



# Sustainable Financial Management Planning for Water Utilities

*June 15, 2020*

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# AGENDA

June 15, 2020

1

## Welcome and Agenda Overview

2

## Zoom Overview

3

## Speakers

- Tara Johnson, EPA Water Finance Center
- Rod Kappes, BDM Rural Water
- Jay Bernas and Ted Henifin, Hampton Roads Sanitation District

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## Q&A

**Today's webinar will be recorded and made available on the EPA website at a later date.**

# Sustainable Financial Management Planning for Water Utilities

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Tara Johnson  
EPA Water Finance Center

# Background

Financial planning can be a key component of overall system preparedness, including laying the groundwork for response to crises such as the COVID-19 pandemic.

- Water sector utilities face mounting financial challenges
  - Aging infrastructure
  - Changes in population and demand for water services
  - New environmental and public health challenges
- Some utilities are embracing sustainable financial planning practices
  - Projecting revenue expectations
  - Predicting capital improvement needs
  - Forecasting expenses years into the future
  - Examining the adequacy of capital and operational budgets



## Key Themes

### **KEY THEME 1: FORWARD-THINKING PLANNING HORIZON**

Shifting to forecast planning for both anticipated costs and revenues helped utilities realize benefits such as stability and predictability.

### **KEY THEME 2: GRADUAL AND PREDICTABLE RATE INCREASES**

As utilities undertook steps to improve financial sustainability, they saw the necessity of raising rates in the findings of their enhanced financial forecasts and improved understanding of future capital and operating investment requirements. To ease affordability burdens and respond to local decision-maker and customer concerns, the utilities focused on implementing rate strategies tied to gradual and predictable annual increases.

### **KEY THEME 3: PROACTIVE COMMUNICATION**

Transparent and proactive communication with customers and local decision-makers allows utilities to maintain good relationships. Utilities found this to be an essential component of a solid foundation for the future of implementing sustainable pricing approaches.

## Key Theme 1: Forward Thinking Planning Horizon

*Shifting to forecast planning for both anticipated costs and revenues helped utilities realize benefits such as stability and predictability.*

- Grounded in approach that ensures all costs are included and budgeted at appropriate level and that utilities can embrace philosophy through financial forecasting and cash-flow modeling
- Financial forecasting helps utilities manage near-term operational budgeting, focusing on cost control and boosting efficiency
- Two types of planning
  - Long-range planning with 10-20 year forecasting
  - Short-range planning, preferred for utilities in early stages of sustainable financial management planning



## Key Theme 1: Continued

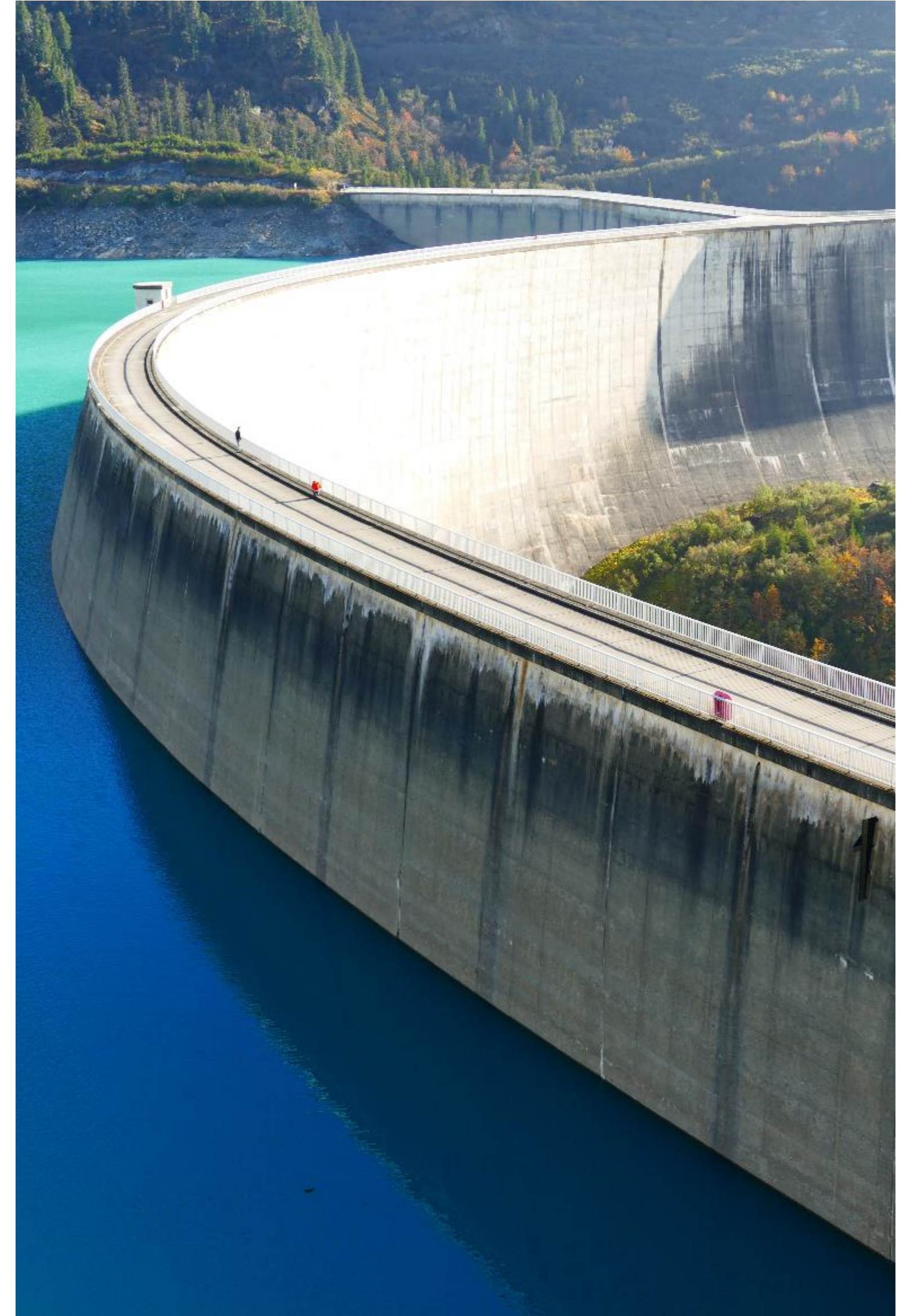
- Costs that factor into future modeling
  - Capital and operations and maintenance (O&M) costs
  - Labor-related costs
  - Long-term capital planning anticipated costs
- Benefits of financial planning
  - Greater financial predictability
  - Able to address areas of historic underinvestment and unmet needs
  - Work toward financial self-sufficiency
  - Stability and predictability
  - Improves relationships with local decision-makers and with customers



## Key Theme 2: Gradual and Predictable Rate Increases

*As utilities took steps to improve financial sustainability, they saw the necessity of raising rates in the findings of their enhanced financial forecasts and improved understanding of future capital and operating investment requirements. To ease affordability burdens and respond to local decision-maker and customer concerns, the utilities focused on implementing rate strategies tied to gradual and predictable annual increases.*

- Utilities used different approaches to raising more revenue
  - Creating a new rate structure
  - Exploring additional revenue sources
  - Increasing rates within the existing structure
- Strategies for affordability
  - Working to keep incremental rate increases as steady and low as possible
  - Implementing direct customer assistance programs
  - Drawing on other low-income assistance programs within the community





## Key Theme 3

*Transparent and proactive communication with customers and local decision-makers allows utilities to maintain good relationships.*

- This strategy helped utilities overcome historical resistance to rate increases by some in their customer base by providing a clear basis for the need, avoiding substantial rate shocks, and helping ratepayers to prepare.
- Opening and maintaining these internal communication channels ensured information needed to support financial forecasts was available on a timely basis and helped to improve the efficiency of the modeling process.



# Rod Kappes



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General Manager - Brown Day Marshall  
Rural Water System Inc.

# Moving to a Sustainable Rate Structure



**BDM Rural Water System, Inc.**



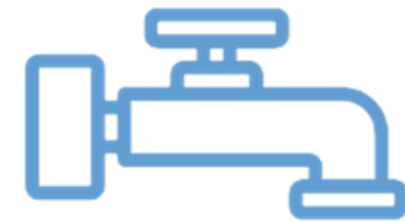
U.S. EPA Webinar  
2020

# BDM Rural Water System, Inc.

7 staff including GM, OM, Office Mgr., 4 Operations Specialists



Serving 4 counties in  
NE South Dakota



Initial construction  
in 1984

2,274

Connections serving  
~8,000 customers



Bulk service for  
17 communities



2 communities  
individually

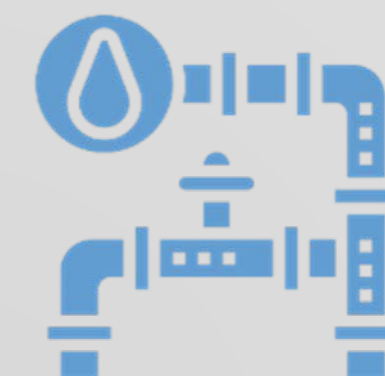
2,040

sq. miles

68 miles E/W  
30 miles N/S



1 treatment plant  
15 reservoir/pump stations  
1.1 million gallons per day average  
1.6 million gallons per day max capacity



1,575 miles of pipeline  
Equivalent of a pipe from New York, NY  
to Dallas, TX

# Moving to a Sustainable Rate Structure

- Proactive vs. reactive management & decision making
- Flexibility
  - Better planning
  - Long-term decisions
- Improved customer relations
  - Less unexpected outages
- Better work environment & team morale
- More operational flexibility



Better  
credit  
standing



Shorter  
credit  
approval



Take  
advantage of  
market  
conditions



Allows system to recover  
current expense of asset  
depreciation



Matches incremental  
cost of property, plant,  
& equipment utilization  
to revenue required

# Where do we start?



- Why all the conversation around long term sustainability when there are positive cash flows?
- What has changed from the first 20-40 years of existence for our systems, to today?
- There are two basic revenue generating components:
  - Monthly base fee income
  - Water usage income
- One source can and may subsidize the other

When the water rate covers operational expense, O&M Exp (Cost to pump, treat & deliver) & monthly base fee covers depreciation, which funds cash financed Cap ex, term debt principal payments & Capital reserve builds then:

- In general, if water rate inadequate, **will feel in monthly cash flow**
- In general, if monthly base fee inadequate, cash flow **may not be impacted for many years**

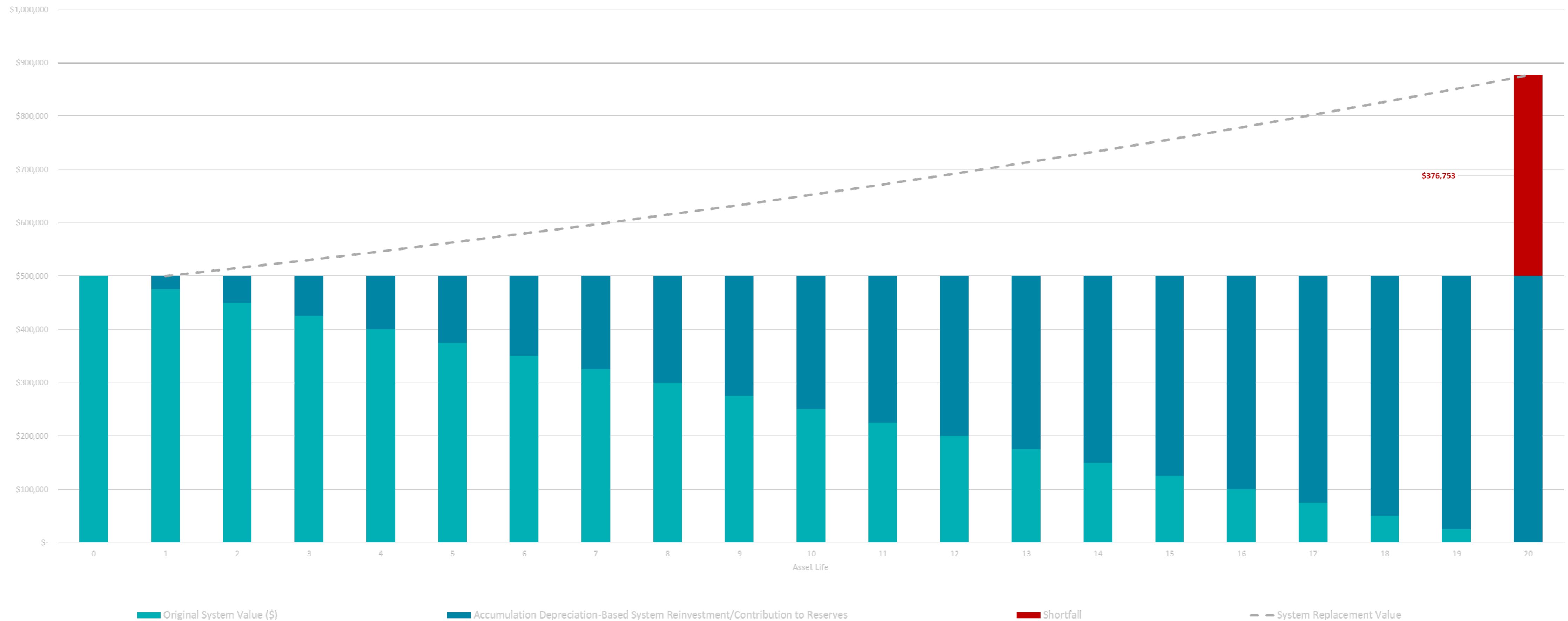
# Evaluating Base & Water Usage Rates

## **Moving to a Full Cost Recovery Long Term Plan**

(Funding Depreciation + Inflation Cost)

# Comparing Depreciation & Replacement Value

Data courtesy of the Water System Depreciation: A Capital Planning Tool for the Well-Managed Utility White Paper by





# Does Our Rate Structure...



Cover operating costs (O&M)



Include 100% of the depreciation expense



Have a plan to fund the future replacement value with a combination of debt and system reserve financing

# BDM's Revenue, Margin and Base Rate

	2015	2016
<b>Unfunded Depreciation</b>	\$513,131	\$134,106
<b>O&amp;M Cost Plus Term Water Usage Margin/1,000 Gallon</b>	\$2.51	\$3.18
		\$3.66
		(\$0.48)
	\$28.40	\$33.40



\$513,131 in unfunded depreciation

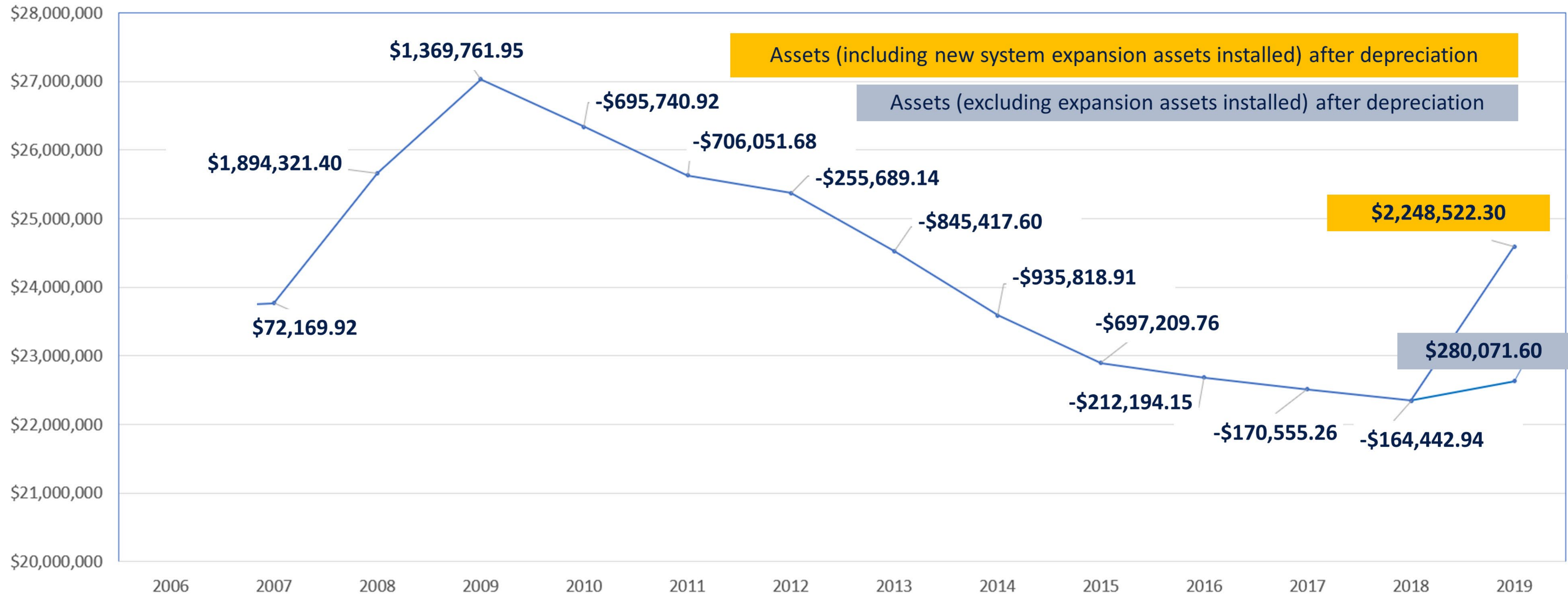


Water revenue lower than O&M costs

# BDM's Revenue, Margin and Base Rate

	2015	2016	2017	2018	2019
<b>Unfunded Depreciation</b>	\$513,131	\$134,106	\$0	\$0	\$0
<b>O&amp;M Cost Plus Term</b>	\$2.51	\$3.18	\$4.16	\$4.16	\$4.22
<b>Water Usage</b>		\$3.66	\$3.80	\$4.01	\$4.16
<b>Base Rate</b>		(\$0.48)	\$0.36	\$0.15	\$0.06
	\$28.40	\$33.40	\$33.40	\$33.40	\$35.00

# BDM Total Assets from 2006 to 2019



# Keys to Our Success



## COMMUNICATION WITH RATE-PAYERS IS CRITICAL

Quarterly manager articles in Quality On Tap magazine, annual meetings, in-person meetings with municipalities and individuals



## PLAN FOR DEPRECIATION

Include depreciation expense in annual budget & planning process (15+ Year Capital Improvement Plan)



## FINANCIAL STABILITY RESULTS IN SAVINGS

Improved financial stability, allows for the refinance of all our term debt at considerably lower interest rates.

Annual interest expense decreased.

Total principal and interest payments were kept the same, reducing the number of years to fully pay off the loans.



## COMMIT TO PAY OFF DEBTS WITHIN THE ASSET'S LIFETIME

Future debt financing required to be amortized at a timeframe that is no longer than the life of the asset being financed.

# Hampton Roads Sanitation District

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Jay Bernas  
Chief Financial Officer – HSRD  
Ted Henifin  
General Manager – HSRD



# Becoming a Financially Sustainable Organization

Ted Henifin, P.E.  
General Manager

Jay Bernas, P.E.  
Chief Financial Officer

June 15, 2020

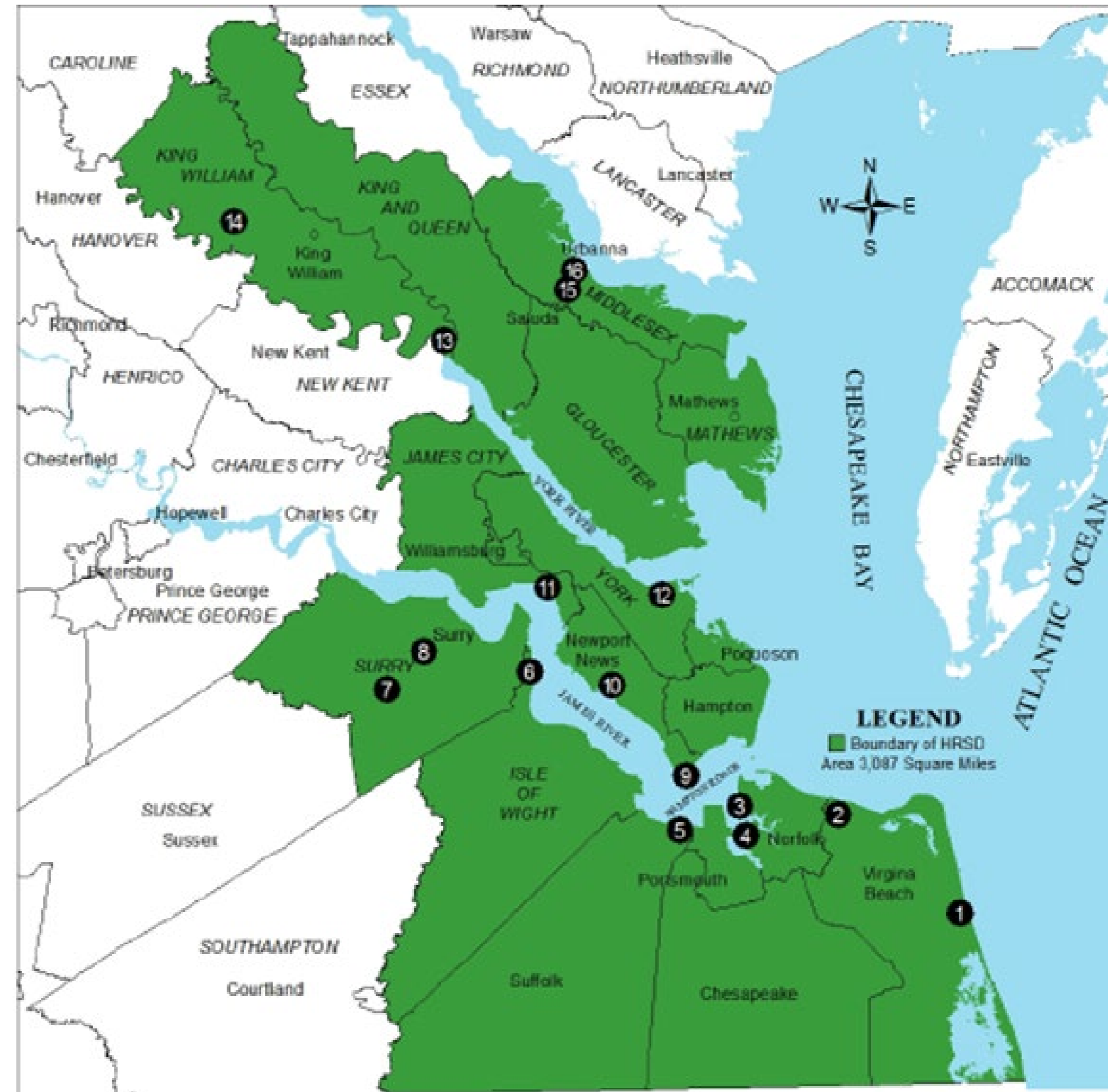
- Background
- Hampton Roads' Challenges
- Catalyst for Change
- HRSD's Financial Model
- Conclusion



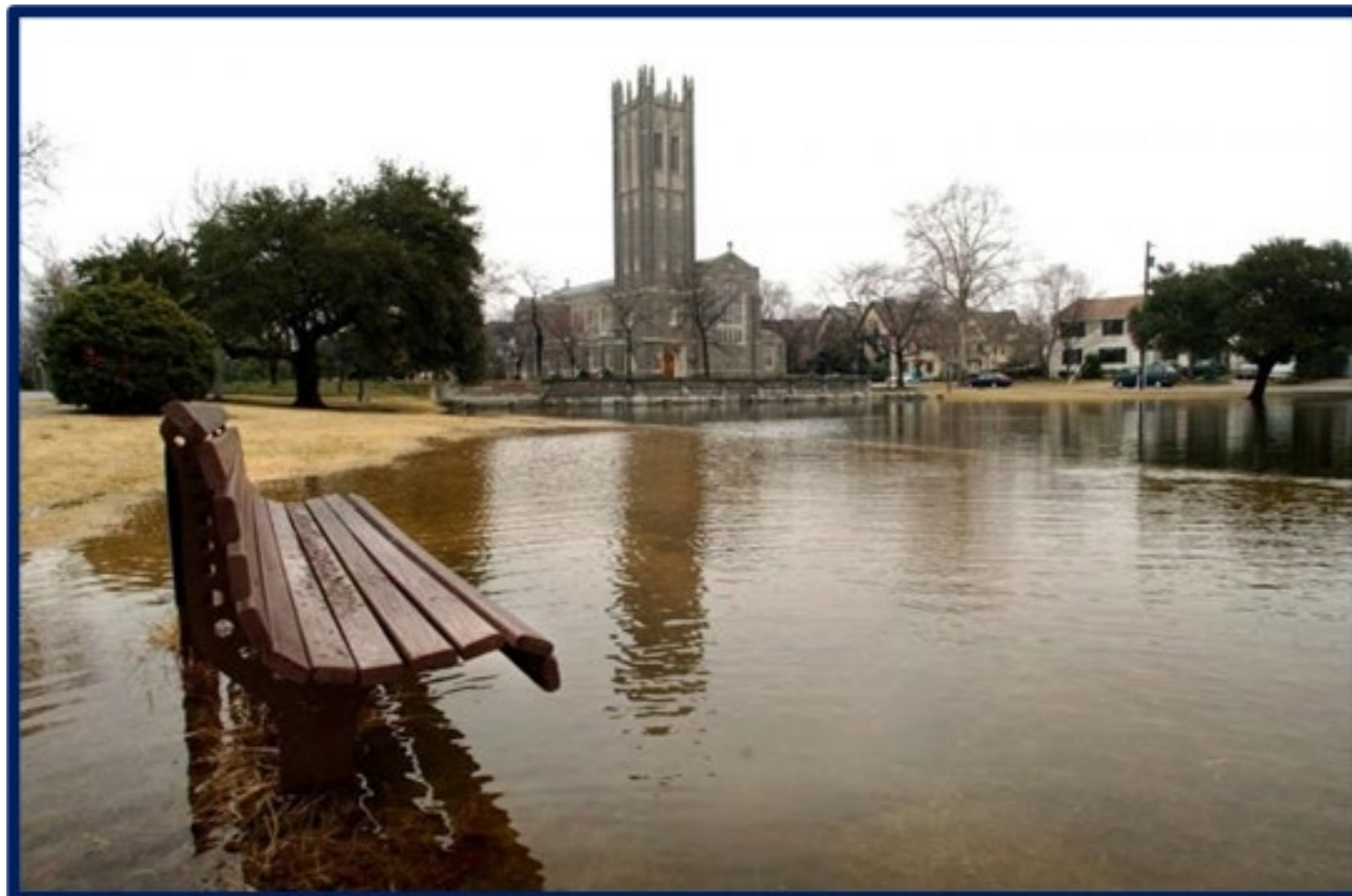
Service Area – 3,100 sq miles



- Provides wastewater treatment for 18 localities (249 mgd treatment capacity)
- Serves 1.7 million people (20% of all Virginians)
- Independent political subdivision with Governor appointed Commission

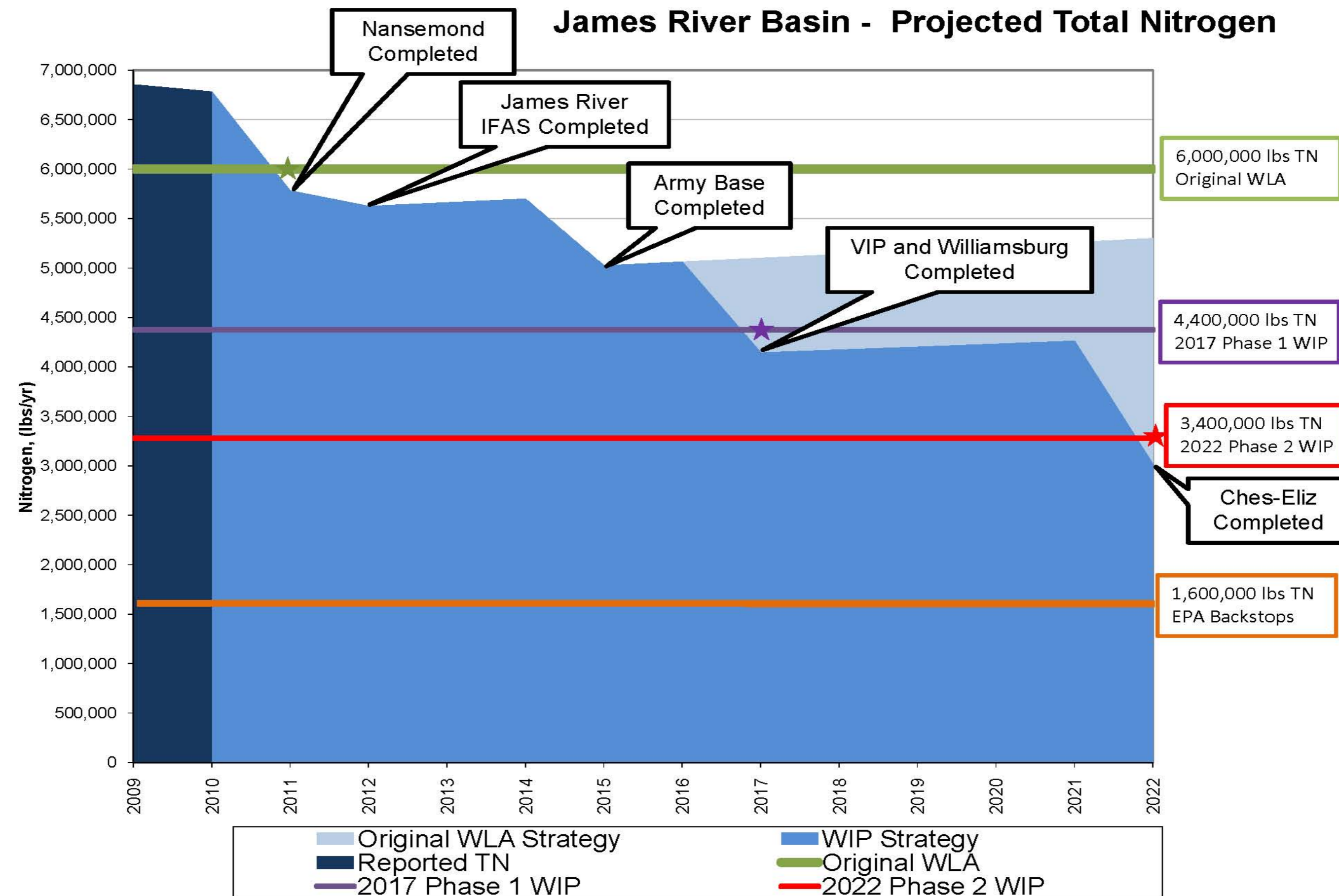


## Water issues challenging Virginia and Hampton Roads



- Restoration of the Chesapeake Bay
  - Harmful Algal Blooms
  - Localized bacteria impairments
  - Urban stormwater retrofits (cost and complexity)
- Adaptation to sea level rise
  - Recurrent flooding
- Depletion of groundwater resources
  - Including protection from saltwater contamination
- Wet weather sewer overflows
  - Compliance with Federal enforcement action

# Nutrients (Plan as of 2010)



## EPA Consent Decree for Wet Weather SSOs

- Started negotiations in 2007 – entered in 2010
- Separate sewer system, not combined
- No real issue – de minimus volume on annual basis
- Initial estimate - \$3 Billion



# Fiscal Year 2007 Budget

## HAMPTON ROADS SANITATION DISTRICT ANNUAL BUDGET FISCAL YEAR 2007

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## HAMPTON ROADS SANITATION DISTRICT OPERATING BUDGET FISCAL YEAR 2007

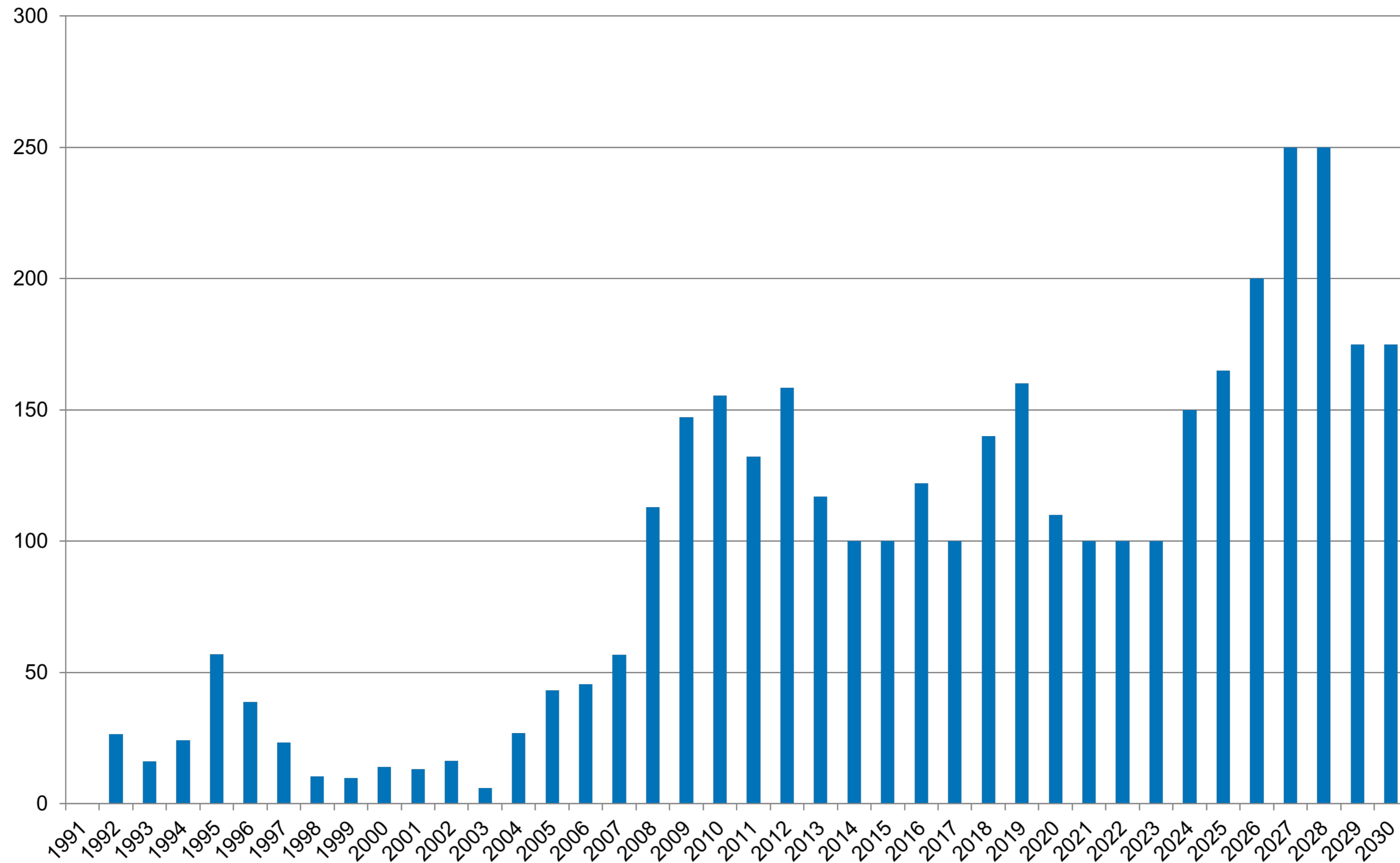
	FY-2007 Budget	FY-2006 Budget	Increase (Decrease)	Percent Changed
<b>OPERATING REVENUE</b>				
Wastewater Treatment Charges	\$ 116,956,000	\$ 104,111,000	\$ 12,845,000	12%
Miscellaneous	1,294,000	1,465,000	(171,000)	(12%)
Total-Operating Revenue	118,250,000	105,576,000	12,674,000	12%
<b>OPERATING APPROPRIATIONS:</b>				
General Management	601,366	570,007	31,359	6%
Finance & Administration	12,593,922	10,861,931	1,731,991	16%
Interceptor Systems	9,830,095	8,622,939	1,207,156	14%
Treatment	44,789,937	40,170,570	4,619,367	11%
Engineering	9,681,267	7,062,964	2,618,303	37%
Water Quality	8,111,588	7,079,095	1,032,493	15%
General Expenses	4,611,000	4,044,100	566,900	14%
	90,219,175	78,411,606	11,807,569	15%
<b>EXCESS OF REVENUE OVER APPROPRIATIONS</b>	28,030,825	27,164,394	866,431	3%
<b>NON-OPERATING REVENUE:</b>				
Wastewater Facility Charges	10,774,000	9,182,000	1,592,000	17%
Investment Earnings	3,615,000	2,058,000	1,557,000	76%
Other	1,178,000	1,145,000	33,000	3%
	15,567,000	12,385,000	3,182,000	26%
<b>REVENUE AVAILABLE FOR DEBT SERVICE</b>	43,597,825	39,549,394	4,048,431	10%
<b>LESS: DEBT SERVICE COST</b>	17,816,266	17,773,864	42,402	0%
<b>NET INCOME AVAILABLE FOR CONSTRUCTION AND IMPROVEMENTS</b>	<u>\$ 25,781,559</u>	<u>\$ 21,775,530</u>	<u>\$ 4,006,029</u>	18%

# Fiscal Year 2008 – First “Long” Range Forecast

FIVE-YEAR FINANCIAL PROJECTION							REMARKS
	FY 2007 Estimated	FY 2008 Projected	FY 2009 Projected	FY 2010 Projected	FY 2011 Projected	FY 2012 Projected	
<b>OPERATIONS BUDGET</b>							
<b>BEGINNING OPERATING RESERVE</b>	\$54,193	\$47,153	\$56,593	\$56,247	\$60,067	\$63,132	
Carry over from last year							
<b>OPERATING REVENUES</b>	118,876	135,123	154,868	177,575	197,299	205,439	
Treatment, surcharge, septic, fees, compost, etc.							
<b>OPERATING EXPENSES</b>	(93,384)	(106,526)	(107,942)	(119,306)	(126,265)	(133,633)	
Department expenses, maintenance and repairs							
<b>DEBT SERVICE</b>	(17,816)	(17,335)	(31,353)	(45,390)	(58,053)	(64,604)	
District bonds							
<b>NON OPERATING REVENUE</b>	14,004	13,210	13,483	13,785	14,588	15,327	
Facility charge, interest, generator credits, rental							
<b>TRANSFER TO CAPITAL PROGRAM</b>	(28,721)	(15,032)	(29,402)	(22,844)	(24,504)	(15,327)	
Transfer of non operating revenue							
<b>ENDING OPERATING RESERVE</b>	<u>\$47,153</u>	<u>\$56,593</u>	<u>\$56,247</u>	<u>\$60,067</u>	<u>\$63,132</u>	<u>\$70,335</u>	
<b>CAPITAL PROGRAM BUDGET</b>							
<b>BEGINNING CAPITAL RESERVE</b>	\$24,082	\$17,241	\$17,335	\$31,353	\$45,390	\$58,053	
Carry over from last year							
<b>CAPITAL PROGRAM INCOME</b>	38,617	118,294	225,418	175,137	187,863	97,951	
Bonds, grants, operating funds transfers							
<b>CAPITAL FUNDS AVAILABLE</b>	62,698	135,535	242,753	206,490	233,253	156,004	
Money available for capital projects							
<b>CONSTRUCTION PLANNED</b>	(45,457)	(118,200)	(211,400)	(161,100)	(175,200)	(91,400)	
Budget plan for capital expenditures							
<b>ENDING CAPITAL RESERVE</b>	<u>\$17,241</u>	<u>\$17,335</u>	<u>\$31,353</u>	<u>\$45,390</u>	<u>\$58,053</u>	<u>\$64,604</u>	
DEBT COVERAGE RATIO - - District primary bond	3.27	8.83	12.72	14.97	17.79	18.12	
DEBT COVERAGE RATIO - - All Debt	2.22	2.41	1.93	1.59	1.47	1.35	

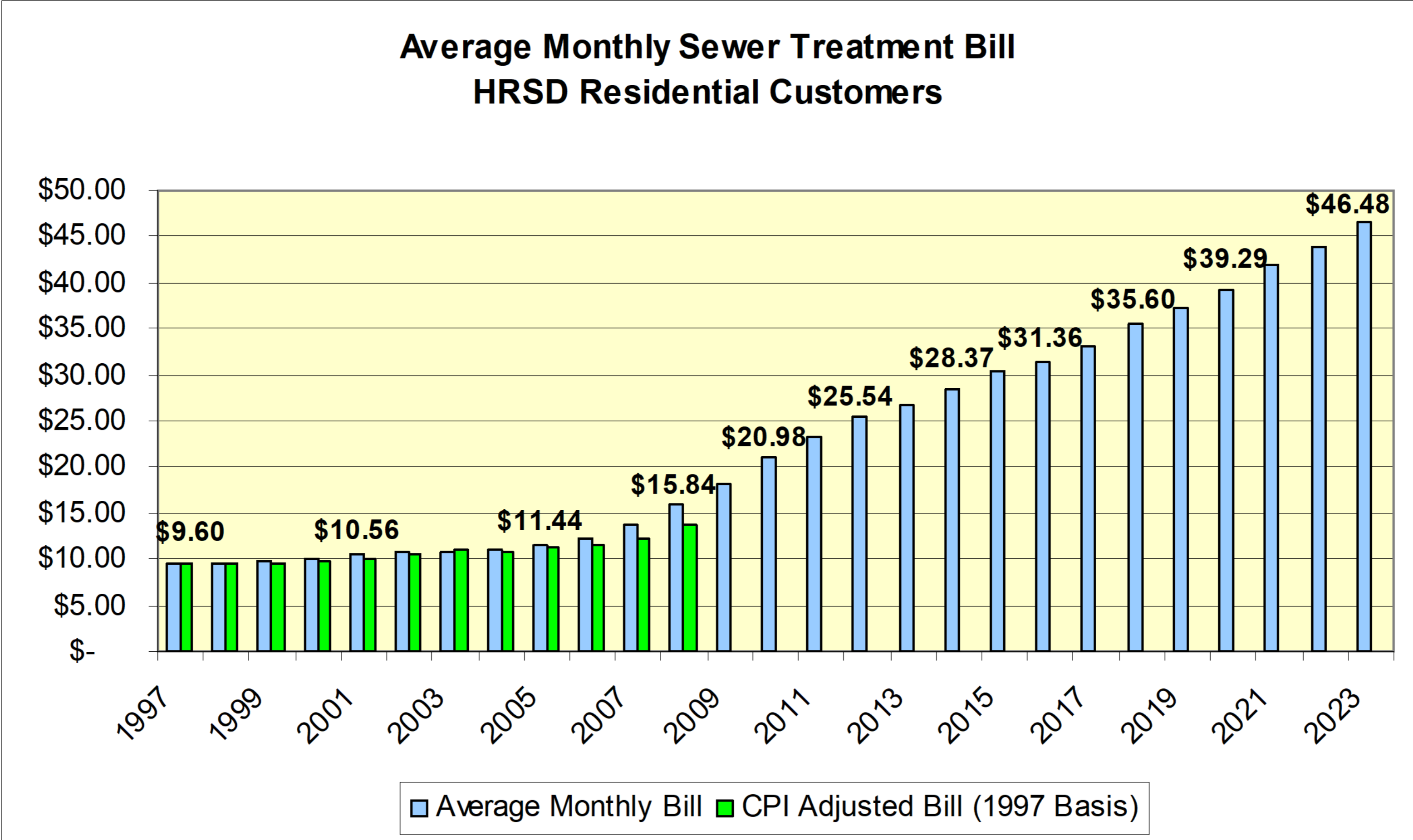
FY-08 INCREASE	15.0%
FY-09 INCREASE	15.0%
FY-10 INCREASE	15.0%
FY-11 INCREASE	11.3%
FY-12 INCREASE	4.2%
FY08 BONDS	\$100,212
FY09 BONDS	\$196,016
FY10 BONDS	\$152,293
FY11 BONDS	\$163,359
FY12 BONDS	\$82,624

## Annual capital expenditures (\$ millions) as projected in 2008





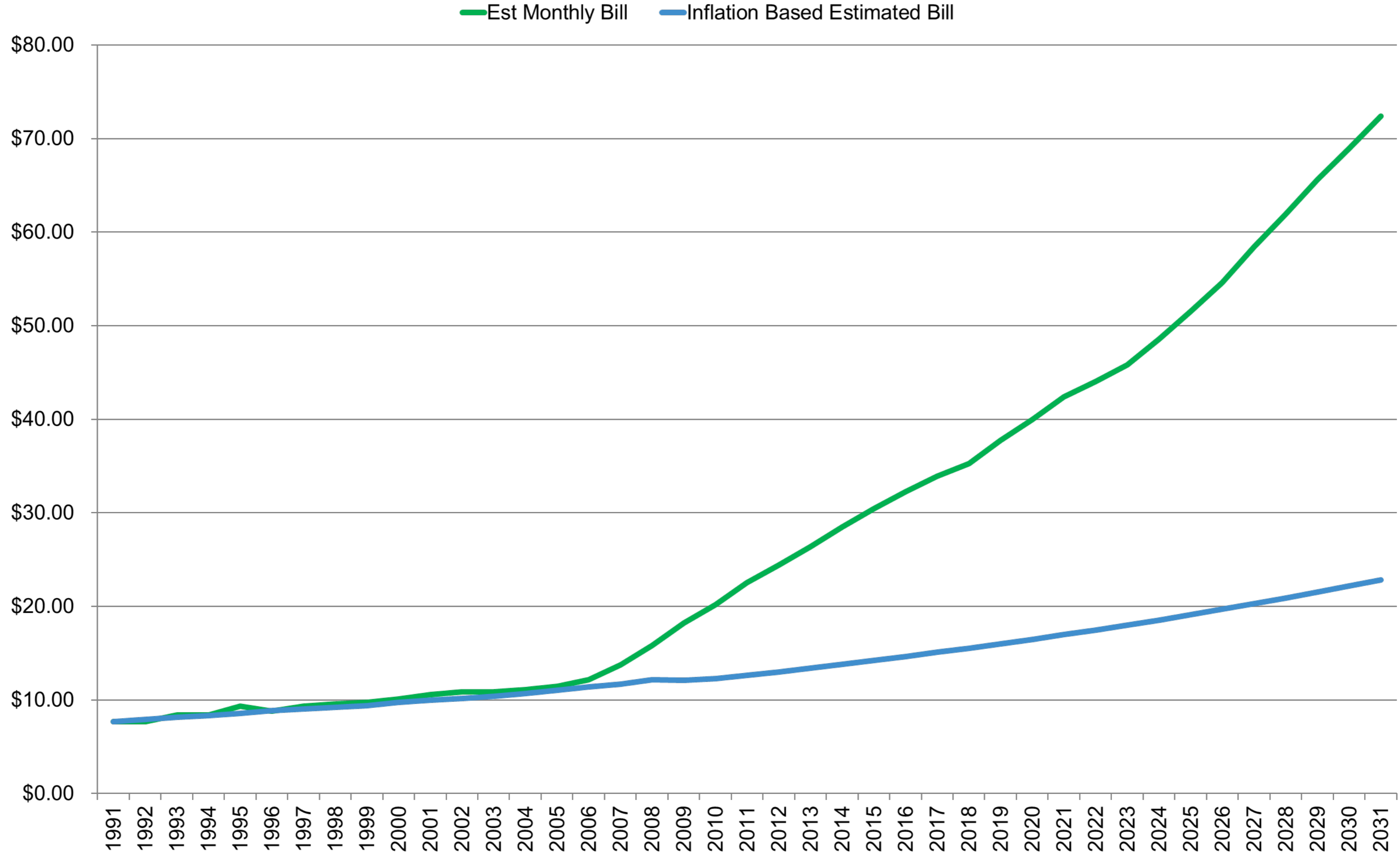
# Projections from 2008



Average bill rises from 0.38% MHI in 2008 to 0.74% MHI in 2023.  
*Assumes 3% annual increase in MHI from \$50,000 in 2008.*



# Projections from 2008





Building the Financial Forecast using Future Perfect



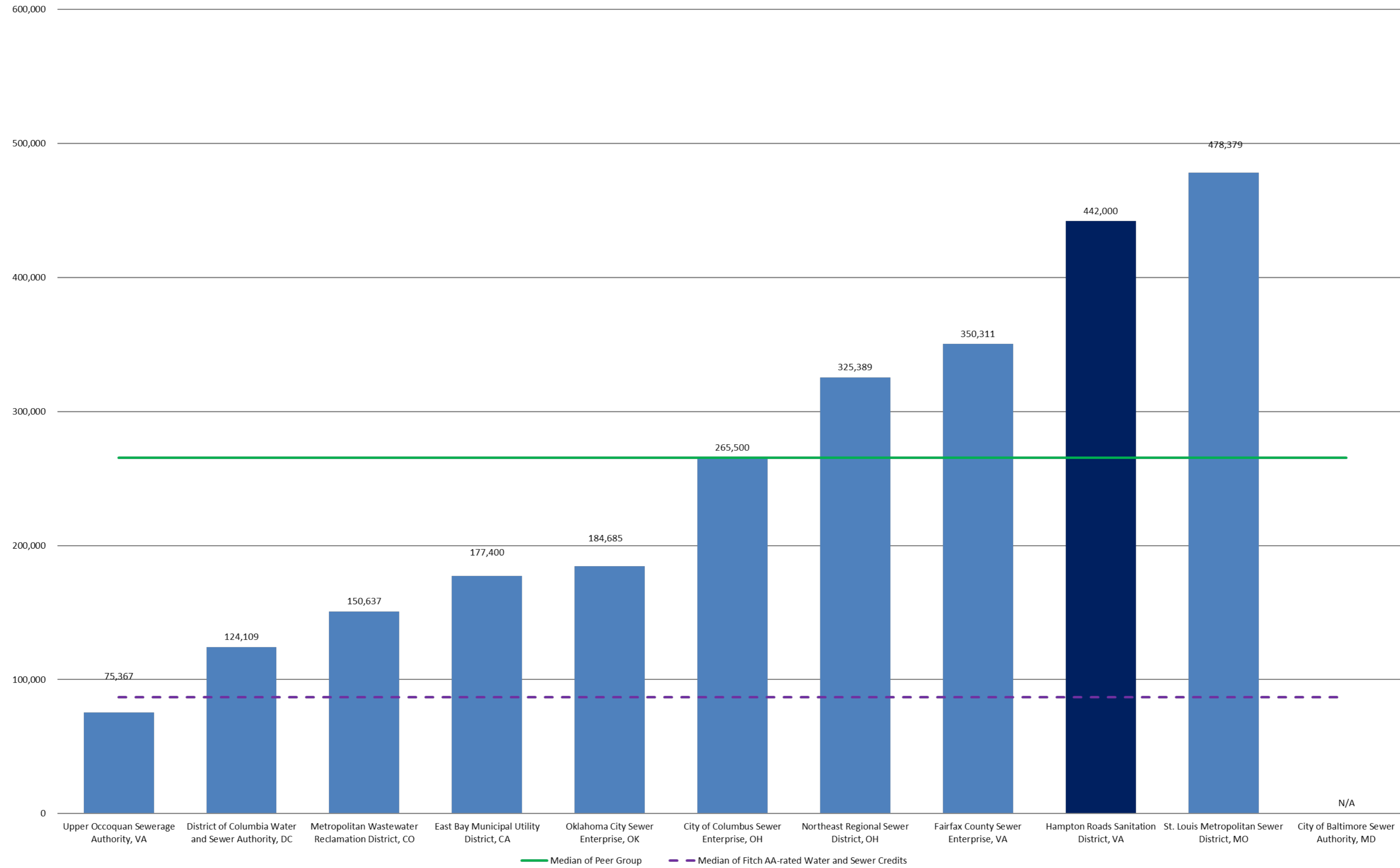
# Comparable Utilities Summary

Name	Ratings	Service Area Population	Total Revenue in 000's	Total Long Term Debt in 000's <sup>1</sup>	Size of CIP
Oklahoma City Sewer Enterprise, OK	Aa2/AAA/ -	532,000	\$129,693	\$148,043	\$154.5 million (2009-2013)
East Bay Municipal Utility District, CA	Aa3/AA+/ -	640,000	75,600	384,439	\$178.7 million (2008-2012)
Fairfax County Sewer Enterprise, VA	Aa2/AAA/AAA	935,000	95,943	376,008	\$300 million (2008-2013)
St. Louis Metropolitan Sewer District, MO	Aa2/AA+/AA+	1,000,000	223,063	441,251	\$820.9 million (2009-2013)
Northeast Regional Sewer District, OH	Aa2/AA/ -	1,000,000	150,154	481,768	\$580.3 million (2007-2011)
City of Columbus Sewer Enterprise, OH	Aa2/AA/AA	1,000,000	163,072	956,579	\$1.6 billion (2008-2013)
Upper Occoquan Sewerage Authority, VA	Aa3/AA+/ -	1,088,000	20,893	338,851	\$395 million (2008-2014)
Metropolitan Wastewater Reclamation District, CO	Aa2/AA+/ -	1,600,000	65,070	95,234	\$1.291 billion (2008-2019)
<b>Hampton Roads Sanitation District, VA</b>	<b>Aa3/AA+/AA</b>	<b>1,600,000</b>	<b>132,206</b>	<b>359,904</b>	<b>\$1.073 billion (2009-2013)</b>
City of Baltimore Sewer Authority, MD	A1/AA/A+	1,800,000	151,462	591,899	\$837.8 million (2008-2013)
District of Columbia Water and Sewer Authority, DC	Aa3/AA/AA-	2,200,000	306,457	1,032,233	\$771.8 million (2008-2017)

1. Includes senior and subordinate indebtedness.

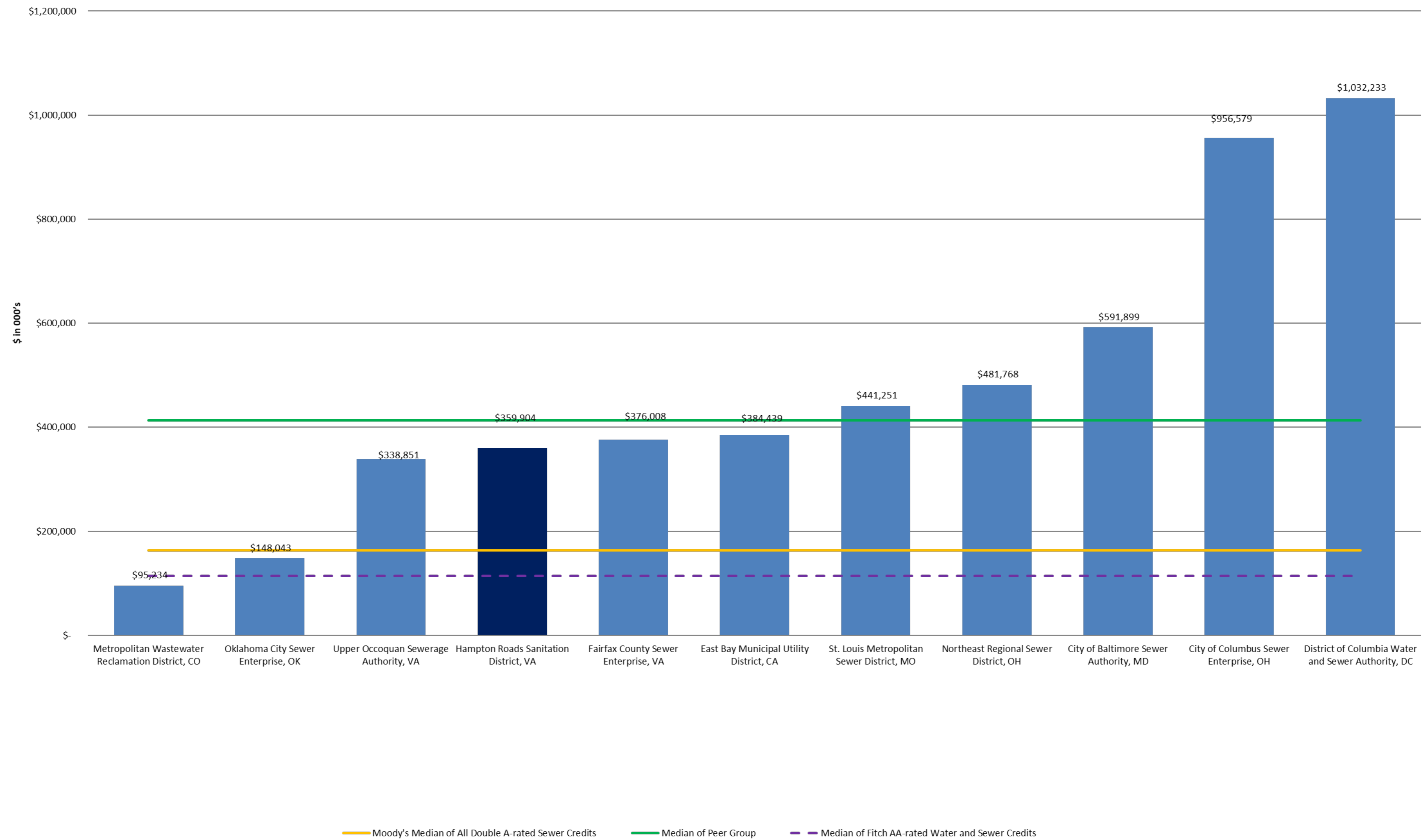
Sources: Moody's Municipal Financial Ratio Analysis Data as of 6/30/07  
 FY 2008 HRSD Comprehensive Annual Financial Report  
 Service Population and CIP data from latest Moody's, S&P, Fitch Rating Reports for Issuer

# Customer Accounts



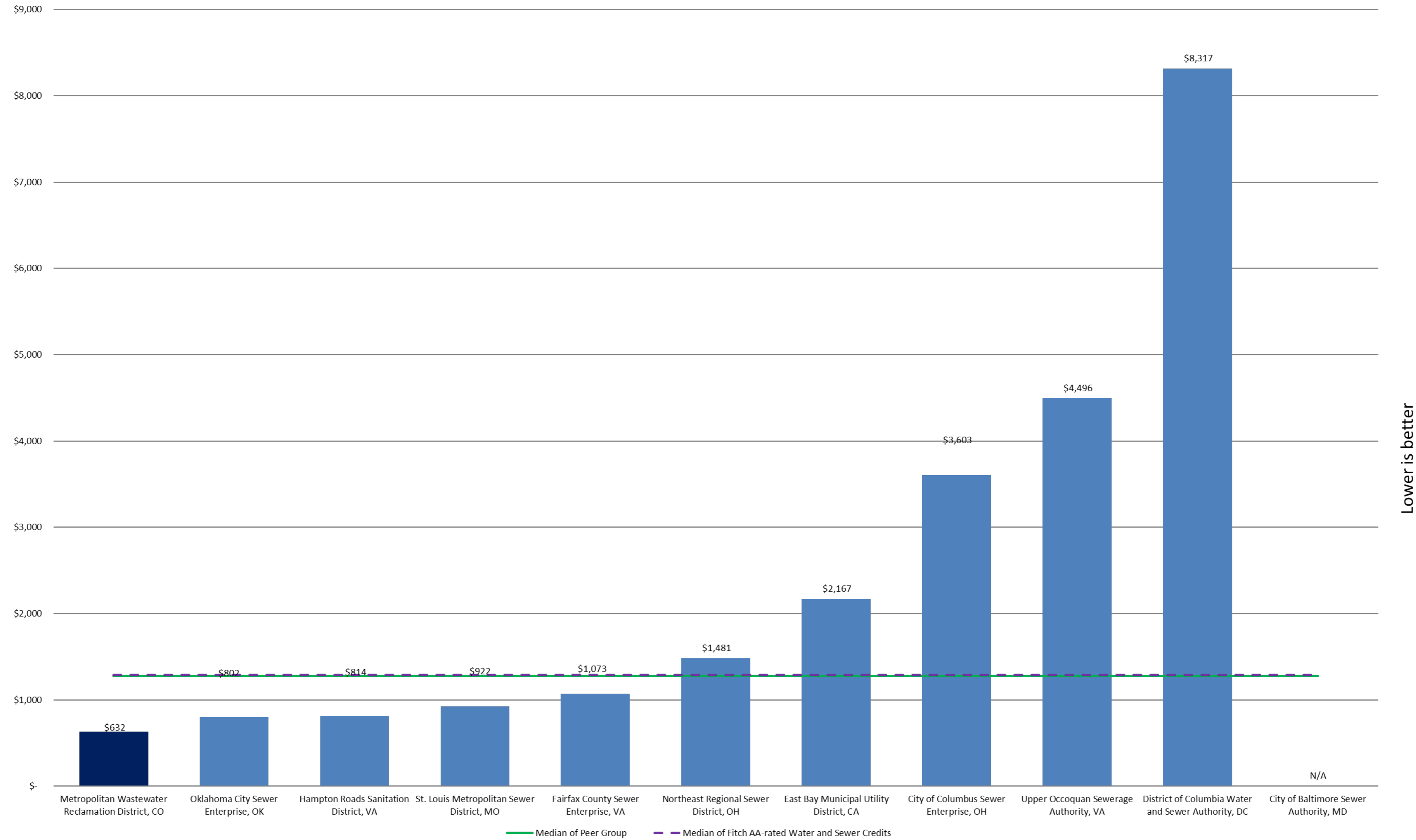
Sources: Moody's Municipal Financial Ratio Analysis Data as of 6/30/07, HRSD data as of 6/30/08.  
 "2009 Median Ratios for Water and Sewer Revenue Bonds – Retail Systems" – Fitch 1/28/09.  
 Customer Account statistics from latest Moody's, S&P, and Fitch Rating Reports.

# Total Debt<sup>1</sup>



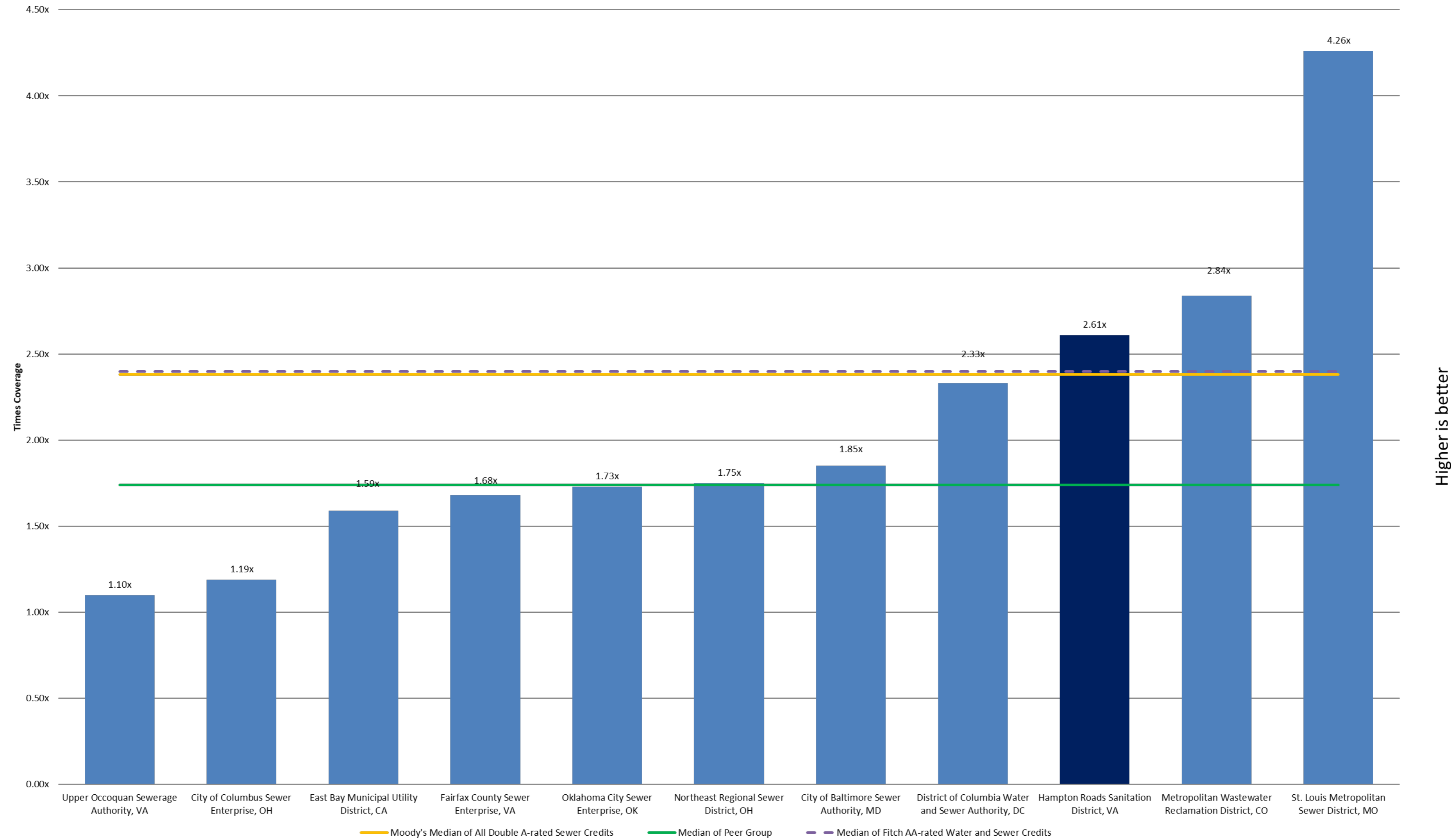
Sources: Moody's Municipal Financial Ratio Analysis Data as of 6/30/07, HRSD data as of 6/30/08.  
 "2009 Median Ratios for Water and Sewer Revenue Bonds – Retail Systems" – Fitch 1/28/09.

# Debt<sup>1</sup> per Customer



Sources: Moody's Municipal Financial Ratio Analysis Data as of 6/30/07, HRSD data as of 6/30/08.  
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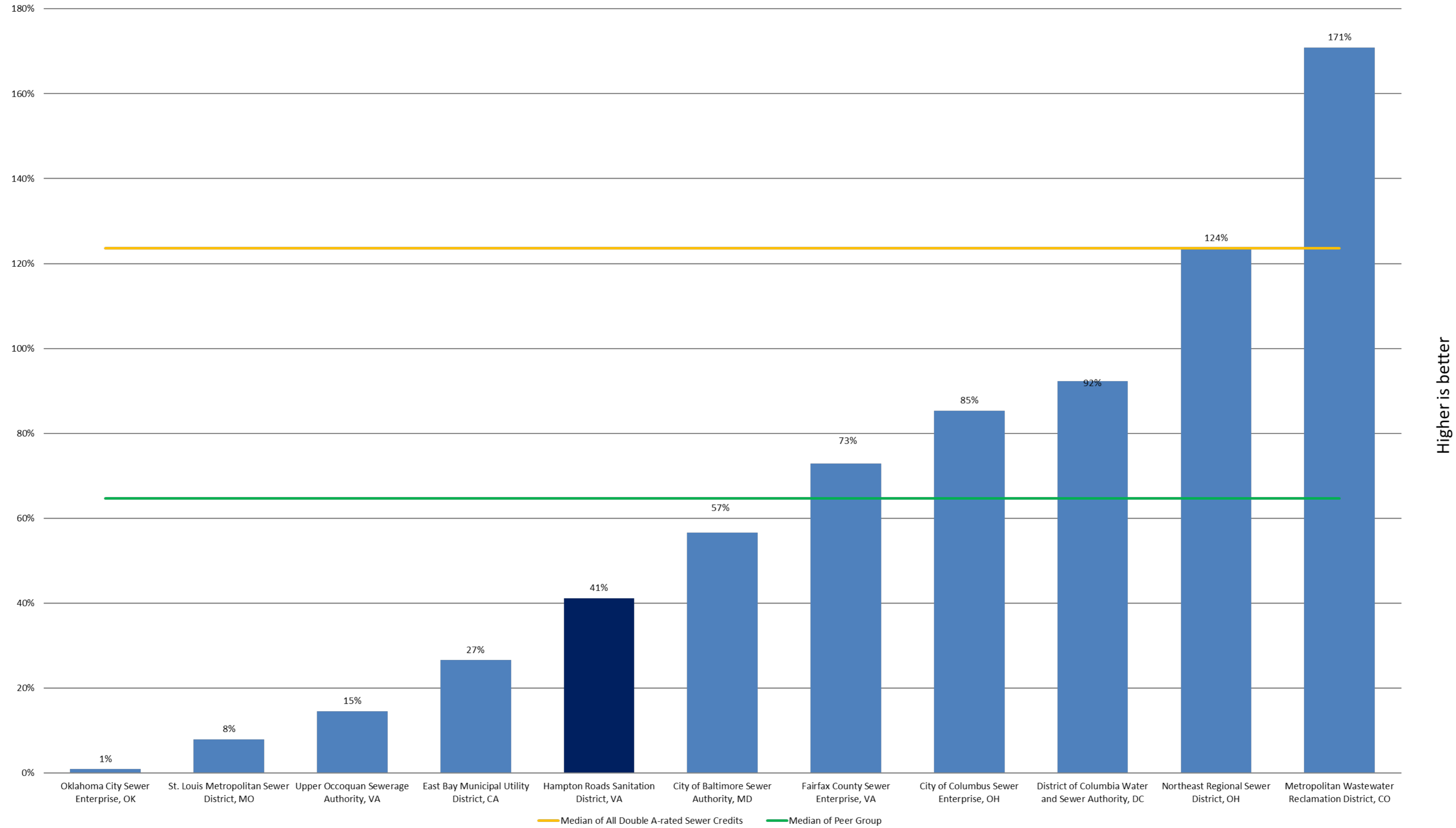
# Total Debt Service Coverage



Sources: Moody's Municipal Financial Ratio Analysis Data as of 6/30/07, HRSD data as of 6/30/08.  
 "2009 Median Ratios for Water and Sewer Revenue Bonds – Retail Systems" – Fitch 1/28/09.

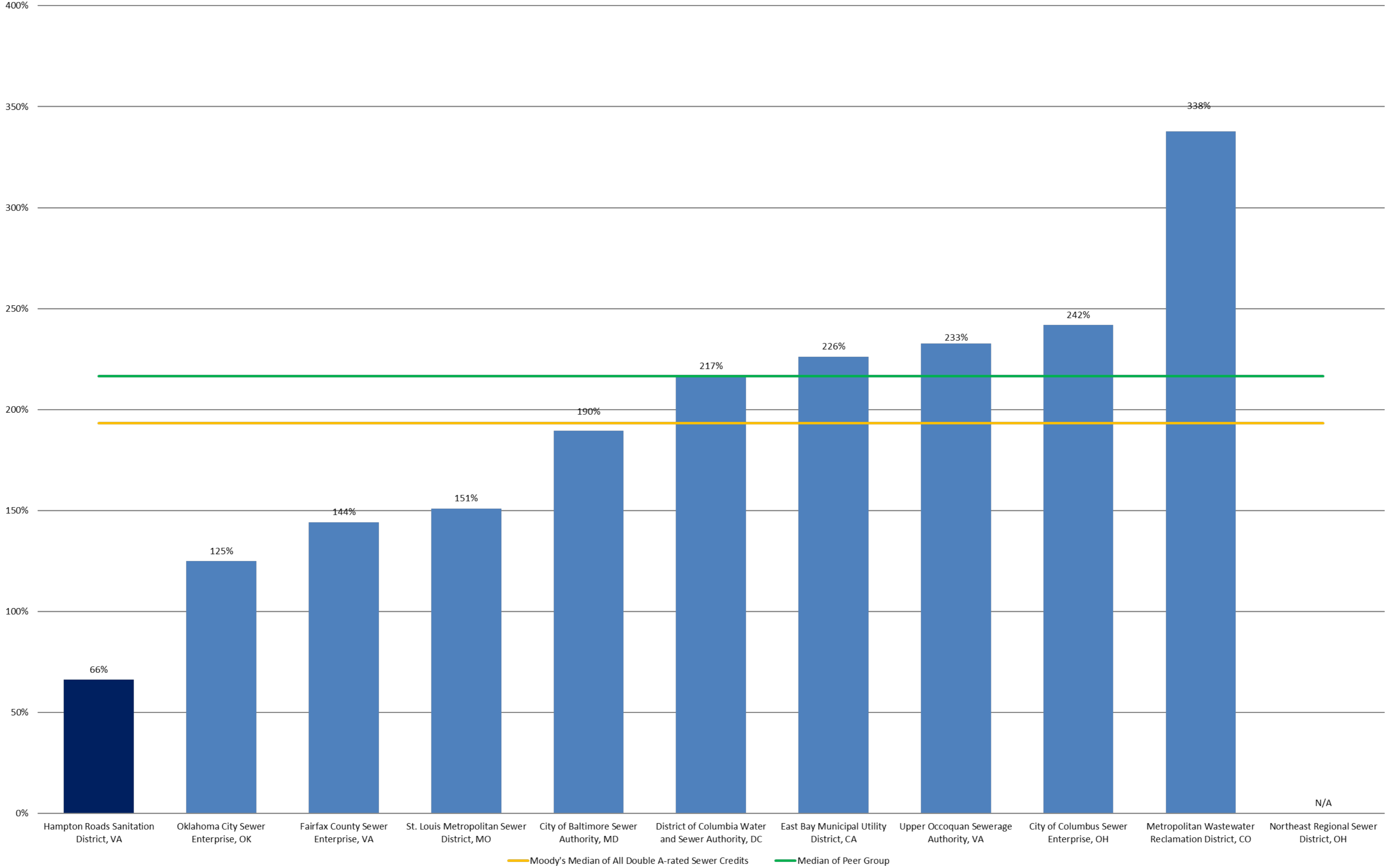


# Unrestricted Reserves as a % of O&M



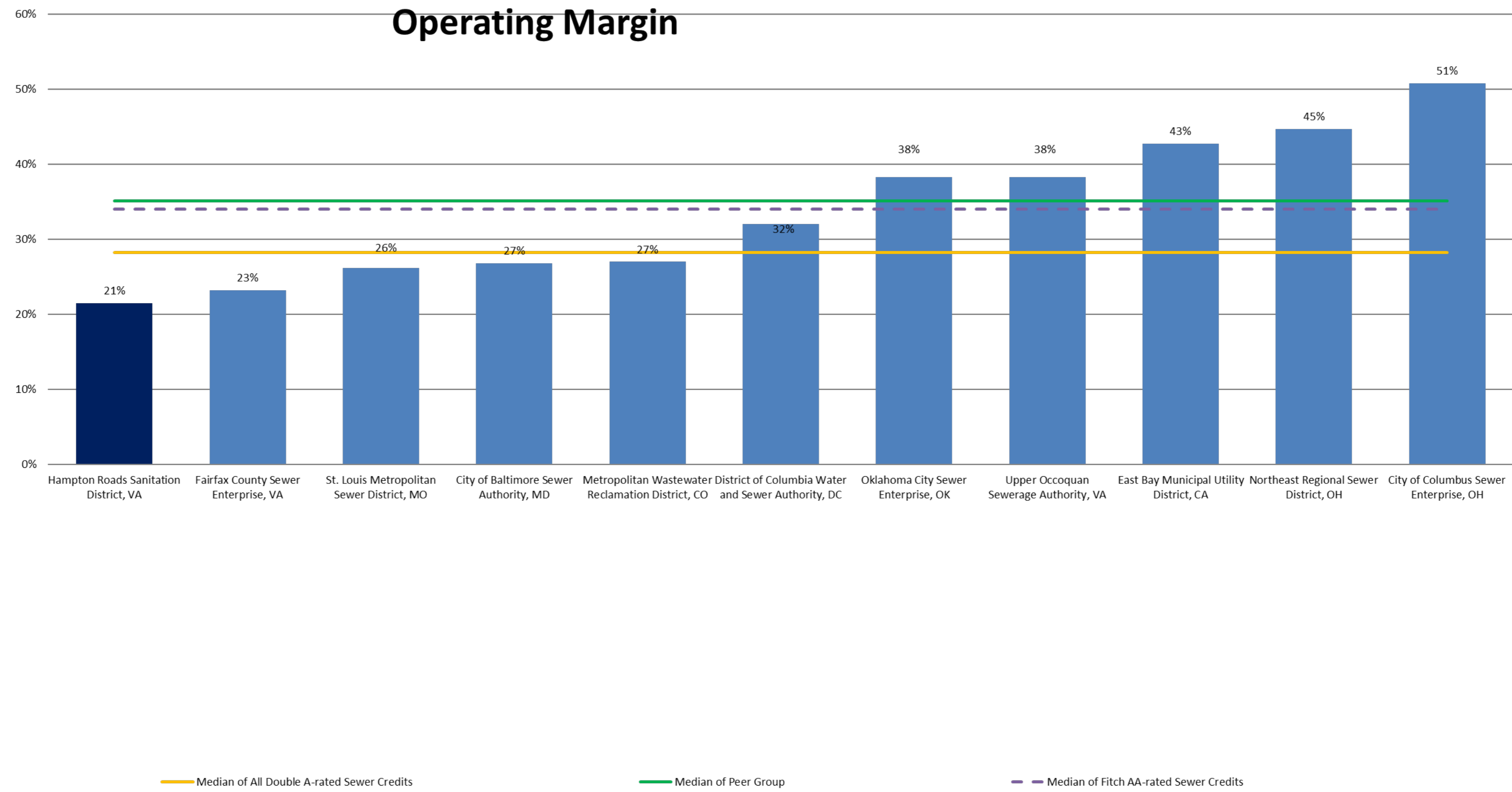
Source: Moody's Municipal Financial Ratio Analysis Data as of 6/30/2007.

# Net Working Capital as a % of O&M



Higher is better

Source: Moody's Municipal Financial Ratio Analysis Data as of 6/30/2007.



Sources: Moody's Municipal Financial Ratio Analysis Data as of 6/30/07, HRSD data as of 6/30/08.  
 "2009 Median Ratios for Water and Sewer Revenue Bonds – Retail Systems" – Fitch 1/28/09.

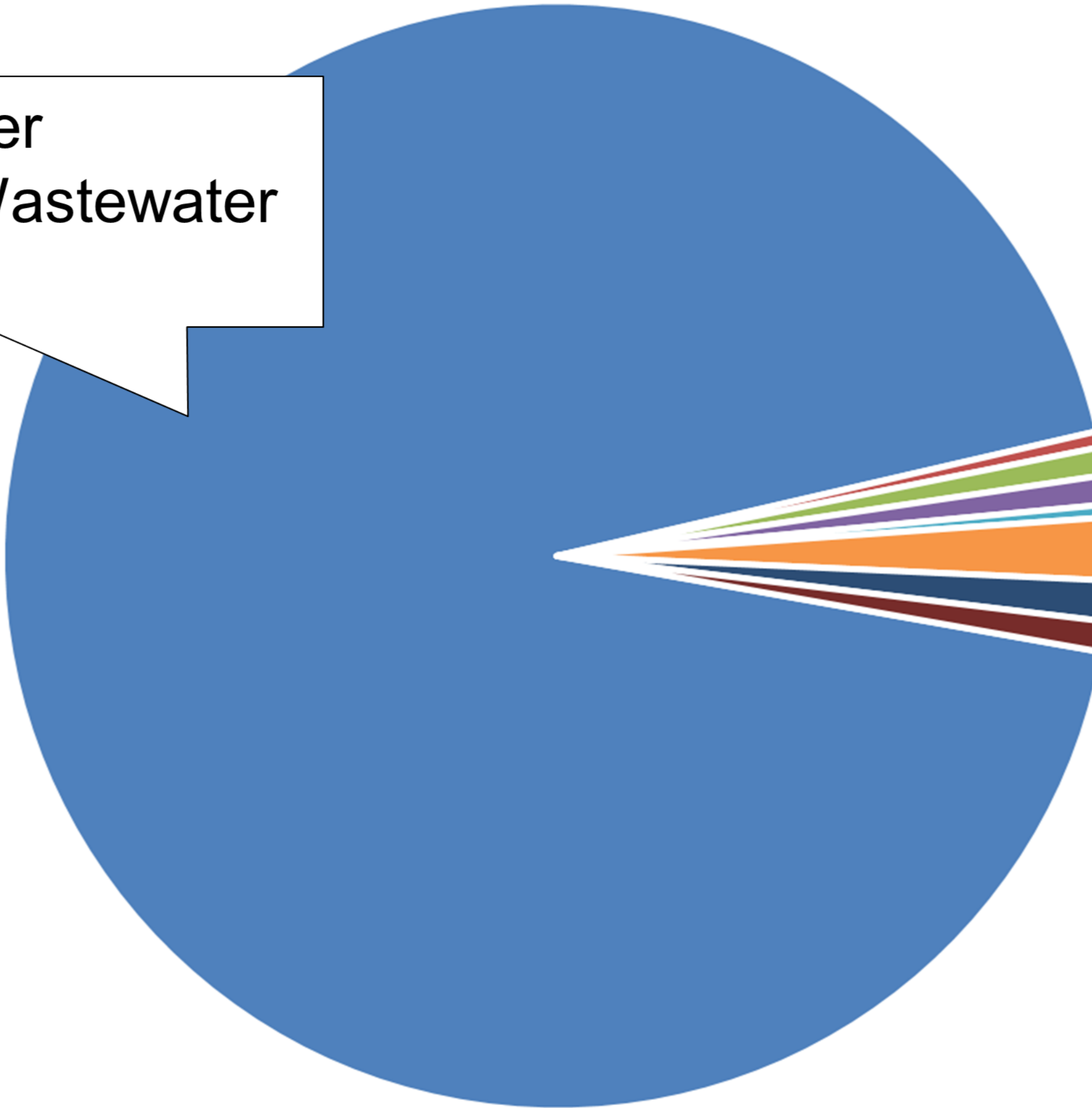
## Financial Forecast

HRSD will analyze water consumption, regional economic and population data periodically to identify any trends that may impact its long-range financial forecast. HRSD will also analyze and conservatively project major expense drivers, such as construction costs, inflation, operating cost increases, and borrowing costs. The forecast should target financial metrics, across the twenty-year period, that are consistent with rating agency metrics for a **strong, double-A** rated credit. This approach will ensure the long-range forecast is resilient and maintains HRSD's strong financial framework.

	FY21	Drivers
<b>Revenue</b>	\$ 332,397	Consumption trends, rate increases
<b>- Expenses</b>	\$ 175,776	Inflation, Efficient operations, New facilities
<b>- Debt Service</b>	\$ 61,408	CIP spend and regulatory deadlines
<b>= Cash for CIP</b>	\$ 94,953	Policy driven, higher cash = lower debt service, Bond ratings, Intergenerational equity

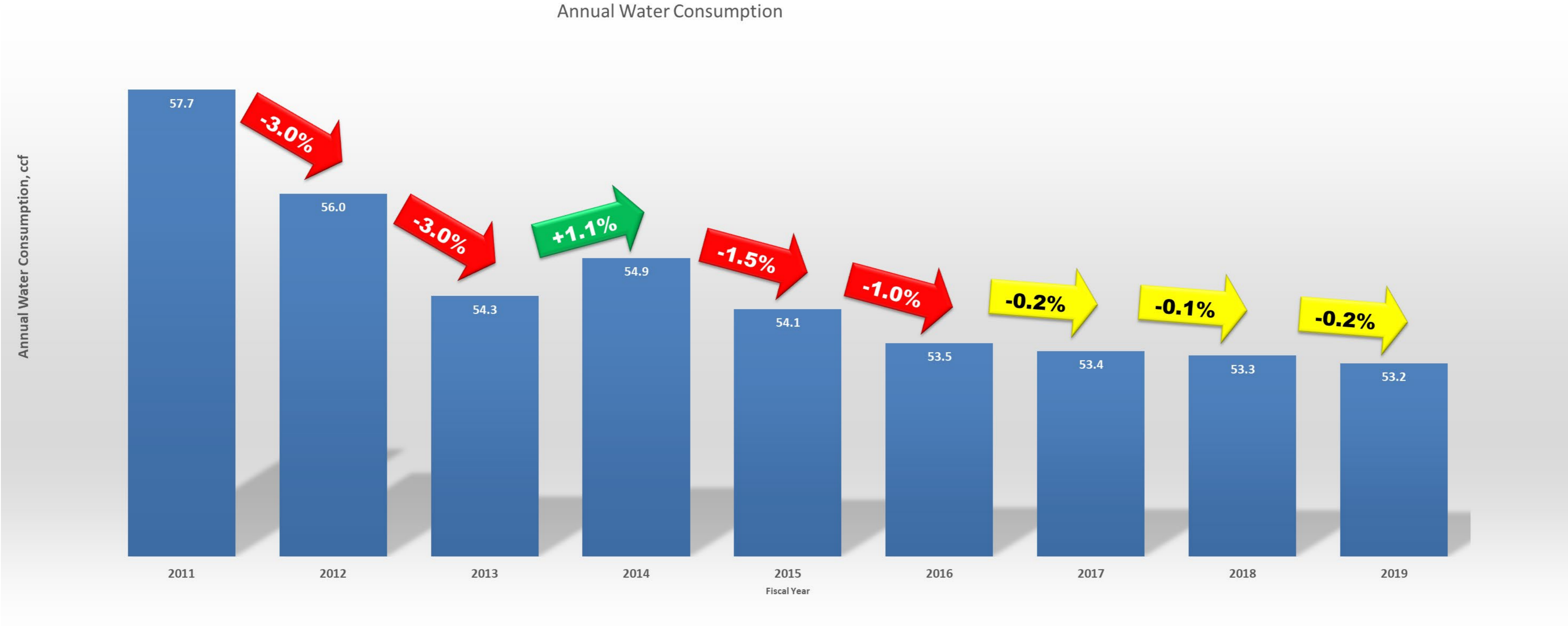
Revenues = Water Consumption \* Wastewater Rate

Wastewater Service Charges  
93.6%



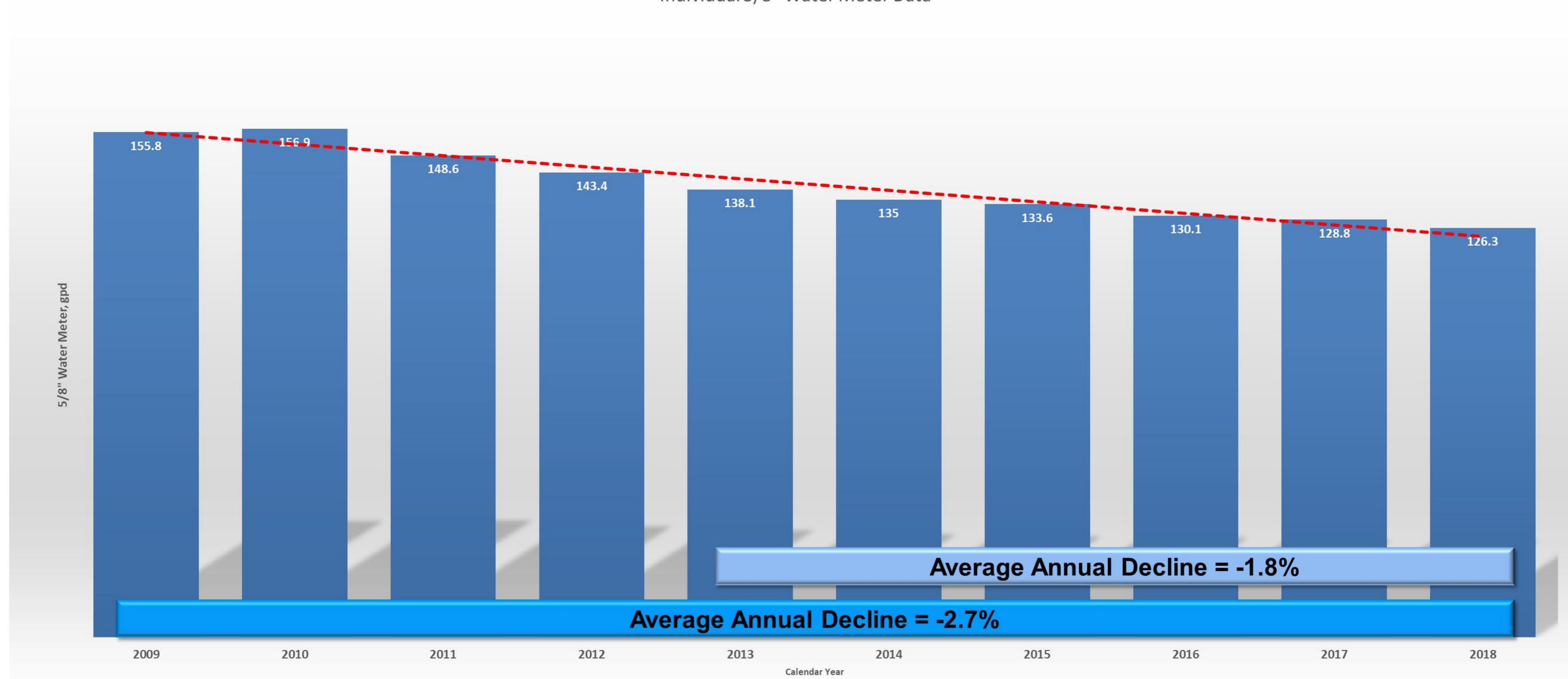
- Surcharge 0.5%
- Indirect Discharge 0.8%
- Miscellaneous Fees 0.8%
- Miscellaneous Income 0.4%
- Facility Charges 1.8%
- Misc Non Operating Revenue 0.9%
- Investment Income 1.2%

# Water Consumption Trends – Almost flat



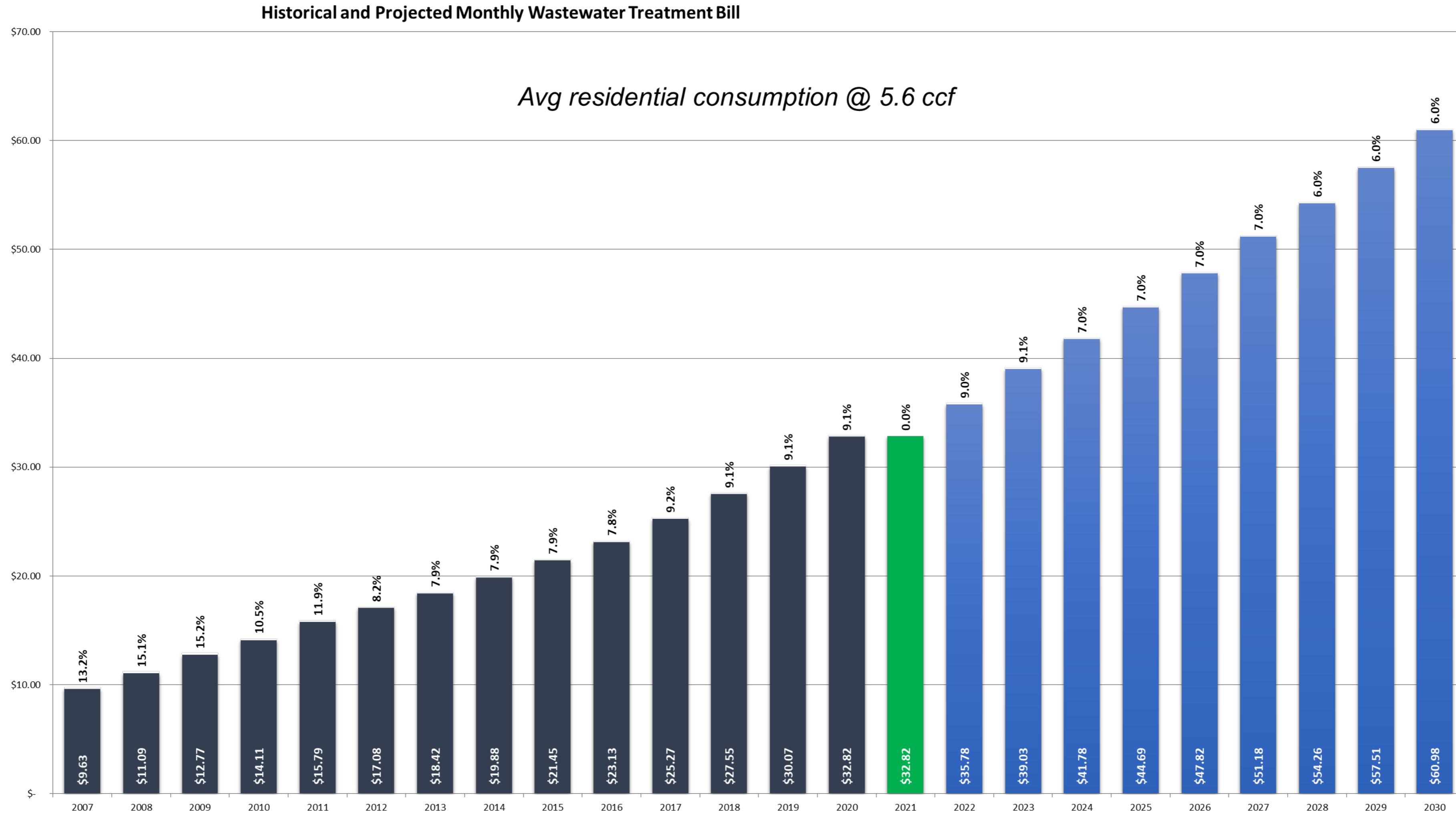
# Residential Water Consumption Trends – New Accounts Offsetting Declines

Individual 5/8" Water Meter Data

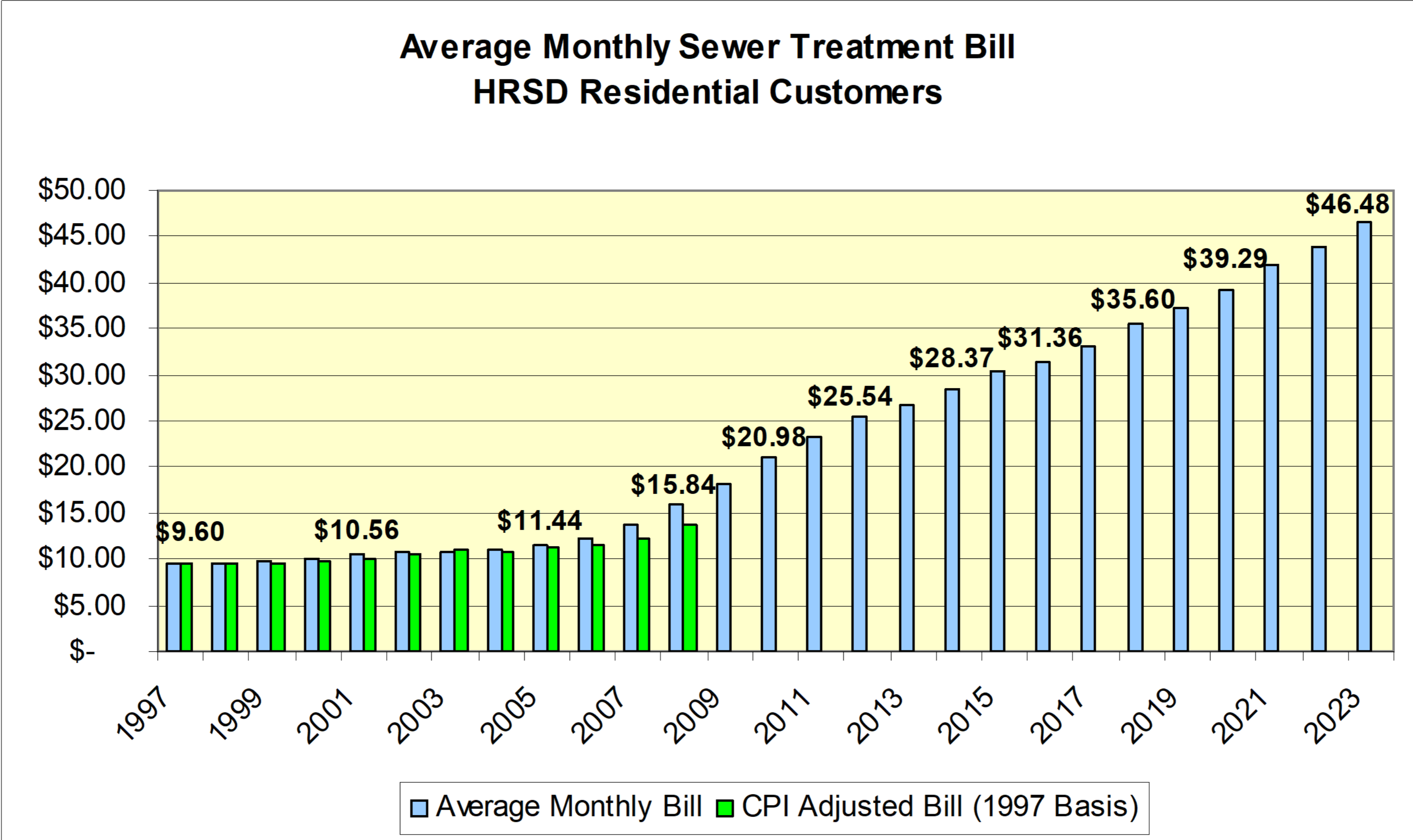




# Projected Wastewater Rate Increases Average Residential bill



# Projections from 2008

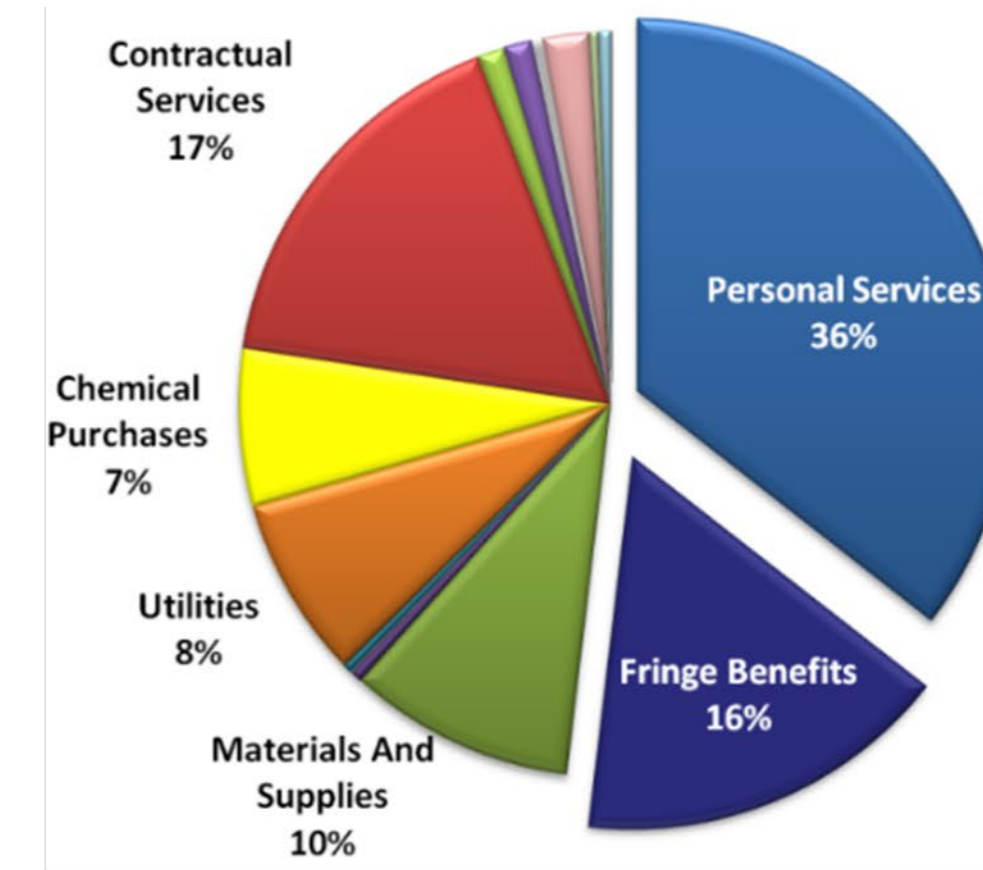


Average bill rises from 0.38% MHI in 2008 to 0.74% MHI in 2023.  
*Assumes 3% annual increase in MHI from \$50,000 in 2008.*



# Forecasting Expenses

- High-level budget items
- Include new facilities
  - SWIFT O&M



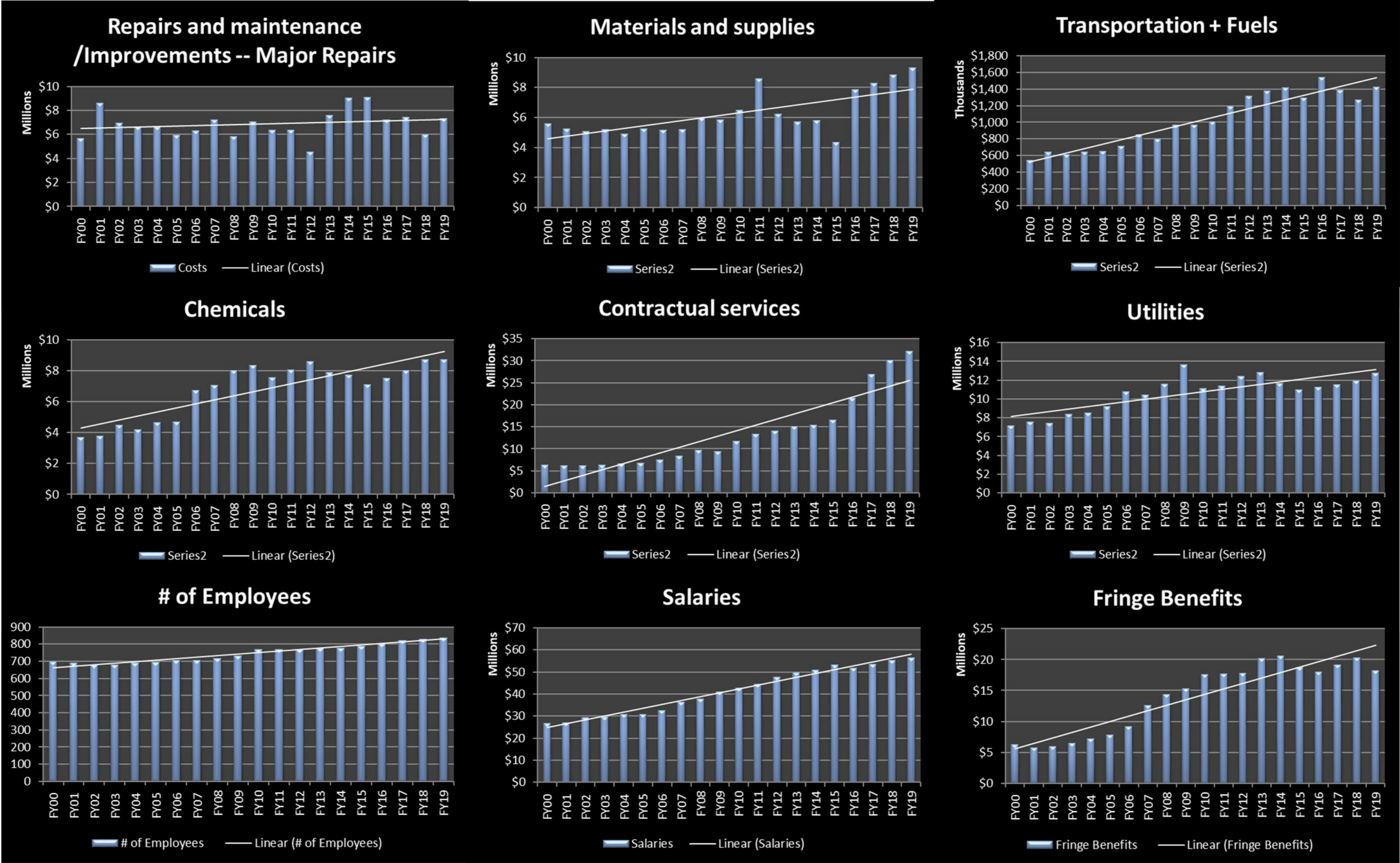
OBJECT CODE	FY17 Actuals	FY18 Budget	FY19 Proposed	FY19 Proposed vs Budget \$ Dif	FY19 Proposed vs Budget % Dif from Budget
Column1	Column2	Column4	Column6	Column7	Column8
AC_51000:Personal Services	\$ 53,400,849	\$ 53,773,326	\$	\$	\$
AC_52000:Fringe Benefits	\$ 19,106,292	\$ 24,691,454	\$	\$	\$
AC_53000:Materials And Supplies	\$ 15,740,746	\$ 14,919,311	\$	\$	\$
AC_53500:Transportation	\$ 900,394	\$ 804,060	\$	\$	\$
AC_53600:Transportation Fuels	\$ 485,680	\$ 615,325	\$	\$	\$
AC_54000:Utilities	\$ 11,523,328	\$ 11,947,481	\$	\$	\$
AC_54500:Chemical Purchases	\$ 8,019,746	\$ 10,324,400	\$	\$	\$
AC_55000:Contractual Services	\$ 21,056,692	\$ 25,728,113	\$	\$	\$
AC_55500:Consulting Services	\$ 2,477,383	\$ 1,800,792	\$	\$	\$
AC_56000:Miscellaneous Expenses	\$ 1,969,971	\$ 1,842,349	\$	\$	\$
AC_56500:Recruitment Expenses	\$ 326,135	\$ 416,500	\$	\$	\$
AC_57000:Bond Issues	\$ 40,765	\$ 900,000	\$	\$	\$
AC_57500:Apprentice Program	\$ 220,596	\$ 230,431	\$	\$	\$
AC_58000:Insurance	\$ 2,825,275	\$ 3,105,000	\$	\$	\$
AC_58500:District Memberships	\$ 429,973	\$ 560,323	\$	\$	\$
AC_60000:Capital Assets	\$ 2,853,910	\$ 814,100	\$	\$	\$
<b>Total Operating Expenses</b>	<b>\$ 141,377,736</b>	<b>\$ 152,472,965</b>	<b>\$ 15,095,229</b>	<b>\$ 11,282,736</b>	<b>7.4%</b>

OBJECT CODE	FY17 Actuals	FY18 Actuals	FY18 Budget	FY19 Proposed	FY19 Proposed vs Budget \$ Dif	FY19 Proposed vs Budget % Dif from Budget
MainObjCode	FY17Actuals	FY18Dec31Actu	FY18Budget	FY19Proposedw	FY19DifferenceW	FY19Difference%
AC_51000:Personal Services	\$ 49,285,697	\$ 25,066,023	\$ 49,493,507	\$ 51,070,448	\$ 1,576,941	3.2%
AC_51000:Personal Services	\$ 1,994,559	\$ 1,032,273	\$ 1,973,598	\$ 1,996,186	\$ 22,588	1.1%
AC_51000:Personal Services	\$ 167,937	\$ 85,247	\$ 182,300	\$ 178,543	\$ (3,757)	-2.1%

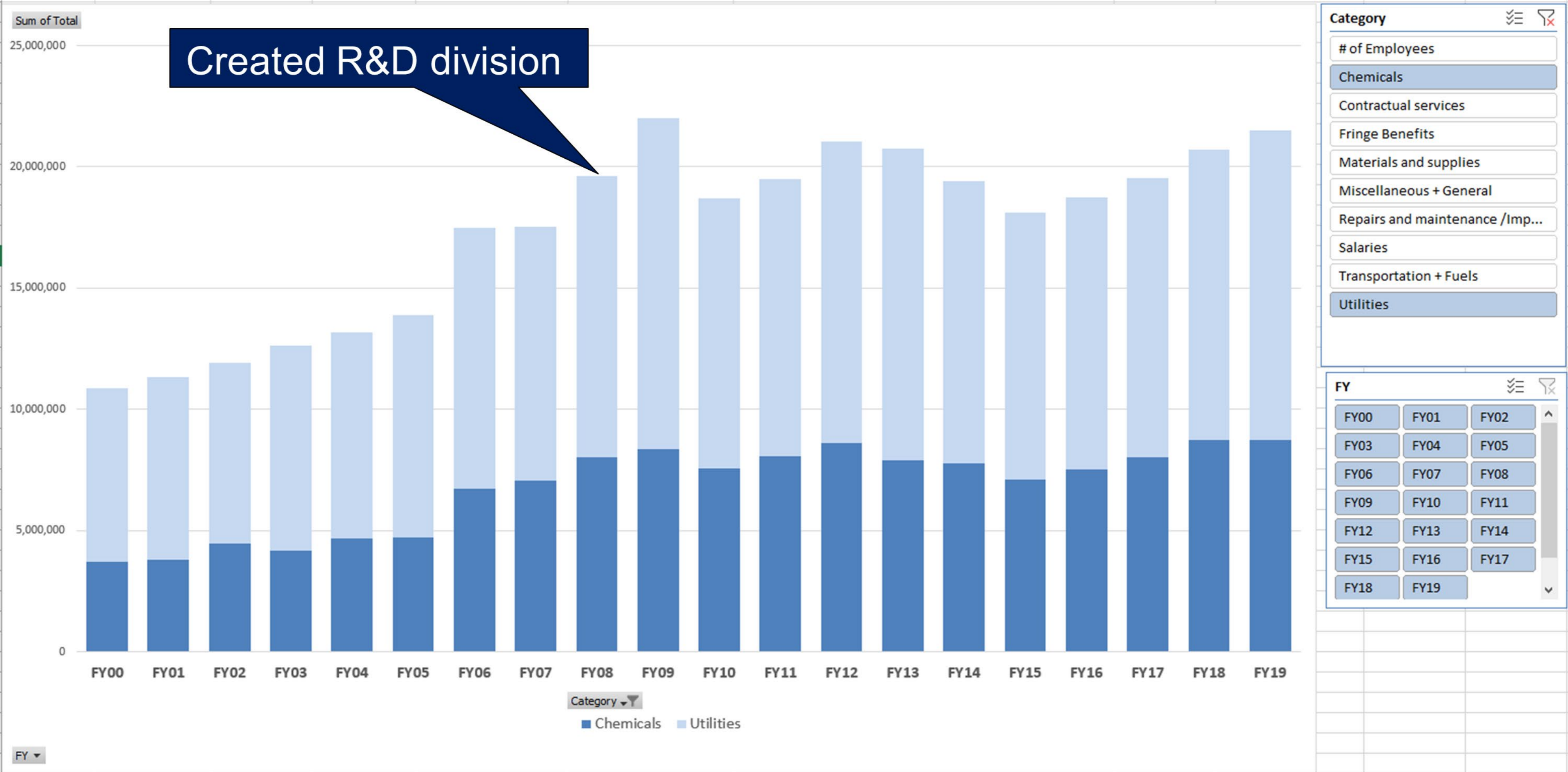
Object Codes	FY17 Actuals	FY18 Dec31Actuals	FY18 Budget	FY19 ProposedwE	FY19 DifferenceWithE	FY19 %Diff
<b>AC_51000:Personal Services</b>	<b>\$ 53,400,849</b>	<b>\$ 27,238,805</b>	<b>\$ 53,773,326</b>	<b>\$ 55,331,885</b>	<b>\$ 1,558,559</b>	<b>2.9%</b>
AC_51111:Salaries - Wages	\$ 49,285,697	\$ 25,066,023	\$ 49,493,507	\$ 51,070,448	\$ 1,576,941	3.2%
AC_51112:Overtime	\$ 1,994,559	\$ 1,032,273	\$ 1,973,598	\$ 1,996,186	\$ 22,588	1.1%
AC_51113:Shift Differential	\$ 167,937	\$ 85,247	\$ 182,300	\$ 178,543	\$ (3,757)	-2.1%
AC_51114:License Bonus	\$ 104,777	\$ 51,180	\$ 112,880	\$ 112,720	\$ (160)	-0.1%
AC_51115:Terminal Leave	\$ 277,263	\$ 152,066	\$ 350,000	\$ 300,000	\$ (50,000)	-14.3%
AC_51116:Stand-by Pay	\$ 501,373	\$ 258,682	\$ 510,130	\$ 550,653	\$ 40,523	7.9%
AC_51117:CDL License Bonus	\$ 17,230	\$ 8,340	\$ 19,160	\$ 16,820	\$ (2,340)	-12.2%
AC_51121:Part Time	\$ 975,119	\$ 523,992	\$ 1,080,752	\$ 1,005,615	\$ (75,136)	-7.0%
AC_51122:Part Time Overtime	\$ -	\$ -	\$ 1,000	\$ 2,000	\$ 1,000	100.0%
AC_51123:Temporary Services	\$ 76,893	\$ 61,002	\$ 50,000	\$ 98,900	\$ 48,900	97.8%
<b>AC_52000:Fringe Benefits</b>	<b>\$ 19,106,292</b>	<b>\$ 12,538,436</b>	<b>\$ 24,691,454</b>	<b>\$ 24,296,169</b>	<b>\$ (395,285)</b>	<b>-1.6%</b>
<b>AC_53000:Materials And Supplies</b>	<b>\$ 15,740,746</b>	<b>\$ 6,416,653</b>	<b>\$ 14,919,311</b>	<b>\$ 15,022,670</b>	<b>\$ 103,359</b>	<b>0.7%</b>
AC_53500:Transportation	\$ 900,394	\$ 300,859	\$ 804,060	\$ 771,141	\$ (32,919)	-4.1%
AC_53600:Transportation Fuels	\$ 485,680	\$ 256,576	\$ 615,325	\$ 673,600	\$ 58,275	9.5%
AC_54000:Utilities	\$ 11,523,328	\$ 5,123,980	\$ 11,947,481	\$ 12,245,138	\$ 297,657	2.5%
AC_54500:Chemical Purchases	\$ 8,019,746	\$ 3,972,178	\$ 10,324,400	\$ 10,703,626	\$ 379,226	3.7%
AC_55000:Contractual Services	\$ 21,056,692	\$ 10,348,390	\$ 25,728,113	\$ 31,239,715	\$ 5,511,602	21.4%
AC_55500:Consulting Services	\$ 2,477,383	\$ 790,662	\$ 1,800,792	\$ 2,122,200	\$ 321,408	17.8%
AC_56000:Miscellaneous Expenses	\$ 1,969,971	\$ 1,061,508	\$ 1,842,349	\$ 1,898,894	\$ 56,545	3.1%
AC_56500:Recruitment Expenses	\$ 326,135	\$ 180,012	\$ 416,500	\$ 411,000	\$ (5,500)	-1.3%



# CAFR Trend Analysis – Line Item Inflation Rates



# Impact of Research and Development



*Estimated Cumulative Gross Savings = \$39.2M since 2009  
 - Relative to Bureau of Labor Statistics (BLS) inflation data*

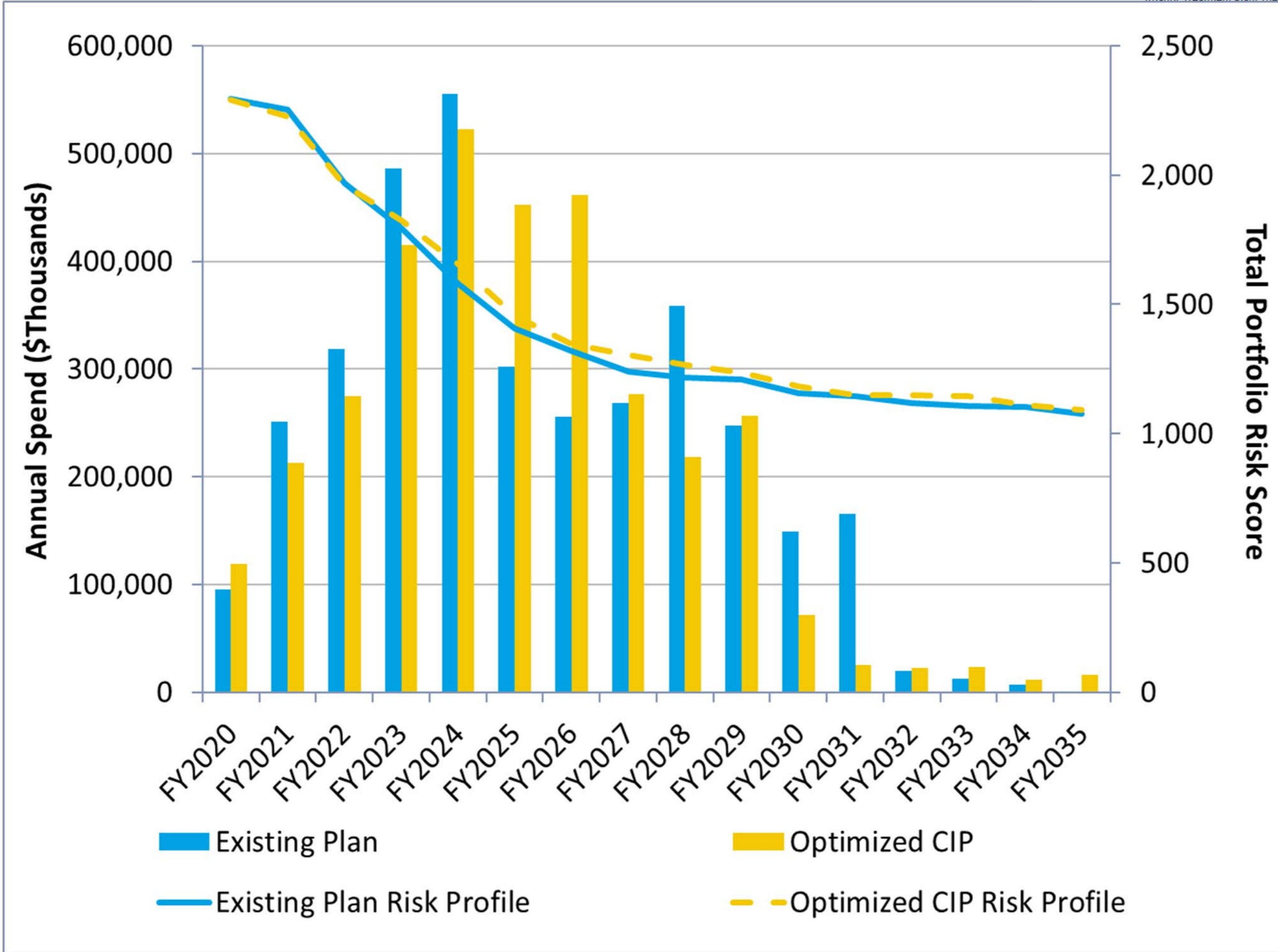


# Asset Management - CIP Risk Based Project Prioritization

*Do the right project at the right time*

Capital Prioritization & Optimization

Risk ID	Project Details				Current Funding		Current Funding Optimized
	Risk Name	Regulatory Type	Capital Costs	Risk Reduction Ratio	Install Year (FY)	Install Year (FY)	Schedule Impact Current CIP
PR_AT013200	Dozers Corner Pump Station and Washington District Pump Station Flooding Mitigation	Rehab Plan Phase Two	\$ 270,000	0.0	2023	2023	No Change
	Atlantic Treatment Plant Thermal Hydrolysis	None	\$ 5,200,000	479.8	2020	2020	No Change
	Main Relocation	None	\$ 150,000	6.4	2020	2020	No Change
	Screen	None	\$ 970,000	323.3	2020	2020	No Change
	21) Relocation	None	\$ 1,270,000	0.0	2020	2035	Delayed 15 Years
	ssion Force Main	None	\$ 13,240,000	2338.2	2020	2020	No Change
	n Phase I (CHES)	Integrated Plan-HPP	\$ 10,970,000	1058.8	2024	2026	Delayed 2 Years
	n Phase II (CHES)	Integrated Plan-HPP	\$ 9,340,000	865.2	2022	2026	Delayed 4 Years
	ity	Integrated Plan-HPP	\$ 850,000	182.2	2027	2026	Accelerated 1 Years
	t Screens (1-3)	None	\$ 3,440,000	0.0	2021	2020	Accelerated 1 Years
	placement	None	\$ 9,390,000	820.4	2020	2021	Delayed 1 Years
	erceptor Force	Rehab Plan Phase Two	\$ 3,660,000	219.2	2020	2020	No Change
	Divisions I and J	None	\$ 14,630,000	766.9	2020	2021	Delayed 1 Years
	nsion Division I	Rehab Plan Phase Two	\$ 2,010,000	1088.5	2021	2020	Accelerated 1 Years



## Program Contingency for Capex Projections

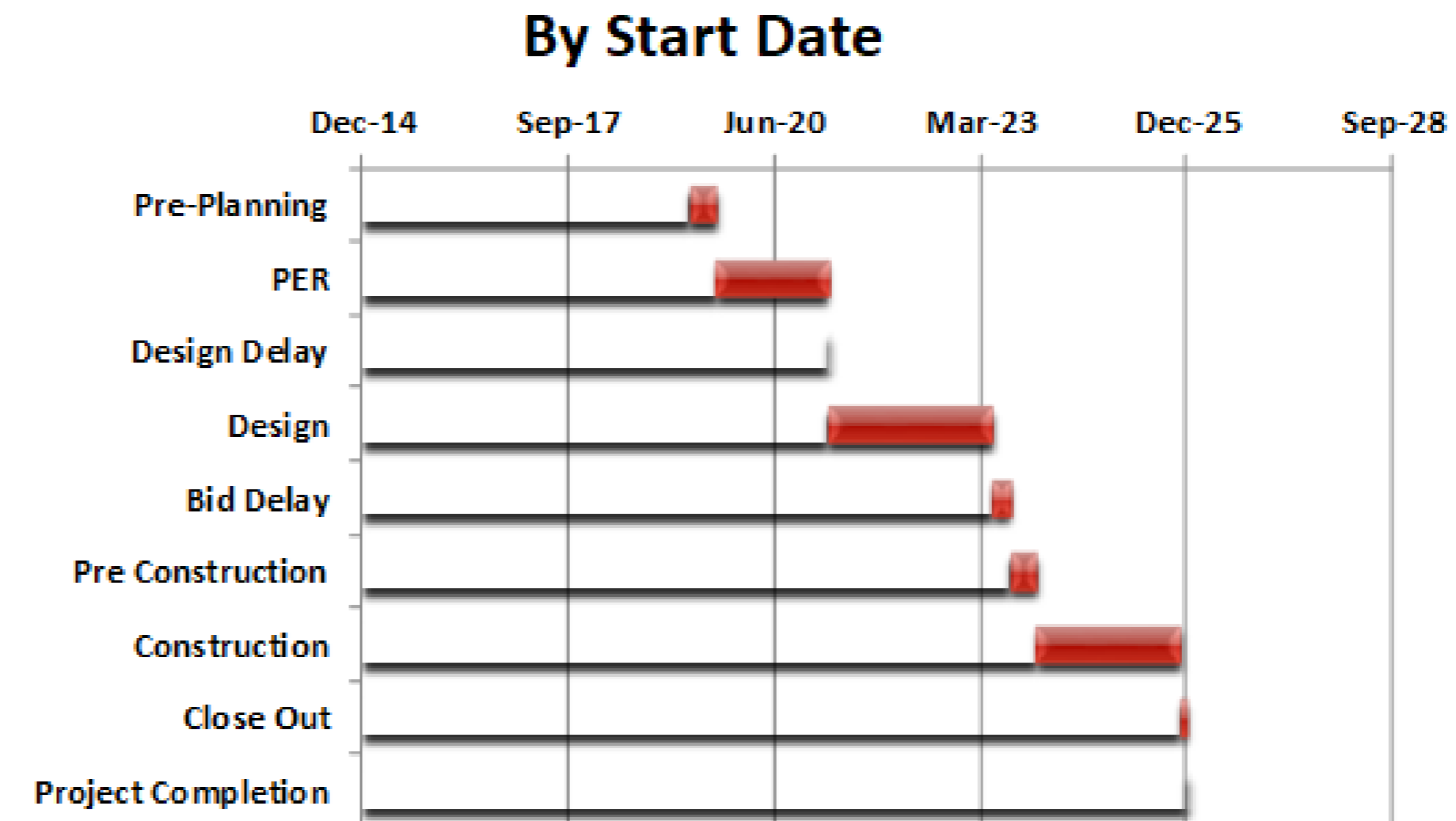
- All projects stripped of individual contingencies
- Probability of every project hitting 100% of their contingency is low
- Program contingency added
  - Year 1 = 0%
  - Year 2 = 2%
  - Years 3 and beyond = 5%

	FY19	FY20	FY21
FY 19 CAP	\$ 134,000,000	\$ 191,000,000	\$ 210,000,000
Program Cost	\$ 134,000,000	\$ 187,254,902	\$ 200,000,000
Program Contingency	0%	2%	5%
Program Total	\$ 134,000,000	\$ 191,000,000	\$ 210,000,000

# Schedule Contingency

## VP013200 South Trunk Sewer Section G 36-Inch and 30-Inch Force Main Replacement

FY19 Schedule	Start Date	Duration (months)
Pre-Planning	5/1/2019	4
PER	9/1/2019	16
Design Delay	1/1/2021	0
Design	1/1/2021	20
Bid Delay	9/1/2022	8
Pre Construction	5/1/2023	4
Construction	9/1/2023	23
Close Out	8/1/2025	1
Project Completion	9/1/2025	0



FY 19-28 Schedule	Start Date	Proposed Duration (months)	D&C					
			D&C Additional Months Added	D&C Modified Duration	D&C Revised Start Date	Contingency % to be Applied	D&C Modified Duration with Contingency	Final Schedule with Contingency
Pre-Planning	5/1/2019	4	0	4	5/1/2019	0%	4	5/1/2019
PER	9/1/2019	16	2	18	9/1/2019	0%	18	9/1/2019
Design Delay	1/1/2021	0	0	0	3/1/2021	0%	0	3/1/2021
Design	1/1/2021	24	0	24	3/1/2021	10%	26	3/1/2021
Bid Delay	1/1/2023	3	0	3	3/1/2023	10%	3	5/1/2023
Pre Construction	4/1/2023	4	0	4	6/1/2023	10%	4	8/1/2023
Construction	7/1/2023	21	0	21	9/1/2023	10%	23	12/1/2023
Close Out	3/1/2025	1	0	1	5/1/2025	10%	1	11/1/2025
Project Completion	3/1/2025	0	0	0	5/1/2025	0%	0	12/1/2025

Amount of Time Added (months)

9

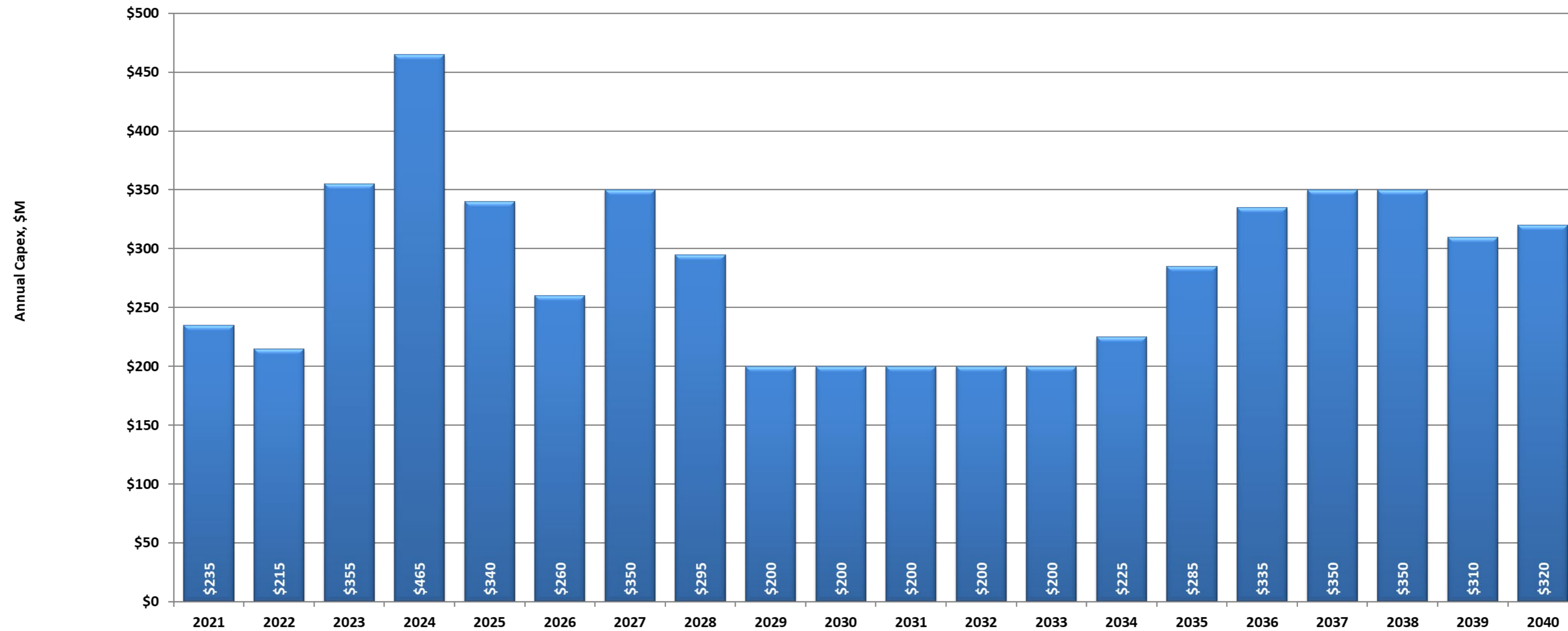




# Capital Spend Projection

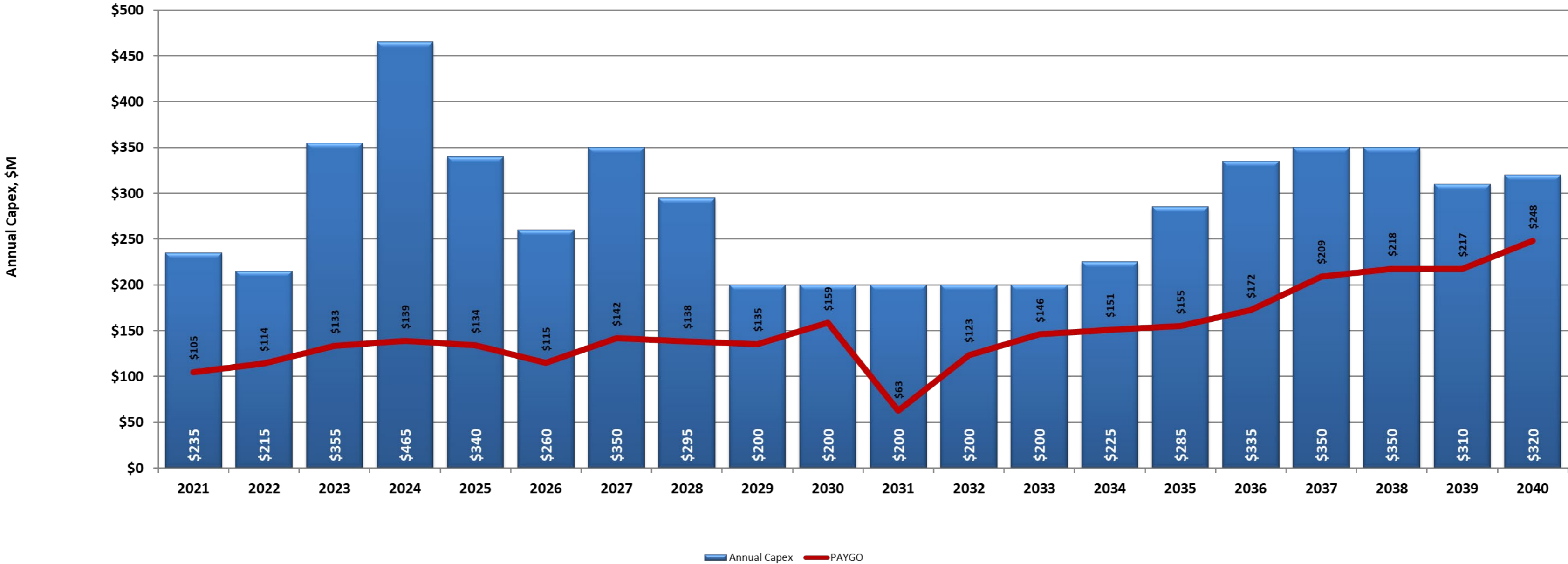
- Integrated Plan (SWIFT and Wet Weather)

Projected Annual Capital Spend

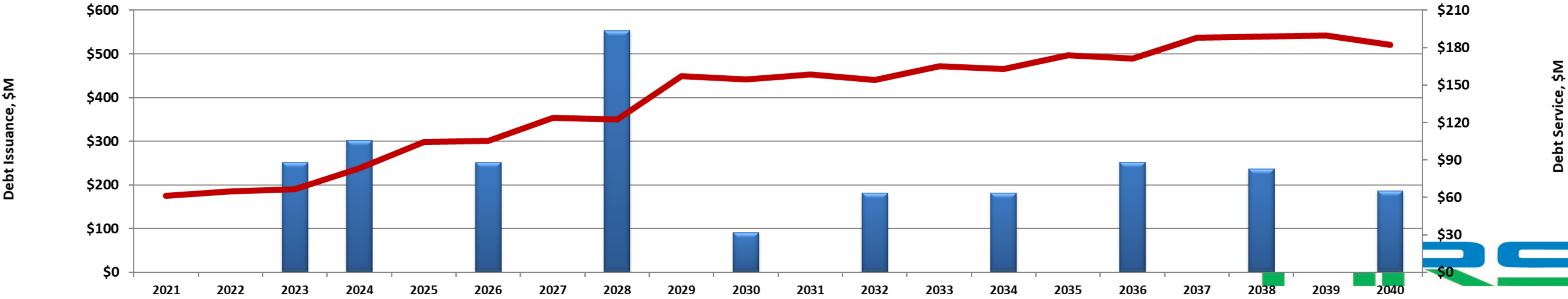


# Future Perfect's Debt Engine

Projected Annual Capital Spend vs Available PAYGO



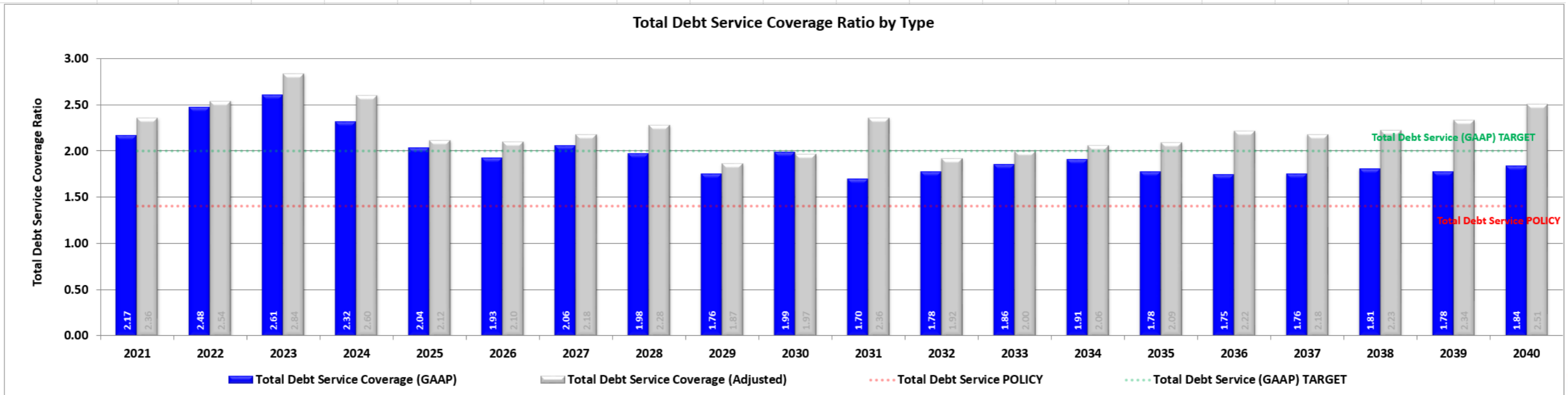
Projected New Revenue Bond Issuance and Debt Service





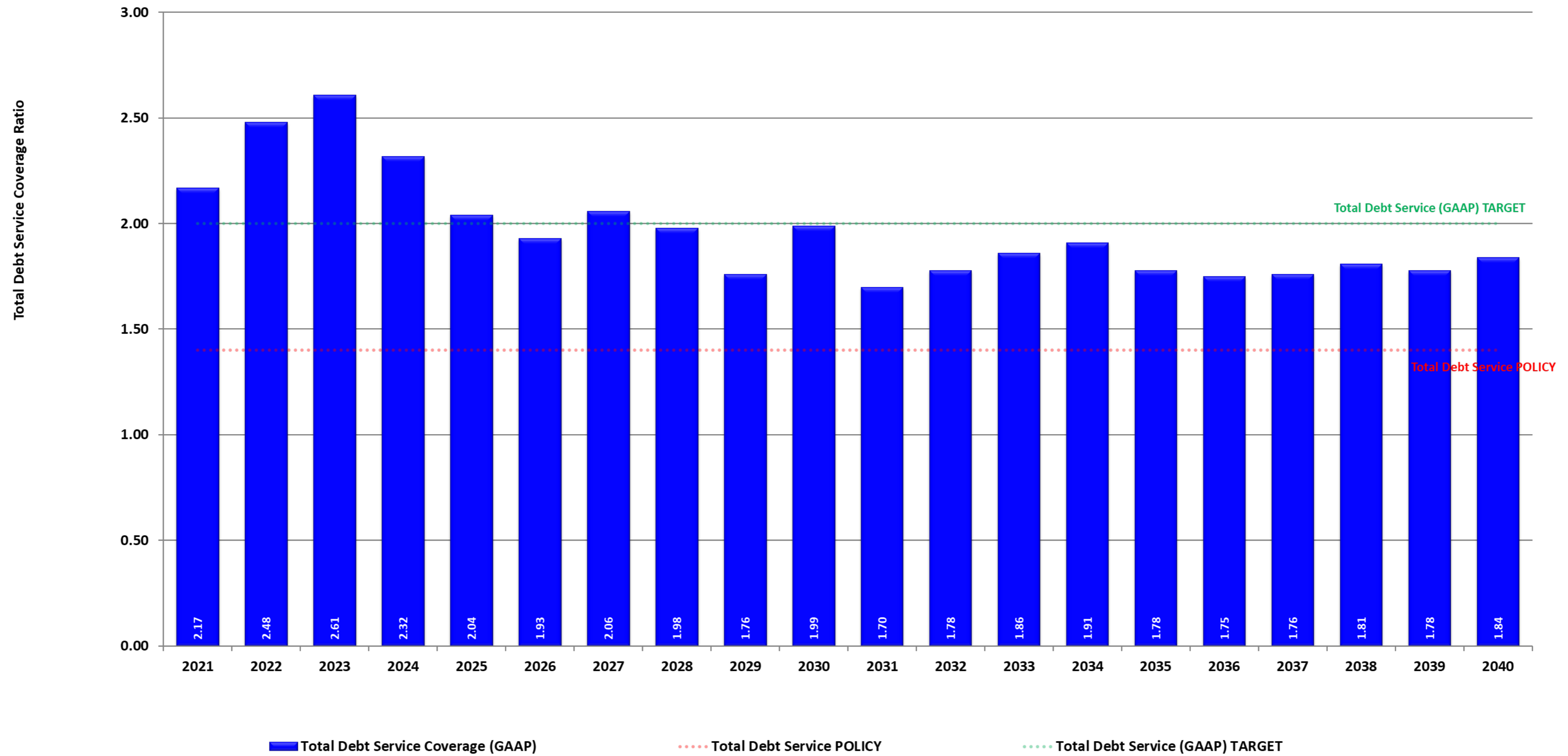
# PFM's Future Perfect Model Pro Forma

Financial Forecast (in thousands)	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
<b>Operating Budget Forecast</b>																				
Projected Annual Water Consumption Decline		1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Projected Wastewater Rate Increase	0.0%	9.0%	9.0%	9.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	6.0%	6.0%	6.0%	6.0%	5.0%	5.0%	5.0%
Projected Wastewater Rate, \$/ccf	\$5.86	\$6.39	\$6.97	\$7.60	\$8.13	\$8.70	\$9.31	\$9.96	\$10.66	\$11.41	\$12.21	\$13.06	\$13.97	\$14.81	\$15.70	\$16.64	\$17.64	\$18.52	\$19.45	\$20.42
<b>Revenues</b>																				
Operating Revenues	\$ 321,175	\$ 345,516	\$ 371,898	\$ 400,253	\$ 422,989	\$ 447,219	\$ 472,889	\$ 499,950	\$ 528,833	\$ 559,476	\$ 591,815	\$ 625,792	\$ 661,808	\$ 699,835	\$ 727,425	\$ 762,522	\$ 799,513	\$ 830,407	\$ 862,784	\$ 896,157
Non-operating Revenues	11,222	11,427	12,323	13,215	14,101	14,017	14,500	14,410	14,617	14,520	14,419	15,698	16,161	16,191	16,633	17,238	18,029	18,083	18,321	18,988
<b>Total Revenues</b>	<b>332,397</b>	<b>356,943</b>	<b>384,221</b>	<b>413,468</b>	<b>437,090</b>	<b>461,236</b>	<b>487,389</b>	<b>514,360</b>	<b>543,450</b>	<b>573,996</b>	<b>606,235</b>	<b>641,490</b>	<b>677,969</b>	<b>710,026</b>	<b>744,059</b>	<b>779,760</b>	<b>817,542</b>	<b>848,490</b>	<b>881,105</b>	<b>915,145</b>
<b>Expenses</b>																				
Salaries	60,953	62,946	65,004	67,130	69,325	72,052	74,393	77,272	79,768	82,347	85,945	88,461	91,423	94,093	96,842	99,674	102,591	105,595	108,689	111,877
Benefits	24,931	25,983	27,069	28,203	29,387	30,623	31,912	33,259	34,665	36,133	37,619	39,170	40,790	42,481	44,247	46,092	48,019	50,032	52,135	54,332
Materials & Supplies	9,068	9,522	9,999	10,500	11,026	11,611	12,261	12,978	13,763	14,617	15,541	16,536	17,603	18,744	19,962	21,259	22,637	24,098	25,645	27,280
Transportation	1,270	1,270	1,270	1,270	1,270	1,270	1,270	1,270	1,270	1,270	1,270	1,270	1,270	1,270	1,270	1,270	1,270	1,270	1,270	1,270
Utilities	12,954	12,954	12,954	12,954	12,954	12,954	12,954	12,954	12,954	12,954	12,954	12,954	12,954	12,954	12,954	12,954	12,954	12,954	12,954	12,954
Chemical Purchases	10,289	10,540	10,797	11,061	11,330	11,614	11,913	12,226	12,554	12,896	13,253	13,625	14,013	14,417	14,837	15,273	15,726	16,196	16,683	17,187
Contractual Services	37,696	39,581	41,560	43,638	45,820	49,096	51,541	55,174	57,911	60,785	66,875	68,935	72,154	74,389	76,693	79,070	81,521	84,048	86,655	89,343
Miscellaneous Expenses	7,631	7,860	8,096	8,339	8,589	8,847	9,112	9,386	9,667	9,957	10,256	10,564	10,881	11,207	11,543	11,890	12,246	12,614	12,992	13,382
Major Repairs and Replacements	10,076	10,690	10,690	11,010	11,341	11,681	12,031	12,392	12,764	13,147	13,541	13,947	14,366	14,797	15,241	15,698	16,169	16,654	17,154	17,668
Capital Acquisitions	600	618	637	656	675	696	716	738	760	783	806	831	855	881	908	935	963	992	1,021	1,052
<b>Total Operating Appropriations from Budget</b>	<b>175,776</b>	<b>177,562</b>	<b>184,266</b>	<b>191,239</b>	<b>198,492</b>	<b>218,269</b>	<b>221,589</b>	<b>241,348</b>	<b>250,644</b>	<b>260,318</b>	<b>329,463</b>	<b>340,554</b>	<b>361,039</b>	<b>373,266</b>	<b>385,925</b>	<b>399,030</b>	<b>412,598</b>	<b>426,647</b>	<b>441,194</b>	<b>456,257</b>
Debt Service	61,408	64,861	66,367	68,151	104,439	105,314	123,582	122,367	156,999	154,696	158,455	154,249	164,942	162,825	173,811	171,110	187,838	188,657	189,682	182,344
Transfer to Capital Improvement Plan (PAYGO)	94,953	114,078	133,355	138,834	133,903	114,607	141,935	138,362	135,494	158,652	62,625	123,448	145,895	151,138	154,848	172,484	209,253	217,733	217,389	247,816
Transfer to General Reserve (Unrestricted Cash)	-	-	-	-	-	22,776	-	11,985	-	55,344	22,874	5,709	22,393	29,051	36,690	7,383	14,959	32,321	28,182	-
Transfer to Risk Management Reserve	260	442	232	244	257	270	284	298	313	330	347	365	384	403	424	446	470	494	519	546
<b>Total Appropriations for Debt Service and Transfers</b>	<b>156,621</b>	<b>179,381</b>	<b>199,955</b>	<b>222,229</b>	<b>238,598</b>	<b>242,967</b>	<b>265,800</b>	<b>273,012</b>	<b>292,806</b>	<b>313,677</b>	<b>276,772</b>	<b>300,936</b>	<b>316,930</b>	<b>336,759</b>	<b>358,134</b>	<b>380,730</b>	<b>404,944</b>	<b>421,843</b>	<b>439,911</b>	<b>458,889</b>
<b>Total Appropriations</b>	<b>\$ 332,397</b>	<b>\$ 356,943</b>	<b>\$ 384,221</b>	<b>\$ 413,468</b>	<b>\$ 437,090</b>	<b>\$ 461,236</b>	<b>\$ 487,389</b>	<b>\$ 514,360</b>	<b>\$ 543,450</b>	<b>\$ 573,996</b>	<b>\$ 606,235</b>	<b>\$ 641,490</b>	<b>\$ 677,969</b>	<b>\$ 710,026</b>	<b>\$ 744,059</b>	<b>\$ 779,760</b>	<b>\$ 817,542</b>	<b>\$ 848,490</b>	<b>\$ 881,105</b>	<b>\$ 915,145</b>
<b>Capital Improvement Budget Forecast</b>																				
<b>Beginning Capital Reserves</b>	\$ 10,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Sources of Funds</b>																				
Debt funded (Revenue Bonds and Interim Financing)	27,678	94,997	212,371	319,564	202,177	141,879	203,560	155,138	63,006	40,838	137,375	76,552	54,105	73,862	130,152	162,516	140,747	132,267	92,611	72,184
Va Clean Water Revolving Loan Fund	96,433	3,967	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HRSD - Cash	94,953	114,078	133,355	138,834	133,903	114,607	141,935	138,362	135,494	158,652	62,625	123,448	145,895	151,138	154,848	172,484	209,253	217,733	217,389	247,816
Reimbursements	5,936	1,958	9,274	6,602	3,920	3,514	4,505	1,500	1,500	510	-	-	-	-	-	-	-	-	-	-
<b>Total Capital Resources</b>	<b>235,000</b>	<b>215,000</b>	<b>355,000</b>	<b>465,000</b>	<b>340,000</b>	<b>260,000</b>	<b>350,000</b>	<b>295,000</b>	<b>200,000</b>	<b>200,000</b>	<b>200,000</b>	<b>200,000</b>	<b>200,000</b>	<b>225,000</b>	<b>285,000</b>	<b>335,000</b>	<b>350,000</b>	<b>350,000</b>	<b>310,000</b>	<b>320,000</b>
Uses of Funds - Capital Expenditures	235,000	215,000	355,000	465,000	340,000	260,000	350,000	295,000	200,000	200,000	200,000	200,000	200,000	225,000	285,000	335,000	350,000	350,000	310,000	320,000
<b>Ending Capital Resources</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>Reserves Balance Forecast</b>																				
Days Cash on Hand	355 days	355 days	332 days	317 days	310 days	303 days	334 days	303 days	307 days	309 days	303 days	303 days	303 days	303 days	303 days	303 days	303 days	303 days	303 days	303 days
Unrestricted Cash	\$ 187,567	\$ 187,567	\$ 187,567	\$ 187,567	\$ 187,567	\$ 210,343	\$ 210,343	\$ 222,328	\$ 222,328	\$ 222,328	\$ 277,672	\$ 300,546	\$ 306,255	\$ 328,648	\$ 357,699	\$ 394,389	\$ 401,772	\$ 416,731	\$ 449,052	\$ 477,234
Risk Reserve	4,020	4,462	4,694	4,938	5,195	5,465	5,748	6,046	6,360	6,689	7,036	7,401	7,784	8,188	8,612	9,059	9,528	10,022	10,541	11,088
<b>Total Reserves Balance</b>	<b>\$ 191,587</b>	<b>\$ 192,029</b>	<b>\$ 192,261</b>	<b>\$ 192,505</b>	<b>\$ 192,762</b>	<b>\$ 215,807</b>	<b>\$ 216,091</b>	<b>\$ 228,374</b>	<b>\$ 228,688</b>	<b>\$ 229,017</b>	<b>\$ 284,708</b>	<b>\$ 307,947</b>	<b>\$ 314,039</b>	<b>\$ 336,836</b>	<b>\$ 366,311</b>	<b>\$ 403,447</b>	<b>\$ 411,300</b>	<b>\$ 426,753</b>	<b>\$ 459,593</b>	<b>\$ 488,322</b>
<b>Financial Ratios Forecast</b>																				
<b>Total Debt Service Coverage (GAAP)</b>	2.17	2.48	2.61	2.32	2.04	1.93	2.06	1.98	1.76	1.99	1.70	1.78	1.86	1.91	1.78	1.75	1.76	1.81	1.78	1.84
<b>Total Debt Service Coverage (Adjusted)</b>	2.36	2.54	2.84	2.60	2.12	2.10	2.18	2.28	1.87	1.97	2.36	1.92	2.00	2.06	2.09	2.22	2.18	2.23	2.34	2.51
CIP % Cash Funded (current year contributions)	40%	53%	38%	30%	39%	44%	41%	47%	68%	79%	31%	62%	73%	67%	54%	51%	60%	62%	70%	77%
Debt Service as a % of Total Revenues	19%	18%	18%	21%	24%	23%	25%	24%	29%	27%	26%	24%	24%	23%	23%	22%	23%	22%	22%	20%

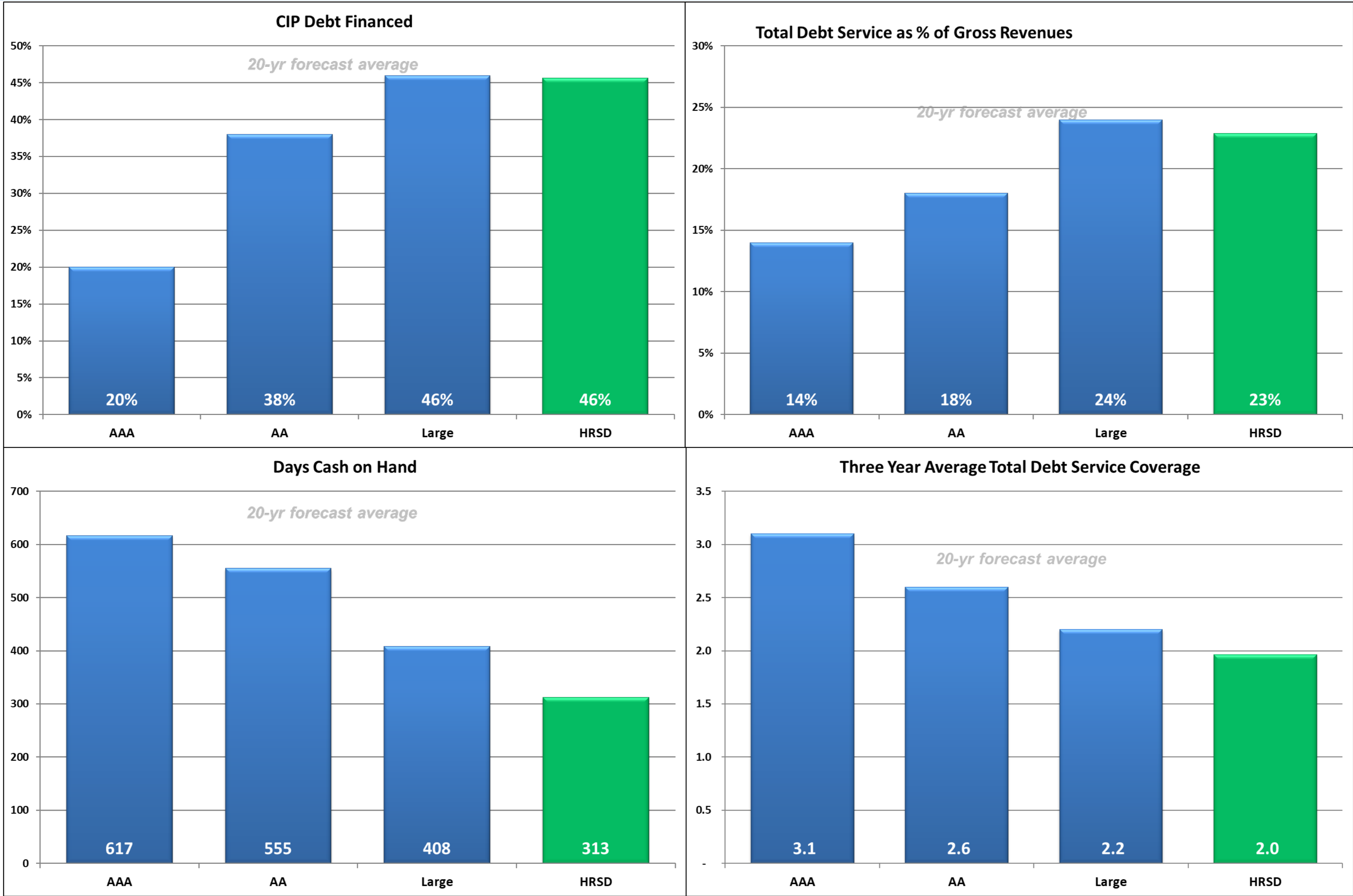


# Total Debt Service Coverage Forecast

Total Debt Service Coverage Forecast



# Financial Forecast Metrics compared to 2020 Fitch Medians



## Defining the Baseline and Ensuring Financial Resiliency

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- WIFIA or Clean Water funding
- Consent Decree negotiations/deadlines
- Capital Planning – how much can we afford?
- Budgeting – Communicating YOY inflation impacts
- Sensitivity of key variables – Scenario Planning and Risk Management
- Confidence in Financial Sustainability
  - Contingency planning - What are your dials and levers?
  - \$15M Cybersecurity initiative

Historical Total Debt Service Coverage Ratio (DSCR)



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## Communication at all levels is key to execute the strategy

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- Internal Stakeholders

- Strong relationships between all departments
  - Engineering and Finance has to be in sync for the CIP
  - Internal lunch and learns for all staff on our financial plan
- Detailed briefings to our Commission and Finance Committee

- External Stakeholders

- Publish monthly financials in our monthly report (available online) and on EMMA (Electronic Municipal Market Access)



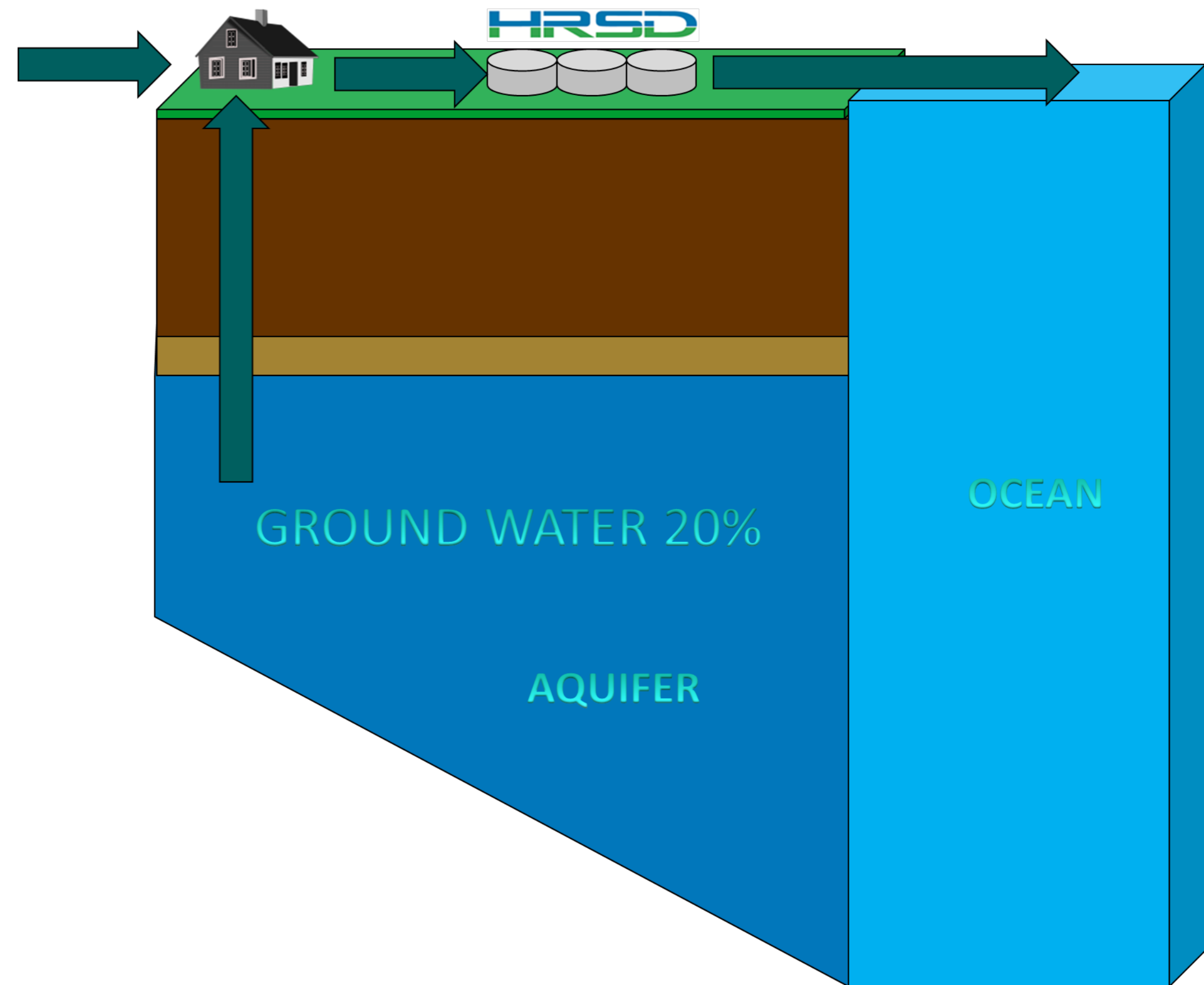
- Revenue = \$332M
- Opex = \$176M
- Debt Service = \$61M
- PAYGO = \$95M
  
- 10 year CIP = \$2.9B
- 20 year CIP = \$5.7B
- Debt Outstanding = \$806M

## Current state of wastewater in Hampton Roads

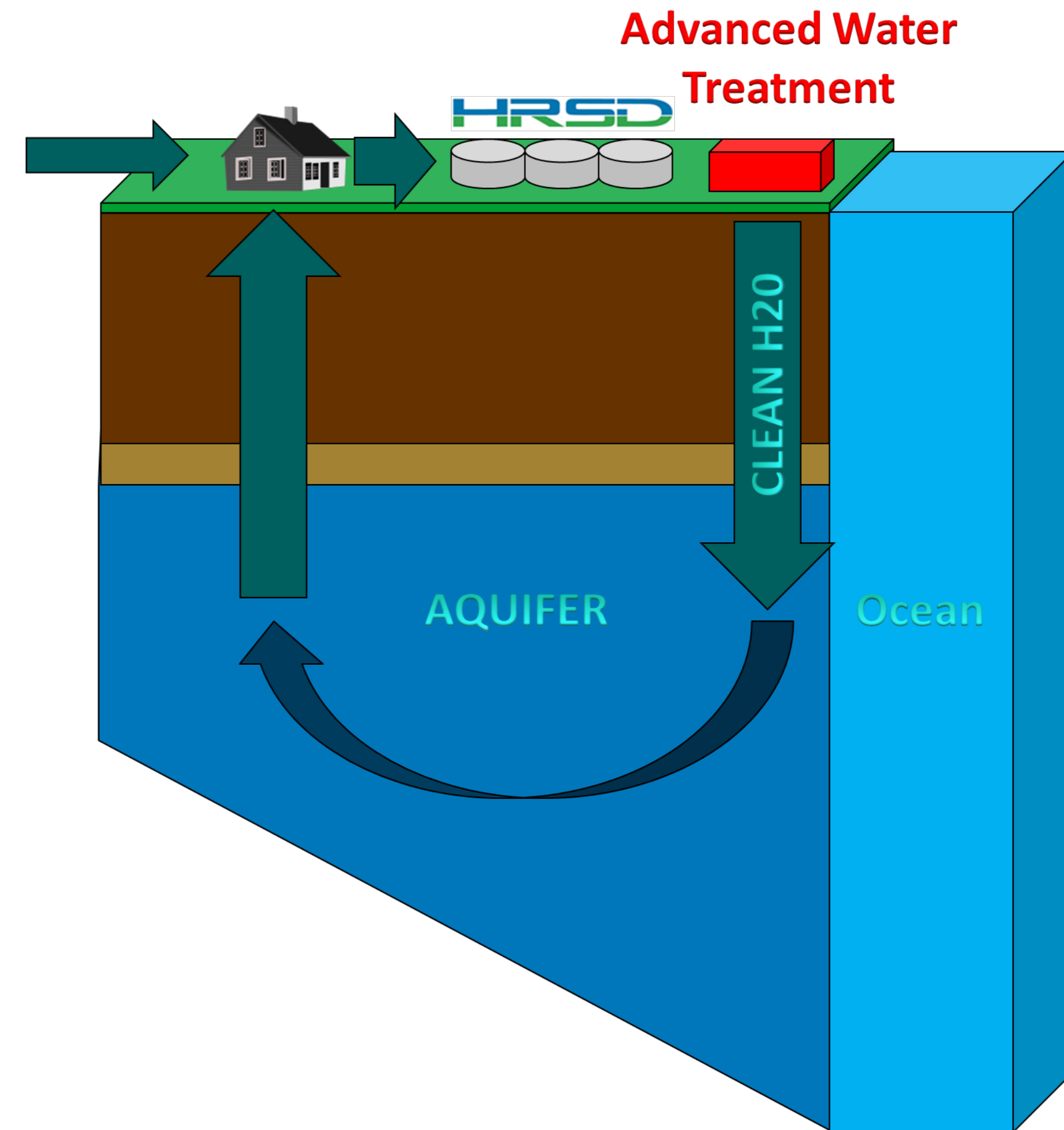
SURFACE WATER 80%

HRSD costs are rising to treat water to higher standards.

Treated water currently discharged to area waterways – no beneficial use.

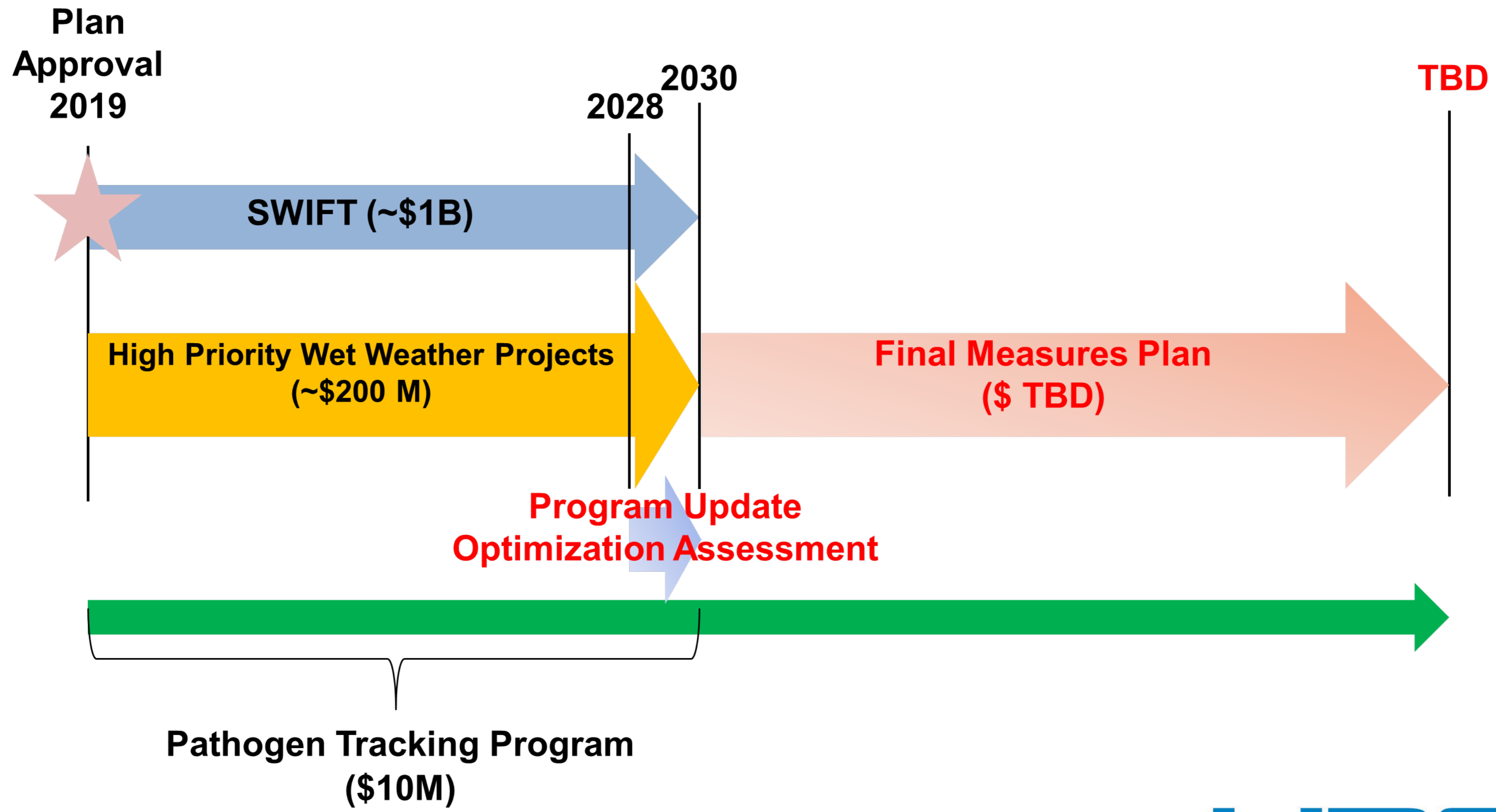


- Treat water to meet drinking water standards and replenish the aquifer with clean water to:
  - Reduce nutrient discharges
  - Reduce the impact of sea-level rise
  - Sustainable groundwater
  - Protect the groundwater from saltwater contamination
- Estimated cost \$1 Billion



# Adaptive Management Integrated Plan

*Sequence Places the Greatest Water Quality Benefits First*



- Postponed planned 9% rate increase
  - Financial model critically important in decision-making process
  - Modified future rate increases
  - Reduced planned liquidity levels
  - Reduced targeted debt service coverage
- No impact to water consumption trends
- Suspended shut-offs
- Too soon to see impact to write-offs

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## Questions?

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# Questions & Answers

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Thank you!

For any additional questions,  
please email the EPA Water  
Finance Center:

[waterfinancecenter@epa.gov](mailto:waterfinancecenter@epa.gov)