



# Water and Wastewater Utility Rates

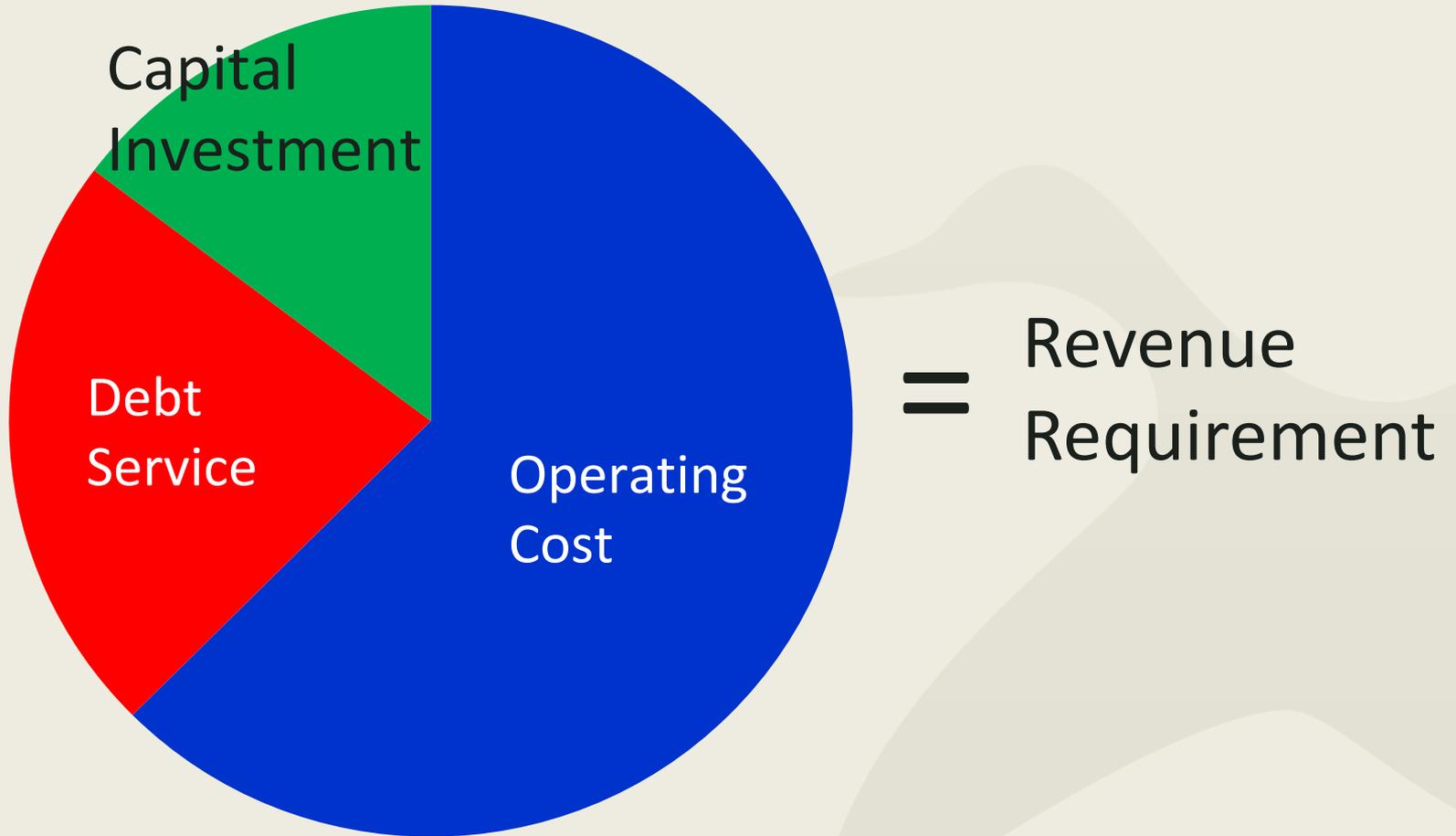
March 1, 2016

Presented By: Diana Langley  
Public Works Director

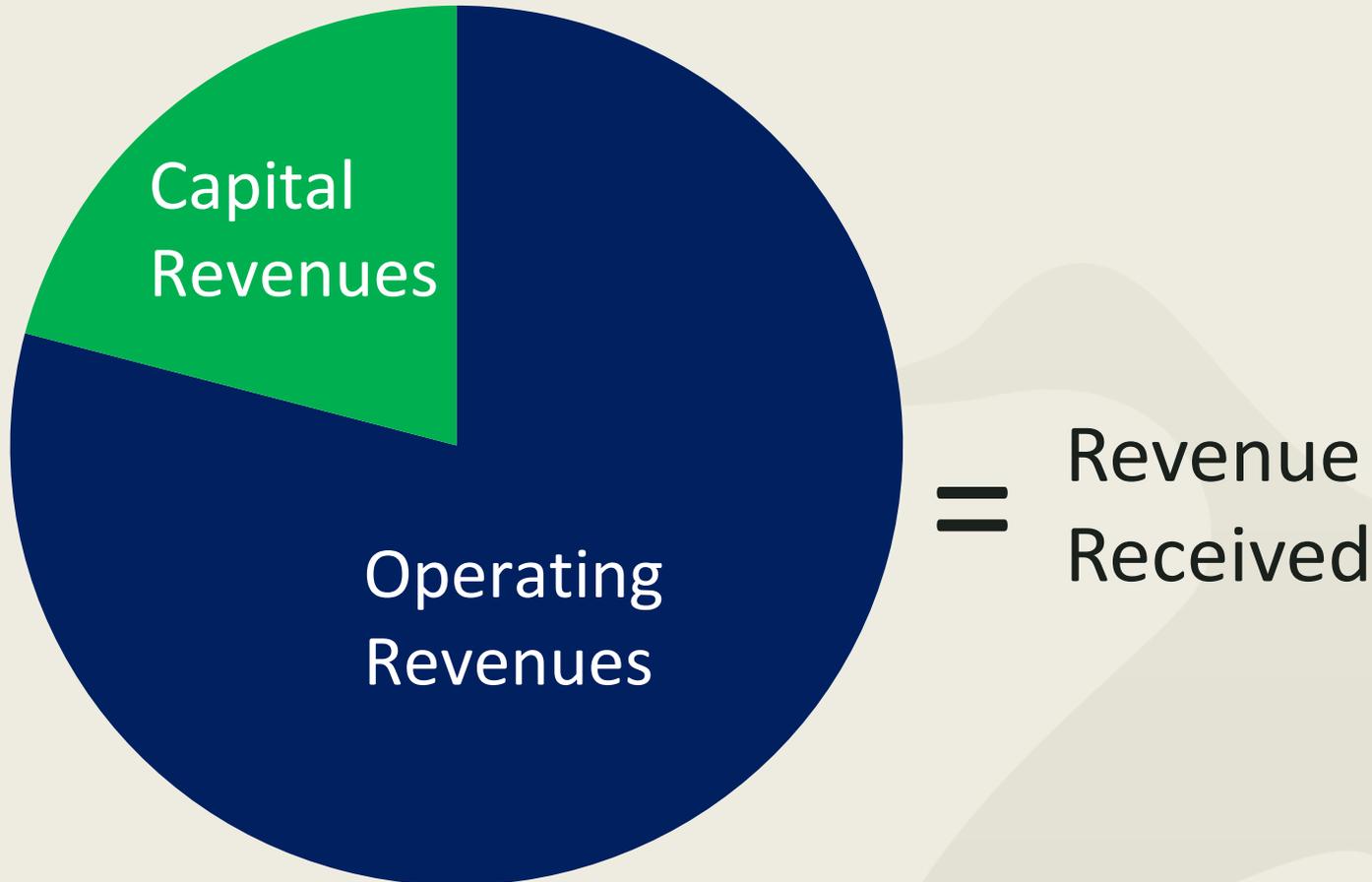


# OVERVIEW

# Uses of Funds

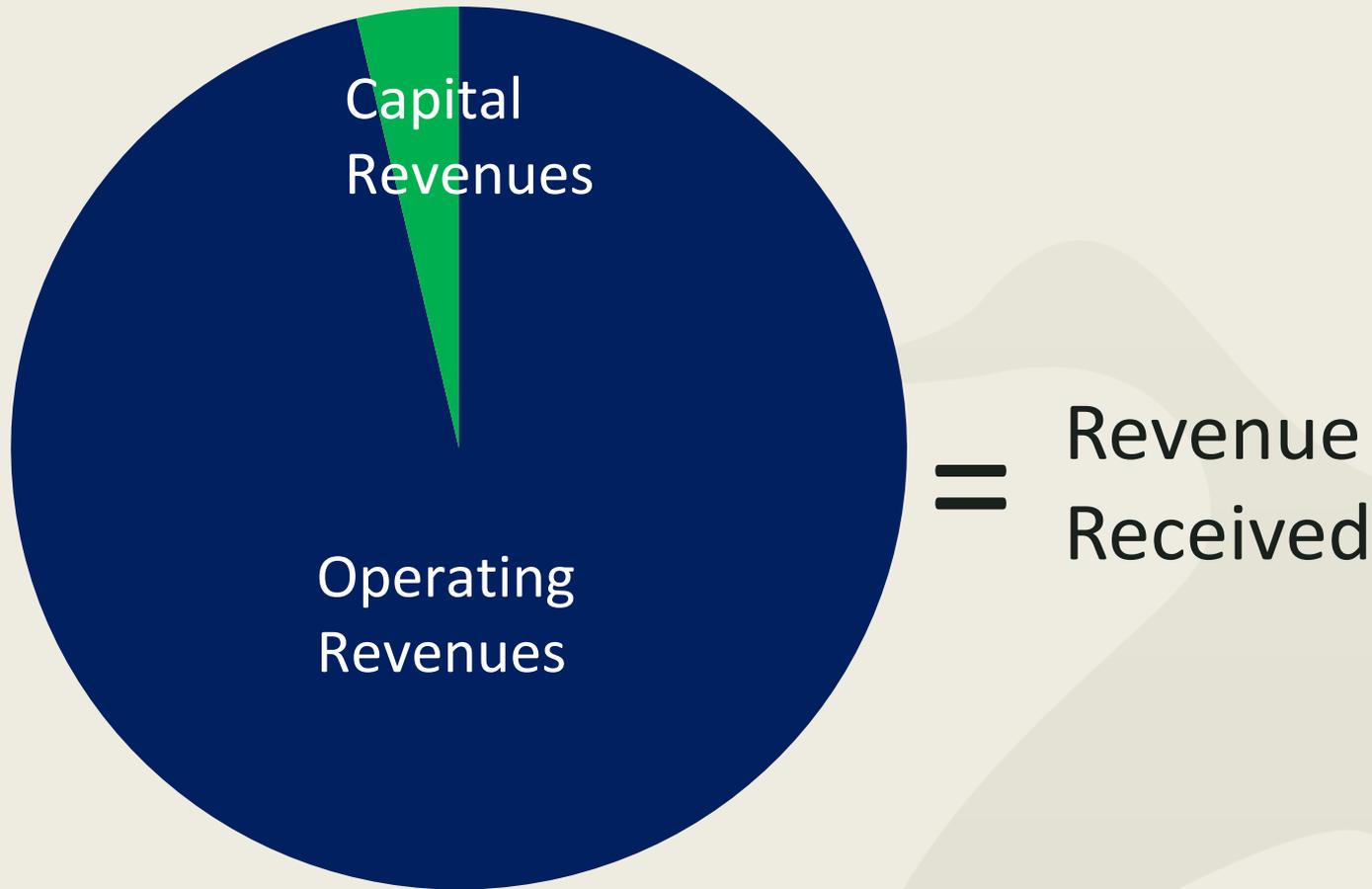


# Source of Funds - Water



Operating Revenues = Water Sales, Backflow Prevention Fees, Interest on Investments  
Capital Revenues = Extension Fees, Connection Fees, HWS Surcharge, Interest on Investments

# Source of Funds – Wastewater



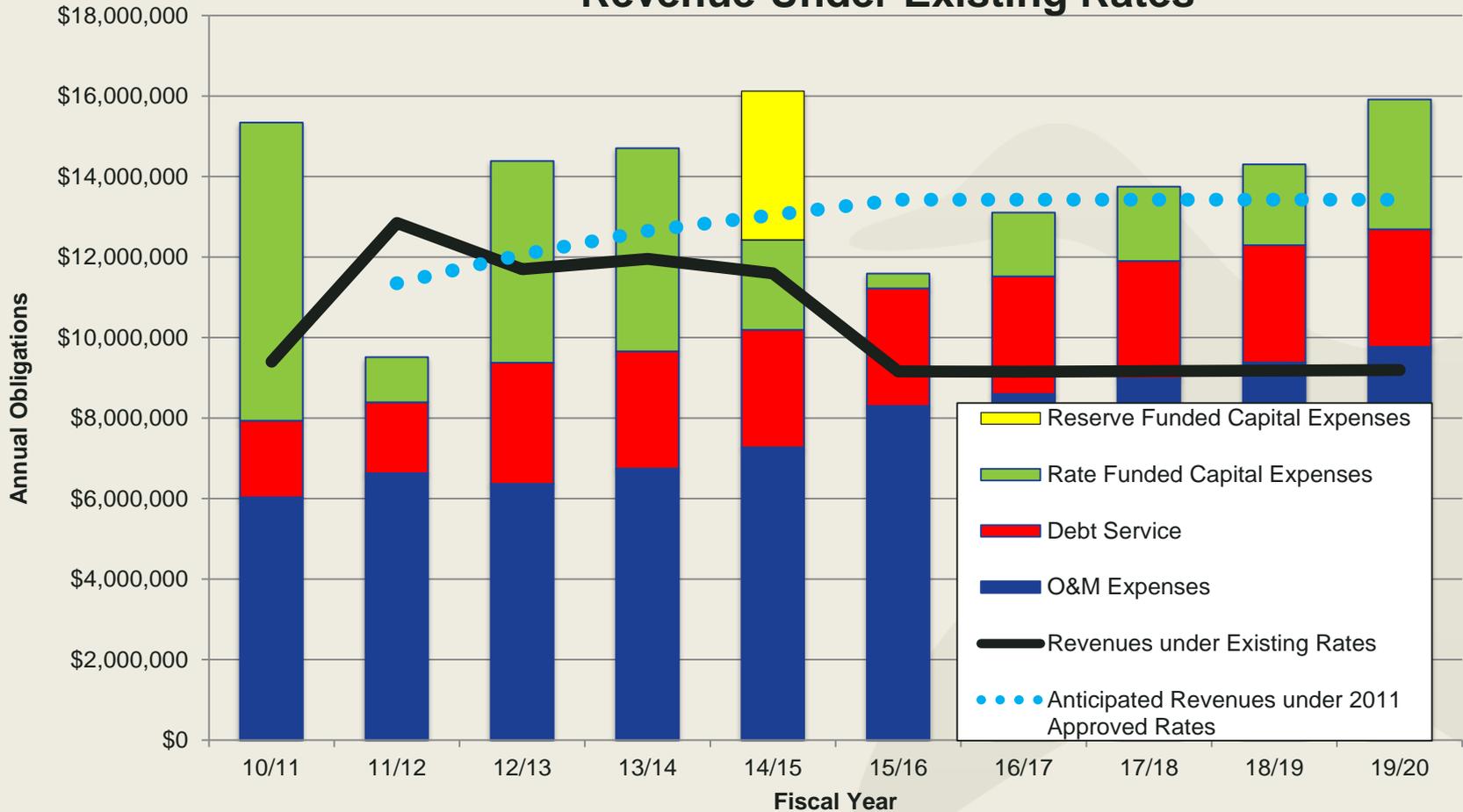
Operating Revenues – Wastewater Service Charges, Septage Fees, Lab Fees, Pretreatment Permits, Interest on Investments

Capital Revenues – Extension Fees, Connection Fees, Interest on Investments

# Funding Allocation Over Time



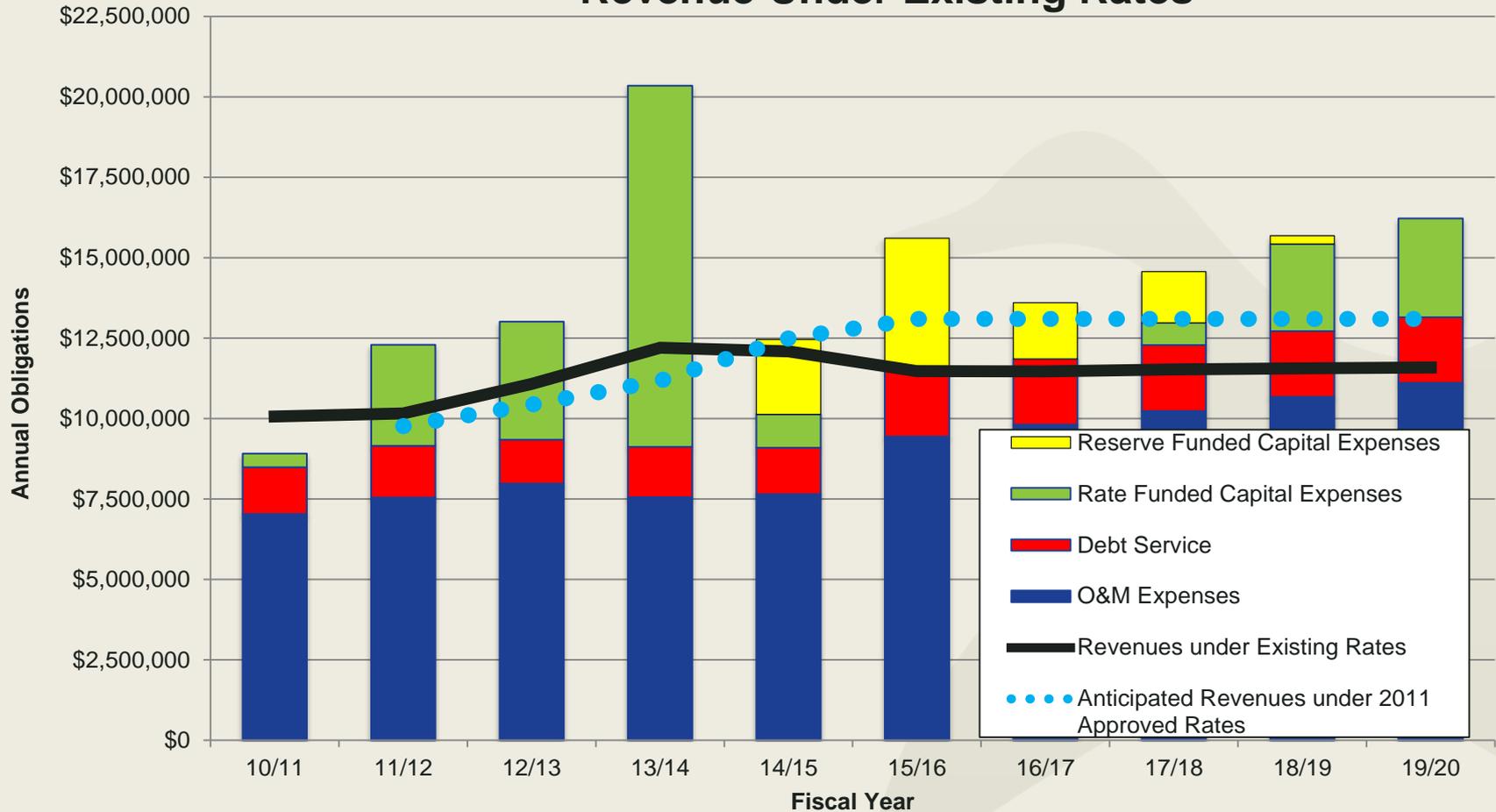
## Water Revenue Requirements vs. Revenue Under Existing Rates



# Funding Allocation Over Time



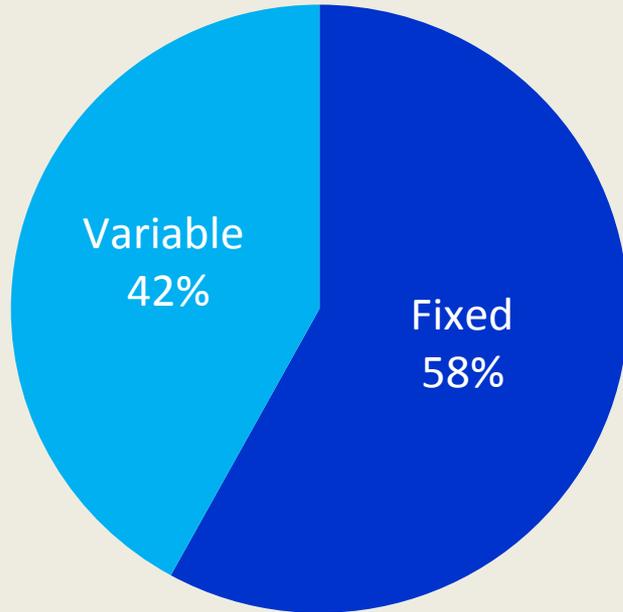
## Wastewater Revenue Requirements vs. Revenue Under Existing Rates



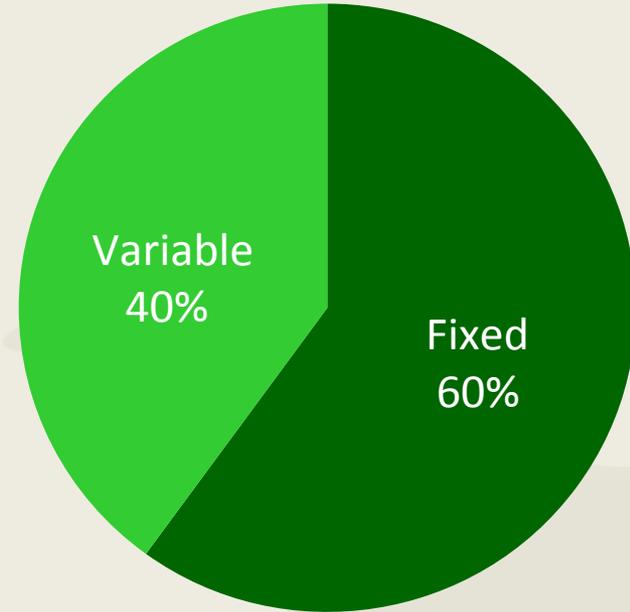


# OPERATIONAL NEEDS

# Operating Costs



Water



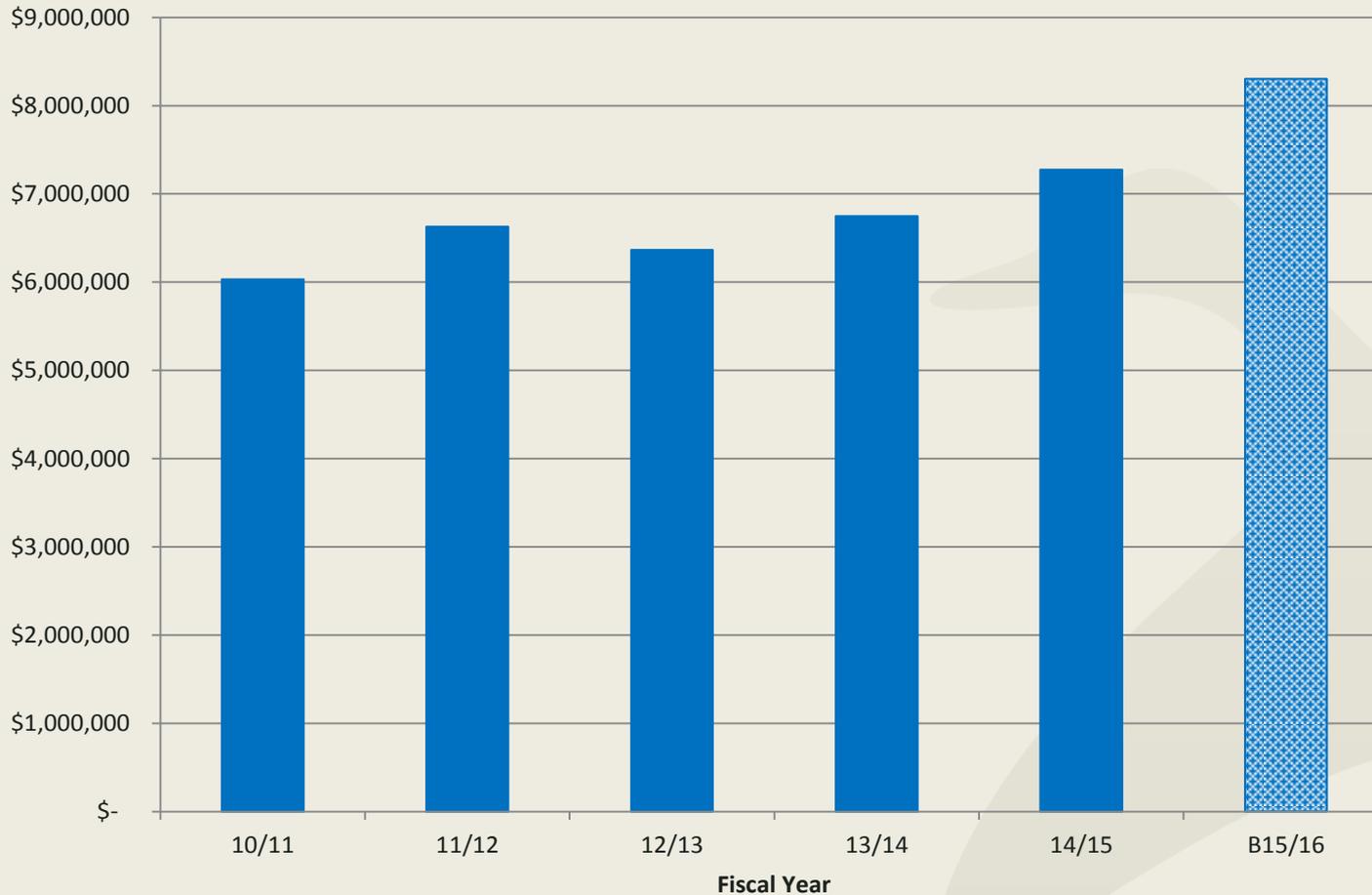
Wastewater

- Fixed Costs – Do not vary by volume treated
  - Examples: Raw water, staffing, maintenance, and repairs
- Variable Costs – Vary depending on volume treated
  - Examples: Power, utilities, and chemicals

# Operating Costs - Water



## Water Operating Costs

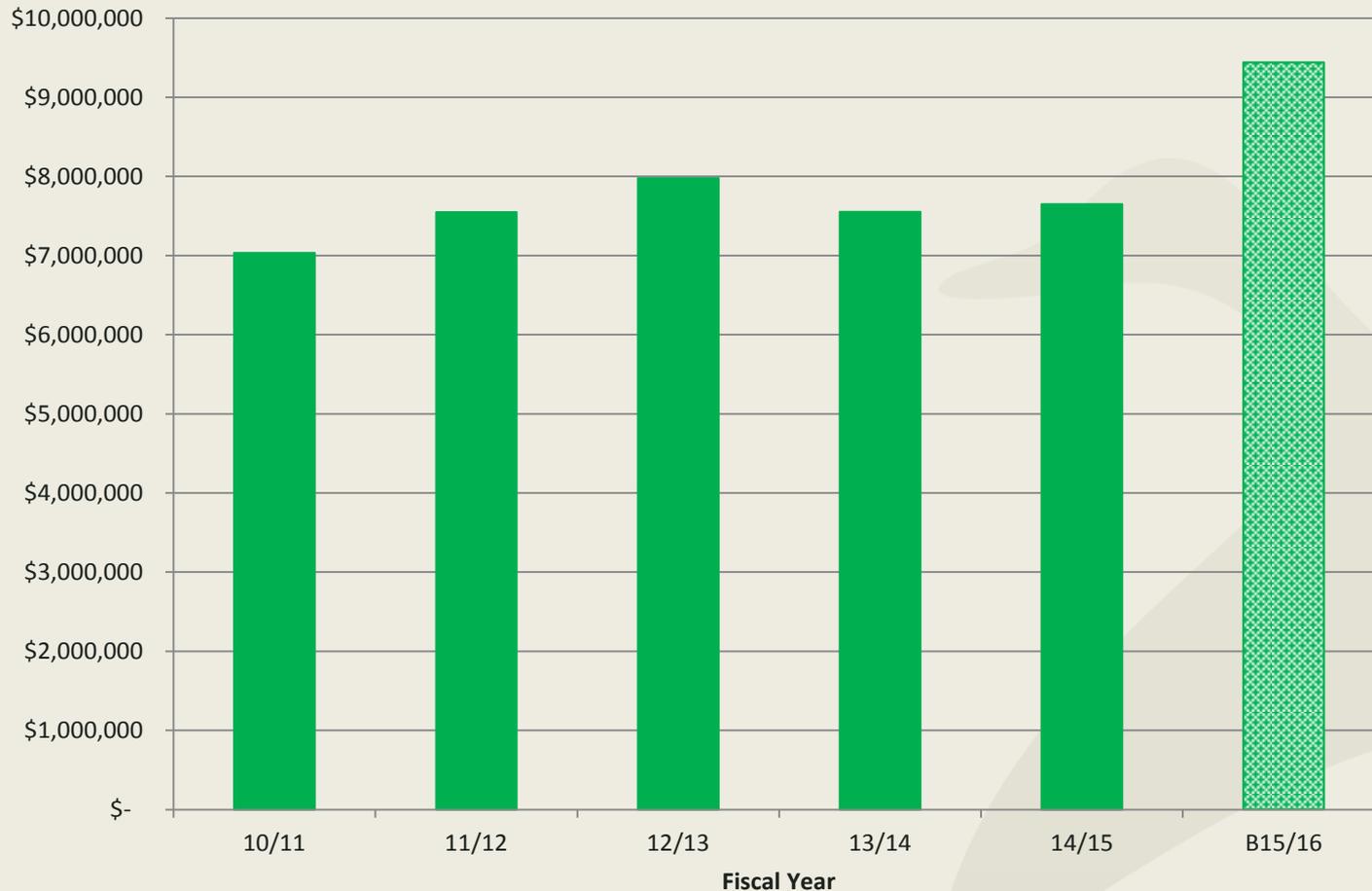


Operating Costs = Salaries & Benefits + Materials, Services, & Supplies

# Operating Costs - Wastewater



## Wastewater Operating Costs



Operating Costs = Salaries & Benefits + Materials, Services, & Supplies

# Debt Service - Water

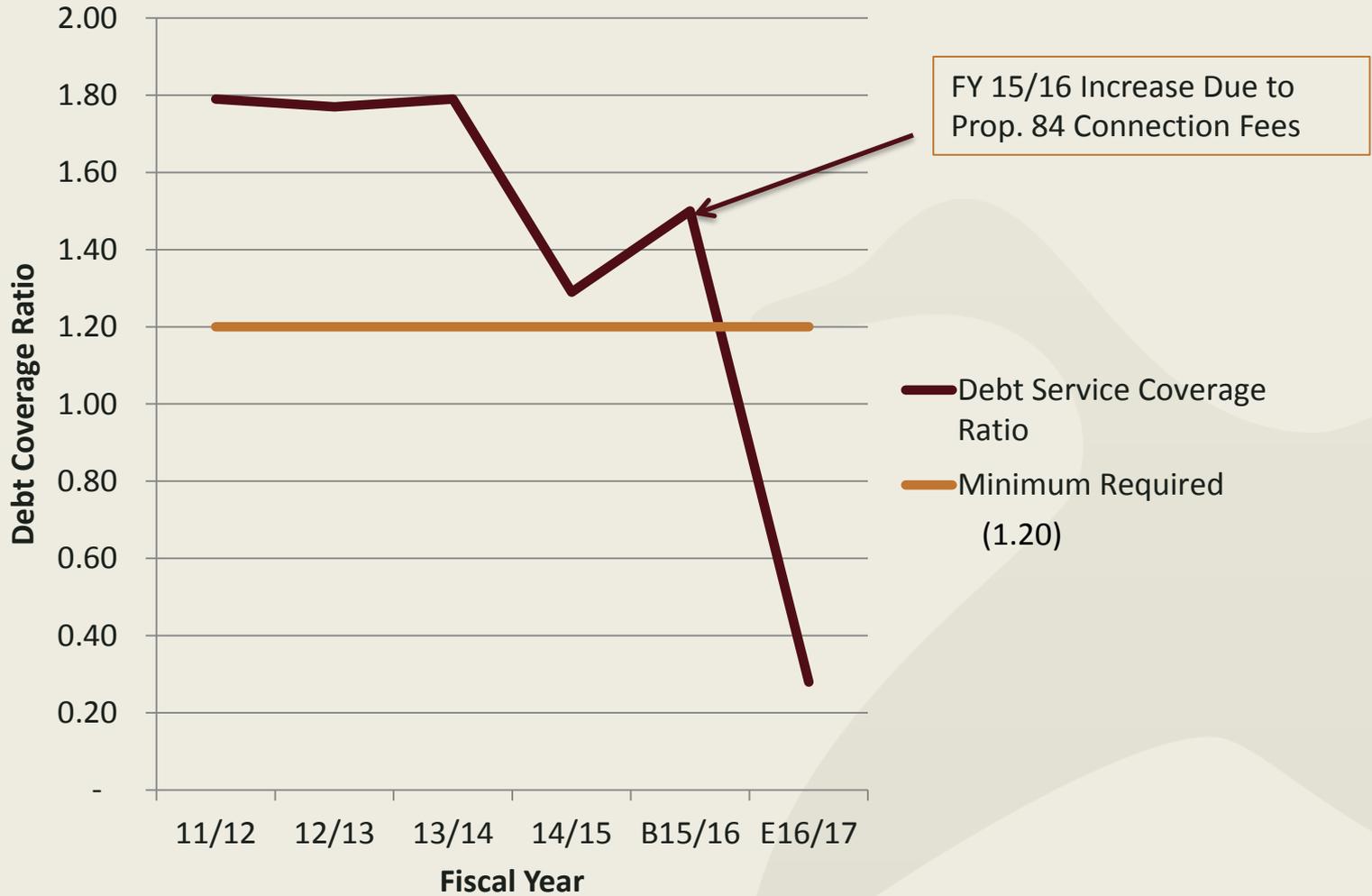


Title	Amount	Approximate Annual Payment	Final Debt Payment
Revenue Refunding Bonds - 2013	\$21,710,000	\$1,391,000	06/01/35
SRF Loan – Region 1	\$5,927,874	\$378,500	07/01/32
SRF Loan – Region 2/3	\$18,381,507	\$1,150,000	07/01/32
Total:	\$46,019,381	\$2,920,000	

Region 1 SRF Loan - \$150,000 of payment collected as customer surcharge

Region 2/3 SRF Loan - \$500,000 of payment collected as customer surcharge

# Debt Service - Water

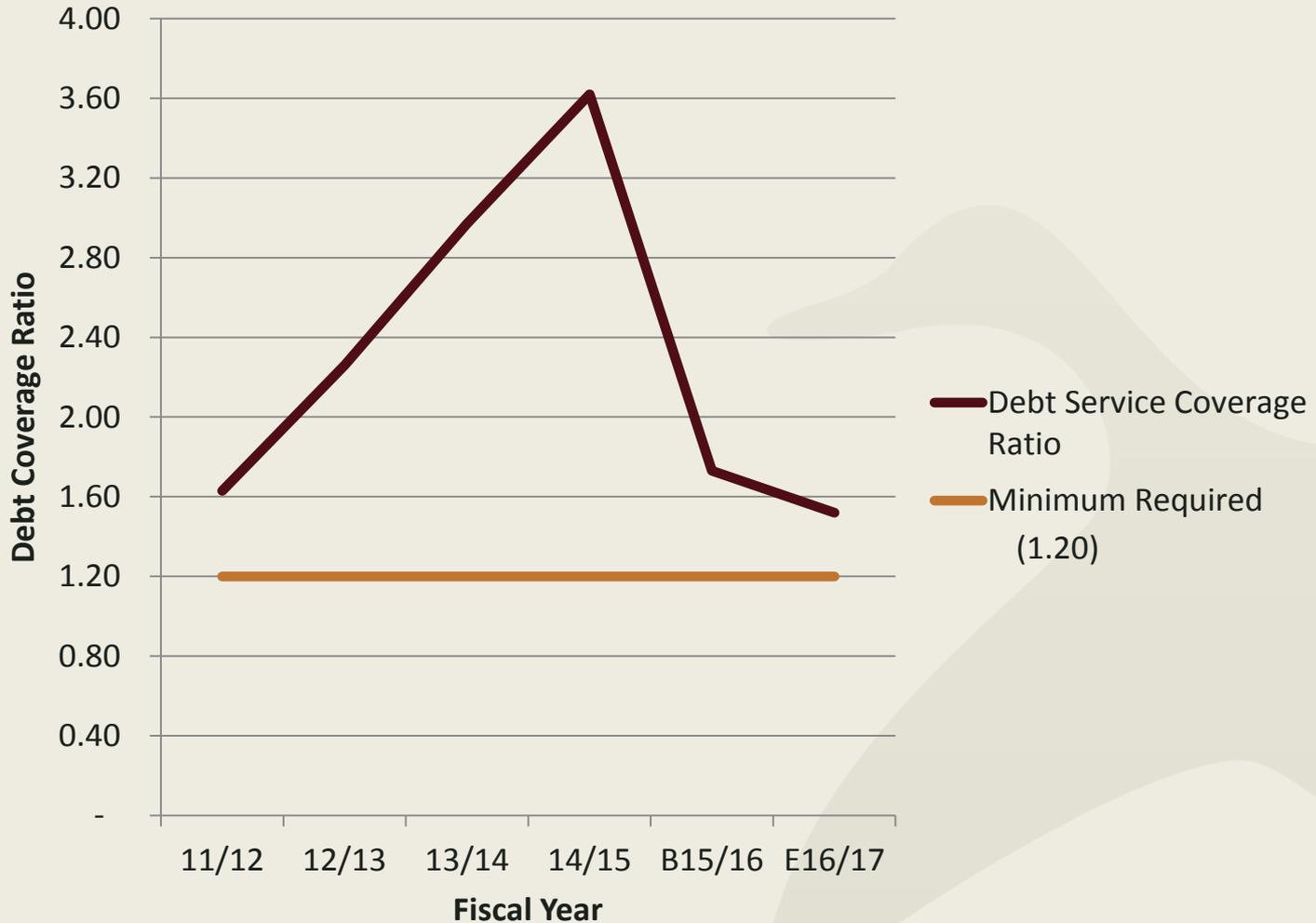


# Debt Service - Wastewater



Title	Amount	Approximate Annual Payment	Final Debt Payment
Revenue Refunding Bonds – 2011	\$9,715,000	\$500,000	06/01/32
Revenue Refunding Bonds – 2014	\$7,321,914	\$759,000	06/01/25
SRF Loan – WWTF	\$3,513,194	\$219,000	04/30/35
SRF Loan – Collection	\$7,193,965	\$386,000	12/31/34
Solar Project	\$2,398,711	\$173,000	06/30/33
Total:	\$30,142,784	\$2,040,000	

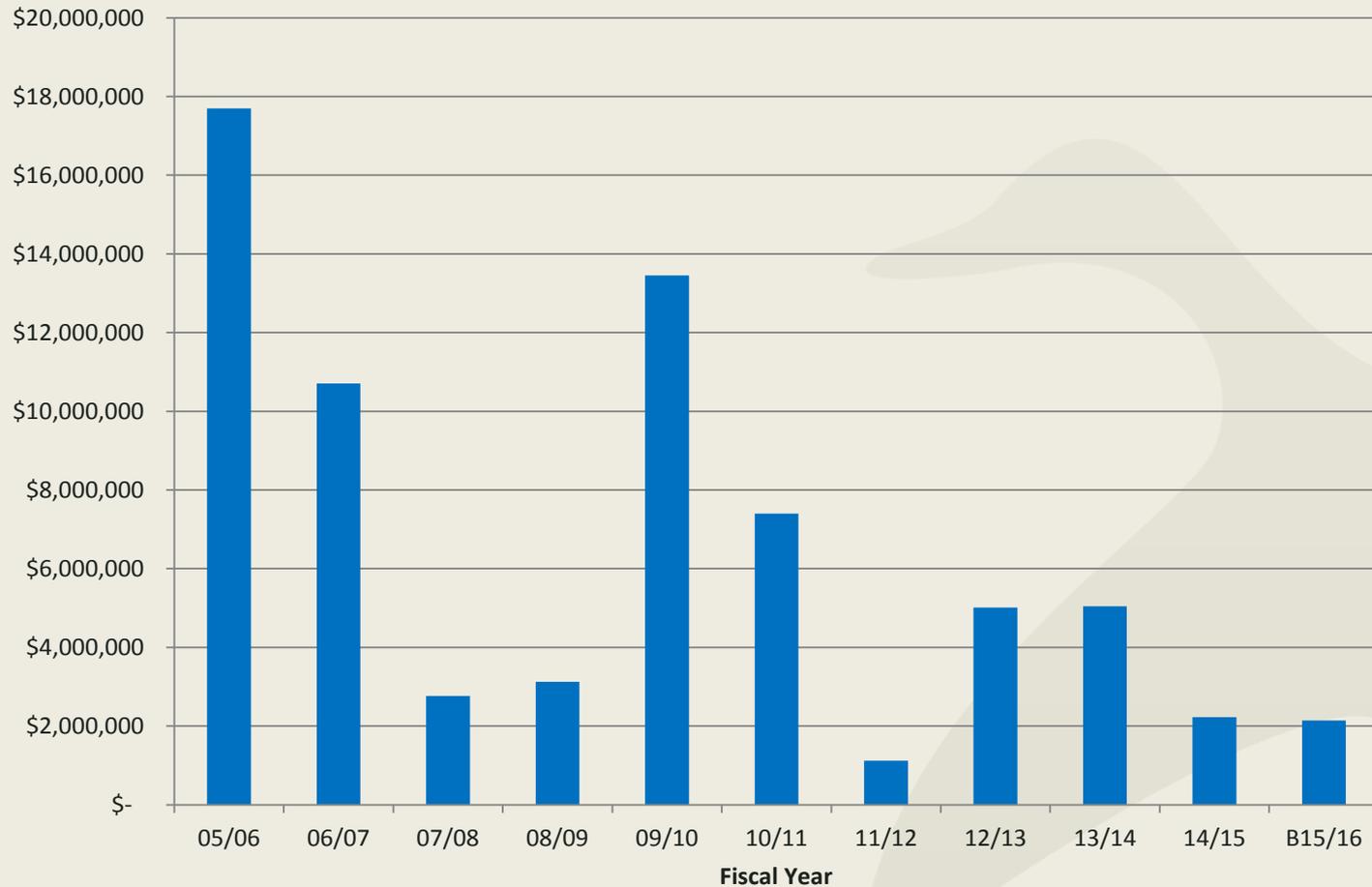
# Debt Service - Wastewater



# Capital Investment - Water



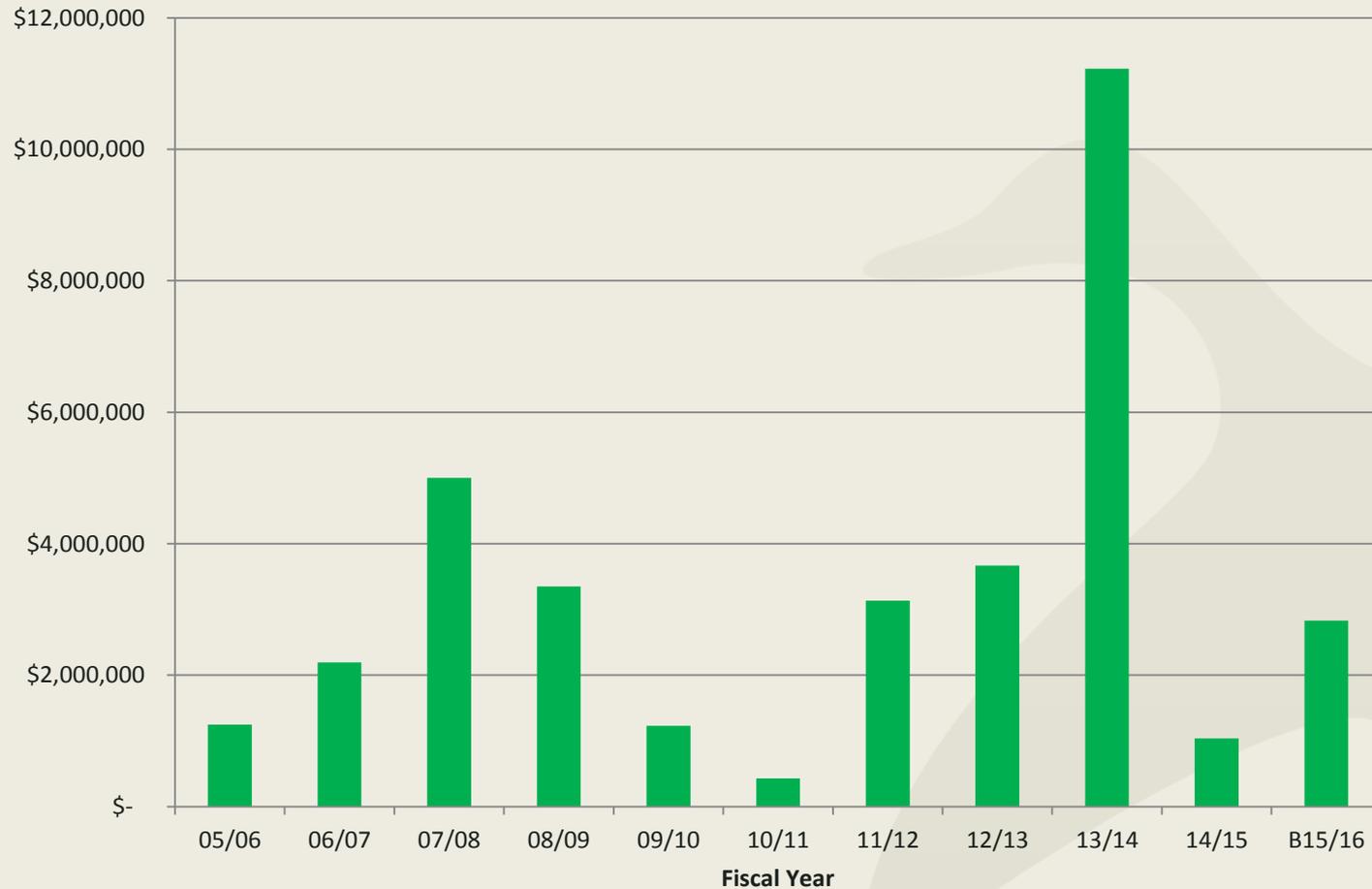
## Capital Improvement Program Expenditures



# Capital Investment – Wastewater



## Capital Improvement Program Expenditures



# SYSTEM CONDITION

# Water System Overview



- Water Treatment Plant
  - Placed into operation 1969
  - Expanded in 1999 – 24 MGD
  - Expanded in 2007 – 36 MGD
  - Current Permitted Capacity – 42 MGD
  - Average Demands

Year	Winter (MGD)	Summer (MGD)
2011	8.5	20.7
2012	9.7	22.9
2013	9.0	21.0
2014	9.4	18.7
2015	8.6	15.0

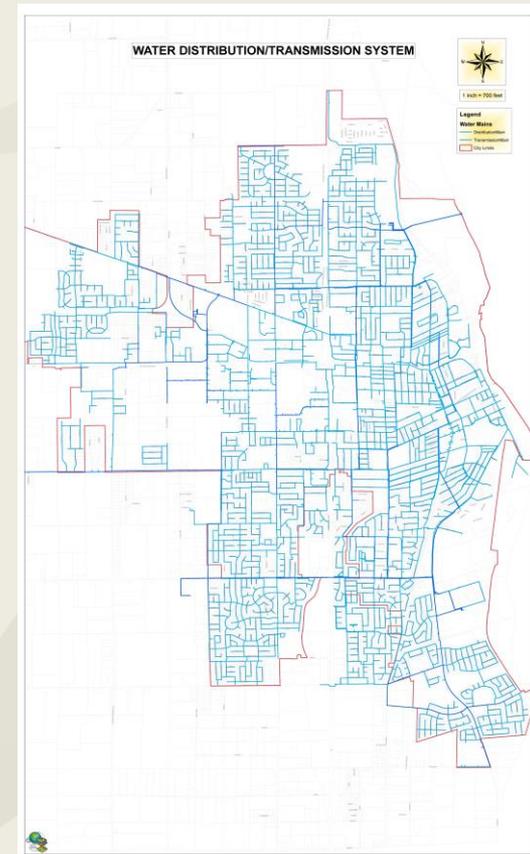
# Water Treatment Plant



# Water System Overview



- Water Distribution System
  - 265 Miles of Transmission and Distribution Mains
  - Sizes Range From 3” to 36”
  - 6 Storage Tanks



# Water Infrastructure Condition & Needs



- Water Treatment Plant

Project	Estimated Cost	Priority
Electrical & Instrumentation Improvements	\$1,000,000	1
Aquifer Storage Recovery/Second Well	\$4,600,000	1
Fluoride System Replacement	\$200,000	1
Security Improvements	\$75,000	1
Carbon Feed System Replacement	\$500,000	2
Backwash Recovery	\$1,000,000	3
Sedimentation/Floc Basin Rehabilitation	\$1,800,000	3
Groundwater Well Abandonments	\$400,000	4
Total:	\$9,575,000	

# Water Infrastructure Condition & Needs



# Water Infrastructure Condition & Needs



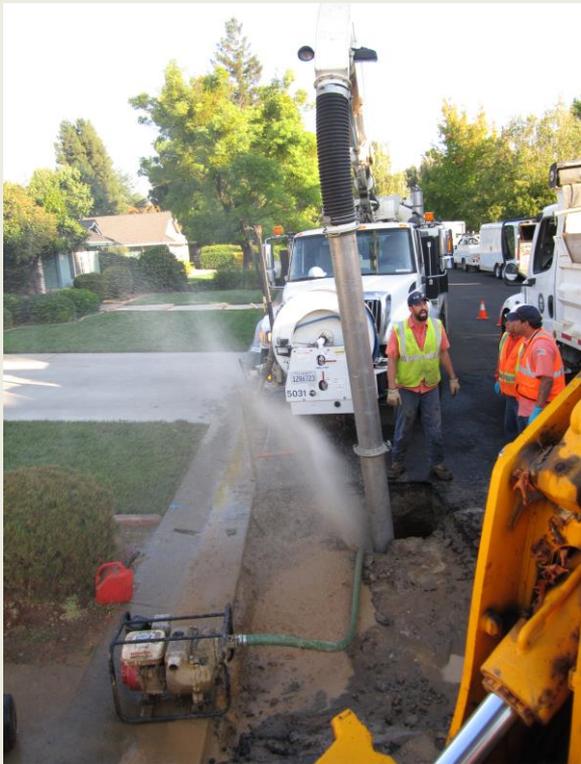
- Water Distribution System

Project	Estimated Cost	Priority
Recoating Water Storage Reservoirs	\$400,000 Annual	1
Replacement of Water Mains	\$27,400,000	1
Replace Water Services/Water Meters	\$700,000 Annual	1

# Water Infrastructure Condition & Needs



- Water Distribution System

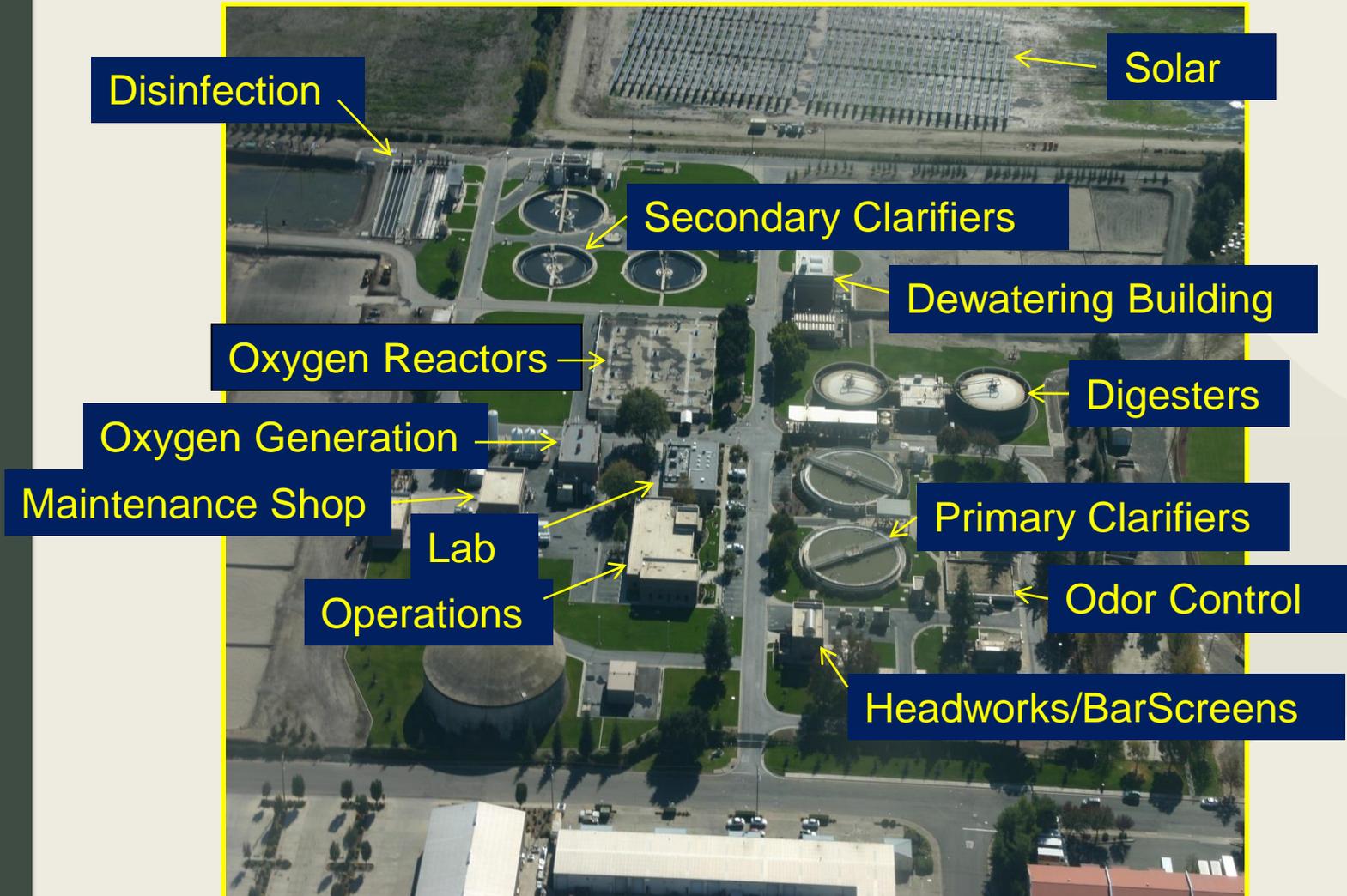


# Wastewater System Overview



- Wastewater Treatment Plant
  - Placed into operation 1972
  - Expanded in 2005
  - Current Permitted Capacity – 10.5 MGD
  - Current Average Flow – 6.5 MGD
  - Solids Coming Into Facility – 11,000 lbs/day

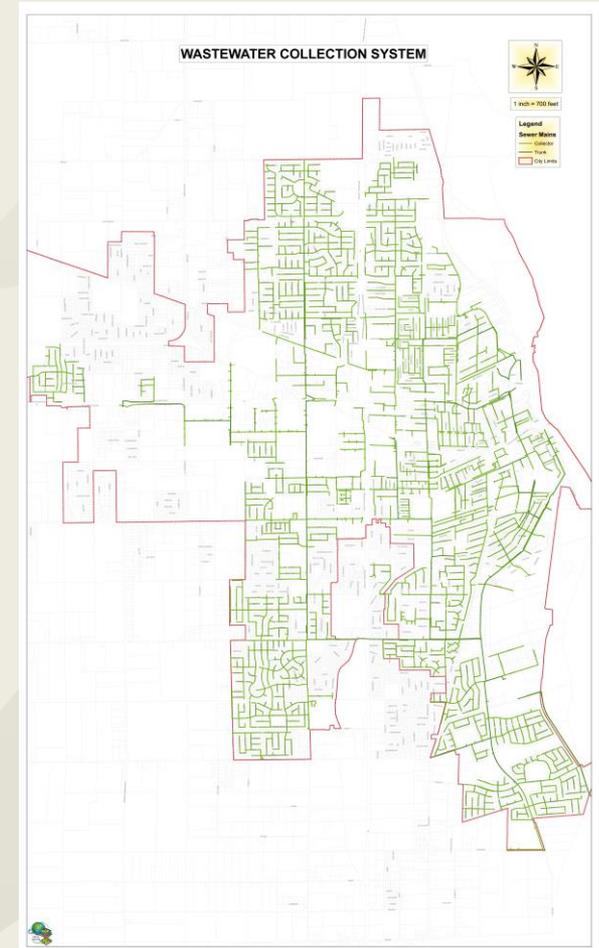
# Wastewater Treatment Facility



# Wastewater System Overview



- Wastewater Collection System
  - 173 Miles of Sewer Mains
  - Sizes Range From 6” to 42”
  - 17 Sewer Lift Stations



# Wastewater Infrastructure Condition & Needs



- Wastewater Treatment Facility

Project	Estimated Cost	Priority
Digester Improvements	\$3,300,000	1
Secondary Clarifier No. 4	\$5,500,000	1
West Chlorine Contact Basin Rehabilitation	\$650,000	1
New Outfall Diffuser	\$11,500,000	1
Advanced Treatment & Water Recycling Opportunities Evaluation	\$270,000	1
Barscreen Rehabilitation/Replacement	\$1,200,000	2
Dewatering System Improvements	\$3,550,000	2
Electrical & Instrumentation Improvements	\$1,000,000	2

# Wastewater Infrastructure Condition & Needs



- Wastewater Treatment Facility

Project	Estimated Cost	Priority
Oxygen Generation Improvements	\$4,000,000	3
Disinfection System Evaluation & Replacement	\$3,150,000	3
New Septage Receiving Facility	\$1,650,000	3
Secondary Clarifier Improvements	\$980,000	3
New Co-Generation System	\$2,800,000	3
Grit Removal Facility	\$4,000,000	4
Total:	\$43,550,000	

# Wastewater Infrastructure Condition & Needs



# Wastewater Infrastructure Condition & Needs



# Wastewater Infrastructure Condition & Needs



Existing Outfall Diffuser

Proposed Outfall Diffuser Location

New Outfall Diffuser

# Wastewater Infrastructure Condition & Needs



- Wastewater Collection System

Project	Estimated Cost	Priority
Replacement of Sewer Mains	\$33,000,000	1
Rehabilitation of Sewer Mains & Manholes		
Lift Station Improvements	\$150,000 Annual	1

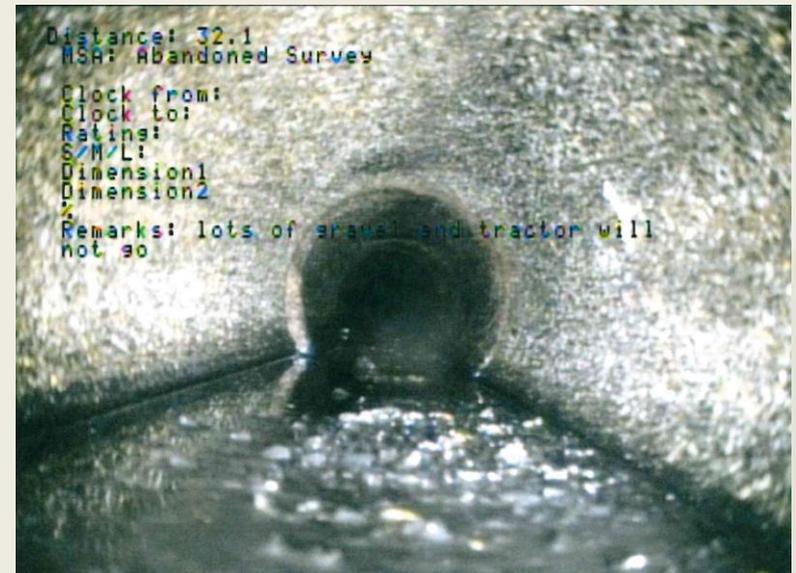
# Wastewater Infrastructure Condition & Needs



- Wastewater Collection System



Manhole



Concrete Sewer Pipe



# EXISTING WATER RATES

# Existing Water Rates



Meter Size	Baseline HCF's*	9/1/11 – 8/31/12	9/1/12 – 8/31/13	9/1/13 – 8/31/14	9/1/14 – 8/31/15	9/1/15 – 8/31/16
1"	15	\$18.25	\$19.39	\$20.35	\$20.98	\$21.59
1-1/2"	30	\$36.50	\$38.79	\$40.70	\$41.96	\$43.18
2"	60	\$73.00	\$77.58	\$81.40	\$83.93	\$86.37
3"	240	\$292.01	\$310.32	\$325.60	\$335.71	\$345.47
4"	480	\$584.01	\$620.64	\$651.20	\$671.42	\$690.95
6"	900	\$1,095.02	\$1,163.69	\$1,220.99	\$1,258.48	\$1,295.52
8"	2,100	\$2,555.05	\$2,715.28	\$2,848.98	\$2,937.48	\$3,022.89
Flow Rate Per Excess HCF		\$1.21	\$1.28	\$1.34	\$1.39	\$1.43

\*HCF = Hundred Cubic Feet = 748 Gallons

# Existing Water Rates



## RATE HISTORY – 1" WATER METER



# Monthly Water Bill Calculation



Monthly Bill = Base Rate + (Amount Over Base Allocation x Flow Rate)

Example: Monthly Use = 20 HCF

Monthly Bill = \$21.59 + (5 HCF x \$1.43)  
= \$28.74



# WATER RATE OPTIONS

# Water/Wastewater Rate Options



- 2 Year Rate Plan
  - O&M Expenses + Debt Service
- 5 Year Rate Plan
  - Option 1: O&M Expenses + Debt Service + Priority 1 & 2 Projects
  - Option 2: O&M Expenses + Debt Service + All Projects\*

\*"All projects" refers to Priority 1 – 4 projects. Does not include tertiary treatment project.

# Water Rate Options



- All Water Rate Options recommend a reduction of the Baseline HCF's by 33% to reflect State Conservation Mandate

Meter Size	Existing Baseline HCF's*	Proposed Baseline HCF's
1"	15	10
1-1/2"	30	20
2"	60	40
3"	240	160
4"	480	320
6"	900	600
8"	2,100	1,400

\*1 HCF = 748 Gallons

# Water Rate Options



- 2-Year Rate Plan
  - O&M Expenses + Debt Service

Meter Size	Baseline HCF's*	Current Rate	Year 1	Year 2
1"	10	\$21.59	\$25.91	\$29.79
1-1/2"	20	\$43.18	\$51.82	\$59.59
2"	40	\$86.37	\$103.64	\$119.19
3"	160	\$345.47	\$414.56	\$476.75
4"	320	\$690.95	\$829.14	\$953.51
6"	600	\$1,295.52	\$1,554.62	\$1,787.82
8"	1,400	\$3,022.89	\$3,627.47	\$4,171.59
Flow Rate Per Excess HCF		\$1.43	\$1.43	\$1.64

\*1 HCF = 748 Gallons

# Water Rate Options



- 5-Year Rate Plan – Option 1
  - O&M Expenses + Debt Service + Priority 1 & 2 Projects

Meter Size	Baseline HCF's*	Current Rate	Year 1	Year 2	Year 3	Year 4	Year 5
1"	10	\$21.59	\$27.64	\$32.89	\$39.13	\$40.70	\$42.33
1-1/2"	20	\$43.18	\$55.27	\$65.77	\$78.27	\$81.40	\$84.66
2"	40	\$86.37	\$110.55	\$131.56	\$156.55	\$162.82	\$169.33
3"	160	\$345.47	\$442.20	\$526.22	\$626.20	\$651.25	\$677.30
4"	320	\$690.95	\$884.42	\$1,052.46	\$1,252.42	\$1,302.52	\$1,354.62
6"	600	\$1,295.52	\$1,658.27	\$1,973.34	\$2,348.27	\$2,442.20	\$2,539.89
8"	1,400	\$3,022.89	\$3,869.30	\$4,604.47	\$5,479.31	\$5,698.49	\$5,926.43
Flow Rate Per Excess HCF		\$1.43	\$1.430	\$1.701	\$2.025	\$2.105	\$2.190

\*1 HCF = 748 Gallons

# Water Rate Options



- 5-Year Rate Plan – Option 2
  - O&M Expenses + Debt Service + All Projects

Meter Size	Baseline HCF's*	Current Rate	Year 1	Year 2	Year 3	Year 4	Year 5
1"	10	\$21.59	\$33.68	\$42.77	\$47.05	\$49.87	\$52.87
1-1/2"	20	\$43.18	\$67.36	\$85.55	\$94.10	\$99.75	\$105.73
2"	40	\$86.37	\$134.74	\$171.12	\$188.23	\$199.52	\$211.49
3"	160	\$345.47	\$538.93	\$684.45	\$752.89	\$798.06	\$845.95
4"	320	\$690.95	\$1,077.88	\$1,368.91	\$1,505.80	\$1,596.15	\$1,691.92
6"	600	\$1,295.52	\$2,021.01	\$2,566.68	\$2,823.35	\$2,992.75	\$3,172.32
8"	1,400	\$3,022.89	\$4,715.71	\$5,988.95	\$6,587.84	\$6,983.12	\$7,402.10
Flow Rate Per Excess HCF		\$1.43	\$1.430	\$1.816	\$1.997	\$2.117	\$2.244

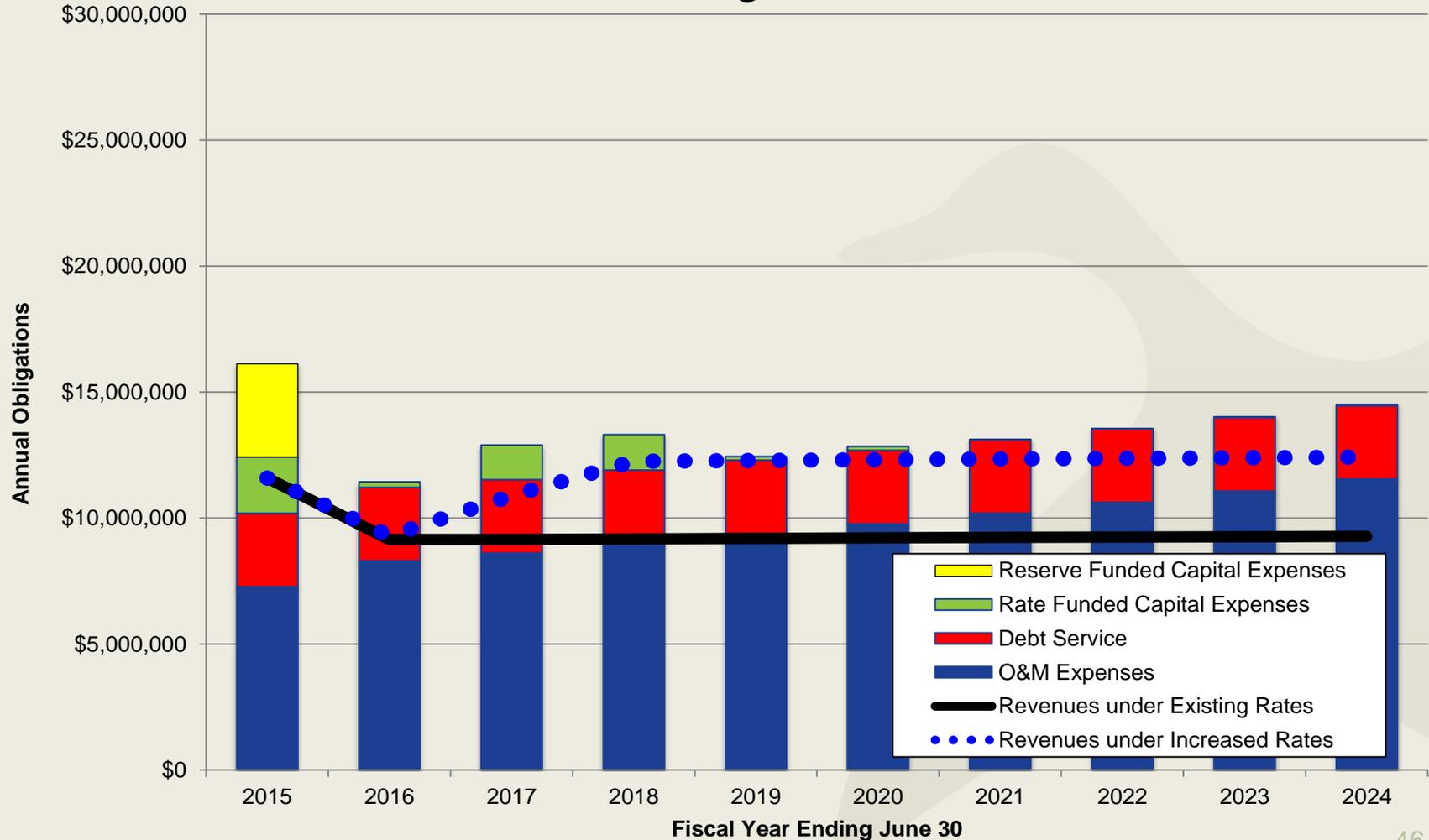
\*1 HCF = 748 Gallons

# Funding Allocation Over Time

## 2-Year Rate Plan



**Water Revenue Requirements vs.  
Revenue Under Existing and Increased Rates**

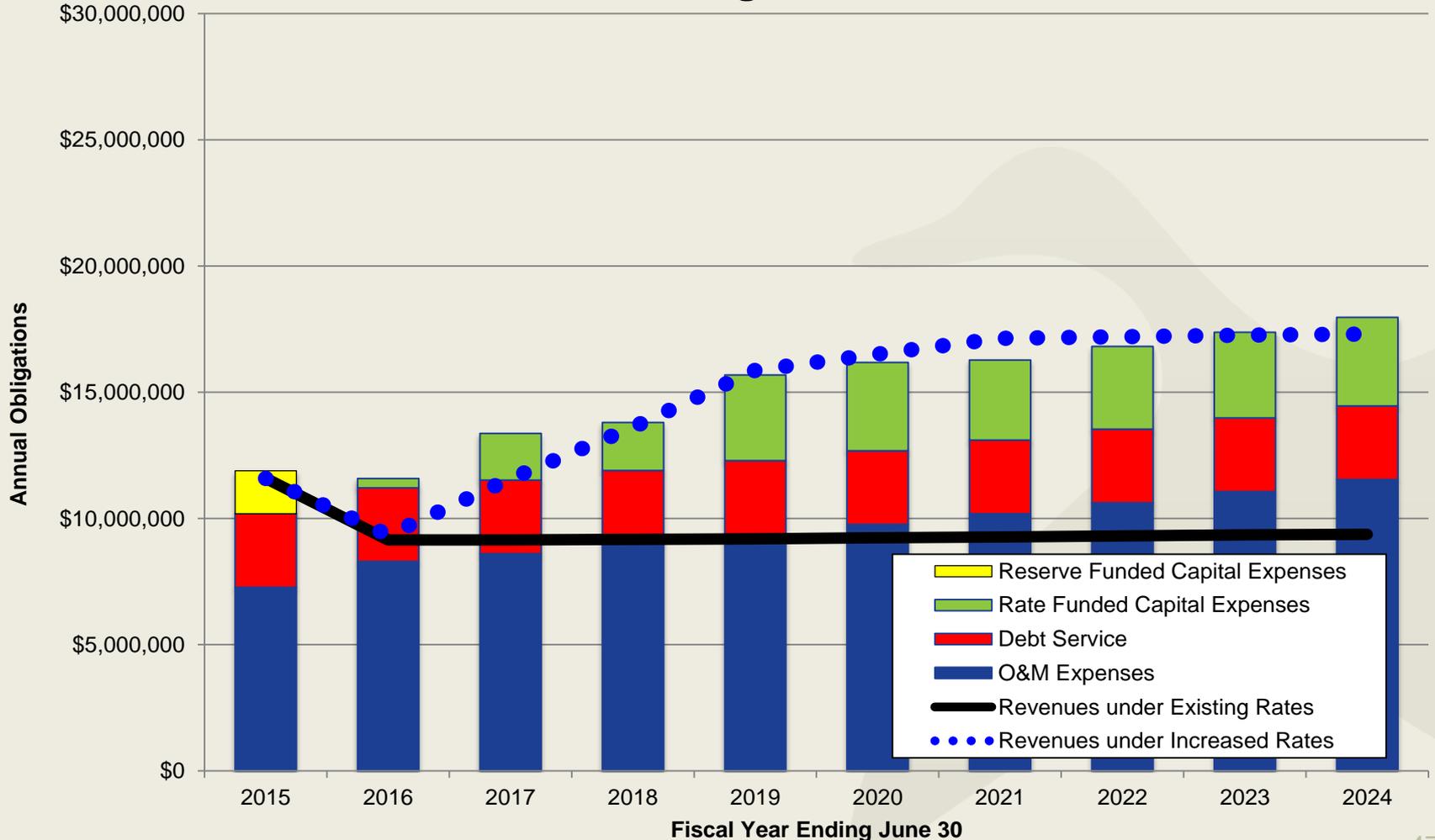


# Funding Allocation Over Time

## 5-Year Rate Plan – Option 1



**Water Revenue Requirements vs.  
Revenue Under Existing and Increased Rates**

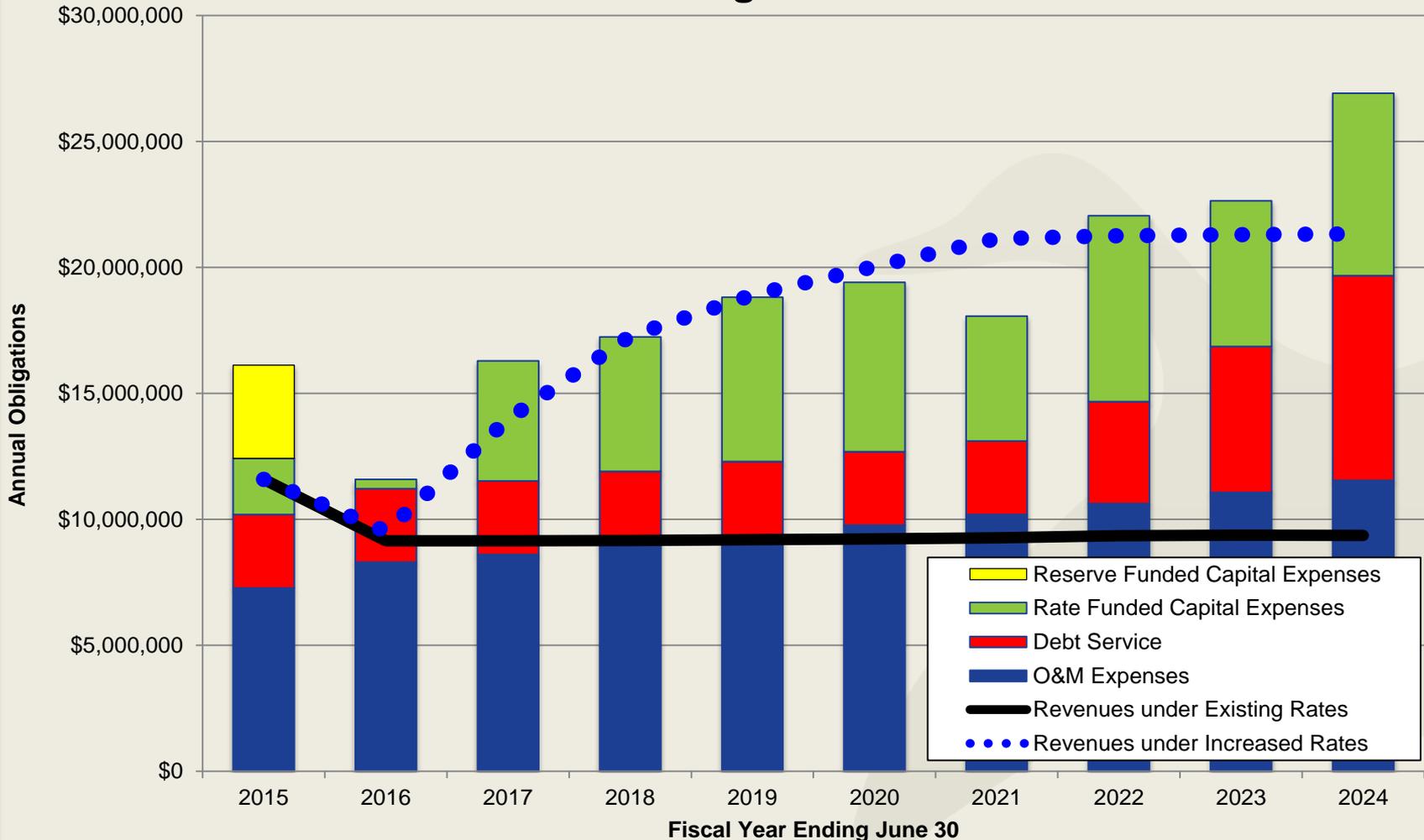


# Funding Allocation Over Time

## 5-Year Rate Plan – Option 2



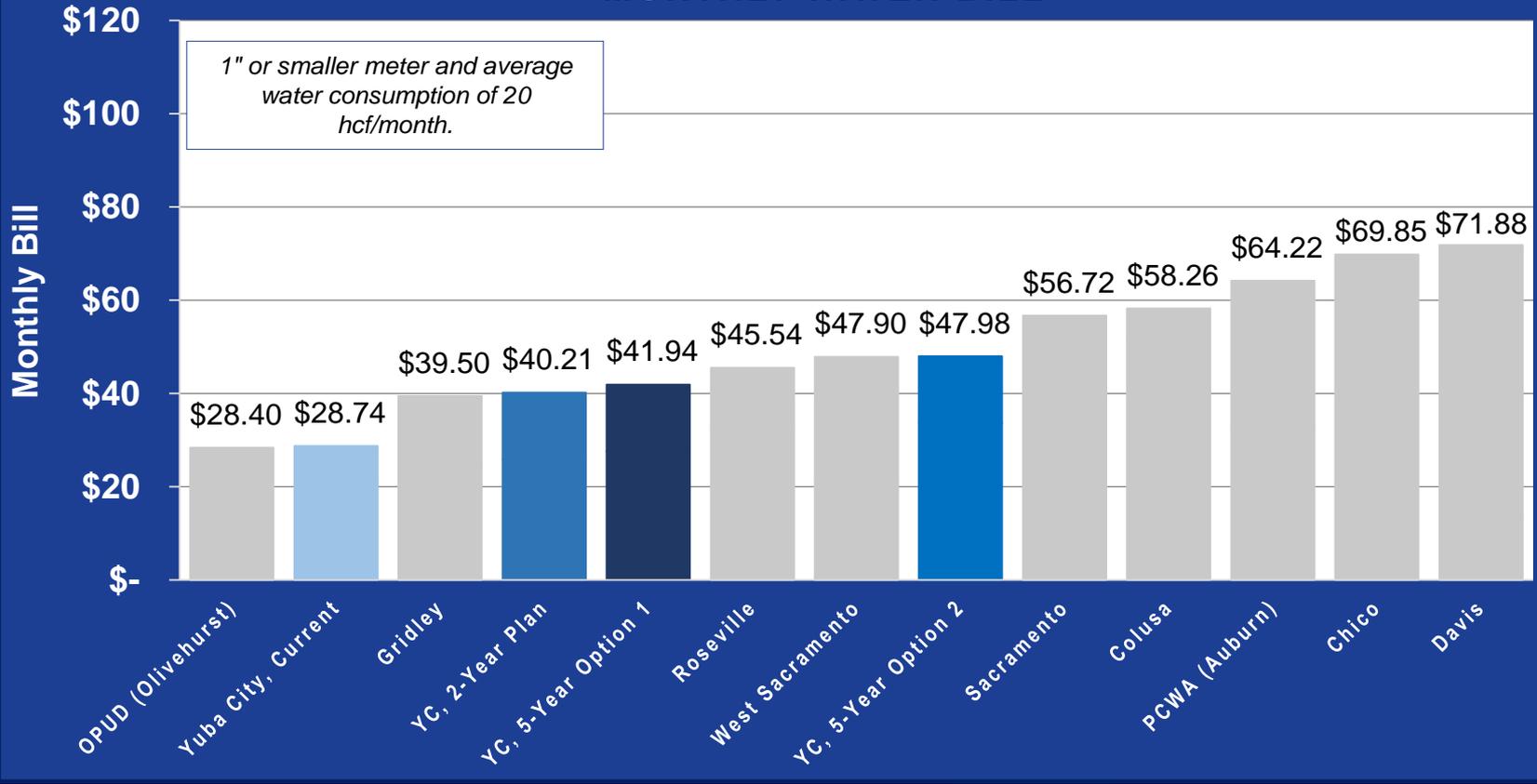
**Water Revenue Requirements vs.  
Revenue Under Existing and Increased Rates**



# Comparison to Other Agencies - SFR



**CITY OF YUBA CITY- REGIONAL COMPARISON  
MONTHLY WATER BILL**



# Key Decision Points - Water



- Reduce Base Allocation by 33%
- Rate Plan
  - 2 Year Rate Plan
    - O&M Expenses + Debt Service
  - 5 Year Rate Plan – Option 1
    - O&M Expenses + Debt Service + Priority 1 & 2 Projects
  - 5 Year Rate Plan – Option 2
    - O&M Expenses + Debt Service + All Projects



# EXISTING WASTEWATER RATES

# Existing Wastewater Rates



- Residential & Commercial

Type of Use	9/1/11 – 8/31/12	9/1/12 – 8/31/13	9/1/13 – 8/31/14	9/1/14 – 8/31/15	9/1/15 – 8/31/16
<b>Residential:</b>					
SFD	\$31.11	\$33.60	\$36.31	\$38.39	\$40.53
MFD	\$24.89	\$26.88	\$29.05	\$30.71	\$32.43
<b>Commercial:</b>					
C1	\$31.11	\$33.60	\$36.31	\$38.39	\$40.53
C2	\$34.92	\$37.76	\$40.83	\$43.19	\$45.60
C3	\$42.17	\$45.66	\$49.41	\$52.29	\$55.23
Flow Charge*	\$1.224	\$1.323	\$1.430	\$1.513	\$1.597

\*Commercial User Charges = Base Charge + Flow Charge for actual water used

# Existing Wastewater Rates



## RATE HISTORY – SINGLE FAMILY DWELLING



# Existing Wastewater Rates



- Industrial

Category	9/1/11 – 8/31/12	9/1/12 – 8/31/13	9/1/13 – 8/31/14	9/1/14 – 8/31/15	9/1/15 – 8/31/16
Flow Charge (Million Gallons)	\$1,981.34	\$2,041.25	\$2,147.15	\$2,240.06	\$2,336.92
Biochemical Oxygen Demand (lb)	\$0.2023	\$0.2087	\$0.2195	\$0.2292	\$0.2393
Suspended Solids (lb)	\$0.1521	\$0.1570	\$0.1651	\$0.1724	\$0.1800



# WASTEWATER RATE OPTIONS

# Wastewater Rate Options



- 2-Year Rate Plan
  - O&M Expenses + Debt Service

Sewer Rate Schedule	Current Rate	Year 1	Year 2
Single Family	\$40.53	\$43.77	\$46.84
Multi-Family	\$32.43	\$35.02	\$37.48
Commercial – C1	\$40.53	\$43.77	\$46.84
Commercial – C2	\$45.60	\$49.25	\$52.70
Commercial – C3	\$55.23	\$59.65	\$63.82
Commercial Volumetric Charge (HCF)	\$1.60	\$1.72	\$1.85
Schools – Per Student/Year	\$18.61	\$20.10	\$21.50

# Wastewater Rate Options



- 5-Year Rate Plan – Option 1
  - O&M Expenses + Debt Service + Priority 1 & 2 Projects

Sewer Rate Schedule	Current Rate	Year 1	Year 2	Year 3	Year 4	Year 5
Single Family	\$40.53	\$44.58	\$49.04	\$53.95	\$59.34	\$65.27
Multi-Family	\$32.43	\$35.67	\$39.24	\$43.16	\$47.48	\$52.23
Commercial – C1	\$40.53	\$44.58	\$49.04	\$53.95	\$59.34	\$65.27
Commercial – C2	\$45.60	\$50.16	\$55.18	\$60.69	\$66.76	\$73.44
Commercial – C3	\$55.23	\$60.75	\$66.83	\$73.51	\$80.86	\$88.95
Commercial Volumetric Charge (HCF)	\$1.60	\$1.76	\$1.93	\$2.13	\$2.34	\$2.57
Schools – Per Student/Year	\$18.61	\$20.47	\$22.52	\$24.77	\$27.25	\$29.97

# Wastewater Rate Options



- 5-Year Rate Plan – Option 2
  - O&M Expenses + Debt Service + All Projects

Sewer Rate Schedule	Current Rate	Year 1	Year 2	Year 3	Year 4	Year 5
Single Family	\$40.53	\$47.01	\$54.54	\$62.17	\$70.88	\$79.38
Multi-Family	\$32.43	\$37.62	\$43.64	\$49.75	\$56.71	\$63.52
Commercial – C1	\$40.53	\$47.01	\$54.54	\$62.17	\$70.88	\$79.38
Commercial – C2	\$45.60	\$52.90	\$61.36	\$69.95	\$79.74	\$89.31
Commercial – C3	\$55.23	\$64.07	\$74.32	\$84.72	\$96.58	\$108.17
Commercial Volumetric Charge (HCF)	\$1.60	\$1.85	\$2.15	\$2.45	\$2.79	\$3.13
Schools – Per Student/Year	\$18.61	\$21.59	\$25.04	\$28.55	\$32.54	\$36.45

# Wastewater Rate Options



- 2-Year Rate Plan
  - O&M Expenses + Debt Service

Sewer Rate Schedule	Current Rate	Year 1	Year 2
Industrial			
Wastewater Volume (MG)	\$2,336.92	\$2,523.87	\$2,700.54
Total Suspended Solids (lbs)	\$0.180	\$0.194	\$0.208
Biochemical Oxygen Demand (lbs)	\$0.239	\$0.258	\$0.277
Septage Hauler			
Charge Per Gallon	\$0.312	\$0.337	\$0.361
Min. Charge: 400 Gallons	\$124.80	\$134.78	\$144.22
Min. Charge: 1,000 Gallon	\$312.00	\$336.96	\$360.55
Min. Charge: 1,500 Gallon	\$468.00	\$505.44	\$540.82

# Wastewater Rate Options



- 5-Year Rate Plan – Option 1
  - O&M Expenses + Debt Service + Priority 1 & 2 Projects

Sewer Rate Schedule	Current Rate	Year 1	Year 2	Year 3	Year 4	Year 5
Industrial						
Volume (MG)	\$2,336.92	\$2,570.61	\$2,827.67	\$3,110.44	\$3,421.48	\$3,763.63
TSS (lbs)	\$0.180	\$0.198	\$0.218	\$0.240	\$0.264	\$0.290
BOD (lbs)	\$0.239	\$0.263	\$0.290	\$0.319	\$0.350	\$0.385
Septage Hauler						
\$/Gallon	\$0.312	\$0.343	\$0.378	\$0.415	\$0.457	\$0.502
400 Gallons	\$124.80	\$137.28	\$151.01	\$166.11	\$182.72	\$200.99
1,000 Gallon	\$312.00	\$343.20	\$377.52	\$415.27	\$456.80	\$502.48
1,500 Gallon	\$468.00	\$514.80	\$566.28	\$622.91	\$685.20	\$753.72

# Wastewater Rate Options



- 5-Year Rate Plan – Option 2
  - O&M Expenses + Debt Service + All Projects

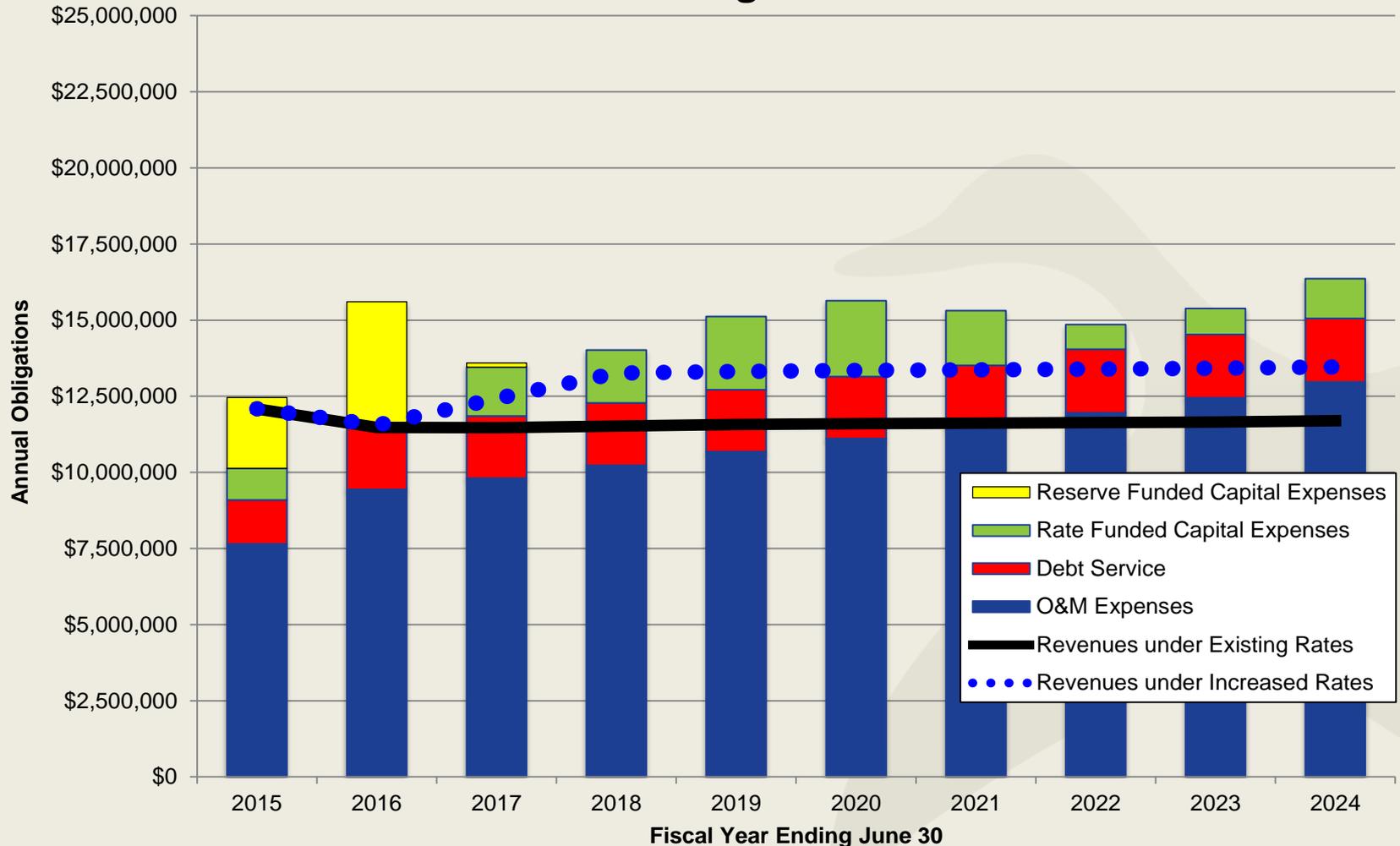
Sewer Rate Schedule	Current Rate	Year 1	Year 2	Year 3	Year 4	Year 5
Industrial						
Volume (MG)	\$2,336.92	\$2,710.83	\$3,144.56	\$3,584.80	\$4,086.67	\$4,577.07
TSS (lbs)	\$0.180	\$0.209	\$0.242	\$0.276	\$0.315	\$0.353
BOD (lbs)	\$0.239	\$0.278	\$0.322	\$0.367	\$0.418	\$0.469
Septage Hauler						
\$/Gallon	\$0.312	\$0.362	\$0.420	\$0.479	\$0.546	\$0.611
400 Gallons	\$124.80	\$144.77	\$167.93	\$191.44	\$218.24	\$244.43
1,000 Gallon	\$312.00	\$361.92	\$419.83	\$478.60	\$545.61	\$611.08
1,500 Gallon	\$468.00	\$542.88	\$629.74	\$717.90	\$818.41	\$916.62

# Funding Allocation Over Time

## 2-Year Rate Plan



### Wastewater Revenue Requirements vs. Revenue Under Existing and Increased Rates

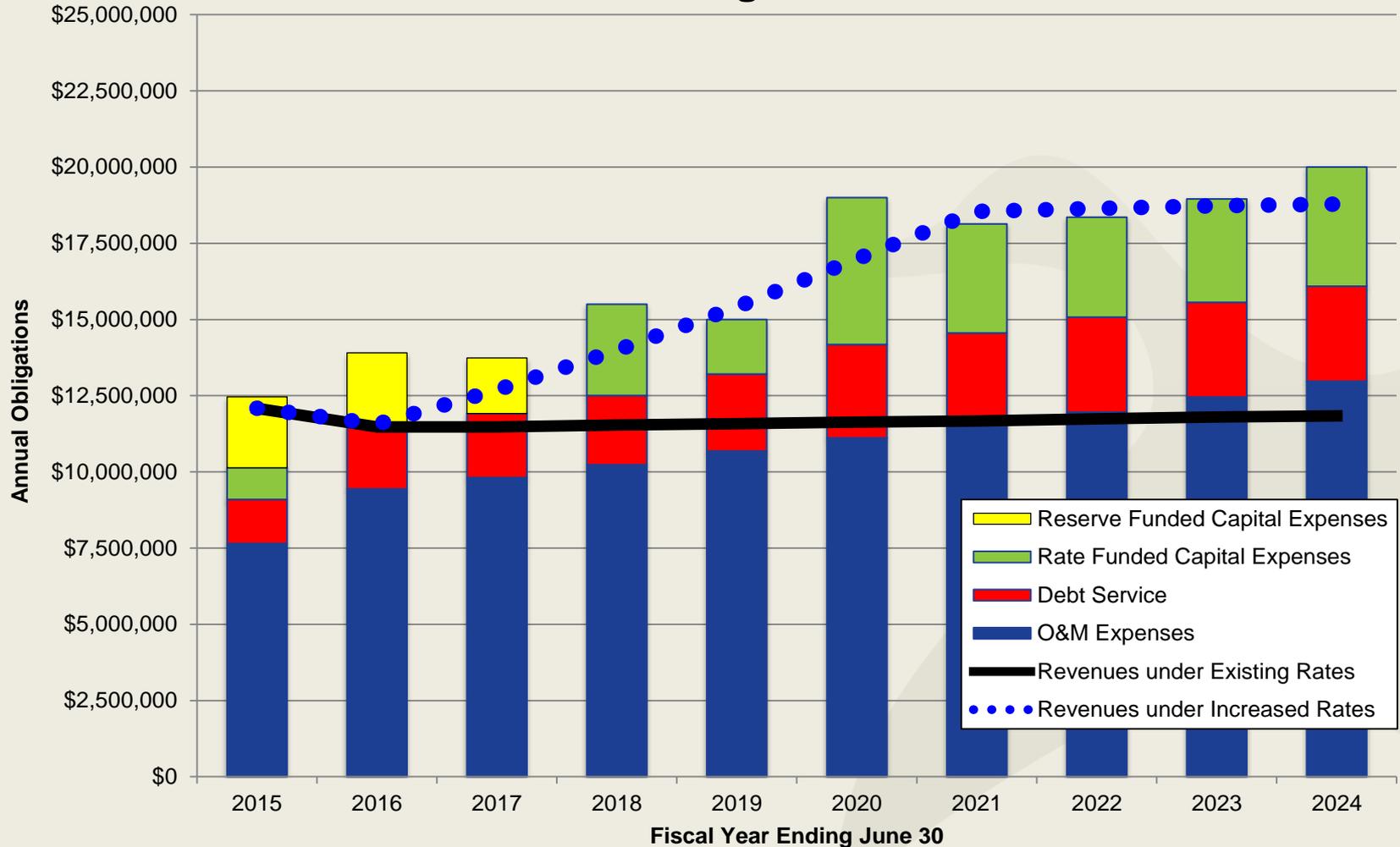


# Funding Allocation Over Time

## 5-Year Rate Plan – Option 1



### Wastewater Revenue Requirements vs. Revenue Under Existing and Increased Rates

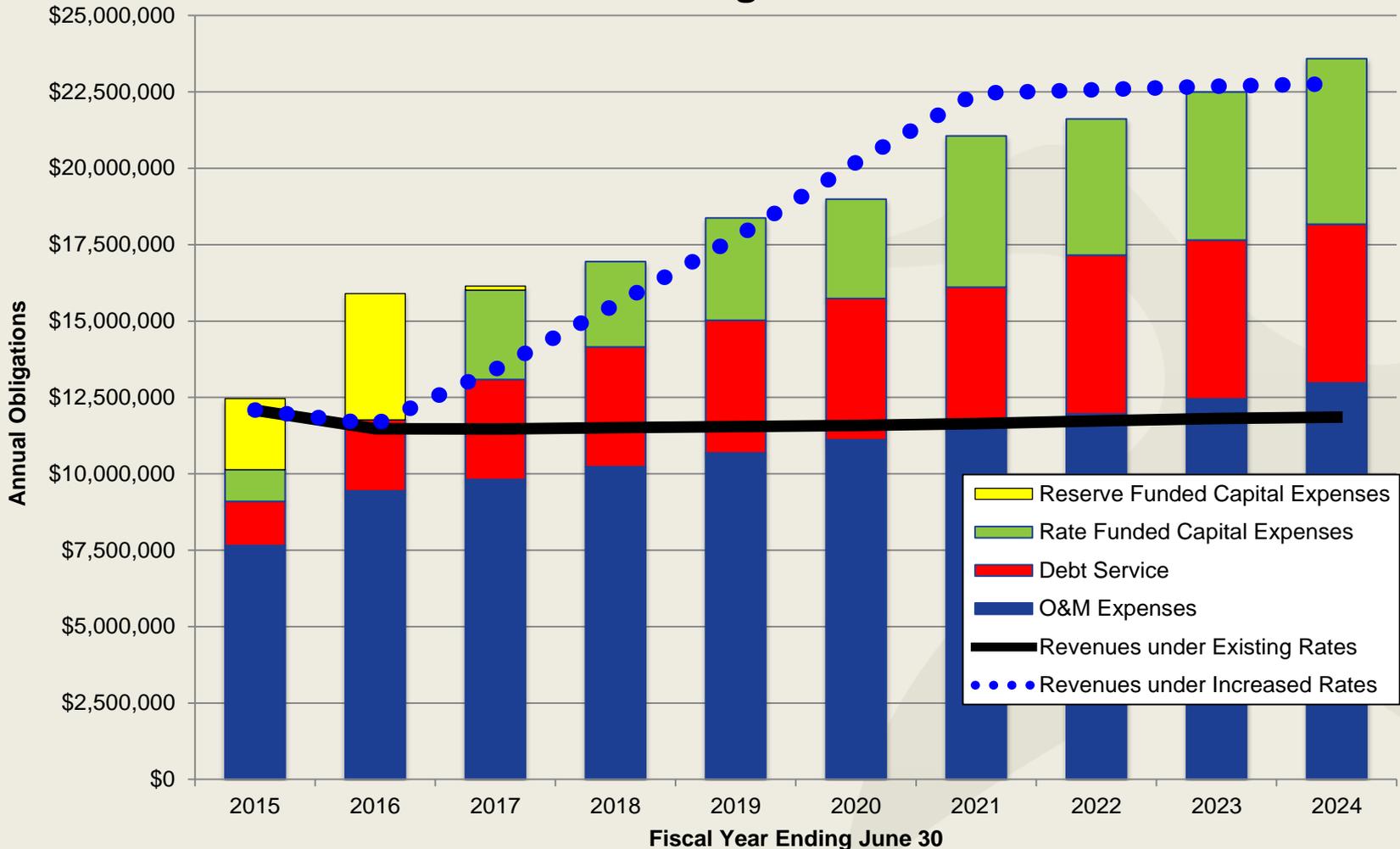


# Funding Allocation Over Time

## 5-Year Rate Plan – Option 2



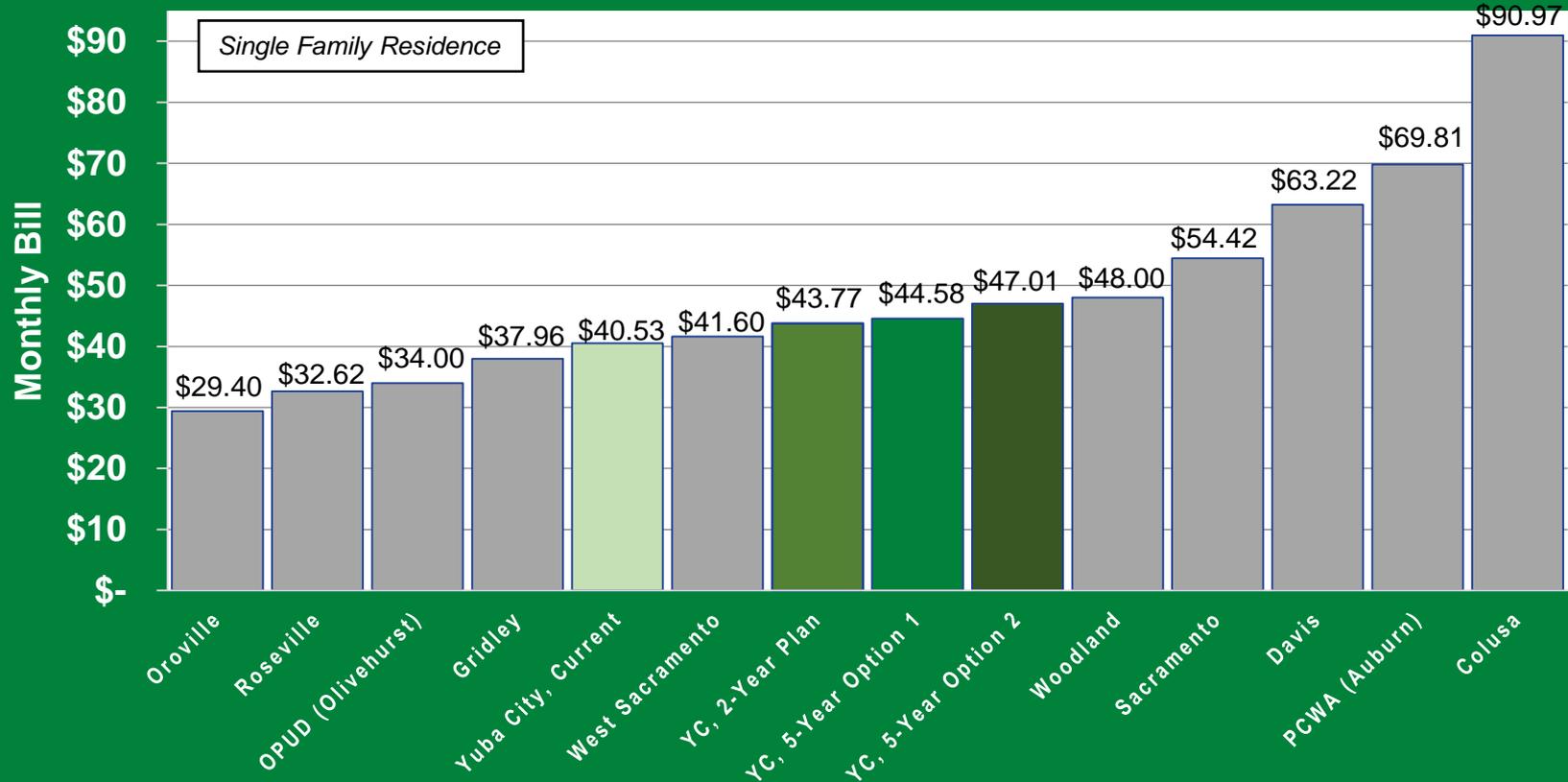
### Wastewater Revenue Requirements vs. Revenue Under Existing and Increased Rates



# Comparison to Other Agencies



## CITY OF YUBA CITY - REGIONAL COMPARISON MONTHLY SEWER BILL



# Key Decision Point – Wastewater



- Rate Plan
  - 2 Year Rate Plan
    - O&M Expenses + Debt Service
  - 5 Year Rate Plan – Option 1
    - O&M Expenses + Debt Service + Priority 1 & 2 Projects
  - 5 Year Rate Plan – Option 2
    - O&M Expenses + Debt Service + All Projects



# PROPOSITION 218 PROCESS

# Proposition 218 Process



- Approved “Guidelines for the Submission and Tabulation of Protests”
- Mail Notice of Public Hearing for Proposed Water and Wastewater Rate Increases at least 45 days prior to Protest Hearing
- Hold Protest Hearing
- Rate Increase is approved if written protests do not exceed 50% of the property owners or customers

# WRAP UP

# Open House



- An open house is scheduled on April 2<sup>nd</sup> from 9 AM to Noon at the Water Treatment Plant and Wastewater Treatment Facility
  - Tours of facilities
  - Equipment on display

# Next Steps

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- Provide Direction to Staff Regarding Decision Points
- Accept and Adopt Rate Study
- Approve Guidelines for the Submission and Tabulation of Protests
- Set the Protest Hearing Date
- Approve Notices for Proposition 218 Protest Hearing