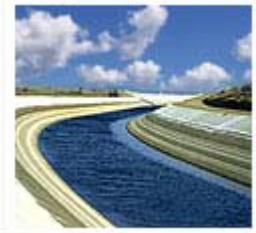
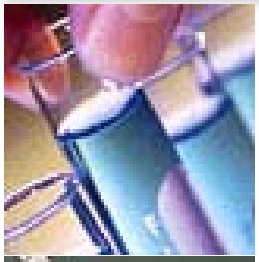
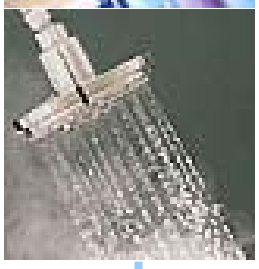
PALMDALE
WATER DISTRICT
PALMDALE CALIFORNIA







WATER RATE STUDY REPORT

RFC
RAFTELIS FINANCIAL
CONSULTANTS, INC.

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March 17, 2009

Mr. Curtis Paxton, Assistant General Manager
Palmdale Water District
2029 East Avenue Q
Palmdale, CA 93550

Subject: Water Rate Study Report

Dear Mr. Curtis,

Raftelis Financial Consultants, Inc. (RFC) is pleased to present this final report regarding the Water Rate Study (Study) to the Palmdale Water District (District). The study involved the development of the District's financial plan and water budget rate structure.

The water budget allocations were designed to provide water allotment objectively and impartially based on each customer's unique characteristics. Two optional water budget rate structures were developed to promote conservation and enhance the financial stability under varying water supply conditions.

It was a pleasure working with you and we wish to express our thanks to you, Messrs. Randy Hill and Michael Williams, and other District staff members for their support and cooperation extended throughout the study. If you have any questions, please call me at (626) 583-1894.

Sincerely,



Raftelis Financial Consultants

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I. EXECUTIVE SUMMARY

The Palmdale Water District ("District") last completed a water rate study in 2005. General increases in costs, along with the District's ongoing commitment to water conservation, has led the District to engage Raftelis Financial Consultants, Inc ("RFC") to conduct a Water Rate Study ("Study") to develop and assist with the implementation of a water budget rate structure. The Study includes development of a six-year rate and financial planning model ("Model") that would be used to ensure adequate funding for operation and capital expenses and evaluation of alternative rate structures. The District also desired RFC to design and assist in implementing water budget rate structure by May 2009. The objectives of the water budget rate structure design and study are to:

- Recover adequate and stable revenues to cover operating and capital costs under varying supply and demand situations;
- Recover costs equitably from various customers;
- Provide incentives for conservation;
- Address infrastructure replacement and long-term capital funding;
- Be consistent with Proposition 218 requirements;
- Minimize customer impacts; and
- Be easy to understand.

This executive summary ("ES") documents the results of the Study and proposes a water budget rate structure that will serve to better meet the District's pricing objectives in Calendar Year ("CY") 2009 and beyond.

A. Pricing Objectives

This Study started with a conceptual design process to help prioritize the District's rate pricing objectives. RFC conducted a Conceptual Design Workshop ("Workshop") to educate stakeholders about the issues involved in developing the financial vision, principles of water budget rate design, and identifying and prioritizing pricing objectives.

Participants of the Workshop ("Project Group"), District Staff and District Board members were asked to prioritize the District's rate pricing objectives. The objectives

were identified as Essential, Very Important, Important, or Least Important and weighted and combined to provide rankings. Table ES - 1 shows the pricing objectives ranked in order of decreasing importance based on the total score. Table ES - 2 shows the demand management sub-objectives ranked in order of decreasing importance based on the Total Score.

Table ES - 1

Price Objectives Rankings

Classification	Objective	Score
Essential	Financial Sufficiency	19
	Cost of Service Based Allocation	17
	Conservation	16
Very Important	Revenue Stability	15
	Legality	15
	Minimization of Customer Impacts	15
	Simple to Understand and Update	14
Important	Rate Stability	11
	Ease of Implementation	10
	Equitable Contributions from New Customers	10
	Affordability to Disadvantaged Customers	9
Least Important	Economic Development	6

Table ES - 2

Demand Management Sub-Objectives Rankings

Classification	Objective	Score
Essential	Reduce Total Consumption	25
Very Important	Surcharge Nonessential and Non-efficient Usage	21
Important	Communicate Conservation Consciousness	18
	Reward Economically Efficient Water Users	17
Least Important	Reduce Peak Consumption	12
	Reduce Seasonal Consumption	12

Based on the results of the pricing objectives exercise, RFC analyzed the District's existing water rate structure, performed a water usage analysis, and examined alternative rate structures to ensure proposed rates are consistent with District rate objectives and financial vision.

B. Review of Findings

This section of the ES provides a brief description of the water system, a review of the revenue requirements, an analysis of cost of service, and the current rate structure.

♦ Water System

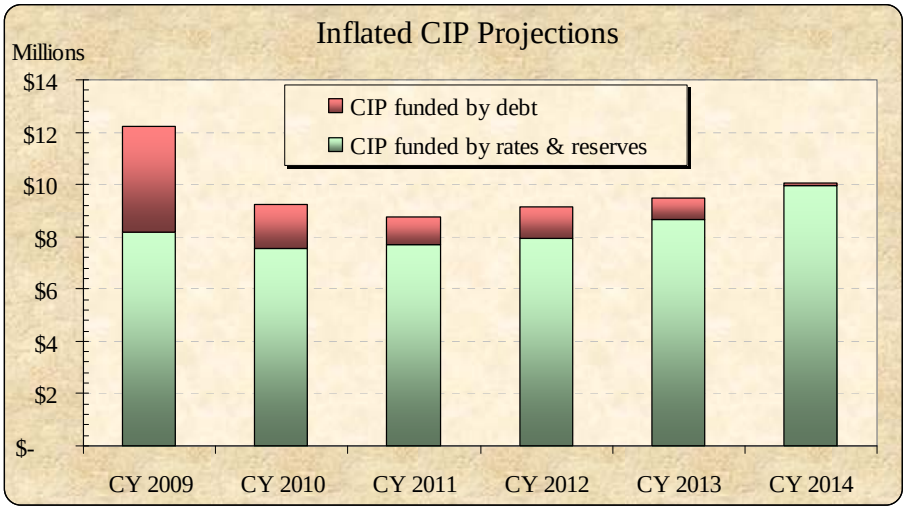
Palmdale Water District customers demand water for a number of purposes, including residential, commercial, and irrigation uses. The District serves 60 percent of its potable demand with water imported from State Water Project ("SWP") (entitlement 21,300 acre ft) and water collected from natural run-off from snow packs in the local mountains, and from rainfall in the Little Rock Reservoir (capacity of 3,500 acre ft). The rate for SWP water was $296/AF in CY 2008, and increased to $350/AF in CY 2009. The water from SWP and Little Rock is collected in Palmdale Lake and treated in the District's water treatment plant ("WTP") before entering distribution system to end users. The remaining potable demand is met using groundwater from the District's 25 local wells.

♦ Capital Financing Plan Summary

Major capital projects for the District include upgrading its water treatment plant ("WTP") for Total Organic Carbon ("TOC") and Trihalomethane ("THM") removal via granular activated carbon ("GAC") contact vessels. It is scheduled to be completed by the end of CY 2009. The WTP upgrade depleted the District's reserve quickly. The recurring capital replacement and refurbishment and capital improvement projects ("CIP") for the District's water facility range from $9 to $10 million a year from CY 2010 to CY 2014, which can be funded by rates or from reserves and restricted funds. Figure ES – 1 below summarizes the District's CIP from CY 2009 to CY 2014.

Figure ES - 1

CIP Projections and Funding Sources

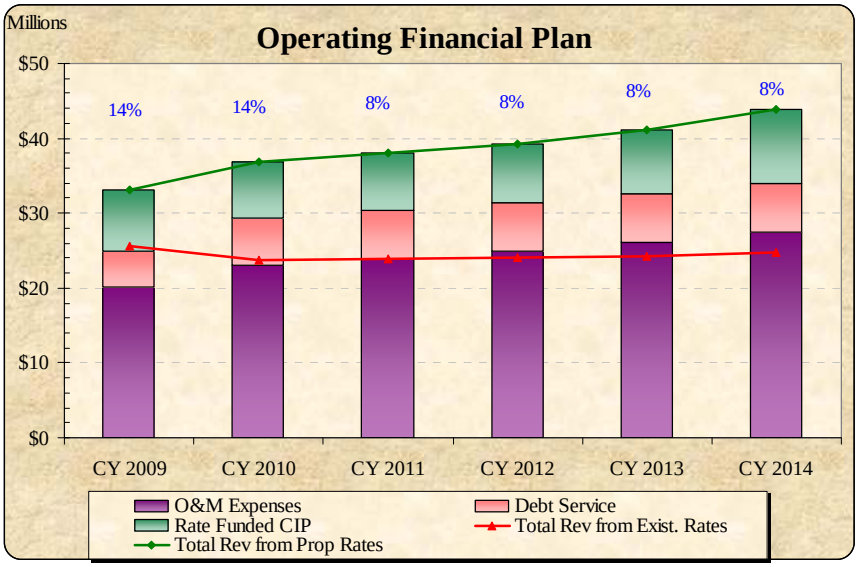


♦ Review of Water Operating Revenue Requirements

Figure ES – 2 below shows all the revenues requirements for the District from CY 2009 to CY 2014 along with the total revenues collected under existing rates and under proposed rates. In this figure, the operating expenses exclude depreciation and non-cash expenses taken from the operating and maintenance ("O&M") expenses reported in the District's annual approved budget. Operating expenses of the District, excluding non-cash expenses such as depreciation, are estimated to increase by $2.9 million, from $20.1 million in CY 2009 to $23 million in CY 2010, due to increased operating costs for the annual replacement of the media in the GAC contact vessels and due to inflation for the existing expenses. Debt service includes annual payments for both old and proposed debt. The District desires to issue $38.25 million in debt by July 2009 to finance the future capital projects and to refinance the 1998 Certificates of Participation ("COP"). Figure ES – 2 shows the operating financial plan including O&M expenses, rate funded capital, debt service expenses and revenues under current and proposed rates.

Figure ES - 2

Operating Financial Plan



♦ Current Rate Structure

The District's current rate structure is a five-tiered structure applied to all customer classes. The rate differentials for the tiers, however, are not sufficient to send a strong conservation signal. Meter charges vary by size and include an allowance for water (effective November 1st, 2005) as shown in Table ES – 3 below.

Table ES - 3

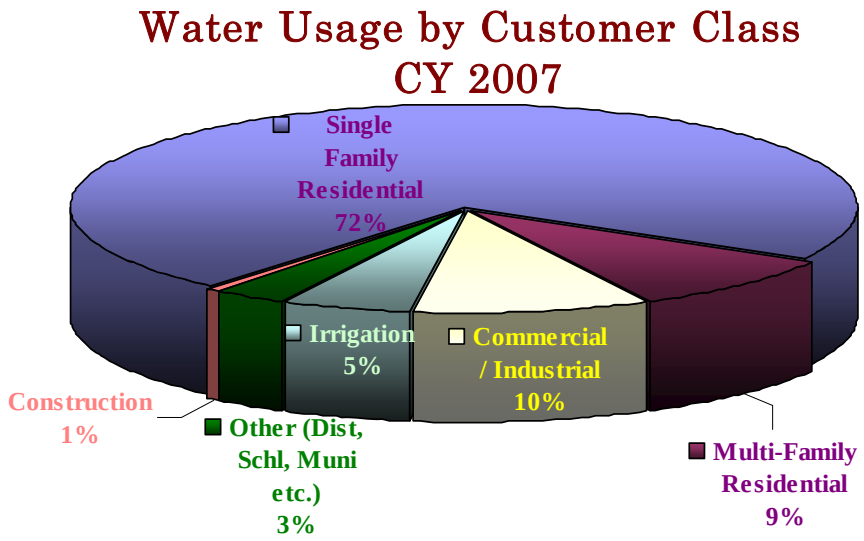
Current Water Rates (effective 11/1/2005)

Base Rate Charges and Included Units			
Meter Size	Min Monthly Charge		Included Units*
5/8"x3/4"	$	12.87	5 units
1"	$	25.73	10 units
1-1/2"	$	38.60	15 units
2	$	64.34	25 units
3"	$	128.67	50 units
4"	$	218.74	85 units
6"	$	424.61	165 units
8"	$	681.95	265 units
10"	$	990.76	385 units
12"	$	1,286.70	500 units
*One Unit equals 100 cubic feet or 748 gallons			

Additional Water Usage Charges Per Unit Beyond Base Minimum Charge					
Tier	Water Units Used	Base Zone	Area 1	Area 2	Area 3
1	0 -10 units	1.27	1.44	1.63	2.53
2	11-25 units	1.29	1.46	1.65	2.55
3	26-50 units	1.32	1.49	1.68	2.58
4	51-100 units	1.37	1.54	1.73	2.63
5	101 or more	1.41	1.58	1.77	2.67

The majority of District's customers are single family residential ("SFR") customers who consume about 72 percent of the District's total consumption, based on 2007 usage data as shown in Figure ES – 3. A typical SFR customer has a 5/8-inch meter and an average usage of 27 units (one unit = one hundred cubic feet, "ccf") per month. Table ES – 4 below shows the monthly bills of a typical SFR customer at various usage levels, and monthly water bills as a percentage of monthly income. [1]

Figure ES - 3



[1] Average family household income $71,547 in Palmdale according to the Greater Antelope Valley Economic Alliance (2008) http://www.aveconomy.org/NEW/demographics.html

Table ES - 4

Monthly Water Bill of a Typical Residential Customer

At Different Usage Levels under Existing Rates

Customer type: Single Family Residential (SFR)

Meter size: 5/8 in

Monthly Usage (ccf)	% of cummulative SFR usage	% of cummulative SFR bills	Monthly bill			
			Base Area	Area 1	Area 2	Area 3
15	46.51%	27.27%	$ 25.57	$ 28.12	$ 30.97	$ 44.47
20	58.04%	41.09%	$ 32.02	$ 35.42	$ 39.22	$ 57.22
25	67.29%	53.46%	$ 38.47	$ 42.72	$ 47.47	$ 69.97
27	**70.41%**	**57.92%**	**$ 41.05**	**$ 45.64**	**$ 50.77**	**$ 75.07**
30	74.53%	63.94%	$ 44.92	$ 50.02	$ 55.72	$ 82.72
50	90.12%	88.02%	$ 71.32	$ 79.82	$ 89.32	$ 134.32

Monthly Usage (ccf)	% of cummulative SFR usage	% of cummulative SFR bills	water bill as % of monthly income			
			Base Area	Area 1	Area 2	Area 3
15	46.51%	27.27%	0.43%	0.47%	0.52%	0.75%
20	58.04%	41.09%	0.54%	0.59%	0.66%	0.96%
25	67.29%	53.46%	0.65%	0.72%	0.80%	1.17%
27	**70.41%**	**57.92%**	**0.69%**	**0.77%**	**0.85%**	**1.26%**
30	74.53%	63.94%	0.75%	0.84%	0.93%	1.39%
50	90.12%	88.02%	1.20%	1.34%	1.50%	2.25%

Shown in Table ES – 4 above, for a typical SFR customer using water less than 27 ccf per month, the monthly water bill under existing rates will be less than 1 percent of the monthly median household income of $5,962[2] (except in Area 3, due to high elevation booster surcharge). Under EPA guidelines, water bills of less than 2 percent of median household income are deemed affordable. We also see 58-percent of SFR customers consume 27 ccf or less, which accounts for 70-percent of the total consumption of all SFR customers.

Our analysis of the District's current rate structure and generated revenues revealed several noteworthy issues:

- The District lost $2 million in rate revenues due to a 13 percent reduction in consumption from 2007 to 2008 as a result of the weak economy, while the overall operating expenses of the District continue to rise due to inflation and drastic increase in imported water cost.

[2] Average family household income $71,547 in Palmdale according to the Greater Antelope Valley Economic Alliance (2008) http://www.aveconomy.org/NEW/demographics.html

- The rate differentials among tiers in the current rate structure are too small to send a strong conservation signal and inadequate to recover the marginal cost of acquiring additional water.
- The current rate structure applies the same tiers to all users and does not differentiate between users who waste water and users who may be efficiently be using larger quantities of water.
- Residential (SFR & MFR) use represents over 80 percent of the total water use in the District. Thus the proposed rate structure will focus more on encouraging efficient residential use.

♦ Cost of Service

The total Cost of Service ("COS") to be recovered from the District's retail users is estimated to be $18.756 million in CY 2009. The COS allocations conducted in this study are based on the Base-Extra Capacity method endorsed by the American Water Works Association ("AWWA"). Under the Base-Extra Capacity method, revenue requirements are allocated to the different user classes proportionate to their use of the water system. Allocations are based on average day ("Base"), maximum day peak ("Max Day") usage, maximum hour peak ("Max Hour") usage, meters and services, and billing and collection.

♦ Rate Design

The proposed structure presented in this Study incorporates AWWA recommended methodologies adapted to meet the District's specific characteristics and provide for a system of user charges that will enhance the proportionate recovery of costs from the various user classes and also send out stronger signal for water conservation.

C. Recommendations and Proposed Changes

This section of the Executive Summary outlines RFC's suggestions and recommendations that will enhance equity in the apportionment and recovery of costs as well as promote water conservation. The proposed water rates, resultant rate impacts and reserve fund policies are summarized below.

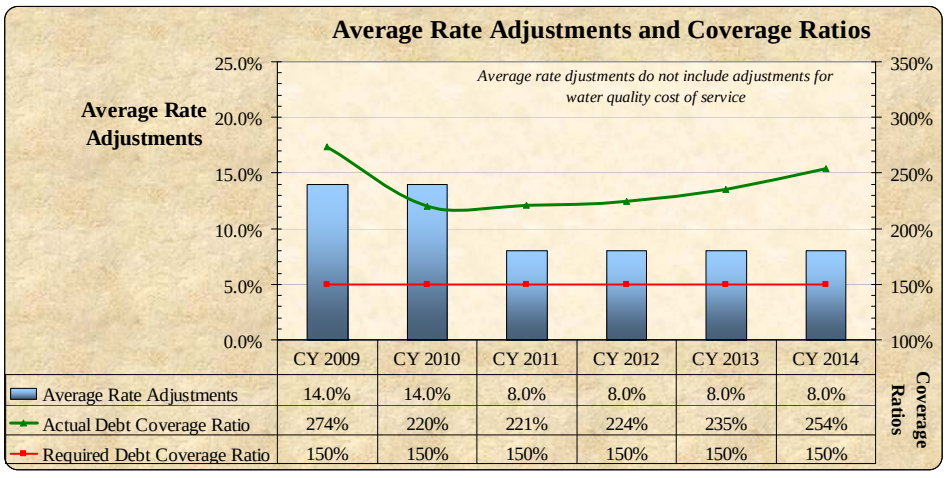
♦ Rate Adjustments

Revenues requirements for the six-year planning period were projected from the District's CY 2009 Budget. The CIP was based on the information provided by the District and adjusted for inflation. An additional line item is the GAC media replacement starting in CY 2010 and anticipated to cost $2 million annually which will be collected as a separate line item on the bill to recover this new operating expense.

Over the past five years (CY 2004-2008), upgrading the WTP cost the District more than $56 million and depleted the District's reserves. For future capital projects and to refinance the 1998 COP, the District desires to issue $38.25 million in debt by July 2009. The weak US economy, along with drought conditions in California and the effectiveness of water conservation programs, will result in further reduction in water sales in the coming years for the District and increases in water costs. In order to sustain operations, adequately fund reserves, and to meet debt coverage requirements over the planning period, a 14 percent average increase in rates is recommended in May 2009, followed by another 14 percent average increase in January 2010. For planning purposes the District may consider annual average increases of 8 percent in January 2011 through 2014, the remaining years of the Study. Figure ES – 4 presents the proposed water rate adjustments along with the actual and the required debt coverage ratios. In addition, the Board is considering implementation of a water quality fee to cover the costs of the GAC treatment.

Figure ES - 4

Proposed Average Rate Adjustments and Debt Coverage Ratios



♦ Recommended User Classifications & Water Allocations

After working closely with Tom Ash from HydroPoint Data Systems, Inc ("HPDS") and District staff, RFC recommends the creation of new user classifications (aka location classes). Currently, the District has 24 location classes for its 26,261 accounts excluding fire accounts, which can be combined into 5 categories as shown in Table ES – 5 below.

Table ES - 5

New User Classifications For Existing Location Classes

New user classifications	Old location classes
Single Family Residential ("SFR")	RESI
Multi-Family Residential ("MFR")	M-APT, M-APTC, M-DUP, M-MHP, M-MHPC
Commercial-Industrial ("CI")	COMB, COMB-C, COMC, COMC-C, INDH, INDL
Irrigation Only ("IRR")	IRRL, IRRO, IRRP
Other	MUNI, SCHL, SCHL-COMP, DIST, ERROR, NOSVC-DET, NOSVC-OTHER, CONF, CONR

For these new classifications, with supporting inputs from HPDS, RFC recommends the following water allocation policy as shown in Table ES – 6.

Table ES - 6

Water Budget Allocation by User Classes

New user classifications	Water Budget Allocations =
Single Family Residential ("SFR")	Indoor allocation + Outdoor allocation
Multi-Family Residential ("MFR")	3-yr moving average by month
Commercial-Industrial ("CI")	3-yr moving average by month
Irrigation Only ("IRR")	Outdoor allocation
Other ("OTHER")	3-yr moving average by month

a) Indoor allocation ("IA")

For SFR customers, the monthly indoor allocation is determined by the number of residents per dwelling (or household size, "Size"), the allowable water usage per resident (gallon per capita day, "GPCD") and number of days in the month ("Days"):

$$IA(ccf) = \frac{GPCD * Size * Days}{\left(748 gallons / 1ccf\right)}$$

In this study, the following default values are used:

- GPCD = 60 gallons per capita day
- Size = 4 persons / dwelling[3]

b) Outdoor allocation ("OA")

The outdoor allocation is determined from total square footage of the property ("TA") adjusted by area factor ("AF") to estimate irrigable area , weather data from local weather station (ET_o – in inches of water) adjusted by a landscape factor ("LF"), and drought factor ("DF") to signal conservation during supply shortages as follows:

$$OA(ccf) = \frac{ET_0 * TA * AF * LF * DF}{\left(12 inch / ft\right)\left(100\, ft^3 / 1ccf\right)}$$

In this study, the following default values are used and recommended for the District to use as a starting point.

- Area Factor (AF) = 45% of total area for SFR customers and 100% of total area for irrigation customers (IRR)
- Landscape Factor (LF) = 70% based on State of CA AB 1881 standard, which takes into account the type of landscape and irrigation efficiency.

Other variables are defined as followed

- Total Area is total parcel area

[3] Rounded from 3.561 persons / household according to California, Dept of Finance: E-5 City/County Population and Housing Estimates, 1/1/2008 for City of Palmdale.

- Monthly ET_o is the sum of daily local weather data (daily ET_o) in the month.
- Drought factor (DF) is set at 100% during normal times and will change with the water supply situation.

c) Historical allocation

For multi-family residential, commercial/industrial and other customers who are non-homogenous, the allocations are based on 3-yr average historical monthly consumption. In addition, the allocations should also be adjusted by the drought factor in the same manner as for SFR and IRR customers.

♦ Proposed Rate Structures

Based on the results of the pricing objectives study, RFC suggests two optional rate structures: Fixed/Variable Cost Allocation ("FV") and Cost of Service ("COS"). The current O&M cost structure of the District is 75 percent fixed and 25 percent variable. The District desires to enhance financial stability by improving the fixed/variable revenue structure. Increasing fixed/variable charge ratio will send a weaker conservation signal and have a greater impact more on small customers, who use less water. To achieve a balance between financial stability and conservation, RFC proposes assigning 60 percent of the total revenue requirements to be recovered from fixed monthly service charges and 40 percent from the variable or commodity rates. Under the COS option, the fixed rates are designed according to cost of service principles as described below.

a) Fixed Charges

The monthly fixed charge includes the following components:

- A billing and customer-service charge that is the same for all customers; and
- A meter charge that increases with the size of the water meter.

Proposed service charges for CY 2009, corresponding to both FV and COS rate options, are summarized in Table ES - 7 below. Meter service charges for subsequent years will increase by the same percentage as the revenue adjustment for those years.

Table ES - 7

Service Charges by FV and COS Options

Fixed/Variable Cost Allocation

Service charge	
Meter size	Monthly Service charge
5/8"	$ 25.97
1"	$ 50.66
1-1/2"	$ 91.81
2"	$ 141.20
3"	$ 256.43
4"	$ 421.05
6"	$ 832.59
8"	$ 1,326.44
10"	$ 1,902.60

Cost of Service

Service charge	
Meter size	Monthly Service charge
5/8"	$ 10.83
1"	$ 22.64
1-1/2"	$ 42.33
2"	$ 65.95
3"	$ 121.08
4"	$ 199.83
6"	$ 396.72
8"	$ 632.98
10"	$ 908.61

b) Commodity Rates

RFC proposes the District continue using a 5-tiered rate structure, in which usage in excess of the allocation (Tiers 2, 3, 4 and 5) includes costs related to new water supplies and conservation programs. This tiered rate structure shown in Table ES – 8 applies to all customers. However, the tier definitions for each customer will be different based on their individual water budget allocation as shown in Table ES - 9 below.

Table ES - 8

Commodity Rates by FV and COS Options in CY 2009

Fixed/Variable Cost Allocation

Commodity rates ($/ccf)	
Tiers	CY 2009
Tier 1	$ 0.64
Tier 2	$ 2.50
Tier 3	$ 3.20
Tier 4	$ 4.16
Tier 5	$ 5.03

Cost of Service

Commodity rates ($/ccf)	
Tiers	CY 2009
Tier 1	$ 1.29
Tier 2	$ 3.15
Tier 3	$ 3.85
Tier 4	$ 4.81
Tier 5	$ 5.68

Table ES - 9

Tiers Definitions

New Customer classifications	Single Family Residential ("SFR") & Multi-Family Residential ("MFR")	Commercial / Industrial ("CI") and Other (i.e. Municipal, District, School, Construction etc …)	Irrigation only ("IRR")
Allocation equation	SFR - Indoor + Outdoor MFR – 3-yr historical monthly average	3-yr historical monthly average	Outdoor
Tier definitions	% of water budget allocation		
Tier 1	0 – 100%	0 – 100%	0 – 100%
Tier 2	100 – 125%	100 – 130%	0 – 110%
Tier 3	125 – 150%	130 – 160%	110 – 120%
Tier 4	150 – 175%	160 – 190%	120 – 130%
Tier 5	Above 175%	Above 190%	Above 130%

c) Surcharges

To recover GAC replacement costs, water quality fees should be collected as a separate line item on the bill and are as shown in the Table ES – 10. RFC recommends the District set aside the water quality fees collected in CY 2009 in a separate reserve to be used for GAC replacement in the future.

Currently, the District has three elevated areas that require additional booster and pumping. RFC has retained the elevation booster surcharges, adjusted for inflation of energy cost, in addition to the existing base rates as shown in Table ES – 10 below.

Table ES - 10

Proposed Surcharges for CY 2009

Water quality fees ($/ccf)		
$		0.20
Elevation booster surcharge ($/ccf)		
B	$	-
A 1	$	0.23
A 2	$	0.49
A 3	$	1.71

♦ Customer Impacts

The new rate structure will have impacts on customers depending on their water usage. A typical SFR customer in the base area, who has a 5/8-inch meter and total parcel area of 8,000 square feet, will experience different rate impacts throughout the year under both options. Figures ES – 5, 6 and 7 clearly show the financial impacts of the new rate structures under both approaches: FV and COS based on average monthly allocations and monthly allocations for January (Winter) and August (Summer), respectively.

Figure ES - 5

SFR Monthly Bills based on Average Allocation

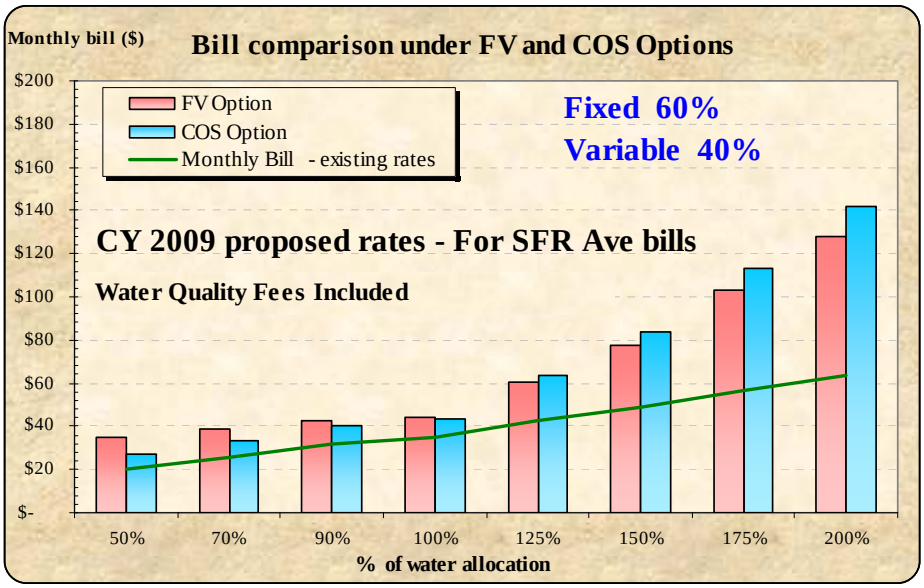


Figure ES - 6

SFR Monthly Bills based on January (Winter) Allocation

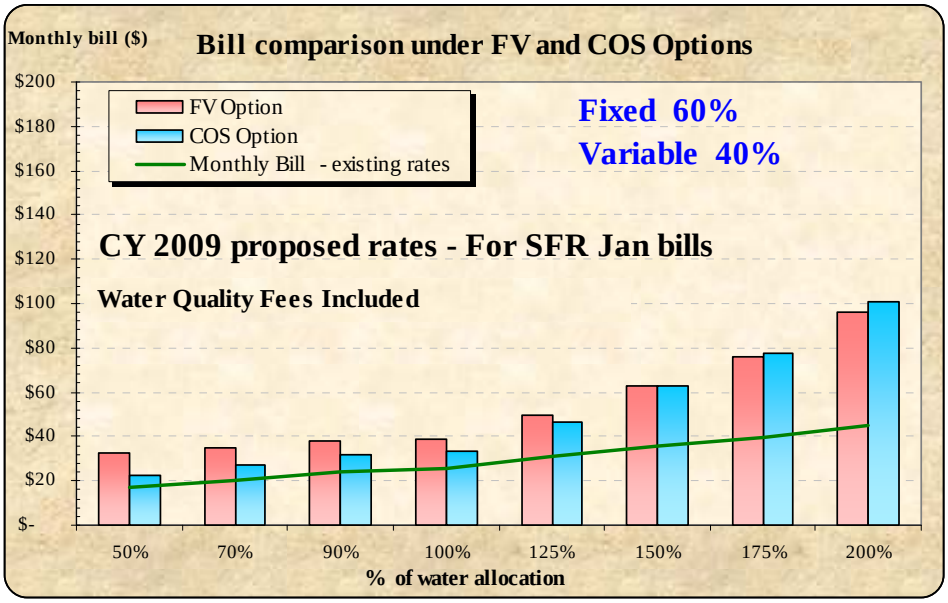
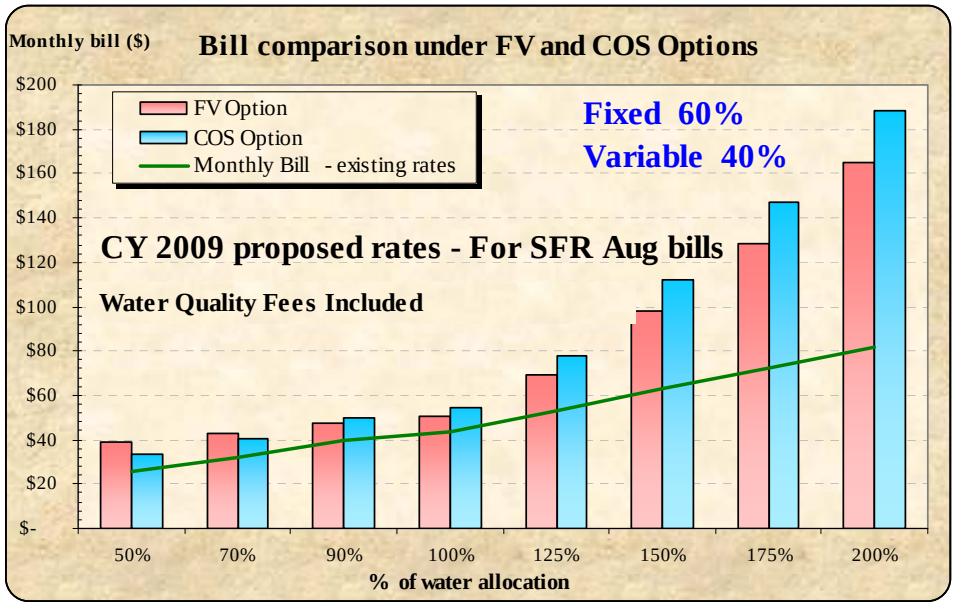


Figure ES - 7

SFR Monthly Bills based on August (Summer) Allocation



From the above figures, RFC makes the following observations:

- Under the FV approach, a larger portion of the bill is fixed and there is less variation than under the COS approach.

- Under the COS approach, there is greater fluctuation in bills but the conservation signal is stronger as the monthly bill grows quickly as usage approaches the water allocation.

D. Reserves

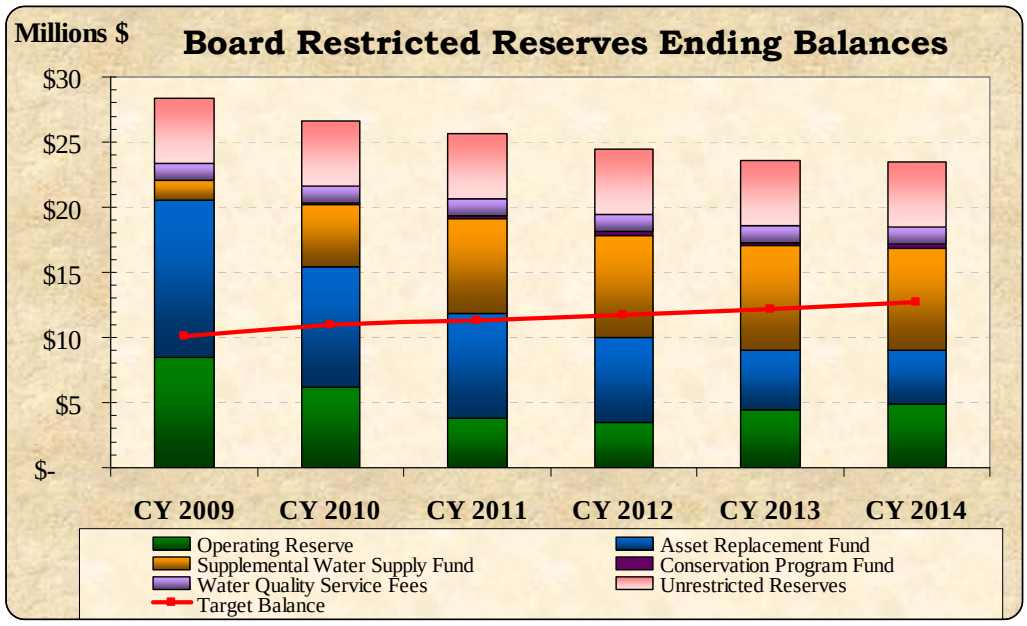
The District recently reviewed its restricted reserve policy and shared it with RFC. There are two types of restricted reserves: legally restricted reserves and board restricted reserves.

1. Legally Restricted Funds
   - Water Facilities Connection Fees
   - Water Supply Connection Fees
   - Dam Self-Insurance Reserve
   - Bond Insurance In-lieu Reserve Fund
2. Board Restricted Funds
   - Municipal Bond Rate Stabilization Fund
   - Operating Reserve
   - Supplemental Water Supply Fund ("SWS fund")
   - Asset Replacement Fund ("ARF")
   - Conservation Program Fund
   - Water Quality Service Fund ("WQS Fund")
   - Unrestricted Reserves

Figure ES – 8 below shows the anticipated levels of board restricted reserves over the planning period CY 2009 to CY 2014.

Figure ES - 8

Combined Board Restricted Reserve Balances



E. Rate Survey

The District's current water bills are in the mid-range of agencies surveyed. Under the proposed increases, the District's charges still remain comparable with those of neighboring utilities. Figures ES – 9 and 10 compares average SFR bills under existing and proposed rates without and with water quality fees to other utilities within the region. Without water quality fees, the proposed rates of the District are in the normal ranges compared to the surveyed agencies. With water quality fees the bills are on the high side compared to the surveyed agencies.

Figure ES - 9

Rate Survey – SFR monthly charges comparison

(Water quality fees excluded for Palmdale)

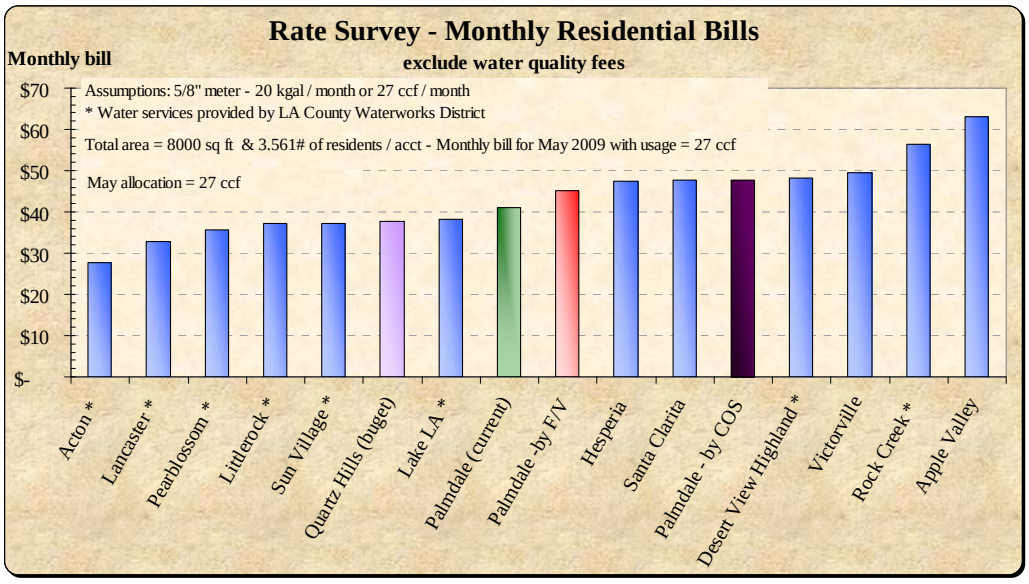
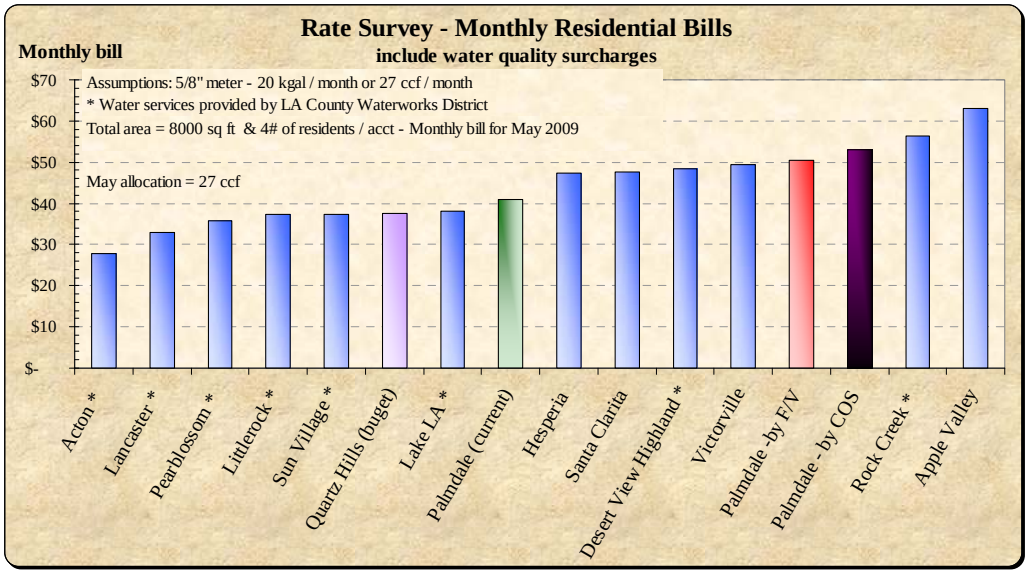


Figure ES - 10

Rate Survey – SFR monthly charges comparison

(Water quality fees included for Palmdale)



Similarly, a comparison for commercial monthly bills was completed and shown in Figures ES – 11 and 12 with and without water quality fees. Given the proposed changes to the rate structure, Palmdale Water District still has affordable monthly bills for its commercial customers compared to the surveyed agencies.

Figure ES - 11

Rate Survey – Commercial monthly charge comparison

(Water quality fees excluded for Palmdale)

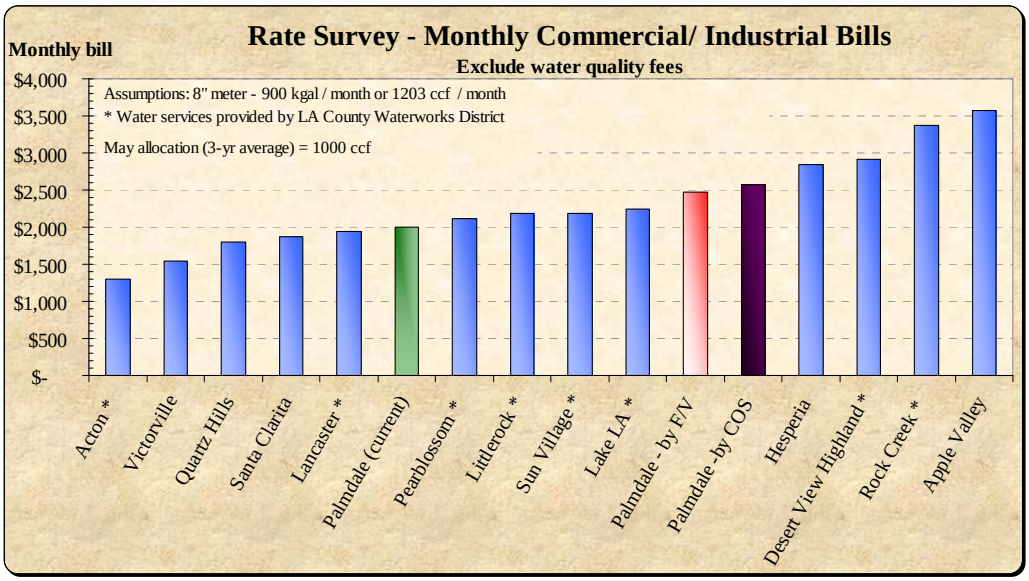
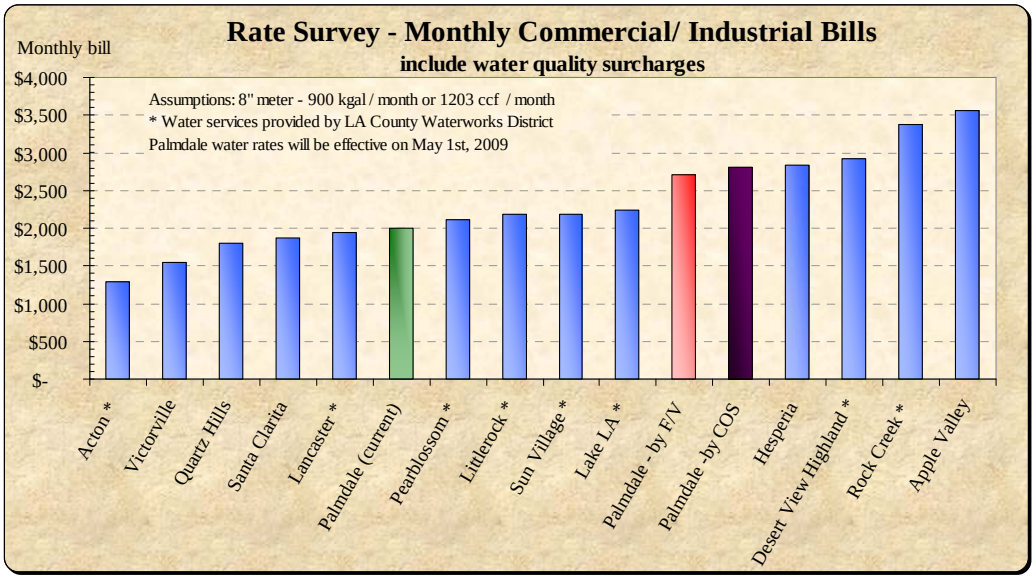


Figure ES - 12

Rate Survey – Commercial Monthly Charge Comparison

(Water quality fees included for Palmdale)



II. INTRODUCTION

The Palmdale Water District ("District") last completed a water rate study in 2005. General increases in costs, along with the District's ongoing commitment to water conservation, has led the District to engage Raftelis Financial Consultants, Inc ("RFC") to conduct a water rate study to develop and assist with the implementation of a water budget rate structure. The key deliverable of the study is the development of water budget rates that promote efficient use and conservation in response to water supply shortages. RFC has developed a financial planning and Rate Model to assist the District in determining fair and equitable rates, and evaluating the resultant impacts on customers.

A. Background

The District currently serves a population of 145,468[4] with approximately 26,000 connections. While the past several years have seen significant development in the District, the area is not immune to the current weakness in the national economy. However, the slowdown in development is likely temporary. The availability of land and desirable living conditions in Southern California suggest that the long-term outlook remains one of substantial customer growth.

The District's water supply consists of a mix of 60 percent surface water (from Little Rock Reservoir and State Water Project (SWP) water) and 40 percent from the District's 25 area groundwater wells. Due to drought conditions in California and the adjudication of the local groundwater basin, there will be a reduction in water supplies available to the District. Thus, the District needs to be proactive in encouraging and effectively reducing demand in the system.

Because of this expected growth and the losses in supply, the District is seeking to procure additional potable water rights and recycled water, build the associated recycled water distribution system, and be more proactive in its conservation efforts. In addition, the District recently spent more than $56 million to upgrade its water treatment plant ("WTP").

[4] From http://www.aveconomy.org/NEW/demographics.html

The capital and operating costs of the District are expected to increase in the coming years, while the water sales are projected to drop due to the weak economy and conservation.

B. Study and Pricing Objectives

Before finalizing the rate structure and rates, it is important to obtain a good understanding of the District's pricing objectives. This helps in consensus building and also providing input into the priorities of the District. Accordingly, RFC conducted a Conceptual Design Workshop ("Workshop") to educate stakeholders about the issues involved in developing the financial vision, principles of rate making, and identifying and prioritizing pricing objectives.

Participants of the Workshop, District staff and Board members, were asked to prioritize the District's pricing objectives and the pricing objective were weighted as follows:

- Essential = 4
- Very Important = 3
- Important = 2
- Least Important = 1

The results were compiled to serve as the basis for evaluating the alternative water rates and pricing structures that would represent the framework for the District's 5-year financial vision. Tables II – 1 and 2 present the rate criteria matrix based on the results of the rankings provided by representatives of the Palmdale Water District.

Table II - 1

PRICING OBJECTIVE RANKINGS

Classification	Objective	Score
Essential	Financial Sufficiency	19
	Cost of Service Based Allocation	17
	Conservation	16
Very Important	Revenue Stability	15
	Legality	15
	Minimization of Customer Impacts	15
	Simple to Understand and Update	14
Important	Rate Stability	11
	Ease of Implementation	10
	Equitable Contributions from New Customers	10
	Affordability to Disadvantaged Customers	9
Least Important	Economic Development	6

Table II - 2

DEMAND MANAGEMENT SUB-OBJECTIVITIES RANKINGS

Classification	Objective	Score
Essential	Reduce Total Consumption	25
Very Important	Surcharge Nonessential and Non-efficient Usage	21
Important	Communicate Conservation Consciousness	18
	Reward Economically Efficient Water Users	17
Least Important	Reduce Peak Consumption	12
	Reduce Seasonal Consumption	12

C. Scope of the Study

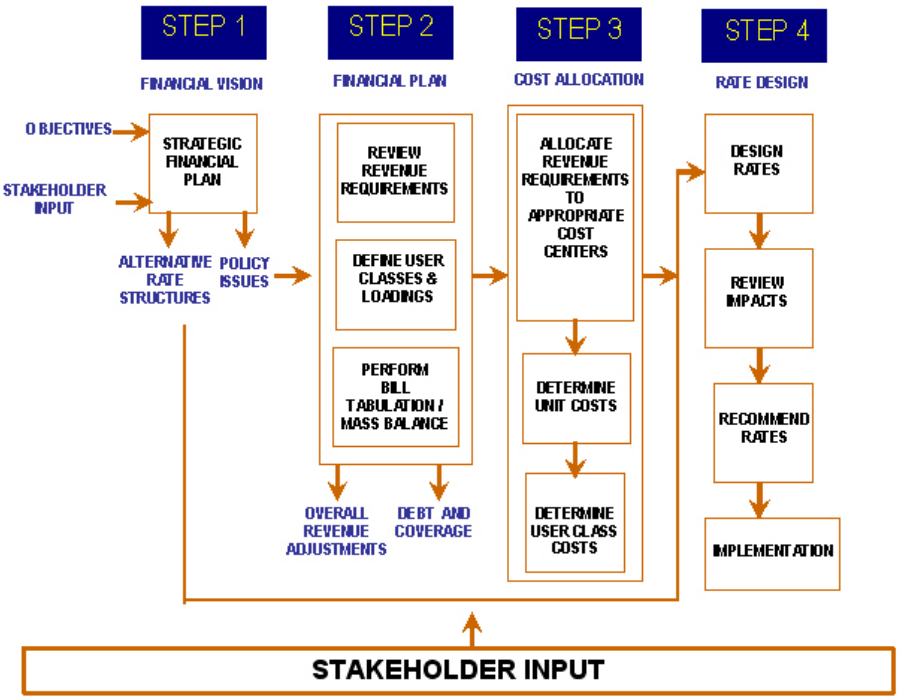
The scope of this study results in the development of cost-based water budget user rates through a comprehensive cost of service and rate design study process. Figure II – 1

provides a graphical representation of the various steps involved in the comprehensive cost of service and rate design process. The steps involved are:

- Financial Planning: Revenue requirements are projected for Calendar Year ("CY") 2009 and CY 2010-2014. Financial planning involves estimation of annual operating and maintenance ("O&M") and capital expenditures, reserve targets, operating and capital revenue sources and the determination of required annual user revenues from rates and charges.
- Cost of Service Analysis: Cost of service analysis involves identifying and apportioning annual revenue requirements to the different user classes proportionate to their demand on the water and sewer systems.
- Rate Design: Rate design involves the development of a fixed and variable schedule of rates for different user classes to proportionately recover the costs attributable to them. Pricing objectives, prioritized in the previous table, are considered at this stage.

Figure II - 1

Cost of Service / Rate Design Process



III. WATER SYSTEM AND CURRENT WATER RATE STRUCTURE

This section of the report presents a brief overview of the water sources, existing rates, and user/usage characteristics.

A. Water Sources

The District's water supply consists of a mix of 60 percent surface water (from Little Rock Reservoir and State Water Project (SWP) water) and 40 percent from the District's 25 area groundwater wells. The District is entitled to take 21,300 acre feet, or 5.6 billion gallons, of water each year from the SWP aqueduct into Palmdale Lake where it is stored for eventual use. Littlerock Dam was originally built in 1922 and was recently renovated to increase the storage capacity of the reservoir to 3,500 acre feet of water. Littlerock Dam reservoir is fed by natural run-off from the local mountains. The water is then transferred from Littlerock reservoir to Palmdale Lake. Before entering the distribution system, water from Palmdale Lake, collected from both sources of surface water, is treated at the District's water treatment plant. A third source of water, the District's water wells, is treated with chlorine. In drought conditions, well water production may increase by up to 50-60 percent to offset the shortage of available surface water. The groundwater basin is in the process of being adjudicated. While this process has been long, and the timing of the conclusion is uncertain, the most likely outcome will be a reduction in water rights for the District. This along with reductions in SWP reliability requires the District to be proactive in encouraging and effectively reducing demand in the system.

B. Existing Rate Structure

The District last completed a water rate study in 2005. The District's current rate structure includes five-tiered commodity rates that apply to all customer classes, a service charge with certain included water units based on meter sizes, and a surcharge for elevation booster/pumping costs for customers in elevated areas. All billing is done on a monthly basis. Table III – 1 outlines the current rates.

Table III - 1

Current Water Rates

(Effective November 1st, 2005)

Base Rate Charges and Included Units			
Meter Size		Min Monthly Charge	Included Units*
5/8"x3/4"	$	12.87	5 units
1"	$	25.73	10 units
1-1/2"	$	38.60	15 units
2	$	64.34	25 units
3"	$	128.67	50 units
4"	$	218.74	85 units
6"	$	424.61	165 units
8"	$	681.95	265 units
10"	$	990.76	385 units
12"	$	1,286.70	500 units

*One Unit equals 100 cubic feet or 748 gallons

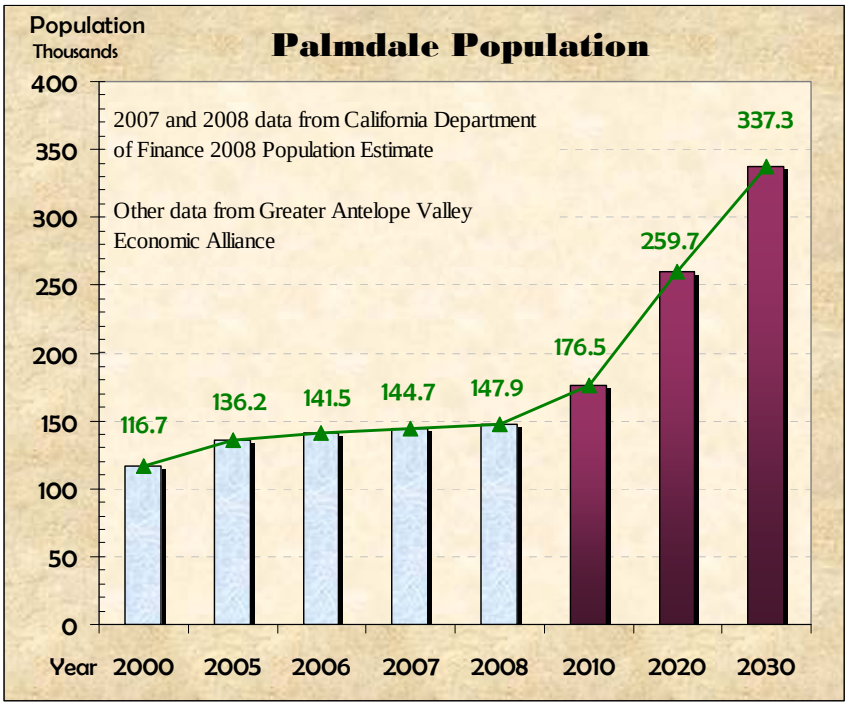
Additional Water Usage Charges Per Unit Beyond Base Minimum Charge					
Tier	Water Units Used	Base Zone	Area 1	Area 2	Area 3
1	0 -10 units	1.27	1.44	1.63	2.53
2	11-25 units	1.29	1.46	1.65	2.55
3	26-50 units	1.32	1.49	1.68	2.58
4	51-100 units	1.37	1.54	1.73	2.63
5	101 or more	1.41	1.58	1.77	2.67

C. Growth

Figure III – 1 below shows Palmdale's population and its projected population in the future based on data and estimates from California Department of Finance and Greater Antelope Valley Economic Alliance. The projections appear to be very optimistic in light of the current conditions. The District information suggests 3 percent growth rates in population; other forecasts suggest a moderation in growth in the coming years. For planning purposes, this study assumes a zero percent annual growth rate in customers in CY 2009 and 2 percent annual growth from CY 2010 through CY 2014. The Model developed for this study provides flexibility to adjust the growth rates as needed.

Figure III - 1

Palmdale Population – Historical and Projections



D. Equivalent Meters

To make projections on water sales and to spread costs related to meters in the appropriate manner, we need to understand the concept of equivalent meters. Equivalent meters are used, rather than just meters, in order to recognize the fact that larger meters provide more capacity and are more expensive to install, maintain, and replace than smaller meters. Meters are assigned a hydraulic capacity by size that is based on the sustained maximum flow rate of the meter. For example a 5/8-inch meter has a hydraulic capacity of 20 gallons per minute ("gpm") whereas a 6 inch meter has a hydraulic capacity of 1,000 gpm. Therefore, a 6" meter is equivalent to 1,000/20, or 50, 5/8-inch meters. In this manner, capacity ratios are used to calculate the total number of equivalent meters in the system.

The total number of equivalent meters, which takes into account hydraulic flow using the 5/8-inch sized meters as a base, is estimated to be approximately 41,808 in CY 2008 and approximately 42,538 in CY 2010. Equivalent meters are used in the unit cost calculation of meters and services in the cost of service section.

It is important to note that it was difficult to get an accurate measure of how many accounts the District has for two reasons. The first is the District's rapid growth; since growth occurs throughout the year; many users only receive service for part of the year. Thus, to consider them as an account for purposes of assigning costs and calculating equivalent meters would not be accurate. The second reason is the District's billing system creates a new account when a customer moves to a new address, so treating each account number as an account could lead to double counting.

To resolve these issues, we used what can be called "Effective Meters," which totals each monthly occurrence of a bill sent out for the entire year and divides the total by twelve. This creates an average number of meters for the year and more accurately reflects the number of customers and equivalent meters served by the District.

The total numbers of historical and projected equivalent meters by customer class are shown in Table III – 2.

Table III - 2

Historical and Projected Equivalent Meters

	Actual 2007	Estimated 2008	Estimated 2009	Projected 2010	Projected 2011	Projected 2012	Projected 2013	Projected 2014
SFR	30,070	30,395	30,395	31,003	31,621	32,250	32,895	33,553
MFR	3,117	3,189	3,189	3,228	3,268	3,307	3,347	3,389
Commercial / Industrial	4,885	5,167	5,167	5,205	5,242	5,280	5,317	5,355
Irrigation	1,357	1,382	1,382	1,412	1,442	1,472	1,502	1,532
Other (Dist, Schl, Muni etc.)	945	946	946	946	946	946	946	946
Construction	900	730	730	745	760	775	790	805
Total	**41,273**	**41,808**	**41,808**	**42,538**	**43,278**	**44,029**	**44,796**	**45,578**

E. Usage Characteristics

The District provided RFC with various billing data that allowed RFC to perform several analyses in order to determine customer usage characteristics. Table III – 3 and Figure III – 2 show the breakdown of potable water usage by customer type. Residential customers, single family residential ("SFR") and multi-family residential ("MFR"), use over 80 percent of the total water in the District.

Table III - 3

Potable Water Usage by Customer Classes – CY 2007

Customer class	Usage (ccf)	% of total
SFR	8,150,996	72%
MFR	1,015,145	9%
Commercial / Industrial	1,103,481	10%
Irrigation	578,323	5%
Other (Dist, Schl, Muni etc.)	356,006	3%
Construction	65,071	1%
Total	**11,269,022**	**100%**

Figure III - 2

Potable Water Usage by Customer Classes – CY 2007

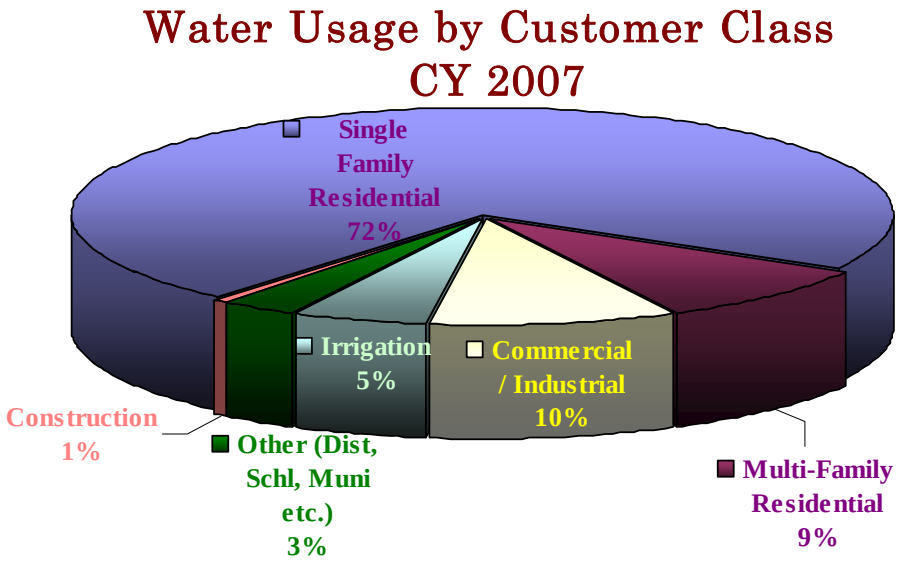


Figure III – 3 reflects single-family residential ("SFR") consumption by month in CY 2007. The average monthly consumption of SFR users is 28 ccf, the summer (June-Sept) average is 40 ccf, and the winter (Dec-Mar) average is 18 ccf. Figure III – 4 summarizes monthly usage of all users in CY 2007 and the monthly annual average consumption of 36 ccf, summer and winter average consumption of 23 ccf and 52 ccf of water per user account, respectively.

Figure III - 3

CY 2007 Water Usage Characteristics – SFR

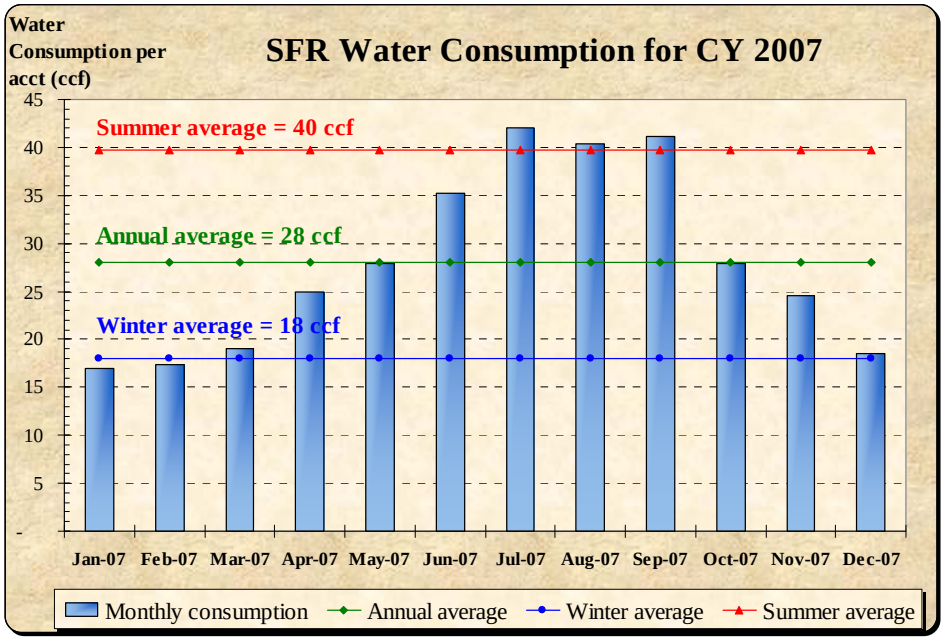
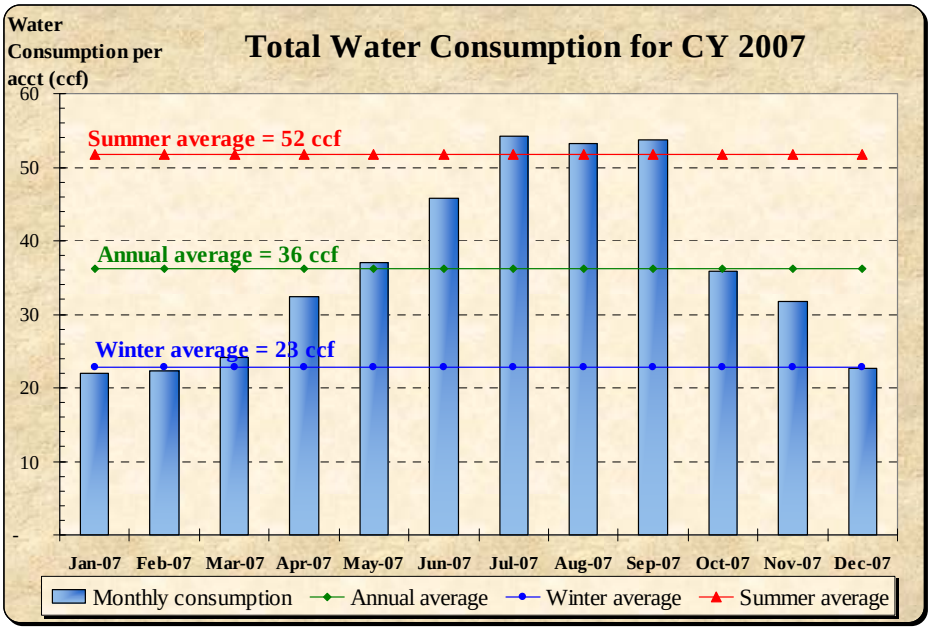


Figure III - 4

CY 2007 Water Usage Characteristic – Total



To determine the usage characteristics of each customer class, a bill frequency tabulation was conducted that plots cumulative usage at each increment of monthly use (ccf of water). The patterns for SFR, MFR, Irrigation ("IRR") and CI customers are shown in Figures III –

5, 6, 7 and 8, respectively, below. As shown in the Figure III – 5, only 10 percent of SFR usage is above 50 ccf per month, which represents about 12 percent of the annual water bills. The 3-year average monthly usage for SFR customers is 27 ccf and 70 percent of SFR usage is below this level representing about 58 percent of the annual SFR bills.

Similarly, for CI customers, 42 percent of their usage is below 250 ccf per month and represents about 91 percent of the annual CI bills. Also, 98 percent of the annual CI bills would have monthly usage below 1,200 ccf. Only 11 percent of the annual MFR bills are for usage above 280 ccf per month. This bill tabulation helps to better understand how water is used and how customers are impacted under current rates.

Figure III - 5

SFR Bill Frequency

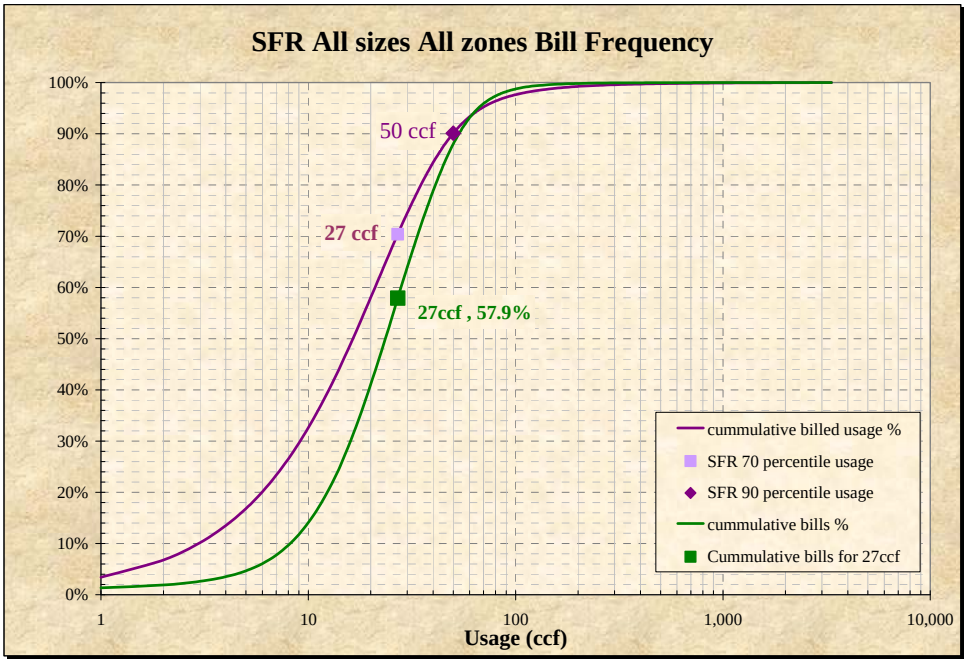


Figure III - 6

MFR Bill Frequency

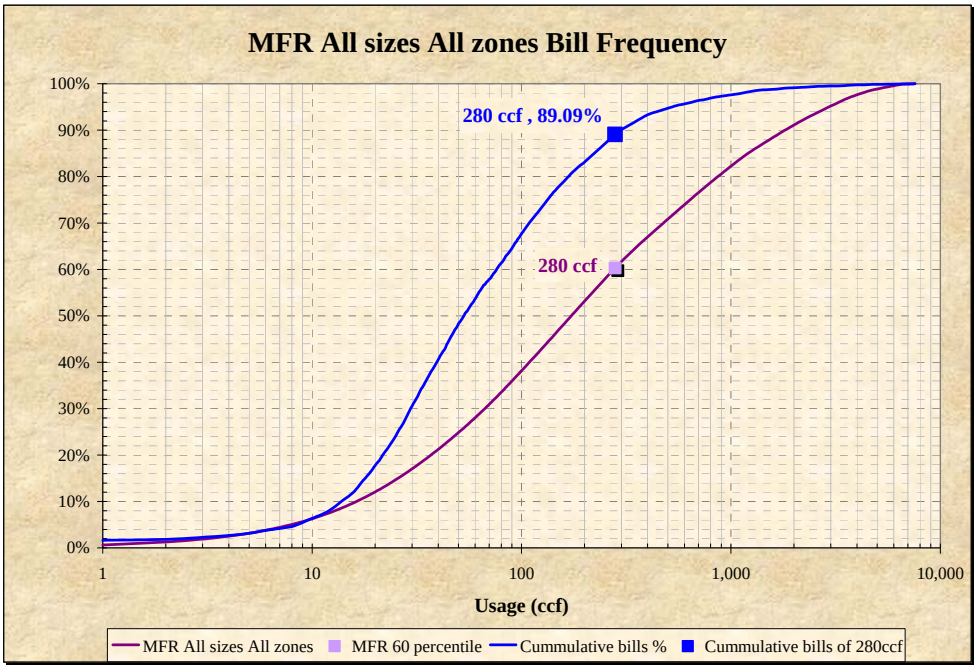


Figure III - 7

IRR Bill Frequency

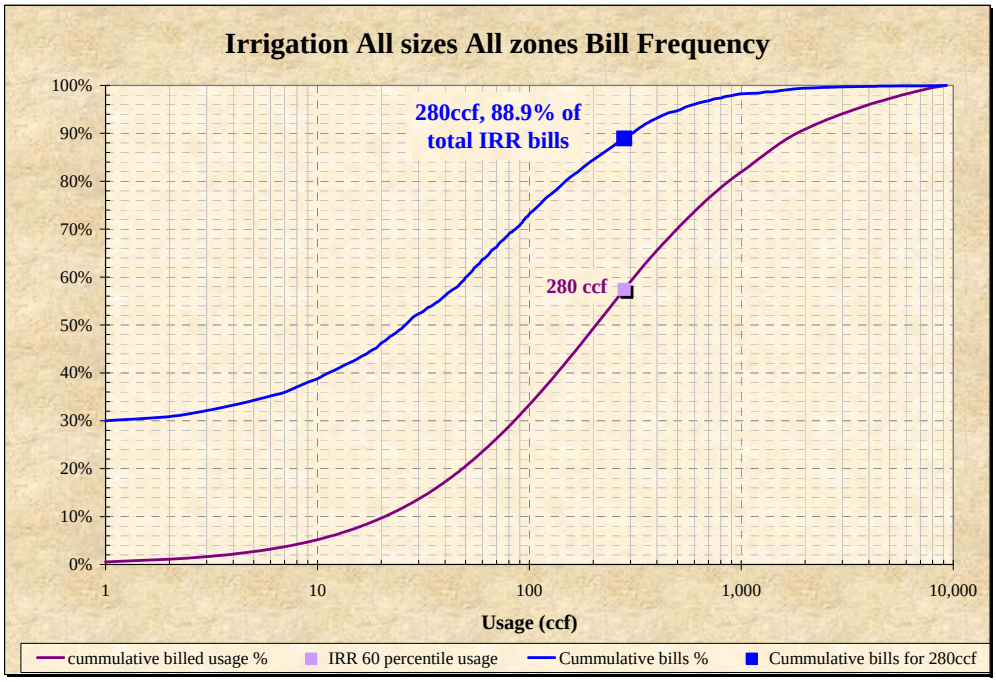
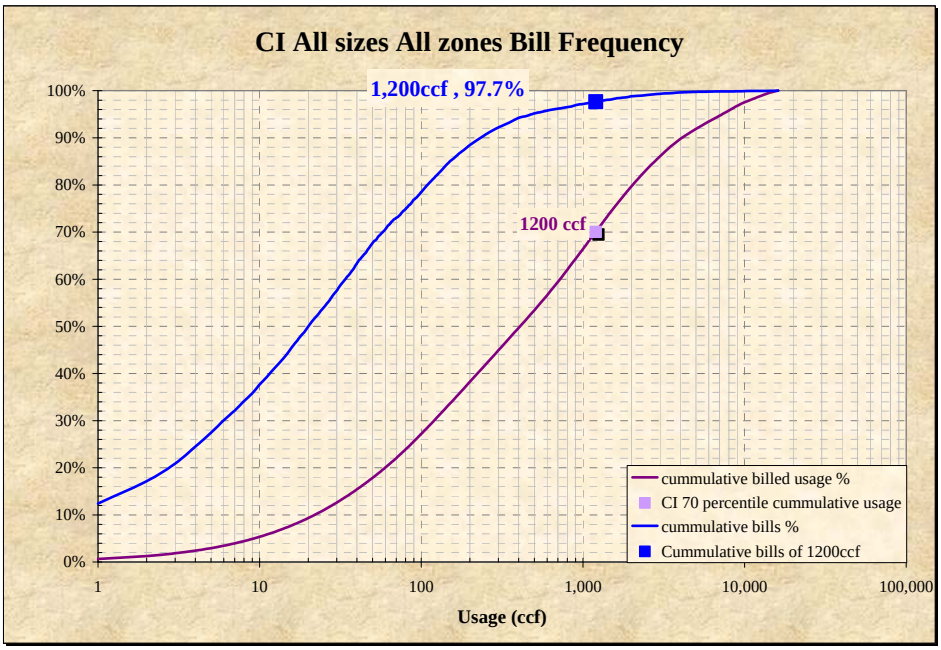


Figure III - 8

CI Bill Frequency



F. Existing Rate Structure Characteristics

An analysis of the monthly fixed service charges in Table III – 4 shows that equity can be improved if the ratios of the charges were more consistent with the AWWA capacity ratios.

Table III - 4

Existing Monthly Service Charges - Analysis

Meter size	Minimum charge	# of ccf included	Monthly service charges *	Ratio used +	Capacity ratio (AWWA standards)
5/8 inch	$ 12.87	5	$ 6.52	1.00	1.00
1 inch	$ 25.73	10	$ 13.03	2.38	2.50
1 1/2 inch	$ 38.60	15	$ 19.55	3.75	5.00
2 inch	$ 64.34	25	$ 32.59	6.50	8.00
3 inch	$ 128.67	50	$ 65.17	13.38	15.00
4 inch	$ 218.74	85	$ 110.79	23.01	25.00
6 inch	$ 424.61	165	$ 215.06	45.02	50.00
8 inch	$ 681.95	265	$ 345.40	72.53	80.00
10 inch	$ 990.76	385	$ 501.81	105.54	115.00

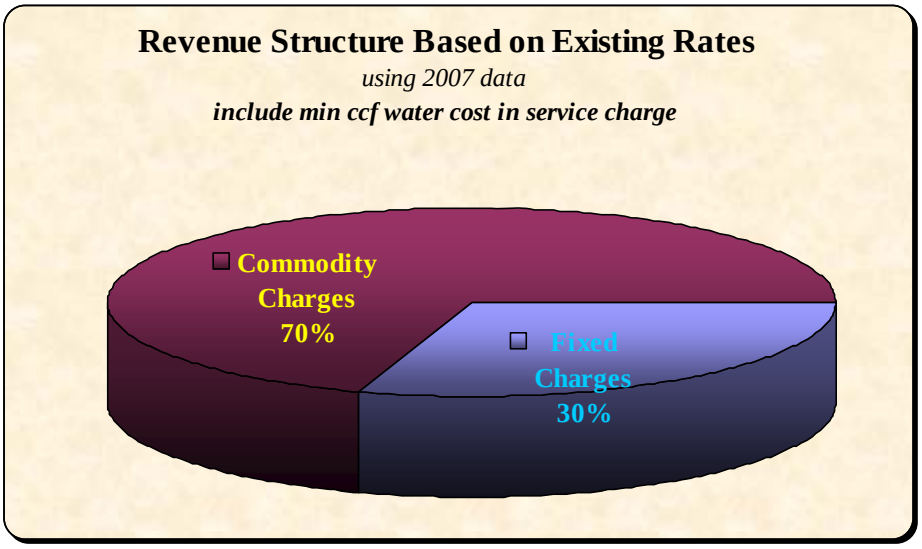
* exclude water allowance costs, which is calculated at Tier 1 rate of base zone ($1.27 per ccf)

+ estimated using meter portion after separating billing (27.3 %) and meter (72.7%) portion out of montlhly service charges based on COS analysis

Figures III – 9 and III – 10 below show the revenue structures of the District under existing rates. Figure III – 9 indicates that 30 percent of total water revenue comes from fixed monthly service charges, which include certain minimum water units in the charges. Figure III – 10 excludes the water revenues of the allowed water units from the monthly service charges, thus the truly fixed component in the fixed charge is only 15 percent of total revenues for the District based on CY 2007 usage data.

Figure III - 9

Revenues Structure – including water revenues in service charges



The current O&M cost structure of the District based on CY 2006 to 2008 data, as shown in Figure III - 11, is 75 percent fixed and 25 percent variable. Due to recent decrease in water sales (13 percent reduction from CY 2007 to CY 2008), the District lost almost $2 million in rate revenues under the existing rate structures. One of the objectives of this Study is to increase financial stability by increasing the fixed charge portion of the revenues.

Figure III - 10

Revenues Structure – exclude water revenues in service charges

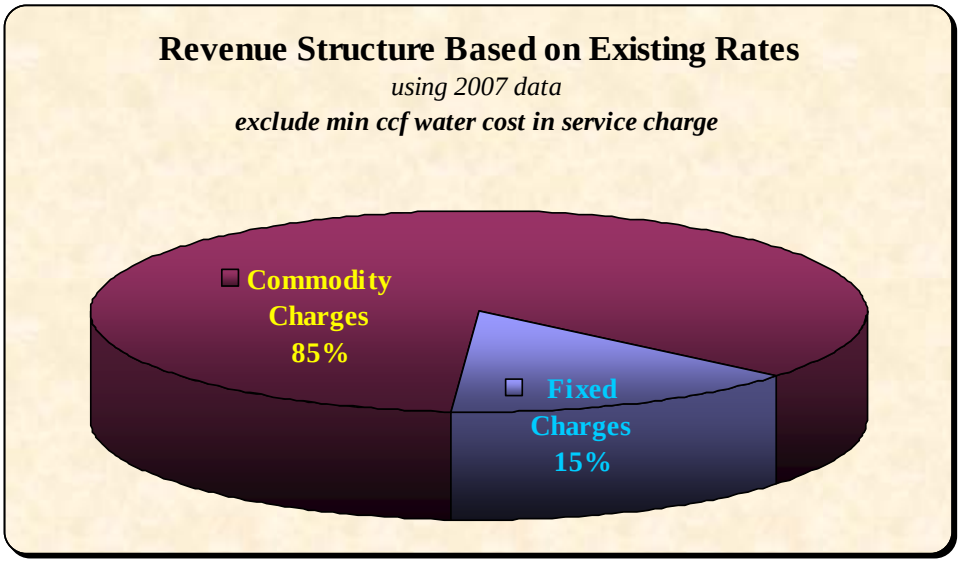
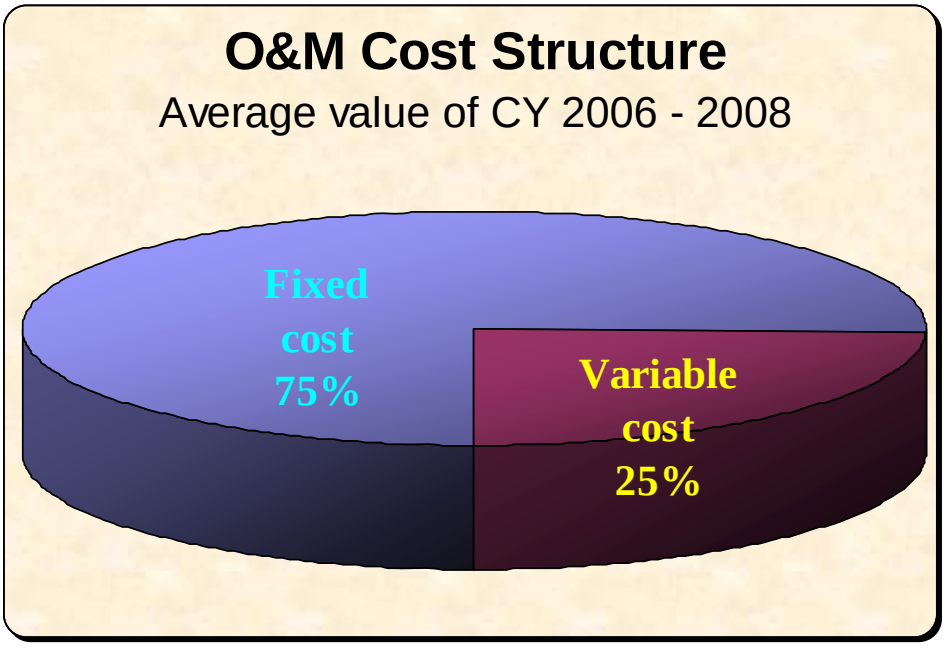


Figure III - 11

Historical O&M Cost Structure



IV. WATER REVENUE REQUIREMENTS

A review of a utility's revenue requirements is a key first step in the rate design process. The review involves an analysis of annual operating revenues under existing rates, O&M expenses, capital expenditures, reserves, and transfers between funds. This section of the report provides a discussion of the projected revenues, operating and capital expenditures, debt coverage requirements, reserve funding policies, and the rate adjustments required to ensure the financial stability of the water enterprise.

A. Operating and Capital Expenses

The District's CY 2009 water budget was used as the base year for O&M costs. From CY 2010, due to the GAC media replacement, an additional $2 million was included annually to the O&M expenses. Various escalation rates were used to project other expenses over the life of this study (CY 2009 to 2014). Most O&M expenses are subject to an annual 3 percent inflation increase (based on historical consumer pricing index "CPI"), while a few expenses are estimated to have a higher escalation factor as follows:

- Personnel expenses are escalated at 7.5 percent to accommodate for 3 percent increase in salaries for living cost adjustments (60 percent of personnel expenses), 9 percent for benefits cost increase (40 percent of personnel expenses) and an additional 2.1 percent for new employees.
- Utility costs are escalated at 8 percent a year over the life of the study.

The CIP was provided by the District and reflects planned capital projects through CY 2014. The plan is provided in current dollars, not adjusted for inflation. Based on the construction cost index (CCI) from 2005 to 2008, an escalation factor of 4 percent per year was used over the planning period. Tables IV - 1, 2 and 3 reflect the O&M and District CIP expenses over the next five years.

Table IV - 1

O&M Expenses – Summary by Department

Line no	Acct #	Descriptions	Projected Final 2008	Budget 2009	*Projected 2010*	*Projected 2011*	*Projected 2012*	*Projected 2013*	*Projected 2014*
1	1	***Administration Department Subtotal***							
2		Personnel Expenses	$ 1,218,000	$ 1,550,200	$ 1,666,465	$ 1,791,450	$ 1,925,809	$ 2,070,244	$ 2,225,513
3		Operating Expenses	$ 2,762,600	$ 1,923,600	$ 1,981,308	$ 2,040,747	$ 2,101,970	$ 2,165,029	$ 2,229,980
4		***Subtotal***	***$ 3,980,600***	***$ 3,473,800***	***$ 3,647,773***	***$ 3,832,197***	***$ 4,027,778***	***$ 4,235,273***	***$ 4,455,492***
5	2	***Customer Service Department Subtotal***							
6		Personnel Expenses	$ 1,574,000	$ 1,718,400	$ 1,847,280	$ 1,985,826	$ 2,134,763	$ 2,294,870	$ 2,466,985
7		Operating Expenses	$ 761,600	$ 303,100	$ 312,193	$ 321,559	$ 331,206	$ 341,142	$ 351,376
8		***Subtotal***	***$ 2,335,600***	***$ 2,021,500***	***$ 2,159,473***	***$ 2,307,385***	***$ 2,465,969***	***$ 2,636,012***	***$ 2,818,361***
9	3	***Engineering Department Subtotal***							
10		Personnel Expenses	$ 1,288,400	$ 1,319,100	$ 1,418,033	$ 1,524,385	$ 1,638,714	$ 1,761,617	$ 1,893,739
11		Operating Expenses	$ 112,400	$ 27,000	$ 27,810	$ 28,644	$ 29,504	$ 30,389	$ 31,300
12		***Subtotal***	***$ 1,400,800***	***$ 1,346,100***	***$ 1,445,843***	***$ 1,553,029***	***$ 1,668,217***	***$ 1,792,006***	***$ 1,925,039***
13	4	***Facility Department Subtotal***							
14		Personnel Expenses	$ 2,485,200	$ 2,494,500	$ 2,681,588	$ 2,882,707	$ 3,098,910	$ 3,331,328	$ 3,581,177
15		Operating Expenses	$ 2,998,800	$ 3,063,100	$ 3,203,599	$ 3,331,544	$ 3,464,847	$ 3,625,259	$ 3,816,559
16		***Subtotal***	***$ 5,484,000***	***$ 5,557,600***	***$ 5,885,187***	***$ 6,214,251***	***$ 6,563,757***	***$ 6,956,587***	***$ 7,397,736***
17	5	***Production Department Subtotal***							
18		Personnel Expenses	$ 1,412,400	$ 1,450,300	$ 1,559,073	$ 1,676,003	$ 1,801,703	$ 1,936,831	$ 2,082,093
19		Operating Expenses	$ 1,245,200	$ 822,100	$ 2,840,057	$ 2,913,788	$ 2,989,790	$ 3,072,963	$ 3,163,564
20		***Subtotal***	***$ 2,657,600***	***$ 2,272,400***	***$ 4,399,129***	***$ 4,589,791***	***$ 4,791,494***	***$ 5,009,794***	***$ 5,245,657***
21	6	***Financial Services Department Subtotal***							
22		Personnel Expenses	$ 1,000,800	$ 643,900	$ 692,193	$ 744,107	$ 799,915	$ 859,909	$ 924,402
23		Operating Expenses	$ 629,000	$ 684,950	$ 705,499	$ 726,663	$ 748,463	$ 770,917	$ 794,045
24		***Subtotal***	***$ 1,629,800***	***$ 1,328,850***	***$ 1,397,691***	***$ 1,470,770***	***$ 1,548,378***	***$ 1,630,826***	***$ 1,718,447***
25	7	***Water Conservation Department Subtotal***							
26		Personnel Expenses	$ 202,700	$ 210,700	$ 226,503	$ 243,490	$ 261,752	$ 281,383	$ 302,487
27		Operating Expenses	$ 332,400	$ 365,500	$ 376,465	$ 387,759	$ 399,392	$ 411,373	$ 423,715
28		***Subtotal***	***$ 535,100***	***$ 576,200***	***$ 602,968***	***$ 631,249***	***$ 661,144***	***$ 692,757***	***$ 726,202***
29		**TOTAL O&M Expenses**							
30		Personnel Expenses	$ 9,181,500	$ 9,387,100	*$ 10,091,133*	*$ 10,847,967*	*$ 11,661,565*	*$ 12,536,182*	*$ 13,476,396*
31		Operating Expenses	$ 8,842,000	$ 7,189,350	*$ 9,446,930*	*$ 9,750,705*	*$ 10,065,171*	*$ 10,417,072*	*$ 10,810,538*
32		Water Purchases	$ 4,625,000	$ 3,900,000	*$ 3,822,000*	*$ 3,707,340*	*$ 3,596,120*	*$ 3,524,197*	*$ 3,488,955*
33		Water Recovery	$ (436,000)	$ (350,000)	*$ (350,000)*	*$ (350,000)*	*$ (350,000)*	*$ (350,000)*	*$ (350,000)*
34		Depreciation	$ 5,003,000	$ 5,100,000	*$ 5,253,000*	*$ 5,410,590*	*$ 5,572,908*	*$ 5,740,095*	*$ 5,912,298*
35		Bad Debts	$ 45,800	$ 57,500	*$ 57,500*	*$ 57,500*	*$ 57,500*	*$ 57,500*	*$ 57,500*
36		Capitalized & Accrued Labor	$ 148,600	$ 330,350	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*
37		Capitalized construction	$ (1,510,000)	$ (1,130,000)	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*
38		**TOTAL O&M Expenses**	**$ 25,899,900**	**$ 24,484,300**	**$ 28,320,563**	**$ 29,424,102**	**$ 30,603,264**	**$ 31,925,047**	**$ 33,395,687**

Table IV - 2

CIP Expenditures (Uninflated)

Line no	Descriptions	Budget 2009	Projected 2010	Projected 2011	Projected 2012	Projected 2013	Projected 2014
1	**Vehicles**						
2	Vehicle Purchases (Trucks, Trailers, parts etc…)	$ 85,500	$ 200,000	$ 200,000	$ 200,000	$ 200,000	$ 400,000
3	**Electronic Equipment**						
4	Other Electronic Equipment	$ 16,500	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000
5	Printer / Copier / Scanner	$ -	$ 10,000	$ 10,000	$ 30,000	$ 10,000	$ 10,000
6	Server	$ 59,000	$ 30,000	$ 30,000	$ 30,000	$ 30,000	$ 30,000
7	***Subtotal***	***$ 75,500***	***$ 60,000***	***$ 60,000***	***$ 80,000***	***$ 60,000***	***$ 60,000***
8	**Building and Facilities**						
9	Wind Turbine		$ 1,100,000	$ 300,000	$ 300,000	$ 300,000	$ 300,000
10	Above Ground Fuel Storage Tank						
11	Backup Power Generator Tie-In Shop						
12	***Subtotal***	***$ -***	***$ 1,100,000***	***$ 300,000***	***$ 300,000***	***$ 300,000***	***$ 300,000***
13	**Others**						
14	Master Plan and Special Studies	$ 545,000					
15	Furnitures		$ 20,000			$ 20,000	
16	Small Equipment	$ 27,000	$ 20,000	$ 20,000	$ 40,000	$ 20,000	$ 20,000
17	Infrastructures Replacement and Maintenance	$ 1,275,000	$ 3,000,000	$ 3,000,000	$ 3,000,000	$ 3,000,000	$ 3,000,000
18	Wells, Boosters and Storage Reservoirs Upgrades, Repl & Maint.	$ 6,430,500	$ 4,000,000	$ 4,000,000	$ 4,000,000	$ 4,000,000	$ 4,000,000
19	Capital Project Improvements	$ 3,075,000	$ 500,000	$ 500,000	$ 500,000	$ 500,000	$ 500,000
20	Water Treatment Plant and Palmdale Lake	$ 188,500					
21	WTP Improvement Phase I						
22	WTP Improvement Phase II	$ 500,000					
23	GAC system maintenace or upgrades						
24	***Subtotal***	***$ 12,041,000***	***$ 7,540,000***	***$ 7,520,000***	***$ 7,540,000***	***$ 7,540,000***	***$ 7,520,000***
25	**TOTAL CIP**	**$ 12,202,000**	**$ 8,900,000**	**$ 8,080,000**	**$ 8,120,000**	**$ 8,100,000**	**$ 8,280,000**

Table IV - 3

CIP Expenditure (Inflated)

Line no	Descriptions	Budget 2009	Projected 2010	Projected 2011	Projected 2012	Projected 2013	Projected 2014
1	**Vehicles**						
2	Vehicle Purchases (Trucks, Trailers, parts etc…)	$ 85,500	$ 208,000	$ 216,320	$ 224,973	$ 233,972	$ 486,661
3	**Electronic Equipment**						
4	Other Electronic Equipment	$ 16,500	$ 20,800	$ 21,632	$ 22,497	$ 23,397	$ 24,333
5	Printer / Copier / Scanner	$ -	$ 10,400	$ 10,816	$ 33,746	$ 11,699	$ 12,167
6	Server	$ 59,000	$ 31,200	$ 32,448	$ 33,746	$ 35,096	$ 36,500
7	***Subtotal***	***$ 75,500***	***$ 62,400***	***$ 64,896***	***$ 89,989***	***$ 70,192***	***$ 72,999***
8	**Building and Facilities**						
9	Wind Turbine	$ -	$ 1,144,000	$ 324,480	$ 337,459	$ 350,958	$ 364,996
10	Above Ground Fuel Storage Tank	$ -	$ -	$ -	$ -	$ -	$ -
11	Backup Power Generator Tie-In Shop	$ -	$ -	$ -	$ -	$ -	$ -
12	***Subtotal***	***$ -***	***$ 1,144,000***	***$ 324,480***	***$ 337,459***	***$ 350,958***	***$ 364,996***
13	**Others**						
14	Master Plan and Special Studies	$ 545,000	$ -	$ -	$ -	$ -	$ -
15	Furnitures	$ -	$ 20,800	$ -	$ -	$ 23,397	$ -
16	Small Equipment	$ 27,000	$ 20,800	$ 21,632	$ 44,995	$ 23,397	$ 24,333
17	Infrastructures Replacement and Maintenance	$ 1,275,000	$ 3,120,000	$ 3,244,800	$ 3,374,592	$ 3,509,576	$ 3,649,959
18	Wells, Boosters and Storage Reservoirs Upgrades, Repl & Maint.	$ 6,430,500	$ 4,160,000	$ 4,326,400	$ 4,499,456	$ 4,679,434	$ 4,866,612
19	Capital Project Improvements	$ 3,075,000	$ 520,000	$ 540,800	$ 562,432	$ 584,929	$ 608,326
20	Water Treatment Plant and Palmdale Lake	$ 188,500	$ -	$ -	$ -	$ -	$ -
21	WTP Improvement Phase I	$ -	$ -	$ -	$ -	$ -	$ -
22	WTP Improvement Phase II	$ 500,000	$ -	$ -	$ -	$ -	$ -
23	GAC system maintenace or upgrades	$ -	$ -	$ -	$ -	$ -	$ -
24	***Subtotal***	***$ 12,041,000***	***$ 7,841,600***	***$ 8,133,632***	***$ 8,481,475***	***$ 8,820,734***	***$ 9,149,230***
25							
26	**TOTAL CIP (inflated)**	**$ 12,202,000**	**$ 9,256,000**	**$ 8,739,328**	**$ 9,133,896**	**$ 9,475,854**	**$ 10,073,886**

B. Proposed Rate Adjustments

The pro forma operations statement, or cash flow summary presented in Table IV – 4, provides a basis for evaluating the timing and level of water rate adjustments required to meet the projected revenue requirements for the study period. An average rate adjustment of 14 percent in May 2009 is recommended, followed by another 14 percent rate increase in January 2010 and annual 8 percent increases for the remaining years of the planning period. In addition, the Board is considering implementation of a water quality fee to cover the costs of GAC treatment.

Table IV - 4

Pro forma Financial Plan – Operating Cash Flows Activities

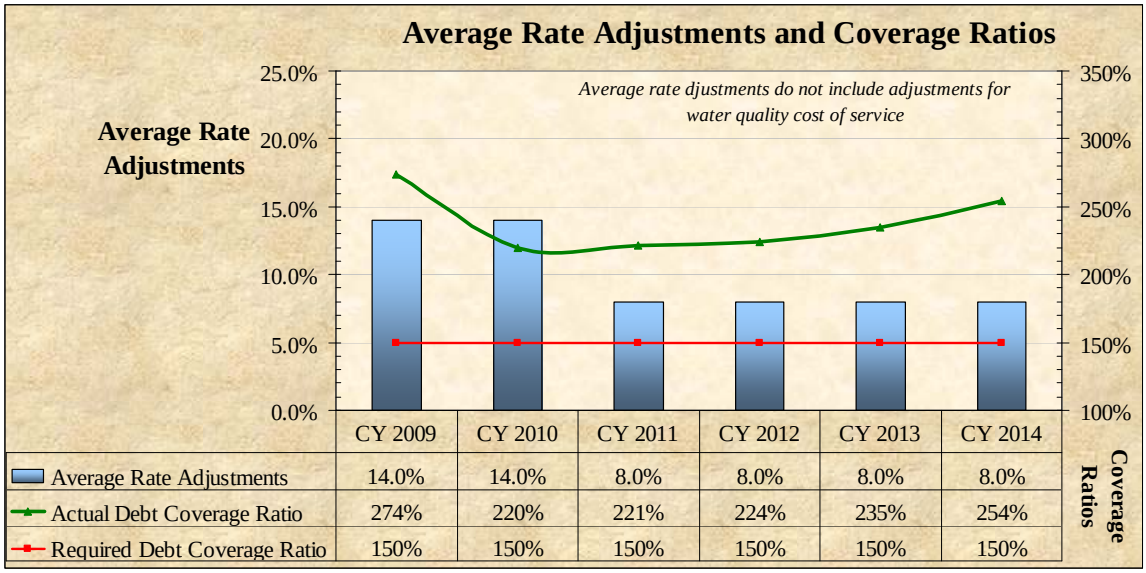
Line no	Descriptions		Budget CY 2009	Projected CY 2010	Projected CY 2011	Projected CY 2012	Projected CY 2013	Projected CY 2014
1	**REVENUES**							
2	**Revenues from rates**							
3	Rev from existing rates		$ 16,452,608	$ 16,559,966	$ 16,558,758	$ 16,561,048	$ 16,675,337	$ 16,900,421
4	Rev from rate adjustments							
5	CY 2009 - 8 months effective	14%	$ 1,535,577	$ 2,318,395	$ 2,318,226	$ 2,318,547	$ 2,334,547	$ 2,366,059
6	CY 2010 - 12 months effective	14%		$ 2,642,971	$ 2,642,778	$ 2,643,143	$ 2,661,384	$ 2,697,307
7	CY 2011 - 12 months effective	8%			$ 1,721,581	$ 1,721,819	$ 1,733,701	$ 1,757,103
8	CY 2012 - 12 months effective	8%				$ 1,859,565	$ 1,872,398	$ 1,897,671
9	CY 2013 - 12 months effective	8%					$ 2,022,189	$ 2,049,485
10	CY 2014 - 12 months effective	8%						$ 2,213,444
11	Subtotal rev from rates adjustment		$ 1,535,577	$ 4,961,366	$ 6,682,585	$ 8,543,074	$ 10,624,219	$ 12,981,069
12	*Subtotal revenues from rates*		*$ 17,988,185*	*$ 21,521,332*	*$ 23,241,342*	*$ 25,104,122*	*$ 27,299,556*	*$ 29,881,490*
13	**Other revenues**							
14	Miscellaneous charges		$ 1,400,000	$ 1,442,000	$ 1,485,260	$ 1,529,818	$ 1,575,712	$ 1,622,984
15	Supplemental water supply revenues		$ 4,563,603	$ 6,265,457	$ 5,431,682	$ 4,620,657	$ 4,092,489	$ 3,875,709
16	Water quality surcharges		$ 1,295,016	$ 2,000,000	$ 2,060,000	$ 2,121,800	$ 2,185,454	$ 2,251,018
17	Assessments							
18	Property Tax	35.7%	$ 1,427,938	$ 1,470,777	$ 1,514,900	$ 1,560,347	$ 1,607,157	$ 1,655,372
19	Debt Service	64.3%	$ 2,572,062	$ 2,649,223	$ 2,728,700	$ 2,810,561	$ 2,894,878	$ 2,981,724
20	Interest		$ 495,586	$ 640,829	$ 613,375	$ 590,978	$ 570,952	$ 561,830
21	Market adj. on investments		$ -	$ -	$ -	$ -	$ -	$ -
22	Capital improvement fees		$ 500,000	$ 520,000	$ 540,800	$ 562,432	$ 584,929	$ 608,326
23	State grants		$ 1,480,000	$ -	$ -	$ -	$ -	$ -
24	Sale of real property		$ 950,000	$ -	$ -	$ -	$ -	$ -
25	Other		$ 350,000	$ 360,500	$ 371,315	$ 382,454	$ 393,928	$ 405,746
26	*Subtotal other revenues*		*$ 15,034,205*	*$ 15,348,785*	*$ 14,746,032*	*$ 14,179,047*	*$ 13,905,499*	*$ 13,962,708*
27	**TOTAL REVENUES**		**$ 33,022,390**	**$ 36,870,117**	**$ 37,987,375**	**$ 39,283,168**	**$ 41,205,056**	**$ 43,844,199**
28	**REVENUES REQUIREMENTS**							
29	**O&M Expenses**							
30	Water conservation program		$ 250,000	$ 252,350	$ 252,123	$ 251,896	$ 254,264	$ 259,273
31	General O&M expenses (excl non-cash)		$ 19,876,450	$ 20,757,713	$ 21,643,890	$ 22,599,160	$ 23,687,734	$ 24,915,599
32	GAC O&M expense		$ -	$ 2,000,000	$ 2,060,000	$ 2,121,800	$ 2,185,454	$ 2,251,018
33	**Non-operating expenses**							
34	State Water Project amortization		$ 1,150,000	$ 1,185,000	$ 1,221,000	$ 1,258,000	$ 1,296,000	$ 1,335,000
35	Deferred charges amortization		$ 88,000	$ 88,000	$ 88,000	$ 88,000	$ 88,000	$ 88,000
36	New debt service 2009		$ 1,341,055	$ 2,906,588	$ 2,900,338	$ 2,903,488	$ 2,901,488	$ 2,903,088
37	Debt Expense (old) - principal & interest		$ 2,131,042	$ 2,125,543	$ 2,129,893	$ 2,126,943	$ 2,128,643	$ 2,128,830
38	*Subtotal non-operating expenses*		*$ 4,710,097*	*$ 6,305,130*	*$ 6,339,230*	*$ 6,376,430*	*$ 6,414,130*	*$ 6,454,918*
39	Transfer to/(from) reserves							
40	Water conservation net revenues to WCPF		$ -	$ 144,276	$ 79,841	$ 36,791	$ 6,656	$ (17,517)
41	Suppl water supply revenues to SWSP		$ 4,563,603	$ 6,265,457	$ 5,431,682	$ 4,620,657	$ 4,092,489	$ 3,875,709
42	Transfer to/(from) Asset Replacement Fund		$ 3,000,000	$ 6,000,000	$ 7,000,000	$ 7,000,000	$ 7,000,000	$ 9,000,000
43	Transfer to/(from) Conservation Program Fund		$ -	$ -	$ -	$ -	$ -	$ 100,000
44	Transfer to/(from) Suppl Water Supply Fund		$ (3,000,000)	$ (3,000,000)	$ (3,000,000)	$ (4,000,000)	$ (4,000,000)	$ (4,000,000)
45	Connection fees related projects		$ 600,000	$ 520,000	$ 540,800	$ 562,432	$ 584,929	$ 608,326
46	*Total Cash Flows Adjustments*		*$ 5,163,603*	*$ 9,929,733*	*$ 10,052,323*	*$ 8,219,880*	*$ 7,684,074*	*$ 9,566,518*
47	**TOTAL REVENUES REQUIREMENTS**		**$ 30,000,150**	**$ 39,244,926**	**$ 40,347,565**	**$ 39,569,166**	**$ 40,225,657**	**$ 43,447,325**
48	**Annual CASH FLOWS, net**		**$ 3,022,239**	**$ (2,374,808)**	**$ (2,360,191)**	**$ (285,998)**	**$ 979,399**	**$ 396,873**
49	Actual Debt Coverage Ratio		274%	220%	221%	224%	235%	254%
50	Required Debt Coverage Ratio		150%	150%	150%	150%	150%	150%

C. Debt Coverage

The District must ensure revenues are sufficient to meet all debt coverage requirements on existing and proposed debt. Failure to meet the coverage ratios could potentially damage the District's credit ratings, resulting in higher interest rates if the District returns to the debt market in the future. Currently, the District is planning to sell $38.25 million of debt, deliverable by July 2009, to finance its future capital projects. Figure IV – 1 below highlights the District's debt coverage ratios against the target ratios and proposed rate adjustments.

Figure IV - 1

Average Rate Adjustments and Coverage Ratios



D. Reserves

Currently, the District has a resolution regarding the reserves policies approved in CY 2005. The District's current reserves and reserve policy (from Resolution No 05-9) is summarized in Table IV – 5 below.

Table IV - 5

Restricted Reserves as set by Resolution No 05-9

Line no	Reserves' names	Descriptions		Balance
1	Rate stabilization fund	10% of prior year Water Revenues	$	1,560,000
2	Operations and Maintenance Reserves	25% of prior year O&M for emergencies	$	3,446,000
3		25% of prior year O&M for operations	$	3,446,000
4	Capital Improvement Working Fund	Double Estimated CIF for 2006	$	4,000,000
5	Emergency Repair Working Fund	5% of prior net Capital Assets	$	3,386,000
6	Littlerock Dam Self Insurance		$	5,000,000
7	Palmdale Dam Self Insurance		$	5,000,000
8	Undesignated net assets		$	33,795,150
9		TOTAL	$	59,633,150

The District is in the process of approving a new reserve policy which has two categories of restricted funds: Board Restricted Funds and Legally Restricted Funds. The Legally Restricted Funds are created to comply with the requirements of state law and the District's contractual obligations. In addition, Board Restricted Funds are the financial vehicle to be used for certain contingencies, or to accomplish strategic goals. These funds can be used for the needs of the community and to implement strategic policies for long-term management. Table IV – 6 below shows the new reserve policy that is currently proposed by the District staff along with the reserve balances as of the end of CY 2008. Figure IV – 2 below shows the anticipated levels of board restricted reserves over the planning period CY 2009 to CY 2014. The combined reserves level in CY 2009 is higher than the target due to $20 million debt receipt scheduled to be delivered by July 2009 to fund capital project.

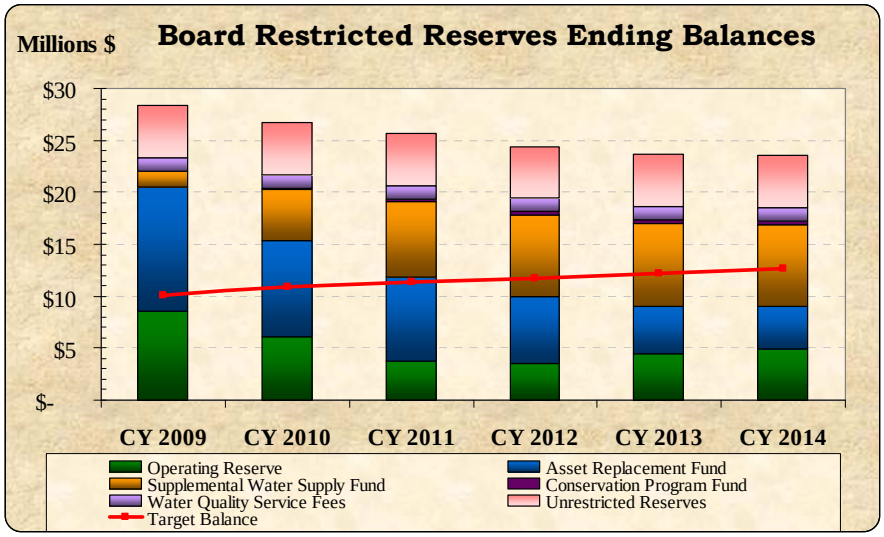
Table IV - 6

New Restricted Reserve Policy

Line no	Reserves' names	Descriptions		Balance (as of 12/2008)
1	**Legally Restricted Reserves**			
2	Water Facilities Connections Fees	Funded by connections fees, used for capital improvement projects	$	100,000
3	Water Supply Connection Fees	Funded by supply connection fees, used for the cost of additional water supply development	$	-
4	Municipal Bond Reserves	Required by bond covenants, used for annual debt service payments	$	1,277,515
5	Dam Self-Insurance Reserve	Used as self-insurance for both Littlerock and Palmdale dams with Littlerock Dam take priority	$	5,000,000
6	Bond Insurance In-lieu Reserve	Used to approximate principal and interest of the 1998 bonds in lieu of insurance	$	1,541,751
7	**Total Legally Restricted Reserves**		$	7,919,266
8	**Board Restricted Reserves**			
9	Municipal Bond Rate Stab Reserve	Used to meet bond covenants	$	1,122,572
10	Operating Reserve	Used as working cash requirement with target of 3-month (or 25%) of O&M expenses	$	5,500,000
11	Supplemental Water Supply Fund	Funded by suppl water supply charges, used for supplemental water supply projects	$	-
12	Asset Replacement Fund	Used to fund capital replacement projects with target equivalent to depreciation	$	-
13	Conservation Program Fund	Funded from conservation charges and used to fund conservation program ($250K in CY 2009)	$	-
14	Water Quality Service Fee	Funded from water quality fees, used for maintenance of GAC system	$	-
15	Unrestricted Reserves		$	583,003
16	**Total Board Restricted Reserves**		$	7,205,575
17	**Total Reserves**		**$**	**15,124,841**

Figure IV - 2

Board Restricted Reserves Ending Balances



Tables IV - 7 and 8 below outline the pro forma cash activities of the District's legally restricted reserves and Board restricted reserves proposed to be adopted in March 2009. The interest earnings rate is assumed to be 2 percent based on current financial market.

Table IV - 7

Cash Flows of Legally Restricted Reserves

	LEGALLY RESTRICTED FUNDS	Budget 2009	Projected 2010	Projected 2011	Projected 2012	Projected 2013	Projected 2014
1	**Water Facilities Connections Fees Fund**						
2	Beginning balance	$ 100,000	$ -	$ -	$ -	$ -	$ -
3	Capital Improvement Fees	$ 500,000	$ 520,000	$ 540,800	$ 562,432	$ 584,929	$ 608,326
4	Capital Improvement Project Expenditures	$ (600,000)	$ (520,000)	$ (540,800)	$ (562,432)	$ (584,929)	$ (608,326)
5	**Ending balance**	$ -	$ -	$ -	$ -	$ -	$ -
6	Interest income	$ 1,010	$ -	$ -	$ -	$ -	$ -
7	**Water Supply Connections Fees Fund**						
8	Beginning balance	$ -	$ -	$ -	$ -	$ -	$ -
9	Supply Connection Fees	$ -	$ -	$ -	$ -	$ -	$ -
10	Suppl Water Supply Cost	$ -	$ -	$ -	$ -	$ -	$ -
11	**Ending balance**	$ -	$ -	$ -	$ -	$ -	$ -
12	Interest income	$ -	$ -	$ -	$ -	$ -	$ -
13	**Municipal Bond Reserve**						
14	Beginning balance	$ 1,277,515	$ -	$ -	$ -	$ -	$ -
15	Debt service payment	$ (1,277,515)					
16	**Ending balance**	$ -	$ -	$ -	$ -	$ -	$ -
17	Interest income	$ 12,904	$ -	$ -	$ -	$ -	$ -
18	**Bond Insurance In-Lieu Reserve**						
	1998 debt reserve fund						
22	Beginning balance	$ 1,541,751	$ -	$ -	$ -	$ -	$ -
23	Transfer to new debt service reserve fund	$ (1,541,751)					
24	**Ending balance**	$ -	$ -	$ -	$ -	$ -	$ -
25	Interest income	$ 31,146	$ -	$ -	$ -	$ -	$ -
26							
27	**Debt Service Reserve (proposed debt) - 2009**						
28	Beginning balance	$ -	$ 3,407,545	$ 3,407,545	$ 3,407,545	$ 3,407,545	$ 3,407,545
29	Debt reserves for new bond issues	$ 3,407,545	$ -	$ -	$ -	$ -	$ -
30	**Ending balance**	$ 3,407,545	$ 3,407,545	$ 3,407,545	$ 3,407,545	$ 3,407,545	$ 3,407,545
31	Interest income	$ 34,420	$ 68,839	$ 68,839	$ 68,839	$ 68,839	$ 68,839

Table IV - 8

Cash Flows of Board Restricted Reserves

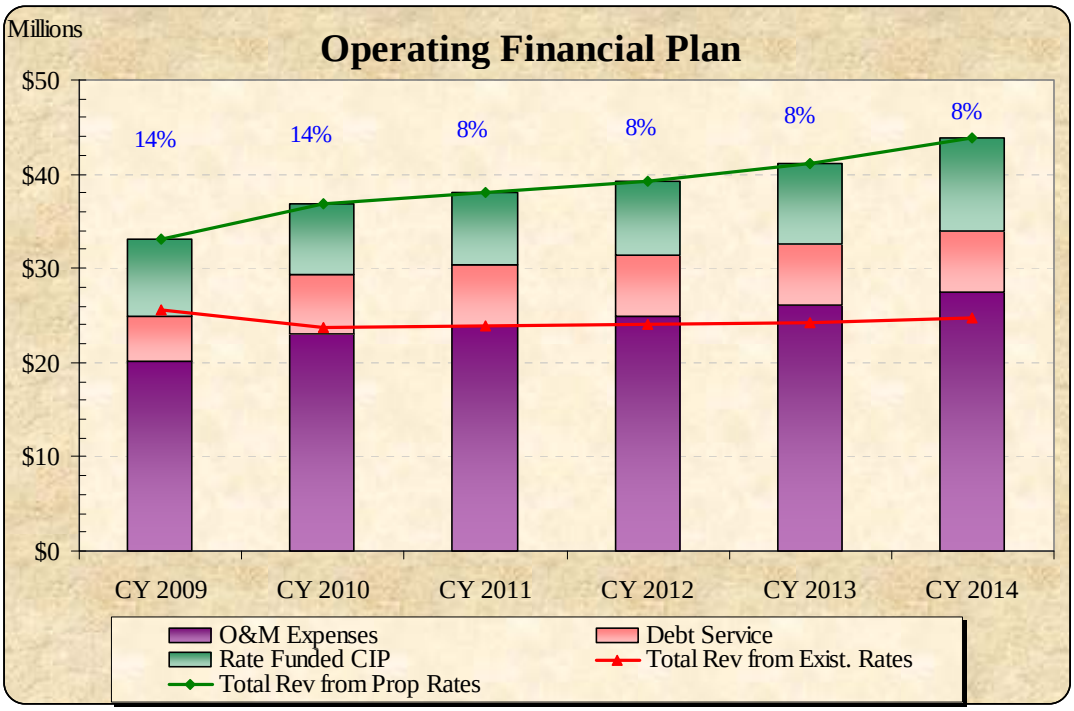
	BOARD RESTRICTED FUNDS		Budget 2009	Projected 2010	Projected 2011	Projected 2012	Projected 2013	Projected 2014
1	**Muni Bond Rate Stab Fund**							
2	Beginning balance		$ 1,122,572	$ 1,122,572	$ 1,122,572	$ 1,122,572	$ 1,122,572	$ 1,122,572
3	**Ending balance**		$ 1,122,572	$ 1,122,572	$ 1,122,572	$ 1,122,572	$ 1,122,572	$ 1,122,572
4	Interest income		$ 22,678	$ 22,678	$ 22,678	$ 22,678	$ 22,678	$ 22,678
5	**Operating Reserve**							
6	Beginning balance		$ 5,500,000	$ 8,522,239	$ 6,147,431	$ 3,787,241	$ 3,501,243	$ 4,480,642
7	Net annual cash flows		$ 3,022,239	$ (2,374,808)	$ (2,360,191)	$ (285,998)	$ 979,399	$ 396,873
8	**Ending balance**		$ 8,522,239	$ 6,147,431	$ 3,787,241	$ 3,501,243	$ 4,480,642	$ 4,877,516
9	Interest income		$ 136,633	$ 141,705	$ 94,155	$ 67,652	$ 74,858	$ 88,852
10	Target balance *	25%	$ 4,969,113	$ 5,189,428	$ 5,410,972	$ 5,649,790	$ 5,921,934	$ 6,228,900
11	* 3-month O&M expenses, GAC, water conservation program and non-cash expenses excluded (i.e. depreciation)							
12	**Supplemental Water Supply Fund**							
13	Beginning balance		$ -	$ 1,563,603	$ 4,829,060	$ 7,260,742	$ 7,881,398	$ 7,973,887
14	Proposed bond funding 2010		$ -	$ -	$ -	$ -	$ -	$ -
15	Net income from supplemental water supply revenues		$ 4,563,603	$ 6,265,457	$ 5,431,682	$ 4,620,657	$ 4,092,489	$ 3,875,709
16	Transfer from/(to) operating fund		$ (3,000,000)	$ (3,000,000)	$ (3,000,000)	$ (4,000,000)	$ (4,000,000)	$ (4,000,000)
17	**Ending balance**		$ 1,563,603	$ 4,829,060	$ 7,260,742	$ 7,881,398	$ 7,973,887	$ 7,849,596
18	Interest income		$ 15,794	$ 64,572	$ 122,119	$ 152,951	$ 160,154	$ 159,833
19	Target balance#		$ -	$ -	$ -	$ -	$ -	$ -
	# = debt service payment of current yr							
20	**Asset Replacement Fund**							
21	Beginning balance		$ -	$ 11,981,003	$ 9,245,003	$ 8,046,475	$ 6,475,011	$ 4,584,086
22	Proposed Bond Funding 2009		$ 20,000,000	$ -	$ -	$ -	$ -	$ -
23	Capital replacement CIP		$ (11,018,997)	$ (8,736,000)	$ (8,198,528)	$ (8,571,464)	$ (8,890,925)	$ (9,465,560)
24	Transfer from/(to) operating fund		$ 3,000,000	$ 6,000,000	$ 7,000,000	$ 7,000,000	$ 7,000,000	$ 9,000,000
25	**Ending balance**		$ 11,981,003	$ 9,245,003	$ 8,046,475	$ 6,475,011	$ 4,584,086	$ 4,118,527
26	Interest income		$ 121,020	$ 214,404	$ 174,661	$ 146,682	$ 111,708	$ 87,905
27	Target balance ++		$ 5,100,000	$ 5,253,000	$ 5,410,590	$ 5,572,908	$ 5,740,095	$ 5,912,298
	++ *Equivalent to depreciation*							
28	**Conservation Program Fund**							
29	Beginning balance		$ -	$ -	$ 144,276	$ 224,117	$ 260,908	$ 267,565
30	Transfer from/(to) operating fund		$ -	$ -	$ -	$ -	$ -	$ 100,000
31	Net income from conservation revenues		$ -	$ 144,276	$ 79,841	$ 36,791	$ 6,656	$ (17,517)
32	**Ending balance**		$ -	$ 144,276	$ 224,117	$ 260,908	$ 267,565	$ 350,047
33	Interest income		$ -	$ 1,457	$ 3,721	$ 4,899	$ 5,338	$ 6,239
34	**Water Quality Service Fees**							
35	Beginning balance		$ -	$ 1,295,016	$ 1,296,474	$ 1,300,195	$ 1,305,094	$ 1,310,432
36	Net income from water quality fees revenues		$ 1,295,016	$ -	$ -	$ -	$ -	$ -
37	**Ending balance**		$ 1,295,016	$ 1,296,474	$ 1,300,195	$ 1,305,094	$ 1,310,432	$ 1,316,671
38	Interest income		$ 13,081	$ 26,162	$ 26,191	$ 26,267	$ 26,366	$ 26,473
39	Target balance - 25% GAC O&M	25%	$ -	$ 500,000	$ 515,000	$ 530,450	$ 546,364	$ 562,754
40	**Unrestricted Reserves**							
41	Beginning balance		$ 5,583,003	$ 5,000,000	$ 5,000,000	$ 5,000,000	$ 5,000,000	$ 5,000,000
42	Misc. expenses		$ (583,003)					
43	**Ending balance**		$ 5,000,000	$ 5,000,000	$ 5,000,000	$ 5,000,000	$ 5,000,000	$ 5,000,000
44	Interest income		$ 106,899	$ 101,010	$ 101,010	$ 101,010	$ 101,010	$ 101,010
	Total Board Restricted Reserves Ending Balance		$ 29,484,434	$ 27,784,816	$ 26,741,341	$ 25,546,227	$ 24,739,184	$ 24,634,928
	Target Balance		$ 10,069,113	$ 10,942,428	$ 11,336,562	$ 11,753,148	$ 12,208,392	$ 12,703,952

E. Projected Revenues

The projected revenues under existing and proposed rate structures and the revenue requirements are presented graphically in Figure IV – 3. Revenues under current rates, represented by the red line in the figure, are insufficient to meet future revenue requirements; therefore, rate adjustments will be needed. The green line reflects the revenue stream under the proposed rates, which results in sufficient revenues to meet both operating and reserve funding needs.

Figure IV - 3

Financial Plan – Revenue Requirements and Projected Revenues



V. PROPOSED WATER RATES AND CUSTOMER IMPACTS

In order to assist the District in conducting a water rate and financial planning study, RFC developed a Model in Microsoft Excel®. The Model was designed to more effectively address the rate and pricing objectives identified by the District. The proposed water rates are calculated based on the projected revenue requirements for CY 2009. The Model is designed to accommodate annual updates for each year's budget and provides a tool for evaluating rate and financial impacts of proposed budget changes.

A. Overview of Rate Setting

For a water utility, the majority of revenue is normally derived through user charges, which are defined as service fees, rates, and billings that are charged to the beneficiaries of the water services. Development of a user charges is defined as the total process of identifying costs, allocating costs to the water service beneficiaries, and designing a rate structure to recover allocated costs.

B. Cost of Service Analysis

One of the key objectives was to perform a cost of service analysis to determine an appropriate allocation of costs among the customer classes.

To perform this analysis, costs are categorized by function and then to the appropriate cost parameters. Using the AWWA Base-Extra Capacity Method, water utility costs of service ("COS") are assigned to three basic functional cost parameters: base costs, extra capacity costs, and customer service-related costs.

Base costs are those operating and capital costs of the water system associated with serving customers at a constant average rate of use. Extra capacity costs represent those operating and capital costs incurred to meet customer peak demands for water in excess of average day usage. Total extra capacity costs are subdivided into costs associated with maximum day and maximum hour demands. For example, water purchase costs are all allocated to base, whereas a treatment plant is designed to handle maximum day demands, therefore treatment plant costs are allocated to base and maximum day using

peaking factors provided by the District's Master Plan 2008 Update to allocate among base, maximum day and maximum hour, shown in Table V – 1.

Table V - 1

System Peaking Factors[5]

Cost Components	Demand Factors
Base	1.00
Max Day	1.90
Max Hour	3.14

Customer service costs are subdivided into service and billing, and meter costs. Service and billing costs are uniform for all customers and include expenses such as meter reading, billing, accounts receivables, and accounting. Meter service costs include maintenance and capital costs associated with meters and services. These costs are assigned based on meter size or equivalent meter capacity. In addition, some of the peaking costs may be assigned to meter costs to ensure a stable source of revenues. The separation of costs of service into these principal components provides the foundation for further allocation of such costs to the customer classes on the basis of their demands.

The COS analysis is based upon the premise of generating annual revenues adequate to meet the estimated annual revenue requirements. Deductions from revenue requirements include miscellaneous operating revenues, interest revenues, reserve funding, and raw water revenue. Adjustments are also made to account for annual cash flows, and mid-year rate increases (to cover the full year's impact of rates) to ensure collection of adequate revenues. This methodology ensures revenue neutrality, and adjusts requirements based on changing costs for operations and capital. The CY 2009 total COS to be recovered from the District's users, excluding the new water quality service cost, shown in Table IV – 2 is estimated at $18.756 million.

[5] From Palmdale Water District Master Plan 2008 Update Section 3, page 3-14

Table V - 2

Cost of Service to be Recovered from Rates

		CY 2009		
		Operating	Capital	Total
1	**Operating Expenses**			
2	O&M Expenses	$ 20,126,450		$ 20,126,450
3	State Water Project amortization		$ 1,150,000	$ 1,150,000
4	Debt service		$ 3,560,097	$ 3,560,097
5	Transfer to reserves		$ 5,163,603	$ 5,163,603
6	Subtotal	$ 20,126,450	$ 9,873,700	$ 30,000,150
7	**Less: Miscellaneous Revenue**			
8	Misc. Revenues	$ 14,538,619		$ 14,538,619
9	Interest Revenue	$ 495,586		$ 495,586
10	Subtotal	$ 15,034,205	$ -	$ 15,034,205
11	**Less: Adjustments**			
12	Adjustment for Annual Cash Ba	$ (3,022,239)		$ (3,022,239)
13	Adjustment to Annualize Rate I	$ (767,788)		$ (767,788)
14	Subtotal	$ (3,790,028)	$ -	$ (3,790,028)
15	**Total Cost to be Recovered**	**$ 8,882,273**	**$ 9,873,700**	**$ 18,755,973**

C. Unit Costs of Service

In order to allocate costs of service to the different user classes, unit costs of service need to be developed for each cost parameter. The unit costs of service are developed by dividing the total annual costs allocated to each cost parameter by the total annual service units of the respective category. Different service units are used for the different cost parameters. The base or volume-related cost parameters are based on volumetric units of one hundred cubic feet of water ("ccf") representing annual usage. The extra capacity parameters of maximum day and maximum hour are based on a rate of usage so they are calculated in units of water (1 ccf = 748 gallons) per day and per hour. Customer-related cost parameters are based on accounts and equivalent meters.

Once the total number of service units is known they can be used to calculate unit costs. The allocated costs are simply divided by the total number of service units for each parameter to determine the unit cost of each parameter. Table V – 3 below present the basis for unit cost development of each cost parameter.

Table V - 3

Unit Cost Development – COS Option

	Base	Max Day	Max Hour	Meter Charges	Billing & Customer Service	General	Conservation Program	Elevation booster	Total	Water quality charge
allocation %	49.6%	8.1%	4.1%	0.7%	10.8%	26.5%				
Net Operating Expenses to be recovered from rate	$ 3,805,539	$ 624,591	$ 315,028	$ 57,165	$ 831,406	$ 2,032,211	$ 250,000	$ 966,333	$ 8,882,273	$ 1,295,016
Capital Costs	$ 3,949,480	$ 1,974,740	$ 987,370	$ 888,633	$ 98,737	$ 1,974,740			$ 9,873,700	
Cost of Services	$ 7,755,019	$ 2,599,331	$ 1,302,398	$ 945,798	$ 930,143	$ 4,006,951	$ 250,000	$ 966,333	$ 18,755,973	$ 1,295,016
Allocation percentage of General Cost	16.6%	5.6%	2.8%	75.0%	0.0%					
to fixed service charge 75.0%				100%	0%					
to variable rate charge 25.0%	67%	22%	11%							
Allocation of General Cost	$ 666,438	$ 223,377	$ 111,923	$ 3,005,213	$ -					
Total Cost of Services	$ 8,421,457	$ 2,822,708	$ 1,414,321	$ 3,951,011	$ 930,143		$ 250,000	$ 966,333	$ 18,755,973	
Total Unit of Services	9,778,583	24,112	57,332	41,808	315,132		6,519,055			6,519,055
Unit of Measure	ccf/yr	ccf/day	ccf/day	equivalent meters / yr	no of monthly bills					
Unit cost of service	$ 0.86	$ 117.07	$ 24.67	$ 94.50	$ 2.95		$ 0.04			$ 0.20
Units	$ per ccf	$ per ccf	$ per ccf	$ per equiv meter per year	$ per monthly bill		$ per ccf			$ per ccf

D. Fixed / Variable Cost Allocation – Unit Cost

The District would like to ensure stable revenues that do not vary with the consumption. This can be achieved by collecting more fixed costs as a service charge on meters. The current fixed / variable ("FV") cost structure of the District O&M is 75 percent fixed cost and 25 variable cost. To provide revenue stability during times of varying usage levels without creating heavy impact on small customers, RFC suggests the District to collect 60 percent of the total cost as fixed revenues and 40 percent as volumetric revenues to recover the $18.756 million of total operating and capital cost as shown in Table V – 4 below.

Table V - 4

Unit Cost Development – FV Option

	O&M	Capital	Overall	Total Cost to be recovered
FIXED COST	75%	100%	88%	$ 16,535,405
VARIABLE COST	25%		12%	$ 2,220,568
TOTAL	100%	100%	100%	$ 18,755,973

FIXED COST	60%	$ 11,253,584	To Billing & Customer Service and Meter Charges
VARIABLE COST	40%	$ 7,502,389	To Base Water Charge, Conservation Charge and Elevation Booster Surcharges
TOTAL	100%	$ 18,755,973	

Rates	Base Water Charge	Elevation booster surcharge	Water conservation	Water quality surcharge	Billing & Customer Service	Meter charge
Total Cost	$ 6,286,057	$ 966,333	$ 250,000	$ 1,295,016	$ 2,994,831	$ 8,258,753
Total unit of services	9,778,583 ccf / yr		6,519,055 ccf / yr	6,519,055 ccf / yr	315,132 monthly bills	41,808 equiv meters
Unit cost	$ 0.64		$ 0.03	$ 0.20	$ 9.50	$ 16.46
Units of services	ccf		ccf	ccf	bill	equiv meter

E. Recommended User Classifications & Water Allocations

In order to develop the water budget rate structure to promote conservation and sustain financial sufficiency from rate revenues, a policy for determining water budget allocation for each customer and a policy to define the tiers for each user classification (or location class) are necessary. Currently, the District has 24 location classes (or customer classes) for its 26,261 accounts, which can be combined into five general categories as shown in Table V – 5 below.

Table V - 5

New User Classifications for Existing Location Classes

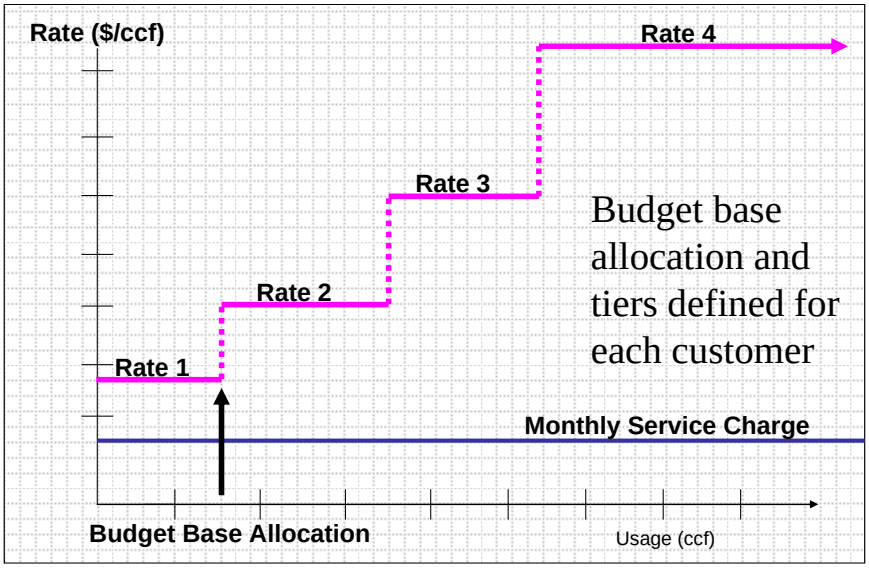
New user classifications	Old location classes
Single Family Residential (“SFR”)	RESI
Multi-Family Residential (“MFR”)	M-APT, M-APTC, M-DUP, M-MHP, M-MHPC
Commercial-Industrial (“CI”)	COMB, COMB-C, COMC, COMC-C, INDH, INDL
Irrigation Only (“IRR”)	IRRL, IRRO, IRRP
Other	MUNI, SCHL, SCHL-COMP, DIST, ERROR, NOSVC-DET, NOSVC-OTHER, CONF, CONR

According to American Water Works Association (“AWWA”) Journal, May 2008, Volume 100, Number 5, “a water budget is the quantity of water that would be required

by an efficient level of water use." Thus, a water budget allocation should be objectively and impartially based on each customer's unique characteristics. To illustrate, Figure V – 1 below shows the general concept for water budget rate structure.

Figure V - 1

Water Budget Rate Concept



After working closely with Tom Ash from HydroPoint Data Systems, Inc ("HPDS") and District's staffs, RFC recommends the following water allocation policy as shown in Table V – 6.

Table V - 6

Water Budget Allocations by user classes

New user classifications	**Water Budget Allocations =**
Single Family Residential ("SFR")	Indoor allocation + Outdoor allocation
Multi-Family Residential ("MFR")	3-yr moving average by month
Commercial-Industrial ("CI")	3-yr moving average by month
Irrigation Only ("IRR")	Outdoor allocation
Other ("Other")	3-yr moving average by month

♦ Indoor Water Allocation

For SFR, the monthly indoor allocation is determined by the number of residents per dwelling account (or household size, "Size"), the allowable water usage per resident (gallon per capita day, "GPCD") and number of days in the month ("Days"):

- $$IA(ccf) = \frac{GPCD * Size * Days}{\left(748 gallons / 1ccf\right)}$$

In this study, the following default values are used:

- GPCD = 60 gallons per capita day
- Size = 4 persons / dwelling [6]

♦ Outdoor Water Allocation

The outdoor allocation is determined from total square footage of the property ("TA") adjusted by area factor ("AF") to estimate irrigable area , weather data from local weather station (ETo – in inches of water) adjusted by a landscape factor ("LF"), and drought factor ("DF") that reflects the water supply situation as follows:

$$OA(ccf) = \frac{ET_0 * TA * AF * LF * DF}{\left(12 inch / ft\right)\left(100\, ft^3 / 1ccf\right)}$$

In this study, the following default values are used and recommended for the District to use as a starting point.

- Area Factor (AF) = 45% of total area for residential customers (SFR) and 100% of total area for irrigation customers (IRR)
- Landscape Factor (LF) = 70% – based the State of California AB 1881 Plant Factor/Irrigation Efficiency standard (Landscape Factor = PF / IE)

Other variables are defined as followed:

[6] From California, Dept of Finance: E-5 City/County Population and Housing Estimates, 1/1/2008 for City of Palmdale, average household size = 3.561, rounded to 4 persons

- Total Area (TA) is total parcel area collected from reliable source such as the District's geographical information systems (GIS)
- Monthly ET_o is determined by sum of all daily local weather data (daily ET_o) in the month. For the purpose of this Study, average monthly ET_o values are collected from CIMIS station 197 from Apr 05 - Nov 08 by month.
- Drought factor (DF) is set at 100% during normal times and will decrease when supply shortages occur.

Table V – 7 below summarizes the monthly allocation and actual 3-year average of an average SFR customer, assuming 8,000 sq feet of total area. The current monthly average usage of SFR customer is 27 units of water (1 ccf = 748 gallons) while the actual average monthly allocation is only 22 units of water. This indicates that this average customer can use water more efficiently.

Table V - 7

Monthly allocation and average usage of an average SFR customer

Month	Total allocations (ccf)	3-yr average usage (ccf)
Jan	15	18
Feb	15	17
Mar	20	17
Apr	22	22
May	27	25
Jun	29	35
Jul	31	40
Aug	29	39
Sep	22	39
Oct	20	30
Nov	16	26
Dec	14	20
Ave	22	27

♦ Commercial Water Allocation

Allocations for CI and Other customers are based on 3-yr historical monthly consumption of each customer adjusted by the drought factor for different water supply conditions.

F. Proposed Water Rate Structure and Rates

After thoroughly analyzing the District's water system and financial activities, RFC proposes the following water budget rate structure consisting of

- Fixed Service Charges
- 5-tiered commodity rates, where tiers are defined based on individual water budget allocations. The commodity rates consist of 3 components as followed:
  - Base rate – to recover the variable cost;
  - Water conservation rate – applicable to tiers 2, 3, 4 and 5 to recover the cost associated with the conservation program in the District; and
  - Supplemental water supply rate – applicable to tiers 2, 3, 4 and 5 based on the supplemental water supply cost from various water supply sources, including developing new water supply.
- Water quality fees to recover the cost of producing high quality GAC treated water
- Elevation booster surcharge to recover pumping and booster costs of delivering water to elevated area.

Based on results of the pricing objectives study, RFC proposes two options for rate structure – FV and COS. Under the FV option, RFC assigned 60 percent of the total costs to be recovered from fixed monthly service charges and 40 percent to be recovered from commodity rates. Under the COS option, the fixed charge should cover fixed costs associated with meter reading, meter maintenance, billing, collections and customer services and a portion of the general expenses.

a) Fixed Charges

Under the COS approach, the fixed monthly service charge includes a customer service component and a meter capacity cost component. The customer service component recovers expenses associated with billing, collection, and customer service. This component is the same for all customers regardless of meter size. In addition to the maintenance and costs related to meters and services, the meter capacity cost component is adjusted to recover a portion of the peaking costs. The meter capacity cost component varies based on meter size due to the difference in potential demand that can be placed on the system by different sized meters. In addition, under the FV option, a portion of the fixed costs are assigned to meters. Tables V – 8 and 9 below summarize the proposed service charges for the two options described above.

Table V - 8

Fixed service charges under FV option

Monthly Service charge	**OPTION 1 : Rates by fixed/variable cost**					
Meter size	**CY 2009**	**CY 2010**	**CY 2011**	**CY 2012**	**CY 2013**	**CY 2014**
5/8 inch	$ 25.97	$ 29.60	$ 31.97	$ 34.53	$ 37.29	$ 40.27
1 inch	$ 50.66	$ 57.75	$ 62.37	$ 67.36	$ 72.75	$ 78.57
1-1/2 inch	$ 91.81	$ 104.67	$ 113.04	$ 122.08	$ 131.85	$ 142.40
2 inch	$ 141.20	$ 160.96	$ 173.84	$ 187.75	$ 202.77	$ 218.99
3 inch	$ 256.43	$ 292.33	$ 315.71	$ 340.97	$ 368.25	$ 397.71
4 inch	$ 421.05	$ 479.99	$ 518.39	$ 559.86	$ 604.65	$ 653.02
6 inch	$ 832.59	$ 949.15	$ 1,025.08	$ 1,107.09	$ 1,195.65	$ 1,291.31
8 inch	$ 1,326.44	$ 1,512.14	$ 1,633.11	$ 1,763.76	$ 1,904.86	$ 2,057.25
10 inch	$ 1,902.60	$ 2,168.96	$ 2,342.48	$ 2,529.87	$ 2,732.26	$ 2,950.84

Table V - 9

Fixed service charges under COS option

Service charge	OPTION 2 : Proposed rates calculation by COS					
Meter size	CY 2009	CY 2010	CY 2011	CY 2012	CY 2013	CY 2014
5/8 inch	$ 10.83	$ 12.34	$ 13.33	$ 14.40	$ 15.55	$ 16.79
1 inch	$ 22.64	$ 25.81	$ 27.87	$ 30.10	$ 32.51	$ 35.11
1-1/2 inch	$ 42.33	$ 48.25	$ 52.11	$ 56.28	$ 60.79	$ 65.65
2 inch	$ 65.95	$ 75.19	$ 81.20	$ 87.70	$ 94.71	$ 102.29
3 inch	$ 121.08	$ 138.03	$ 149.08	$ 161.00	$ 173.88	$ 187.79
4 inch	$ 199.83	$ 227.81	$ 246.04	$ 265.72	$ 286.98	$ 309.93
6 inch	$ 396.72	$ 452.26	$ 488.44	$ 527.51	$ 569.71	$ 615.29
8 inch	$ 632.98	$ 721.59	$ 779.32	$ 841.67	$ 909.00	$ 981.72
10 inch	$ 908.61	$ 1,035.82	$ 1,118.68	$ 1,208.18	$ 1,304.83	$ 1,409.22

b) Commodity Rates

RFC proposes the District use a 5-tiered commodity rate structure composed of a base rate for usage within the water budget allocation and penalty rates for usage in excess of the allocation. The penalty rates include two components - water conservation rate and supplemental water supply rate. Usage exceeding the allotted water budget (Tiers 2, 3, 4 and 5) will include expenses associated with the water conservation program. In this Study, RFC utilized the $250,000 budgeted for water conservation program in 2009 to develop the water conservation rates for tiers 2, 3, 4 and 5. Table V – 10 below shows the development of the water conservation rates.

Table V - 10

Water Conservation Rate Calculations

	Usage in Tier	Cost distribution	Incremental rate ($ / ccf)	Revenues collected
Tier 1	4,949,324	0%	$ -	$ -
Tier 2	513,734	10%	$ 0.05	$ 25,000
Tier 3	322,575	20%	$ 0.16	$ 50,000
Tier 4	205,513	30%	$ 0.36	$ 75,000
Tier 5	527,910	40%	$ 0.19	$ 100,000

The supplemental water supply rates are based on the marginal cost of the purchasing additional water and the cost of developing new water supply. The high tier usage (tiers 4 and 5) will be responsible for the more expensive water sources. Table V – 11 below

shows the allocation of the different marginal water costs to the supplemental water supply rates in tiers 2, 3, 4 and 5. The cost of purchasing additional acre-foot of water under State Water Project is approximately $1,000. The next source of water is from conservation program "Cash for grass", $2,300 per acre-foot of water.

Table V - 11

Supplemental Water Supply Rate Calculations

			Units (ccf)		Unit cost ($/ccf)		Marginal unit cost ($/ccf)
Current water cost (2008 data)	$	4,625,000	5,867,150	$	0.79	$	-
Supplement project water from SWP ($ / AF)	$	1,000	435.60	$	2.30	$	1.51
Non-project water cost ($/AF)	$	2,300	435.60	$	5.28	$	4.49

Supplemental Water Supply Rates			% of supl	% of non-project
Tier 1	$	-		
Tier 2	$	1.81	90%	10%
Tier 3	$	2.40	70%	30%
Tier 4	$	3.15	45%	55%
Tier 5	$	4.19	10%	90%

These tiered rates apply to all customers. However, the tier cutoffs for each customer will be based on their individual water budget allocation. The rates are summarized in Tables V – 12 and 13 below.

Table V - 12

Commodity rates under FV option

Commodity rates ($/ccf)	**OPTION 1 : Rates by fixed/variable cost**					
Tiers	**CY 2009**	**CY 2010**	**CY 2011**	**CY 2012**	**CY 2013**	**CY 2014**
Tier 1	$ 0.64	$ 0.73	$ 0.79	$ 0.85	$ 0.92	$ 1.00
Tier 2	$ 2.50	$ 2.59	$ 2.66	$ 2.73	$ 2.80	$ 2.88
Tier 3	$ 3.20	$ 3.31	$ 3.39	$ 3.46	$ 3.55	$ 3.64
Tier 4	$ 4.16	$ 4.30	$ 4.39	$ 4.49	$ 4.60	$ 4.71
Tier 5	$ 5.03	$ 5.14	$ 5.22	$ 5.30	$ 5.39	$ 5.48

Table V - 13

Commodity rates under COS option

Commodity rates ($/ccf)	OPTION 2 : Proposed rates calculation by COS					
Tiers	CY 2009	CY 2010	CY 2011	CY 2012	CY 2013	CY 2014
Tier 1	$ 1.29	$ 1.48	$ 1.59	$ 1.72	$ 1.86	$ 2.01
Tier 2	$ 3.15	$ 3.34	$ 3.46	$ 3.59	$ 3.73	$ 3.89
Tier 3	$ 3.85	$ 4.06	$ 4.19	$ 4.33	$ 4.48	$ 4.65
Tier 4	$ 4.81	$ 5.04	$ 5.19	$ 5.36	$ 5.53	$ 5.72
Tier 5	$ 5.68	$ 5.89	$ 6.02	$ 6.17	$ 6.32	$ 6.49

Each user classification has different usage characteristics. For example, SFR customers use 27 units of water per month on average, while commercial customers use an average of more than 140 units of water per month. Thus, RFC recommends the following tier definitions to address the differences in usage characteristics among customer classes (or location classes) as shown in Table V – 14 below.

Table V - 14

Tier Definitions

New Customer classifications	Single Family Residential ("SFR") & Multi-Family Residential ("MFR")	Commercial / Industrial ("CI") and Other (i.e. Municipal, District, School, Construction etc …)	Irrigation only ("IRR")
Allocation equation	SFR - Indoor + Outdoor MFR – 3-yr historical monthly average	3-yr historical monthly average	Outdoor
Tier definitions	% of water budget allocation		
Tier 1	0 – 100%	0 – 100%	0 – 100%
Tier 2	100 – 125%	100 – 130%	0 – 110%
Tier 3	125 – 150%	130 – 160%	110 – 120%
Tier 4	150 – 175%	160 – 190%	120 – 130%
Tier 5	Above 175%	Above 190%	Above 130%

c) Surcharges

Starting in CY 2010, the upgrades to the water treatment plant needed to comply with future drinking water standards will increase the annual operating cost of the District by approximately $2 million. The District expressed its desire to recover this new cost

through a separate surcharge, called water quality service fees, starting CY 2009. The water quality service fee is derived from the annual cost of routine replacement of the media in granular activated carbon contact vessels. RFC recommends the District set aside the water quality fees collected in CY 2009 in a separate fund called Water Quality Service Fund to use for maintenance of the system in the future.

Currently, the District has three elevated areas that require additional booster and pumping in its transmission and distribution system. In this Study, RFC used the current booster surcharges adjusted for inflation (assuming 8 percent per year or 34 percent cumulative from CY 2005) to determine the new surcharges. Table V – 15 below defines the elevation zones to be used for elevation booster surcharges. Table V – 6 summarizes the elevation booster surcharges for the planning period after adjusting for energy cost increase at 8 percent per year.

Table V - 15

Elevation zone definitions

ZONE	ELEV.UNITS
BASE AREA	2800 / 2850
AREA 1	2950 / 3000
AREA 2	3200 / 3250
AREA 3	3400 above

Table V - 16

Proposed Surcharges

Surcharges ($ / ccf)	CY 2009	CY 2010	CY 2011	CY 2012	CY 2013	CY 2014
Water quality fees	$ 0.20	$ 0.20	$ 0.21	$ 0.22	$ 0.23	$ 0.23
Elevation booster surcharge						
Area 1	$ 0.23	$ 0.25	$ 0.27	$ 0.29	$ 0.31	$ 0.34
Area 2	$ 0.49	$ 0.53	$ 0.57	$ 0.62	$ 0.67	$ 0.72
Area 3	$ 1.71	$ 1.85	$ 2.00	$ 2.16	$ 2.33	$ 2.52
Inflation rates used for energy cost	8%	8%	8%	8%	8%	8%

G. Customer Impacts

The new rate structure will impact customers depending on their water usage. A typical SFR customer in the base area, who has 5/8-in meter and total parcel area of 8,000 square feet, will experience different rate impacts throughout the year under both options.

Tables V - 17, 19 and 21 and Figures V – 2, 3 and 4 below clearly show the financial impacts of the new rate structures under both options, FV and COS, based on the average monthly allocation, January (Winter) allocation, and August (Summer) allocation, respectively. In addition, Tables V – 18, 20 and 22 highlight the monthly water bills of a typical SFR customer in the base zone as percentage of the monthly household income.[7] By EPA guidelines, utility bills of less than two percent of median housing income are deemed affordable.

Table V - 17

SFR Rate Impacts based on Average Allocation

Usage		Monthly Bill - existing rates	FV Option		COS Option		Water Quality Impact
% of allocation	ccf		Monthly Bill	Impact	Monthly Bill	Impact	
50%	11	$ 20.49	$ 35.22	$ 14.73	$ 27.25	$ 6.76	$ 2.19
70%	15	$ 25.57	$ 38.59	$ 13.02	$ 33.22	$ 7.66	$ 2.98
90%	20	$ 32.02	$ 42.79	$ 10.78	$ 40.69	$ 8.67	$ 3.97
100%	**22**	**$ 34.60**	**$ 44.48**	**$ 9.88**	**$ 43.68**	**$ 9.08**	**$ 4.37**
125%	28	$ 42.34	$ 60.65	$ 18.32	$ 63.76	$ 21.43	$ 5.56
150%	33	$ 48.88	$ 77.65	$ 28.77	$ 84.02	$ 35.14	$ 6.56
175%	39	$ 56.80	$ 102.83	$ 46.03	$ 113.10	$ 56.31	$ 7.75
200%	44	$ 63.40	$ 128.08	$ 64.68	$ 141.61	$ 78.22	$ 8.74
3-yr average	27	$ 41.05	$ 57.96	$ 16.91	$ 60.41	$ 19.37	$ 5.36

Table V - 18

Monthly water bill as percentage of monthly income

Based on average allocation

% of water allocations	Monthly bill as % of monthly income		
	Existing rates	Proposed rates - FV	Proposed rates - COS
50%	0.34%	0.59%	0.46%
70%	0.43%	0.65%	0.56%
90%	0.54%	0.72%	0.68%
100%	0.58%	0.75%	0.73%
125%	0.71%	1.02%	1.07%
150%	0.82%	1.30%	1.41%
175%	0.95%	1.72%	1.90%
200%	1.06%	2.15%	2.38%

[7] Average family household income $71,547 in Palmdale according to the Greater Antelope Valley Economic Alliance (2008) http://www.aveconomy.org/NEW/demographics.html

Figure V - 2

SFR Monthly Bills based on Average Allocation

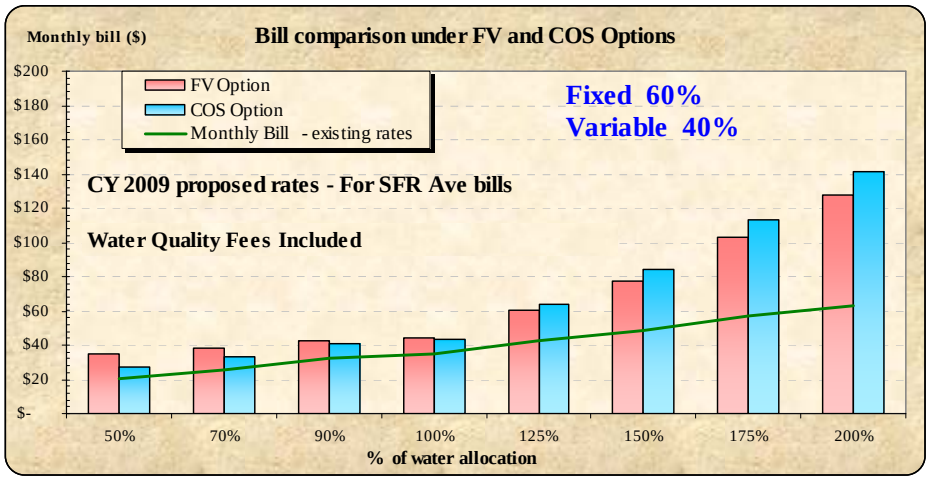


Table V - 19

SFR Rate Impacts based on January (Winter) Allocation

Usage		Monthly Bill - existing rates	FV Option		COS Option		Water Quality Impact
% of allocation	ccf		Monthly Bill	Impact	Monthly Bill	Impact	
50%	8	$ 16.68	$ 32.70	$ 16.02	$ 22.77	$ 6.10	$ 1.59
70%	11	$ 20.49	$ 35.22	$ 14.73	$ 27.25	$ 6.76	$ 2.19
90%	14	$ 24.30	$ 37.75	$ 13.45	$ 31.73	$ 7.43	$ 2.78
100%	**15**	**$ 25.57**	**$ 38.59**	**$ 13.02**	**$ 33.22**	**$ 7.66**	**$ 2.98**
125%	19	$ 30.73	$ 49.37	$ 18.64	$ 46.61	$ 15.89	$ 3.77
150%	23	$ 35.89	$ 62.97	$ 27.08	$ 62.82	$ 26.93	$ 4.57
175%	26	$ 39.76	$ 76.03	$ 36.28	$ 77.84	$ 38.08	$ 5.16
200%	30	$ 44.92	$ 96.06	$ 51.14	$ 100.47	$ 55.56	$ 5.96
3-yr average	27	$ 41.05	$ 80.39	$ 39.34	$ 82.85	$ 41.80	$ 5.36

Table V - 20

Monthly water bill as percentage of monthly income

Based on January (Winter) allocation

	Monthly bill as % of monthly income		
% of water allocations	Existing rates	Proposed rates - FV	Proposed rates - COS
50%	0.28%	0.55%	0.38%
70%	0.34%	0.59%	0.46%
90%	0.41%	0.63%	0.53%
100%	0.43%	0.65%	0.56%
125%	0.52%	0.83%	0.78%
150%	0.60%	1.06%	1.05%
175%	0.67%	1.28%	1.31%
200%	0.75%	1.61%	1.69%

Figure V - 3

SFR Monthly Bills based on January (Winter) Allocation

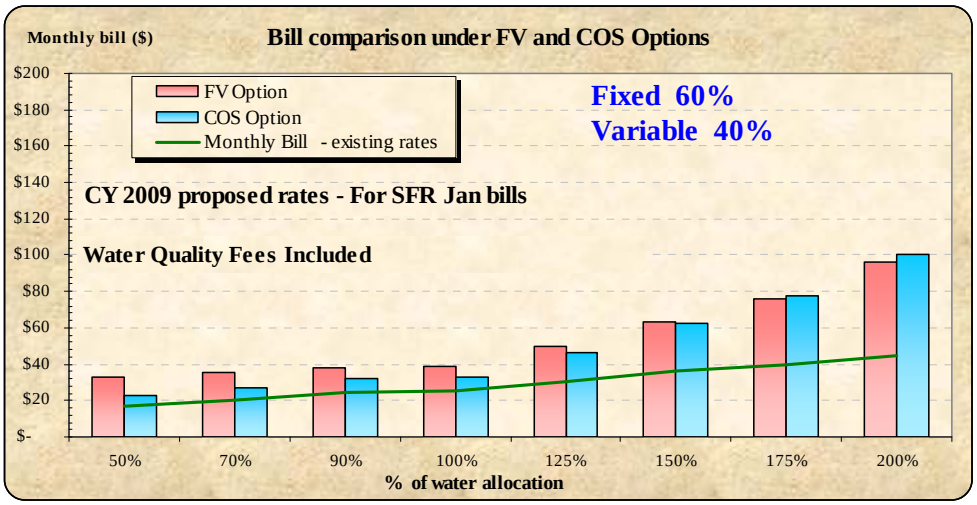


Table V - 21

SFR Rate Impacts based on August (Summer) Allocation

Usage		Monthly Bill - existing rates	FV Option		COS Option		Water Quality Impact
% of allocation	ccf		Monthly Bill	Impact	Monthly Bill	Impact	
50%	15	$ 25.57	$ 38.59	$ 13.02	$ 33.22	$ 7.66	$ 2.98
70%	20	$ 32.02	$ 42.79	$ 10.78	$ 40.69	$ 8.67	$ 3.97
90%	26	$ 39.76	$ 47.84	$ 8.09	$ 49.65	$ 9.89	$ 5.16
100%	**29**	**$ 43.63**	**$ 50.37**	**$ 6.74**	**$ 54.13**	**$ 10.50**	**$ 5.76**
125%	36	$ 52.84	$ 69.24	$ 16.40	$ 77.56	$ 24.73	$ 7.15
150%	44	$ 63.40	$ 98.26	$ 34.86	$ 111.79	$ 48.40	$ 8.74
175%	51	$ 72.64	$ 128.75	$ 56.11	$ 146.84	$ 74.21	$ 10.13
200%	58	$ 82.03	$ 165.32	$ 83.29	$ 187.97	$ 105.95	$ 11.52
3-yr average	27	$ 41.05	$ 48.69	$ 7.64	$ 51.14	$ 10.10	$ 5.36

Table V - 22

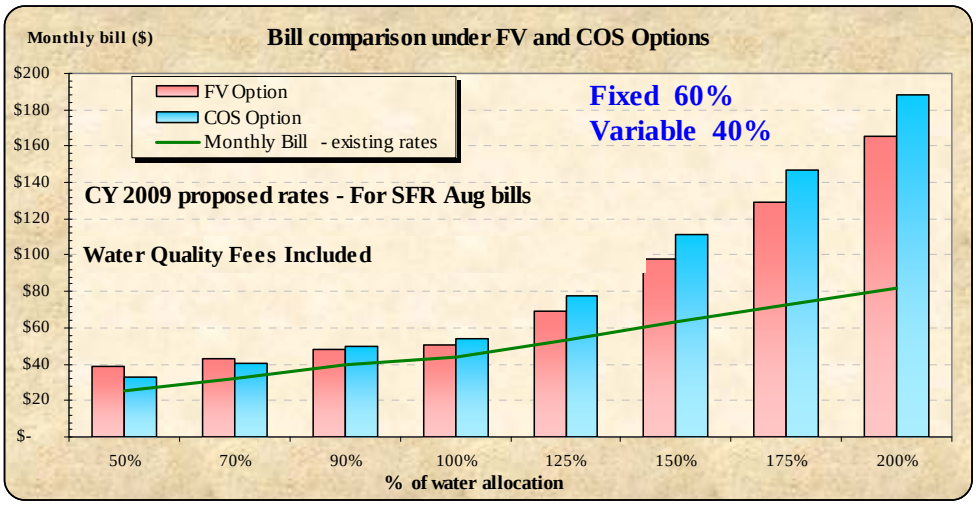
Monthly water bill as percentage of monthly income

Based on August (Summer) allocation

% of water allocations	Monthly bill as % of monthly income		
	Existing rates	Proposed rates - FV	Proposed rates - COS
50%	0.43%	0.65%	0.56%
70%	0.54%	0.72%	0.68%
90%	0.67%	0.80%	0.83%
100%	0.73%	0.84%	0.91%
125%	0.89%	1.16%	1.30%
150%	1.06%	1.65%	1.88%
175%	1.22%	2.16%	2.46%
200%	1.38%	2.77%	3.15%

Figure V - 4

SFR Monthly Bills based on August (Summer) Allocation



As shown in the tables and figures above, the impacts due to new rates will be less for users who conserve and use water within their budget allocation. The FV option recovers 60 percent of the total costs from fixed charges, thus the variable portion of the monthly bills increments will not be as steep as those determined by COS. The new water bills are significantly higher compared to the existing bills given similar consumption. This is due to the increased cost to continue producing high-quality drinking water after the upgrade of the water treatment plant. This new rate structure will send a stronger conservation signal to customers who use excessive amounts of water. As all users conserve water and use water within their allocation, the proposed rates should be able to recover all required costs of service to maintain the District's financial sufficiency.

H. Revenue Impacts

The two rate options proposed above will have different potential impacts on the rate revenues of the District. The FV options will stabilize revenues more as 60 percent of the District's total costs is recovered from service charges. The COS option will exhibit greater fluctuation in revenues with changes in usage or with mandatory cut-backs.

Figure V – 5 below indicates that currently the District's revenue structure is composed of 15 percent from fixed charges and 85 percent from variable charges (excluding water charges from the minimum water allowance in service charge), while the cost structure is

75 percent fixed cost and 25 percent variable cost. Figures V – 6 and 7 below represent the revenue structures under the two proposed options. Figure V – 6 estimates that under FV option, 60 percent of the rate revenues is from monthly fixed charges and Figure V – 7 shows that 26 percent of rate revenues will be collected from monthly fixed charges, an improvement compared to the existing rate structure. Thus, both rate options will provide more revenue stability and financial sufficiency than the existing rate structure.

Figure V - 5

Revenues Structure of the Existing Rate Structure

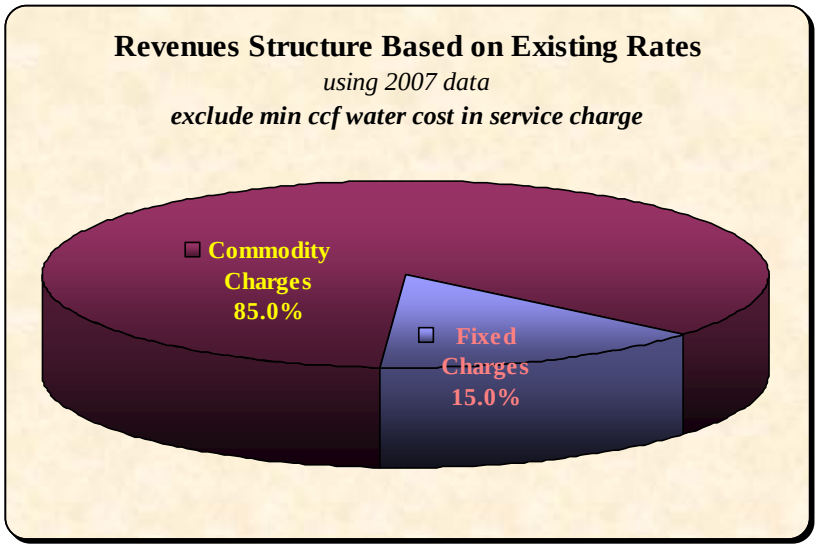


Figure V - 6

Revenues Structure of the Proposed Rate Structure – FV Option

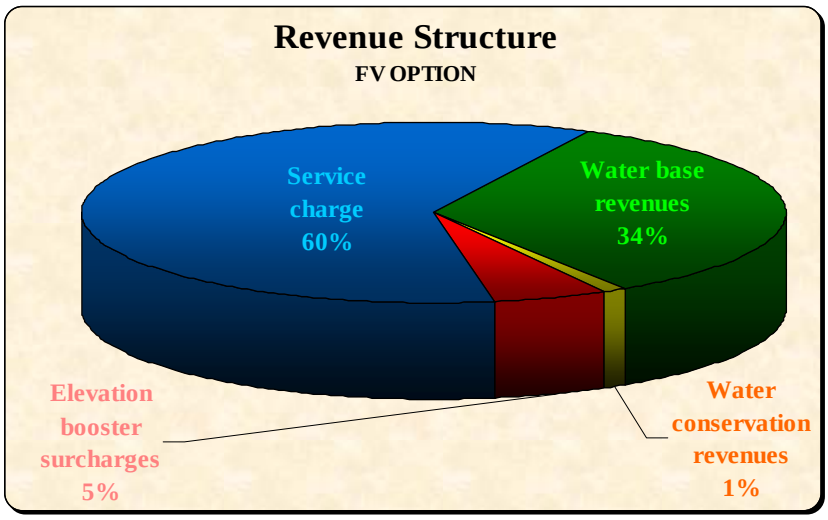
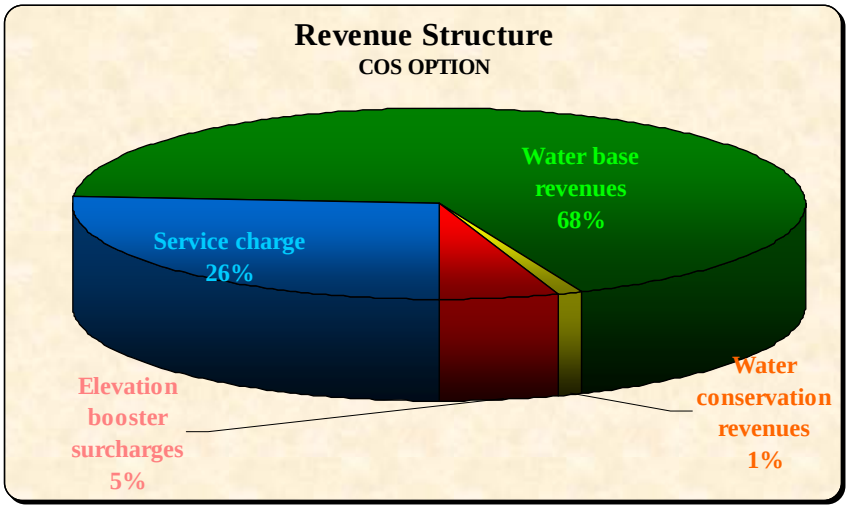


Figure V - 7

Revenues Structure of the Proposed Rate Structure – COS Option



I. Rate Survey

The District's current water bills are in the mid-range of agencies surveyed. Under the proposed increases, the District's charges still remain comparable with those of neighboring utilities. Figures V – 8 and 9 compares average SFR bills under existing and proposed rates without and with water quality fees to other utilities within the region. Without water quality fees, the proposed rates of the District are in the normal ranges compared to the surveyed agencies. With water quality fees the bills are on the high side compared to the surveyed agencies.

Similarly, a comparison for commercial monthly bills was completed and shown in Figures V – 10 and 11 with and without water quality fee. Given the proposed changes to the rate structure, Palmdale Water District still has affordable monthly bills for its commercial customers compared to the surveyed agencies.

Figure V - 8

Rate Survey – SFR monthly charges comparison

(Water quality fees excluded for Palmdale)

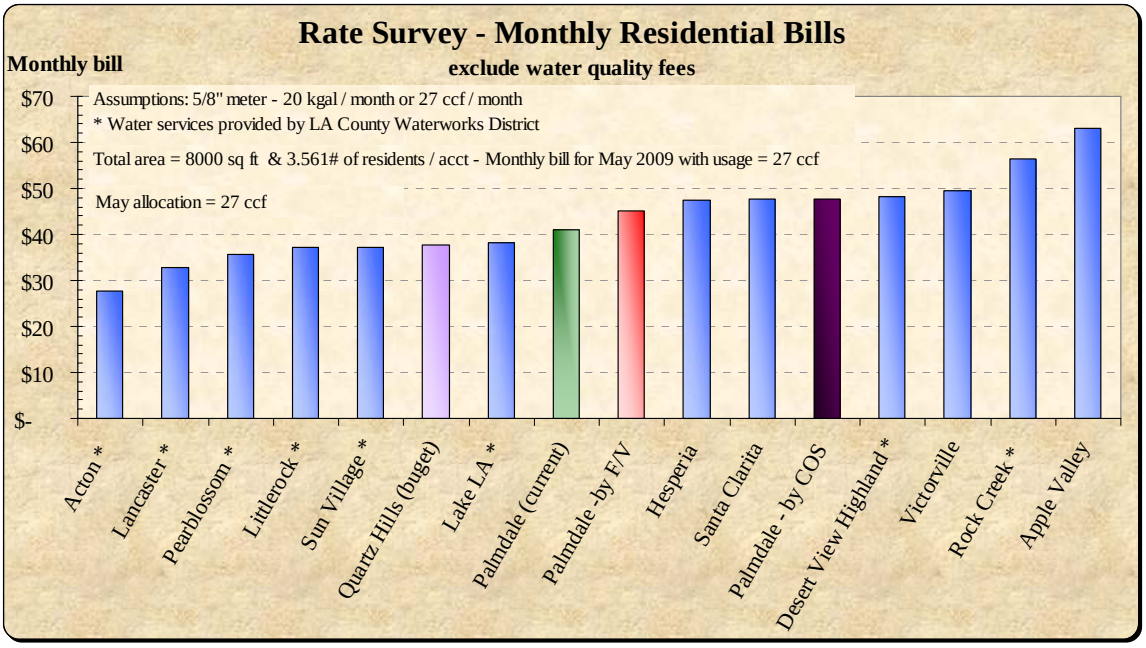


Figure V - 9

Rate Survey – SFR monthly charges comparison

(Water quality fees included for Palmdale)

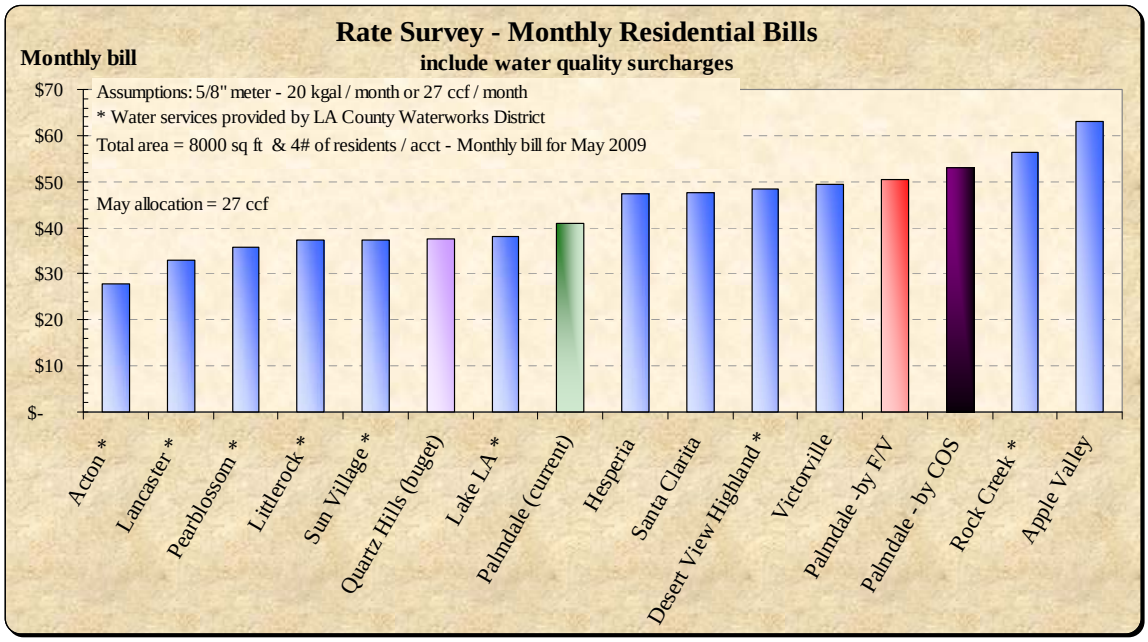


Figure V - 10

Rate Survey – Commercial monthly charge comparison

(Water quality fees excluded for Palmdale)

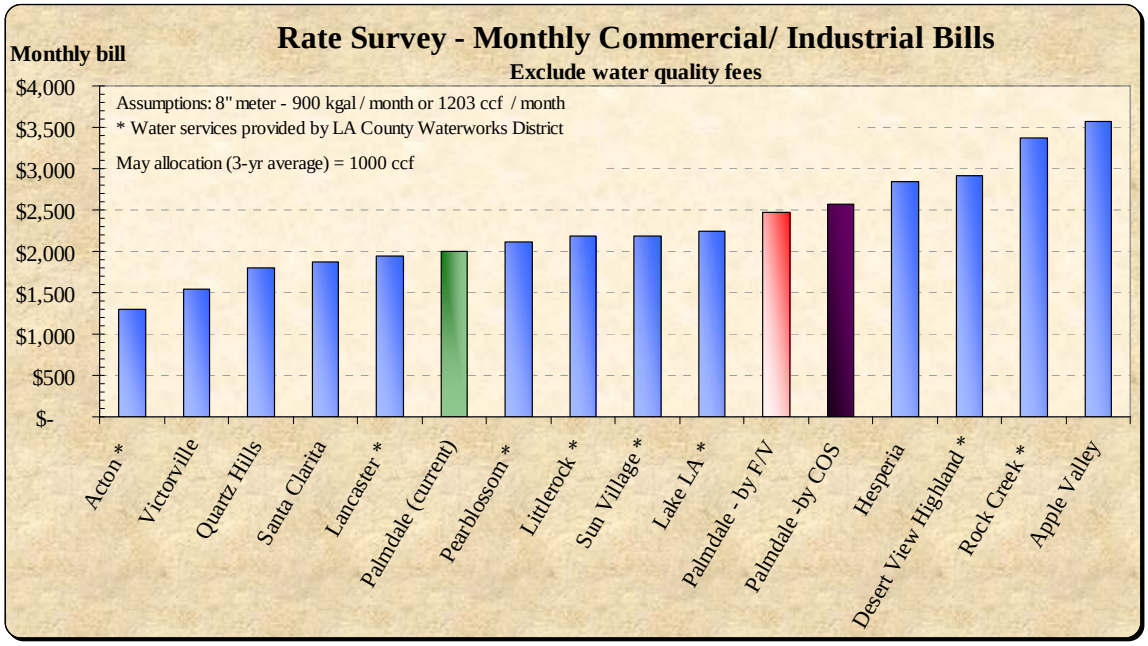


Figure V - 11

Rate Survey – Commercial Monthly Charge Comparison

(Water Quality Fees Included For Palmdale)

