
Wastewater 18.49	18.83	20.54	20.36	23.62	36.63	31.83	38.78	25.05	33.86	50.69
Water 14.44	19.48	14.89	28.84	15.18	16.73	25.07	22.13	29.45	30.43	26.49

Water 14.44 Wastewater 18.49 Water Supply Fee/EAA 4.36

Exhibit 22
[redacted] General Class Rate Comparison



	Amarillo	El Paso	Lubbock	Dallas	SA (current)	Corpus Christi	SA (proposed)	Arlington	Ft. Worth	Houston	Austin
Water Supply Fee/EAA		34.87			359.30		467.13				
Wastewater	455.12	524.55	585.13	687.07	561.06	789.11	658.48	955.52	1090.25	1481.04	1532.26
Water	484.89	479.4	657.91	595.18	371.04	582.07	380.45	784.24	785.25	841.88	1052.33

Water Wastewater Water Supply Fee/EAA

V. Public Involvement

During the course of the rate study, RFC also participated in various public involvement initiatives designed to provide stakeholders with an opportunity to provide input during the development of water and wastewater rates and charges. The Public Involvement Plan (PIP) was developed by the SAWS Public Relations Department with input from RFC and other SAWS departments that were involved in the rate development process.

RFC's primary role in the public involvement plan consisted of interaction with the Rates Advisory Committee (RAC). The RAC was a group comprised of representatives of various different customer classes and stakeholder groups whose role was to participate actively in the rate study process by providing input to SAWS staff and RFC and to provide guidance to the Board regarding any recommendations resulting from the rate study.

During the course of the rate study, the RAC held eleven formal meetings. At the meetings, the RAC was provided information relating to the development of rates and was given the opportunity to respond to this information and make recommendations relating to the approach that was taken to developing rates. Among other things, the RAC identified and prioritized its pricing objectives, identified rate structure options that should be investigated and chose the preferred rate structure options.

At the conclusion of the RAC process, the RAC provided the following general advice and guidance to the Board for their consideration:

- SAWS needs to address long-term infrastructure needs and funding requirements.
- SAWS should maintain a conservation-based pricing model and continue to fund conservation efforts using a portion of the revenues collected through the volumetric charge assessed to residential customers and a portion of the revenues collected through the meter charge for the general and irrigation classes.
- SAWS should continue to implement programs that help ensure that rates are affordable for certain economically disadvantaged customers.
- SAWS should review its policy of providing an exemption from irrigation rates for certain customers including golf courses and plant nurseries.
- The assumptions used to estimate the percentage of water used for irrigation by General Class customers should be reviewed. .
- The business plan for recycled water business group should be reviewed.

With respect to rates, the RAC provided the following specific advice and guidance:

- SAWS should maintain the existing rate structures, including the seasonal rate differential, but rates should be updated based on the cost of service analysis prepared by RFC.

- Rates assessed to the General Class should not be reduced from the existing level.
- Irrigation rates should be set on parity with the upper tiers of the residential rates.
- SAWS should continue to calculate winter average water consumption based on metered consumption during the period starting November 15th and ending March 15th
- SAWS should continue to assess a flat Water Supply Fee, but should investigate the possibility of moving to an increasing block Water Supply Fee, with the block fees set based on a marginal cost approach.

VI. Review of Impact Fee Methodology

As part of the Comprehensive Cost of Service and Rate Study, SAWS engaged RFC to review the methodology used to determine its water and wastewater impact fees currently assessed by the utility. Impact fees are one-time capital recovery charges assessed against new development as a way to recover a proportional share of the cost of capital facilities constructed to provide service capacity for new customers. SAWS' methodology for determining appropriate impact fees is a hybrid approach that is based on recommendations provided in the "1999-2009 Capital Improvements Plan and Maximum Impact Fees for Water, Water Supply, and Sanitary Sewer Systems" prepared by Black & Veatch (B&V). It is our understanding that the methodology described in this B&V report is the methodology that SAWS currently uses to calculate impact fees; therefore review of this report was the basis for our review of the impact fee calculation methodology. The review of the impact fee methodology focused on two criteria, equity and defensibility. The review with respect to equity considered whether the methodology resulted in impact fees that recovered the appropriate share of capital costs from new customers. In terms of defensibility, the review assessed whether the methodology was based upon accepted industry standards and whether the approach was in compliance with state and federal guidelines related to impact fees.

A. Summary of SAWS Impact Fees

SAWS currently assesses Water Impact Fees, Wastewater Impact Fees, Water Supply Impact Fees and Local Benefit Facility Impact Fees.

Water Impact Fees

The SAWS Water Impact Fee is comprised of two separate components, a Flow Impact Fee and a System Development Impact Fee. The Flow Impact Fee recovers the cost of existing distribution assets available to serve new customers and the cost of anticipated distribution projects needed to serve new customers. This fee is the same for all new customers. The System Development Impact Fee recovers the cost of existing water production and transmission assets available to serve new customers and the cost of anticipated production and transmission projects needed to serve new customers. The System Development Impact Fee is comprised of three separate sub-components, the Well Component, the Production Component and the Transmission Component.

In recognition of the fact that differences in elevation and proximity to production wells dictate that a greater level of capital investment be made to serve some areas within the SAWS service area, the SAWS service area has been divided into 17 distinct "service levels" each of which is charged a separate System Development Impact Fee. Specifically, a different Production Component and Transmission Component is calculated and assessed to each service level.

Wastewater Impact Fees

SAWS' Wastewater Impact Fee is comprised of two components, an Existing Facilities Component and a New Facilities Component. The Existing Facilities Component recovers costs associated with available capacity provided by existing wastewater system assets. The New Facilities Component recovers the anticipated costs associated with wastewater system projects that will be required during the 10-year planning period. Additionally, separate fees are calculated and assessed to two separate service areas, the Inner Service Area (ISA) and the Outer Service Area (OSA). The ISA consists of the area established by the Texas State Legislature as the Regional Agent Boundary and the OSA consists of the area between the ISA and the City of San Antonio's Extraterritorial Jurisdiction (ETJ) or the Bexar County Line. Separate charges for the ISA and OSA recognize that each area has specific capital requirements for meeting wastewater demand in each area.

Water Supply Impact Fee

The Water Supply Impact Fee is designed to recover the costs associated with identifying and developing new water supply sources. The costs for assets needed to develop new water sources into a viable supply alternative such as wells, pipelines, pumps, storage facilities and treatment facilities are included in the calculation of this fee. Unlike the other impact fees assessed by SAWS, the Water Supply Impact Fee does not recover costs associated with existing assets, but only the costs associated with new capital projects planned during the 10-year planning period.

Local Benefit Facility Impact Fee

The Local Benefit Facility Impact Fee is designed to recover the capital costs associated with providing water service to a subdivision or other group of customers that was not previously served by SAWS. These new service areas are known as Local Benefit Areas (LBA). These costs are primarily the costs associated with constructing main extensions throughout the LBA.

B. Methodology for Calculating Impact Fees

SAWS uses an impact fee calculation methodology that incorporates both of the generally accepted approaches to determining impact fees, the "System Buy-In Approach" and the "Marginal/Incremental Approach". Both approaches are recognized as industry standards by the American Water Works Association and if implemented properly meet the requirements of the "rational nexus" standard applied by courts. The current approach also appears to be consistent with Chapter 395 of the Texas Local Government Code.

> System Buy-In Approach - The System Buy-In Approach recognizes the current value of fixed assets associated with SAWS' existing water and wastewater systems that are available to serve new customers. The System Buy-In component used in the calculation of SAWS impact fees is based on the original cost less accumulated depreciation (OCLD), or net book value, of the existing facilities that represent excess capacity that is available to serve new customers.

Marginal/Incremental Cost Approach

The Marginal/Incremental Cost Approach specifically focuses on the cost of adding additional facilities to serve new customers. SAWS is faced with significant capital costs to provide additional capacity to serve new customer growth and the Marginal/Incremental Cost Approach allows these costs to be captured in the impact fee. The costs for future capital facilities required to serve new customers have been included in SAWS' current Capital Improvements Plan ("CIP"). These future capital costs are assigned to the water and wastewater capacity that is anticipated to be added by the end of the 10-year planning horizon.

Once the costs associated with capital projects needed to serve new customers is determined, these costs are divided by the capacity that these assets will provide. For impact fee calculations, this capacity is expressed in terms of Equivalent Dwelling Units (EDU). For the purposes of developing water, wastewater and water supply impact fees, an EDU is defined as the amount of water consumed or wastewater discharged by a typical residential customer with a 5/8-inch or 3/4-inch water meter. In SAWS' case, an EDU for water is assumed to be 360 gallons per day and an EDU for wastewater is 300 gallons per day. In order to determine the EDU demand placed on a system by customers with meters larger than 5/8-inch or 3/4-inch, meter capacity ratios are used to calculate the number of EDUs represented by larger meter sizes. For instance, since the potential demand represented by a 2-inch meter is five times that of a 5/8-inch meter, 5 EDUs are assigned to 2-inch meters.

Water Impact Fees

The fee calculation methodology currently used by SAWS to calculate Water Impact Fees is a hybrid approach that utilizes both the System Buy-In Approach and the Marginal/Incremental Approach. In doing so, the approach recognizes both the costs associated with existing capacity available to serve new customers and the anticipated costs associated with new system expansion projects.

The Flow Impact Fee is determined by first identifying the costs associated with the existing distribution system assets that are available to serve new customers. This value is determined by subtracting outstanding bond debt and contributed capital from the value of the existing distribution main and then adding the anticipated cost of distribution system expansion projects planned for the 10-year planning period. This total is then divided by the number of EDUs that the system is expected to serve. The result is the Flow Impact Fee per EDU. Since it is assumed that the cost to provide new distribution capacity is the same across all service levels within the SAWS system, the Flow Impact Fee is the same for all service levels.

The System Development Impact Fee is calculated in much the same way as the Flow Impact Fee with the exception being that the Production and Transmission Components of the System Development Impact Fee vary by service level. The Well Component is the same for each service level. In order to calculate service level specific Production and Transmission Components, anticipated demand for each service level must be determined and the specific

costs associated with the assets required to meet the anticipated demand in each service level must be assigned to that service level. Once service level specific costs have been determined, these costs are divided by the anticipated demand in each service level to arrive at the Production and Transmission Components of the System Development Fee for each service level. These components are then added to the Well Component to arrive at the total System Development Impact Fee for each service level.

The total Water Impact Fee for each service level consists of the Flow Impact Fee plus the total System Development Impact Fee for each service level.

Wastewater Impact Fee

Wastewater Impact Fees for each service are (ISA and OSA) are developed in the same way as Water Impact Fees. For each service area, the capital costs associated with serving new customers is equal to the value of the existing sanitary sewer and wastewater treatment facilities, less contributed capital and outstanding bond debt, plus the anticipated costs associated with constructing expansion related facilities. These costs are then divided by the capacity in EDUs that these facilities are anticipated to serve. The result is the Wastewater Impact Fee for each service area.

Water Supply Impact Fee

The Water Supply Impact Fee is calculated using the Marginal/Incremental Approach and only takes into consideration the anticipated costs of new infrastructure projects required to meet the water supply demands placed on the system by new customers over the 10-year planning period. The fee is calculated by dividing the anticipated cost of wells, pump stations, storage facilities, pipelines and treatment facilities associated with new water sources, by the capacity in EDUs that these facilities will provide.

Local Benefit Facility Impact Fee

The development of Local Benefit Facility Impact Fees is based on the Marginal/Incremental Approach in that it only considers the costs associated with new facilities required to serve the LBA under consideration. The anticipated cost of providing service to an LBA is divided by the number of EDUs in the LBA to determine the cost per EDU. Each lot within the LBA is assumed to represent one EDU. The resulting cost per EDU is the Local Benefit Facility Impact Fee.

C. Conclusions of Impact Fee Methodology Review

Based on our review of the previously referenced B&V report titled "1999-2009 Capital Improvements Plan and Maximum Impact Fees for Water, Water Supply, and Sanitary Sewer Systems", which we assume accurately describes the methodology that SAWS currently uses to develop and assess impact fees, it is our opinion that SAWS impact fee calculation methodology is in keeping with standard industry practice and should result in impact fees that equitably

recover the costs of providing the capacity to meet the demand placed on SAWS water and wastewater systems by new customers during the 10-year planning period.
The approach used to determine the value of the assets used to serve new customers should result in fees that equitably recover the cost of facilities needed to meet the demand of new customers from the new customers without inappropriately recovering costs that are also being recovered through other rates and charges assessed by SAWS.

Since SAWS' impact fees are developed using impact fee calculation approaches that are accepted by the industry the resulting fees should be readily defensible if challenged. Additionally, the impact fee methodology appears to be in compliance with Chapter 395 of the Texas Local Government Code and other impact fee calculation guidelines. Please note that RFC is not a law firm and this opinion regarding compliance with the Texas Local Government Code is not a legal opinion. If SAWS requires a legal opinion regarding compliance with the Texas Local Government Code, it should consult legal counsel. Also, if the methodology that SAWS employs to calculate impact fees is inconsistent with the methodology described in the B&V report, it may not be in compliance with industry standards and may not result in equitable cost recovery.