

All About Water & Sewer

City Council Work Session
March 10, 2015



1

Presentation Overview

- Chapter 1: History of Presentations
- Chapter 2: Regional Comparisons
- Chapter 3: Financial Overview
- Chapter 4: Capital Improvement Program
- Chapter 5: Satellite/Bulk Customers
- Chapter 6: Efficiency Successes & Opportunities
- Chapter 7: Rate Study



2

Chapter 1: History of Presentations

- Previous Presentations
- Press Releases
- Newsletters
- Consent Decree: Status of Deliverables



3

Presentations & Information Given



FOR IMMEDIATE RELEASE Avoiding and Detecting Cold Weather Leaks

Columbia, SC, February 18, 2015 – With temperatures likely to dip below freezing this evening, the City of Columbia reminds its water customers to take precautions to prevent water pipes from freezing.

Leaks

- Know your faucet's drip rate.
- Turn OFF all outside spigots.
- Turn OFF all outside irrigation systems.

Outside

- Disconnect any hoses or lines from your outside faucets.
- Drain and store any outdoor equipment.
- Turn OFF all outdoor irrigation systems.

Inside

- In a hot water tank, check for a leak as soon as you can to minimize water loss.
- In a hot water tank, check for a leak as soon as you can to minimize water loss.
- In a hot water tank, check for a leak as soon as you can to minimize water loss.

Other

- In a hot water tank, check for a leak as soon as you can to minimize water loss.
- In a hot water tank, check for a leak as soon as you can to minimize water loss.
- In a hot water tank, check for a leak as soon as you can to minimize water loss.

For more information

- Visit the City of Columbia Department of Water and Engineering at 245...
- Visit the City of Columbia Department of Water and Engineering at 245...
- Visit the City of Columbia Department of Water and Engineering at 245...

For more information

- Visit the City of Columbia Department of Water and Engineering at 245...
- Visit the City of Columbia Department of Water and Engineering at 245...
- Visit the City of Columbia Department of Water and Engineering at 245...

For more information

- Visit the City of Columbia Department of Water and Engineering at 245...
- Visit the City of Columbia Department of Water and Engineering at 245...
- Visit the City of Columbia Department of Water and Engineering at 245...

For more information

- Visit the City of Columbia Department of Water and Engineering at 245...
- Visit the City of Columbia Department of Water and Engineering at 245...
- Visit the City of Columbia Department of Water and Engineering at 245...

For more information

- Visit the City of Columbia Department of Water and Engineering at 245...
- Visit the City of Columbia Department of Water and Engineering at 245...
- Visit the City of Columbia Department of Water and Engineering at 245...

For more information

- Visit the City of Columbia Department of Water and Engineering at 245...
- Visit the City of Columbia Department of Water and Engineering at 245...
- Visit the City of Columbia Department of Water and Engineering at 245...

For more information

- Visit the City of Columbia Department of Water and Engineering at 245...
- Visit the City of Columbia Department of Water and Engineering at 245...
- Visit the City of Columbia Department of Water and Engineering at 245...

For more information

- Visit the City of Columbia Department of Water and Engineering at 245...
- Visit the City of Columbia Department of Water and Engineering at 245...
- Visit the City of Columbia Department of Water and Engineering at 245...

For more information

- Visit the City of Columbia Department of Water and Engineering at 245...
- Visit the City of Columbia Department of Water and Engineering at 245...
- Visit the City of Columbia Department of Water and Engineering at 245...

For more information

- Visit the City of Columbia Department of Water and Engineering at 245...
- Visit the City of Columbia Department of Water and Engineering at 245...
- Visit the City of Columbia Department of Water and Engineering at 245...

For more information

- Visit the City of Columbia Department of Water and Engineering at 245...
- Visit the City of Columbia Department of Water and Engineering at 245...
- Visit the City of Columbia Department of Water and Engineering at 245...

For more information

- Visit the City of Columbia Department of Water and Engineering at 245...
- Visit the City of Columbia Department of Water and Engineering at 245...
- Visit the City of Columbia Department of Water and Engineering at 245...

For more information

- Visit the City of Columbia Department of Water and Engineering at 245...
- Visit the City of Columbia Department of Water and Engineering at 245...
- Visit the City of Columbia Department of Water and Engineering at 245...

For more information

- Visit the City of Columbia Department of Water and Engineering at 245...
- Visit the City of Columbia Department of Water and Engineering at 245...
- Visit the City of Columbia Department of Water and Engineering at 245...

For more information

- Visit the City of Columbia Department of Water and Engineering at 245...
- Visit the City of Columbia Department of Water and Engineering at 245...
- Visit the City of Columbia Department of Water and Engineering at 245...

For more information

- Visit the City of Columbia Department of Water and Engineering at 245...
- Visit the City of Columbia Department of Water and Engineering at 245...
- Visit the City of Columbia Department of Water and Engineering at 245...



4

Status of CD Deliverables

Date of Entry – May 21, 2014

CD Deliverable	First Due Date	% Complete
Sewer Mapping Program (SMP)	7/21/2014	100%
CAP List (Checkbook)	8/21/2014	100%
Maintenance Management System (MMS)	5/21/2015	50%
Satellite Sewer System Agreements (SSSA)	5/21/2015	100%
Transmission System Operations and Maintenance Program (TSOMP)	5/21/2015	100%
Continuing Sewer Assessment Program (CSAP)	6/9/2015	100%
WWTP Operations Program	11/21/2015	15%
Contingency and Emergency Response Plan (CERP)	11/21/2015	75%
WCTS Training Program	11/21/2015	15%
Information Management System Program (IMS)	11/21/2015	5%
Financial Analysis Program	11/21/2015	5%
Gravity Sewer System Operations and Maintenance Program (GSOMP)	11/21/2015	55%
Infrastructure Rehabilitation Program (IRP)	2/8/2016	0%
WWTP Training Program	5/21/2016	13%
IR Report for the WCTS	2/10/2018	0%
Sewer System Hydraulic Model Report	11/10/2018	0%
Supplemental Environmental Project Implementation (SEP)	5/21/2019	1%
SEP - Quality Assurance Project Plan (QAPP)	7/21/2014	100%
Capacity Assurance Program (CAP)	6/11/2019	0%
Supplemental IR Report	11/15/2020	0%

Notes: 1. First Due Date represents the initial submittal of the required Plan to complete the Program. 2. Following the submittal and approval of each Plan, the implementation of the Plan begins and may last for several years. 3. Some future due dates may change based on the timing of approval of earlier Plans.



5

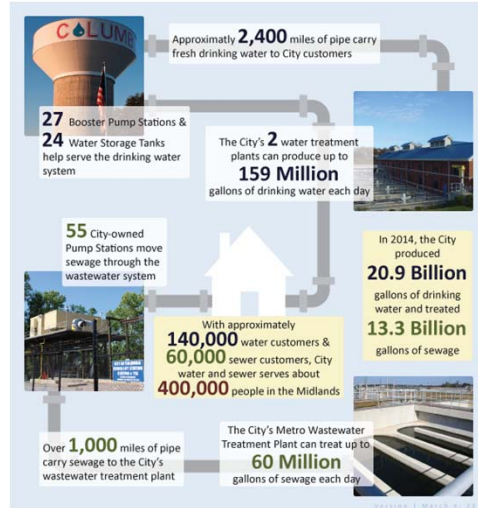
Chapter 2: Regional Comparisons

- System Overview
- System Comparisons
- Rate Comparisons
- Affordability Comparisons



6

Water & Sewer System Overview

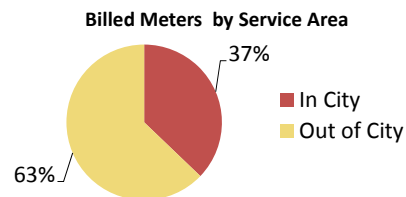


7

Water & Sewer System Overview

	2005			2014		
Billed Meters	In City	Out of City	Total	In City	Out of City	Total
Water	36,956	84,114	121,070	40,939	98,505	139,444
Sewer*	30,854	31,987	62,841	33,097	26,732	59,829
	67,810	116,101		74,036	125,237	
Water Plant Capacity (2 plants)			126,000,000			159,000,000
Sewer Plant Capacity (1 plant)			60,000,000			60,000,000
Miles of Water Lines			1,773.73			2,301.00
Miles of Sewer Line			932.11			1,077.00
System Assets			\$602,910,906			\$1,027,867,429
Number of Employees			542			609
- Utilities & Engineering Staff			472			491
- All Other Departments			70			118

* Sewer is based on water meter consumption.



8

WATER & SEWER SYSTEM COMPARISONS

Water and Wastewater Utility	Median Household Income	Water Capacity (MGD)	Sewer Capacity (MGD)	Water Accounts	Sewer Accounts
Aiken, SC	\$ 53,127	17.50		19,000	13,682
Athens, GA	\$ 32,853	36.00	28.00	33,500	24,200
Augusta, GA	\$ 37,560	80.00	48.34	68,113	53,644
Beaufort-Jasper WSA, SC	\$ 50,801	39.00	18.85	50,368	33,252
Cayce, SC	\$ 43,776	9.60	25.00	8,245	11,595
Charleston Water System, SC	\$ 51,591	116.00	37.00	110,715	50,879
Charlotte (CMU), NC	\$ 52,375	242.00	123.00	262,607	242,959
Columbia, SC	\$ 41,344	159.00	60.00	140,009	60,239
Florence, SC	\$ 41,663	26.46	24.00	31,949	21,070
Greenville Water System (SC) and REWA	\$ 40,793	135.00	90.00	155,852	126,054
Lexington, SC	\$ 61,477	6.50	12.46	36,460	
Orangeburg, SC	\$ 32,645	8.00		60,000	10,700
Raleigh, NC	\$ 54,448	67.00	48.25	175,000	156,000
Rock Hill, SC	\$ 42,550	36.00	20.00	96,000	23,000
Savannah, GA	\$ 35,838	80.00	173.00	92,509	89,939
Spartanburg Water System, SC	\$ 33,129	86.00	31.00	59,504	
Sumter, SC	\$ 39,429	23.00	12.00	23,184	16,853
West Columbia, SC	\$ 40,594	19.50	3.27		
Wilmington, NC	\$ 41,573	31.30	22.10	62,551	62,296
State of South Carolina	\$ 44,779				

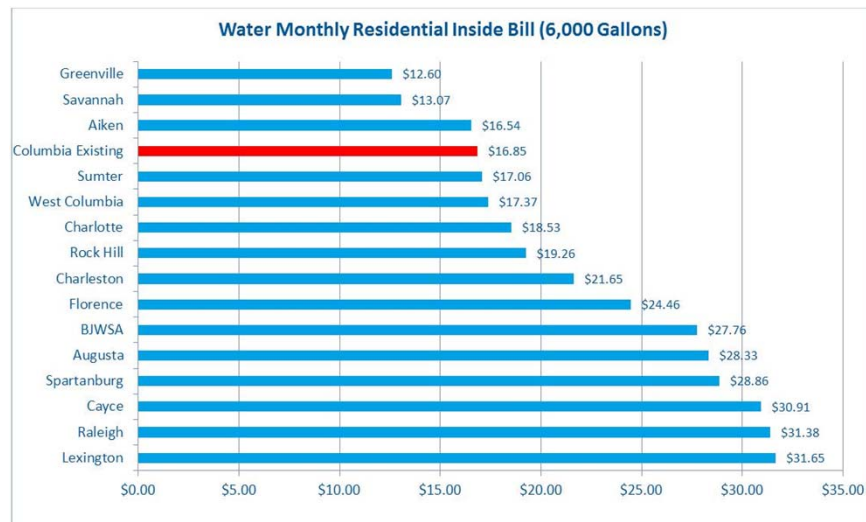
*MHI from latest U.S. Census Data

*System Capacity and Number of Accounts from Latest Information Available on Agency Websites and CAFRs



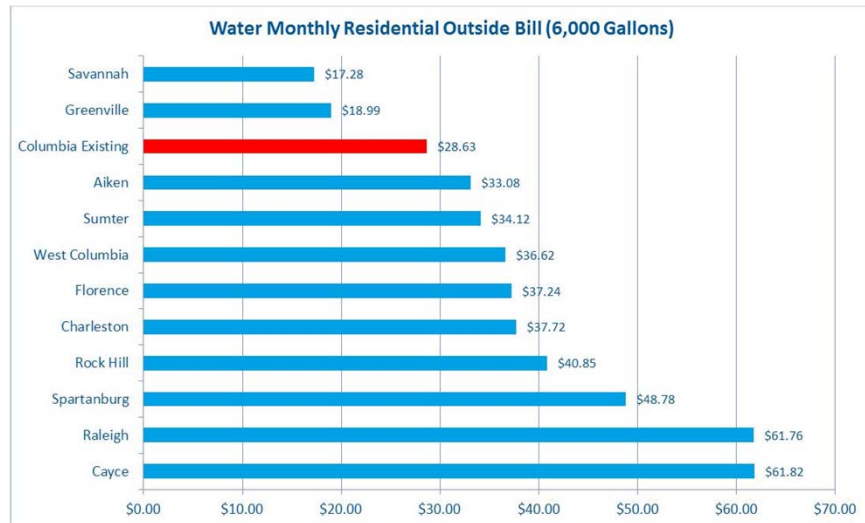
9

WATER BILL COMPARISONS: INSIDE CITY



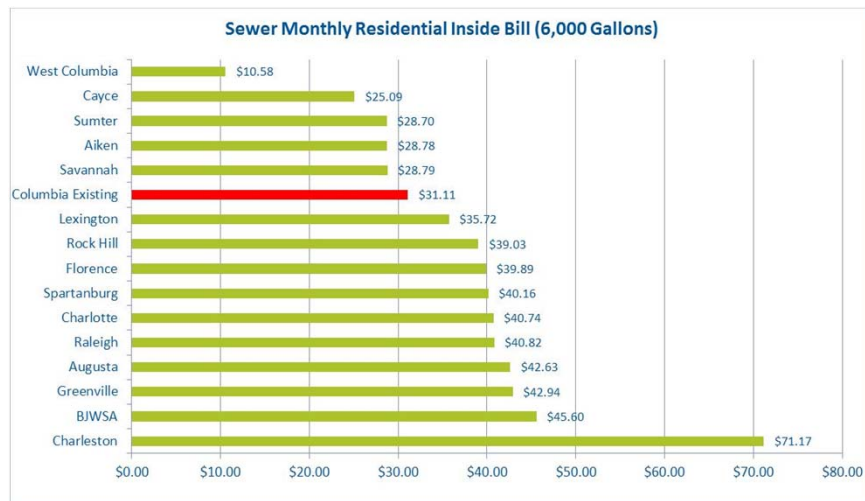
10

WATER BILL COMPARISONS: OUTSIDE CITY



11

SEWER BILL COMPARISONS: INSIDE CITY



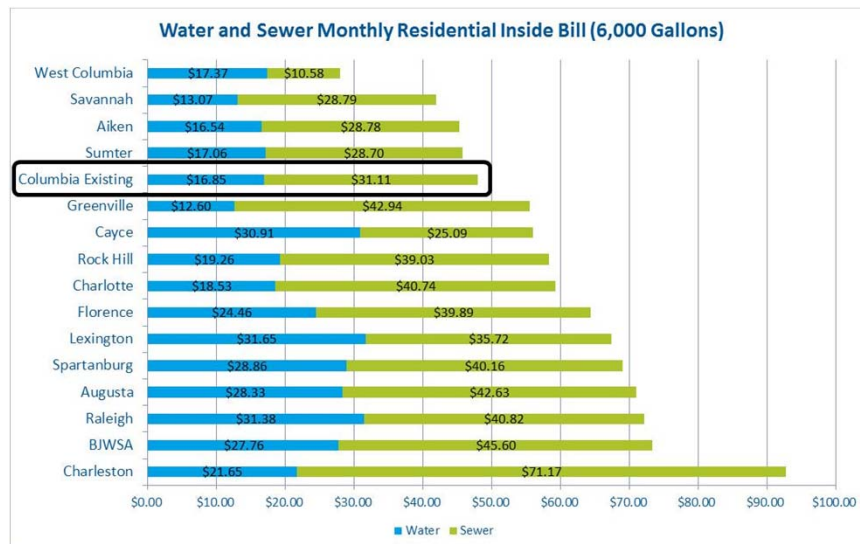
12

SEWER BILL COMPARISONS: OUTSIDE CITY



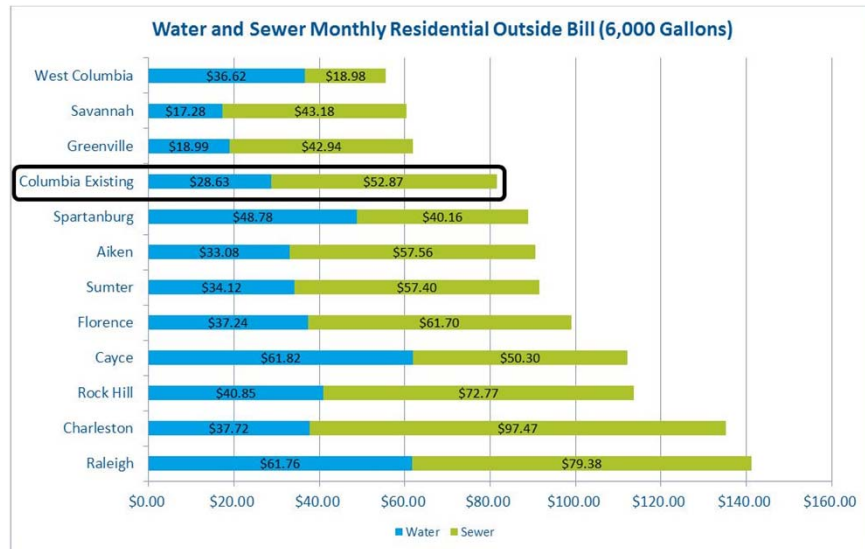
13

COMBINED UTILITY BILL COMPARISONS: INSIDE CITY



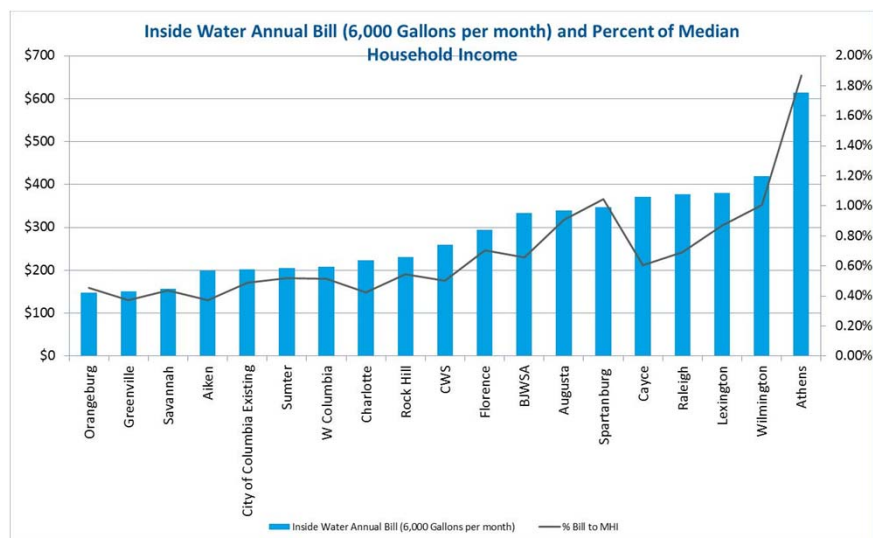
14

COMBINED UTILITY BILL COMPARISONS: OUTSIDE CITY



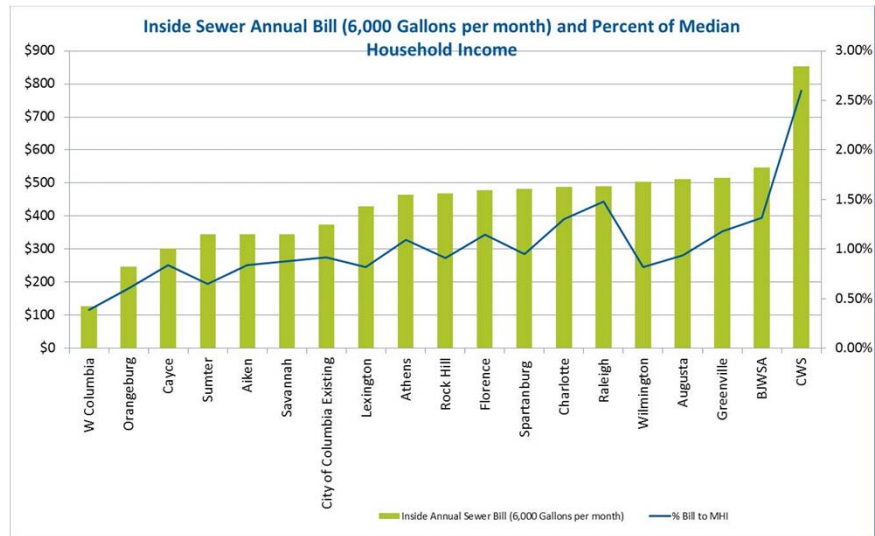
15

AFFORDABILITY: ANNUAL WATER BILLS



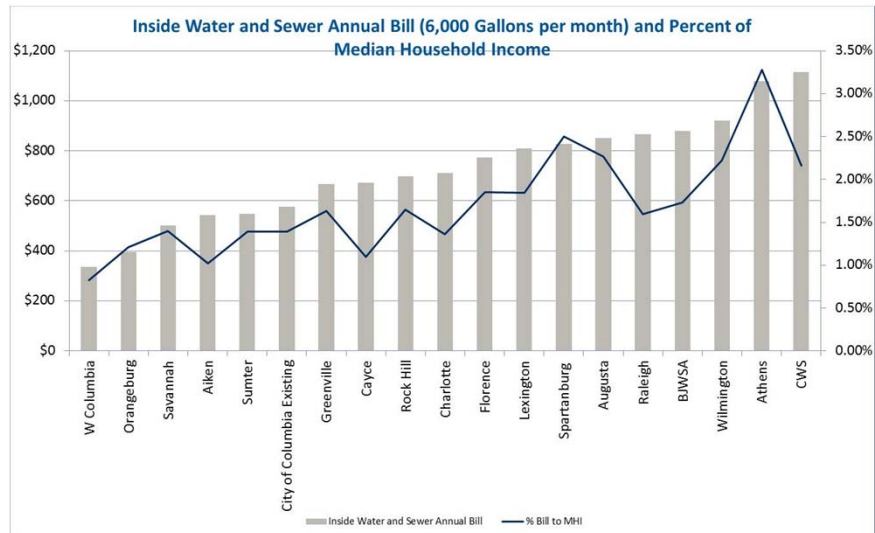
16

AFFORDABILITY: ANNUAL SEWER BILLS




17

AFFORDABILITY: ANNUAL COMBINED UTILITY BILLS







18



Chapter 3: Financial Overview





- Budget Overview & History
- Cash Reserve History
- Debt Service
- Transfer History

19

Budget Overview & History

FY 13, 14 & current have been previously presented & are in the books.

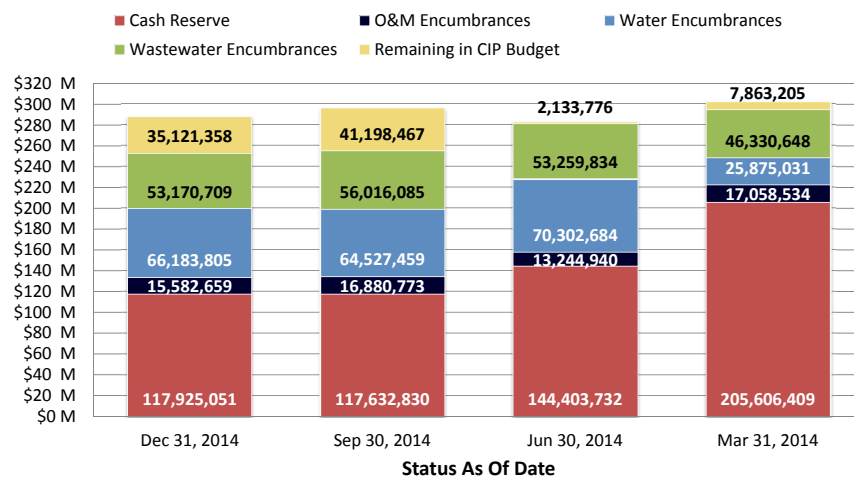
20

Cash Reserve History



21

Cash Reserves For Previous Four Quarters



22

Debt Service



23

Targeted Liquidity

- **Liquidity**
 - Unrestricted cash & investments divided by **Total O&M Expenses**
- **Total O&M Expenses**
 - Includes all recurring expenditure items such as salaries, supplies, & maintenance expenses.
 - Does not include any depreciation, amortization, or interest expense, nor does it include one-time charges such as capital investment or loss/gain on disposal of assets
- **Current Aa1 Mean**
 - 138%
 - Practice based on Moody's Municipal Financial Ratio Analysis. Note that prior year was 145%.

Fiscal Year	Expenses	Targeted Liquidity %	Resulting Targeted Liquidity
FY 2013 (Audited)	74,400,435	145%	107,880,631
FY 2014 (Audited)	66,189,697	145%	95,975,061
FY 2015 (Projection)	70,423,651	138%	97,184,638
FY 2016 (Budget)	78,749,645	138%	108,674,510

24

Calculation Of Net Revenues Available For Debt Service - Coverage Calculation

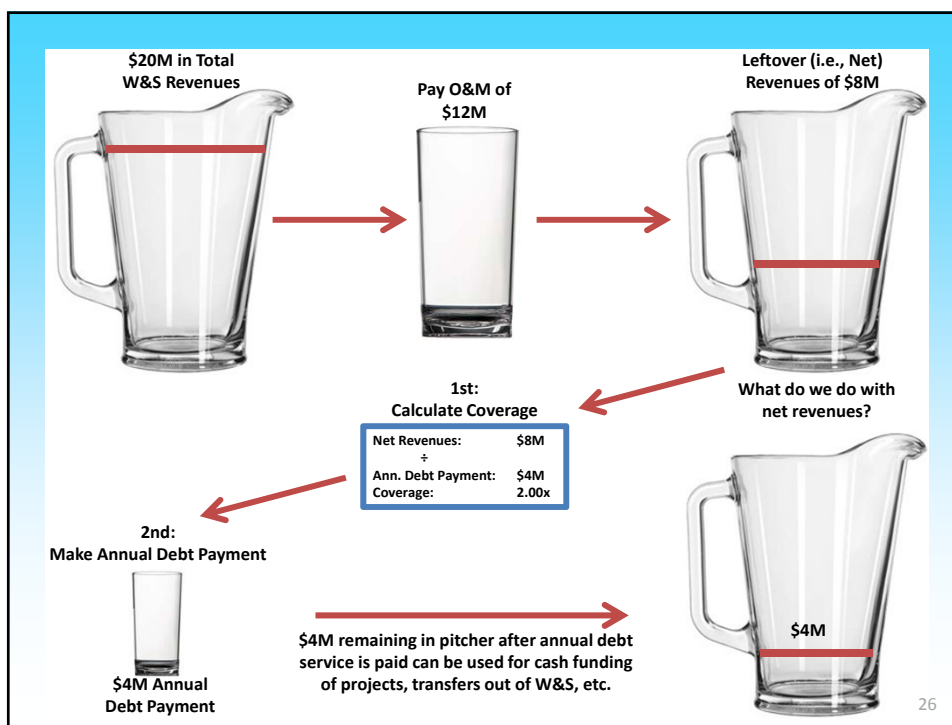
Current Aa1 Mean Coverage (Senior Lien Debt) = 3.54x
Recommended City of Columbia Coverage = 2.0x

Projected Coverage
Based on Audited 2014


Fiscal Year	Audited 2014
Revenues	
Charges for Services	116,146,448
Other Operating Revenue	352,272
Investment Income/(Loss)	972,514
Other Non-Operating Revenue	149,203
Gain/(Loss) from Sale of Assets	303,828
Total	117,924,265
Expenses	
Personnel Services	30,183,595
Materials and Supplies	8,759,851
Other Services and Charges	19,739,467
Heat, Light and Power	7,127,184
Bad Debt Expense	379,600
	66,189,697
Net Revenues Available for DS	51,734,568

FY End June 30	Existing Aggregate Debt Service	Coverage Existing Bonds
2014	26,753,259	1.93x
2015	29,008,192	1.78x
2016	29,006,859	1.78x
2017	29,005,906	1.78x
2018	29,009,417	1.78x
2019	29,005,067	1.78x
2020	29,008,284	1.78x
2021	29,012,256	1.78x
2022	29,016,756	1.78x
2023	29,019,251	1.78x
2024	29,020,950	1.78x
2025	29,019,190	1.78x
2026	29,024,805	1.78x
2027	29,022,011	1.78x
2028	29,023,667	1.78x
2029	29,025,099	1.78x
2030	29,033,419	1.78x
2031	29,324,165	1.76x

25







26

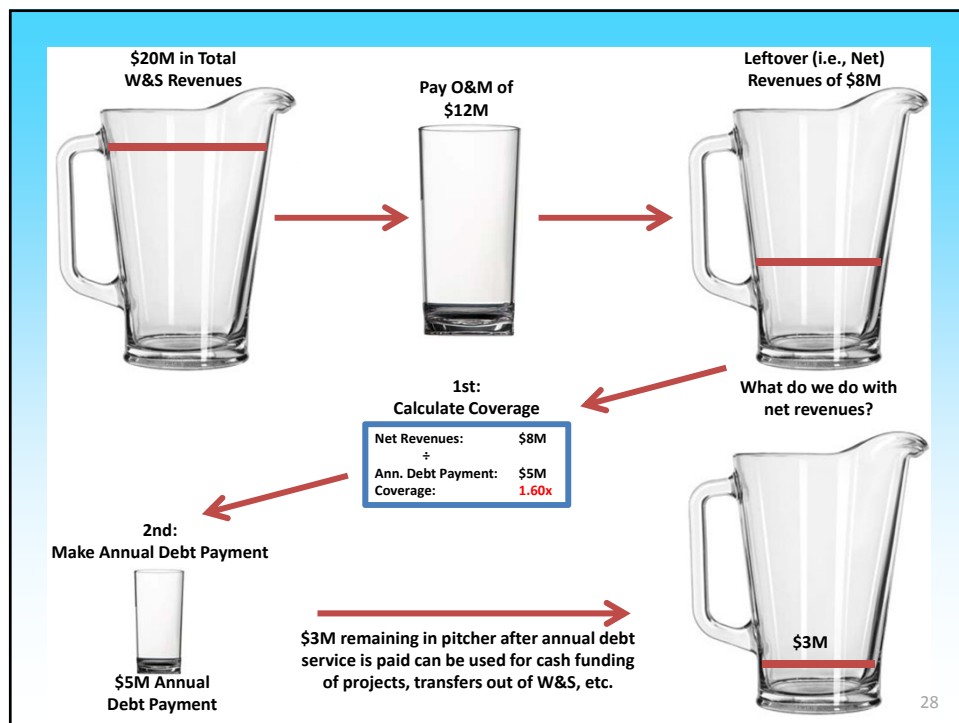


\$4M

Wait a minute, we've got \$4M remaining in pitcher. Let's take \$1M of that & use it to issue more bonds. No problem, right?

27



Outstanding Bond Issues

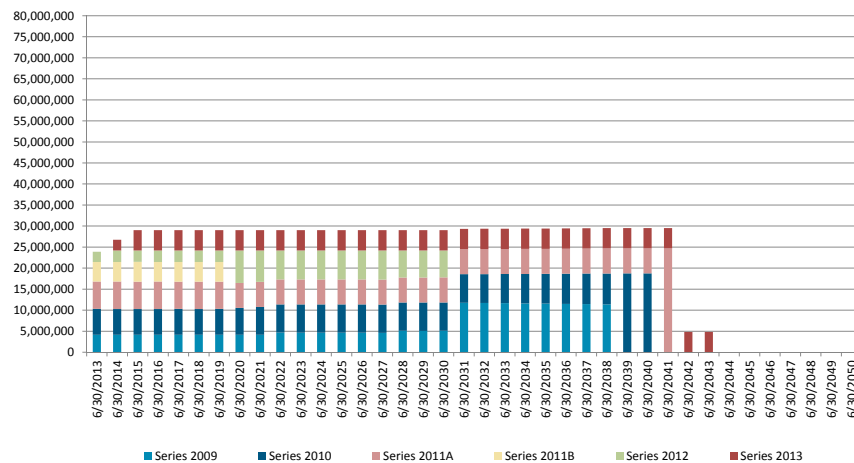
Water & Sewer Fund as of 6/30/2014:	Outstanding Principal
• \$81,860,000 Waterworks & Sewer System Revenue Bonds, Series 2009	\$81,860,000
• \$105,000,000 Waterworks & Sewer System Revenue Bonds, Series 2010	\$102,795,000
• \$100,000,000 Waterworks & Sewer System Revenue Bonds, Series 2011A	\$96,045,000
• \$27,265,000 Waterworks & Sewer System Revenue Bonds, Series 2011B	\$20,290,000
• \$58,055,000 Waterworks & Sewer System Revenue Bonds, Series 2012	\$58,055,000
• \$75,305,000 Waterworks & Sewer System Revenue Bonds, Series 2013	\$73,165,000



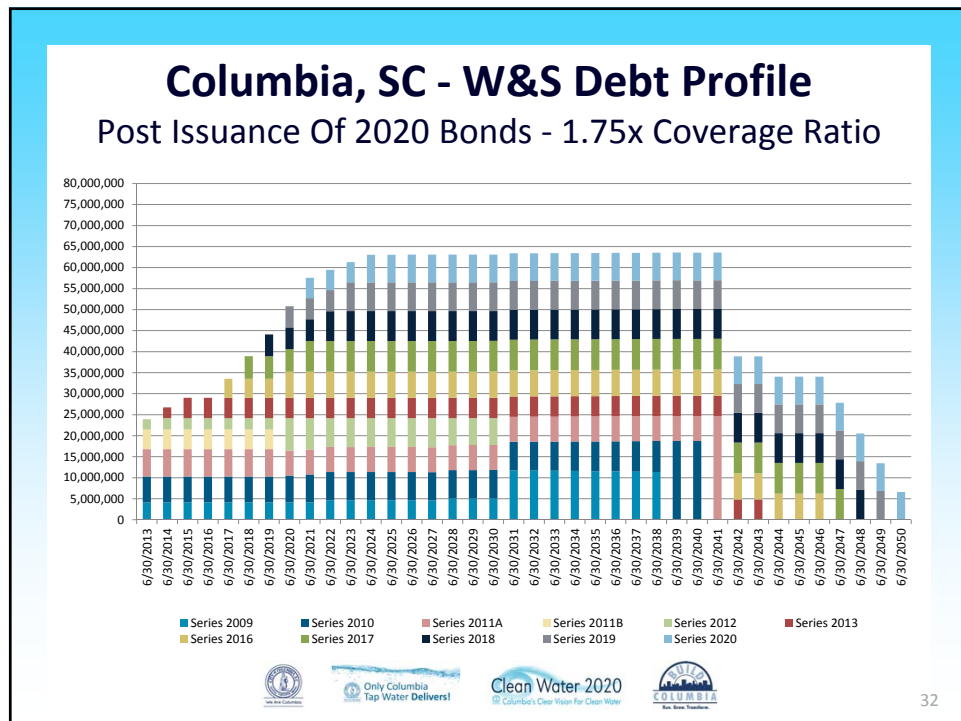
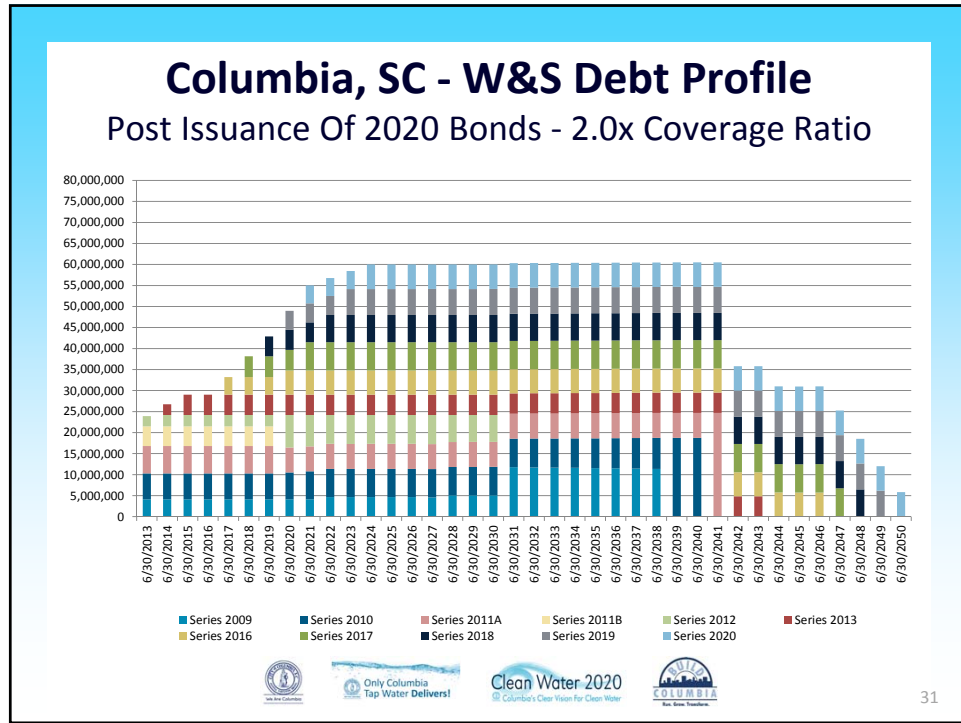
29

Columbia, SC - W&S Debt Profile

Post Issuance Of 2013 Bonds - i.e., Status Quo



30



Transfer History



33

Water & Sewer Operating Fund Transfers Out

- **Water & Sewer Operating Budget Includes Transfers Out To Other Funds**
 - General Fund – Direct transfer in support of general fund activities
 - Capital Improvement Program – Budgeted cash for funding of the Water & Sewer CIP
 - Internal Service Funds – To fund city internal services that are provided to the Water & Sewer fund (purchasing, central stores, integrated systems)
- **Common Practice**
 - Many cities that operate a utility have a transfer to their general fund & utilize different methods for calculation. Transfers from utility fund to the general fund is a common & accepted practice.
- **2013 Resolution**
 - In 2013, City Council adopted a resolution that capped the transfer from Water & Sewer to the General Fund at 5% of the budgeted revenues. This resolution replaced a previous resolution that was adopted in 1993.

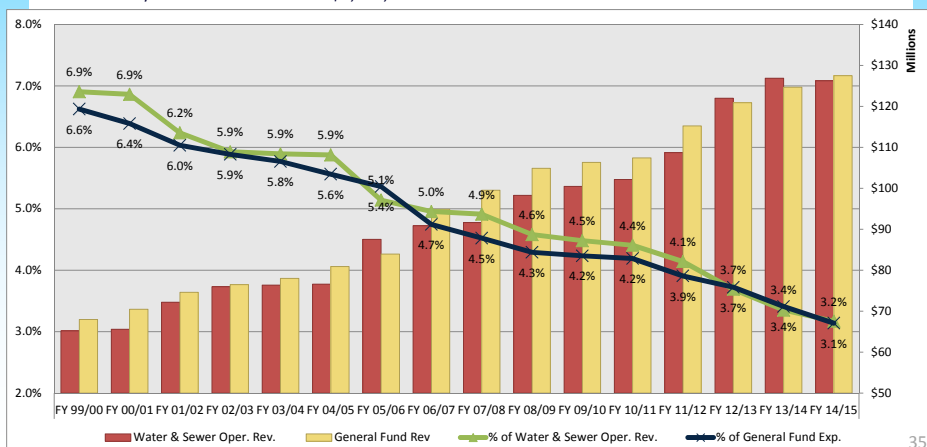


34

Water & Sewer Transfer To The General Fund As Percent Of Budget

- Transfer**

- FY 99/00-FY 12/13 \$4,500,000
- FY 13/14 \$4,250,000
- FY 14/15 \$4,000,000



35

Budget Expenditure Categories

- Operating Departments**

- Departments that provide a direct service to the water & sewer system
Utilities & Engineering; Public Works - Street Division; Finance; GIS; General Services

- Non-Operating Departments**

- Departments or functions that are directly expensed from the water & sewer system (for the benefit of the system) but are not related to the operations of the system
Economic development; Development Corporations; Office of Business Opportunities

- Non Departmental**

- Represents expenditures that are not associated with a specific department or function but are costs specific to the water & sewer system
Debt services, bad debt expense



36

Budget Expenditure Categories

- **Transfers Out**
 - Transfers from the water & sewer system to another fund
General fund; capital improvement fund; internal service fund
- **Indirect Cost Allocation**
 - Reflects water & sewer's portion of shared expenses with the General Fund that are not directly charged to water & sewer. For reporting purposes, these costs are reflected with transfers out, but are budgeted in the Finance Water Admin budget.
Executive management, Human Resources, Legal, Planning, Public Relations



37

FY 2014/2015 Water & Sewer Operating Budget

EXPENDITURES

Operating Departments

FINANCE	6,444,337
FIRE HYDRANT MAINTENANCE	472,442
POLICE - CSO/PUBLIC SAFETY	659,259
PUBLIC WORKS-STREET REPAIR	1,526,849
GENERAL SERVICES PUBLIC BLDGS.	1,907,817
GIS MANAGEMENT	503,294
UTILITIES & ENGINEERING	65,456,252
TOTAL OPERATING	76,970,250

Non-Operating Departments

OFFICE OF BUSINESS OPPORTUNITIES	212,463
ECONOMIC DEV DEPARTMENT	1,191,470
DEVELOPMENT CORPORATIONS	1,386,338
ECONOMIC DEV SPECIAL PROJECTS	103,500
TOTAL NON-OPERATING DEPARTMENTS	2,893,271

Non-Departmental

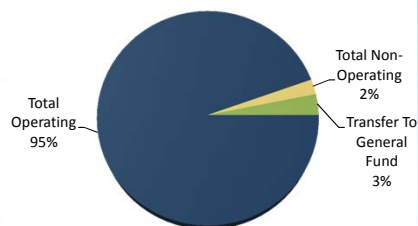
DEBT SERVICE	29,008,192
TECHNOLOGY REPLACEMENTS	250,000
NON-DEPARTMENTAL	85,000
BAD DEBT	750,000
RESERVE	1,000,000
TOTAL NON-DEPARTMENTAL OPERATING	31,093,692

TRANSFERS OUT

TO GENERAL FUND	4,000,000
TO WATER/SEWER CAPITAL IMP. PROGRAM	11,673,149
TO INTERNAL SERVICE FUNDS	954,733
TOTAL TRANSFERS	16,627,882

FY 14/15 TOTAL OPERATING BUDGET **127,585,095**

FY 14-15 Water & Sewer Operating Budget
\$127,585,095



38




BREAK






39

A Sample Bill



CITY OF COLUMBIA
WATER CUSTOMER SERVICE
1700 WASHINGTON STREET
COLUMBIA, SC 29201-7007
(803) 545-5300

CHARGE	AMOUNT
WATER SERVICE	\$5.51
SEWER SERVICE	\$5.51
WATER CONSUMPTION	\$5.51
TOTAL DUE NOW	\$16.53

Billing Summary: BODE CITY





ACCOUNT NO.	DATE	AMOUNT	STATUS
00000001	03/01/14	\$5.51	PAID
00000001	03/01/14	\$5.51	PAID
00000001	03/01/14	\$5.51	PAID

CITY OF COLUMBIA
WATER CUSTOMER SERVICE
1700 WASHINGTON STREET
COLUMBIA, SC 29201-7007
(803) 545-5300

PAID DATE 06-APR-2014 **AMOUNT** 45.35

CITY OF COLUMBIA
PO BOX 7997
COLUMBIA, SC 29202-7997

0000Y33031048027532024Y320000Y33031048027532024Y320

40

The Billing Summary

Billing Summary: **INSIDE CITY**

CHARGE DESCRIPTION	SERVICE PERIOD	DAYS OF SERVICE	METER NUMBER	PREVIOUS READING	PRESENT READING	CONSUMPTION / UNITS	CONSUMPTION 1 YEAR AGO	CHARGE
Residential Water	02/19/2014	03/19/2014	28	9004826	210600	211300	700	14.64
Residential Sewer	02/19/2014	03/19/2014	28				1500	27.91
Storm Water	02/20/2014	03/20/2014	28			0		6.80
Total New Charges								49.35



41

Reading Your Meter

Estimate Your Water & Sewer Charges: Residential Customers

For billing purposes, the City tracks your water use in units of **100 cubic feet**.

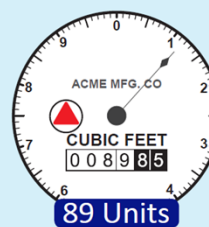
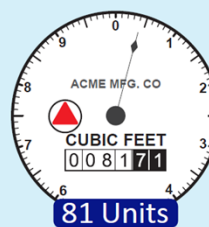
A meter reader looking at the meter in **Figure 1 A** would disregard the last two numbers on the black background and record only those numbers on the white background. In this case, the meter reader would record **81 units**.

To estimate your bill, you first need to calculate your water usage in 100 cubic foot units.

Fig. 1: Reading Billing Units

A: Start of the Month

B: End of the Month



42

Calculate Your Use

Calculate Water Use:

- Record the number of units at the start of the month. This value is **Units 1**.

Example: Use the reading from Figure 1 A
Units 1 = 81 Units

- At the end of the month, record the number of units again. This value is **Units 2**.

Example: Use the reading from Figure 1 B
Units 2 = 89 Units

- To find **Units Used**, Subtract **Units 1** from **Units 2**.

Example:
Units Used = Units 2 - Units 1
= 89 Units - 81 Units
= 8 Units Used

Note: 8 Units Used is equivalent to 800 cubic feet of water use on your bill.

Follow Along:

Your Units 1:	Your Units 2:
2106	2113
Your Units 2:	2113
Your Units 1:	2106
Your Units Used:	7



43

Calculate The Water Portion

Calculate Water Portion of the Bill:

- Determine your Water Base Rate and Water Vol Rate. For most residential customers

	In-City	Out-of-City
Water Base Rate	\$6.00	\$10.20
Water Vol Rate	\$2.16	\$3.67

Example: In-City Residential Customer on 5/8" Tap
Water Base Rate = \$6.00
Water Vol Rate = \$2.16

- Calculate the Water Portion of your bill
Water Portion =
(Units Used - 3) x Water Vol Rate + Water Base Rate

Example: In-City Residential Customer
Water Portion = (8 - 3) x \$2.16 + \$6.00
= 5 x \$2.16 + \$6.00
= \$10.80 + \$6.00
= \$16.80

Follow Along:

Your Units Used:	7 - 3 =	4
Your Water Vol Rate:	X	2.16
Your Water Base Rate:	+	6.00
Your Water Portion:		14.64



44

Calculate The Sewer Portion

Calculate Sewer Portion of the Bill:

- Determine your Sewer Base Rate and Sewer Vol Rate.
For most residential customers

	<u>In-City</u>	<u>Out-of-City</u>
Sewer Base Rate	\$6.00	\$10.20
Sewer Vol Rate	\$3.13	\$5.32

Example: In-City Residential Customer on 5/8" Tap

Sewer Base Rate = \$6.00

Sewer Volumetric Rate = \$3.13

- Calculate the Sewer Portion of your bill

Sewer Portion =

Units Used x Sewer Vol Rate + Sewer Base Rate

Example: In-City Residential Customer

Sewer Portion = $8 \times \$3.13 + \6.00

= \$25.04 + \$6.00

= \$31.04

Follow Along:

Your	
Units Used:	7
	X
Your	
Sewer Vol Rate:	3.13
	21.91
	+
Your	
Sewer Base Rate:	6.00
Your	
Sewer Portion:	27.91



45

Calculate the Water/Sewer Portion

Calculate the Total Bill:

- Add the Water Portion of your bill to the Sewer Portion of your bill.

Total Bill = Water Portion + Sewer Portion

Example: In-City Residential Customer

Total Bill = \$16.80 + \$31.04

= \$47.84

Follow Along:

Your	
Water Portion:	14.64
	+
Your	
Sewer Portion:	27.91
Your	
Total Bill:	42.55

All rates effective as of May 1, 2013

Version Date: March 10, 2014

Includes only water and sewer related user charges, does not include stormwater, fire, hydrant, fire sprinklers, or any other charges found on customer's water and sewer bills



46



Chapter 4: Capital Improvement Program

- CIP Prioritization
- CIP: Looking Back & Planning Ahead
- Digging Deep: Five Year Projections
- Project Life Cycle & Funding Curves
- Encumbrances & Cash Flow
- Capacity Limitations: Current & Projected
- Meeting the Demands



47

Prioritization Of CIP Funding

- **Complex Decision Process To Prioritize & Select Projects For Funding**
- **More Project Needs Than Available Funding**
- **CIP Mainly Funded By Bonds**
 - Bonding capacity is largely set by rates
- **Current 5-Year CIP Limited To \$120M Per Year**
 - \$40M Water
 - \$80M Wastewater



48

Prioritization Of Water CIP Projects

- 1) Regulatory Compliance (WTP & Distribution)
- 2) Fire Protection
- 3) Water Quality Improvements
- 4) Water Treatment Plant Upgrades (Non-regulatory)
- 5) System Expansion & Contractual Obligations



49

Prioritization Of Wastewater CIP Projects

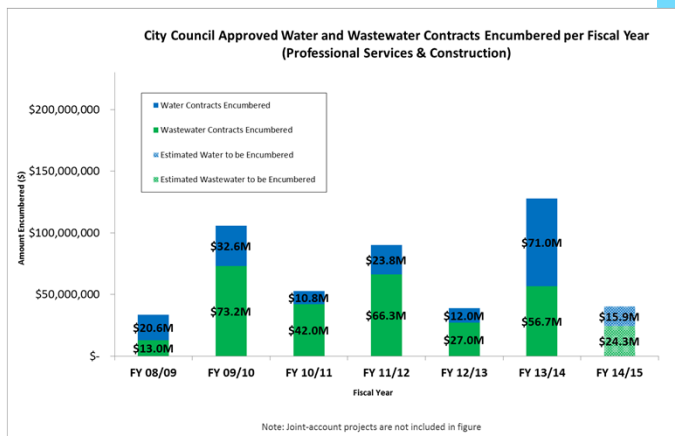
- 1) Regulatory Compliance & Consent Decree Requirements
- 2) Rehabilitation Of Critical Collection System & WWTP Assets
- 3) Capacity Enhancement (Correction of Capacity Limited Areas)
- 4) System Expansion & Contractual Obligations



50

CIP Execution – Past Years

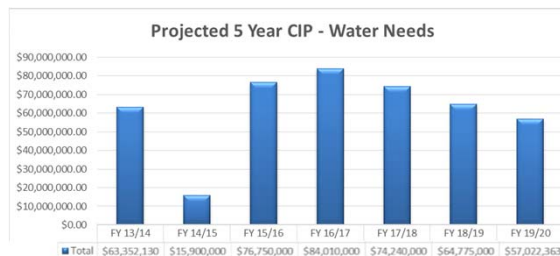
- Past 6 Years Have Been Inconsistent In CIP Encumbrances
- Level Of CIP Projects Encumbered Was Partially Controlled By Internal Bottlenecks
- FY14/15 Levels Were Limited Due To Inability To Issue A New Bond
- Remaining FY14/15 Needs Have Been Delayed To Future Years



51

CIP Requests – Next Five Years

- Significant Requests For Water & Wastewater CIP Funds



52

CIP Execution – Next Five Years

- **Total CIP Has Been Developed For \$120M Annually**

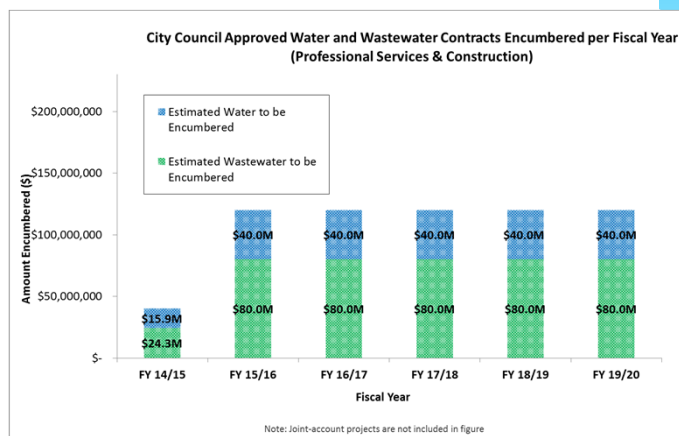
- \$40M Water
- \$80M Wastewater

- **FY 15/16 Will Be Proposed To Council for Approval**

- FY 16/17 – FY 19/20 is projected & will be revised as needed

- **See Handouts Of 5-Year CIP Plan**

- Council District Information



53

CIP Execution – Next Five Years

- **Handout Includes Future 5-year CIP & Information On Projects Delayed To Later Years Due To Limited CIP Funding In FY 14/15**
- **Proposed Projects Are Based On Needs & Priorities**
- **Major Known Sanitary Sewer Overflow (SSO) Volume Contributors Are Being Addressed**
- **Continued Capacity Limited Areas Are A Concern**



54

CIP Execution – Next Five Years

- **Since 2013: Internal Bottlenecks That Once Limited The City's Ability to Execute Contracts Have Been Improved**
 - Project management resources – Program management
 - Construction inspection – Consultants to supplement existing staff
 - Procurement – Process improvements & staff additions
- **Project Management Resources Will Continue To Be Monitored & Addressed**



55

Project Lifecycle & Funding Curves

- **Major Projects Often Take Several Years To Implement**
- **CIP Contains Major & Minor Projects**
 - Majority of the costs are in the major projects
- **Spending Cash Trails The Project Encumbrances**
 - Typical lifecycle
 - Example project lifecycles

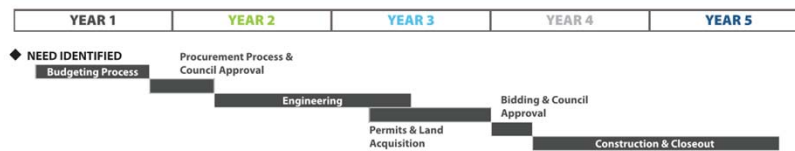


56

Major Project Lifecycle

- This Example Is Common For
 - Major WTP/WWTP upgrades
 - Major pipeline & pumping facility upgrades

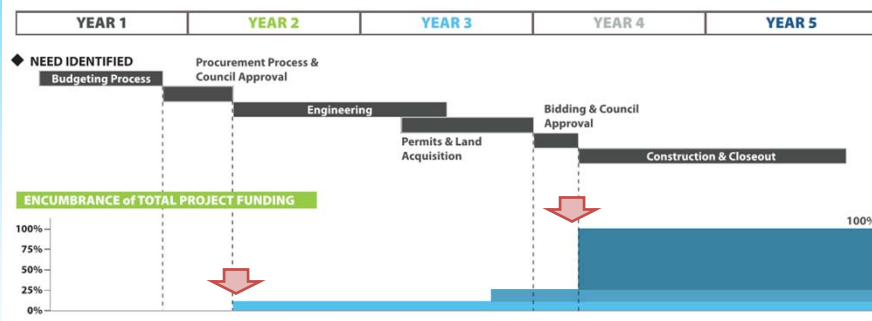
TYPICAL MAJOR PROJECT LIFE CYCLE



57

Major Project Lifecycle

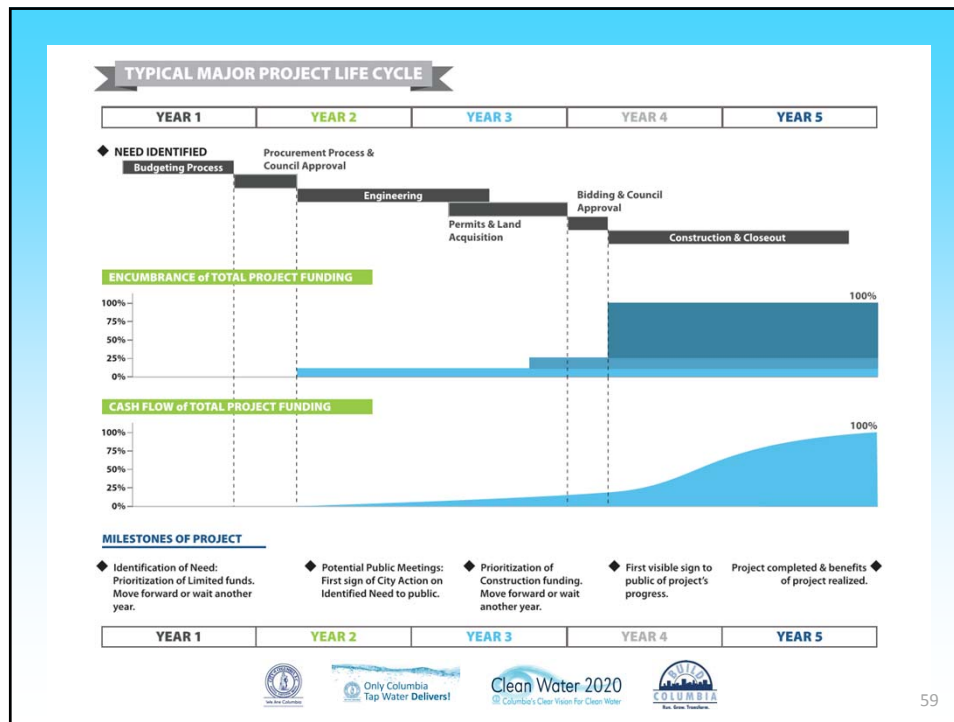
TYPICAL MAJOR PROJECT LIFE CYCLE



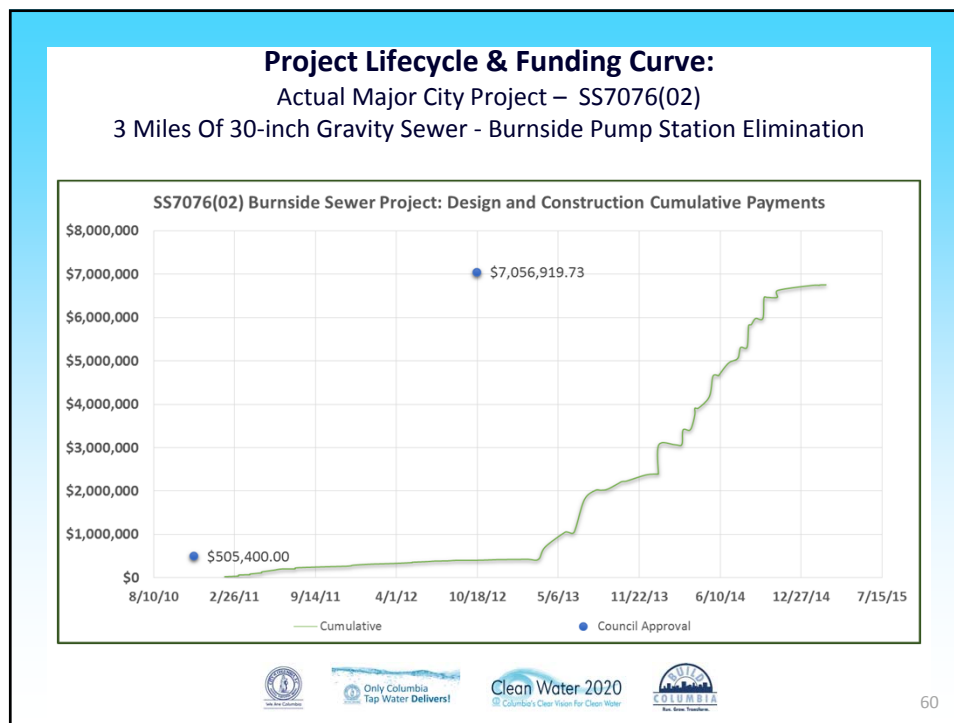
Arrows indicate major encumbrances for design & construction



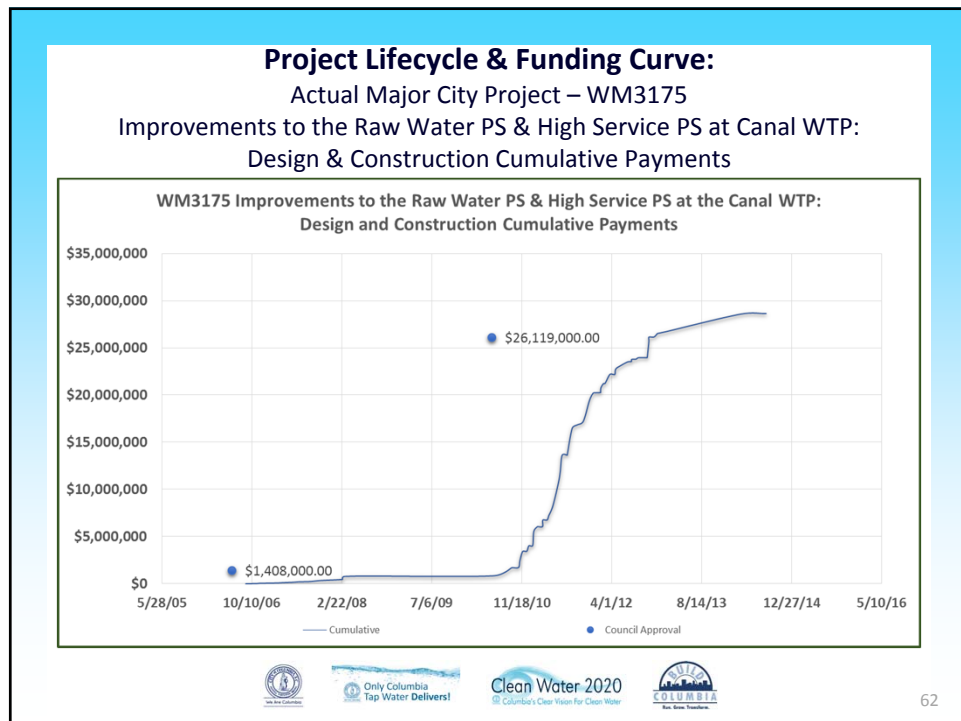
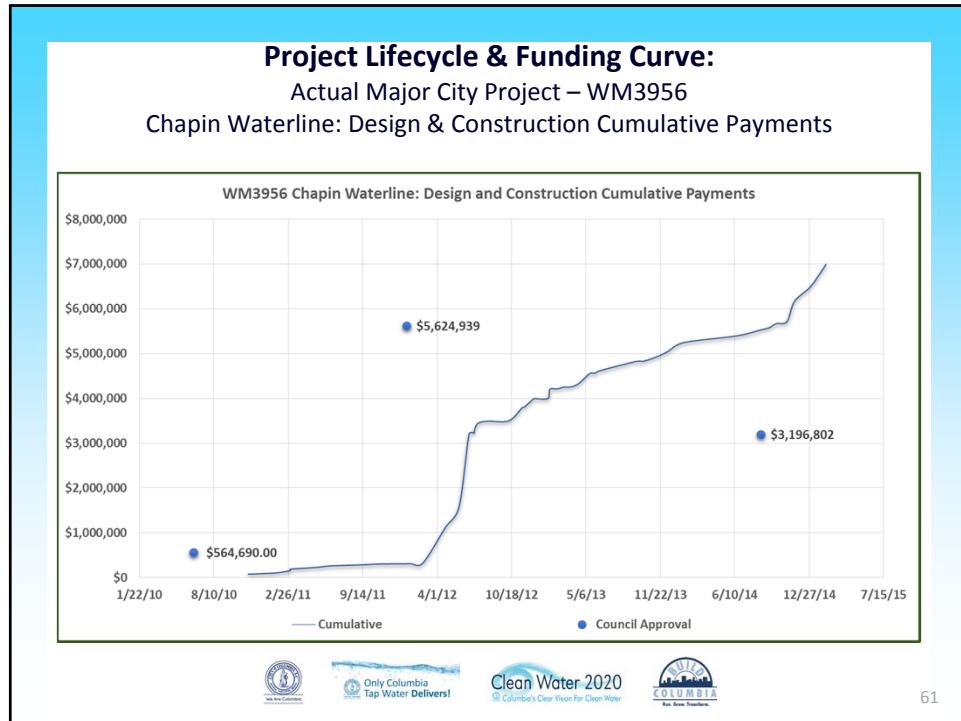
58

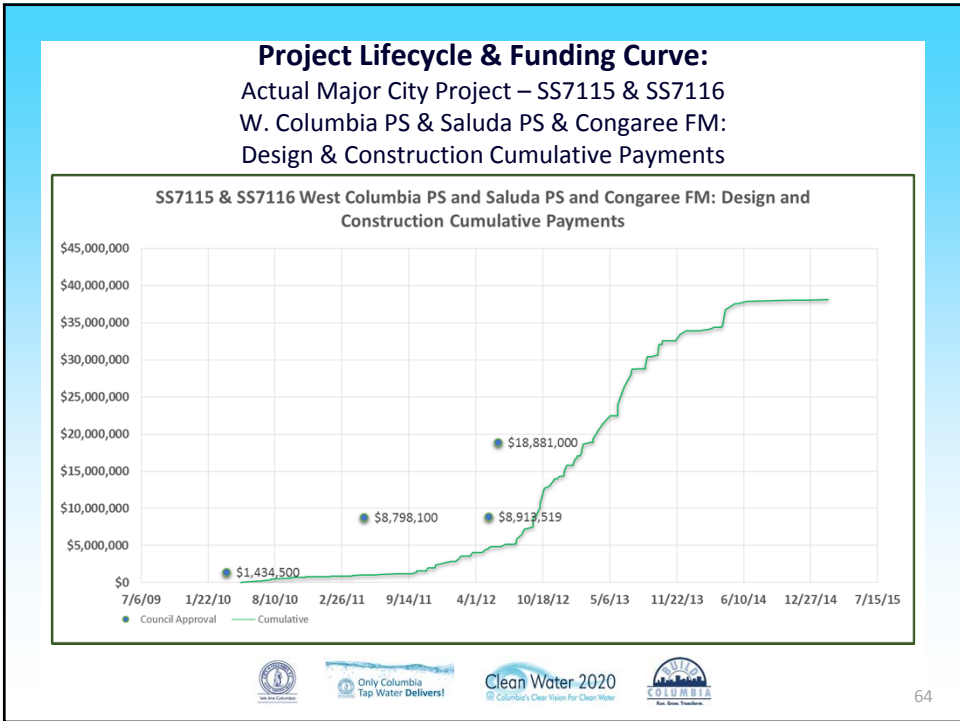
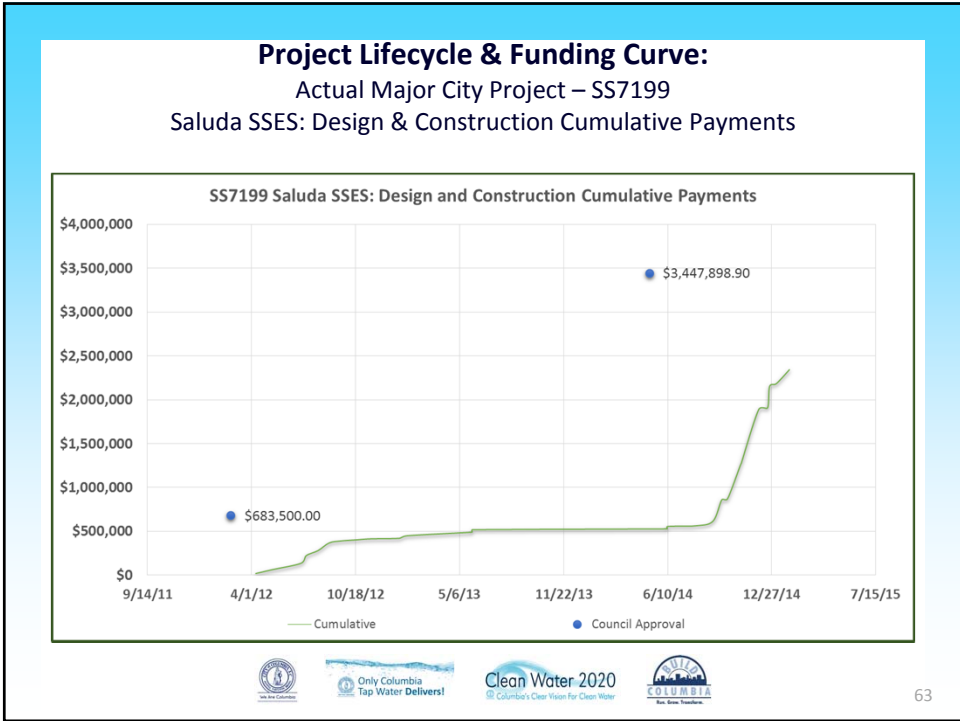


59



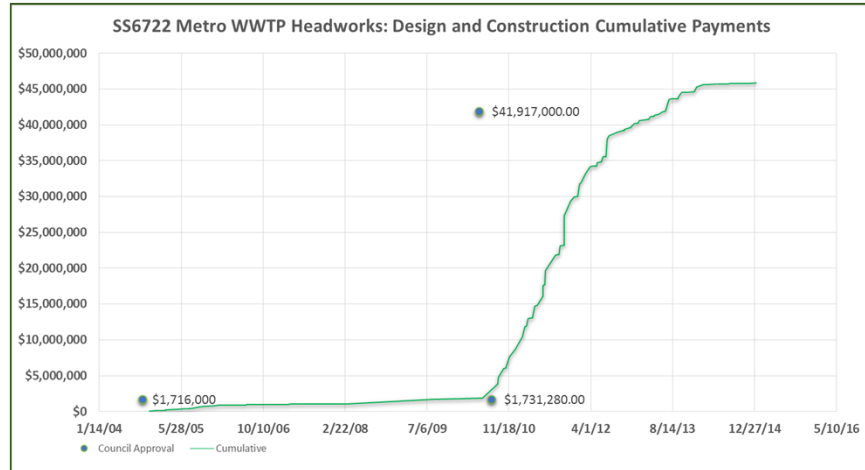
60





Project Lifecycle & Funding Curve:

Actual Major City Project – SS6722
Metro WWTP Headworks: Design & Construction Cumulative Payments



65

Active CIP Summary

Water & Sewer CIP Schedule
Through January 31, 2015

UNAUDITED

Project Name	Working Budget	Total CIP thru 06/30/14	2014/2015 Total Expenses	Total CIP thru EOM	2014/2015 Encumb.	Remaining in Budget
STORM DRAIN CIP (tied to W&S CIP projects)	917,403	896,806		896,806		(0.00)
TOTAL SEWER CIP	189,306,696	108,084,219	13,165,805	121,250,025	61,071,569	8,744,578
TOTAL WATER CIP	112,293,565	23,538,675	5,346,285	28,884,960	65,331,350	17,375,171
TOTAL WATER & SEWER CIP	\$ 302,517,664	\$ 132,519,700	\$ 18,512,090	\$ 151,031,790	\$ 126,402,919	\$ 26,119,750

This includes all currently active water & sewer projects, approved in FY14/15 & prior years.



66

Capacity Limited Areas - Wastewater

- **Capacity Limited Areas Are Governed By The Terms Of The CD & Based On Multiple Wet-weather SSO Events & Available Capacity**
- **City Has 2 Choices Once A Capacity Limited Area Is Identified**
 - Invest in CIP funds & execute a project to remove the capacity limitation
 - Allow the capacity limitation to remain until funding is available & prioritized



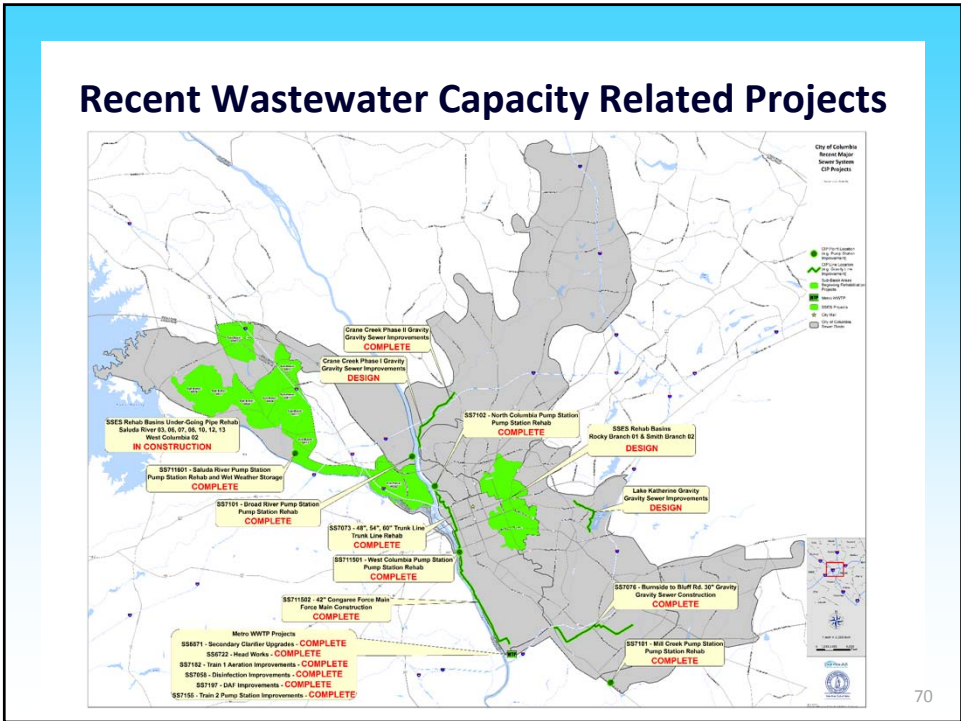
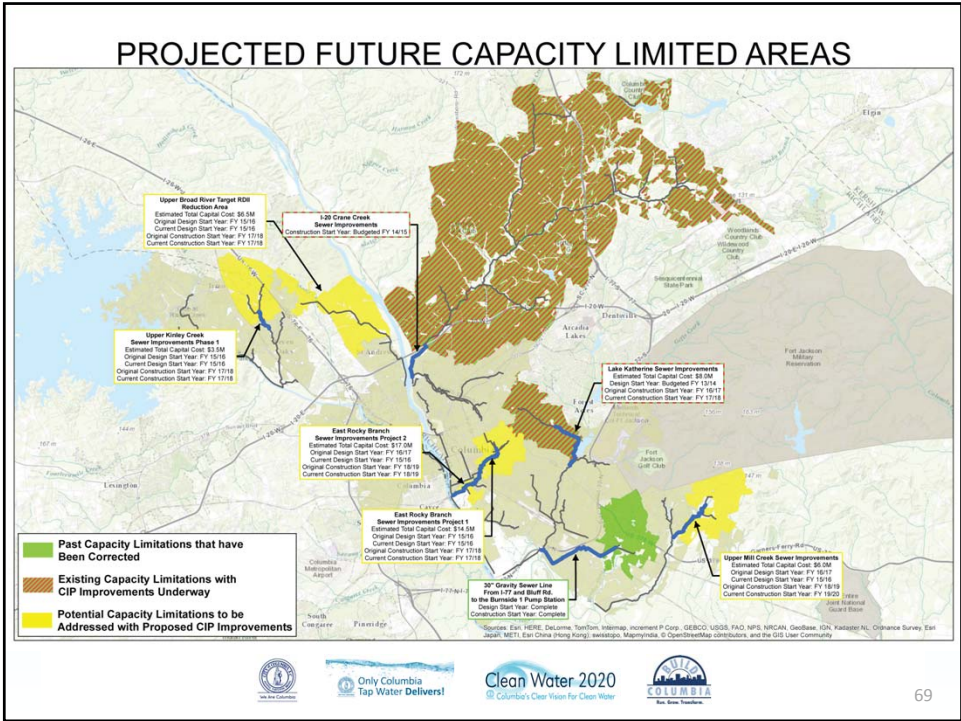
67

Capacity Limited Areas - Wastewater

- **Some Capacity Limitations Affect Small Areas, Other Limitations Impact Large Portions Of The Collection System**
- **2 Major Capacity Limited Areas Currently Exist**
- **Hydraulic Modeling Of The Major Pipes Have Projected Additional Future Capacity Limited Areas In The Near Future**
- **Additional Areas Will Be Identified As Modeling Continues & As The Smaller Pipes (Less than 15-inch) Are Evaluated**
- **Recommending Owners & Developers Go Through The Pre-CAP Process Early**
 - Identify existing capacity limitations on large or small diameter pipes
 - No guarantee of future capacity until permit is issued



68



Meeting The CIP Demands

- **Challenging Balance Between**
 - WTP & WWTP upgrade needs
 - Necessary pipeline rehabilitation & replacement
 - Addressing capacity limitations
- **CIP Needs & Project Prioritization Are Reviewed Annually Due To Impacts From**
 - Better knowledge of system assets, conditions, & capacities
 - Changing regulatory requirements, etc.



71

Chapter 5: Contractual Overview

- Existing Contracts
- Looking Ahead



72

Water Contracts

Entity	Date Signed	Amendments	Volumetric Rate	Volume Committed	Term of Agreement
Chapin	1988	1996	Commercial	-	30 Years
Dutchman Shores (Carolina Water)	1995	-	Commercial	-	10 Years
Ft Jackson	1987	2012	<ul style="list-style-type: none"> According to the 1987 Utility Service Contract, rates are to be mutually agreed upon during renegotiation at the request of the either party, provided that the rate shall be at least 13% below the rate to any other customer of the City under similar conditions of service. The 2012 Amendment set the rate at \$1.06 per 100 cubic feet. 	4,550 GPM	-
Winnsboro	2012	2013	Commercial	1.0 MGD	5 Years



73

Wastewater Contracts

Entity	Date Signed	Amendments	Rate	Volume Committed	Term of Agreement
East Richland	1963	1993 Addition of Gregg Park	<ul style="list-style-type: none"> Each entity collects tap and monthly fees in their service area. Each entity collects expansion fees for developments flowing to their WWTP. 	-	-
Ft Jackson	1967	1968 1973 1974 1977	<ul style="list-style-type: none"> According to the 1967 Sewer Service Contract as amended in 1968, 1973, 1974, and 1977, the City agreed that the rates charged under the Contract would not exceed the lowest rates available to any customer under like conditions of service. 	-	-
NI America	2013	-	<ul style="list-style-type: none"> \$7.50 per customer + \$0.50 per customer for billing data Increases to \$17 in 3/16 Increases to commercial rate in 9/16 	-	-
Riverbanks Zoo	1992	1993	Commercial through meter + \$2,077 for riverwater	-	-
West Columbia	1969	1975 1992 1999	<ul style="list-style-type: none"> Calculated by formula from 1975 contract and currently averaging approximately \$36,000 / mo. Contribute in a cost share arrangement for capital improvement projects. 	3.27 MGD	-



74

Looking Ahead: Review Of Consent Decree Requirement

Satellite Sewer System Agreements:

"Within one (1) year...a proposed form of Satellite Sewer System Agreement for new or the renewal of existing agreements that cover collection, conveyance and treatment...as that term is defined in SC Regulation 61-9.122.2..."



75



Looking Ahead: DHEC's Definition Of SSS

- **Satellite Sewer Systems**
 - Are owned/operated by one person
 - Discharges to a system owned/operated by another
- **From DHEC's Website**
 - *Wastewater system not covered by either a NPDES permit or a State Land Application Permit*
- **Two Basic Situations Normally Apply**
 - Sewers serving more than one building (apartments, subdivisions, industrial complexes, etc.)
 - Pretreatment systems at industries



76

Looking Ahead: Categories Of Satellite Sewer Systems

- **Major Contributors** (With Existing Agreements)
 - Permitted Industrial Dischargers
 - East Richland
 - Fort Jackson
 - NI America
 - Riverbanks Zoo
 - West Columbia
- **Covered Under DHEC's General Operating Permit**



77

Looking Ahead: EPA's Elements Of SSS Agreements

- **Sewer Use Ordinance**
 - Contributor should adopt pretreatment sewer use ordinance that is no less stringent
- **Local Limits**
 - Contributor should adopt local limits for industrial discharges at least as stringent or specific maximum total mass loading of pollutants
- **Control Mechanism**
 - Who is responsible for issuing control mechanism to industrial users?



78

Looking Ahead: EPA's Elements Of SSS Agreements

- **Transfer Of Records**
 - Contributor should grant access to all records compiled for the Pretreatment Program
 - Notices of key activities (e.g., enforcement, permit issuance)
- **Right Of Entry, Inspection & Sampling**
 - Contributor should grant power to enter facilities of industrial users to verify compliance
- **Enforcement**
 - Who is responsible for enforcement? If Contributor, then City should have right if Contributor fails to.



79

Looking Ahead: EPA's Elements Of SSS Agreements

- **Remedies For Breach**
 - If Contributor has primary responsibility for permitting, compliance monitoring, and/or enforcement but is unable or unwilling to do so, City should be granted that right.
- **Residential Areas**
 - If no industrial users are located within Contributor's jurisdiction, agreement should state
 - 1) No industrial users are currently located within
 - 2) None shall be allowed unless prior notification is provided & new agreement entered into



80

Looking Ahead: Future Activities

- Final SSSA Template to EPA – May 21, 2015
- Await EPA Approval of SSSA Template
- Re-issue Industrial Discharge Permits
- Negotiate new Agreements With Satellite Systems As Necessary




81

BREAK







82



Chapter 6: Efficiency Successes & Opportunities





- Water & Sewer Revenue Audit
- Automated Meter Reading
- Joint Purchases
- Pumping Efficiencies
- Apprenticeships & Certifications
- RFEI For Efficiencies
- Bio Solids Update
- Smart Manhole Cover System
- Other Initiatives

83

Water & Sewer Revenue Audit: Billing Audit

- **Firm Selection**
 - RFP issued on September 13, 2013
 - URM contracted on December 10, 2013
- **Scope Of Audit**
 - *“Assist in ensuring that users of retail water & sewer service provided by Columbia are properly & equitably billed for such service”*

84

Water & Sewer Revenue Audit: Billing Audit

- **Findings**

- 17,805 accounts audited
 - All customers except single family residential
- 1,471 (8.3%) flagged for field investigation
- 441 (2.5%) verified to have potential increased revenue

- **Projected Impact**

- **Estimated: \$1.95 M Total**
 - City's portion projected to be \$780,000 per year for 3 years per contract



85

Water & Sewer Revenue Audit: Cost Of Service Assessment

- **Additional Service Offered By Auditing Firm**

- Review business processes for efficiencies
- Review current costs assessed for services

- **History Of Account Service Requests**

- Almost 140,000 accounts
- Service requests in 2014
 - 21,167 Move-in* - New account (service request)
 - 11,605 Move-out* - Final bill (meter read)
 - 8,858 Re-read* - Verification of monthly meter reading for billing
 - 924 Meter test* - Verify meter functionality

**Multiple service requests may have come from the same account*



86

Water & Sewer Revenue Audit: Cost Of Service Assessment

- **Fees**
 - Imposed to regulate service activities & discourage bad behavior
 - Examples include re-read of meter, meter test, non-pay disconnect, theft of service
- **Administrative Charges**
 - Assessed to cover cost for service requests
 - Examples include new service, transfer of service, disconnect service
- **Current Fees & Charges DO NOT Recover 100% Of Costs Associated With Providing Services**



87

Water & Sewer Revenue Audit: Cost Of Service Assessment

- **Improve Efficiencies**
- **Clearly Define Business Practices, Policies, Fees For Customer**
- **Update Ordinance To**
 - Remove ambiguous language
 - Combine duplicated sections
 - Remove outdated sections
 - Come closer to recovering administrative costs
- **Types Of Changes Recommended**
 - Fees
 - Bad debt practices
 - Adjustment processes
 - Rules of service
 - *Streamlining recommendations to be presented March 17, 2015*



88

AMR / AMI: Background

- **City Has Approximately 140,000 Billed Water Accounts**
 - Most have a single water meter
 - Some have multiple meters
- **584 Routes Lead To Serious Challenges**
 - Fuel & man power
 - Estimated reads
 - Hidden meters
 - Rereads/ Misreads



89

AMR / AMI: Technology

- **AMR:** Automatic Meter Reading
 - Remote read
 - Route based
- **AMI:** Advanced Metering Infrastructure
 - Fixed network
 - Remote access (i.e. computer terminal)



90

AMR / AMI: Comparison

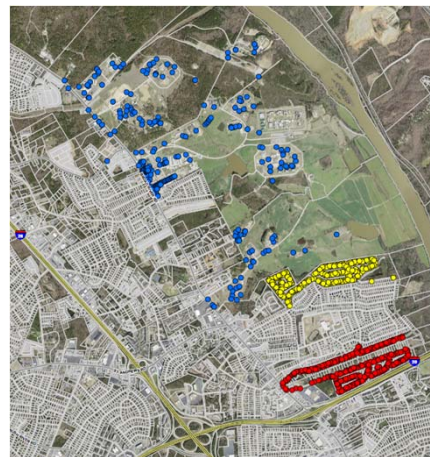
- **Cities In SC With AMI**
 - Columbia is one of the few in SC
- **Cities In SC With AMR**
 - Spartanburg – Completely AMR
~58,000 meters
 - Greenville – Completely AMR
~170,000 meters
 - Charleston – Using AMR in ~ ½ system
~56,000 meters out of 110,000



91

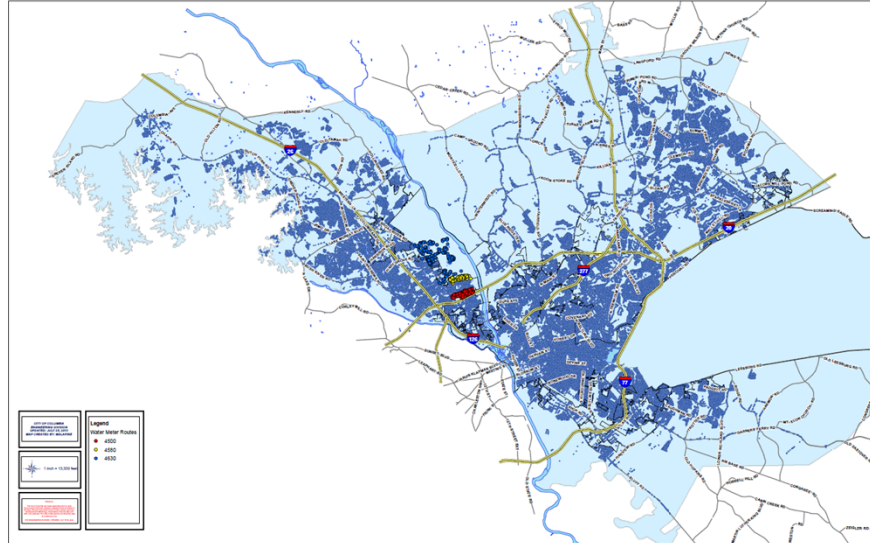
AMR / AMI: City Pilot

- **City Pilot Tested Both**
 - ~850 meters total
 - 3 test routes
 - AMR: 2 Residential Routes
 - AMI: 1 Commercial Route (Prison)
 - Both AMR/AMI worked well



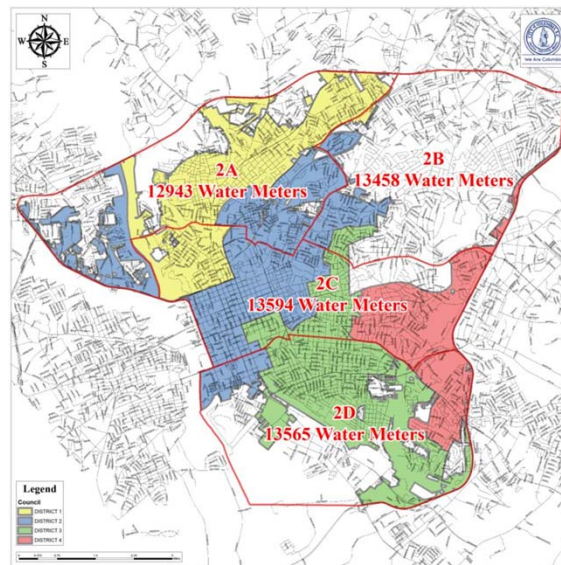
92

AMR / AMI: Goal Of City-Wide Service



93

AMR / AMI: Next Phase



94

AMR / AMI: Next Steps

- **Developing RFP**
 - For third party consultant to evaluate City system, City needs, & make recommendations for strategy & logistics of implementation
 - Anticipated release: Spring, 2015
- **Future Work Based On Recommendations**
 - Develop protocols for purchasing remote technology
 - Begin replacing meters in a key areas
- **Anticipated Results**
 - Significant increase in meter accuracy
 - Reduction in manpower needs



95

Purchasing Efficiencies

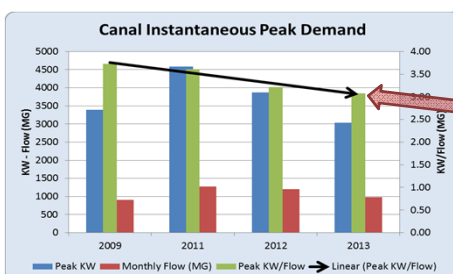
- **Reverse Auction**
 - An auction where the sellers place bids
 - Can incorporate value-added bids
 - Cuts costs & time for finding quotes
- **Drinking Water Success**
 - In 2013, chemical purchase auction came in ~\$75,000 under estimate (2.6% savings)
 - Will incorporate reverse auction in future chemical purchases & will consider with other purchases



96

Pumping Efficiencies

- **2012 Canal Plant Renovations**
 - Used variable frequency drive pumps
 - 4 VFD raw water pumps
 - 2 High service pumps (25 MGD)



Peak
Demand
Cut By
17.5%



97

Apprenticeships & Certifications

- **Apprenticeship Programs**
 - Drinking Water Plants Complete
 - Wastewater Plant Complete
 - Wastewater Maintenance Complete
 - Water Distribution In Development
- **Certifications Through Labor Licensing & Regulation**
 - Drinking Water Operator Licenses
 - Wastewater Operator Licenses
 - Wastewater Collection Licenses
 - Water Distribution Licenses



98

Professional Organizations

- **American Public Works Association Members**
 - SC chapter board member
- **SC Chapter Of The American Water Works Association Members**
 - Utility membership for all staff
 - Staff representation on various committees
- **Water Research Foundation Representatives**
- **Water Utility Council Representatives**
- **Water Environment Association Of South Carolina Members**
 - Utility membership for all staff
 - Staff representation on various committees



99

RFEI For Efficiencies

- **Opened On February 24, 2015**
- **9 Respondents**
- **Responses Screened Per Resolution R-2015-015**
 - To eliminate responses proposing the *“sale, lease, service concession arrangement or certain public-private financing or refinancing of the system or any related capital improvement projects”*
 - Initial screening has been conducted by senior staff
- **Remaining Responses Will Be Reviewed By Committee**



100

Bio Solids RFEI Update

- **RFEI Process To Explore Alternatives To The City's Current Bio Solids**
 - WWTP digester improvements are the foundation for this process
 - Green alternatives (energy recovery, fertilizer, biogas, landfill reduction, etc.)
 - Potential for cost savings, alternative delivery, & alternative financing
- **Received 15 Responses**
- **Discussions Held With 6 Firms In Late 2014**



101

Bio Solids RFEI Update

- **Conclusions Of The Process To Date**
 - Strong interest from many firms, including major market players
 - Many proved beneficial use technologies available
 - Significant market appetite to share risk
- **Next Step Is To Develop The RFP**
 - Process remains open to all firms, approach to be set by the City



102

Smart Manhole Cover System

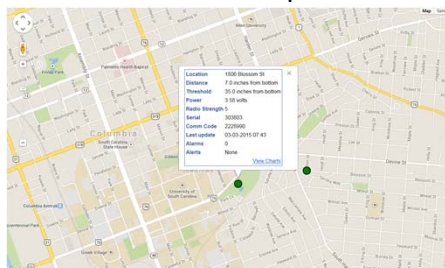
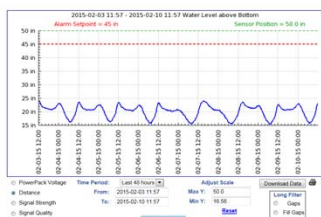
- Pilot Test Of Remote Monitor Covers Complete
- Allows For Continual Remote Monitoring Of Critical Manholes
- Better Identification Of SSOs
 - Acts as an early warning system



103

Smart Manhole Cover System

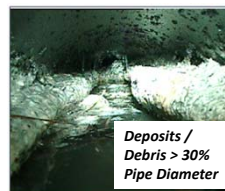
- Major Benefits
 - Improved system monitoring
 - Reduced man hours & overtime during rain events
 - Significant safety improvement over current operations



104

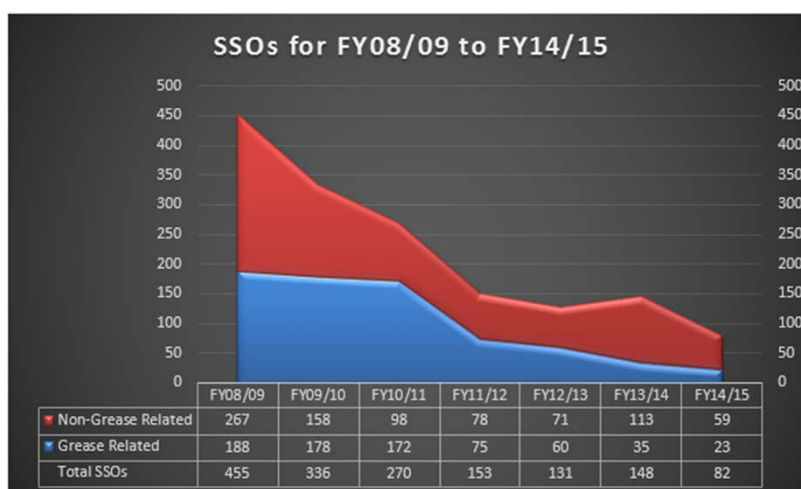
Other Initiatives: FOG & Root Cause

- **Fats, Oils & Grease (FOG) Program**
 - WWM working with FOG inspectors
 - FOG program has been significantly enhanced
 - Grease related SSOs are down considerably but remain a major cause
- **Root Cause Analysis**
 - SOP developed & being implemented to determine root cause of SSOs
 - Helps ensure the right corrective action is taken & repeat SSOs are reduced



105

Other Initiatives: FOG & Root Cause



106

Other Initiatives: Cityworks

- **City's Computerized Maintenance Management System**
 - Improved use of the system
 - Produces **Key Performance Indicators** to track workload, produce maintenance schedules, & compare preventive & corrective maintenance
- **Wastewater Treatment Plant**
 - Collecting information on all WWTP assets
 - Cityworks now used on portions of the WWTP processes
 - Will implement across the WWTP per CD requirements



107

Other Initiatives: Cityworks

- **Wastewater Collection System**
 - Improved tracking & reduction of work order backlog
 - Better organization of preventive maintenance
- **Cityworks Summary For Wastewater Maintenance**
 - Average of 681 work orders per month
 - Only 12.3 per month were not closed out

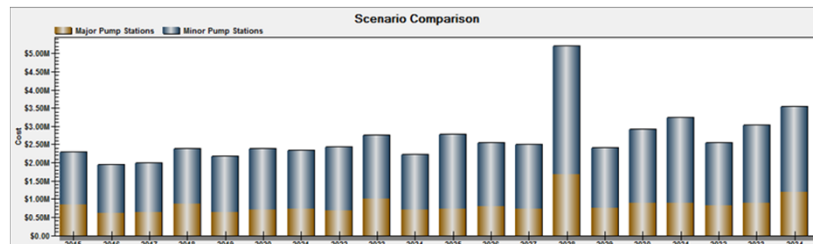
	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Total	Average
Workorders	861	736	573	779	652	281	884	4766	680.8571
	4	25	4	2	4	14	33	86	12.28571



108

Other Initiatives: Asset Management - Wastewater

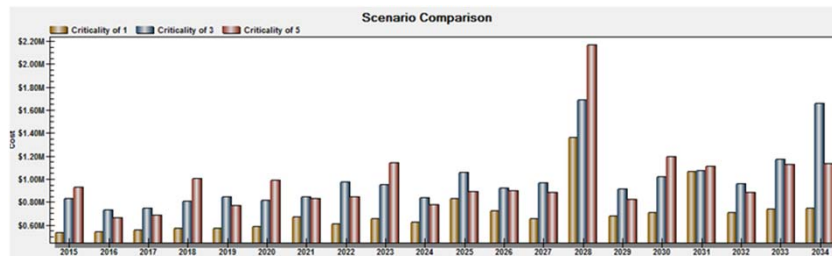
- **Developing Asset Management For Wastewater**
 - Developed from CD driven initiatives
 - Based on condition of assets
 - Based on risk of failure
 - Allows for proactive planning (workload & financial) for asset renewal



109

Other Initiatives: Asset Management - Wastewater

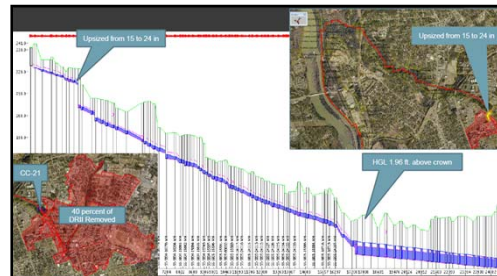
- **Collected Asset Information For All Pump Stations**
- **Currently Collecting Information For WWTP Assets**



110

Other Initiatives: Hydraulic Model - Wastewater

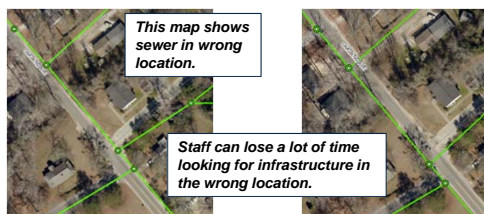
- Developing a Hydraulic Model
- Can Better Predict Collection System Capacities
- Capacity & Rehabilitation Investment Decisions Are Better Informed; Can Be Proactive Before Capacity Limitations Exist
- Past CIP Investments Were Reactive



111

Other Initiatives: GIS & Mapping Improvements - Wastewater

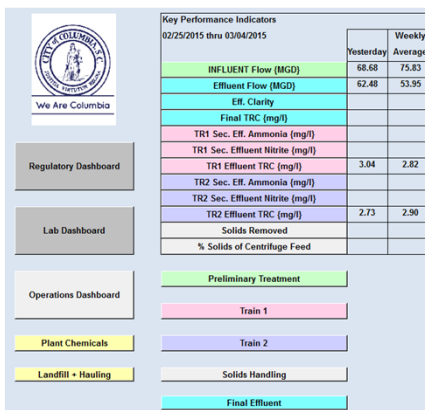
- Past GIS & Mapping Information Was Not Reliable
- Sewer Mapping Program Is Being Implemented
- Will Result In
 - Reliable collection system mapping
 - Major time savings for field staff
 - Getting the "right information, in the right hands, at the right time"



112

Other Initiatives: Wastewater Treatment Plant Operations

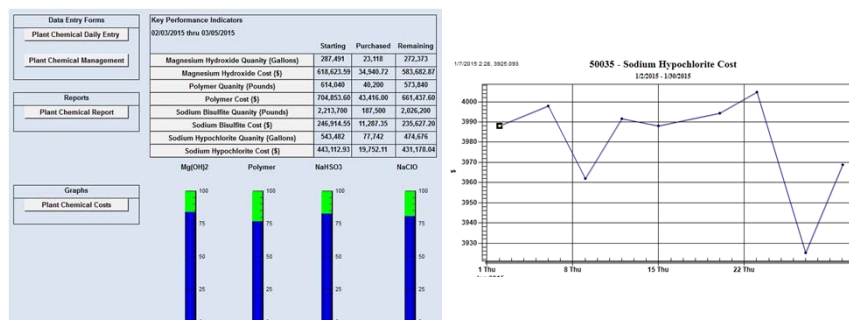
- **SCADA Systems Are Undergoing A Major Upgrade**
 - New software platform
 - WWTP data collection will be significantly improved
 - Collection system pumping information & warning system
- **Implementing HACH-WIMS As Plant Operations Decision Tool**
 - Efficient plant operations
 - Utilizing an improved WWTP SCADA system for electronic data collection
 - Results in man-hours reduction & reliable plant performance



113

Other Initiatives: Wastewater Treatment Plant Operations

- **HACH – WIMS Results In Reliable Plant Performance & Helps Manage Chemical Usage**



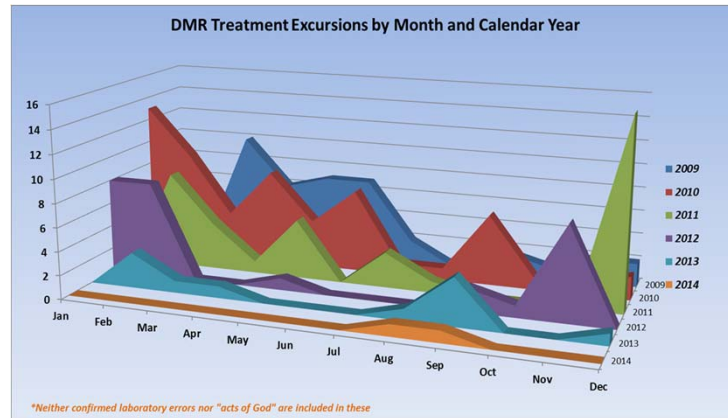
Creating electronic DMRs & working towards being the second utility in the state to submit electronically



114

Other Initiatives: Wastewater Treatment Plant Operations

- Dramatically Improved Performance



115

Chapter 7: Rate Study

- Rate Increase History
- Rate Increase Structure
- Proposed Rate Increase
- Sample Bills



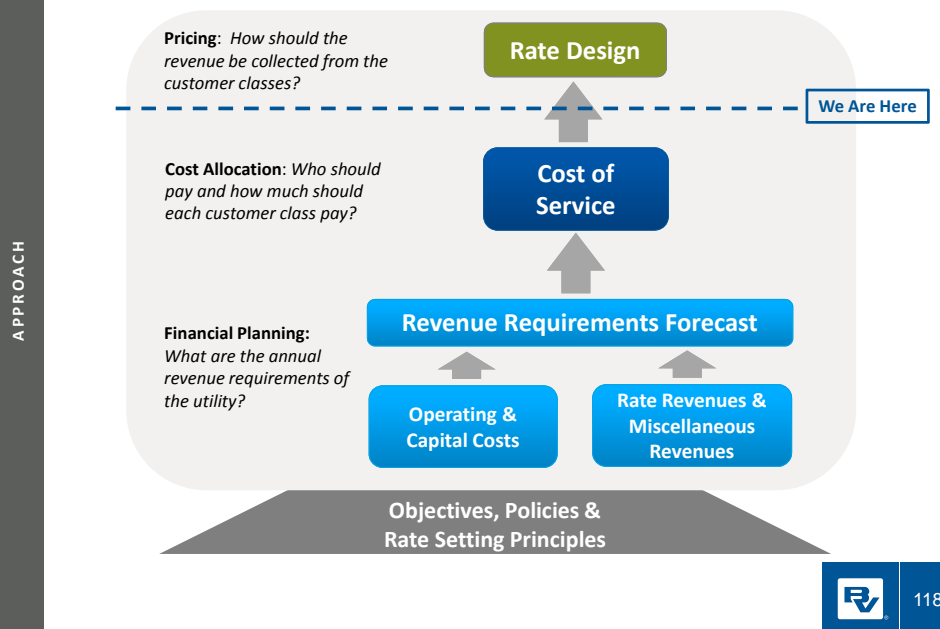
116

Rate Increase History

- **2006**
 - Rate study recommended 25% increase in rates, to be implemented over a 5 year period to fund a \$500M 5 year Capital Improvement Program
 - Added volumetric rates for irrigation meters
 - Prior to 2006, out-of-City sewer base rate was the same as in-City rates.
 - Meter taps and sewer impact fees increased to reflect cost of service, fees were phased in over 2 years
- **2007 & 2008 5% Rate Increase Proposed & Approved**
- **2009 5% Rate Increase Proposed, 0% Approved**
- **2010 5% Rate Increase Proposed, 2% Approved**
- **2011 5% Rate Increase Proposed, 5% Approved**
- **2012 Rate Study Conducted**
 - 8% (average residential customer bill) increase
 - Change in rate structure – shifted rates to cover fixed cost, primary increase on base rates
 - Introduced sewer base rate based on meter size
- **2013 Adjustments To Previously Adopted Rates**
 - Water base rates on large/commercial meters reduced between 36-50%
 - No sewer base rate changes
 - Water & sewer volumetric rates increased 8%
- **2014 7.9% Increase Proposed, 0% Approved**

117

STUDY PROGRESS AND APPROACH



REVENUE REQUIREMENTS – 5 YEAR PROJECTION

- O&M: FY 2016 Budget as Starting Point = \$79 Million
- Annual Increase in O&M of 3% thereafter for modeling purposes, reviewed and adjusted annually.
 - Recognition of general market inflation and Clean Water 2020 efforts
 - Outstanding Debt Service = \$29 Million Annually
- New Money Revenue Bond Issuances Annually from 2016-2020.
 - Annual Capital Spending of \$120 million



119

SCENARIO: 2.0 DEBT SERVICE COVERAGE TARGET FROM 2016-2020



120

COMBINED UTILITY 2016 REVENUE REQUIREMENTS				
Scenario: 2.0 Debt Service Coverage				
Line No.	Description	Operating Expense	Capital Cost	Total Cost
Statement of Net Revenue Requirements (Cash Basis)				
Revenue Requirements				
1	O&M Expenses	78,749,646	0	78,749,646
2	Debt Service	0	29,006,859	29,006,859
3	Other Expenditures & Transfers:			0
4	Transfer to Internal Services	954,733	0	954,733
5	Direct Transfer	4,000,000	0	4,000,000
6	Indirect Cost Allocation	2,270,000	0	2,270,000
7	Operating/Working Capital	0	2,385,188	2,385,188
8	Transfer to Water and Sewer Improvements	0	26,500,000	26,500,000
9	Funding to/(from) Operating Reserve	0	(7,103,062)	(7,103,062)
10	Subtotal	85,974,379	50,788,985	136,763,364
Less Revenue Requirements Met from Other Sources				
11	Other Revenues and Adjustments	6,106,472		6,106,472
12	Interest Earned	576,996		576,996
13	Subtotal	6,683,468	0	6,683,468
14	Net Revenue Requirements to be Recovered by Rates	79,290,911	50,788,985	130,079,896
15	Revenue Under Existing Rates			116,040,618
16	Required Increase			12.1%

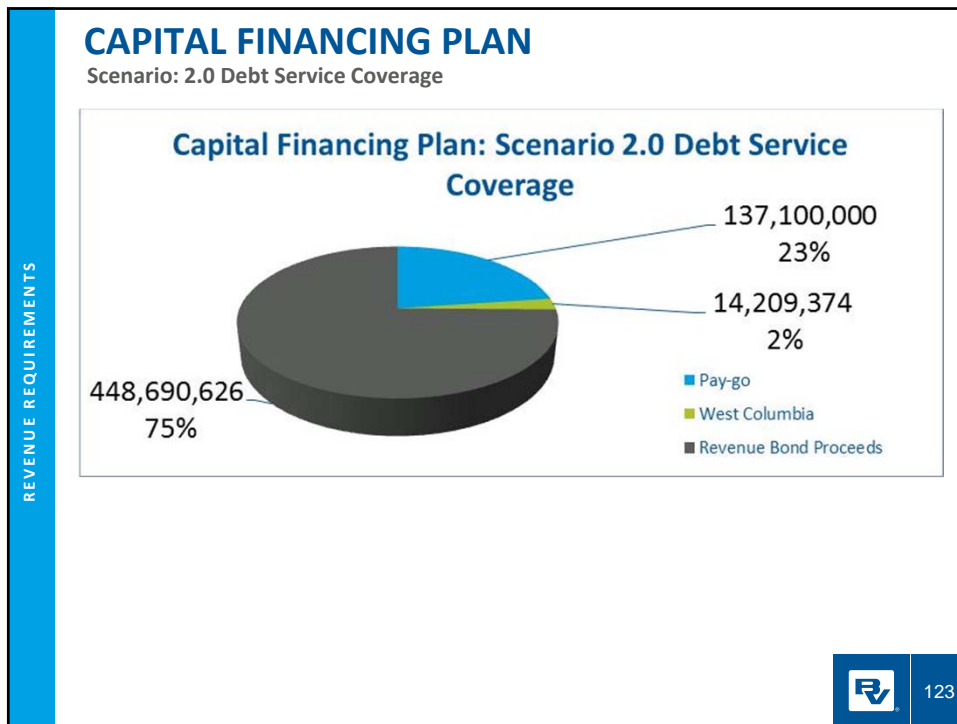


121

CAPITAL FINANCING PLAN	
Scenario: 2.0 Debt Service Coverage	
REVENUE REQUIREMENTS	<ul style="list-style-type: none"> 2016-2020 CIP = \$120 million annually <ul style="list-style-type: none"> \$205 million Water and \$395 million Wastewater Annual Revenue Bond Issuances, \$'s for Projects (\$448.7 million from FY 2016-2020) <ul style="list-style-type: none"> 2016 - \$83.0 million 2017 - \$97.7 million 2018 - \$94.0 million 2019 - \$89.4 million 2020 - \$84.6 million "Pay-go" from cash reserves and rate revenue reinvested back into the system (to be adjusted annually based on actuals) (\$137.1 million from FY 2016-2020) <ul style="list-style-type: none"> 2016 - \$26.5 million 2017 - \$20.5 million 2018 - \$25 million 2019 - \$29.7 million 2020 - \$35.4 million Anticipated Capital Contributions from West Columbia over next 5 years included



122



WATER SYSTEM CASH FLOW STATEMENT
Scenario: 2.0 Debt Service Coverage

Description	2015	2016	2017	2018	2019	2020
Water Service - Existing Rates	\$ 71,834	\$ 72,541	\$ 73,255	\$ 73,977	\$ 74,705	\$ 75,441
Wastewater Service - Existing Rates	-	-	-	-	-	-
Total Service Revenue - Existing Rates	\$ 71,834	\$ 72,541	\$ 73,255	\$ 73,977	\$ 74,705	\$ 75,441
Additional Revenue Required						
Fiscal Year	% Increase					
2015	0.0%	\$ -	\$ -	\$ -	\$ -	\$ -
2016	0.0%	-	-	-	-	-
2017	0.0%	-	-	-	-	-
2018	4.2%	-	-	3,137	3,168	3,199
2019	4.7%	-	-	-	3,695	3,731
2020	5.6%	-	-	-	-	4,651
Total Additional Revenue Required	\$ -	\$ -	\$ -	\$ 3,137	\$ 6,863	\$ 11,581
Other Revenue and Adjustments	\$ 2,873	\$ 2,875	\$ 2,890	\$ 2,878	\$ 2,876	\$ 2,866
Total Revenues	\$ 74,706	\$ 75,415	\$ 76,145	\$ 79,991	\$ 84,444	\$ 89,888
Operating Expense	\$ 34,526	\$ 40,079	\$ 41,281	\$ 42,519	\$ 43,795	\$ 45,109
Net Revenues after Operations	\$ 40,180	\$ 35,337	\$ 34,864	\$ 37,472	\$ 40,649	\$ 44,779
Outstanding Debt Service	\$ 17,841	\$ 17,840	\$ 17,840	\$ 17,842	\$ 17,839	\$ 17,841
Projected Future Debt Service	-	-	1,535	3,205	4,801	6,881
Total Debt Service	\$ 17,841	\$ 17,840	\$ 19,374	\$ 21,046	\$ 22,640	\$ 24,722
Cash Funded CIP	\$ 4,450	\$ 9,676	\$ 6,938	\$ 8,405	\$ 9,976	\$ 11,800
Transfers and Other Expenditures	\$ 4,565	\$ 4,565	\$ 4,565	\$ 4,565	\$ 4,565	\$ 4,565
Operating/Working Capital	\$ 1,029	\$ 1,116	\$ 1,149	\$ 1,184	\$ 1,219	\$ 1,256
Annual Operating Balance	\$ 12,294	\$ 2,140	\$ 2,838	\$ 2,272	\$ 2,250	\$ 2,437

124

WASTEWATER SYSTEM CASH FLOW STATEMENT

Scenario: 2.0 Debt Service Coverage

Description	2015	2016	2017	2018	2019	2020
Water Service - Existing Rates	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Wastewater Service - Existing Rates	42,838	43,500	43,903	44,311	44,722	45,138
Total Service Revenue - Existing Rates	\$ 42,838	\$ 43,500	\$ 43,903	\$ 44,311	\$ 44,722	\$ 45,138
Additional Revenue Required						
Fiscal Year	% Increase					
2015	0.0%	\$ -	\$ -	\$ -	\$ -	\$ -
2016	32.3%	14,039	14,169	14,301	14,434	14,568
2017	16.7%		9,671	9,761	9,852	9,943
2018	11.7%			7,969	8,043	8,118
2019	9.0%				6,938	7,003
2020	10.2%					8,622
Total Additional Revenue Required		\$ 14,039	\$ 23,841	\$ 32,032	\$ 39,267	\$ 48,253
Other Revenue and Adjustments	\$ 4,103	\$ 3,809	\$ 3,640	\$ 3,505	\$ 3,400	\$ 3,261
Total Revenues	\$ 46,940	\$ 61,348	\$ 71,384	\$ 79,847	\$ 87,389	\$ 96,652
Operating Expense	\$ 35,818	\$ 38,671	\$ 39,831	\$ 41,026	\$ 42,257	\$ 43,525
Net Revenues after Operations	\$ 11,122	\$ 22,677	\$ 31,553	\$ 38,821	\$ 45,132	\$ 53,127
Outstanding Debt Service	\$ 11,167	\$ 11,167	\$ 11,166	\$ 11,168	\$ 11,166	\$ 11,167
Projected Future Debt Service	-	-	2,668	5,932	9,084	13,064
Total Debt Service	\$ 11,167	\$ 11,167	\$ 13,834	\$ 17,100	\$ 20,250	\$ 24,231
Cash Funded CIP	\$ 7,068	\$ 16,824	\$ 13,562	\$ 16,595	\$ 19,724	\$ 23,600
Transfers and Other Expenditures	\$ 2,660	\$ 2,660	\$ 2,660	\$ 2,660	\$ 2,660	\$ 2,660
Operating/Working Capital	\$ 1,148	\$ 1,270	\$ 1,308	\$ 1,347	\$ 1,387	\$ 1,429
Annual Operating Balance	\$ (10,922)	\$ (9,243)	\$ 189	\$ 1,119	\$ 1,110	\$ 1,207



125

COMBINED UTILITY CASH FLOW STATEMENT

Scenario: 2.0 Debt Service Coverage

Description	2015	2016	2017	2018	2019	2020
Water Service - Existing Rates	\$ 71,834	\$ 72,541	\$ 73,255	\$ 73,977	\$ 74,705	\$ 75,441
Wastewater Service - Existing Rates	42,838	43,500	43,903	44,311	44,722	45,138
Total Service Revenue - Existing Rates	\$ 114,671	\$ 116,041	\$ 117,158	\$ 118,287	\$ 119,427	\$ 120,579
Additional Revenue Required						
Fiscal Year	% Increase					
2015	0.0%	\$ -	\$ -	\$ -	\$ -	\$ -
2016	12.1%	14,039	14,169	14,301	14,434	14,568
2017	7.4%		9,671	9,761	9,852	9,943
2018	7.8%			11,139	11,242	11,347
2019	6.9%				10,638	10,739
2020	7.9%					13,257
Total Additional Revenue Required		\$ 14,039	\$ 23,841	\$ 35,201	\$ 46,166	\$ 59,854
Other Revenue and Adjustments	\$ 6,975	\$ 6,683	\$ 6,530	\$ 6,350	\$ 6,240	\$ 6,107
Total Revenues	\$ 121,646	\$ 136,763	\$ 147,529	\$ 159,838	\$ 171,833	\$ 186,540
Operating Expense	\$ 70,345	\$ 78,750	\$ 81,112	\$ 83,545	\$ 86,052	\$ 88,633
Net Revenues after Operations	\$ 51,302	\$ 58,014	\$ 66,417	\$ 76,293	\$ 85,781	\$ 97,907
Outstanding Debt Service	\$ 29,008	\$ 29,007	\$ 29,006	\$ 29,009	\$ 29,005	\$ 29,008
Projected Future Debt Service	-	-	4,203	9,137	13,886	19,945
Total Debt Service	\$ 29,008	\$ 29,007	\$ 33,208	\$ 38,146	\$ 42,891	\$ 48,953
Cash Funded CIP	\$ 11,518	\$ 26,500	\$ 20,500	\$ 25,000	\$ 29,700	\$ 35,400
Transfers and Other Expenditures	\$ 7,225	\$ 7,225	\$ 7,225	\$ 7,225	\$ 7,225	\$ 7,225
Operating/Working Capital	\$ 2,178	\$ 2,385	\$ 2,457	\$ 2,530	\$ 2,606	\$ 2,685
Annual Operating Balance	\$ 1,373	\$ (7,103)	\$ 3,027	\$ 3,391	\$ 3,359	\$ 3,644
Debt Service Coverage Ratio	1.77	2.00	2.00	2.00	2.00	2.00
Unrestricted Operating Fund Ending Balance	116,086	108,983	112,009	115,401	118,760	122,404
Target Operating Balance (% of O&M) 138%	97,076	108,675	111,935	115,293	118,752	122,314



126

SCENARIO: 1.75 DEBT SERVICE COVERAGE TARGET FROM 2016- 2020



127

COMBINED UTILITY 2016 REVENUE REQUIREMENTS

Scenario: 1.75 Debt Service Coverage

Line No.	Description	Operating Expense	Capital Cost	Total Cost
Statement of Net Revenue Requirements (Cash Basis)				
Revenue Requirements				
1	O&M Expenses	78,749,646	0	78,749,646
2	Debt Service	0	29,006,859	29,006,859
3	Other Expenditures & Transfers:			0
4	Transfer to Internal Services	954,733	0	954,733
5	Direct Transfer	4,000,000	0	4,000,000
6	Indirect Cost Allocation	2,270,000	0	2,270,000
7	Operating/Working Capital	0	2,385,188	2,385,188
8	Transfer to Water and Sewer Improvements	0	19,500,000	19,500,000
9	Funding to/(from) Operating Reserve	0	(7,312,632)	(7,312,632)
10	Subtotal	85,974,379	43,579,415	129,553,794
Less Revenue Requirements Met from Other Sources				
11	Other Revenues and Adjustments	6,254,231		6,254,231
12	Interest Earned	576,996		576,996
13	Subtotal	6,831,227	0	6,831,227
14	Net Revenue Requirements to be Recovered by Rates	79,143,152	43,579,415	122,722,567
15	Revenue Under Existing Rates			116,040,618
16	Required Increase			5.8%



128

REVENUE REQUIREMENTS

CAPITAL FINANCING PLAN

Scenario: 1.75 Debt Service Coverage

- 2016-2020 CIP = \$120 million annually
 - \$205 million Water and \$395 million Wastewater
- Annual Revenue Bond Issuances, \$'s for Projects (\$493.6 million from FY 2016-2020)
 - 2016 - \$90.0 million
 - 2017 - \$106.0 million
 - 2018 - \$102.9 million
 - 2019 - \$99.3 million
 - 2020 - \$95.4 million
- "Pay-go" from cash reserves and rate revenue reinvested back into the system (to be adjusted annually based on actuals) (\$92.2 million from FY 2016-2020)
 - 2016 - \$19.5 million
 - 2017 - \$12.2 million
 - 2018 - \$16.1 million
 - 2019 - \$19.8 million
 - 2020 - \$24.6 million
- Anticipated Capital Contributions from West Columbia over next 5 years included

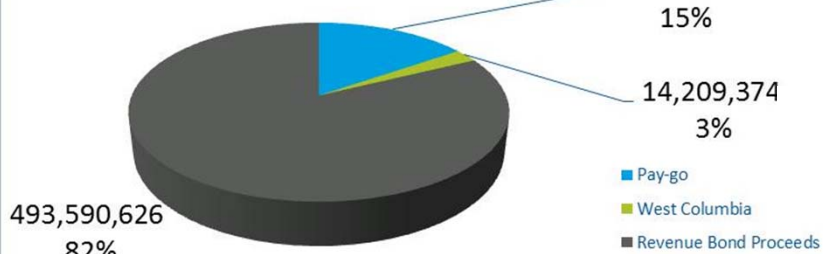
129

REVENUE REQUIREMENTS

CAPITAL FINANCING PLAN

Scenario: 1.75 Debt Service Coverage

Capital Financing Plan: Scenario 1.75 Debt Service Coverage



Source	Amount	Percentage
Revenue Bond Proceeds	493,590,626	82%
Pay-go	92,200,000	15%
West Columbia	14,209,374	3%

130

WATER SYSTEM CASH FLOW STATEMENT

Scenario: 1.75 Debt Service Coverage

Description	2015	2016	2017	2018	2019	2020
Water Service - Existing Rates	\$ 71,834	\$ 72,541	\$ 73,255	\$ 73,977	\$ 74,705	\$ 75,441
Wastewater Service - Existing Rates	-	-	-	-	-	-
Total Service Revenue - Existing Rates	\$ 71,834	\$ 72,541	\$ 73,255	\$ 73,977	\$ 74,705	\$ 75,441
Additional Revenue Required						
Fiscal Year	% Increase					
2015	0.0%	\$ -	\$ -	\$ -	\$ -	\$ -
2016	0.0%	-	-	-	-	-
2017	0.0%	-	-	-	-	-
2018	0.0%	-	-	-	-	-
2019	5.3%				3,985	4,024
2020	5.7%					4,516
Total Additional Revenue Required	\$ -	\$ -	\$ -	\$ -	\$ 3,985	\$ 8,540
Other Revenue and Adjustments	\$ 2,873	\$ 2,875	\$ 2,890	\$ 2,909	\$ 2,905	\$ 2,896
Total Revenues	\$ 74,706	\$ 75,415	\$ 76,145	\$ 76,885	\$ 81,595	\$ 86,877
Operating Expense	\$ 34,526	\$ 40,079	\$ 41,281	\$ 42,519	\$ 43,795	\$ 45,109
Net Revenues after Operations	\$ 40,180	\$ 35,337	\$ 34,864	\$ 34,366	\$ 37,800	\$ 41,769
Outstanding Debt Service	\$ 17,841	\$ 17,840	\$ 17,840	\$ 17,842	\$ 17,839	\$ 17,841
Projected Future Debt Service	-	-	1,662	3,473	5,219	7,511
Total Debt Service	\$ 17,841	\$ 17,840	\$ 19,502	\$ 21,315	\$ 23,058	\$ 25,352
Cash Funded CIP	\$ 4,450	\$ 7,120	\$ 4,129	\$ 5,413	\$ 6,651	\$ 8,200
Transfers and Other Expenditures	\$ 4,565	\$ 4,565	\$ 4,565	\$ 4,565	\$ 4,565	\$ 4,565
Operating/Working Capital	\$ 1,029	\$ 1,116	\$ 1,149	\$ 1,184	\$ 1,219	\$ 1,256
Annual Operating Balance	\$ 12,294	\$ 4,696	\$ 5,519	\$ 1,890	\$ 2,308	\$ 2,396



131

WASTEWATER SYSTEM CASH FLOW STATEMENT

Scenario: 1.75 Debt Service Coverage

Description	2015	2016	2017	2018	2019	2020
Water Service - Existing Rates	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Wastewater Service - Existing Rates	42,838	43,500	43,903	44,311	44,722	45,138
Total Service Revenue - Existing Rates	\$ 42,838	\$ 43,500	\$ 43,903	\$ 44,311	\$ 44,722	\$ 45,138
Additional Revenue Required						
Fiscal Year	% Increase					
2015	0.0%	\$ -	\$ -	\$ -	\$ -	\$ -
2016	15.4%	6,682	6,744	6,806	6,870	6,934
2017	18.3%		9,251	9,337	9,423	9,511
2018	17.7%			10,693	10,792	10,893
2019	8.8%				6,308	6,367
2020	10.7%					8,402
Total Additional Revenue Required	\$ -	\$ 6,682	\$ 15,995	\$ 26,836	\$ 33,394	\$ 42,106
Other Revenue and Adjustments	\$ 4,103	\$ 3,957	\$ 3,797	\$ 3,609	\$ 3,517	\$ 3,383
Total Revenues	\$ 46,940	\$ 54,138	\$ 63,695	\$ 74,755	\$ 81,633	\$ 90,627
Operating Expense	\$ 35,818	\$ 38,671	\$ 39,831	\$ 41,026	\$ 42,257	\$ 43,525
Net Revenues after Operations	\$ 11,122	\$ 15,467	\$ 23,864	\$ 33,729	\$ 39,376	\$ 47,102
Outstanding Debt Service	\$ 11,167	\$ 11,167	\$ 11,166	\$ 11,168	\$ 11,166	\$ 11,167
Projected Future Debt Service	-	-	2,890	6,429	9,877	14,264
Total Debt Service	\$ 11,167	\$ 11,167	\$ 14,057	\$ 17,597	\$ 21,043	\$ 25,431
Cash Funded CIP	\$ 7,068	\$ 12,380	\$ 8,071	\$ 10,687	\$ 13,149	\$ 16,400
Transfers and Other Expenditures	\$ 2,660	\$ 2,660	\$ 2,660	\$ 2,660	\$ 2,660	\$ 2,660
Operating/Working Capital	\$ 1,148	\$ 1,270	\$ 1,308	\$ 1,347	\$ 1,387	\$ 1,429
Annual Operating Balance	\$ (10,922)	\$ (12,009)	\$ (2,232)	\$ 1,438	\$ 1,136	\$ 1,182



132

COMBINED UTILITY CASH FLOW STATEMENT

Scenario: 1.75 Debt Service Coverage

Description	2015	2016	2017	2018	2019	2020
Water Service - Existing Rates	\$ 71,834	\$ 72,541	\$ 73,255	\$ 73,977	\$ 74,705	\$ 75,441
Wastewater Service - Existing Rates	42,838	43,500	43,903	44,311	44,722	45,138
Total Service Revenue - Existing Rates	\$ 114,671	\$ 116,041	\$ 117,158	\$ 118,287	\$ 119,427	\$ 120,579
Additional Revenue Required						
Fiscal Year	% Increase					
2015	0.0%	\$ -	\$ -	\$ -	\$ -	\$ -
2016	5.8%		6,682	6,744	6,806	6,870
2017	7.5%			9,251	9,337	9,423
2018	8.0%				10,693	10,792
2019	7.0%					10,300
2020	8.1%					12,900
Total Additional Revenue Required		\$ -	\$ 6,682	\$ 15,995	\$ 26,836	\$ 37,385
Other Revenue and Adjustments		\$ 6,975	\$ 6,831	\$ 6,686	\$ 6,517	\$ 6,416
Total Revenues		\$ 121,646	\$ 129,554	\$ 139,839	\$ 151,640	\$ 163,228
Operating Expense		\$ 70,345	\$ 78,750	\$ 81,112	\$ 83,545	\$ 86,052
Net Revenues after Operations		\$ 51,302	\$ 50,804	\$ 58,727	\$ 68,095	\$ 77,176
Outstanding Debt Service		\$ 29,008	\$ 29,007	\$ 29,006	\$ 29,009	\$ 29,005
Projected Future Debt Service		-	-	4,553	9,902	15,096
Total Debt Service		\$ 29,008	\$ 29,007	\$ 33,558	\$ 38,911	\$ 44,101
Cash Funded CIP		\$ 11,518	\$ 19,500	\$ 12,200	\$ 16,100	\$ 19,800
Transfers and Other Expenditures		\$ 7,225	\$ 7,225	\$ 7,225	\$ 7,225	\$ 7,225
Operating/Working Capital		\$ 2,178	\$ 2,385	\$ 2,457	\$ 2,530	\$ 2,606
Annual Operating Balance		\$ 1,373	\$ (7,313)	\$ 3,287	\$ 3,328	\$ 3,444
Debt Service Coverage Ratio		1.77	1.75	1.75	1.75	1.75
Unrestricted Operating Fund Ending Balance		116,086	108,773	112,060	115,389	118,833
Target Operating Balance (% of O&M) 138%		97,076	108,675	111,935	115,293	118,752



133

RATES AND BILL IMPACTS



134

RATES AND REVENUE ADJUSTMENTS

- Assumptions:

- Scenario: 2.0 DSC = in FY 2016, a 12.1% increase in combined system revenues
- Scenario: 1.75 DSC = in FY 2016, a 5.8% increase in combined system revenues
- Revenue increases for both scenarios are applied to the water and wastewater systems equally
- Maintains existing rate structures for both water and sewer user rates
- Contractual and other rate customers (West Columbia, Fort Jackson, State Rate) rates are not adjusted
 - Rate adjustments are made only to other retail customers



135

CUSTOMER BILL IMPACTS: 2.0 SCENARIO

Residential Inside City Combined Water and Sewer Bill: 5/8" Meter

Usage	Usage Gallons	Existing Rates			Rates after Increase			Bill Increase %	Bill Increase \$
		Fixed Charge	Volume Charge	Total	Fixed Charge	Volume Charge	Total		
CF	Gallons	\$	\$	\$	\$	\$	\$	%	\$
0	0	\$ 12.00	\$ -	\$ 12.00	\$ 13.60	\$ -	\$ 13.60	13.33%	\$ 1.60
134	1,000	\$ 12.00	\$ 4.18	\$ 16.18	\$ 13.60	\$ 4.69	\$ 18.29	13.02%	\$ 2.11
267	2,000	\$ 12.00	\$ 8.37	\$ 20.37	\$ 13.60	\$ 9.39	\$ 22.99	12.84%	\$ 2.62
401	3,000	\$ 12.00	\$ 14.74	\$ 26.74	\$ 13.60	\$ 16.53	\$ 30.13	12.71%	\$ 3.40
535	4,000	\$ 12.00	\$ 21.81	\$ 33.81	\$ 13.60	\$ 24.47	\$ 38.07	12.62%	\$ 4.27
668	5,000	\$ 12.00	\$ 28.88	\$ 40.88	\$ 13.60	\$ 32.42	\$ 46.02	12.56%	\$ 5.13
Avg. Use 802	6,000	\$ 12.00	\$ 35.95	\$ 47.95	\$ 13.60	\$ 40.36	\$ 53.96	12.52%	\$ 6.00
936	7,000	\$ 12.00	\$ 43.03	\$ 55.03	\$ 13.60	\$ 48.30	\$ 61.90	12.49%	\$ 6.87
1,070	8,000	\$ 12.00	\$ 50.10	\$ 62.10	\$ 13.60	\$ 56.24	\$ 69.84	12.47%	\$ 7.74
1,203	9,000	\$ 12.00	\$ 57.17	\$ 69.17	\$ 13.60	\$ 64.18	\$ 77.78	12.45%	\$ 8.61
1,337	10,000	\$ 12.00	\$ 64.24	\$ 76.24	\$ 13.60	\$ 72.12	\$ 85.72	12.43%	\$ 9.48
1,471	11,000	\$ 12.00	\$ 71.31	\$ 83.31	\$ 13.60	\$ 80.06	\$ 93.66	12.42%	\$ 10.35
1,604	12,000	\$ 12.00	\$ 78.39	\$ 90.39	\$ 13.60	\$ 88.00	\$ 101.60	12.41%	\$ 11.22
1,738	13,000	\$ 12.00	\$ 85.46	\$ 97.46	\$ 13.60	\$ 95.95	\$ 109.55	12.40%	\$ 12.09
1,872	14,000	\$ 12.00	\$ 92.53	\$ 104.53	\$ 13.60	\$ 103.89	\$ 117.49	12.39%	\$ 12.96
2,005	15,000	\$ 12.00	\$ 99.60	\$ 111.60	\$ 13.60	\$ 111.83	\$ 125.43	12.39%	\$ 13.82
2,139	16,000	\$ 12.00	\$ 106.68	\$ 118.68	\$ 13.60	\$ 119.77	\$ 133.37	12.38%	\$ 14.69
2,273	17,000	\$ 12.00	\$ 113.75	\$ 125.75	\$ 13.60	\$ 127.71	\$ 141.31	12.38%	\$ 15.56
2,406	18,000	\$ 12.00	\$ 120.82	\$ 132.82	\$ 13.60	\$ 135.65	\$ 149.25	12.37%	\$ 16.43
2,540	19,000	\$ 12.00	\$ 127.89	\$ 139.89	\$ 13.60	\$ 143.59	\$ 157.19	12.37%	\$ 17.30
2,674	20,000	\$ 12.00	\$ 134.96	\$ 146.96	\$ 13.60	\$ 151.53	\$ 165.13	12.36%	\$ 18.17

Includes only water and sewer related user charges, does not include stormwater, fire, hydrant, fire sprinklers, or any other charges found on customer's water and sewer bills



136

CUSTOMER BILL IMPACTS: 2.0 SCENARIO

Residential Outside City Combined Water and Sewer Bill: 5/8" Meter

Usage	Usage	Existing Rates			Proposed Rates			Bill Increase	Bill Increase
		Fixed Charge	Volume Charge	Total	Fixed Charge	Volume Charge	Total		
CF	Gallons	\$	\$	\$	\$	\$	\$	%	\$
0	0	\$ 20.40	\$ -	\$ 20.40	\$ 23.12	\$ -	\$ 23.12	13.33%	\$ 2.72
134	1,000	\$ 20.40	\$ 7.11	\$ 27.51	\$ 23.12	\$ 7.97	\$ 31.09	13.00%	\$ 3.58
267	2,000	\$ 20.40	\$ 14.22	\$ 34.62	\$ 23.12	\$ 15.94	\$ 39.06	12.80%	\$ 4.43
401	3,000	\$ 20.40	\$ 25.05	\$ 45.45	\$ 23.12	\$ 28.07	\$ 51.19	12.63%	\$ 5.74
535	4,000	\$ 20.40	\$ 37.06	\$ 57.46	\$ 23.12	\$ 41.54	\$ 64.66	12.53%	\$ 7.20
668	5,000	\$ 20.40	\$ 49.08	\$ 69.48	\$ 23.12	\$ 55.02	\$ 78.14	12.46%	\$ 8.66
Avg. Use	802	\$ 20.40	\$ 61.10	\$ 81.50	\$ 23.12	\$ 68.50	\$ 91.62	12.41%	\$ 10.11
	936	\$ 20.40	\$ 73.12	\$ 93.52	\$ 23.12	\$ 81.97	\$ 105.09	12.37%	\$ 11.57
	1,070	\$ 20.40	\$ 85.14	\$ 105.54	\$ 23.12	\$ 95.45	\$ 118.57	12.34%	\$ 13.03
	1,203	\$ 20.40	\$ 97.16	\$ 117.56	\$ 23.12	\$ 108.92	\$ 132.04	12.32%	\$ 14.48
	1,337	\$ 20.40	\$ 109.18	\$ 129.58	\$ 23.12	\$ 122.40	\$ 145.52	12.30%	\$ 15.94
	1,471	\$ 20.40	\$ 121.20	\$ 141.60	\$ 23.12	\$ 135.88	\$ 159.00	12.29%	\$ 17.40
	1,604	\$ 20.40	\$ 133.21	\$ 153.61	\$ 23.12	\$ 149.35	\$ 172.47	12.28%	\$ 18.86
	1,738	\$ 20.40	\$ 145.23	\$ 165.63	\$ 23.12	\$ 162.83	\$ 185.95	12.26%	\$ 20.31
	1,872	\$ 20.40	\$ 157.25	\$ 177.65	\$ 23.12	\$ 176.30	\$ 199.42	12.25%	\$ 21.77
	2,005	\$ 20.40	\$ 169.27	\$ 189.67	\$ 23.12	\$ 189.78	\$ 212.90	12.25%	\$ 23.23
	2,139	\$ 20.40	\$ 181.29	\$ 201.69	\$ 23.12	\$ 203.25	\$ 226.37	12.24%	\$ 24.69
	2,273	\$ 20.40	\$ 193.31	\$ 213.71	\$ 23.12	\$ 216.73	\$ 239.85	12.23%	\$ 26.14
	2,406	\$ 20.40	\$ 205.33	\$ 225.73	\$ 23.12	\$ 230.21	\$ 253.33	12.23%	\$ 27.60
	2,540	\$ 20.40	\$ 217.35	\$ 237.75	\$ 23.12	\$ 243.68	\$ 266.80	12.22%	\$ 29.06
	2,674	\$ 20.40	\$ 229.36	\$ 249.76	\$ 23.12	\$ 257.16	\$ 280.28	12.22%	\$ 30.51

Includes only water and sewer related user charges, does not include stormwater, fire, hydrant, fire sprinklers, or any other charges found on customer's water and sewer bills



137

CUSTOMER BILL IMPACTS: 2.0 SCENARIO

Commercial Inside City Combined Water and Sewer Bill: 5/8" Meter

Usage	Usage	Existing Rates			Proposed Rates			Bill Increase	Bill Increase
		Fixed Charge	Volume Charge	Total	Fixed Charge	Volume Charge	Total		
CF	Gallons	\$	\$	\$	\$	\$	\$	%	\$
0	0	\$ 12.00	\$ -	\$ 12.00	\$ 13.60	\$ -	\$ 13.60	13.33%	\$ 1.60
1,337	10,000	\$ 12.00	\$ 63.10	\$ 75.10	\$ 13.60	\$ 70.77	\$ 84.37	12.35%	\$ 9.27
Avg. Use	2,674	\$ 12.00	\$ 132.35	\$ 144.35	\$ 13.60	\$ 148.45	\$ 162.05	12.26%	\$ 17.69
Avg. Use	4,011	\$ 12.00	\$ 201.60	\$ 213.60	\$ 13.60	\$ 226.12	\$ 239.72	12.23%	\$ 26.12
	5,348	\$ 12.00	\$ 270.86	\$ 282.86	\$ 13.60	\$ 303.80	\$ 317.40	12.21%	\$ 34.54
	6,684	\$ 12.00	\$ 340.11	\$ 352.11	\$ 13.60	\$ 381.47	\$ 395.07	12.20%	\$ 42.96
	8,021	\$ 12.00	\$ 409.36	\$ 421.36	\$ 13.60	\$ 459.14	\$ 472.74	12.20%	\$ 51.38
	9,358	\$ 12.00	\$ 478.61	\$ 490.61	\$ 13.60	\$ 536.82	\$ 550.42	12.19%	\$ 59.81
	10,695	\$ 12.00	\$ 547.10	\$ 559.10	\$ 13.60	\$ 613.66	\$ 627.26	12.19%	\$ 68.16
	12,032	\$ 12.00	\$ 614.88	\$ 626.88	\$ 13.60	\$ 689.73	\$ 703.33	12.20%	\$ 76.45
	13,369	\$ 12.00	\$ 682.66	\$ 694.66	\$ 13.60	\$ 765.80	\$ 779.40	12.20%	\$ 84.74

Includes only water and sewer related user charges, does not include stormwater, fire, hydrant, fire sprinklers, or any other charges found on customer's water and sewer bills



138

CUSTOMER BILL IMPACTS: 2.0 SCENARIO

Commercial Outside City Combined Water and Sewer Bill: 5/8" Meter

	Usage CF	Usage Gallons	Existing Rates			Proposed Rates			Bill Increase %	Bill Increase \$
			Fixed Charge \$	Volume Charge \$	Total \$	Fixed Charge \$	Volume Charge \$	Total \$		
	0	0	\$ 20.40	\$ -	\$ 20.40	\$ 23.12	\$ -	\$ 23.12	13.33%	\$ 2.72
	1,337	10,000	\$ 20.40	\$ 107.31	\$ 127.71	\$ 23.12	\$ 120.19	\$ 143.31	12.22%	\$ 15.60
Avg. Use	2,674	20,000	\$ 20.40	\$ 225.09	\$ 245.49	\$ 23.12	\$ 252.14	\$ 275.26	12.13%	\$ 29.77
Avg. Use	4,011	30,000	\$ 20.40	\$ 342.87	\$ 363.27	\$ 23.12	\$ 384.10	\$ 407.22	12.10%	\$ 43.94
	5,348	40,000	\$ 20.40	\$ 460.65	\$ 481.05	\$ 23.12	\$ 516.05	\$ 539.17	12.08%	\$ 58.11
	6,684	50,000	\$ 20.40	\$ 578.43	\$ 598.83	\$ 23.12	\$ 648.00	\$ 671.12	12.07%	\$ 72.29
	8,021	60,000	\$ 20.40	\$ 696.21	\$ 716.61	\$ 23.12	\$ 779.95	\$ 803.07	12.06%	\$ 86.46
	9,358	70,000	\$ 20.40	\$ 814.00	\$ 834.40	\$ 23.12	\$ 911.90	\$ 935.02	12.06%	\$ 100.63
	10,695	80,000	\$ 20.40	\$ 930.46	\$ 950.86	\$ 23.12	\$ 1,042.40	\$ 1,065.52	12.06%	\$ 114.66
	12,032	90,000	\$ 20.40	\$ 1,045.70	\$ 1,066.10	\$ 23.12	\$ 1,171.54	\$ 1,194.66	12.06%	\$ 128.56
	13,369	100,000	\$ 20.40	\$ 1,160.94	\$ 1,181.34	\$ 23.12	\$ 1,300.68	\$ 1,323.80	12.06%	\$ 142.47

Includes only water and sewer related user charges, does not include stormwater, fire, hydrant, fire sprinklers, or any other charges found on customer's water and sewer bills



139

CUSTOMER BILL IMPACTS: 1.75 SCENARIO

Residential Inside City Combined Water and Sewer Bill: 5/8" Meter

	Usage CF	Usage Gallons	Existing Rates			Proposed Rates			Bill Increase %	Bill Increase \$
			Fixed Charge \$	Volume Charge \$	Total \$	Fixed Charge \$	Volume Charge \$	Total \$		
	0	0	\$ 12.00	\$ -	\$ 12.00	\$ 12.80	\$ -	\$ 12.80	6.67%	\$ 0.80
	134	1,000	\$ 12.00	\$ 4.18	\$ 16.18	\$ 12.80	\$ 4.40	\$ 17.20	6.26%	\$ 1.01
	267	2,000	\$ 12.00	\$ 8.37	\$ 20.37	\$ 12.80	\$ 8.80	\$ 21.60	6.03%	\$ 1.23
	401	3,000	\$ 12.00	\$ 14.74	\$ 26.74	\$ 12.80	\$ 15.50	\$ 28.30	5.85%	\$ 1.56
	535	4,000	\$ 12.00	\$ 21.81	\$ 33.81	\$ 12.80	\$ 22.95	\$ 35.75	5.73%	\$ 1.94
	668	5,000	\$ 12.00	\$ 28.88	\$ 40.88	\$ 12.80	\$ 30.39	\$ 43.19	5.65%	\$ 2.31
Avg. Use	802	6,000	\$ 12.00	\$ 35.95	\$ 47.95	\$ 12.80	\$ 37.84	\$ 50.64	5.60%	\$ 2.69
	936	7,000	\$ 12.00	\$ 43.03	\$ 55.03	\$ 12.80	\$ 45.29	\$ 58.09	5.56%	\$ 3.06
	1,070	8,000	\$ 12.00	\$ 50.10	\$ 62.10	\$ 12.80	\$ 52.73	\$ 65.53	5.53%	\$ 3.43
	1,203	9,000	\$ 12.00	\$ 57.17	\$ 69.17	\$ 12.80	\$ 60.18	\$ 72.98	5.51%	\$ 3.81
	1,337	10,000	\$ 12.00	\$ 64.24	\$ 76.24	\$ 12.80	\$ 67.63	\$ 80.43	5.49%	\$ 4.18
	1,471	11,000	\$ 12.00	\$ 71.31	\$ 83.31	\$ 12.80	\$ 75.07	\$ 87.87	5.47%	\$ 4.56
	1,604	12,000	\$ 12.00	\$ 78.39	\$ 90.39	\$ 12.80	\$ 82.52	\$ 95.32	5.46%	\$ 4.93
	1,738	13,000	\$ 12.00	\$ 85.46	\$ 97.46	\$ 12.80	\$ 89.96	\$ 102.76	5.44%	\$ 5.31
	1,872	14,000	\$ 12.00	\$ 92.53	\$ 104.53	\$ 12.80	\$ 97.41	\$ 110.21	5.43%	\$ 5.68
	2,005	15,000	\$ 12.00	\$ 99.60	\$ 111.60	\$ 12.80	\$ 104.86	\$ 117.66	5.43%	\$ 6.05
	2,139	16,000	\$ 12.00	\$ 106.68	\$ 118.68	\$ 12.80	\$ 112.30	\$ 125.10	5.42%	\$ 6.43
	2,273	17,000	\$ 12.00	\$ 113.75	\$ 125.75	\$ 12.80	\$ 119.75	\$ 132.55	5.41%	\$ 6.80
	2,406	18,000	\$ 12.00	\$ 120.82	\$ 132.82	\$ 12.80	\$ 127.20	\$ 140.00	5.40%	\$ 7.18
	2,540	19,000	\$ 12.00	\$ 127.89	\$ 139.89	\$ 12.80	\$ 134.64	\$ 147.44	5.40%	\$ 7.55
	2,674	20,000	\$ 12.00	\$ 134.96	\$ 146.96	\$ 12.80	\$ 142.09	\$ 154.89	5.39%	\$ 7.93

Includes only water and sewer related user charges, does not include stormwater, fire, hydrant, fire sprinklers, or any other charges found on customer's water and sewer bills



140

CUSTOMER BILL IMPACTS: 1.75 SCENARIO

Residential Outside City Combined Water and Sewer Bill: 5/8" Meter

Usage	Usage Gallons	Existing Rates			Proposed Rates			Bill Increase %	Bill Increase \$
		Fixed Charge	Volume Charge	Total	Fixed Charge	Volume Charge	Total		
CF	Gallons	\$	\$	\$	\$	\$	\$	%	\$
0	0	\$ 20.40	\$ -	\$ 20.40	\$ 21.76	\$ -	\$ 21.76	6.67%	\$ 1.36
134	1,000	\$ 20.40	\$ 7.11	\$ 27.51	\$ 21.76	\$ 7.49	\$ 29.25	6.30%	\$ 1.73
267	2,000	\$ 20.40	\$ 14.22	\$ 34.62	\$ 21.76	\$ 14.97	\$ 36.73	6.09%	\$ 2.11
401	3,000	\$ 20.40	\$ 25.05	\$ 45.45	\$ 21.76	\$ 26.38	\$ 48.14	5.93%	\$ 2.70
535	4,000	\$ 20.40	\$ 37.06	\$ 57.46	\$ 21.76	\$ 39.06	\$ 60.82	5.83%	\$ 3.35
668	5,000	\$ 20.40	\$ 49.08	\$ 69.48	\$ 21.76	\$ 51.73	\$ 73.49	5.76%	\$ 4.01
Avg. Use	802	\$ 20.40	\$ 61.10	\$ 81.50	\$ 21.76	\$ 64.40	\$ 86.16	5.72%	\$ 4.66
	936	\$ 20.40	\$ 73.12	\$ 93.52	\$ 21.76	\$ 77.08	\$ 98.84	5.68%	\$ 5.32
	1,070	\$ 20.40	\$ 85.14	\$ 105.54	\$ 21.76	\$ 89.75	\$ 111.51	5.66%	\$ 5.97
	1,203	\$ 20.40	\$ 97.16	\$ 117.56	\$ 21.76	\$ 102.42	\$ 124.18	5.64%	\$ 6.63
	1,337	\$ 20.40	\$ 109.18	\$ 129.58	\$ 21.76	\$ 115.10	\$ 136.86	5.62%	\$ 7.28
	1,471	\$ 20.40	\$ 121.20	\$ 141.60	\$ 21.76	\$ 127.77	\$ 149.53	5.60%	\$ 7.94
	1,604	\$ 20.40	\$ 133.21	\$ 153.61	\$ 21.76	\$ 140.45	\$ 162.21	5.59%	\$ 8.59
	1,738	\$ 20.40	\$ 145.23	\$ 165.63	\$ 21.76	\$ 153.12	\$ 174.88	5.58%	\$ 9.25
	1,872	\$ 20.40	\$ 157.25	\$ 177.65	\$ 21.76	\$ 165.79	\$ 187.55	5.57%	\$ 9.90
	2,005	\$ 20.40	\$ 169.27	\$ 189.67	\$ 21.76	\$ 178.47	\$ 200.23	5.57%	\$ 10.56
	2,139	\$ 20.40	\$ 181.29	\$ 201.69	\$ 21.76	\$ 191.14	\$ 212.90	5.56%	\$ 11.21
	2,273	\$ 20.40	\$ 193.31	\$ 213.71	\$ 21.76	\$ 203.81	\$ 225.57	5.55%	\$ 11.87
	2,406	\$ 20.40	\$ 205.33	\$ 225.73	\$ 21.76	\$ 216.49	\$ 238.25	5.55%	\$ 12.52
	2,540	\$ 20.40	\$ 217.35	\$ 237.75	\$ 21.76	\$ 229.16	\$ 250.92	5.54%	\$ 13.18
	2,674	\$ 20.40	\$ 229.36	\$ 249.76	\$ 21.76	\$ 241.84	\$ 263.60	5.54%	\$ 13.83

Includes only water and sewer related user charges, does not include stormwater, fire, hydrant, fire sprinklers, or any other charges found on customer's water and sewer bills



141

CUSTOMER BILL IMPACTS: 1.75 SCENARIO

Commercial Inside City Combined Water and Sewer Bill: 5/8" Meter

Usage	Usage Gallons	Existing Rates			Proposed Rates			Bill Increase %	Bill Increase \$
		Fixed Charge	Volume Charge	Total	Fixed Charge	Volume Charge	Total		
CF	Gallons	\$	\$	\$	\$	\$	\$	%	\$
0	0	\$ 12.00	\$ -	\$ 12.00	\$ 12.80	\$ -	\$ 12.80	6.67%	\$ 0.80
1,337	10,000	\$ 12.00	\$ 63.10	\$ 75.10	\$ 12.80	\$ 66.48	\$ 79.28	5.57%	\$ 4.18
Avg. Use	2,674	\$ 12.00	\$ 132.35	\$ 144.35	\$ 12.80	\$ 139.48	\$ 152.28	5.49%	\$ 7.93
Avg. Use	4,011	\$ 12.00	\$ 201.60	\$ 213.60	\$ 12.80	\$ 212.47	\$ 225.27	5.46%	\$ 11.67
	5,348	\$ 12.00	\$ 270.86	\$ 282.86	\$ 12.80	\$ 285.47	\$ 298.27	5.45%	\$ 15.41
	6,684	\$ 12.00	\$ 340.11	\$ 352.11	\$ 12.80	\$ 358.46	\$ 371.26	5.44%	\$ 19.16
	8,021	\$ 12.00	\$ 409.36	\$ 421.36	\$ 12.80	\$ 431.46	\$ 444.26	5.43%	\$ 22.90
	9,358	\$ 12.00	\$ 478.61	\$ 490.61	\$ 12.80	\$ 504.45	\$ 517.25	5.43%	\$ 26.64
	10,695	\$ 12.00	\$ 547.10	\$ 559.10	\$ 12.80	\$ 576.61	\$ 589.41	5.42%	\$ 30.32
	12,032	\$ 12.00	\$ 614.88	\$ 626.88	\$ 12.80	\$ 648.00	\$ 660.80	5.41%	\$ 33.93
	13,369	\$ 12.00	\$ 682.66	\$ 694.66	\$ 12.80	\$ 719.39	\$ 732.19	5.40%	\$ 37.54

Includes only water and sewer related user charges, does not include stormwater, fire, hydrant, fire sprinklers, or any other charges found on customer's water and sewer bills



142

CUSTOMER BILL IMPACTS: 1.75 SCENARIO

Commercial Outside City Combined Water and Sewer Bill: 5/8" Meter

Usage	Usage	Existing Rates			Proposed Rates			Bill Increase	Bill Increase
		Fixed Charge	Volume Charge	Total	Fixed Charge	Volume Charge	Total		
CF	Gallons	\$	\$	\$	\$	\$	\$	%	\$
0	0	\$ 20.40	\$ -	\$ 20.40	\$ 21.76	\$ -	\$ 21.76	6.67%	\$ 1.36
1,337	10,000	\$ 20.40	\$ 107.31	\$ 127.71	\$ 21.76	\$ 113.13	\$ 134.89	5.62%	\$ 7.18
Avg. Use 2,674	20,000	\$ 20.40	\$ 225.09	\$ 245.49	\$ 21.76	\$ 237.33	\$ 259.09	5.54%	\$ 13.59
Avg. Use 4,011	30,000	\$ 20.40	\$ 342.87	\$ 363.27	\$ 21.76	\$ 361.52	\$ 383.28	5.51%	\$ 20.01
5,348	40,000	\$ 20.40	\$ 460.65	\$ 481.05	\$ 21.76	\$ 485.72	\$ 507.48	5.49%	\$ 26.43
6,684	50,000	\$ 20.40	\$ 578.43	\$ 598.83	\$ 21.76	\$ 609.92	\$ 631.68	5.48%	\$ 32.85
8,021	60,000	\$ 20.40	\$ 696.21	\$ 716.61	\$ 21.76	\$ 734.12	\$ 755.88	5.48%	\$ 39.26
9,358	70,000	\$ 20.40	\$ 814.00	\$ 834.40	\$ 21.76	\$ 858.32	\$ 880.08	5.47%	\$ 45.68
10,695	80,000	\$ 20.40	\$ 930.46	\$ 950.86	\$ 21.76	\$ 981.12	\$ 1,002.88	5.47%	\$ 52.03
12,032	90,000	\$ 20.40	\$ 1,045.70	\$ 1,066.10	\$ 21.76	\$ 1,102.65	\$ 1,124.41	5.47%	\$ 58.31
13,369	100,000	\$ 20.40	\$ 1,160.94	\$ 1,181.34	\$ 21.76	\$ 1,224.17	\$ 1,245.93	5.47%	\$ 64.59

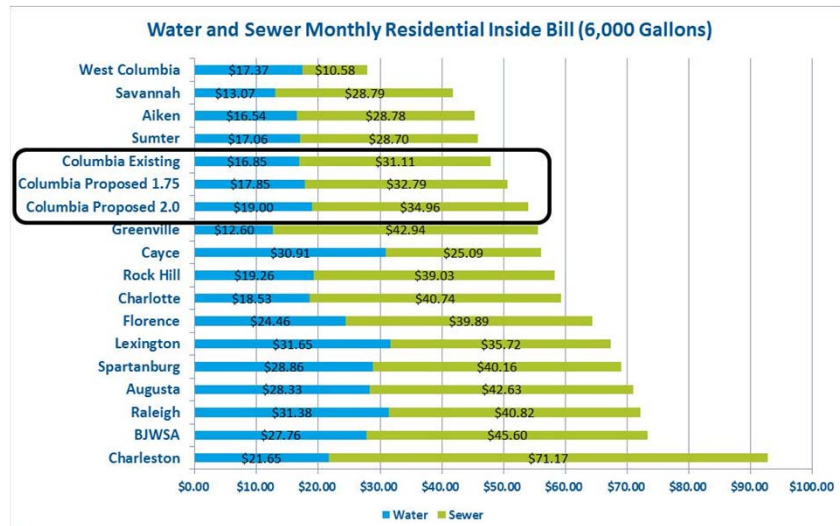
Includes only water and sewer related user charges, does not include stormwater, fire, hydrant, fire sprinklers, or any other charges found on customer's water and sewer bills



143

CUSTOMER BILL IMPACTS

Residential Inside City Combined Water and Sewer Bill: 5/8" Meter



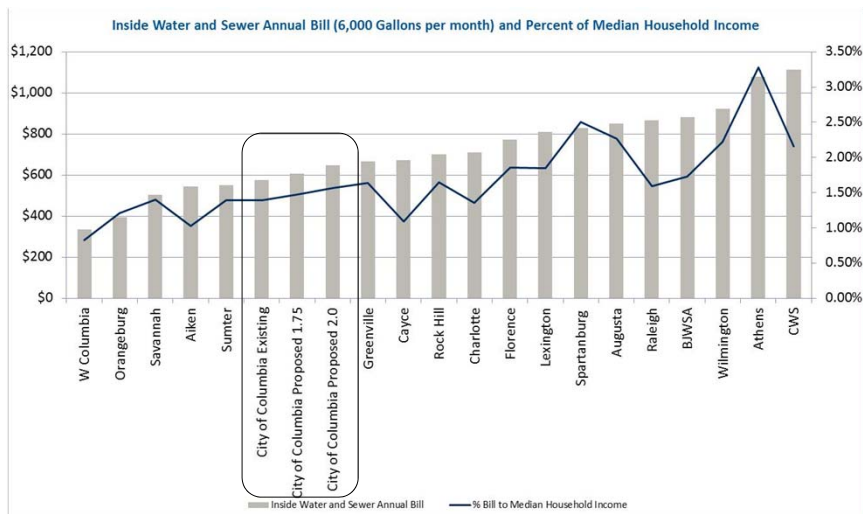
Includes only water and sewer related user charges, does not include stormwater, fire, hydrant, fire sprinklers, or any other charges found on customer's water and sewer bills



144

CUSTOMER BILL IMPACT ON AFFORDABILITY

Residential Inside City Combined Water and Sewer Bill: 5/8" Meter



Includes only water and sewer related user charges, does not include stormwater, fire, hydrant, fire sprinklers, or any other charges found on customer's water and sewer bills



145

All Things Water & Sewer Wrap Up & Next Steps

- **Goals**
 - Meet the requirements of the Consent Decree on time & without additional fines
 - To provide customers with a sustainable, well-maintained, safe & reliable water & sewer system
 - Operationally efficient & expertly managed
 - Seek to maintain recommended 2.0 coverage & liquidity levels
 - Provide the infrastructure needed to continue to spur economic growth in the region
 - Continue to treat & maintain the system as one of our greatest assets
- **Timeline**
 - March 17th: Staff to make recommendations regarding proposed fees & ordinance changes
 - Proceed with recommended 12.1% combined W&S revenue increase in FY 15/16
 - April 7th: Public hearing & 1st reading
 - April 21st: 2nd reading



146

Questions & Comments



147