



City of Merced
2018 Water Rate Study

Proposed Rate Plan

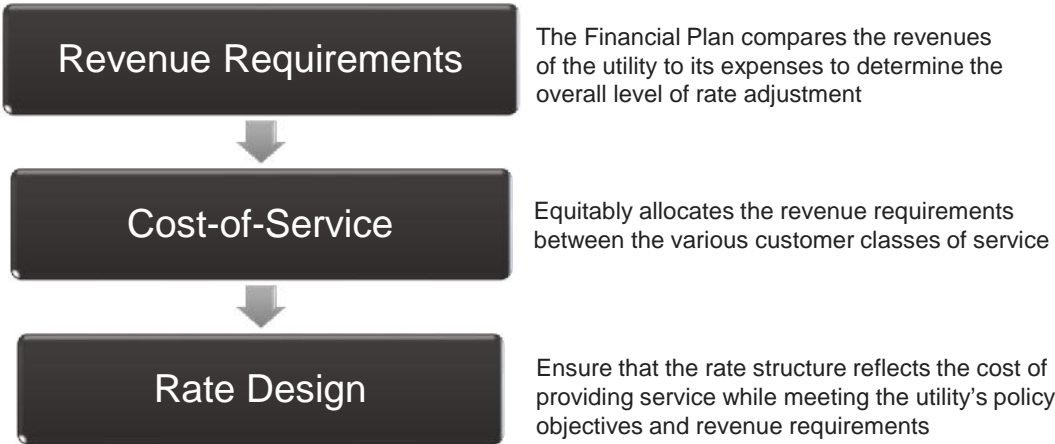
July 16, 2018



Agenda

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

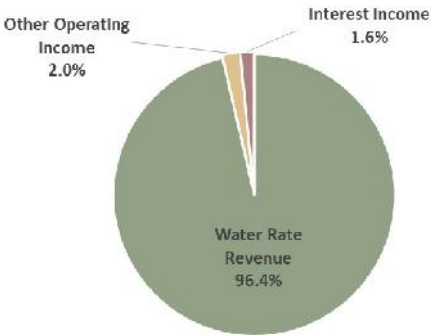
The Rate Setting Process



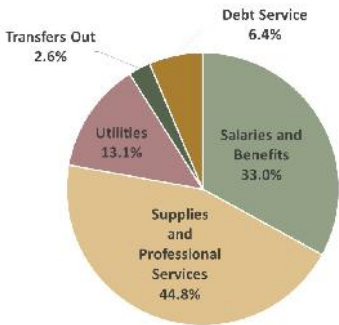
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FY2019 Budget

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



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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

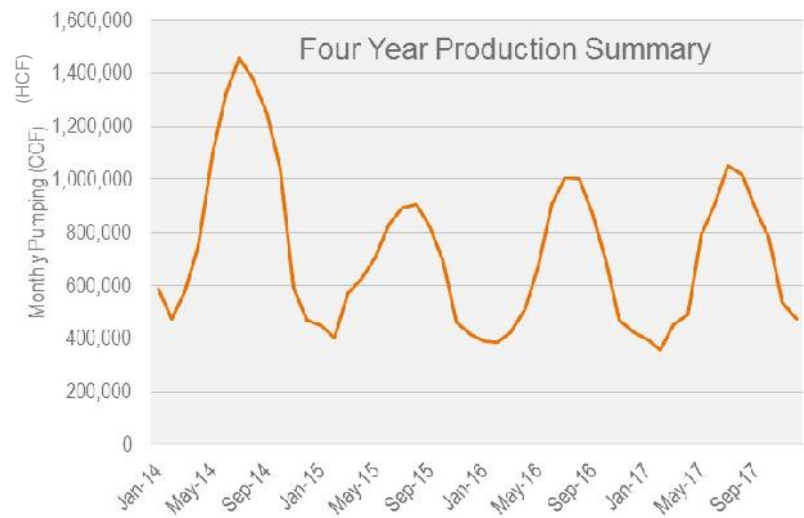
Growth = 1%

Cost Inflation (5-Year Average)

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

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Historical Water Usage

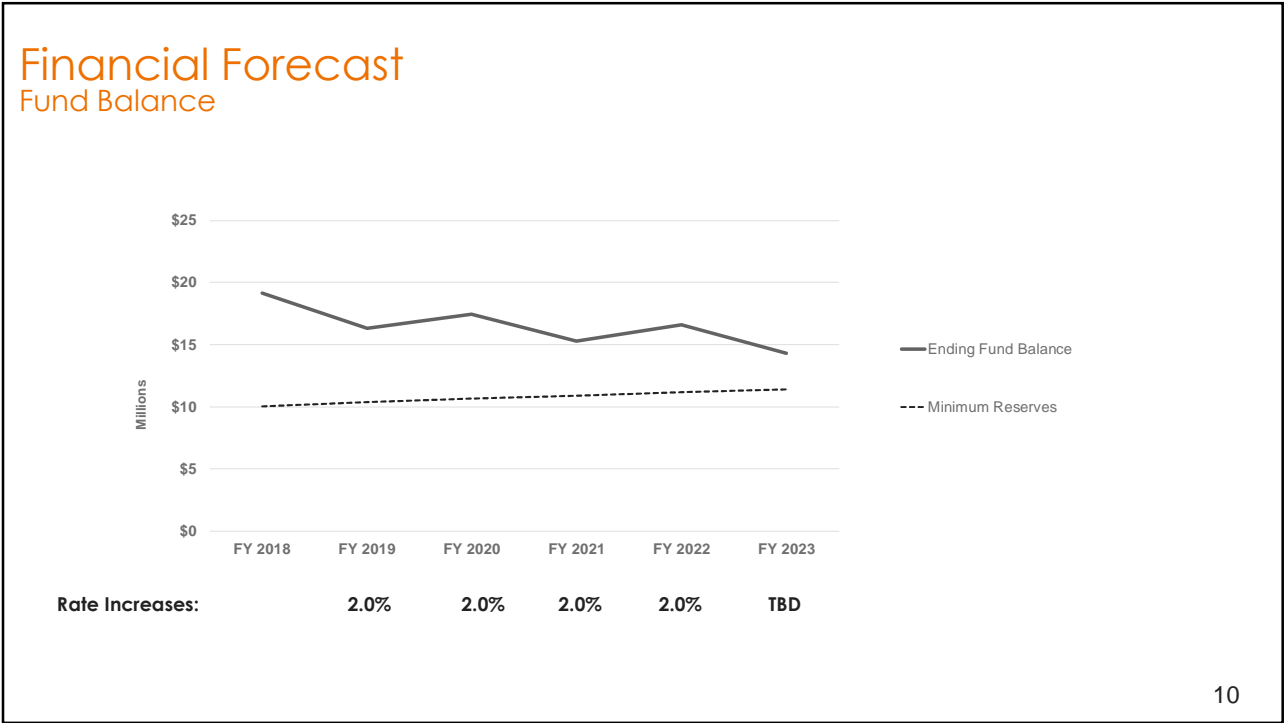
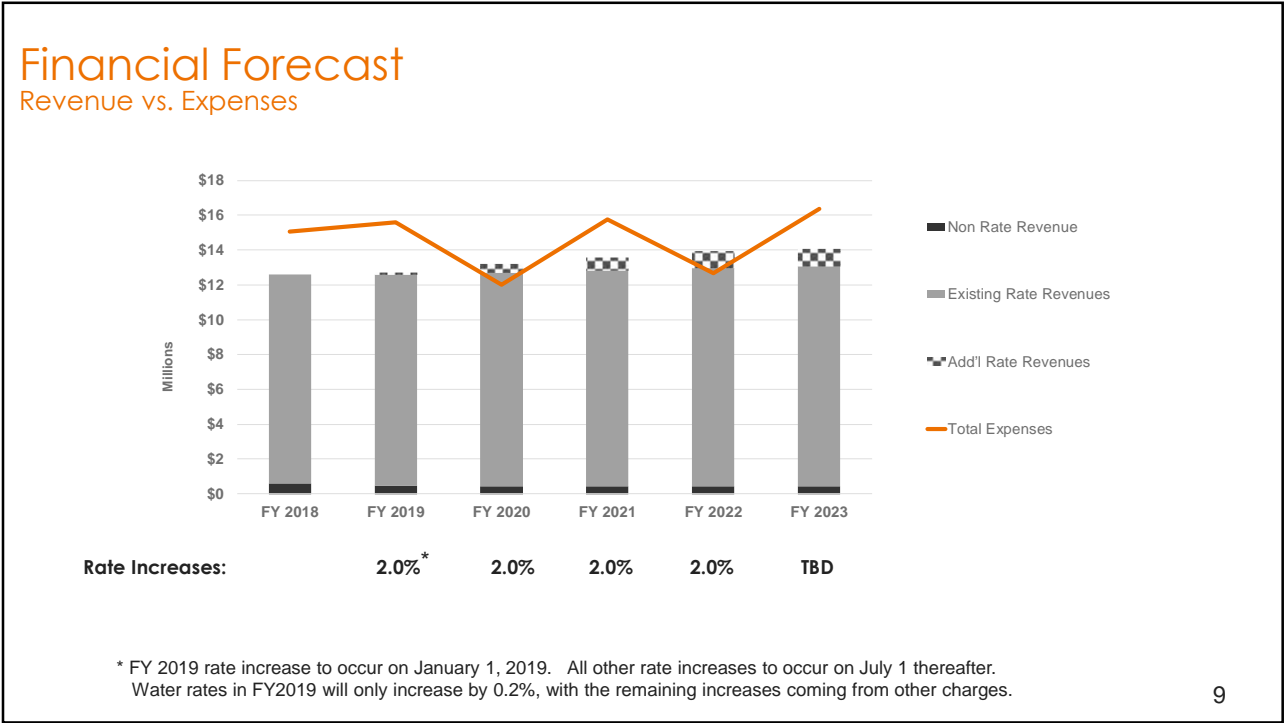


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Capital Spending Forecast



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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.

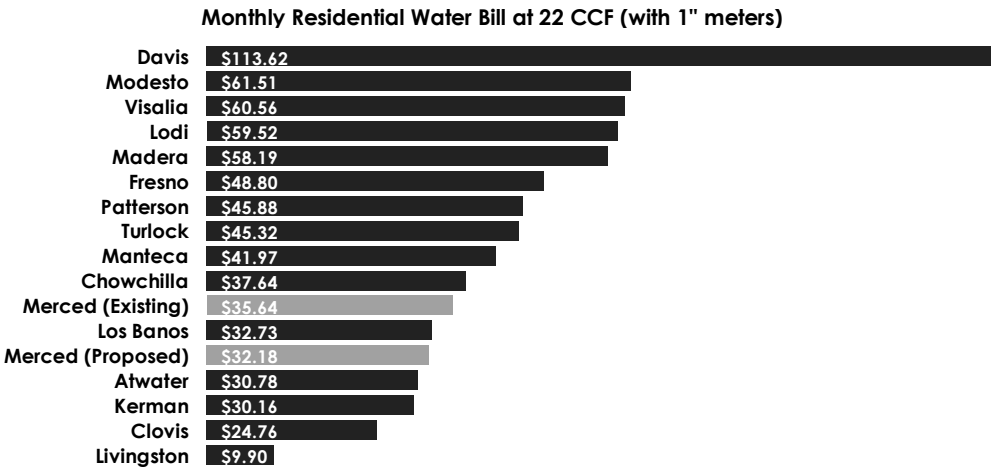
Water Allocation

| 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 |
|-----------------------------------|------------------------------|------------|
| Water Allocation: (3/4" meter) | 30 HCF | 20 HCF |
| | Volumetric Rate (per HCF) | |
| | \$0.89 | \$0.74 |
| Meter Size | Base Monthly Charge | |
| 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 |
| 3/4" Meter Bills (examples) | | |
| 22 HCF usage: | \$34.24 | \$32.18 |
| 44 HCF usage: | \$46.70 | \$48.46 |
| Fixed Revenue: | 77.1% | 78.7% |

Rate Survey



Example Bill for Larger Customers

Customer #1

Meter Size: 3"
Water Usage: 6,840 HCF

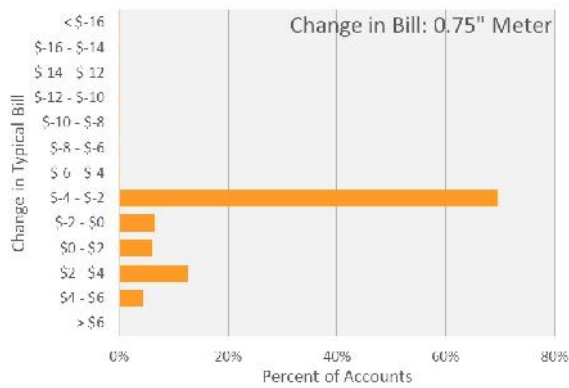
| | Current | Proposed |
|----------------------|---------|----------|
| Base Monthly Charge: | \$76.13 | \$193.94 |
| Water Allocation: | 50 HCF | 128 HCF |
| Volumetric Charge: | \$6,043 | \$4,966 |
| Total Bill: | \$6,119 | \$5,160 |

Customer #2

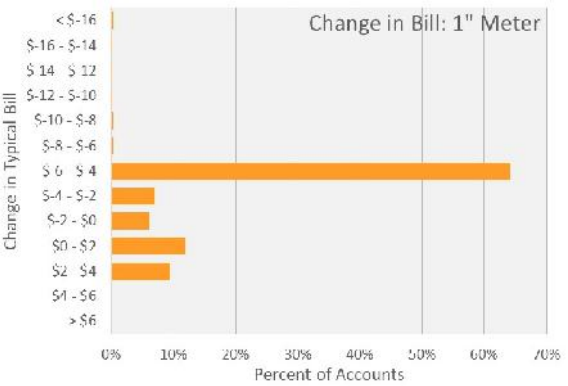
Meter Size: 4"
Water Usage: 241 HCF

| | Current | Proposed |
|----------------------|---------|----------|
| Base Monthly Charge: | \$89.81 | \$302.82 |
| Water Allocation: | 50 HCF | 200 HCF |
| Volumetric Charge: | \$170 | \$302 |
| Total Bill: | \$260 | \$333 |

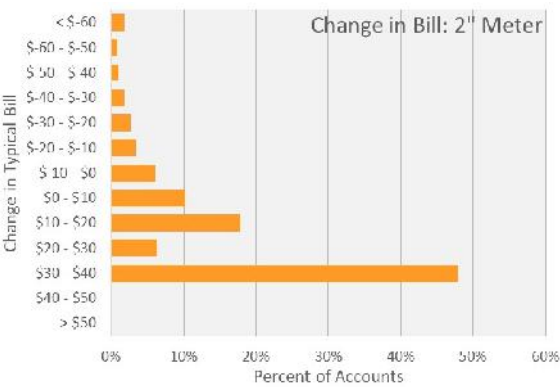
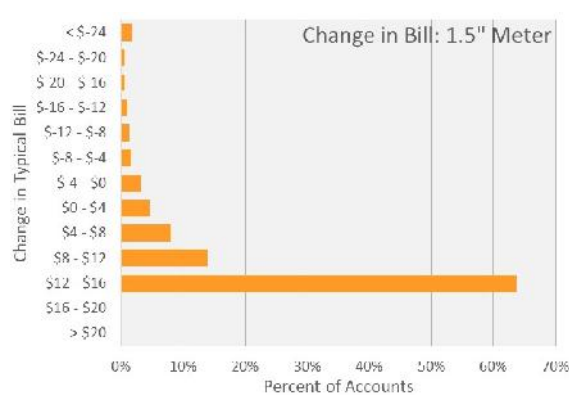
Bill Impact Analysis



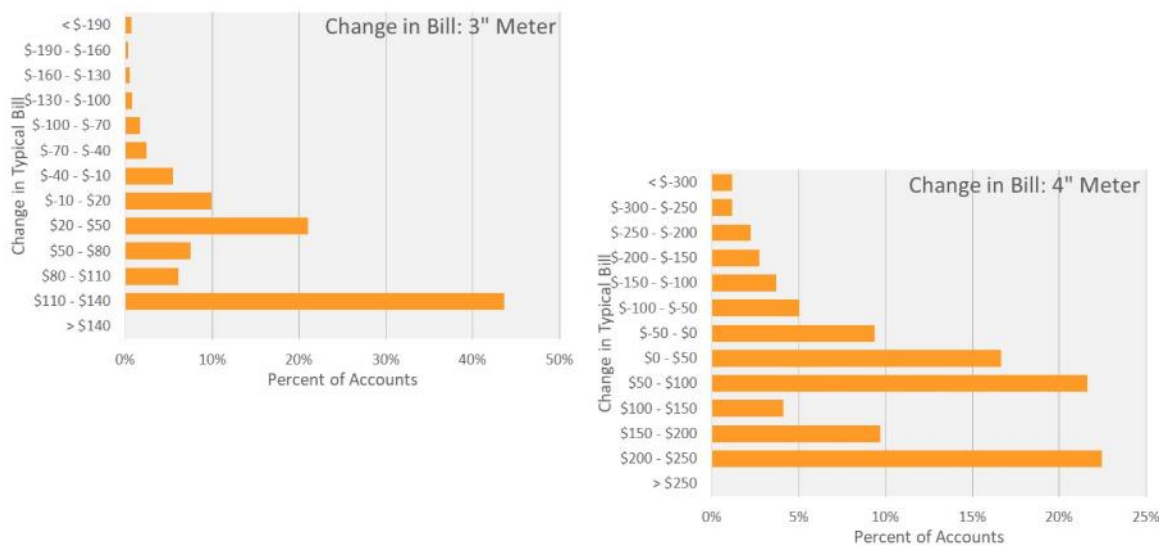
73.9% of customers will see a decrease in their bill



Bill Impact Analysis

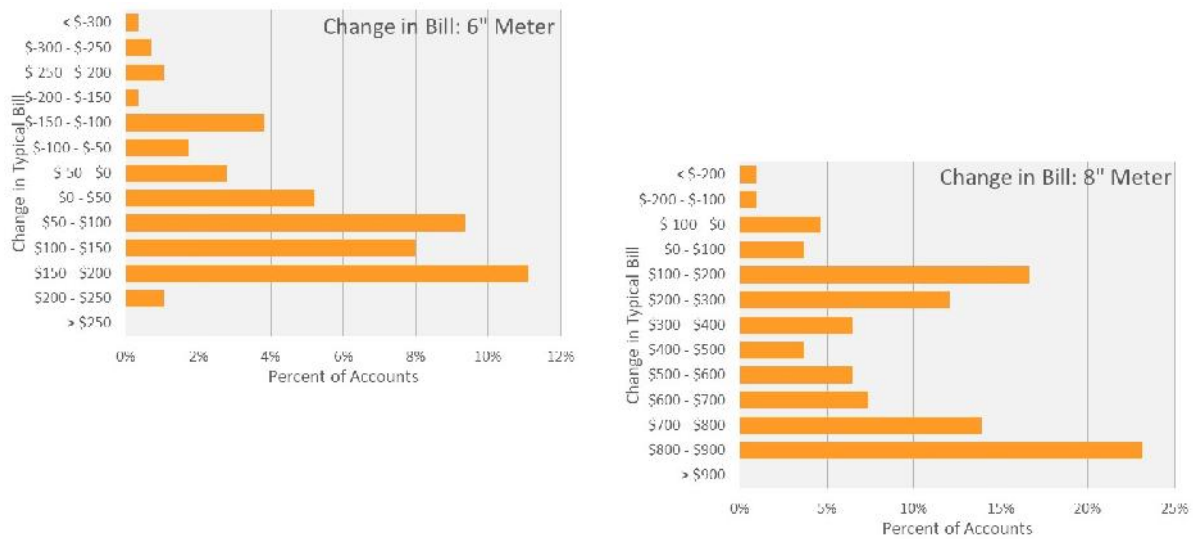


Bill Impact Analysis



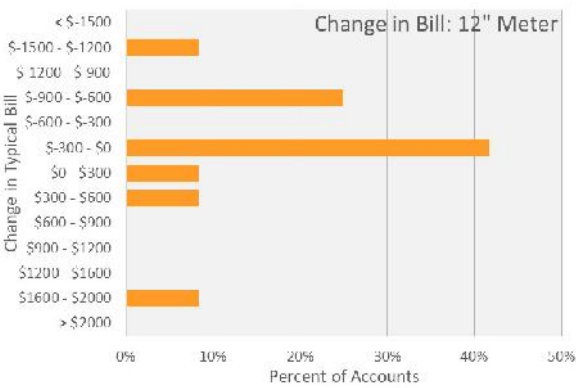
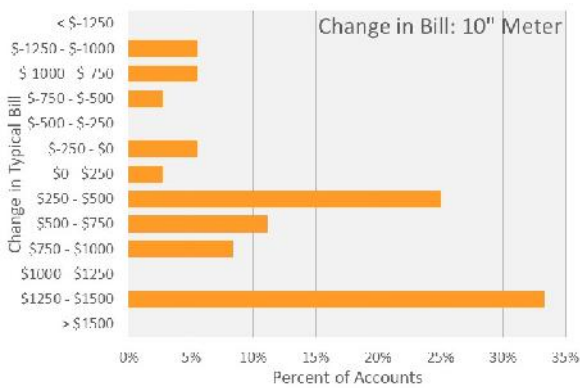
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Bill Impact Analysis (Scenario 1)



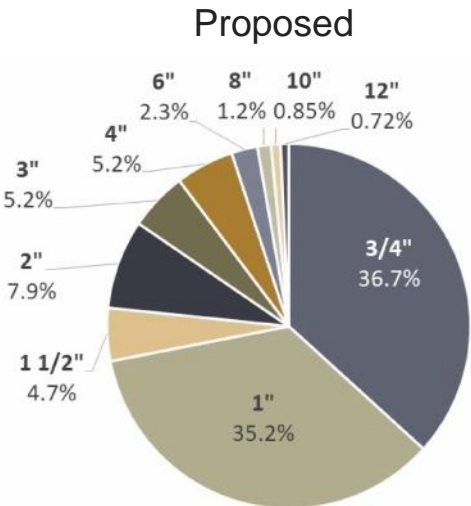
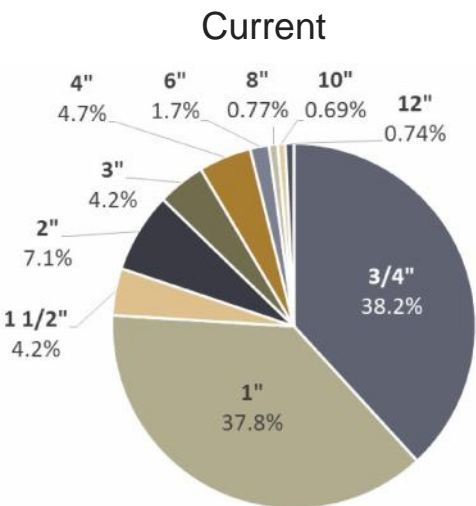
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Bill Impact Analysis (Scenario 1)



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Revenue by Meter Size



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

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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 |
|------------|----------------|
| 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

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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

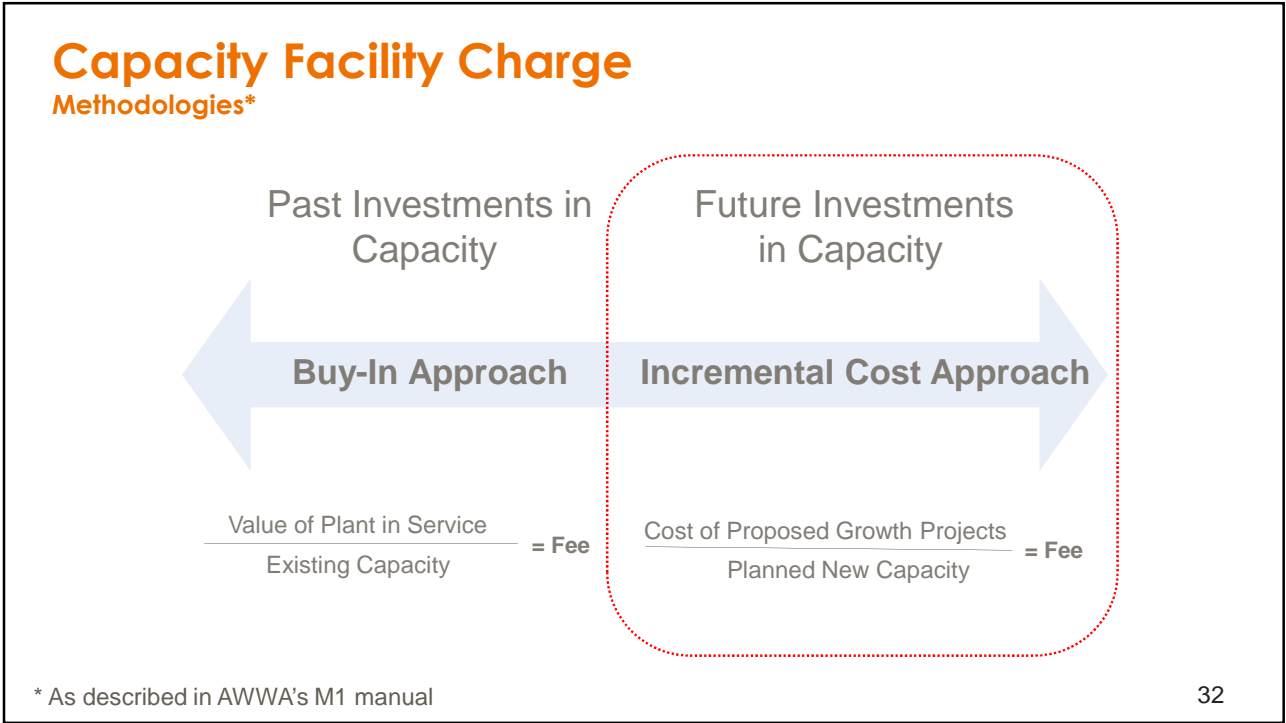
| Size of Connection | Demand Factor ⁽¹⁾ | Proposed Monthly Charge | Current Monthly Charge | Number of Accounts |
|--------------------|------------------------------|-------------------------|------------------------|--------------------|
| 2" | 6.19 | \$1.36 | na | 0 |
| 3" | 17.98 | \$3.96 | na | 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



Capital Facility Charges

Proposed

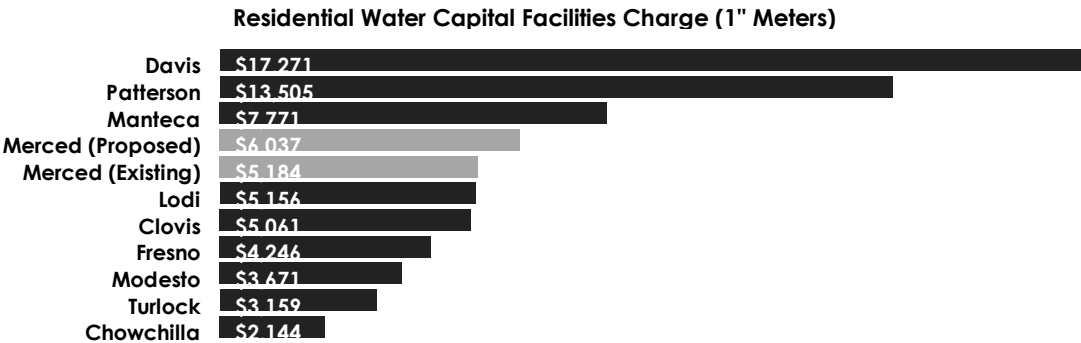
| Meter Sizes | Current Scaling Factors | Current Capital Facilities Charge | AWWA Scaling Factor ¹ | Proposed Capital Facilities Charge | Percent Increase |
|-------------|-------------------------|-----------------------------------|----------------------------------|------------------------------------|------------------|
| 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 | 84.0 | \$507,108 | 95.6% |
| 12" | (na) | (na) | 106.0 | \$639,922 | (na) |


¹ 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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