



City of Merced  
2018 Water Rate Study

# Proposed Rate Plan

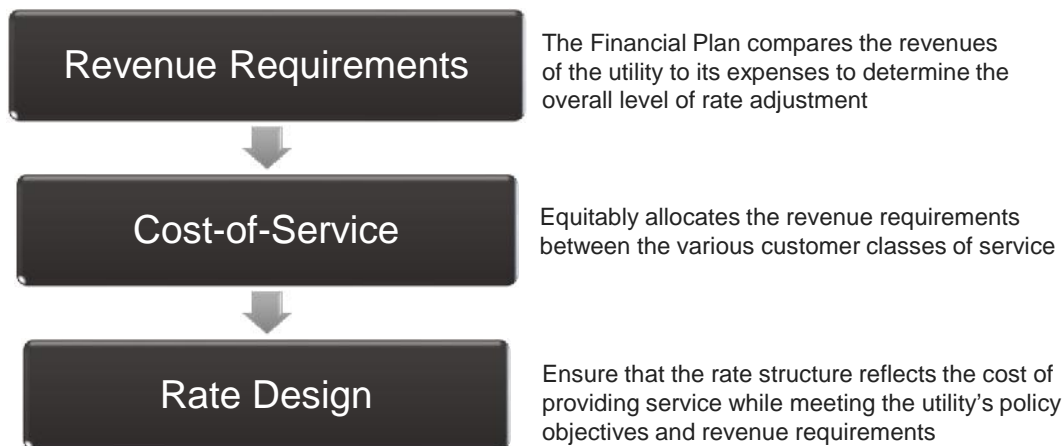
July 16, 2018



## Agenda

1. Financial Plan Results
2. Cost of Service & Rate Design Recommendations
3. Miscellaneous Rates
4. Capital Facility Charges
5. Next Steps

## The Rate Setting Process

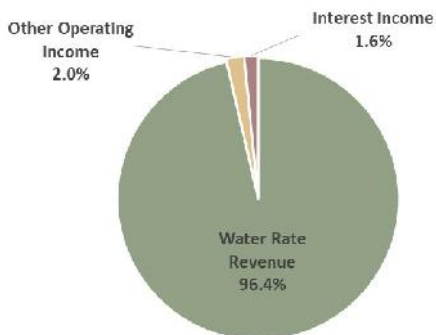


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## FY2019 Budget

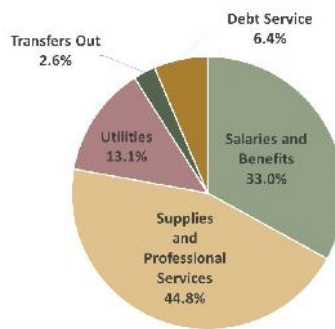
### Revenue

Water Rate Revenue	\$ 12,362,400
Other Operating Income	\$ 259,769
Interest Income	\$ 200,727
<b>Total:</b>	<b>\$ 12,822,896</b>



### Operating Expenses

Salaries and Benefits	\$ 3,853,147
Supplies and Professional Services	\$ 5,235,624
Utilities	\$ 1,535,206
Transfers Out	\$ 308,562
Debt Service	\$ 744,851
<b>Total:</b>	<b>\$ 11,677,388</b>



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## Reserve Policies

- 1. Operating Reserve**  
< 6 month of operating budget
- 2. Capital Improvement Reserve**  
\$5M ~ equal to value of vulnerable assets

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## Financial Planning Assumptions

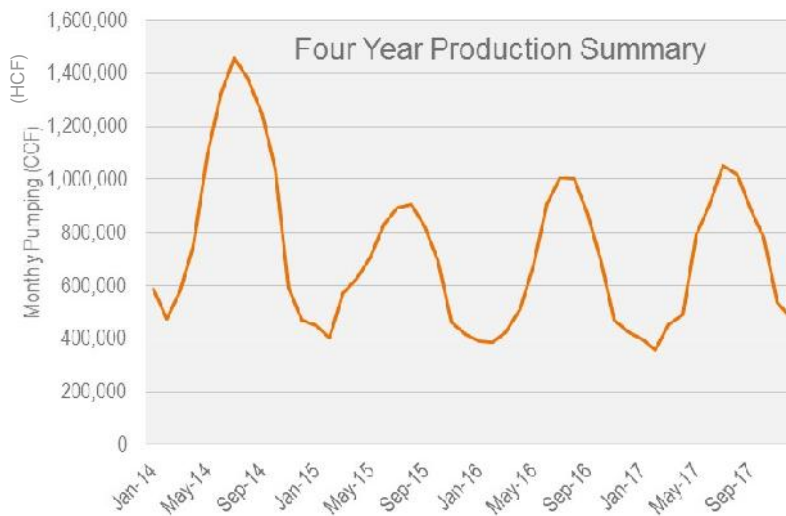
**Growth = 1%**

**Cost Inflation (5-Year Average)**

- Salaries = 1.9%
- Benefits = 5.5%
- All other categories = 3.0%

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## Historical Water Usage

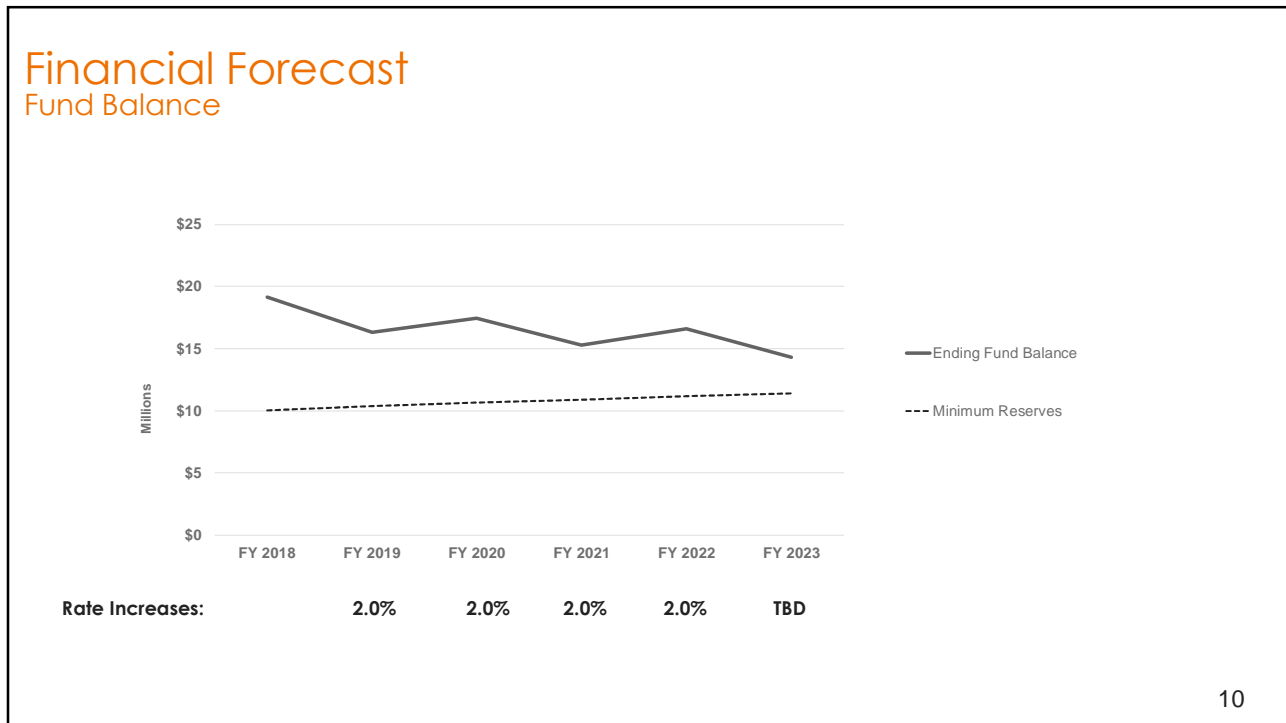
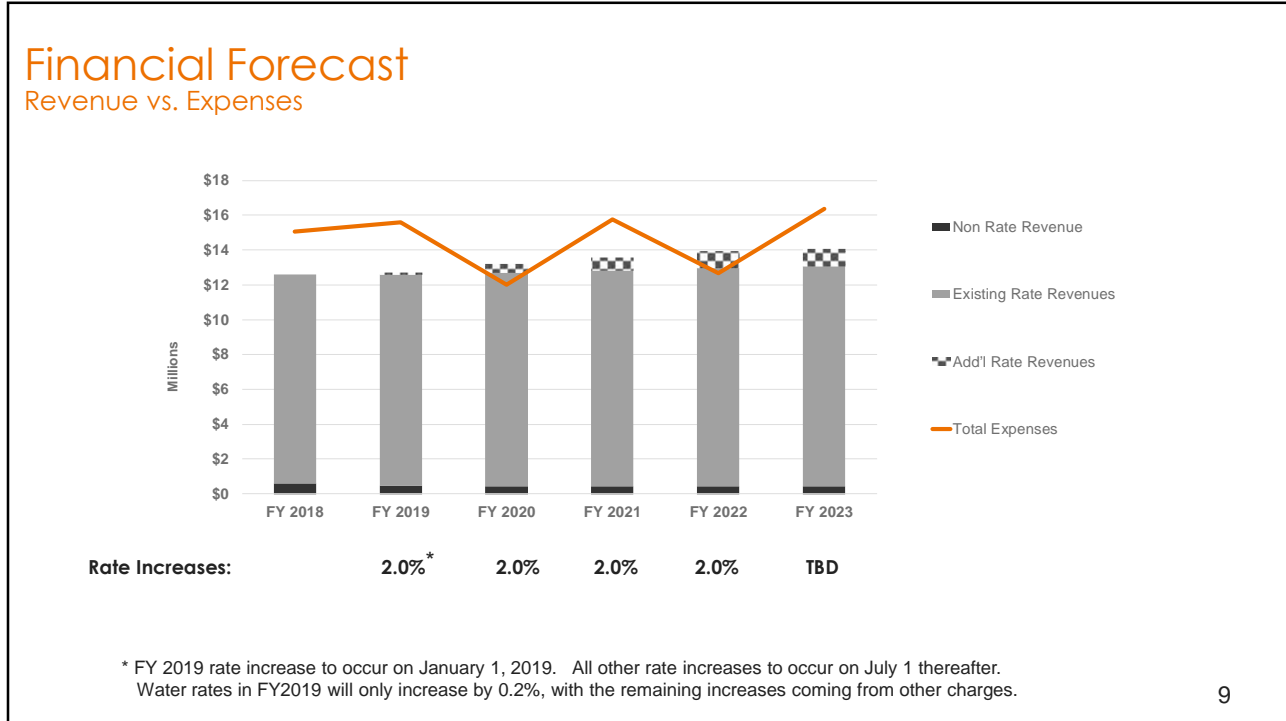


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## Capital Spending Forecast



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Water Rate Study

# Cost of Service & Rate Design



## System Background

**Customers:** 23,196 Accounts

- 19,906 "Residential"
- 1,584 Apartments (multifamily)
- 1,140 Commercial
- 134 Public
- 432 Irrigation

**Source:** Groundwater Wells

**Treatment:** Wellhead Treatment

## Customer Classes

“Retail” Customers (all customers)

+ Outside City Customers

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## Current Rate Design

**Base Monthly Charge:**

- Based on meter size
- Includes water allocation (30 to 50 HCF)

**Volumetric Rate (metered water):**

- Uniform rate

(No customer classes)

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## Rate Design Considerations

#1 - Cost basis (Prop 218 compliance)

**And...**

- A. Equitability
- B. Revenue Stability
- C. Affordability
- D. Conservation Signal
- E. Simplicity

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## Rate Design Elements

1. Fixed revenue vs. variable revenue
  - Allocation of peaking costs to Base Charge or Volumetric Charge
2. Water Allocation (Water included in the Base Monthly Charge)
  - Examined 30 HCF, 20 HCF, and 10 HCF
3. Meter Equivalency Schedule
  - (see next page)

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# Rate Design Elements

## Meter Equivalency

### Meter Equivalency Schedule

Meter Size	Existing Ratio	Meter Equivalence (1)
3/4"	1.0	1.0
1"	1.0	1.0
1 1/2"	1.4	2.0
2"	1.9	3.2
3"	2.2	6.4
4"	2.6	10.0
6"	3.1	20.0
8"	4.4	32.0
10"	5.7	48.0
12"	7.1	67.5

(1) Source: AWWA M1 Manual, 6th Ed.

### Water Allocation

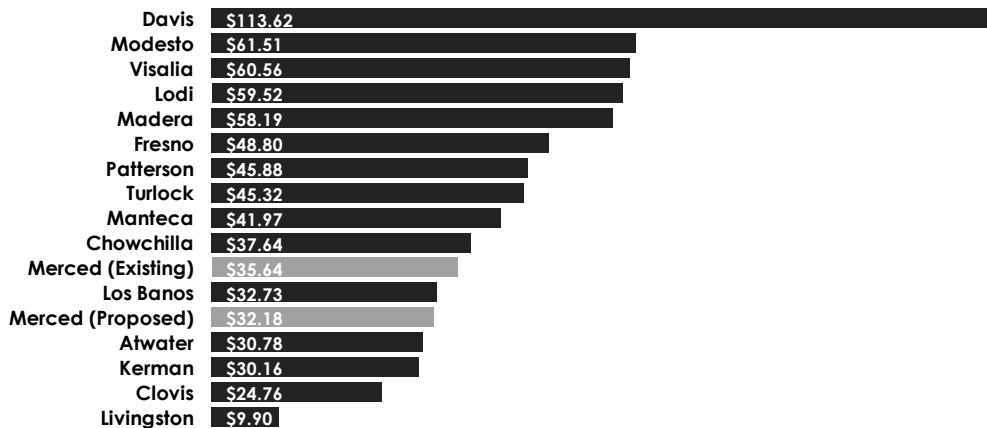
Current (HCF)	Proposed (HCF)
30	20
30	20
40	40
50	64
50	128
50	200
50	400
50	640
50	960
50	1,350

# Proposed Rates

	Current	Proposed
<b>Water Allocation:</b> (3/4" meter)	30 HCF	20 HCF
	<b>Volumetric Rate</b> (per HCF)	
	\$0.89	\$0.74
	<b>Meter Size Base Monthly Charge</b>	
3/4"	\$34.24	\$30.70
1"	\$35.64	\$30.70
1 1/2"	\$47.52	\$60.94
2"	\$65.50	\$97.22
3"	\$76.13	\$193.97
4"	\$89.81	\$302.82
6"	\$104.99	\$605.17
8"	\$150.58	\$967.99
10"	\$196.12	\$1,451.75
12"	\$241.42	\$2,041.33
<b>3/4" Meter Bills (examples)</b>		
22 HCF usage:	\$34.24	\$32.18
44 HCF usage:	\$46.70	\$48.46
<b>Fixed Revenue:</b>	77.1%	78.7%

## Rate Survey

Monthly Residential Water Bill at 22 CCF (with 1" meters)



## Example Bill for Larger Customers

### Customer #1

Meter Size: 3"

Water Usage: 6,840 HCF

	Current	Proposed
Base Monthly Charge:	\$76.13	\$193.94
Water Allocation:	50 HCF	128 HCF
Volumetric Charge:	\$6,043	\$4,966
<b>Total Bill:</b>	<b>\$6,119</b>	<b>\$5,160</b>

### Customer #2

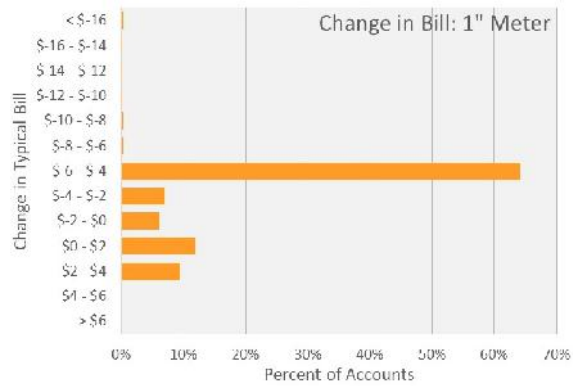
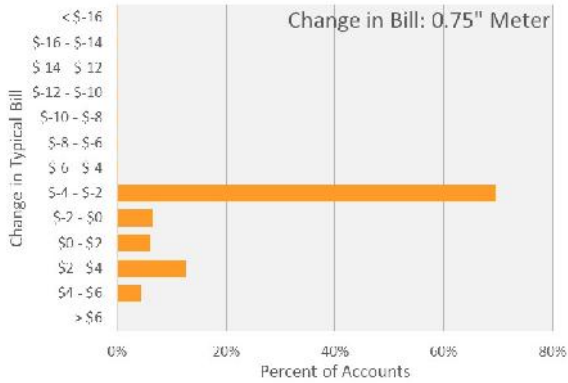
Meter Size: 4"

Water Usage: 241 HCF

	Current	Proposed
Base Monthly Charge:	\$89.81	\$302.82
Water Allocation:	50 HCF	200 HCF
Volumetric Charge:	\$170	\$302
<b>Total Bill:</b>	<b>\$260</b>	<b>\$333</b>

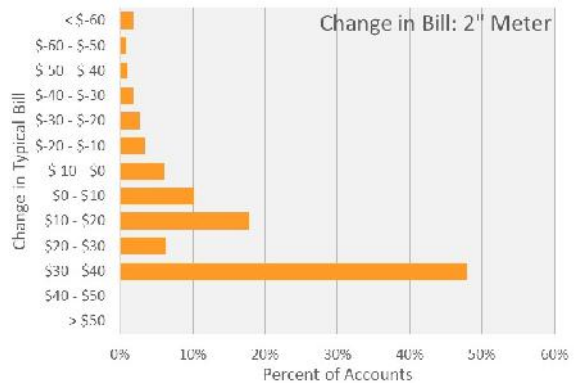
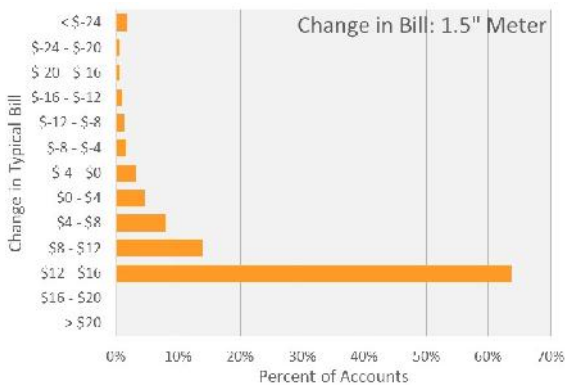
## Bill Impact Analysis

73.9% of customers will see a decrease in their bill



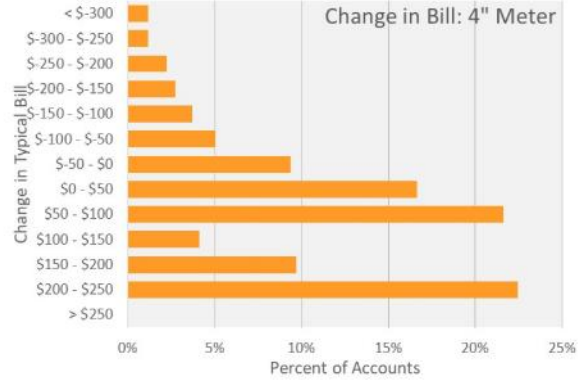
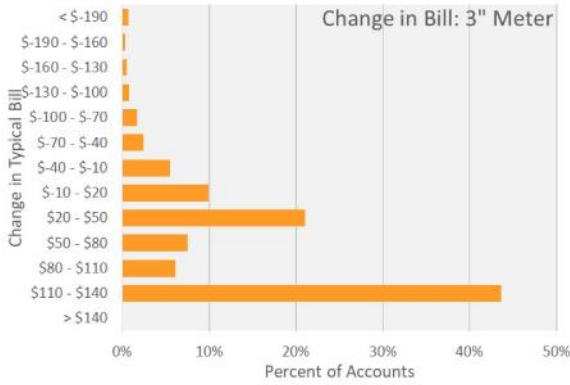
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## Bill Impact Analysis



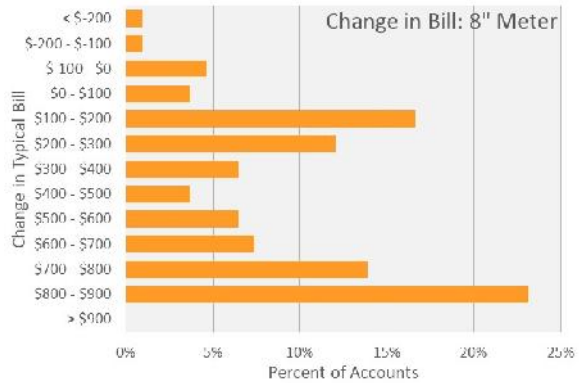
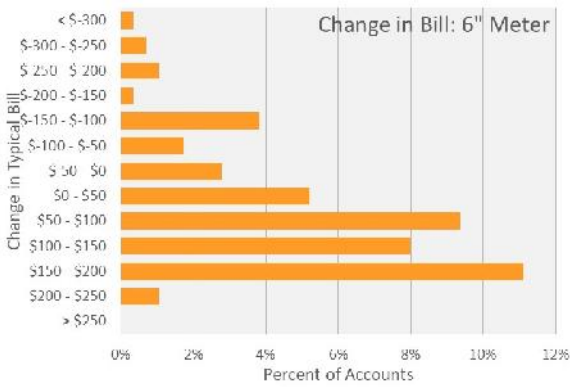
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## Bill Impact Analysis



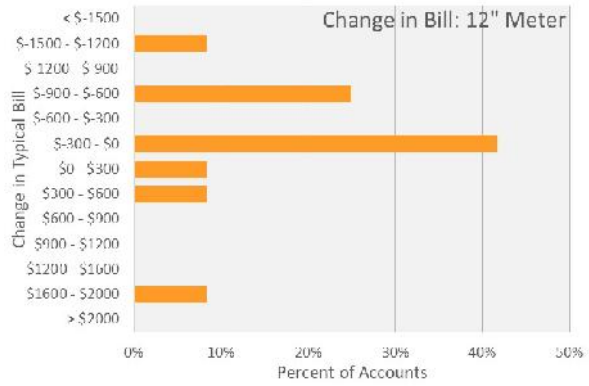
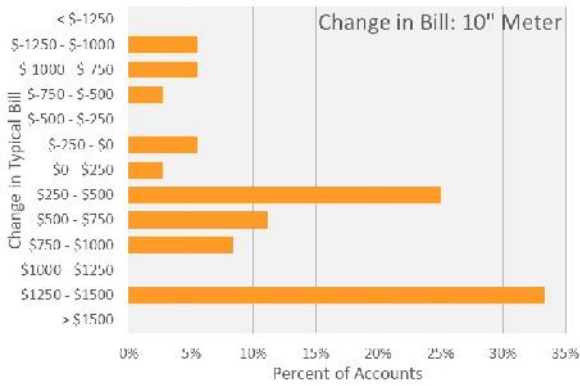
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## Bill Impact Analysis (Scenario 1)

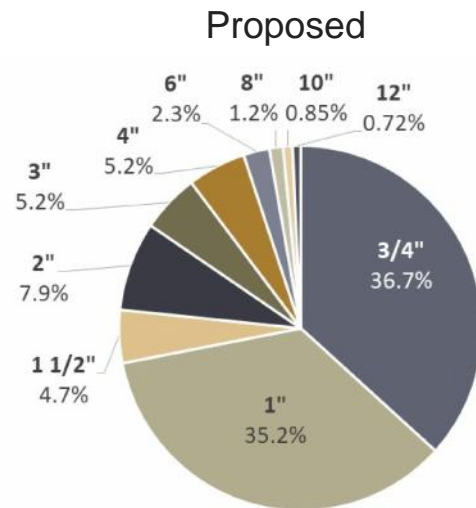
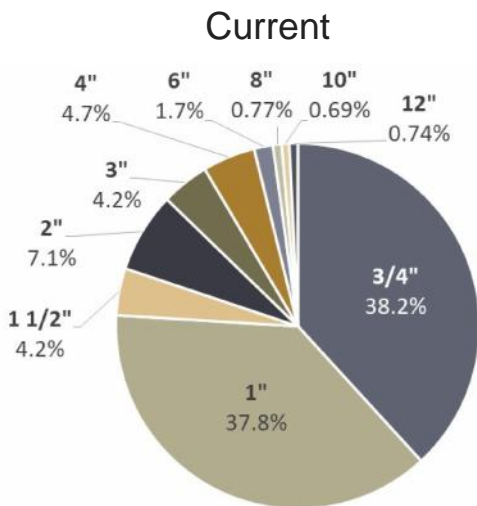


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### Bill Impact Analysis (Scenario 1)



### Revenue by Meter Size



## Drought Surcharge

- Rate schedule to be implemented in the event of a Stage 3 drought (as declared by City Council)
- Assume a 20% reduction in water usage

	Current	Proposed	With Surcharge
	<b>VOLUMETRIC RATE</b>		
	\$0.89	\$0.74	<b>\$0.99</b>
	<b>BASE MONTHLY CHARGE</b>		
<b>Meter Size</b>			
¾"	\$34.24	\$30.70	<b>\$31.40</b>
1"	\$35.64	\$30.70	<b>\$31.40</b>
1 ½"	\$47.52	\$60.94	<b>\$62.33</b>
2"	\$65.50	\$97.22	<b>\$99.45</b>
3"	\$76.13	\$193.97	<b>\$198.43</b>
4"	\$89.81	\$302.82	<b>\$309.78</b>
6"	\$104.99	\$605.17	<b>\$619.09</b>
8"	\$150.58	\$967.99	<b>\$990.26</b>
10"	\$196.12	\$1,451.75	<b>\$1,485.16</b>
12"	\$241.42	\$2,041.33	<b>\$2,088.31</b>
<b>¾" Meter Bills (examples)</b>			
22 HCF:	\$34.24	\$32.18	<b>\$33.38</b>
44 HCF:	\$46.70	\$48.46	<b>\$55.16</b>

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## Outside Customer Charge

### Utility-Basis Approach\*

- Quantifies the risk factors associated with delivering services to customer outside City boundaries
- Based on an acceptable rate of return based on the weighted cost of capital (3.5%)
- Fiscal impact: \$60,000

Meter Size	Monthly Charge
¾"	\$5.51
1"	\$5.51
1 ½"	\$11.03
2"	\$17.64
3"	\$35.28
4"	\$55.13
6"	\$110.25
8"	\$176.40

\* As outline by AWWA's M1 Manual

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## Backflow Program

**Total Program Costs:**

- ✓ Labor: \$234K
- ✓ Vehicle depreciation: \$16K

**Total number of units:** 2,383

**Proposed Monthly Charge:** \$8.75

**Current Monthly Charge:** \$5.00

Increase: 75%

Fiscal impact : \$120,000

## Private Fire

Current Revenue: \$86,400  
 Proposed Revenue: \$124,100

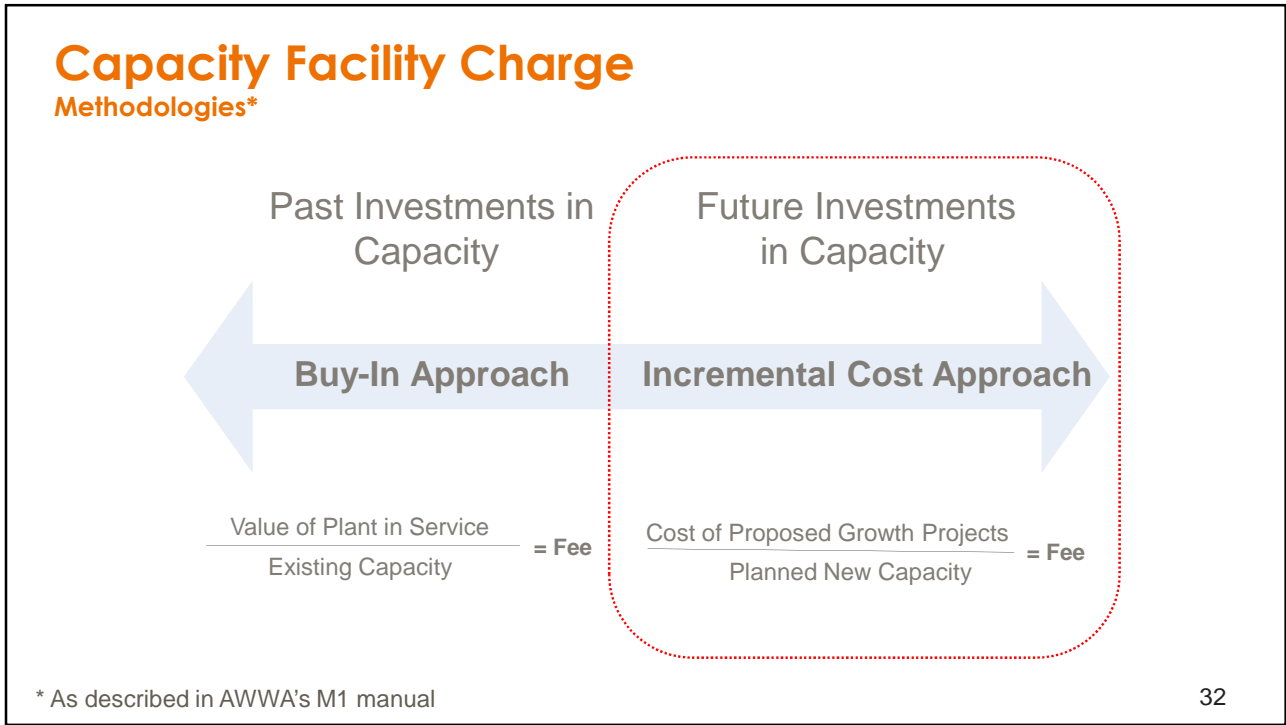
Size of Connection	Demand Factor <sup>(1)</sup>	Proposed Monthly Charge	Current Monthly Charge	Number of Accounts
2"	6.19	\$1.36	na	0
3"	17.98	\$3.96	na	0
4"	38.32	\$8.44	\$17.54	48
6"	111.31	\$24.53	\$20.47	95
8"	237.21	\$52.28	\$29.24	104
10"	426.58	\$94.01	\$38.01	11
12"	689.04	\$151.85	\$60.66	2
Fire Hydrant	68.91	\$15.19	\$19.83	

<sup>(1)</sup> Based on AWWA's practice of estimating the relative flow through pressure conduits as the diameter raised to power of 2.63.

**Major Assumption:** Assumes that system is sized to handle two simultaneous fire events at 1,500 gpm for 2 hours in the same pressure zone

Water Rate Study

# Capacity Charge Topics





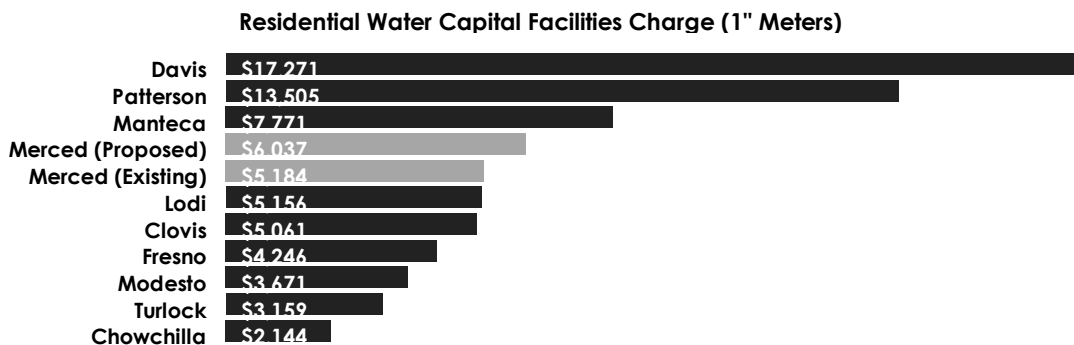
## Capital Facility Charges Proposed


Meter Sizes	Current Scaling Factors	Current Capital Facilities Charge	AWWA Scaling Factor <sup>1</sup>	Proposed Capital Facilities Charge	Percent Increase
1"	1.0	\$5,184	1.0	\$6,037	16.5%
1.5"	2.0	\$10,368	2.0	\$12,074	16.5%
2"	3.2	\$16,588	3.2	\$19,318	16.5%
3"	6.4	\$33,178	6.4	\$38,637	16.5%
4"	10.0	\$51,841	10.0	\$60,370	16.5%
6"	20.0	\$103,681	20.0	\$120,740	16.5%
8"	32.0	\$165,892	32.0	\$193,184	16.5%
10"	50.0	\$259,205	84.0	\$507,108	95.6%
12"	(na)	(na)	106.0	\$639,922	(na)

<sup>1</sup> Source: Table VII.2-5, AWWA M1 Principles of Water Rates, Fees, and Charges (indexed to a minimum meter size of 1-inch)

**Private Fire Connection Charge** - Accounts with fire flow requirements that are higher than the basic requirement (1,500 gpm for 2 hours) will be charged proportionately higher in increments of 1" Meter charges.

## Capital Facility Charge Survey





**NEXT STEPS**

- Direct staff to issue Prop 218 Notice
- Public Hearing

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