



# City of Annapolis



## Water and Sewer Rate and Fee Study Citizen's Advisory Committee Workshop

February 17, 2011

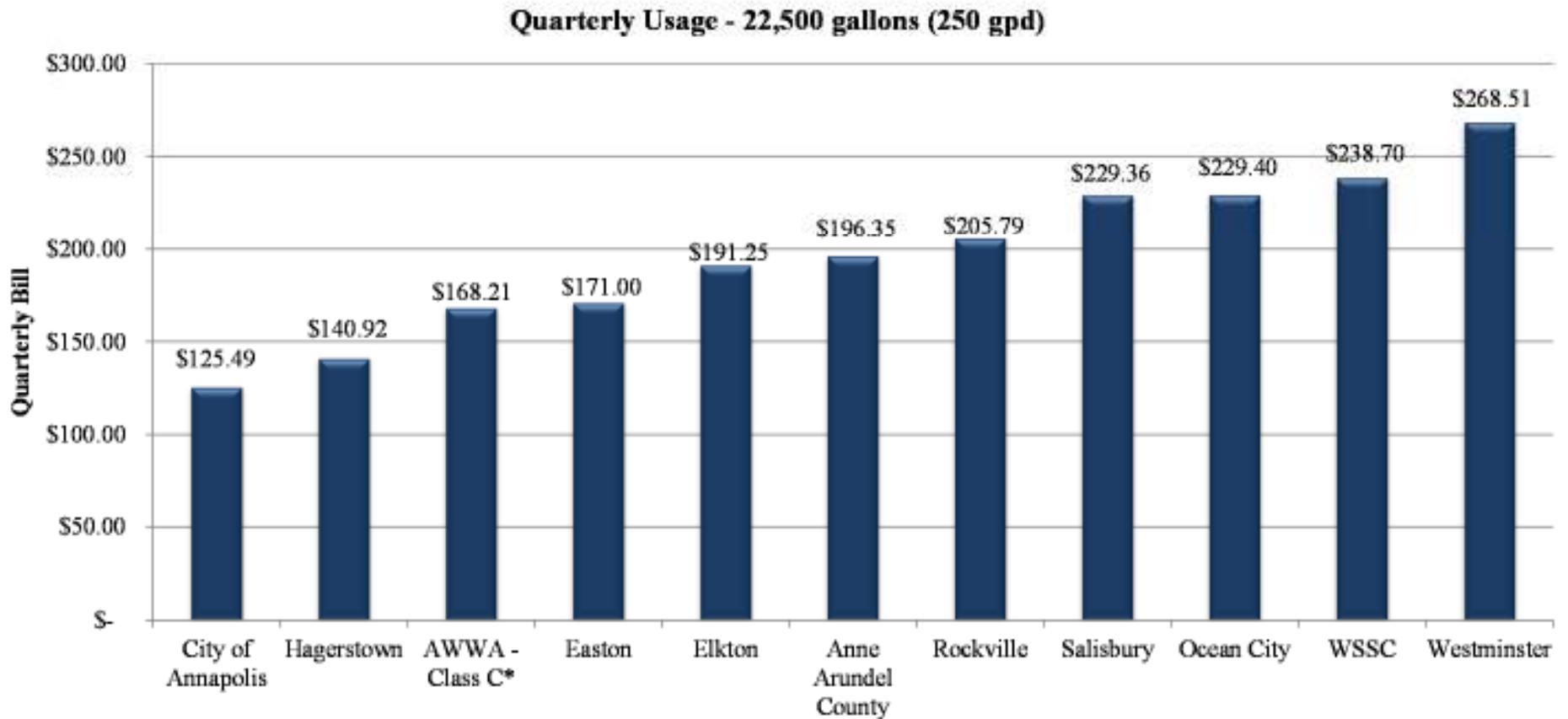
David Hyder  
Tracey Moher

# Objectives - Why Conduct the Study?

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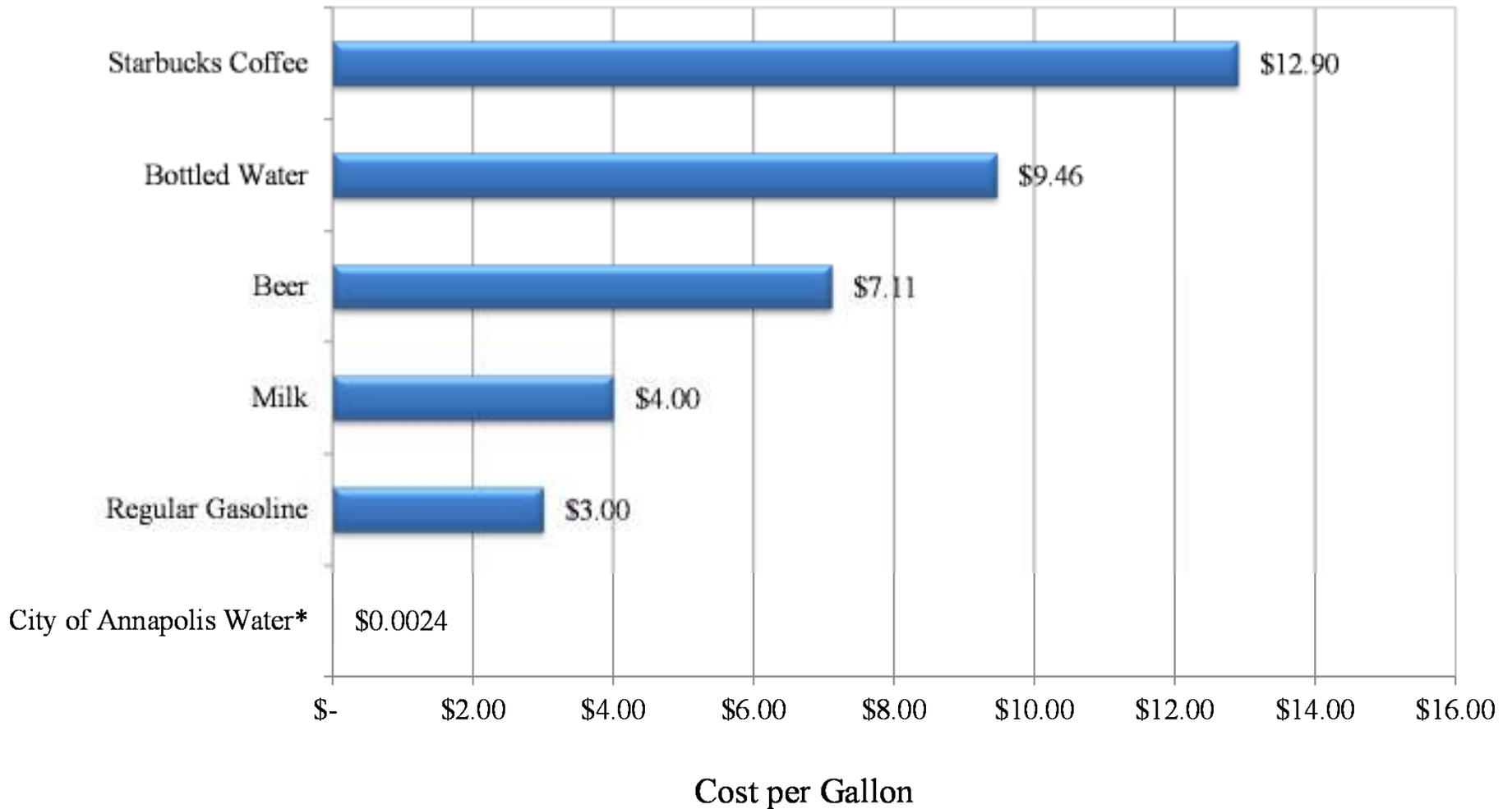
- Necessary review of water and sewer funds to restore stability and financial health
- Need for long-term financial planning due to significant future capital investments required for systems
- Establish appropriate pricing structure for water and sewer service
- Funding will be needed for extensive capital improvement plans, including the new Water Treatment Plant (WTP) which has over \$50 million in upcoming project costs.
- The last rate study was conducted in 1999.
- There have been no sewer rate increases since 1999. There was a 24% water rate increase last year.

# Water and Sewer Bill Comparisons



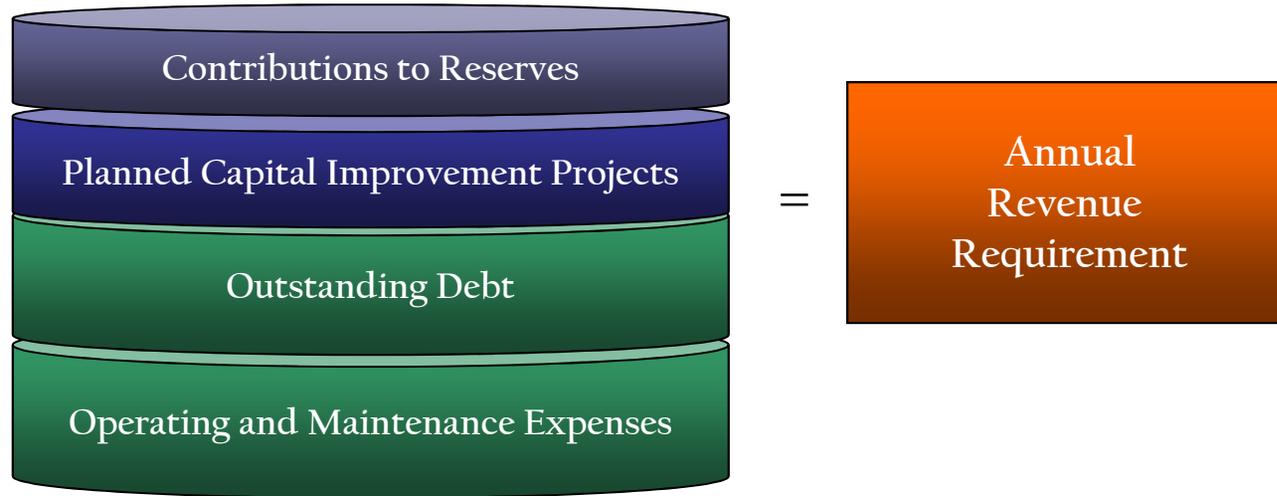
\* American Water Works Association 2008 National Rate Survey

# Value of Water

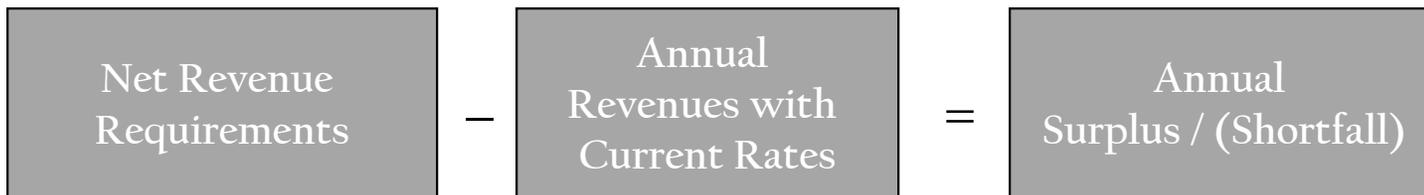
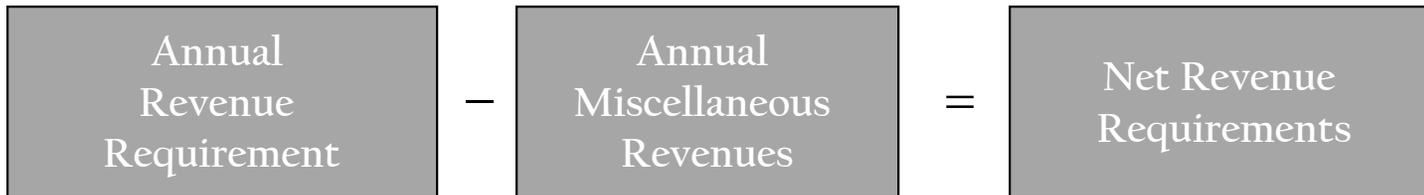
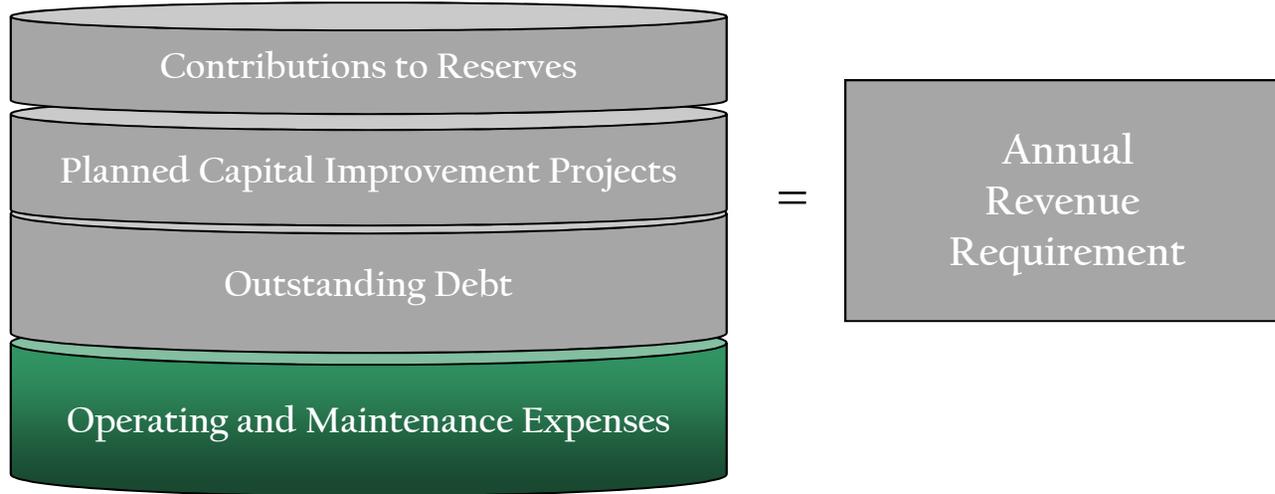


\* Delivered to your home or business

# Net Revenue Requirements

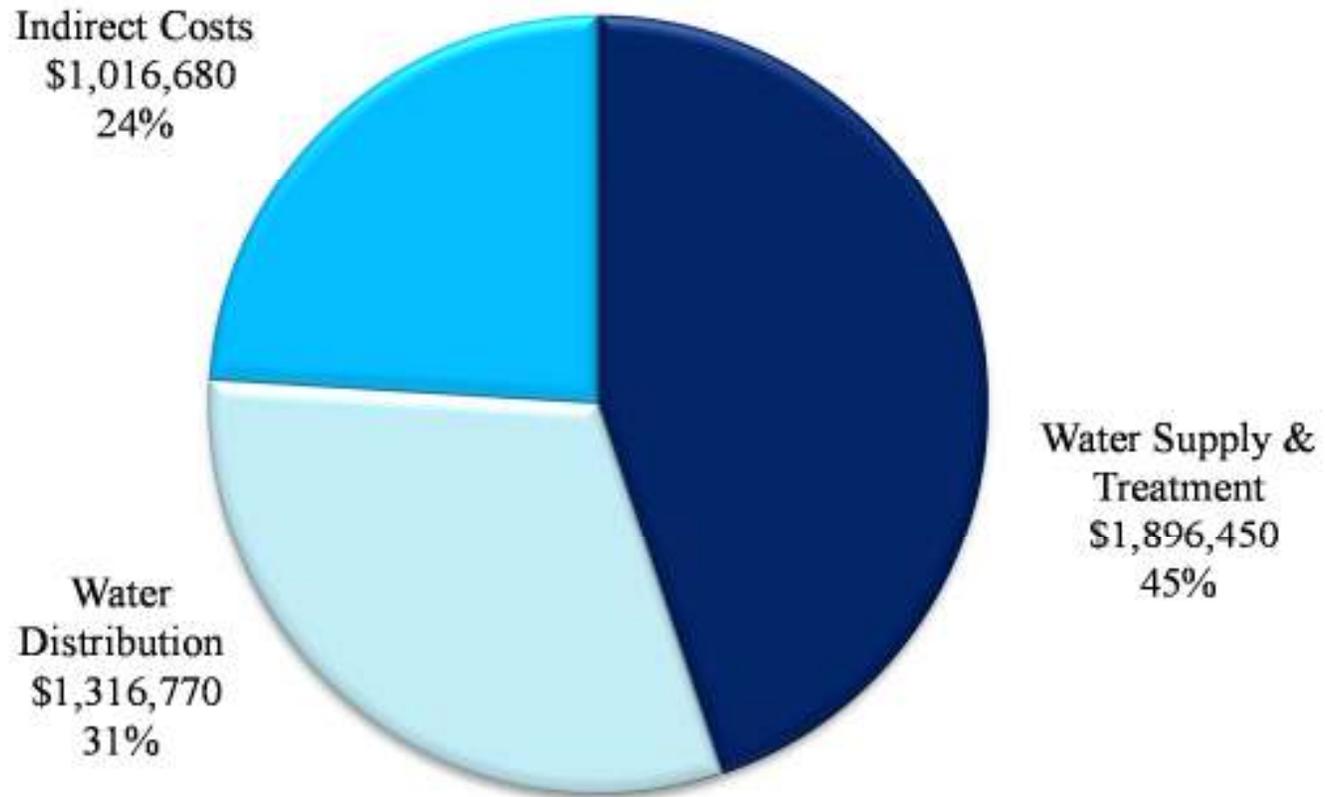


# Net Revenue Requirements



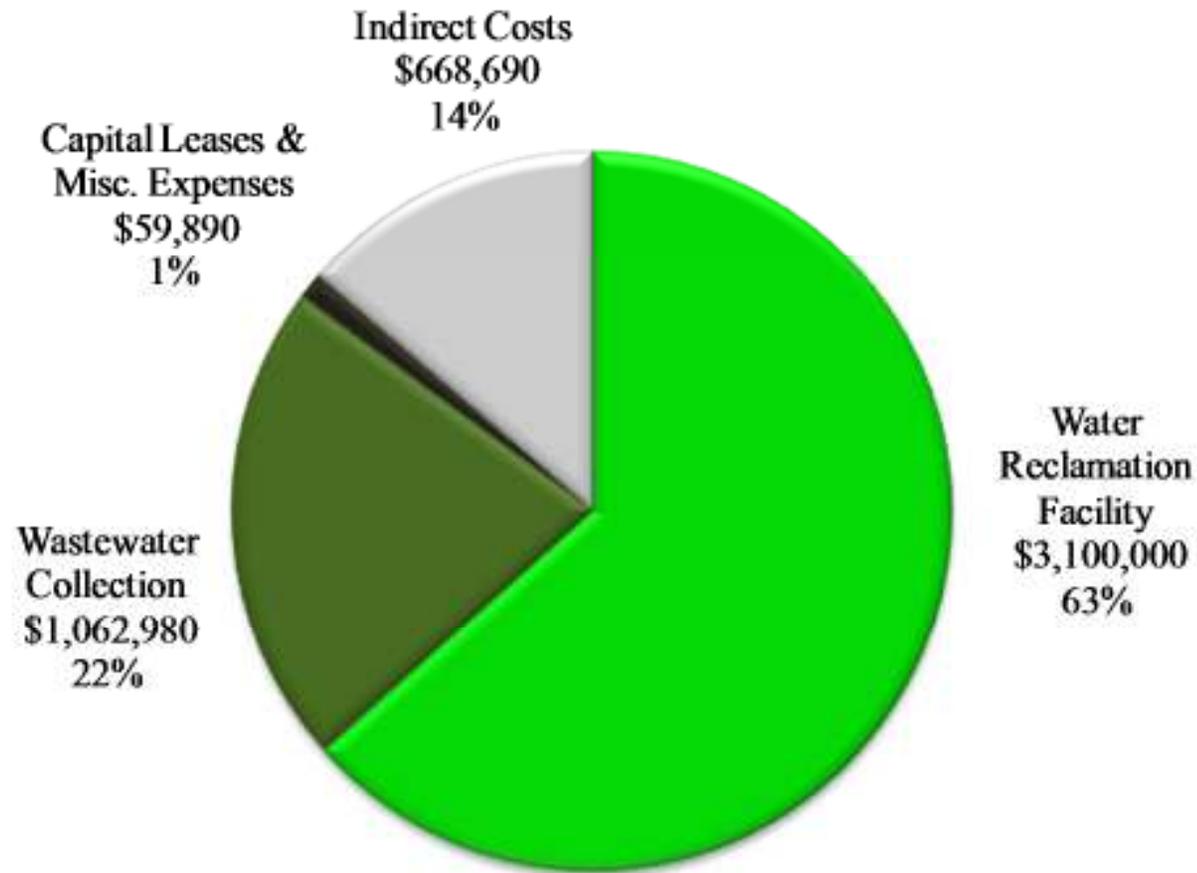
# O&M Expenses (Water)

**Total FY 11 Budget: \$4,229,900**

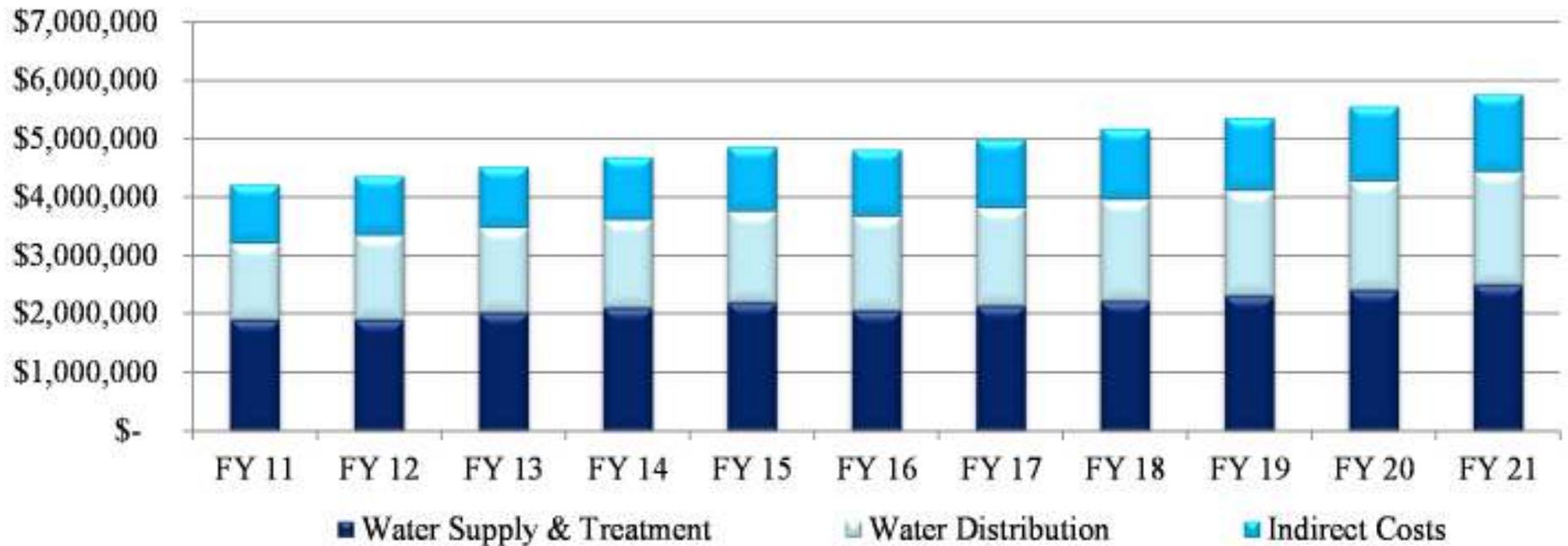


# O&M Expenses (Sewer)

**Total FY 11 Budget: \$4,891,560**

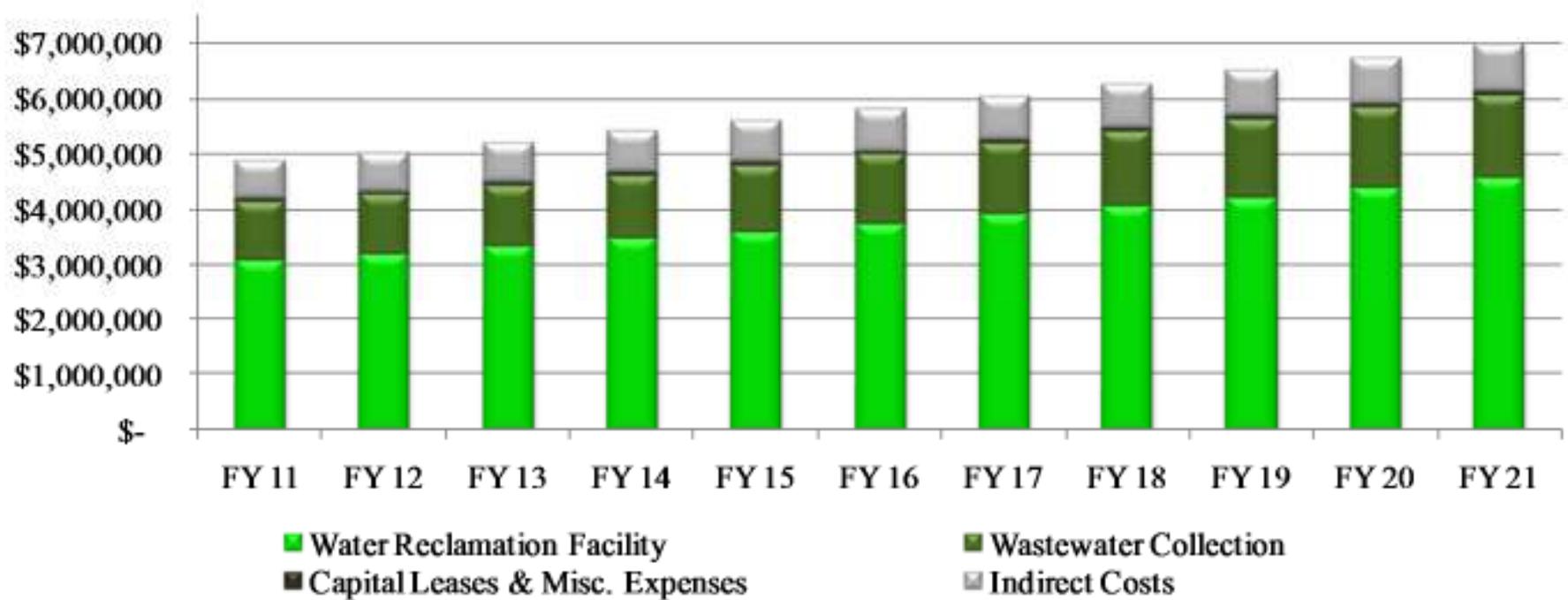


# O&M Expenses Forecast (Water)



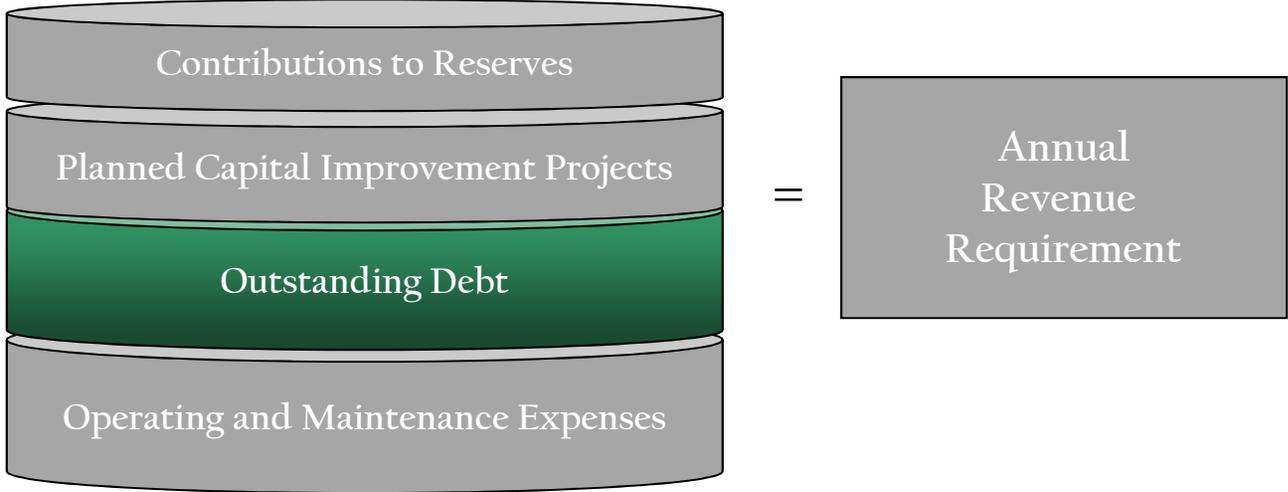
<i>in millions</i>	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Water	\$4.23	\$4.37	\$4.53	\$4.70	\$4.87	\$4.82	\$5.00	\$5.18	\$5.37	\$5.56	\$5.77
<i>Change</i>		3.31%	3.66%	3.67%	3.70%	-0.96%	3.63%	3.63%	3.63%	3.64%	3.65%

# O&M Expenses Forecast (Sewer)



<i>in millions</i>	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Sewer	\$4.89	\$5.02	\$5.21	\$5.40	\$5.60	\$5.81	\$6.03	\$6.25	\$6.49	\$6.73	\$6.97
<i>Change</i>		2.53%	3.79%	3.77%	3.75%	3.74%	3.72%	3.71%	3.70%	3.69%	3.68%

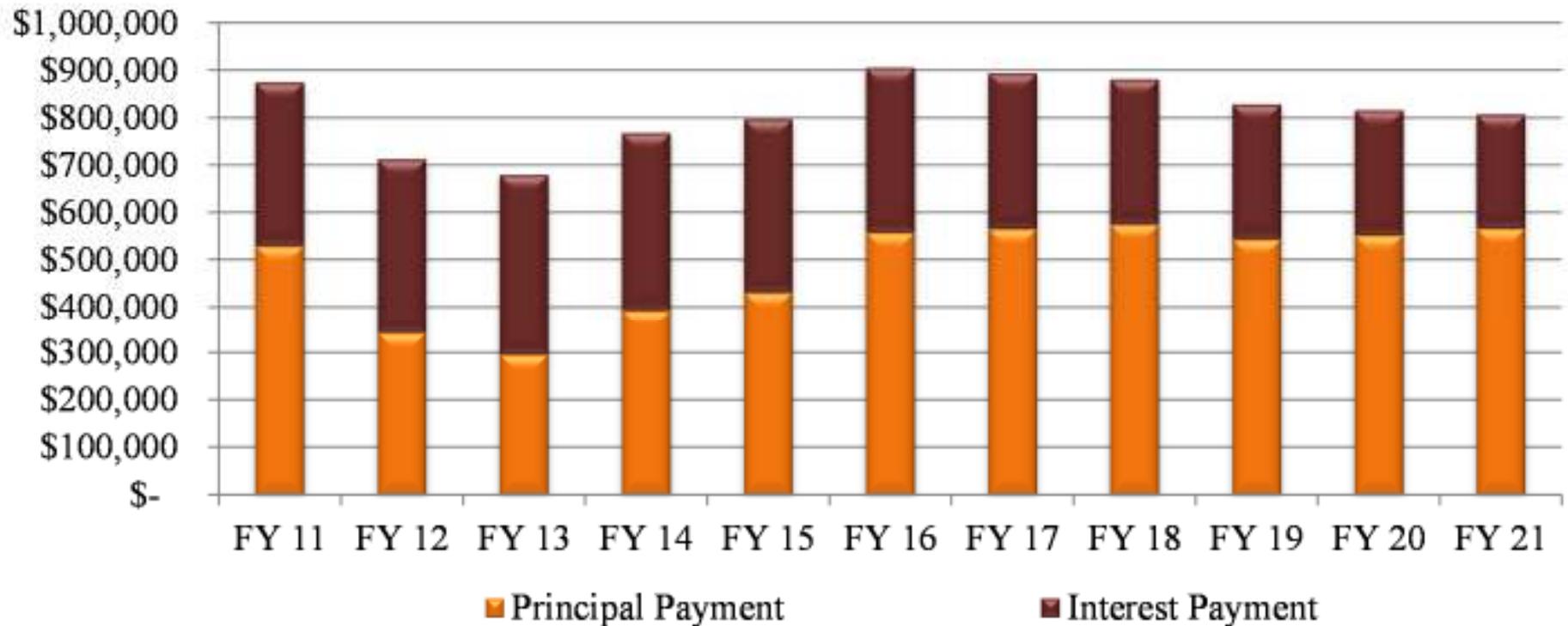
# Net Revenue Requirements



Annual Revenue Requirement	-	Annual Miscellaneous Revenues	=	Net Revenue Requirements
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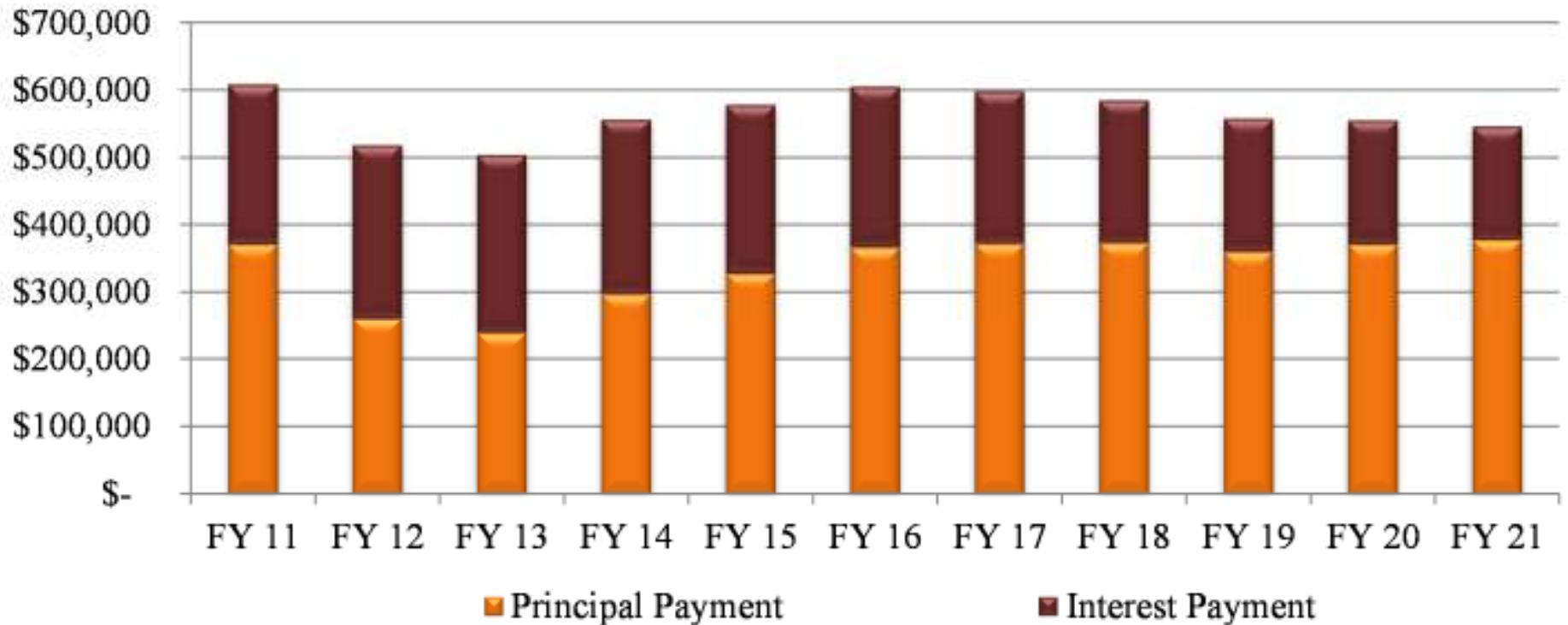
Net Revenue Requirements	-	Annual Revenues with Current Rates	=	Annual Surplus / (Shortfall)
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# Existing Debt Service (Water)



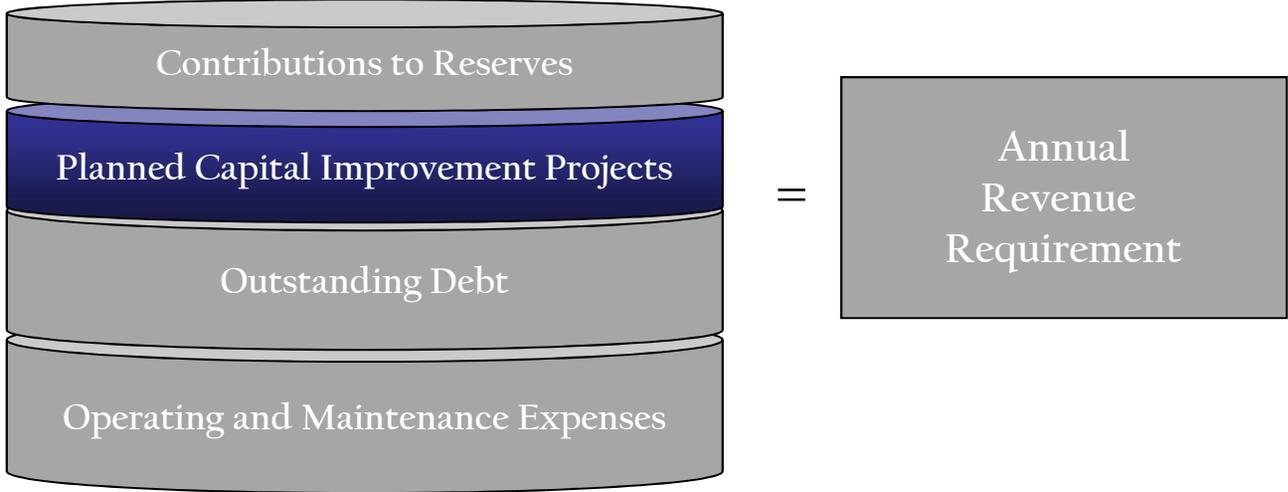
- Assumes debt restructuring

# Existing Debt Service (Sewer)



- Assumes debt restructuring

# Net Revenue Requirements



Annual Revenue Requirement	-	Annual Miscellaneous Revenues	=	Net Revenue Requirements
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Net Revenue Requirements	-	Annual Revenues with Current Rates	=	Annual Surplus / (Shortfall)
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# Capital Improvement Projects (Water) – WTP Only

	SCENARIO A				
(in millions)	2011	2012	2013	2014	2015
WTP - Prior Year Funding	\$0.32	\$0.28	\$ -	\$ -	\$ -
WTP - Bank Loans	\$ -	\$0.19	\$ -	\$ -	\$ -
WTP - Grants	\$ -	\$ -	\$1.50	\$ -	\$ -
WTP - MDE Loans	\$ -	\$ -	\$10.30	\$11.20	\$ -
WTP - Bonds	\$ -	\$ -	\$ -	\$18.22	\$9.25
<b>Total WTP Funds Required</b>	<b>\$0.32</b>	<b>\$0.47</b>	<b>\$11.80</b>	<b>\$29.42</b>	<b>\$9.25</b>

	SCENARIO B				
(in millions)	2011	2012	2013	2014	2015
WTP - Prior Year Funding	\$0.32	\$0.28	\$ -	\$ -	\$ -
WTP - Bank Loans	\$ -	\$0.19	\$ -	\$ -	\$ -
WTP - Grants	\$ -	\$ -	\$1.50	\$ -	\$ -
WTP - MDE Loans	\$ -	\$ -	\$10.30	\$27.25	\$9.25
WTP - Bonds	\$ -	\$ -	\$ -	\$2.17	\$ -
<b>Total WTP Funds Required</b>	<b>\$0.32</b>	<b>\$0.47</b>	<b>\$11.80</b>	<b>\$29.42</b>	<b>\$9.25</b>

Scenario A -  
MDE Funding: \$21.6

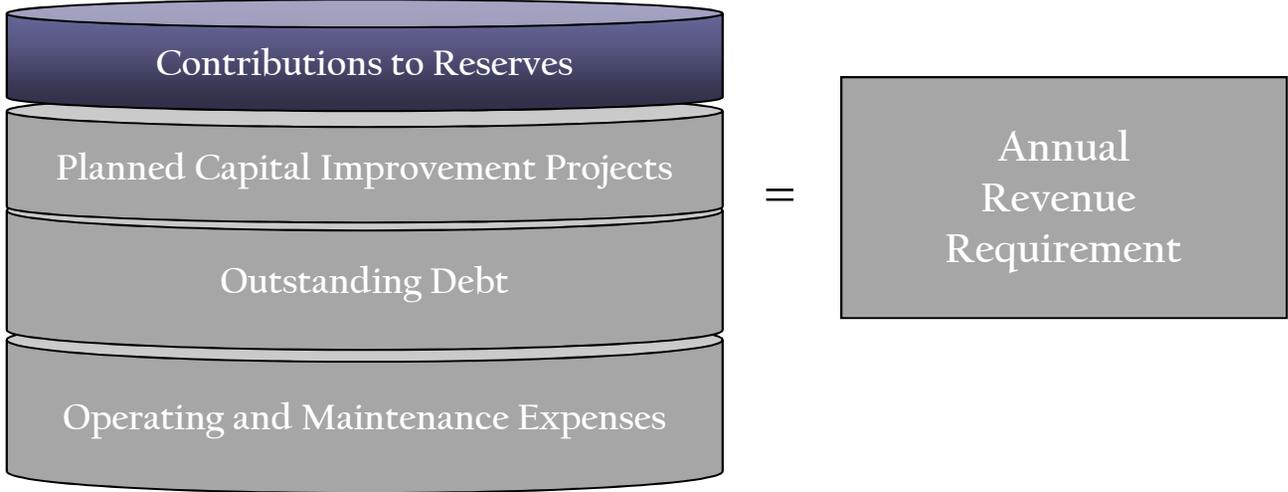
Scenario B -  
MDE Funding: \$46.8

## Capital Improvement Projects – Continued

Water CIP Projects (in millions)	2011	2012	2013	2014	2015	2016	2017
Annual Water Distribution System Upgrades	\$0.10	\$1.72	\$1.88	\$1.93	\$1.99	\$2.05	\$2.11
SCADA/RADIO Upgrades	\$ -	\$0.17	\$0.12	\$0.12	\$ -	\$ -	\$0.21
<b>Total Water Capital Projects – Excluding WTP</b>	<b>\$0.10</b>	<b>\$1.89</b>	<b>\$2.00</b>	<b>\$2.05</b>	<b>\$1.99</b>	<b>\$2.05</b>	<b>\$2.32</b>

Sewer CIP Projects (in millions)	2011	2012	2013	2014	2015	2016	2017
Sewer Rehabilitation	\$1.30	\$0.95	\$2.32	\$2.39	\$2.46	\$2.53	\$2.60
SCADA/RADIO Upgrades	\$0.79	\$0.24	\$ -	\$ -	\$ -	\$0.92	\$0.29
Annual Wastewater Pump and Pump Station Upgrades	\$0.49	\$1.24	\$0.33	\$ -	\$ -	\$ -	\$ -
<b>Total Sewer Capital Projects</b>	<b>\$2.58</b>	<b>\$2.43</b>	<b>\$2.65</b>	<b>\$2.39</b>	<b>\$2.46</b>	<b>\$3.45</b>	<b>\$2.89</b>

# Net Revenue Requirements



Annual Revenue Requirement	-	Annual Miscellaneous Revenues	=	Net Revenue Requirements
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Net Revenue Requirements	-	Annual Revenues with Current Rates	=	Annual Surplus / (Shortfall)
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# Operating & Maintenance Reserve

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- Serves as working capital reserve.
- Industry Practice is to maintain 90 days of annual operating expenses for fund (25% of annual O&M) - typically required by PSC for investor-owned utilities.
- We recommend three months of operating and maintenance expenses as a minimum target.
- Fully-funding the O&M reserve in FY12 would result in an O&M Reserve contribution of \$1.04 million in the water fund and \$1.25 million in the sewer fund.
- In order to minimize the impact to the customer, a reserve contribution of \$100,000 per year for each fund (water & sewer) is recommended until a balance of 90 days of O&M expenses is reached, starting in FY 2012.

# Repair, Replacement & Rehabilitation “3R” Reserve

- What Should We Spend?
  - Useful life of water and sewer system assets

	Water Fund	Sewer Fund
Replacement cost of pipe exceeding estimated useful life	\$32,907,249	\$40,672,973

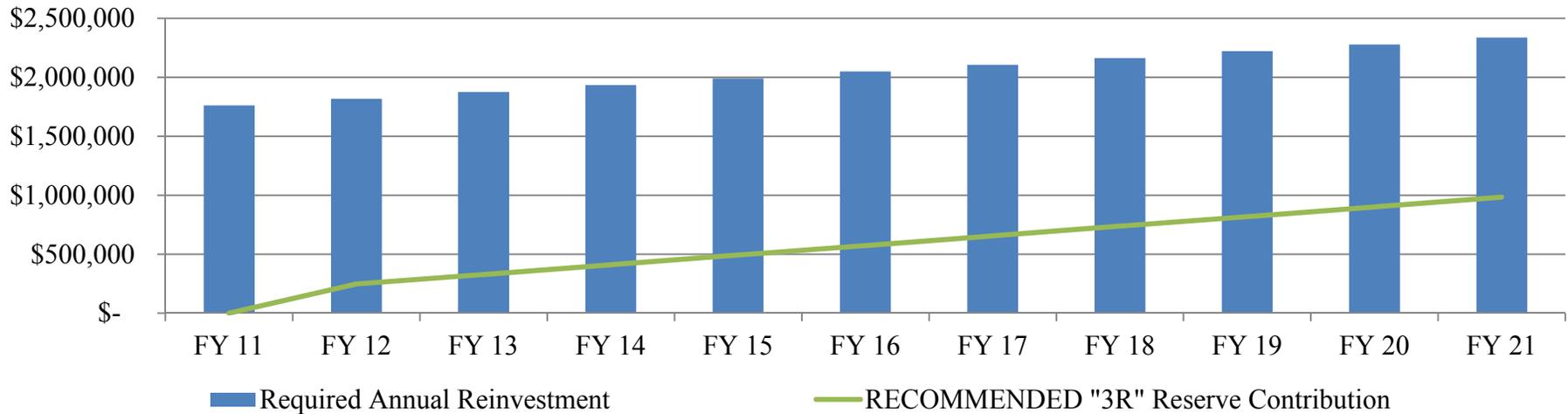
- What Can the City Afford?
  - Recommended Phase In of “3R” Reserve

# Water System Pipe

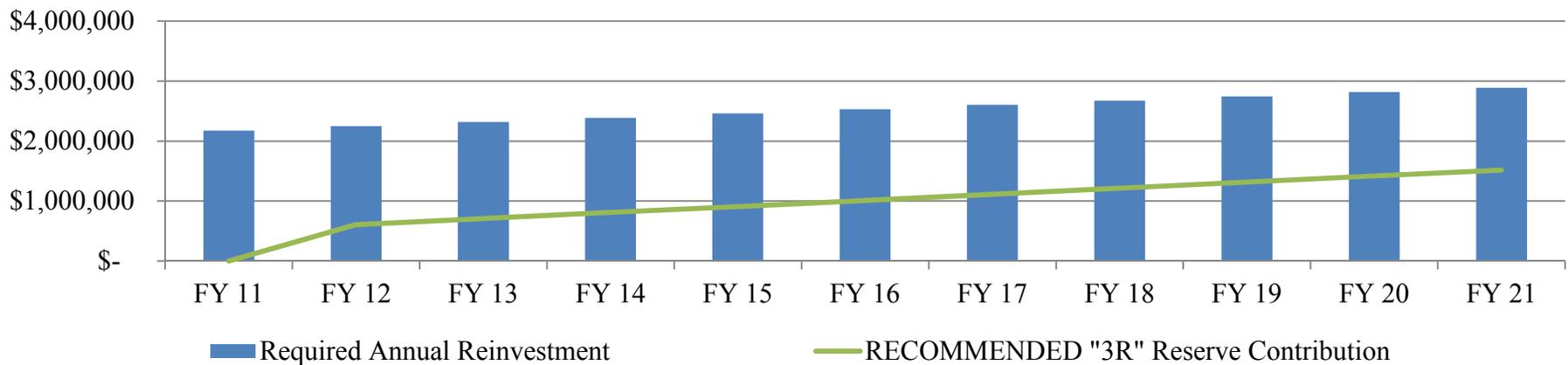


# Repair, Replacement & Rehabilitation "3R" Reserve

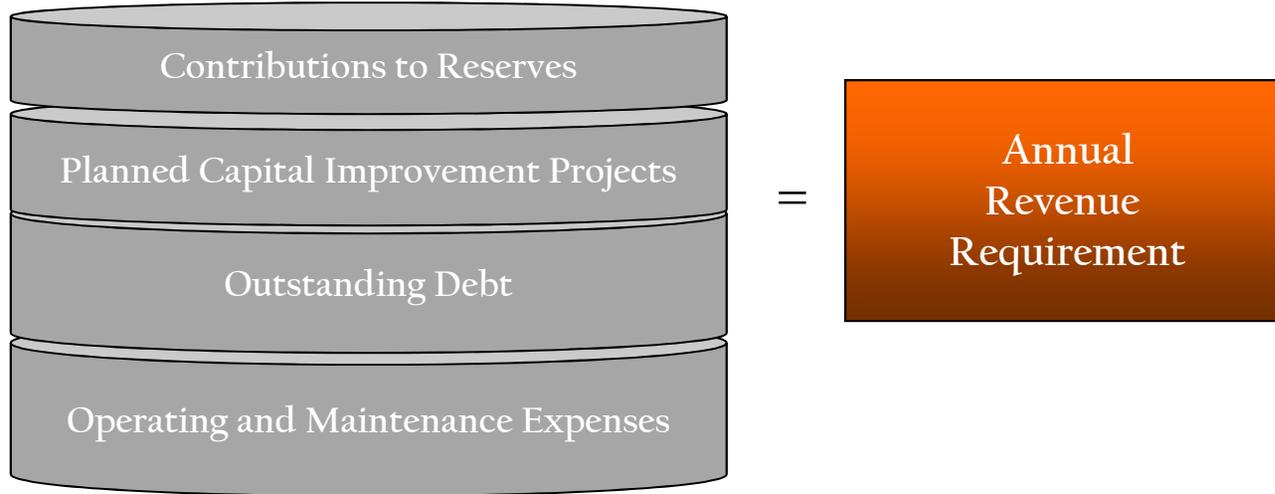
## Water Fund - "3R" Reserve Contribution



## Sewer Fund - "3R" Reserve Contribution



# Net Revenue Requirements



$$\begin{array}{|c|} \hline \text{Annual} \\ \text{Revenue} \\ \text{Requirement} \\ \hline \end{array} - \begin{array}{|c|} \hline \text{Annual} \\ \text{Miscellaneous} \\ \text{Revenues} \\ \hline \end{array} = \begin{array}{|c|} \hline \text{Net Revenue} \\ \text{Requirements} \\ \hline \end{array}$$

$$\begin{array}{|c|} \hline \text{Net Revenue} \\ \text{Requirements} \\ \hline \end{array} - \begin{array}{|c|} \hline \text{Annual} \\ \text{Revenues with} \\ \text{Current Rates} \\ \hline \end{array} = \begin{array}{|c|} \hline \text{Annual} \\ \text{Surplus / (Shortfall)} \\ \hline \end{array}$$

## Revenue Requirements - Operating Fund (Water)

(millions)	2011	2012	2013	2014	2015	2016
Operating Costs						
Total Operating Expenses	\$4.23	\$4.37	\$4.53	\$4.70	\$4.87	\$4.82
Operating Reserve Contribution*	\$0.00	\$0.10	\$0.10	\$0.10	\$0.10	\$0.10
<i>Total Operating Expenses</i>	<i>\$4.23</i>	<i>\$4.47</i>	<i>\$4.63</i>	<i>\$4.80</i>	<i>\$4.97</i>	<i>\$4.92</i>
Capital Costs						
Cash Funded Capital Projects	\$0.00	\$0.00	\$0.40	\$0.41	\$1.00	\$2.05
Existing Debt Service Expense	\$0.88	\$0.71	\$0.68	\$0.77	\$0.80	\$0.91
Projected Debt Service (Excluding WTP)	\$0.00	\$0.13	\$0.13	\$0.41	\$0.41	\$0.41
3R Reserve Contribution*	\$0.00	\$0.25	\$0.33	\$0.41	\$0.49	\$0.57
<i>Total Capital Expenses</i>	<i>\$0.88</i>	<i>\$1.09</i>	<i>\$1.54</i>	<i>\$2.00</i>	<i>\$2.69</i>	<i>\$3.94</i>
<b>Total Base Revenue Requirements</b>	<b>\$5.11</b>	<b>\$5.56</b>	<b>\$6.17</b>	<b>\$6.80</b>	<b>\$7.66</b>	<b>\$8.86</b>

\*Reserve funds of a maximum amount of \$380k a year are transferred to the General Fund over a 10 year period to refund past borrowings.

# Revenue Requirements - Operating Fund (Water)

SCENARIO A - MDE Funding: \$21.6 million						
(millions)	2011	2012	2013	2014	2015	2016
<b>Total Base Revenue Requirements</b>	<b>\$5.11</b>	<b>\$5.56</b>	<b>\$6.17</b>	<b>\$6.80</b>	<b>\$7.66</b>	<b>\$8.86</b>
Projected Debt Service Expense (WTP)	\$ -	\$ -	\$0.47	\$2.28	\$2.78	\$2.78
Miscellaneous Other Revenues*	\$0.59	\$0.74	\$0.72	\$0.62	\$0.56	\$0.55
<b>Net Revenue Requirement</b>	<b>\$4.52</b>	<b>\$4.82</b>	<b>\$5.91</b>	<b>\$8.46</b>	<b>\$9.88</b>	<b>\$11.09</b>

SCENARIO B - MDE Funding: \$46.8 million						
(millions)	2011	2012	2013	2014	2015	2016
<b>Total Base Revenue Requirements</b>	<b>\$5.11</b>	<b>\$5.56</b>	<b>\$6.17</b>	<b>\$6.80</b>	<b>\$7.66</b>	<b>\$8.86</b>
Projected Debt Service Expense (WTP)	\$ -	\$ -	\$0.47	\$0.61	\$1.82	\$2.24
Miscellaneous Other Revenues	\$0.59	\$0.61	\$0.60	\$0.57	\$0.56	\$0.55
<b>Net Revenue Requirement</b>	<b>\$4.52</b>	<b>\$4.95</b>	<b>\$6.04</b>	<b>\$6.84</b>	<b>\$8.92</b>	<b>\$10.55</b>

\*Miscellaneous revenues slightly higher in Scenario A due to interest earned on bond proceeds

# Net Revenue Requirements (Water)

SCENARIO A - MDE Funding: \$21.6 million						
(millions)	2011	2012	2013	2014	2015	2016
<b>Net Revenue Requirement</b>	<b>\$4.52</b>	<b>\$4.82</b>	<b>\$5.91</b>	<b>\$8.46</b>	<b>\$9.88</b>	<b>\$11.09</b>
Projected Revenues with Current Rates	\$3.81	\$3.81	\$3.81	\$3.81	\$3.81	\$3.81
Surplus / (Shortfall)	(\$0.71)	(\$1.01)	(\$2.10)	(\$4.65)	(\$6.07)	(\$7.28)

SCENARIO B - MDE Funding: \$46.8 million						
(millions)	2011	2012	2013	2014	2015	2016
<b>Net Revenue Requirement</b>	<b>\$4.52</b>	<b>\$4.95</b>	<b>\$6.04</b>	<b>\$6.84</b>	<b>\$8.92</b>	<b>\$10.55</b>
Projected Revenues with Current Rates	\$3.81	\$3.81	\$3.81	\$3.81	\$3.81	\$3.81
Surplus / (Shortfall)	(\$0.71)	(\$1.14)	(\$2.23)	(\$3.03)	(\$5.11)	(\$6.74)

## Revenue Requirements - Operating Fund (Sewer)

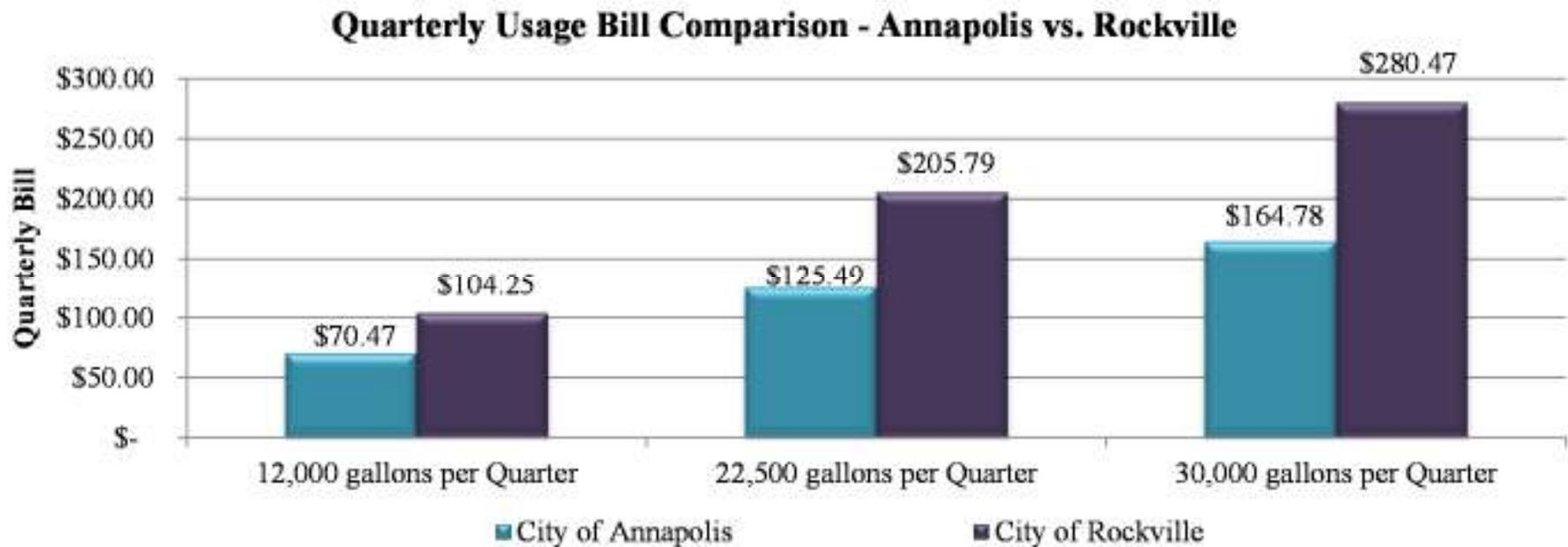
(millions)	2011	2012	2013	2014	2015	2016
Operating Costs						
Total Operating Expenses	\$4.89	\$5.02	\$5.21	\$5.40	\$5.60	\$5.81
Operating Reserve Contribution	\$0.00	\$0.10	\$0.10	\$0.10	\$0.10	\$0.10
<i>Total Operating Expenses</i>	<i>\$4.89</i>	<i>\$5.12</i>	<i>\$5.31</i>	<i>\$5.50</i>	<i>\$5.70</i>	<i>\$5.91</i>
Capital Costs						
Cash Funded Capital Projects	\$0.00	\$0.00	\$0.53	\$0.48	\$1.23	\$3.45
Existing Debt Service Expense	\$0.61	\$0.52	\$0.50	\$0.56	\$0.58	\$0.61
Projected Debt Service Expense	\$0.00	\$0.33	\$0.33	\$0.68	\$0.68	\$0.68
3R Reserve Contribution	\$0.00	\$0.61	\$0.71	\$0.81	\$0.91	\$1.01
<i>Total Capital Expenses</i>	<i>\$0.61</i>	<i>\$1.46</i>	<i>\$2.07</i>	<i>\$2.52</i>	<i>\$3.40</i>	<i>\$5.75</i>
<b>Total Revenue Requirement</b>	<b>\$5.50</b>	<b>\$6.57</b>	<b>\$7.38</b>	<b>\$8.02</b>	<b>\$9.10</b>	<b>\$11.66</b>
Miscellaneous Other Revenues	\$0.64	\$0.63	\$0.62	\$0.61	\$0.60	\$0.59
<b>Net Revenue Requirement</b>	<b>\$4.86</b>	<b>\$5.94</b>	<b>\$6.76</b>	<b>\$7.41</b>	<b>\$8.50</b>	<b>\$11.07</b>

## Net Revenue Requirements (Sewer)

(millions)	2011	2012	2013	2014	2015	2016
<b>Net Revenue Requirement</b>	<b>\$4.86</b>	<b>\$5.94</b>	<b>\$6.76</b>	<b>\$7.41</b>	<b>\$8.50</b>	<b>\$11.07</b>
Projected Revenues with Current Rates	\$3.98	\$3.98	\$3.98	\$3.98	\$3.98	\$3.98
Surplus / (Shortfall)	(\$0.88)	(\$1.96)	(\$2.78)	(\$3.43)	(\$4.52)	(\$7.09)

# Summary

- The City's General Fund has been subsidizing water and sewer operations over the last decade.
- As a result residents of the City have been funding the systems through taxes.
- Water and sewer rates need to be increased to ensure the systems are self-supporting.



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## Next Steps

- Customer and Consumption Analysis
- Develop Cost of Service Analysis
- Model Current Rate Structure / Rate Alternatives