


BUILDING A WORLD OF DIFFERENCE

16 September, 2014


SAN ANTONIO WATER SYSTEM (SAWS) RATE ADVISORY COMMITTEE: MEETING 7

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RATE SETTING PROCESS

- PURPOSE
- STUDY APPROACH
- COST OF SERVICE ANALYSIS
- RATE DESIGN ANALYSIS
- QUESTIONS




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PURPOSE

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- Present the conceptual Water System rate design and other rate design alternatives
- Obtain feedback from the RAC, and
- Determine the appropriateness of the range of rate design options presented to the RAC


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STUDY APPROACH

STUDY APPROACH

Pricing: *How should the revenue be collected from the customer classes?*

Cost Allocation: *Who should pay and how much should each customer class pay?*

Financial Planning: *What are the annual revenue requirements of the utility?*

Objectives, Policies & Rate Setting Principles

Operating & Capital Costs


Rate Revenues & Miscellaneous Revenues

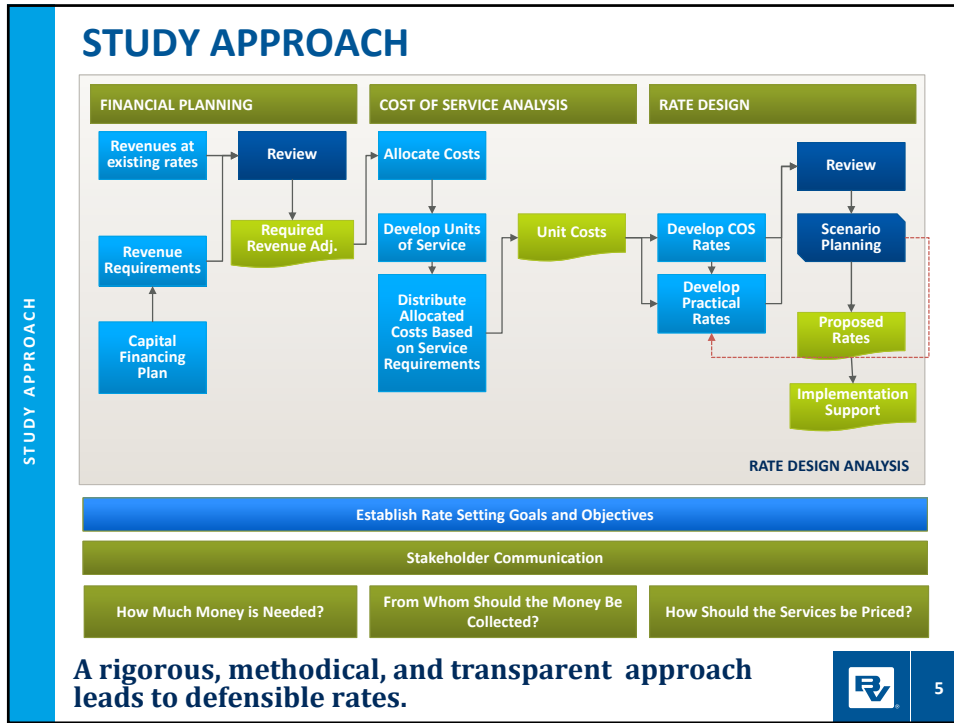
Revenue Requirements Forecast

Cost of Service

Rate Design

We Are Here


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RATE SETTING OBJECTIVES

	2009 Rate Study Priorities	2014 Rate Study Priorities
Essential	<ul style="list-style-type: none"> 1 Conservation/Demand Management 2 Financial Sufficiency 3 Rate Stability 	<ul style="list-style-type: none"> 1 Financial Sufficiency 2 Cost of Service Based Allocations 3 Revenue/Rate Stability
Very Important	<ul style="list-style-type: none"> 4 Revenue Stability 5 Equitable Contributions from New Customers 5 Affordability to Disadvantaged Customers 	<ul style="list-style-type: none"> 4 Conservation 5 Drought Management 6 Economic Development
Important	<ul style="list-style-type: none"> 7 Cost of Service Based Allocations 8 Minimization of Customer Impacts 9 Simple to Understand and Update 	<ul style="list-style-type: none"> 7 Affordability to Disadvantaged Customers 8 Simple to Understand/Update
Least Important	<ul style="list-style-type: none"> 10 Legality 11 Ease of Implementation 12 Economic Development 	<ul style="list-style-type: none"> 9 Minimize Customer Impact 10 Ease of Implementation

Prioritization of rate setting objectives

COST OF SERVICE ANALYSIS

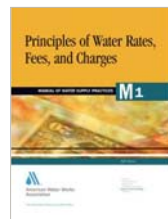
- **What is Cost of Service?**
 - A process by which the total system costs (O&M and Capital Costs) are allocated to the users of the system in proportion to the service rendered

- **Why should costs be allocated?**
 - Recognize differences in customer class characteristics
 - Charge users commensurate with service received
 - Establish a basis for defensible rate design



COST OF SERVICE ANALYSIS

Major guidance manual for Water System COS analysis:



Guidelines for Water Cost of Service & Rate Making



KEY STEPS OF THE COS ANALYSIS

STEP 1 – Determine Costs by Operational Cost Centers

STEP 2 – Allocate Costs by Operational Cost Centers to Functional Cost Components

STEP 3 – Distribute by Function Cost Components to Customer Classes

- Customer Class Cost of Service



COST OF SERVICE ANALYSIS

STEP 1 – Water Supply Operational Cost


Line No.	Description	Operating Expense \$	Capital Cost \$	Total Cost \$
Statement of Net Revenue Requirements				
1	O&M Expenses	59,570,789		59,570,789
2	Debt Service		54,462,156	54,462,156
3	Other Expenditures	5,993,868	7,123,943	13,117,812
4	Subtotal	65,564,658	61,586,100	127,150,757
Less Revenue Requirements Met from Other Sources:				
5	Other Revenues	6,030,936	(89,586)	5,941,350
6	CPS Contract and Interest	(3,223,125)	0	(3,223,125)
7	Subtotal	2,807,811	(89,586)	2,718,225
8	Net Cost of Service	62,756,847	61,675,686	124,432,532
Restatement of Net Cost of Service				
9	O&M Expenses	62,756,847		62,756,847
10	Depreciation		10,842,311	10,842,311
11	Return		50,833,375	50,833,375
12	Subtotal	62,756,847	61,675,686	124,432,532
13	Net Cost of Service	62,756,847	61,675,686	124,432,532



COST OF SERVICE ANALYSIS

STEP 1 – Water Delivery Operational Cost


Line No.	Description	Operating Expense \$	Capital Cost \$	Total Cost \$
Statement of Net Revenue Requirements				
1	O&M Expenses	59,873,344		59,873,344
2	Debt Service		48,626,855	48,626,855
3	Other Expenditures	6,913,922	13,954,034	20,867,956
4	Subtotal	66,787,266	62,580,889	129,368,155
Less Revenue Requirements Met from Other Sources:				
5	Other Revenues	(2,254,322)	(25,313)	(2,279,635)
6	CPS Contract and Interest	0	0	0
7	Subtotal	(2,254,322)	(25,313)	(2,279,635)
8	Net Cost of Service	69,041,588	62,606,202	131,647,790
Restatement of Net Cost of Service				
9	O&M Expenses	69,041,588		69,041,588
10	Depreciation		49,273,936	49,273,936
11	Return		13,332,266	13,332,266
12	Subtotal	69,041,588	62,606,202	131,647,790
13	Net Cost of Service	69,041,588	62,606,202	131,647,790


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COST OF SERVICE ANALYSIS

STEP 2 – Allocate Water System Cost to Functional Cost Components

Description	Base	Max Day	Max Hour	Meters & Services	Customer Billing	Demand Charge	Fire Protection	Recycled
Source of Supply	✓							
Transmission	✓	✓						
Distribution	✓	✓	✓					
Storage	✓		✓					
Meter Services				✓				
Customer Billing					✓			
Demand Charge						✓		
Fire Protection							✓	
Recycled								✓
Net Cost of Service:								
Water System	53.11%	22.21%	8.92%	4.82%	2.67%	3.32%	0.64%	4.31%


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COST OF SERVICE ANALYSIS

STEP 2 – Allocate Water System Cost to Functional Cost Components

Example of the Water System Peaking Characteristics:

Customer Classes	Base (Percent of Usage)	Max Day (Peaking Factors)	Max Hour (Peaking Factors)
Residential	54.65%	1.95	3.25
General	35.44%	1.70	2.57
Wholesale	0.22%	1.70	3.00
Irrigation	6.19%	4.30	7.85
Recycled	3.50%	1.65	2.67

COST OF SERVICE ANALYSIS



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COST OF SERVICE ANALYSIS

STEP 3 – Customer Class Cost of Service

Water Supply Customer Class Cost of Service:

Line No.	Description	Allocated COS \$	Existing Revenues \$	Revenue Recovery Amount \$	Percent %
SAWS					
1	Residential	65,459,353	58,131,668	(7,327,685)	88.8%
2	Multi-Family	14,365,684	16,027,440	1,661,755	111.6%
3	General	22,007,445	26,710,464	4,703,019	121.4%
4	Wholesale	241,919	240,706	(1,213)	99.5%
5	Irrigation	11,301,932	18,143,467	6,841,535	160.5%
6	Recycled	11,056,198	5,178,787	(5,877,411)	46.8%
7	Total	124,432,532	124,432,531	(1)	100.0%

COST OF SERVICE ANALYSIS



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COST OF SERVICE ANALYSIS

COST OF SERVICE ANALYSIS

STEP 3 – Customer Class Cost of Service

Water Delivery Customer Class Cost of Service:

Line No.	Description	Allocated COS	Existing Revenues	Revenue Recovery Amount	Revenue Recovery Percent
		\$	\$	\$	%
SAWS					
1	Residential	74,476,469	80,426,358	5,949,889	108.0%
2	Multi-Family	16,261,949	12,447,054	(3,814,895)	76.5%
3	General	24,454,590	24,610,776	156,186	100.6%
4	Wholesale	234,773	214,454	(20,319)	91.3%
5	Irrigation	14,591,827	12,321,106	(2,270,721)	84.4%
6	Fire Protection	1,628,181	1,628,041	(141)	100.0%
7	Total	131,647,790	131,647,790	0	100.0%


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COST OF SERVICE ANALYSIS

COST OF SERVICE ANALYSIS

STEP 3 – Customer Class Cost of Service

Total Water System Customer Class Cost of Service:

Line No.	Description	Allocated COS	Existing Revenues	Revenue Recovery Amount	Revenue Recovery Percent
		\$	\$	\$	%
SAWS					
1	Residential	139,935,823	138,558,027	(1,377,796)	99.0%
2	Multi-Family	30,627,633	28,474,494	(2,153,139)	93.0%
3	General	46,462,035	51,321,239	4,859,205	110.5%
4	Wholesale	476,692	455,160	(21,532)	95.5%
5	Irrigation	25,893,759	30,464,573	4,570,814	117.7%
6	Recycled Water	11,056,198	5,178,787	(5,877,411)	46.8%
7	Fire Protection	1,628,181	1,628,041	(141)	100.0%
8	Total	256,080,322	256,080,321	(1)	100.0%


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RATE DESIGN ANALYSIS

Purpose:

Fundamental principle in rate making is to establish a rational nexus between costs incurred in providing service (cost of service) and charges assessed to rate payers

$$\text{Revenue Requirements} \div \text{Units of Service} = \text{Rates \& Charges}$$

RATE DESIGN ANALYSIS



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RATE DESIGN ANALYSIS

Conceptual Rate Design Recommendations:

1. Standardize meter based charges
2. Add a demand charge
3. Eliminate seasonal rates
4. Add an additional usage block(s)
 - Establish a Lifeline Supply
5. Modify usage block thresholds
6. Refine rate differentials between usage blocks
7. Develop special customer class designations
 - Multi-family customers
 - Combination meter customers
8. Implement a drought rates

RATE DESIGN ANALYSIS




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RATE DESIGN ANALYSIS

RATE DESIGN ANALYSIS

Water System Rate Design Analysis Scenarios:

1. Scenario 1 - Conceptual Rate Design
2. Scenario 2 – Conceptual Rate Design
 - i. No Standardize Meter Charges
 - ii. No Demand Charge
3. Scenario 3 - Conceptual Rate Design
 - i. Same as Scenario 2 except for additional Fixed Lifeline Supply Charge (block 2 – residential only)

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RATE DESIGN ANALYSIS


RATE DESIGN ANALYSIS

Modified Rate Blocks – Residential Class

Line	Description	Existing Blocks (Gallons)			Proposed Blocks (Gallons)		
		Usage Blocks	Percent		Usage Blocks	Percent	
			Usage	Bills		Usage	Bills
1	Block 1	5,985	63.62%	58.24%	2,244	29.33%	18.12%
2	Block 2	12,717	86.40%	89.16%	5,985	63.62%	58.24%
3	Block 3	17,205	91.53%	94.68%	14,212	88.54%	91.57%
4	Block 4	Above	100.00%	100.00%	23,936	95.01%	97.73%
5	Block 5				Above	100.00%	100.00%

Note:

1. The figures outlined herein are based on actual FY 2013 billing determinant information.

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RATE DESIGN ANALYSIS

RATE DESIGN ANALYSIS

Multi-family and General Class Block Thresholds

Usage Block	Existing & Conceptual Rates	Multi-Family	Commercial	Industrial	Municipal
	Block Thresholds (gallons)	Usage by Block (%)	Usage by Block (%)	Usage by Block (%)	Usage by Block (%)
Block 1	Base	88%	81%	86%	72%
Block 2	100% - 125% of Base	6%	7%	7%	8%
Block 3	125% - 175% of Base	3%	5%	4%	7%
Block 4	Over 175% of Base	2%	7%	3%	13%

Base is defined as 100% of Prior Year's Average Annual Consumption


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RATE DESIGN ANALYSIS

RATE DESIGN ANALYSIS

Modified Rate Blocks – Irrigation Class

Line	Description	Existing Blocks (Gallons) ¹		Proposed Blocks (Gallons) ¹	
		Block Threshold	Percent of Usage	Block Threshold	Percent of Usage
1	Block 1	6,732	13.29%	8,229	15.66%
2	Block 2	17,205	27.47%	17,954	28.31%
3	Block 3	> 17,205	100.00%	162,316	79.59%
4	Block 4			> 162,316	100.00%

Note:
 1. The percent of usage figures outlined herein are based on actual FY 2013 billing determinant information.


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RATE DESIGN ANALYSIS

Scenario 1 – Demand Charge

Demand Charge:

- Residential & Irrigation Classes– assessed based on a customer’s actual usage compared to the prior year’s customer class average usage
- Multi-family, General, & Wholesale Classes – assessed based on a customer’s actual usage compared to their calculated average annual consumption (“base use”)

Block Threshold	Units	Residential	Apartment	General	Irrigation
Block 1	Per Bill	\$1.14	\$8.81	\$7.14	\$5.81
Block 2	Per Bill	\$1.43	\$11.01	\$8.93	\$7.26

RATE DESIGN ANALYSIS



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RATE DESIGN ANALYSIS

Scenario 3 – Lifeline Supply Charge

Lifeline Supply Charge:

- Additional fixed charge of \$0.79 per bill
- Applies to Residential Customers Only with usage in block 2
- Reverses the impact of the lower volume charge in block 1

RATE DESIGN ANALYSIS




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RATE DESIGN ANALYSIS

Cost of Service Summary – Conceptual Rate Design

Line No.	Description	Allocated COS	Revenue Target Adjustments	Adjusted COS	Existing Revenues	Existing Percent Recovery	Proposed Revenues	Proposed Percent Recovery
		\$	\$	\$	\$	%	\$	%
SAWS								
1	Residential	139,935,823	0	139,935,823	138,558,027	99.0%	139,924,502	100.0%
2	Multi-Family	30,627,633	0	30,627,633	28,474,494	93.0%	30,613,388	100.0%
3	General	46,462,035	0	46,462,035	51,321,239	110.5%	47,640,250	102.5%
4	Wholesale	476,692	0	476,692	455,160	95.5%	477,327	100.1%
5	Irrigation	25,893,759	0	25,893,759	30,464,573	117.7%	30,456,727	117.6%
6	Recycled	11,056,198	0	11,056,198	5,178,787	46.8%	5,339,946	48.3%
7	Fire Protection	1,628,181	0	1,628,181	1,628,041	100.0%	1,628,181	100.0%
8	Total	256,080,322	0	256,080,322	256,080,321	100.0%	256,080,322	100.0%

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RATE DESIGN ANALYSIS

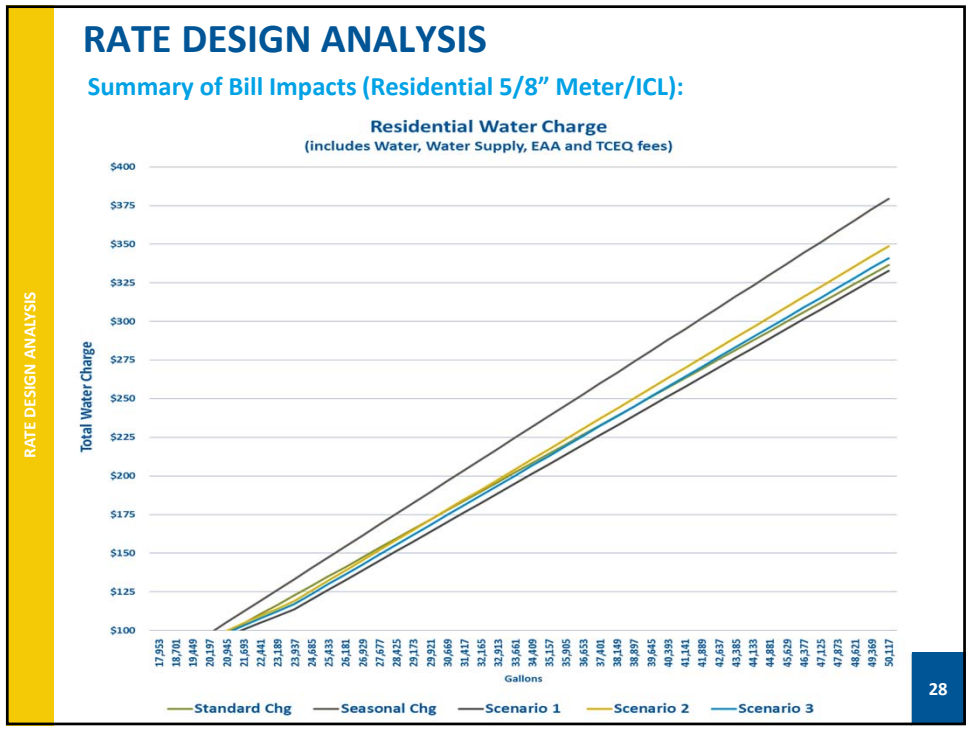
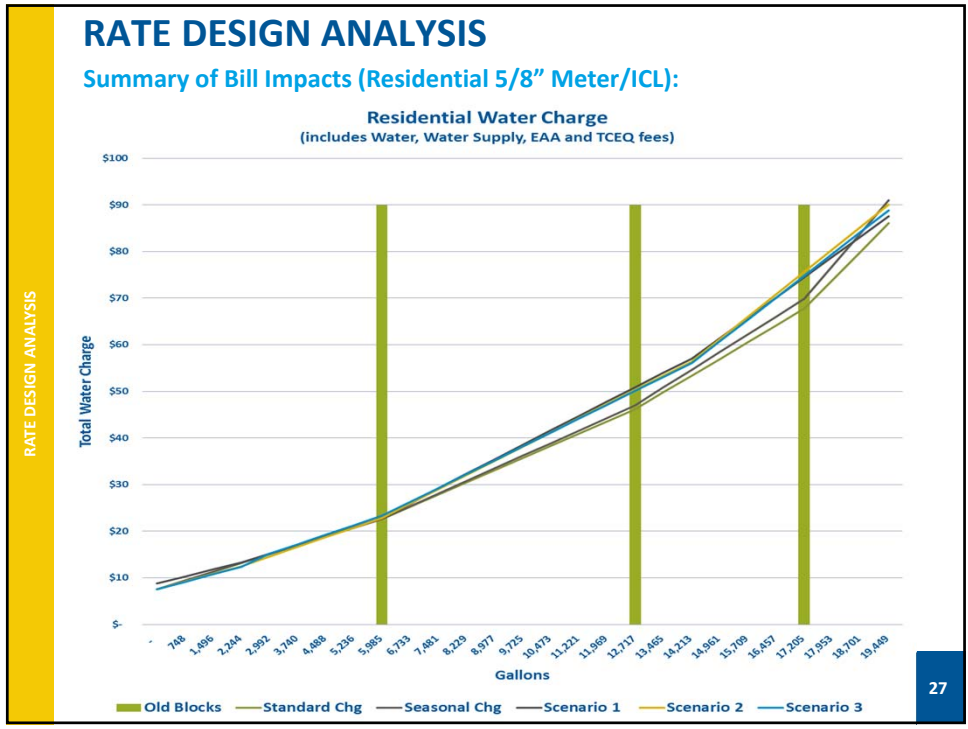
Summary of Potential Rates (Combined Volumetric Rates – Inside City):

Residential

Usage Blocks	Existing Rates				Conceptual Design			
	Standard		Seasonal		Standard			
	Rate	Differential	Rate	Differential	Scenario 1	Scenario 2	Scenario 3	Differential
Block 1	.2194		.2194		.1691	.1876	.1828	
Block 2	.3174	1.45	.3297	1.50	.2199	.2439	.2376	1.30
Block 3	.4477	2.04	.4768	2.17	.3806	.3753	.3655	2.25
Block 4	.7837	3.57	.9076	4.14	.5497	.6098	.5939	3.25
Block 5					.8034	.8444	.8223	4.75

Note:
 1. The Outside the City Limits (OCL) differential utilized as a part of the Rate Design Analysis is 1.3 (30.0%).

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RATE DESIGN ANALYSIS

RATE DESIGN ANALYSIS

Summary of Potential Rates (Combined Volumetric Rates – Inside City):

Block	Existing Rates		Conceptual Design		
	Rate	Differential	Scenario 1	Scenario 2	Differential
MULTI-FAMILY CLASS					
Block 1	.3056		.3269	.3234	
Block 2	.3286	1.08	.3759	.3719	1.15
Block 3	.3851	1.26	.4577	.4204	1.40
Block 4	.4767	1.56	.5721	.5659	1.75
GENERAL CLASS					
Block 1	.3056		.2796	.2709	
Block 2	.3286	1.08	.3075	.2980	1.10
Block 3	.3851	1.26	.3635	.3522	1.30
Block 4	.4767	1.56	.4473	.4335	1.60

Note:
 1. The multi-family and general class volumetric rates are the same for Scenario 2 and Scenario 3 as shown in the illustration above.


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RATE DESIGN ANALYSIS

RATE DESIGN ANALYSIS

Summary of Bill Impacts

Multi-family/General Class Water Charges

(includes Water, Water Supply and EAA)
 2" meter - base usage

	-	24,687	50,123	100,245	200,491	499,731	1,000,210
Existing General Class	\$71.36	\$154.94	\$241.05	\$410.74	\$750.12	\$1,763.20	\$3,457.57
Scenario 1 Multi-family	\$46.36	\$135.20	\$226.73	\$407.09	\$767.83	\$1,844.65	\$3,645.63
Scenario 2 Multi-family	\$74.26	\$162.22	\$252.85	\$431.44	\$788.61	\$1,854.81	\$3,638.03
Scenario 1 General	\$46.36	\$123.51	\$203.01	\$359.65	\$672.95	\$1,608.16	\$3,172.31
Scenario 2 General	\$74.26	\$149.28	\$226.58	\$378.89	\$683.53	\$1,592.89	\$3,113.79

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RATE DESIGN ANALYSIS


Summary of Proposed Rates (Combined Volumetric Rates – Inside City):

Irrigation

Block	Existing Rates				Conceptual Design		
	Standard		Seasonal		Standard		
	Rate	Differential	Rate	Differential	Scenario 1	Scenario 2	Differential
Block 1	.3533		.3533		.2733	.2707	
Block 2	.4477	1.27	.4796	1.36	.4100	.4060	1.50
Block 3	.8206	2.32	.9499	2.69	.8883	.8796	3.25
Block 4					1.0249	1.0150	3.75

Note:
1. The irrigation class volumetric rates are the same for Scenario 2 and Scenario 3 as shown in the illustration above.

RATE DESIGN ANALYSIS



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RATE DESIGN ANALYSIS

Summary of Bill Impacts

Irrigation Water Charge
(includes Water, Water Supply and EAA)
2" meter

	-	8,229	17,954	162,316	200,491	499,731	1,000,210
Existing - Standard	\$71.18	\$104.38	\$153.91	\$1,386.12	\$1,711.96	\$4,266.12	\$8,537.96
Existing - Seasonal	\$71.18	\$104.86	\$158.22	\$1,577.09	\$1,952.29	\$4,893.37	\$9,812.33
Scenario 1	\$46.18	\$71.38	\$114.46	\$1,444.36	\$1,848.21	\$5,013.82	\$10,308.31
Scenario 2	\$74.26	\$99.24	\$141.93	\$1,459.36	\$1,859.40	\$4,995.18	\$10,239.78

RATE DESIGN ANALYSIS



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RATE DESIGN ANALYSIS


RATE DESIGN ANALYSIS

Summary Results – All Scenarios

1. Rates based on Cost of Service Principles
2. Increase in fixed component revenues
 - **Maintain Revenue Stability**

Fixed vs. Variable Revenue by Scenario	Fixed	Variable	Total
Existing Rate Structure	21%	79%	100%
Scenario 1	23%	77%	100%
Scenario 2	21%	79%	100%
Scenario 3	22%	78%	100%

3. Proposed rates send an earlier price signal
4. Proposed rates are revenue neutral

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RATE DESIGN ANALYSIS

RATE DESIGN ANALYSIS

Rate Design Objectives – Scenario Comparison

Objectives	Existing	Scenario 1	Scenario 2	Scenario 3
Financial Sufficiency	✓	✓	✓	✓
Cost of Service Based Allocations		✓	✓	✓
Revenue/ Rate Stability		✓		
Conservation	✓	✓	✓	✓
Drought Management (1)	✓			
Economic Development				
Affordability				✓
Simple to Understand/Update	✓		✓	
Minimize Customer Impact	✓			✓
Ease of Implementation			✓	

Note:
1. Drought Management objectives will be address upon the finalization of the proposed rates.


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RATE DESIGN ANALYSIS

Next Steps

- 1. Rate Design Results**
 - Wastewater
 - Recycle
 - Wholesale
 - Drought Rates
 - Miscellaneous Fees
- 2. Vista Ridge Rate Impact**
- 3. DSP/SAWS Rate Convergence**
- 4. Affordability Adjustments**


RATE DESIGN ANALYSIS



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QUESTIONS

QUESTIONS



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