

BUILDING A WORLD OF DIFFERENCE

SAN ANTONIO WATER SYSTEM (SAWS)

RATE ADVISORY COMMITTEE: MEETING 6

Bill Zieburtz

Robert Chambers

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Building a world of difference.®

CONCEPTUAL RATE DESIGN

PURPOSE

CONCEPTUAL RATE DESIGN

WATER DELIVERY

WATER SUPPLY

WASTEWATER RATES

ADDITIONAL RATE DESIGN ISSUES

NEXT STEPS

QUESTIONS

PURPOSE

- Present a conceptual framework for rate design
- Obtain feedback from the RAC, and
- Determine an appropriate range of rate design options for SAWS

PRIORITIZATION

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

	2014 Rate Study Priorities
Essential	<ol style="list-style-type: none"> 1 Financial Sufficiency 2 Cost of Service Based Allocations 3 Revenue/Rate Stability
Very Important	<ol style="list-style-type: none"> 4 Conservation 5 Drought Management 6 Economic Development
Important	<ol style="list-style-type: none"> 7 Affordability to Disadvantaged Customers 8 Simple to Understand/Update
Least Important	<ol style="list-style-type: none"> 9 Minimize Customer Impact 10 Ease of Implementation

CONCEPTUAL RATE DESIGN

- **Financial Sufficiency**

- Meet existing operating and capital requirements
- Achieves revenue neutrality
- Achieves financial metrics
- Implement Drought Rates

- **Cost of Service**

- Based on cost of service principles
- Alignment of revenues with the cost to provide service
- Appropriate designation of certain customer groups
 - Multi-Family
- Recalculation of Special Services Fees

CONCEPTUAL RATE DESIGN

- **Continued Management of Existing Water Resources**
 - Conservation
 - targets discretionary usage
 - alignment of volumetric rates
 - Demand Management – Implementation of a Demand Charge
 - volatility in customer demand/usage
- **Customer Affordability**
 - Addresses customer affordability

CURRENT WATER DELIVERY RATES - DESCRIPTION

- **Residential**
 - Standard and Seasonal Designations
 - Monthly Service Availability Charge
 - Increasing 4-block volumetric rate
 - Encourages conservation through strong price signals
 - Management of summer peaks through price signals
- **General Class**
 - Monthly Service Availability Charge
 - Distinct customer specific volumetric structure
 - Base Use - 100% of Annual Average Consumption
 - Increasing 4-block volumetric rate
 - Customer's usage determines monthly Utility Bill Impacts

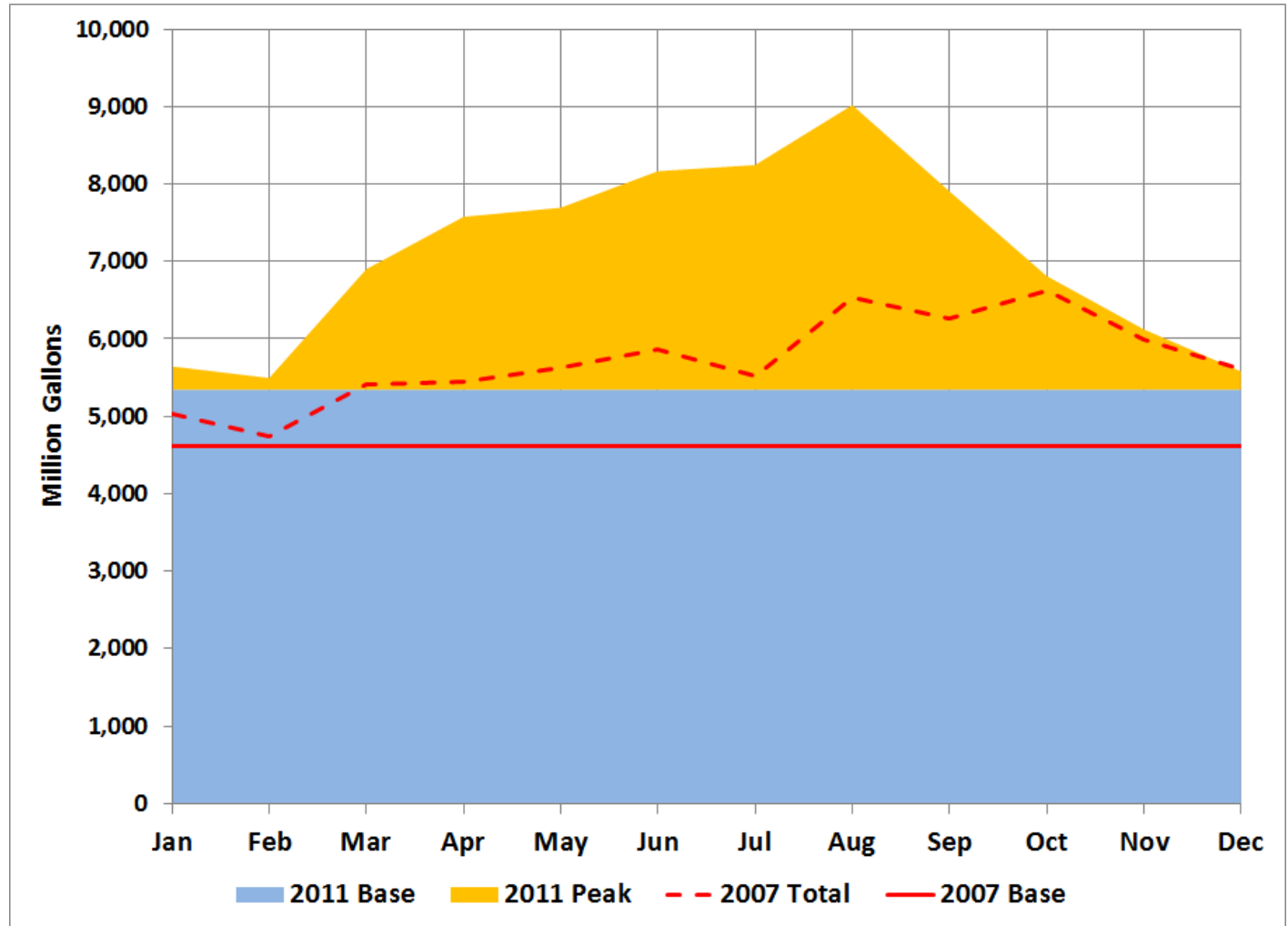
CURRENT WATER DELIVERY RATES - DESCRIPTION

- **Irrigation**
 - Standard and Seasonal Designations
 - Monthly Service Availability Charge
 - Increasing 3-block volumetric rate
 - Attempts to manage outdoor usage through strong price signals
 - Stronger price signals are established in seasonal rates to manage summer peaks

WATER DELIVERY RATES - OBSERVATIONS

- How Much Water Use is Variable?

Combined
Water
Pumped

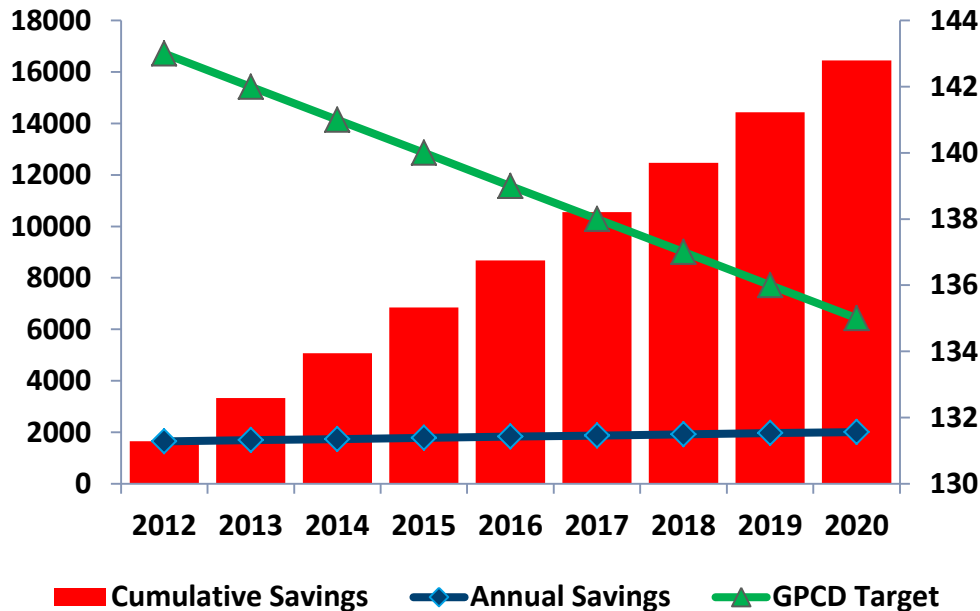


Significant variability is experienced during the summer months



WATER DELIVERY RATES - OBSERVATIONS

- Water Management Plan Targets 135 GPCD by FY 2020

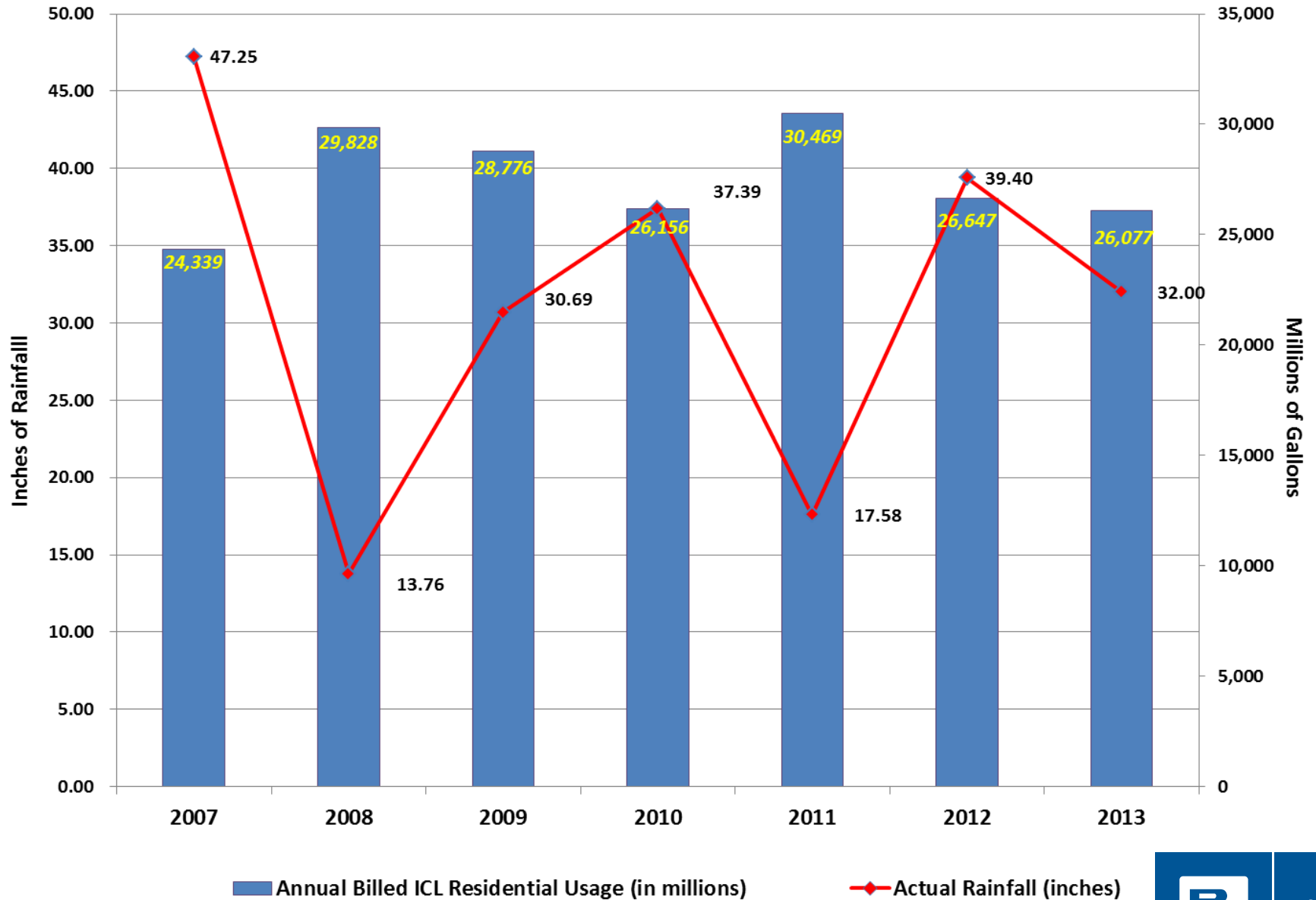


Year	Permanent Savings		GPCD
	1-Year	Cumulative	Target
2012	1,644	1,644	143
2013	1,690	3,334	142
2014	1,736	5,070	141
2015	1,782	6,852	140
2016	1,827	8,679	139
2017	1,873	10,552	138
2018	1,919	12,471	137
2019	1,964	14,435	136
2020	2,010	16,445	135

Continue to promote efficient use of water resources

WATER DELIVERY RATES - OBSERVATIONS

- Historical Impact of Weather on Water Usage



WATER DELIVERY RATES - OBJECTIVES

Structure rates to:

- **Maintain Revenue Stability**
 - Wet Weather Conditions
 - Seasonal Usage Periods
 - Drought Conditions
- **Account for the shifts in a customer's water demand/usage**
- **Align rate structure with the Water Management Plan conservation targets**

WATER DELIVERY RATES - RECOMMENDATIONS

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

WATER DELIVERY RATES – RESIDENTIAL CLASS RECOMMENDATIONS

1. Standardize Meter Based Charges

- All meters have distinct flow requirements
 - Based on meter size
- Service Availability
 - Based on meter size
- Cost of Operations
 - Read meter
 - Maintain meter
 - Document performance



WATER DELIVERY RATES – RESIDENTIAL CLASS RECOMMENDATIONS

2. Add a Demand Charge

- What is Demand?
 - Making service available “to all”
 - Providing service upon request “to all”
 - Maintaining appropriate levels of service during all periods of the day “for all”
- Recover costs of oversizing system to meet peak demands
- Supports revenue stability
- Replaces seasonal rates

Tracks the changes in a customer’s demand requirements over time



WATER DELIVERY RATES – RESIDENTIAL CLASS RECOMMENDATIONS

2. Add a Demand Charge (cont'd)

- Determination of a “Capacity Standard”
 - A measure of water demand that is currently being utilized by an individual customer or a specific group of customers
 - Calculation of the measure:
 $(\text{historical monthly average} * \text{billing periods}) / (\text{days in the year}) / (1,000 \text{ gallons}) = \text{units in KGD (1,000 gallons per day)}$
 - Provides a perspective on the current average day demand requirements of an individual customer or a group of customers

Tracks the changes in a customer's demand requirements over time



WATER DELIVERY RATES – RESIDENTIAL CLASS RECOMMENDATIONS

2. Add a Demand Charge (cont'd)

- Fixed rate component
 - Assessed on a monthly basis per customer
- Based on the average day residential customer demand
 - Residential Capacity Standard
- Assessed as a two-tier demand charge
 - Tier 1 – at or below capacity standard
 - Tier 2 – above the capacity standard

Residential Class Capacity Standard Calculation

Line	Description	Total
1	Average Monthly Usage (gallons)	6,758
2	Annual Billing Periods	12
3	Annual Usage (gallons)	81,096
4	Days in Years	365
5	Capacity Standard (KGD)	0.22

Tracks the changes in a customer's demand requirements over time

WATER DELIVERY RATES – RESIDENTIAL CLASS RECOMMENDATIONS

3. Add an additional usage block

- Development of a Lifeline Supply rate
 - Low consumption

4. Modify usage block thresholds

- Promote conservation
- Provide for reasonable outdoor usage (block 3)
- Target high outdoor usage (block 4)
- Top 5% of usage (block 5)

WATER DELIVERY RATES – RESIDENTIAL CLASS RECOMMENDATIONS

Line	Usage Block	Description	Rationale
1	Block 1	Lifeline Supply	Target low use customers with usage below 2,244 gallons.
2	Block 2	Non-Discretionary Indoor Usage	Usage at or below the typical winter average
3	Block 3	Discretionary Indoor & Reasonable Outdoor Usage	Usage above the typical winter average and reasonable outdoor usage
4	Block 4	High Discretionary Usage	Target high outdoor usage
5	Block 5	Top 5% of Usage	Target super users

Targets excessive usage especially for the high-end users



WATER DELIVERY RATES – RESIDENTIAL CLASS RECOMMENDATIONS

Line	Description	Existing Blocks (Gallons)			Proposed Blocks (Gallons)		
		Block Threshold	Percent		Block Threshold	Percent	
			Usage	Bills		Usage	Bills
1	Block 1	5,985	63.62%	50.21%	2,244	29.33%	11.18%
2	Block 2	12,717	86.40%	36.33%	5,985	63.62%	39.03%
3	Block 3	17,205	91.53%	7.44%	14,212	87.76%	39.30%
4	Block 4	Above	100.00%	6.02%	23,936	94.85%	7.86%
5	Block 5				Above	100.00%	2.63%

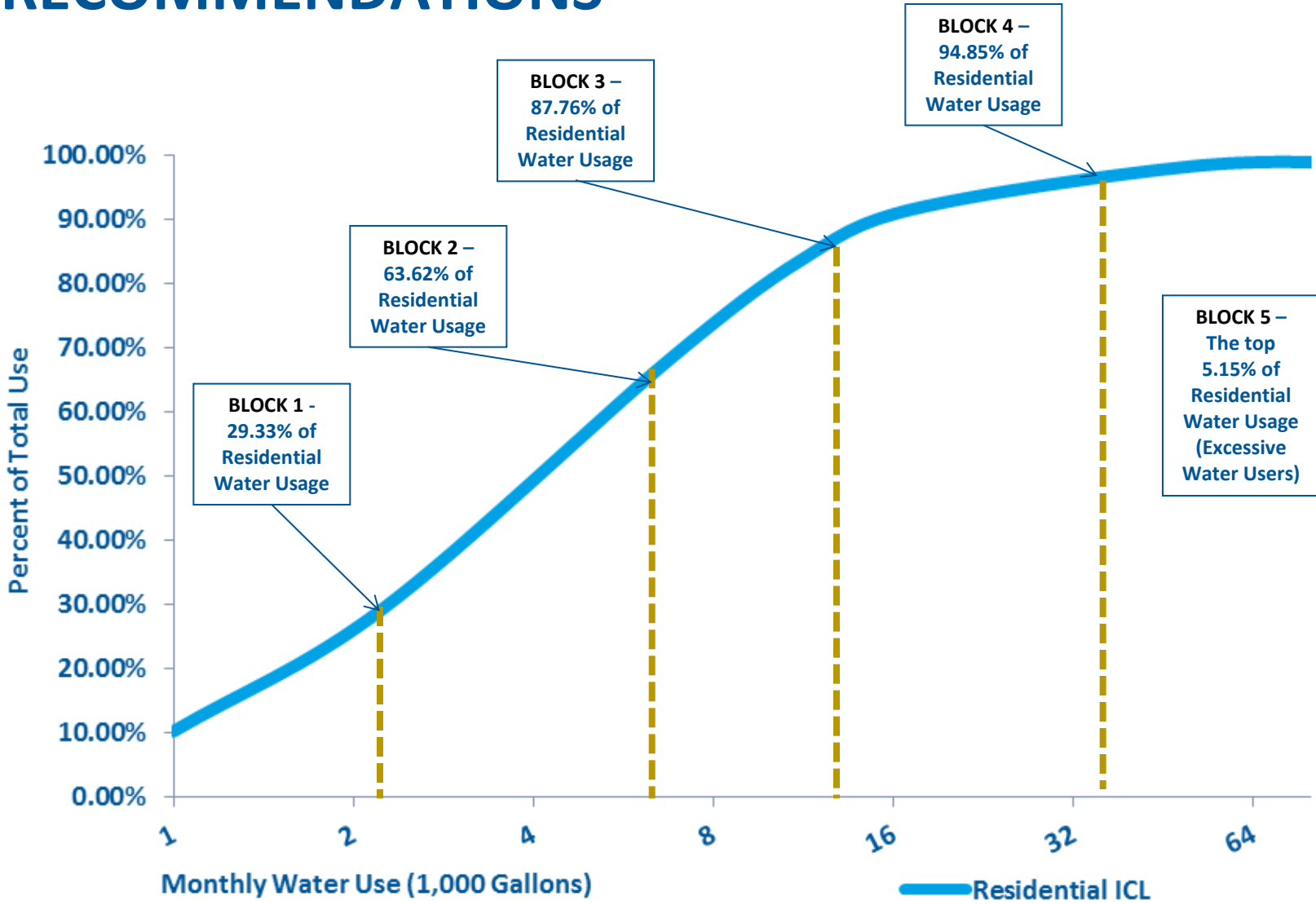
Note:
 1. The figures outlined herein are based on actual FY 2013 billing determinant information.

Typical average indoor monthly residential usage = **5,985 gallons**

Targets excessive usage especially for the high-end users



WATER DELIVERY RATES – RESIDENTIAL CLASS RECOMMENDATIONS



Block thresholds associated with the proposed rates



WATER DELIVERY RATES – RESIDENTIAL CLASS RECOMMENDATIONS

5. Refine rate differentials between usage blocks

- Promote the efficient use of water resources through strong and consistent price signals

WATER DELIVERY RATES – RESIDENTIAL CLASS

EXAMPLE RATE DIFFERENTIALS

Line	Description	Existing Differential	Example of Differential
1	Block 1	1.00	1.00
2	Block 2	1.45	1.30
3	Block 3	2.04	1.75
4	Block 4	3.57	2.25
5	Block 5		3.75

General Considerations:

- i. **Customer Bill Impact** – What bill impact will customers experience at different levels of usage?
- ii. **Price Signals** – Are the appropriate price signals being sent across all levels of usage?
- iii. **Cost of Service** – Are costs being recovered based on established cost of service principles?
- iv. **Revenue neutrality**

WATER DELIVERY RATES – GENERAL CLASS RECOMMENDATIONS

1. Standardize Meter Based Charges

- All meters have distinct flow requirements
 - Based on meter size
- Service Availability
 - Based on meter size
- Cost of Operations
 - Read meter
 - Maintain meter
 - Document performance



WATER DELIVERY RATES – GENERAL CLASS RECOMMENDATIONS

2. Add a Demand Charge

- Fixed rate component
 - Assessed on a monthly basis per customer
- Based on prior year's average demand (base usage) of each individual customer
 - Customer's Capacity Standard
- Assessed as a two-tier demand charge
 - Tier 1 – at or below capacity standard
 - Tier 2 – above the capacity standard

General Class Capacity Standard Calculation

Line	Description	Total
1	Customer A: Avg. Usage (gallons)	12,250
2	Annual Billing Periods	12
3	Annual Usage (gallons)	147,000
4	Days in Years	365
5	Capacity Standard (KGD)	0.40

WATER DELIVERY RATES – GENERAL CLASS RECOMMENDATIONS

4. Maintain the existing usage block structure

Line	Usage Blocks	Existing Usage	Proposed Usage	Description
1	Block 1	100%	100%	Non-Discretionary usage
2	Block 2	125%	125%	Non-Discretionary usage
3	Block 3	175%	175%	Discretionary
4	Block 4	> 175%	> 175%	Excessive

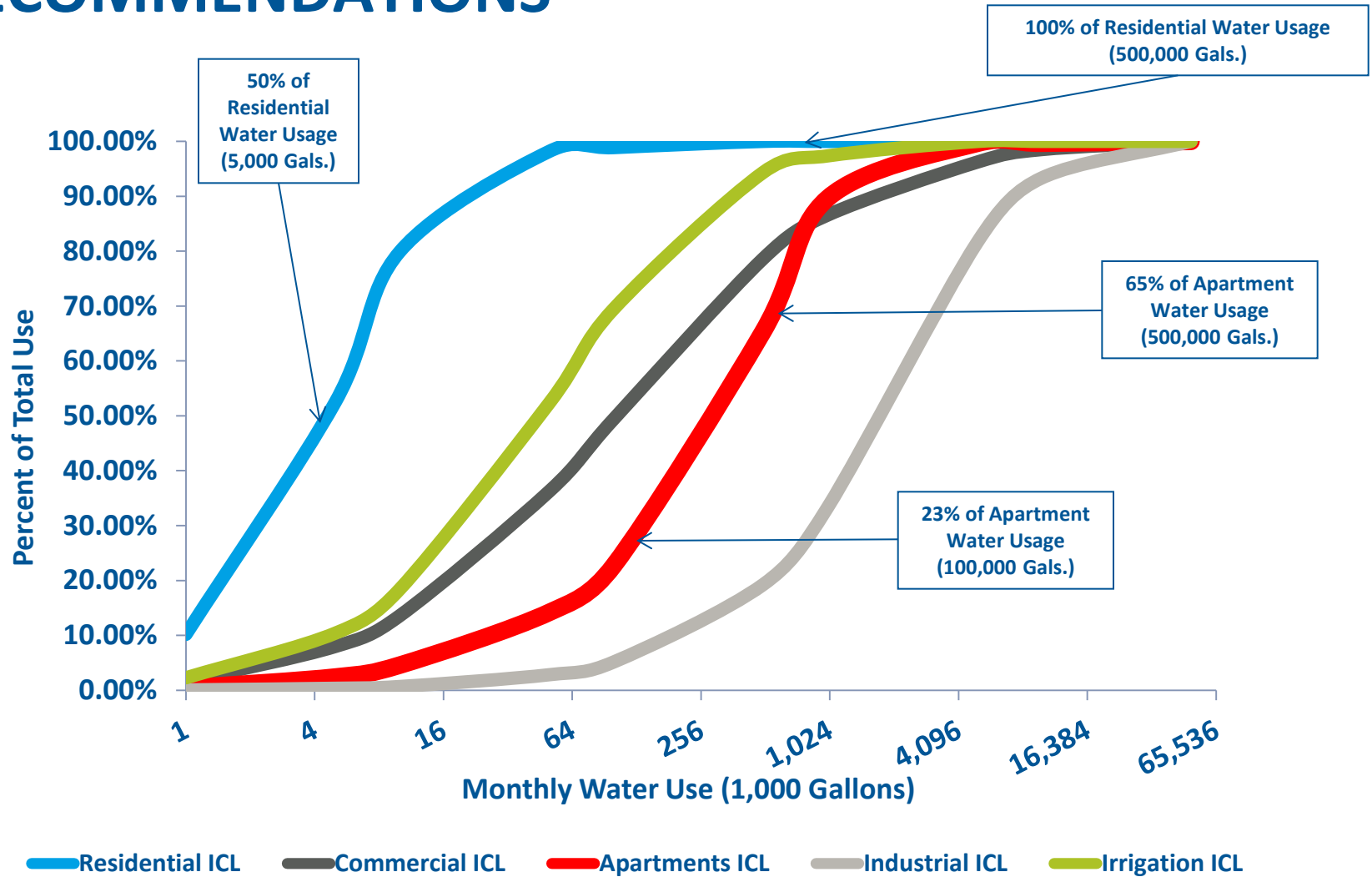
WATER DELIVERY RATES – GENERAL CLASS RECOMMENDATIONS

4. Develop a special Multi-family customer class

- Appropriately account for the demand characteristics of the Multi-family customer group
- Address the basis for billing customers
 - Master meter vs billing unit

Line	Description	Customer Counts ¹
Meter Size (inches):		
1	5/8'	1,360
2	3/4'	168
3	1	538
4	1.5	312
5	2	479
6	3	192
7	4	215
8	6	191
9	8	38
10	10	7
11	Total	3,499
Note:		
1. Denotes the total apartment customers per meter for the fiscal year 2013.		

WATER DELIVERY RATES – GENERAL CLASS RECOMMENDATIONS



The existing “Apartment” class will be reclassified as “Multi-family”



WATER DELIVERY RATES – GENERAL CLASS RECOMMENDATIONS

5. Develop a special customer class for combination meter customers

- Considered as two functions requiring service
 - Water and fire protection
- Appropriately assess cost associated with both functions
- Proposed combination meter rates:
 - Meter charges – specific charges will be developed for these customers
 - Volumetric rates – the proposed general class rate would apply to these customers

WATER DELIVERY RATES – IRRIGATION CLASS RECOMMENDATIONS

1. Standardize Meter Based Charges

- All meters have distinct flow requirements
 - Based on meter size
- Service Availability
 - Based on meter size
- Cost of Operations
 - Read meter
 - Maintain meter
 - Document performance



WATER DELIVERY RATES – IRRIGATION CLASS RECOMMENDATIONS

2. Add a Demand Charge

- Fixed rate component
 - Assessed on a monthly basis per customer
- Based on the average day irrigation class demand
 - Irrigation Capacity Standard
- Assessed as a two-tier demand charge
 - Tier 1 – at or below capacity standard
 - Tier 2 – above the capacity standard

Irrigation Class Capacity Standard Calculation

Line	Description	Total
1	Avg. Monthly Usage (gallons)	22,700
2	Annual Billing Periods	12
3	Annual Usage (gallons)	272,400
4	Days in Years	365
5	Capacity Standard (KGD)	0.75

Tracks the changes in a customer's demand requirements over time

WATER DELIVERY RATES – IRRIGATION CLASS RECOMMENDATIONS

3. Modify Usage Block Threshold

- Promote Conservation
- Target non-discretionary usage around the recorded monthly average usage
- Break out multi-family irrigation (tie to number of units)

FY 2013 Average Monthly Irrigation Usage

Line	Description	Average Usage ¹
1	Residential	22,270
2	Commercial	31,823
3	Apartments	25,486
4	Industrial	39,562
5	Municipal	509,804
6	Total Irrigation Class	30,879

Note:
1. Denotes the average monthly irrigation usage per customer class for the fiscal year 2013.

WATER DELIVERY RATES – IRRIGATION CLASS RECOMMENDATIONS

Line	Description	Existing Blocks (Gallons) ¹		Proposed Blocks (Gallons) ¹	
		Block Threshold	Percent of Usage	Block Threshold	Percent of Usage
1	Block 1	6,733	13.40%	8,229	15.80%
2	Block 2	17,205	27.69%	17,954	28.53%
3	Block 3	> 17,205	100.00%	162,316	80.00%
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.

WATER DELIVERY RATES – IMPLEMENTATION OF DROUGHT RATES

- Development of drought rates through all established staged drought restrictions:
 - Mechanism to protect SAWS against potential revenue loss due to restrictions placed on water use
 - Implemented through a volumetric rate applied to water usage
 - Engaged or disengaged based on the posted aquifer levels that triggers a drought restriction
 - As the drought restrictions intensifies, drought rates will be increased
 - As the drought restrictions are loosened, the drought rates will be reversed

CURRENT WATER SUPPLY RATES - DESCRIPTIONS

- No meter based or customer charge
- Volumetric rates are assessed for Water Supply services
- Uniform rates are assessed for all water supplied
- Recover the costs to supply water to existing customers served by SAWS

WATER SUPPLY RATES - OBSERVATIONS

Maximum Available Source of Water Supply for all of SAWS (Acre Feet)

Line	Description	Source of Supply ¹		
		SAWS	DSP	Total
1	Edwards Aquifer	254,415	35,548	289,963
2	Aquifer Storage & Recovery (ASR)	88,275		88,275
3	Recycled Water (CPS Energy Power Plants)	50,000		50,000
4	Recycled Water (Other Customers)	25,000		25,000
5	Regional Carrizo	11,000		11,000
6	Canyon Regional Water Authority		5,300	5,300
7	Medina Medina Surface Water		13,000	13,000
8	Canyon Lake	8,500		8,500
9	Local Carrizo	8,900	1,000	9,900
10	Trinity Aquifer	4,800	5,000	9,800
11	Total	450,890	59,848	510,738

Note:
1. The information provided above was retrieved from the SAWS FY 2013 Comprehensive Annual Financial Report.

Conversion: 1 Acre Feet = 325,851 Gallons

WATER SUPPLY RATES - OBSERVATIONS

- **Must set water supply rates to fully recover all current and future increments of cost**
- **Must promote conservation principles across all customer classes**
- **Must align the application of Water Supply rates with Water Delivery Rates**
 - **Align Usage Block Thresholds**
 - **Align the application across customer classes**
 - **Establish multi-family rates to mirror domestic and irrigation rate changes**

WATER SUPPLY RATES - RECOMMENDATIONS

Line	Description	Existing Blocks (Gallons)	Proposed Blocks (Gallons) ¹
Residential:			
1	Block 1	5,985	2,244
2	Block 2	12,717	5,985
3	Block 3	17,205	14,212
4	Block 4	> 17,205	23,936
5	Block 5		> 23,936
General:			
6	Block 1	100%	100%
7	Block 2	NA	125%
8	Block 3	NA	175%
9	Block 4	NA	> 175%
Irrigation:			
10	Block 1	6,733	8,229
11	Block 2	17,205	17,954
12	Block 3	> 17,205	162,316
13	Block 4		> 162,316

Note:

1. Black & Veatch proposed the implementation of increasing block rates to support the proposed block threshold outlined above.

CURRENT WASTEWATER RATES - DESCRIPTIONS

- **Minimum Charge with a sewer flow allowance**
 - Sewer flow from 0 to 1,496 gallons is included in the minimum charge
- **Uniform block rate for all sewer flow greater than 1,496 gallons**
- **Residential Class**
 - Based on the winter average (Nov. – Mar.) water usage
 - Reflective of outdoor water use not returned to the sanitary sewer system
- **General Class**
 - Based on 100% of water usage

WASTEWATER RATES - RECOMMENDATIONS

- Convert existing service availability charge to a minimum charge
- Establish a Block 1 volume rate for low residential usage (2,244 gallons)
 - All remaining usage would be charged a higher volumetric rate

Line	Description	Existing Blocks (Gallons)	Proposed Blocks (Gallons)
1	Block 1	1,496	2,244
2	Block 2	> 1,496	> 2,244

- Create a multi-family customer class
- Update industrial sewer surcharges
- Adjust unaveraged residential charge to reflect current average winter consumption trends



ADDITIONAL RATE DESIGN ISSUES

- **Special Services Charges**
 - Industrial Waste Permits
 - Industrial Discharge Sampling Fee
 - Liquid Waste Hauler Permit and Disposal Site Fee
 - FOG Fee
 - Laboratory Testing Fee
 - Fire Hydrant Water Usage Rate and Daily Rental Fee
- **Review the existing costs and frequencies associated with providing these special services**
- **Assess the proposed special services charges based on the implicit cost to provide these services**

ADDITIONAL RATE DESIGN ISSUES

- **Recycled Water Rates**
 - Assess recycled water rates based on the implicit cost to provide this service and the understood market conditions related to customer requiring this service
- **Wholesale rates**
- **ICL/OCL differential**
- **DSP Rate Convergence**

ADDITIONAL RATE DESIGN ISSUES

- **Utility Level Affordability Program Review**
 - Currently conducting a review of SAWS' Affordability Program
- **Affordability Program Framework**
 - Must be "POLICY" mandated
 - Value of the program must be "FINITE"
 - The cost of the program and number of participants must be "DEFINED"
 - A means Test/Framework must be established
 - Residency, Age, Physical Health, & Income
 - A definitive application process must be established
 - Potential candidates must initiate and complete the process

NEXT STEPS

- Review cost of service results
- Model proposed rate change scenarios
- Present conceptual design to RAC for approval

QUESTIONS

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