

# 2014 Water, Wastewater & Recycled Water Rate Study

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RATE DESIGN WORKSHOP WITH DISTRICT BOARD  
JUNE 3, 2015



# Agenda

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Introduction

Rate Study Process

Proposition 218 Requirements

Sanitation Rates Design

Water Budget Framework

Water Rates Design

Customer Impacts Analysis

Reclaimed Water Rates Design

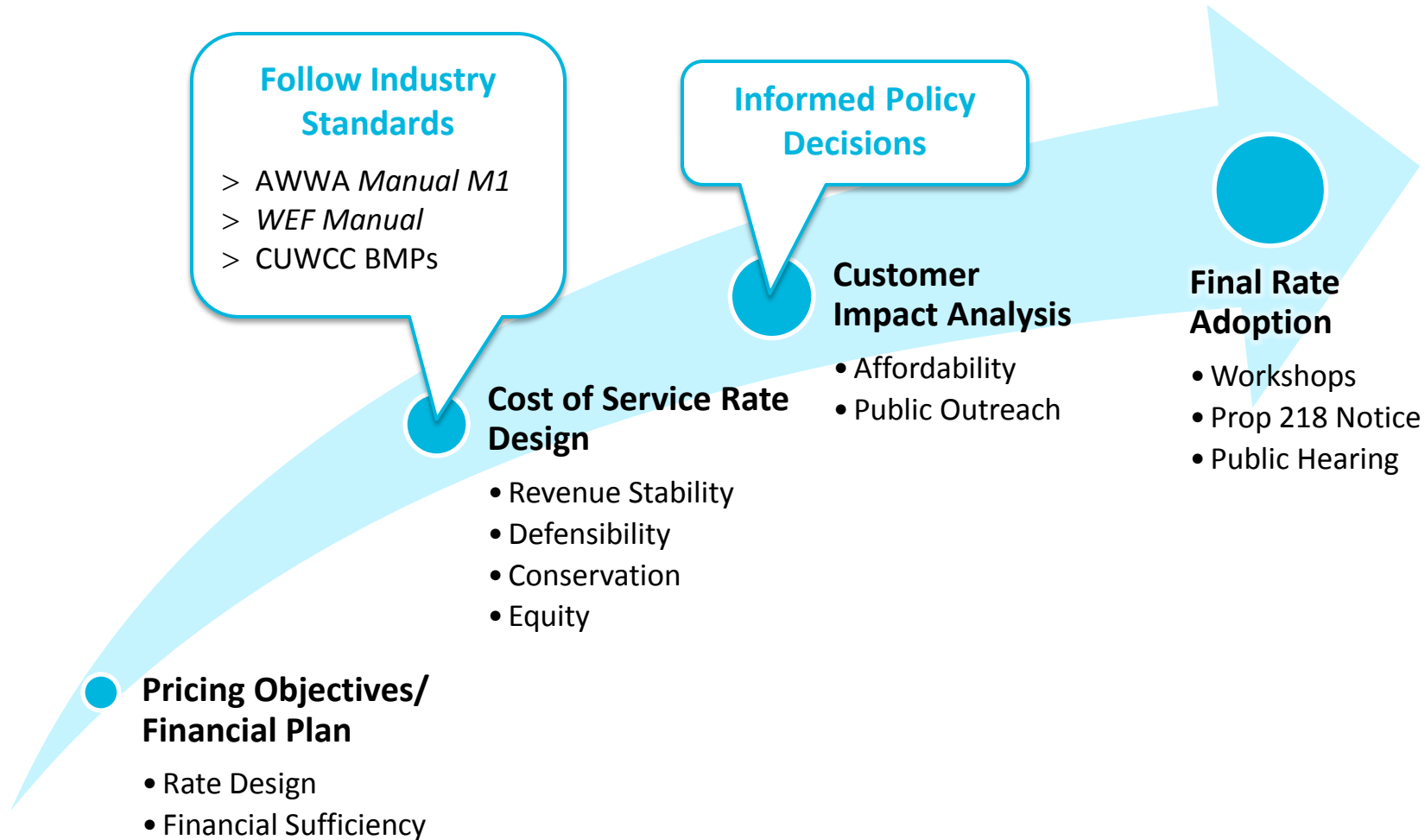
Conclusions and Staff Recommendations

Discussion on Penalties

# Introduction

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# Rate Study Process



# Nexus Requirements on Rates

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## Prop 218 requirements

- Nexus requirement needed between cost of service and rates
- What is the rationale for different tiered rates?
- Why do different customers have different rates?

# Sanitation Rates

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COST OF SERVICE ANALYSIS

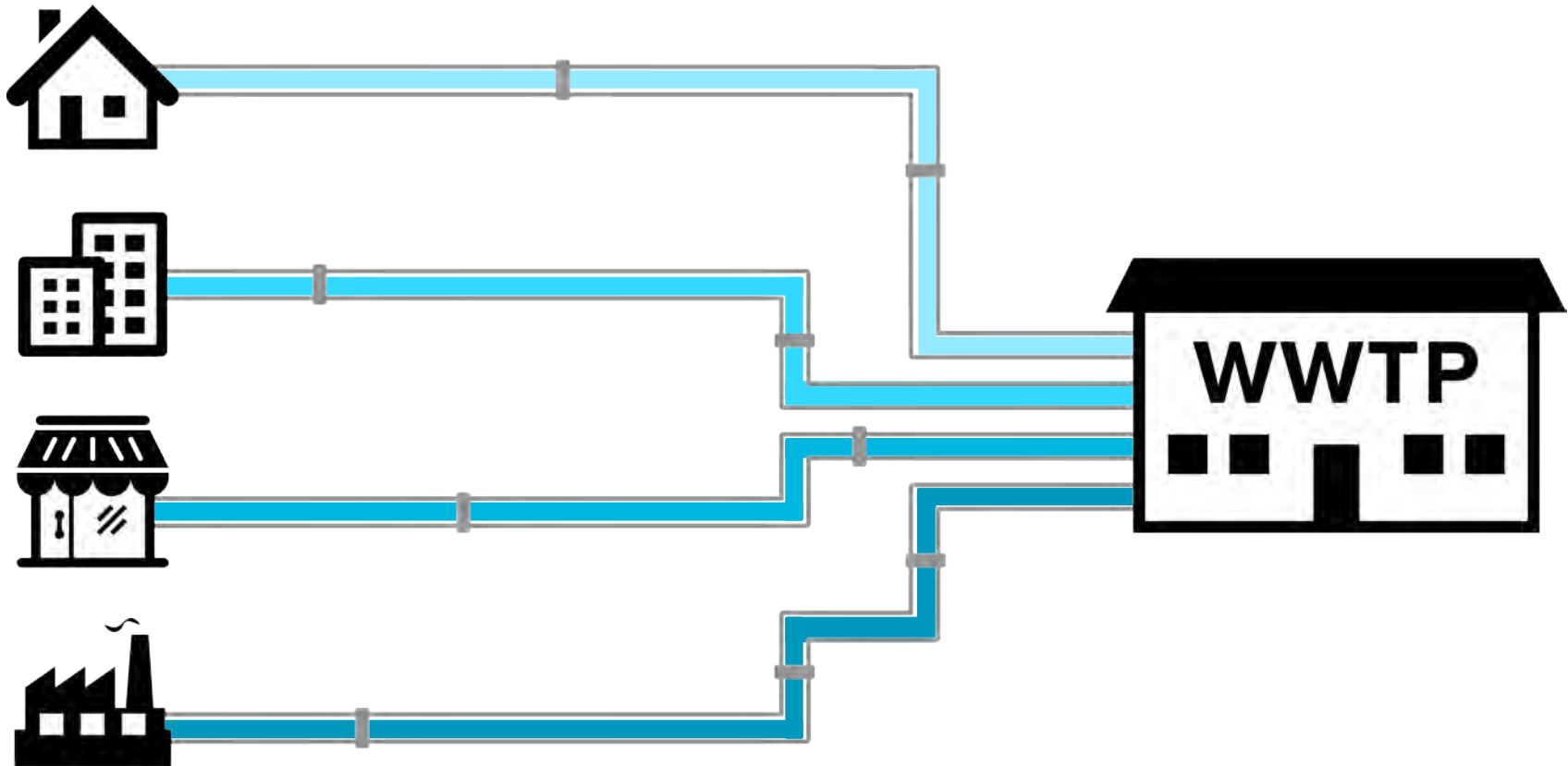
RECOMMENDATIONS

PROPOSED RATES

# Sanitation Cost of Service Analysis

## Step 1: Mass / Plant Balance

Determine flow & strength of customers



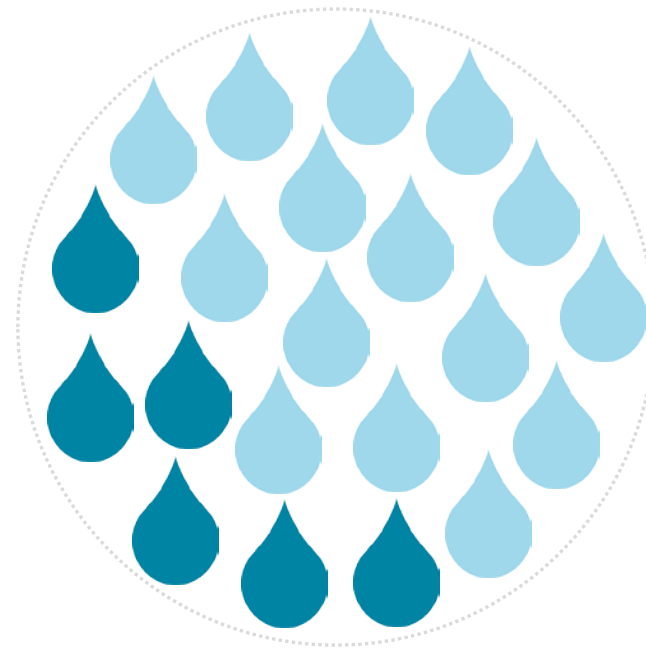
# Sanitation Cost of Service Analysis

## Step 2: Cost Structure

Clarify O&M costs & assets by function



COLLECTION



TREATMENT PLANT



*Flow*

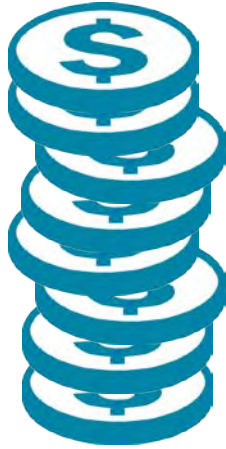


*Strength*



# Sanitation Cost of Service Analysis

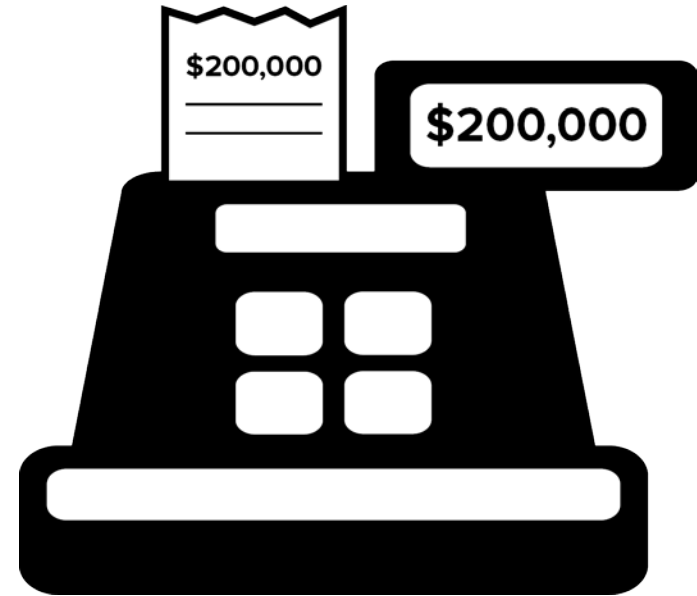
## Step 3: Cost of Each Customer Class



*Flow*



*Strength*



OFFICE / SCHOOL

# Cost of Service Analysis

## Before Revenue Adjustment

	Flow Based	Fixed Costs	Total	Current	% Change
Residential	\$9,786,723	\$1,852,127	\$11,638,850	\$13,000,814	-10%
Commercial	\$5,209,418	\$54,059	\$5,263,477	\$3,901,514	35%
<b>Total</b>	<b>\$14,996,141</b>	<b>\$1,906,186</b>	<b>\$16,902,328</b>	<b>\$16,902,328</b>	<b>0%</b>

# Recommendations

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## Residential Sanitation Rates

- Residential Sanitation Rates = Fixed Cost per dwelling unit + flow based charges based on household size
  - Average residential household size ~ 3 per dwelling unit

## Commercial Sanitation Rates

- Revised hcf / Equivalent Residential Unit (ERU) included in the ERU charges to match with new estimated residential flow from the COS analysis
- ERU charges based on strength factors for each commercial class

# Residential Sanitation Rates

## FY 2016 Rates

FY 2016  
2%

### Residential (Single Family/Multi Family)

Bi-Monthly Fixed Costs	\$13.96 /dwelling unit
Flow Charge (\$/hcf)	\$6.52 /hcf

### Sample Single Family Sanitation Bills

GPCD	55
Days of Service	60

### Assumed 54 GPCD & 60 Days of Service

Household Size	Revised WW Flows (revised GPCD = 55)	FY 2015	FY 2016
		Current	2%
1 persons	4.4 hcf	\$75.80	\$42.72
2 persons	8.8 hcf	\$75.80	\$71.49
3 persons	13.2 hcf	\$110.74	\$100.25
4 persons	17.6 hcf	\$110.74	\$129.02
5 persons	22.1 hcf	\$110.74	\$157.78
6 persons	26.5 hcf	\$110.74	\$186.55

# Proposed 5-Year Sanitation Rates

## Residential Rates

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Household Size	Current	2%	2%	2%	2%	2%
<b>1 persons</b>	\$75.80	\$42.72	\$43.62	\$44.53	\$45.45	\$46.37
<b>2 persons</b>	\$75.80	\$71.49	\$73.00	\$74.53	\$76.07	\$77.60
<b>3 persons</b>	\$110.74	\$100.25	\$102.39	\$104.53	\$106.68	\$108.84
<b>4 persons</b>	\$110.74	\$129.02	\$131.77	\$134.53	\$137.30	\$140.07
<b>5 persons</b>	\$110.74	\$157.78	\$161.15	\$164.53	\$167.92	\$171.31
<b>6 persons</b>	\$110.74	\$186.55	\$190.53	\$194.53	\$198.54	\$202.54

# Commercial Sanitation Rates

Commercial Sanitation Rates				Current	FY 2016 Proposed
<b>Account Service Charges (\$/ bi-monthly bill)</b>					
Class 1				\$17.56	\$13.96
Class 2				\$17.56	\$13.96
Class 3				\$17.56	\$13.96
Class 4				\$17.56	\$13.96
<b>ERU Charges (\$/ERU)</b>		<b>hcf / ERU</b>			
Class 1	Inclusive of	13.2		\$93.18	\$83.86
Class 2	Inclusive of	13.2		\$93.18	\$115.62
Class 3	Inclusive of	13.2		\$93.18	\$153.11
Class 4	Inclusive of	13.2		\$93.18	\$192.72
<b>Excess Usage Charges (\$/hcf)</b>					
Class 1	Excess of	13.2		\$3.16	\$6.35
Class 2	Excess of	13.2		\$5.39	\$8.75
Class 3	Excess of	13.2		\$8.18	\$11.58
Class 4	Excess of	13.2		N/A	\$14.58

# Proposed 5-Year Sanitation Rates

## Commercial Rates

			FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
			Current	2%	2%	2%	2%	2%
<b>Account Service Charges (\$/ bi-monthly bill)</b>								
Class 1			\$17.56	\$13.96	\$14.24	\$14.53	\$14.83	\$15.13
Class 2			\$17.56	\$13.96	\$14.24	\$14.53	\$14.83	\$15.13
Class 3			\$17.56	\$13.96	\$14.24	\$14.53	\$14.83	\$15.13
Class 4			\$17.56	\$13.96	\$14.24	\$14.53	\$14.83	\$15.13
<b>ERU Charges (\$/ERU)</b>		<b>hcf / ERU</b>						
Class 1	Inclusive of	13.2	\$93.18	\$83.86	\$85.54	\$87.26	\$89.01	\$90.80
Class 2	Inclusive of	13.2	\$93.18	\$115.62	\$117.94	\$120.30	\$122.71	\$125.17
Class 3	Inclusive of	13.2	\$93.18	\$153.11	\$156.18	\$159.31	\$162.50	\$165.75
Class 4	Inclusive of	13.2	\$93.18	\$192.72	\$196.58	\$200.52	\$204.54	\$208.64
<b>Excess Usage Charges (\$/hcf)*</b>								
Class 1	Excess of	13.2	\$3.16	\$6.35	\$6.48	\$6.61	\$6.75	\$6.89
Class 2	Excess of	13.2	\$5.39	\$8.75	\$8.93	\$9.11	\$9.30	\$9.49
Class 3	Excess of	13.2	\$8.18	\$11.58	\$11.82	\$12.06	\$12.31	\$12.56
Class 4	Excess of	13.2	N/A	\$14.58	\$14.88	\$15.18	\$15.49	\$15.80

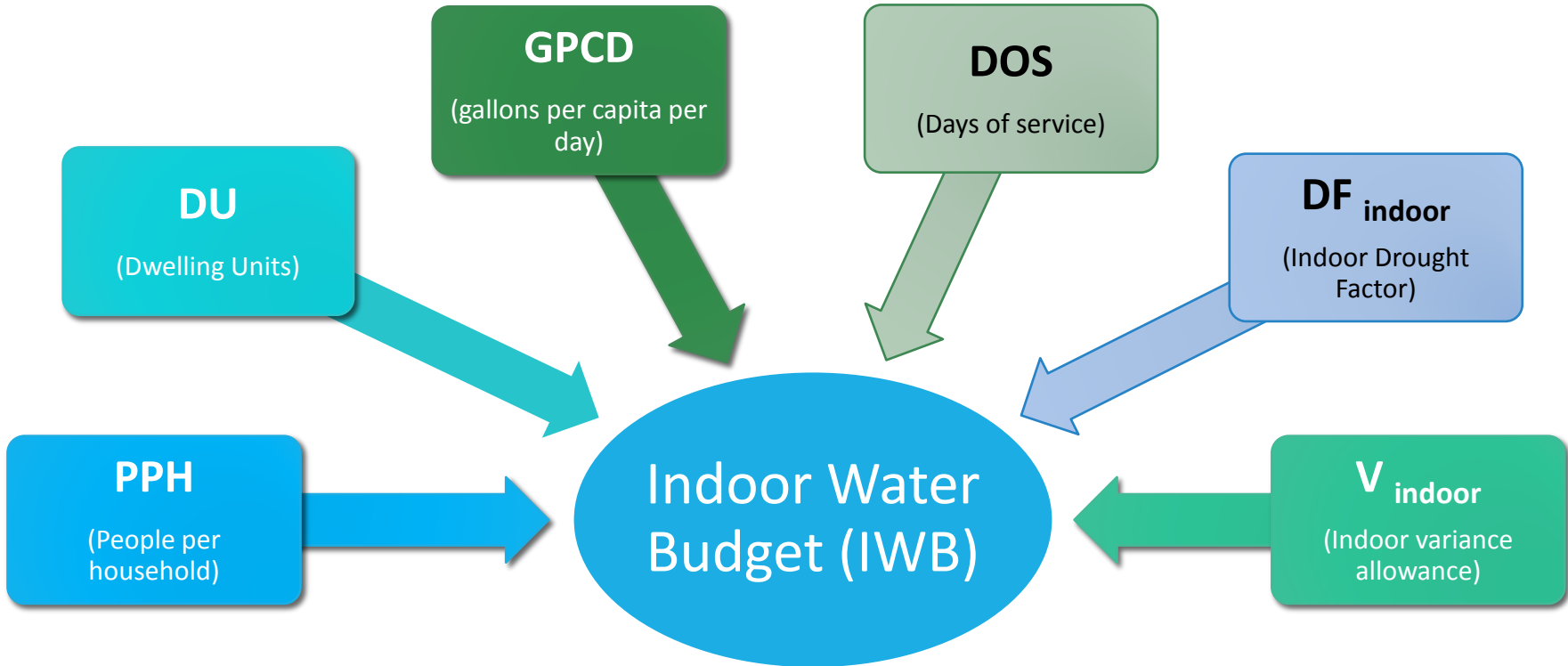
# Water Budget Framework

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# Defining Efficiency

## Indoor Water Budget



$$IWB(hcf) = \frac{PPH * DU * GPCD * DOS * DF_{indoor}}{748} + V_{indoor}$$

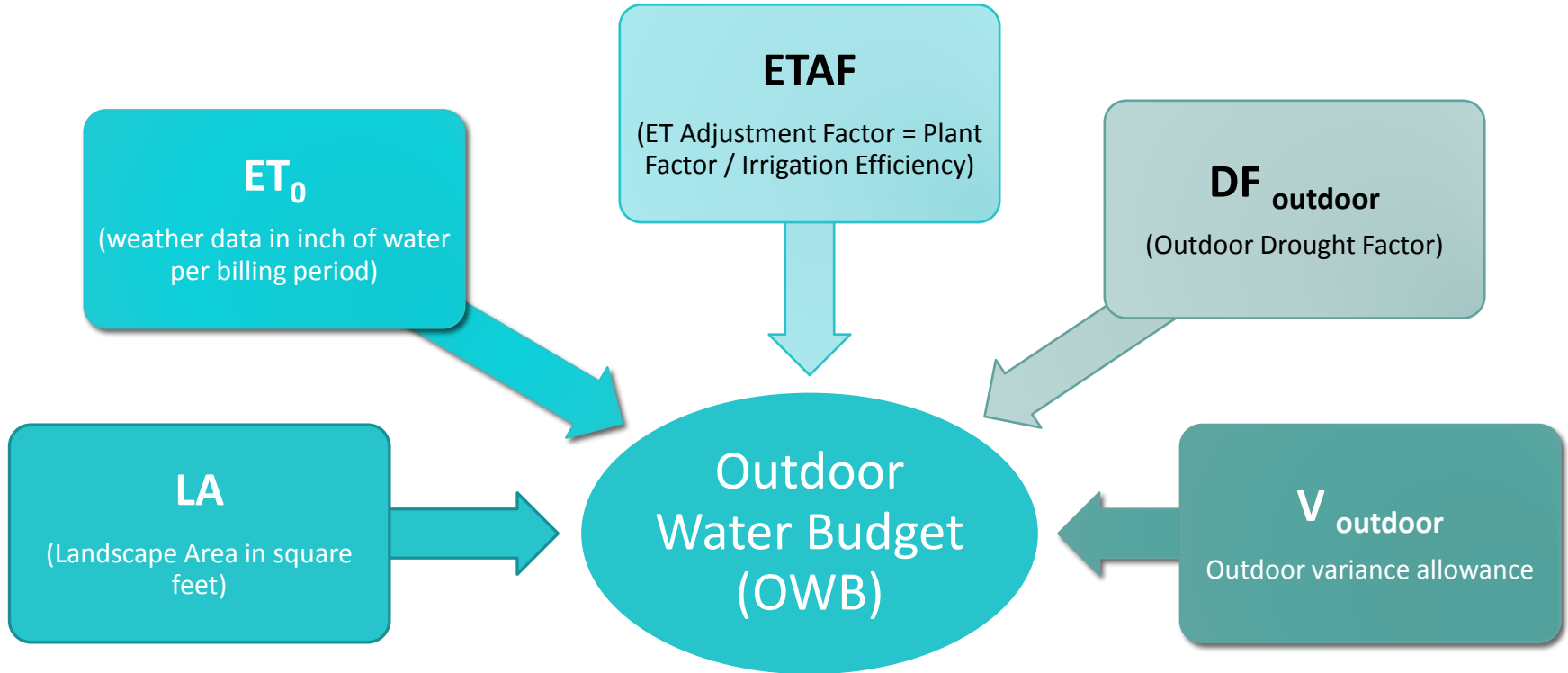
# Defining Efficiency

## Outdoor Water Budget



# Defining Efficiency

## Outdoor Water Budget



$$OWB(hcf) = \left( \frac{LA * ET_0 * ETAF}{1200} + V_{outdoor} \right) * DF_{outdoor}$$

# Defining Efficiency

## Commercial Water Budget (CWB)

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Daily CWB = 90% of 3-year rolling daily average for the billing period

- SB x7-7 mandates commercial users to reduce at least 10% of usage

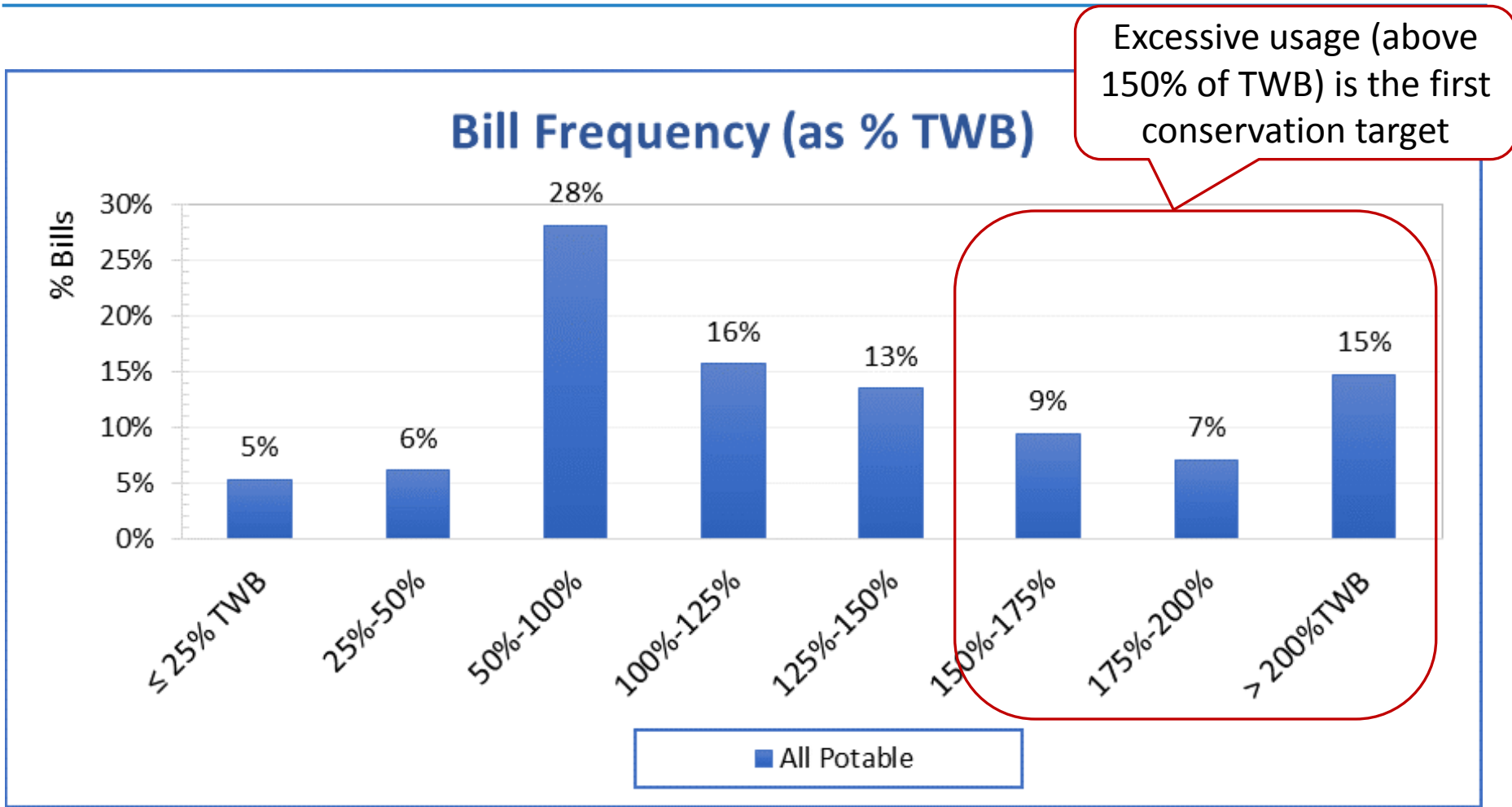
# Proposed Water Budget Factors

Indoor WB	Outdoor WB	Commercial WB
Customer Classes: Residential, Multi Family	Customer Classes: Residential, Multi Family, Irrigation and Reclaimed	Customer Classes: Commercial
Default Household Size: <ul style="list-style-type: none"> <li>• Single Family = 3</li> <li>• Multi Family = 3</li> </ul>	Landscape Area: as measured by the District	Commercial Daily Factor = 90% Daily CWB = 90% of rolling 3- year daily average
GPCD = 55	Weather Data: Actual 3 ET Zones for 3 weather stations ETAF = 80%	
Drought Factor = 100%	Drought Factor = 100% <ul style="list-style-type: none"> <li>• Reclaimed: No Drought Factor</li> </ul>	N/A

# Water Budget Tier Definitions

	Commercial	Residential	Multi Family	Irrigation	Reclaimed
<b>Tier 1</b>	33% CWB	100% IWB	100% IWB		
<b>Tier 2</b>	67% CWB	100% OWB	100% OWB	100% OWB	100% OWB
<b>Tier 3</b>	50% CWB	50% TWB	50% TWB	50% OWB	50% OWB
<b>Tier 4</b>	Above Tier 3	Above Tier 3	Above Tier 3	Above Tier 3	Above Tier 3

# Potable Water Usage Analysis



# Water Rates

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COST OF SERVICE ANALYSIS

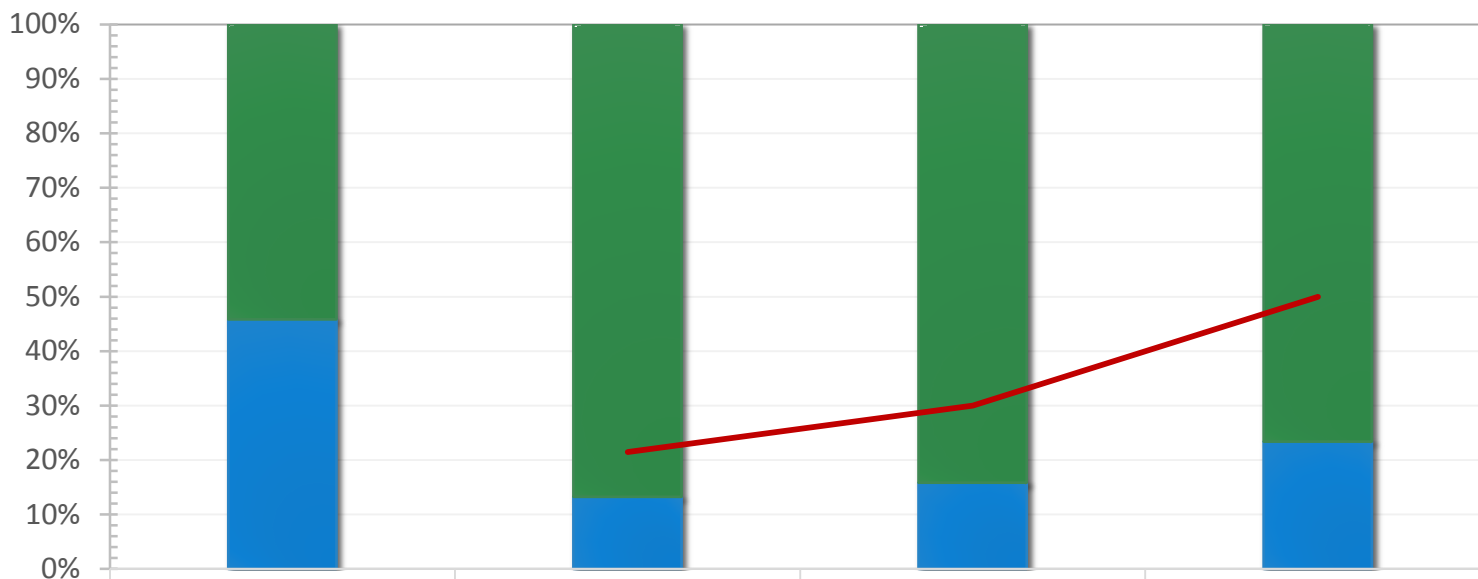
RECOMMENDATIONS

PROPOSED RATES



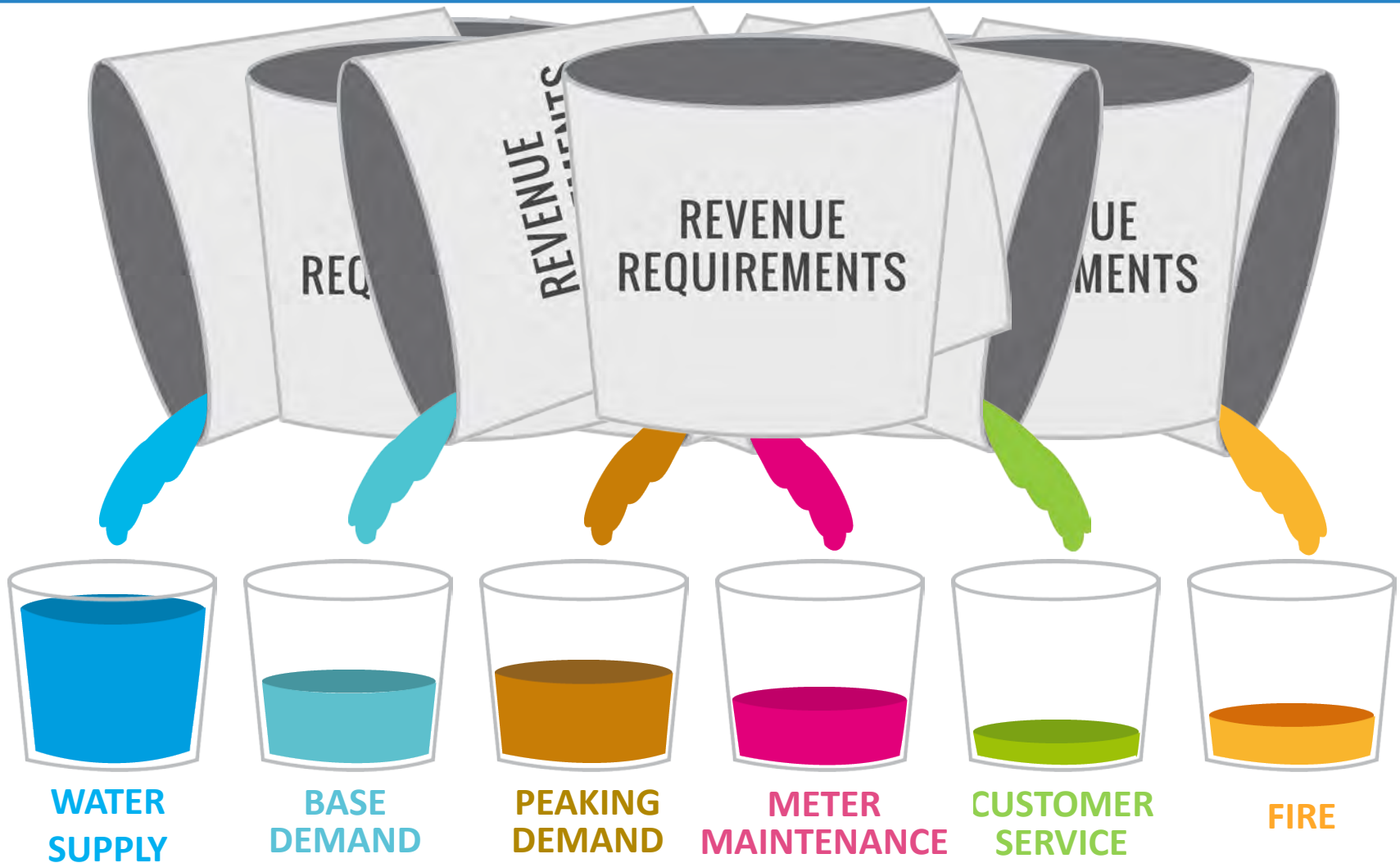
# Cost and Revenue Structures

## Cost and Revenue Structure Comparison



	FY 2016 Cost	Revenues @ Current Rates	Proposed FY 2016 Rev	Proposed FY 2020 Rev
Variable	54.2%	86.8%	84.2%	76.6%
Fixed	45.8%	13.2%	15.8%	23.4%
% of Fixed System Cost Recovery		21%	30%	50%

# Cost of Service Allocation Process



# Cost of Service Analysis Results and Revenue Recovery

Rev Requirements	FY 2016	Commodity	Elevation Surcharges	Bi-Monthly RTS
Water Supply	\$18,568,054	x		
Power	\$2,486,413	x	x	
Base	\$5,270,710	x		x
Peaking	\$11,136,043	x		x
Conservation	\$283,422	x		
Rev Offset	-\$819,667	x		
Meters	\$574,460			x
B&CS	\$359,721			x
<b>Total</b>	<b>\$37,859,156</b>			

*Fixed System Cost = Base + Peaking = \$16.4M*

# Proposed Water Bi-Monthly RTS

Meter Size	Number of Accounts	Current	FY 2016 Revised COS	FY 2017 4.5%	FY 2018 4.5%	FY 2019 4.5%	FY 2020 4.5%
Fixed System Cost Recovery			30%	35%	40%	45%	50%
3/4"	461	\$31.73	<b>\$37.56</b>	\$44.64	\$52.28	\$60.51	\$69.39
3/4" x 1"	16,230	\$31.73	<b>\$37.56</b>	\$44.64	\$52.28	\$60.51	\$69.39
1"	2,129	\$46.72	<b>\$60.60</b>	\$72.30	\$84.94	\$98.56	\$113.25
1 1/2"	595	\$84.18	<b>\$118.18</b>	\$141.45	\$166.59	\$193.67	\$222.90
2"	411	\$129.66	<b>\$187.28</b>	\$224.42	\$264.57	\$307.81	\$354.48
3"	41	\$248.90	<b>\$406.10</b>	\$487.16	\$574.83	\$669.25	\$771.16
4"	18	\$384.34	<b>\$728.56</b>	\$874.37	\$1,032.05	\$1,201.90	\$1,385.21
6"	16	\$758.25	<b>\$1,845.68</b>	\$2,215.77	\$2,616.01	\$3,047.16	\$3,512.46
8"	4	\$1,208.57	<b>\$3,227.68</b>	\$3,875.23	\$4,575.54	\$5,329.95	\$6,144.11
10"	0	\$1,732.98	<b>\$4,840.01</b>	\$5,811.26	\$6,861.65	\$7,993.20	\$9,214.37

# Components of Water Commodity Rates

Base Power	Water Supply	Delivery Cost	Peaking Cost	Conservation	Revenue Offsets
<p>Energy Cost, Pump Stations, Tanks and System Operations Costs for base (zone 1) zone</p>	<p>Local water variable costs, purchased water costs</p>	<p>Remaining cost of delivering water to customer</p>	<p>Peaking cost of capital</p>	<p>Water conservation program costs</p>	<p>Non-operating unrestricted revenues to provide affordability for essential use</p>

# Water Commodity Rates

Commodity Charge (\$ / hcf)	Base Power	Water Supply	Delivery	Peaking	Conservation	Rev Offset
<b>All Zones</b>						
Tier 1	x	Blended MWD Tier 1 & Reservoir	x			x
Tier 2	x	Blended MWD Tier 1 & Reservoir	x	x		x
Tier 3	x	Blended MWD Tier 1 & Reservoir	x	xx	x	
Tier 4	x	MWD Tier 2	x	xxx	x	
Temporary Services	x	MWD Tier 2	x	xxxx		

# Water Commodity Rates

Commodity Charge (\$ / hcf)	Base Power	Water Supply	Delivery	Peaking	Conservation	Rev Offset	Proposed
<b>All Zones</b>							
Tier 1	\$0.06	\$2.08	\$0.41	\$0.00	\$0.00	-\$0.13	<b>\$2.42 /hcf</b>
Tier 2	\$0.06	\$2.08	\$0.41	\$0.81	\$0.00	-\$0.13	<b>\$3.23 /hcf</b>
Tier 3	\$0.06	\$2.08	\$0.41	\$1.34	\$0.10	\$0.00	<b>\$3.99 /hcf</b>
Tier 4	\$0.06	\$2.60	\$0.41	\$1.83	\$0.10	\$0.00	<b>\$5.00 /hcf</b>
Temporary Services	\$0.06	\$2.60	\$0.41	\$4.79	\$0.00	\$0.00	<b>\$7.86 /hcf</b>

# Water Commodity Rates

Commodity Charge (\$ / hcf)	Current	Proposed
<b>All Zones</b>		
Tier 1	\$2.31 /hcf	<b>\$2.42 /hcf</b>
Tier 2	\$2.80 /hcf	<b>\$3.23 /hcf</b>
Tier 3	\$3.81 /hcf	<b>\$3.99 /hcf</b>
Tier 4	\$5.34 /hcf	<b>\$5.00 /hcf</b>
Temporary Services	\$8.01 /hcf	<b>\$7.86 /hcf</b>



# Water Commodity Rates

	Current	FY 2016 Revised COS	FY 2017 4.5%	FY 2018 4.5%	FY 2019 4.5%	FY 2020 4.5%
<b>Fixed Cost Recovery</b>		<b>30%</b>	<b>35%</b>	<b>40%</b>	<b>45%</b>	<b>50%</b>
<b>Commodity Charge (\$ / hcf)</b>	<b>Before Pass-through Water Supply Rates</b>					
Tier 1	\$2.31 /hcf	<b>\$2.42 /hcf</b>	\$2.49 /hcf	\$2.57 /hcf	\$2.64 /hcf	\$2.72 /hcf
Tier 2	\$2.80 /hcf	<b>\$3.23 /hcf</b>	\$3.25 /hcf	\$3.29 /hcf	\$3.33 /hcf	\$3.36 /hcf
Tier 3	\$3.81 /hcf	<b>\$3.99 /hcf</b>	\$4.00 /hcf	\$4.01 /hcf	\$4.02 /hcf	\$4.04 /hcf
Tier 4	\$5.34 /hcf	<b>\$5.00 /hcf</b>	\$5.00 /hcf	\$5.02 /hcf	\$5.03 /hcf	\$5.04 /hcf
Temporary Services	\$8.01 /hcf	<b>\$7.86 /hcf</b>	\$7.68 /hcf	\$7.54 /hcf	\$7.37 /hcf	\$7.21 /hcf
<b>Estimated Cumulative Pass-through Water Supply Rate</b> <i>(subject to annual review to ensure sufficient cost recovery)</i>			<b>+\$0.13 /hcf</b>	<b>+\$0.28 /hcf</b>	<b>+\$0.43 /hcf</b>	<b>+\$0.61 /hcf</b>

# Water Elevation Charges

	Current	FY 2016 Revised COS	FY 2017 4.5%	FY 2018 4.5%	FY 2019 4.5%	FY 2020 4.5%
<b>Elevation Charge (\$/hcf)</b>						
Zone 1	\$0.00 /hcf	<b>\$0.00 /hcf</b>	\$0.00 /hcf	\$0.00 /hcf	\$0.00 /hcf	\$0.00 /hcf
Zone 2	\$0.42 /hcf	<b>\$0.42 /hcf</b>	\$0.44 /hcf	\$0.46 /hcf	\$0.49 /hcf	\$0.52 /hcf
Zone 3	\$0.74 /hcf	<b>\$0.98 /hcf</b>	\$1.03 /hcf	\$1.08 /hcf	\$1.13 /hcf	\$1.19 /hcf
Zone 4	\$1.28 /hcf	<b>\$1.56 /hcf</b>	\$1.64 /hcf	\$1.72 /hcf	\$1.80 /hcf	\$1.89 /hcf
Zone 5	\$2.55 /hcf	<b>\$0.00 /hcf</b>	\$0.00 /hcf	\$0.00 /hcf	\$0.00 /hcf	\$0.00 /hcf

# Customer Impact Analysis

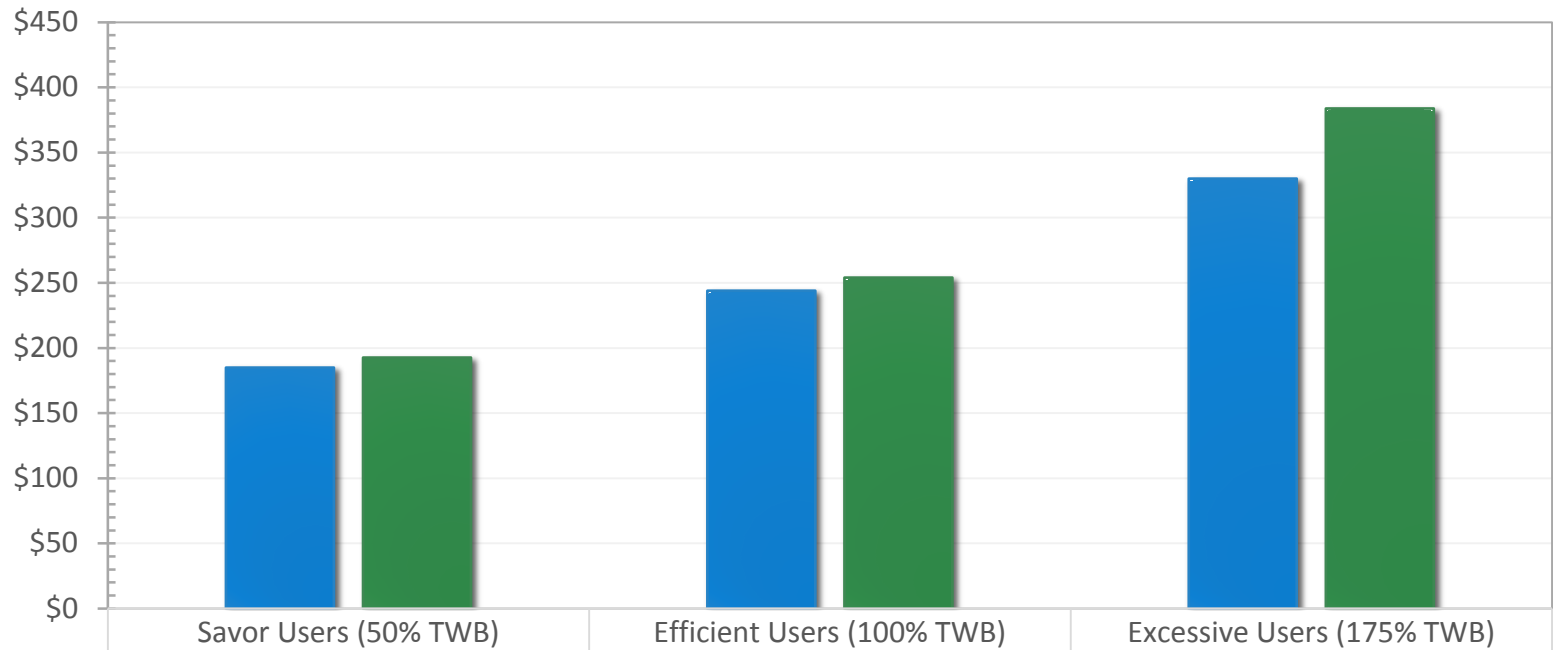
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# Water + Sanitation Customer Impacts

FY 2016

## SFR Sample Water & Sanitation Bills (FY 2016)

*3/4" x 1" meter, ET Zone 3, Pumping Zone 1, Household Size = 3, Landscape Area = 4,000sq ft, TWB = 39 hcf on average bi-monthly bills*



	Savor Users (50% TWB)	Efficient Users (100% TWB)	Excessive Users (175% TWB)
Current W+S Bills	\$184.81	\$243.83	\$329.85
Proposed W+S Bills	\$192.51	\$253.88	\$383.68
Impacts	\$7.70	\$10.05	\$53.83
% Impact	4.2%	4.1%	16.3%

# Water + Sanitation Customer Impacts

## Multi-Year for Typical SFR Customer using 39 hcf (100%TWB)

FY 2017 – FY 2020 bills do not include Pass-through W+S costs

### RESIDENTIAL SAMPLE WATER & SANITATION BILLS

(WITHOUT PASSTHROUGH WS FOR FY 2017 - FY 2020)

3/4" x 1" meter, ET Zone 3, Pumping Zone 1, Household Size = 3, 1 Dwelling Unit, Landscape Area = 4,000sq ft

Bi-monthly Avg Usage = 39 hcf (i.e. 100% TWB)



	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Current W + S Bills	\$243.83	\$243.83	\$243.83	\$243.83	\$243.83
Proposed W + S Bills	\$253.88	\$264.61	\$276.54	\$288.93	\$301.87
Impact	\$10.05	\$20.78	\$32.71	\$45.10	\$58.04
% Impact	4.1%	8.5%	13.4%	18.5%	23.8%

# Water + Sanitation Customer Impacts

## Multi-Year for Typical SFR Customer using 39 hcf (100%TWB)

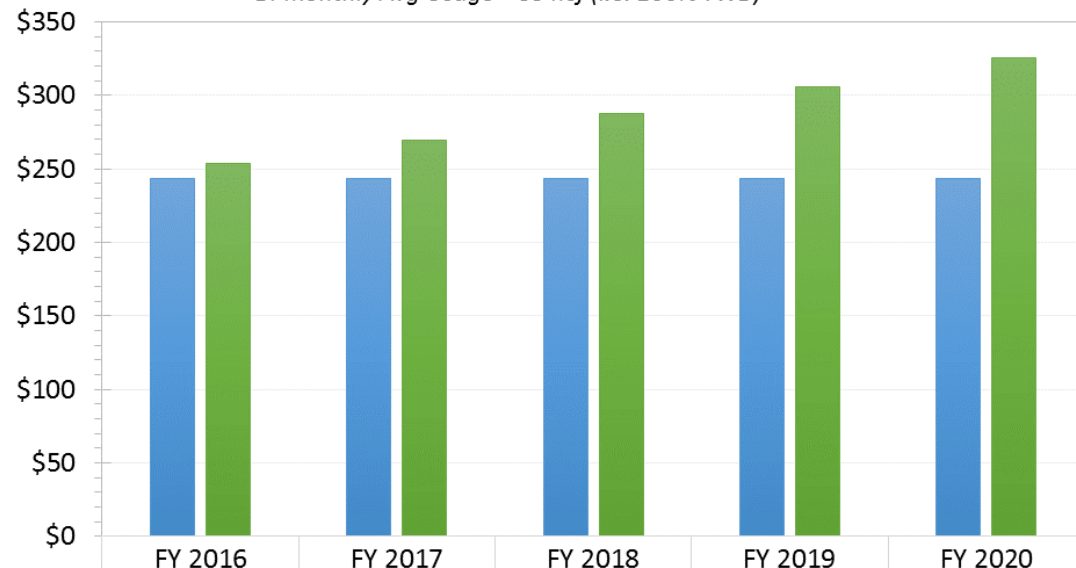
FY 2017 – FY 2020 bills with Estimated Pass-through WS Costs

### RESIDENTIAL SAMPLE WATER & SANITATION BILLS

(W/ EST. PASSTHROUGH WS)

3/4" x 1" meter, ET Zone 3, Pumping Zone 1, Household Size = 3, 1 Dwelling Unit, Landscape Area = 4,000sqft

Bi-monthly Avg Usage = 39 hcf (i.e. 100% TWB)



	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Current W + S Bills	\$243.83	\$243.83	\$243.83	\$243.83	\$243.83
Proposed W + S Bills	\$253.88	\$269.68	\$287.46	\$305.70	\$325.66
Impact	\$10.05	\$25.85	\$43.63	\$61.87	\$81.83
Impact of Estimated Pass-through WS		\$5.07	\$10.92	\$16.77	\$23.79
% Impact	4.1%	10.6%	17.9%	25.4%	33.6%

# Reclaimed Water

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RECOMMENDATIONS

PROPOSED RATES

# Recommendations

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1. To enhance revenue stability, RW services are proposed to have the same Bi-Monthly Readiness-To-Serve charges as Potable Water services
2. To promote efficiency, RW services are proposed to have similar water budget rate structure as potable irrigation services



# RW Bi-Monthly RTS

Same as Potable Meters

Meter Size	Current	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Fixed Cost Recovery		30%	35%	40%	45%	50%
3/4"		<b>\$37.56</b>	\$44.64	\$52.28	\$60.51	\$69.39
3/4" x 1"		<b>\$37.56</b>	\$44.64	\$52.28	\$60.51	\$69.39
1"		<b>\$60.60</b>	\$72.30	\$84.94	\$98.56	\$113.25
1 1/2"		<b>\$118.18</b>	\$141.45	\$166.59	\$193.67	\$222.90
2"		<b>\$187.28</b>	\$224.42	\$264.57	\$307.81	\$354.48
3"		<b>\$406.10</b>	\$487.16	\$574.83	\$669.25	\$771.16
4"		<b>\$728.56</b>	\$874.37	\$1,032.05	\$1,201.90	\$1,385.21
6"		<b>\$1,845.68</b>	\$2,215.77	\$2,616.01	\$3,047.16	\$3,512.46
8"		<b>\$3,227.68</b>	\$3,875.23	\$4,575.54	\$5,329.95	\$6,144.11
10"		<b>\$4,840.01</b>	\$5,811.26	\$6,861.65	\$7,993.20	\$9,214.37

# RW Commodity Rates

## COS Approach

	Base Power	Water Supply	Delivery	Peaking	FY 2016 Proposed	FY 2015 Current
<b>Commodity Rates</b>						
Tier 1						\$1.09 /hcf
Tier 2	\$0.17	\$0.49	\$0.63	\$0.14	<b>\$1.43 /hcf</b>	\$1.42 /hcf
Tier 3	\$0.17	\$0.49	\$0.63	\$0.86	<b>\$2.15 /hcf</b>	\$2.27 /hcf
Tier 4	\$0.17	\$3.71	\$0.63	\$0.86	<b>\$5.37 /hcf</b>	\$3.51 /hcf
Temporary	\$0.17	\$3.71	\$0.63	\$1.91	<b>\$6.42 /hcf</b>	\$5.27 /hcf

# RW Commodity Rates

## COS Approach

	Current	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
<b>Commodity Rates</b>						
Tier 1	\$1.09 /hcf					
Tier 2	\$1.42 /hcf	<b>\$1.43 /hcf</b>	\$1.44 /hcf	\$1.45 /hcf	\$1.45 /hcf	\$1.46 /hcf
Tier 3	\$2.27 /hcf	<b>\$2.15 /hcf</b>	\$2.06 /hcf	\$1.97 /hcf	\$1.85 /hcf	\$1.74 /hcf
Tier 4	\$3.51 /hcf	<b>\$5.37 /hcf</b>	\$5.35 /hcf	\$5.32 /hcf	\$5.27 /hcf	\$5.23 /hcf
Temporary	\$5.27 /hcf	<b>\$6.42 /hcf</b>	\$6.25 /hcf	\$6.08 /hcf	\$5.86 /hcf	\$5.65 /hcf
<b>Elevation Charge (\$/hcf)</b>						
Zone L	\$0.00 /hcf	<b>\$0.00 /hcf</b>	\$0.00 /hcf	\$0.00 /hcf	\$0.00 /hcf	\$0.00 /hcf
Zone C	\$0.25 /hcf	<b>\$0.36 /hcf</b>	\$0.37 /hcf	\$0.38 /hcf	\$0.39 /hcf	\$0.40 /hcf
Zone Q	\$0.25 /hcf	<b>\$0.36 /hcf</b>	\$0.37 /hcf	\$0.38 /hcf	\$0.39 /hcf	\$0.40 /hcf
Zone M	\$0.25 /hcf	<b>\$0.36 /hcf</b>	\$0.37 /hcf	\$0.38 /hcf	\$0.39 /hcf	\$0.40 /hcf
Zone W	\$0.25 /hcf	<b>\$0.36 /hcf</b>	\$0.37 /hcf	\$0.38 /hcf	\$0.39 /hcf	\$0.40 /hcf
Temporary	\$0.38 /hcf	<b>\$0.36 /hcf</b>	\$0.37 /hcf	\$0.38 /hcf	\$0.39 /hcf	\$0.40 /hcf

# RW Commodity Rates

## 90% Potable Rates Approach

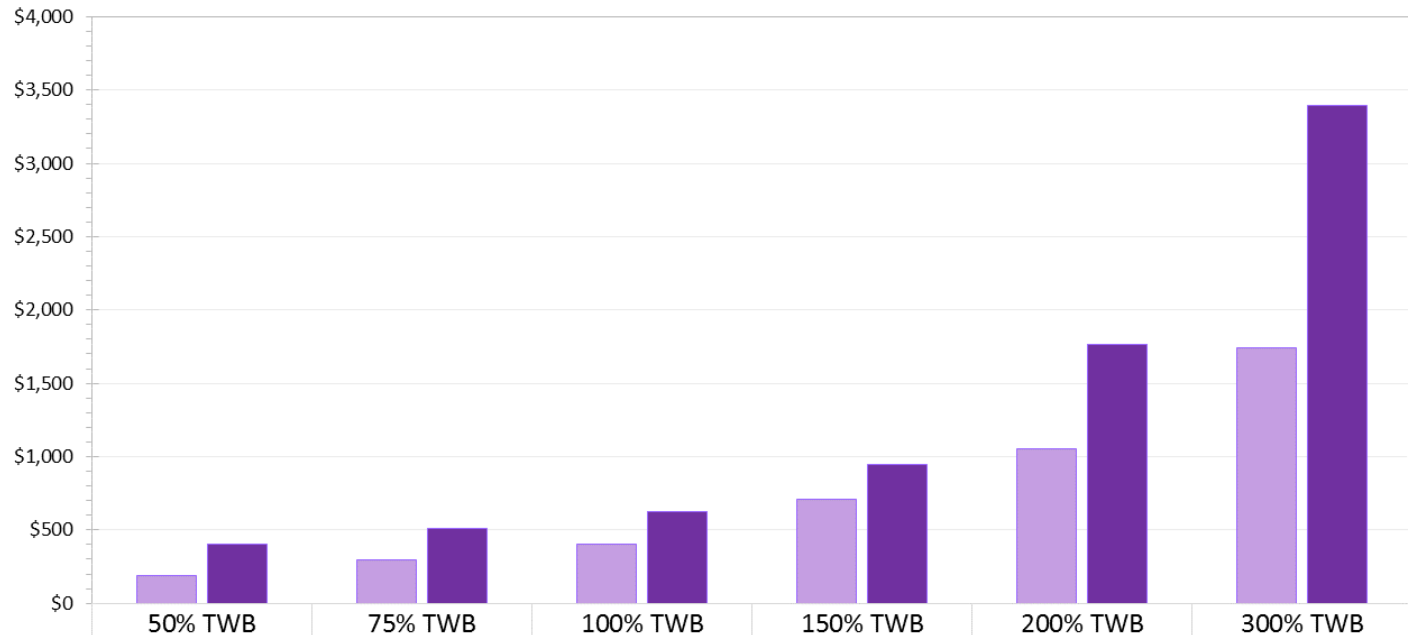
	Current	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
<b>Commodity Rates</b>						
Tier 1	\$1.09 /hcf					
Tier 2	\$1.42 /hcf	<b>\$2.91 /hcf</b>	\$2.93 /hcf	\$2.96 /hcf	\$2.98 /hcf	\$3.00 /hcf
Tier 3	\$2.27 /hcf	<b>\$3.60 /hcf</b>	\$3.60 /hcf	\$3.60 /hcf	\$3.60 /hcf	\$3.60 /hcf
Tier 4	\$3.51 /hcf	<b>\$4.50 /hcf</b>	\$4.50 /hcf	\$4.49 /hcf	\$4.50 /hcf	\$4.50 /hcf
Temporary	\$5.27 /hcf	<b>\$7.08 /hcf</b>	\$6.89 /hcf	\$6.73 /hcf	\$6.57 /hcf	\$6.39 /hcf
<b>Elevation Charge (\$/hcf)</b>						
Zone L	\$0.00 /hcf	<b>\$0.00 /hcf</b>	\$0.00 /hcf	\$0.00 /hcf	\$0.00 /hcf	\$0.00 /hcf
Zone C	\$0.25 /hcf	<b>\$0.36 /hcf</b>	\$0.37 /hcf	\$0.38 /hcf	\$0.39 /hcf	\$0.40 /hcf
Zone Q	\$0.25 /hcf	<b>\$0.36 /hcf</b>	\$0.37 /hcf	\$0.38 /hcf	\$0.39 /hcf	\$0.40 /hcf
Zone M	\$0.25 /hcf	<b>\$0.36 /hcf</b>	\$0.37 /hcf	\$0.38 /hcf	\$0.39 /hcf	\$0.40 /hcf
Zone W	\$0.25 /hcf	<b>\$0.36 /hcf</b>	\$0.37 /hcf	\$0.38 /hcf	\$0.39 /hcf	\$0.40 /hcf
Temporary	\$0.38 /hcf	<b>\$0.36 /hcf</b>	\$0.37 /hcf	\$0.38 /hcf	\$0.39 /hcf	\$0.40 /hcf

# RW Customer Impacts

## COS Approach

### Reclaimed Water Sample Water Bills

2" meter, Pumping Zone L, ET Zone 3, Landscape Area = 50,000sqft



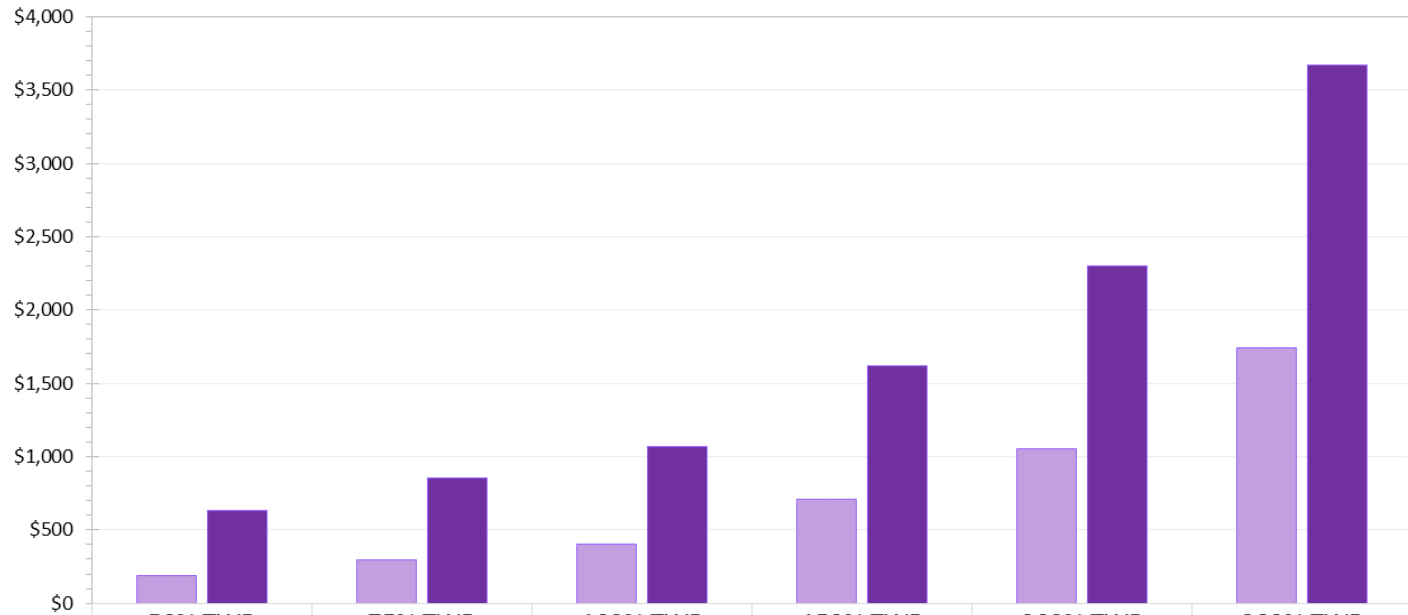
Bi-monthly Avg Usage	50% TWB	75% TWB	100% TWB	150% TWB	200% TWB	300% TWB
	152 hcf	228 hcf	304 hcf	456 hcf	608 hcf	912 hcf
Current Bills	\$187.79	\$295.71	\$403.63	\$705.32	\$1,050.36	\$1,740.44
Proposed Bills	\$404.64	\$513.32	\$622.00	\$948.80	\$1,765.04	\$3,397.52
Impacts	\$216.85	\$217.61	\$218.37	\$243.48	\$714.68	\$1,657.08
% Impacts	115%	74%	54%	35%	68%	95%

# RW Customer Impacts

## 90% Potable Rates Approach

### Reclaimed Water Sample Water Bills

2" meter, Pumping Zone L, ET Zone 3, Landscape Area = 50,000sqft



Bi-monthly Avg Usage	50% TWB	75% TWB	100% TWB	150% TWB	200% TWB	300% TWB
	152 hcf	228 hcf	304 hcf	456 hcf	608 hcf	912 hcf
Current Bills	\$187.79	\$295.71	\$403.63	\$705.32	\$1,050.36	\$1,740.44
Proposed Bills	\$629.60	\$850.76	\$1,071.92	\$1,619.12	\$2,303.12	\$3,671.12
Impacts	\$441.81	\$555.05	\$668.29	\$913.80	\$1,252.76	\$1,930.68
% Impacts	235%	188%	166%	130%	119%	111%

# Conclusions & Staff Recommendations

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# Conclusions & Staff Recommendations

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Proceed with Prop 218 Notice for:

- Sanitation Rates based on cost of service (COS) analysis
  - Residential Rates: Based on household size
  - Commercial Rates: Based on strength factors
- Water Rates based on water budget structure to promote efficiency
  - Gradually increase Bi-Monthly Readiness-to-serve (RTS) charges to recover more fixed costs from FY 2016 to FY 2020
  - Establish water rates based on cost of service analysis to comply with Prop 218 requirements
- RW Rates based on water budget structure to promote efficiency
  - Apply bi-monthly RTS charges to RW to enhance revenue stability
  - Establish water rates based on cost of service analysis to comply with Prop 218 requirements



# Discussion on Penalties and Drought Tools

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# Penalties

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## Why Use Penalties?

### Proposed Penalties:

- Assessed on each unit of water over 200% of budget
  - First Offence - warning
  - Second Offence - \$2.50 per hcf
  - Third or more Offences - \$5.00 per hcf

# Tools to Address Drought Through Water Budget Rate Structure

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1. Reduction in Outdoor Budget through Outdoor Drought Factors
2. Compression of Tiers 3
3. Application of Penalties at Lower Usage (for example penalty assessed on water over 150% of budget)

# Appendices

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BACK-UP SLIDES

# 5-year Water Rates @ Current Structure

	Current	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Revenue Adjustments w/o Pass-through WS		4.5%	4.5%	4.5%	4.5%	4.5%
<b>Bi-Monthly RTS</b>						
3/4"	\$31.73	\$33.16	\$34.66	\$36.22	\$37.85	\$39.56
3/4" x 1"	\$31.73	\$33.16	\$34.66	\$36.22	\$37.85	\$39.56
1"	\$46.72	\$48.83	\$51.03	\$53.33	\$55.73	\$58.24
1 1/2"	\$84.18	\$87.97	\$91.93	\$96.07	\$100.40	\$104.92
2"	\$129.66	\$135.50	\$141.60	\$147.98	\$154.64	\$161.60
2 1/2"	\$248.90	\$260.11	\$271.82	\$284.06	\$296.85	\$310.21
3"	\$248.90	\$260.11	\$271.82	\$284.06	\$296.85	\$310.21
4"	\$384.34	\$401.64	\$419.72	\$438.61	\$458.35	\$478.98
6"	\$758.25	\$792.38	\$828.04	\$865.31	\$904.25	\$944.95
8"	\$1,208.57	\$1,262.96	\$1,319.80	\$1,379.20	\$1,441.27	\$1,506.13
10"	\$1,732.98	\$1,810.97	\$1,892.47	\$1,977.64	\$2,066.64	\$2,159.64

# 5-year Water Rates @ Current Structure

	Current	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
<b>Revenue Adjustments w/o Pass-through WS</b>		4.5%	4.5%	4.5%	4.5%	4.5%
<b>Commodity Charge (\$ / hcf) before Pass-through WS Rates</b>						
Tier 1	\$2.31 /hcf	\$2.42 /hcf	\$2.53 /hcf	\$2.65 /hcf	\$2.77 /hcf	\$2.90 /hcf
Tier 2	\$2.80 /hcf	\$2.93 /hcf	\$3.07 /hcf	\$3.21 /hcf	\$3.36 /hcf	\$3.52 /hcf
Tier 3	\$3.81 /hcf	\$3.99 /hcf	\$4.17 /hcf	\$4.36 /hcf	\$4.56 /hcf	\$4.77 /hcf
Tier 4	\$5.34 /hcf	\$5.59 /hcf	\$5.85 /hcf	\$6.12 /hcf	\$6.40 /hcf	\$6.69 /hcf
Temporary Services	\$8.01 /hcf	\$8.38 /hcf	\$8.76 /hcf	\$9.16 /hcf	\$9.58 /hcf	\$10.02 /hcf
<b>Pass-through WS Rates</b>		\$0.12 /hcf	\$0.25 /hcf	\$0.40 /hcf	\$0.55 /hcf	\$0.73 /hcf

# 5-year Water Rates @ Current Structure

	Current	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Revenue Adjustments w/o Pass-through WS		4.5%	4.5%	4.5%	4.5%	4.5%
<b>Elevation Charge (\$/hcf)</b>						
Zone 1	\$0.00 /hcf	\$0.00 /hcf	\$0.00 /hcf	\$0.00 /hcf	\$0.00 /hcf	\$0.00 /hcf
Zone 2	\$0.42 /hcf	\$0.44 /hcf	\$0.46 /hcf	\$0.49 /hcf	\$0.52 /hcf	\$0.55 /hcf
Zone 3	\$0.74 /hcf	\$0.78 /hcf	\$0.82 /hcf	\$0.86 /hcf	\$0.90 /hcf	\$0.95 /hcf
Zone 4	\$1.28 /hcf	\$1.34 /hcf	\$1.41 /hcf	\$1.48 /hcf	\$1.55 /hcf	\$1.62 /hcf
Zone 5	\$2.55 /hcf	\$2.67 /hcf	\$2.80 /hcf	\$2.93 /hcf	\$3.07 /hcf	\$3.21 /hcf

# Concern for Rates at Current Structure

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The rates shown in the previous slides are not based on cost of service analysis conducted in this Study

- Applying the revenue adjustments across the board on current rates
- Lack of administrative records for the rates and nexus behind the rates

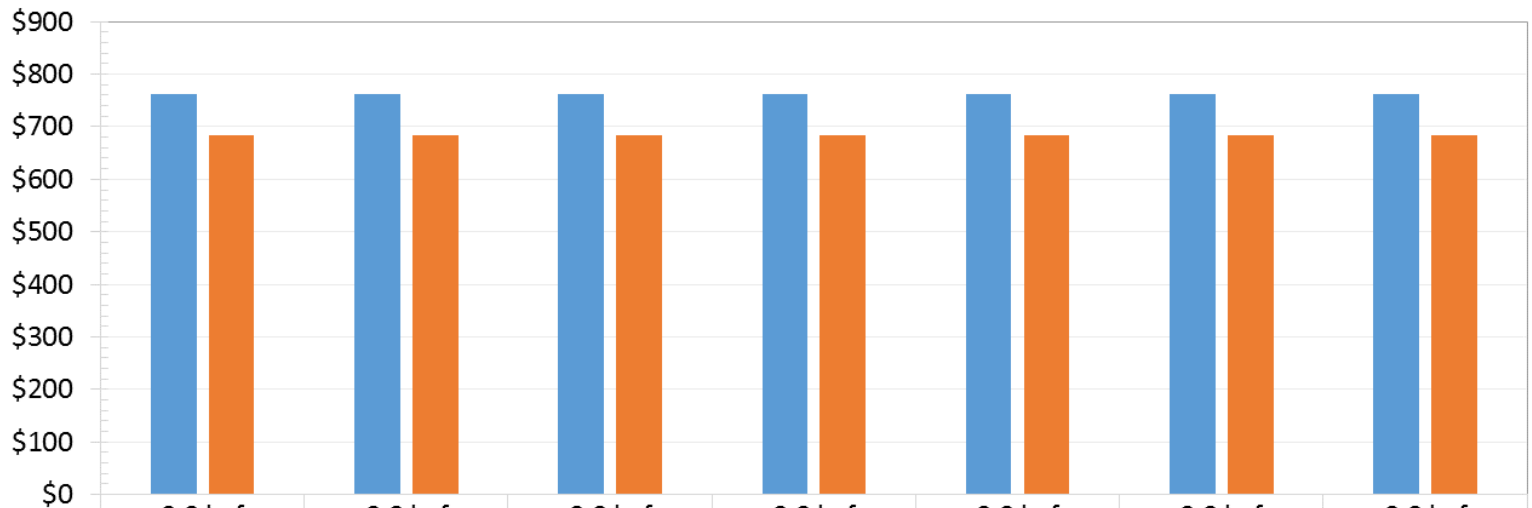


# Sample School Sanitation Bill Impacts

Class 1 with 8 ERUs, 105.6 hcf inclusive in ERU Charge

## Sample Commercial Sanitation Bills at Different Usage Levels

Class 1 with 8 ERUs



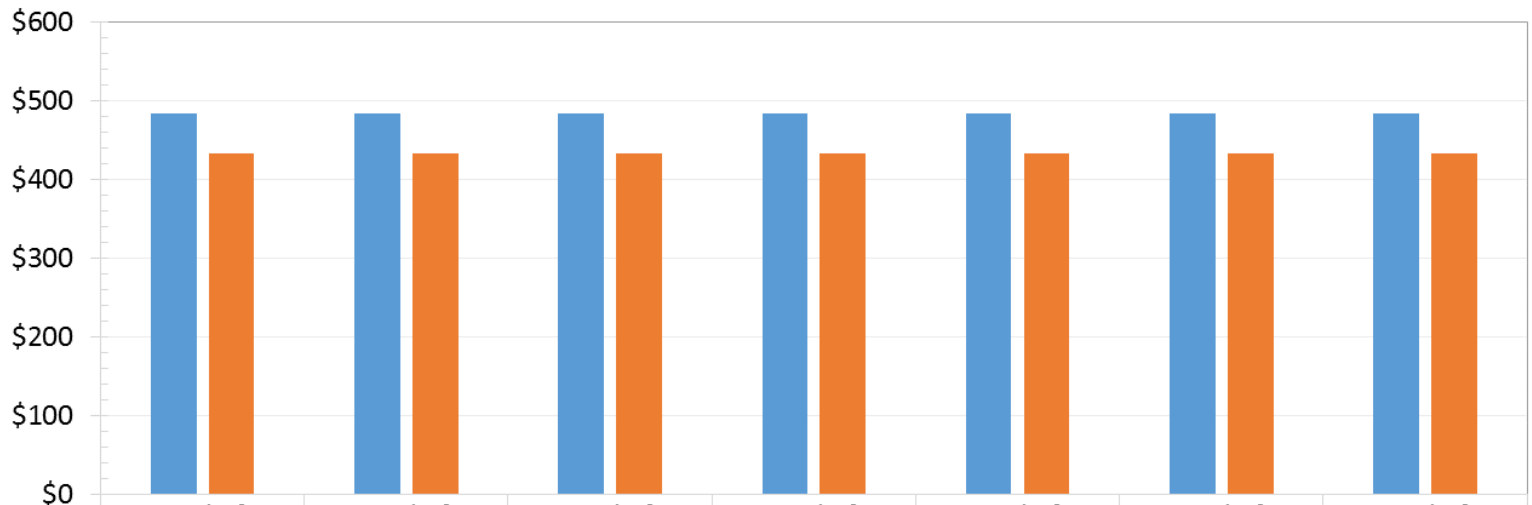
	0.0 hcf	0.0 hcf	0.0 hcf	0.0 hcf	0.0 hcf	0.0 hcf	0.0 hcf
Revised Excess Usage	0.0 hcf	0.0 hcf	0.0 hcf	0.0 hcf	0.0 hcf	0.0 hcf	0.0 hcf
Current Excess Usage	0.0 hcf	0.0 hcf	0.0 hcf	0.0 hcf	0.0 hcf	0.0 hcf	0.0 hcf
Billed Water Usage	10 hcf	12 hcf	15 hcf	25 hcf	30 hcf	35 hcf	50 hcf
<b>FY 2015 Current</b>	\$763	\$763	\$763	\$763	\$763	\$763	\$763
<b>FY 2016 Revised</b>	\$685	\$685	\$685	\$685	\$685	\$685	\$685
<b>FY 2016 Impact</b>	-\$78	-\$78	-\$78	-\$78	-\$78	-\$78	-\$78
<b>FY 2016 % Impact</b>	-110%	-110%	-110%	-110%	-110%	-110%	-110%

# Sample School Sanitation Bill Impacts

Class 1 with 5 ERUs, 66 hcf inclusive in ERU Charge

## Sample Commercial Sanitation Bills at Different Usage Levels

Class 1 with 5 ERUs



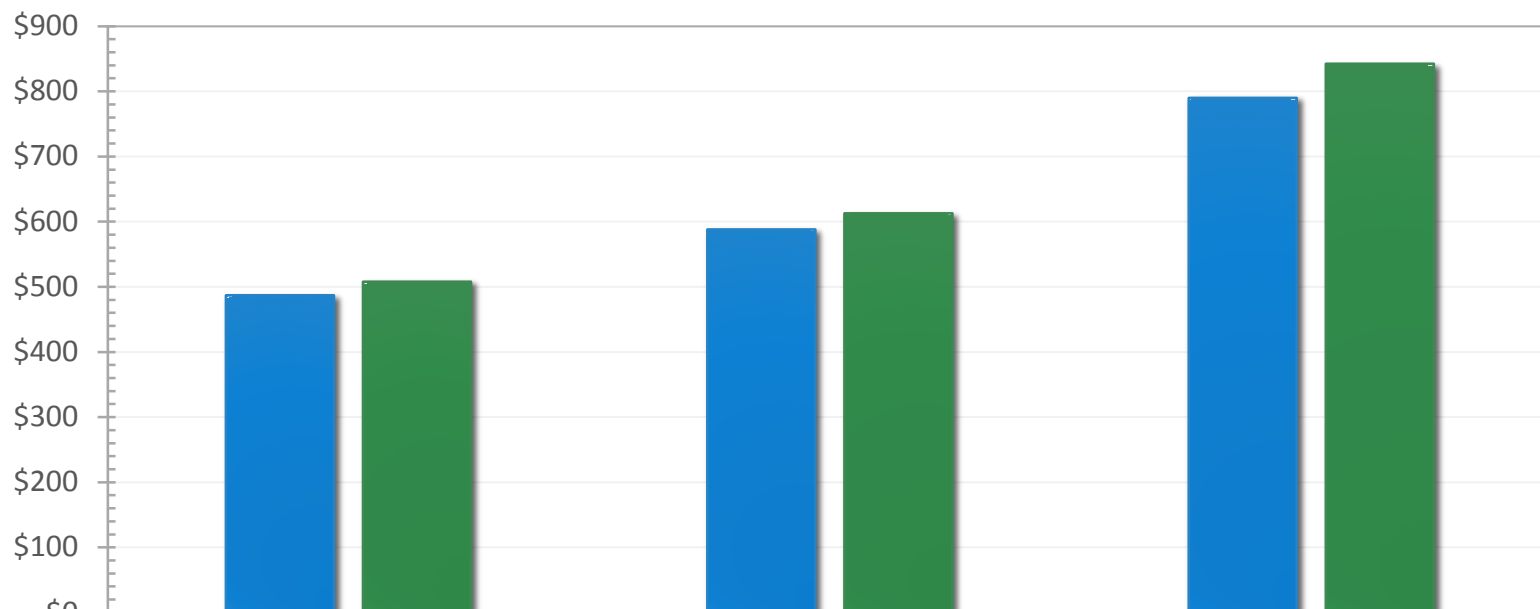
	0.0 hcf	0.0 hcf	0.0 hcf	0.0 hcf	0.0 hcf	0.0 hcf	0.0 hcf
Revised Excess Usage	0.0 hcf	0.0 hcf	0.0 hcf	0.0 hcf	0.0 hcf	0.0 hcf	0.0 hcf
Current Excess Usage	0.0 hcf	0.0 hcf	0.0 hcf	0.0 hcf	0.0 hcf	0.0 hcf	0.0 hcf
Billed Water Usage	10 hcf	12 hcf	15 hcf	25 hcf	30 hcf	35 hcf	50 hcf
<b>FY 2015 Current</b>	\$483	\$483	\$483	\$483	\$483	\$483	\$483
<b>FY 2016 Revised</b>	\$433	\$433	\$433	\$433	\$433	\$433	\$433
<b>FY 2016 Impact</b>	-\$50	-\$50	-\$50	-\$50	-\$50	-\$50	-\$50
<b>FY 2016 % Impact</b>	-110%	-110%	-110%	-110%	-110%	-110%	-110%

# Water + Sanitation Customer Impacts

FY 2016

## MFR Sample Water & Sanitation Bills (FY 2016)

1" meter, ET Zone 3, Pumping Zone 1, Household Size = 2, 5 Dwelling Unit, Landscape Area = 4,000sq ft, TWB = 70 hcf on average bi-monthly bills



	Savor Users (50% TWB)	Efficient Users (100% TWB)	Excessive Users (175% TWB)
Current W+S Bills	\$486.73	\$587.76	\$789.69
Proposed W+S Bills	\$507.54	\$612.49	\$842.14
Impacts	\$20.81	\$24.73	\$52.45
% Impact	4.3%	4.2%	6.6%

# Water + Sanitation Customer Impacts

## Multi-Year for Typical MFR Customer using 70 hcf (100%TWB)

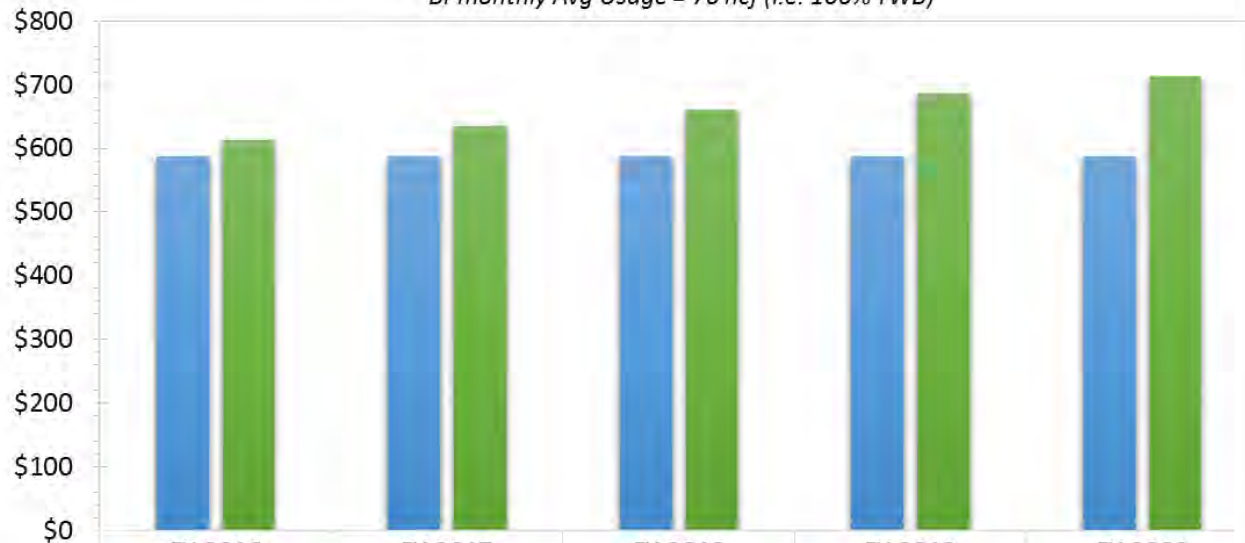
FY 2017 – FY 2020 bills do not include Pass-through W+S costs

### RESIDENTIAL SAMPLE WATER & SANITATION BILLS

(WITHOUT PASSTHROUGH WS FOR FY 2017 - FY 2020)

1" meter, ET Zone 3, Pumping Zone 1, Household Size = 2, 5 Dwelling Unit(s), Landscape Area = 4,000sqft

Bi-monthly Avg Usage = 70 hcf (i.e. 100% TWB)



	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Current W + S Bills	\$587.76	\$587.76	\$587.76	\$587.76	\$587.76
Proposed W + S Bills	\$612.49	\$635.52	\$660.49	\$686.04	\$712.86
Impact	\$24.73	\$47.76	\$72.73	\$98.28	\$125.10
% Impact	4.2%	8.1%	12.4%	16.7%	21.3%

# Water + Sanitation Customer Impacts

## Multi-Year for Typical MFR Customer using 70 hcf (100%TWB)

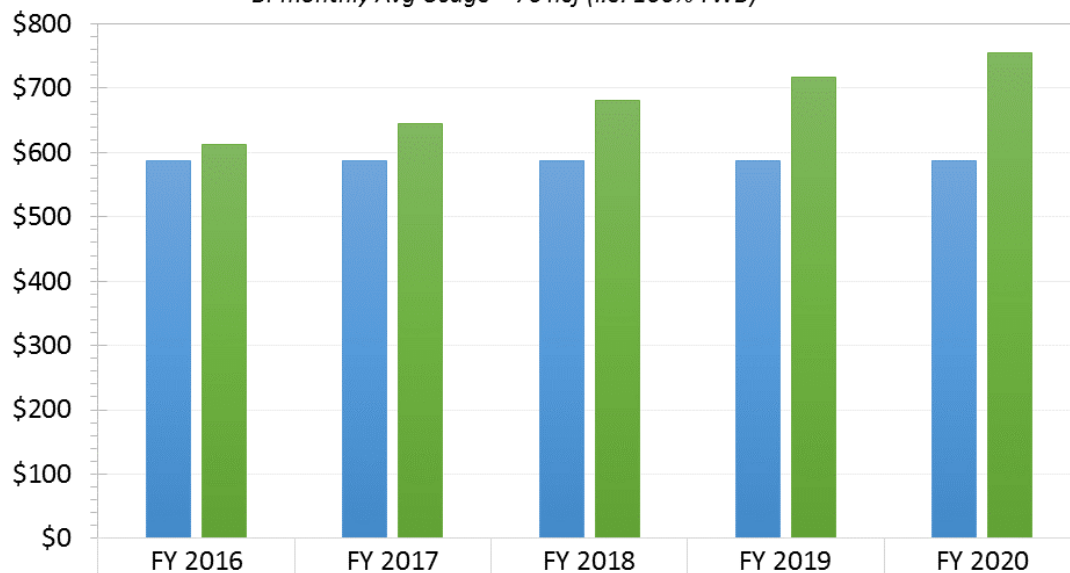
FY 2017 – FY 2020 bills with Estimated Pass-through W+S Costs

### RESIDENTIAL SAMPLE WATER & SANITATION BILLS

(W/ EST. PASSTHROUGH WS)

1" meter, ET Zone 3, Pumping Zone 1, Household Size = 2, 5 Dwelling Unit(s), Landscape Area = 4,000sqft

Bi-monthly Avg Usage = 70 hcf (i.e. 100% TWB)



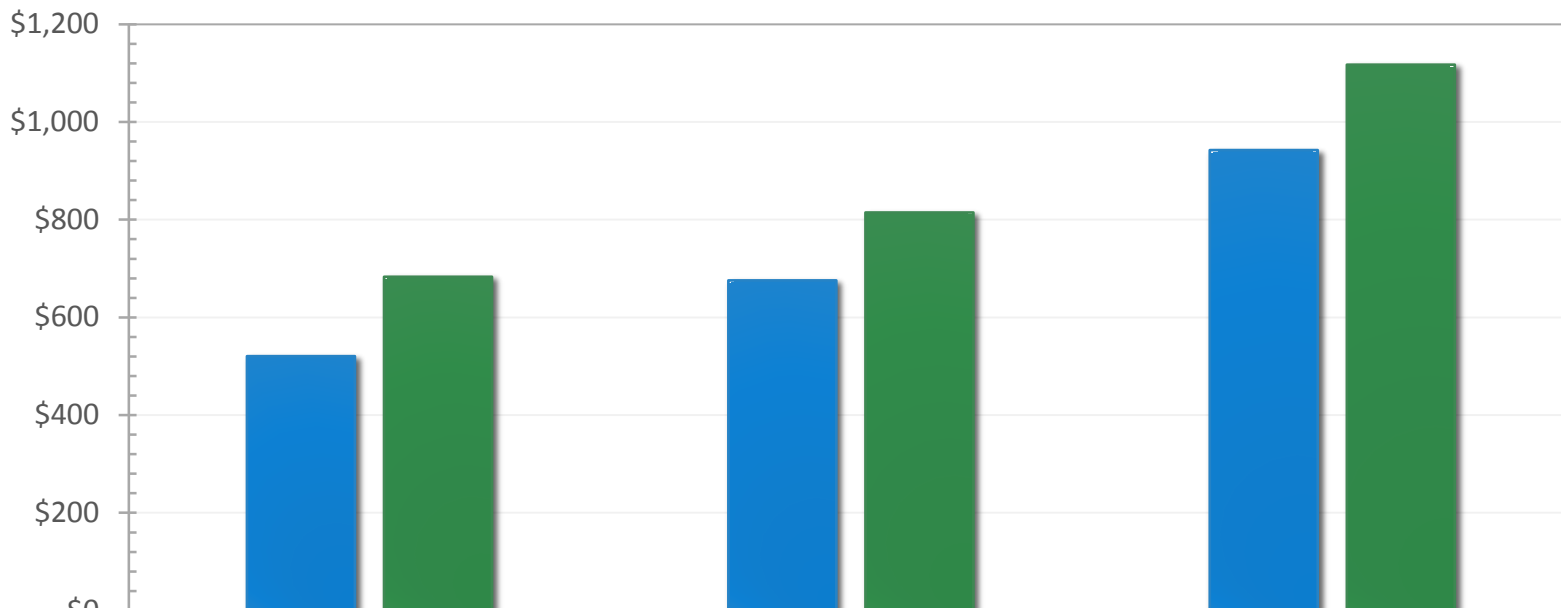
■ Current W + S Bills	\$587.76	\$587.76	\$587.76	\$587.76	\$587.76
■ Proposed W + S Bills	\$612.49	\$644.62	\$680.09	\$716.14	\$755.56
Impact	\$24.73	\$56.86	\$92.33	\$128.38	\$167.80
Impact of Estimated Pass-through WS		\$9.10	\$19.60	\$30.10	\$42.70
% Impact	4.2%	9.7%	15.7%	21.8%	28.5%

# Water + Sanitation Customer Impacts

FY 2016

## MFR Sample Water & Sanitation Bills (FY 2016)

1" meter, ET Zone 3, Pumping Zone 1, Household Size = 3, 5 Dwelling Unit, Landscape Area = 4,000sq ft, TWB = 93 hcf on average bi-monthly bills



	Savor Users (50% TWB)	Efficient Users (100% TWB)	Excessive Users (175% TWB)
Current W+S Bills	\$520.33	\$675.39	\$942.09
Proposed W+S Bills	\$682.80	\$814.37	\$1,116.90
Impacts	\$162.47	\$138.98	\$174.81
% Impact	31.2%	20.6%	18.6%

# Water + Sanitation Customer Impacts

## Multi-Year for Typical MFR Customer using 93 hcf (100%TWB)

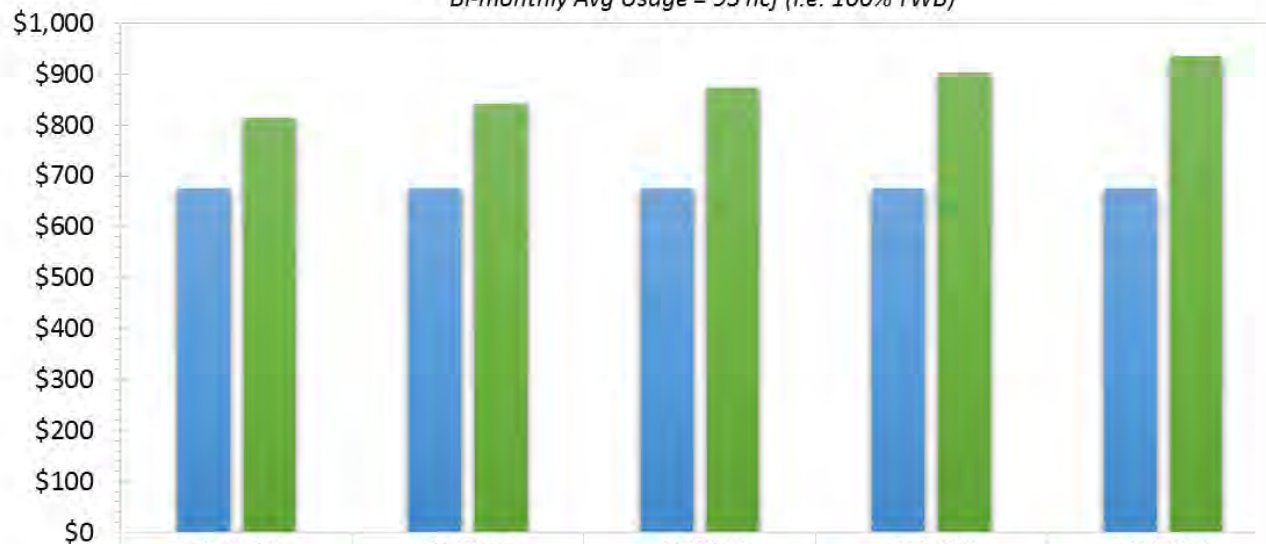
FY 2017 – FY 2020 bills do not include Pass-through W+S costs

### RESIDENTIAL SAMPLE WATER & SANITATION BILLS

(WITHOUT PASSTHROUGH WS FOR FY 2017 - FY 2020)

1" meter, ET Zone 3, Pumping Zone 1, Household Size = 3, 5 Dwelling Unit(s), Landscape Area = 4,000sqft

Bi-monthly Avg Usage = 93 hcf (i.e. 100% TWB)

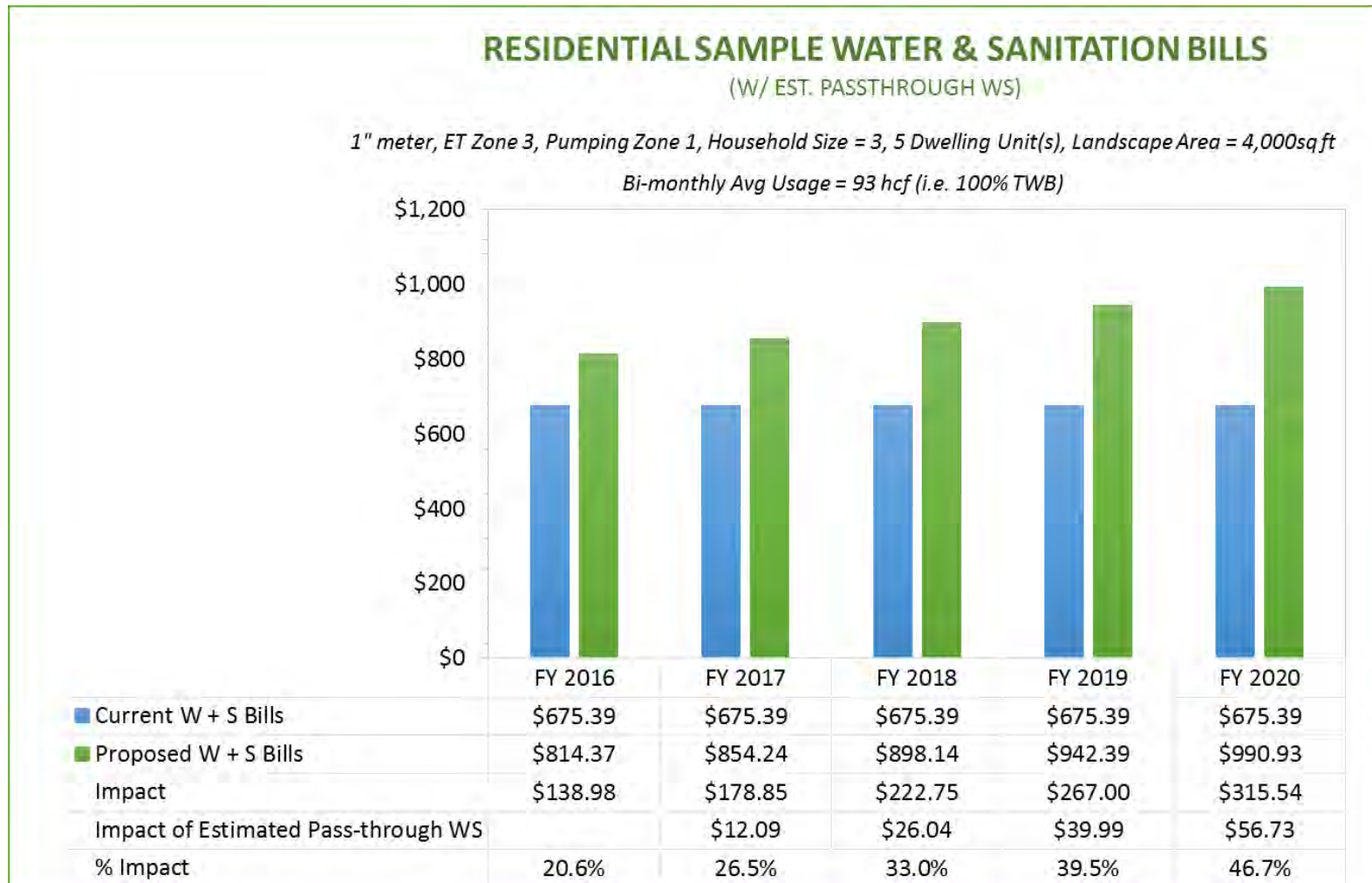


	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Current W + S Bills	\$675.39	\$675.39	\$675.39	\$675.39	\$675.39
Proposed W + S Bills	\$814.37	\$842.15	\$872.10	\$902.40	\$934.20
Impact	\$138.98	\$166.76	\$196.71	\$227.01	\$258.81
% Impact	20.6%	24.7%	29.1%	33.6%	38.3%

# Water + Sanitation Customer Impacts

## Multi-Year for Typical MFR Customer using 93 hcf (100%TWB)

FY 2017 – FY 2020 bills with Estimated Pass-through W+S Costs



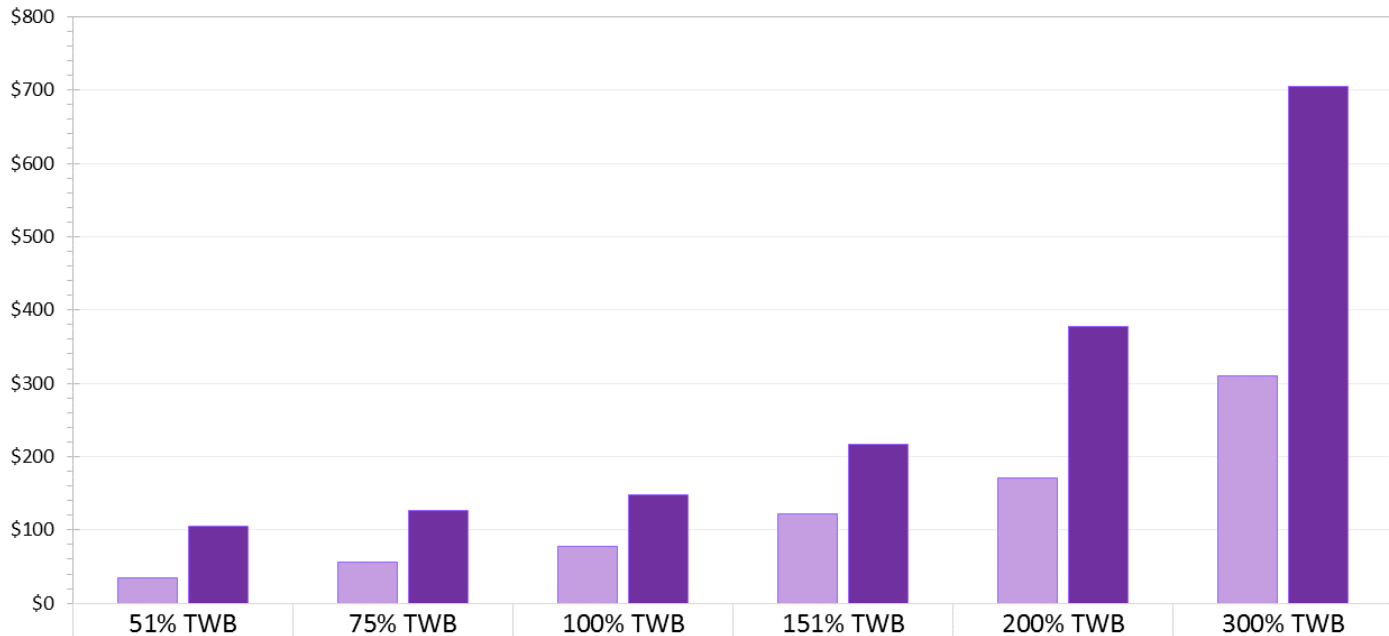


# RW Customer Impacts

## COS Approach

### Reclaimed Water Sample Water Bills

1" meter, Pumping Zone L, ET Zone 3, Landscape Area = 10,000sqft



Bi-monthly Avg Usage

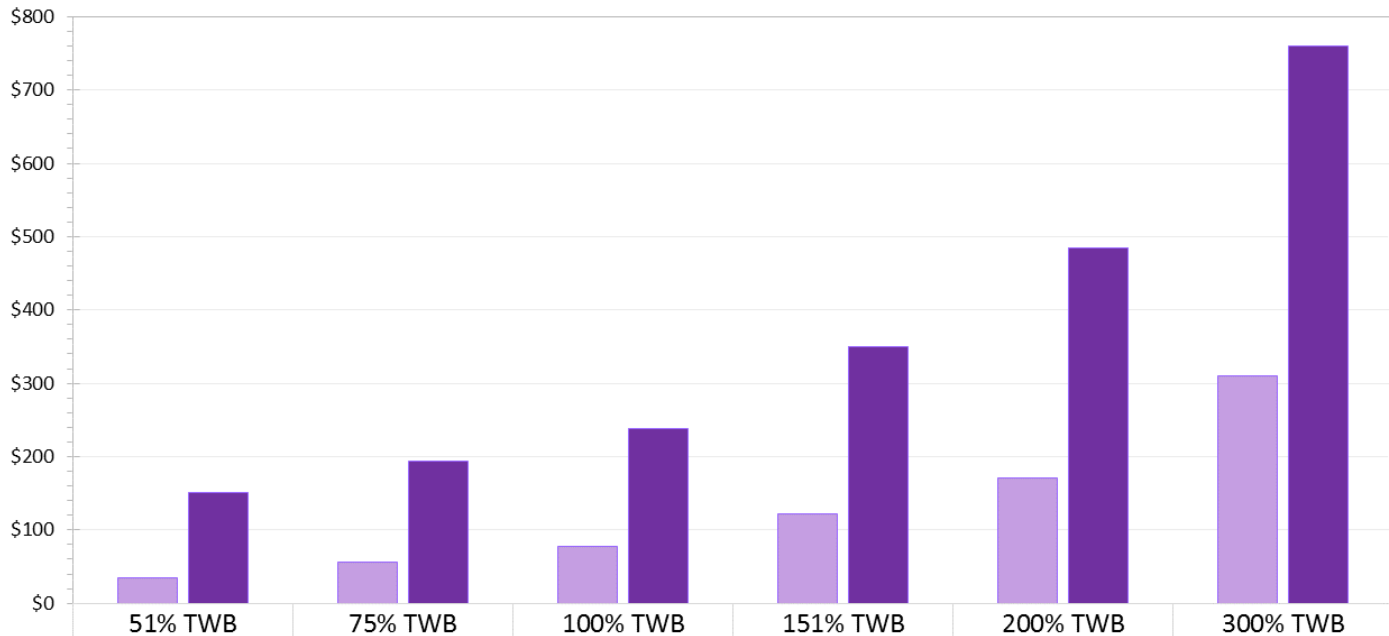
Current Bills	\$35.11	\$56.41	\$77.71	\$121.73	\$171.13	\$309.60
Proposed Bills	\$104.93	\$126.38	\$147.83	\$216.09	\$377.19	\$704.76
Impacts	\$69.82	\$69.97	\$70.12	\$94.36	\$206.06	\$395.16
% Impacts	199%	124%	90%	78%	120%	128%

# RW Customer Impacts

## 90% Potable Rates Approach

### Reclaimed Water Sample Water Bills

1" meter, Pumping Zone L, ET Zone 3, Landscape Area = 10,000sqft

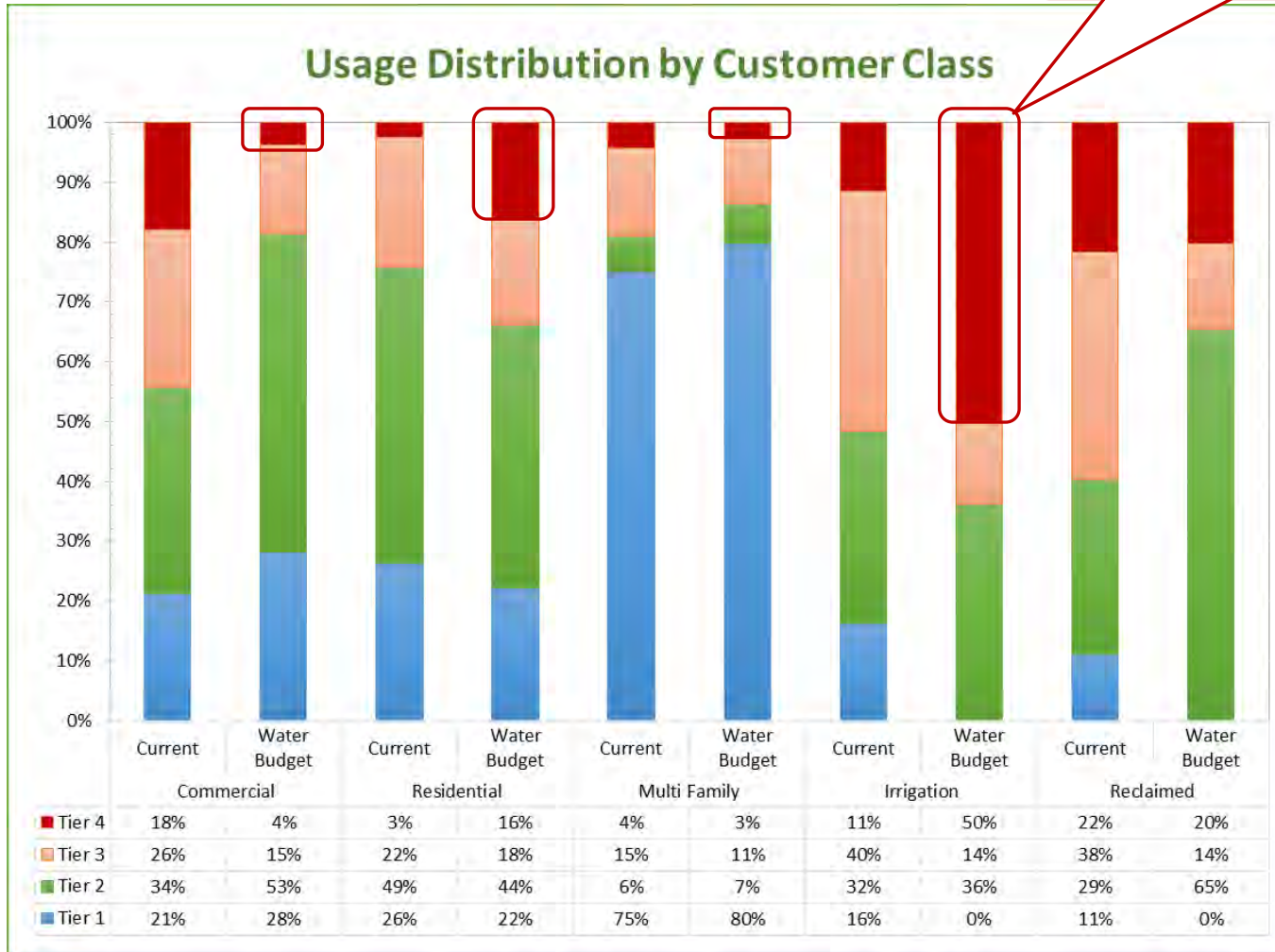


Bi-monthly Avg Usage	51% TWB	75% TWB	100% TWB	151% TWB	200% TWB	300% TWB
Usage (hcf)	31 hcf	46 hcf	61 hcf	92 hcf	122 hcf	183 hcf
Current Bills	\$35.11	\$56.41	\$77.71	\$121.73	\$171.13	\$309.60
Proposed Bills	\$150.81	\$194.46	\$238.11	\$350.16	\$485.16	\$759.66
Impacts	\$115.70	\$138.05	\$160.40	\$228.43	\$314.03	\$450.06
% Impacts	330%	245%	206%	188%	184%	145%

# Usage Analysis

## Excessive Usage as Conservation Targets

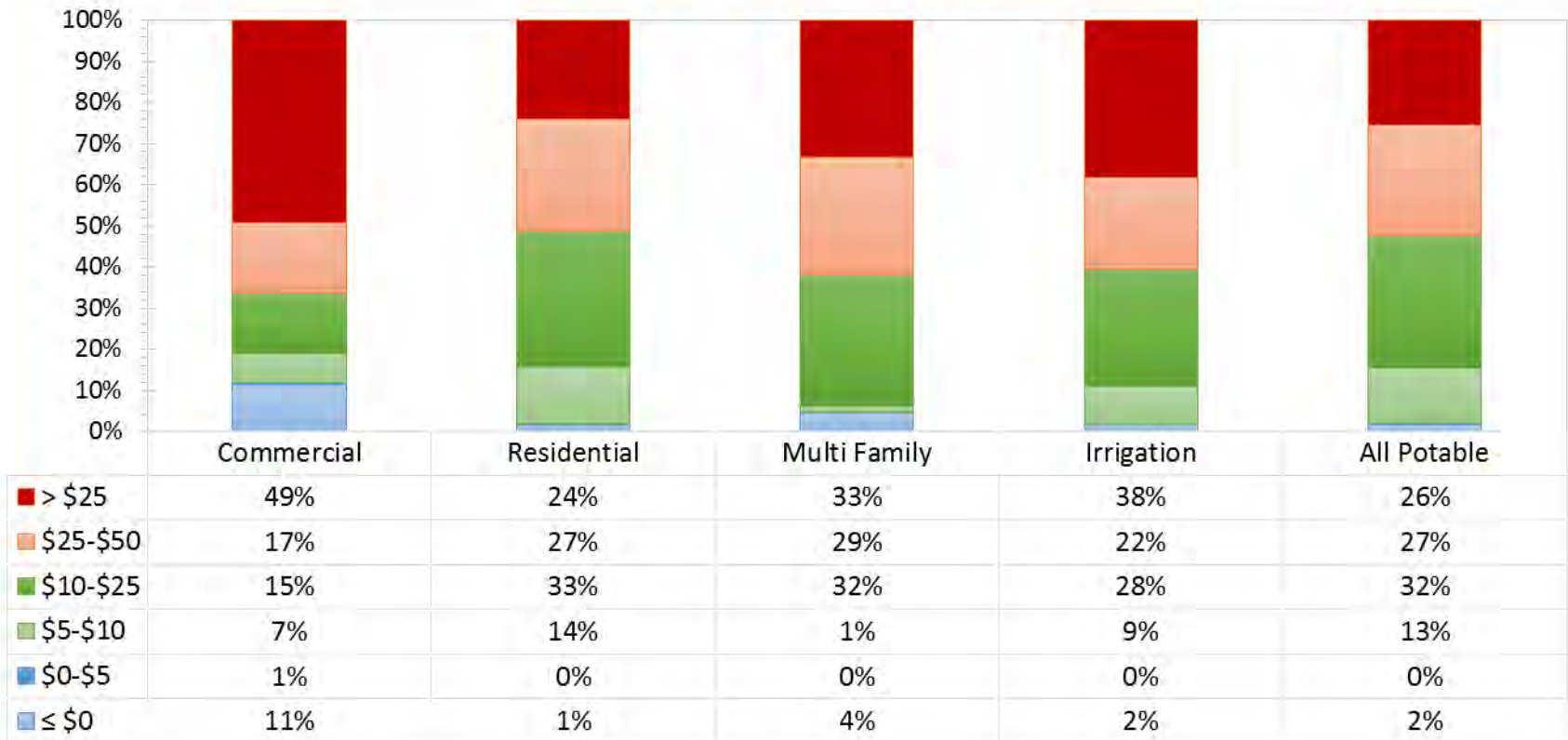
Excessive usage (above 150% of TWB) is the first conservation target



# Water Customer Bill Impacts

## Potable Water Customer Impacts Summary

FY 2014 Usage with 2015 and 2016 Rates



# Defining Efficiency

## Commercial Water Budget (CWB)

Daily CWB = 90% of 3-year rolling daily average for the billing period

- SB x7-7 mandates commercial users to reduce at least 10% of usage

CWB = Daily CWB \* Days of Service for the billing period

3-Yr rolling daily average ( $Avg_x$ )

$$Avg_x = \frac{\sum_{x-2}^x Usage_x}{\sum_{x-2}^x DOS_x}$$

- X = Current Year
- Usage = total usage for each billing period for year X – 2 to year X
- DOS = days of service for each billing period for year X – 2 to year X