

# SCWSD Rate Study Update

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# Background

- “...pipes that were laid post-World War II have an average life span of 75 to 100 years, meaning that many of them are reaching the end of their design life.”
  - 2021 Drinking Water Infrastructure Report Card, American Society of Civil Engineers
- “The implications of the nation’s aging water infrastructure are becoming clear. Between 2012 and 2018, the rate of water main breaks increased by 27 percent, reaching an estimated 250,000 to 300,000 per year.”
  - The Economic Benefits of Investing Water Infrastructure: How a failure to act would affect the US Economic Recovery, American Society of Civil Engineers (2020)
- “Despite the growing need for water infrastructure, the federal government’s share of capital and O&M investment has fallen from 31 percent in 1977 to a mere four percent in 2017.
- “Costs incurred by US households due to water and wastewater failures would be seven times higher in 20 years than they are today.”

# Background

- Projected 2021 “Billing” Revenues:

Total	Per Water Tap EQ	Per Tap EQ/Month
<hr/> \$1,245,230	<hr/> \$2,200	<hr/> \$183.34

- Projected 2021 Expenditures less “Other” Income:

Total	Per Water Tap EQ	Per Tap EQ/Month
<hr/> \$1,699,979	<hr/> \$3,004	<hr/> \$250

- Projected 2021 Change in (Capital) Reserves:

Total	Per water Tap EQ	Per Tap EQ/Month
\$ (454,749)	\$ (803)	\$ (67)

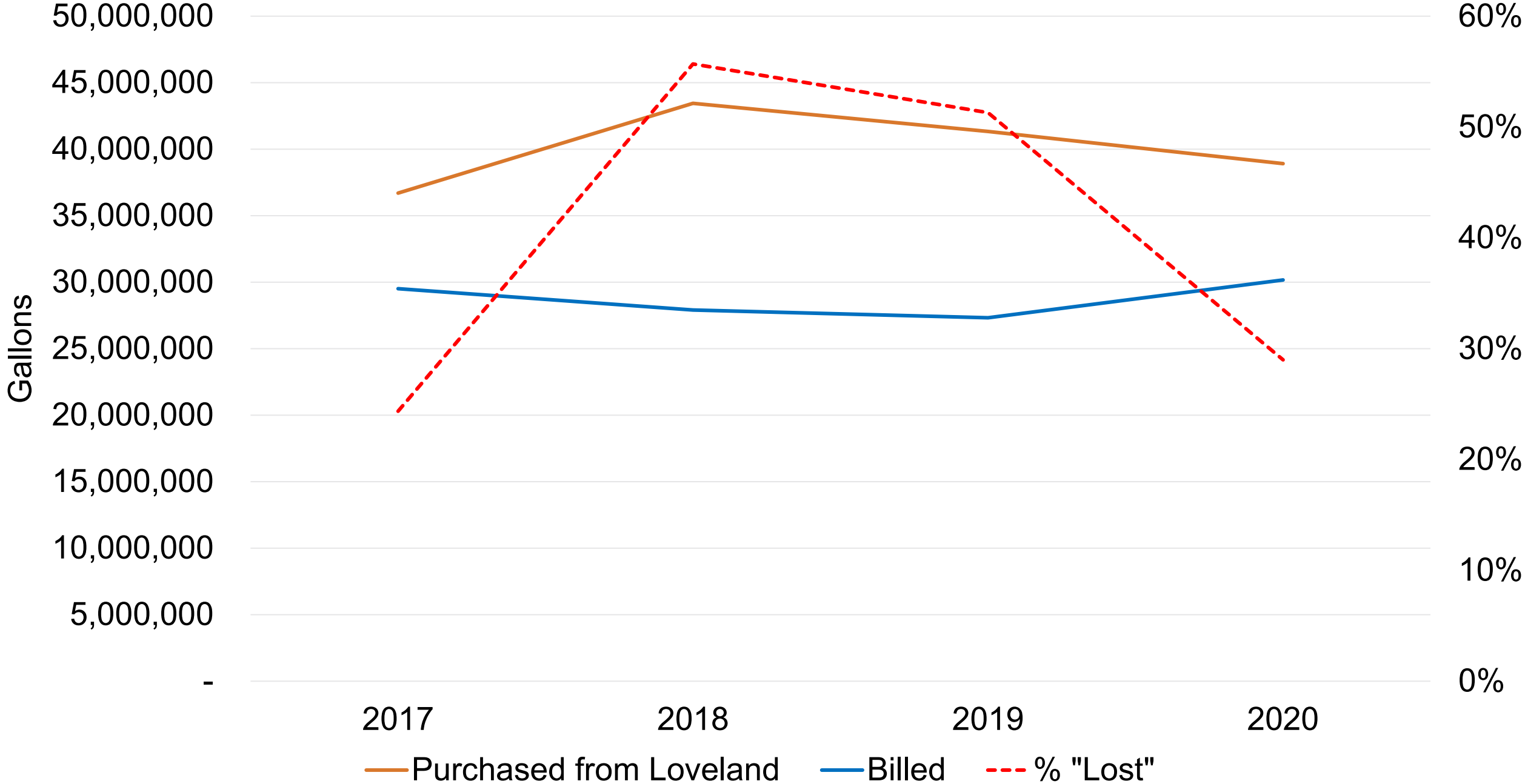
# Study Objectives

- 1) Develop a “Model” that will
  - i. calculate alternative rate schedules that recover costs,
  - ii. allow the Board to easily adjust rates in a manner that will allow them to maintain desired reserve levels, and
  - iii. enable the Board to answer the question: “What impact would project X have on rates?”
- 2) Collect feedback from existing customers
- 3) Summarize model results and customer
  - Important: This is not a cost of services study.
  - Important: This study focuses on monthly billing charges.

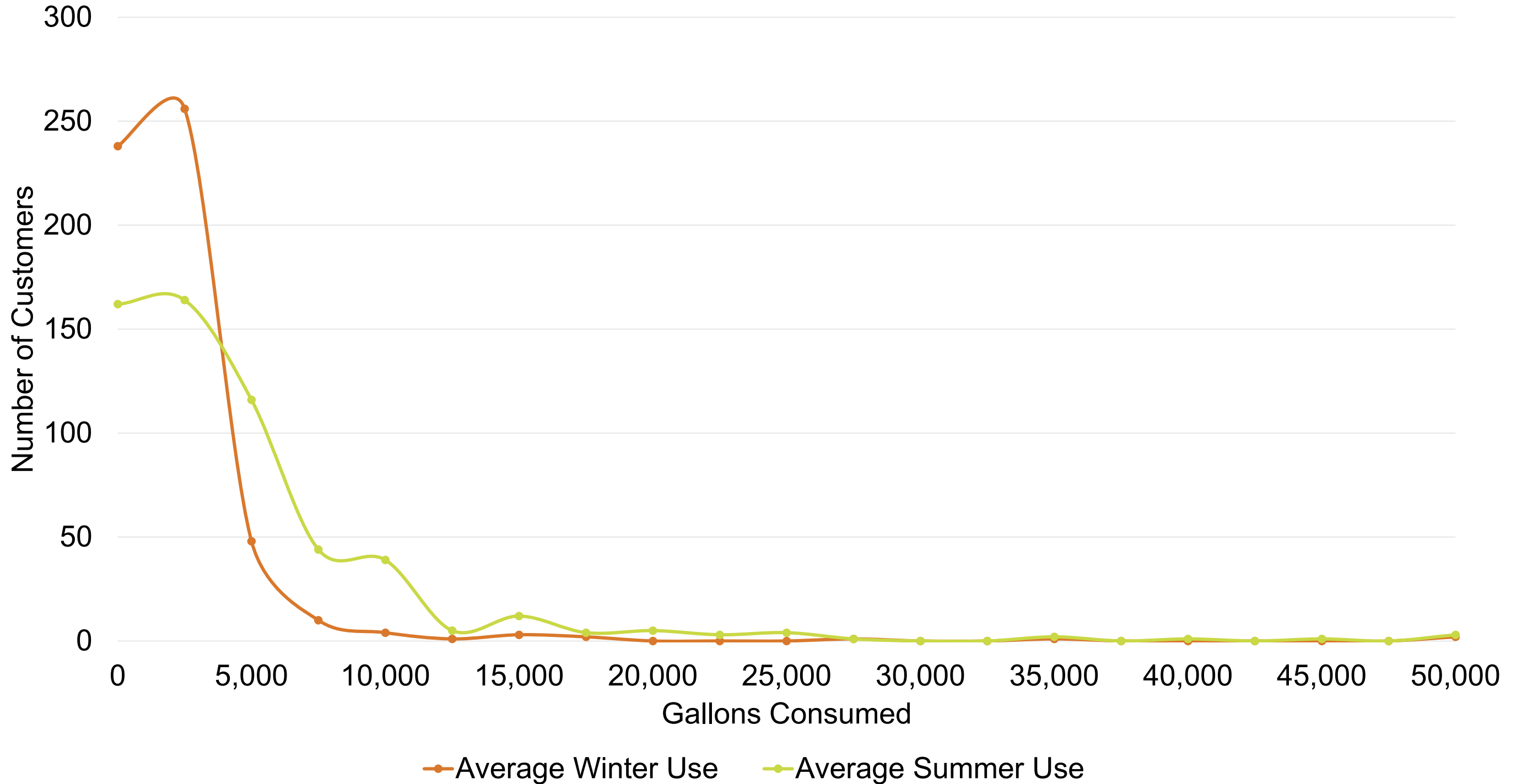
# 2021 Rates and Projected Revenues

Current Rates	
Water Use	
P1	\$4.58
P2	\$8.95
P2	\$21.43
Monthly Minimum	\$59.69
CIP Surcharge	\$30.00
Sewer Use	
Monthly Minimum	\$76.70
Other Revenues	NA

# Annual System Water Use



# Distribution of Customers by Monthly Use: Average Winter versus Average Summer Use



# Breaking Down Projected 2022 Costs

Name	Service	Description	Draft Projected 2022	
Operating			Total	Percent of Total
Water Sales	Water	Costs associated with the purchase of water from FCLWD	\$146,773.00	9%
		All other operating costs associated with water		

## Recommendation

**Begin tracking costs in these categories or something similar.**



# Model Overview

- How fixed charges are calculated:

Total Category Costs/# of Tap Equivalents

- How variable water charges are calculated:
  1. Adjusted FCLWD Treatment Cost + estimated block price
  2. + block prices to recover operating costs:
    - Assume block width
    - Assume ratio of block prices
    - Solve for price(s) that equate total category costs to revenue generated given simulated demands.

# Options- part 1

					Water Use Scenario
Loveland Treatment Cost (per TH G)					Medium
	3.26				
					Block Width Option
System Loss Adjustment					2
	40%				Block Price Option
					2
Adjusted FCL Rate	4.55				
Total Annual Billed (gallons)	30,173,474				
	Water	Sewer			
Number of Equivalentents	566	379			
	Water	Sewer			
Share of Operating in Variable Charge	0.2	0			
Admin Cost Split (% of Admin for Water)					
	0.69235088				

# Options- part 2

- Type of rate structure
  - Constant Marginal Price versus Increasing Block Rate
- Block width and block price ratios

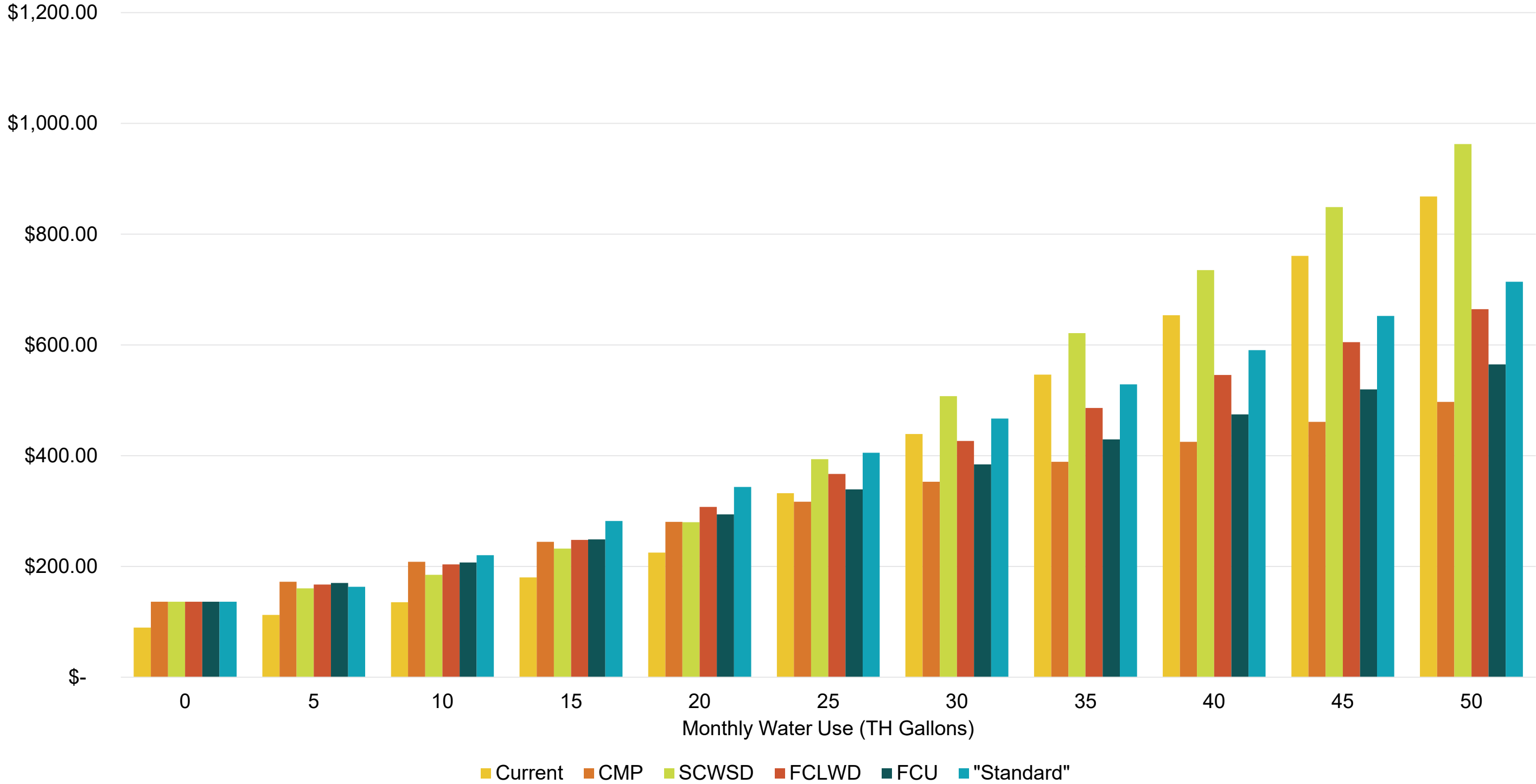
Block Widths (upper bound)					
	CMP	Current SCWSD	FCLWD	FCU	"Typical"
B1	NA	10,000	8,000	7,000	4,000
B2	NA	20,000	15,000	13,000	6,000
B3	NA	Unlimited	Unlimited	Unlimited	Unlimited

Block Pricing Ratios (% change relative to P1)					
	CMP	Current SCWSD	FCLWD	FCU	Moderate
P2	NA	0.95	0.42	0.15	0.5
P3	NA	3.68	0.91	0.33	1.5

# Results

		Current	Curr Draft 2022	CMP	Scenario Name	FCLWD	FCU	"Standard"
Water	Monthly Minimum	\$59.69						
	CIP Surcharge	\$30.00						
	P1	\$4.58						
	P2	\$8.95						
	P3	\$21.43						
	B1	10,000						
	B2	20,000						
Sewer	Monthly Minimum	\$76.70						
	CIP Surcharge	\$0						

# Projected Monthly Bill by Rate Structure (Water Use Only)



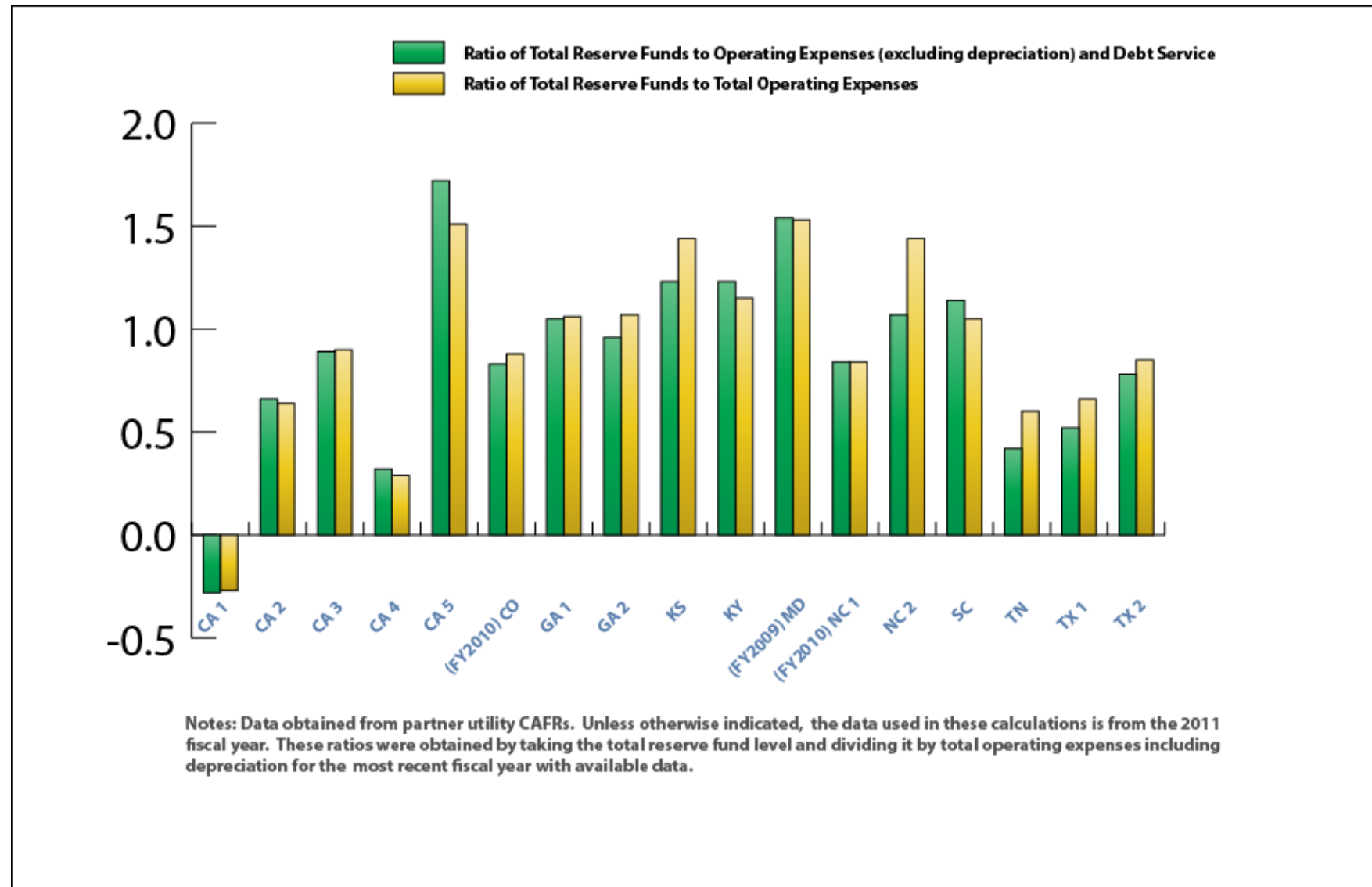
# Rate Recommendations

- Continue to set all non-water use and non-sewer use charges to recover costs and revisit every 1-2 years.
- Continue to keep sewer as a monthly fixed charge.
- Consider creating alternative customer classes and charging rates based on cost of each individual class.
  - But wait until we have identified classes and more consistent billing records.
- (for now) Stick with a rate structure that generates revenues primarily through fixed/base charges given uncertainty in how demand will respond to price increases.
  - Reconsider once we have more consistent water use data.

# Reserve Funds

Quick Aside

# Reserve Requirements



Source: [More on Reserve Funds: How Much is Too Much?](#) (Royster, 2013)



# Current Reserve Levels

	<b>2020 End of Year</b>	<b>2021 Adopted Budget</b>
Total Reserve Ratio	1.23	.82

# Comments?