



City of Merced
2018 Water Rate Study

Proposed Rate Plan

August 20, 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

Revenue Requirements

The Financial Plan compares the revenues of the utility to its expenses to determine the overall level of rate adjustment



Cost-of-Service

Equitably allocates the revenue requirements between the various customer classes of service



Rate Design

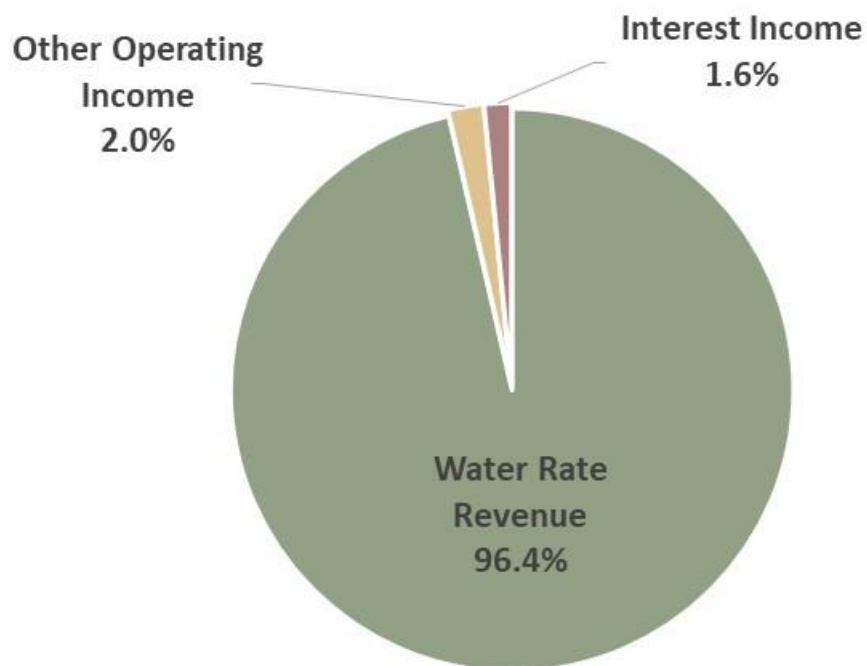
Ensure that the rate structure reflects the cost of providing service while meeting the utility's policy objectives and revenue requirements

FY2019 Budget

Revenue

Water Rate Revenue	\$ 12,362,400
Other Operating Income	\$ 259,769
Interest Income	\$ 200,727

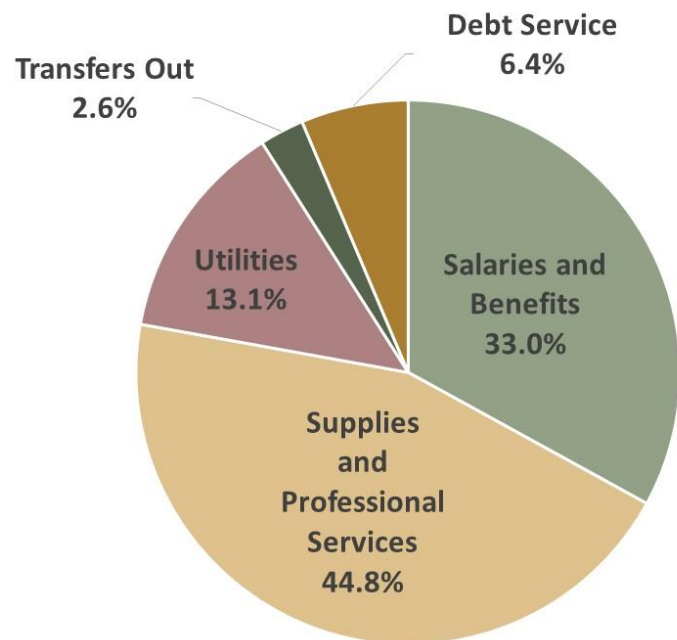
Total: \$ 12,822,896



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

Total: \$ 11,677,388



Reserve Policies

- 1. Operating Reserve**

< 6 month of operating budget

- 2. Capital Improvement Reserve**

\$5M ~ equal to value of vulnerable assets

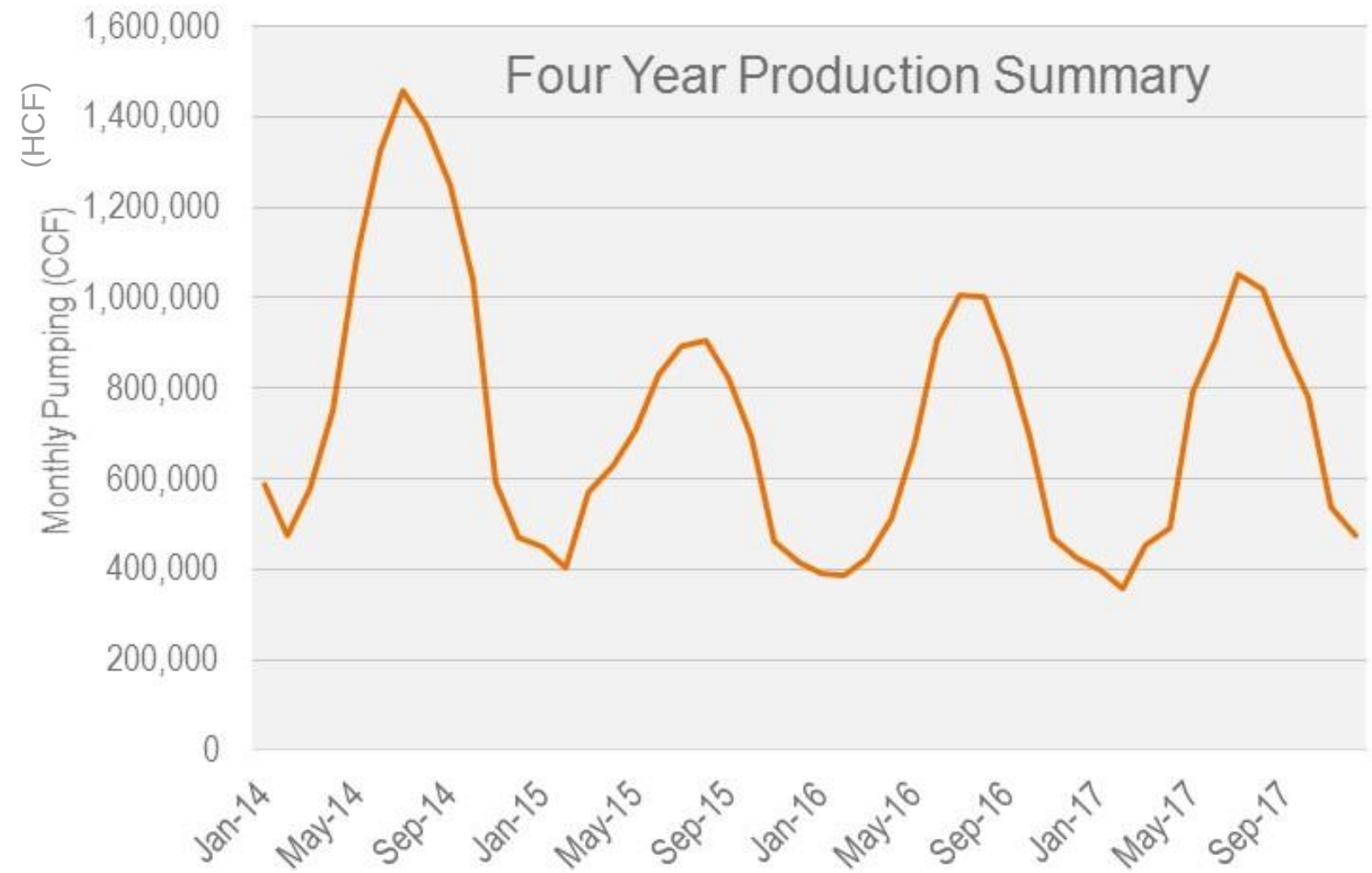
Financial Planning Assumptions

Growth = 1%

Cost Inflation (5-Year Average)

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

Historical Water Usage

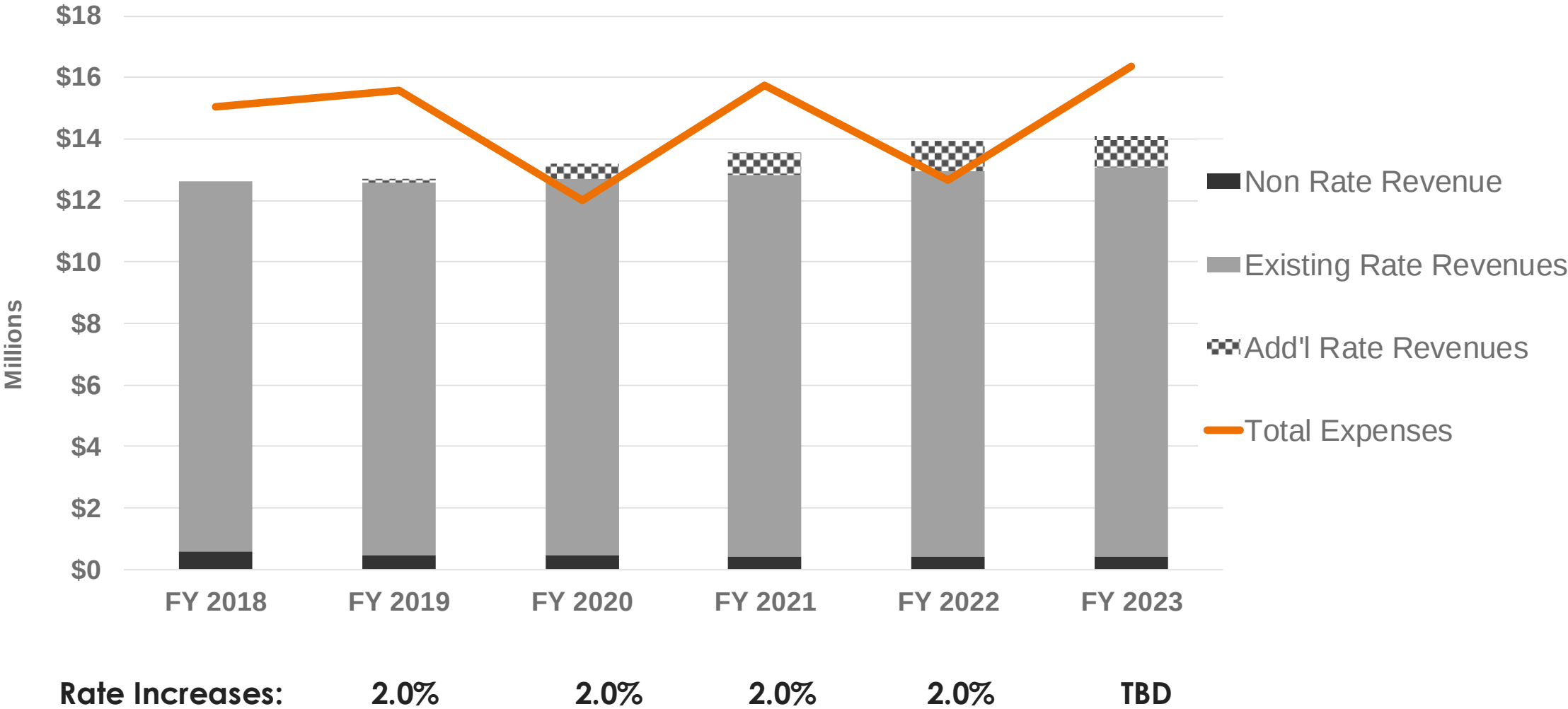


Capital Spending Forecast



Financial Forecast

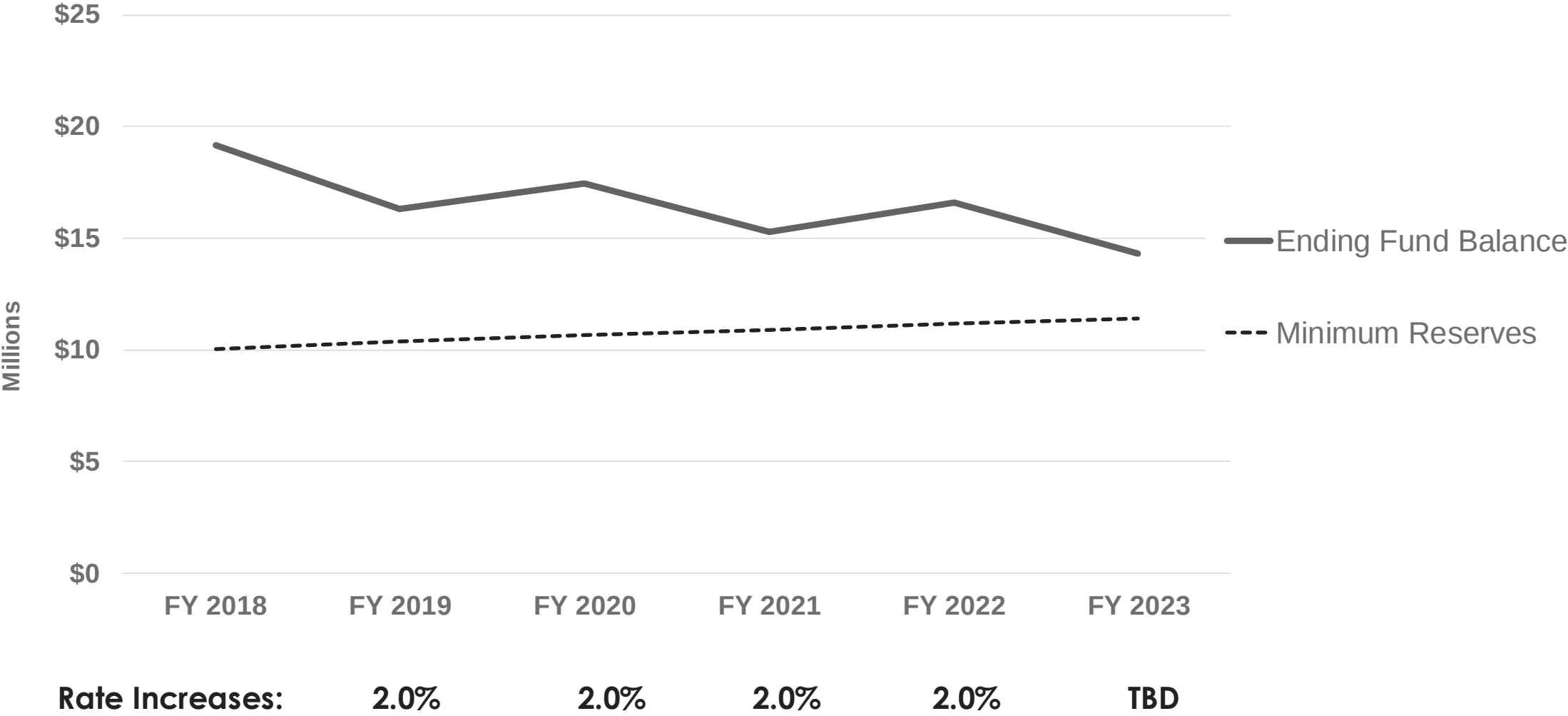
Revenue vs. Expenses



* FY 2019 rate increase to occur on January 1, 2019. All other rate increases to occur on July 1 thereafter.
Water rates in FY2019 will only increase by 0.2%, with the remaining increases coming from other charges.

Financial Forecast

Fund Balance



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

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)

Rate Design Considerations

#1 - Cost basis (Prop 218 compliance)

And...

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

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)

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: Table B-1, Appendix B, *AWWA M1 Manual*, 6th Ed

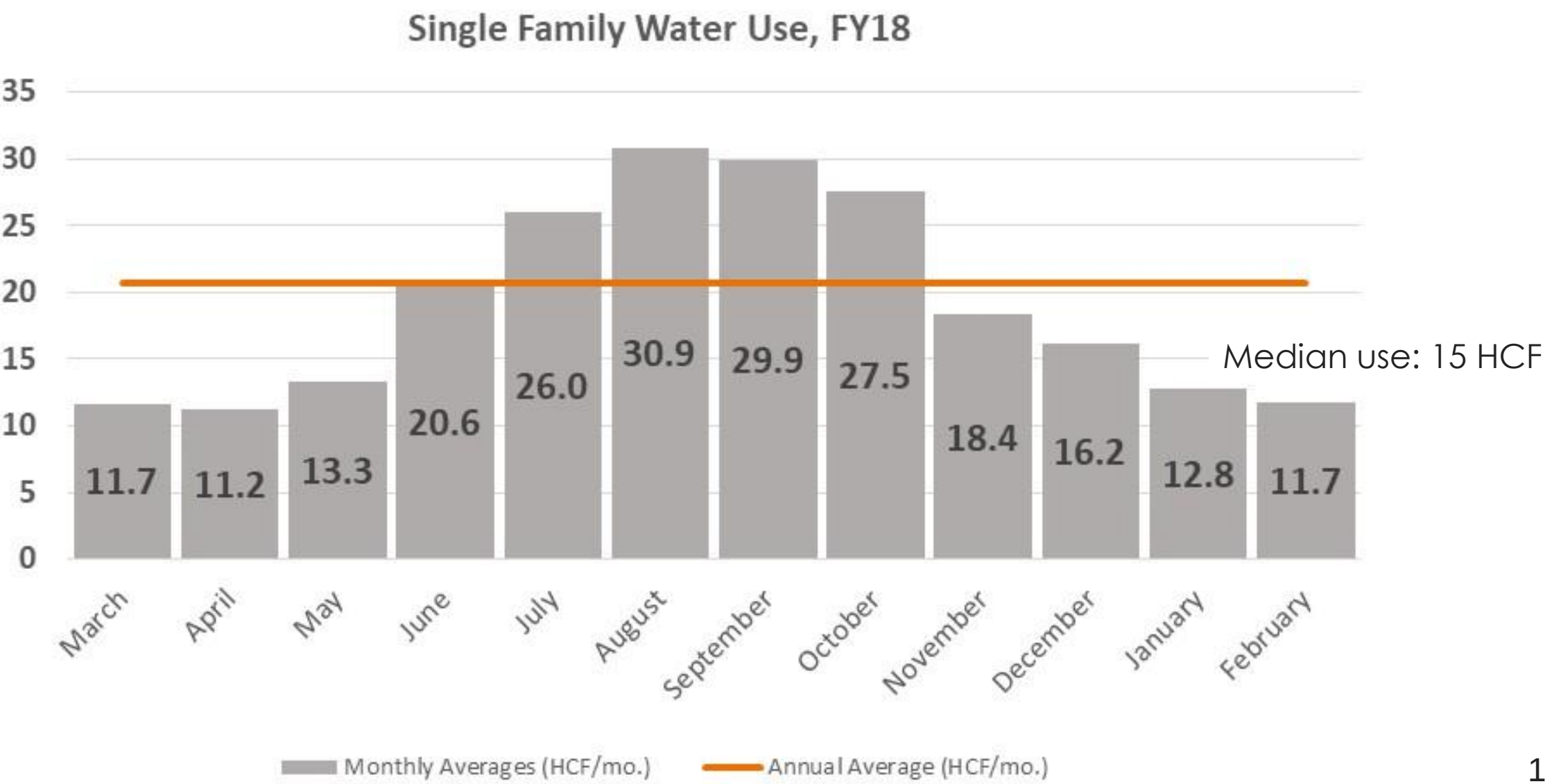
Water Allocation

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

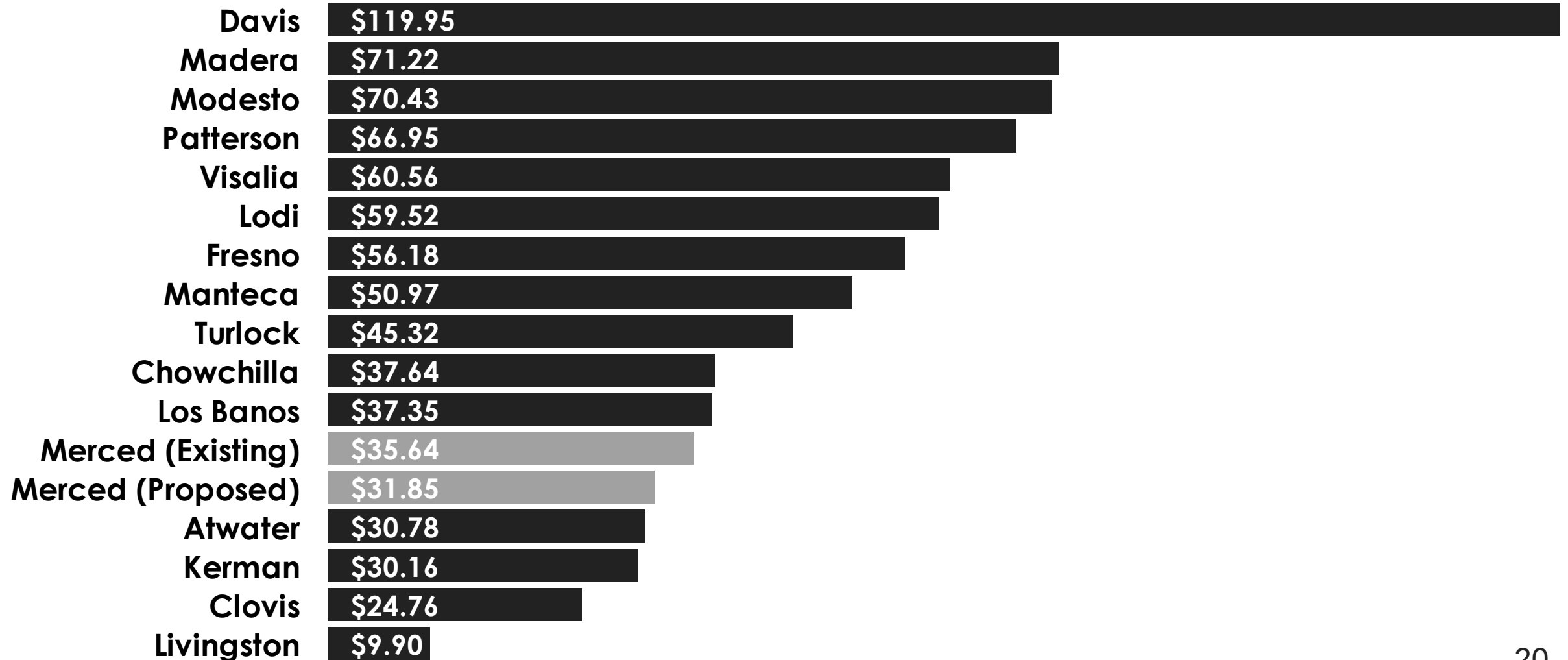
	Current	Proposed
Water Allocation: (3/4" meter)	30 HCF	20 HCF
	Volumetric Rate (per HCF)	
	\$0.89	\$0.73
Meter Size	Base Monthly Charge	
3/4"	\$34.24	\$30.39
1"	\$35.64	\$30.39
1 1/2"	\$47.52	\$60.32
2"	\$65.50	\$96.24
3"	\$76.13	\$192.01
4"	\$89.81	\$299.76
6"	\$104.99	\$599.06
8"	\$150.58	\$958.22
10"	\$196.12	\$1,437.10
12"	\$241.42	\$2,020.74
3/4" Meter Bills (examples)		
22 HCF usage:	\$34.24	\$31.85
44 HCF usage:	\$46.70	\$47.91
Fixed Revenue:	77.1%	78.4%

Average Monthly Single Family Water Usage



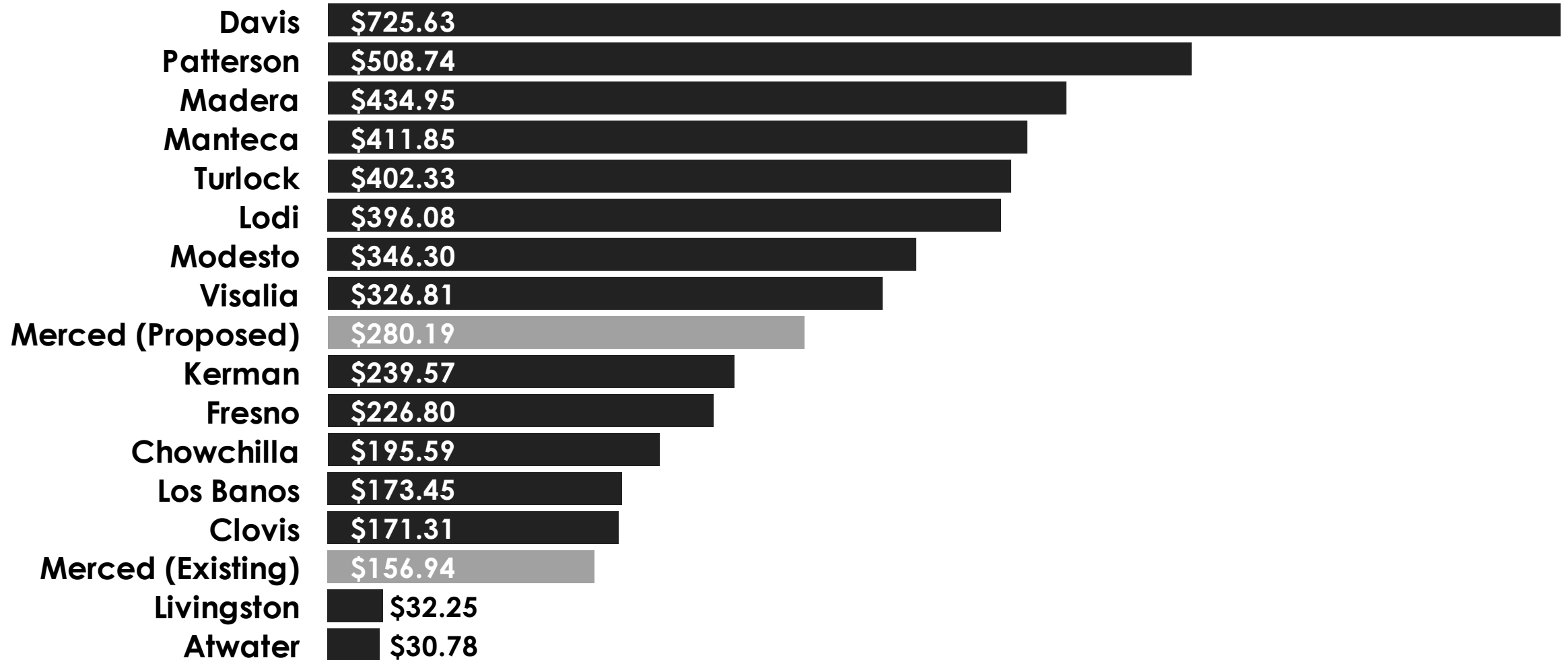
Rate Survey - Typical Residential

Monthly Water Bill at 22 HCF (with 1" meters)



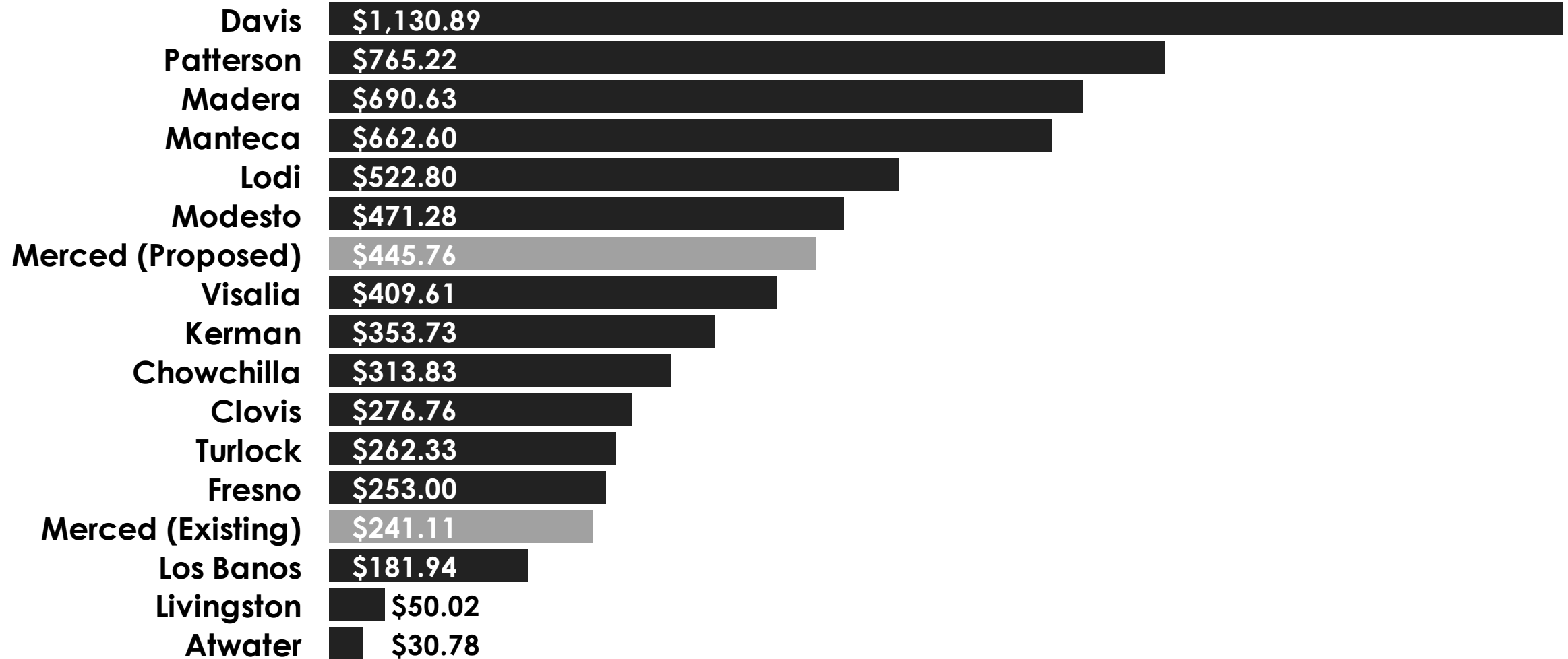
Rate Survey - Typical 3" Commercial

Monthly Water Bill at 141 HCF (with 3" meters)



Rate Survey - Typical 4" Commercial

Monthly Water Bill at 220 HCF (with 4" meters)



Example Bill for Larger Customers

Customer #1

Meter Size: 3”
Water Usage: 6,840 HCF

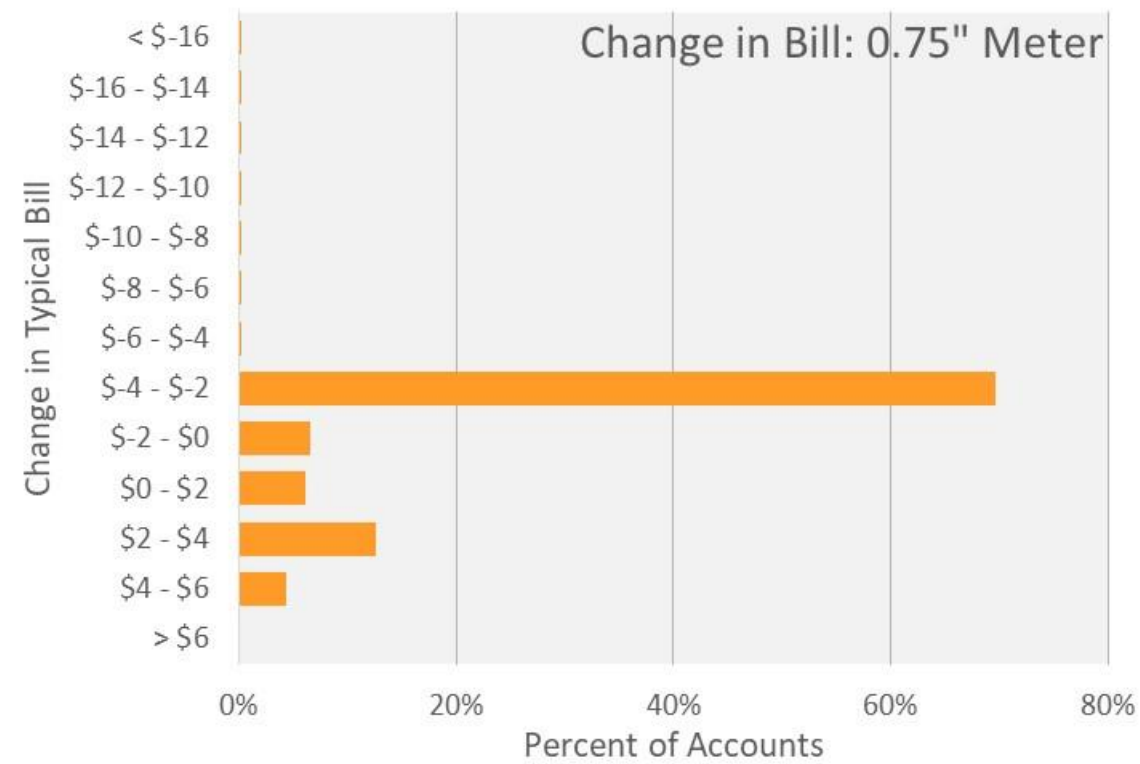
	Current	Proposed
Base Monthly Charge:	\$76.13	\$193.94
Water Allocation:	50 HCF	128 HCF
Volumetric Charge:	\$6,043	\$4,900
Total Bill:	\$6,119	\$5,092

Customer #2

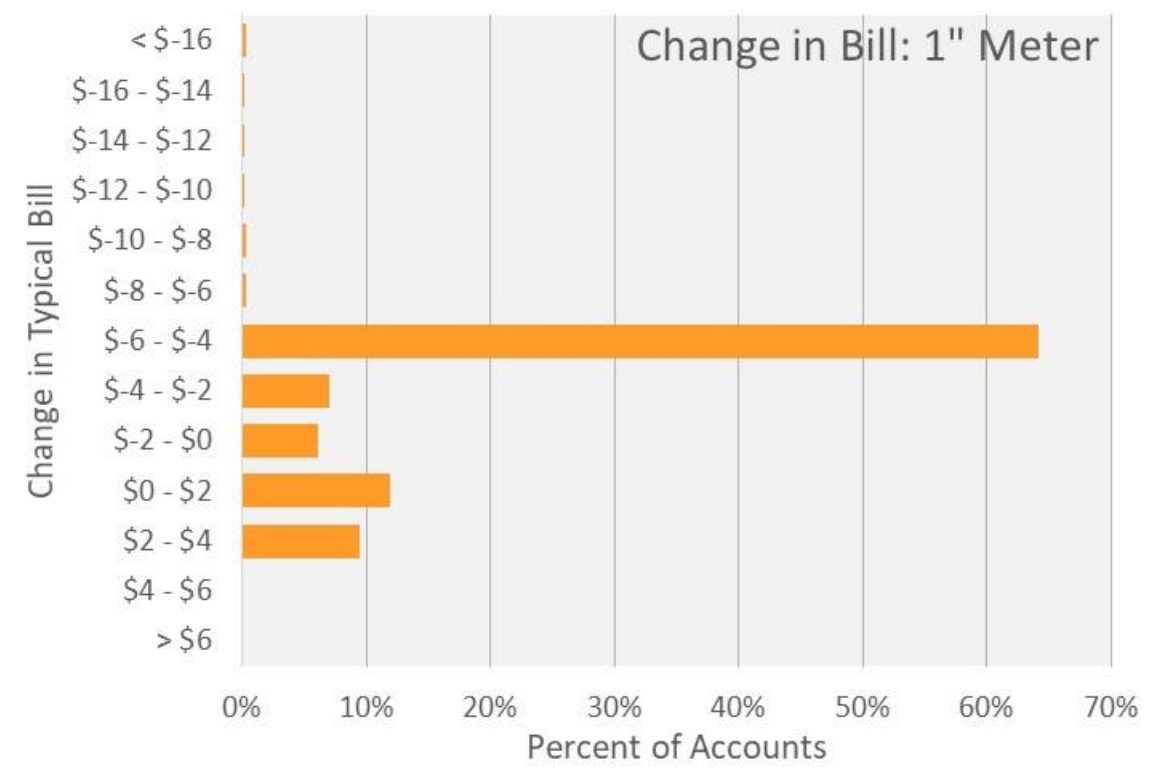
Meter Size: 4”
Water Usage: 241 HCF

	Current	Proposed
Base Monthly Charge:	\$89.81	\$302.82
Water Allocation:	50 HCF	200 HCF
Volumetric Charge:	\$170	\$30
Total Bill:	\$260	\$330

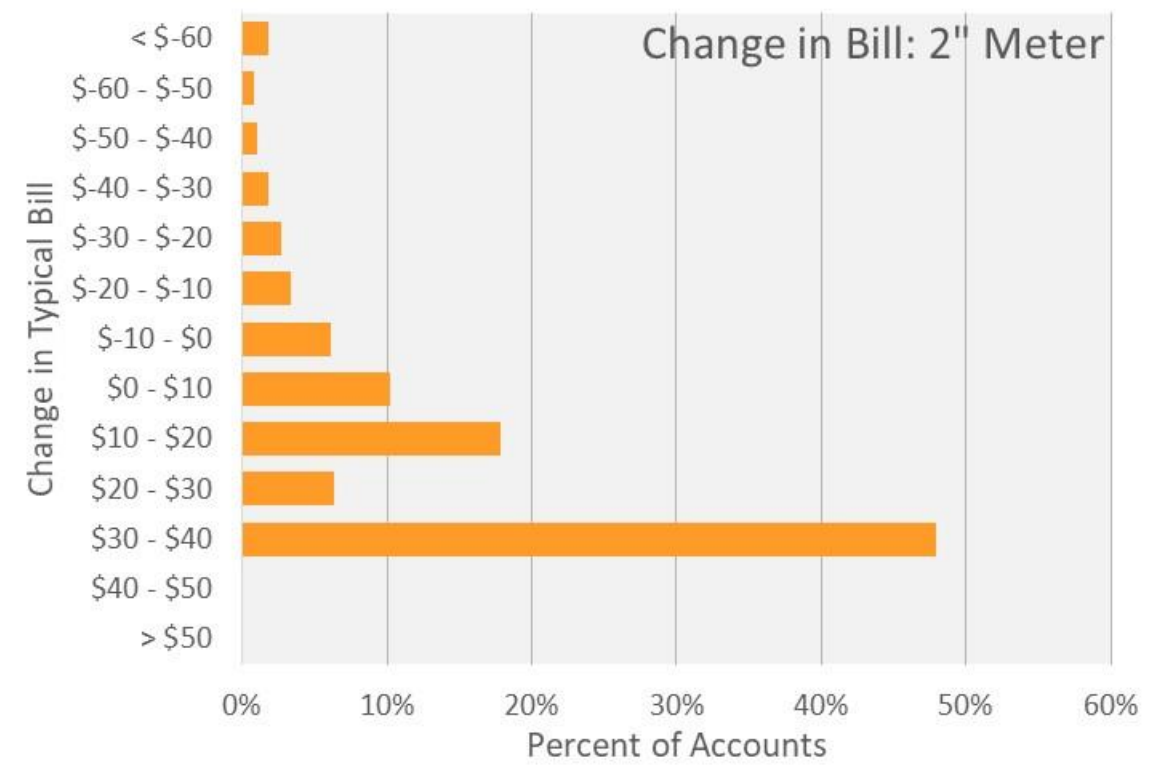
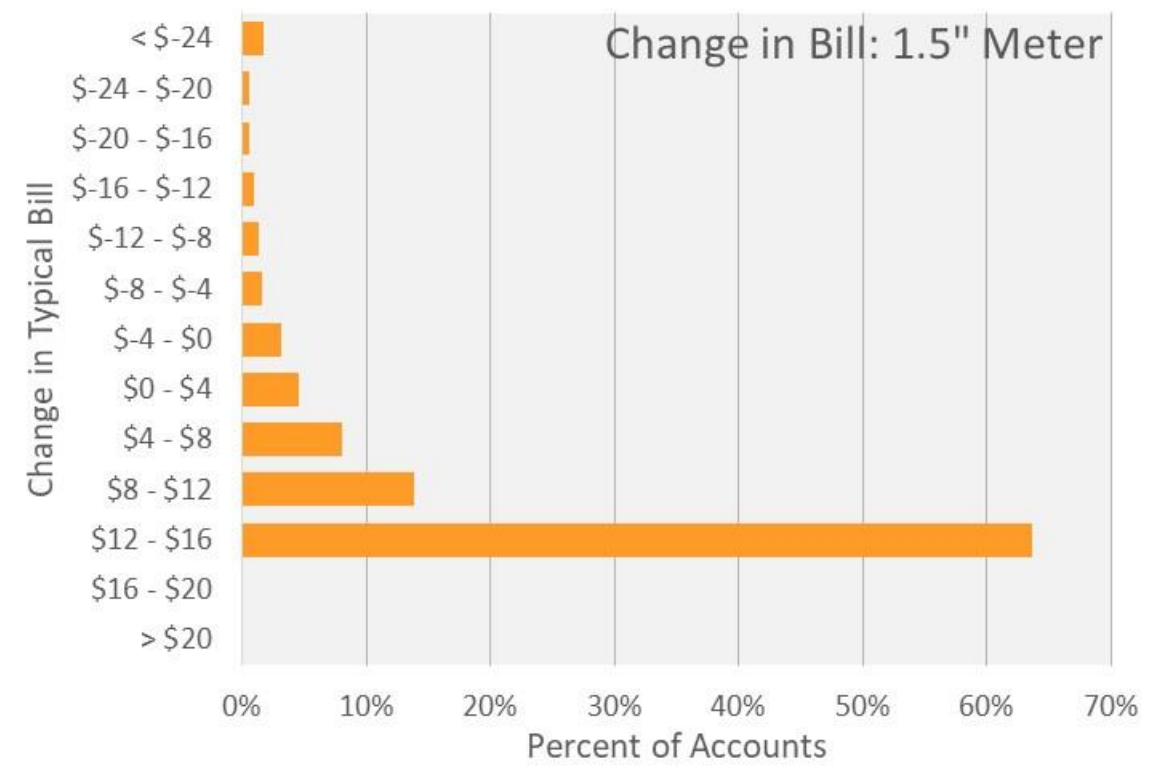
Bill Impact Analysis



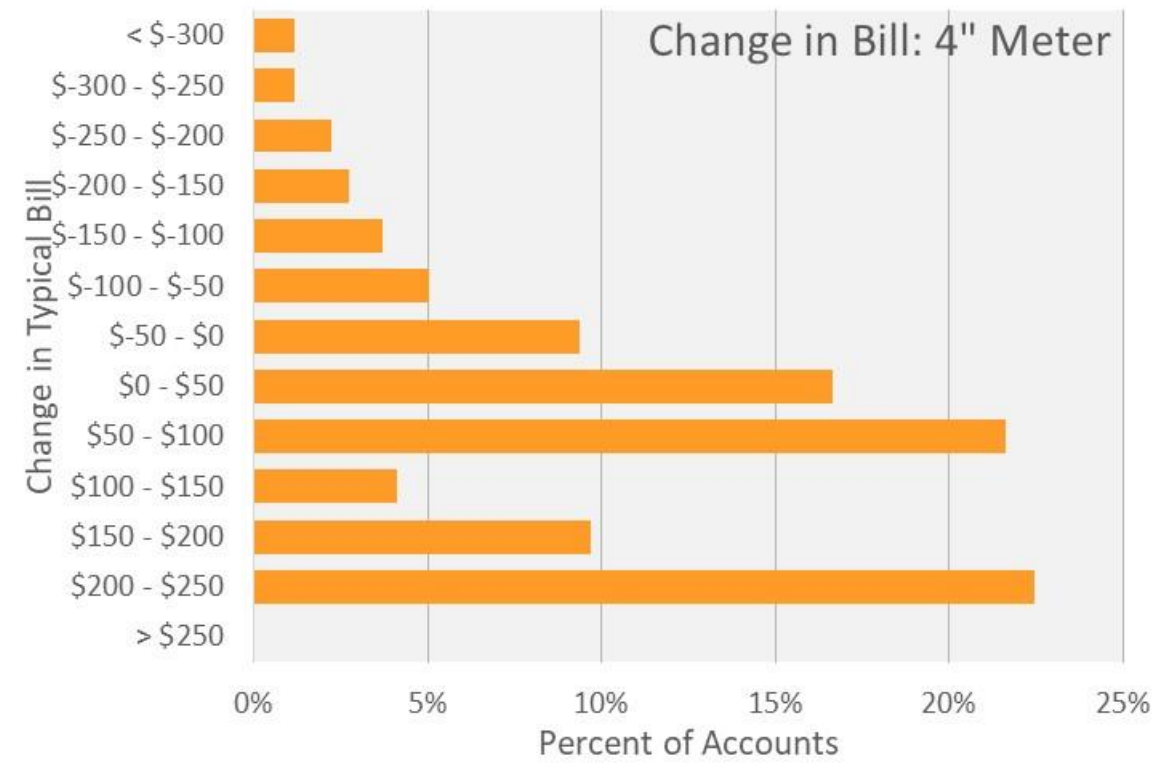
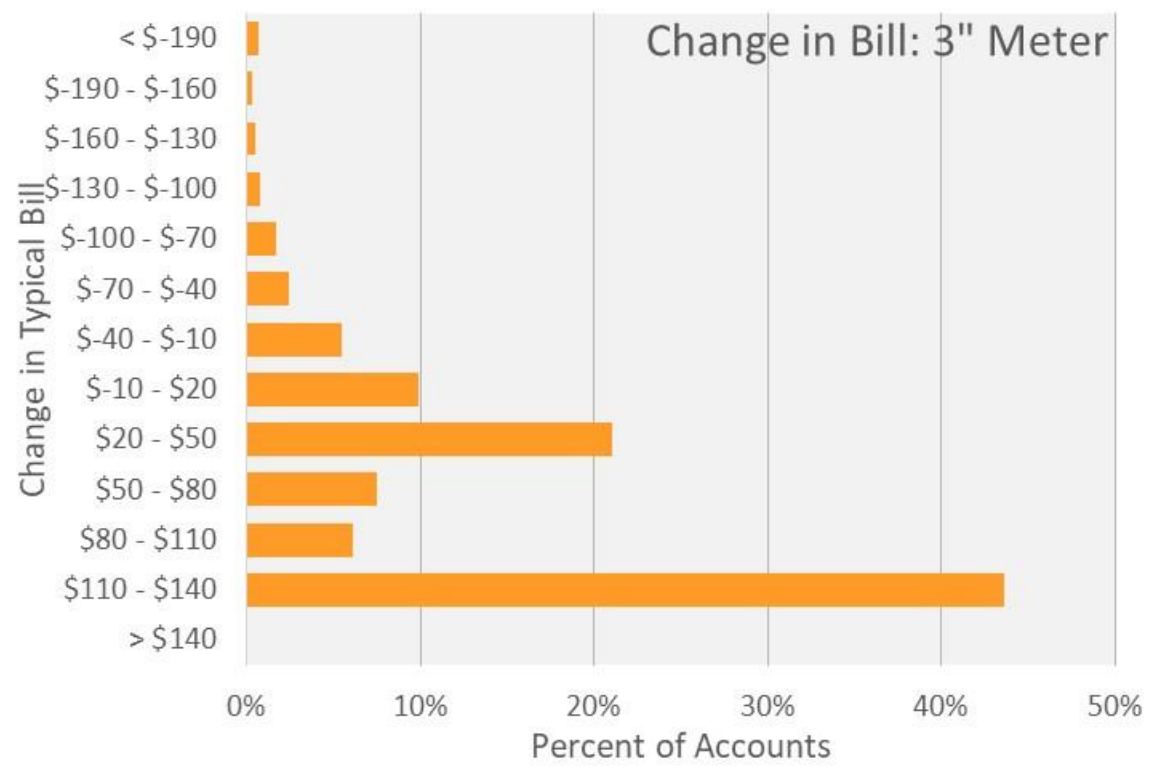
75.6% of customers will see a decrease in their bill



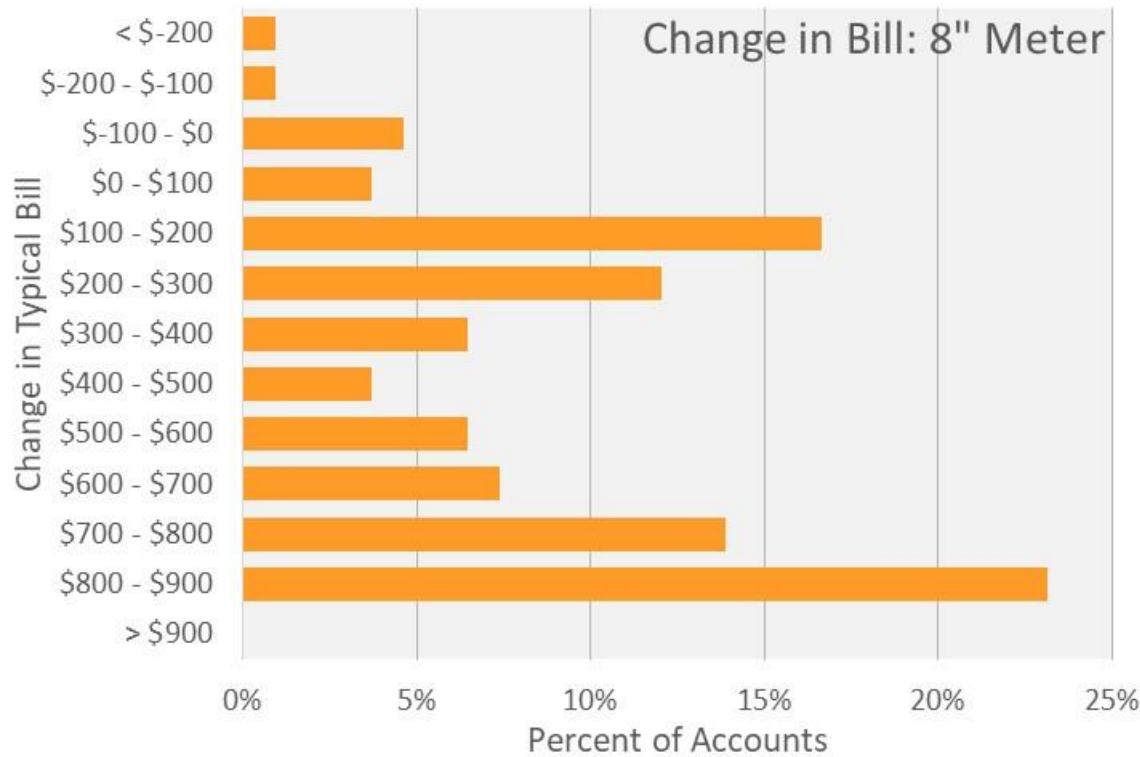
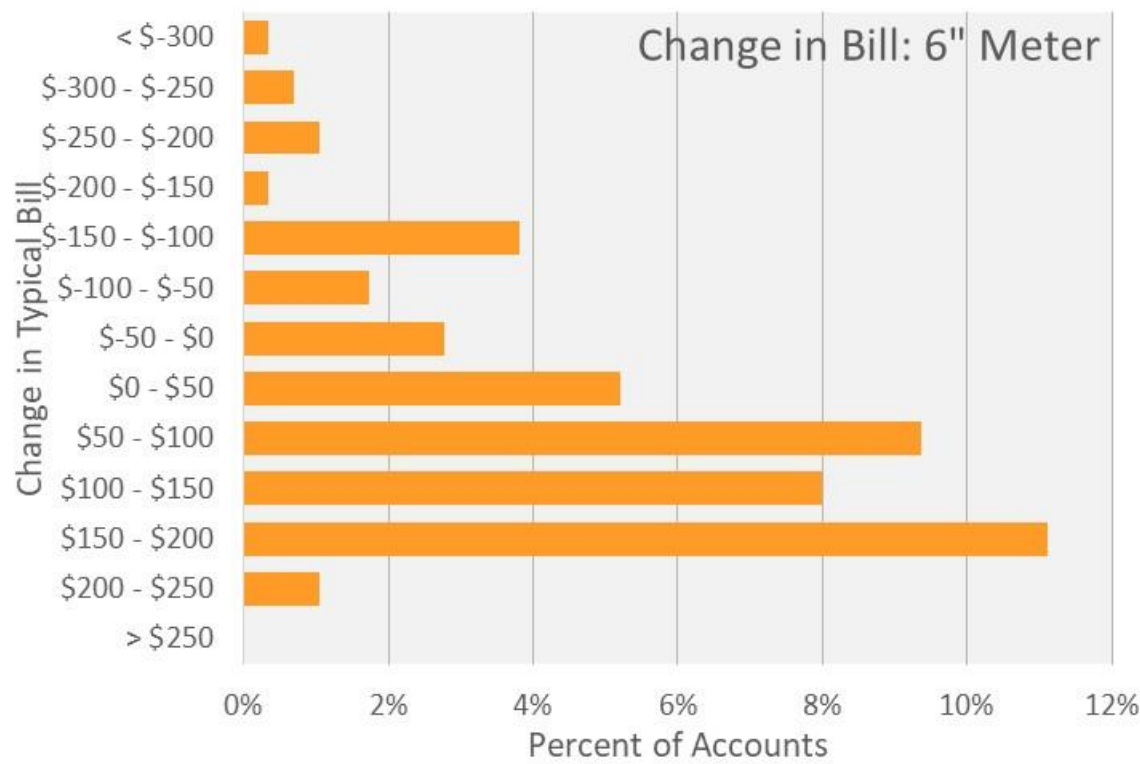
Bill Impact Analysis



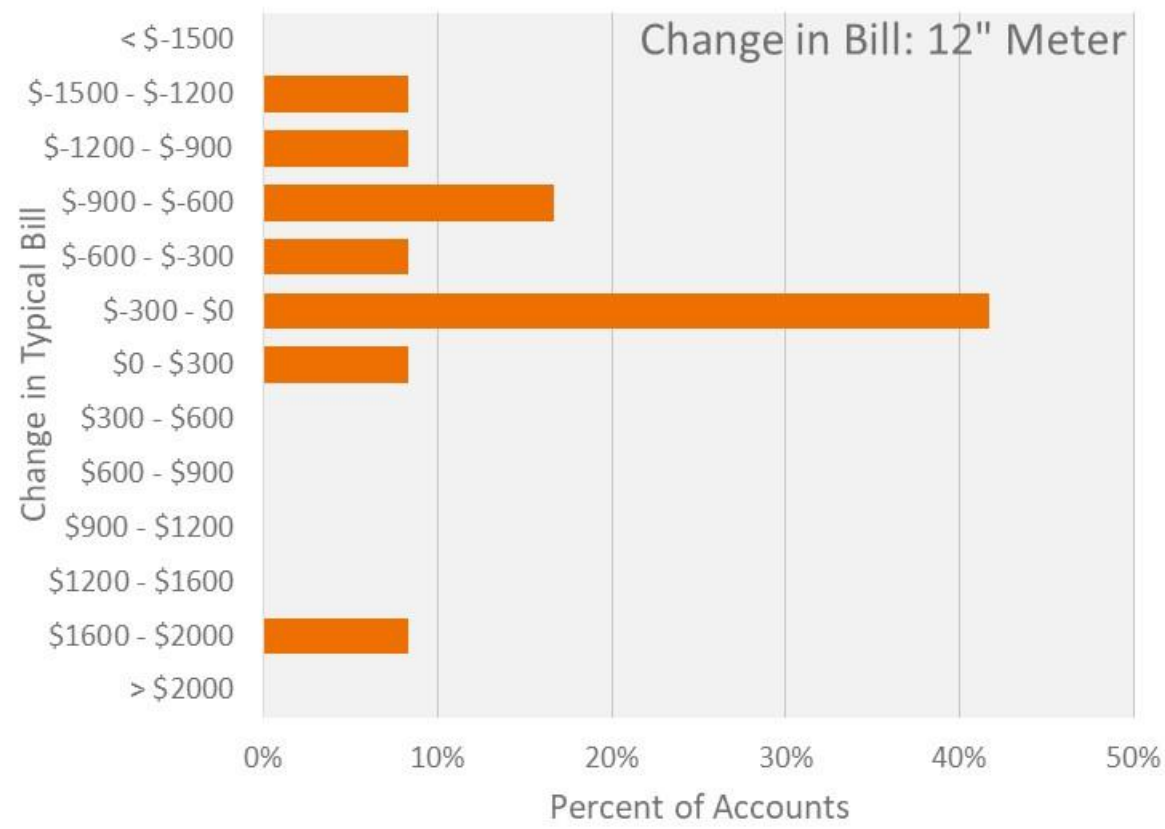
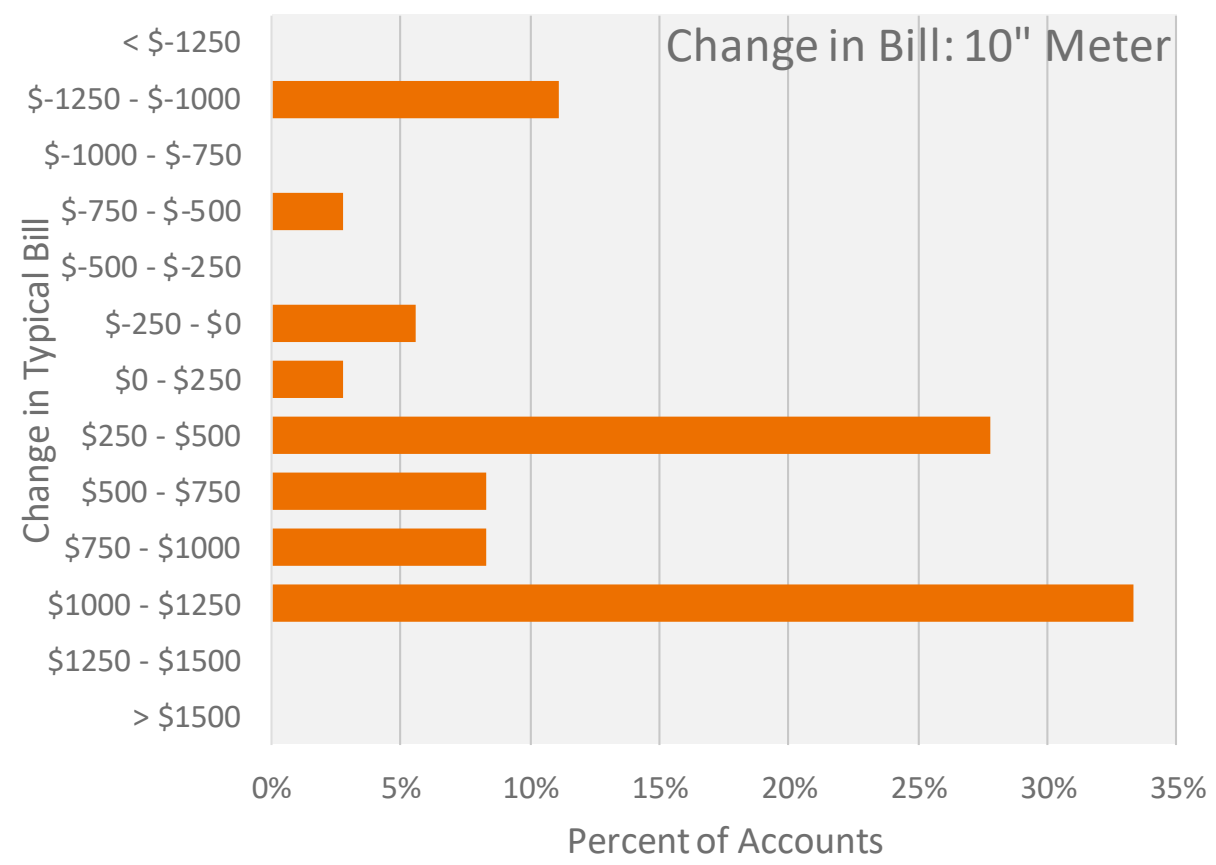
Bill Impact Analysis



Bill Impact Analysis

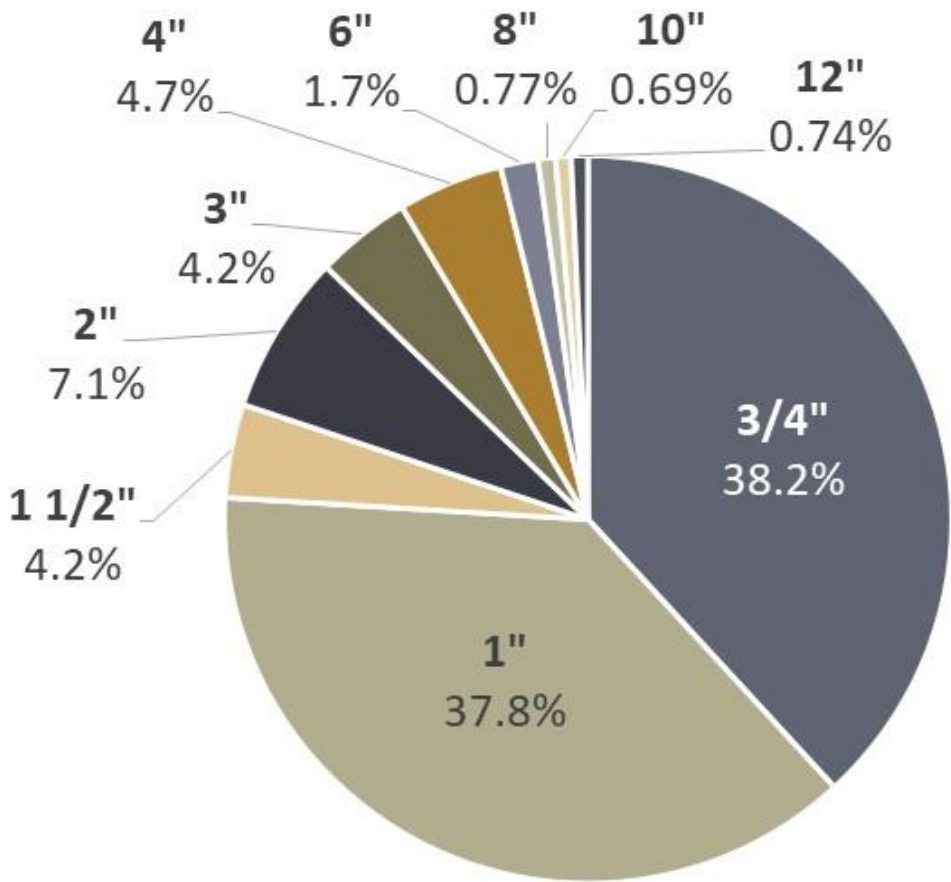


Bill Impact Analysis

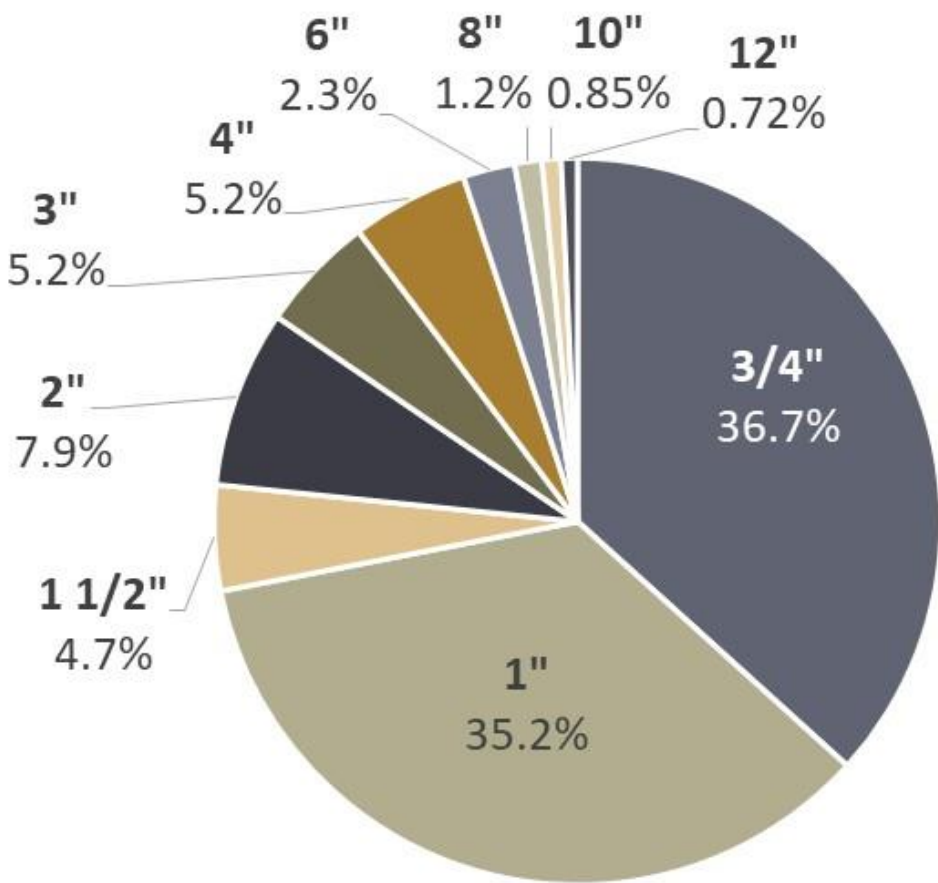


Revenue by Meter Size

Current



Proposed



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
	VOLUMETRIC RATE		
	\$0.89	\$0.73	\$0.98
Meter Size	BASE MONTHLY CHARGE		
¾"	\$34.24	\$30.39	\$31.10
1"	\$35.64	\$30.39	\$31.10
1 ½"	\$47.52	\$60.32	\$61.74
2"	\$65.50	\$96.24	\$98.51
3"	\$76.13	\$192.01	\$196.56
4"	\$89.81	\$299.76	\$306.86
6"	\$104.99	\$599.06	\$613.26
8"	\$150.58	\$958.22	\$980.94
10"	\$196.12	\$1,437.10	\$1,471.18
12"	\$241.42	\$2,020.74	\$2,068.66
¾" Meter Bills (examples)			
22 HCF:	\$34.24	\$31.85	\$33.06
44 HCF:	\$46.70	\$47.91	\$54.62

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
3/4"	\$5.51
1"	\$5.51
1 1/2"	\$11.03
2"	\$17.64
3"	\$35.28
4"	\$55.13
6"	\$110.25
8"	\$176.40

* As outline by AWWA's M1 Manual

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 ⁽¹⁾	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	

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

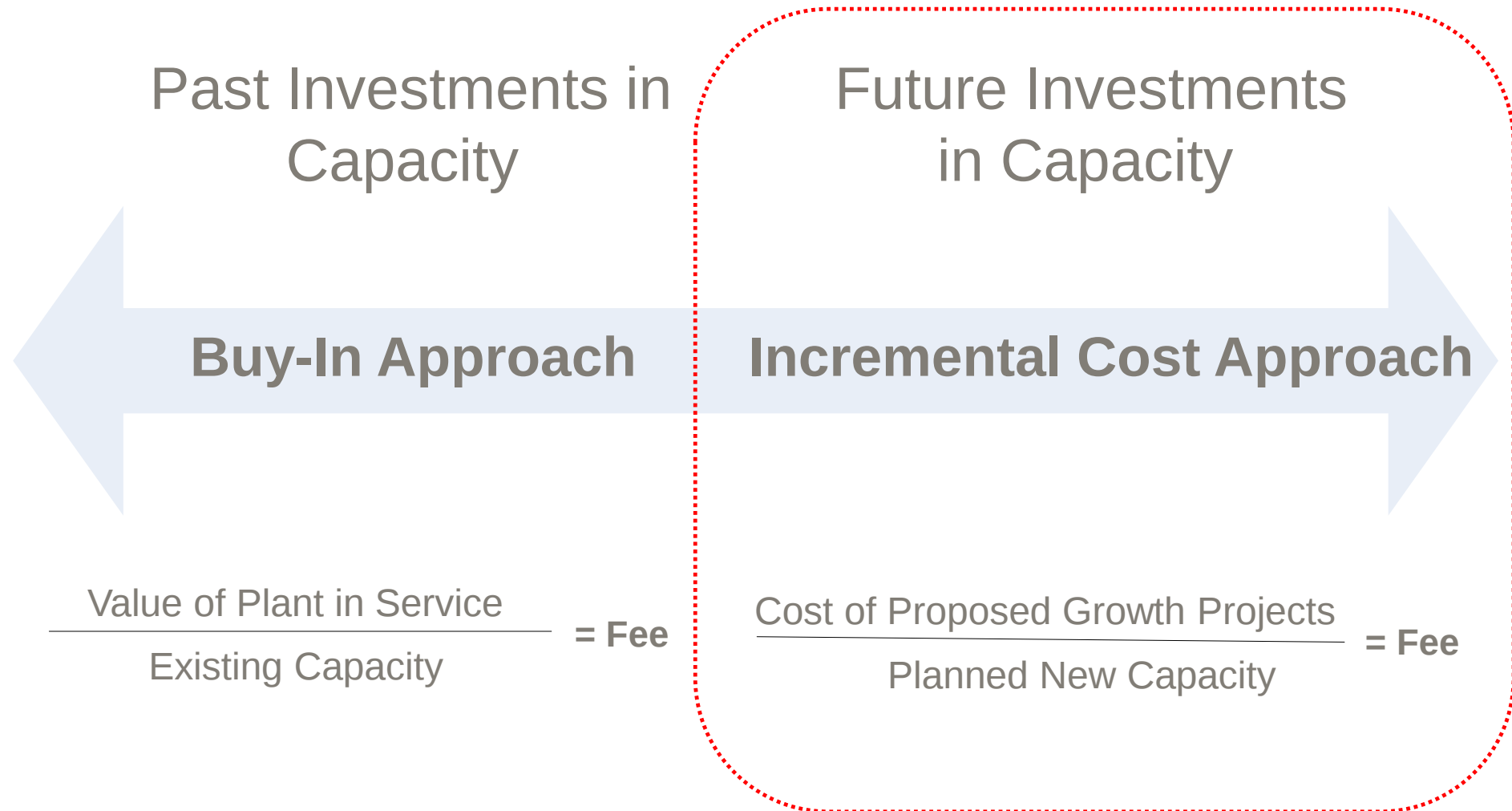
Major Assumption: Assumes that system is sized to handle two simultaneous fire events at 1,500 gpm for 2 hours in the same pressure zone

Water Rate Study

Capacity Charge Topics

Capacity Facility Charge

Methodologies*



* As described in AWWA's M1 manual

Capital Facility Charges

Proposed

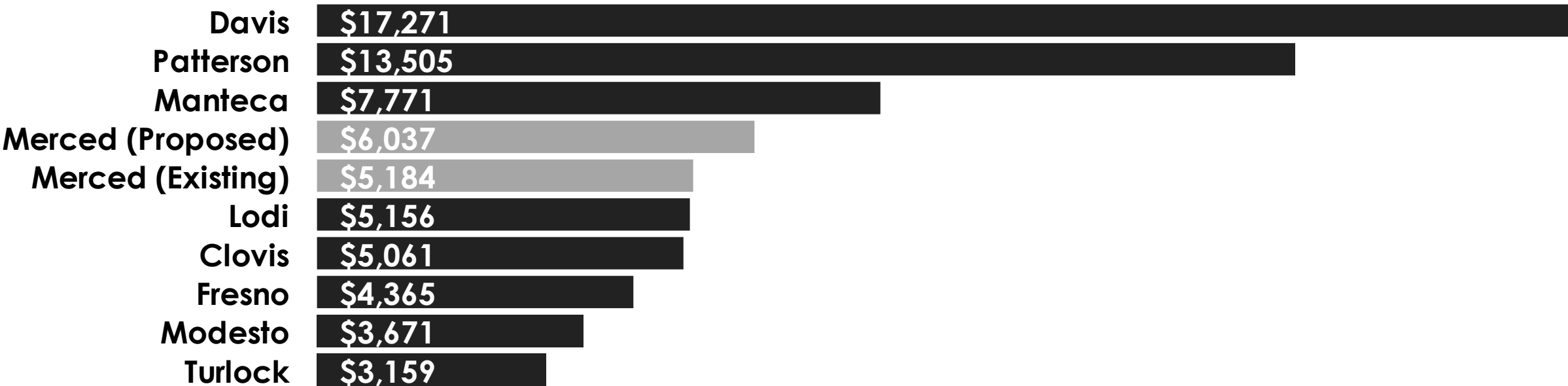
Meter Sizes	Current Scaling Factors	Current Capital Facilities Charge	AWWA Scaling Factor ¹	Proposed Capital Facilities Charge	Percent Increase
1"	1.0	\$5,184	1.0	\$6,037	16.5%
1.5"	2.0	\$10,368	2.0	\$12,074	16.5%
2"	3.2	\$16,588	3.2	\$19,318	16.5%
3"	6.4	\$33,178	6.4	\$38,637	16.5%
4"	10.0	\$51,841	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	48.0	\$289,776	11.8%
12"	(na)	(na)	67.5	\$407,498	(na)

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 - Residential

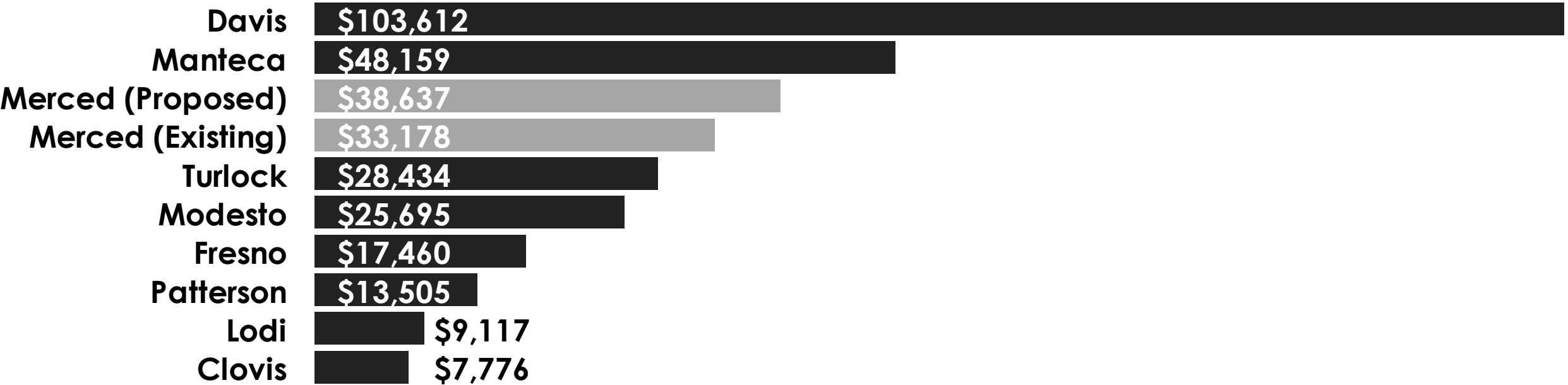
Residential Water Capital Facilities Charge (1" Meters)



Capital Facility Charge

Survey – 3" Meter

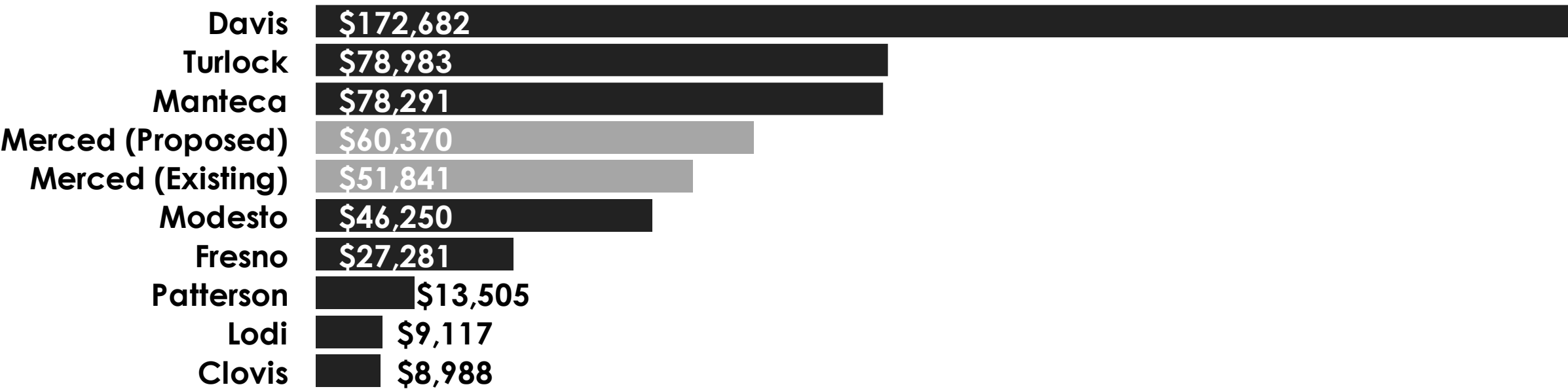
Water Capital Facilities Charge (3" Meters)



Capital Facility Charge

Survey – 4" Meter

Water Capital Facilities Charge (4" Meters)





NEXT STEPS

Direct staff to issue Prop 218 Notice
Public Hearing