StepWise Utility Advisors, LLC.

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Final Report

Water Utility Rate Study

For:
Bexar Metropolitan Water District of
San Antonio, Texas

August 6, 2010

Mr. Jesse Morin
Bexar Metropolitan Water District
2047 W Malone
San Antonio TX 78225

Dear Mr. Morin:

This report documents our Water Utility Rate Study for the Bexar Metropolitan Water District. The report includes an evaluation of the revenue and revenue requirements for the District's water system from May 1, 2010 through April 30, 2016. A cost of service analysis was performed to determine the responsibility for system costs by the District's customer classes served for the test year 2010-11. The final section of the report discusses the rate option chosen by the Board of Directors and the process used to evaluate multiple rate options for the District during the study.

It is our pleasure to be of service to the Bexar Metropolitan Water District and we wish to acknowledge the assistance provided to us by the Finance and Accounting staff and others during the preparation of these studies.

Sincerely,

Mike Dutton
Vice President
StepWise Utility Advisors

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EXECUTIVE SUMMARY

On March 22, 2010, the Bexar Metropolitan Water District (District) engaged StepWise Utility Advisors, LLC (StepWise) to study the District's water utility costs for the purpose of developing recommendations that would provide equity amongst the District water customer groups, improve revenue stability, promote conservation among high-use customers, and promote public acceptance. This report summarizes the procedures utilized as well as the findings and recommendations of the rate restructuring efforts, the results of which are summarized in Tables ES-1 through ES-4.

Table ES-1
Residential Class Capacity Reservation Fee

Meter Size	Monthly Charge
5/8"	$7.93
3/4"	$10.38
1"	$15.87
1-1/2"	$39.67
2"	$63.47

The StepWise team used statistical analyses and Monte Carlo simulation modeling to calculate the proposed rates. We followed a three-step iterative process for designing the rates that required us to (1) normalize and statistically define water demands, (2) set up and run the simulation model, and (3) test the simulation results against the District's goals and objectives. The latter two steps were repeated as necessary until the rates were judged to meet the goals and objectives. Ultimately, the Board adopted the proposed rates as shown in the rates section and in Tables ES-1 through ES-4.

Table ES-2
Commercial Class Capacity Reservation Fee

Meter Size	Monthly Charge
5/8"	$24.41
3/4"	$30.51
1"	$48.82
1-1/2"	$122.06
2"	$195.30
2-1/2"	$317.35
3"	$439.41
4"	$781.18
6"	$1,708.83
8"	$2,929.43

Table ES-3
Residential Class Volume Charges

Monthly Consumption:	Volume Charge per 1,000 gallons
0 to 5,000 gals.	$0.89
5,001 to 10,000 gals.	$1.43
10,001 to 17,000 gals.	$3.95
Over 17,000 gals.	$6.30

Water Supply Fee (all customer classes):
$1.84 per 1,000 gallons

EAA Management Fee (pass through):
$0.15 per 1,000 gallons

Table ES-4
Commercial Class Volume Charges

Monthly Consumption:	Volume Charge per 1,000 gallons
0 to 40,000 gals.	$2.54
40,001 to 150,000 gals.	$4.95
Over 150,000 gals.	$8.00

Water Supply Fee (all customer classes):
$1.84 per 1,000 gallons

EAA Management Fee (pass through):
$0.15 per 1,000 gallons

Equity between Customer Groups: Initial considerations when developing water rates, is to establish equitable charges to individual customers commensurate with the cost of providing service. Since this is impractical, schedules of rates are normally designed to meet average conditions for groups of customers having similar service requirements. Practical considerations may enter into the final choice of user charges, recognizing such factors as previous rate levels, the degree of adjustments indicated, and policies concerning the application of rates.

The District's existing retail rate schedules are not consistent with cost of service determinations between customer groups. A more detailed discussion is presented in the cost of service section of the report. The client has requested that test year 2010-11 water rates be developed based on the existing customer class revenue percentages. In future years, the consultant team recommends the District move toward cost of service based rates to achieve better equity between customer classes.

Revenue Stability: Historically, the District has used a relatively high fixed monthly service charge as a significant component of the rate structure. Apart from providing stable and predictable revenues, the service charge has the effect of increasing the average cost of water for customers who use a relatively small amount per month. In 2007, the District moved to a rate structure that was more reliant on volume-based charges. One of the District's goals for the 2007 Study was to move away from dependence on fixed service charges and to rely more on volume-based charges. This change would result in a net decrease in monthly bills for the smallest water users in the District – those using less than 10,000 gallons per month on average. The 2007 rate changes reduced monthly service charges significantly and have resulted in a decrease in monthly bills for all typical residential customers (5/8-inch meters) using less than 10,000 gallons per month compared to the previous rate structure that was dependent on relatively high fixed monthly charges. This rate structure change also increased the variability of rate revenue due to wet summers or during periods of water use restrictions. Several rate alternatives developed during the current Study would increase rate revenue stability, but these alternatives also increased monthly bills for residential customers using less than 7,500 gallons per month by more than the overall system increase of 7%. Because of this, public acceptance of these rate alternatives was deemed to be low. The Board-adopted rates have essentially the same revenue stability as the existing rates.

Promotion of Conservation: As a general rule, conservation-based pricing is said to occur when there is a higher price for increasing levels of usage. When presented with higher prices for water, it is expected that consumers will alter their usage characteristics over time, particularly for discretionary water usage, generally decreasing their demand in order to pay less overall. Because the District's adopted rate schedule includes increasing volume charges for increasingly higher levels of water use, it is an example of conservation-based pricing.

Public Acceptance of Rate Structure: The adopted rates are similar to rates charged by most large Texas water utilities. StepWise conducted a survey of

large water utilities in Texas and found that most rate structures resemble that of the proposed rates. That is, most rate structures are heavily dependent on volumetric charges as opposed to fixed monthly fees, and most rate structures resemble an "inclining block" conservation rate such as the proposed rates.

The consultant team presented rate study information at three Board workshops (May 3rd, June 24th, and July 22nd). Information included common water rate structures and proposed rate structure options. StepWise participated in two public rate hearings on June 29th and June 30th to present proposed rate options, answer questions, and to solicit feedback from District customers. BMWD senior staff held other stakeholder meetings during the rate study process. The Board of Directors adopted the new rates on July 30, 2010.

The report also documents a number of findings uncovered in the course of the Study, which the District should consider in the future. These include, but are not limited to, considerations pertaining to the impacts of decreased usage resulting from very wet years or during period of restricted usage or from the conservation-based pricing.

SECTION 1: INTRODUCTION AND OVERVIEW

1.1 Introduction and Background

On March 22, 2010, the District engaged StepWise to study the District's water utility costs for the purpose of developing recommendations that would review the existing water rate structure and suggest alternatives to increase revenue stability during wet periods and during periods of curtailment, provide adequate funding to meet the financial obligations of the District, and promote conservation among customers.

StepWise held a workshop with the Board of Directors on May 3, 2010 to discuss the rate study scope of services, provide information on historical District usage patterns, discuss various rate options available for the District's consideration, and to solicit input from the Board of Directors and senior staff. StepWise presented rate options at two Board of Directors rate workshops held on June 24, 2010 and July 22, 2010. Public hearings were held on June 29 and 30, 2010 regarding the proposed rate options. This report documents the assumptions, methodology, findings, recommendations, and results of the Bexar Metropolitan Water District Rate Study for 2010 (Study).

The District is a governmental agency of the State of Texas created in 1945 by a special act of the Legislature of Texas. The District provides retail water service to its customers, who are situated in multiple non-contiguous service areas in and around the City of San Antonio, and wholesale water service to Atascosa Rural Water Supply Corporation and the East Central Special Utility District. The District provides limited wastewater services to a limited commercial customer base in the City of Bulverde but otherwise is not engaged in providing wastewater collection or treatment anywhere in its certificated service area. On a contract basis, or as a convenience for its customers, the District bills for and collects charges for garbage removal and sewer services provided by other municipal agencies.

Although the District initially was established within a narrowly defined service area with a certificate of convenience and necessity (CCN), over time it either has allowed other utility districts and/or private companies to join the District or has acquired additional service areas. In each instance, whether through consolidation or acquisition, the District has expanded its service area and CCN. In its history, the District has had as many as 23 separate rate schedules, which it has consolidated over time to a uniform schedule in 2007.

In its 2007 legislative session, the Texas House of Representatives introduced legislation referred to as HB1565. The enacted purpose of HB1565 was to cause the District to meet various performance measurements and to report to an Oversight Committee that would have certain supervisory powers over the District. In a report by the New Mexico Finance Authority, as ordered by TCEQ in its role of providing oversight of the District pursuant a vote of the Texas Legislature, it was noted that the District's goal of achieving rates on par with those of SAWS' was not appropriate or even necessary given major differences in cost structures between the two organizations.

Stepwise understands the importance of this study with respect to the earlier recommendations and continued observation of the oversight committee as well as the need for the District to address its rates and charges to ensure financial feasibility for its ongoing operations.

1.2 Report Date

The effective date of this report is July 30, 2010 (Report Date), which is the date on which Board of Directors approved the new rates for fiscal year 2010-11. As such, this report only includes information that was available at the time the recommendations were made and does not include any subsequent events that have taken place between that date and the date this report was issued (Issue Date).

1.3 Overview of the Ratemaking Process

StepWise follows standard industry practices for determining water rates. These practices are described in some detail in the American Water Works Association Manual of Water Supply Practices: M1 (*Principles of Water Rates, Fees, and Charges*, Fifth Ed., 2000). In general, the ratemaking process for water utilities includes three steps: determination of test-year revenue requirements, allocation of the revenue requirements to customer classes (sometimes called "cost-of-service" allocation), and calculation of rates that recover the revenue requirements. The scope of work outlined for the Study includes each of these steps.

SECTION 2: FINANCE PLAN

2.1 Introduction

In conducting our rate study for the District, we have reviewed financial records and the capital improvement program of the System and other investigations, as we deemed necessary. Projected revenues and revenue requirements for the System are presented in this report for the current budget year and the five years ending April 30, 2016.

BexarMet has provided historical data presented in this report. We have reviewed and discussed this data with BexarMet staff. StepWise has prepared a forecast of revenues and revenue requirements and includes forecasted capital improvement program requirements as provided by BexarMet. The cost of service analysis is based on the revenue requirements determination developed in the financial plan and operational and cost data provided by BexarMet.

In preparing our forecasts of future operations summarized in this report, StepWise has made certain assumptions with respect to conditions, events, and circumstances which may occur in the future. The methodology utilized by StepWise in performing the analyses follows generally accepted practices for such forecasts. Such assumptions and methodologies are summarized in this report and are reasonable and appropriate for the purpose for which they are used. While StepWise believes the assumptions are reasonable and the methodology valid, actual results may differ materially from those forecast, as influenced by the conditions, events, and circumstances which actually occur.

2.2 Revenue Forecasts

Operating revenue of the System is derived primarily from retail and wholesale water sales. BexarMet has experienced moderate account growth over the past eight years. According to information provided by BexarMet, the District served 75,757 accounts in fiscal year 2002 and BexarMet averaged 91,573 accounts in fiscal year ending April 30, 2010. Historical and projected accounts are shown in Table 2-1. The number of water customer accounts is projected to increase from 91,573 in fiscal year 2009-10 to 102,330 customer accounts in fiscal year 2015-16. Projections of future customer growth have been made based on analysis of historical trends and review of anticipated local growth patterns. StepWise has projected account growth of 1.5 percent in fiscal year 2010-11 and 1.9 percent per year for the remainder of the forecast period.

Table 2-1
Bexar Metropolitan Water District
Historical and Projected Water Accounts

	Fiscal Year								
Customer Class	**2007-08**	**2008-09**	**2009-10**	**2010-11**	**2011-12**	**2012-13**	**2013-14**	**2014-15**	**2015-16**
	Historical Average Number of Accounts			Budget Year			Projected		
Residential	83,273	85,372	87,116	88,423	90,191	91,995	93,835	95,712	97,626
Commercial	3,748	3,851	4,017	4,057	4,098	4,139	4,180	4,222	4,264
Apartment	416	426	416	416	416	416	416	416	416
School	35	21	22	22	22	22	22	22	22
Wholesale	2	2	2	2	2	2	2	2	2
Total	87,474	89,672	91,573	92,920	94,729	96,574	98,455	100,374	102,330
		2.5%	2.1%	1.5%	1.9%	1.9%	1.9%	1.9%	1.9%

Historical and projected billed water sales volume is summarized in Table 2-2. The historical billed volume was obtained from BexarMet statistical billing summaries. Forecasted billed water volume is based upon the number of projected customer class accounts multiplied by normalized customer class water use per account figures. These normalized customer class use per account determinations were based on historical usage patterns over the past eight years to recognize the variation in precipitation and its impact on billed water volume. Based on this normalization approach, total water billed volume is not projected to exceed actual fiscal year 2008-09 (drought year) billed volume until fiscal year 2013-14. The largest wholesale customer, East Central Water Supply Corporation, is expected to reduce their water purchases from BexarMet and purchase more water from Canyon Regional Water Authority.

Table 2-2
Bexar Metropolitan Water District
Historical and Projected Water Volumes

	Fiscal Year								
Customer Class	**2007-08**	**2008-09**	**2009-10**	**2010-11**	**2011-12**	**2012-13**	**2013-14**	**2014-15**	**2015-16**
		Historical		Budget Year			Projected		
	1,000 gals.	1,000 gals.	1,000 gals.	1,000 gals.	1,000 gals.	1,000 gals.	1,000 gals.	1,000 gals.	1,000 gals.
Residential	7,668,644	9,369,649	8,134,760	8,930,697	9,632,420	9,825,068	10,021,569	10,222,001	10,426,441
Commercial	1,672,099	2,039,953	1,708,981	1,927,156	1,946,427	1,965,892	1,985,550	2,005,406	2,025,460
Apartment	465,537	495,742	446,531	416,000	416,000	416,000	416,000	416,000	416,000
School	18,073	41,446	25,391	41,800	41,800	41,800	41,800	41,800	41,800
Wholesale	514,800	514,800	514,800	210,000	210,000	210,000	210,000	210,000	210,000
Total	10,339,154	12,461,590	10,830,463	11,525,652	12,246,647	12,458,760	12,674,920	12,895,207	13,119,701

Table 2-3 presents projected revenues for both retail and wholesale customer classes from existing rates and charges. These are independent water sales revenue forecasts developed by StepWise. Additional revenues from future increases are shown separately in Table 2-8 of this letter report. Water revenues are forecasted to increase from $64,760,700 in fiscal year 2010-11 to $72,427,300 in fiscal year 2015-16.

Table 2-3
Bexar Metropolitan Water District
Projected Retail and Wholesale Water Sales Revenue From Existing Rates [a]

	Fiscal Year					
Customer Class	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
	Budget Year					
Residential	$44,044,600	$47,005,600	$47,945,700	$48,904,700	$49,882,800	$50,880,400
Commercial	16,288,400	16,451,200	16,615,700	16,781,900	16,949,700	17,119,200
Apartment	3,367,500	3,367,500	3,367,500	3,367,500	3,367,500	3,367,500
School	422,400	422,400	422,400	422,400	422,400	422,400
Wholesale	637,800	637,800	637,800	637,800	637,800	637,800
Total	$64,760,700	$67,884,500	$68,989,100	$70,114,300	$71,260,200	$72,427,300

[a] Includes capacity reservation fee, volume charge, and system improvement fee revenue.

Other operating and non-operating revenues are shown in Table 2-4. The fiscal year 2010-11 budgeted other operating and non-operating revenues have been projected to remain unchanged throughout the forecast period. Customer penalties and fees, regulatory assessments and impact fee revenues make up the majority of the other operating revenues. An independent projection of impact fee revenues using the projected annual change in equivalent meters from this study applied to the maximum impact fee schedule developed in the recently completed 2009 Impact Fee Study plus the existing water resource fee results in projected annual impact fee revenues that are $5.4 million to $6.1 million greater than those of the forecast period impact fee revenue shown in Table 2-4. Much of the difference is attributed to pre-paid impact fees at fee schedules in place prior to the changes made as a result of the 2009 Impact Fee Study. In addition, the projected growth in equivalent meters developed for the 2009 Impact Fee Study is more than double those used in this study.

Table 2-4
Bexar Metropolitan Water District
Other Operating and Non-Operating Revenues

Category	Fiscal Year					
	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
	Budget Year					
Other Operating Revenues: [a]						
Customer Penalties and Fees	$1,615,000	$1,615,000	$1,615,000	$1,615,000	$1,615,000	$1,615,000
Sewer Revenue	0	0	0	0	0	0
Main and Service Extension Fees	550,000	550,000	550,000	550,000	550,000	550,000
Collection Fees	524,300	524,300	524,300	524,300	524,300	524,300
Fire Protection	250,000	250,000	250,000	250,000	250,000	250,000
Regulatory Assessment Fee	2,206,700	2,206,700	2,206,700	2,206,700	2,206,700	2,206,700
Timberwood Assessment Fee	3,500	3,500	3,500	3,500	3,500	3,500
Impact Fee/Water Development Fees	2,252,600	3,500,000	3,500,000	3,500,000	3,500,000	3,500,000
Subtotal Other Operating Revenues	$7,402,100	$8,649,500	$8,649,500	$8,649,500	$8,649,500	$8,649,500
Non-Operating Revenues:						
Interest Income	$215,000	$215,000	$215,000	$215,000	$215,000	$215,000
Bad Debt Recovered	10,000	10,000	10,000	10,000	10,000	10,000
Other Non-Operating Revenue	915,000	915,000	915,000	915,000	915,000	915,000
Subtotal Non-Operating Reveneues	$1,140,000	$1,140,000	$1,140,000	$1,140,000	$1,140,000	$1,140,000
Total	$8,542,100	$9,789,500	$9,789,500	$9,789,500	$9,789,500	$9,789,500

[a] Does not include water sales to retail and wholesale customers, as shown in Table 2-3.

2.3 Revenue Requirements

The revenue required to adequately provide for the continued operation of the System must be sufficient to meet the cash requirements for operation and maintenance of the System, expenditures for normal annual capital improvements and debt service. Projections of the cash requirements to meet the System expenditures for the forecast period are developed in the following section.

BexarMet operation and maintenance (O&M) expenses include the annual costs associated with operations, administration and general expenses. O&M expenses include the costs of personnel services, materials, supplies, and contractual services which represent the normal everyday cost of system operations. Since these costs are an annual obligation of BexarMet, they are met from operating revenue as incurred. BexarMet O&M expenses include contractual obligations for water purchase agreements with Bexar-Medina-Atascosa Water Control and Improvement District No. 1 (BMA), Guadalupe Blanco River Authority (GBRA), Canyon Regional Water Authority (CRWA), Canyon Lake Water Supply Corporation and WECo. They also include lease payments to the Bexar Metropolitan Development Corporation for the O&M expenses, debt service and major maintenance fund associated with the ultra filtration water plant which supplies treated surface water to a portion of the BexarMet customer base. For the current budget year, water supply contracts and Development Corporation lease obligations combine for $17.4 million of the total O&M expenditures. This is projected to grow to approximately $22.8 million in fiscal year 2015-16. These future water supply obligations have been reduced by recent changes made to the WECo contract and successful litigation pertaining to the contract.

Future O&M expenses are projected to increase due to the combined effects of inflation, customer growth and existing contractual obligations. Projected O&M expenses are based on the fiscal year 2010-11 adopted O&M budget adjusted for known and expected future changes and trended for District growth and inflation. The following table summarizes the projected BexarMet O&M expenses for the periods indicated. The fiscal year 2010-11 adopted O&M budget expenses of $52,377,400 are projected to grow to $65,746,600 by the end of the forecast period.

Table 2-5
Bexar Metropolitan Water District
Budgeted and Projected Operation & Maintenance Expenses

Item	Fiscal Year					
	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
	Budget Year					
Operating Expenses:						
Personnel	$13,366,500	$13,901,100	$14,457,200	$15,035,500	$15,636,900	$16,262,300
O&M Materials	3,016,700	3,137,300	3,262,800	3,393,300	3,529,100	3,670,200
O&M Production	817,500	850,200	884,200	919,600	956,400	994,600
Water Supply - Various Projects	17,416,800	18,689,400	19,894,100	20,995,000	21,942,800	22,820,500
Utilities	3,400,000	3,570,000	3,748,500	3,935,900	4,132,700	4,339,400
Other Expenses	4,435,400	4,619,400	4,810,900	5,010,500	5,218,300	5,435,100
Subtotal Operating Expenses	$42,452,900	$44,767,400	$47,057,700	$49,289,800	$51,416,200	$53,522,100
Net Administrative & General Expenses:						
Personnel	$4,060,900	$4,223,300	$4,392,300	$4,568,000	$4,750,700	$4,940,700
Professional Fees	1,006,300	1,046,600	1,088,400	1,132,000	1,177,200	1,224,300
General Liability Insurance	400,000	416,000	432,600	449,900	467,900	486,700
Other Expenses	4,457,300	4,663,100	4,877,300	5,099,900	5,331,700	5,572,800
Subtotal A&G Expenses	$9,924,500	$10,349,000	$10,790,600	$11,249,800	$11,727,500	$12,224,500
Total Operation & Maintenance Expenses	$52,377,400	$55,116,400	$57,848,300	$60,539,600	$63,143,700	$65,746,600

Table 2-6 provides a summary of existing and projected BexarMet debt service requirements. The existing BexarMet parity and subordinate debt and the projected future debt are shown separately. Existing parity revenue bonds include Series 1998 Revenue Bonds, Series 2002 Revenue Refunding Bonds, Series 2006 Revenue Refunding Bonds, Series 2007 Revenue Refunding Bonds and Series 2009 Revenue Refunding Bonds. Existing subordinate debt includes Series 1995A Revenue Notes and Series 2008 Taxable Revenue Notes. Projected future debt includes a proposed refunding of Series 2008 Taxable Revenue Notes in the current fiscal year. This refunding term is assumed to be fifteen years. A new revenue bond issue is projected at the end of fiscal year 2011-12 to take the commercial paper program long. Another revenue bond issue is projected in fiscal year 2015-16 for the same purpose.

Table 2-6
Bexar Metropolitan Water District
Existing and Projected Debt Service Requirements [a]

Category	Fiscal Year 2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
	Budget Year					
Existing Parity Bonds:						
Series 1998 Revenue Bonds	$3,448,225	$3,446,545	$3,441,963	$3,439,000	$3,432,750	$3,789,625
Series 2002 Revenue Refunding Bonds	2,555,361	2,555,849	2,562,194	1,386,972	1,382,459	1,270,365
Series 2006 Revenue Refunding Bonds	2,978,588	2,979,050	2,978,238	4,138,387	4,123,013	3,359,462
Series 2007 Revenue Refunding Bonds	2,505,660	2,506,835	2,505,760	2,502,435	2,501,748	2,997,110
Series 2009 Revenue Refunding Bonds	2,083,967	2,995,455	2,996,588	2,995,375	2,996,250	2,956,250
Subtotal Parity Bonds	$13,571,801	$14,483,734	$14,484,743	$14,462,169	$14,436,220	$14,372,812
Existing Subordinate Debt:						
Series 1995A Revenue Notes	$125,000	$125,000	$125,000	$125,000	$125,000	$125,000
Series 2008 Taxable Revenue Notes	403,000	0				
Subtotal Subordinate Debt	$528,000	$125,000	$125,000	$125,000	$125,000	$125,000
Projected Future Debt:						
Series 2008 Taxable Revenue Notes Refundin	$1,099,500	$1,102,700	$1,099,400	$1,099,500	$1,102,700	$1,099,100
Projected FY 2012 & 2016 Revenue Bonds	0	613,629	3,681,776	3,681,776	3,681,776	7,438,550
Subtotal Future Debt	$1,099,500	$1,716,329	$4,781,176	$4,781,276	$4,784,476	$8,537,650
Total Revenue Bond Debt Service	$15,199,301	$16,325,063	$19,390,919	$19,368,445	$19,345,696	$23,035,462

[a] Excludes projected commercial paper interest expense. Development Corporation debt service obligations are contained in the Development Corporation lease obligations to the Water District as part of the Water District's operation and maintenance expense.

2.4 Commercial Paper Interest Expense

BexarMet had issued $6,500,000 of the District's $50,000,000 commercial paper line at April 30, 2010. Projected commercial paper interest expense is forecasted using an average of the beginning and ending balance of commercial paper outstanding times an estimated interest rate. The estimated interest rates used in the financial forecast are 1.50%, 3.0%, 3.0%, 3.0%, 3.0% and 3.0% from fiscal year 2010-11 to fiscal year 2015-16, respectively.

2.5 Capital Improvement Program Expenditures

The District's capital improvement program, as shown in Table 2-7, is primarily driven by system growth and compliance issues. StepWise was provided projected capital improvements program costs generated from the District's recently completed master planning efforts. These master planning efforts encompass a ten year planning period. Projects identified from these efforts will be prioritized to maximize the benefits of these capital improvement expenditures to BexarMet customers. Fiscal year 2010-11 capital expenditures are based on the Board approved capital improvement budget. Based on discussions with senior staff, capital improvement expenditures are projected at $25 million per year for the remaining forecast period. The projected BexarMet capital improvement expenditures over the next six years are larger than during any similar period in the District's history. Priorities include construction of additional ground and elevated storage and transmission mains in the System's fastest growing areas and continuing investment in water production facilities. The plan also includes substantial resources for infrastructure upgrades and standby power generation equipment at critical locations.

Table 2-7
Bexar Metropolitan Water District
Projected Water Capital Improvement Program Costs [a]

	Fiscal Year					
Category	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
	Budget Year					
Water Production and Storage Facilities	$18,532,200	$15,000,000	$15,000,000	$15,000,000	$15,000,000	$15,000,000
Transmission and Distribution Mains	0	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000
Other Projects [b]	10,558,800	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000
Total	$29,091,000	$25,000,000	$25,000,000	$25,000,000	$25,000,000	$25,000,000

[a] Projected costs based on expected BMWD capital improvement program budgets.
[b] Includes government projects main relocates; vehicles, technology, and equipment; and system maintenance repair and replacement.

2.6 Operating Fund Forecasts

Table 2-8 presents a summary of BexarMet's projected revenues, revenue requirements and the calculation of debt service coverage ratios over the forecast period. After the June 24, 2010 Board rate workshop, the General Manager directed the consulting team to revise the Finance Plan to reduce the revenue increase for fiscal year 2010-11. Before the change, the required revenue increase was 9.0%, effective September 1, 2010. The Finance Plan was revised to restore reserve funds used during fiscal year 2009-10 over a two year period instead of the original one year restoration plan. This change reduced the needed revenue increase to 7.0% for fiscal year 2010-11, effective September 1, 2010. However, this change to the Finance Plan resulted in an increase in the fiscal year 2011-12 revenue increase from 3.0% to 5.0%.

Sources of operating funds are shown on lines 1 through 9 of the table. These sources include beginning cash on hand, water sales revenue from existing rates, other operating and non-operating revenues and projected revenue increases. Total revenues are projected to be $76,539,300 in fiscal year 2010-11 and increase to $102,263,700 by the end of the forecast period.

StepWise is forecasting the need for revenue increases in fiscal years 2010-11 through 2015-16 (see line 2). These increases are needed to balance revenues and revenue requirements and meet debt service coverage ratio goals established by the Board of Directors. The first revenue increase of 7 percent is assumed to be effective for 8 months. All remaining increases are assumed to be effective for the entire fiscal year.

The District's revenue requirements are shown on lines 10 through 29. These requirements include O&M expenses, existing and future debt service obligations and transfers to other funds. Total revenue requirements are projected to be $74,063,300 in fiscal year 2010-11 and increase to $101,812,200 by the end of the forecast period. Transfers to other funds, lines 24 through 27, include operating revenues transferred to the capital fund, impact fee revenues transferred to the capital fund, transfers to the operating coverage reserve fund, and transfers to the contingency fund.

Table 2-8
Bexar Metropolitan Water District
Operating Fund Proforma Statement

	Description	Fiscal Year 2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
1	Beginning Operating Cash Balance	$10,048,500	$12,524,500	$12,993,100	$13,962,800	$14,527,300	$14,981,900
2	**Revenue Increase Needed**	**7.00%**	**5.00%**	**3.00%**	**3.00%**	**3.00%**	**4.00%**
3	**REVENUES**						
4	Water Sales Revenues (Retail & Wholesale)	$64,760,700	$67,884,500	$68,989,100	$70,114,300	$71,260,200	$72,427,300
5	Additional Water Sales Revenue Required	3,236,500	8,383,700	10,845,400	13,456,400	16,224,400	20,046,900
	Subtotal Rate Revenues	**$67,997,200**	**$76,268,200**	**$79,834,500**	**$83,570,700**	**$87,484,600**	**$92,474,200**
6	Impact Fees/Water Development Fees	$2,252,600	$3,500,000	$3,500,000	$3,500,000	$3,500,000	$3,500,000
7	Other Operating Revenues	5,149,500	5,149,500	5,149,500	5,149,500	5,149,500	5,149,500
8	Non-Operating Revenues	1,140,000	1,140,000	1,140,000	1,140,000	1,140,000	1,140,000
9	**Total Gross Revenues**	**$76,539,300**	**$86,057,700**	**$89,624,000**	**$93,360,200**	**$97,274,100**	**$102,263,700**
	O&M Expenses:						
10	Operating Expenses	$42,452,900	$44,767,400	$47,057,700	$49,289,800	$51,416,200	$53,522,100
11	Net Adminstrative & General Expenses	9,924,500	10,349,000	10,790,600	11,249,800	11,727,500	12,224,500
12	**Total O&M Expenses**	**$52,377,400**	**$55,116,400**	**$57,848,300**	**$60,539,600**	**$63,143,700**	**$65,746,600**
13	Non-Operating Expenses	$1,167,700	$1,167,700	$1,167,700	$1,167,700	$1,167,700	$1,167,700
14	**Revenues Available for Debt Service & Transfers**	**$22,994,200**	**$29,773,600**	**$30,608,000**	**$31,652,900**	**$32,962,700**	**$35,349,400**
	Water District Debt Service (Existing)						
15	Revenue Parity Bonds	$13,571,800	$14,483,700	$14,484,700	$14,462,200	$14,436,200	$14,372,800
16	Subordinate Revenue Bonds	528,000	125,000	125,000	125,000	125,000	125,000
17	Commercial Paper Interest Expense	566,300	480,000	247,400	719,900	1,162,400	862,400
18	**Total Debt Service (Existing)**	**$14,666,100**	**$15,088,700**	**$14,857,100**	**$15,307,100**	**$15,723,600**	**$15,360,200**

Table 2-8
Bexar Metropolitan Water District
Operating Fund Proforma Statement Page 2

	Water District Debt Service (Future)						
19	Revenue Parity Bonds	$1,099,500	$1,716,300	$4,781,200	$4,781,300	$4,784,500	$8,537,700
20	Subordinate Revenue Bonds	0	0	0	0	0	0
21	**Total Debt Service (Future)**	**$1,099,500**	**$1,716,300**	**$4,781,200**	**$4,781,300**	**$4,784,500**	**$8,537,700**
22	**Total Debt Service Requirements**	**$15,765,600**	**$16,805,000**	**$19,638,300**	**$20,088,400**	**$20,508,100**	**$23,897,900**
23	**Revenues Available After Debt Service**	**$7,228,600**	**$12,968,600**	**$10,969,700**	**$11,564,500**	**$12,454,600**	**$11,451,500**
	Proposed Uses of Balance Available for Transfers Out:						
24	Operating Coverage Reserve Fund	$0	$4,500,000	$1,500,000	$1,500,000	$1,500,000	$1,500,000
25	Contigency Fund	1,500,000	0	0	0	0	0
26	Revenues Transferred to Capital Fund	1,000,000	4,500,000	5,000,000	6,000,000	7,000,000	6,000,000
27	Impact Fees/Water Development Fees to Capital Fund	2,252,600	3,500,000	3,500,000	3,500,000	3,500,000	3,500,000
28	**Total Transfers Out**	$4,752,600	$12,500,000	$10,000,000	$11,000,000	$12,000,000	$11,000,000
29	**Total Revenue Requirements**	**$74,063,300**	**$85,589,100**	**$88,654,300**	**$92,795,700**	**$96,819,500**	**$101,812,200**
30	**Annual Operating Cash Flow Generated (Used)**	$2,476,000	$468,600	$969,700	$564,500	$454,600	$451,500
31	**Ending Operating Cash Balance**	**$12,524,500**	**$12,993,100**	**$13,962,800**	**$14,527,300**	**$14,981,900**	**$15,433,400**
	Debt Service Coverage Forecast:						
32	Gross Revenues (Line 9)	$76,539,300	$86,057,700	$89,624,000	$93,360,200	$97,274,100	$102,263,700
33	BexarMet Development Corp. Non-Operating Income	50,000	50,000	50,000	50,000	50,000	50,000
32	Less: O&M Expenses (Line 12)	52,377,400	55,116,400	57,848,300	60,539,600	63,143,700	65,746,600
35	Less: Non-Operating Interest Expense	40,000	40,000	40,000	40,000	40,000	40,000
36	**Net Revenues for Coverage**	**$24,171,900**	**$30,951,300**	**$31,785,700**	**$32,830,600**	**$34,140,400**	**$36,527,100**
	Annual Debt Service:						
37	Revenue Parity Bonds	$14,671,300	$16,200,000	$19,265,900	$19,243,500	$19,220,700	$22,910,500
38	Subordinate Rev. Bonds & Commercial Paper Interest	$1,094,300	$605,000	$372,400	$844,900	$1,287,400	$987,400
39	Total Debt Service	$15,765,600	$16,805,000	$19,638,300	$20,088,400	$20,508,100	$23,897,900
40	Revenue Parity Bond Coverage (Line 36/Line 37)	**1.65**	**1.91**	**1.65**	**1.71**	**1.78**	**1.59**
41	Total Debt Service Coverage (Line 36/Line 39)	**1.53**	**1.84**	**1.62**	**1.63**	**1.66**	**1.53**

Debt service coverage ratios are shown on lines 40 and 41. Debt service subject to the coverage covenant included in the Parity Bonds Orders includes annual debt service payments on Parity Bonds and Subordinate Lien Obligations (which includes interest expense on outstanding Commercial Paper Notes). Forecasted debt service coverage is expected to remain above the minimum

requirement of 1.25 times with respect to the outstanding Parity Bonds, as well as above 1.10 times with respect to all District indebtedness (inclusive of both Parity Bonds and Subordinate Lien Obligations) throughout the forecast period analyzed by StepWise.

Projected parity bond coverage ratios range from 1.65 times in fiscal year 2010-11 to a low of 1.59 times in fiscal year 2015-16. Total debt service coverage requirements range from 1.53 times to a high of 1.84 times. Projected debt service coverage ratios **assume revenue increases are implemented when required**. Note also that Net Revenues for Coverage (line 36) includes impact fee revenues, as allowed by the bond covenant. Changes in assumed building activity within BexarMet's service area could have an adverse impact on actual debt service coverage.

2.7 Capital Improvement Program Financing Plan

The sources of funds for the capital improvement program financing plan are shown in Table 2-9. A combination of commercial paper proceeds, impact fee revenues (Table 2-8, line 27), beginning construction funds on hand and transfers from the Operating Fund (Table 2-8, line 26) are used to fund the projected capital improvement program.

Table 2-9
Bexar Metropolitan Water District
Water Capital Improvement Program Financing Plan

	Description	Fiscal Year 2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
1	**Beginning Capital Fund Balance**	$915,400	$608,300	$737,400	$876,000	$531,600	$697,100
	Sources of Funds						
2	Transfer From Water Operating Fund	$1,000,000	$4,500,000	$5,000,000	$6,000,000	$7,000,000	$6,000,000
3	Revenue Bond Proceeds for Capital Projects	0	0	0	0	0	0
4	Subordinate Bond Proceeds for Capital Projects	0	0	0	0	0	0
5	Commercial Paper Proceeds for Capital Projects	25,500,000	17,000,000	16,500,000	15,000,000	14,500,000	15,500,000
6	Grants	0	0	0	0	0	0
7	Impact Fees - Transfer from Operating Fund	2,252,600	3,500,000	3,500,000	3,500,000	3,500,000	3,500,000
8	Investment Income	31,300	129,100	138,600	155,600	165,500	153,000
9	**Total Sources**	$28,783,900	$25,129,100	$25,138,600	$24,655,600	$25,165,500	$25,153,000
	Uses of Funds						
10	Major Capital Improvements Projects	$29,091,000	$25,000,000	$25,000,000	$25,000,000	$25,000,000	$25,000,000
11	Debt Issuance Expense	0	0	0	0	0	0
12	Reserve Requirement	0	0	0	0	0	0
13	**Total Uses**	$29,091,000	$25,000,000	$25,000,000	$25,000,000	$25,000,000	$25,000,000
14	Annual Surplus (Deficiency)	($307,100)	$129,100	$138,600	($344,400)	$165,500	$153,000
15	**Ending Capital Fund Balance**	**$608,300**	**$737,400**	**$876,000**	**$531,600**	**$697,100**	**$850,100**
	Commercial Paper Program						
16	End of Fiscal Year Available Balance	$18,000,000	$50,002,000	$33,502,000	$18,502,000	$4,002,000	$38,502,200

2.8 Restricted and Unrestricted Reserves

Table 2-10 is a summary of existing and projected BexarMet unrestricted and restricted funds. At the end of fiscal year 2009-10, the District had $10,048,500 in unrestricted cash and cash equivalents on hand, and restricted balances of $16,963,400 broken out in the four categories listed in Table 2-10. Based on the projected operating fund financial plan, additional deposits (Table 2-8, line 24) would be made to the operating coverage reserve fund over the forecast period. These deposits to the operating coverage reserve fund, along with changes in the ending operating cash balances (Table 2-8, line 30), result in the unrestricted cash and cash equivalent balances shown below for the forecast period.

Unrestricted cash and cash equivalents are forecasted to increase from $10,048,500 at the end of fiscal year 2009-10 to a balance of $25,933,400 by the end of fiscal year 2015-16. Construction fund balances are linked to the ending balances shown on Table 2-9 (line 15) over the forecast period. Reserve fund balances change with the estimated Series 2012 and Series 2016 debt service reserve deposits. The contingency fund balance is assumed to remain constant over the forecast period. Restricted fund balances are projected to increase from $16,963,400 at the end of fiscal year 2009-10 to a balance of $30,696,900 at the end of the forecast period.

Table 2-10
Bexar Metropolitan Water District
Existing and Projected Unrestricted and Restricted Funds [a]

	Fiscal Year						
Category	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
		Budget Year					
Unrestricted Funds:							
Cash & Cash Equivalents [b]	$10,048,500	$12,524,500	$17,493,100	$19,962,800	$22,027,300	$23,981,900	$25,933,400
Restricted Funds:							
Interest and Sinking Funds	$8,315,500	$8,315,500	$10,193,900	$10,193,900	$10,193,900	$12,072,300	$12,072,300
Contingency Funds	1,400	1,501,400	1,501,400	1,501,400	1,501,400	1,501,400	1,501,400
Construction Funds	915,400	608,300	737,400	876,000	531,600	697,100	850,100
Reserve Funds	7,731,100	8,834,500	12,516,300	12,516,300	12,516,300	12,516,300	16,273,100
Subtotal Restricted Funds	$16,963,400	$19,259,700	$24,949,000	$25,087,600	$24,743,200	$26,787,100	$30,696,900
Total	$27,011,900	$31,784,200	$42,442,100	$45,050,400	$46,770,500	$50,769,000	$56,630,300

[a] Does not include Bexar Metropolitan Development Corporation unrestricted cash and restricted funds.
[b] Includes operating coverage reserve funds.

2.9 Days of Operation and Maintenance Expenses on Hand

A common water utility metric is the measure of cash reserves available to meet ongoing O&M expenses, stated in days of O&M expenses on hand. The District financial policy is 120 days of O&M expenses on hand.

Total unrestricted cash and cash equivalent plus restricted contingency funds increase from $6,490,272 at the end of fiscal year 2006-07 to $10,049,956 at the end of fiscal year 2009-10. These funds are projected to increase to $27,434,800 at the end of the forecast period. O&M expenses are also projected to increase throughout the forecast period from the fiscal year 2010-11 budgeted O&M expense of $52,377,400 to $65,746,600 in fiscal year 2015-16.

Historical days of O&M expenses on hand increases from 49 days on hand at April 30, 2007 to 103 days on hand at the end of fiscal year 2008-09. The projected metric varies from a low of 98 days on hand in fiscal year 2010-11 to 152 days on hand at the end of fiscal year 2015-16.

Table 2-11
Bexar Metropolitan Water District
Historical and Projected Days of Operation & Maintenance Expenses on Hand

	Fiscal Year									
Category	**2006-07**	**2007-08**	**2008-09**	**2009-10**	**2010-11**	**2011-12**	**2012-13**	**2013-14**	**2014-15**	**2015-16**
		Historical		Estimate	Budget Year			Projected		
Unrestricted Funds:										
Cash & Cash Equivalents	$4,976,945	$8,243,971	$12,990,661	$10,048,510	$12,524,500	$17,493,100	$19,962,800	$22,027,300	$23,981,900	$25,933,400
Restricted Funds:										
Contingency Funds	1,513,327	1,585,199	1,501,446	1,446	1,501,400	1,501,400	1,501,400	1,501,400	1,501,400	1,501,400
Total	$6,490,272	$9,829,170	$14,492,107	$10,049,956	$14,025,900	$18,994,500	$21,464,200	$23,528,700	$25,483,300	$27,434,800
Operation & Maintenance Expenses	$48,699,063	$44,499,867	$51,396,038	$52,961,700	$52,377,400	$55,116,400	$57,848,300	$60,539,600	$63,143,700	$65,746,600
Days of O&M Expenses on Hand	49	81	103	69	98	126	135	142	147	152

SECTION 3: COST OF SERVICE DETERMINATION

3.1 Introduction

The main purpose of a cost of service analysis is to fairly divide the rate burden among different types of customers according to the service demands of each customer classification. Each customer class places different service requirements on the water system such as their relative peaking capacity requirements and the quantity of water used.

In developing equitable rate structures, water system revenue requirements are allocated to the various customer classifications according to the services provided. Allocations of these requirements to customer classes should take into account the quantity of water use, the relative peak capacity requirements placed on the water system, the number and size of meters and services providing service to customers, and other relevant factors.

This section will detail the water system cost of service development and discuss the findings of the study. Cost of service allocations are made for a test year or period considered representative of the period that the resulting rates are expected to be in effect. Fiscal year 2010-11 was selected as the test year for this study.

3.2 Cost of Service to be Allocated

The cost of service to be allocated to the various customer classes consists of net revenue requirements for the test year. Net revenue requirements (cost of service) are determined by taking total BexarMet Water District revenue requirements and subtracting other operating and non-operating revenue. The remaining amount, net revenue requirements, will be met from water rates. For the test year, total revenue requirements consist of operating expenses of $53,877,400, plus capital costs of $20,185,900. Non-rate related revenue of $4,769,400 is subtracted from the total revenue requirements to determine the net revenue requirements on a cash basis for the test year. The test year net revenue requirements or cost of service is summarized below:

Table 3-1
BexarMet Water District
Cost of Service to be Allocated
2010-2011 Test Year

		Operating Expense	Capital Costs	Total
	Total Revenue Requirements			
1	Operating Expense	$52,377,400		$52,377,400
2	Non-Operating Expense		1,167,700	1,167,700
3	Debt Service Requirements		15,765,600	15,765,600
4	Transfer to Construction Fund/Capital Outlay		3,252,600	3,252,600
5	Operating Transfers	1,500,000		1,500,000
6	Subtotal	$53,877,400	$20,185,900	$74,063,300
	Revenue Requirements Met From Other Sources			
7	Other Operating Revenue	$3,935,200		$3,935,200
8	Wholesale Revenues	464,000	173,800	637,800
9	Customer Penalties	1,615,000		1,615,000
10	Collection Fees	524,300		524,300
11	Impact Fees		2,252,600	2,252,600
12	Interest Income	160,800	54,200	215,000
13	Decrease (Increase) in Operating Reserves	(1,801,800)	(674,200)	(2,476,000)
14	Full Year Revenue Increase Adjustment (a)	(969,900)	(326,800)	(1,296,700)
15	Subtotal	3,927,600	1,479,600	5,407,200
16	Total Cost of Service Recovered from Retail Customers	$49,949,800	$18,706,300	$68,656,100
17	Total Cost of Service (b)	$50,413,800	$18,880,100	$69,293,900

(a) Represents effect of partial year rate adjustment.
(b) Line 16 Cost of Service Recovered from Retail Customers plus line 8 Wholesale Revenues.

The test year cost of service of $69,293,900 will be recovered from rates and charges to the District's water customers. In allocating cost of service to customer classes, revenue requirements can be apportioned among the customer classes on either a cash basis or utility basis. The cash basis treats all customers the same regardless of water system ownership, whereas the utility basis approach recognizes that the owners of the water system are entitled to charge for depreciation and a fair rate of return on the investment in facilities serving non-owner customers. Regardless of the approach used, both the cash basis and utility basis test year total cost of service will be the same for a municipal water utility.

3.3 Functional Cost Components

The total cost of providing water service has been analyzed by system function. The basic functional cost components for the water system consist of Base, Extra Capacity, Customer (Meters & Services and Billing), Direct Fire Protection, and Water Development Rights. Costs allocable only to a specific customer group are assigned directly to that group.

Base costs are those which vary directly with the total quantity of water used, as well as those costs associated with serving customers under average load conditions without the elements necessary to meet water use variations or peak demands. Base costs include operating costs for supply/production, pumping, storage, and distribution facilities, and a portion of administrative and general costs, as well as capital costs on water plant investment associated with serving customers to the extent required for a constant, or average annual rate of use.

Extra Capacity costs include operating costs incurred due to demands in excess of average load conditions, and capital costs for additional plant and system capacity beyond that required for the average rate of use. Maximum Day Extra Capacity costs are incurred in meeting demands in excess of average day requirements. Maximum Hour Extra Capacity costs are incurred in meeting demands in excess of maximum day use.

Customer costs are defined as costs which tend to vary in proportion to the number of customers connected to the water system. Customer costs are further classified as: (1) billing related costs including meter reading, billing, and collection, and (2) meter/service related costs including maintenance and capital charges associated with meters and services.

The joint cost category was established in order to properly allocate the costs related to facilities which are shared by all customers exclusive of those facilities which are allocable directly to a specific customer group. The facilities included in this category include supply/production facilities including wells, basins, and purification equipment; pumping and storage facilities; and transmission system mains required to deliver water to all customers.

The facilities included in the Specific to Retail cost category are the system of distribution mains which are used principally to provide water service to retail customers only.

3.4 Allocation to Cost Components

The BexarMet water system is comprised of various facilities; each designed and operated to fulfill a given function. To provide adequate service to its customers, the water system must be capable of not only providing the total amount of water requested, but also supplying water at adequate volume to meet maximum day and hour (peak day and hour) demands. Since all customers do not exert maximum demands at the same time, capacities of various system components are established to meet the maximum coincidental demand of all classes of customers. The capacities of some facilities such as well production, treatment, and transmission mains are designed to meet maximum day demands. Other facilities, such as booster pumping, tanks and water storage

reservoirs, and distribution mains are designed to meet maximum hourly rates of water use. These requirements result in different ratios of average to maximum demands, or load factors to be met by the various parts of the system. The demand ratios, in turn, provide the basis for allocating costs of respective facilities to the Base and Extra Capacity cost components.

In the allocation of operating expense and capital costs, costs are allocated directly to functional components to the extent possible. The separation of costs into functional components provides a means for distributing such costs to the various customer classes on the basis of respective responsibilities for each particular type of service.

3.5 Plant Investment and Capital Costs

Capital costs may be reasonably assigned to functional components on the basis of plant investment. The estimated test year plant investment in water system facilities consists of plant in service as of April 30, 2010. The resulting allocation of plant investment is the basis for the respective recovery of test year capital costs. Allocation of the $251,055,400 plant investment for test year 2010-11 is shown in Table 3-2.

Table 3-2
BexarMet Water District
Allocation of Net Plant Investment To Functional Cost Components
2010-2011 Test Year

Description	Total	Joint			Specific to Retail			Meters & Services	Customer Billing	Direct Fire	Water Development/ Rights
		Base	Extra Capacity Maximum Day	Extra Capacity Maximum Hour	Base	Extra Capacity Maximum Day	Extra Capacity Maximum Hour				
Wells	$14,270,100	$8,394,200	$5,875,900								
Pump Stations	9,255,300	2,985,600	2,089,900	4,179,800							
Ground and Elevated Tanks	15,609,800	4,909,500	3,436,700	6,873,400						390,200	
SCADA System	1,085,500	462,600	316,300	306,600							
Transmission Mains	60,950,800	35,853,400	25,097,400								
Distribution Mains	129,356,800				41,102,100	28,771,500	57,542,800			1,940,400	
Hydrants	363,800									363,800	
Data Proc. Equip. & Software	253,500								253,500		
Meters and Services	5,791,100							5,791,100			
Land and Easements	8,747,600	2,084,500	1,397,000	431,100	1,559,700	1,091,800	2,183,500				
Water Resource Development	7,486,400										7,486,400
Water Rights	2,893,500										2,893,500
Water System Acquistions	13,198,300	2,930,300	2,050,800	632,800	2,289,500	1,602,700	3,205,400	322,600	14,100	150,100	
Buildings and Equipment	7,402,100	1,643,400	1,150,200	354,900	1,284,100	898,800	1,797,700	180,900	7,900	84,200	
Other General Facilities	3,396,900	754,200	527,800	162,900	589,300	412,500	825,000	83,000	3,600	38,600	
Total Plant	$280,061,500	$60,017,700	$41,942,000	$12,941,500	$46,824,700	$32,777,300	$65,554,400	$6,377,600	$279,100	$2,967,300	$10,379,900
Less: Contributed Plant											
Wells	45,400	26,700	18,700								
Tanks	112,100	36,200	25,300	50,600							
Distribution Mains	28,848,600				9,306,000	6,514,200	13,028,400				
Net Plant Investment	$251,055,400	$59,954,800	$41,898,000	$12,890,900	$37,518,700	$26,263,100	$52,526,000	$6,377,600	$279,100	$2,967,300	$10,379,900
Percentage of Total	100.0%	23.9%	16.7%	5.1%	14.9%	10.5%	20.9%	2.5%	0.1%	1.2%	4.1%

3.6 Operating Expense

Operating expenses for the test year related to production and distribution systems are allocated to functional cost components based on maintenance and operation expense categories used by the water system. Administrative and overhead expenses related to total system operation are allocated in relation to all other specific maintenance and operation expense categories. Test year operation and maintenance expenses of $53,877,400 are reduced by other operating revenue totaling $3,463,600 to determine test year net operating expense. Allocation of net operating expense of $50,413,800 for the test year appears in Table 3-3.

Table 3-3
BexarMet Water District
Allocation of Operating Expenses To Functional Cost Components
2010-2011 Test Year

Description	Total	Joint			Specific to Retail			Meters & Services	Customer Billing	Direct Fire	Revenue Based Allocations	Water Development/ Rights
			Extra Capacity			Extra Capacity						
		Base	Maximum Day	Maximum Hour	Base	Maximum Day	Maximum Hour					
Source of Supply/Production												
Purchased Water	$12,743,700	$10,223,700										
Water Treatment	4,673,100	2,748,900	1,924,200									
Purchased Power	3,400,000	2,000,000	1,400,000									
Water Testing	576,000	576,000										
Other	150,000	150,000										
Subtotal Source of Supply/Production	$21,542,800	$15,698,600	$3,324,200									
Water System Operation & Maintenance												
Wells and Pump Stations	$817,500	$480,900	$336,600									
Ground and Elevated Storage Tanks	110,000	34,600	24,200	48,400							2,800	
Transmission and Distribution Mains	1,430,000	281,000	196,700		254,100	177,900	355,800	143,000			21,500	
Labor	13,742,600	4,643,100	3,249,800	282,100	1,481,200	1,037,000	2,074,100	833,600			141,700	
Materials & Supplies	2,835,500	958,100	670,500	58,200	305,600	214,000	427,900	172,000			29,200	
Equipment Leases	211,400	71,400	50,000	4,300	22,800	16,000	31,900	12,800			2,200	
Other	320,300	108,300	75,700	6,600	34,500	24,200	48,300	19,400			3,300	
Subtotal System Operation & Maintenance	$19,467,300	$6,577,400	$4,603,500	$399,600	$2,098,200	$1,469,100	$2,938,000	$1,180,800			$200,700	
Customer Service & Billing												
Customer Service	$2,180,900									$2,180,900		
Water Conservation	397,900				298,400			99,500				
Postage	487,400									487,400		
Bad Debt Expense	546,900											546,900
Communication Expense	330,900									248,200		82,700
Software System Support	262,700									183,900		78,800
Subtotal Customer Service & Billing	$4,206,700	$0	$0	$0	$298,400	$0	$0	$99,500	$3,100,400	$0	$708,400	
Business Support												
Human Resources	$327,900	$179,700	$57,500	$2,900	$17,400	$10,700	$21,300	$9,300	$22,500	$1,500	$5,100	
Purchasing	366,600	201,200	64,300	3,200	19,400	11,900	23,800	10,400	25,100	1,600	5,700	
General Administrative	6,466,100	2,923,100	1,133,700	57,100	342,700	210,100	420,100	183,100	711,300	28,700	101,300	
Subtotal Business Support	$7,160,600	$3,304,000	$1,255,500	$63,200	$379,500	$232,700	$465,200	$202,800	$758,900	$31,800	$112,100	
Total Operation & Maintenance Expense	$52,377,400	$25,580,000	$9,183,200	$462,800	$2,776,100	$1,701,800	$3,403,200	$1,483,100	$3,859,300	$232,500	$820,500	
Operating Transfers	1,500,000	732,500	263,000	13,300	79,500	48,700	97,500	42,500	110,500	6,700	23,500	
Total Gross Operating Expenses	$53,877,400	$26,312,500	$9,446,200	$476,100	$2,855,600	$1,750,500	$3,500,700	$1,525,600	$3,969,800	$239,200	$844,000	
Less Other Operating Revenue												
Customer Penalties	$1,615,000									$1,292,000		$323,000
Collection Fees	524,300									393,200		131,100
Interest Income	160,800	90,000	28,200	1,400	8,500	5,200	10,400	4,600	11,800	700		
All Other	1,163,500	650,300	204,000	10,300	61,700	37,800	75,600	32,900	85,700	5,200		
Subtotal	$3,463,600	$740,300	$232,200	$11,700	$70,200	$43,000	$86,000	$37,500	$1,782,700	$5,900	$454,100	
Net Operating Expense	$50,413,800	$25,572,200	$9,214,000	$464,400	$2,785,400	$1,707,500	$3,414,700	$1,488,100	$2,187,100	$233,300	$389,900	
Percentage of Total	100.0%	50.7%	18.3%	0.9%	5.5%	3.4%	6.8%	3.0%	4.3%	0.5%	0.8%	

3.7 Allocation of Costs to Customer Classes

The total cost responsibility of each customer class may be estimated by the distribution of the cost of service for each cost component among the customer classes based on the respective service requirements of each class.

3.8 Customer Classifications

BexarMet water customers have been separated into specific categories for water service including retail and wholesale customers. Non-residential retail customers (commercial rate class) are presently grouped for rate classification purposes and are generally served at a similar average cost. These customers, however, do place somewhat different loads or peaks on the water system in terms of annual, daily, and hourly water demands. Therefore, for cost allocation purposes, the commercial rate group is separated into the classifications of apartment, commercial, and school accounts.

These retail and wholesale classes group customers with similar service requirement characteristics and provide a means for allocating costs to customers. The design of equitable rate schedules then follows.

3.9 Units of Service

In allocating the responsibility for costs of service, Base costs, Extra Capacity costs, and Customer costs may be distributed to customer classes according to respective service requirements of the classes.

The cost of service responsibility for Base costs vary with the volume of water used, and may be distributed to customer classes on that basis. Extra Capacity costs are those costs associated with meeting peak rates of water use, and these costs are distributed to customer classes on the basis of respective extra capacity requirements. In determining the responsibility of each customer class for Extra Capacity costs, peak requirements of the various classes are estimated on the basis of an analysis of the BexarMet water system's operating and billing records.

Generally, residential customers place more severe peak demands on the water system than do commercial, and apartment customers. Therefore, residential customers are assigned higher capacity factors than the non-residential customers. However, based on the operating and billing records provided by the client, school accounts had the highest maximum day and hour demand factors of all customer classes. We attribute these higher peaks to irrigation use. The apartment and commercial customers' water use is generally spread more evenly throughout the day, and maximum rates of use tend to depart from the average less than the peak requirements of residential users. The wholesale customers receive water service through master meters and are projected to exhibit usage characteristics similar to the District's residential class.

Customer costs are distributed among customer classes on the basis of the number and size of water meters in service, and on the number of bills rendered. Meter related costs are allocated on the basis of the number of equivalent 5/8-inch meters serving each customer class. The number of equivalent meters estimated for each customer classification is based upon the total number of various size meters connected to the water system by the respective classes and the ratio of the cost of various sized meters to the cost of a 5/8-inch meter installation.

Fire Protection Extra Capacity requirements are based on standards of the Insurance Service Office (ISO) for peak fire flow requirements. A primary and secondary fire flow requirement is assumed to be the total fire demand. For the analysis, the largest fire hydrant flow requirement is 6,000 gallons per minute (gpm) with a 4 hour duration and a secondary fire flow of 2,000 gpm for 2 hours.

Table 3-4 illustrates the estimated units of service for the test year.

Table 3-4
BexarMet Water District
Estimated Units Of Service
2010-2011 Test Year

Customer Class	Total Annual	Average Day	Maximum Day Capacity Factor	Maximum Day Total Capacity	Maximum Day Extra Capacity (a)	Maximum Hour Capacity Factor	Maximum Hour Total Capacity	Maximum Hour Extra Capacity (b)	Customer Equivalent Meters	Customer No. of Bills	Equivalent Hydrants	Revenue Percentage
	1,000 gals	1,000 gpd	%	1,000 gpd	1,000 gpd	%	1,000 gpd	1,000 gpd				
Retail Service												
Residential	8,930,697	24,468	200	48,935	24,468	330	80,743	31,808	98,605	1,061,076		68.01%
Apartment	416,000	1,140	190	2,165	1,026	290	3,305	1,140	2,180	4,992		5.20%
Commercial	1,927,156	5,280	195	10,296	5,016	315	16,632	6,336	15,209	48,684		25.15%
School	41,800	115	205	235	120	350	401	166	371	264		0.65%
Fire Protection												
Public				1,600	1,600		10,972	9,372		0	7,695	
Private				77	77		530	453		0	372	
Subtotal Retail Service	11,315,653	31,002		63,308	32,307		112,583	49,275	116,365	1,115,016	8,067	
Wholesale												
Atascosa Rural Water Supply	50,000	137	190	260	123	320	438	178	75	12		0.19%
East Central	160,000	438	190	833	395	320	1,403	570	100	12		0.79%
Subtotal Wholesale	210,000	575		1,093	518		1,841	748	175	24		
Total System	11,525,653	31,577		64,401	32,824		114,424	50,023	116,540	1,115,040	8,067	

(a) Extra capacity in excess of average day usage.
(b) Extra capacity in excess of maximum day usage.

3.10 Customer Class Costs of Service

The costs of service are distributed to the various customer classes by application of unit costs of service to respective service requirements. Unit costs are based on total costs divided by the applicable units of service and are presented in Table 3-5. The total unit costs of service applied to the respective service requirements for each customer class results in the total allocated cost of service for each customer class as shown in Tables 3-6 (retail customers) and 3-7 (wholesale customers) for the 2010-11 test year.

Table 3-5
BexarMet Water District
Unit Costs of Service
2010-2011 Test Year

Description	Total	Joint			Specific to Retail			Customer Billing	Direct Fire	Revenue Based Allocations	Water Development/ Rights	Total
			Extra Capacity			Extra Capacity						
		Base	Maximum Day	Maximum Hour	Base	Maximum Day	Maximum Hour					
Units of Service												
Annual Period	11,525,653	31,147	40,198	11,315,653	30,630	39,450					11,525,653	
Fire Protection		1,677	9,825		1,677	9,825						
Total	11,525,653	32,824	50,023	11,315,653	32,307	49,275	116,540	1,115,040	8,067		11,525,653	
Units	1,000 gals	1,000 gpd	1,000 gpd	1,000 gals	1,000 gpd	1,000 gpd	Equivalent Meters	Bills	Equivalent Hydrants	Direct	1,000 gals. Joint - Base	
Operating Expense												
Total Cost - $	25,572,200	9,214,000	464,400	2,785,400	1,707,500	3,414,700	1,488,100	2,187,100	233,300	389,900	2,957,200	$50,413,800
Unit Cost - $/Unit	2.219	280.706	9.284	0.246	52.853	69.299	12.769	1.961	28.920		0.257	
Plant Investment												
Total Value - $	59,954,800	41,898,000	12,890,900	37,518,700	26,263,100	52,526,000	6,377,600	279,100	2,967,300		10,379,900	
Capital Cost												
Total Cost - $	4,508,800	3,150,900	969,400	2,821,500	1,975,100	3,950,100	479,600	21,000	223,100		780,600	$18,880,100
Unit Cost - $/Unit	0.391	95.993	19.379	0.249	61.136	80.165	4.115	0.019	27.656		0.068	
Total Unit Cost of Service												
Inside City Retail - $/Unit	2.610	376.699	28.663	0.495	113.989	149.464	16.884	1.980	56.576		0.324	
Wholesale - $/Unit	2.610	376.699	28.663				16.884	1.980			0.324	
Total Costs of Service												$69,293,900

Table 3-6
BexarMet Water District
Allocation of Cost of Service to Retail Customer Classes
2010-2011 Test Year

Description	Total	Joint			Specific to Retail			Billing	Direct Fire	Revenue Based Allocations	Water Development/ Rights	Total
		Base	Extra Capacity Maximum Day	Extra Capacity Maximum Hour	Base	Extra Capacity Maximum Day	Extra Capacity Maximum Hour					
Retail Service												
Unit Cost of Service - $/Unit	2.610	376.699	28.663	0.495	113.989	149.464	16.884	1.980	56.576	389,900	0.324	
Residential												
Units of Service	8,930,697	24,468	31,808	8,930,697	24,468	31,808	98,605	1,061,076		68.01%	8,930,697	
Costs of Service - $	23,308,360	9,216,900	911,700	4,425,200	2,789,100	4,754,200	1,664,900	2,101,200		265,200	2,896,200	52,332,960
Subtotal												$52,332,960
Apartment												
Units of Service	416,000	1,026	1,140	416,000	1,026	1,140	2,180	4,992		5.20%	416,000	
Costs of Service - $	1,085,700	386,400	32,700	206,100	116,900	170,300	36,800	9,900		20,300	134,900	2,200,000
Subtotal												$2,200,000
Commercial												
Units of Service	1,927,156	5,016	6,336	1,927,156	5,016	6,336	15,209	48,684		25.15%	1,927,156	
Costs of Service - $	5,029,700	1,889,500	181,600	954,900	571,800	947,000	256,800	96,400		98,100	625,000	10,650,800
Subtotal												$10,650,800
School												
Units of Service	41,800	120	166	41,800	120	166	371	264		0.65%	41,800	
Costs of Service - $	109,100	45,300	4,800	20,700	13,700	24,800	6,300	500		2,500	13,600	241,300
Subtotal												$241,300
Public Fire Protection												
Units of Service		1,600	9,372		1,600	9,372		0	7,695			
Costs of Service - $		602,700	268,600		182,400	1,400,800		0	435,400			$2,889,900
Private Fire Protection												
Units of Service		77	453		77	453		0	372			
Costs of Service - $		29,000	13,000		8,800	67,700		0	21,000			$139,500
Total Inside City Retail	29,532,860	12,169,800	1,412,400	5,606,900	3,682,700	7,364,800	1,964,800	2,208,000	456,400	386,100	3,669,700	$68,454,460

Table 3-7
BexarMet Water District
Allocation of Cost of Service to Wholesale Customer Class
2010-2011 Test Year

Description	Joint			Specific to Retail			Meters	Billing	Direct Fire	Revenue Based Allocations	Water Development/ Rights	Total
		Extra Capacity			Extra Capacity							
	Base	Maximum Day	Maximum Hour	Base	Maximum Day	Maximum Hour						
Wholesale												
Unit Cost of Service - $/Unit	2.610	376.699	28.663				16.884	1.980	0.000		0.324	
Units of Service												
Atascosa Rural Water Supply	50,000	123	178				75	12		0.19%	50,000	
East Central	160,000	395	570				100	12		0.79%	160,000	
Subtotal Wholesale Units	210,000	518	748				175	24		0.98%	210,000	
Costs of Service - $												
Atascosa Rural Water Supply	130,500	46,400	5,100				1,300	20		700	16,200	200,220
East Central	417,600	148,600	16,300				1,700	20		3,100	51,900	639,220
Wholesale Costs of Service	548,100	195,000	21,400				3,000	40	0	3,800	68,100	$839,440
Total Outside City												$839,440
Total Water Utility	$30,080,960	$12,364,800	$1,433,800	$5,606,900	$3,682,700	$7,364,800	$1,967,800	$2,208,040	$456,400	$389,900	$3,737,800	$69,293,900

Table 3-8 includes a summary of projected revenues from each customer class under existing rates for the 2010-11 test year indicating increases or decreases of revenue under existing rates required to recover the cost of service from each customer class. Retail class costs of service figures in column 1 are adjusted to recognize public fire protection costs of $2,889,900 as shown in column 2. This reassignment of $2,889,000 in public fire protection costs between the various retail customer classes is shown in Table 3-9. The two wholesale customers were determined to receive no increases due to existing contractual obligations. Allocated wholesale costs of service above the current contractual obligations were reassigned to retail customer classes in column 3 of Table 3-8. Increases are indicated for the wholesale customers when contract prices are adjusted. A comparison of columns 2 and 4 of Table 3-8 for the wholesale customers provides the basis for the adjustments.

Table 3-8
BexarMet Water District
Comparison of Costs of Service
With Projected Revenue Under Existing Rates
2010-2011 Test Year

Customer Class	Costs of Service	Adjusted Costs of Service (a)	Adjusted Costs of Service (b)	Revenue Under Existing Rates	Indicated Increase (Decrease) Required
	$	$	$	$	%
Retail Service					
Residential	52,332,960	54,657,660	54,818,700	44,044,600	24.5
Apartment	2,200,000	2,236,900	2,243,500	3,367,500	(33.4)
Commercial	10,650,800	11,130,800	11,163,600	16,288,400	(31.5)
School	241,300	245,600	246,300	422,400	(41.7)
Public Fire Protection	2,889,900			0	
Private Fire Protection	139,500	183,500	184,000	0	
Subtotal Retail Service	68,454,460	68,454,460	68,656,100	64,122,900	7.1
Wholesale:					
Atascosa Rural Water Supply	200,220	200,220	123,300	123,300	0.0
East Central	639,220	639,220	514,400	514,400	0.0
Subtotal Wholesale	839,440	839,440	637,700	637,700	0.0
Total All Classes	69,293,900	69,293,900	69,293,800	64,760,600	7.0

(a) Adjusted to reflect the redistribution of public fire protection costs of service to other retail customer classes.
(b) Adjusted to reflect the redistribution of wholesale costs of service above the contract amounts to retail customer classes.

As shown in column 5, line 11, an overall water system increase of seven percent (7.0 %) is indicated for the test year. There are indicated adjustments between retail customer classes. The residential class generates most of the BexarMet water sales revenue. However, based on the cost of service analysis, an indicated 24.5 percent increase is needed for the residential class to meet costs of service requirements of $54,818,700. The commercial class customers (apartment, commercial, school, and private fire protection) as a group are shown to require an overall decrease of $6,240,900 to be at cost of service levels. The percentage decreases varies between the apartment, commercial and school customer groups.

Initial considerations when developing water rates, is to establish equitable charges to individual customers commensurate with the cost of providing service. Since developing rates for each individual customer is impractical, schedules of rates are normally designed to meet average conditions for groups of customers having similar service requirements. The foregoing cost of service studies are the result of engineering estimates based to some extent upon judgment and experience, and detailed results should not be used as exact answers but as guidelines during the rate adjustment process. Practical considerations may enter into the final choice of user charges, recognizing such factors as previous rate levels, the degree of adjustments indicated, and policies concerning the application of rates. BexarMet requested that test year rates be developed based on consideration of historical charges and total revenues earned for the individual customer classes.

In future years, StepWise recommends the District move toward cost of service based rates to achieve better equity between customer classes. We would recommend that the adjustments needed to reach cost of service by retail customer classes should be implemented over a multi-year period in order to minimize the rate shock to the residential customer group.

Table 3-9 presents the allocation of public fire protection between the various retail customer classes based on number of accounts and estimated fire demand for each retail customer class. Results of the public fire protection allocation between customer classes are used in the development of adjusted costs of service shown in Table 3-8.

Table 3-9
BexarMet Water District
Development of Demand Related Public
Fire Protection Allocation Basis
2010-2011 Test Year

Customer Class	Assumed Maximum Fire Flow	Assumed Fire Duration	Total Fire Usage	Number of Accounts	Weighted Usage	Allocation Basis	Allocated Public Fire Protection
	gpm	Hours	1,000 gals.	accounts	(3)*(4)	%	
Retail Service							
Residential	2,000	2	240	88,423	21,221,520	80.44	2,324,700
Apartment	4,500	3	810	416	336,960	1.28	36,900
Commercial	6,000	3	1,080	4,057	4,381,560	16.61	480,000
School	10,000	3	1,800	22	39,600	0.15	4,300
Private Fire Protection	6,000	3	1,080	372	401,760	1.52	44,000
Subtotal Retail Service	34,500			93,290	26,381,400	100.00	2,889,900

3.11 Private Fire Protection Charges

A schedule of test year cost based private fire charges by fire line size is shown in Table 3-10. Charges are based on the allocated cost for private fire protection and the number of private fire lines from the District's billing system. The allocated annual cost of providing private fire protection is $494 per equivalent 6 inch hydrant/fire line.

Table 3-10
Private Fire Protection Charges

Fire Line Size	Annual Charge
4 inch or less	$168
6 inch	$494
8 inch	$1,051
10 inch	$1,889
12 inch	$3,053

SECTION 4: THE PROPOSED RATES

4.1 Introduction

The proposed rates address the charges for retail water service within the District's existing service areas. The Study did not address rates for wholesale service because those rates are determined using contractual terms regarding adjustments, and the District's ability to alter the rates for wholesale service is limited to the individual contract terms. Several rate alternative options were developed as part of the rate study. Of those rate options developed, some were eliminated by the District's senior leadership, and never presented to the Board of Directors. Other possible rate alternatives were eliminated based on the May 3, 2010 workshop with the Board of Directors and the Board's feedback. Three specific rate option alternatives were presented to the Board in workshops on June 24, 2010 and July 22, 2010.

The District's Board of Directors established four objectives related to the rate structure in a workshop held on May 3, 2010:

1. Equity between retail customer classes
2. Rates that increase revenue stability
3. Rates that send a conservation pricing signal to high-use customers
4. A rate structure that has public acceptance

In addition to the above goals, the proposed rates are designed to recover the District's test year revenue requirements. The proposed rate schedule as adopted by the Board of Directors is provided in Tables 4-2 through 4-5.

4.2 Rate Design Approach

The StepWise consulting team used statistical analyses and Monte Carlo simulation modeling to calculate the proposed rates. We followed a three-step iterative process for designing the rates that required us to (1) normalize and statistically define water demands, (2) set up and run the simulation model, and (3) test the simulation results against the goals and objectives. The latter two steps were repeated if necessary until the rates are judged to meet the goals and objectives. The following subsections describe these three steps in more detail.

4.3 Normalization of Water Demands

Like most water utilities, the District experiences cycles of high and low per capita water demand. For the District, these cycles tend to correlate to the timing and amount of annual rainfall and, to a certain degree, the severity of drought periods which bring with them requirements to force curtailments of service in order to preserve water resources. Figure 1 demonstrates the variation in water demand (measured in aggregate at the system level) as it relates to annual rainfall totals.

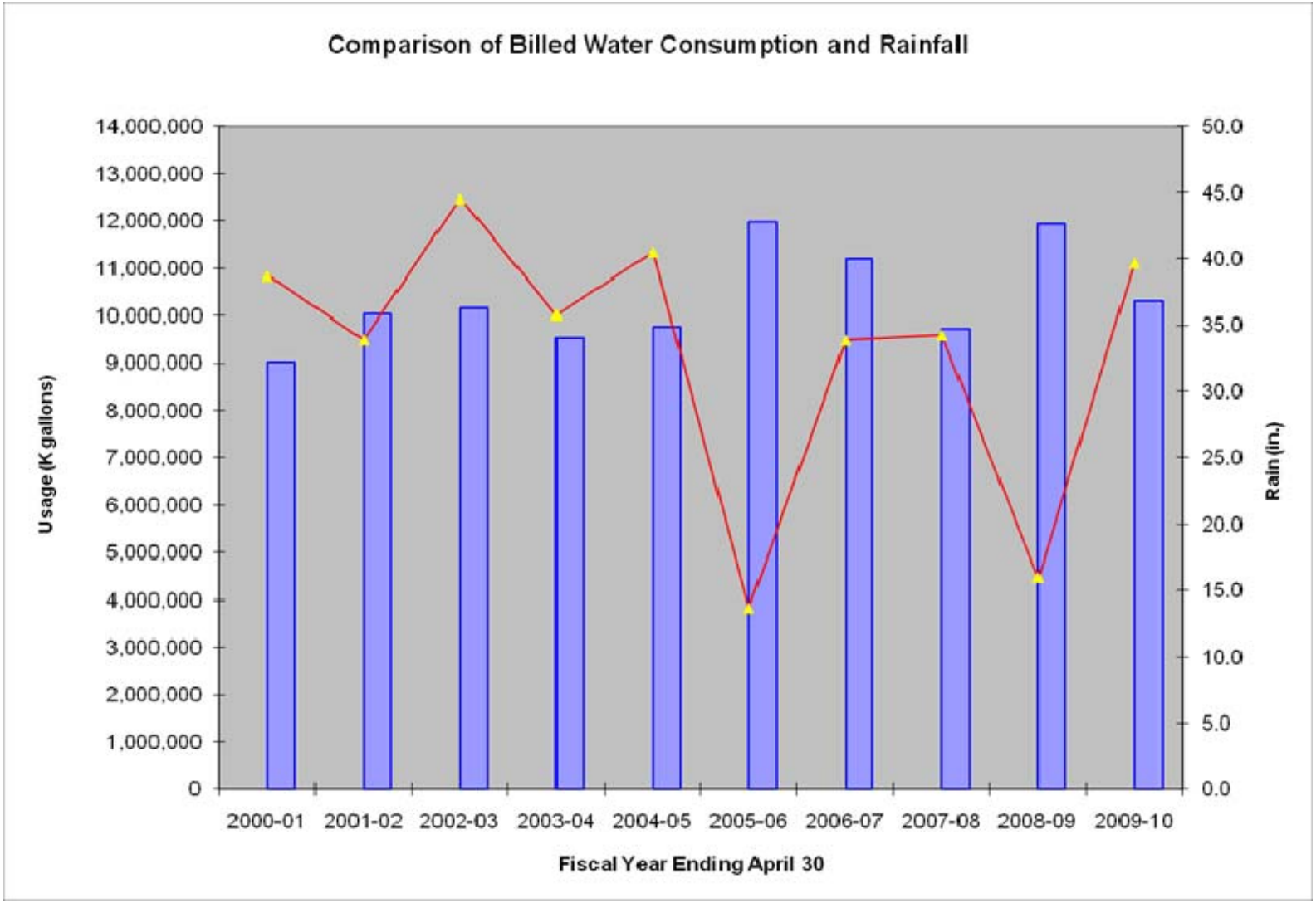


Figure 1 Comparison of Total Water Sold and Fiscal Year Rainfall

To normalize water demands, StepWise analyzed the District's individual billing records over an eight-year period. A statistical profile was developed from the data for each of the District's existing customer classes for each month and for each meter size. The results of these analyses produced what is called *probability distribution function* applicable for one month (e.g., January), for one customer class (e.g., Residential), for one meter size (e.g., 5/8-inch meter), in each existing rate group (e.g., Group 2). In this manner, StepWise created a probability function like the one shown in Figure 2, to describe expected water usage for all of the District's nearly 92,000 customers.

The probability function provides an understanding of the average usage occurring in each month, for each type of customer. Water usage for a 5/8-inch metered residential customer in January, for example, is much different than water usage for 2-inch metered commercial customer in July. The statistical analysis allows quantification of these differences and, because of the long time frame used, smoothes the highs and lows that come from changes in weather and/or climate. It was determined that usage varies significantly by geographic location within the District's service areas. During summer months especially, residential usage in the Southside service area is significantly lower than usage in the Hill Country system.

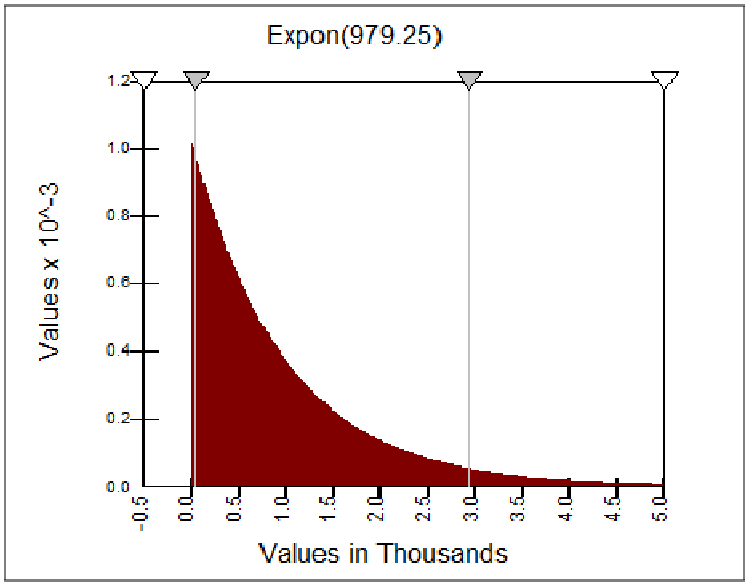


Figure 2 Probability Function (Residential 5/8" Meter, January

4.4 Simulation Modeling

The StepWise consulting team used Monte Carlo techniques to analyze the proposed rates. Monte Carlo methods are widely acknowledged approaches which use statistical computer programs to simulate the behavior of systems. In this case, we were interested in the District's system for billing customers for water usage. Starting from the probability functions discussed above that define customers' monthly water usage, the simulation calculated expected monthly bills based on inputs that defined the proposed rate schedule(s).

The simulation was "run" thousands of times. For each iteration, a data point was randomly selected from each probability function (all data points fall within the defined limits of the probability function) in the simulation model and a monthly bill was calculated for that data point. Thus, the model produced a monthly bill (January through December) for each class (commercial, and residential),

based on the customers' meter sizes and grouping within the District's current rate schedule. There were 684 such calculations for each iteration; we ran 10,000 iterations, resulting in 6.8 million monthly bill calculations.

As the simulation was run, each monthly bill was tabulated, and the results were summarized to show the expected revenues as compared to the revenue requirements. In addition, the simulation model captured additional statistical information that allowed quantification of the expected results within a 95% confidence interval. This means that in a year with normal precipitation and water demands, based on the five-year data sample used in the analysis, the proposed rates will fall within a defined range with a confidence level of 95% (meaning there is a maximum of a 5% chance — all else being equal — that the revenues would fall outside the indicated range, either higher or lower). Figure 3 shows the expected revenues from the proposed rate schedule. The left column shows the expected revenue; the middle column shows the high end of the range (the +95% interval); the right column shows the lower end of the expected revenues (the -95% interval). The tabular information from this figure is provided in Figure 4.

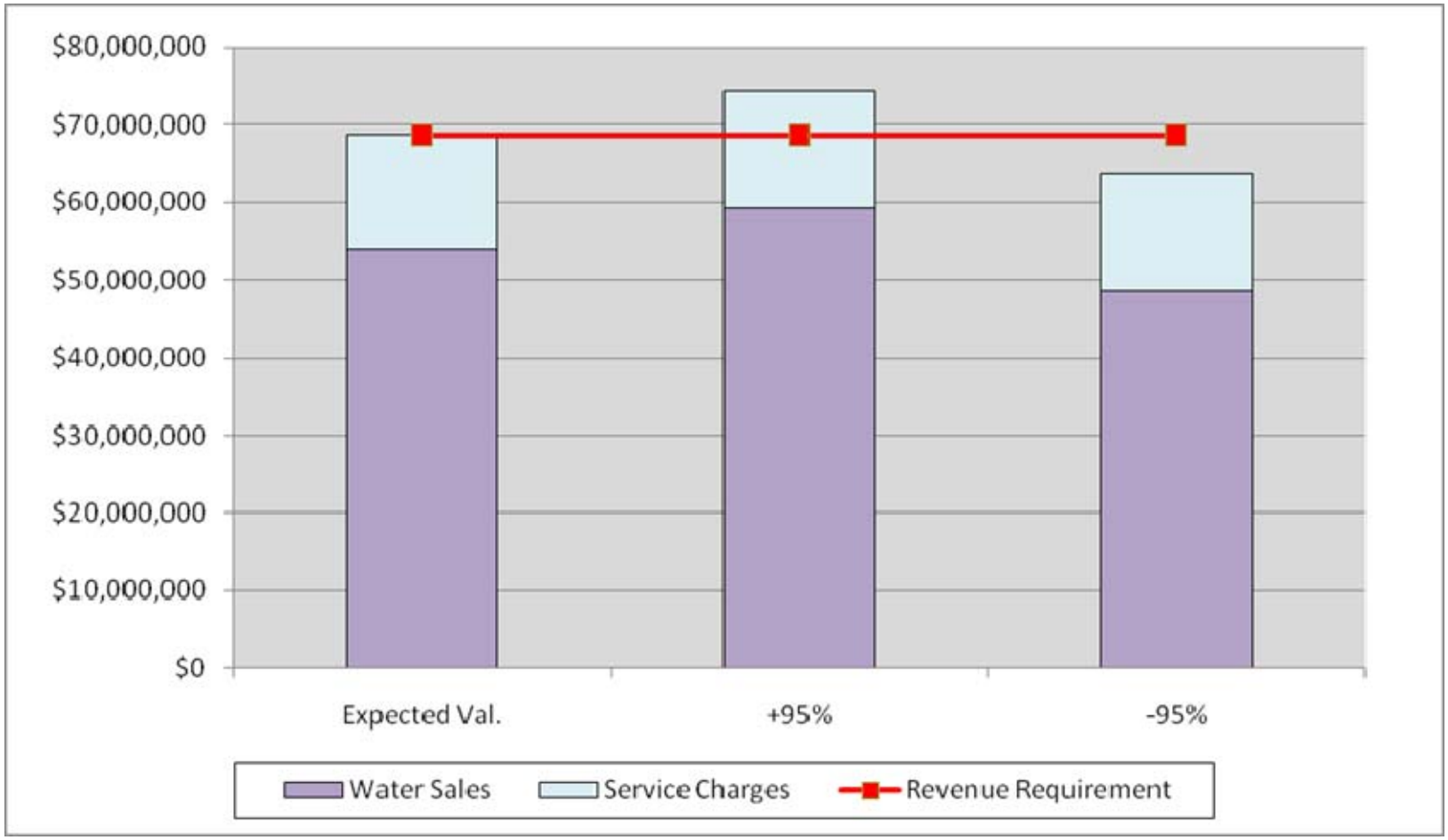


Figure 3 Expected Revenues at Proposed Rates (Compared to Test Year Revenue Requirement)

Table 4-1 Expected Revenues from Proposed Rates			
Rate Component	**Expected Val.**	**+95%**	**-95%**
Water Sales	$53,841,649	$59,163,751	$48,519,547
Service Charges	14,882,555	15,216,200	15,216,200
Totals	$68,724,204	$74,379,950	$63,735,746
Test Year Revenue Req. (Incl. EAA Fees)	$68,656,200	$68,656,200	$68,656,200
Surplus/(defecit)	$68,004	$5,723,750	($4,920,454)

The StepWise team used the simulation model to analyze several rate design alternatives for the District. Rate structures that would not reasonably recover the revenue requirement and/or failed to meet the District's objectives were eliminated from further consideration. In analyzing Figure 3, it is important to understand that the expected revenue falls *within the 95% confidence interval*. What this means is that, under normalized conditions, there is an equal likelihood that the revenues will fall at the lower end of the range as they may the higher end of the range. The indicated expected value is merely the middle of the interval. Thus, what the simulation model has allowed is to provide a quantification of the relative risk inherent in the proposed rate structure; the indicated spread in revenues within the interval of over $10.6 million indicates a 15.5% expected variance in revenues to the District under normal demand conditions (again, normal conditions are defined by analysis of customer usage data from the preceding eight year period).

4.5 Comparing Results to Board Objectives

The proposed rates were the result of a number of simulation runs using the Monte Carlo method described in the report. The District's staff and members of the Board evaluated the earlier alternatives in terms of how well each alternative achieved the Board's objectives. Ultimately, the Board adopted the proposed rates as shown in Tables 4-2 through 4-5.

Table 4-2 Residential Class Capacity Reservation Fee	
Meter Size	Monthly Charge
5/8"	$7.93
3/4"	$10.38
1"	$15.87
1-1/2"	$39.67
2"	$63.47

Table 4-3 Commercial Class Capacity Reservation Fee	
Meter Size	Monthly Charge
5/8"	$24.41
3/4"	$30.51
1"	$48.82
1-1/2"	$122.06
2"	$195.30
2-1/2"	$317.35
3"	$439.41
4"	$781.18
6"	$1,708.83
8"	$2,929.43

Table 4-4
Residential Class Volume Charges

Monthly Consumption:	Volume Charge per 1,000 gallons
0 to 5,000 gals.	$0.89
5,001 to 10,000 gals.	$1.43
10,001 to 17,000 gals.	$3.95
Over 17,000 gals.	$6.30

Water Supply Fee (all customer classes):
$1.84 per 1,000 gallons

EAA Management Fee (pass through):
$0.15 per 1,000 gallons

Table 4-5
Commercial Class Volume Charges

Monthly Consumption:	Volume Charge per 1,000 gallons
0 to 40,000 gals.	$2.54
40,001 to 150,000 gals.	$4.95
Over 150,000 gals.	$8.00

Water Supply Fee (all customer classes):
$1.84 per 1,000 gallons

EAA Management Fee (pass through):
$0.15 per 1,000 gallons

4.6 Equity Between Retail Customer Classes

Initial considerations when developing water rates, is to establish equitable charges to individual customers commensurate with the cost of providing service. Since this is impractical, schedules of rates are normally designed to meet average conditions for groups of customers having similar service requirements. Practical considerations may enter into the final choice of user charges, recognizing such factors as previous rate levels, the degree of adjustments indicated, and policies concerning the application of rates. As described in the previous chapter, the District's existing rate schedule is not consistent with cost of service determinations between customer groups.

4.7 Revenue Stability

Historically, the District has used a relatively high fixed monthly service charge as a significant component of the rate structure. Apart from providing stable and predictable revenues, the service charge has the effect of increasing the average cost of water for customers who use a relatively small amount per month. In 2007, the District moved to a rate structure that was more reliant on volume-based charges. One of the District's goals for the 2007 Study was to move away from dependence on fixed service charges and to rely more on volume-based charges in order to promote water conservation and increase the equitability of the then existing rates. The changes put in place in 2007 resulted in a net decrease in monthly bills for the smallest water users in the District – those using less than 10,000 gallons per month on average. The 2007 rate changes also reduced monthly service charges significantly and have resulted in a decrease in monthly bills for all typical residential customers (5/8-inch meters) using less than 10,000 gallons per month compared to the previous rate structure that was dependent on relatively high fixed monthly charges. This rate structure change also increased the variability of rate revenue due to wet summers or during periods of water use restrictions. Some of the rate alternatives developed during the current Study would increase

revenue stability, but these alternatives would have also increased monthly bills for residential customers using less than 7,500 gallons per month by more than the overall system increase of 7%. Because of this, public acceptance of such alternatives was deemed to be low. The Board adopted rates have approximately the same revenue stability characteristics as the existing rates.

One of the methods used to determine revenue stability was to plot the unit revenues compared to the unit costs of service for each customer class. This is a descriptive approach that allows us to analyze how revenue for each unit of demand compares to the average cost of service at each unit of demand. From this information, we can see to what degree the proposed rates depend on high levels of water demand in order to generate the necessary revenues. We can compare both the existing and proposed rates in this way to provide an opinion of revenue stability. The residential class comparison is shown in Figure 4 and the commercial class chart is shown in Figure 5. For the residential class, 93% of all water billed is priced below the class average cost per thousand gallons. The higher volume residential customers are paying more than average cost per unit for all three rate options. Rate structures that depend on high levels of residential water demand to meet system revenue needs are more risky than those that do not. During wet summers or during periods of water use restrictions these higher use residential bills are the most likely to decline - leading to increased revenue instability. A review of Figure 5 shows commercial rate options 2 and 3 above the average cost per unit at all usage levels and option 1 rates above the average cost per unit for most water use levels. The Board adopted option 2 rates. This chart is consistent with the findings of the cost of service analysis in which the commercial class customers were paying rates that were more than their cost of service.

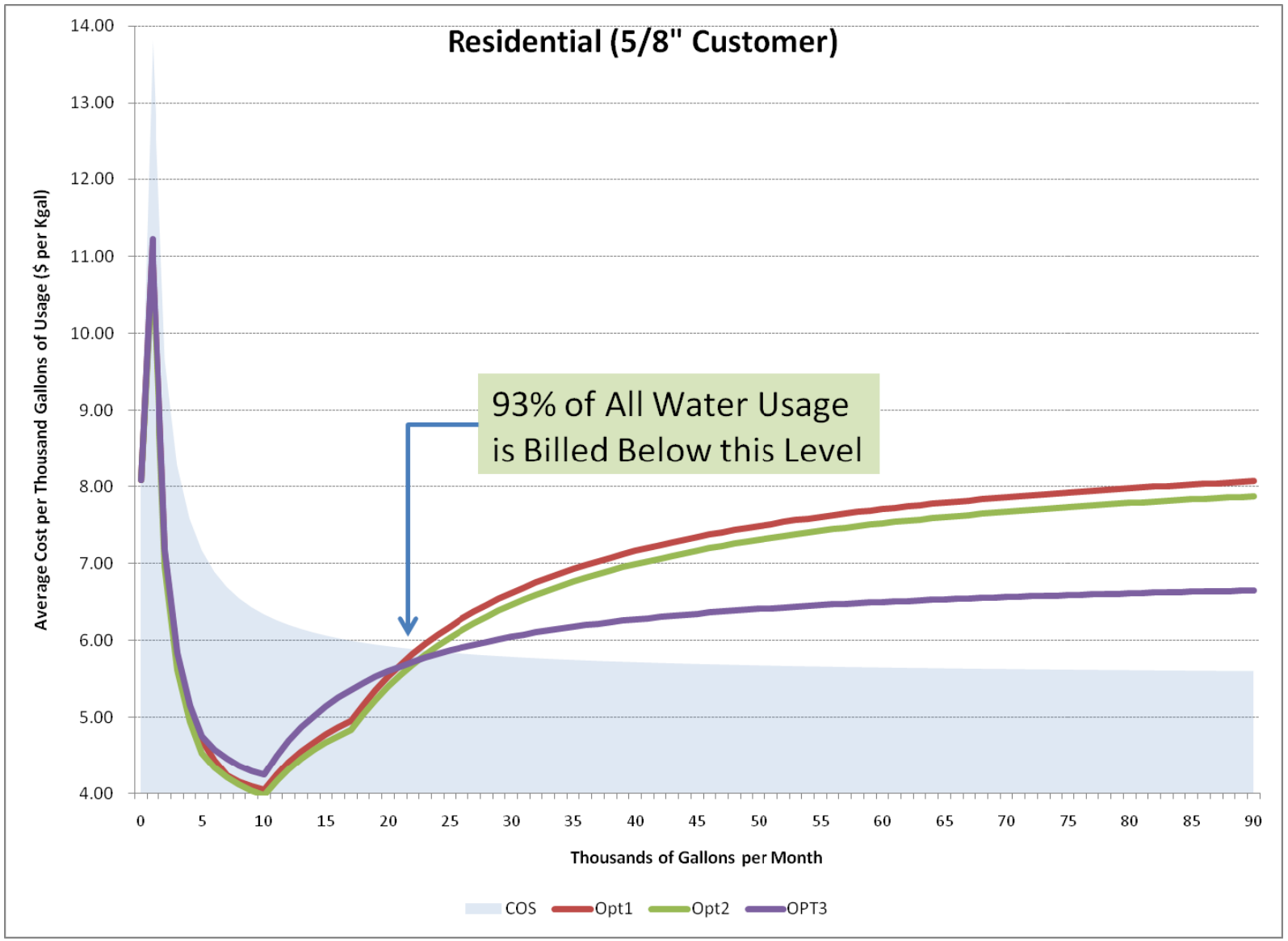


Figure 4 Residential Class Unit Revenues Compared to Unit Cost of Service

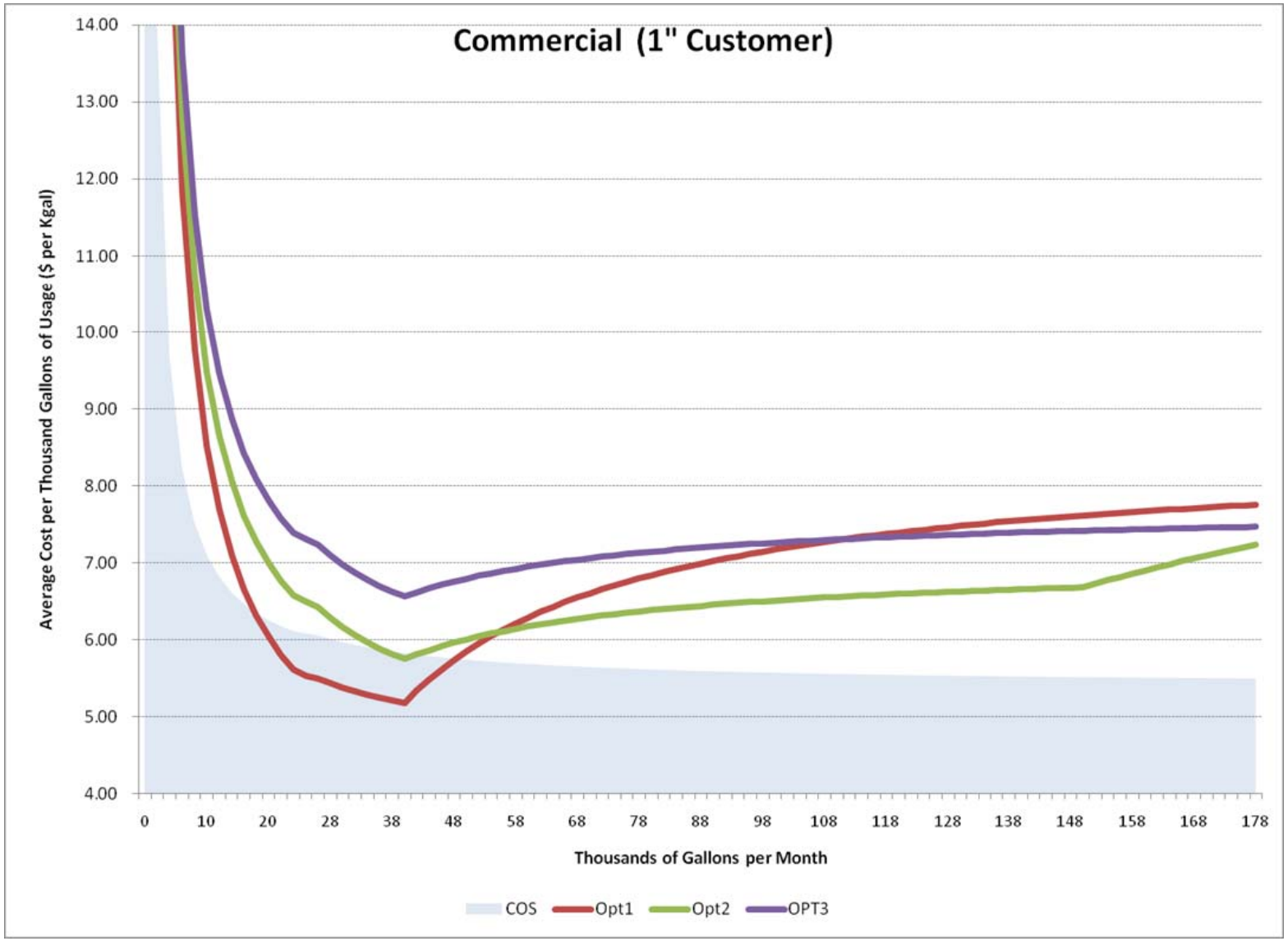


Figure 5 Commercial Class Unit Revenues Compared to Unit Cost of Service

4.8 Conservation Pricing for High-Use Customers

The existing and recently adopted rate structures provides a preference for average residential usage at or below 10,000 gallons per month; usage above this level is charged at increasingly higher rates, with the highest rate at $6.30 per thousand gallons. As a general rule, conservation-based pricing is said to occur when there is a higher price for increasing levels of usage. The District's adopted rate schedule is an example of such a rate schedule.

4.9 Public Acceptance of Rate Structure

The consultant team presented rate study information at three Board workshops (May 3rd, June 24th, and July 22nd). Information included common water rate structures and proposed rate structure options. StepWise participated in two public hearings on June 29th and June 30th to present proposed rate options, answer questions, and to solicit feedback from District customers. District senior staff held other stakeholder meetings during the rate study process. The Board of Directors adopted the new rates on July 30, 2010.

4.10 Findings Related to the Proposed Rate Structure

There are a number of key findings related to the proposed rate structure, as follows:

1) **The adopted rates have essentially the same revenue instability risk as the District's existing rate structure**. Before 2007, the District relied on a large portion of its revenue being derived from fixed monthly service charges. Changes since 2007, including the Board-adopted rates resulting from this Study, place more emphasis on volumetric charges, which increase the risk of revenue recovery for the District. In very wet years, for example, revenues can be expected to fall well below historic levels. Meanwhile, dry years may push revenues well above historic levels. Under normal demand expectations, the rates are expected to produce a 15.5% variance in water sales revenue; this is a systematic risk associated with the rate schedule itself, and it is essentially the same range produced under the current rates.
2) **Price elasticity response to the adopted rates is unknown as of the Report Date.** When presented with higher prices for water, it is expected that consumers will alter their usage characteristics over time, generally decreasing their demand in order to pay less overall. Demand for water generally is price inelastic, meaning that changes in prices tend to have a relatively small effect on water demand. However, some degree of elasticity does exist, particularly for discretionary water usage. Irrigation use and other outdoor uses tend to be discretionary to a point, and it is these demands — generally water demand in the third and fourth blocks under the existing and newly adopted rates — that are being relied on more heavily in order to produce the revenue necessary to recover the District's revenue requirements. The degree of consumer response to the new rates could have a material effect on the District's ability to recover its revenue requirements, which may result in the need for rate increases in the future.
3) **The proposed rates are similar to rates charged by most Texas water utilities**. StepWise conducted a survey of water utilities in Texas and found that most rate structures resemble that of the newly adopted rates. That is, most rate structures are heavily dependent on volumetric charges as opposed to fixed monthly fees, and most rate structures resemble an "inclining block" conservation rate such as the proposed rates.
4) **Current cash reserves may not be adequate to absorb short-term variations in revenue recovery.** Based on the

risk associated with the rate structure, the level of unrestricted reserves available for the District's use may not be adequate to sustain the District through abnormally wet seasons, or any other decrease in normal water demands. Since the rate structure change in 2007, the District has experienced a wet summer in 2007 and a use restricted period during the summer and early fall of 2009 which adversely impacted rate revenues. With currently available reserves, the District has just enough cash to account for the expected variance in revenues resulting from the new rates under normal conditions for a single year, but the use of reserves will not assist the District in meeting debt service coverage during these periods of revenue shortfalls. Abnormal conditions could easily push the revenue variance either up (dry years without water restrictions) or down (in wet years, or dry years with restrictions). Sustained downward trends in demand may cause the District to pursue additional rate increases to ensure recovery of revenue requirements and/or maintenance of debt service coverage requirements.

5) **Neither the existing or adopted rates compare closely to the allocated costs of service by customer class**. Practical considerations may enter into the final choice of user charges, recognizing such factors as previous rate levels, the degree of adjustments indicated, and policies concerning the application of rates. As described in the previous chapter, the District's existing rate schedule is not consistent with cost of service determinations between customer groups. The residential class is paying less than their calculated cost of service while the commercial customers are paying more than their calculated cost of service.

APPENDIX

Survey of Texas Water Utilities

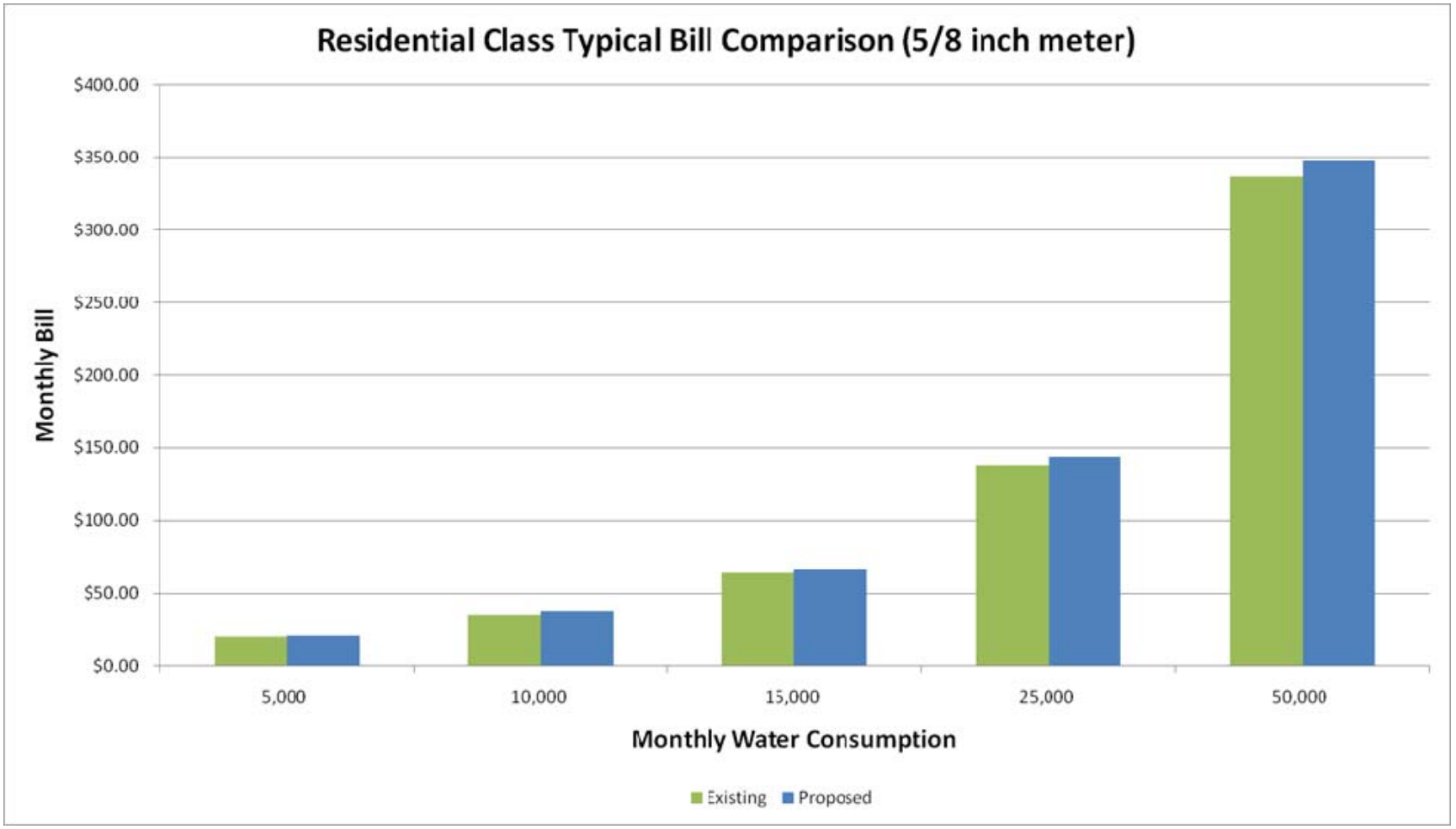
Residential Class Typical Monthly Water Bills, 5/8" meter												
					Effective 11/1/2010							
Monthly Water Use	Existing BMWD	Option 1 BMWD	Option 2 BMWD	Option 3 BMWD	SAWS Standard	SAWS Seasonal	Corpus Christi	Austin	Plano	Garland	Round Rock	Laredo
gals	$	$	$	$	$	$	$	$	$	$	$	$
2,500	14.14	15.13	14.76	14.76	11.49	11.49	12.19	10.01	15.60	12.75	18.78	8.19
5,000	20.86	22.33	21.58	21.58	16.22	16.22	21.63	16.56	16.47	19.63	24.38	11.74
7,500 avg	**27.82**	**29.78**	**29.76**	**29.76**	**22.22**	**22.40**	**32.16**	**23.11**	**20.95**	**26.86**	**29.98**	**15.44**
10,000	35.69	38.20	37.93	37.93	29.06	29.52	43.41	33.75	25.42	34.08	35.58	19.14
12,000	46.89	50.18	49.51	51.91	34.53	35.22	53.50	47.17	29.00	39.86	40.06	22.22
15,000	63.69	68.15	66.88	72.88	45.31	46.40	68.63	67.30	34.37	48.53	46.78	26.84
20,000	98.65	105.57	102.88	107.83	72.70	76.72	98.38	112.30	43.32	70.93	59.10	34.54
25,000	138.25	147.97	143.58	142.78	106.48	115.18	128.13	157.30	61.17	93.33	73.10	42.74
30,000	177.85	190.37	184.28	177.73	140.26	153.63	157.88	252.30	79.02	115.73	87.10	50.94
40,000	257.05	275.17	265.68	247.63	207.82	230.54	228.25	352.30	114.72	160.53	115.10	68.24
50,000	336.25	359.97	347.08	317.53	275.38	307.45	298.62	452.30	150.42	205.33	143.10	86.34

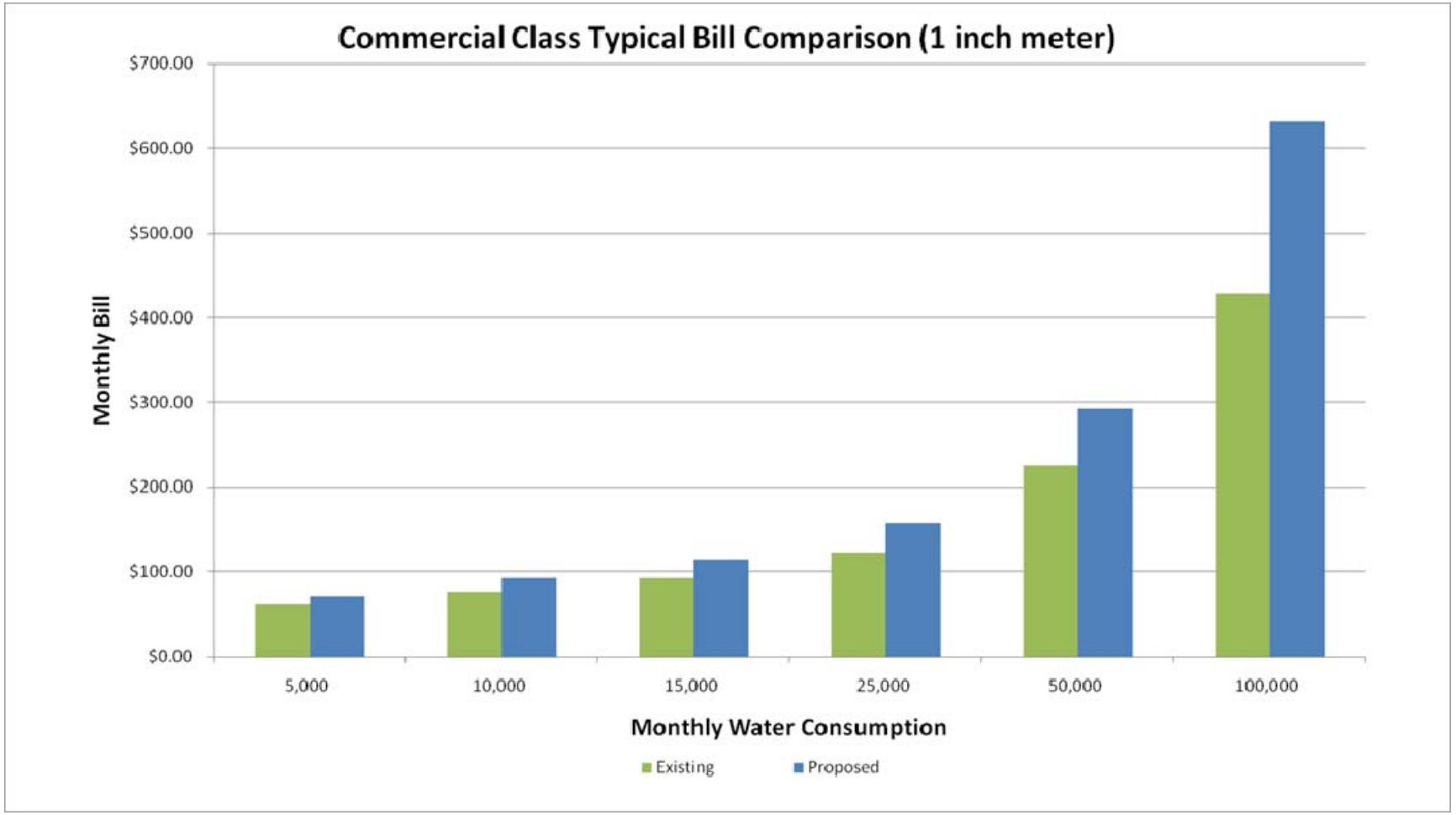
Note: Water bills for BexarMet and SAWS include their respective water supply fees.

Commercial Class Typical Monthly Water Bills, 1" meter								
Monthly Water Use	**Existing BMWD**	**Option 1 BMWD**	**Option 2 BMWD**	**Option 3 BMWD**	**SAWS [a]**	**Austin**	**Dallas**	**Houston**
gals	$	$	$	$	$	$	$	$
5,000	61.90	65.47	70.72	74.82	34.54	30.43	16.39	22.32
10,000	78.20	82.12	92.62	100.82	47.61	51.48	26.14	36.02
15,000	94.50	98.77	114.52	126.82	60.69	72.53	36.14	49.72
20,000	110.80	115.42	136.42	152.82	73.76	93.58	46.14	63.42
30,000	148.25	153.92	180.22	204.82	100.97	135.68	66.14	90.82
40,000 avg	**190.55**	**197.62**	**224.02**	**256.82**	**133.82**	**177.78**	**86.14**	**118.22**
50,000	232.85	241.32	291.92	332.22	172.56	219.88	106.14	145.62
75,000	338.60	350.57	461.67	520.72	277.29	325.13	156.14	214.12
100,000	444.35	459.82	631.42	709.22	382.01	430.38	206.14	282.62
125,000	550.10	569.07	801.17	897.72	486.74	535.63	256.14	351.12

[a] Assumes SAWS Commercial Customer Base Usage is 25,000 gallons per month. Rates effective 11/1/2010.

Typical Bill Comparison Charts




Commercial Class Typical Bill Comparison (1 inch meter)
$700.00
$600.00
$500.00
$400.00
$300.00
$200.00
$100.00
$0.00
Monthly Bill
5,000
10,000
15,000
25,000
50,000
100,000
Monthly Water Consumption
Existing
Proposed

Presentations to the Board of Directors (May 3, 2010, June 24, 2010 and July 22, 2010)