Attachment A

RAFTELIS

DC WATER

Retail Rates Committee

2021 Cost of Service Study

Preliminary Draft Results | January 28, 2020

AGENDA

- Background
  - Objectives of the Cost of Service Study
- Revenue Sufficiency Analysis
  - Cost Drivers and Trends
  - FY 2021 Results
- Cost of Service Analysis – Rate Equity
  - COS Study Initiatives
  - Cost of Service Update
  - Results and Customer Impacts
- Next Steps

Background

Background

DC Water has conducted a Cost of Service (COS) Study every three years, and will now be conducting a COS Study every other year. Raftelis has performed the last three studies in 2012, 2015, and 2018.

Study Components

1. Revenue Sufficiency Analysis – Do the proposed rates recover adequate revenue to meet expenditures?
2. Cost of Service Analysis / Rate Equity – Are proposed rates equitably recovering the costs of providing service?
3. Alternative Rate Structure Analysis – Are there alternative rate structures that may more effectively meet DC Water's highest priority pricing objectives?

Objectives of the COS Study

- DC Water consistently prioritizes the following pricing objectives:
  1. Revenue Sufficiency – Rates should recover revenue necessary to operate and maintain the utility in perpetuity and meet all legal, regulatory, and permitting requirements
  2. Cost of Service Recovery – Rates should be supported by industry practice and ensure that customers pay their fair share
  3. Simplicity – Rates and charges should be easy for customers to understand
  4. Affordability – DC Water should minimize customer bills while not sacrificing good, clean, and safe service

Revenue Sufficiency Analysis

Revenue requirements are the total cash needs of the utility to fund operating and capital costs including all debt service obligations and reserve fund contributions.

Cost Drivers & Trends

- Capital costs are increasing due to regulatory requirements and infrastructure rehabilitation, particularly for wastewater and CSO mitigation
- DC Water has continued to make attempts to lower Operating and Maintenance expense increases to keep rates as low as possible for customers
- DC Water is utilizing Rate Stabilization Fund transfers to help mitigate increases
- Per capita consumption has continued to decrease causing overall billable consumption to decline

Revenue Sufficiency Findings

Raftelis projects revenue based on rates and units of service (number of accounts, billed consumption, and impervious ERUs)

- Revenues under proposed rate increases are sufficient to fund utility cash requirements in FY2021 and FY 2022
- Reserve funds can be maintained at target levels
- Debt service coverage is adequate to meet required bond covenants

Comparison of Revenues & Expenses
(FY 2021)

	Financial Plan	Raftelis Model	Delta
Revenue			
Operating	$ 689,092,199	$ 687,498,286	*$ (1,593,913)*
Non-Operating	44,235,752	44,235,752	-
Total: Revenue	$ 733,327,951	$ 731,734,038	*$ (1,593,913)*
Expenses			
Operating	$ 365,658,415	$ 365,658,415	*$* -
Debt Service	222,267,822	222,267,822	-
Total: Expenses	$ 587,926,237	$ 587,926,237	*$* -
Net Cash Available for PAYGO Capital & Other Cash Needs	**$ 145,401,714**	**$ 143,807,801**	**$ (1,593,913)**

Comparison of Revenues & Expenses
(FY 2022)

	Financial Plan	Raftelis Model	Delta
Revenue			
Operating	$ 714,940,216	$ 713,521,374	*$ (1,418,842)*
Non-Operating	50,927,455	50,927,455	-
Total: Revenue	$ 765,867,671	$ 764,448,829	*$ (1,418,842)*
Expenses			
Operating	$ 376,303,303	$ 376,303,303	*$ -*
Debt Service	240,497,131	240,082,928	*(414,203)*
Total: Expenses	$ 616,800,434	$ 616,386,231	*$ (414,203)*
Net Cash Available for PAYGO Capital & Other Cash Needs	**$ 149,067,237**	**$ 148,062,598**	**$ (1,004,640)**

Cost of Service Analysis - Rate Equity

Rate structures apportion the revenue requirements to retail customers based on the demands they place on the utility system.

Cost of Service Initiatives

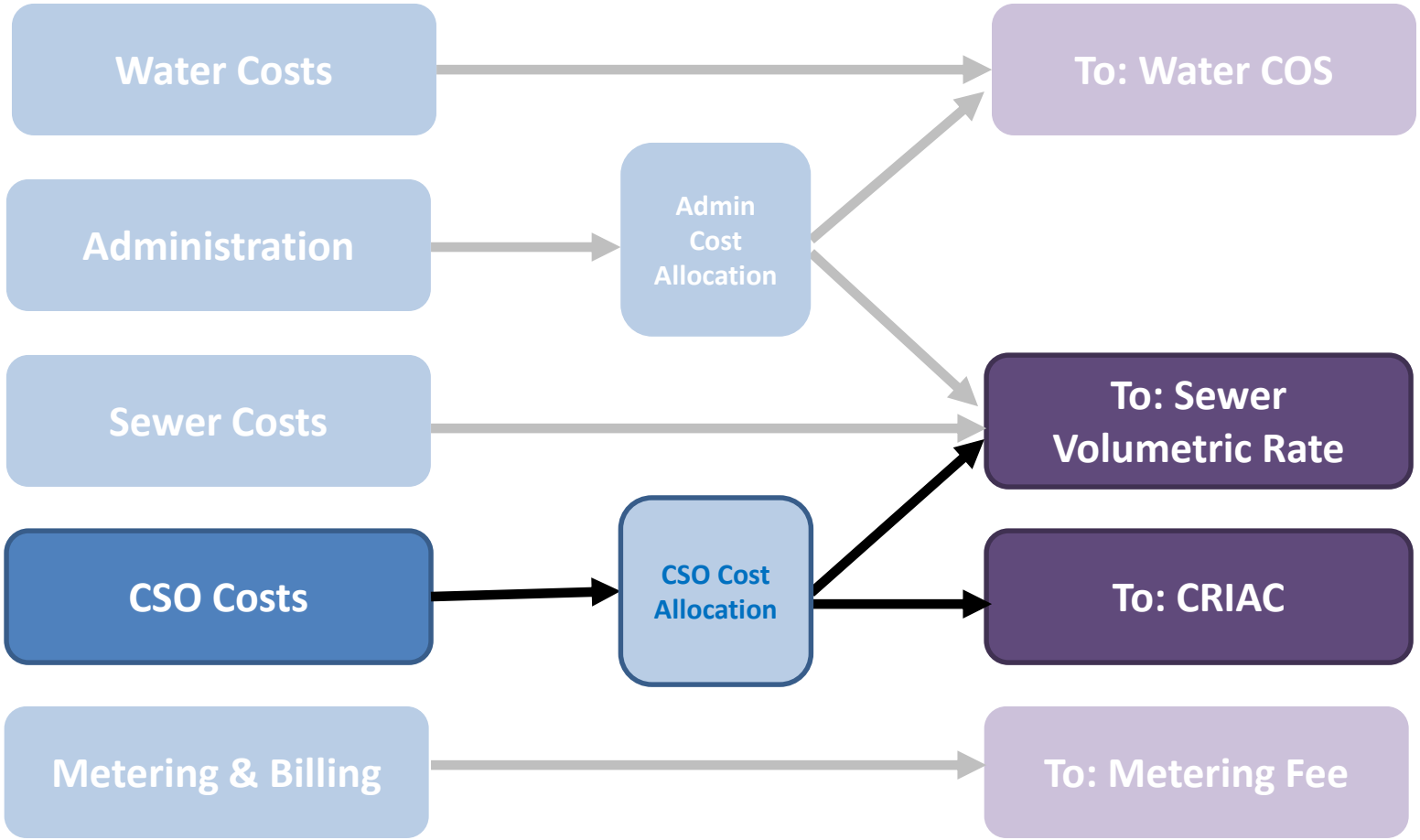
- A reallocation of some costs associated with the Clean Rivers Impervious Area Charge (CRIAC) to the Sewer Volumetric Rate
- A reallocation of some Customer Service operating costs associated with metering, billing, and collections activities to the Metering Fee
- The revenue collected from the ongoing Water System Replacement Fee, originally designed to fund the annual costs of 1% of DC Water's water renewal and replacement program, has been used in its entirety to offset the Water utility's revenue requirements, resulting in a decrease to all water volumetric charges

Clean Rivers Allocation

- Historically, all Clean Rivers capital costs were recovered by the CRIAC
- DC Water implemented a change to bring additional equity to the Clean Rivers program. Funding for Clean Rivers is now allocated between the Impervious Area Charge (to address stormwater contributions) and the sewer volumetric rate (to address wastewater contributions).
- Engineering CSO allocation: 63% stormwater to 37% wastewater
- Phased in over 3 years ending in FY 2022

Cost of Service Allocations

COS Allocations are dependent on the utility's rate structure



Clean Rivers Cost Allocation

- Updated CSO allocations to sewer were phased in over a 3-yr period from FY 2020 through FY 2022

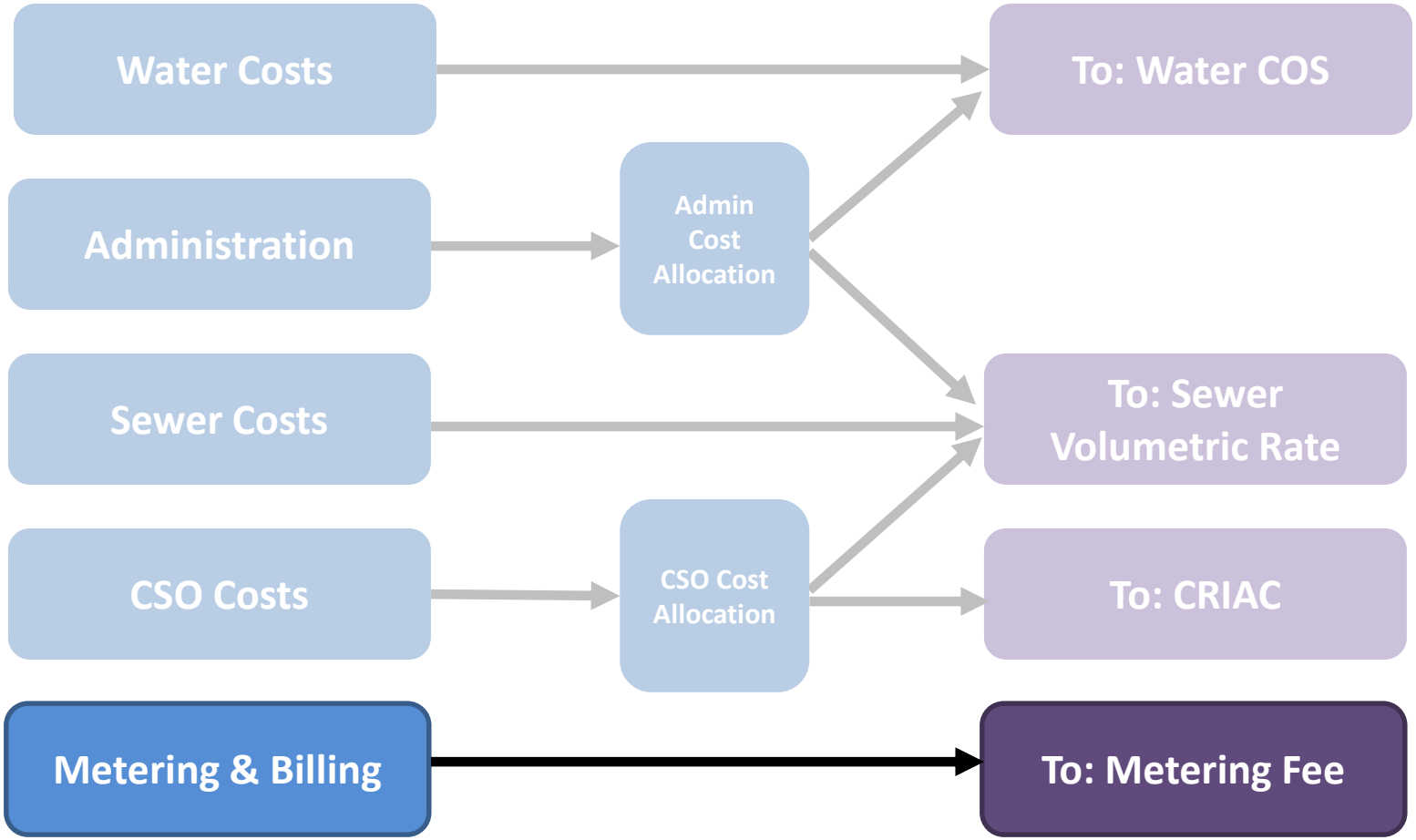
Clean Rivers Cost Allocation	FY 2020 (Existing)	FY 2021 (Proposed)	FY 2022 (Proposed)
CSO CRIAC Allocation (percentage)	82%	72%	63%
CSO CRIAC Allocation ($ millions)	$ 102.0	$ 98.0	$ 92.4
CRIAC ($/ERU/month)	$ 20.94	$ 19.52	$ 18.40
CSO Sewer Allocation (percentage)	18%	28%	37%
CSO + Sewer Allocation ($ millions)	$ 263.7	$ 298.5	$ 321.8
Sewer Volumetric Rate ($/Ccf)	$ 8.89	$ 9.77	$ 10.64

Metering Fee Allocation

- Historically, only automated metering capital costs were recovered in the Metering Fee
- Many utilities recover capital and operating costs associated with metering and billing in a fixed, meter-based charge
  - Baltimore City, Philadelphia Water, PWCSA, Fairfax Water, Howard County (MD), Richmond (VA)
- Shifts costs to the Metering Fee and away from the volumetric rates
- Phased in over 2 years ending in FY 2022

Cost of Service Allocations

COS Allocations are dependent on the utility's rate structure



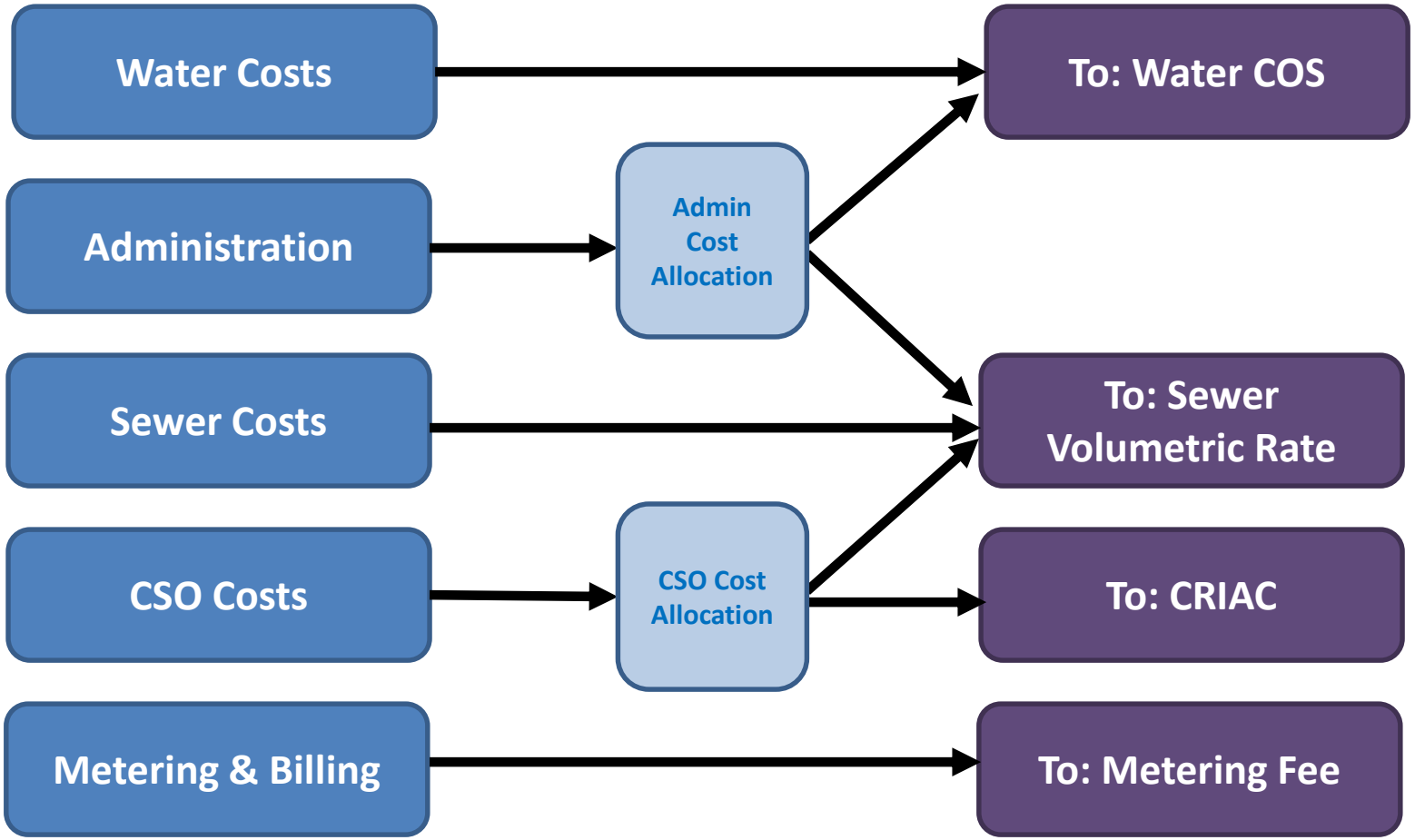
Metering Fee Cost Allocation

- Customer Service allocations and capital replacement costs phased in over a 2-yr period from FY 2021 through FY 2022
- Original automated metering capital costs fully amortized by FY 2020

Metering Fee Cost Allocation	FY 2020 (Existing)	FY 2021 (Proposed)	FY 2022 (Proposed)
Debt Service + Coverage ($ millions)	$ 11.8	$ 7.8	$ 8.1
Allocated Customer Service Costs	$ 0.0	$ 7.2	$ 15.3
Collection Factor (3% reduction)	$ 0.2	$ 0.4	$ 0.7
Metering Fee Revenue	$ 12.0	$ 15.4	$ 24.1
Metering Fee ($/month, 5/8”)	$ 3.86	$ 4.96	$ 7.75

Cost of Service Allocations

COS Allocations are dependent on the utility's rate structure



Retail Rate Development Summary

FY 2021 Unit Costs

	Revenue Requirement	Units of Service	Unit Cost
Metering Fee	$ 15,404,519	258,970 EMUs	$ 59.484/yr
Water Volumetric Rate	141,198,799	31,825,135 Ccf	$ 4.437/Ccf
Sewer Volumetric Rate	298,517,944	30,575,132 Ccf	$ 9.763/Ccf
Clean Rivers IAC	97,957,515	418,364 ERUs	$ 234.144/ERU
Water System Replacement Fee	40,000,000	529,100 EUUs	$ 75.600/yr
Total Revenue Requirements	**$ 593,078,776**		

EMUs – Equivalent Metering Units (based on a residential meter)
ERUs – Equivalent Residential Units (based on tier 1 residential sq footage)
EUUs – Equivalent Usage Units (based on average usage by meter size)
Assumes water conservation of 1.5% in FY 2020 and 2021 based on actual usage trends

Retail Rate Development Summary

FY 2022 Unit Costs

	Revenue Requirement	Units of Service	Unit Cost
Metering Fee	$ 24,082,852	258,970 EMUs	$ 92.995/yr
Water Volumetric Rate	142,805,804	31,504,004 Ccf	$ 4.533/Ccf
Sewer Volumetric Rate	321,804,229	30,249,425 Ccf	$ 10.638/Ccf
Clean Rivers IAC	92,369,650	418,364 ERUs	$ 220.788/ERU
Water System Replacement Fee	40,000,000	529,100 EUUs	$ 75.600/yr
Total Revenue Requirements	**$ 621,062,535**		

EMUs – Equivalent Metering Units (based on a residential meter)
ERUs – Equivalent Residential Units (based on tier 1 residential sq footage)
EUUs – Equivalent Usage Units (based on average usage by meter size)
Assumes water conservation of 1.5% in FY 2020 and 2021 based on actual usage trends

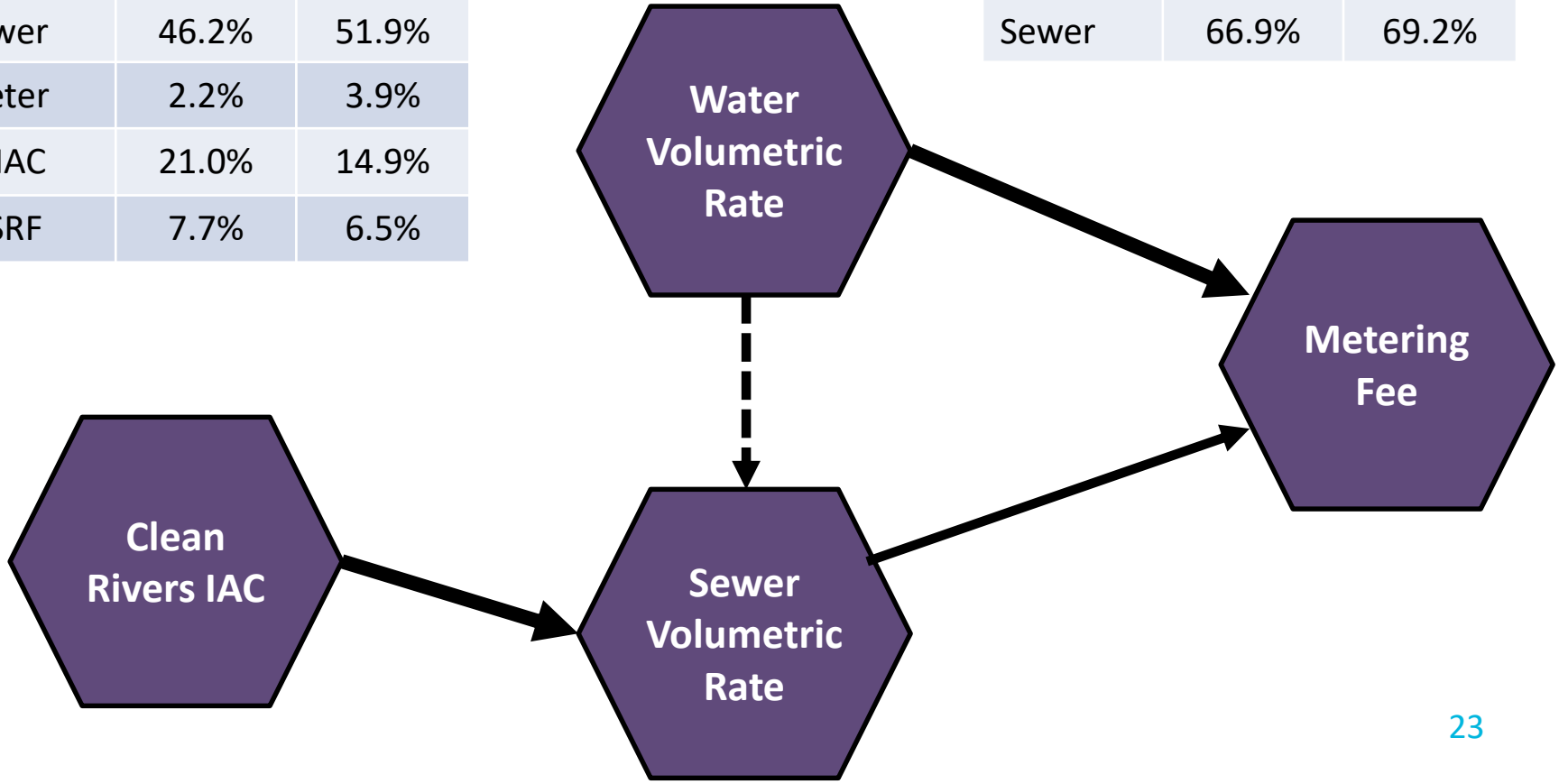
Existing and Proposed Rates

Rate Component	FY 2020 (Existing)	FY 2021 (Proposed)	FY 2022 (Proposed)	FY 2021 % Difference	FY 2021 $ Difference	FY 2022 % Difference	FY 2022 $ Difference
Water Volumetric – Residential – Tier 1	$ 3.06	$ 3.49	$ 3.63	14.1%	$ 0.43	4.0%	$ 0.14
Water Volumetric – Residential – Tier 2	$ 4.10	$ 4.50	$ 4.74	9.8%	$ 0.40	5.3%	$ 0.24
Water Volumetric – Multi-Family	$ 3.54	$ 3.96	$ 4.15	11.9%	$ 0.42	4.8%	$ 0.19
Water Volumetric – Non-Residential	$ 4.25	$ 4.65	$ 4.91	9.4%	$ 0.40	5.6%	$ 0.26
Sewer Volumetric	$ 8.89	$ 9.77	$ 10.64	9.9%	$ 0.88	8.9%	$ 0.87
Metering Fee	$ 3.86	$ 4.96	$ 7.75	28.5%	$ 1.10	56.3%	$ 2.79
Clean Rivers IAC	$ 20.94	$ 19.52	$ 18.40	(6.8%)	($ 1.42)	(5.7%)	($ 1.12)
WSRF	$ 6.30	$ 6.30	$ 6.30	0.0%	$ 0.00	0.0%	$ 0.00

COS Study Cost Recovery Shifts

Cost Recovery by Retail Rate Component	FY 2019	FY 2022
Water	22.9%	23.1%
Sewer	46.2%	51.9%
Meter	2.2%	3.9%
CRIAC	21.0%	14.9%
WSRF	7.7%	6.5%

Cost Recovery by Water and Sewer Only	FY 2019	FY 2022
Water	33.1%	30.8%
Sewer	66.9%	69.2%



Cost of Service Findings

- Increases in the volumetric rates and the Metering Fee partially offset by the reduction in CRIAC for FY 2021 and FY 2022
- Cost of sewer service is rising faster than water service
- Revenue collected from the Water System Replacement Fee, originally designed to fund the annual costs of 1% of DC Water's water renewal and replacement program, used to offset the Water revenue requirements, and decrease Water volumetric rates
- PILOT District Charge on the DC Water bill is increasing
- Average customer usage is currently at 5.42 Ccf/month, a 12.6% drop over typical usage from the 2015 COS Study

Residential Customer Monthly Bill
(5/8” / 5.42 Ccf)

RESIDENTIAL CUSTOMER MONTHLY BILL (5/8" / 5.42 CCF)

	Current (FY 2020)	Cost of Service (FY 2021)	Cost of Service (FY 2022)	FY 2021 $ Change	FY 2021 % Change	FY 2022 $ Change	FY 2022 % Change
DC Water and Sewer Retail Rates	$ 66.25	$ 73.30	$ 78.92	$ 7.05	10.6%	$ 5.62	7.7%
DC Water Clean Rivers IAC	20.94	19.52	18.40	(1.42)	-6.8%	(1.12)	-5.7%
DC Water Customer Metering Fee	3.86	4.96	7.75	1.10	28.5%	2.79	56.3%
DC Water Water System Replacement Fee	6.30	6.30	6.30	-	0.0%	-	0.0%
Subtotal: DC Water Rates & Charges	**$ 97.35**	**$ 104.08**	**$ 111.37**	**$ 6.73**	**6.9%**	**$ 7.29**	**7.0%**
District of Columbia PILOT	$ 2.76	$ 2.93	$ 3.04	$ 0.17	6.2%	0.11	3.8%
District of Columbia Right of Way Fee	1.03	1.03	1.03	-	0.0%	-	0.0%
District of Columbia Stormwater Fee	2.67	2.67	2.67	-	0.0%	-	0.0%
Subtotal District of Columbia Charges	$ 6.46	$ 6.63	$ 6.74	$ 0.17	2.6%	$ 0.11	1.7%
Total Amount Appearing on DC Water Bill	**$ 103.81**	**$ 110.71**	**$ 118.11**	**$ 6.90**	**6.7%**	**$ 7.40**	**6.7%**

Residential CAP Customer Monthly Bill
(5/8” / 5.42 Ccf)

RESIDENTIAL CAP CUSTOMER MONTHLY BILL (5/8" / 5.42 CCF)

	Current (FY 2020)	Cost of Service (FY 2021)	Cost of Service (FY 2022)	FY 2021		FY 2022	
				$ Change	% Change	$ Change	% Change
DC Water and Sewer Retail Rates	$ 66.25	$ 73.30	$ 78.92	$ 7.05	10.6%	$ 5.62	7.7%
DC Water Clean Rivers IAC	20.94	19.52	18.40	(1.42)	-6.8%	(1.12)	-5.7%
DC Water Customer Metering Fee	3.86	4.96	7.75	1.10	28.5%	2.79	56.3%
DC Water Water System Replacement Fee	6.30	6.30	6.30	-	0.0%	-	0.0%
Subtotal: DC Water Rates & Charges	**$ 97.35**	**$ 104.08**	**$ 111.37**	**$ 6.73**	**6.9%**	**$ 7.29**	**7.0%**
District of Columbia PILOT	$ 2.76	$ 2.93	$ 3.04	$ 0.17	6.2%	$ 0.11	3.8%
District of Columbia Right of Way Fee	1.03	1.03	1.03	-	0.0%	-	0.0%
District of Columbia Stormwater Fee	2.67	2.67	2.67	-	0.0%	-	0.0%
Subtotal District of Columbia Charges	$ 6.46	$ 6.63	$ 6.74	$ 0.17	2.6%	$ 0.11	1.7%
Less: CAP Discount - 4 Ccf per Month	$ (50.60)	$ (55.96)	$ (60.08)	$ (5.36)	10.6%	$ (4.12)	7.4%
Less: CAP Discount - % of CRIAC	(10.47)	(14.64)	(13.80)	(4.17)	39.8%	0.84	-5.7%
Less: CAP Discount - WSRF	(6.30)	(6.30)	(6.30)	-	-	-	0.0%
Subtotal: CAP Discount	$ (67.37)	$ (76.90)	$ (80.18)	$ (9.53)	14.1%	$ (3.28)	4.3%
Total Amount Appearing on DC Water Bill with CAP Discount	**$ 36.44**	**$ 33.81**	**$ 37.93**	**$ (2.63)**	**-7.2%**	**$ 4.12**	**12.2%**

Next Steps

THANK YOU

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