DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY

Board of Directors

DC Retail Water and Sewer Rates Committee

Thursday, November 29, 2018

9:30am

1. **Call to Order** ..... **Rachna Bhatt, Chairperson**

2. **Customer Assistance Program Expansion Update** (Attachment A) .....**Matthew Brown**

3. **Action Item** (Attachment B) .....**Matthew Brown**
   - Approval to Expand DC Water's Customer Assistance Program (CAP) to Eligible Customers (Action Item 1)

4. **FY2020 Budget Considerations** (Attachment C) .....**Matthew Brown**

5. **Path to Achieve Asset Management** (Attachment D).....**Matthew Brown**

6. **DC Retail Water and Sewer Rates Committee Workplan** .....**Matthew Brown**
   - FY 2019 Proposed DC Retail Rates Committee Workplan (Attachment E)

7. **Agenda for December 18, 2018 Committee Meeting** (Attachment F)….**Rachna Bhatt, Chairperson**

8. **Other Business**.....**Matthew Brown**

9. **Executive Session***

10. **Adjournment**

FOLLOW-UP-ITEMS – DC Retail Water and Sewer Rates Committee Meeting (October 23, 2018)

There were no follow-up items

* The DC Water Board of Directors may go into executive session at this meeting pursuant to the District of Columbia Open Meetings Act of 2010, if such action is approved by a majority vote of the Board members who constitute a quorum to discuss: matters prohibited from public disclosure pursuant to a court order or law under D.C. Official Code § 2-575(b)(1); contract negotiations under D.C. Official Code § 2-575(b)(1); legal, confidential or privileged matters under D.C. Official Code § 2-575(b)(4); collective bargaining negotiations under D.C. Official Code § 2-575(b)(5); facility security under D.C. Official Code § 2-575(b)(8); disciplinary matters under D.C. Official Code § 2-575(b)(9); personnel matters under D.C. Official Code § 2-575(b)(10);proprietary matters under D.C. Official Code § 2-575(b)(11); decision in an adjudication action under D.C. Official Code § 2-575(b)(13); civil or criminal matters where disclosure to the public may harm the investigation under D.C. Official Code § 2-575(b)(14), and other matters provided in the Act.

Attachment A

Customer Assistance Program Expansion

Presentation to the DC Retail Water and Sewer Rates Committee,
November 29, 2018

District of Columbia Water and Sewer Authority

Blue Plains Advanced Wastewater Treatment Plant

Purpose

- Review comments received on the proposed Customer Assistance Program Expansion proposal
- Seek committee's recommendation to the full board for approval of the program

Definitions

- **Customer Assistance Program (CAP)** – Existing program that uses LIHEAP (Low Income Home Energy Assistance Program) criteria to provide DC Water-funded discounts to low-income residential customers with incomes up to 60 percent of the State Median Income (SMI from Health and Human Services (HHS))

- **Customer Assistance Program II (CAP2)** – DC Water's proposed expanded program for low-income residential customers who do not qualify for CAP with household income up to 80% Area Median Income (AMI)

- **Customer Assistance Program III (CAP3)** – New District-funded program to provide benefits to DC Water customers with household income greater than 80% and up to 100% Area Median Income (AMI) who do not qualify for CAP or CAP2

- **CRIAC (Clean Rivers Impervious Area Charge) Nonprofit Relief Program** – New District-funded program to provide CRIAC credits to nonprofit organizations as determined by the District Department of the Environment (DOEE)

Purpose

- Comparison of existing (CAP) and new customer assistance programs (CAP2 and CAP3)

	CAP	CAP2	CAP3
	Existing	New	New
Funding	DC Water	DC Water	District
Income Eligibility (Households of four persons)	$59,457	$93,750	$117,200
Water and Sewer	4 CCFs	3 CCFs	-
District Fees	Waived	-	-
Water System Replacement Fee	Waived	-	-
CRIAC	50% discount	50% discount	75% discount
Monthly Discount	$63.16	$43.48	$17.25

Income Limits for CAP, CAP2 and CAP3

Household Income Limits for Expansion of the Customer Assistance Program (CAP)			
Persons	CAP Income Limit 60% of SMI	CAP 2 Income Limit 80% of AMI	CAP 3 Income Limit 100% AMI
1	$30,916	$65,650	$82,050
2	$40,431	$75,000	$93,750
3	$49,944	$84,400	$105,500
4	$59,457	$93,750	$117,200
5	$68,970	$101,250	$117,200*
6	$78,483	$108,750	$117,200*
7	$80,267	$116,250	$117,200*
8	$82,051	$117,200*	$117,200*

- The median family income for the Washington-Arlington-Alexandria, DC-VA-MD HUD Metro FMR (Fair Market Rent) Area is $117,200 for FY2018
- The Department of Housing and Urban Development calculates median household income (MHI) by "capping" the number at the US median family income level, and then making an (upward) adjustment for high housing cost areas; the "capped" Low 80% Income Limit for a family of four is $77,450
- The proposed program uses the "uncapped" income levels; the "uncapped" Income Limit for a family of four is $93,750

Customer Assistance Program (Existing)

- DC Water has a statutory mandate to mitigate the impact of any increases in retail water and sewer rates on low-income residents of the District
- Existing CAP program provides an approximately 58% discount to those who qualify:
  - Exempt First four CCFs of water and sewer, and associated PILOT and ROW
  - Water System Replacement fee is waived
  - Fifty percent of the Clean Rivers Impervious Area Charge (CRIAC) is waived
- Eligibility is determined by the District Department of Energy and Environment (DOEE)
- DOEE determines eligibility based on the LIHEAP criteria

DC Water

- **CAP2 (Residential)**
  - Customers would be provided an exemption of up to three CCFs of water and sewer and 50% CRIAC
    - Benefits will be provided to eligible households retroactively from October 1, 2018
  - At an average monthly discount of $43.48 (3 CCFs of water and sewer and 50% off one ERU), DC Water can serve 10,541 customers
  - This program is for one year, through September 30, 2019
  - Program will be capped at $6 million, $5.5 million in benefits to customers and up to $0.5 million for administrative costs; plus District contributing additional funds for this program
    - When this level is reached, the program will be discontinued

District Government

- **CAP3 (Residential):**
  - Eligibility - Single-family households and individually metered tenants with household income at or above 80% AMI and below 100% AMI
  - Benefits - 75% of the CRIAC
- **CRIAC Non-Profit Relief Program**
  - Eligibility - Non-profits must:
    - Successfully obtain status as a non-profit
    - Show significant financial hardship
    - Comply with on-site and off-site stormwater mitigation BMP
    - Allow DOEE to visit the site of the organization
  - Benefit - Credit of up to 90% off of the billed CRIAC charges; provided retroactively for entire fiscal year; and must reapply to continue benefits

Comments Received

- **No written comments received**

Timeline Scenario
January 2019 Implementation

07/05/18 – Board approved one-time transfer from Rate Stabilization Fund (RSF) in FY 2019

09/25/18 – **RRC** to update and recommend proposed CAP regulations

10/04/18 – **Board approval** of proposed CAP regulations

10/19/18 – Publish Notice of Proposed Rulemaking (NOPR) for CAP regulations

10/19/18 – Publish Notice of Public Hearing (NOPH) for CAP regulations

10/19/18 – Public Comment Period
11/19/18 – End of Public Comment Period

10/30/18 – **Public Hearing**

11/29/18 – **Special RRC meeting** to recommend final CAP regulations

12/06/18 – **Board approval** of final CAP regulations

12/21/18 – Publish Notice of Final Rulemaking (NOFR) for CAP regulations

01/01/19 – **Go-Live** with CAP2 and implement CAP3 and CRIAC Relief Program benefits

Funding Source & Design Assumptions

	DC Water Funded		DOEE Funded	
	CAP	CAP2	CAP3	Non-Profit
Funding	$1.2M Recovered through rates	$6.0M from Rate Stabilization Fund $5.5M for benefits *$1.2M from DOEE for CRIAC benefits	$1.3M from DOEE	$3.35M from DOEE
Forecasted Customers	3,575	12,840	4,900	
Eligibility Validation	Performed by DOEE			
Account Status Validation	Performed by DCW			
Bill Application	Rate Credit		Payment Credit	
Impacted Charges	4 CCF Water, Sewer, PILOT, ROW 50% CRIAC 100% WSRF	3 CCF Water, Sewer 50% CRIAC	Determined by DOEE for CRIAC only	Determined by DOEE up to 90% CRIAC
Retroactive	Back to later of: • Date of enrollment • As early as 10/1/2018	Retroactive to 10/1/2018 if applied before 3/1/2019	Lump sum back to 10/1/2018 and monthly until 9/30/19	Lump sum back to 10/1/2018 and monthly until 9/30/19

Attachment B

DC Retail Water and Sewer Rates Committee

Action Item 1

1. Approval to Expand DC Water's Customer Assistance Program (CAP) to Eligible Customers

ACTION ITEM 1

Customer Assistance Program Expansion Summary

1. Adopt regulations to expand DC Water's Customer Assistance Program (CAP), effective January 1, 2019, as summarized below and provided in Attachment A:

CAP2 (Residential Customers)

- Eligible single-family or individually metered Residential customers shall receive a discount of 3 Ccf on their billed water and sewer service charges and 50% on their billed Clean Rivers Impervious Area Charge (CRIAC).

- CAP2 program expenditures will not exceed $6 million authorized by Board; $5.5 million in benefits to customers and $0.5 million for administrative costs.

- Should the District provide additional funds for the CAP2 program, Board approval will be sought to continue the program with the funds provided.

- If DC Water determines that budgeted funds are not sufficient, DC Water will suspend accepting new CAP2 applicants, or suspend providing CAP2 benefits.

- DOEE will determine the CAP2 applicant's financial eligibility based on household-income limits equal to or above 60% of the state medium income and below 80% of the area medium income, not capped by the U.S. median low-income limit.

- CAP2 applicants that submit a complete CAP2 application to DOEE before March 1, 2019 shall CAP2 benefits retroactive for Fiscal Year 2019 from October 1, 2018 and terminate on September 30, 2019. CAP2 applicants that submit a complete CAP2 application to DOEE on or after March 1, 2019 shall receive CAP2 benefits from the date of submittal and terminate on September 30, 2018.

2. Adopt regulations to implement the District Department of Energy and Environment (DOEE) CAP3 and CRIAC Non-Profit Relief Programs:

   a. Proposal to establish procedures to provide credits to certain single-family or individually-metered Residential Customers authorized by DOEE to receive the DOEE's Customer Assistance Program Expansion (CAP3) credits:

CAP3 (Residential Customers)

- Eligible single-family or individually-metered Residential customers shall receive CAP3 benefits as defined by DOEE, subject to the availability of District funds.

- CAP3 credits will be applied to eligible Residential customers' accounts provided DOEE notifies DC Water of the customers' eligibility, and DC Water receives funds from DOEE to apply the credits.

- CAP3 credits will be provided from the date DOEE approves the CAP3 applicant's financial eligibility for the CAP3 benefit period, subject to the availability of District funds.

b. Proposal to establish procedures to provide credits to certain nonprofit customers authorized by DOEE to receive the District's CRIAC Nonprofit Relief Program credits:

CRIAC Nonprofit Relief Program (Non-Residential Customers)

- Eligible non-residential customers shall receive CRIAC Nonprofit Relief Program benefits as defined by DOEE, subject to the availability of District funds.

- CRIAC Nonprofit Relief Program benefits will be applied to non-residential customers' accounts provided DOEE notifies DC Water of the customers' eligibility, and DC Water receives funds from DOEE to apply the credits.

- CRIAC Nonprofit Relief Program benefit period will be the entire Fiscal Year 2019, beginning October 1st and ending September 30th, subject to the availability of funds.

- CRIAC Nonprofit Relief Program customers are required to reapply for the benefits at least 30-days, and no more than 60-days before the end of the benefit period.

Attachment A

DC Water's CAP Expansion - Final Rulemaking
Effective January 1, 2019

Chapter 41, RETAIL WATER AND SEWER RATES, of Title 21 DCMR, WATER AND SANITATION, is amended as follows:

Section 4102, CUSTOMER ASSISTANCE PROGRAMS, is amended to read as follows:

4102 CUSTOMER ASSISTANCE PROGRAMS

4102.1 CUSTOMER ASSISTANCE PROGRAM

(a) Participation in the Customer Assistance Program (CAP) shall be limited to a single-family or individually-metered Residential Customer that meets the following eligibility requirements:

(1) The applicant is responsible for paying for water and sewer services and/or the Clean Rivers Impervious Surface Area Charge (CRIAC); and

(2) The Department of Energy & Environment (DOEE) has determined that the CAP applicant's annual household income meets the household income-eligibility requirements for the District's Low Income Home Energy Assistance Program (LIHEAP), below sixty percent (60%) of the State Median Income (SMI) for the District of Columbia.

(b) An approved CAP customer shall receive the following benefits:

(1) Exemption from water service charges, sewer service charges, Payment-in-Lieu of Taxes (PILOT) fees and Right-of-Way (ROW) fees for the first Four Hundred Cubic Feet (4 Ccf) per month of water used. If the customer uses less than Four Hundred Cubic Feet (4 Ccf) of water in any month, the exemption will apply based on the amount of that month's billed water usage;

(2) Credit of one hundred percent (100%) off of the monthly billed Water System Replacement Fee; and

(3) Credit of fifty percent (50%) off of the monthly billed CRIAC.

(c) Upon DC Water's receipt of notice from DOEE that the CAP applicant meets the financial eligibility requirements, DC Water shall provide the CAP discounts to the CAP customer's account from the date that

DOEE accepts a completed CAP application to the end of the fiscal year in which the application was submitted.

(d) To continue receiving CAP benefits without interruptions, the CAP customer must submit a renewal CAP application to DOEE in accordance with the Utility Discount Program renewal deadline. A CAP customer that submits their renewal CAP application after this period, and is subsequently approved by DOEE, will receive CAP benefits as of the date of the application.

4102.2 CUSTOMER ASSISTANCE PROGRAM II (CAP2)

(a) Participation in the CAP2 Program shall be limited to a single-family or individually-metered Residential Customer that meets the following eligibility requirements:

(1) The applicant maintains an active DC Water account and is responsible for paying for water and sewer services and/or the CRIAC; and

(2) DOEE has determined that the CAP2 applicant's annual household income is equal to or above the household income-eligibility limits for the District's LIHEAP, sixty percent (60%) of the SMI for the District of Columbia and below eighty percent (80%) of the Area Median Income (AMI) for the District of Columbia, not capped by the United States median low-income limit.

(b) An approved CAP2 customer shall receive the following benefits, subject to the availability of funds:

(1) Exemption from water service charges and sewer service charges for the first three Hundred Cubic Feet (3 Ccf) per month of water used. If the customer uses less than three Hundred Cubic Feet (3 Ccf) of water in any month, the exemption will apply based on the amount of that month's billed water usage; and

(2) Credit of fifty percent (50%) off of the monthly billed CRIAC.

(c) Upon DC Water's receipt of notice from DOEE that the CAP2 customer meets the financial eligibility requirements, DC Water shall provide the CAP2 benefits for not more than the entire Fiscal Year 2019, beginning October 1, 2018 and terminating on September 30, 2019, subject to the availability of budgeted funds.

(1) CAP2 customers that submit a complete application to DOEE before March 1, 2019, shall receive CAP2 benefits retroactive to October 1, 2018 and terminating on September 30, 2018.

(2) CAP2 customer that submit a complete application on or after March 1, 2019, shall receive CAP2 benefits as of the date of submittal and terminating on September 30, 2018.

(d) If DC Water determines that the remaining budgeted funds are insufficient to provide CAP2 benefits, DC Water may:

(1) Suspend the process for accepting CAP2 applicants; or

(2) Suspend providing CAP2 benefits to CAP2 recipients.

(e) The CAP2 Program shall terminate on September 30, 2019.

4102.3 Eligibility for the CAP and CAP2 Programs shall be determined by DOEE based on the income eligibility criteria provided in § 4102.1(a)(2) and § 4102.2(a)(2).

4102.4 DOEE CUSTOMER ASSISTANCE PROGRAM III FOR SINGLE-FAMILY AND INDIVIDUALLY METERED HOUSEHOLDS

(a) DC Water shall apply DOEE Customer Assistance Program III (CAP3) benefits to an eligible single-family or individually-metered Residential Customer's account in accordance with the following:

(1) The applicant maintains an active DC Water account and is responsible for paying for water and sewer services and/or the CRIAC;

(2) DOEE has notified DC Water that the customer has met the requirements of 20 DCMR Chapter 37 and is eligible to receive the CAP3 benefits;

(3) DOEE has notified DC Water of the amount of the CAP3 benefits to be applied to the CAP3 customer's account; and

(4) DOEE has transferred funds to DC Water for the benefits applied to the customer's account.

(b) DC Water shall stop applying CAP3 benefits to a CAP3 customer's account upon receipt of notice from DOEE that the customer is no longer eligible for the CAP3 benefits, or receipt of notice from DOEE regarding the unavailability of funds.

(c) If DC Water determines that the remaining budgeted funds are insufficient to provide CAP3 benefits, DC Water may:

(1) Suspend the process for accepting CAP3 applicants; or

(2) Suspend providing CAP3 benefits to CAP3 recipients.

4102.5 DOEE CLEAN RIVERS IMPERVIOUS SURFACE AREA CHARGE RELIEF PROGRAM FOR NONPROGIT ORGANIZATIONS

(a) DC Water shall apply DOEE CRIAC Relief Program for Nonprofit Organizations (CRIAC Nonprofit Relief Program) benefits to an eligible non-profit organization's account in accordance with the following:

(1) The applicant maintains an active DC Water account and is responsible for paying for the CRIAC charges;

(2) DOEE has notified DC Water that the customer has met the requirements provided in 21 DCMR § 565 and is eligible to receive CRIAC Nonprofit Relief Program benefits;

(3) DOEE has notified DC Water of the amount of the benefits to be applied to the nonprofit organization's account each billing period; and

(4) DOEE has transferred funds to DC Water for the CRIAC Nonprofit Relief Program benefits applied to the customer's account.

(b) DC Water shall stop applying CRIAC Nonprofit Relief Program benefits to a customer's account upon notice from DOEE that the customer is no longer eligible for the CRIAC Nonprofit Relief Program benefits.

(c) If DC Water determines that the remaining budgeted funds are insufficient to provide CRIAC Nonprofit Relief Program benefits, DC Water may:

(1) Suspend the process for accepting CRIAC Nonprofit Relief Program applicants; or

(2) Suspend or adjust providing CRIAC Nonprofit Relief Program benefits to CRIAC Nonprofit Relief Program recipients.

4102.6 Nothing in this section shall be interpreted to mean that the benefits provided through DC Water's CAP or CAP2 Programs or DOEE's CAP3 or

CRIAC Nonprofit Relief Programs are an entitlement, continuing or otherwise.

4102.7 For the purposes of this section, the term “SMI” means the state median income as determined on an annual basis by the U.S. Department of Health and Human Services (HHS).

4102.8 For the purposes of this section, the term “AMI” means the Area Median Income (AMI), alternately referred to as the HUD Area Median Family Income (HAMFI), determined on an annual basis by the U.S. Department of Housing and Urban Development (HUD).

Attachment C

FY2020 Budget Considerations

Presentation to the DC Retail Water and Sewer Rates Committee

November 29, 2018

District of Columbia Water and Sewer Authority

Blue Plains Advanced Wastewater Treatment Plant

FY 2020 Budget Considerations

FY 2020 Budget Considerations

- Capital Plan
  - Clean Rivers Impervious Area Charge
  - District Stormwater Pumping Stations
  - DDOT paving requirements
- Financial Plan
  - PILOT and ROW payments
  - Days of cash on hand
  - Clean Rivers Funding

FY 2020 Budget Considerations

- Clean Rivers Impervious Area Charge
  - Working with Stakeholder Alliance and Raftelis consulting to determine options
  - Revenue requirement of $121.2 million for FY 2020
  - Options must be evaluated against criteria

Possible Criteria

Existing ERU Approach

Criteria		
Equity	🟡	Concern: that customers with little water use pay more than their "fair share"
Administrative Feasibility	🟢	Easily billable based on flyover results
Revenue Neutrality	🟢	Sufficient revenue is raised to pay debt service costs
Federal Government	🟢	Federal government pays about $20 million a year, would pay less if allocated based on water usage
Legal defensibility	🟢	Has been defended in court
Executable	🟢	Yes – has been in effect since 2009
Adheres to Industry Practice	🟢	This is a common industry practice for recovering wet weather program costs

Possible Criteria

- Recover some Clean River costs from a volumetric rate

Criteria		
Equity	🟡	Some would pay less, but others (including multi-family customers) would pay more
Administrative Feasibility	🟢	Easily billable based on flyover results and metered billings
Revenue Neutrality	🟢	Sufficient revenue is raised to pay debt service costs
Federal Government	🟡	Federal government would pay much less
Legal defensibility	🟡	Current methodology has been in place since 2009
Executable	🟢	This could be implemented
Adheres to Industry Practice	🟢	Sewer flows do contribute a large amounts to CSO volumes

Shifting Cost from CRIAC to Sewer Volumetric Rate

- Customer Impact:
  - Assessed here as 50% for illustrative purposes. Actual shift would be determined based on policy consideration
  - As a class, Multi-family and Commercial would pay more while Federal Government paid less
  - Small volume customers in every class would generally pay less

Monthly	Average Household	Sample Multi-Family	Sample Commercial	Sample Cemetery	Sample Church (High Con)	Sample Church (Low Con)
Monthly CCF	6.2	92.5	4,478	4.0	876	9.42
ERU	1	6.3	52.2	115.1	128.6	59.2
FY2019 Monthly Total Bill	$108	$1,301	$59,448	$3,015	$14,946	$1,654
FY 2019 Estimated Total Bill with 50% IAC recovered through Volumetric Charge	$108	$1,398	$67,043	$1,698	$15,070	$991

Possible Criteria

- DC and Fed pays for impervious area in right-of-way (streets & sidewalks)

Criteria		
Equity	🟡	The cost recovery burden shifts from utility customers to local taxpayers
Administrative Feasibility	🟡	New customer setup in billing system and new payables for DC government
Revenue Neutrality	🔴	Could be issues if DC and Fed do not agree to pay
Federal Government	🟡	Federal government would pay more IAC in its ROW
Legal defensibility	🟢	Would not be challenged if District agrees
Executable	🟢	Would not be difficult or costly to implement
Adheres to Industry Practice	🟡	It is uncommon for local right-of-way to be billed for impervious area

Clean Rivers Funding

- Federal and District Right-of Way (ROW) is about 40% of impervious cover
  - This transportation infrastructure is not charged the IAC
  - 40% of the $113 million IAC collected in FY17 is $45 million
  - There are a total of 680,000 ERUs (Equivalent Residential Unit) in the District, and about 270,000 of ROW ERUs
  - If DC Water received payment for transportation right-of-way, the impervious area charge could be reduced by about $9.15 per month

Clean Rivers Funding

- The suburban share of the Clean Rivers Program was determined as part of the 2012 IMA Agreement (a 12-year process); including the cost allocation basis in nitrogen and CSO (a 4-year process)
  - Cost allocation review involved chief executives of the five jurisdictions, and of the scenarios contemplated, a 7.1 percent cost allocation basis was adopted
    - Based on calculation of excess flow delivered to Blue Plains during wet weather events as well as discharge at meter locations for the various IMA jurisdictions
  - Analysis also considered other analysis:
    - Difference in tunnel storage volume required in a year and percent of suburban use in the Long-Term Control Plan (LTCP)
    - Difference in annual volume exceeding treatment capacity in an aver year (Annual CSO Overflow Volume)
    - Difference in volume exceeding treatment capacity for the largest storm in a 3 year design period
    - Difference in annual wet weather volume handled in an average year
    - Evaluation of what suburban customers might need to do to if peak flows were not handled by the District of Columbia system

Clean Rivers Funding

- Since FY 2003, DC Water has received Congressional CSO appropriations totaling $252.8 million
- Of this amount, $14.0 million appropriated for FY 2018 under Public Law 115-41 was received from the Treasury in May 2018
- Under Public Law total federal payment to the District totaled $90 million

Stormwater Pumping Stations

- 16 Stormwater Pumping Stations protect District roads from flooding
- Constructed by the DC government from 1935 to 1974. In 2009, the DC Attorney General determined they were the responsibility of DC Water
- DC Water anticipates refurbishing them at a cost of approximately $50 million over the ten year capital program, beginning in FY 2019
  - Within the 10-year timeframe, work at all 16 pump stations is planned
  - Upgrades include installation of new emergency generators, electrical gear, replacement pumps, valves, piping, supervisory control and data acquisition (SCADA) and high voltage systems, and improvements in lighting, access hatches and grating and fire alarms
- Work is partially funded by three FEMA grants totaling $3.3 million, with potential for future grants

Fiscal Year	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28
Funding	$5,901	$7,160	$1,514	$6,146	$1,897	$3,185	$5,435	5,759	$4,073	5,726

Paving Requirements

- The District Department of Transportation (DDOT) Paving Requirement requires curb to curb surface restoration, rather than spot repairs
- DC Water estimates that this increases paving costs by about 50%, or about $7 million each year

Below is an example from a Small Diameter Water Main (SDWM) contract comparing the cost of the DDOT requirement and without it:

Example from SDWM contract 10a (approx. 5.4 Miles of watermain)

12,204	SQYD of PCC Base	$86.00 per sqyd	$1,049,548
75,255	SQD asphalt	$23.00 per sqyd	$1,730,865
			$2,780,413

If we paved the 'cuts' only, the patch area is approximately the same as the base area:

12,204	SQYD of PCC Base	$86.00 per sqyd	$1,049,548
12,204	SQD asphalt	$23.00 per sqyd	$280,692
			$1,330,240

PILOT & ROW Payments

- PILOT and ROW payments
  - PILOT (Payment in Lieu of Taxes) – Totals $16.6 million for FY 2019. The PILOT payment is governed by an MOU signed on December 15, 2014 between the District and DC Water; the MOU provides for annual escalation of 2 percent beginning FY 2016 through 2024
  - ROW (Right-of-Way) – This annual payment of $5.1 million is governed by an MOU signed on October 6, 2014, between the District and DC Water, for the occupation of the public right-of-way by water and sewer mains maintained and operated by DC Water
  - Both PILOT and ROW are passthrough charges that DC Water collects from its customers and remits to the District

Days of Cash On Hand

- DC Water Board policy is to maintain $120 million, or 120 days of cash on hand
- DC Water management practice has been to maintain at least $140 million
  - As expenditures increased every year, holding a $140 million balance means that the number of days of cash will decreased each year
- $140 million cash-on-hand plus $61.450 million Rate Stabilization Fund balance have equaled more than 250 days of cash
  - Per rating agency scorecards, AAA utilities maintain a balance of greater than 250 days of cash
- A revision to Board policy to maintain 250 days-of-cash on-hand could help ensure that DC Water maintains the highest credit rating
  - Could be phased in, with an initial requirement to build days-of-cash on-hand through any year-end surplus

Days Cash on Hand

- A change to the Board policy to require 250 days-of-cash on hand would help ensure high credit ratings
- A drop in credit ratings from AAA to AA+ will cost the Authority $19.1 million over a 10 year period

	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Operating and Maintenance	$ 313,869,035	$ 320,137,447	$ 338,498,706	$ 348,334,650	$ 358,462,353	$ 368,890,500	$ 379,628,035
Less: PILOT, ROW & Stormwater	21,057,041	21,376,182	23,701,706	22,033,740	23,372,415	22,717,863	23,429,624
Net Operating and Maintenance	$ 292,811,994	$ 298,761,265	$ 314,797,000	$ 326,300,910	$ 335,089,938	$ 346,172,637	$ 356,198,411
Daily Operating Expenditures	$ 813,367	$ 829,892	$ 874,436	$ 906,391	$ 930,805	$ 961,591	$ 989,440
Ending Cash Balance	$ 147,212,244	$ 166,795,693	$ 140,000,000	$ 140,000,000	$ 140,000,000	$ 140,000,000	$ 140,000,000
Rate Stabilization Fund (RSF)	$ 61,450,000	$ 61,450,000	$ 55,450,000	$ 55,450,000	$ 55,450,000	$ 55,450,000	$ 55,450,000
Ending Cash Balance including RSF	208,662,244	228,245,693	195,450,000	195,450,000	195,450,000	195,450,000	195,450,000
Days Cash on Hand	257	276	223	216	210	204	198

Attachment D

dc water is life

Path to Achieve Asset Management
Financial Impacts - Customer & Debt Service

Presentation to the DC Retail Water and Sewer Rates Committee
November 29, 2018

District of Columbia Water and Sewer Authority

Agenda

- Review financial metrics important to DC Water and credit agencies
- Discuss the capital plan scenarios and their impact on those financial metrics
- Assess the impact of increased capital spending on our customers

Overview of Capital Improvement Program

Rolling 10 year CIP Options Compared

Service Area	Current Baseline	Modified Baseline	Asset Management
DCCR	**Fully funded** to meet Consent Decree	**Fully funded** to meet Consent Decree	**Fully funded** to meet Consent Decree
Wastewater	**Generally funded** to meet NPDES Permit and established levels of service	**Fully funded** to meet NPDES Permit and established levels of service	**Fully funded** to meet NPDES Permit and established levels of service
Stormwater	**Underfunded**	**Fully funded**	**Fully funded**
Water			
Pump Stations & Storage Facilities	**Generally funded** to current service levels	**Generally funded**	**Fully funded**
Small Diameter WMs	**Underfunded to meet 1%** replacement/rehab goal **[11 mi/year]**	**Funded to meet 1%** per year replacement level (increased cost is due to switch to full replacement)	**Fully funded to ramp up to 2%** replacement level **[22 mi/year]**
Large Diameter WMs	**Generally funded**	**Generally funded**	**Generally funded**
Sewer			
Pump Stations	**Underfunded**	**Fully funded**	**Fully funded**
Sewer Lines < 60" dia.	**Substantially underfunded [0.35%; 6.2 mi/year]**	**Funded to ramp up to 1.0%** per year rehabilitation level **[17.5 mi/year]** by FY23 and onwards	**Fully funded to ramp up to 2.3%** rehabilitation level **[40 mi/year]**
Sewer Lines ≥ 60"	**Generally Funded**	**Generally Funded**	**Generally Funded**
Non Process	**Fully funded** for HQ, Fleet and Sewer Operations Facilities	**Fully funded** for HQ, Fleet and Sewer Operations Facilities	**Fully funded** for HQ, Fleet and Sewer Operations Facilities

'Generally Funded' = What we know or expect to find can be repaired 'Underfunded' = What we know or expect to find is not all funded 'Fully Funded' = All needs known or expected are met

Rolling 10 year CIP Options

x1000's	Current Baseline $4.1 Billion	Modified Baseline $5.0 Billion	Asset Management $6.5 Billion
Engineering CIP Total	$3,764,107	$4,435,378	$ 5,417,230
Capital Equipment	Underfunded	Generally Funded	Fully Funded
	$170,539	$347,529	$370,434
Washington Aqueduct	Generally Funded	Fully Funded except Federally Owned Water Main (FOWM) and Advanced Treatment	Fully Funded
	$118,600	$187,303	$670,827
Additional Capital Programs Total	$289,139	$534,832	$1,041,261
TOTAL	$4,053,246	$4,970,211	$ 6,458,490

'Generally Funded' = What we know or expect to find can be repaired 'Underfunded' = What we know or expect to find is not all funded 'Fully Funded' = All needs known or expected are met

Summary of CIP Options by Program

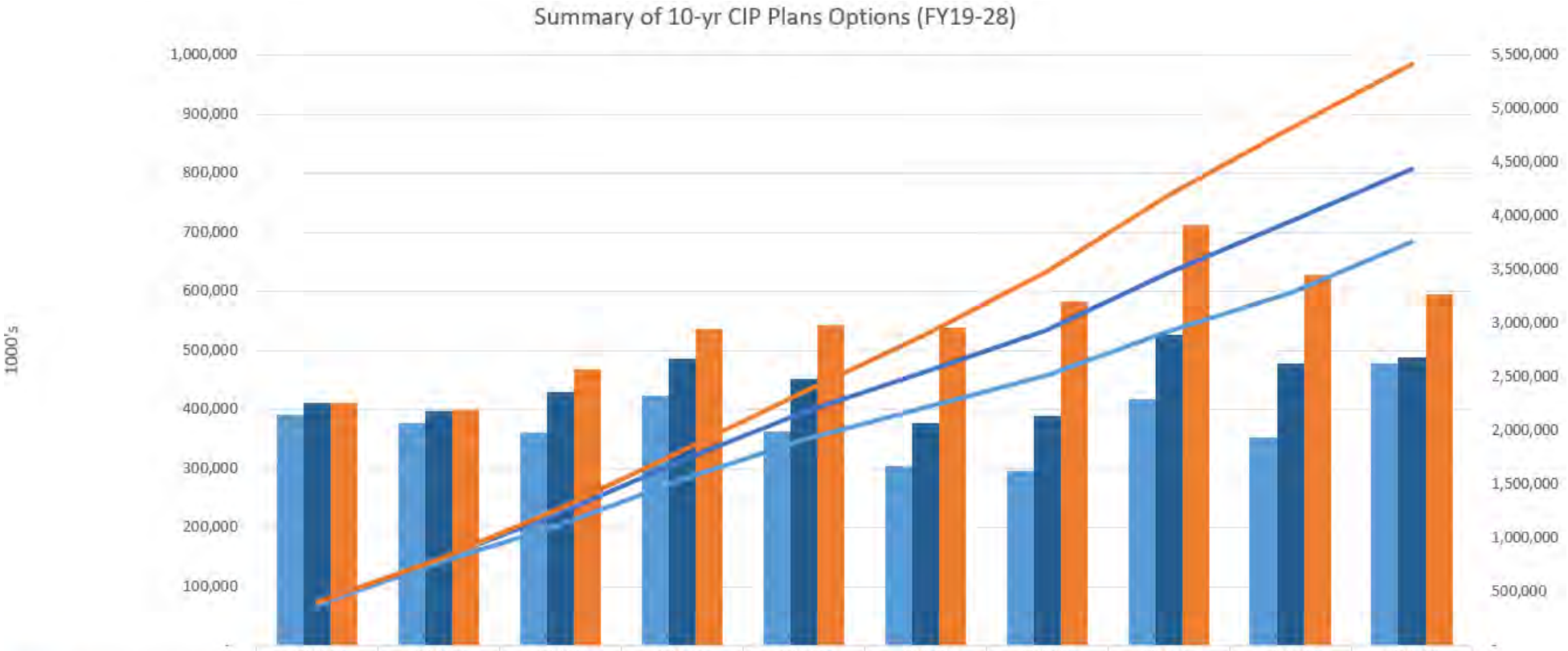
$ in thousands

Approved Baseline (+FY18) $4.1 Billion	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	10 yr Total
Non Process Facilities	33,107	18,907	7,860	1,551	25	6,615	7,773	-	-	4,000	79,838
Wastewater Treatment	74,617	77,853	87,960	89,820	69,560	51,607	62,172	117,623	129,252	117,551	878,014
Combined Sewer Overflow	200,343	160,554	148,121	203,086	164,508	79,692	65,611	135,797	92,819	91,453	1,341,984
Stormwater	4,909	2,400	2,312	5,839	1,212	1,784	1,642	1,276	2,133	9,845	33,353
Sanitary Sewer	32,947	34,046	53,050	74,492	73,917	75,912	58,882	60,769	38,672	137,088	639,776
Water	45,747	84,256	62,341	48,241	53,471	88,055	99,661	101,344	89,510	118,514	791,143
Engineering CIP Total	391,670	378,015	361,644	423,029	362,694	303,666	295,742	416,809	352,386	478,452	3,764,107
Additional Capital Programs	47,448	42,327	41,037	22,618	22,618	22,618	22,618	22,618	22,618	22,619	289,139
Approved Total CIP	439,118	420,342	402,681	445,647	385,312	326,284	318,360	439,427	375,004	501,071	4,053,246

Modified Baseline Progam $5.0 Billion	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	10 yr Total
Non Process Facilities	16,199	42,778	25,341	13,765	7,379	12,159	11,181	4,618	4,201	-	137,621
Wastewater Treatment	82,299	68,754	91,798	95,749	97,391	74,295	82,081	132,586	136,626	122,192	983,771
Combined Sewer Overflow	196,349	153,703	147,502	198,384	157,582	76,745	64,354	150,798	102,978	90,974	1,339,369
Stormwater	7,513	8,495	2,741	7,865	3,679	4,935	7,485	7,452	5,204	10,020	65,390
Sanitary Sewer	41,926	41,324	46,858	74,412	103,622	105,173	114,705	124,868	126,915	145,502	925,305
Water	66,911	82,143	114,995	96,786	82,287	103,415	108,939	106,804	102,681	118,961	983,923
Engineering CIP Total	411,196	397,198	429,234	486,962	451,939	376,723	388,745	527,126	478,605	487,649	4,435,378
Additional Capital Programs	47,624	52,740	50,165	48,408	67,416	51,509	68,272	44,461	46,637	57,600	534,832
Total Modified Baseline CIP	458,821	449,939	479,400	535,369	519,355	428,232	457,017	571,587	525,242	545,250	4,970,211
Increases vs Approved CIP	19,703	29,596	76,718	89,722	134,043	101,948	138,657	132,159	150,237	44,179	916,964

Asset Management $6.5 Billion	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	10 yr Total
Non Process Facilities	29,858	25,023	24,844	13,827	7,368	14,819	8,474	4,699	4,203	4,209	137,324
Wastewater Treatment	79,332	61,577	90,835	95,631	98,586	101,248	128,046	165,588	138,019	117,551	1,076,413
Combined Sewer Overflow	194,678	156,246	151,227	202,584	159,117	73,113	61,239	151,243	102,210	91,453	1,343,109
Stormwater	6,076	10,216	5,957	12,393	10,502	11,957	14,056	14,873	13,625	9,845	109,502
Sanitary Sewer	39,661	65,672	73,524	106,648	141,754	169,990	189,267	196,194	192,779	192,746	1,368,234
Water	62,113	81,566	122,361	105,433	125,400	168,242	182,081	180,030	176,039	179,383	1,382,647
Engineering CIP Total	411,717	400,299	468,748	536,515	542,727	539,370	583,163	712,626	626,875	595,188	5,417,230
Additional Capital Programs	51,996	53,202	56,493	76,500	89,975	121,266	81,928	58,231	395,774	55,895	1,041,261
Total AM CIP	463,712	453,501	525,241	613,015	632,703	660,636	665,091	770,857	1,022,650	651,083	6,458,490
Increases vs Approved CIP	24,595	33,159	122,560	167,367	247,391	334,353	346,732	331,430	647,646	150,013	2,405,244

Summary of CIP Plan Options



	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
1) Approved (Baseline)	391,670	378,015	361,644	423,029	362,694	303,666	295,742	416,809	352,386	478,452
2) Modified Baseline	411,196	397,198	429,234	486,962	451,939	376,723	388,745	527,126	478,605	487,649
3) Asset Management	411,717	400,299	468,748	536,515	542,727	539,370	583,163	712,626	626,875	595,188
1) Cumul. Approved	391,670	769,685	1,131,329	1,554,359	1,917,053	2,220,719	2,516,460	2,933,270	3,285,656	3,764,107
2) Cumul. Modified Baseline	411,717	808,915	1,238,150	1,725,111	2,177,050	2,553,773	2,942,518	3,469,644	3,948,249	4,435,898
3) Cumul. Asset Management	411,717	812,016	1,280,764	1,817,279	2,360,007	2,899,377	3,482,540	4,195,166	4,822,041	5,417,230

Financial Metrics and Impacts

Value of Robust Credit Ratings

- Current credit ratings unlock significant value given size and scope of new money capital plan and potential refinancing
- 20-year average life for $2 billion of capital borrowing

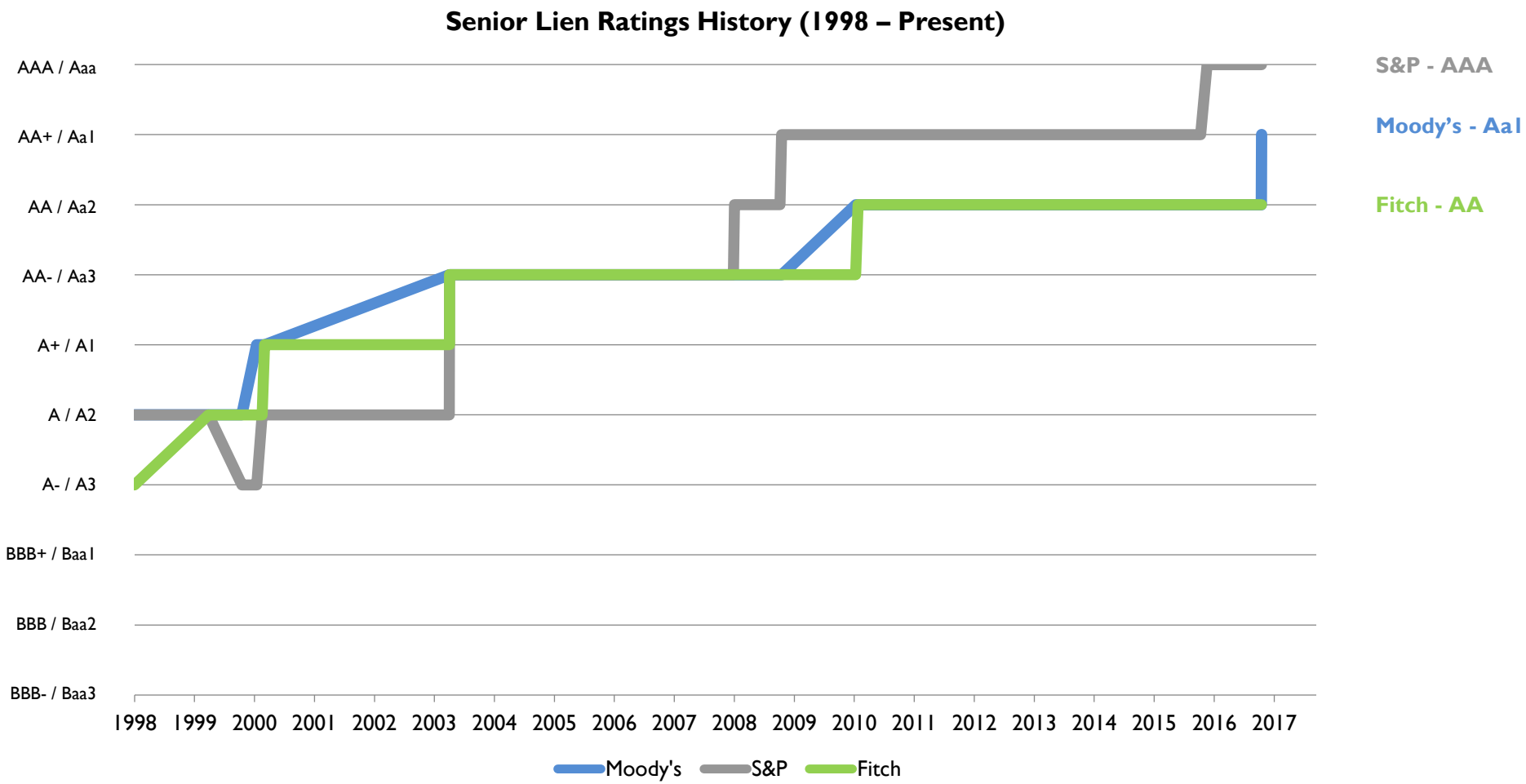
		Individual Bond Sale ($200 million)			Aggregate Debt Issuance for Capital Program ($2 billion)		
Rating	Yield Differential vs. AAA Rating	Annual Cost Differential ($200 million)	Total Cost Differential (Through Maturity)	PV at 4%	Annual Cost ($2 billion)	Total Cost Differential (Through Maturity)	PV at 4% ($200MM Issued Annually,10 Yrs)
AAA	0.00%	$ -	$ -	$ -	$ -	$ -	$ -
AA+	0.10%	200,000	4,000,000	2,708,463	2,000,000	40,000,000	19,071,322
AA	0.20%	400,000	8,000,000	5,416,927	4,000,000	80,000,000	38,142,644
AA-	0.30%	600,000	12,000,000	8,125,390	6,000,000	120,000,000	57,213,966
A+	0.40%	800,000	16,000,000	10,833,853	8,000,000	160,000,000	76,285,288
A	0.50%	1,000,000	20,000,000	13,542,316	10,000,000	200,000,000	95,356,610
A-	0.60%	1,200,000	24,000,000	16,250,780	12,000,000	240,000,000	114,427,932

Select Peer Group

- Triple AAA and double AA rated companies within the water and sewer industry

Selected Peer	Type	Moody's Rating (Senior)	S&P Rating (Senior)	Total Operating Revenues ($000s)	Total Annual Debt Service ($000s)	Debt Ratio	Long Term Debt ($000s)	Total Debt Service Coverage	DS as a % of Total Operating Revenues	Days Cash on Hand	Average Bill as % of Median Effective Buying Income
Atlanta, GA	Water & Sewer	Aa2	AA-	486,285	213,856	45.6%	2,924,317	1.9x	44.0%	1,364	4.1%
Charlotte, NC	Water & Sewer	Aaa	AAA	378,019	132,439	40.9%	1,527,327	1.8x	35.0%	864	2.0%
Dallas, TX	Water & Sewer	Aa1	AAA	632,469	182,000	46.7%	2,605,865	2.1x	28.8%	225	1.8%[1]
DC Water	Water & Sewer	Aa1	AAA	624,447	169,346	62.8%	3,224,567	1.9x	27.1%	259	1.6%
Louisville MSD, KY	Sewer	Aa3	AA	273,907	137,857	61.9%	1,865,260	1.4x	50.3%	220	1.3%[1]
Metro St. Louis Sewer District, MO	Sewer	Aa1	AAA	333,470	69,328	40.4%	1,351,437	2.4x	20.8%	623	1.2%[1]
NE Ohio Regional Sewer District	Sewer	Aa1	AA+	343,880	110,603	50.4%	1,546,085	1.9x	32.2%	754	2.3%
NYC Water	Water & Sewer	Aa1	AAA	3,828,715	821,000	97.8%	31,266,750	3.1x	21.4%	382	2.2%
San Antonio, TX	Water & Sewer	Aa1	AA+	678,110	173,005	46.0%	2,811,870	2.1x	25.5%	440	1.7%

Senior Lien Credit Rating History



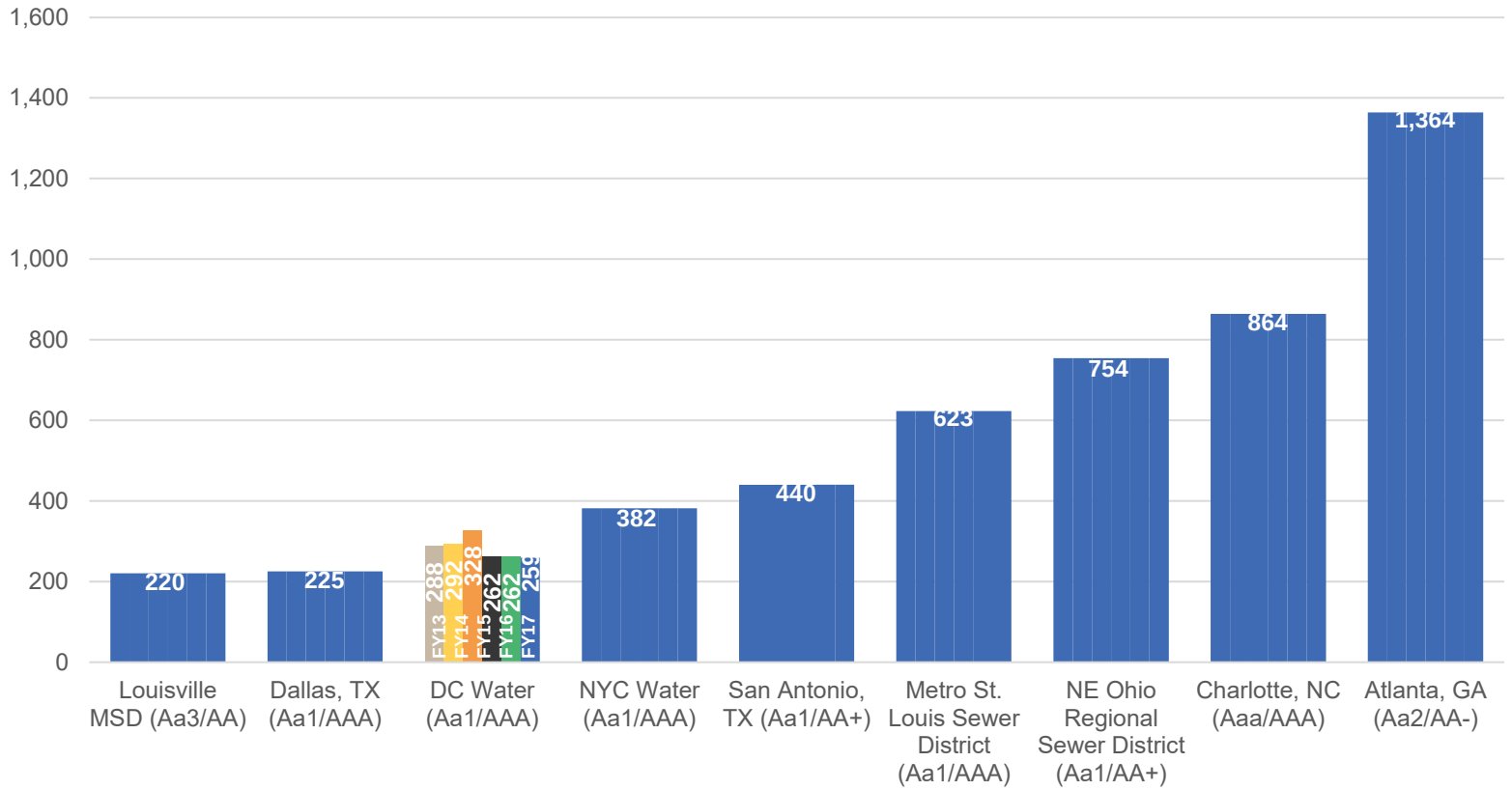
Summary of DC Water Unrestricted Days Cash and Investments

- Days of cash on hand from FY2015 to FY2017

Source	FY 2017		FY 2016		FY 2015	
	$	Days O&M (days)	$	Days O&M (days)	$	Days O&M (days)
Renewal and Replacement Fund	$35.0 million	44	$35.0 million	43	$35.0 million	49
Required O&M Reserve	$49.8 million	62	$49.1 million	60	$46.4 million	63
Discretionary Reserves	$62.4 million	76	$78.5 million	96	$78.7 million	106
Rate Stabilization Fund	$62.5 million	77	$51.5 million	63	$32.5 million	44
Total	**$209.7 million**	**259**	**$214.0 million**	**262**	**$192.6 million**	**262**
O&M Expense[1]	$299.7 million		$303.5 million		$274.4 million	

Days of Cash on Hand

- Days of cash on hand is an important measure of short and long term liquidity due to operational needs of an organization; DC Water typically exceeds 250 days of cash
- Current Board policy is to keep $120 million, or 120 days of cash on hand, but to maintain current credit ratings, DC Water should keep 250+ days cash on hand
- All three scenarios hold Days of Cash on hand to 250 days



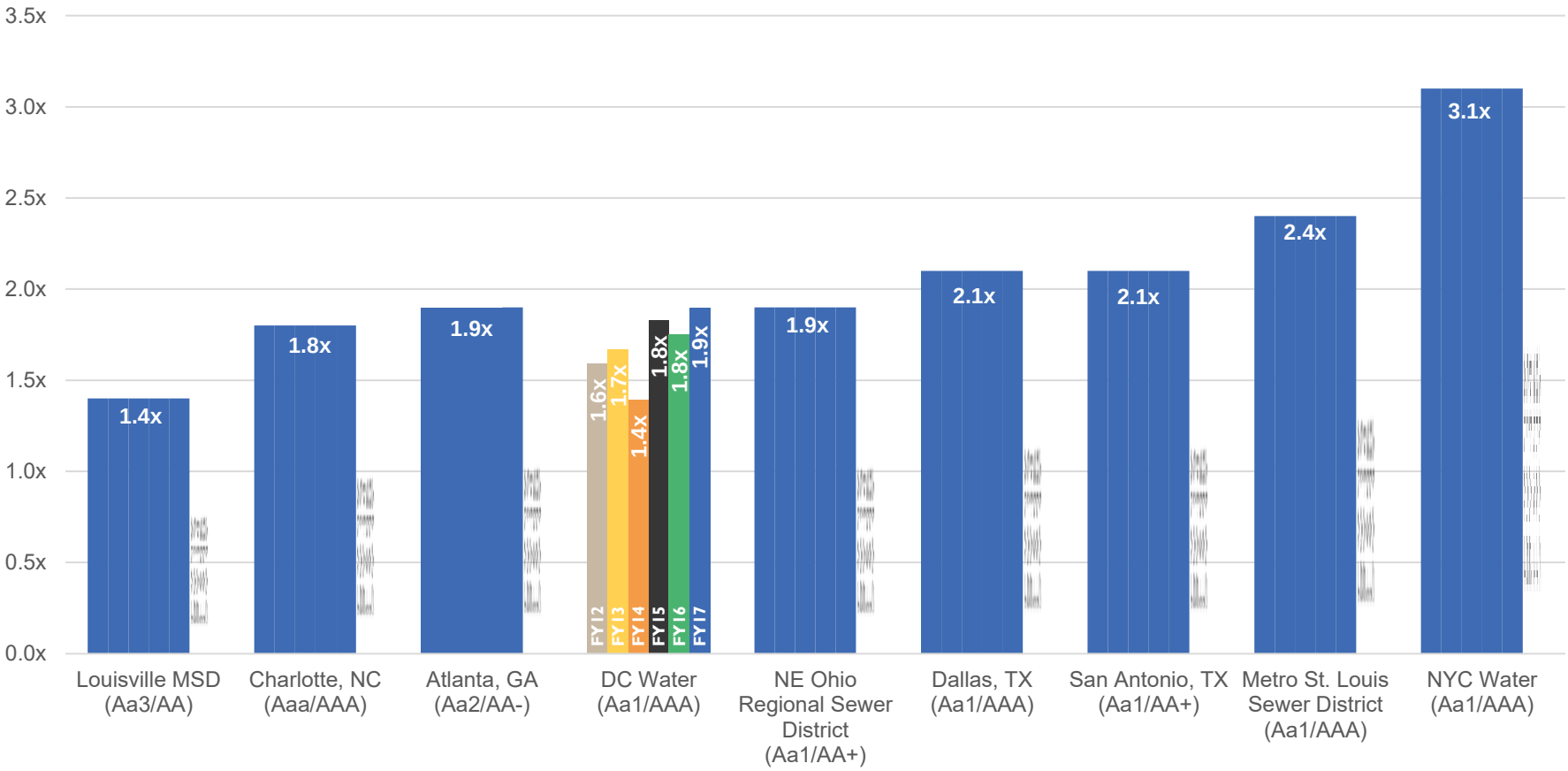
Days of Cash Calculation

- DC Water is recognized by rating agencies for having over 250 days of cash
- Board Policy is 120 days-of-cash

	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Operating and Maintenance	$ 313,869,035	$ 320,137,447	$ 338,498,706	$ 348,334,650	$ 358,462,353	$ 368,890,500	$ 379,628,035
Less: PILOT, ROW & Stormwater	21,057,041	21,376,182	23,701,706	22,033,740	23,372,415	22,717,863	23,429,624
Net Operating and Maintenance	$ 292,811,994	$ 298,761,265	$ 314,797,000	$ 326,300,910	$ 335,089,938	$ 346,172,637	$ 356,198,411
Daily Operating Expenditures	$ 813,367	$ 829,892	$ 874,436	$ 906,391	$ 930,805	$ 961,591	$ 989,440
Ending Cash Balance	$ 147,212,244	$ 166,795,693	$ 140,000,000	$ 140,000,000	$ 140,000,000	$ 140,000,000	$ 140,000,000
Rate Stabilization Fund (RSF)	$ 61,450,000	$ 61,450,000	$ 55,450,000	$ 55,450,000	$ 55,450,000	$ 55,450,000	$ 55,450,000
Ending Cash Balance including RSF	208,662,244	228,245,693	195,450,000	195,450,000	195,450,000	195,450,000	195,450,000
Days Cash on Hand	257	276	223	216	210	204	198

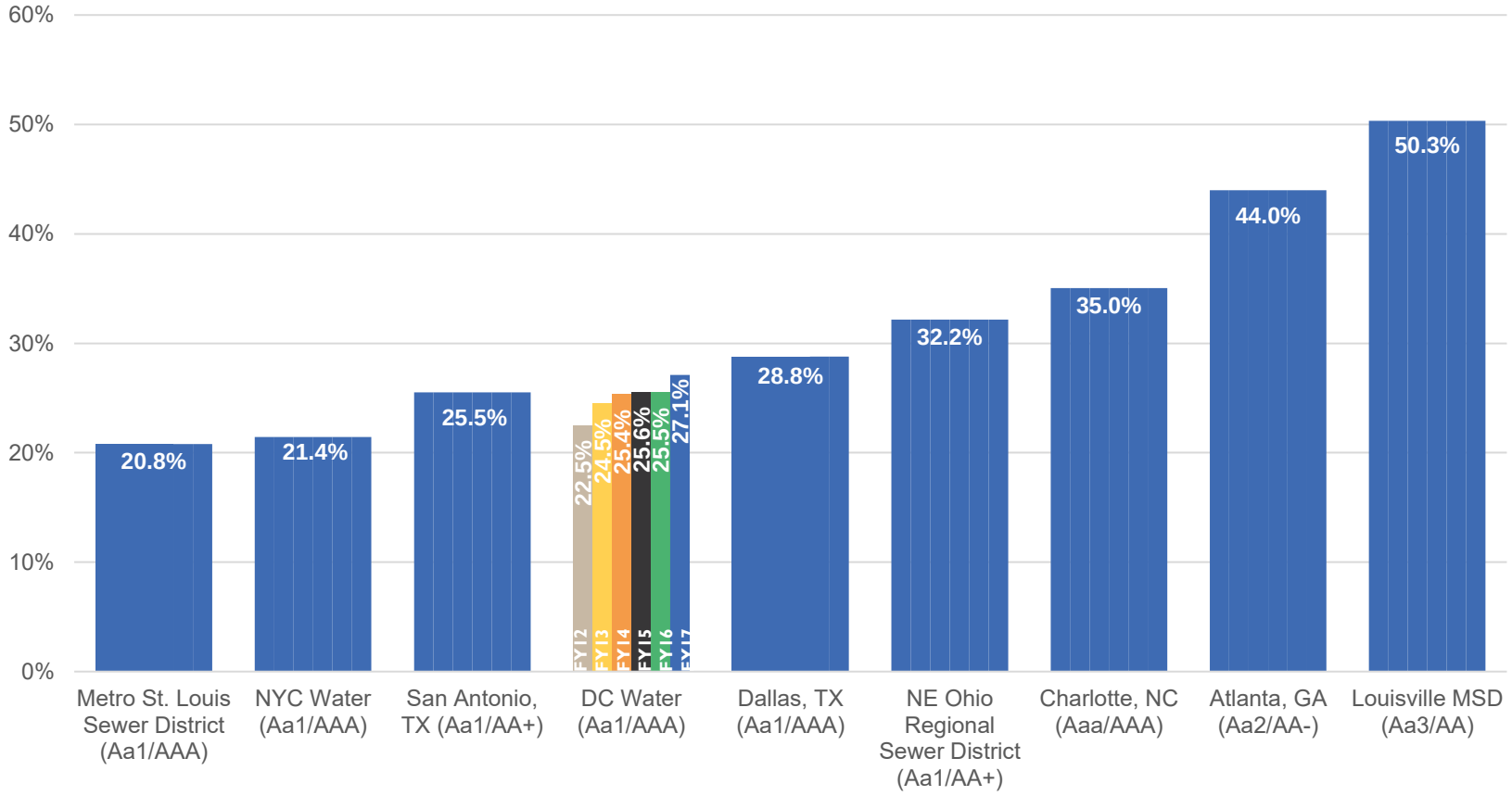
Coverage

- Senior lien debt service coverage is typically at or above 3x each year, where management budgets combined coverage to achieve 1.6x - $1.7x
- Coverage for utilities with AAA rating range is typically from 1.8 to 3.1
- All three scenarios maintain combined coverage at 1.6x - 1.7x



Debt Service as Percent of Revenue

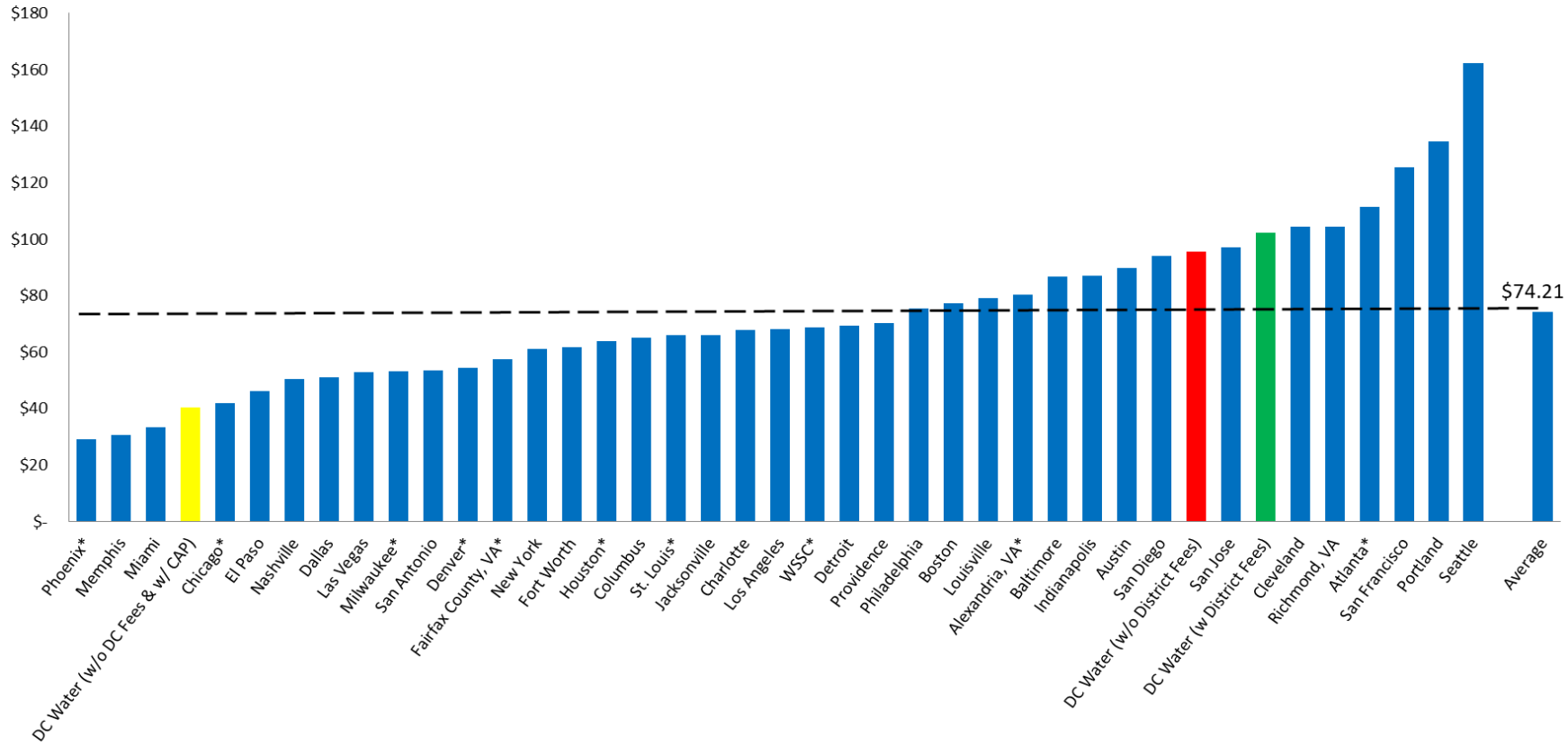
- Large capital program creates high leverage with projected rate increases for increasing annual debt service costs
- FY2019 budgeted debt service is 30.7% of revenues
- All three scenarios hold debt service as 33% of revenues, or less



Other Financial Metrics

- PAYGO is the use of cash, rather than borrowing, for capital expenditures
  - Baseline - $1.6 Billion
  - Modified Baseline - $2.0 Billion
  - Asset Management - $2.3 Billion
- New Borrowing
  - Baseline - $1.3 Billion
  - Modified Baseline - $ 1.8 Billion
  - Asset Management - $ 2.6 Billion

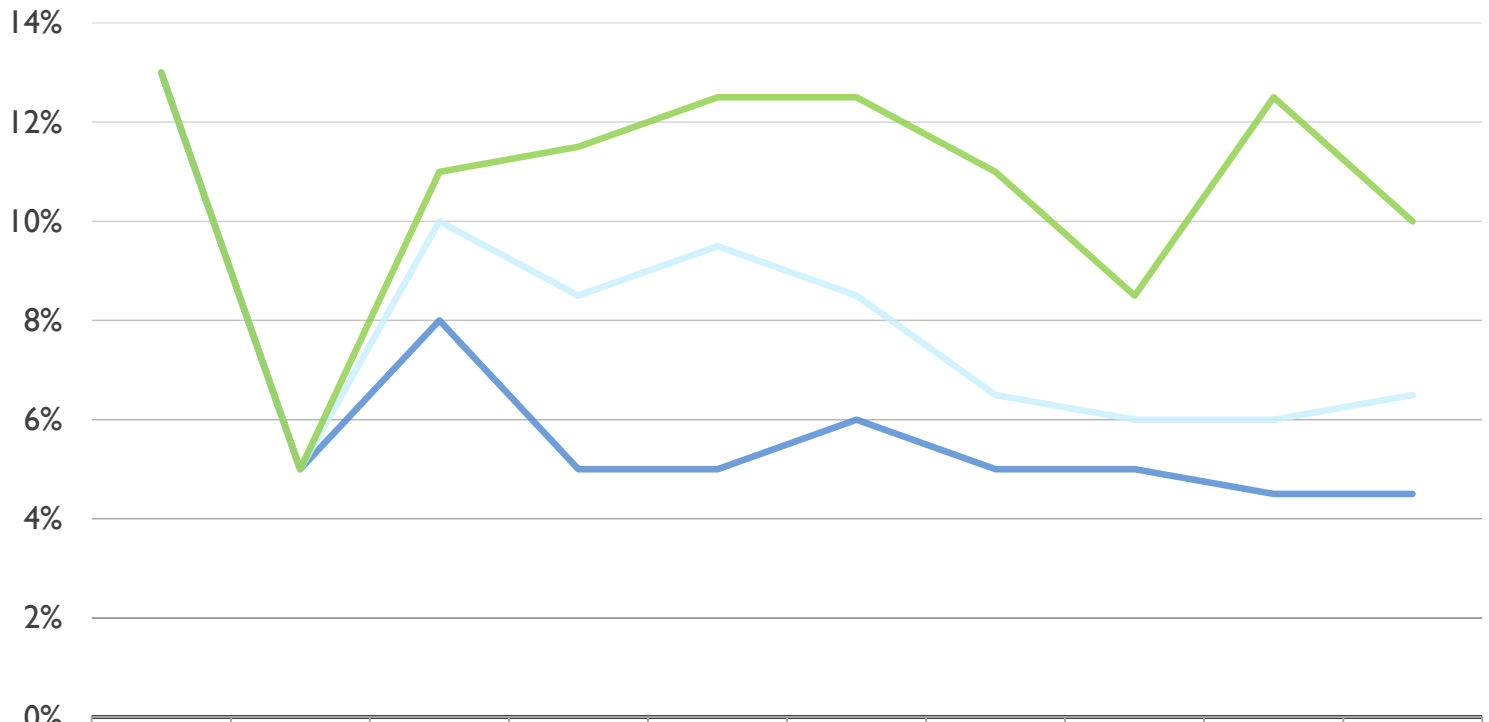
DC Water Retail Rates Compared to Other Large Utilities



(1) Assumes average residential consumption of 6.20 Ccf, or 4,638 gallons, per month. Ccf = hundred cubic feet, or 748 gallons
(2) Reflects rates and fees in place as of March 1, 2018. The Authority's rate includes the PILOT/ROW fee totaling $0.67 per Ccf (effective October 1, 2017) and the DOEE residential stormwater rate of $2.67 per ERU per month
(3) Some cities use property tax revenue or other revenues to pay for part of the cost of water, wastewater, or stormwater services, as indicated by * in the graph above. In such situations, the user charge will not reflect the full cost of water, wastewater or stormwater services
(4) Based on rates in effect Spring 2018

Water and Sewer Rates

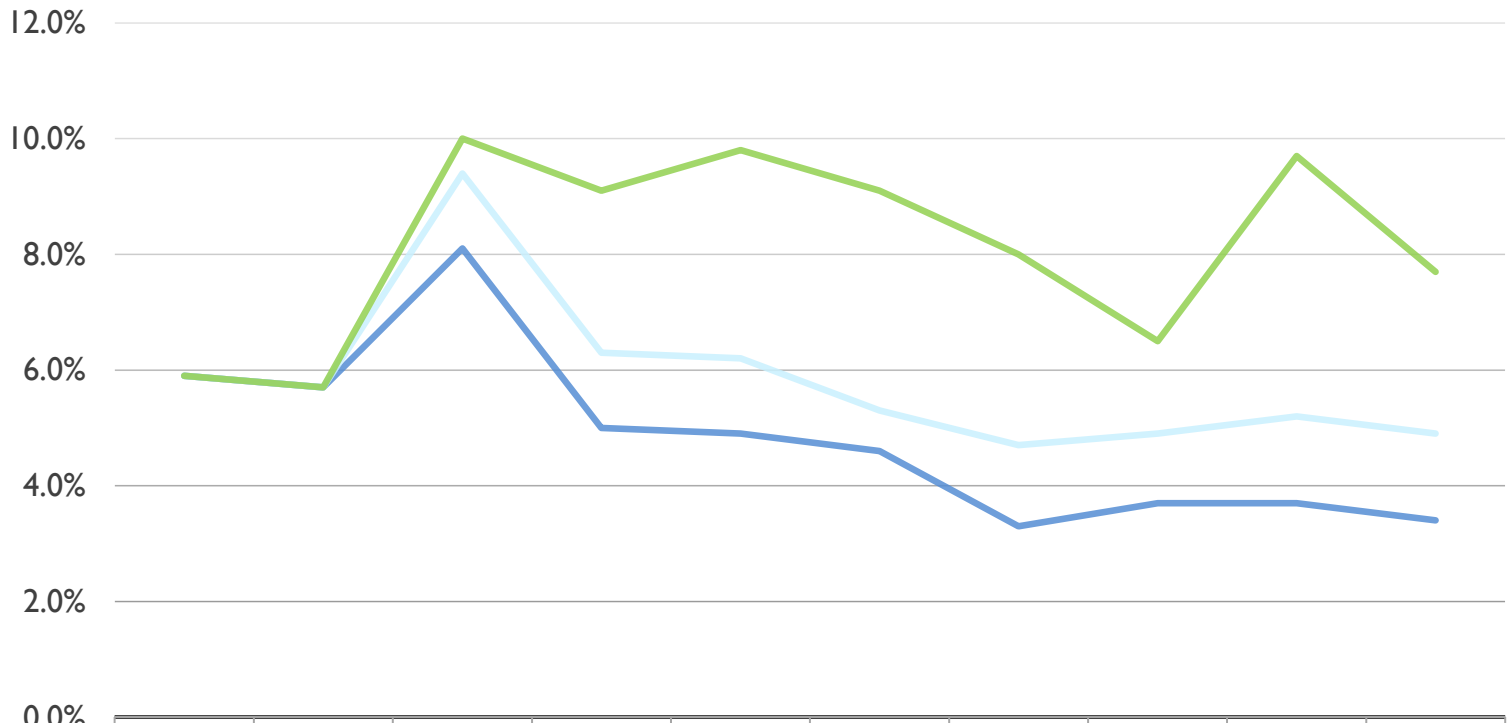
- Water and Sewer rates will increase under all of the scenarios



	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
Baseline	13%	5%	8%	5%	5%	6%	5%	5%	5%	5%
Modified	13%	5%	10%	9%	10%	9%	7%	6%	6%	7%
Asset Management	13%	5%	11%	12%	13%	13%	11%	9%	13%	10%

Average Residential Customer Bill – Percentage Increases

- Average residential customer bill percentage increases under all of the scenarios



	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
Baseline	5.9%	5.7%	8.1%	5.0%	4.9%	4.6%	3.3%	3.7%	3.7%	3.4%
Modified	5.9%	5.7%	9.4%	6.3%	6.2%	5.3%	4.7%	4.9%	5.2%	4.9%
Asset Management	5.9%	5.7%	10.0%	9.1%	9.8%	9.1%	8.0%	6.5%	9.7%	7.7%

Customer Bill Comparisons

	Average Residential 6.2 Ccf 1 ERU			Multi-family 92.6 Ccf 6.3 ERU			Commercial 114 Ccf 13.1ERU			Average Residential Customer Bill as % of MHI -		
	Base Line	Mod	Asset Mgt	Base Line	Mod	Asset Mgt	Base Line	Mod	Asset Mgt	Base Line	Mod	Asset Mgt
Average Annual Rate Increase	6.1%	7.9%	10.8%	6.1%	7.9%	10.8%	6.1%	7.9%	10.8%			
Average Bill FY 2019	$108	$108	$108	$1,303	$1,303	$1,302	$1,850	$1,850	$1,850	1.5%	1.5%	1.5%
Average Bill FY 2023	$136	$145	$151	$1,633	$1,757	$1,851	$2,331	$2,495	$2,617	1.6%	1.7%	1.7%
Average Bill FY 2028	$164	$185	$224	$2,017	$2,328	$2,915	$2,848	$3,262	$4,025	1.6%	1.8%	2.1%

Retail Customer Impacts

Baseline (Proposed) $4.0 Billion	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Water & Sewer Rate (%)	13.0%	5.0%	8.0%	5.0%	5.0%	6.0%	5.0%	5.0%	4.5%	4.5%
CRIAC ($/ERU)	$23.00	$25.58	$29.07	$31.33	$33.62	$34.66	$34.75	$35.45	$36.46	37.08
Avg. Customer Bill ($)	$108	$114	$124	$130	$136	$143	$147	$153	$158	$164
Avg. Customer Bill (%)	5.9%	5.7%	8.1%	5.0%	4.9%	4.6%	3.3%	3.7%	3.7%	3.4%

Modified Baseline $4.6 Billion	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Water & Sewer Rate (%)	13.0%	5.0%	10.0%	8.5%	9.5%	8.5%	6.5%	6.0%	6.0%	6.5%
CRIAC ($/ERU)	$22.99	$25.54	$29.03	$31.28	$33.57	$34.66	$34.84	$35.73	$36.97	$37.64
Avg. Customer Bill ($)	$108	$114	$125	$134	$145	$154	$161	$168	$176	$185
Avg. Customer Bill (%)	5.9%	5.7%	9.4%	6.3%	6.2%	5.3%	4.7%	4.9%	5.2%	4.9%

Asset Management $5.1 Billion	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Water & Sewer Rate (%)	13.0%	5.0%	11.0%	11.5%	12.0%	12.5%	11.5%	8.5%	12.5%	10.0%
CRIAC ($/ERU)	$22.99	$25.54	$29.03	$31.28	$33.57	$34.66	$34.84	$35.73	$36.97	$37.64
Avg. Customer Bill ($)	$108	$114	$126	$137	$151	$165	$178	$189	$208	$224
Avg. Customer Bill (%)	5.9%	5.7%	10.0%	9.1%	9.8%	9.1%	8.0%	6.5%	9.7%	7.7%

Assumes: Average monthly consumption of 6.2 Ccf and 1ERU

Multi-family Customer Impacts

Baseline (Proposed) $4.0 Billion	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Water & Sewer Rate (%)	13.0%	5.0%	8.0%	5.0%	5.0%	6.0%	5.0%	5.0%	4.5%	4.5%
CRIAC ($/ERU)	$23.00	$25.58	$29.07	$31.33	$33.62	$34.66	$34.75	$35.45	$36.46	$37.08
Avg. Multi-family Bill ($)	$1,303	$1,373	$1,482	$1,556	$1,633	$1,707	$1,776	$1,852	$1,934	$2,017
Avg. Multi-family Bill (%)	9.2%	5.4%	7.9%	5.0%	5.0%	4.5%	4.0%	4.3%	4.4%	4.3%

Modified Baseline $4.6 Billion	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Water & Sewer Rate (%)	13.0%	5.0%	10.0%	8.5%	9.5%	8.5%	6.5%	6.0%	6.0%	6.5%
CRIAC ($/ERU)	$22.99	$25.54	$29.03	$31.28	$33.57	$34.66	$34.84	$35.73	$36.97	$37.64
Avg. Multi-family Bill ($)	$1,303	$1,372	$1,503	$1,619	$1,756	$1,884	$1,987	$2,091	$2,204	$2,328
Avg. Multi-family Bill (%)	9.2%	5.4%	9.5%	7.7%	8.5%	7.3%	5.4%	5.3%	5.4%	5.7%

Asset Mgt. Ramp-up $5.1 Billion	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Water & Sewer Rate (%)	13.0%	5.0%	11.0%	11.5%	12.0%	12.5%	11.5%	8.5%	12.5%	10.0%
CRIAC ($/ERU)	$22.99	$25.54	$29.03	$31.28	$33.57	$34.66	$34.84	$35.73	$36.97	$37.64
Avg. Multi-family Bill ($)	$1,302	$1,372	$1,515	$1,668	$1,851	$2,048	$2,246	$2,413	$2,679	$2,915
Avg. Multi-family Bill (%)	9.1%	5.4%	10.4%	10.1%	11.0%	10.7%	9.6%	7.5%	11.0%	8.8%

Assumes: Average monthly consumption of 92.6 Ccf and 6.3 ERU

Commercial Customer Impacts

Baseline (Proposed) $4.0 Billion	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Water & Sewer Rate (%)	13.0%	5.0%	8.0%	5.0%	5.0%	6.0%	5.0%	5.0%	4.5%	4.5%
CRIAC ($/ERU)	$23.00	$25.58	$29.07	$31.33	$33.62	$34.66	$34.75	$35.45	$36.46	$37.08
Avg. Commercial Bill ($)	$1,850	$1,954	$2,113	$2,220	$2,331	$2,448	$2,539	$2,643	$2,746	$2,848
Avg. Commercial Bill (%)	7.7%	5.6%	8.2%	5.1%	5.0%	5.0%	3.7%	4.1%	3.9%	3.7%

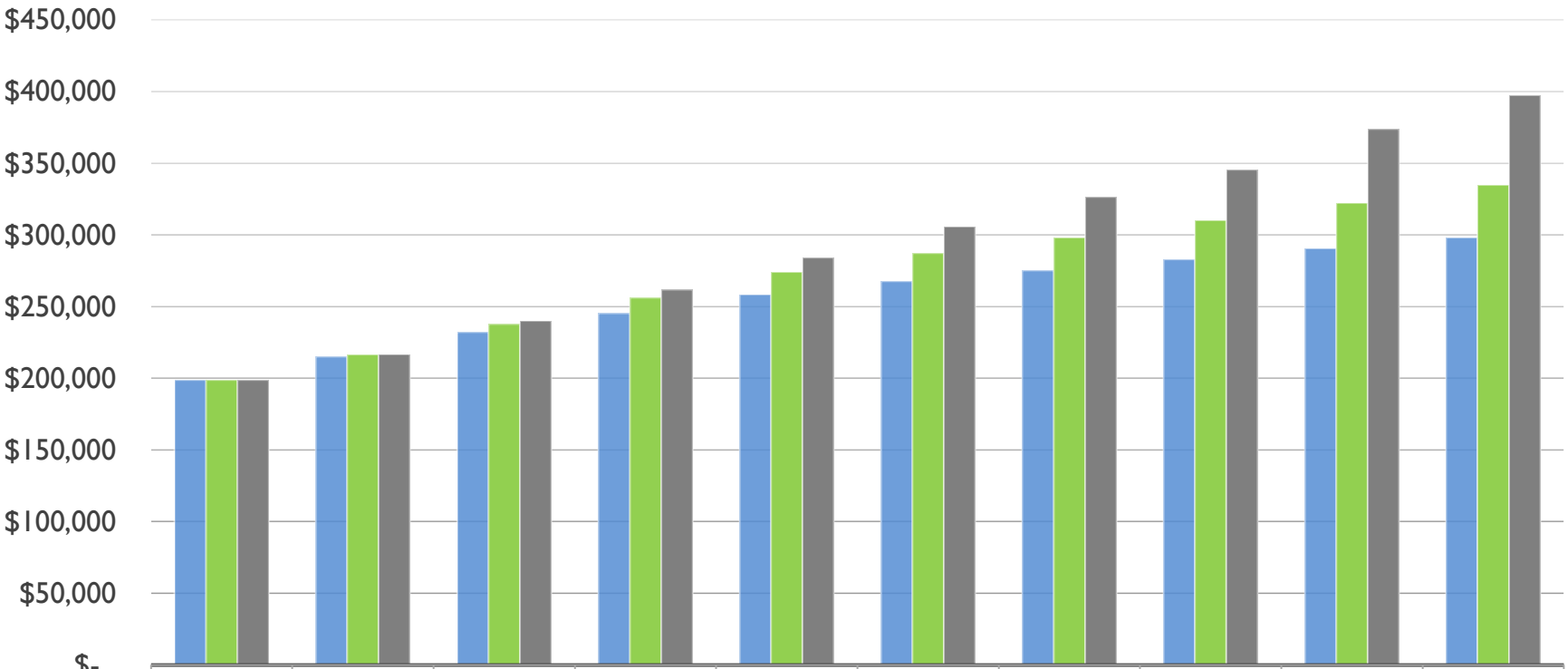
Modified Baseline $4.6 Billion	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Water & Sewer Rate (%)	13.0%	5.0%	10.0%	8.5%	9.5%	8.5%	6.5%	6.0%	6.0%	6.5%
CRIAC ($/ERU)	$22.99	$25.54	$29.03	$31.28	$33.57	$34.66	$34.84	$35.73	$36.97	$37.64
Avg. Commercial Bill ($)	$1,850	$1,953	$2,141	$2,304	$2,495	$2,668	$2,801	$2,943	$3,096	$3,262
Avg. Commercial Bill (%)	7.7%	5.6%	9.6%	7.6%	8.3%	6.9%	5.0%	5.1%	5.2%	5.4%

Asset Mgt. Ramp-up $5.1 Billion	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Water & Sewer Rate (%)	13.0%	5.0%	11.0%	11.5%	12.0%	12.5%	11.5%	8.5%	12.5%	10.0%
CRIAC ($/ERU)	$22.99	$25.54	$29.03	$31.28	$33.57	$34.66	$34.84	$35.73	$36.97	$37.64
Avg. Commercial Bill ($)	$1,850	$1,953	$2,156	$2,367	$2,617	$2,859	$3,115	$3,360	$3,713	$4,025
Avg. Commercial Bill (%)	7.7%	5.6%	10.4%	9.8%	10.6%	9.3%	8.9%	7.9%	10.5%	8.4%

Assumes: Average monthly consumption of 114 Ccf and 13.1ERU

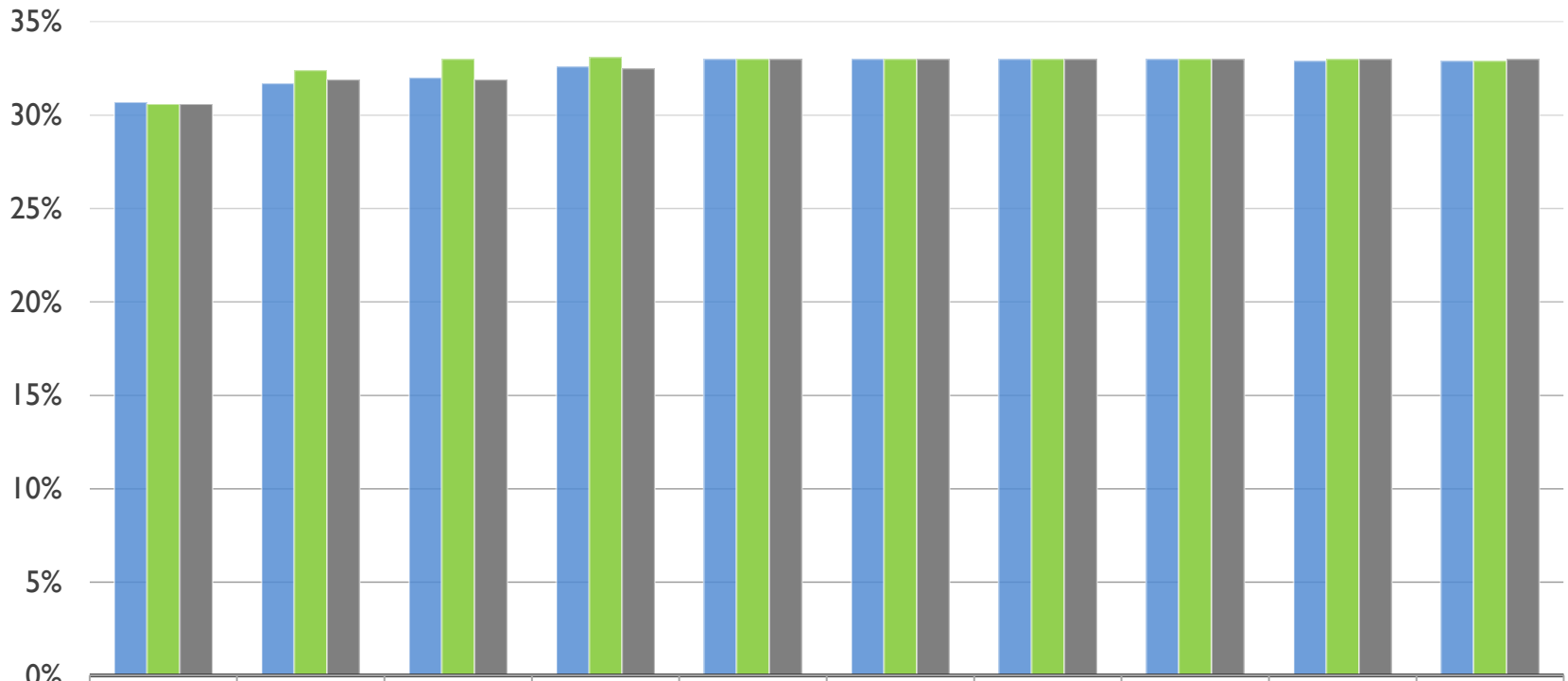
Debt Service Cost Impacts

Under the Asset Management Plan, annual debt service costs will be close to $400 million by 2028



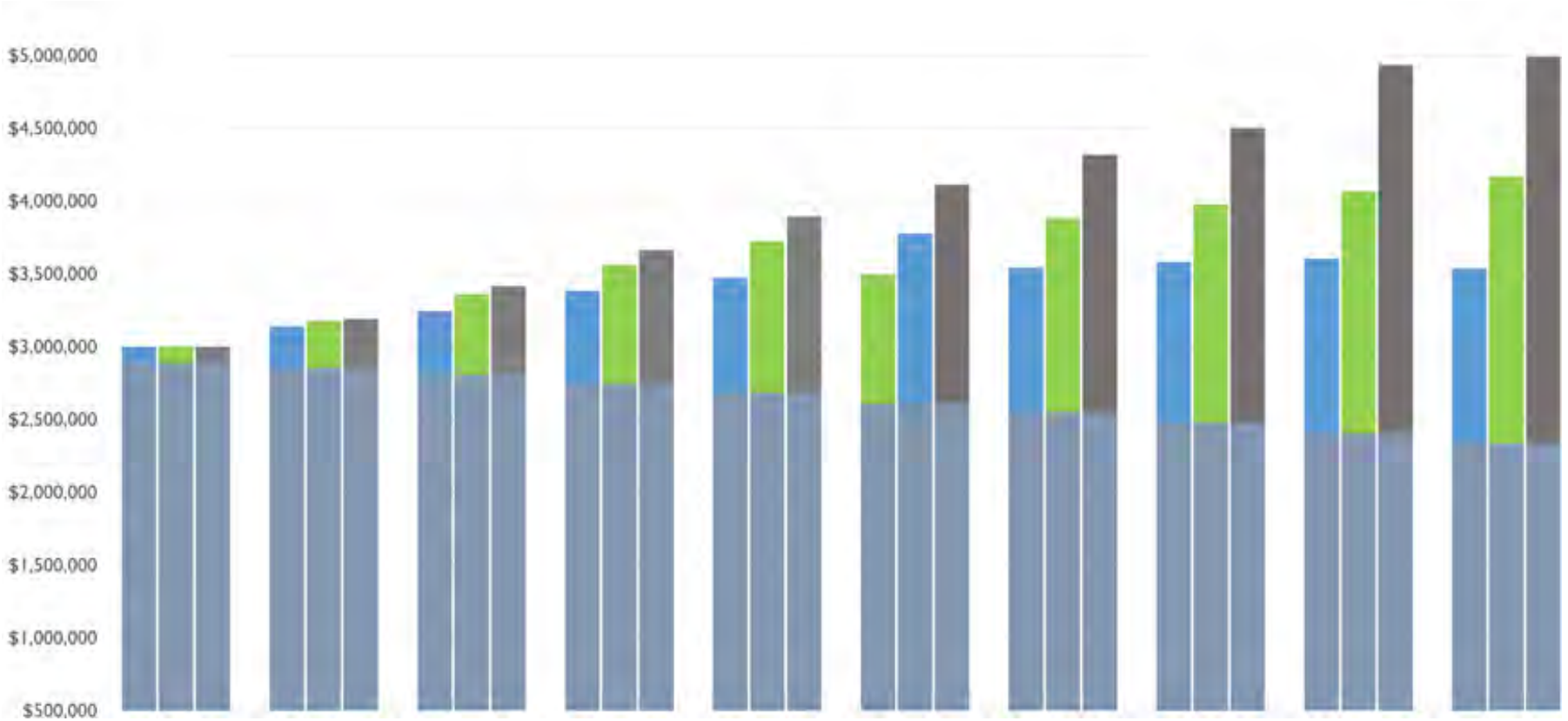
	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
Baseline	$198,754	$215,098	$232,248	$245,392	$258,411	$267,735	$275,138	$282,936	$290,737	$298,148
Modified	$198,754	$216,476	$237,888	$256,268	$274,159	$287,302	$298,114	$310,158	$322,448	$334,833
Asset Management	$198,754	$216,848	$240,229	$261,910	$284,111	$305,874	$326,576	$345,614	$373,926	$397,522

Debt Service % of Revenue



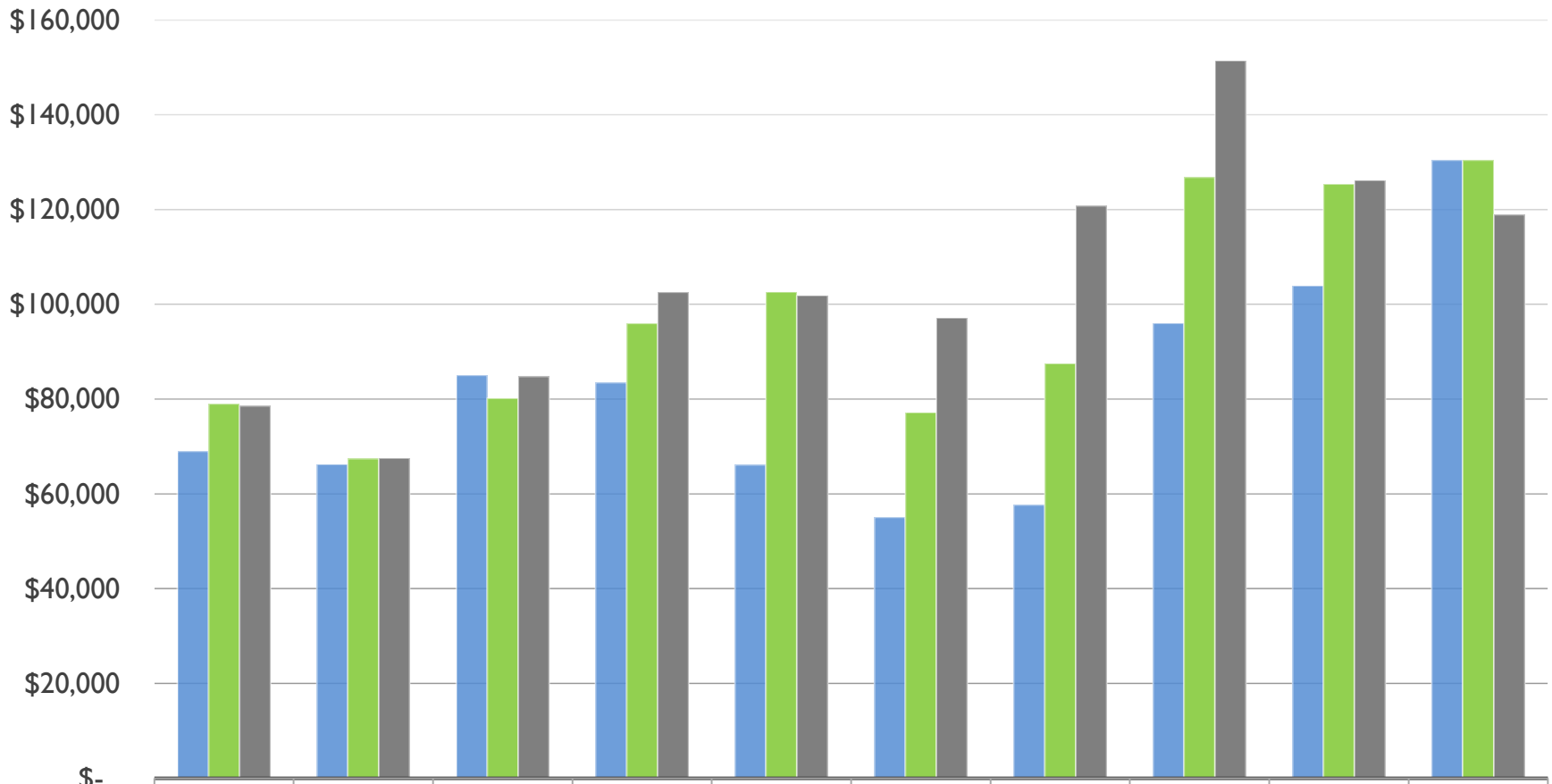
	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
Baseline	31%	32%	32%	33%	33%	33%	33%	33%	33%	33%
Modified	31%	32%	33%	33%	33%	33%	33%	33%	33%	33%
Asset Management	31%	32%	32%	33%	33%	33%	33%	33%	33%	33%

Debt Outstanding – Existing vs. Projected



Existing Debt	$2,890,445	$2,857,315	$2,805,995	$2,745,955	$2,685,340	$2,605,625	$2,552,680	$2,481,520	$2,404,340	$2,338,255
Baseline	$110,000	$283,819	$439,878	$639,166	$790,868	$890,868	$990,868	$1,101,369	$1,201,369	$1,201,369
Modified Baseline	$110,000	$323,182	$557,034	$819,733	$1,039,416	$1,174,415	$1,331,378	$1,499,437	$1,662,951	$1,833,577
Asset Management	$110,000	$333,799	$610,725	$919,391	$1,209,352	$1,506,557	$1,768,028	$2,020,197	$2,531,701	$2,656,701

Wholesale Customer Revenue/Impacts



	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
Baseline	$69,007	$66,263	$85,059	$83,471	$66,147	$55,086	$57,663	$96,061	$103,958	$130,451
Modified	79,007	67,442	80,222	95,957	102,614	77,209	87,524	126,849	125,430	130,451
Asset Management	78,543	67,577	84,818	102,600	101,916	97,161	120,802	151,435	126,207	118,936

Public Outreach/Customer Engagement

DC Water is committed to our community

- Our water and sewer infrastructure has served us well for 100-plus years but is showing its age. We need to ensure it remains in good condition
- Over the next 10 years DC Water will invest more than $4 billion in its utility systems to meet federal environmental mandates and to ensure safety and reliability
- While these investments will require rate increases, they will create hundreds of jobs, boost the local economy and provide quality of life benefits for residents
- We are already seeing significant economic development and activity along the Anacostia River as a result of better water quality

Public Outreach/Customer Engagement

Strategy

- Highlight what DC Water has done to benefit residents, create jobs and enhance economic development
- Be honest about consequences of not investing adequately in water and sewer systems
- Arm customers with information on what they can do to help keep their bills low and help the environment
- Use tiered communications that begins with messaging to closest stakeholders, such as the Stakeholders Alliance group, and work outwardly through key audiences to build support
- When appropriate, initiate face-to-face contact with customers and community members to provide updates, gain public input and deliver key messages
- Generate productive earned media coverage
- Develop compelling electronic and printed tools to reinforce key messages and refute opposition
- Utilize online content, advertising and social media to deliver key information and messages to connect with customers and the public

Budget Adoption Calendar

- CEO & Executive Team Budget Recommendations – **January**
- Committee Reviews, Recommendations – **January/February**
- Wholesale Customer Briefing – **January**
- Budget Adoption – **March**

Discussion

Appendix

S&P Global Ratings

RatingsDirect®

Affordable For Now: Water And Sewer Rates At U.S. Municipal Utilities

October 24, 2018

Key Takeaways

- Water and sewer rates at S&P Global-rated U.S. public utilities vary widely depending on region, water source, treatment technology, and utility size. They are generally at levels we consider affordable given local incomes and poverty rates.
- Rate inflation is higher in water and sewer than in many other public utility sectors.
- Levels of household consumption affect affordability, as well as rate structure and operating and capital cost.
- Affordability plans can help reduce delinquencies and improve revenue reliability and rate-setting flexibility. Strong public outreach and information, as well as political and Public Utility Commission support, contribute to management flexibility for rate-setting.

PRIMARY CREDIT ANALYST

Erin Boeke Burke
New York
+ 1 (212) 438 1515
Erin.Boeke-Burke
@spglobal.com

SECONDARY CONTACTS

Theodore A Chapman
Dallas
(1) 214-871-1401
theodore.chapman
@spglobal.com

James M Breeding
Dallas
(1) 214-871-1407
james.breeding
@spglobal.com

RESEARCH CONTRIBUTOR

Shrinivas Parab
CRISIL Global Analytical Center, an S&P affiliate, Mumbai

S&P Global Ratings maintains revenue debt ratings on 1,600 public water and wastewater utilities in the U.S. This includes multiple security types and issues but with the same obligor (e.g., Baltimore issues both water and wastewater revenue bonds that are separately secured by dedicated revenue streams). However, it excludes debt issued by wholesalers, as well as debt issued by state agencies to fund water and wastewater projects.

In general, water and sewer rates at rated utilities are still at levels that we consider affordable. However, rate inflation in the sector has been higher than in many other utility sectors, and we expect this trend to continue. Over time, we believe that affordability, particularly for low- and fixed-income residents, could come under pressure and constrain revenue-generating flexibility as public utilities work through large capital plans due to aging infrastructure, changing regulatory requirements, and concerns about securing long-term water supply. We will continue to examine the effects of revenue needs and affordability concerns on utility rates and overall financial performance.

Most U.S. Public Utilities Charge "Affordable" Rates

For both utility types, a monthly rate between $30 and $40 for 6,000 gallons of service is the most common. Nationally, rates tend to be slightly higher for sewer than water service: The median and

Less than 1% of water utilities and 3%

mean are both $37 for water, in contrast to $42 (median) and $45 (mean) for sewer. Less than 1% of the water utilities in the sample and less than 3% of sewer utilities have monthly rates over $100.

of sewer utilities have average monthly rates over $100.

Chart 1

Monthly Water Rates, 6k gal

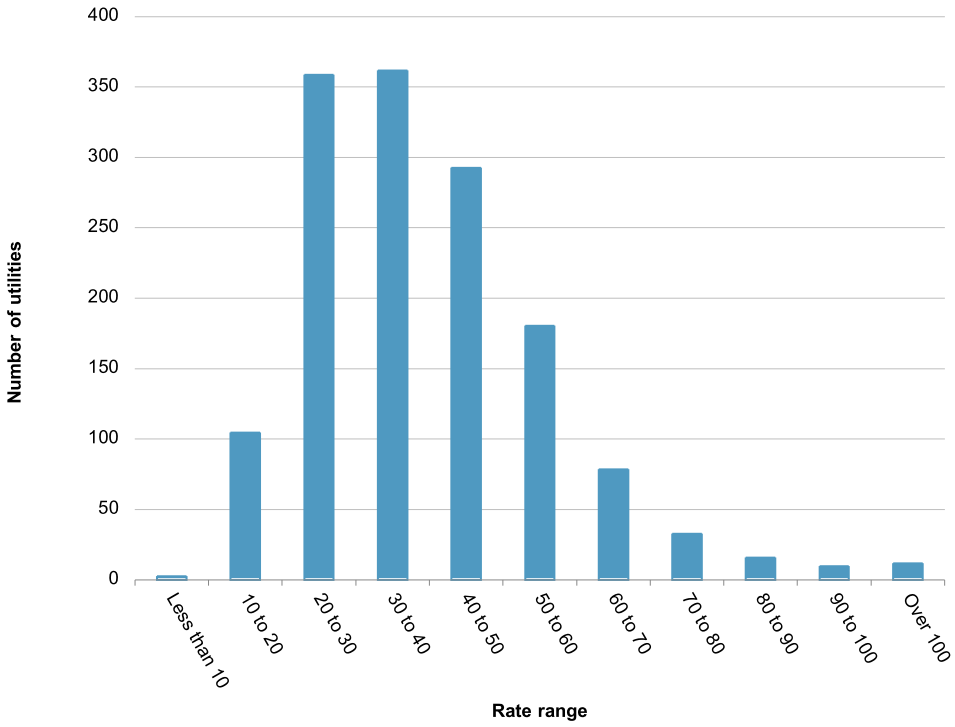
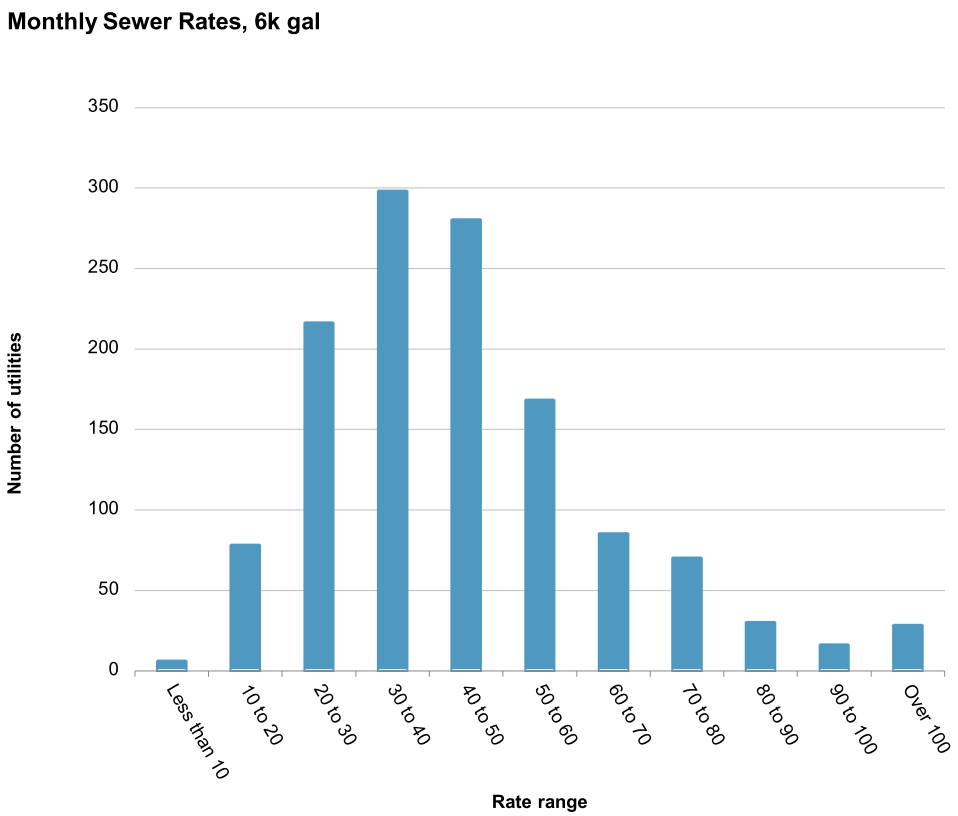


Chart 2

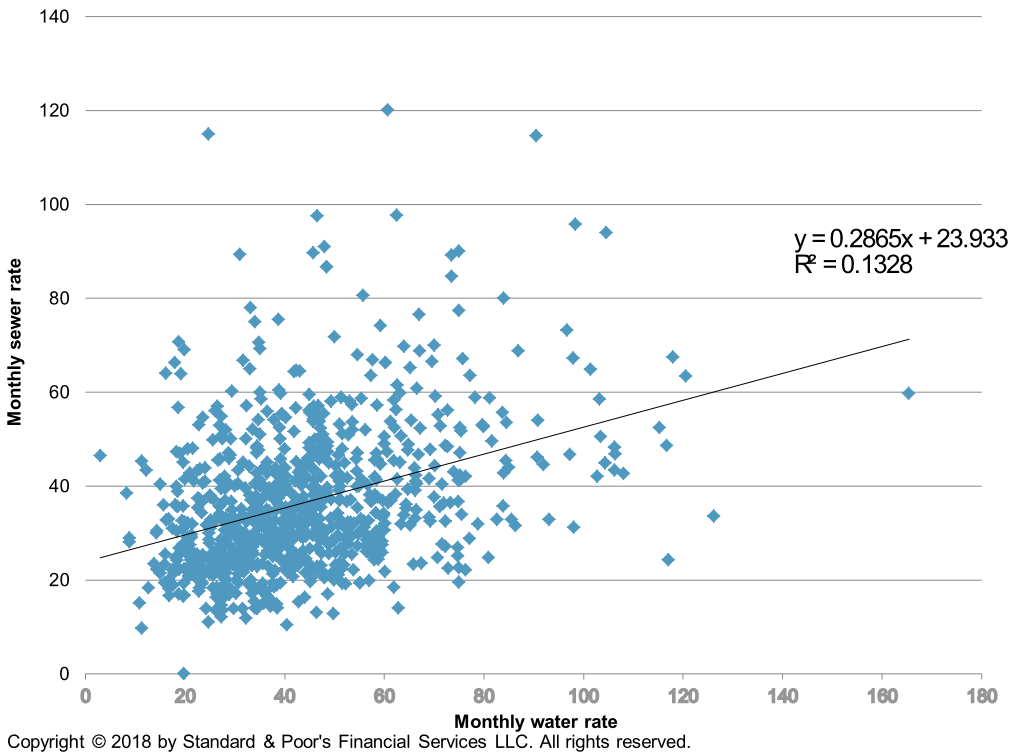


A Note On The Sample

S&P Global Ratings has rate data for over 1,400 water utilities nationwide and 1,200 wastewater utilities, including publicly rated water, sewer, and combined utilities; wholesale utility participants and customers; and utilities that pledge revenue to support bonds where the public rating is based on a different pledge. We acknowledge that this is not a random sample, as we only maintain rate data on utilities associated with public debt. Due to the nature of this sample, these utilities will generally be larger and have greater financial capacity than the universe of all municipal water and sewer utilities in the U.S. Additionally, some states are underrepresented due to alternative forms of financing such as state bond banks (see "Many New England Water And Wastewater Utilities Have Strong Profiles But Face Costly Mandates And Aging Infrastructure," published July 12, 2017, on RatingsDirect). S&P Global Ratings uses a baseline assumption of 6,000 gallons of monthly water or sewer usage; while an average customer bill may not be the same as this 6,000-gallon amount depending on consumption, this single level is used throughout for comparability unless otherwise noted. This assumption is based on research and feedback during the request for comment phase prior to the implementation of the applicable criteria, "Rating Methodology And Assumptions For U.S. Municipal Waterworks And Sanitary Sewer Utility Revenue Bonds" (published Jan. 19, 2016).

Chart 3

Water And Sewer Rates At Combined Utilities



We have both water and sewer rates for over 800 utilities. This is significantly smaller than the total data set, as separate entities provide water and sewer service in many areas. Among those utilities where we do have both water and sewer rates, we can see that there is a positive association between them: Utilities that charge more for water often also charge more for sewer. There are a variety of possible reasons why this is the case, including management rate-setting philosophy, system age, local cost factors, and political support. The sewer bill is often slightly higher than the water bill, which is consistent with the national rate distributions shown above and our observation that generally sanitary sewer systems are more capital intensive, especially relative to groundwater-based drinking water systems.

The most expensive water rates in our sample are in Missouri. Missouri issuers tend to have higher debt levels and weaker asset management and long-term planning scores. Like many others on the list, these Missouri issuers are in more rural areas so they have smaller customer bases to absorb large fixed costs. The rates listed below do not include additional dry-period assessments and surcharges; many systems also charge higher rates for customers who live outside of the primary municipal jurisdiction ("out of town" rates and surcharges). Where the table identifies rate "up to" a given amount, it means there are multiple billing districts within the service area, but they do not represent "in town" and "out of town" rates.

Table 1

Most Expensive Water Rates At Publicly Rated Utilities, 2018

Peculiar, MO	$120
West Wise Special Utility District, TX	$111
Daviess County Public Water Supply District No.1, MO	$111
North Prairie Rural Water District, ND	Up to $110
Carroll County Public Water Supply District No. 1, MO	$105
Ralls County Public Water Supply District No. 1, MO	$103
Santa Barbara, CA	$97
West Cumberland Utility District, TN	$96
West Milford Township Municipal Utility Authority, NJ	$94
Red River Authority, TX	Up to $94

The list of the most expensive sewer utilities is more California-centric. California has one of the most restrictive regulatory regimes, which often requires more capital-intensive processes than in other parts of the country. Additionally, many utilities in the state discharge into sensitive environmental areas. Some utilities have high rates due to expensive regulatory-driven capital plans; others are small systems with few customers to bear the financial burden of maintaining aging systems. In several instances, especially where water consumption tends to be strongly seasonal and affected by summer irrigation, sewer bills are based on water consumption, but only in the winter months. We are assuming a 6kgal baseline despite the seasonality in consumption.

Table 2

Most Expensive Sewer Rates at Publicly Rated Utilities, 2018

Sanitary District No. 5 of Marin County, CA	Up to $165
Pacifica, CA	$157 (2017)
North Bend, WA	$153
Newport, RI	$135
Millbrae Public Financing Authority, CA	$127
Montecito Sanitary District, CA	$123
Healdsburg, CA	$122
Mill Valley, CA	$121
Deltona, FL	$117
Oak Island, NC	$115

The list of the most expensive combined rates includes many of the utilities listed above, but is more geographically diverse with only one state (California) appearing twice on the list. The trend of higher sewer rates continues, with all but one of the utilities charging more for sewer service than for water.

One surprise for many readers may be the absence of Atlanta and Austin, as they have received significant attention for recent rate increases and are often used as examples of areas with "high rates." Both water and sewer rates for both cities were included in our sample. While they are higher than the national average, with a monthly bill of $43 for water and $108 for sewer in Atlanta

and $38 for water and $62 for sewer in Austin, the bills are not as high as those of many other utilities in the sample (although Atlanta does make the list of top 10 for combined rates).

Table 3

Most Expensive Combined Rates At Publicly Rated Utilities, 2018

	Water	Sewer	Combined
North Bend, WA	$60	$153	$213
Newport, RI	$65	$135	$200
West Milford Township Municipal Utility Authority, NJ	$94	$105	$199
Healdsburg, CA	$63	$121	$184
Peculiar, MO	$120	$61	$181
West Travis County Public Utility Agency, TX	$73	$97	$170
Oak Island, NC	$52	$115	$167
Holly Village, MI	$59	$99	$158
Atlanta, GA	$43	$108	$151
Santa Rosa, CA	$43	$106	$150

What Does "Affordable" Mean?

The Environmental Protection Agency (EPA) standard

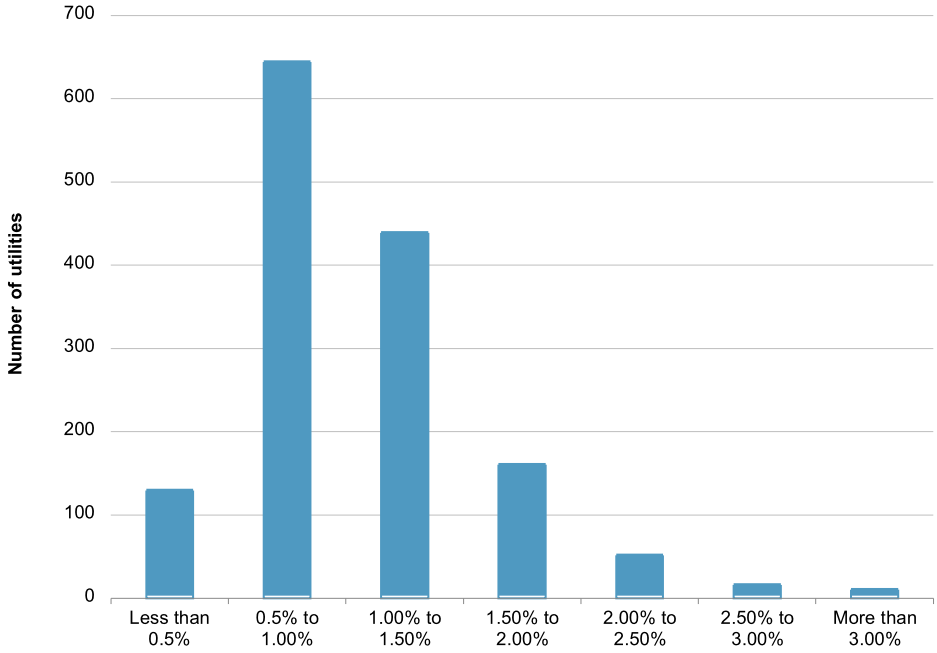
There are a wide range of opinions on what it means for water and sewer service to be "affordable." There is no broadly applicable direct correlation between economic growth and system demands due to changing consumption patterns (discussed below). However, economic fundamentals are still a critical proxy for the current and likely future ability of the customer base to support utility operations and its revenue requirements, as municipal utilities tend to derive nearly all operating revenues from the local rate base. Regardless of the condition of the utility's service area economy, the relative ability of its customer base to pay the utility bill has remained important not only to credit quality but also to the sector itself. Both the EPA and the water utility industry's leading professional organization, the American Water Works Assn. (AWWA), have developed guidelines for measuring affordability.

The EPA's "Interim Economic Guidance for Water Quality Standards Workbook" (EPA 823-B-95-002, March 1995; Section 4) and "Combined Sewer Overflows--Guidance for Financial Capability Assessment and Schedule Development" (EPA 832-B-97-004, February 1997; Section 3) develop affordability criteria for sewer systems, including the residential indicator, which measures the annual utility burden as a percentage of median household income (MHHI). Under the EPA guidance, the benchmark for water systems is 2.5% of annual MHHI. EPA guidance also identifies a number of additional secondary screening criteria such as the local unemployment rate versus the national rate. S&P Global Ratings looks at median household effective buying income (MHHEBI) as opposed to MHHI, since it better captures after-tax, disposable income, or take-home pay (EPA's secondary screening affordability criteria also take into account the household tax burden). If we use the same benchmark of 2.5% despite the differences between MHHI and MHHEBI, approximately 98% of the utilities in our data set charge rates that are "affordable" by the EPA standard.

Affordable For Now: Water And Sewer Rates At U.S. Municipal Utilities

Chart 4

Water Rates As A Percent Of MHHEBI



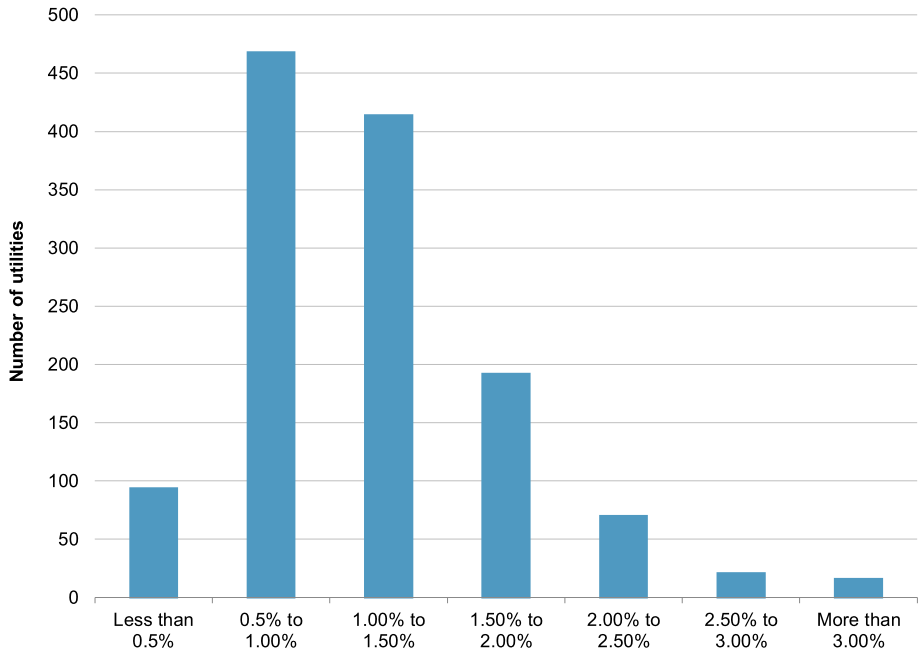
MHHEBI--Median household effective buying income.

The EPA has a slightly lower benchmark for "affordable" sewer rates, at 2% of MHHI. Looking at the sewer utilities in our sample, the percentage that charge "affordable" rates is 92%, lower in part due to the higher rates in the sewer utilities than at water utilities, as well as the lower benchmark.

Approximately 98% of the water utilities and 92% of the sewer utilities in our data set charge rates that are "affordable" by the EPA standard.

Chart 5

Sewer Rates As A Percent Of MHHEBI



MHHEBI--Median household effective buying income.

High Rates Are Not A Requirement For Creditworthiness

Not only is affordability one of many inputs into a utility manager's business decisions, but it is also a relevant credit factor. Under S&P Global Ratings' criteria for assessing the creditworthiness of water and sewer utilities, we assign each utility a "market position" score based on our opinion of the relative affordability, comparability of rates with those of peers in the region or state, and management flexibility to increase rates in the future if additional revenues are required to maintain financial strength. In addition to the average household bill as a percentage of MHHEBI, the score includes the county poverty rate. The relative poverty rate is important because service areas that have not just lower MHHEBI levels, but also disproportionately higher percentages of the population located in the lowest quintiles of the MHHEBI distribution curve, may exhibit greater sensitivity toward perceived affordability, even if adjusted for low inflation or a favorable cost of living.

Market position scores range from '1' to '6', with '1' being the strongest. The market position score calculation may use either the average monthly household consumption where available (as this better reflects the average household bill) or our 6,000 gallons/800 cubic feet (ccf) standard. For utilities with an anchor assessment of '5' or '6' that have recently completed or achieved substantial completion of a historically capital-intensive period, the anchor assessment may improve by one point. The committee may also adjust the market position score negatively if a

Service areas that have higher percentages of the population located in the lowest quintiles of the MHHEBI distribution curve may exhibit greater sensitivity toward perceived affordability, even if adjusted for low inflation or a

utility is in a period of substantial rate increases, or it otherwise thinks that future rate-setting flexibility may be more constrained.

favorable cost of living.

Table 4

Market Position Assessment: Water- Or Drainage-Only Utilities

	Annual utility bill as a percent of MHHEBI		
Percent of county population living in poverty	**Less than 1%**	**1% to 2%**	**More than 2%**
Less than 10%	1	2	3
10% to 20%	2	3	4
20% to 30%	3	4	5
More than 30%	4	5	6

MHHEBI--Median household effective buying income.

Chart 6

Market Position Score -- Water-Only Utilities

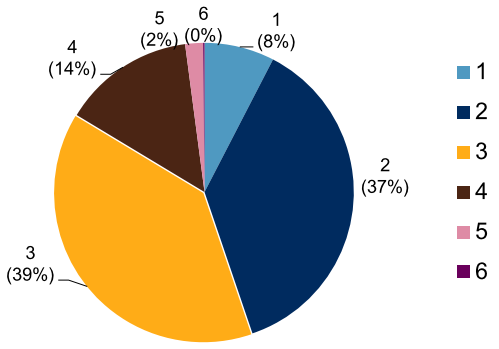


Table 5

Market Position Assessment: Sewer-Only Utilities

	Annual utility bill as a percent of MHHEBI		
Percent of county population living in poverty	**Less than 1.25%**	**1.25% to 2.50%**	**More than 2.50%**
Less than 10%	1	2	3
10% to 20%	2	3	4
20% to 30%	3	4	5
More than 30%	4	5	6

MHHEBI--Median household effective buying income.

Chart 7

Market Position Score -- Sewer-Only Utilities

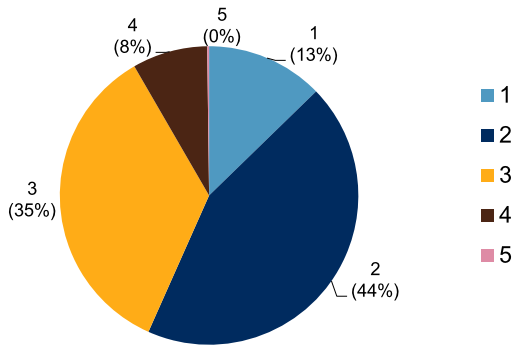


Table 6

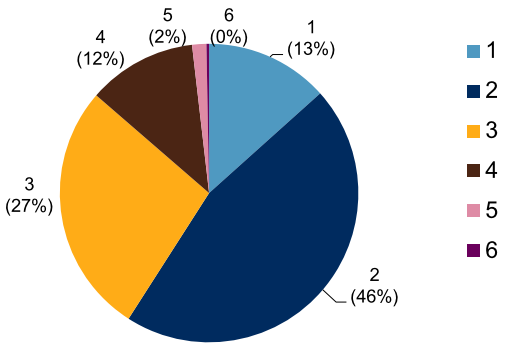
Market Position Assessment: Water And Sewer/Draining Utilities

	Annual utility bill as a percent of MHHEBI		
Percent of county population living in poverty	**Less than 2.25%**	**2.25% to 4.50%**	**More than 4.50%**
Less than 10%	1	2	3
10% to 20%	2	3	4
20% to 30%	3	4	5
More than 30%	4	5	6

MHHEBI--Median household effective buying income.

Chart 8

Market Position Score -- Combined Utilities



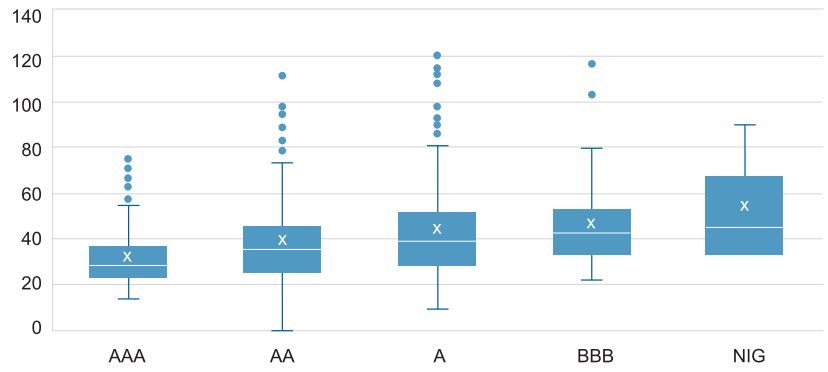
As the charts show, sewer-only and combined water and sewer utilities tend to have stronger market position scores than water-only utilities have. Well over half of sewer and combined

systems score a '1' or a '2', levels we consider extremely or very strong, whereas less than 45% of water utilities have this same flexibility. Sixteen percent of water and 12% of combined utilities score a '4' or higher, levels we consider adequate or vulnerable. Only 8% of sewer utilities have similar market position scores.

As S&P Global Ratings considers rate affordability part of the rating process, it is consistent that affordable rates are a characteristic of higher-rated utilities. For water utilities, there is a clear pattern: Higher-rated utilities tend to charge lower rates for service. For sewer utilities, there is not such a clear correlation. However, both charts show that the financial strength needed for strong credit quality comes from more than just high rates. Many highly rated utilities tend to be in major metropolitan areas and therefore are able to spread fixed costs across a larger customer base; others are newer systems with fewer capital needs associated with maintaining aging infrastructure. (For additional information about the characteristics that tend to lead to higher credit ratings, see "The Common Credit Characteristics Of Highly Rated U.S. Municipal Water And Sewer Utilities," published March 7, 2017.)

Chart 9

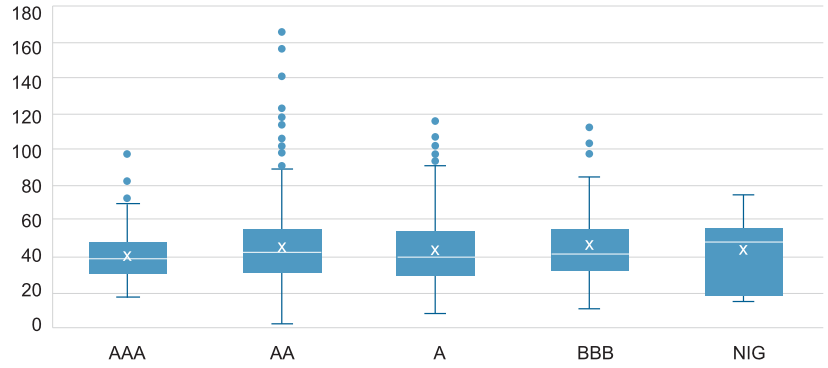
Water Rates By Rating Category



NIG--Noninvestment-grade. Source: S&P Global Ratings.

Chart 10

Sewer Ratings By Rating Category



NIG--Noninvestment-grade. Source: S&P Global Ratings.

Reading Box And Whisker Plots

Box and Whisker plots summarize a lot of information in a single image. For a given sample, the "box" covers the area from the first to third quartile of the sample (the interquartile range [IQR]), with the median marked by a line through the box. The bars extend to the maximum and minimum, excluding outliers. Outliers are identified by the dots, which represent data points more than 3x the IQR away from the edges of the box. An 'x' marks the mean. So shorter boxes depict more compact data sets, and taller ones represent a wider range of results.

High Rates As An ESG Concern

S&P Global Ratings has recognized that environmental, social, and governance (ESG) factors have rapidly grown beyond a niche in the global credit markets (see, for example, "The Rise Of ESG In Fixed Income," published on Sept. 10, 2018) and are now an established set of investing principles. Utility managers, however, may view other asset classes as being late to the game. Among water and sewer utilities, there has been embedded into management strategies the idea of the "triple bottom line" of environmental stewardship, financial integrity, and affordability, which aligns quite nicely with ESG. For this essential service, affordability takes on the question of whether water is a human right, a property right, a commodity, or something else entirely. Potable water is not free, because the infrastructure to access the raw water supply, properly and safely treat it, and ultimately deliver it to the end user is not free. But if it is not free, then how should the cost be determined? As a signatory to the United Nations Principles for Responsible Investment (UN-PRI) global initiative in May 2016, S&P Global Ratings is committed to the goal of encouraging and developing greater transparency and consistency of ESG factors in the credit rating process and credit reports. Just as we seek to better incorporate affordability as part of utility-related ESG

For this essential service, affordability takes on the question of whether water is a human right, a property right, a commodity, or something else entirely.

evaluations, so do we more broadly seek to update our global analytical approach (see "S&P Global Ratings' Proposal for Environmental, Social and Governance (ESG) Evaluations," published Sept. 24, 2018).

Do Affordability Programs Affect Creditworthiness?

Recent increases in water and sewer rates and charges have drawn attention to affordability concerns, for both local governments and federal officials. While there are federal affordability programs to help low- and fixed-income families afford housing, food, and energy, no such federal program currently exists for water and wastewater service. As a result, many local utilities and municipalities have explored introducing their own affordability programs. According to the most recent AWWA "State of the Water Industry Report," the percentage of survey respondents that indicated their utilities provide some form of bill assistance increased to 48% in 2018 from 39% in 2017. Utility managers have taken a broad range of approaches, including creating rate-funded rebate programs, providing "lifeline" rates, changing rate structures, providing payment plan options, and partnering with third parties to implement programs. Depending on the state, there may be restrictions on the type of programs that may be allowed or how they can be funded, and it is still most common for us to hear from utility managers that "our affordability program is to keep rates low for everyone."

In general, our criteria for creditworthiness are agnostic as to rate structure. This also applies to affordability programs; S&P Global Ratings does not think that affordability programs directly contribute to creditworthiness nor does it have a bias toward or against specific types of programs. However, depending on how a program is implemented, a successful affordability program can contribute to overall credit strength, and a poorly conceived or implemented one can introduce additional risk that may affect our view of the overall creditworthiness of a utility.

In general, our criteria for creditworthiness are agnostic as to rate structure. This also applies to affordability programs.

Well-constructed affordability programs can improve revenue certainty and stability by helping reduce delinquency and nonpayment rates, and manage political opposition to rate increases for customers that a utility has determined to have a stronger ability to pay. Efforts to increase water and sewer rates are often met with the strongest opposition by people on low or fixed incomes, including retirees. By providing programs to help customers with the greatest affordability constraints, these efforts could reduce resistance to rate increases on others, provided the size of the differential does not get too extreme or raise questions about the cost of service.

Among the most high-profile examples is the process that ultimately led to Great Lakes Water Authority (GLWA), Mich.'s successful water residential assistance program (WRAP). While Detroit's water and sewer department did not experience the profound fiscal distress that the general government did, the city had for years been experiencing chronic delinquencies due to numerous factors, including antiquated billing procedures, inconsistent shut-offs and collection efforts, a significant number of inactive accounts, and socioeconomic factors limiting many residents' ability to pay. Billing enforcement actions such as service shut-offs faced public scrutiny and headline risk.

Soon after GLWA's creation, it established the WRAP and made it available to all qualified low-income customers in its service base. While many of the chronic issues described above are still pressuring collections in Detroit, GLWA has been able to integrate WRAP with its other collections efforts, providing means-based help that management has estimated has since averted 3,100 shut-offs and conducted over 1,000 water audits that have helped customers both detect leaks and establish more efficient conservation. The implementation of WRAP has also helped GLWA focus its collections efforts in several other ways. Collections have improved because the affordability program helps spread repayment of delinquent payments out over time.

While many of the chronic issues described above are still pressuring collections in Detroit, GLWA management

Because any customer who is both enrolled in a payment plan and current in its billing cannot have service shut off, it also focuses the city's efforts on shut-offs for habitually delinquent customers who have not engaged with the city to arrange for a payment plan. For fiscal 2019, GLWA budgeted $4.9 million for the WRAP, against water and sewer operating revenues from just city of Detroit customers of $359 million.

Despite the gains in a city like Detroit, attempts to introduce an affordability program can also create additional risks. Depending on the number of customers who qualify for financial assistance and the size of the benefit, program costs (appropriated costs or foregone revenues) could exceed projections to the detriment of system net revenues. Any attempts to introduce a program could face similar public opposition as rate increases often do, causing lawsuits and revenue uncertainty for extended periods. More complicated rate structures can also lead to customer confusion and increase the likelihood of administrative errors.

has estimated it has averted 3,100 shut-offs and conducted over 1,000 water audits since implementing WRAP.

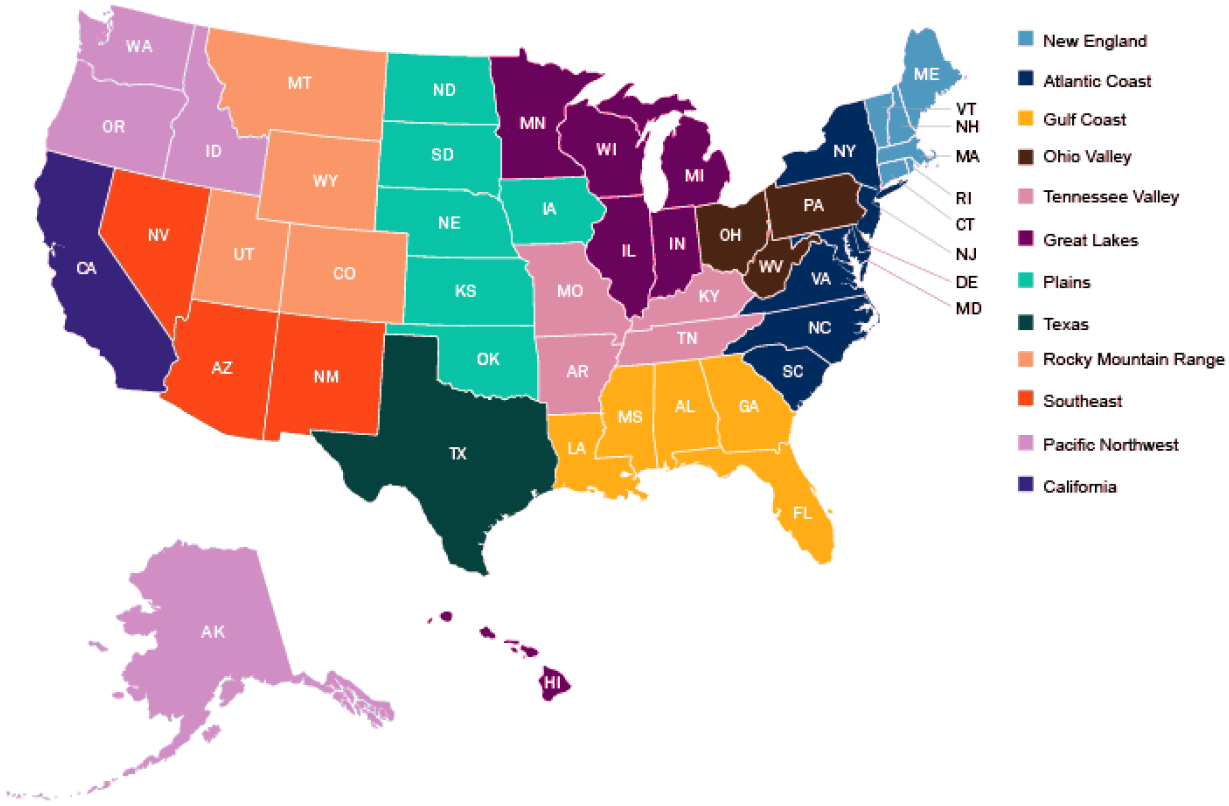
System Location Matters

There are a number of geographic factors that contribute to customer rates, such as climate and type of water supply, as well as utility size and population density. Economic factors can also affect rates, such as local income and poverty levels. Many of the utilities we rate have higher rates for out-of-town customers, to capture those costs associated with the extra distance to their homes, as well as, in some cases, the lack of financial support from the municipality where the utility is based.

S&P Global Ratings rates utility revenue-backed bonds in almost every U.S. state, although the number of ratings depends on a number of factors, including access to state bond banks and debt restrictions. For monitoring and analytical purposes, we have divided the country into 12 regions; these regions share some common characteristics such as climate and consumption patterns, the preponderance of agriculture, and to some extent economic characteristics.

Chart 11

S&P Global Ratings Regions

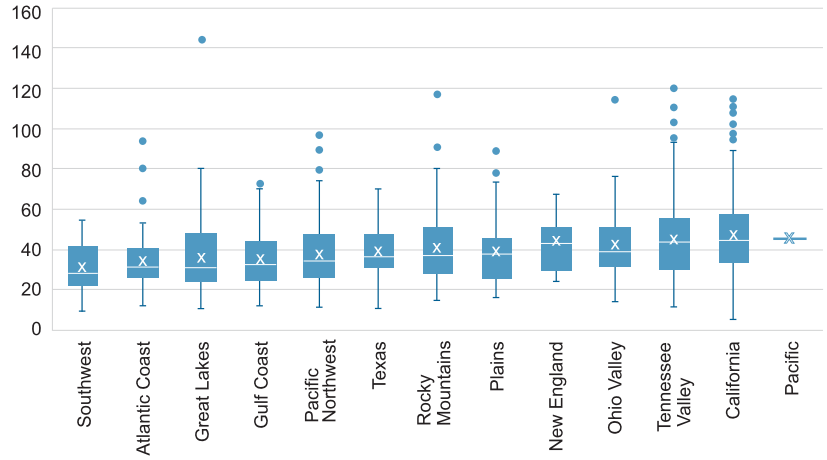


Source: S&P Global Ratings.

Looking at water bills across these regions, the median rate ranges from $28 in the Southwest to $45 in the Tennessee Valley and California. The lower rates in the Atlantic Coast (per the chart legend) and Great Lakes states are less surprising given the strong availability of surface and groundwater sources, as well as Public Utility Commission (PUC) regulation of rates in some states (e.g., Wisconsin and Indiana). Low rates in the Southwest are more surprising due to the scarcity of water and large amounts of infrastructure and energy required to transport water to population centers, although many of the systems in that region are newer and don't have as many costs associated with aging infrastructure.

Chart 12

Water Rates By Region



Source: S&P Global Ratings.

High rates in California partially reflect the cost of large infrastructure to move water from the northern to the southern parts of the state, as well as substantial infrastructure to buffer interyear variance in water supply, as most annual precipitation occurs in a few atmospheric river events during the year. Additionally, more stringent regulatory and environmental requirements than elsewhere in the nation lead to more complex and expensive capital infrastructure and the utilities pass these costs on to their customers.

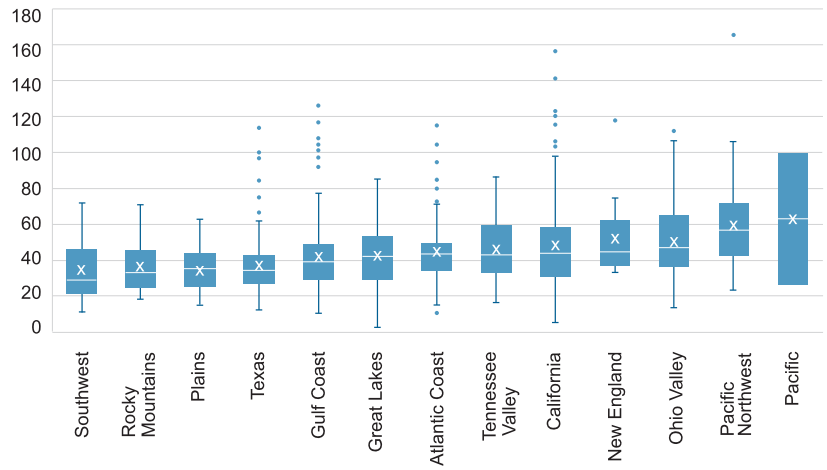
We expect rates in the West, where scarcity is the norm and supply concerns garner attention even in the mainstream media, to be no less immune to pressures. The recently approved "California Water Fix" is among the most high-profile regional collaboration in decades. In 2017 dollars, the state estimates the project could cost close to $16.7 billion assuming no cost overruns and the project is fully operational in 2033. One of the participants, the Metropolitan Water District of Southern California (MWD, AAA/Stable) is allocated 26% of the total project, but has also committed to assume the Central Valley Project allocation, increasing total participation up to $10.8 billion, or 64.6% of the total cost. The management team has estimated the project could affect the average retail ratepayer by about $4.80 per month. We view the potential for a deviation from budget and timeline as likely, and the actual effect on individual households will likely vary widely based on local circumstances, such as the specific purveyor's water supply mix. We would most likely view it as credit impactful if MWD's members begin to push back, either for continued alternative delivery options and a reduced take from MWD, or in an extreme scenario, trying to affect an exit from their contractual relationship with MWD, citing wholesale (and therefore, retail) rates that are already somewhat high.

The Southwest also has the lowest sewer rates in our sample, with a median rate of $29. Many Southwest systems benefit from being relatively young, whereas aging infrastructure and the need to separate old combined sewer systems have increased capital costs at many systems in other parts of the nation. The Pacific Northwest is highest with a median of $57. The Pacific Northwest number includes 40 utilities in the Seattle-Tacoma-Bellevue metropolitan statistical

area, and may be affected by the consent decree signed between the U.S. EPA and Seattle (see more on consent decrees below). Other regions with high sewer rates, such as the Ohio Valley and New England, tend to have high costs due to aging infrastructure and the presence of systems built with combined sewer and wastewater systems.

Chart 13

Sewer Rates By Region

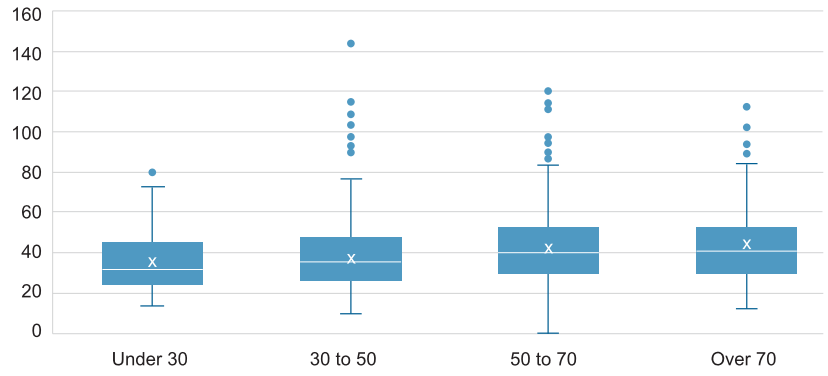


Source: S&P Global Ratings.

Local economic factors can also be a factor in rate setting, as system managers and public officials in charge of rate setting consider ability to pay and the political palatability of rate increases. Under our criteria, we look at a variety of economic factors to help determine creditworthiness, including local income levels (measured using MHHEBI), unemployment levels, the strength of the metropolitan service area (an aggregate assessment that looks at employment diversity, employment growth, and the employment base), the presence of a stabilizing institution such as a major university or military base, and population growth trends. While not all of these factors are likely to affect customer rates, we did look at income levels and poverty rates within the customer base, due to likely concerns about affordability in the rate-setting process and the potential for public opposition to rate increases.

Chart 14

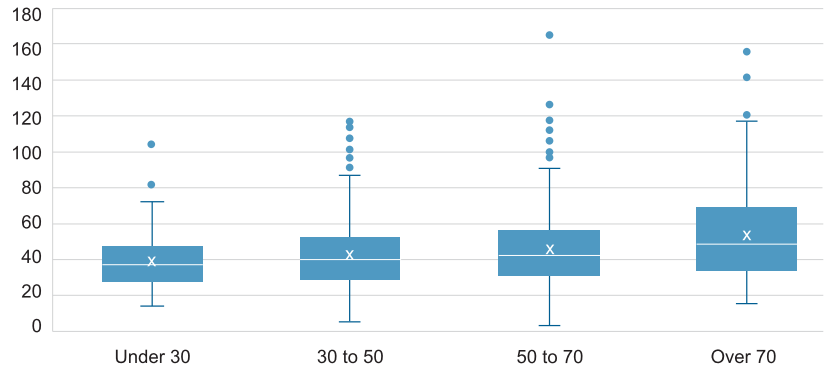
Water Rates By MHHEBI Levels



MHHEBI--Median household effective buying income. Source: S&P Global Ratings.

Chart 15

Sewer Rates By MHHEBI Levels



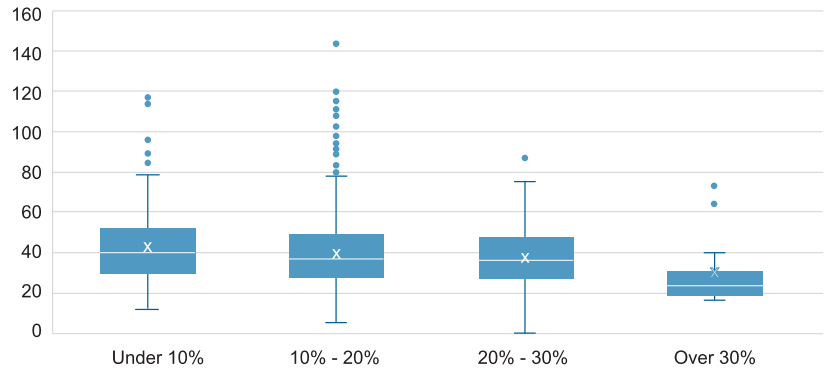
MHHEBI--Median household effective buying income. Source: S&P Global Ratings.

Looking at the data, it appears that higher poverty rates and lower income levels correlate with lower water and sewer bills. In short, ability to pay is a consideration in the rate-setting process. Both income and poverty rates appear to have a more substantial impact on sewer than water bills, possibly because one of the greatest factors in sewer capital plans is regulatory requirements, and there is regulatory sensitivity to affordability concerns. In contrast, water system costs are more the result of local water supply factors than regulatory requirements. It should be noted that the sample of rated utilities with poverty rates over 30% is substantially smaller than the other groups, as these communities likely seek to finance capital investments from other sources before issuing debt in the public market.

Both income and poverty rates appear to have a more substantial impact on sewer than water bills.

Chart 16

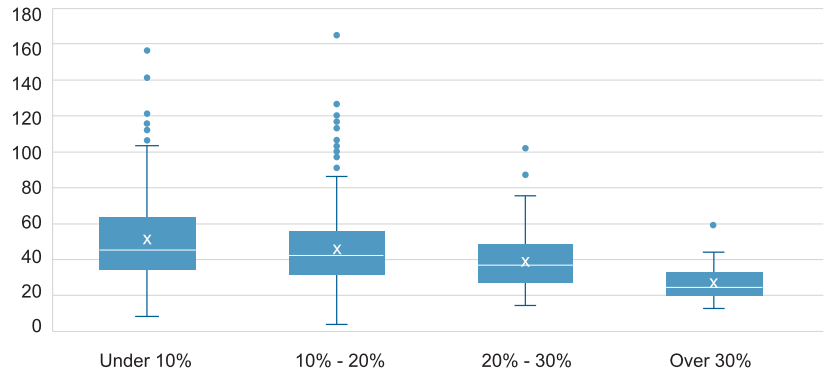
Water Rates By County Poverty Rate



Source: S&P Global Ratings.

Chart 17

Sewer Rates By Poverty Rate



Source: S&P Global Ratings.

Geography Isn't Everything

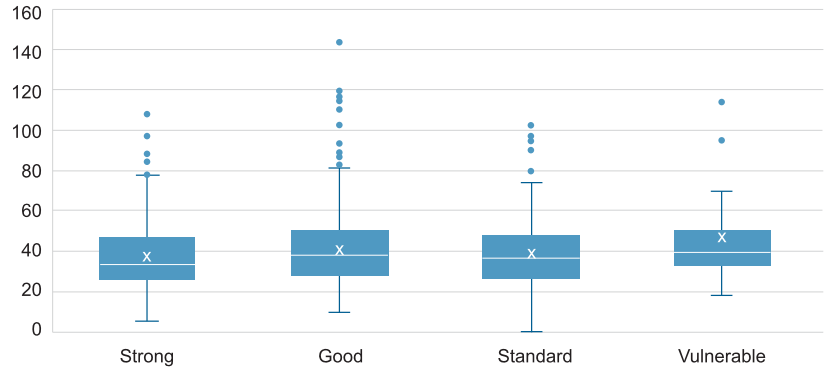
There are a number of other contributors to system costs and rates, which are less easily quantified and not included in our analysis of creditworthiness. They include, among other factors, the type of technology used for processing and treatment (which affects energy, chemicals, and personnel costs); the average age of infrastructure and its condition; payments in lieu of taxes and other payment to or receipts from local governments; state and local regulatory requirements that may exceed federal standards; and economies of scale from using wholesale providers or combining administration of water, sewer, stormwater, and other utility billing and administration.

Additionally, in states where a PUC regulates the rates of publicly owned water and sewer systems, this can affect both the size and timing of rate changes.

One factor that we are able to review with our data set is whether the strength of rate-setting practices affects the rates charged to customers. The strength of rate-setting practices is part of our assessment of a system's operational management. The score reflects whether a utility does an annual check for revenue sufficiency, how proactive a utility is in setting rates to meet future revenue needs, whether an authority adopts multiyear rate increases or includes an annual adjustment for inflation, legal restrictions such as PUC oversight or control, and compliance with rate covenants and other financial requirements. There does not appear to be a substantial difference in rates depending on the strength of the rate-setting process. As with the percentage of utilities with county poverty rates over 30% above, the proportion of utilities with rate-setting assessments of "vulnerable" is substantially smaller than the rest of the sample.

Chart 18

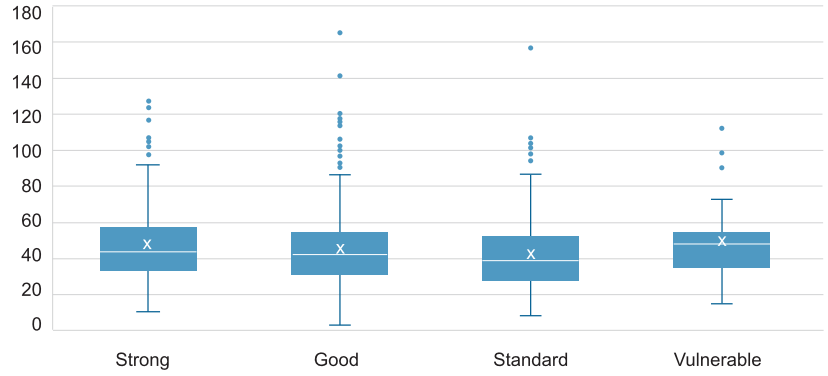
Water Rates By Rate-Setting Practices



Source: S&P Global Ratings.

Chart 19

Sewer Rates By Rate-Setting Practices



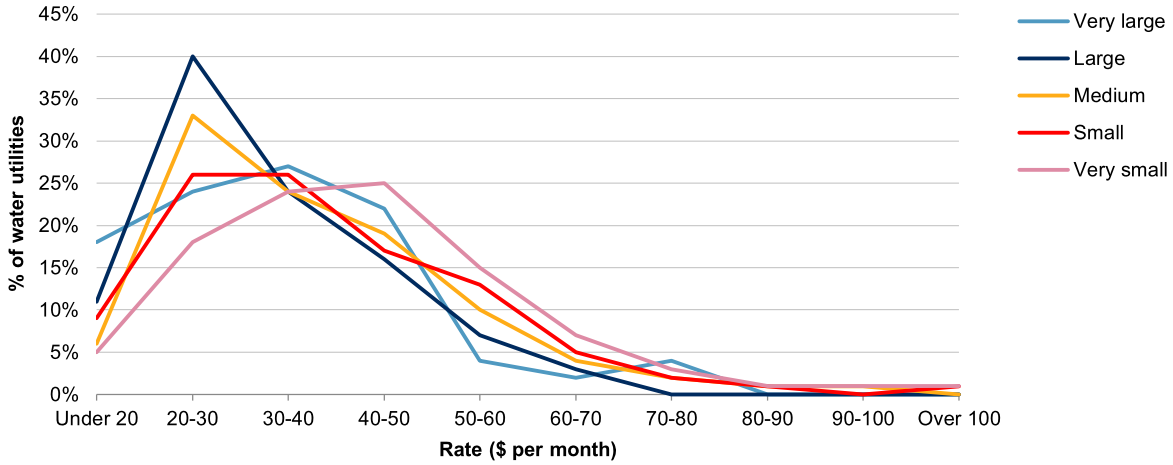
Source: S&P Global Ratings.

Another factor we considered was utility size. There are a number of advantages to operating a large utility: They are often located in areas with high population density, so there are more ratepayers per mile of pipe, and more customers in total to help pay for system costs. According the 2018 AWWA survey, half of respondents from very large utilities expressed confidence that they would be "very able" to cover the full cost of providing service, in contrast to 27% and 29% of respondents from small and midsize utilities, respectively. The majority of utilities tracked by S&P Global Ratings fall into our "small" and "very small" categories (between $5 million and $25 million in annual operating revenues, and less than $5 million, respectively). While the bulk of utilities in the "small" to "very large" categories charge rates still below $40 per month, the highest rates in the sample get bigger as the systems get smaller: The highest rate in a very large system is less than $80, but by the time you get to a midsize system, it is nearly $110. Also, the distribution in very small systems appears skewed higher, with nearly half of very small systems setting monthly rates over $50 as opposed to one-third of larger systems. In addition to having a smaller number of customers to absorb operating and fixed costs, smaller systems also tend to have more regulatory infractions, which can lead to fines and unanticipated capital expenses. (For more information about the effects of utility size, see "U.S. Municipal Utilities Sector 2018 Outlook: Being Bigger Has Its Advantages," published Jan. 18, 2018.)

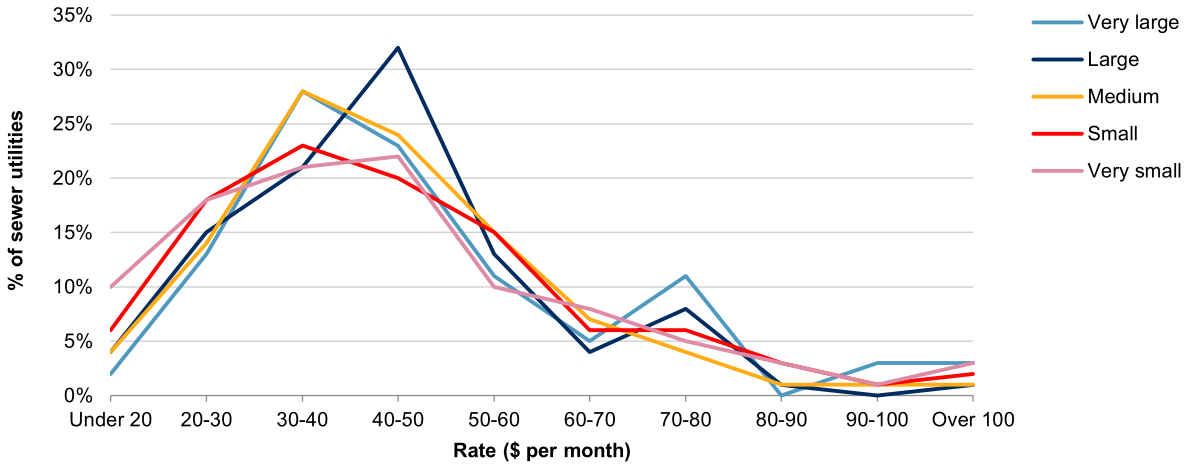
Nearly half of very small water systems have monthly rates over $50 as opposed to one-third of larger systems.

Chart 20

Water Rates By Utility Size



Sewer Rates By Utility Size



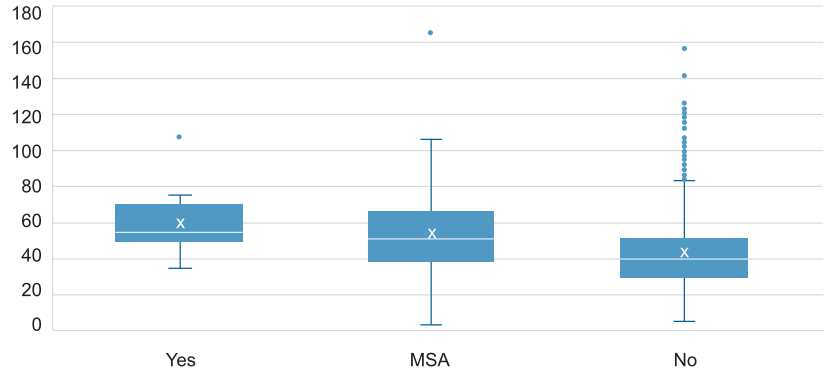
There does not appear to be such a clear trend in sewer systems, potentially due to the importance of regulation in determining sewer system capital plans.

Some states or municipalities have their own environmental and health requirements above and beyond federal standards, such as Florida's restrictions on ocean outflows or local fluoride requirements. State-level differences would be captured in the regional analysis above. However, one of the major sources of costs for sewer utilities in recent decades has been federal EPA

consent decrees for sanitary sewer and combined sewer overflows. Plans to address overflows often take decades and many millions of dollars of capital work to address, including such activities as separating combined sewer systems, expanding wet weather capacity at treatment plants and in conveyance systems, and reducing inflow and infiltration throughout the system. As can be seen, the rates at utilities under a consent decree are substantially higher than those that are not.

Chart 22

Sewer Rates By Consent Decree



Source: S&P Global Ratings.

We have also included a third category: utilities in the same metropolitan area as a utility under a consent decree. The effect of a consent decree on these systems can be either direct or indirect. Systems can be affected directly as wholesale customers of the system under a consent order. For example, the Allegheny County Sanitary Authority (ALCOSAN) serves 83 municipalities in the Pittsburgh area, and the majority of these systems only do collection and conveyance to ALCOSAN. As ALCOSAN has worked through implementing its Wet Weather Plan, it has adopted significant annual increases in the rates that its wholesale customers pay; these utilities then had to pass their rising costs on to ratepayers. Many of the municipalities have also had to do additional work to reduce inflow and infiltration within their service areas. In other areas, the effects may be more indirect, as rising rates at the utility under consent order may make rate increases more politically palatable for neighboring communities. While there will not always be such regional impacts, rates at utilities near one under consent order are also notably higher than those elsewhere. Given that consent decrees appear to lead to rate increases, it is important to note that the EPA does consider the affordability of system improvements. Those utilities (such as ALCOSAN) that have demonstrated affordability concerns have been able to work with the EPA to modify capital plans to reduce affordability stress, including prioritizing capital investments and extending the amount of time to implement capital plans.

Those utilities that have demonstrated affordability concerns have been able to work with the EPA to modify capital plans to reduce affordability stress.

Nationwide, Rates Are Rising

The AWWA each year since 2004 surveys its membership as part of its annual "State of the Water Industry" report. In the most recent report (May 2018), AWWA captures the continued trend of greater efficiency (generally measured in the industry as declining per capita per day

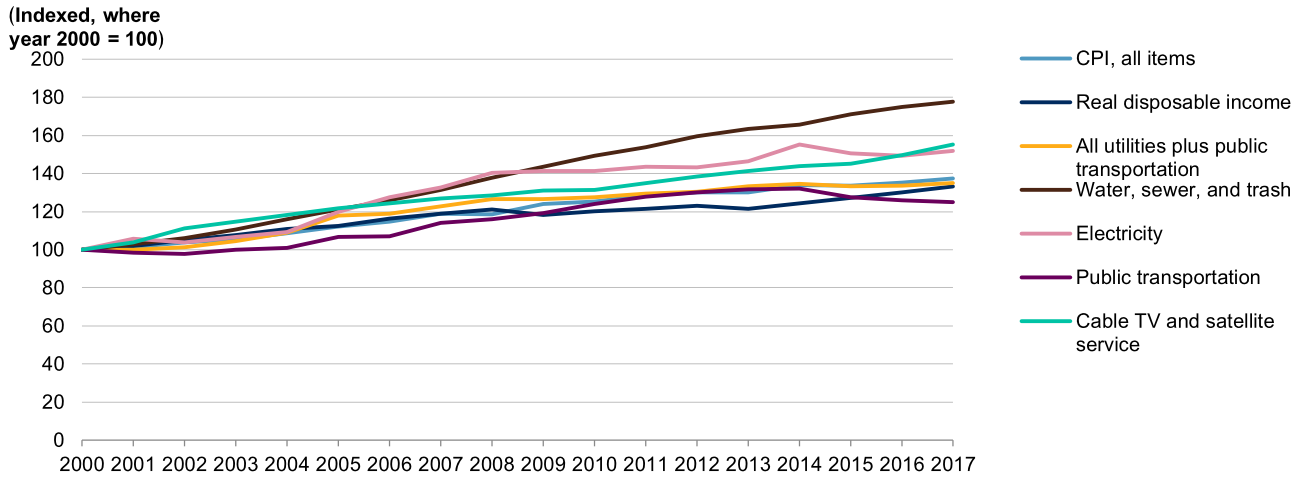
consumption) keeping total water sales flat if not slightly declining as fixed costs for replacements and renewals (regardless of whether discretionary or via unfunded mandates) increase. Simply put, greater revenue requirements and fixed costs are being spread over flat-to-declining sales. Simple numerator-denominator relationships do not favor rates, which remain pretty much the only source of operating revenues for utilities and the ability to pay for capital improvements. The AWWA survey's top two concerns among respondents are replacing aging infrastructure and the ability to finance those replacements.

Adding to the mix is that during the last major phase of large investments in the 1970s and 1980s, the federal level of participation was slightly larger, even as its total contribution to water and sewer infrastructure has remained relatively small overall ("Four Trends in Government Spending on Water and Wastewater Utilities since 1956," Shadi Eskaf, U.S. EPA's Region 4 Environmental Finance Center at University of North Carolina, Chapel Hill. Sept. 9, 2015). Most of the costs of most the infrastructure in the U.S., especially for water and surface transportation, has been borne by state and local governments (SLG). We have previously commented that even if an infrastructure incentive package is approved by Congress and the president, the SLG percentage of the total is unlikely to change appreciably.

While water and sewer provision in the developed world remains incredibly efficient and still with actual costs generally lower than premium TV or smart cellphones, the rate of growth year to year has generally outstripped those services and even outstripped both inflation and real incomes (see chart below). S&P Global Ratings anticipates this trend will continue unabated unless and until a different scheme for paying the costs of an extraordinarily capital-intensive industry has been established and proven.

Chart 23

Selected Inflation Rates, 2000 To 2017



The Effects Of Consumption On Average Bills

While this article has focused mostly on rates for 6,000 gallons, the actual average bill for households is strongly affected by the rate structure and average consumption levels. Where utility management is able to provide average consumption, we often consider that figure in place of the 6,000-gallon baseline so that our assessment of affordability more closely reflects an actual household bill. For example, in Pennsylvania, many issuers report average household consumption of 4,000 gallons per month (and some are even lower). However, this does not always affect affordability, as many Pennsylvania issuers charge a flat monthly rate, since encouraging conservation is far less of a concern than having predictable levels of revenue given local consumption patterns and water supply. In contrast, utilities in the West often report average consumption of 10,000 gallons or more, given significant irrigation in a dry climate. Rate structures that base sewer bills on winter water consumption attempt to avoid charging for wastewater treatment where water is being used for lawns, not toilets. Additionally, while the rates discussed above have assumed a non-conservation scenario, water rates during drought and other conservation periods can be substantially higher. Some of the utilities we rate charge an additional $5 per thousand gallons or more during drought periods. These conservation rates are meant to serve as a short-term demand management tool. We would only expect customers to maintain usage levels and pay substantially higher bills for a prolonged period in areas with very low price sensitivity.

Whereas in the past, increases in volumetric rates were offset by lower use, further increases will have a bigger effect when consumption doesn't change or when rate structures draw more revenue from fixed charges.

In recent years, increases in water and sewer rates have been tempered by increases in conservation. Managers at the utilities we work with have reported declining per capita consumption and flat water demand even as their customer bases have grown. S&P Global Ratings has reflected that within its approach to assessing rates: Its default assumption used to be 8,000 gallons of monthly usage, but it is now 6,000 gallons. However, many of the greatest conservation gains associated with the transition to low-flow appliances have been realized, and we increasingly hear from management that the decline in per-household usage is tapering. Additionally, with national trends of lower consumption and a higher share of fixed costs, many utilities are starting to generate more revenues from fixed charges, as opposed to volume-based revenues. Whereas in the past, increases in volumetric rates were offset by lower use, further increases will have more of an effect when consumption doesn't change or when rate structures draw more revenue from fixed charges.

What Lies Ahead For Water And Sewer Rates?

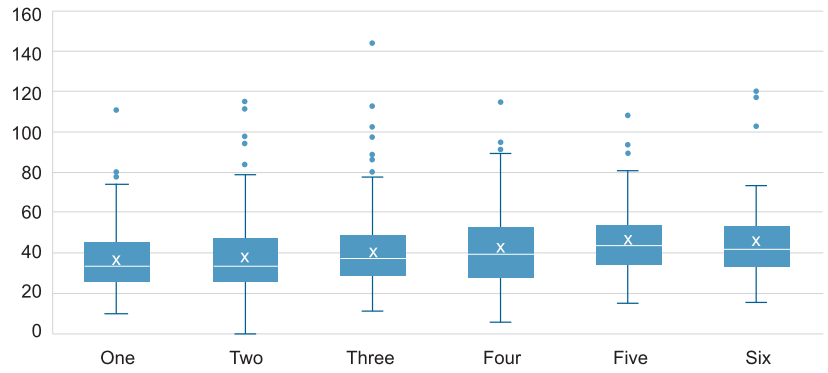
We do not anticipate that the rise in water and sewer rates will slow anytime soon. The tragedy of Flint, Mich., and periodic other high-profile infrastructure crises may create a fever pitch for elected officials and decision-makers to re-think priorities, but local and state budgets are already competing against other infrastructure needs that sometimes also affect rates, such as resilience, climate change, and emerging risks such as cybersecurity. The effect of rising rates on households has been somewhat mitigated over the past decade as water consumption rates have declined across the country and consumers become more savvy about water conservation and efficiency. However, many utilities report that the consumption curve has started to level off, as many of the easy fixes of low-flow plumbing have already been implemented. Shifts to increase the fixed portion of the bill to meet fixed utility costs and fewer easy ways to reduce water bills mean that future rate increases will affect households more directly. Changes will be most difficult in small and rural communities that lack economies of scale and have large amounts of infrastructure relative to the population.

There have been a number of policy proposals in recent years focused on spurring greater infrastructure investment, including in water and sewer systems. However, it appears that few of these will address concerns about rising system costs and affordability. Most of the policy proposals have focused on expanding federal state revolving funds, the Water Infrastructure Finance and Innovation Act, and other sources of debt, while some focus on increasing private participation in public utilities. However, based on our sample, we can see that higher levels of debt correlate with higher rates. In time, declining public funding and additional debt financing for capital needs will push more system costs onto ratepayers.

In time, declining public funding and additional debt financing for capital needs will push more system costs onto ratepayers.

Chart 24

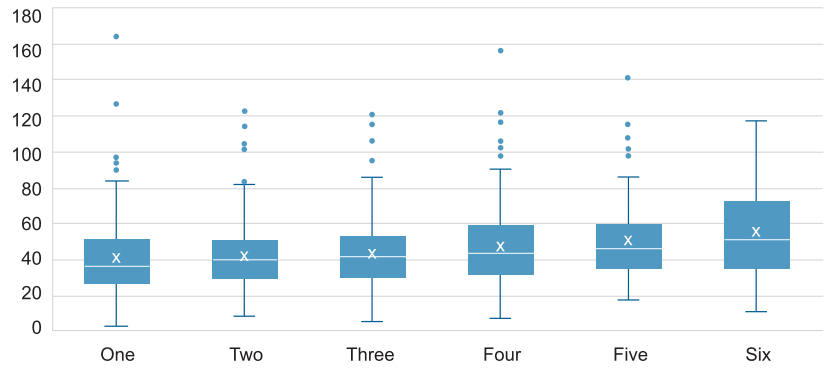
Water Rates By Debt Score



Source: S&P Global Ratings.

Chart 25

Sewer Rates By Debt Score



Source: S&P Global Ratings.

The federal EPA has already demonstrated its willingness to work with utilities to allocate more time than was originally proposed to meet overflow concerns while reducing rate shock. Last year, a bill was introduced in the U.S. House of Representatives to create a program to provide grants to municipalities and public water and sewer utilities affected by federal consent decrees so they can provide assistance to low-income households. Some in the EPA as well as local utilities nationwide have pushed for an update to the definition of "affordability" to look at the effects of rates on low- and fixed-income populations, as opposed to the current approach, which focuses on a single metric. AWWA also reports increased interest in affordability programs, and some utilities are already implementing alternative payment plans, base rates, and other forms of financial assistance.

We at S&P Global Ratings will continue to monitor this negotiation between rising costs and affordability concerns to see if management teams continue to obtain the revenue increases as needed to maintain financial strength and keep the water and sewer sector one of the most highly rated in public finance.

This report does not constitute a rating action.

Attachment E

FY 2019 Proposed RRC Committee Workplan

Objective/*Activities*/Task	Date of Activity	Completed	Responsible Department
1. Propose and Establish Retail Rates for FY 2020			
a. FY 2020 Budget presentation to Board	January 3, 2019		Chief Financial Officer
b. FY 2020 Proposed Rates, Charges & Fees presented to RRC	January 22, 2019		Rates and Revenue
c. RRC recommendation on proposed FY 2020 rates	February 26, 2019		Rates and Revenue
d. Board approves proposed FY 2020 rates	March 7, 2019		
e. Publish Proposed Rates and Fees in *D.C. Register*	March 22, 2019		General Counsel
f. Public Comment and Outreach	March 22 – April 22, 2019		External Affairs
g. Public Hearing	May TBD, 2019		Board Secretary
h. Public Hearing Record Closes	TBD, 2019		
i. RRC final recommendation to approve FY 2020 rates	June 25, 2019		Rates and Revenue
j. Board approves FY 2019 & FY 2020 rates	TBD		
k. Publish Final Rates and Fees in *D.C. Register*	TBD		General Counsel
l. Rates Go-Live	October 1, 2019 (FY 2020)		Rates and Revenue and Customer Service
2. Conduct a Review of the Impact of the CRIAC on Various Customer Segments (on-going) *including low-income customers who do not qualify for CAP, non-profit organizations and small businesses owners*			
a. CRIAC overview to RRC	November 15, 2016	√	Rates and Revenue
b. Discuss the CRIAC restructuring of various segments including low-income customers who do not qualify for CAP, non-profit, charitable and religious organizations and small businesses.	February 21, 2017	√	
c. Comparison of how other utilities with impervious area charges segment non-residential customers and provide discounts/credits/ exemptions	November 14, 2017	√	
d. Stakeholder Alliance “Clean Rivers Reformulation Strategies” meeting	September 20, 2018 October 11, 2018 November 28, 2018	√ √ √	

Attachment E

FY 2019 Proposed RRC Committee Workplan			
Objective/*Activities*/Task	Date of Activity	Completed	Responsible Department
3. Delinquent Accounts			
a. *Soldiers Home Negotiations*	Monthly, as needed		General Counsel
4. Establish CAP2 Program and Rules to Implement District CAP3 and CRIAC Nonprofit Relief Programs to Mitigate Impacts of DC Water Rates, Fees and Charges on Low-Income Residents Currently not Eligible for CAP and District of Columbia Identified Customers			
a. *Regulations to Establish CAP2 Program and Rules for Implementing District CAP3 and CRIAC Nonprofit Relief Programs*			
1) Presentation to RRC on Rate Policy Options and the RSF	April 24, 2018	√	Rates & Revenue
2) Presentation to Joint RRC & F&B Committees on one-time transfer of $6 Million from the RSF to FY 2019 Budget	June 26, 2018	√	
3) F&B Committee recommends one-time transfer of $6 Million from the RSF to FY 2019 Budget	June 26, 2018	√	Rates & Revenue
4) Board approved one-time transfer from RSF in FY 2019	July 5, 2018	√	
5) RRC update and approval of proposed CAP2 Program and rules implementing District CAP3 and CRIAC Nonprofit Relief Programs	September 25, 2018	√	Rates & Revenue
6) Board approval of CAP2 Program and rules implementing District CAP3 Nonprofit Relief Programs	October 4, 2018	√	
7) Publish NOPR for CAP2 Program and rules implementing District CAP3 and Nonprofit Relief Programs	October 19, 2018	√	General Counsel
8) Publish NOPH for Public Hearing	October 19, 2018	√	General Counsel
9) Public Comment Period	October 19 – November 19, 2018	√	External Affairs
10) Update the RRC on the CAP expansion communication plan & system implementation	October 23, 2018	√	Rates & Revenue
11) Public Hearing	October 30, 2018	√	Board Secretary

Attachment E

FY 2019 Proposed RRC Committee Workplan

Objective/*Activities*/Task	Date of Activity	Completed	Responsible Department
4. Establish CAP2 Program and Rules to Implement District CAP3 and CRIAC Nonprofit Relief Programs to Mitigate Impacts of DC Water Rates, Fees and Charges on Low-Income Residents Currently not Eligible for CAP and District of Columbia Identified Customers, (Continued)			
12) Special RRC meeting to recommend final CAP2 Program and rules implementing District CAP3 and CRIAC Nonprofit Relief Programs	November 29, 2018	√	Rates & Revenue
13) Board approval of CAP2 Program and rules implementing District CAP3 and CRIAC Nonprofit Relief Programs	December 6, 2018		
14) Publish final NOFR for CAP2 Program and rules implementing District CAP3 and CRIAC Nonprofit Relief Programs	December 21, 2018		General Counsel
15) Go-Live	January 1, 2019		Rates and Revenue and Customer Service
5. 2018 Cost of Service Miscellaneous Fees and Charges			
a. RRC COS Update and Recommendation on Proposed Amendments to Miscellaneous Fees & Charges	October 23, 2018	√	Rates & Revenue
b. Board Approval of Notice of Proposed Rulemaking (NOPR) for Miscellaneous Fees & Charges	November 1, 2018	√	
c. Publish NOPR in DC Register	November 23, 2018		General Counsel
d. Public Comment period	November 23 – December 24, 2018		Board Secretary
e. RRC Final Recommendation to Approve Amendments for Miscellaneous Fees & Charges	January 22, 2019		Rates & Revenue
f. Board Approval of Notice of Final Rulemaking (NOFR)	February 7, 2019		
g. Publish NOFR in DC Register	February 22, 2019		General Counsel
h. Miscellaneous Fees & Charges Go-Live	February 22, 2019 (FY 2019)		Rates and Revenue/ Customer Service

Attachment E

FY 2019 Proposed RRC Committee Workplan

Objective/*Activities*/Task	Date of Activity	Completed	Responsible Department
6. Retail Groundwater Sewer Rate Ratemaking			
a. RRC Update and Recommendation on Proposed Retail Groundwater Sewer Rate	October 23, 2018	√	Rates & Revenue
b. Board Approval of Proposed Notice of Proposed Rulemaking for Retail Groundwater Sewer Rate	November 1, 2018	√	
c. Publish Notice of Proposed Rulemaking (NOPR) in DC Register	November 16, 2018	√	General Counsel
d. Public Comment period	November 16 – December 17, 2018		External Affairs
e. Public Hearing	May TBD, 2019		Board Secretary
f. RRC Final Recommendation to Approve Amendments for Retail Groundwater Sewer Rate	June 25, 2019		Rates & Revenue
g. Board Approval of Notice of Final Rulemaking (NOFR)	TBD		
h. Publish NOFR in DC Register	TBD		General Counsel
i. Retail Groundwater Sewer Charge Go-live	October 1, 2019 (FY 2020)		Rates and Revenue/ Customer Service
7. 2019 Potomac Interceptor Cost of Service Study			
a. 2019 Potomac Interceptor Cost of Service Study (FY 2020 – FY 2022 rates are proposed)	April 23, 2019		Rates & Revenue
8. Path to Achieve Asset Management			
a. Path to Achieve Asset Management *Update*	October 23, 2018 November 29, 2018	√ √	Rates & Revenue
9. Cost of Service Studies			
a. Cost of Service Studies Update	TBD		Rates & Revenue

* Dates subject to change

Attachment F

D.C. WATER AND SEWER AUTHORITY
BOARD OF DIRECTORS
RETAIL WATER & SEWER RATES
COMMITTEE MEETING

Tuesday, December 18, 2018; 9:30 a.m.
AGENDA

Call to Order	Committee Chairman
Monthly Updates	Chief Financial Officer
Committee Workplan	Chief Financial Officer
Agenda for January 22, 2019 Committee Meeting	Committee Chairman
Other Business	Chief Financial Officer
Adjournment	

*Detailed agenda can be found on DC Water's website at www.dcwater.com/about/board_agendas.cfm