



**DISTRICT OF COLUMBIA
WATER AND SEWER AUTHORITY**

Board of Directors

Finance and Budget Committee

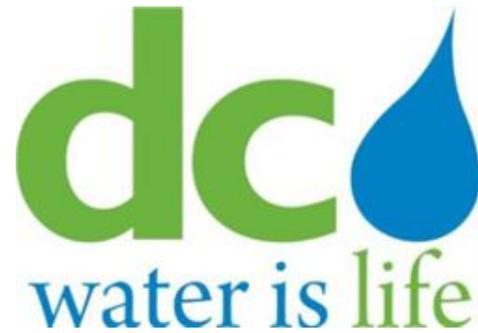
Thursday, September 26, 2019

11:00 a.m.

- 1. **Call to Order**..... Major Riddick, Chairperson
- 2. **August 2019 Financial Report (Attachment 1)**..... Lola Oyeyemi
- 3. **Capital Improvement Program Quarterly Update (Attachment 2)** Paul Guttridge
- 4. **Enterprise Resource Planning (ERP) Project Update (Attachment 3)** Dan Bae
- 5. **Additional Allocation of FY 2019 Projected Net Cash Position (Attachment 4)**
..... Matthew T. Brown
- 6. **Series 2019D Refunding Transaction and Market Update (Attachment 5)**
..... Eric Brown, Public Financial Management
- 7. **Action Items**..... Matthew T. Brown/Dan Bae
 - A. **Recommendation of Approval for System Integration Service for new ERP Software (Attachment 6)**
 - B. **Recommendation of Approval for Additional Allocation of FY 2019 Projected Net Cash (Attachment 7)**
 - C. **2019 A, B & D Bond Resolution and Related Documents (Attachment 8)**
 - 1. 2019 A, B & D Preliminary Official Statement
 - 2. Authorizing Resolution for Series 2019D
 - 3. 26th Supplemental Indenture (Series 2019D)
 - 4. Bond Purchase Agreement for 2019D
 - 5. Escrow Agreement
- 8. **Agenda for October Committee Meeting (Attachment 9)**..... Major Riddick
- 9. **Executive Session***
- 10. **Adjournment**

FOLLOW-UP ITEMS - There were no follow-up items from the Finance and Budget Committee meeting held on July 25, 2019.

* 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)(2); legal, confidential or privileged matters under D.C. Official Code § 2-575(b)(4)(A); 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); train and develop members of a public body and staff under D.C. Official Codes § 2-575(b)(12); 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.



Fiscal Year 2019

Monthly Financial Report

Period Ending August 31, 2019

DEPARTMENT OF FINANCE

Matthew T. Brown, CFO & Executive Vice President, Finance and Procurement

Ivan Boykin, Director, Finance

Syed Khalil, Director, Rates & Revenue

John Madrid, Controller

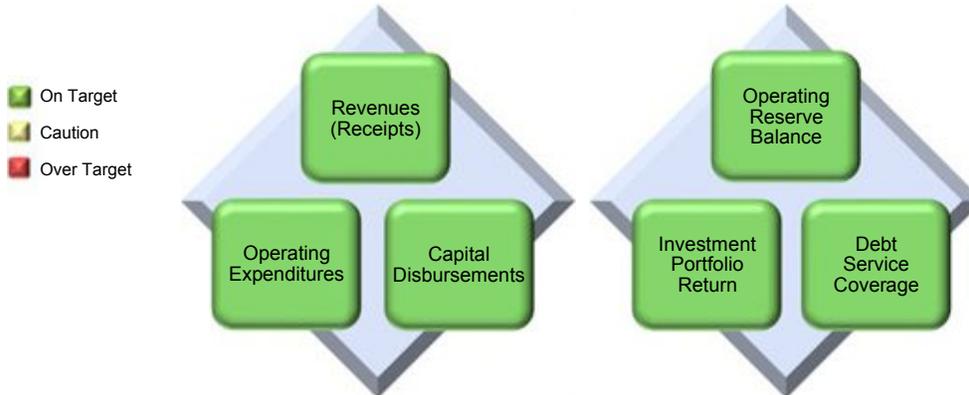
Lola Oyeyemi, Director, Budget

Monthly Financial Report

AUGUST 2019

EXECUTIVE SUMMARY

As of the end of August 2019, with approximately 92 percent of the fiscal year completed, we are on track with budgetary expectations and targeted performance metrics.



(\$ in millions)

	Budget	YTD Budget	Actual	Variance		Actual % Budget
				Favorable	(Unfavorable)	
Revenues (Receipts)*	\$665.7	\$610.2	\$636.2	\$26.0	4.3%	95.6%
Expenditures*	\$582.8	\$534.2	\$489.6	\$44.6	8.4%	84.0%
Capital Disbursements	\$439.1	\$412.5	\$354.6	\$57.9	14.0%	80.8%

** Straight-lined (11/12 of budget)*

Highlights:

- On-going development of Proposed FY 2021 operating and ten-year budget requests. The Budget Workshop and Committee reviews planned for early 2020 and Board adoption in March 2020
- FY 2019 year-end closeout preparations continue
- FY 2019 year-end audit activities will commence in November 2019

Matthew T. Brown, Executive Vice President & Chief Financial Officer

Monthly Financial Report

Fiscal Year-to-Date
As of August 31, 2019

Operating Revenues (\$000's)

Category	A	B	C	D = C/A	E = C-B	F = E/B
	FY 2019 REVISED BUDGET	YTD BUDGET*	ACTUAL	ACTUAL % of BUDGET	VARIANCE \$ Fav/(Unfav)	VARIANCE % Fav/(Unfav)
Res. / Comm. / Multi.	\$376,210	\$344,859	\$354,555	94.2%	\$9,696	2.8%
Federal	67,054	61,466	68,163	101.7%	6,697	10.9%
Municipal (DC Govt.)	18,009	16,508	15,681	87.1%	(827)	(5.0%)
DC Housing Authority	9,860	9,038	10,557	107.1%	1,519	16.8%
Metering Fee	10,776	9,878	10,650	98.8%	772	7.8%
Water System Replacement Fee (WSRF)	39,717	36,407	37,480	94.4%	1,073	2.9%
Wholesale	82,992	76,076	82,173	99.0%	6,097	8.0%
PILOT/ROW	21,701	19,893	19,104	88.0%	(789)	(4.0%)
All Other	39,331	36,053	37,845	96.2%	1,791	5.0%
TOTAL	\$665,650	\$610,179	\$636,208	95.6%	\$26,029	4.3%

*Straight-lined (11/12 of budget)

VARIANCE ANALYSIS FOR MAJOR REPORTED ITEMS

At the end of August 2019, cash receipts totaled \$636.2 million, or 95.6 percent of the revised FY 2019 budget. Several categories of customers make payments on a quarterly basis, including the Federal Government (which made their fourth quarterly payment in July), and wholesale customers (who made their fourth quarter payment in August).

Residential, Commercial and Multi-Family – Receipts for this category are higher at \$354.6 million or 94.2 percent of the revised budget. The higher receipts are partly due to increased year-end billing of the unbilled accounts. The CRIAC receipts are also slightly higher than the budget.

Federal – Actual receipts through August 2019 totaled \$68.2 million or 101.7 percent of the revised budget. The Federal Government made their fourth quarter payment in July 2019.

District Government – Receipts are lower at \$15.7 million, or 87.1 percent of the revised budget. In August, the District Government paid \$4.1 million for June and July billings.

DC Housing – Receipts are slightly higher at \$10.6 million or 107.1 percent of the revised budget. The DC Housing Authority had not paid the August billed amount of \$0.8 million in September 2018. The overdue amount was received in October 2018, which resulted in one additional payment in FY 2019.

Wholesale – The Wholesale customers' actual receipts through August 2019 total \$82.2 million or 99.0 percent of the revised FY 2019 budget. The Wholesale customers made their fourth quarter payment in August 2019.

Other Revenue – Receipts are higher than the straight-line budget at \$37.8 million or 96.2 percent of the budgeted category primarily due to (i) higher Development Contractor Water and Sewer Service Fees as compared to budget and (ii) \$6.03 million payment received from the District Government for the CAP2, CAP3 and CRIAC Non-Profit Relief programs.

Monthly Financial Report

Fiscal Year-to-Date
As of August 31, 2019

Operating Expenditures (\$000's)

Category	A FY 2019 BUDGET	B YTD BUDGET*	C ACTUAL	D=C/A ACTUAL % of BUDGET	E=C-B VARIANCE \$ Fav/(Unfav)	F=E/B VARIANCE % Fav/(Unfav)
Personnel	\$162,620	\$149,068	\$142,079	87.4%	\$6,989	4.7%
Contractual Services	81,679	74,872	65,636	80.4%	9,236	12.3%
Water Purchases	30,520	27,977	29,438	96.5%	(1,461)	(5.2%)
Supplies & Chemicals	32,091	29,417	31,958	99.6%	(2,541)	(8.6%)
Utilities	26,905	24,663	23,070	85.7%	1,593	6.5%
Small Equipment	1,240	1,137	396	32.0%	740	65.1%
SUBTOTAL O&M	\$335,055	\$307,134	\$292,577	87.3%	\$14,556	4.7%
Debt Service	199,025	182,440	177,110	89.0%	5,330	2.9%
PILOT/ROW	21,702	19,894	19,894	91.7%	0	0.0%
Cash Financed Capital Improvements	26,999	24,749	0	0.0%	24,749	100.0%
TOTAL OPERATING	\$582,781	\$534,216	\$489,580	84.0%	\$44,636	8.4%
Capital Labor	(18,259)	(16,737)	(16,126)	88.3%	(611)	3.7%
TOTAL NET OPERATING	\$564,522	\$517,479	\$473,454	83.9%	\$44,024	8.5%

*Straight-lined (11/12 of budget)

VARIANCE ANALYSIS FOR MAJOR REPORTED ITEMS

Operating expenditures (including debt service and the Right-of-Way & PILOT fees) totaled \$489.6 million or 84 percent of the FY 2019 Board-approved budget of \$582.8 million. These numbers include estimated incurred but unpaid invoices and are subject to revision in subsequent months.

Personnel Services – As previously reported, YTD underspending is due to the temporary hiring freeze, eliminated vacancies and lower benefit costs versus budget. A total of 1115 positions were filled at the end of August with a year-to-date vacancy rate of 9.1 percent after the elimination of aged vacancies. Overtime spending totals \$7.4 million or 97.5 percent of the annual budget due to increased after-hour work performed in response to emergencies and water main breaks during the winter season.

Contractual Services – Spending is in line with expectations with slight uptick anticipated as we closeout the fiscal year.

Water Purchases – Reflect DC Water's share of Washington Aqueduct expenditures, with increased spending due to higher consumption during the summer months.

Supplies & Chemicals – YTD overspending continues to be from increased chemical usage in the Tunnel Dewatering Pump Station (TDPS), higher than anticipated influent at the Plant, and higher unit prices of major chemicals (methanol and ferric chloride).

Utilities – Underspending is primarily driven by lower than anticipated unit prices for electricity and higher in onsite electricity generation from the Combined Heat and Power (CHP) facility of 6.43MW versus 6.0MW budgeted. Presently, 15MW of the Authority's electric load is locked at an average Western hub price of \$30.72/MWh for the remainder of the year. Staff continues to monitor the market with plans to hedge additional loads for FY 2020 when market conditions are favorable.

Debt Service – YTD actuals are in line with budget and debt service payment schedule.

Capital Labor – YTD spending is in line with budget and historical trends.

Monthly Financial Report

Fiscal Year-to-Date
As of August 31, 2019

Capital Disbursements (\$000's)

Service Area	A FY 2019 REVISED BUDGET	B YTD BUDGET	C ACTUAL	D = C/A ACTUAL % BUDGET	E = B-C VARIANCE \$ Fav/(Unfav)	F = E/B VARIANCE % Fav/(Unfav)
Non Process Facilities	\$15,309	\$14,933	\$8,215	53.7%	\$6,718	45.0%
Wastewater Treatment	69,979	65,542	50,546	72.2%	14,996	22.9%
Combined Sewer Overflow	195,350	183,076	184,856	94.6%	(1,779)	(1.0)%
Stormwater	4,220	3,702	1,978	46.9%	1,724	46.6%
Sanitary Sewer	44,927	42,499	35,567	79.2%	6,931	16.3%
Water	61,884	59,267	43,706	70.6%	15,561	26.3%
SUBTOTAL: CAPITAL PROJECTS	\$391,669	\$369,018	\$324,867	82.9%	\$44,151	12.0%
Capital Equipment*	34,518	31,641	19,295	55.9%	12,347	39.0%
Washington Aqueduct*	12,930	11,853	10,443	80.8%	1,410	11.9%
SUBTOTAL: ADD'L CAPITAL PROGRAMS	\$47,448	\$43,494	29,737	62.7%	\$13,756	31.6%
TOTAL	\$439,117	\$412,512	\$354,605	80.8%	\$57,907	14.0%

*Straight-lined (11/12 of budget)

VARIANCE ANALYSIS FOR MAJOR REPORTED ITEMS

At the end of August 2019, capital disbursements totaled \$354.6 million or 80.8 percent of the revised budget.

Capital Projects – YTD disbursements remain low across all service areas, with the exception of the Combined Sewer Overflow area. Project performance will be reviewed in detail as part of the quarterly CIP update by the Department of Engineering and Technical Services to the Environmental Quality & Operations and Finance & Budget Committees in September 2019.

Capital Equipment – YTD underspending is attributable to the delay of the Enterprise Resource Planning (ERP) project, long lead times for the delivery of specialized Fleet equipment, Facilities renovation and HVAC projects, pump rebuilds in Maintenance Services, and lower than anticipated use of the Authority-wide reserves.

Washington Aqueduct – YTD spending reflects disbursements made through the third quarter to execute designated capital projects at the Aqueduct. The fourth quarter payment of \$404.5 thousand is anticipated to be paid in September.

Monthly Financial Report

Fiscal Year-to-Date
As of August 31, 2019

Cash Investments (\$ in millions)

Cash Balances

Rate Stabilization Fund Balance	\$	55.5
DC Insurance Reserve Balance		1.0

<i>Operating Reserve Accounts</i>	
Renewal & Replacement Balance	35.0
O & M Reserve per Indenture	51.7
Undesignated Reserve Balance	38.8
O & M Reserve per Board Policy	125.5
Excess Above O & M Reserve	14.5
Management O & M Reserve Policy	140.0
Project Billing Refunds	11.0
Excess Revenue	22.8
Operating Reserve Accounts	173.8

Operating Cash Balance Including RSF	\$	230.3
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<i>Additional Reserve Accounts</i>	
Unrestricted	
Bond Fund - Construction 2016B	4.9
Bond Fund - Construction 2018A	34.6
Bond Fund - Construction 2018B	69.6
CSO LTCP Appropriations	8.1
Unrestricted Total	117.3

Restricted	
Debt Service Reserve - Series 1998	23.7
District Funds	3.7
DC Water - CAP2	5.8
DOEE - CAP2	1.2
DOEE - CAP3/Non-Profit	3.2
Developer Deposits	0.5
Danbury Meter Installation Project	0.5
Restricted Total	38.5

Total All Funds	\$	386.1
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OVERALL PORTFOLIO PERFORMANCE

- The operating reserve balance was \$173.8 million as compared to the operating reserve level of \$140.0 million for FY 2019
- Average cash balance for the month of August was \$168.3 million
- Total investment portfolio was in compliance with the Authority's Investment Policy
- Operating funds interest income for August (on a cash basis) was \$110,403; YTD \$2,505,628
- A detailed investment performance report is attached

Monthly Financial Report

Fiscal Year-to-Date
As of August 31, 2019

Cash Flow Summary (\$000's)

	Annual Budget Cash Basis	YTD 92% Cash Budget	YTD Actual Cash Oct. 1, 2018 - Aug. 31, 2019	Variance Favorable (Unfavorable)	
OPERATING BUDGET					
Cash Provided					
Retail	\$521,626	\$478,157	\$497,087	\$18,930	4%
Wholesale	82,992	76,076	82,173	6,097	8%
Other	60,608	55,558	56,558	1,000	2%
Total Cash Provided	665,226	609,791	635,817	26,026	4%
Operating Cash Used					
Personnel Services	144,361	132,331	130,277	2,054	2%
Contractual Services	81,679	74,872	85,646	(10,774)	-14%
Chemicals & Supplies	32,082	29,409	36,389	(6,980)	-24%
Utilities	26,915	24,672	23,444	1,228	5%
Water Purchases	30,520	27,977	28,846	(869)	-3%
Small Equipment	1,240	1,137	399	737	65%
Total Operating Cash Used	316,797	290,397	305,001	(14,604)	-5%
Defeasance D.S./Cash Financed Capital Construction	26,999	24,749	0	24,749	100%
Other Cash Used					
Debt Service	198,754	182,191	177,110	5,082	3%
Payment In Lieu of Taxes/Right of Way	21,702	19,893	21,702	(1,809)	-9%
Total Other Cash Used	220,456	202,084	198,812	3,273	2%
Total Cash Used	564,252	517,231	503,813	13,418	3%
Net Cash Provided (Used) by Operating Act.	100,974	92,560	132,004	39,444	
CAPITAL BUDGET					
Cash Provided					
Debt Proceeds	110,000	100,833	171,545	70,712	70%
EPA Grants	18,215	16,697	13,276	(3,422)	-20%
CSO Grants			8,000	8,000	0%
System Availability Fee	3,850	3,529	0	(3,529)	-100%
Transfer from Operations	98,540	90,328	(90,328)	(90,328)	-100%
Interest Income	2,981	2,733	4,149	1,417	52%
Wholesale Capital Contributions	67,112	61,519	48,636	(12,884)	-21%
Total Cash Provided	300,698	275,640	245,606	(30,034)	-11%
Cash Used					
DC Water Capital Program	426,187	390,671	344,805	45,867	12%
Washington Aqueduct Projects	12,930	11,853	10,443	1,410	12%
Total Cash Used	439,117	402,524	355,248	47,276	12%
Net Cash/PAYGO Provided (Used) by Cap. Act.	(\$138,419)	(\$126,884)	(\$109,642)	\$17,242	
Beginning Balance, October 1 (Net of Rate Stab. Fund) Projected					
	\$166,796		\$166,796		
Plus (Less) Operating Surplus	100,974	92,560	132,004		
Wholesale Customer Refunds from Prior Years	(11,000)	(10,083)	(10,970)		
DC Fleet Payment			773		
Interest Earned From Bond Reserve	424	388	391		
Transfer to CAP Fund			240		
Prior Year Federal Billing Reconciliation	(5,821)	(5,336)	(5,753)		
Project Billing Refunds	(11,000)	(10,083)			
Cash Used for Capital	(75,391)	(69,108)	(109,642)		
Balance Attributable to O&M Reserve	\$164,982		\$173,839		
OTHER CASH RESERVES					
	Current Balance				
Rate Stabilization Fund	\$55,450				
DC Insurance Reserve	1,000				
Unrestricted Reserves	117,286				
Restricted Reserves	38,514				

Monthly Financial Report

APPENDIX

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Monthly Financial Report

Fiscal Year-to-Date
As of August 31, 2019

Operating Revenues Detail

(\$ in millions)

Revenue Category	FY 2019 Budget	YTD Budget	Actual	Variance		Actual % of Budget
				Favorable / (Unfavorable)		
Residential, Commercial, and Multi-family	\$376.2	\$344.9	\$354.6	\$9.6	2.8%	94.2%
Federal	67.1	61.5	68.2	6.7	10.9%	101.7%
District Government	18.0	16.5	15.7	(0.8)	-5.0%	87.1%
DC Housing Authority	9.9	9.1	10.6	1.6	16.8%	107.1%
Customer Metering Fee	10.8	9.9	10.7	0.8	7.8%	98.8%
Water System Replacement Fee (WSRF)	39.7	36.4	37.5	1.1	2.9%	94.4%
Wholesale	83.0	76.1	82.2	6.1	8.0%	99.0%
Right-of-Way Fee/PILOT	21.7	19.9	19.1	(0.8)	-4.0%	88.0%
Subtotal (before Other Revenues)	\$626.4	\$574.2	\$598.4	\$24.2	4.2%	95.5%
Other Revenue without RSF						
IMA Indirect Cost Reimb. For Capital Projects	4.6	4.2	3.3	(0.9)	-21.4%	71.7%
DC Fire Protection Fee	12.5	11.5	10.8	(0.7)	-6.1%	86.4%
Stormwater (MS4)	1.0	0.9	1.3	0.4	44.4%	130.0%
Interest	3.1	2.8	2.9	0.1	3.6%	93.5%
Developer Fees (Water & Sewer)	6.0	5.5	8.5	3.0	54.5%	141.7%
Transfer From Rates Stabilization	6.0	5.5	0.0	(5.5)	-100.0%	0.0%
System Availability Fee (SAF)	3.9	3.6	1.9	(1.7)	-47.2%	48.7%
Others	2.2	2.0	9.2	7.0	350.0%	418.2%
Subtotal	\$39.3	\$36.1	\$37.9	\$1.8	5.0%	96.2%
Rate Stabilization Fund Transfer	\$0.0	\$0.0	\$0.0	\$0.0	0.0%	0.0%
Other Revenue Subtotal	\$39.3	\$36.1	\$37.9	\$1.8	5.0%	96.2%
Grand Total	\$665.7	\$610.2	\$636.2	\$26.0	4.3%	95.6%

BREAKDOWN OF RETAIL RECEIPTS BY CUSTOMER CATEGORY
(\$ in 000's)

Customer Category	Water	Sewer	Clean Rivers			Total
			IAC	Metering Fee	WSRF	
Residential	\$32,144	\$50,701	\$29,801	\$4,738	\$8,525	\$125,908
Commercial	54,919	62,038	35,509	3,140	14,479	170,086
Multi-family	30,173	46,408	12,864	1,467	6,501	97,412
Federal	19,953	22,682	25,529	787	5,776	74,725
District Govt	2,931	3,966	8,784	394	1,805	17,879
DC Housing Authority	3,727	5,522	1,308	125	395	11,077
Total:	\$143,846	\$191,316	\$113,795	\$10,650	\$37,480	\$497,087

Note: The breakdown of Collections into Residential, Commercial, & Multi-family and Water and sewer is approximate as it is based on percentages of historical data and does not take into account adjustments and timing differences

Clean Rivers IAC - Actual vs Budget
(\$ in 000's)

Customer Category	FY2019 Budget	Year-To-Date Budget	Actual Received	Variance		Actual % of Budget
				Favorable / <Unfavorable>	Variance % of YTD Budget	
Residential	\$31,594	\$28,961	\$29,801	\$840	3%	94%
Commercial	35,847	32,860	35,509	2,650	8%	99%
Multi-family	13,567	12,436	12,864	427	3%	95%
Federal	25,529	23,402	25,529	2,127	9%	100%
District Govt	8,888	8,147	8,784	637	8%	99%
DC Housing Authority	1,520	1,393	1,308	(85)	-6%	86%
Total:	\$116,945	\$107,200	\$113,795	\$6,595	6%	97%

Monthly Financial Report

Fiscal Year-to-Date
As of August 31, 2019

Retail Accounts Receivable (Delinquent Accounts)

The following tables show retail accounts receivable over 90 days including a breakdown by customer class.

Greater Than 90 Days by Month

	\$ in millions	# of accounts
September 30, 2012	\$5.5	13,063
September 30, 2013	\$4.9	11,920
September 30, 2014	\$5.3	12,442
September 30, 2015	\$6.5	11,981
September 30, 2016	\$7.7	12,406
September 30, 2017	\$8.4	11,526
September 30, 2018	\$13.4	16,273
October 31, 2018	\$14.4	14,890
November 30, 2018	\$13.9	14,091
December 31, 2018	\$14.6	14,373
January 31, 2019	\$13.6	12,153
February 28, 2019	\$12.5	11,732
March 31, 2019	\$11.8	10,033
April 30, 2019	\$11.3	9,408
May 31, 2019	\$11.1	9,651
Jun 30, 2019	\$11.4	9,395
Jul 31, 2019	\$11.0	9,282
Aug 31, 2019	\$11.0	8,397

Notes: The increase in the accounts receivable over 90 days is due to the temporary suspension of collections procedures because of the new billing system VertexOne, which was implemented in December 2017.

Greater Than 90 Days by Customer

	Number of Accounts			Month of Aug (All Categories)				Total Delinquent				
	W & S	Impervious Only	Total No. of	Active		Inactive		July		August		
				No. of	Amount	No. of	Amount	No. of	Amount	No. of	Amount	
a/c	a/c	a/c	a/c	(\$)	a/c	(\$)	a/c	(\$)	a/c	(\$)	%	
Commercial	8,996	2,418	11,414	875	\$3,489,063	26	\$122,338	937	\$3,654,968	901	\$3,611,402	33%
Multi-family	8,360	361	8,721	755	\$3,610,024	11	\$75,684	807	\$3,519,062	766	\$3,685,708	33%
Single-Family Residential	106,021	2,882	108,903	6,658	\$3,658,860	72	\$73,189	7,538	\$3,832,260	6,730	\$3,732,049	34%
Total	123,377	5,661	129,038	8,288	\$10,757,947	109	\$271,212	9,282	\$11,006,290	8,397	\$11,029,159	100%

Notes: Included in the above \$11.03M (or 8,397 accounts) of the DC Water Over 90 days delinquent accounts, \$4,208,528.93 (or 1,625 accounts) represents Impervious only accounts over 90 days delinquent.

-Reportable delinquencies do not include balances associated with a long standing dispute between DC Water and a large commercial customer.

Monthly Financial Report

Fiscal Year-to-Date
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Overtime by Department

Department	FY 2019			
	Budget	YTD Actual	YTD Actual % of Budget	% of Regular Pay
Office of the Board Secretary *	\$9,000	\$12,004	133.4%	4.9%
General Manager	9,000	988	11.0%	0.0%
General Counsel	3,000	2,375	79.2%	0.1%
External Affairs	5,000	2,495	49.9%	0.2%
Internal Audit	-	0	0.0%	0.0%
Information Technology	15,000	9,056	60.4%	0.3%
Procurement **	30,000	62,673	208.9%	2.1%
Customer Service ***	311,000	374,653	120.5%	4.3%
Finance, Accounting & Budget	40,000	30,449	76.1%	0.5%
Assistant General Manager - Administrative Services	1,000	0	0.0%	0.0%
Office of Emergency Management	-	7	0.0%	0.0%
Human Capital Management	6,000	825	13.8%	0.0%
Occupational Safety and Health	1,000	75	7.5%	0.0%
Facilities Management	300,000	212,083	70.7%	6.5%
Department of Security	-	1,000	0.0%	0.1%
Wastewater Engineering	36,000	5,755	16.0%	0.3%
Water Quality and Technology	30,000	2,672	8.9%	0.1%
Distribution and Conveyance System	800,000	651,292	81.4%	9.5%
Engineering and Technical Services	864,000	679,610	78.7%	5.1%
Water Services ****	1,522,000	1,664,901	109.4%	13.6%
Clean Rivers	-	0	0.0%	0.0%
Sewer Services *****	1,068,000	1,374,538	128.7%	20.8%
Wastewater Treatment - Operations	1,831,000	1,693,712	92.5%	16.1%
Wastewater Treatment - Process Engineering	45,000	29,120	64.7%	0.9%
Maintenance Services	545,000	539,191	98.9%	7.3%
Permit Operations	99,000	19,691	19.9%	1.1%
Fleet Management *****	4,000	14,073	351.8%	2.1%
Total DC WATER	\$7,575,000	\$7,383,237	97.5%	7.1%

* Office of the Board Secretary is experiencing high overtime due to new member orientations

** Procurement is experiencing high overtime as a result of warehouse inventory management activities

*** Customer Service is experiencing high overtime to complete meter reader replacement project

**** Water Services is experiencing high overtime spending related to emergency repairs to watermain breaks

***** Sewer Services is experiencing high overtime for after hours and emergency repairs

***** Fleet Management is experiencing high overtime spending due to short staffing in the department

Monthly Financial Report

Fiscal Year-to-Date
As of August 31, 2019

Capital Disbursements Detail by Program (\$000's)

Service Areas	Budget		Actual			Variance		
	FY 2019 REVISED BUDGET	YTD BUDGET	Oct 2018 - July 2019	Aug 2019	YTD	ACTUAL % BUDGET	VARIANCE \$ Fav/(Unfav)	VARIANCE % Fav/(Unfav)
NON PROCESS FACILITIES								
Facility Land Use	\$15,309	\$14,933	\$7,699	\$516	\$8,215	53.7%	\$6,718	45.0%
Subtotal	15,309	14,933	7,699	516	8,215	53.7%	6,718	45.0%
WASTEWATER TREATMENT								
Liquids Processing	21,488	20,028	16,899	174	17,073	79.5%	2,955	14.8%
Plantwide	15,777	14,153	9,077	730	9,807	62.2%	4,346	30.7%
Solids Processing	6,672	6,213	5,146	211	5,357	80.3%	857	13.8%
Enhanced Nitrogen Removal Facilities	26,042	25,147	16,861	1,448	18,309	70.3%	6,838	27.2%
Subtotal	69,979	65,542	47,983	2,562	50,546	72.2%	14,996	22.9%
COMBINED SEWER OVERFLOW								
D.C. Clean Rivers	187,859	176,152	173,254	5,529	178,783	95.2%	(2,631)	-1.5%
Program Management	1,685	1,560	1,891	142	2,033	120.6%	(473)	-30.3%
Combined Sewer	5,805	5,364	4,005	34	4,039	69.6%	1,325	24.7%
Subtotal	195,350	183,076	179,150	5,706	184,856	94.6%	(1,779)	-1.0%
STORMWATER								
Local Drainage	8	8	-	-	-	0.0%	8	100.0%
On-Going	1,056	939	892	2	893	84.6%	46	4.9%
Pumping Facilities	1,996	1,605	812	239	1,051	52.6%	554	34.5%
DDOT	-	-	-	-	-	0.0%	-	0.0%
Research and Program Management	1,078	-	-	-	-	0.0%	-	0.0%
Trunk/Force Sewers	82	1,149	33	-	33	40.8%	1,116	97.1%
Subtotal	4,220	3,702	1,737	241	1,978	46.9%	1,724	46.6%
SANITARY SEWER								
Collection Sewers	5,434	5,398	4,445	54	4,499	82.8%	900	16.7%
On-Going	13,653	12,865	9,913	1,137	11,050	80.9%	1,815	14.1%
Pumping Facilities	2,248	2,088	926	-	926	41.2%	1,162	55.7%
Program Management	3,321	3,091	2,323	128	2,451	73.8%	640	20.7%
Interceptor/Trunk Force Sewers	20,270	19,057	15,416	1,227	16,643	82.1%	2,414	12.7%
Subtotal	44,927	42,499	33,023	2,545	35,567	79.2%	6,931	16.3%
WATER								
Distribution Systems	30,729	29,888	19,618	1,600	21,218	69.1%	8,670	29.0%
Lead Program	4,338	4,086	3,787	272	4,059	93.6%	27	0.7%
On-Going	10,080	9,665	7,395	898	8,293	82.3%	1,372	14.2%
Pumping Facilities	1,199	1,165	472	1	473	39.5%	692	59.4%
DDOT	992	965	-	250	250	25.3%	714	74.0%
Storage Facilities	9,384	8,948	5,161	50	5,211	55.5%	3,736	41.8%
Program Management	5,163	4,551	3,910	291	4,201	81.4%	350	7.7%
Subtotal	61,884	59,267	40,343	3,363	43,706	70.6%	15,561	26.3%
Capital Projects	391,669	369,018	309,936	14,932	324,867	82.9%	44,151	12.0%
CAPITAL EQUIPMENT	34,518	31,641	17,632	1,663	19,295	55.9%	12,347	39.0%
WASHINGTON AQUEDUCT	12,930	11,853	10,443	-	10,443	80.8%	1,410	11.9%
Additional Capital Programs	47,448	43,494	28,074	1,663	29,737	62.7%	13,756	31.6%
Total	\$439,117	\$412,512	\$338,010	\$16,594	\$354,605	80.8%	\$57,907	14.0%



DC Water
Investment Performance Report – August 2019



Investment Performance Report – August 2019

**DC Water
Finance Division
Economic Update**

ECONOMIC COMMENTARY

- U.S. Gross Domestic Product (“GDP”) increased at an annual rate of 2.0% according to the Bureau of Economic Analysis’ second estimate for the second quarter of 2019. The second estimate GDP was a slight revision down from the first estimate of GDP of 2.1% and also a decrease from first quarter’s GDP growth of 3.1%. The downward revisions were attributed to state and local government spending, exports, private inventory investment and residential investment.
- The U.S. Department of Labor reported 130,000 jobs were added in August which was below market expectations. This marks the smallest increase in jobs in the past three months and showing evidence that hiring has slowed. According to the Bureau of Labor Statistics, the unemployment rate remained unchanged at 3.7% for a third month in a row and the labor participation rate edged up to 63.2% in August.
- The Federal Reserve’s yearly symposium took place on Thursday, August 22nd and Friday, August 23rd in Jackson Hole, Wyoming. Chairman Jerome Powell focused on the current challenges to maintaining the economic expansion, such as slowing global growth, trade policy uncertainty, and muted inflation, which weigh down an otherwise favorable economic outlook.
- Long term U.S. Treasury yields fell while short-term yields climbed over the week awaiting further direction from the Federal Reserve at the Jackson Hole Symposium. Powell indicated that the U.S. economy faces “significant risks” mainly due to trade uncertainty. On August, 27th, the U.S. yield curve deepened to levels that have not been seen since 2007. The deepening of the yield curve reflects investors’ uncertainties over the trade conflict between China and the United States and nervousness about the possibility of a recession. These heightened concerns led to demand for safe-haven assets which impacted U.S. Treasury yields.

PORTFOLIO RECAP

- The portfolio is diversified among Bank Deposits, U.S. Treasuries, Federal Agencies, Supranational Bonds, Commercial Paper, Negotiable CDs, Corporate Notes/Bonds, Municipal Bonds, FDIC Insured CDs, and SEC registered money market funds.
- The overall yield-to-maturity on cost of the portfolio is 1.93%.

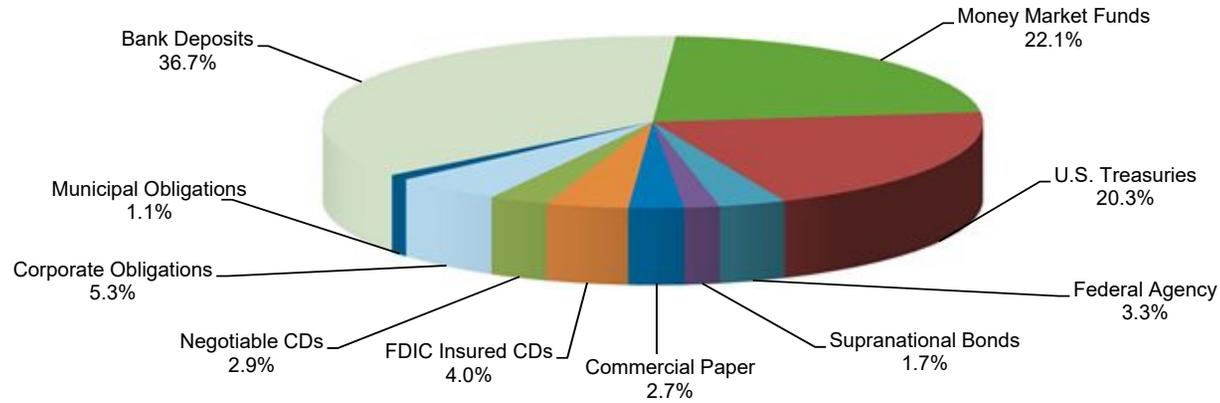
Operating Reserve

- The investment advisor (PFMAM) purchased \$0.6 million of one 3-year Treasury note at a yield of 1.69%.
- PFMAM purchased \$1.8 million of 3-year corporate notes from various issuers with an average weighted yield of 1.92%.
- PFMAM also purchased \$0.4 million of a 3-year municipal note at a yield of 1.74%.
- Towards the close of the month, PFMAM purchased \$2.9 million of negotiable CDs in the 3-year maturity range from various issuers with an average weighted yield of 1.86%.



Investment Performance Report – August 2019

**DC Water
Finance Division
Investments - By Security Type
As of August 31, 2019**

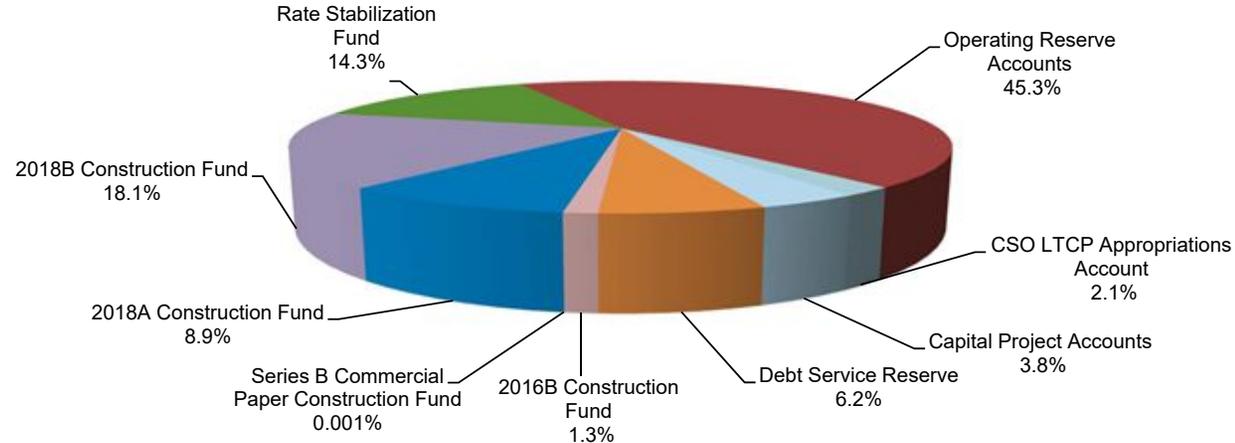


Security Type	Book Value + Accrued Interest	Asset Allocation	Permitted By Policy
Bank Deposits	142,430,642	36.7%	100.0%
Money Market Funds	85,658,456	22.1%	100.0%
U.S. Treasuries	78,865,209	20.3%	100.0%
Federal Agency	12,733,317	3.3%	80.0%
Supranational Bonds	6,707,719	1.7%	30.0%
Commercial Paper	10,478,113	2.7%	35.0%
FDIC Insured CDs	15,580,428	4.0%	30.0%
Negotiable CDs	11,261,305	2.9%	30.0%
Corporate Obligations	20,552,610	5.3%	30.0%
Municipal Obligations	4,132,643	1.1%	20.0%
Total	\$ 388,400,443	100.0%	



Investment Performance Report – August 2019

**DC Water
Finance Division
Investment Analysis – By Fund
As of August 31, 2019**



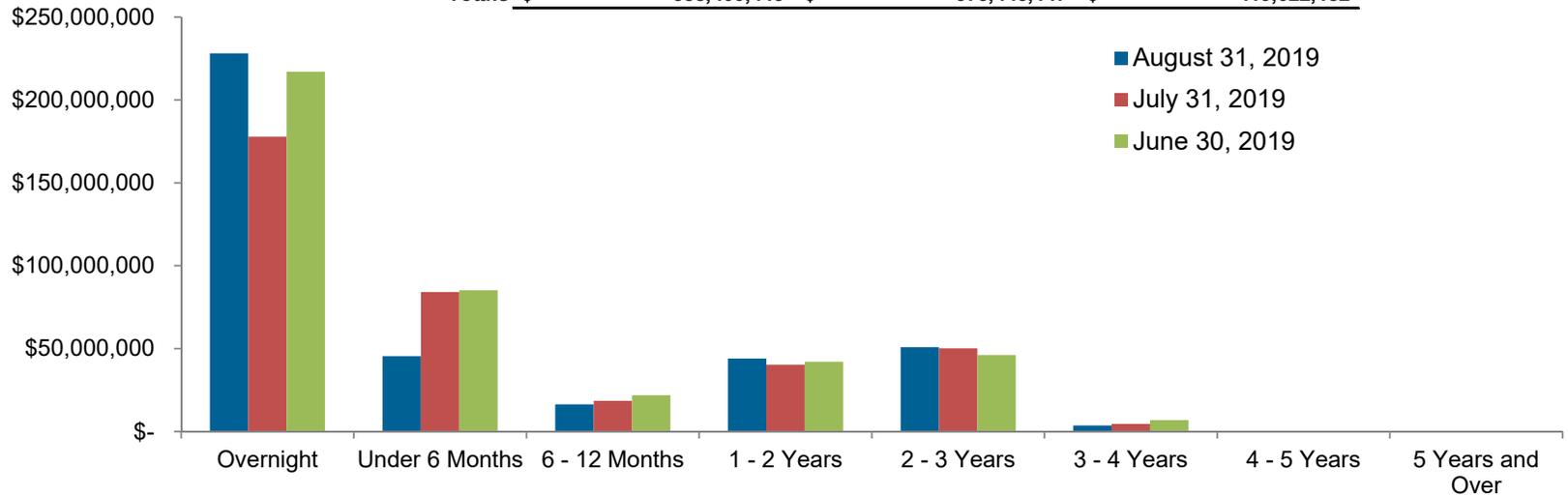
Fund Name	Book Value + Accrued Interest	Yield-to- Maturity at Cost	Effective Duration (years)	Weighted Average Maturity (days)
Rate Stabilization Fund	\$ 55,450,000	2.05%	0.00	1.0
Operating Reserve Accounts	\$ 176,000,601	1.83%	1.07	401.1
CSO LTCP Appropriations Account	\$ 8,076,196	2.07%	0.00	1.0
Capital Project Accounts	\$ 14,947,658	0.90%	0.00	1.0
Debt Service Reserve	\$ 23,924,722	2.48%	0.98	368.3
Series B Commercial Paper Construction Fund	\$ 2,854	1.55%	0.00	1.0
2016B Construction Fund	\$ 4,918,259	1.96%	0.00	1.0
2018A Construction Fund	\$ 34,678,105	1.96%	0.00	1.0
2018B Construction Fund	\$ 70,402,050	2.18%	0.03	11.2
Total	\$ 388,400,443	1.93%	0.55	206.8



Investment Performance Report – August 2019

**DC Water
Finance Division
Investment Analysis – By Maturity**

Maturity Distribution	August 31, 2019	July 31, 2019	June 30, 2019
Overnight \$	228,089,098.28 \$	177,798,328.34 \$	217,052,607.03
Under 6 Months	45,455,312.58	84,108,214.89	85,160,767.26
6 - 12 Months	16,398,131.76	18,487,405.92	21,847,108.74
1 - 2 Years	43,984,697.40	40,298,520.16	42,057,698.16
2 - 3 Years	50,833,572.64	50,161,035.73	46,092,080.98
3 - 4 Years	3,639,630.60	4,591,641.46	6,811,920.30
4 - 5 Years	-	-	-
5 Years and Over	-	-	-
Totals \$	388,400,443 \$	375,445,147 \$	419,022,182





Investment Performance Report – August 2019

**DC Water
Finance Division
Investments – Issuer Allocation**

	Credit Ratings S&P / Moody's	Book Value		Investment Policy Limit	Compliance with Investment Policy
Bank Deposits					
TD Bank		142,430,641.86	36.7%	100.0%	Yes
Sub-Total Bank Deposits		142,430,641.86	36.7%	100.0%	Yes
Money Market Mutual Funds					
Wells Fargo Treasury Plus MMF	AAAm	85,186,450.24	21.9%	50.0%	Yes
Wells Fargo Government MMF	AAAm	469,152.51	0.1%	50.0%	Yes
First American Treasury	AAAm	2,853.67	0.0%	50.0%	Yes
Sub-Total Money Market Mutual Funds		85,658,456.42	22.1%	100.0%	Yes
U.S. Treasuries					
Treasury Note	AA+ / Aaa	78,865,208.99	20.3%	100.0%	Yes
Sub-Total Treasuries		78,865,208.99	20.3%	100.0%	Yes
Federal Agencies					
Fannie Mae	AA+ / Aaa	5,435,053.76	1.4%	40.0%	Yes
Federal Home Loan Bank	AA+ / Aaa	7,298,263.44	1.9%	40.0%	Yes
Sub-Total Federal Agencies		12,733,317.20	3.3%	80.0%	Yes
Supranational Bonds					
African Development Bank	AAA / Aaa	808,838.92	0.2%	5.0%	Yes
Asian Development Bank	AAA / Aaa	701,441.65	0.2%	5.0%	Yes
Inter-American Development Bank	AAA / Aaa	1,993,289.35	0.5%	5.0%	Yes
International Bank for Reconstruction and Development	AAA / Aaa	2,267,866.39	0.6%	5.0%	Yes
International Finance Corporation Note	AAA / Aaa	936,282.58	0.2%	5.0%	Yes
Sub-Total Supranational Bonds		6,707,718.89	1.7%	30.0%	Yes
Commercial Paper					
BNP Paribas NY Branch	A-1 / P-1	3,991,622.20	1.0%	5.0%	Yes
JP Morgan Securities LLC	A-1 / P-1	6,486,490.86	1.7%	5.0%	Yes
Sub-Total Commercial Paper		10,478,113.06	2.7%	35.0%	Yes
FDIC Insured Certificates of Deposit					
CDARS - Placed by Industrial Bank	NR / NR	15,580,428.36	4.0%	5.0%	Yes
Sub-Total FDIC-Insured Certificates of Deposit		15,580,428.36	4.0%	30.0%	Yes

CDARS holdings are not managed by PFMAM, and we therefore cannot guarantee the accuracy of holdings information provided.



Investment Performance Report – August 2019

**DC Water
Finance Division
Investments – Issuer Allocation**

	Credit Ratings S&P / Moody's	Book Value		Investment Policy Limit	Compliance with Investment Policy
Negotiable Certificates of Deposit					
Bank of Montreal Chicago	A-1 / P-1	927,213.06	0.2%	5.0%	Yes
Bank of Nova Scotia Houston	A-1 / P-1	931,668.96	0.2%	5.0%	Yes
Canadian Imperial Bank NY	A-1 / P-1	1,405,642.81	0.4%	5.0%	Yes
HSBC Bank USA	AA- / Aa2	935,406.25	0.2%	5.0%	Yes
Nordea Bank AB NY	AA- / Aa3	1,450,223.54	0.4%	5.0%	Yes
Royal Bank of Canada NY	AA- / Aa2	705,292.00	0.2%	5.0%	Yes
Skandinaviska Enskilda Bank	A+ / Aa2	1,450,000.00	0.4%	5.0%	Yes
Swedbank NY	AA- / Aa2	931,299.25	0.2%	5.0%	Yes
UBS AG Stamford CT	A-1 / P-1	1,623,328.89	0.4%	5.0%	Yes
Westpac Banking Corp NY	A-1+ / P-1	901,230.00	0.2%	5.0%	Yes
Sub-Total Negotiable Certificates of Deposit		11,261,304.76	2.9%	30.0%	Yes
Corporate Obligations					
3M Company	AA- / A1	344,251.76	0.1%	5.0%	Yes
Apple	AA+ / Aa1	983,651.80	0.3%	5.0%	Yes
Bank of Montreal	A- / A2	469,788.22	0.1%	5.0%	Yes
Bank of New York Mellon	A / A1	1,222,135.33	0.3%	5.0%	Yes
Bank of Nova Scotia Houston	A+ / Aa2	912,359.46	0.2%	5.0%	Yes
Berkshire Hathaway Inc.	AA / Aa2	493,526.00	0.1%	5.0%	Yes
Blackrock	AA- / Aa3	931,961.78	0.2%	5.0%	Yes
Chevron	AA / Aa2	480,156.77	0.1%	5.0%	Yes
Coca-Cola	A+ / A1	379,452.25	0.1%	5.0%	Yes
Costco Wholesale	A+ / Aa3	203,198.33	0.1%	5.0%	Yes
Exxon Mobil Corporation	AA+ / Aaa	345,273.41	0.1%	5.0%	Yes
Johnson & Johnson	AAA / Aaa	196,088.12	0.1%	5.0%	Yes
JP Morgan	A- / A2	1,413,728.17	0.4%	5.0%	Yes
Merck & Co.	AA / A1	894,866.14	0.2%	5.0%	Yes
Northern Trust Company	A+ / A2	481,580.65	0.1%	5.0%	Yes
Pfizer Inc.	AA- / A1	855,977.18	0.2%	5.0%	Yes
Procter & Gamble Co	AA- / Aa3	951,239.22	0.2%	5.0%	Yes
Royal Bank of Canada	AA- / Aa2	879,007.61	0.2%	5.0%	Yes
Toronto Dominion Bank NY	AA- / Aa1	1,869,599.36	0.5%	5.0%	Yes
Total Capital	A+ / Aa3	965,051.43	0.2%	5.0%	Yes
Toyota	AA- / Aa3	926,891.88	0.2%	5.0%	Yes
US Bank Cincinnati	A+ / A1	994,134.72	0.3%	5.0%	Yes

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Investment Performance Report – August 2019

**DC Water
Finance Division
Investments – Issuer Allocation**

	Credit Ratings S&P / Moody's	Book Value		Investment Policy Limit	Compliance with Investment Policy
Corporate Obligations					
Visa	AA- / Aa3	923,201.99	0.2%	5.0%	Yes
Wal-Mart Stores Inc.	AA / Aa2	1,508,235.41	0.4%	5.0%	Yes
Westpac Banking	AA- / Aa3	927,253.28	0.2%	5.0%	Yes
Sub-Total Corporate Obligations		20,552,610.27	5.3%	30.0%	Yes
Municipal Obligations					
California State	AA- / Aa3	1,087,558.73	0.3%	5.0%	Yes
Honolulu, Hawaii	NR / Aa1	390,188.39	0.1%	5.0%	Yes
NYC Transitional Finance Authority	AAA / Aa1	1,477,528.25	0.4%	5.0%	Yes
New York State	NR / Aa1	395,574.83	0.1%	5.0%	Yes
San Jose, California	AA+ / Aa1	438,760.88	0.1%	5.0%	Yes
University of California	AA / Aa2	343,032.37	0.1%	5.0%	Yes
Sub-Total Municipal Obligations		4,132,643.45	1.1%	20.0%	Yes
Grand Total		\$ 388,400,443.26	100.0%		

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Investment Performance Report – August 2019



**DC Water
Finance Division
Book Value Performance
As of August 31, 2019**

The portfolio is in compliance with the Authority's Investment Policy

	Trailing 1 Month		Trailing 3 Months		Trailing 6 Months		Trailing 12 Months	Trailing 24 Months
	Periodic	Annualized	Periodic	Annualized	Periodic	Annualized		
Rate Stabilization Fund	0.17%	2.07%	0.50%	2.01%	1.01%	2.02%	2.00%	1.53%
Operating Reserve Accounts	0.48%	5.80%	0.92%	3.72%	1.33%	2.65%	2.14%	1.78%
Debt Service Reserve	0.21%	2.48%	0.62%	2.49%	1.23%	2.45%	2.29%	1.86%
2018A Construction Fund	0.17%	1.99%	0.51%	2.05%	1.10%	4.43%	2.12%	n/a
2018B Construction Fund	0.26%	3.05%	0.63%	2.54%	1.25%	5.07%	2.43%	n/a
Short-Term	0.15%	1.79%	0.48%	1.92%	0.99%	1.97%	1.99%	1.72%
ICE BoAML 3-Month Treasury Index (Book Value) ¹	0.16%	1.94%	0.51%	2.05%	1.11%	2.22%	2.29%	2.01%
Core (1+ Years)	0.21%	2.48%	0.63%	2.52%	1.26%	2.51%	2.42%	2.16%
ICE BoAML 1-3 Year Treasury Index (Book Value) ²	0.13%	1.57%	0.45%	1.78%	1.00%	2.00%	2.35%	2.37%

- (1) The Merrill Lynch 3-Month Treasury Bill is an unmanaged index tracking the on-the-run Treasury Bill. The Index is produced and maintained by Merrill Lynch & Co. Performance for this index is shown on a book value basis.
- (2) The Merrill Lynch 3-Month Treasury Bill is an unmanaged index tracking a basket of U.S. Treasuries with 1 to 3 year maturities. The Index is produced and maintained by Merrill Lynch & Co. Performance for this index is shown on a book value basis.

Investment Performance Report – August 2019



DC Water
Finance Division
Portfolio Holdings by Fund

DESCRIPTION	CUSIP	PAR AMOUNT	COUPON RATE	MATURITY DATE	SETTLEMENT DATE	YTM AT COST	ORIGINAL COST	MARKET VALUE + ACCRUED INTEREST	AMORTIZED COST + ACCRUED INTEREST	TOTAL VALUE
Rate Stabilization Fund										
TD BANK BANK DEPOSIT		\$ 55,450,000		9/1/2019		2.05%	\$ 55,450,000	\$ 55,450,000	\$ 55,450,000	\$ 55,450,000.00
Operating Reserve Accounts										
TD BANK BANK DEPOSIT		\$ 62,956,789		9/1/2019		0.90%	\$ 62,956,789	\$ 62,956,789	\$ 62,956,789	
DC RESERVES TD BANK DEPOSIT		1,000,000		9/1/2019		2.07%	1,000,000	1,000,000	1,000,000	
WELLS FARGO GOVERNMENT MMF		469,153		9/1/2019		1.99%	469,153	469,153	469,153	
INDUSTRIAL BANK CDARS		5,077,888	0.500	10/10/2019	10/11/2018	0.50%	5,077,888	5,100,546	5,100,546	
INDUSTRIAL BANK CDARS		5,110,912	1.500	11/7/2019	11/8/2018	1.49%	5,110,912	5,173,674	5,173,674	
INDUSTRIAL BANK CDARS		2,640,952	2.000	1/16/2020	1/17/2019	1.99%	2,640,952	2,674,005	2,674,005	
INDUSTRIAL BANK CDARS		2,599,667	2.000	1/16/2020	1/17/2019	1.99%	2,599,667	2,632,204	2,632,204	
UBS AG STAMFORD CT LT CD	90275DHG8	1,600,000	2.900	3/2/2020	3/6/2018	2.93%	1,600,000	1,631,151	1,623,329	
CANADIAN IMP BK COMM NY FLT CERT DEPOS	13606BVF0	1,400,000	2.738	4/10/2020	4/10/2018	2.78%	1,400,000	1,408,467	1,405,643	
NYC TRANS FIN AUTH, NY TXBL REV BONDS	64971W5W6	540,000	1.960	5/1/2020	6/29/2017	1.96%	540,000	544,295	543,528	
BANK OF NOVA SCOTIA HOUSTON CD	06417GU22	925,000	3.080	6/5/2020	6/7/2018	3.10%	924,649	941,104	931,669	
WAL-MART STORES INC CORP NOTES	93114ZEG4	925,000	2.850	6/23/2020	6/27/2018	2.87%	924,713	936,986	929,860	
BANK OF NOVA SCOTIA HOUSTON CORP BOND	064159JX5	500,000	2.150	7/14/2020	7/14/2017	2.15%	499,930	502,234	501,383	
FNMA NOTES	3135G0T60	375,000	1.500	7/30/2020	9/1/2017	1.49%	375,098	374,484	375,516	
US TREASURY NOTES	912828XM7	725,000	1.625	7/31/2020	7/7/2017	1.60%	725,453	724,750	726,162	
BANK OF MONTREAL CHICAGO CERT DEPOS	06370REU9	925,000	3.190	8/3/2020	8/3/2018	3.23%	925,000	936,420	927,213	
WESTPAC BANKING CORP NY CD	96121TA43	900,000	2.050	8/3/2020	8/7/2017	2.05%	900,000	903,805	901,230	
INTL BANK OF RECONSTRUCTION AND DEV NOTE	45905UP32	925,000	1.561	9/12/2020	9/19/2017	1.64%	922,780	929,609	930,998	
TORONTO-DOMINION BANK	89114QC71	925,000	3.150	9/17/2020	9/17/2018	3.16%	924,806	950,824	938,171	
FHLB NOTES	3130ACE26	965,000	1.375	9/28/2020	9/8/2017	1.48%	961,902	966,927	968,533	
HSBC BANK USA NA CERT DEPOS	40435RCN9	925,000	2.700	10/2/2020	4/4/2019	2.70%	925,000	941,998	935,406	
FANNIE MAE NOTES	3135G0U84	1,850,000	2.875	10/30/2020	11/6/2018	2.95%	1,847,373	1,893,102	1,866,320	
US TREASURY NOTES	912828L99	250,000	1.375	10/31/2020	10/17/2017	1.71%	247,539	250,123	250,123	
INTER-AMERICAN DEVELOPMENT BANK	4581XD0C8	915,000	2.125	11/9/2020	10/10/2017	1.81%	923,481	925,368	924,379	
JOHNSON & JOHNSON CORP NOTE	478160CH5	195,000	1.950	11/10/2020	11/10/2017	1.99%	194,791	196,500	196,088	
COCA-COLA CO/THE GLOBAL NOTES	191216AR1	370,000	3.150	11/15/2020	9/12/2017	1.78%	385,584	379,234	379,452	
SWEDBANK (NEW YORK) CERT DEPOS	87019U6D6	925,000	2.270	11/16/2020	11/17/2017	2.30%	925,000	933,748	931,299	
US TREASURY NOTES	912828M98	3,000,000	1.625	11/30/2020	11/3/2017	1.77%	2,986,992	3,009,456	3,007,038	
US TREASURY NOTES	912828N48	1,975,000	1.750	12/31/2020	12/5/2017	1.91%	1,965,588	1,982,305	1,976,782	
US TREASURY NOTES	912828N48	975,000	1.750	12/31/2020	12/6/2017	1.96%	968,830	978,606	975,206	
ASIAN DEVELOPMENT BANK NOTE	045167EF6	700,000	2.250	1/20/2021	1/19/2018	2.29%	699,251	707,127	701,442	
US TREASURY NOTES	912828N89	1,750,000	1.375	1/31/2021	1/4/2018	2.05%	1,715,000	1,744,914	1,735,736	
US TREASURY NOTES	912828N89	800,000	1.375	1/31/2021	1/4/2018	2.08%	783,188	797,675	793,097	
US TREASURY NOTES	912828P87	1,100,000	1.125	2/28/2021	2/16/2018	2.42%	1,058,707	1,091,698	1,079,276	
INTERNATIONAL FINANCE CORPORATION NOTE	45950VLQ7	925,000	2.635	3/9/2021	3/16/2018	2.66%	924,306	945,262	936,283	
NY ST DORM AUTH PITS TXBL REV BONDS	64990FJN5	390,000	3.100	3/15/2021	12/21/2018	3.10%	390,000	403,402	395,575	
AFRICAN DEVELOPMENT BANK NOTE	00828EC20	800,000	2.625	3/22/2021	3/22/2018	2.66%	799,176	821,075	808,839	
CA ST TXBL GO BONDS	13063DGA0	1,075,000	2.800	4/1/2021	4/25/2018	2.80%	1,075,043	1,104,269	1,087,559	
TOYOTA MOTOR CREDIT CORP	89236TC26	475,000	1.900	4/8/2021	3/6/2018	2.82%	462,223	478,712	471,822	
TOYOTA MOTOR CREDIT CORP NOTES	89236TEU5	290,000	2.950	4/13/2021	4/13/2018	2.96%	289,884	298,305	293,216	
TOYOTA MOTOR CREDIT CORP NOTES	89236TEU5	160,000	2.950	4/13/2021	4/13/2018	2.93%	160,082	164,582	161,854	
BANK OF NEW YORK MELLON CORP (CALLABLE)	06406FAA1	515,000	2.500	4/15/2021	2/16/2018	2.93%	508,300	524,231	516,358	
BANK OF NEW YORK MELLON CORP (CALLABLE)	06406FAA1	410,000	2.500	4/15/2021	2/16/2018	2.99%	404,022	417,349	410,743	
INTER-AMERICAN DEVELOPMENT BANK NOTE	4581XD0B1	1,060,000	2.625	4/19/2021	4/19/2018	2.70%	1,057,668	1,086,977	1,068,910	
ROYAL BANK OF CANADA CORP NOTES	78013XKG2	870,000	3.200	4/30/2021	4/30/2018	3.23%	869,382	898,456	879,008	

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Investment Performance Report – August 2019

DC Water
Finance Division
Portfolio Holdings by Fund

DESCRIPTION	CUSIP	PAR AMOUNT	COUPON RATE	MATURITY DATE	SETTLEMENT DATE	YTM AT COST	ORIGINAL COST	MARKET VALUE + ACCRUED INTEREST	AMORTIZED COST + ACCRUED INTEREST	TOTAL VALUE
Operating Reserve Accounts										
US TREASURY NOTES	9128284P2	1,900,000	2.625	5/15/2021	2/11/2019	2.45%	1,907,348	1,947,652	1,920,383	
UNIV OF CAL TXBL REV BONDS	91412HBM5	340,000	3.029	5/15/2021	6/5/2018	3.03%	340,000	350,189	343,032	
US TREASURY NOTES	912828WN6	975,000	2.000	5/31/2021	6/6/2018	2.62%	957,671	986,963	969,657	
ROYAL BANK OF CANADA NY CD	78012UEE1	700,000	3.240	6/7/2021	6/8/2018	3.24%	700,000	723,117	705,292	
TORONTO DOMINION BANK CORP NOTES	89114QBZ0	925,000	3.250	6/11/2021	6/12/2018	3.27%	924,584	953,094	931,429	
TOTAL CAPITAL INTL SA CORP NOTE	89153VAP4	475,000	2.750	6/19/2021	7/10/2019	2.24%	479,536	484,006	481,824	
FANNIE MAE NOTES	3135G0U35	1,320,000	2.750	6/22/2021	6/25/2018	2.76%	1,319,696	1,355,418	1,326,770	
WAL-MART STORES INC CORP NOTES	931142EJ8	575,000	3.125	6/23/2021	6/27/2018	3.13%	574,971	592,436	578,375	
INTL BANK OF RECONSTRUCTION AND DEV NOTE	459058GH0	1,335,000	2.750	7/23/2021	7/25/2018	2.83%	1,331,876	1,368,082	1,336,868	
US TREASURY NOTES	9128284W7	3,500,000	2.750	8/15/2021	9/7/2018	2.72%	3,502,871	3,584,974	3,506,405	
US TREASURY NOTES	9128284W7	1,100,000	2.750	8/15/2021	9/28/2018	2.91%	1,095,316	1,126,706	1,098,192	
US TREASURY NOTES	9128284W7	450,000	2.750	8/15/2021	10/4/2018	2.89%	448,295	460,925	449,400	
US TREASURY NOTES	9128284W7	425,000	2.750	8/15/2021	10/11/2018	2.97%	422,443	435,318	423,768	
3M COMPANY	88579YBA8	340,000	3.000	9/14/2021	9/14/2018	3.07%	339,303	352,230	344,252	
PFIZER INC CORP NOTE	717081EM1	575,000	3.000	9/15/2021	9/7/2018	3.05%	574,224	596,242	582,421	
FEDERAL HOME LOAN BANKS NOTES (CALLABLE)	3130AEXV7	925,000	3.000	9/20/2021	9/20/2018	3.00%	925,000	937,733	937,410	
FEDERAL HOME LOAN BANKS NOTES	3130AF5B9	1,850,000	3.000	10/12/2021	11/6/2018	3.02%	1,848,927	1,927,131	1,870,664	
FEDERAL HOME LOAN BANKS NOTES	3130AF5B9	1,575,000	3.000	10/12/2021	12/12/2018	2.85%	1,581,395	1,640,665	1,598,089	
UNITED STATES TREASURY NOTES	9128285F3	1,000,000	2.875	10/15/2021	12/12/2018	2.77%	1,002,852	1,039,044	1,013,084	
FANNIE MAE NOTES	3135G0U92	935,000	2.625	1/11/2022	1/11/2019	2.65%	934,327	962,154	937,875	
FANNIE MAE NOTES	3135G0U92	925,000	2.625	1/11/2022	1/31/2019	2.62%	925,241	951,864	928,573	
WESTPAC BANKING CORP NY CORP NOTES	961214DG5	925,000	2.800	1/11/2022	4/10/2019	2.86%	923,418	949,106	927,253	
US TREASURY NOTES	9128285V8	4,600,000	2.500	1/15/2022	1/31/2019	2.55%	4,593,352	4,723,353	4,609,656	
US TREASURY NOTES	9128285V8	1,000,000	2.500	1/15/2022	2/11/2019	2.43%	1,001,992	1,026,816	1,004,893	
US TREASURY NOTES	912828V72	3,800,000	1.875	1/31/2022	1/9/2019	2.50%	3,730,828	3,841,080	3,751,238	
MERCK & CO INC CORP NOTES	58933YAQ8	450,000	2.350	2/10/2022	1/16/2019	2.99%	441,639	457,233	443,903	
US TREASURY NOTES	9128286C9	5,150,000	2.500	2/15/2022	3/5/2019	2.54%	5,144,367	5,282,081	5,151,265	
US TREASURY NOTES	9128286C9	1,250,000	2.500	2/15/2022	4/3/2019	2.29%	1,257,275	1,282,059	1,257,707	
TOTAL CAPITAL SA CORP NOTE	89153VAB5	475,000	2.875	2/17/2022	7/19/2019	2.20%	483,047	486,881	483,227	
CHEVRON CORP (CALLABLE) NOTES	166764BN9	475,000	2.498	3/3/2022	5/17/2019	2.56%	474,202	489,112	480,157	
PFIZER INC CORP BONDS	717081ER0	270,000	2.800	3/11/2022	3/11/2019	2.80%	269,984	280,525	273,556	
US BANCORP (CALLABLE) NOTE	91159HHC7	965,000	3.000	3/15/2022	6/18/2019	2.33%	982,032	1,003,221	994,135	
BANK OF MONTREAL	06367WJM6	465,000	2.900	3/26/2022	3/26/2019	2.99%	463,819	480,657	469,788	
UNITED STATES TREASURY NOTES	9128286M7	1,685,000	2.250	4/15/2022	5/3/2019	2.23%	1,686,185	1,733,361	1,700,460	
APPLE INC CORP NOTES	037833BF6	500,000	2.700	5/13/2022	1/10/2019	3.08%	494,015	516,045	499,178	
APPLE INC CORP NOTES	037833BF6	475,000	2.700	5/13/2022	6/14/2019	2.25%	481,056	490,243	484,474	
BERKSHIRE HATHAWAY INC CORP NOTE	084664BT7	475,000	3.000	5/15/2022	8/15/2019	1.85%	489,559	495,227	493,526	
COSTCO WHOLESALE CORP CORP NOTES	22160KAK1	200,000	2.300	5/18/2022	8/16/2019	1.94%	201,910	203,915	203,198	
BLACKROCK INC CORP NOTES	09247XAJ0	925,000	3.375	6/1/2022	11/9/2018	3.41%	923,909	973,626	931,962	
FEDERAL HOME LOAN BANK	313379Q69	1,900,000	2.125	6/10/2022	7/1/2019	1.86%	1,914,269	1,940,849	1,922,567	
JPMORGAN CHASE & CO CORP NOTES	46647PAS5	925,000	3.514	6/18/2022	6/26/2018	3.50%	925,564	953,477	932,000	
US TREASURY NOTES	9128282P4	3,050,000	1.875	7/31/2022	6/5/2019	1.85%	3,052,502	3,092,384	3,057,314	
HONOLULU, HI TXBL GO BONDS	438687KR5	390,000	1.739	8/1/2022	8/21/2019	1.74%	390,000	390,703	390,188	
NORTHERN TRUST COMPANY CORP NOTES	665859AN4	475,000	2.375	8/2/2022	8/13/2019	1.95%	480,767	483,372	481,581	
PROCTER & GAMBLE CO/THE CORP NOTES	742718EU9	950,000	2.150	8/11/2022	6/21/2019	2.15%	950,105	962,533	951,239	
EXXON MOBIL CORPORATION	30231GBB7	345,000	1.902	8/16/2022	8/16/2019	1.90%	345,000	347,467	345,273	
BANK OF NY MELLON CORP CORP NOTES	06406RAK3	295,000	1.950	8/23/2022	8/23/2019	1.96%	294,906	294,878	295,034	
NORDEA BANK ABP NEW YORK CERT DEPOS	65558TLL7	1,450,000	1.850	8/26/2022	8/29/2019	1.87%	1,450,000	1,450,457	1,450,224	

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Investment Performance Report – August 2019

DC Water
Finance Division
Portfolio Holdings by Fund

DESCRIPTION	CUSIP	PAR AMOUNT	COUPON RATE	MATURITY DATE	SETTLEMENT DATE	YTM AT COST	ORIGINAL COST	MARKET VALUE + ACCRUED INTEREST	AMORTIZED COST + ACCRUED INTEREST	TOTAL VALUE
Operating Reserve Accounts										
SKANDINAVISKA ENSKILDA BANKEN AB CERT DE	83050PDR7	1,450,000	1.860	8/26/2022	9/3/2019	1.83%	1,450,000	1,446,690	1,450,000	
US TREASURY NOTES	9128282S8	150,000	1.625	8/31/2022	8/5/2019	1.69%	149,701	150,821	149,715	
SAN JOSE, CA TXBL GO BONDS	798135H44	435,000	2.300	9/1/2022	7/25/2019	2.08%	437,854	442,704	438,761	
MERCK & CO INC CORP NOTES	589331AT4	450,000	2.400	9/15/2022	3/15/2019	2.71%	445,401	462,077	450,963	
VISA INC (GALLABLE) NOTE	92826CAG7	925,000	2.150	9/15/2022	5/24/2019	2.56%	913,086	947,377	923,202	
NYC TRANS FIN AUTH, NY TXBL REV BONDS	64971XHY7	925,000	2.520	11/1/2022	4/12/2019	2.52%	925,000	956,580	934,000	
BANK OF NOVA SCOTIA	064159QD1	410,000	2.375	1/18/2023	7/18/2019	2.39%	409,807	415,449	410,977	
JPMORGAN CHASE & CO BONDS	46647PBB1	475,000	3.207	4/1/2023	3/22/2019	3.21%	475,000	495,068	481,728	
										\$ 176,000,600.52
Debt Service Reserve										
WELLS FARGO TREASURY PLUS MMF		\$ 12,374		9/1/2019		1.96%	\$ 12,374	\$ 12,374	\$ 12,374	
US TREASURY NOTES	912828TR1	5,035,000	1.000	9/30/2019	4/5/2019	2.43%	5,000,384	5,052,223	5,050,546	
US TREASURY N/B NOTES	9128284C1	7,475,000	2.250	3/31/2020	2/6/2019	2.56%	7,449,013	7,560,658	7,532,599	
US TREASURY NOTES	912828VZ0	4,275,000	2.000	9/30/2020	4/5/2019	2.40%	4,249,951	4,321,163	4,292,709	
US TREASURY NOTES	912828F21	7,025,000	2.125	9/30/2021	4/2/2018	2.49%	6,940,206	7,174,529	7,036,493	
										\$ 23,924,721.58
CSO LTCP Appropriations Account										
TD BANK BANK DEPOSIT		\$ 8,076,196		9/1/2019		2.07%	\$ 8,076,196	\$ 8,076,196	\$ 8,076,196	
										\$ 8,076,195.52
Capital Project Accounts										
TD BANK BANK DEPOSIT - DISTRICT FUNDS		\$ 3,701,658		9/1/2019		1.58%	\$ 3,701,658	\$ 3,701,658	\$ 3,701,658	
TD BANK BANK DEPOSIT - DC WATER CAP2		\$ 5,760,000		9/1/2019		1.58%	\$ 5,760,000	\$ 5,760,000	\$ 5,760,000	
TD BANK BANK DEPOSIT - DOEE CAP2		\$ 1,200,000		9/1/2019		1.58%	\$ 1,200,000	\$ 1,200,000	\$ 1,200,000	
TD BANK BANK DEPOSIT - DOEE CAP3/NON-PROFIT		\$ 3,286,000		9/1/2019		1.58%	\$ 3,286,000	\$ 3,286,000	\$ 3,286,000	
TD BANK BANK DEPOSIT - DANBURY MTR PROJECT		\$ 500,000		9/1/2019		1.58%	\$ 500,000	\$ 500,000	\$ 500,000	
TD BANK BANK DEPOSIT - DEVELOPER DEPOSITS > \$250K		\$ 500,000		9/1/2019		1.58%	\$ 500,000	\$ 500,000	\$ 500,000	
										\$ 14,947,657.61
Series B Commercial Paper Construction Fund										
FIRST AMERICAN FUNDS TREASURY MMF		\$ 2,854		9/1/2019		1.55%	\$ 2,854	\$ 2,854	\$ 2,854	
										\$ 2,853.67
2016B Construction Fund										
WELLS FARGO TREASURY PLUS MMF		\$ 4,918,259		9/1/2019		1.96%	\$ 4,918,259	\$ 4,918,259	\$ 4,918,259	
										\$ 4,918,258.56
2018A Construction Fund										
WELLS FARGO TREASURY PLUS MMF		\$ 34,678,105		9/1/2019		1.96%	\$ 34,678,105	\$ 34,678,105	\$ 34,678,105	
										\$ 34,678,105.34
2018B Construction Fund										
WELLS FARGO TREASURY PLUS MMF		\$ 45,577,712		9/1/2019		1.96%	\$ 45,577,712	\$ 45,577,712	\$ 45,577,712	
BNP PARIBAS NY BRANCH COMM PAPER	09659CWW4	4,000,000	-	9/30/2019	3/1/2019	2.64%	3,938,467	3,992,732	3,991,622	
JP MORGAN SECURITIES LLC COMM PAPER	46640CWW7	6,500,000	-	9/30/2019	3/1/2019	2.62%	6,400,778	6,488,131	6,486,491	
US TREASURY NOTES	912828F39	14,250,000	1.750	9/30/2019	3/1/2019	2.53%	14,185,986	14,351,508	14,346,225	
										\$ 70,402,050.46
							\$ 387,061,466.74	\$ 390,059,370.56	\$ 388,400,443.26	\$ 388,400,443.26

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Investment Performance Report – August 2019

DC Water
Finance Division
Security Purchases
Last 6 Months

CUSIP	DESCRIPTION	PAR	COUPON	MATURITY DATE	TRADE DATE	SETTLE DATE	YTM	TRANSACTION AMOUNT
Operating Reserve Accounts								
9128286C9	US TREASURY NOTES	5,150,000.00	2.50	2/15/2022	3/1/2019	3/5/2019	2.54	5,150,769.12
717081ER0	PFIZER INC CORP BONDS	270,000.00	2.80	3/11/2022	3/4/2019	3/11/2019	2.80	269,983.80
589331AT4	MERCK & CO INC CORP NOTES	450,000.00	2.40	9/15/2022	3/13/2019	3/15/2019	2.71	445,401.00
46647PBB1	JPMORGAN CHASE & CO BONDS	475,000.00	3.21	4/1/2023	3/15/2019	3/22/2019	3.21	475,000.00
06367WJM6	BANK OF MONTREAL	465,000.00	2.90	3/26/2022	3/21/2019	3/26/2019	2.99	463,818.90
64971XHY7	NYC TRANS FIN AUTH, NY TXBL REV BONDS	925,000.00	2.52	11/1/2022	3/27/2019	4/12/2019	2.52	925,000.00
9128286C9	US TREASURY NOTES	1,250,000.00	2.50	2/15/2022	4/1/2019	4/3/2019	2.29	1,261,332.71
40435RCN9	HSBC BANK USA NA CERT DEPOS	925,000.00	2.70	10/2/2020	4/3/2019	4/4/2019	2.25	925,000.00
961214DG5	WESTPAC BANKING CORP NY CORP NOTES	925,000.00	2.80	1/11/2022	4/8/2019	4/10/2019	2.86	929,821.31
9128286M7	UNITED STATES TREASURY NOTES	2,150,000.00	2.25	4/15/2022	5/1/2019	5/3/2019	2.23	2,153,890.82
166764BN9	CHEVRON CORP (CALLABLE) NOTES	475,000.00	2.50	3/3/2022	5/15/2019	5/17/2019	2.56	476,641.02
92826CAG7	VISA INC (CALLABLE) NOTE	925,000.00	2.15	9/15/2022	5/22/2019	5/24/2019	2.56	916,897.77
9128282P4	US TREASURY NOTES	4,000,000.00	1.88	7/31/2022	6/3/2019	6/5/2019	1.85	4,029,179.04
037833BF6	APPLE INC CORP NOTES	475,000.00	2.70	5/13/2022	6/12/2019	6/14/2019	2.25	482,160.63
91159HHC7	US BANCORP (CALLABLE) NOTE	965,000.00	3.00	3/15/2022	6/14/2019	6/18/2019	2.33	989,511.00
742718EU9	PROCTER & GAMBLE CO/THE CORP NOTES	950,000.00	2.15	8/11/2022	6/18/2019	6/21/2019	2.15	957,480.19
313379Q69	FEDERAL HOME LOAN BANK	1,900,000.00	2.13	6/10/2022	7/1/2019	7/1/2019	1.86	1,916,624.21
89153VAP4	TOTAL CAPITAL INTL SA CORP NOTE	475,000.00	2.75	6/19/2021	7/8/2019	7/10/2019	2.24	480,298.23
798135H44	SAN JOSE, CA TXBL GO BONDS	435,000.00	2.30	9/1/2022	7/9/2019	7/25/2019	2.08	437,853.60
064159QD1	BANK OF NOVA SCOTIA	410,000.00	2.38	1/18/2023	7/15/2019	7/18/2019	2.39	409,807.30
89153VAB5	TOTAL CAPITAL SA CORP NOTE	475,000.00	2.88	2/17/2022	7/17/2019	7/19/2019	2.20	488,812.47
9128282S8	US TREASURY NOTES	600,000.00	1.63	8/31/2022	8/2/2019	8/5/2019	1.69	602,990.83
438687KR5	HONOLULU, HI TXBL GO BONDS	390,000.00	1.74	8/1/2022	8/8/2019	8/21/2019	1.74	390,000.00
665859AN4	NORTHERN TRUST COMPANY CORP NOTES	475,000.00	2.38	8/2/2022	8/9/2019	8/13/2019	1.95	481,111.20
084664BT7	BERKSHIRE HATHAWAY INC CORP NOTE	475,000.00	3.00	5/15/2022	8/12/2019	8/15/2019	1.85	493,121.25
30231GBB7	EXXON MOBIL CORPORATION	345,000.00	1.90	8/16/2022	8/13/2019	8/16/2019	1.90	345,000.00
22160KAK1	COSTCO WHOLESALE CORP CORP NOTES	200,000.00	2.30	5/18/2022	8/14/2019	8/16/2019	1.94	203,034.44
06406RAK3	BANK OF NY MELLON CORP CORP NOTES	295,000.00	1.95	8/23/2022	8/20/2019	8/23/2019	1.96	294,905.60
65558TLL7	NORDEA BANK ABP NEW YORK CERT DEPOS	1,450,000.00	1.85	8/26/2022	8/27/2019	8/29/2019	1.87	1,450,000.00
83050PDR7	SKANDINAVISKA ENSKILDA BANKEN AB CERT DE	1,450,000.00	1.86	8/26/2022	8/29/2019	9/3/2019	1.86	1,450,000.00
Total Debt Service Reserve								
912828TR1	US TREASURY NOTES	5,035,000.00	1.00	9/30/2019	4/5/2019	4/5/2019	2.43	5,001,072.22
912828VZ0	US TREASURY NOTES	4,275,000.00	2.00	9/30/2020	4/5/2019	4/5/2019	2.40	4,251,119.20
2018A Construction Fund								
912828D23	US TREASURY NOTES	19,950,000.00	1.625	4/30/2019	2/28/2019	3/1/2019	2.440	20,031,085.63
912828W97	US TREASURY NOTES	16,080,000.00	1.250	3/31/2019	2/28/2019	3/1/2019	2.472	16,147,602.82
2018B Construction Fund								
09659CWW4	BNP PARIBAS NY BRANCH COMM PAPER	4,000,000.00	0.000	9/30/2019	3/1/2019	3/1/2019	2.672	3,938,466.67
46640QWW7	JP MORGAN SECURITIES LLC COMM PAPER	6,500,000.00	0.000	9/30/2019	3/1/2019	3/1/2019	2.651	6,400,777.50
62479MWW0	MUFG BANK LTD/NY COMM PAPER	2,500,000.00	0.000	8/30/2019	3/1/2019	3/1/2019	2.671	2,467,138.89
89233HVV1	TOYOTA MOTOR CREDIT CORP COMM PAPER	5,000,000.00	0.000	8/30/2019	3/1/2019	3/1/2019	2.630	4,935,288.89
912828F39	US TREASURY NOTES	14,250,000.00	1.750	9/30/2019	3/1/2019	3/1/2019	2.531	14,290,120.95

Securities highlighted in **blue font** denote trades executed during the current month.



Investment Performance Report – August 2019

DC Water
Finance Division
Security Sales
Last 6 Months

CUSIP	DESCRIPTION	PAR	COUPON	MATURITY DATE	TRADE DATE	SETTLE DATE	YTM	TRANSACTION AMOUNT
Operating Reserve Accounts								
912828J50	US TREASURY NOTES	2,625,000.00	1.38	2/29/2020	3/1/2019	3/5/2019	2.56	2,595,343.92
00828ECA5	AFRICAN DEVELOPMENT BANK NOTE	1,035,000.00	1.88	3/16/2020	3/4/2019	3/6/2019	2.68	1,035,811.61
40054PAE5	GOLDMAN SACHS BANK USA CERT DEPOS	1,400,000.00	2.80	8/5/2019	3/4/2019	3/5/2019	2.72	1,422,669.13
717081EB5	PFIZER INC CORP NOTE	595,000.00	1.70	12/15/2019	3/5/2019	3/5/2019	2.70	592,690.08
717081EB5	PFIZER INC CORP NOTE	300,000.00	1.70	12/15/2019	3/5/2019	3/5/2019	2.70	298,835.33
912828K58	US TREASURY NOTES	100,000.00	1.38	4/30/2020	3/5/2019	3/5/2019	2.56	99,131.04
912828K58	US TREASURY NOTES	150,000.00	1.38	4/30/2020	3/15/2019	3/22/2019	2.53	148,934.05
06367T4W7	BANK OF MONTREAL CHICAGO CORP NOTES	470,000.00	3.10	4/13/2021	3/21/2019	3/26/2019	2.76	479,731.87
912828K58	US TREASURY NOTES	925,000.00	1.38	4/30/2020	3/27/2019	4/3/2019	2.37	920,654.88
912828K58	US TREASURY NOTES	1,150,000.00	1.38	4/30/2020	4/1/2019	4/3/2019	2.41	1,144,148.74
912828XH8	US TREASURY NOTES	915,000.00	1.63	6/30/2020	4/3/2019	4/4/2019	2.41	910,175.60
961214DJ9	WESTPAC BANKING CORP NOTES	925,000.00	2.15	3/6/2020	4/8/2019	4/10/2019	2.71	922,225.51
912828K58	US TREASURY NOTES	425,000.00	1.38	4/30/2020	5/1/2019	5/3/2019	2.39	420,830.84
912828K58	US TREASURY NOTES	1,575,000.00	1.38	4/30/2020	5/1/2019	5/3/2019	2.39	1,559,549.59
912828VF4	US TREASURY NOTES	400,000.00	1.38	5/31/2020	5/15/2019	5/17/2019	2.32	398,663.46
912828VF4	US TREASURY NOTES	925,000.00	1.38	5/31/2020	5/22/2019	5/24/2019	2.37	921,900.91
912828VF4	US TREASURY NOTES	325,000.00	1.38	5/31/2020	6/3/2019	6/5/2019	2.18	322,521.99
912828XH8	US TREASURY NOTES	910,000.00	1.63	6/30/2020	6/3/2019	6/5/2019	2.16	911,253.76
912828XH8	US TREASURY NOTES	2,750,000.00	1.63	6/30/2020	6/3/2019	6/5/2019	2.16	2,753,788.85
89236TDU6	TOYOTA MOTOR CREDIT CORP	425,000.00	1.95	4/17/2020	6/12/2019	6/14/2019	2.31	425,028.69
89236TDU6	TOYOTA MOTOR CREDIT CORP	205,000.00	1.95	4/17/2020	6/14/2019	6/18/2019	2.30	205,095.15
89236TDU6	TOYOTA MOTOR CREDIT CORP	295,000.00	1.95	4/17/2020	6/14/2019	6/18/2019	2.30	295,136.93
912828M7	UNITED STATES TREASURY NOTES	465,000.00	2.25	4/15/2022	6/14/2019	6/18/2019	1.82	472,315.06
912828P4	US TREASURY NOTES	950,000.00	1.88	7/31/2022	6/18/2019	6/21/2019	1.83	958,162.63
89152UAD4	TOTAL CAPITAL SA CORP NOTES	475,000.00	4.45	6/24/2020	7/8/2019	7/10/2019	2.28	485,635.11
912828XH8	US TREASURY NOTES	300,000.00	1.63	6/30/2020	7/11/2019	7/25/2019	2.03	299,206.18
064159JX5	BANK OF NOVA SCOTIA HOUSTON CORP BOND	425,000.00	2.15	7/14/2020	7/15/2019	7/18/2019	2.26	424,659.53
89152UAD4	TOTAL CAPITAL SA CORP NOTES	375,000.00	4.45	6/24/2020	7/17/2019	7/19/2019	2.26	383,685.10
912828XH8	US TREASURY NOTES	100,000.00	1.63	6/30/2020	7/17/2019	7/19/2019	1.99	99,740.15
912828XH8	US TREASURY NOTES	500,000.00	1.63	6/30/2020	8/1/2019	8/5/2019	2.03	498,978.43
3135G0T60	FNMA NOTES	425,000.00	1.50	7/30/2020	8/12/2019	8/13/2019	1.83	423,904.21
912828XM7	US TREASURY NOTES	100,000.00	1.63	7/31/2020	8/13/2019	8/16/2019	1.88	99,832.37
912828S8	US TREASURY NOTES	200,000.00	1.63	8/31/2022	8/14/2019	8/16/2019	1.53	202,047.22
912828S8	US TREASURY NOTES	250,000.00	1.63	8/31/2022	8/20/2019	8/23/2019	1.46	253,192.93
65590ASN7	NORDEA BANK AB NY CD	1,850,000.00	2.72	2/20/2020	8/27/2019	8/29/2019	2.00	1,857,557.32
3135G0T60	FNMA NOTES	1,050,000.00	1.50	7/30/2020	8/29/2019	9/3/2019	1.77	1,048,850.25

Securities highlighted in **blue font** denote trades executed during the current month.



Investment Performance Report – August 2019

DC Water
Finance Division
Security Maturities
Last 6 Months

CUSIP	DESCRIPTION	PAR	COUPON	MATURITY DATE	TRADE DATE	SETTLE DATE	TRANSACTION AMOUNT
Operating Reserve Accounts							
341271AA2	FL ST BOARD ADMIN FIN CORP TXBL REV BD	1,800,000.00	2.16	7/1/2019	7/1/2019	7/1/2019	1,800,000.00
20772J3D2	CT ST TXBL GO BONDS	985,000.00	1.30	8/15/2019	8/15/2019	8/15/2019	985,000.00
Total Debt Service Reserve							
912828C65	US TREASURY NOTES	3,850,000.00	1.63	3/31/2019	3/31/2019	3/31/2019	3,850,000.00
912828W97	US TREASURY NOTES	5,175,000.00	1.25	3/31/2019	3/31/2019	3/31/2019	5,175,000.00
2018A Construction Fund							
09659CQ19	BNP PARIBAS NY BRANCH COMM PAPER	3,500,000.00	-	3/1/2019	3/1/2019	3/1/2019	3,500,000.00
21687BQ12	COOPERATIEVE RABOBANK U.A. COMM PAPER	2,380,000.00	-	3/1/2019	3/1/2019	3/1/2019	2,380,000.00
46640QQ12	JP MORGAN SECURITIES LLC COMM PAPER	5,750,000.00	-	3/1/2019	3/1/2019	3/1/2019	5,750,000.00
89233HQ15	TOYOTA MOTOR CREDIT CORP COMM PAPER	2,300,000.00	-	3/1/2019	3/1/2019	3/1/2019	2,300,000.00
912828W97	US TREASURY NOTES	16,080,000.00	1.25	3/31/2019	3/31/2019	3/31/2019	16,080,000.00
912828D23	US TREASURY NOTES	19,950,000.00	1.63	4/30/2019	4/30/2019	4/30/2019	19,950,000.00
912828XS4	US TREASURY NOTES	4,795,000.00	1.25	5/31/2019	5/31/2019	5/31/2019	4,795,000.00
912828D80	US TREASURY NOTES	1,850,000.00	1.63	8/31/2019	8/31/2019	8/31/2019	1,850,000.00
2018B Construction Fund							
46640QQ12	JP MORGAN SECURITIES LLC COMM PAPER	7,250,000.00	-	3/1/2019	3/1/2019	3/1/2019	7,250,000.00
89233HQ15	TOYOTA MOTOR CREDIT CORP COMM PAPER	1,500,000.00	-	3/1/2019	3/1/2019	3/1/2019	1,500,000.00
62479MSQ7	MUFG BANK LTD/NY COMM PAPER	1,500,000.00	-	5/24/2019	5/24/2019	5/24/2019	1,500,000.00
89233HSQ8	TOYOTA MOTOR CREDIT CORP COMM PAPER	1,500,000.00	-	5/24/2019	5/24/2019	5/24/2019	1,500,000.00
912828XS4	US TREASURY NOTES	27,200,000.00	1.25	5/31/2019	5/31/2019	5/31/2019	27,200,000.00
912828WS5	US TREASURY NOTES	14,000,000.00	1.63	6/30/2019	6/30/2019	6/30/2019	14,000,000.00
912828K5	US TREASURY NOTES	4,660,000.00	1.38	7/31/2019	7/31/2019	7/31/2019	4,660,000.00
62479MVW0	MUFG BANK LTD/NY COMM PAPER	2,500,000.00	-	8/30/2019	8/30/2019	8/30/2019	2,500,000.00
89233HVW1	TOYOTA MOTOR CREDIT CORP COMM PAPER	5,000,000.00	-	8/30/2019	8/30/2019	8/30/2019	5,000,000.00
912828D80	US TREASURY NOTES	28,225,000.00	1.63	8/31/2019	8/31/2019	8/31/2019	28,225,000.00

Securities highlighted in **blue font** denote trades executed during the current month.

Investment Performance Report – August 2019



**DC Water
Finance Division
Upcoming Transaction Cash Flows
Next 30 Days**

DATE	TRANSACTION	CUSIP	DESCRIPTION	COUPON	MATURITY DATE	PAR VALUE/SHARES	PRINCIPAL	INTEREST	TOTAL
09/01/19	INTEREST	798135H44	SAN JOSE, CA TXBL GO BONDS	2.300	09/01/22	435,000.00	0.00	1,000.50	1,000.50
09/03/19	INTEREST	166764BN9	CHEVRON CORP (CALLABLE) NOTES	2.498	03/03/22	475,000.00	0.00	5,932.75	5,932.75
09/03/19	INTEREST	90275DHG8	UBS AG STAMFORD CT LT CD	2.900	03/02/20	1,600,000.00	0.00	23,586.67	23,586.67
09/09/19	INTEREST	45950VLQ7	INTERNATIONAL FINANCE CORPORATION NOTE	2.635	03/09/21	925,000.00	0.00	12,186.88	12,186.88
09/11/19	INTEREST	717081ER0	PFIZER INC CORP BONDS	2.800	03/11/22	270,000.00	0.00	3,780.00	3,780.00
09/12/19	INTEREST	45905UP32	INTL BANK OF RECONSTRUCTION AND DEV NOTE	1.561	09/12/20	925,000.00	0.00	7,219.63	7,219.63
09/14/19	INTEREST	88579YBA8	3M COMPANY	3.000	09/14/21	340,000.00	0.00	5,100.00	5,100.00
09/15/19	INTEREST	589331AT4	MERCK & CO INC CORP NOTES	2.400	09/15/22	450,000.00	0.00	5,400.00	5,400.00
09/15/19	INTEREST	64990FJN5	NY ST DORM AUTH PITS TXBL REV BONDS	3.100	03/15/21	390,000.00	0.00	6,045.00	6,045.00
09/15/19	INTEREST	717081EM1	PFIZER INC CORP NOTE	3.000	09/15/21	575,000.00	0.00	8,625.00	8,625.00
09/15/19	INTEREST	91159HHC7	US BANCORP (CALLABLE) NOTE	3.000	03/15/22	965,000.00	0.00	14,475.00	14,475.00
09/15/19	INTEREST	92826CAG7	VISA INC (CALLABLE) NOTE	2.150	09/15/22	925,000.00	0.00	9,943.75	9,943.75
09/17/19	INTEREST	89114QC71	TORONTO-DOMINION BANK	3.150	09/17/20	925,000.00	0.00	14,568.75	14,568.75
09/20/19	INTEREST	3130AEXV7	FEDERAL HOME LOAN BANKS NOTES (CALLABLE)	3.000	09/20/21	925,000.00	0.00	13,875.00	13,875.00
09/22/19	INTEREST	00828ECZ0	AFRICAN DEVELOPMENT BANK NOTE	2.625	03/22/21	800,000.00	0.00	10,500.00	10,500.00
09/26/19	INTEREST	06367WJM6	BANK OF MONTREAL	2.900	03/26/22	465,000.00	0.00	6,742.50	6,742.50
09/28/19	INTEREST	3130ACE26	FHLB NOTES	1.375	09/28/20	965,000.00	0.00	6,634.38	6,634.38
09/30/19	INTEREST	9128284C1	US TREASURY N/B NOTES	2.250	03/31/20	7,475,000.00	0.00	84,093.75	84,093.75
09/30/19	INTEREST	912828F21	US TREASURY NOTES	2.125	09/30/21	7,025,000.00	0.00	74,640.63	74,640.63
09/30/19	MATURITY	912828TR1	US TREASURY NOTES	1.000	09/30/19	5,035,000.00	5,035,000.00	25,175.00	5,060,175.00
09/30/19	INTEREST	912828VZ0	US TREASURY NOTES	2.000	09/30/20	4,275,000.00	0.00	42,750.00	42,750.00
09/30/19	MATURITY	09659CWW4	BNP PARIBAS NY BRANCH COMM PAPER	0.000	09/30/19	4,000,000.00	3,938,466.64	61,533.36	4,000,000.00
09/30/19	MATURITY	46640QWW7	JP MORGAN SECURITIES LLC COMM PAPER	0.000	09/30/19	6,500,000.00	6,400,777.50	99,222.50	6,500,000.00
09/30/19	MATURITY	912828F39	US TREASURY NOTES	1.750	09/30/19	14,250,000.00	14,250,000.00	124,687.50	14,374,687.50



Appendix: Economic Update



Economic Growth Declines in Second Quarter

- U.S. economic activity experienced moderate growth during the second quarter of 2019.
 - The second estimate of U.S. GDP growth for the second quarter was 2.0%, a fall from the first estimate of 2.1%, and signaling significant economic slowing since the first quarter’s growth of 3.1%.
- Growth is still projected to steadily decline in in the remaining quarters of 2019 and into 2020. Once again, estimated projections decreased slightly from last month’s estimates.
 - The main causes for this expected decrease in future growth are state and local government spending, exports, private inventory investment, and residential investment.

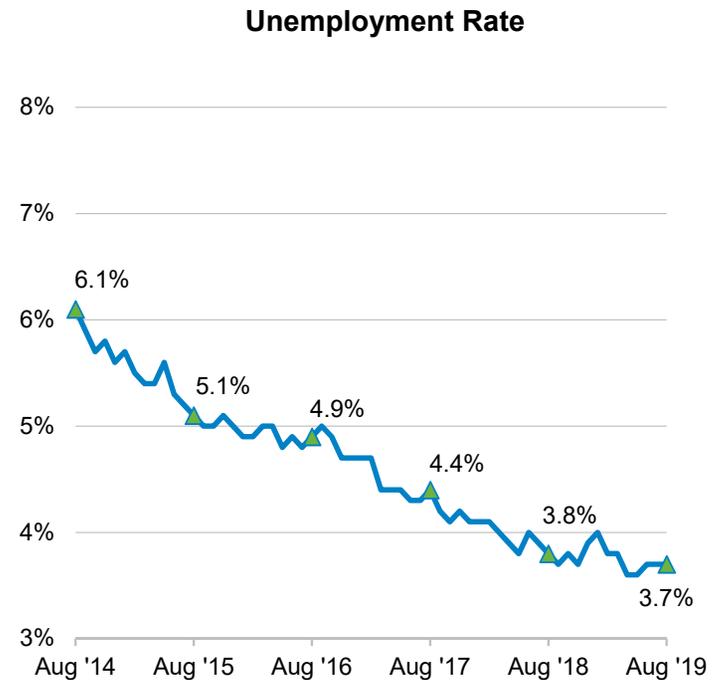
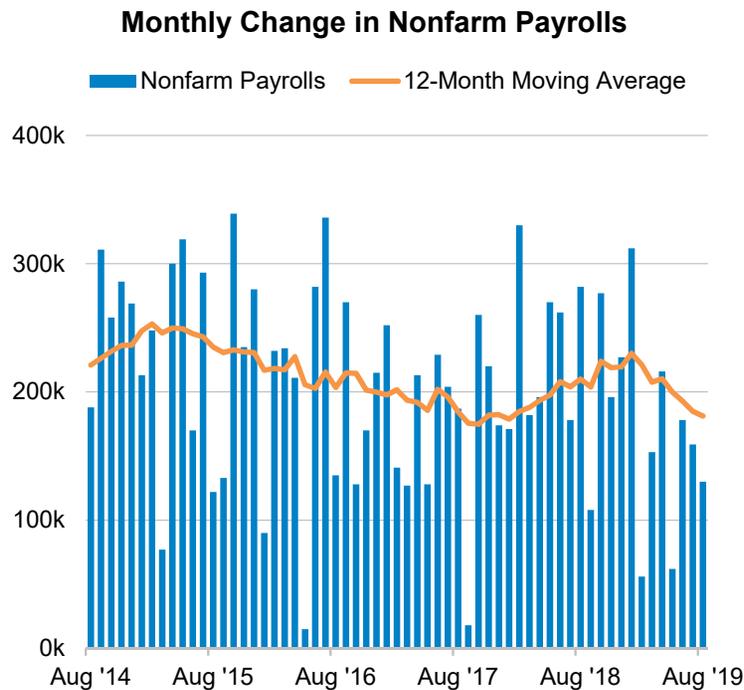


Source: Bloomberg, as of August 31, 2019. SAAR is seasonally adjusted annualized rate. Purple denotes rolling four-quarter averages.



Labor Market Job Growth Begins to Slow

- The U.S. economy added 130,000 jobs in August, the slowest job growth within the last three months.
- The unemployment rate continues to remain steady at 3.7% at the close of August.



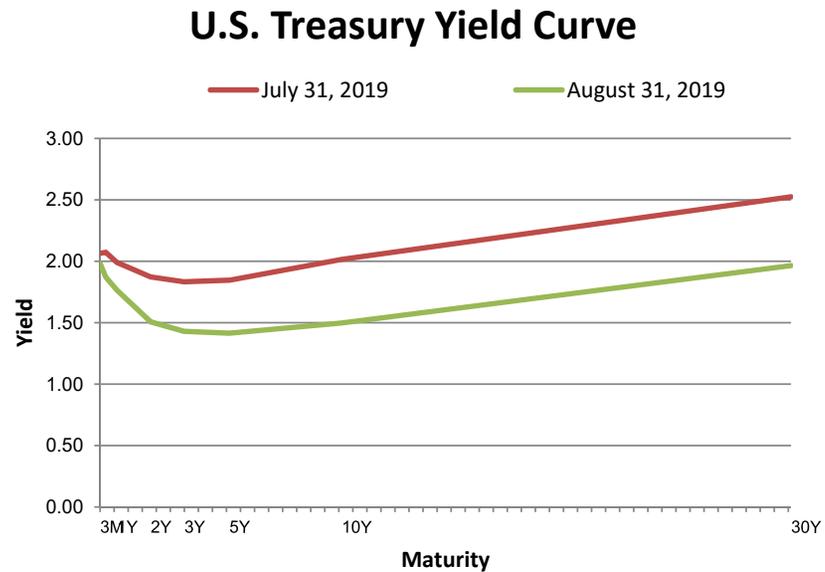
Source: Bloomberg, as of August 31, 2019.



U.S. Treasury Yield Curve

- The U.S. Treasury yield curve now exhibits an even more pronounced inversion. On August 27th, the curve inverted between the 2-year and 10-year maturities for the first time since 2007.
- 3-month Treasury notes continue to provide higher yields than those of intermediate-term notes up to 10 years as of August 31st, 2019.

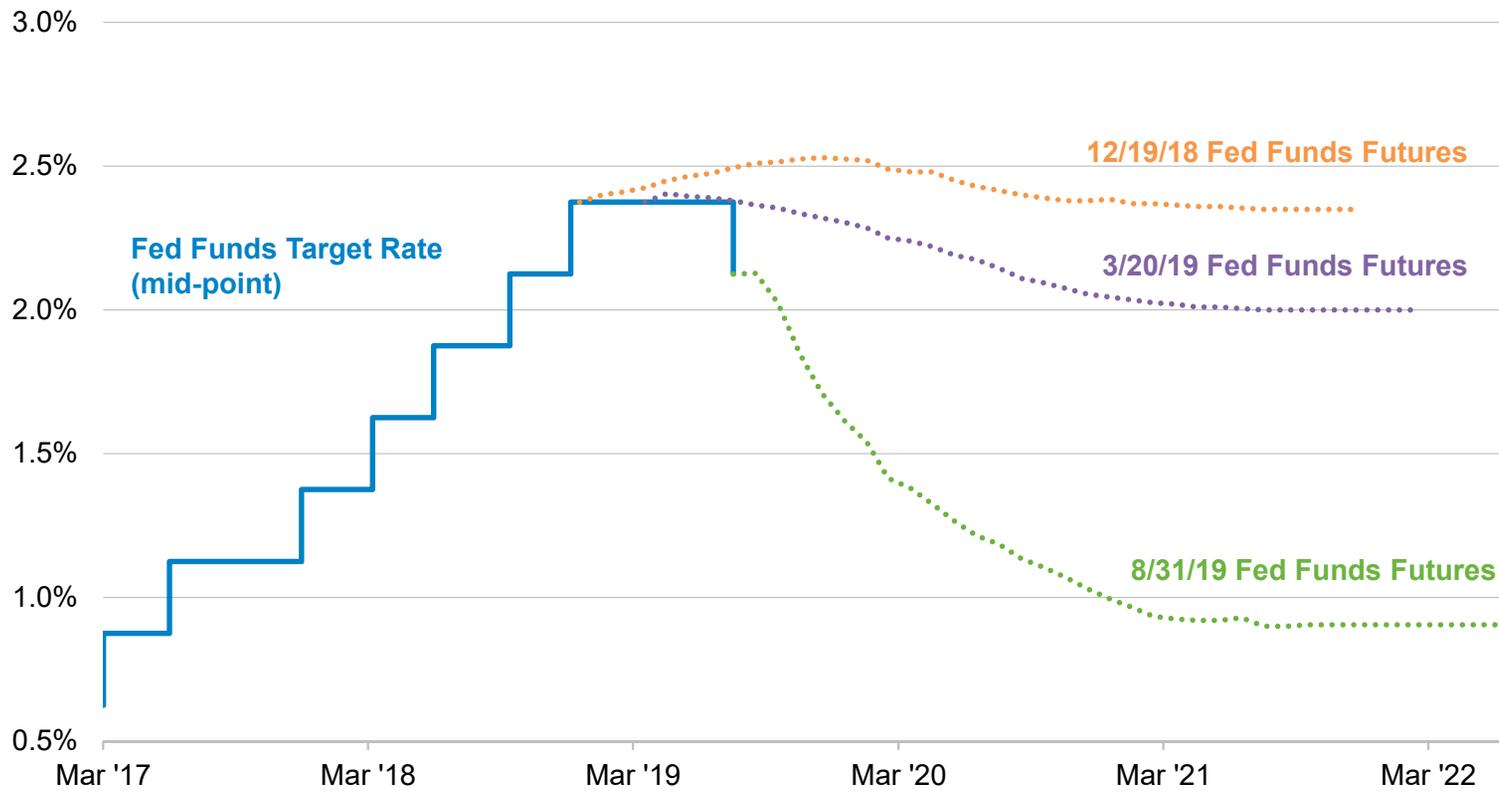
	<u>7/31/2019</u>	<u>8/31/2019</u>	<u>Change</u>
3 month	2.07%	1.98%	-0.08%
6 month	2.07%	1.87%	-0.20%
1 year	1.99%	1.77%	-0.23%
2 year	1.87%	1.51%	-0.37%
3 year	1.83%	1.43%	-0.40%
5 year	1.85%	1.41%	-0.43%
10 year	2.02%	1.50%	-0.52%
30 year	2.53%	1.96%	-0.56%



Source: Bloomberg, as of August 31, 2019.



The Market Expects 2-3 More Rate Cuts by Year End



Source: Federal Reserve and Bloomberg. Fed funds futures as of Fed meeting dates of 12/19/2018 and 3/20/2019 as well as 8/31/2019.



Market Expectations Adjust to FOMC Guidance

2019 Rate Moves Priced into the Futures Market



“The Committee judges that some further gradual increases in the target range for the federal funds rate will be consistent with sustained expansion of economic activity...”

- December 2018

“In light of global economic and financial developments and muted inflation pressures, the Committee will be patient as it determines what future adjustments to the target range for the federal funds rate may be appropriate...”

- January 2019

“The Committee will closely monitor the implications of incoming information for the economic outlook and will act as appropriate to sustain the expansion...”

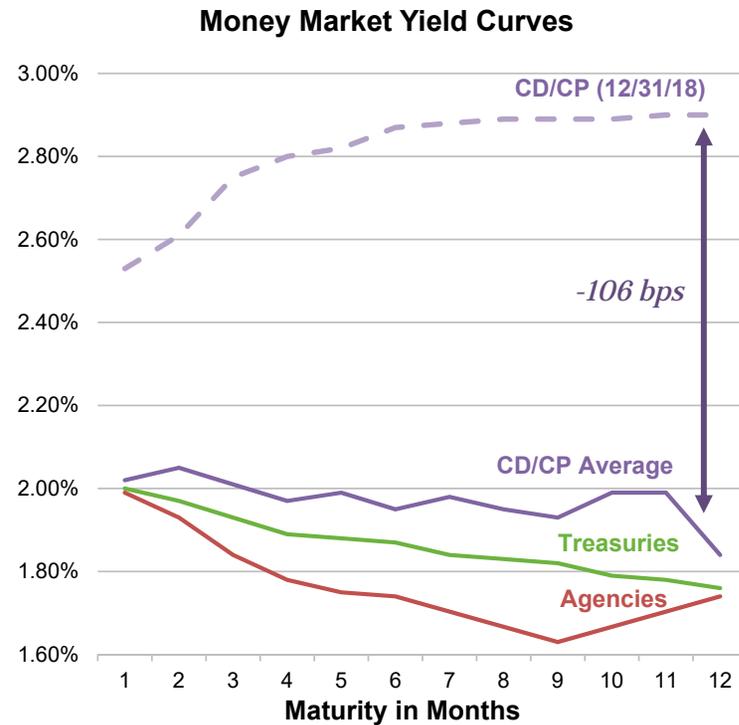
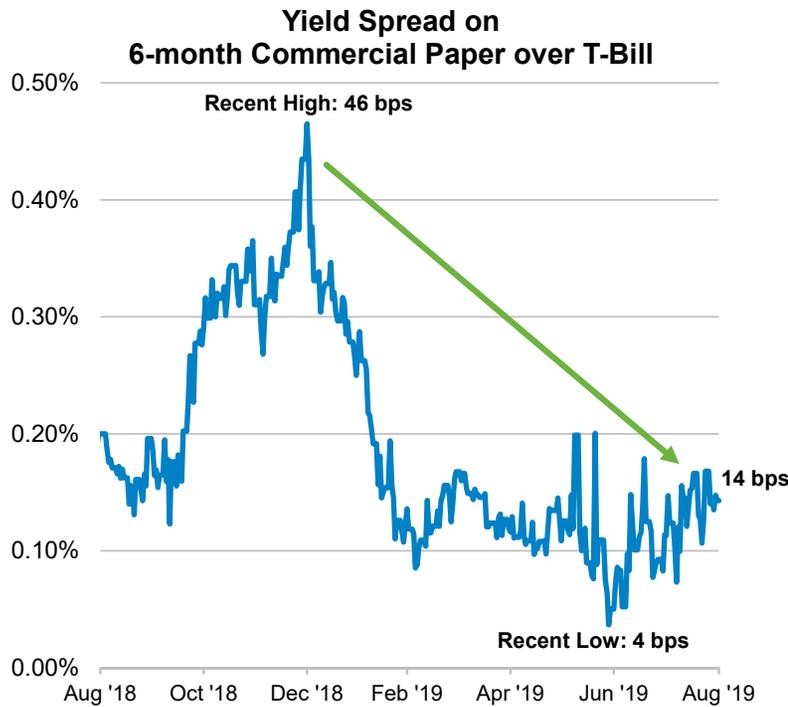
- June 2019

Source: Bloomberg, as of August 31, 2019.



Current Short-Term Interest Rate Environment

- Commercial paper and bank certificate of deposit (CP/CD) yield spreads remained historically narrow in August, as rates continue to fall across maturities.
- Treasuries continue to be relatively attractive versus agency discount notes.



Source: Bloomberg, PFMAM Trading Desk, as of 8/31/19. Not a specific recommendation. Actual yields may vary by issue.



Disclosure

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CDARS holdings and Bank Deposits are not managed by PFMAM, and therefore we cannot guarantee the accuracy of holdings.

District of Columbia Water and Sewer Authority

Capital Improvement Program Report



**FY-2019 3rd Quarter
April 1st through June 30th, 2019**

**Board of Directors
Finance and Budget Committee**

**David L. Gadis CEO and General Manager
Leonard R. Benson, Senior Vice President and Chief Engineer**

August 2019

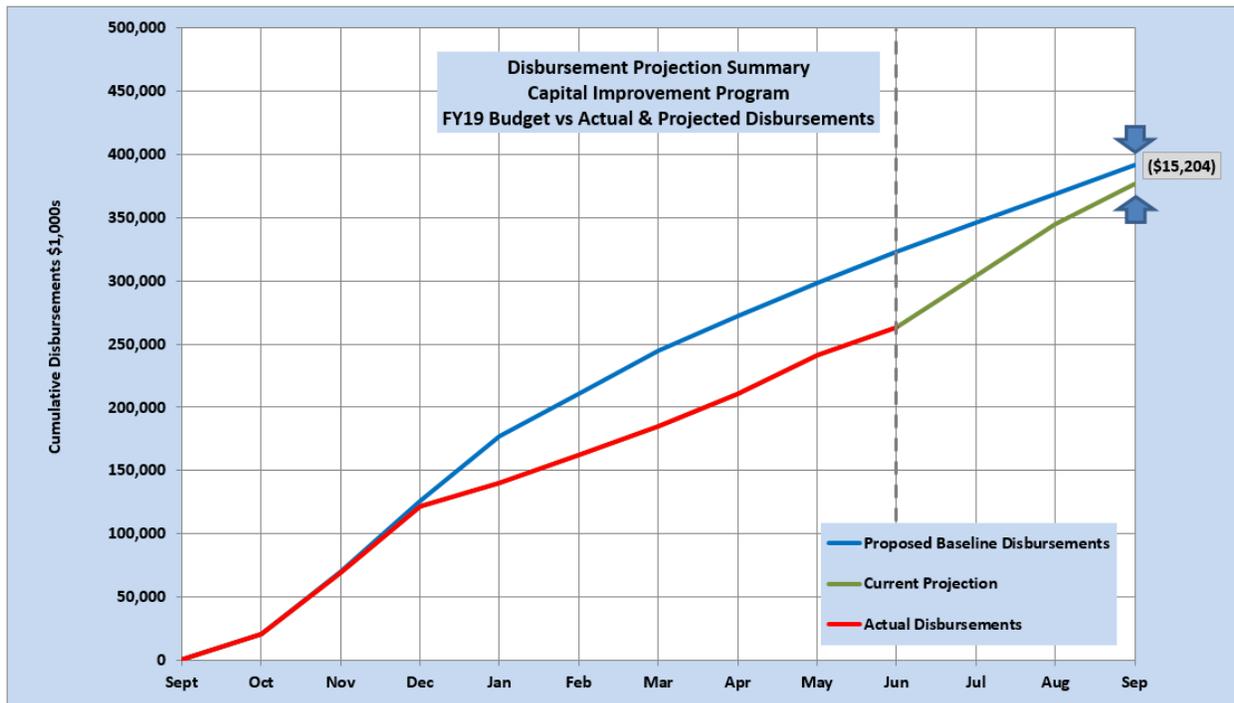


Capital Improvement Program Report 3rd Quarter FY2019

CIP Disbursement Performance

Current projected program disbursements through the end of the fiscal year compared with the FY19 baseline are shown in the chart below:

Disbursement Summary



*Note: FY19 Baseline was set in Dec, therefore Oct/Nov Actual disbursements match the Baseline disbursements.

The current projected fiscal year 2019 CIP disbursements are \$376,403,000 through the end of September 2019, which is on track to meet the baseline disbursement projection of \$391,670,000. The disbursements to date through the 3rd Quarter are \$263,357,000 which is \$59,451,000 under the baseline forecasted Q3 disbursements of \$322,808,000. The majority of the remaining spending is on committed construction projects, most of which are anticipated to be on track within the fiscal year.

Current disbursement projections within the service areas are as follows:

Non-Process Facilities

Baseline Disbursements \$15,309,000
 Projected Disbursements \$15,307,000 (on baseline projection)

There are no significant project variances for this service area currently projected over the fiscal year. The spending through the 3rd Quarter is \$6.2M, which is \$8.1M below the baseline, this underspending



Capital Improvement Program Report 3rd Quarter FY2019

is mainly due to the delay in retention release for the HQ building. It is anticipated the retention release will still occur within this fiscal year.

Wastewater Treatment Service Area

Baseline Disbursements	\$69,979,000
Projected Disbursements	\$60,600,000 (\$9.4M below baseline projection)

Significant project variances forecast for the fiscal year in this service area:

Project LS – Misc. Facilities Projects (\$1.0M below baseline)- Delay in contract execution to rebid the work to achieve cost savings

Project BX - Gravity Thickener Upgrades Ph II (\$1.2M below baseline) due to later than anticipated start.

Project E8 - Enhanced Clarification Facilities (\$1.7M below baseline) due to later than anticipated closeout of contract.

Project FS - Div D - Bolling Overflow & Diversion (\$2.3M below baseline) due to later than anticipated closeout of contract.

The spending through the 3rd Quarter is \$40.9M which is \$16.5M below the baseline. This underspending is mainly in the Plantwide Program (\$3.7M) and Enhanced Nitrogen Program (\$8.3M). Later than anticipated execution of contracts in the Plantwide Program resulted in reduced FY19 spending while the reduced spending in the Enhanced Nitrogen Removal Program was caused by a delay in project close-out for some contracts. Spending is not anticipated to recover by the end of the fiscal year.

For clarity, the Combined Sewer Overflow (CSO) Service Area comments are addressed separately by the CSO and DC Clean Rivers Program Areas:

Combined Sewer Overflow Program Area

Baseline Disbursements	\$7,491,000
Projected Disbursements	\$8,246,000 (\$0.7M above baseline projection)

There are no significant project variances for this service area currently projected over the fiscal year.

DC Clean Rivers Program Area

Baseline Disbursements	\$187,859,000
Projected Disbursements	\$187,883,000

The DCCR team currently anticipate the spending to meet the baseline forecast by year end.

The underspending through the 3rd Quarter (\$9.0M) is mainly attributable to invoicing delays in the DC Clean Rivers projects, due to compliance issues preventing processing payments to one Contractor and to untimely submittal of payment applications from another Contractor. It is currently anticipated the spending will be on track by fiscal year end.



Capital Improvement Program Report 3rd Quarter FY2019

Stormwater Service Area

Baseline Disbursements \$4,220,000
Projected Disbursements \$4,089,000 (\$0.1M below baseline projection)

There are no significant project variances for this service area currently projected over the fiscal year.

Sanitary Sewer Service Area

Baseline Disbursements \$44,926,000
Projected Disbursements \$45,116,000 (on baseline projection)

There are no significant project variances for this service area currently projected over the fiscal year.

The 3rd Quarter underspending (\$7.4M) in the Sanitary Sewer System service area is mainly attributable to delays in the closeout of projects G1 - Small Local Sewer Rehab 1 and IL - Creekbed Sewer Rehabilitation 2. It is currently anticipated these will closeout within the fiscal year.

Water Service Area

Baseline Disbursements \$61,884,000
Projected Disbursements \$55,162,000 (\$6.7M below baseline projection)

There are no significant project variances for this service area currently projected over the fiscal year.

The 3rd Quarter underspending (\$16.7M) in the Water Service area is mainly due to underspending in the Water Distribution System program area (\$10.0M), mainly attributable to delays in closing out two Small Diameter Water Main projects and suspension of work on C900 - Large Diameter Water Mains to ensure water pressure over the high demand summer period.



Capital Improvement Program Report
3rd Quarter FY2019

Priority 1 Projects (Court Ordered, Stipulated Agreements, etc.)

All priority 1 projects are on schedule and within budget.

Significant Contract Actions Anticipated – 6 Month Look-Ahead

Project	Name	Contract Type	Joint Use?	Cost Range	Committee	BOD
FA00	Soldiers Home Reservoir Upgrade	Construction	No	\$5M - \$10M	EQ & Ops Jul	Sep
Multiple	Waste-Water Program Manager	Professional Services	No	\$20M -25M	EQ & Ops Dec	Jan
Multiple	Water Program Manager	Professional Services	No	\$20M -25M	EQ & Ops Sep	Oct
LZ00	Potomac Interceptor – Phase 5 Pipe Rehab MH30-31	Construction	Yes	\$10M - \$15M	EQ & Ops Nov	Dec
F100	Small Diameter Water Main Repl. 13a	Construction	No	\$5M - \$10M	EQ & Ops Jan	Feb
F100	Small Diameter Water Main Repl. 13b	Construction	No	\$5M - \$10M	EQ & Ops Dec	Jan
F100	Small Diameter Water Main Repl. 13c	Construction	No	\$5M - \$10M	EQ & Ops Jan	Feb
F100	Small Diameter Water Main Repl. 13d	Construction	No	\$5M - \$10M	EQ & Ops Jan	Feb
JF00	Construction of Flood Seawall – Segment C	Construction	Yes	\$5M - \$10M	EQ & Ops Nov	Dec
HH00	Construction of New Fleet Facility	Construction	No	\$10M - \$14M	EQ & Ops Dec	Jan



Capital Improvement Program Report 3rd Quarter FY2019

Schedule - Key Performance Indicators Capital Improvement Program

Summary:

For the 3rd Quarter, one of the three Key Performance Indicators (KPIs) completed this period were achieved within 90 days of their target date. Two will be completed outside the 90-day threshold.

#	Performance
8	KPIs completed within threshold
0	KPIs completed outside threshold
8	Total KPIs completed to date
6	KPIs expected to be completed outside threshold
3	KPIs remaining
17	Total KPIs due this year

Reasons for any KPIs not meeting the 90-day threshold this period (Q3):

The Design Start milestone for project LZ09 - PI Phase 6 Pipe Rehab at Clara Barton Pkwy and I-495 has slipped due to extended review by NPS
 The Construction Substantial Completion for FQ01 Main & O St. PS Intermediate Upgrades has slipped due to delays related to completion of the construction of the HQO building. The modifications to the O Street PS included some work performed through the HQO contractor that will be resolved through ongoing final contract negotiations.

The table below provides a detailed breakdown of each KPI due date grouped by Quarter:

Quarter	Job Code	Job Name	Activity Name	Due Date (Baseline)	Estimated Complete Date	Actual Complete Date	Variance (positive is early)	Met within 90 days
Q1	DZ02	Div RC-A - Rock Creek Project 1 (GI)	Construction Substantial Completion Milestone (KPI)	9-Oct-18		9-Oct-18	0	✓
Q2	J306	National Arboretum Sewer Rehab (Eastside Interceptor)	Construction Substantial Completion	22-Jan-19		24-Jan-19	-2	✓



Capital Improvement Program Report 3rd Quarter FY2019

Quarter	Job Code	Job Name	Activity Name	Due Date (Baseline)	Estimated Complete Date	Actual Complete Date	Variance (positive is early)	Met within 90 days
Q2	DE02	Small Diameter Water Main Replacement 12B	Construction Substantial Completion	25-Jan-19		23-Jan-19	2	✓
Q2	O302	Small Diameter Water Main Replacement 11b	Construction Substantial Completion	1-Feb-19		27-Dec-18	36	✓
Q2	MA01	St. Elizabeth Water Tank	Construction Substantial Completion	24-Jan-19		24-Dec-18	31	✓
Q2	IL10	Creekbed Sewer Rehabilitation Rock Creek Oregon Avenue	Construction Substantial Completion	19-Feb-19	30-Sep-19		-223	x
Q2	DE01	Small Diameter Water Main Replacement 12A	Construction Substantial Completion	30-Apr-19		20-Dec-18	131	✓
Q3	AL05	Plantwide Projects Program Management	MFU6 - Start Milestone	1-May-19		29-May-19	-28	✓
Q3	LZ09	PI Phase 6 Pipe Rehab at Clara Barton Pkwy and I495	Design Start Milestone	19-Jun-19	2-Dec-19		-166	x
Q3	FQ01	FQ01 Main & O St. PS Intermediate Upgrades	Construction Substantial Completion	30-Jun-19	30-Sep-19		-92	x
Q4	QS01	Local Sewer Rehab Project 5-1	Design Start Milestone	15-Jul-19	30-Oct-19		-107	x
Q4	C904	66" Low Service Steel Main at 8th Street NE & SE	Construction Substantial Completion	5-Jul-19	30-Apr-20		-300	x
Q4	I801	Large Valve Replacements 11R	Construction Substantial Completion	31-Jul-19	30-Sep-19		-61	
Q4	CZ07	Potomac Project 1 (GI)	Substantial Completion Milestone	31-Jul-19		8-Mar-19	145	✓
Q4	FA03	Soldiers Home Reservoir Upgrade	Construction Start Milestone	8-Aug-19	10-Oct-19		-63	
Q4	UC06	Upgrades to Filtration Influent Pumps 1-10	Construction Start Milestone	13-Aug-19	13-Aug-19		0	
Q4	OE01	FY15 - Plantwide Storm Drainage Improvements	Construction Start Milestone	17-Sep-19	17-Sep-21		-731	x

Table Key: Positive variance = Finishing earlier than baseline plan Bold = Actual Date achieved

New Enterprise Resource Planning (ERP) Project Update

Finance and Budget Committee September 26, 2019





Purpose

- ❖ Provide ERP Project Status Update
- ❖ Seek Committee's recommendation of System Integration (SI) Contract to Board



ERP Project Update

❖ Current ERP

- Three separate systems: Financial (Lawson), Procurement (Zycus), HCM (Ceridian)
- Current ERP software (Lawson) has been **discontinued since 2016**, and is currently on extended support

❖ Planning for ERP system replacement began in September 2015

- KPMG (Dec 2015 – Jan 2016) assessed the financial systems and recommended implementation of a new ERP solution:
 - Found existing Lawson environment not user friendly, suboptimal reporting and access to information, lack of integration with Maximo, Primavera, CIS, Ceridian, requires validation and manual work-around activities
 - Recommended a new ERP over Lawson upgrade; Key factors: similar organizations leveraging Oracle or SAP, current state of usability of the Lawson solution, drive to consolidate platforms and more functionality,
- RSM (2017) through a Business Process Optimization project recommended process, technology, and control improvements within ERP to enable automation and to add improved capabilities (e.g. integration with other systems, business intelligence, reporting and dashboard, budgeting and planning, redesigning chart of accounts, automating Wholesale Customer and Grants Billing, cost allocations)

❖ Budget Planning

- Board-approved FY 2019 – FY 2028 Capital Improvement Program includes \$16.6 million for replacement of the ERP system
 - \$4 million budgeted in FY 2019, with \$2 million allocated from FY 2019 cash surplus to the ERP project in FY 2020
 - Current estimates remain below this budget
- FY 2020 Operating Budget includes an additional \$2.75 million for Software Subscription, Staff Augmentation, Training, and Data Conversion



ERP Solution Selection

❖ Selection of new software began in late 2017 and was completed in March 2019 thru a competitive solicitation process:

- Met 23 vendors, 9 proposals received proposing 4 different solutions, 24 evaluators from Procurement, Finance, People and Talent, spent over 10,000 hours
- Key evaluation criteria included: Implementation approach, project team, software capability, past experiences, total cost of ownership, software demonstration, oral presentation
- Requirements covered the full scope of Financials, Procurement, and HCM with 10,440 questions asked in the RFP document

❖ Software Selected: **Oracle Cloud ERP**

- Unanimously selected: more user friendly and functionality best for DC Water
- License fee a fraction of closest competitor, and system integration cost about half
- Oracle is true single cloud solution and does not require a managed service, which results in lower annual costs

❖ System Integrator (SI) Selected: **AST Corporation**

- Offered more complete scope of service
- Included a robust change management proposal
- Specializes only in Oracle system integration
- Extensive private, public, and utility experience

Benefits of the Oracle Cloud ERP System

❖ One Integrated System, One Data Source:

- Financial, HCM, and Procurement on a single enterprise-wide system.
- Enable the flow of information into one central database, and help breakdown information silos
- Connected in real-time, Artificial Intelligence Capable, and informed decision-making
- Seamless way of working, increasing productivity, efficiency, improved quality and reduced lead-time

❖ Built-in industry best practices and procedures in the software

❖ Automated dashboard, reporting, workflow, e-signature, paperless

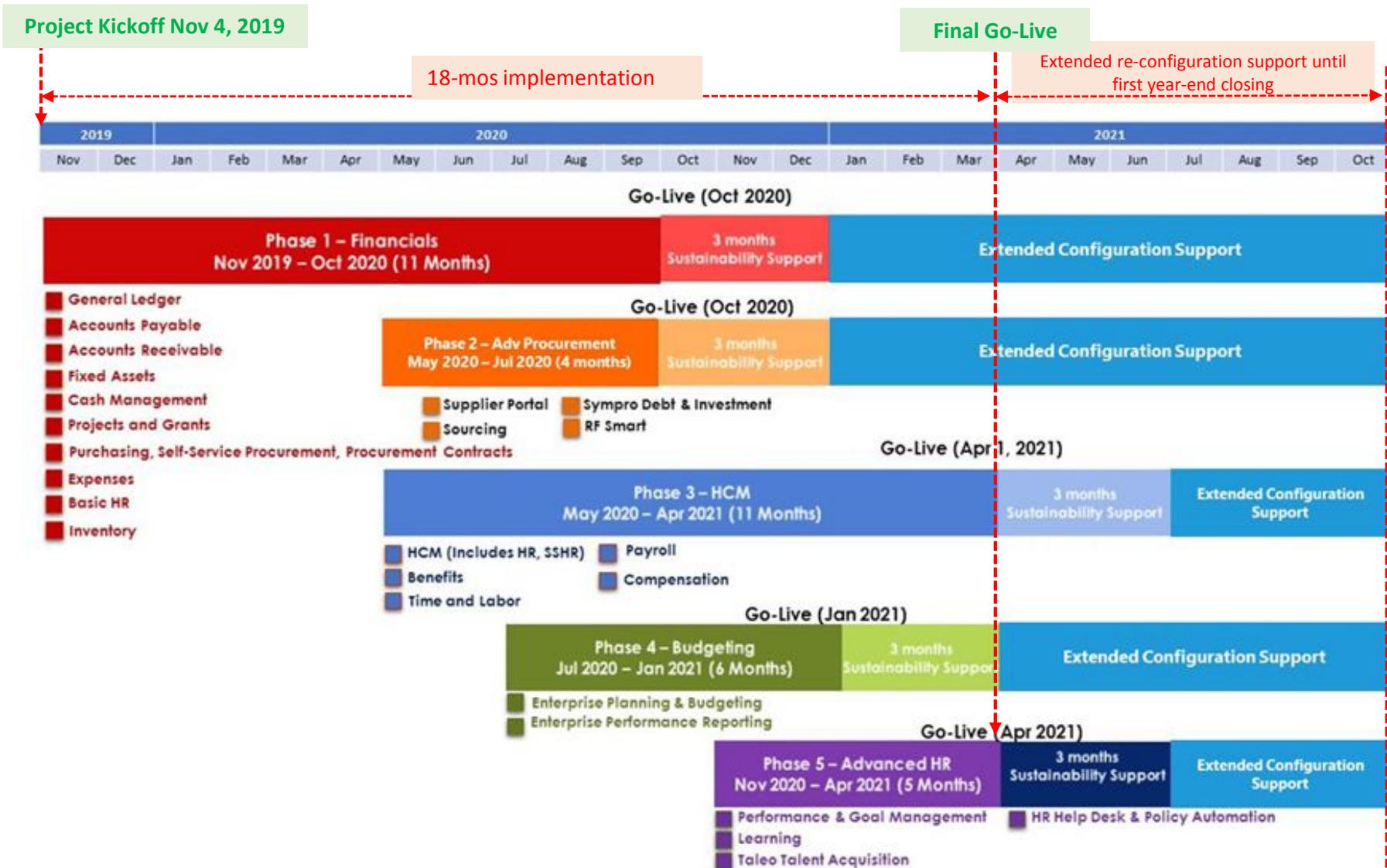
❖ Increased auditability & compliance

❖ Mobility: iOS and Android compatible

❖ Lower operating cost (compared to on-premise solution)



ERP Project Schedule Overview: 24 months





Ensuring Project Success

- ❖ **Since the selection of software and system integrator, the project team has worked to reduce implementation risk and to identify opportunities for business process improvements**
- ❖ **Launched the Executive Steering and Project Steering Committees by partnering with the new EPMO (Enterprise Program Management Office) with goals to:**
 - Align to corporate strategy, balance, and oversight of project work
 - Increase enterprise-wide collaboration, communications, stakeholder engagement, and change management
 - Develop project risk management plans to mitigate or minimize identified areas of project risk
- ❖ **Conducted a detailed review of Statement of Work (SOW) and made adjustments to reduce high potential risks**
- ❖ **Complete Current Process documentation began in key areas to reduce project delays**
- ❖ **Made key decisions on the system interface, payroll, and training programs**



Statement of Work (SOW) Review Process

- ❖ **Led by Project Steering Committee and working with all department users, the DC Water project team and AST conducted a thorough review of scope and business processes since May to:**
 - Reduce/mitigate potentially high implementation risk areas and identify process improvement opportunities
 - Identify any project elements not contained in original bid
 - Help reduce, but cannot eliminate, the risk of future change orders
- ❖ **Key changes made to the original SOW:**
 - **New items that improve business process**
 - Added capabilities to automate development and publication of the CAFR (Comprehensive Annual Financial Report) and Budget documents
 - Boosted treasury functionality by adding one of the industry best 3rd party solution (Sympro)
 - Added an advanced inventory module to improve interface with work order management system (Maximo)
 - **New items to reduce potential high implementation risks**
 - Boosted AST project resources and travel for Payroll and Accounts Payable & Receivable functions, adding mid-year payroll conversation to reduce risk
 - Changed the system interface plan by adding a middleware to reduce potential integration challenges between Oracle ERP and current external systems (i.e. Maximo) and future systems
 - Integrated a testing capability to ensure compatibility of future Oracle updates before implementation
 - Added a post implementation configuration support until the end of FY21 for all modules
 - **New items that were not in the original bid**
 - 45 additional interfaces added (majority from Maximo (work order management system))
 - Added a new 3rd party warehouse scanner system (current system is not compatible with Oracle)
 - Identified additional data for conversion and migration



Current Cost Estimates

- ❖ **Operating costs will be lower than the current system that must be replaced**
 - **Not including potential risk remediation costs, total cost of ownership (TCO) of current system is estimated to be \$17.4 million**
 - **Ten year operating cost of new system is estimated to be \$10.3 million**
 - Includes extended support of Lawson until May 2021 for data retrieval
 - Supports Human Capital Management (HCM) access of legacy employee data
 - Fees required to terminate existing payroll system
- ❖ **Capital costs are estimated at \$14 million**
 - **System Integrator (SI) Statement of Work (SOW) including items added to further enhance business processes and to reduce implementation risks**
 - **Also includes:**
 - 3rd party Independent Verification & Validation Services (IV&V)
 - Capital Labor cost of DC Water Project Team
 - IT costs such as project management, network, quality assurance analyst, system admin, etc.
 - Implementation of Human Capital Management (HCM) datamart for legacy employee data



Operating Cost Estimates

- ❖ **Total cost of ownership (TCO) of current system is estimated to be \$17.4 million**
- ❖ **Ten year operating cost of new system is estimated to be \$10.3 million**

Descriptions	Annual Cost	10-year TCO
Oracle Cloud ERP Annual Subscription Fee	\$617,936	\$6,179,359
AST Automated Testing Service	\$53,419	\$534,186
3 rd Party Software Fee	\$229,857	\$2,298,567
Employee Training (one time, estimate)	\$100,000	\$100,000
Extended 2-yr support for Lawson	\$226,006	\$452,012
Legacy HCM data	\$42,196	\$421,955
One time termination fee for existing payroll system	\$331,592	\$331,592
TOTAL	\$1,061,006	\$10,317,671



Capital Cost Estimates – System Integration

- Through the Statement of Work Review Process, additional items were identified that will help ensure the project’s success

AST System Integration (SI) Statement of Work (SOW)	
AST Implementation cost bid	\$7,999,980
• New items that improve business processes	\$143,986
• New items that reduce implementation risk	\$434,525
• New items that were not in the original bid	\$220,349
• Post implementation configuration support	\$404,090
Allowance (4,000 hours) for change orders	\$496,000
Total System Integration Cost	\$9,698,930



Capital Cost Estimates – System Integration, cont.

- Details of additional items for System Integration

Additional Scope of Work Items	Proposed Cost	Negotiated Cost	Description
1 Original Proposal	\$8,645,280	\$7,999,980	
2 Business process improvements	\$286,961	\$143,986	
CAFR and Budget Book Development	\$81,000	\$40,643	Automates CAFR and Budget Book process
Sympro (3rd party Treasury software)	\$7,761	\$3,894	Add additional treasury capabilities
Advanced Inventory	\$198,200	\$99,449	Add additional automation to the inventory management
3 Reduce implementation risk	\$866,000	\$434,525	
Moving AP/AR Resource from Offshore to Onshore	\$350,100	\$175,667	Additional onsite AP/AR resource to assure successful integration of revenue and collection data
Additional Payroll Scope	\$96,400	\$48,370	Additional Payroll support (design and test) to assure success
Mid Year Payroll Conversion	\$125,200	\$62,821	Additional payroll support for the mid year conversion
Additional Onsite travel Costs	\$125,900	\$63,172	Travel cost of additional onsite resource to assure project success
Integrated Cloud Services (middleware)	\$68,400	\$34,320	Use of this middleware will reduce integration effort between Oracle and all other systems that are connected to Oracle (i.e. Maximo, 3rd party software, etc.)
AST Autonomous Tester License and Development	\$100,000	\$50,176	Automate testing of Oracle quarterly updates before installing
4 New items that were not in the original bid	\$439,150	\$220,349	
Additional Interfaces (45 new)	\$254,650	\$127,774	Identified 45 additional interfaces from other current systems (i.e. Maximo) to Oracle that are necessary for business process improvement
RF Smart (3rd party software)	\$92,000	\$46,162	New warehouse scanner solution, current system not compatible
Additional Data Conversion	\$92,500	\$46,413	Data cleaning and migration of additional data identified
5 Post Implementation Configuration Support	\$404,090	\$404,090	
AST Re-Configuration Support till end of FY21	\$404,090	\$404,090	Assure entire ERP system is working as designed, provide stabilization support and re-design/fixes of any potential issues until the first year-end (FY21) closure using Oracle
6 Allowance for change orders	\$496,000	\$496,000	
TOTAL	\$11,137,481	\$9,698,930	



Capital Cost Estimates - Others

- ❖ **Approximately \$4.3 million earmarked for other project-related requirements including:**
 - 3rd party software implementation
 - Independent Verification & Validation Services (IV&V)
 - Capital Labor (DC Water Employees - Project Team)
 - IT (PM, network, QA analyst, System Admin, etc.)
 - HCM Datamart Development

Other Elements of the Scope of Work

- ❖ Fully defined and detailed scope of work and deliverables for each functional area and modules to minimize potential change orders
- ❖ Detailed project delivery schedule, resource, and work locations
- ❖ Milestone and deliverable payment schedule with acceptance criteria and procedure
- ❖ Ten percent retainage from each milestone/deliverable payment and to be paid at the end of final project completion



Potential Risks

❖ Potential scope creep

- **Mitigation plan:**
 - Require Executive and Project Steering Committee review before approval
 - Review the scope change with expertise from IV&V (Independent Verification & Validation Service Firm) and Oracle
- **Allowance of \$496,000 (4,000 hours) added to the contract to manage approved scope changes**



Recommendation

- ❖ **That the Committee recommend to the Board approval of the ERP System Integrator contract with AST for \$9,698,930**



Additional Allocation of FY 2019 Projected Net Cash Position

Presentation to the Finance & Budget Committee

Matthew T. Brown, EVP & Chief Financial Officer

September 26, 2019



PURPOSE

- Review management's request for additional allocation of the FY 2019 projected cash surplus to the meter project
- Seek committee's recommendations for use of projected cash surplus



BACKGROUND

May
2019

- Overview of the FY 2019 year-end projections for operating revenues, operating expenditures and capital disbursements
- Projected FY 2019 net cash position of \$16.953 million

June
2019

- Overview of Curing Pad project to Finance and Budget (F&B) Committee
- Committee recommended transfers of \$6 million to Rate Stabilization Fund and \$2 million to PAY-GO financing for ERP Project

July
2019

- Board approved resolution for transfer to Rate Stabilization Fund (\$6 million) and ERP (\$2 million)
- Overview of the Automated Metering Infrastructure (AMI) project to the Audit and F&B Committees

Sept.
2019

- Update on AMI project and contract award for meter installation services presented to the Joint F&B and EQ&OPS Committee on September 26, 2019



ADDITIONAL CASH ALLOCATION FOR CAPITAL PROJECTS

- **Automated Metering Infrastructure (AMI) Project - \$2.9 million**
 - Installation of 11,000 small meters by vendor and in-house staffing, including program management costs
 - Cost 100% borne by ratepayers



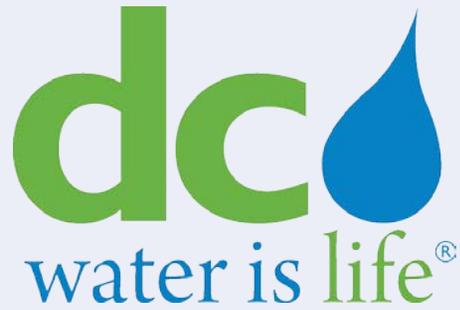
ALLOCATION OF FY 2019 PROJECTED NET CASH POSITION

	\$000's
Projected Year End Net Cash Balance	\$16,953
<u>Board Adopted Resolution for Use of Surplus Funds (July 2019):</u>	
- Transfer to Rate Stabilization Fund (RSF)	(6,000)
- Transfer to PAY-GO financing for Enterprise Resource Planning (ERP) Project	(2,000)
Available Cash for Carry-over to FY 2020	\$8,953
<u>Management's Request for Additional Transfer to PAY-GO Financing:</u>	
- Automated Metering Infrastructure (AMI) Project	(2,900)
Total Remaining Cash for Carry-over to FY 2020	\$6,053



RECOMMENDATION

- Recommendation of allocation of \$2,900,000 to PAY-GO financing from the FY 2019 projected cash surplus for the AMI project in FY 2020 to the full Board



ATTACHMENT 5



Series 2019D Refunding Transaction and Market Update

September 26, 2019

PFM Financial Advisors LLC

4350 N. Fairfax Drive
Suite 580
Arlington, VA 22203

703.741.0175
pfm.com



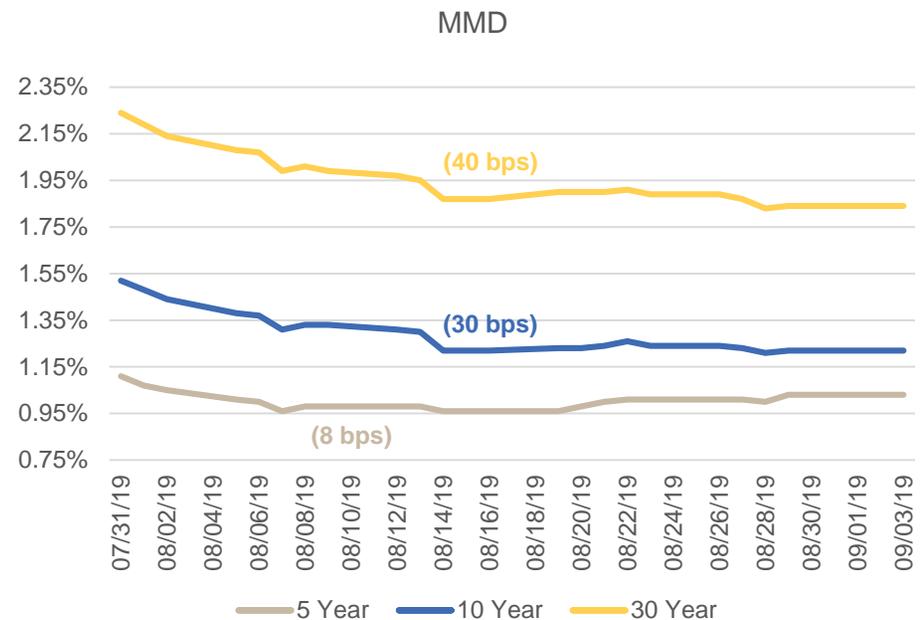
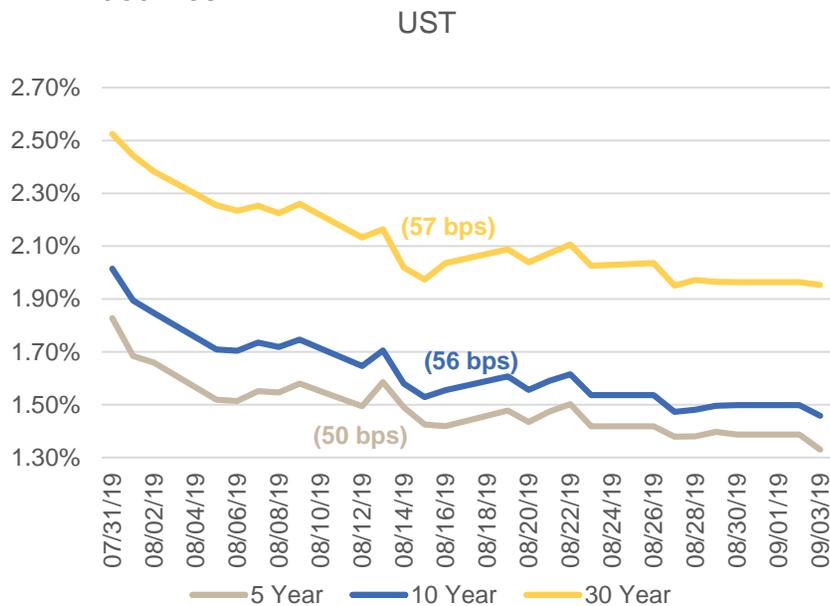
Refunding Transaction Summary & Highlights

- Throughout August and early September taxable and tax-exempt rates dropped to historic lows, with compression between the two yield curves offering unprecedented opportunities for municipal issuers
- While tax-exempt advance refundings are no longer allowable under current tax law, low interest rates have created an opportunity to attain significant savings on a taxable basis for a large universe of bonds
- DC Water requests authorization to pursue a taxable advance refunding of \$300 million of callable Series 2013A bonds
 - Although larger taxable refunding could generate savings, DC Water seeks portfolio approach to manage tradeoffs that exist between taxable advance refunding now and tax-exempt refunding later
- Economies of scale generate efficiencies and cost savings for DC Water by pricing Series 2019D at the same time as previously approved Series 2019A/B fixed rate new money transaction
- Board authorization will enable DC Water to act quickly to take advantage of evolving market conditions as volatility continues, within the parameters of savings thresholds



Significant Market Movements – July 31 to September 4

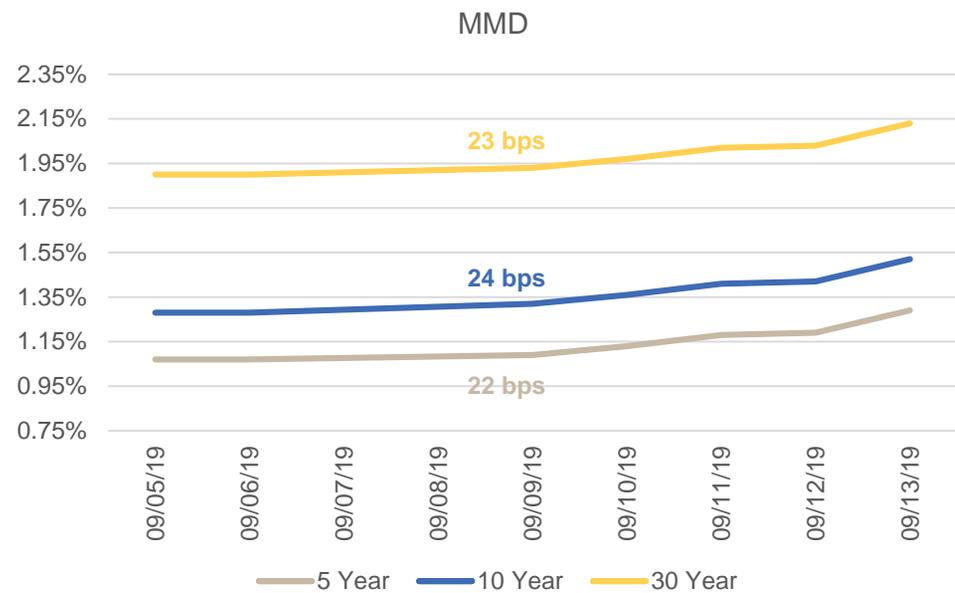
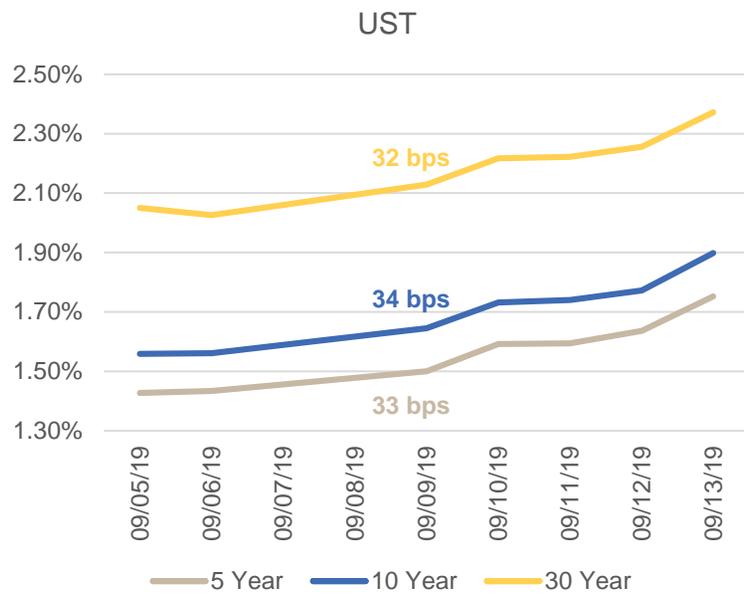
- Significant decline in rates kicked off by the cut in the federal funds rate at the July FOMC meeting and accelerated by the trade situation between the U.S. and China
- Tensions surrounding trade war with China are important drivers of market
- Poor Chinese and German economic data fanned fears of a global slowdown
- The 30yr UST and MMD maturities both reached and set new historic lows
- As of September 4, federal funds futures market priced a 100% chance of a rate decrease at September FOMC meeting
- MMD underperformed Treasuries over time period, with significant decreases in treasuries echoed by more modest declines in MMD





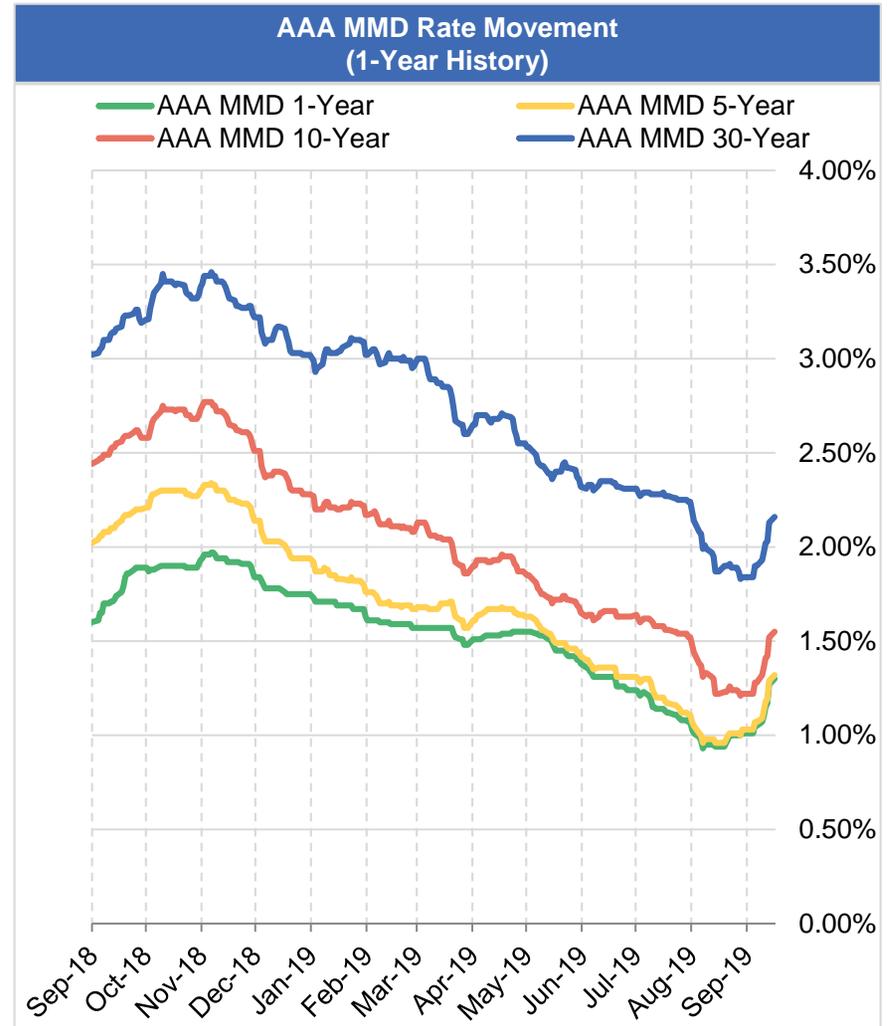
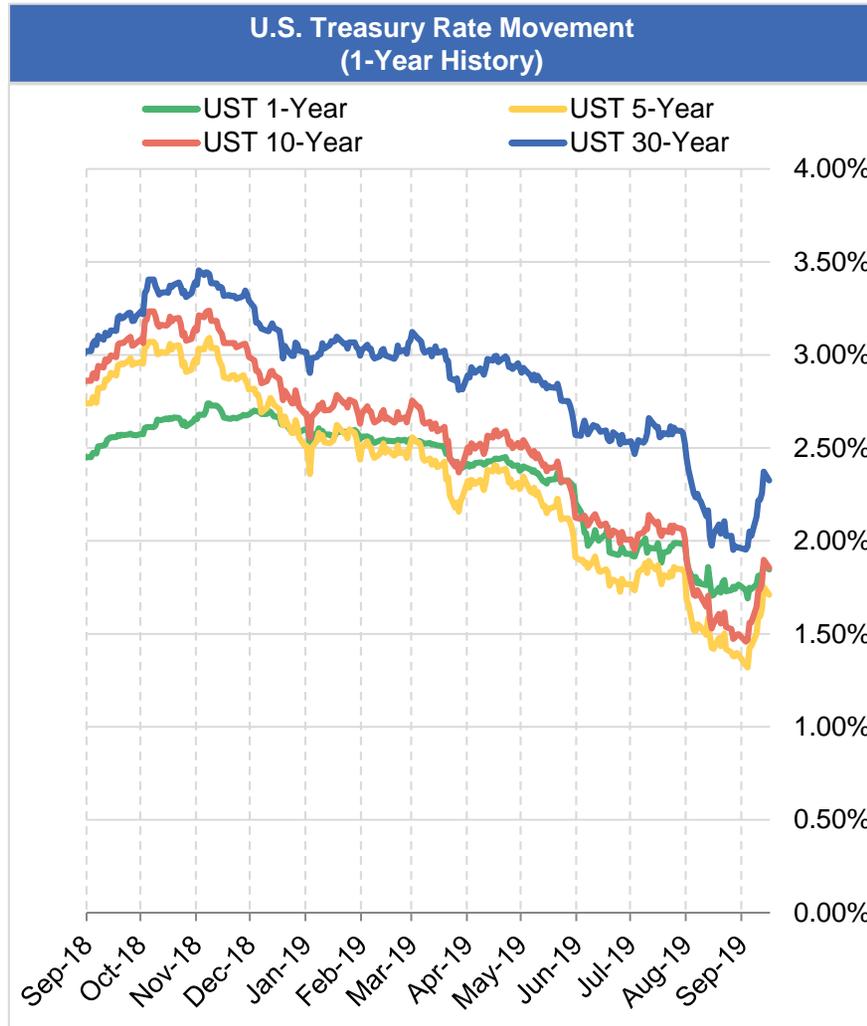
Continued Volatility – September 5 to September 13

- ◆ Continued market volatility since September 5 worked to reverse some of short-term gains
 - Optimism that trade war with China may be easing
 - Better-than-expected economic indicators
- ◆ At the same time, political issues in the Middle East are brewing and have the potential to drive yields down once again in a flight to quality
- ◆ Significant day-to-day volatility highlights importance of flexibility and ability to move quickly in executing refunding transaction when and if market conditions warrant





U.S. Treasury & AAA MMD Rate Movement

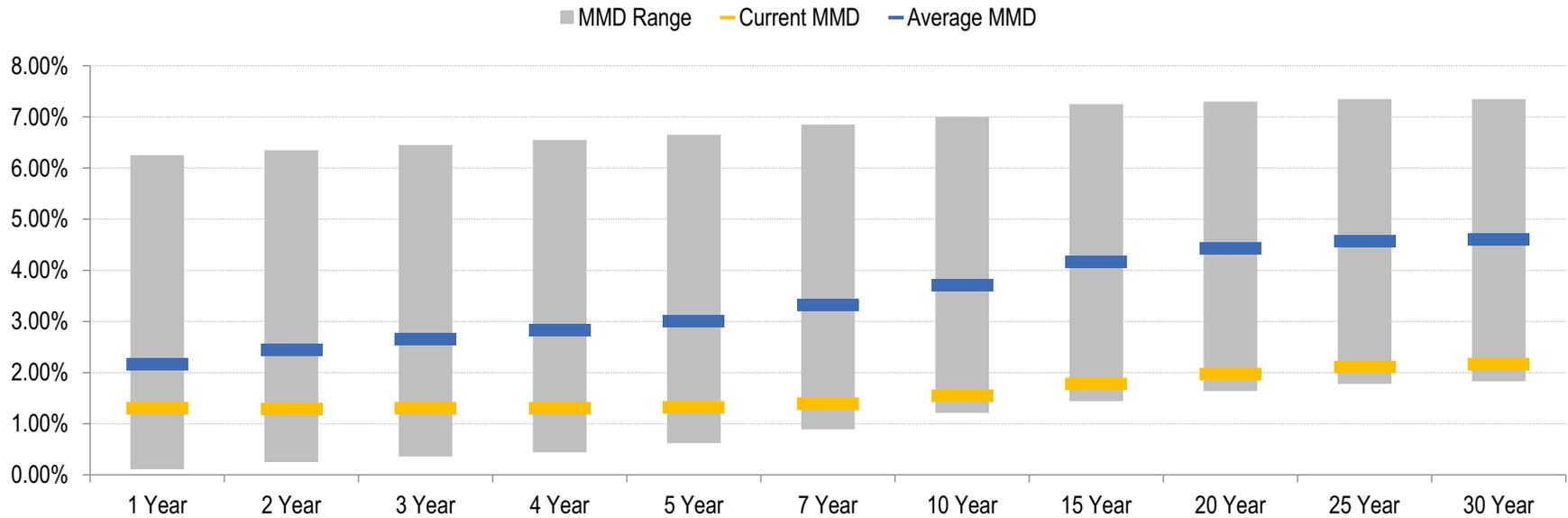


Source: Thomson Reuters



AAA MMD Position Since Inception

30 Year History of AAA MMD Rate Position
(September 17, 1989 to September 16, 2019)



Statistic	1 Year	2 Year	3 Year	4 Year	5 Year	7 Year	10 Year	15 Year	20 Year	25 Year	30 Year
9/16/2019	1.30%	1.29%	1.30%	1.31%	1.32%	1.39%	1.55%	1.77%	1.97%	2.11%	2.16%
Average	2.16%	2.45%	2.65%	2.83%	3.00%	3.33%	3.71%	4.16%	4.43%	4.56%	4.61%
Spread to Avg.	-0.86%	-1.16%	-1.35%	-1.52%	-1.68%	-1.94%	-2.16%	-2.39%	-2.46%	-2.45%	-2.45%
Minimum	0.11%	0.25%	0.36%	0.44%	0.62%	0.89%	1.21%	1.44%	1.64%	1.78%	1.83%
Spread to Min.	1.19%	1.04%	0.94%	0.87%	0.70%	0.50%	0.34%	0.33%	0.33%	0.33%	0.33%
Maximum	6.25%	6.35%	6.45%	6.55%	6.65%	6.85%	7.00%	7.25%	7.30%	7.35%	7.35%
Spread to Max.	-4.95%	-5.06%	-5.15%	-5.24%	-5.33%	-5.46%	-5.45%	-5.48%	-5.33%	-5.24%	-5.19%
Percent of Market Days Lower	38.49%	34.43%	31.53%	27.24%	21.66%	10.89%	1.95%	0.79%	0.58%	1.03%	1.03%



Interest Rate Forecasts

Bond Yield Forecast (As of September 16, 2019)							
Average Forecasts	Current	Q3 19	Q4 19	Q1 20	Q2 20	Q3 20	Q4 20
30-Year UST	2.38%	2.18%	2.15%	2.21%	2.28%	2.37%	2.42%
10-Year UST	1.90%	1.67%	1.68%	1.75%	1.81%	1.89%	1.96%
2-Year UST	1.80%	1.59%	1.56%	1.56%	1.58%	1.63%	1.66%
3M LIBOR	2.12%	2.07%	1.90%	1.78%	1.70%	1.69%	1.71%
Fed Funds Target Rate (Upper)	2.25%	2.00%	1.80%	1.65%	1.65%	1.60%	1.60%
Fed Funds Target Rate (Lower)	2.00%	1.76%	1.54%	1.43%	1.38%	1.33%	1.33%



Key Taxable Advance Refunding Considerations

- By pursuing a refunding now, DC Water forgoes the potential to generate even greater savings later
 - Should interest rates increase less than breakeven yield curve movements of approximately 0.50% - 1.00%, higher savings would be generated by a tax-exempt current refunding at the Series 2013A call date of October 1, 2023
 - Future tax-exempt refunding options carry more option value with tax-exempt 5.00% coupons than taxable par coupons
- While taxable bonds result in a permanent interest rate penalty versus any tax-exempt option, with the elimination of tax-exempt advance refundings municipal issuers have limited other options to lock in current rates
 - Historically low taxable rates can offer refinancing economics multiple times better than typical threshold to execute tax-exempt refunding and 3% minimum in DC Water Debt Policy
- Alternative options that could generate greater savings for DC Water exist as well – namely forward tax-exempt delivery bonds and use of interest rate swaps – but each has its own limitations
 - Forward delivery bonds can typically be completed only within 18 months of the call date, and with a premium to a current refunding transaction
 - Interest rate swaps (and other derivative products) can provide efficient solutions, but come with a set of different business risks and policy considerations
- Despite trade-offs, taxable bonds have extremely strong economics in the current environment and low breakeven yield curve movements to call date



Series 2019D Bond Transaction Highlights

- ◆ In addition to previously-approved Series 2019A/B and Series 2019C, DC Water requests authorization to issue taxable Subordinate Lien refunding bonds to refund up to \$300 million of Subordinate Lien Series 2013A
- ◆ Refunding Series 2019D intended to price concurrently with Series 2019A/B fixed rate new money transaction
- ◆ Siebert Cisneros Shank & Co. and J.P. Morgan Securities (lead managers for Series 2019A/B and Series 2019C, respectively) have been selected to co-lead the underwriting groups Series 2019D
- ◆ Series 2019D will be executed only if market conditions allow DC Water to exceed 10% NPV savings threshold included in Authorizing Resolution
- ◆ Pursuant to Authorizing Resolution, DC Water Board will be asked to approve several documents related to the financing plan described in the presentation
 - 26th Supplemental Indenture
 - Revised Preliminary Official Statement incorporating Series 2019D
 - Escrow Agreement for Series 2019D



Series 2019 Preliminary Plan of Finance

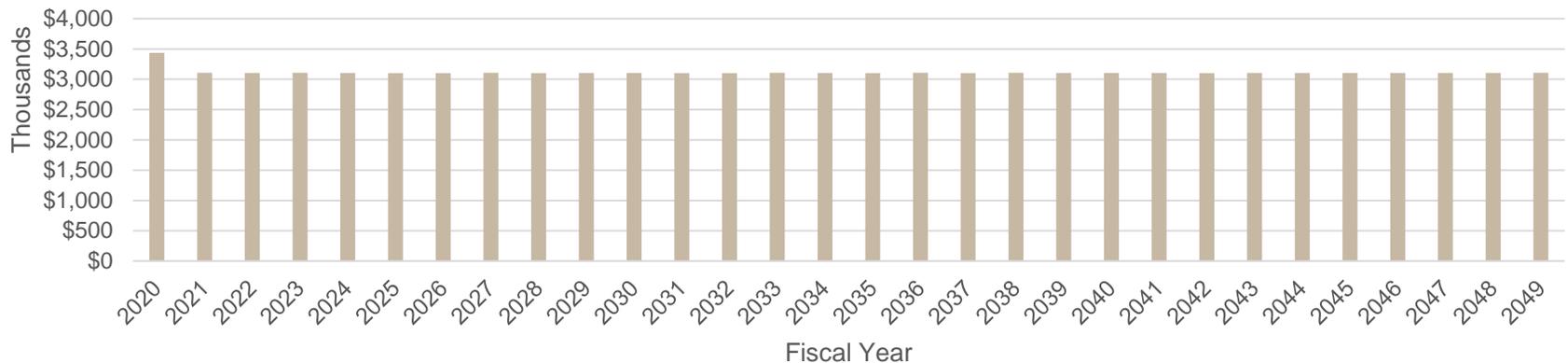
Key Terms*

- Purpose: Refunding
- Term: 29 years
- Tax Status: Taxable
- Lien: Subordinate
- Expected 10 year optional par call
- Refunded Bonds: \$300 million Series 2013A
- Level debt service savings structure
- Minimum NPV savings threshold of 10% of refunded par (\$62.1 million / 20.7% as of September 3)

Expected Sources & Uses*

Series 2019D	
Sources (\$)	
Par Amount	344,655,000
Net Premium	-
Total	344,655,000
Uses (\$)	
Escrow Fund	342,484,187
Underwriting / Other Issuance Expenses	2,170,813
Total	344,655,000

Potential Cash Flow Debt Service Savings (Rates as of September 3, 2019)*



*Preliminary, subject to change within the parameters of Board authorization.



Preliminary Financing Schedule Highlights

- ◆ **July 25, 2019** – Request Finance & Budget Committee review and recommendation for approval of Series 2019A/B and Series 2019C
- ◆ **September 5, 2019** – Request DC Water Board approval of Series 2019A/B and Series 2019C transaction
- ◆ **September 26, 2019** – Request Finance & Budget Committee review and recommendation for approval of Series 2019D refunding
- ◆ **September 27, 2019** – Request Board approval of Series 2019D refunding
- ◆ **Week of September 23, 2019** – Receive credit ratings and green bond opinion
- ◆ **October 8, 2019** – Series 2019A/B and Series 2019D bond pricing
- ◆ **October 24, 2019** – Series 2019C bond pricing
- ◆ **November 6, 2019**– Series 2019A/B, Series 2019C and Series 2019D bond closing

**DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY
BOARD OF DIRECTORS CONTRACTOR FACT SHEET**

ACTION REQUESTED

GOODS AND SERVICES CONTRACT AWARD

**System Integration Service for new Enterprise Resource Planning (ERP) Software
(Joint Use)**

Approval to execute a contract award for the system integration service of new ERP Software in the amount of not-to-exceed \$9,698,930.00 for the 2-year and 1-month base term.

CONTRACTOR/SUB/VENDOR INFORMATION

PRIME: Applications Software Technology LLC 4343 Commerce Court, Suite 701, Lisle, Illinois 60532	SUBS: N/A	PARTICIPATION: N/A
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DESCRIPTION AND PURPOSE

Original Contract Value: \$9,698,930.00
 Base-Term of Contract: 10-03-2019 – 10-30-2021 (2-year and 1-month Base Term)
 No. of Option Years in Contract: 0 option

Purpose of the Contract:

The purpose of this contract is to purchase a system integration service for the new Oracle Cloud ERP software for the duration of implementation and subsequent configuration support period.

Contract Scope:

DC Water selected and purchased the Oracle Cloud ERP software service for its future financial, HCM, and Procurement system. Applications Software Technology LLC will provide the system integration service to design, configure, test, and launch the software as well as providing the configuration support service until the end of FY21 to assist DC Water with the first year-end closure process with the new ERP software. The contract value includes \$496,000.00 (4,000 hours) of allowance for any change orders resulting from possible scope changes during the project.

Supplier Selection:

A Request for Proposal (RFP) was issued in September 2018 and 9 proposals were received. 4 firms were down-selected for the negotiation rounds that included extensive product demonstrations and oral presentations. DC Water selected in March 2019 Oracle Cloud ERP as the new ERP software and Applications Software Technology LLC as the system integrator after extensive rounds of reviews and negotiations.

No LSBE participation

PROCUREMENT INFORMATION

Contract Type:	Goods / Services	Award Based On:	Best Value
Commodity:	Software	Contract Number:	18-PR-CFO-56
Contractor Market:	Open Market with Preference Points for LBE and LSBE participation		

BUDGET INFORMATION

Funding:	Capital	Departments:	Finance, Procurement and People & Talent
Service Area:	DC Water-wide	Department Heads:	Matthew Brown and Keith Lindsey

ESTIMATED USER SHARE INFORMATION

User	Share %	Dollar Amount
District of Columbia	78.67%	\$7,630,148.23
Washington Suburban Sanitary Commission	16.18%	\$1,569,286.87
Fairfax County	3.30%	\$320,064.69
Loudoun Water	1.56%	\$151,303.31
Other (PI)	0.29%	\$28,126.90
TOTAL ESTIMATED DOLLAR AMOUNT	100.00%	\$9,698,930.00


 _____, 9/10/19
 Keith J. Lindsey Date
 Acting EVP of People and Talent


 _____, 9/18/19
 Dan Bae Date
 VP of Procurement and Compliance


 _____, 9/18/2019
 Matthew T. Brown Date
 CFO and EVP of Finance and Procurement

 David L. Gadis Date
 General Manager and CEO

ATTACHMENT 7

**FINANCE & BUDGET COMMITTEE
PROPOSED ADDITIONAL ALLOCATION OF
FY 2019 PROJECTED NET CASH SURPLUS**

ACTION ITEM B: Approval of Resolution Authorizing the Allocation of \$2.9 million for Automated Metering Infrastructure (AMI) project from Projected Cash Surplus

Projected FY 2019 Net Cash Surplus **\$16.953 million**

Previously Board Approved Use of Surplus Funds:

- Rate Stabilization Fund (RSF) (\$6.0 million)
- Enterprise Resource Planning (ERP) Project (\$2.0 million)
- Remaining Cash Balance \$8.953 million

Additional allocation to:

- **Automated Metering Infrastructure (AMI) Project** **(\$2.9 million)**
- Remaining cash to be carried over to FY 2020 \$6.053 million

ATTACHMENT 8

**FINANCE & BUDGET COMMITTEE
APPROVAL OF
2019 A, B & D SERIES SENIOR LIEN REVENUE BONDS
FINANCING DOCUMENTS**

ACTION ITEM C: Approval of documents authorizing the issuance of the 2019 A, B & D Series Senior Lien Revenue Bonds:

1. 2019 A, B & D Preliminary Official Statement
2. Authorizing Resolution for Series 2019D
3. 26th Supplemental Indenture (Series 2019D)
4. Bond Purchase Agreement for 2019D
5. Escrow Agreement

PRELIMINARY OFFICIAL STATEMENT DATED _____, 2019

NEW ISSUE – BOOK-ENTRY ONLY

RATINGS: Standard & Poor's: []

Moody's: []

Fitch: []

See "RATINGS" herein

In the opinion of Co-Bond Counsel, under existing law (i) assuming continuing compliance with certain covenants and the accuracy of certain representations, interest on the Series 2019A/B Bonds is excluded from gross income for federal income tax purposes, and is not an item of tax preference for purposes of the federal alternative minimum tax, and (ii) the Series 2019A/B/D Bonds and the interest thereon are exempt from District taxation, except estate, inheritance and gift taxes. Interest on the Series 2019A/B Bonds may be subject to certain federal taxes imposed only on certain corporations. INTEREST ON THE SERIES 2019D BONDS IS NOT EXCLUDED FROM GROSS INCOME FOR FEDERAL INCOME TAX PURPOSES. For a more complete discussion of the tax aspects, see "TAX MATTERS" herein.

[DC Water Logo]

\$(125,000,000)*
DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY
Public Utility Subordinate Lien Revenue Bonds, Series 2019A (Green Bonds)

\$(75,000,000)*
DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY
Public Utility Subordinate Lien Revenue Bonds, Series 2019B

\$(300,000,000)*
DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY
Public Utility Subordinate Lien Revenue Refunding Bonds, Series 2019D (Federally Taxable)

Dated: Date of Delivery

Due: As shown on inside cover

Authority for Issuance. The Public Utility Subordinate Lien Revenue Bonds, Series 2019A (Green Bonds) (the "Series 2019A Bonds"), the Public Utility Subordinate Lien Revenue Bonds, Series 2019B (the "Series 2019B Bonds") and the Public Utility Subordinate Lien Revenue Refunding Bonds, Series 2019D (Federally Taxable) (the "Series 2019D Bonds") and, together with the Series 2019A Bonds, and the Series 2019B Bonds, the "Series 2019A/B/D Bonds") are being issued by the District of Columbia Water and Sewer Authority (the "Authority," also commonly referred to as "DC Water") pursuant to a Master Indenture of Trust, dated as of April 1, 1998 (the "Master Indenture"), by and between the Authority and Wells Fargo Bank, N.A., as trustee (the "Trustee"), as amended and supplemented from time to time, including as amended and supplemented by the Twenty-Fourth Supplemental Indenture of Trust, by and between the Authority and the Trustee, dated the date of issuance and delivery of the Series 2019A Bonds and the Series 2019B Bonds (the "Series 2019A/B Bonds") (the "Twenty-Fourth Supplemental Indenture"), and the Twenty-Sixth Supplemental Indenture of Trust, by and between the Authority and the Trustee, dated the date of issuance and delivery of the Series 2019D Bonds (the "Twenty-Sixth Supplemental Indenture" and, together with the Twenty-Fourth Supplemental Indenture and the Master Indenture, as previously amended and supplemented, the "Indenture").

Use of Proceeds. The proceeds of the Series 2019A Bonds will be used to pay (i) a portion of the costs of the Authority's DC Clean Rivers Project (as defined herein (the "Series 2019A Project"), and (ii) the costs of issuing the Series 2019A Bonds. The proceeds of the Series 2019B Bonds will be used to (i) pay a portion of the costs of certain capital improvements to the System (the "Series 2019B Project"), and (ii) pay the costs of issuing the Series 2019B Bonds. The proceeds of the Series 2019D Bonds will be used to (i) refund all or a portion of the Authority's outstanding Public Utility Subordinate Lien Revenue Bonds, Series 2013A (the "Series 2013A Bonds") and (ii) pay costs of issuing the Series 2019D Bonds.

Denominations and Interest. The Series 2019A/B/D Bonds will be issued initially in denominations of \$5,000 or any integral multiple thereof and will mature in the years and amounts and accrue interest from their date of delivery at the rates set forth on the inside cover page of this Official Statement. Interest on the Series 2019A/B/D Bonds will be calculated on the basis of a 360-day year of twelve 30-day months, payable semi-annually on each April 1 and October 1, commencing April 1, 2020.

Book-Entry Only. The Series 2019A/B/D Bonds will be issued in fully registered form in the name of Cede & Co., as nominee of The Depository Trust Company ("DTC") under the book-entry only system maintained by DTC or its nominee. So long as Cede & Co. is the registered owner of the Series 2019A/B/D Bonds, the principal of and premium, if any, and interest on the Series 2019A/B/D Bonds will be payable by the Trustee to DTC, which will in turn remit such payments to its participants for subsequent disbursement to beneficial owners of the Series 2019A/B/D Bonds, as more fully described herein. See APPENDIX E – "DTC Book-Entry System and Global Clearance Procedures."

Redemption. The Series 2019A/B/D Bonds are subject to redemption prior to maturity, as more fully described herein. See "THE SERIES 2019A/B/D BONDS – Redemption Provisions."

Security. The Series 2019A/B/D Bonds will be secured by a pledge of Net Revenues that will be subordinate to the pledge of Net Revenues that secures the Outstanding Senior Debt and any other Senior Debt the Authority may issue from time to time in the future, and on a parity with the pledge of Net Revenues that secures the Outstanding Subordinate Debt and any other Subordinate Debt the Authority may issue from time to time in the future, without preference, priority or distinction of any Subordinate Debt over any other Subordinate Debt, all as further described and defined herein. The Series 2019A/B/D Bonds will not be secured by a Debt Service Reserve Fund. See "SECURITY FOR THE SERIES 2019A/B/D BONDS."

Limited Obligation. The Series 2019A/B/D Bonds shall be special, limited obligations of the Authority payable solely from the Net Revenues of the Authority. The Series 2019A/B/D Bonds shall be without recourse to the District of Columbia (the "District"). The Series 2019A/B/D Bonds shall not be general obligations of the District or of the Authority. The Series 2019A/B/D Bonds shall not be a pledge of or involve the faith and credit or the taxing power of the District, shall not constitute a debt of the District, the United States of America or any User Jurisdiction (as defined herein) or any agency or instrumentality of any User Jurisdiction, and neither the District, the United States, any User Jurisdiction nor any agency or instrumentality of any User Jurisdiction shall be liable thereon. The Series 2019A/B/D Bonds also shall not constitute the lending of the public credit for private undertakings as prohibited by the Home Rule Act (as defined herein). The Authority has no taxing power.

Green Bonds. The Series 2019A Project consists of a portion of the DC Clean Rivers Project. Based upon independent assessment of the DC Clean Rivers Project and of the Authority conducted by Vigeo applying environmental, social and governance criteria, the Authority has designated the Series 2019A Project as a "Green Project" and has designated the Series 2019A Bonds as "Green Bonds." See "INTRODUCTION – Use of the Series 2019A/B/D Bond Proceeds," "PLAN OF FINANCE" and APPENDIX G – "Opinion of Independent Sustainability Consultant."

The Series 2019A/B/D Bonds are offered when, as and if issued by the Authority and received by the Underwriters (as defined herein). Certain legal matters with respect to the issuance of the Series 2019A/B/D Bonds are subject to the approval of Squire Patton Boggs (US) LLP and Parker Poe Adams & Bernstein LLP, Co-Bond Counsel to the Authority. Squire Patton Boggs (US) LLP and Parker Poe Adams & Bernstein LLP also serve as Co-Disclosure Counsel to the Authority in connection with the preparation of this Official Statement. Certain legal matters will be passed upon for the Authority by its General Counsel and for the Underwriters by Orrick, Herrington & Sutcliffe LLP and McKenzie & Associates, Co-Underwriters' Counsel. It is expected that the Series 2019A/B/D Bonds will be available for delivery through the facilities of DTC in New York, New York on or about [], 2019.

SIEBERT CISNEROS SHANK & CO., L.L.C.

J.P. MORGAN

Senior Manager Series 2019A/B Bonds
 Co-Senior Manager Series 2019D Bonds

Co-Senior Manager Series 2019D Bonds

FTN Financial Capital Markets

Jefferies LLC

Morgan Stanley

Raymond James

Stern Brothers & Co.

This cover page, including the inside cover page, contains certain information for quick reference only. It is not a summary of this Official Statement. Prospective purchasers must read the entire Official Statement to obtain the information essential to the making of an informed investment decision.

Dated: [], 2019

* Preliminary; subject to change.

THIS PRELIMINARY OFFICIAL STATEMENT AND THE INFORMATION CONTAINED IN IT ARE SUBJECT TO COMPLETION AND AMENDMENT IN A FINAL OFFICIAL STATEMENT. Under no circumstances shall this Preliminary Official Statement constitute an offer to sell or the solicitation of an offer to buy, and there shall not be any sale of the Bonds offered hereby, in any jurisdiction in which such offer, solicitation or sale would be unlawful prior to the registration or qualification under the securities laws of that jurisdiction.

MATURITY SCHEDULE

[\$125,000,000]*
DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY
Public Utility Subordinate Lien Revenue Bonds
Series 2019A
(Green Bonds)

Serial Bonds

Maturity (Oct. 1)	Principal Amount	Interest Rate	Yield	CUSIP No.†
		[]%	[]%*	254845 []

Term Bonds

\$[] []% Term Bonds, due October 1, 20[], Yield []% * CUSIP 254845 []†

* Yield calculated to first optional redemption date of [October 1, 2029.]

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* Preliminary; subject to change.

[\$75,000,000]*
DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY
Public Utility Subordinate Lien Revenue Bonds
Series 2019B

Serial Bonds

Maturity (Oct. 1)	Principal Amount	Interest Rate	Yield	CUSIP No.†
		[]%	[]%*	254845 []

Term Bonds

\$[] []% Term Bonds, due October 1, 20[], Yield []%* CUSIP 254845 []†

* Yield calculated to first optional redemption date of [October 1, 2029.]

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* Preliminary; subject to change.

[\$300,000,000]*
DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY
Public Utility Subordinate Lien Revenue Refunding Bonds,
Series 2019D
(Federally Taxable)

Serial Bonds

Maturity (Oct. 1)	Principal Amount	Interest Rate	Yield	CUSIP No.†	ISINs/Common Codes
		[]%	[]%*	254845 []	

Term Bonds

\$[] []% Term Bonds, due October 1, 20[], Yield []%* CUSIP 254845 []†

* Yield calculated to first optional redemption date of [October 1, 2029.]

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* Preliminary; subject to change.

District of Columbia Water and Sewer Authority
1385 Canal Street, S.E.
Washington, D.C. 20003
(202) 787-2714

www.dewater.com

Principal Board Members Jurisdiction

Tommy Wells, Chairman	<i>District of Columbia</i>
Randy Bartlett	<i>Fairfax County</i>
Ellen O. Boardman	<i>District of Columbia</i>
Krystal J. Brumfield	<i>District of Columbia</i>
Rachna Bhatt	<i>District of Columbia</i>
David Franco	<i>District of Columbia</i>
Floyd Holt	<i>Prince George's County</i>
Fariba Kassiri	<i>Montgomery County</i>
Adam Ortiz	<i>Montgomery County</i>
Major F. Riddick, Jr.	<i>Prince George's County</i>
Emile Thompson	<i>District of Columbia</i>

Alternate Board Members Jurisdiction

Lavinia Baxter	<i>Prince George's County</i>
Kendrick Curry	<i>District of Columbia</i>
Ivan Frishberg	<i>District of Columbia</i>
Anthony Giancola	<i>District of Columbia</i>
Howard Gibbs	<i>District of Columbia</i>
Joseph Gill	<i>Prince George's County</i>
Adriana Hochber	<i>Montgomery County</i>
Sarah Motsch	<i>Fairfax County</i>
Jed Ross	<i>District of Columbia</i>
Steven Shofar	<i>Montgomery County</i>
Vacant	<i>District of Columbia</i>

Authority Management

<i>CEO and General Manager</i>	David Gadis
<i>Chief Financial Officer and Executive Vice President, Finance and Procurement</i>	Matthew T. Brown
<i>Executive Vice President, Operations and Engineering</i>	Biju George
<i>Chief of Staff</i>	Mustaafa Dozier
<i>Interim Executive Vice President, Legal Affairs</i>	Gregory Hope
<i>Senior Vice President CIP Project Delivery</i>	Leonard R. Benson
<i>Director of DC Clean Rivers Project</i>	Carlton Ray
<i>Vice President, Wastewater Operations and Engineering</i>	Aklile Tesfaye
<i>Executive Vice President, Administration</i>	Maureen Holman

Authority Consultants and Counsel

<i>Co-Bond Counsel</i>	Squire Patton Boggs (US) LLP and Parker Poe Adams & Bernstein LLP
<i>Co-Disclosure Counsel</i>	Squire Patton Boggs (US) LLP and Parker Poe Adams & Bernstein LLP
<i>Financial Feasibility Consultant</i>	Amawalk Consulting Group LLC
<i>Engineering Feasibility Consultant</i>	Johnson, Mirmiran, & Thompson, Inc.
<i>Financial Advisor</i>	PFM Financial Advisors LLC
<i>Sustainability Consultant</i>	Vigeo

IMPORTANT NOTICES

No Offering May be Made Except by this Official Statement. No dealer, broker, salesperson or other person has been authorized by the Authority or the Underwriters to give any information or to make any representations with respect to this offering, other than as contained in this Official Statement and, if given or made, such other information or representations must not be relied upon as having been authorized by the Authority or the Underwriters.

No Unlawful Offer, Solicitation or Sale. This Official Statement does not constitute an offer to sell or the solicitation of an offer to buy, nor shall there be any sale of the Series 2019A/B/D Bonds by any person in any jurisdiction in which it is unlawful for such person to make such offer, solicitation or sale.

Use of this Official Statement. This Official Statement is provided in connection with the sale of the Series 2019A/B/D Bonds referred to herein and may not be reproduced or be used, in whole or in part, for any other purpose. This Official Statement is not to be construed as a contract or agreement among the Authority, the Underwriters and the purchasers or owners of any offered Series 2019A/B/D Bonds. This Official Statement is being provided to prospective purchasers either in bound printed form (“original bound format”) or in electronic format on the following website: www.munios.com. This Official Statement may be relied upon only if it is in its original bound format or if it is printed in its entirety directly from such website.

Preparation of this Official Statement. The information contained in this Official Statement has been derived from information provided by the Authority and other sources which are believed to be reliable. Additional information, including financial information, concerning the Authority is available from the Authority’s website. Any such information that is inconsistent with the information set forth in this Official Statement should be disregarded. The information and expressions of opinions herein are subject to change without notice and neither the delivery of this Official Statement nor any sale made hereunder shall, under any circumstances, create any implication that there has been no change in the affairs of the Authority since the date hereof. Such information and expressions of opinion are made for the purpose of providing information to prospective investors and are not to be used for any other purpose or relied on by any other party. The Underwriters have reviewed the information in this Official Statement in accordance with, and as part of, their respective responsibilities to investors under the federal securities laws as applied to the facts and circumstances of this transaction, but the Underwriters do not guarantee the accuracy or completeness of such information.

No Registration or Approval. The Series 2019A/B/D Bonds have not been registered with the U.S. Securities and Exchange Commission (the “SEC”) under the Securities Act of 1933, as amended, in reliance upon exceptions contained in the Act. Neither the SEC nor any other federal or state securities commission or regulatory authority has approved or disapproved of the Series 2019A/B/D Bonds or passed upon the accuracy or adequacy of this Official Statement. Any representation to the contrary is a criminal offense.

Public Offering Prices. In connection with this offering, the Underwriters may over allot or effect transactions which stabilize or maintain the market price of the Series 2019A/B/D Bonds at a level above that which might otherwise prevail in the open market; such stabilizing, if commenced, may be discontinued at any time.

Forecasts and Forward-Looking Statements. Statements contained in this Official Statement that do not reflect historical facts are forward-looking statements. Forward-looking statements can be identified by words such as “estimate,” “project,” “anticipate,” “expect,” “intend,” “believe,” “plan,” “budget,” “predict,” “may,” “should,” and similar expressions. Projections, forecasts, assumptions, expressions of opinions, estimates and other forward-looking statements are not to be construed as representations of fact and are qualified in their entirety by the cautionary statements set forth in this Official Statement. The forward-looking statements are based on various assumptions and estimates and are inherently subject to risks and uncertainties, including, but not limited to, risks and uncertainties relating to the possible invalidity of the underlying assumptions and estimates and possible changes or developments in various important factors. Accordingly, actual results may vary from the projections, forecasts and estimates contained in this Official Statement and such variations may be material, which could affect the ability to fulfill some or all of the obligations under the Series 2019A/B/D Bonds. All forward-looking statements included in this Official Statement are based on information available on the date of this Official Statement, and the Authority assumes no obligation to update any such forward-looking statements.

**INFORMATION CONCERNING OFFERING RESTRICTIONS IN CERTAIN JURISDICTIONS OUTSIDE
THE UNITED STATES**

MINIMUM UNIT SALES

THE SERIES 2019D BONDS WILL TRADE AND SETTLE ON A UNIT BASIS (ONE UNIT EQUALING ONE BOND OF \$5,000 PRINCIPAL AMOUNT). FOR ANY SALES MADE OUTSIDE THE UNITED STATES, THE MINIMUM PURCHASE AND TRADING AMOUNT IS 30 UNITS (BEING 30 BONDS IN AN AGGREGATE PRINCIPAL AMOUNT OF \$150,000).

NOTICE TO PROSPECTIVE INVESTORS IN THE EUROPEAN ECONOMIC AREA (“EEA”)

THE SERIES 2019D BONDS ARE NOT INTENDED TO BE OFFERED, SOLD OR OTHERWISE MADE AVAILABLE TO AND SHOULD NOT BE OFFERED, SOLD OR OTHERWISE MADE AVAILABLE TO ANY RETAIL INVESTOR IN THE EUROPEAN ECONOMIC AREA (“EEA”). FOR THESE PURPOSES, A RETAIL INVESTOR MEANS A PERSON WHO IS ONE (OR MORE) OF: (I) A RETAIL CLIENT AS DEFINED IN POINT (11) OF ARTICLE 4(1) OF DIRECTIVE 2014/65/EU (AS AMENDED, “MIFID II”); OR (II) A CUSTOMER WITHIN THE MEANING OF DIRECTIVE (EU) 2016/97 (THE “INSURANCE DISTRIBUTION DIRECTIVE”), WHERE THAT CUSTOMER WOULD NOT QUALIFY AS A PROFESSIONAL CLIENT AS DEFINED IN POINT (10) OF ARTICLE 4(1) OF MIFID II; OR (III) NOT A QUALIFIED INVESTOR AS DEFINED IN REGULATION (EU) 2017/1129 (THE “PROSPECTUS REGULATION”). CONSEQUENTLY, NO KEY INFORMATION DOCUMENT REQUIRED BY REGULATION (EU) NO 1286/2014 (AS AMENDED, THE “PRIIPS REGULATION”) FOR OFFERING OR SELLING THE SERIES 2019D BONDS OR OTHERWISE MAKING THEM AVAILABLE TO RETAIL INVESTORS IN THE EEA HAS BEEN PREPARED AND THEREFORE OFFERING OR SELLING THE SERIES 2019D BONDS OR OTHERWISE MAKING THEM AVAILABLE TO ANY RETAIL INVESTOR IN THE EEA MAY BE UNLAWFUL UNDER THE PRIIPS REGULATION.

THIS OFFICIAL STATEMENT HAS BEEN PREPARED ON THE BASIS THAT ALL OFFERS OF THE SERIES 2019D BONDS TO ANY PERSON THAT IS LOCATED WITHIN A MEMBER STATE OF THE EEA WILL BE MADE PURSUANT TO AN EXEMPTION UNDER ARTICLE 1(4) OF THE PROSPECTUS REGULATION, AS IMPLEMENTED IN MEMBER STATES OF THE EEA, FROM THE REQUIREMENT TO PRODUCE A PROSPECTUS FOR OFFERS OF THE SERIES 2019D BONDS. ACCORDINGLY, ANY PERSON MAKING OR INTENDING TO MAKE ANY OFFER IN THE EEA OF THE SERIES 2019D BONDS SHOULD ONLY DO SO IN CIRCUMSTANCES IN WHICH NO OBLIGATION ARISES FOR THE AUTHORITY OR ANY OF THE UNDERWRITERS TO PROVIDE A PROSPECTUS FOR SUCH OFFER. NEITHER THE AUTHORITY NOR THE UNDERWRITERS HAVE AUTHORIZED, NOR DO THEY AUTHORIZE, THE MAKING OF ANY OFFER OF SERIES 2019D BONDS THROUGH ANY FINANCIAL INTERMEDIARY, OTHER THAN OFFERS MADE BY THE UNDERWRITERS, WHICH CONSTITUTE THE FINAL PLACEMENT OF THE SERIES 2019D BONDS CONTEMPLATED IN THIS OFFICIAL STATEMENT.

THE OFFER OF ANY SERIES 2019D BONDS WHICH IS THE SUBJECT OF THE OFFERING CONTEMPLATED BY THIS OFFICIAL STATEMENT IS NOT BEING MADE AND WILL NOT BE MADE TO THE PUBLIC IN THAT MEMBER STATE, OTHER THAN: (A) TO ANY LEGAL ENTITY WHICH IS A “QUALIFIED INVESTOR” AS SUCH TERM IS DEFINED IN THE PROSPECTUS REGULATION; (B) TO FEWER THAN 150 NATURAL OR LEGAL PERSONS (OTHER THAN “QUALIFIED INVESTORS” AS SUCH TERM IS DEFINED IN THE PROSPECTUS REGULATION), SUBJECT TO OBTAINING THE PRIOR CONSENT OF THE RELEVANT UNDERWRITER OR THE CORPORATION FOR ANY SUCH OFFER OR (C) IN ANY OTHER CIRCUMSTANCES FALLING WITHIN ARTICLE 1(4) OF THE PROSPECTUS REGULATION; PROVIDED THAT NO SUCH OFFER OF THE SERIES 2019D BONDS SHALL REQUIRE THE AUTHORITY OR ANY UNDERWRITER TO PUBLISH A PROSPECTUS PURSUANT TO ARTICLE 3 OF THE PROSPECTUS REGULATION OR A SUPPLEMENT TO A PROSPECTUS PURSUANT TO ARTICLE 23 OF THE PROSPECTUS REGULATION.

FOR THE PURPOSES OF THIS PROVISION, THE EXPRESSION AN “OFFER OF SECURITIES TO THE PUBLIC” IN RELATION TO THE SERIES 2019D BONDS IN ANY MEMBER STATE MEANS THE COMMUNICATION IN ANY FORM AND BY ANY MEANS OF SUFFICIENT INFORMATION ON THE TERMS OF THE OFFER AND THE SERIES 2019D BONDS TO BE OFFERED SO AS TO ENABLE AN INVESTOR TO DECIDE TO PURCHASE OR SUBSCRIBE FOR THE SERIES 2019D BONDS.

EACH SUBSCRIBER FOR OR PURCHASER OF THE SERIES 2019D BONDS IN THE OFFERING LOCATED WITHIN A MEMBER STATE WILL BE DEEMED TO HAVE REPRESENTED, ACKNOWLEDGED AND AGREED THAT IT IS A “QUALIFIED INVESTOR” AS DEFINED IN THE PROSPECTUS REGULATION.

THE AUTHORITY AND EACH UNDERWRITER AND OTHERS WILL RELY ON THE TRUTH AND ACCURACY OF THE FOREGOING REPRESENTATION, ACKNOWLEDGEMENT AND AGREEMENT.

NOTICE TO PROSPECTIVE INVESTORS IN THE UNITED KINGDOM

THIS OFFICIAL STATEMENT HAS NOT BEEN APPROVED FOR THE PURPOSES OF SECTION 21 OF THE FINANCIAL SERVICES AND MARKETS ACT 2000 (“FSMA”) AND DOES NOT CONSTITUTE AN OFFER TO THE PUBLIC IN ACCORDANCE WITH THE PROVISIONS OF SECTION 85 OF THE FSMA. IT IS FOR DISTRIBUTION ONLY TO, AND IS DIRECTED SOLELY AT, PERSONS WHO (I) ARE OUTSIDE OF THE UNITED KINGDOM (II) ARE INVESTMENT PROFESSIONALS, AS SUCH TERM IS DEFINED IN ARTICLE 19(5) OF THE FINANCIAL SERVICES AND MARKETS ACT 2000 (FINANCIAL PROMOTION) ORDER 2005, AS AMENDED (THE “FINANCIAL PROMOTION ORDER”), (III) ARE PERSONS FALLING WITHIN ARTICLE 49(2)(A) TO (D) OF THE FINANCIAL PROMOTION ORDER OR (IV) ARE PERSONS TO WHOM AN INVITATION OR INDUCEMENT TO ENGAGE IN INVESTMENT ACTIVITY (WITHIN THE MEANING OF SECTION 21 OF THE FSMA) IN CONNECTION WITH THE ISSUE OR SALE OF ANY SERIES 2019D BONDS MAY OTHERWISE BE LAWFULLY COMMUNICATED OR CAUSED TO BE COMMUNICATED (ALL SUCH PERSONS TOGETHER BEING REFERRED TO AS “RELEVANT PERSONS”). THIS OFFICIAL STATEMENT IS DIRECTED ONLY AT RELEVANT PERSONS AND MUST NOT BE ACTED ON OR RELIED ON BY PERSONS WHO ARE NOT RELEVANT PERSONS. ANY INVESTMENT OR INVESTMENT ACTIVITY TO WHICH THIS OFFICIAL STATEMENT RELATES IS AVAILABLE ONLY TO RELEVANT PERSONS AND WILL BE ENGAGED IN ONLY WITH RELEVANT PERSONS. ANY PERSON WHO IS NOT A RELEVANT PERSON SHOULD NOT ACT OR RELY ON THIS OFFICIAL STATEMENT OR ANY OF ITS CONTENTS.

NOTICE TO PROSPECTIVE INVESTORS IN HONG KONG

THE CONTENTS OF THIS OFFICIAL STATEMENT HAVE NOT BEEN REVIEWED BY ANY REGULATORY AUTHORITY IN HONG KONG. YOU ARE ADVISED TO EXERCISE CAUTION IN RELATION TO THE OFFER OF THE SERIES 2019D BONDS. IF YOU ARE IN ANY DOUBT ABOUT ANY OF THE CONTENTS OF THIS OFFICIAL STATEMENT, YOU SHOULD OBTAIN INDEPENDENT PROFESSIONAL ADVICE.

THIS OFFICIAL STATEMENT HAS NOT BEEN, AND WILL NOT BE, REGISTERED AS A PROSPECTUS (AS DEFINED IN THE COMPANIES (WINDING UP AND MISCELLANEOUS PROVISIONS) ORDINANCE (CHAPTER 32 OF THE LAWS OF HONG KONG) (THE “C(WUMP)O”) IN HONG KONG NOR HAS IT BEEN APPROVED BY THE SECURITIES AND FUTURES COMMISSION OF HONG KONG PURSUANT TO THE SECURITIES AND FUTURES ORDINANCE (CHAPTER 571 OF THE LAWS OF HONG KONG) (“SFO”). ACCORDINGLY, THE SERIES 2019D BONDS MAY NOT BE OFFERED OR SOLD IN HONG KONG BY MEANS OF THIS OFFICIAL STATEMENT OR ANY OTHER DOCUMENT, AND THIS OFFICIAL STATEMENT MUST NOT BE ISSUED, CIRCULATED OR DISTRIBUTED IN HONG KONG, OTHER THAN (A) TO ‘PROFESSIONAL INVESTORS’ AS DEFINED IN THE SFO AND ANY RULES MADE UNDER THE SFO OR (B) IN OTHER CIRCUMSTANCES WHICH DO NOT RESULT IN THE DOCUMENT BEING A “PROSPECTUS” AS DEFINED IN THE C(WUMP)O OR WHICH DO NOT CONSTITUTE AN OFFER TO THE PUBLIC WITHIN THE MEANING OF THE C(WUMP)O. IN ADDITION, NO PERSON MAY ISSUE OR HAVE IN ITS POSSESSION FOR THE PURPOSES OF ISSUE, WHETHER IN HONG KONG OR ELSEWHERE, ANY ADVERTISEMENT, INVITATION OR DOCUMENT RELATING TO THE SERIES 2019D BONDS, WHICH IS DIRECTED AT, OR THE CONTENTS OF WHICH ARE LIKELY TO BE ACCESSED OR READ BY, THE PUBLIC OF HONG KONG (EXCEPT IF PERMITTED TO DO SO UNDER THE SECURITIES LAWS OF HONG KONG) OTHER THAN WITH RESPECT TO SERIES 2019D BONDS WHICH ARE OR ARE INTENDED TO BE DISPOSED OF ONLY (A) TO PERSONS OUTSIDE HONG KONG, (B) TO ‘PROFESSIONAL INVESTORS’ AS DEFINED IN THE SFO AND ANY RULES MADE UNDER THE SFO.

NOTICE TO PROSPECTIVE INVESTORS IN JAPAN

THE BONDS HAVE NOT BEEN AND WILL NOT BE REGISTERED UNDER THE FINANCIAL INSTRUMENTS AND EXCHANGE ACT OF JAPAN (ACT NO. 25 OF 1948, AS AMENDED, THE “FIEA”). NEITHER THE BONDS NOR ANY INTEREST THEREIN MAY BE OFFERED OR SOLD, DIRECTLY OR INDIRECTLY, IN JAPAN OR TO, OR FOR THE BENEFIT OF, ANY RESIDENT OF JAPAN (AS DEFINED UNDER ITEM 5, PARAGRAPH 1, ARTICLE 6 OF THE FOREIGN EXCHANGE AND FOREIGN TRADE ACT (ACT NO. 228 OF 1949, AS AMENDED)), OR TO OTHERS FOR RE-OFFERING OR RESALE, DIRECTLY OR INDIRECTLY, IN JAPAN OR TO, OR FOR THE BENEFIT OF, ANY RESIDENT OF JAPAN, EXCEPT PURSUANT TO AN EXEMPTION FROM THE REGISTRATION REQUIREMENTS OF, AND OTHERWISE IN COMPLIANCE WITH, THE FIEA AND ANY OTHER APPLICABLE LAWS, REGULATIONS AND MINISTERIAL GUIDELINES OF JAPAN.

THE PRIMARY OFFERING OF THE BONDS AND THE SOLICITATION OF AN OFFER FOR ACQUISITION THEREOF HAVE NOT BEEN AND WILL NOT BE REGISTERED UNDER PARAGRAPH 1, ARTICLE 4 OF THE FIEA. AS IT IS A PRIMARY OFFERING, IN JAPAN, THE BONDS MAY ONLY BE OFFERED, SOLD, RESOLD OR OTHERWISE TRANSFERRED, DIRECTLY OR INDIRECTLY TO, OR FOR

THE BENEFIT OF CERTAIN QUALIFIED INSTITUTIONAL INVESTORS AS DEFINED IN THE FIEA (“QIIs”) IN RELIANCE ON THE QIIs-ONLY PRIVATE PLACEMENT EXEMPTION AS SET FORTH IN ITEM 2(I), PARAGRAPH 3, ARTICLE 2 OF THE FIEA. A QII WHO PURCHASED OR OTHERWISE OBTAINED THE BONDS CANNOT RESELL OR OTHERWISE TRANSFER THE BONDS IN JAPAN TO ANY PERSON EXCEPT ANOTHER QII.

NOTICE TO PROSPECTIVE INVESTORS IN TAIWAN

THE OFFER OF THE BONDS HAS NOT BEEN AND WILL NOT BE REGISTERED OR FILED WITH, OR APPROVED BY, THE FINANCIAL SUPERVISORY COMMISSION OF TAIWAN AND/OR OTHER REGULATORY AUTHORITY OF TAIWAN PURSUANT TO RELEVANT SECURITIES LAWS AND REGULATIONS, AND THE BONDS MAY NOT BE OFFERED, ISSUED OR SOLD IN TAIWAN THROUGH A PUBLIC OFFERING OR IN CIRCUMSTANCES WHICH CONSTITUTE AN OFFER WITHIN THE MEANING OF THE SECURITIES AND EXCHANGE ACT OF TAIWAN THAT REQUIRES THE REGISTRATION OR FILING WITH OR APPROVAL OF THE FINANCIAL SUPERVISORY COMMISSION OF TAIWAN. THE BONDS MAY BE MADE AVAILABLE OUTSIDE TAIWAN FOR PURCHASE BY INVESTORS RESIDING IN TAIWAN (EITHER DIRECTLY OR THROUGH PROPERLY LICENSED TAIWAN INTERMEDIARIES), BUT MAY NOT BE OFFERED OR SOLD IN TAIWAN EXCEPT TO QUALIFIED INVESTORS VIA A TAIWAN LICENSED INTERMEDIARY. ANY SUBSCRIPTIONS OF BONDS SHALL ONLY BECOME EFFECTIVE UPON ACCEPTANCE BY THE ISSUER OR THE RELEVANT DEALER OUTSIDE TAIWAN AND SHALL BE DEEMED A CONTRACT ENTERED INTO IN THE JURISDICTION OF INCORPORATION OF THE ISSUER OR RELEVANT DEALER, AS THE CASE MAY BE, UNLESS OTHERWISE SPECIFIED IN THE SUBSCRIPTION DOCUMENTS RELATING TO THE BONDS SIGNED BY THE INVESTORS.

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OFFICIAL STATEMENT

[\$125,000,000]*
DISTRICT OF COLUMBIA WATER AND SEWER
AUTHORITY
Public Utility Subordinate Lien Revenue Bonds,
Series 2019A
(Green Bonds)

[\$75,000,000]*
DISTRICT OF COLUMBIA WATER AND SEWER
AUTHORITY
Public Utility Subordinate Lien Revenue Bonds,
Series 2019B

[\$300,000,000]*
DISTRICT OF COLUMBIA WATER AND SEWER
AUTHORITY
Public Utility Subordinate Lien Revenue Refunding Bonds,
Series 2019D
(Federally Taxable)

INTRODUCTION

General

This Official Statement, including the cover page and the appendices hereto (the “Official Statement”), is provided in connection with the issuance by the District of Columbia Water and Sewer Authority (the “Authority,” also commonly referred to as “DC Water”) of its Public Utility Subordinate Lien Revenue Bonds, Series 2019A (Green Bonds), in the original principal amount of \$[125,000,000]* (the “Series 2019A Bonds”), its Public Utility Subordinate Lien Revenue Bonds, Series 2019B Bonds, in the original principal amount of \$[75,000,000]* (the “Series 2019B Bonds”) and its Public Utility Subordinate Lien Revenue Refunding Bonds, Series 2019D (Federally Taxable), in the original principal amount of \$[300,000,000]* (the “Series 2019D Bonds” and the Series 2019A Bonds and Series 2019B Bonds, each a “Series” and, together, the “Series 2019A/B/D Bonds”)

Capitalized terms used in this Official Statement and not otherwise defined herein shall have the meanings ascribed thereto in APPENDIX C – “Glossary and Summary of the Indenture.”

Authorization

The Series 2019A/B/D Bonds are being issued pursuant to the Master Indenture of Trust, dated as of April 1, 1998 (the “Master Indenture”), as amended and supplemented to the date of delivery of the Series 2019A/B/D Bonds (the “Indenture”), including by the Twenty-Fourth Supplemental Indenture of Trust, to be dated the date of issuance and delivery of the Series 2019A Bonds and the Series 2019B Bonds (the “Series 2019A/B Bonds”) (the “Twenty-Fourth Supplemental Indenture”) and the Twenty-Sixth Supplemental Indenture of Trust, to be dated the date of issuance and delivery of the Series 2019D Bonds (the “Twenty-Sixth Supplemental Indenture”) each by and between the Authority and Wells Fargo Bank, N.A., as trustee (the “Trustee”). The Series 2019A/B Bonds are also being issued pursuant to a resolution of the Authority’s Board of Directors passed at its September 5, 2019 meeting authorizing the issuance of the Series 2019A/B Bonds, and the Series 2019D Bonds are being issued pursuant to a resolution of the Authority’s Board of Directors passed at its [September 27, 2019] meeting authorizing the issuance of the Series 2019D Bonds.

The Public Utility Subordinate Lien Multimodal Revenue Bonds, Series 2019C (the “Series 2019C Subordinate Bonds”) are being issued at the same time as the Series 2019A/B/D Bonds pursuant to the Indenture as supplemented by the Twenty-Fifth Supplemental Indenture of Trust, to be dated the date of issuance and delivery of the Series 2019C Subordinate Bonds (the “Twenty-Fifth Supplemental Indenture”) in an amount not to exceed \$[100,000,000].

District of Columbia Water and Sewer Authority

The Authority is an independent authority of the District of Columbia (the “District”), which was created in April 1996 and began operating on October 1, 1996, under and pursuant to an act of the Council of the District (the “Council”), which is entitled the “Water and Sewer Authority Establishment and Department of Public Works Reorganization Act of 1996” (D.C. Law 11-111) (D.C. Code §§ 34-2201.01 *et seq.*), as amended and supplemented

* Preliminary; subject to change.

(the “Act”), and an act of the U.S. Congress entitled the “District of Columbia Water and Sewer Authority Act of 1996” (Public Law 104-184) (the “Federal Act”). The Council was authorized to adopt the Act pursuant to the authority set forth in the District of Columbia Self-Government and Governmental Reorganization Act (P.L. 93-198; 87 Stat 774; D.C. Official Code, 2006 Repl., §§ 1-201 *et. seq.*), as amended (the “Home Rule Act”). See “THE AUTHORITY.”

The Authority provides retail water and wastewater services to approximately 700,000 residents in the District and wholesale wastewater conveyance and treatment to approximately 1.6 million people in major suburban areas of Prince George’s and Montgomery Counties in Maryland and Fairfax and Loudoun Counties in Virginia (collectively, the “User Jurisdictions”). Pursuant to the Act, the District authorized the Authority to use all of the property and assets of the water distribution system (the “Water System”) and the wastewater collection, treatment and disposal system (the “Wastewater System” and, together with the Water System, the “System”) formerly operated by the District, for as long as any revenue bonds of the Authority, including the Series 2019A/B/D Bonds, remain outstanding. In accordance with the Act, the District retains full legal title to and a complete equitable interest in the System. See “THE SYSTEM.”

The Authority’s service area consists of the District and certain areas of the User Jurisdictions and, therefore, certain demographic, economic and statistical information relating to the District and the User Jurisdictions may be relevant to prospective purchasers of the Series 2019A/B/D Bonds. The Authority makes no representation as to the accuracy or completeness of information derived from other sources.

Use of the Series 2019A/B/D Bond Proceeds

The proceeds of the Series 2019A Bonds will be used to pay (i) a portion of the costs of the DC Clean Rivers Project (as defined herein) (the “Series 2019A Project”) and (ii) the costs of issuing the Series 2019A Bonds. For a description of the DC Clean Rivers Project, see “CAPITAL IMPROVEMENT PROGRAM – Categories of CIP Projects – Combined Sewer Overflow Projects.” The Authority has designated the Series 2019A Project as a “Green Project” and the Series 2019A Bonds as “Green Bonds” based on, among other things, an independent assessment by Vigeo (“Vigeo”) of the DC Clean Rivers Project and the Authority’s environmental, social, and governance characteristics. The terms “Green Project” and “Green Bond” are neither defined in, nor related to the Indenture, and their use herein is for identification purposes only and is not intended to provide or imply that a holder of the Series 2019A Bonds is entitled to any additional security other than as provided in the Indenture. For a description of Vigeo’s assessment process, see APPENDIX G – “Opinion of Independent Sustainability Consultant.”

The proceeds of the Series 2019A Bonds to be used to pay the costs of the Series 2019A Project will be deposited in a segregated account of the Construction Fund established and maintained under the Indenture (the “2019A Construction Account”). Such proceeds will be invested in Permitted Investments pursuant to the Indenture. See “PLAN OF FINANCE.” The Authority has committed to report annually on the allocation of such proceeds to the Green Project and on certain environmental and social outcomes of the Green Project and on certain governance matters of the Authority until such proceeds are fully allocated.

The proceeds of the Series 2019B Bonds will be used to (i) pay the costs of certain capital improvements to the System (the “Series 2019B Project”) and (ii) pay the costs of issuing the Series 2019B Bonds.

The proceeds of the Series 2019B Bonds to be used to pay the costs of the Series 2019B Project will be deposited in a segregated account of the Construction Fund established and maintained under the Indenture (the “2019B Construction Account”). Such proceeds will be invested in Permitted Investments pursuant to the Indenture. See “PLAN OF FINANCE” and “CAPITAL IMPROVEMENT PROGRAM.”

The proceeds of the Series 2019D Bonds will be used to (i) refund all or a portion of the Authority’s outstanding Public Utility Subordinated Lien Revenue Bonds, Series 2013A (the “Series 2013A Bonds”) and (ii) pay costs of issuing the Series 2019D Bonds. See “PLAN OF FINANCE.”

Security and Source of Payment

Under the Indenture, the Authority may issue “Senior Debt” and “Subordinate Debt” from time to time. The Series 2019A/B/D Bonds will constitute Subordinate Debt under the Indenture. The Series 2019A/B/D Bonds will be secured by a lien on and a pledge of Net Revenues that is subordinate to the pledge of Net Revenues that secures the Outstanding Senior Debt and any other Senior Debt the Authority may issue from time to time in the future, and on a parity with the pledge of Net Revenues that secures the Outstanding Subordinate Debt and any other Subordinate Debt the Authority may issue from time to time in the future, without preference, priority or distinction of any Subordinate Debt over any other Subordinate Debt.

Prior to the issuance of the Series 2019A/B/D Bonds, \$1,050,305,000 aggregate principal amount of Senior Debt and \$2,223,295,000 aggregate principal amount of Subordinate Debt will be outstanding. See “OUTSTANDING INDEBTEDNESS.”

The Series 2019A/B/D Bonds will be payable solely from Net Revenues after the funding of certain Funds and Accounts established under the Indenture. The principal sources of Net Revenues are the payments received by the Authority pursuant to its rates and charges imposed for the use of and the services furnished by the System, as described in the Indenture. See “SECURITY FOR THE SERIES 2019A/B/D BONDS – Lien and Pledge of the Master Indenture” and “RATES AND CHARGES.” The Series 2019A/B/D Bonds will not be secured by a Debt Service Reserve Fund.

The Series 2019A/B/D Bonds shall be special and limited obligations of the Authority. The Series 2019A/B/D Bonds shall be without recourse to the District. The Series 2019A/B/D Bonds shall not be general obligations of the District or of the Authority. The Series 2019A/B/D Bonds shall not be a pledge of or involve the faith and credit or the taxing power of the District, shall not constitute a debt of the District, the United States of America or any User Jurisdiction or any agency or instrumentality of any User Jurisdiction, and neither the District, the United States, any User Jurisdiction, nor any agency or instrumentality of any User Jurisdiction shall be liable thereon. The Series 2019A/B/D Bonds also shall not constitute the lending of the public credit for private undertakings as prohibited by the Home Rule Act of the District. The Authority has no taxing power.

Concurrent Issuance of Bonds by the Authority

Concurrently with the issuance of the Series 2019A/B/D Bonds, the Authority expects to issue the Series 2019C Subordinate Bonds, in an amount not to exceed \$100 million pursuant to the Indenture, as supplemented by the Twenty-Fifth Supplemental Indenture. The Series 2019C Subordinate Bonds are expected to finance certain Costs of the System and pay certain costs of issuance. The Authority expects that the Series 2019C Subordinate Bonds will initially bear interest at a Long-Term Rate as defined in the Twenty-Fifth Supplemental Indenture. The Series 2019C Subordinate Bonds will be secured by a pledge of Net Revenues subordinate to the pledge of Net Revenues that secures Senior Debt and on a parity with the pledge of Net Revenues that secures other Subordinate Debt, including, without limitation, other Subordinate Debt that the Authority may issue from time to time in the future. The issuance of the Series 2019C Subordinate Bonds is not dependent upon the Authority’s issuance of the Series 2019A/B/D Bonds, and the Series 2019A/B/D Bonds will be sold separately and independently from the Series 2019C Subordinate Bonds.

Rate Covenant and Financial Forecast

The Master Indenture includes a rate covenant as described below. Rates, fees and charges are established by the Authority and are not subject to regulatory approval, nor are they subject to other regulations under current law. In general, and as more fully described herein, the Rate Covenant provides that the Authority covenants to fix, charge, revise and collect rates, fees and other charges for the use of and the services furnished by the System sufficient in each Fiscal Year so that:

- (i) Revenues collected by the Authority in such Fiscal Year will be sufficient to pay at least the actual Operating Expenses and required deposits and payments; and
- (ii) Net Revenues shall be sufficient in each Fiscal Year to be at least equal to the sum of (a) an amount equal to one hundred and twenty percent (120%) of the Annual Debt Service on Senior Debt; and (b) one hundred percent (100%) of the Annual Debt Service on Subordinate Debt.

See “SECURITY FOR THE SERIES 2019A/B/D BONDS – Rate Covenant.” Additional financial information, including certain projections of revenues, disbursements and debt service coverage, is included in “FINANCIAL OPERATIONS – Projected Financial Operations” herein.

Capital Improvement Program

The Authority utilizes an annually adopted ten-year Capital Improvement Program (the “Capital Improvement Program” or the “CIP”) to plan and manage the capital investments necessary to fulfill its service missions, comply with regulatory requirements and preserve and upgrade its water and wastewater systems. The Authority updates the CIP annually in conjunction with its budget process, based on detailed project review by engineering staff, external engineering consultants retained by the Authority, operations staff and senior management. The Authority intends to finance the costs of the CIP from a number of sources, including proceeds of the Series 2019A/B/D Bonds, future bonds and other forms of indebtedness, grants, certain operating revenues and wholesale customer contributions. As more fully described herein, the Authority estimates the cost of the current ten-year CIP at \$4.96 billion on a cash disbursement basis. The Board approved the CIP on April 4, 2019. See “CAPITAL IMPROVEMENT PROGRAM.”

Miscellaneous

This Official Statement contains brief descriptions of the Series 2019A/B/D Bonds, the Authority, the System, the Capital Improvement Program, the Indenture and certain provisions of the Act. Such descriptions and the summaries of and references to all documents, statutes, reports and other instruments referred to herein do not purport to be comprehensive or definitive, and each such document, statute, report or instrument is qualified in its entirety by reference to each such document, statute, report or instrument, copies of which are available from the Authority. All references to the Series 2019A/B/D Bonds are qualified in their entirety by reference to the definitive forms thereof and the information with respect thereto contained in the Indenture. Insofar as any statements are made in this Official Statement involving matters of opinion, regardless of whether expressly so stated, they are intended merely as such and not as representations of fact.

The information in this Official Statement is subject to change without notice, and neither the delivery of this Official Statement, nor any sale made hereunder shall under any circumstances create an implication that there has been no change in the affairs of the Authority since the date hereof. This Official Statement is not to be construed as a contract or agreement between the Authority or the Underwriters and the purchasers or owners of any of the Series 2019A/B/D Bonds.

Inquiries regarding information about the Authority and the financial matters contained in this Official Statement may be directed to the Chief Financial Officer and Executive Vice President, Finance and Procurement of the Authority at (202) 787-2000.

THE SERIES 2019A/B/D BONDS

General

The Series 2019A/B/D Bonds will be dated their date of delivery and will bear interest at the rates set forth on the inside cover page of this Official Statement. Interest on the Series 2019A/B/D Bonds will be calculated on the basis of a 360-day year of twelve 30-day months, payable semi-annually on each April 1 and October 1, commencing April 1, 2020 (each, an "Interest Payment Date"), and will mature on the dates and in the principal amounts as set forth on the inside cover page of this Official Statement.

Book-Entry Only System

The Series 2019A/B/D Bonds will be issued in fully registered form and, when issued, will be held by DTC or its nominee, as securities depository with respect to the Series 2019A/B/D Bonds. Individual purchases of interests in the Series 2019A/B/D Bonds will be made in book-entry form only, in the principal amount of \$5,000 or any integral multiple thereof. Individual purchasers will not receive physical delivery of bond certificates. So long as Cede & Co. is the registered owner of the Series 2019A/B/D Bonds as nominee of DTC, references herein to the holders or registered owners of the Series 2019A/B/D Bonds will mean Cede & Co. and will not mean the beneficial owners ("Beneficial Owners") of the Series 2019A/B/D Bonds. Beneficial interests in the Series 2019A/B/D Bonds may be held through DTC directly as a participant or indirectly through organizations that are participants. See APPENDIX E – "DTC Book-Entry System and Global Clearance Procedures."

As long as the Series 2019A/B/D Bonds are held by DTC or its nominee, interest will be paid to Cede & Co., as nominee of DTC, in same-day funds on each Interest Payment Date. If the book-entry only system is discontinued, bond certificates will be delivered as described in the Indenture, and Beneficial Owners (as defined herein) will become registered owners of the Series 2019A/B/D Bonds (the "Bondholders"). If the book-entry only system is discontinued, interest on the Series 2019A/B/D Bonds shall be payable on each Interest Payment Date by check or draft mailed to the registered owner at the address as it appears on the 15th day of the month preceding an Interest Payment Date on the registration books kept by the Trustee.

Neither the Authority, the Trustee nor the Underwriters will have any responsibility or obligation to the Participants, DTC or the persons for whom they act with respect to (i) the accuracy of any records maintained by DTC or by any Direct or Indirect Participant of DTC, (ii) the providing of notice or payments to the Direct Participants, Indirect Participants or beneficial owners, (iii) the selection by DTC or by any Direct or Indirect Participant of any beneficial owner to receive payment in the event of a partial redemption of the Series 2019A/B/D Bonds or (iv) any other action taken by DTC or its partnership nominee as owner of the Series 2019A/B/D Bonds. For more information on DTC and the book-entry only system, see APPENDIX E – "DTC Book-Entry System and Global Clearance Procedures."

Redemption Provisions

Series 2019A/B Bonds

Optional Redemption. The Series 2019A/B Bonds maturing on or after October 1, 20[___], are subject to optional redemption prior to maturity on or after October 1, 20[___], from any source, in whole or in part on any date, in such order of maturities as shall be determined by the Authority (and by lot within a maturity), at a redemption price of 100% of the principal amount thereof, together with accrued interest, if any, to the redemption date.

Mandatory Redemption. The Series 2019A Bonds maturing on October 1, 20[___] (the “Series 2019A 20[___] Term Bonds”) are subject to mandatory sinking fund redemption in part (in accordance with the procedures described below in “– Selection of the Series 2019A/B Bonds to be Redeemed”), prior to maturity on October 1, in the years set forth below, at a redemption price equal to the principal amount of the Series 2019A Bonds called for redemption plus interest accrued to the redemption date.

Series 2019A 20[___] Term Bonds	
Year	Amount
[]	\$([])
[]	[]
[]	[]
[]†	[]

† Final Maturity

The Series 2019B Bonds maturing on October 1, 20[___] (the “Series 2019B 20[___] Term Bonds”), are subject to mandatory sinking fund redemption in part (in accordance with the procedures described below in “– Selection of the Series 2019A/B Bonds to be Redeemed”), prior to maturity on October 1, in the years set forth below, at a redemption price equal to the principal amount of the Series 2019B Bonds called for redemption plus interest accrued to the redemption date.

Series 2019B 20[___] Term Bonds	
Year	Amount
[]	\$([])
[]	[]
[]	[]
[]	[]
[]†	[]

† Final Maturity

The principal amount of the Series 2019A/B Bonds required to be redeemed on any redemption date pursuant to the operation of mandatory sinking fund redemption provisions will be reduced, at the option of the Authority, by the principal amount of any Series 2019A/B Bond scheduled for redemption on such redemption date or dates, that, at least 45 days prior to the mandatory sinking fund redemption date, (i) has been acquired by the Authority and delivered to the Trustee for cancellation, (ii) has been acquired and canceled by the Trustee, at the direction of the Authority, at a price not exceeding the principal amount of such Series 2019A/B Bond plus accrued interest to the date of acquisition thereof, or (iii) has been redeemed pursuant to the optional redemption provisions and not previously credited to a scheduled mandatory redemption. Upon such purchase of such Series 2019A/B Bonds, the Trustee shall then credit an amount equal to the principal of such Series 2019A/B Bonds so purchased towards the sinking fund installments for the Series 2019A/B Bonds of such maturity in such order as may be determined by the Authority in a certificate of an Authorized Official, which will direct the reduction of a ratable portion of each annual mandatory sinking fund installment requirement in accordance with the procedures set forth under “– Selection of the Series 2019A/B Bonds to be Redeemed” below.

Selection of the Series 2019A/B Bonds to be Redeemed. The particular maturities of the Series 2019A/B Bonds to be redeemed at the option of the Authority will be determined by the Authority in its sole discretion.

If less than all of a Series 2019A/B Bond of a maturity is called for prior redemption and if the Series 2019A/B Bonds are registered in book-entry only form and DTC or a successor securities depository is the sole registered owner of such Series 2019A/B Bonds, the particular Series 2019A/B Bonds or portions thereof to be redeemed shall be selected by DTC in accordance with DTC procedures, or, if the book-entry only system is discontinued, by the Trustee by lot in such manner as the Trustee in its discretion may determine. In either case, (i) the portion of any Series 2019A/B Bond to be redeemed shall be in the principal amount of \$5,000 or integral multiples

thereof and (ii) in selecting Series 2019A/B Bonds for redemption, each Series 2019A/B Bond shall be considered as representing that number of the Series 2019A/B Bonds that is obtained by dividing the principal amount of such Series 2019A/B Bond by \$5,000.

Series 2019D Bonds

Optional Redemption. The Series 2019D Bonds are subject to prior redemption by and at the sole option of the Authority, in whole multiples of \$5,000, either in whole or in part (as selected by the Authority) on any date on or after [DATE], at a redemption price equal to 100% of the principal amount redeemed, plus accrued interest to the redemption date.

Mandatory Sinking Fund Redemption. The Series 2019D Bonds maturing on [MONTH] in the years [YEAR] (the “[YEAR] Term Bonds”) are subject to mandatory sinking fund redemption by the Authority at par, plus accrued interest to the redemption date pursuant to the mandatory sinking fund requirements of the Indenture as follows:

	[MONTH]	[MONTH]
<u>Year (Interest Rate)</u>	<u>Sinking Fund Amount</u>	<u>Sinking Fund Amount</u>

unless otherwise redeemed prior to maturity, the remaining principal amount of such [YEAR] Term Bonds (\$) will be payable on [DATE].

The Series 2019D Bonds maturing on [MONTH] in the years [YEAR] (the “[YEAR] Term Bonds”) and, together with the [YEAR] Term Bonds, the “Series 2019D Term Bonds”) are subject to mandatory sinking fund redemption by the Authority at par, plus accrued interest to the redemption date pursuant to the mandatory sinking fund requirements of the Indenture as follows:

	[MONTH]	[MONTH]
<u>Year (Interest Rate)</u>	<u>Sinking Fund Amount</u>	<u>Sinking Fund Amount</u>

unless otherwise redeemed prior to maturity, the remaining principal amount of such [YEAR] Term Bonds (\$) will be payable on [DATE].

The principal amount of the Series 2019D Term Bonds required to be redeemed by operation of the mandatory sinking fund schedules set forth above may be reduced by the principal amount of any of the Series 2019D Bonds of the applicable maturity which have been theretofore delivered by the Authority to the Trustee for cancellation, or theretofore redeemed (but not through the operation of the mandatory sinking fund) or purchased or determined to be purchased by the Trustee and which have not theretofore been made the basis of such reduction, as provided in the Indenture (the “mandatory sinking fund credit”).

The particular Series 2019D Bonds to be redeemed will be selected from such maturities as shall be determined by the Authority, upon advice from Co-Bond Counsel.

[ADD MAKE WHOLE CALL?]

Selection of Series 2019D Bonds for Redemption. If less than all the Series 2019D Bonds of a particular maturity shall be called for any optional redemption or mandatory sinking fund redemption: (i) if the Series 2019D Bonds are not registered in book entry only form, any redemption of less than all of the Series 2019D Bonds will be allocated among the registered owners of such Series 2019D Bonds being redeemed as nearly as practicable in proportion to the amounts of the principal amounts of the Series 2019D Bonds owned by each registered owner, in

authorized denominations, calculated based on the formula: (principal to be redeemed) x (principal amount owned by such owner) / (total principal amount outstanding), and the particular Series 2019D Bonds to be redeemed will be determined by the Trustee in any manner as the Trustee in its sole discretion deems fair and appropriate and (ii) if the Series 2019D Bonds are in book entry only form and so long as DTC or a successor securities depository is the sole registered owner of the Series 2019D Bonds, any redemption of less than all of the Series 2019D Bonds will be done in accordance with DTC's procedures in effect at such time. It is the Authority's intent that redemption allocations made by DTC, the DTC Participants or such other intermediaries that may exist between the Authority and the Beneficial Owners be made in accordance with these same proportional provisions; provided, however, the Authority provides no assurance that DTC, the DTC Participants or any other intermediary will allocate redemptions among Beneficial Owners on such a proportional basis.

Notice of Redemption

The Authority shall not be responsible for mailing a notice of redemption to anyone other than DTC or another qualified securities depository or its nominee unless no qualified securities depository is the registered owner of the Series 2019A/B/D Bonds. If no qualified securities depository is the registered owner of the Series 2019A/B/D Bonds, a notice of redemption shall be mailed to the registered owners of the Series 2019A/B/D Bonds. See "THE SERIES 2019A/B/D BONDS – Book-Entry Only System."

The Trustee shall send notice of the call for redemption, identifying the Series 2019A/B/D Bonds or portions thereof to be redeemed, not fewer than 20 days prior to the redemption date or such shorter period as may be acceptable to DTC while the Series 2019A/B/D Bonds are in book-entry form and registered to DTC (i) by registered or certified mail or overnight express delivery, to the holder of each Series 2019A/B/D Bond to be redeemed at the address as it appears on the registration books kept by the Trustee, (ii) by registered or certified mail or overnight express delivery, to all organizations registered as securities depositories with the SEC and (iii) to each nationally recognized municipal securities information repository designated as such by the SEC. Failure to give any notice specified in (i) above, or any defect therein, shall not affect the validity of any proceedings for the redemption of any Series 2019A/B/D Bond with respect to which no such failure or defect has occurred. Failure to give any notice specified in (ii) or (iii) above, or any defect therein, shall not affect the validity of any proceedings for the redemption of any Series 2019A/B/D Bond with respect to which the notice specified in (i) above is correctly given. If the notices of redemption are sent before there is sufficient money on deposit in the applicable fund or account to pay the full redemption price of the Series 2019A/B/D Bonds, the notice of redemption of the Series 2019A/B/D Bonds shall specify that the redemption is conditional upon there being on deposit in the applicable fund or account on the redemption date sufficient money to pay the full redemption price of the Series 2019A/B/D Bonds to be redeemed.

Any notice of redemption shall be mailed by first-class mail, postage prepaid. Notice of redemption also shall be given by Electronic Means to a Depository. A certificate of the Trustee shall conclusively establish the mailing of any such notice for all purposes.

PLAN OF FINANCE

Series 2019A Bonds. Net proceeds of the Series 2019A Bonds will be used to pay the costs of the Series 2019A Project. For a description of the DC Clean Rivers Project (of which the Series 2019A Project is a portion) in this Official Statement, see "CAPITAL IMPROVEMENT PROGRAM – Categories of CIP Projects – Combined Sewer Overflow Projects." Such proceeds will be deposited in the 2019A Construction Account. The proceeds therein will be invested in Permitted Investments pursuant to the Indenture. The remainder of the proceeds of the Series 2019A Bonds will be used to pay costs of issuing the Series 2019A Bonds.

Based on the results of an independent assessment by Vigeo of the Series 2019A Project's environmental, social, and governance characteristics, the Authority has designated the Series 2019A Project as a "Green Project" and the Series 2019A Bonds as "Green Bonds."* The Authority will report annually on the allocation of proceeds to the Series 2019A Project and on certain environmental and social outcomes of the Series 2019A Project. See "INDEPENDENT SUSTAINABILITY CONSULTANT OPINION LETTER" and APPENDIX G – "Opinion of Independent Sustainability Consultant."

Series 2019B Bonds. A portion of the net proceeds of the Series 2019B Bonds will be used to pay the costs of the Series 2019B Project. See "CAPITAL IMPROVEMENT PROGRAM." Such proceeds will be deposited in the 2019B Construction Account. The proceeds therein will be invested in Permitted Investments pursuant to the

* The terms "Green Bond" and "Green Project" are not defined in and do not relate to the Indenture, and are used herein for identification purposes only.

Indenture. The remainder of the proceeds of the Series 2019B Bonds will be used to pay costs of issuing the Series 2019B Bonds.

Series 2019D Bonds. A portion of the proceeds of the Series 2019D Bonds, together with other funds of the Authority, will be deposited into an escrow account held by the Trustee pursuant to an Escrow Agreement between the Authority and the Trustee dated as of the date of issuance of the Series 2019D Bonds (such account, the “Series 2019D Escrow Account”), and will be used by the Trustee, in its capacity as escrow trustee, to redeem those certain maturities of the Series 2013A Bonds on the redemption dates and at the redemption prices set forth below (together, the “Refunded Bonds” The sufficiency of the amounts deposited in the Series 2019D Escrow Account for the refunding of the Refunded Bonds will be verified by [NAME], Certified Public Accountants, as verification agent (the “Verification Agent”). See “VERIFICATION OF MATHEMATICAL COMPUTATIONS.”

Series 2013A Bonds

<u>Maturity (October 1)</u>	<u>Principal Amount</u>	<u>Interest Rate</u>	<u>Redemption Date</u>	<u>Redemption Price</u>
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SOURCES AND USES OF FUNDS

The proceeds of the Series 2019A/B/D Bonds are expected to be applied as follows:

	<u>Series 2019A Bonds</u>	<u>Series 2019B Bonds</u>	<u>Series 2019D Bonds</u>	<u>Total</u>
Sources of Funds				
Par Amount				
Original Issue Premium				
Total Sources				
Uses of Funds				
Deposit to Series 2019A Construction Account				
Deposit to Series 2019B Construction Account				
Deposit to Series 2019D Escrow Account				
Underwriters' Discount				
Other Costs of Issuance				
Total Uses				

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SECURITY FOR THE SERIES 2019A/B/D BONDS

Lien and Pledge of the Master Indenture

General. The Series 2019A/B/D Bonds are authorized and when issued will be issued in accordance with the statutes of the District and the United States, and will constitute valid and legally binding special and limited obligations of the Authority.

The Series 2019A/B/D Bonds will constitute Subordinate Debt under the Indenture, payable solely from the Net Revenues of the System. Net Revenues are Revenues less Operating Expenses (as defined in the Indenture). Revenues are defined as all moneys received as income, rates, fees, charges, receipts, profits and other moneys derived by the Authority from its ownership and operation of the System, and for the use of and for the services furnished by the System, including Connection Fees (as defined in the Indenture), transfers from the Rate Stabilization Fund to the Revenue Fund, proceeds of any business interruption insurance, and investment earnings on all of the funds held by the Trustee under the Indenture and the Authority, except any rebate fund that may be created under the Indenture. Revenues do not include refundable customer deposits, the IMA Capital Payments (as defined in the Indenture) or other payments solely in aid of construction, the EPA Grants or similar payments, or the proceeds resulting from the sale of all or a portion of the System.

The Series 2019A/B/D Bonds are payable and secured on a subordinate basis to the Outstanding Senior Debt and all other Senior Debt hereafter issued or incurred by the Authority pursuant to the Indenture, and on a parity basis with the Outstanding Subordinate Debt and all other Subordinate Debt hereafter issued or incurred by the Authority pursuant to the Indenture. The Authority expects to issue additional Senior Debt and Subordinate Debt in the future. For a listing of the Authority's Outstanding Senior Debt and Subordinate Debt, see "OUTSTANDING INDEBTEDNESS."

The Master Indenture defines "Senior Debt" as Bonds and Other System Indebtedness, and "Bonds" as bonds, notes or other obligations issued pursuant to the Master Indenture, but not including Other System Indebtedness and Subordinate Debt. "Other System Indebtedness" means any indebtedness issued or incurred in connection with the System that the Authority is required, or has elected, to treat as payable on a parity basis with the Bonds with respect to the pledge of Net Revenues. "Subordinate Debt" means bonds, notes or other obligations issued in connection with the System that are expected to be paid from and have pledged to their payment Net Revenues on a subordinate lien basis after the pledge of Net Revenues to Senior Debt.

The Indenture pledges to the payment of the principal of and premium, if any, and interest on all Senior Debt and Subordinate Debt (at their respective levels of priority of security) that may from time to time be outstanding: (i) all right, title and interest of the Authority in and to the Net Revenues; (ii) all moneys or securities in any of the funds or Accounts established under the Indenture (other than the Operating Fund, and all Accounts in the Construction Fund other than the Construction Account, except to the extent a specific Account or subaccount therein relates, and is pledged, solely to specific series of Bonds or Subordinate Debt); and (iii) all rights and privileges of every kind and nature appurtenant to, all proceeds of, and all right, title and claim which the Authority now or may hereafter acquire in the aforesaid property, subject only to the provisions of the Indenture and the Act relating to the use and application thereof. Furthermore, the Indenture provides for specific Accounts in the Debt Service Reserve Fund to be pledged solely to the Senior Debt to which they relate and specific Accounts in the Subordinate Debt Service Reserve Fund to be pledged solely to the Subordinate Debt to which they relate. The Series 2019A/B/D Bonds are not secured by a Debt Service Reserve Fund, therefore no Account in the Subordinate Debt Service Reserve Fund will be established for the Series 2019A/B/D Bonds.

Statutory Lien. The Act provides that a pledge of the Authority is binding from the time it is made. Any funds, or property pledged, are subject to the lien of a pledge without physical delivery. The lien of a pledge is binding as against parties having any tort, contract, or other claim against the Authority regardless of notice. Neither the resolution stipulating the terms for sale of Authority bonds nor any other instrument creating a pledge need be recorded.

Segregated Funds. The Act establishes the Water and Sewer Enterprise Fund and requires the Authority to operate it in accordance with generally accepted accounting principles. The Revenue Fund created by the Master Indenture constitutes the Water and Sewer Enterprise Fund. The Revenue Fund is required to be held by the Authority, subject to the lien of the Indenture.

According to the Act, subject to the provisions made by the Authority for security of revenue bonds, all revenues, proceeds, and moneys from whatever source derived (except those collected or received from the stormwater fee) which are collected or received by the Authority will be credited to the Revenue Fund and will not, at any time, be transferred to, lapse into, or be commingled with the General Fund of the District, or any other funds or accounts of the District, except for limited circumstances under which such funds shall be transferred to the District to pay for goods and services and property contracted for by the Authority from the District, or as otherwise authorized by law.

See “THE AUTHORITY – Authority’s Relationship to the District” and “CUSTOMER BASE, RATES AND CHARGES – Components of Retail Rates and Charges – Stormwater Fee.”

Direct Payments

General. The Series 2010A Bonds are Build America Bonds, a form of “direct payment bonds” issued pursuant to the American Recovery and Reinvestment Act of 2009 (the “Recovery Act”), which allowed an issuer to apply to receive subsidy payments directly from the Secretary of the United States Treasury. An amount equal to thirty-five percent (35%) of the Authority’s semiannual interest payments on the Series 2010A Bonds is to be paid to the Authority by the federal government in the form of Direct Payments.

The Direct Payments on the Series 2010A Bonds do not constitute Revenues under the Indenture and so are not part of the pledged Net Revenues, but, upon receipt, all Direct Payments are required to be deposited by the Authority or the Trustee into the appropriate subaccount in the Subordinate Interest Account in the Subordinate Bond Fund and, upon deposit, become available to be applied solely to the purposes for which the Indenture permits funds in such subaccount, account and fund to be applied, including to pay debt service on the Series 2010A Bonds.

Rate Covenant Amendment. On October 26, 2010, the Twelfth Supplemental Indenture amended the Master Indenture to provide that, for purposes of determining the Authority’s compliance with the Rate Covenant, the amount of any Direct Payment received by the Authority or the Trustee in any Fiscal Year shall be credited against (i) Annual Debt Service on Senior Debt in such Fiscal Year if such Direct Payment is related to Senior Debt or (ii) Annual Debt Service on Subordinate Debt in such Fiscal Year if such Direct Payment is related to Subordinate Debt. This amendment became effective upon the execution of the Twelfth Supplemental Indenture.

Additional Bonds Test Amendment. The Twelfth Supplemental Indenture also amended the Master Indenture to provide that, subject to the requirements of the Master Indenture for obtaining bondholder consent, for the purposes of computing Annual Debt Service on any Direct Payment BABs or Other System Indebtedness as to which Direct Payments are expected to be made (whether previously issued or proposed to be issued by the Authority) in connection with any proposed issuance of additional Bonds or Other System Indebtedness, the amount of any Direct Payment expected to be received by the Authority or the Trustee in the then current or any future Fiscal Year shall be credited against the Annual Debt Service on such Direct Payment BABs. This amendment became effective on November 20, 2014, upon the issuance of the Authority’s Series 2014C Bonds, in connection with which the Authority obtained the required consent of a majority (specifically, 50.5%) of the Holders of the Outstanding Bonds.

No Assurances. No assurances are provided that the Authority will receive the Direct Payments. The Direct Payments do not constitute a full faith and credit guarantee of the United States of America. Such payments are required to be paid by the United States Treasury under the Recovery Act, but the amount of any Direct Payment is subject to change by the United States Congress. The Authority is obligated to make all payments of principal and interest on the Series 2010A Bonds whether or not it receives the Direct Payments pursuant to the Recovery Act.

Sequestration. Direct Payments are classified under federal budget rules as mandatory spending programs. Since 2013, mandatory spending programs, such as Direct Payments, have been subject to an automatic reduction (sequestration) pursuant to the provisions of the Budget Control Act of 2011 (the “Budget Control Act”). As a result of the sequestration, payments due to the Authority on the Series 2010A Bonds have been reduced in the following approximate amounts: (i) \$248,000 (4.3%) (Fiscal Year 2013), (ii) \$411,000 (7.2%) (Fiscal Year 2014), (iii) \$417,000 (7.3%) (Fiscal Year 2015), (iv) \$400,000 (7.0%) (Fiscal Year 2016), (v) \$394,000 (6.9%) (Fiscal Year 2017), (vi) \$377,000 (6.6%) (Fiscal Year 2018), and (vii) \$354,000 (6.2%) (Fiscal Year 2019).

According to the Report of the Office of Management and Budget (“OMB”) to the Congress for Fiscal Year 2020, and as **confirmed by the Internal Revenue Service**, interest subsidy payments to issuers of direct payment bonds processed on or after October 1, 2019, through and including September 30, 2020, will be reduced by 5.9%, unless intervening Congressional action changes the reduction percentage.

Under the Budget Control Act there may be additional sequester orders for future fiscal years through and including fiscal year 2029. Any such additional sequester order signed by the President may or may not establish a different reduction value. The Authority cannot predict what percentage, if any, cuts may be made to Direct Payments in the future. The projected financial operations of the Authority, as presented herein (see “FINANCIAL OPERATIONS – Projected Financial Operations”), assume that Direct Payments will be 32% of the interest payments on Series 2010A Bonds in each year starting in Fiscal Year 2021. The projected debt service shown in “DEBT SERVICE REQUIREMENTS – Outstanding Senior and Subordinate Debt” reflects the known subsidy reduction of 5.9% for Fiscal Year 2020, and assumes Direct Payments equal to 32% of the interest payments on Series 2010A Bonds in each year starting in Fiscal Year 2021. The Authority is obligated to make all payments of principal of and interest on the Series 2010A Bonds whether or not such Direct Payments are received.

Limited Remedies of Holders of Subordinate Debt

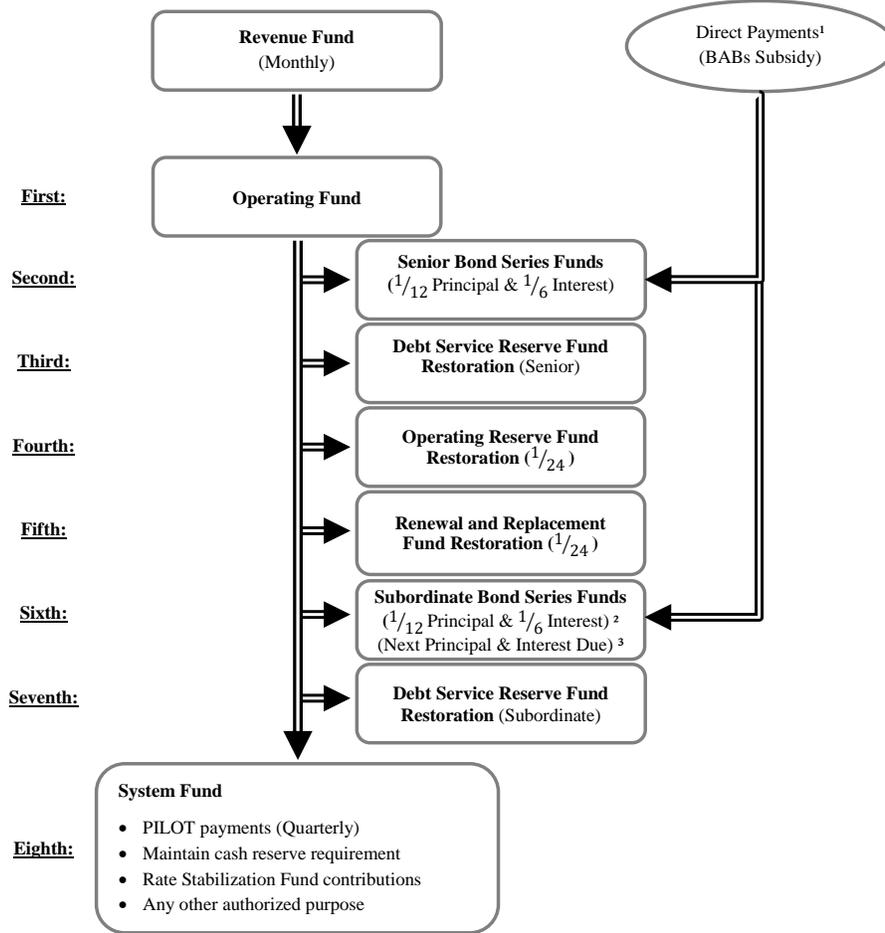
The Indenture prohibits the acceleration of Subordinate Debt if any Senior Debt (including Bonds) is outstanding. The Indenture confers upon the holders of not less than 25% of the aggregate principal amount of

Outstanding Bonds (which includes Senior Debt only, not Subordinate Debt) the right to direct the Trustee to protect and enforce their rights by mandamus or other suit, action or proceeding, and confers upon the holders of a majority of the aggregate principal amount of Outstanding Bonds the right to direct the method and place of conducting all proceedings to be taken in connection with the enforcement of the terms and conditions of the Indenture or any other proceedings under the Indenture, in accordance with the provisions of law and the Indenture. The Indenture does not confer those rights upon any specified percentage of the holders of Subordinate Debt.

Flow of Funds

The Authority deposits all revenues, as received, in the Revenue Fund. The chart below depicts a simplified flow of Revenues required by the Indenture after being deposited into the Revenue Fund. This chart is for illustrative purposes only, is in no way comprehensive or definitive, and must be read in conjunction with the entire Official Statement.

Indenture Revenue Flow of Funds



¹ The Twelfth Supplemental Indenture amended the above-described deposit requirements in the Master Indenture by providing that, upon receipt of any Direct Payment, the Authority or the Trustee shall cause it to be deposited (i) in the appropriate subaccounts in the Interest Account in the Bond Fund if such Direct Payment relates to Bonds or Other System Indebtedness, and (ii) in the appropriate subaccount in the Subordinate Interest Account in the Subordinate Bond Fund if such Direct Payment relates to Subordinate Debt, and shall cause it to be applied solely to the purposes to which the Indenture permits funds in such subaccount, account and fund to be applied.

²For fixed rate Subordinate Debt

³For variable rate Subordinate Debt

Pursuant to the Indenture, all Revenues received by the Authority shall be deposited in the Revenue Fund to be held by the Authority; provided, however, that upon an Event of Default, the Authority will transfer all amounts in all Authority-held funds to the Trustee, and the Trustee shall hold such moneys in trust for the benefit of the holders of Indebtedness.

Each month, the Authority shall transfer from the Revenue Fund to the Operating Fund an amount sufficient to pay Operating Expenses during such month. Thereafter, Net Revenues shall be disbursed on the last Business Day of each month in the following order (as noted above, the term “Series of Bonds” refers to Senior Debt):

- i. To the subaccounts in the Interest Account established for each Series of Bonds the amounts, if any, set forth in the applicable Supplemental Indentures with respect to each Series of Bonds, and an amount equal to 1/6 of the interest due on each Series of Bonds to pay interest required to be paid on any interest payment date related to such Series of Bonds.
- ii. On a parity with (i) above, to the subaccounts in the Principal Account established for each Series of Bonds and Sinking Fund Account in the Bond Fund the amounts, if any, set forth in the applicable Supplemental Indentures with respect to each Series of Bonds and an amount equal to 1/12 of the principal due on each Series of Bonds.
- iii. To the applicable Account in the Debt Service Reserve Fund with respect to each Series of Bonds the amounts, if any, necessary to restore the amount on deposit therein to the related Series Debt Service Reserve Requirement. For a description of the requirements for and the uses of the Debt Service Reserve Fund, see “Certain Reserve Funds – Debt Service Reserve Fund and Subordinate Debt Service Reserve Fund” below.
- iv. To the Operating Reserve Fund the amounts, if any, necessary to restore the amounts on deposit therein to the Operating Reserve Requirement, which requirement shall be funded within 24 months of any withdrawal and replenished from time to time by depositing 1/24 of the Operating Reserve Requirement on the last Business Day of each month after such withdrawal, if necessary. For a description of the requirements for and the uses of the Operating Reserve Fund, see “Certain Reserve Funds – Operating Reserve Fund” below.
- v. To the Renewal and Replacement Reserve Fund, to the extent that there has been a withdrawal from such fund, the amounts necessary to make the amounts on deposit therein equal to the Renewal and Replacement Reserve Requirement. Such withdrawn amounts shall be funded within 24 months by depositing in such fund 1/24 of the Renewal and Replacement Reserve Requirement on the last Business Day of each month after such withdrawal. For a description of the uses of the Renewal and Replacement Reserve Fund, see “Certain Reserve Funds – Renewal and Replacement Reserve Fund” below.
- vi. To the Subordinate Bond Fund, the amount equal to the deposits to such funds and Accounts required by the related Supplemental Indentures or other documents evidencing such debt. Generally, an amount equal to 1/6 of the interest and 1/12 of the principal next due on any fixed rate Subordinate Debt shall be deposited each month, and generally an amount equal to interest and principal next due on any variable rate Subordinate Debt shall be deposited prior to any date on which such interest and principal is due.
- vii. To the applicable Account, if any, in the Subordinate Debt Service Reserve Fund with respect to each Subordinate Debt issue the amounts, if any, necessary to restore the amount on deposit therein to the related Subordinate Debt Reserve Requirement or to reimburse the provider of any Qualified Reserve Credit Facility for amounts drawn thereunder and to pay related costs.
- viii. To the System Fund, any moneys remaining in the Revenue Fund, after all deposits and transfers required by (i) through (vii) above have been made. Moneys in the System Fund may be used for any authorized purpose. On the following dates, moneys on deposit in the System Fund shall be used to make the following payments:
 - (a) on each May 15, and quarterly thereafter, to the District to make the payment in lieu of taxes (the “PILOT”) required by the District Memorandum of Understanding relating to the PILOT dated January 29, 1998, as amended;

- (b) on each September 1, an amount retained by the Authority in the System Fund necessary to satisfy the Cash Reserve Requirement (\$125.5 million as of the date of this Official Statement); and
- (c) on each September 30, to the Rate Stabilization Fund, the amount that the Board determines based on an analysis of the Authority's financial performance conducted by the CEO and General Manager (the "CEO") and reported to the Board for approval not later than its regularly scheduled meeting in July of each Fiscal Year. For a description of the uses of the Rate Stabilization Fund, see "Certain Reserve Funds – Rate Stabilization Fund" below.

The Twelfth Supplemental Indenture amended the above-described deposit requirements in the Master Indenture by providing that, upon receipt of any Direct Payment, the Authority or the Trustee shall cause it to be deposited (i) in the appropriate subaccount in the Interest Account in the Bond Fund if such Direct Payment relates to Bonds or Other System Indebtedness, and (ii) in the appropriate subaccount in the Subordinate Interest Account in the Subordinate Bond Fund if such Direct Payment relates to Subordinate Debt, and shall cause it to be applied solely to the purposes to which the Indenture permits funds in such subaccount, account and fund to be applied. See "– Pledge of Master Indenture – Direct Payments – Sequestration" above.

For a more extensive discussion of the terms and provisions of the Indenture including the security for the Series 2019A/B/D Bonds, the funds and Accounts established by the Indenture and the purposes to which moneys in such funds and Accounts may be applied, see APPENDIX C – "Glossary and Summary of the Indenture."

Certain Reserve Funds

Debt Service Reserve Fund and Subordinate Debt Service Reserve Fund. The Indenture creates a Debt Service Reserve Fund and a Subordinate Debt Service Reserve Fund, each to be held by the Trustee. The Indenture permits, but does not require, the Authority to specify a debt service reserve requirement for each issuance of Senior Debt or Subordinate Debt and to make provision for the means by which any such reserve requirements will be met. The Authority will not specify a debt service reserve requirement for the Series 2019A/B/D Bonds.

Operating Reserve Fund. The Master Indenture creates an Operating Reserve Fund in which the Authority must maintain a balance equal to at least 60 days of operating and maintenance expenses of the prior year. Money in the Operating Reserve Fund shall be used to pay, to the extent necessary, Operating Expenses of the Authority. In addition, to the extent that the amount on deposit in the Bond Fund is insufficient to make the required interest and principal payments on Senior Debt, money in the Operating Reserve Fund shall be used prior to any withdrawal from the Debt Service Reserve Fund to satisfy any such deficiencies. The Board has adopted a policy of funding operating reserves to a level in excess of that required by the Master Indenture. See "– Discretionary Reserves" below. As of March 31, 2019 the balance in the Operating Reserve Fund was \$54.0 million, which represents 60 days of operating and maintenance expenses.

Renewal and Replacement Reserve Fund. The Master Indenture creates a Renewal and Replacement Reserve Fund to be held by the Authority to provide funding for unforeseen or emergency needs. Money in the Renewal and Replacement Reserve Fund may be used to pay for any capital expenditures related to the System. In addition, to the extent that the amounts on deposit in the Bond Fund and the Operating Reserve Fund are insufficient to make the required interest and principal payments on Senior Debt, money in the Renewal and Replacement Reserve Fund shall be used prior to any withdrawal from the Debt Service Reserve Fund to satisfy any such deficiencies. The Master Indenture allows this requirement to be met if an amount equal to 2% of the original cost value of plant in service, or some other amount as approved by the Board, is held by the Authority. The Board has adopted a policy requiring the Authority to maintain a balance of at least \$35.0 million in the Renewal and Replacement Reserve Fund. As of March 31, 2019, the balance in the Renewal and Replacement Reserve Fund was \$35.0 million.

Rate Stabilization Fund. The Master Indenture creates a Rate Stabilization Fund to be held by the Authority, the moneys in which may be transferred by the Authority to the Revenue Fund at any time. The Board has adopted a policy allowing moneys to be transferred to the Rate Stabilization Fund from the System Fund annually based on an analysis of the Authority's financial performance conducted by the CEO or designee and reported to the Board for approval during the fourth quarter of each Fiscal Year, and at other times at the direction of the Board. As of March 31, 2019, the balance in the Rate Stabilization Fund was \$61.5 million. The Authority may withdraw funds from the Rate Stabilization Fund in the future to reduce rate increases that might otherwise be required. See "FINANCIAL OPERATIONS – Reserve Funds – Rate Stabilization Fund" and "FINANCIAL OPERATIONS – Projected Financial Operations."

Discretionary Reserves. The Board has adopted a policy of funding operating reserves at a level in excess of the 60-day operating and maintenance reserve required by the Master Indenture. To comply with the Board's policy, the Authority is required to have cash reserves equal to 120 days of budgeted operating and maintenance costs calculated on an average daily balance basis, with the objective of maintaining at least \$125.5 million in operating

reserves. For purposes of calculating this requirement, the balances in the Operating Reserve Fund and the Renewal and Replacement Reserve Fund are included. For Fiscal Year 2019, the operating reserves requirement is \$125.5 million. As of March 31, 2019, the Authority had an operating reserve cash balance of \$166.3 million which exceeded the Board's policy requirement.

Pursuant to Board policy, the Authority's reserves are independently evaluated every five years. In February 2018, Amawalk independently evaluated the adequacy of the Authority's reserves and concluded that current Board policy provides for an appropriate level of reserves. Amawalk recommended that the Board may wish to amend its current policy to require the higher of \$140.0 million or 140 days of operating reserves to be consistent with the projected reserve balances in the Authority's Financial Plan. In January 2019, Authority staff recommended to further enhance the Authority's cash position and maintain a target of 250 days of cash on hand. As of March 31, 2019, there were no material differences in the balances shown above for the preceding reserve funds and the Rate Stabilization Fund.

Rate Covenant

Master Indenture Covenant. The Master Indenture includes a rate covenant (the "Rate Covenant") as described below. Rates, fees and charges are established by the Authority and are not subject to regulatory approval, nor are they subject to other regulations under current law. (For a description of the pledge of the District not to limit or alter rights vested in the Authority to fulfill agreements made with holders of its bonds, see "COVENANT BY THE DISTRICT OF COLUMBIA.") The Authority has never failed to satisfy the Rate Covenant, which provides that the Authority shall fix, charge, revise and collect rates, fees and other charges for the use of and the services furnished by the System sufficient in each Fiscal Year so that:

- i. Revenues collected by the Authority in such Fiscal Year will be sufficient to pay at least: (a) the actual Operating Expenses; (b) Annual Debt Service on Senior Debt; (c) any amount necessary to be deposited in any Account in the Debt Service Reserve Fund relating to a Series of Bonds to restore the amount on deposit therein to the Series Debt Service Reserve Requirement; (d) the amount required to pay Annual Debt Service on the Subordinate Debt (including any reserves in connection therewith and the restoration thereof); (e) any amount necessary to be deposited in the Operating Reserve Fund and the Renewal and Replacement Reserve Fund to maintain the required balances therein; and (f) any amount necessary to make any PILOT payments in such Fiscal Year; and
- ii. Net Revenues shall be sufficient in each Fiscal Year to be at least equal to the sum of (a) an amount equal to one hundred and twenty percent (120%) of the Annual Debt Service on Senior Debt; and (b) one hundred percent (100%) of the Annual Debt Service on Subordinate Debt.

If at the end of any Fiscal Year the Authority is not in compliance with the Rate Covenant, or if the Authority fails for three consecutive months to make the deposits required under the Indenture to the Interest Account and the Principal Account (or the Sinking Fund Account, as applicable) or there is a deficiency in a Series Debt Service Reserve Account for longer than three consecutive months, the Authority shall immediately request a Qualified Independent Consultant to submit a written report and recommendations with respect to increases in the Authority's rates, fees and other charges and improvements in the operations of and the services rendered by the System and the Authority's accounting and billing procedures necessary to bring the Authority into compliance with the Rate Covenant. The report and recommendations shall be filed with the Trustee and the Authority within 120 days from the date of discovery of noncompliance with the Rate Covenant. The Authority shall promptly revise its rates, fees and charges, and alter its operations and services to conform with the report and recommendations of the Qualified Independent Consultant to the extent permitted by law.

Deposit and Crediting of Direct Payments. The Twelfth Supplemental Indenture amended the Master Indenture to provide that, for purposes of determining the Authority's compliance with the Rate Covenant, the amount of any Direct Payment received by the Authority or the Trustee in any Fiscal Year shall be credited against (i) Annual Debt Service on Senior Debt in such Fiscal Year if such Direct Payment related to Senior Debt or (ii) Annual Debt Service on Subordinate Debt in such Fiscal Year if such Direct Payment related to Subordinate Debt. This amendment became effective upon the execution of the Twelfth Supplemental Indenture. See "SECURITY FOR THE SERIES 2019A/B/D BONDS – Direct Payment Bonds – Sequestration."

Additional Board Policy. In addition to the Rate Covenant described above, in 1997, the Board adopted a financial policy of fixing, charging, revising and collecting rates, fees and other charges for the use of and the services furnished by the System sufficient in each Fiscal Year so that Net Revenues shall be at least equal to one hundred and forty percent (140%) of the Annual Debt Service on Senior Debt in each such Fiscal Year. See "FINANCIAL OPERATIONS – Financial Policies." To date, the Authority consistently has met or exceeded this policy goal. There can be no assurance, however, that the Board will not change this financial policy or that the Authority will continue to meet this policy goal.

Additional Senior Debt

The Indenture provides that the Authority may issue additional Senior Debt and Other System Indebtedness, including Bonds, to pay Costs of the System only upon satisfaction of certain requirements, including, among other things, receipt by the Trustee of the following:

- i. evidence that upon issuance of such Bonds, each Series Debt Service Reserve Account within the Debt Service Reserve Fund will contain the applicable Series Debt Service Reserve Requirement; and
- ii. either: (a) a certificate of the Authorized Representative of the Authority stating that, based on the Authority's financial records, the Authority would have been able to meet the Rate Covenant taking into account (1) the maximum Annual Debt Service on the proposed additional Series of Bonds, and (2) the rates, fees and other charges which are in effect at the time of the delivery of the proposed additional Series of Bonds; or (b) a written statement of a Qualified Independent Consultant, which projects Operating Expenses, Revenues and Net Revenues for five full Fiscal Years following the date of issuance of such proposed additional Series of Bonds, which projection does not include the actual debt service for any Indebtedness to be refunded, and which demonstrates that, on the basis of such projection, the Authority can comply with the Rate Covenant.

If any Bonds are issued to refund any Indebtedness, the Trustee must receive the following:

- i. evidence that the Authority has made provision as required by the Indenture for the payment or redemption of all Indebtedness to be refunded; and
- ii. either: (a) a written determination by the Authorized Representative of the Authority that the Annual Debt Service requirements for each Fiscal Year in which there will be Outstanding Indebtedness not to be refunded will not increase more than 5% over what the Annual Debt Service requirements for such Fiscal Year would have been on all Senior Debt immediately prior to the issuance of such Bonds, and that the final maturity of Indebtedness being refunded has not been extended; or (b) a certificate of the Authority stating that, based on the Authority's financial records, the Authority would have been able to meet the Rate Covenant, taking into account (1) the maximum Annual Debt Service on the proposed additional Series of Bonds, and (2) the rates, fees and other charges which are in effect at the time of the delivery of the proposed additional Series of Bonds; or (c) a written statement of a Qualified Independent Consultant, that projects Operating Expenses, Revenues and Net Revenues for five full Fiscal Years following the date of issuance of such proposed additional Series of Bonds, which projection does not include the actual debt service for any Indebtedness to be refunded, and that demonstrates that, on the basis of such projection, the Authority can comply with the Rate Covenant.

The Authority may incur or refinance Other System Indebtedness provided that: (i) the documents relating to the Other System Indebtedness acknowledge that such debt constitutes Other System Indebtedness under the Master Indenture and is subject to the applicable terms and conditions thereof, and specify the amounts and due dates of Annual Debt Service with respect to the Other System Indebtedness; (ii) the conditions of the Master Indenture regarding the issuance of Bonds have been met as if the Other System Indebtedness was an additional Series of Bonds; (iii) the Trustee receives written notice of the issuance of the Other System Indebtedness and the material terms and conditions thereof, and the Trustee shall register the holder as owner thereof as such on its books and records; and (iv) the Trustee receives an Opinion of Counsel that the documents creating the Other System Indebtedness have been duly authorized, executed and delivered on behalf of the Authority and constitute valid, binding and enforceable obligations. In connection with the incurrence of any Other System Indebtedness, the Trustee shall enter into an intercreditor arrangement with the holder of such Other System Indebtedness, the terms of which shall be determined at the time of incurrence of such Other System Indebtedness.

The Master Indenture was amended with bondholder consent to include provisions regarding the crediting of Direct Payments for the purposes of computing Annual Debt Service on any Direct Payment BABs or Other System Indebtedness as to which Direct Payments are expected to be made in connection with any proposed issuance of additional Bonds or Other System Indebtedness. See "SECURITY FOR THE SERIES 2019A/B/D BONDS – Direct Payments – Sequestration."

Additional Subordinate Debt

Under the Indenture, the Authority may at any time issue Subordinate Debt and pledge Net Revenues thereto so long as rates, fees and charges are in effect or scheduled to go into effect to meet the Rate Covenant immediately after the issuance of such Subordinate Debt. The Authority has modified the Master Indenture to include provisions regarding the crediting of Direct Payments for the purposes of computing Annual Debt Service on any

Direct Payment BABs or other Indebtedness as to which Direct Payments are expected to be made in connection with any proposed issuance of additional Bonds, Subordinate Debt or Other System Indebtedness. See “SECURITY FOR THE SERIES 2019A/B/D BONDS – Direct Payments – Sequestration.”

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DEBT SERVICE REQUIREMENTS

Outstanding Senior and Subordinate Debt

The following tables set forth the annual principal and interest requirements for (i) Outstanding Senior Debt, (ii) Outstanding Subordinate Debt, (iii) the Series 2019A/B/D Bonds and (iv) the Series 2019C Subordinate Bonds, as well as annual and aggregate totals.

Fiscal Year Ending September 30 ¹	Outstanding Subordinate Debt	Series 2019A/B/D Bonds			Series 2019C Subordinate Bonds ¹¹	Total Outstanding Subordinate Debt ^{1,2,3,4,5,6,7}	Direct payments Relating to Series 2010A Bonds	Total Subordinate Debt ¹⁰	Outstanding Senior Debt	Total Senior and Subordinate Debt
		Principal	Interest	Total						
2020	130,988,118				1,805,556	132,793,674	(5,373,250)	127,420,424	76,385,100	203,805,524
2021	136,707,080				2,000,000	138,707,080	(5,161,933)	133,545,147	76,386,225	209,931,372
2022	137,362,379				2,000,000	139,362,379	(5,099,176)	134,263,203	76,385,850	210,649,053
2023	137,289,675				2,000,000	139,289,675	(5,033,083)	134,256,593	76,395,200	210,651,793
2024	152,473,365				2,000,000	154,473,365	(4,963,430)	149,509,935	61,134,725	210,644,660
2025	152,378,341				3,250,000	155,628,341	(4,878,673)	150,749,667	61,134,950	211,884,617
2026	152,282,487				3,250,000	155,532,487	(4,791,835)	150,740,652	61,133,200	211,873,852
2027	152,183,426				3,250,000	155,433,426	(4,702,827)	150,730,599	61,137,400	211,867,999
2028	152,095,687				3,250,000	155,345,687	(4,611,477)	150,734,210	61,134,950	211,869,160
2029	159,633,009				3,250,000	162,883,009	(4,426,435)	158,456,574	53,018,750	211,475,324
2030	159,423,544				3,250,000	162,673,544	(4,232,061)	158,441,483	50,157,500	208,598,983
2031	159,076,435				3,250,000	162,326,435	(4,034,152)	158,292,282	49,849,750	208,142,032
2032	158,990,243				3,250,000	162,240,243	(3,830,589)	158,409,653	53,363,500	211,773,153
2033	158,759,204				3,250,000	162,009,204	(3,618,456)	158,390,748	53,022,250	211,412,998
2034	160,238,264				3,250,000	163,488,264	(3,399,962)	160,088,302	53,023,750	213,112,052
2035	159,995,850				3,250,000	163,245,850	(3,174,929)	160,070,921	53,020,000	213,090,921
2036	160,033,895				3,250,000	163,283,895	(2,944,242)	160,339,653	53,024,500	213,364,153
2037	147,913,487				3,250,000	151,163,487	(2,705,427)	148,458,060	55,525,000	203,983,060
2038	146,594,099				3,250,000	149,844,099	(2,459,985)	147,384,114	52,574,750	199,958,864
2039	146,030,490				3,250,000	149,280,490	(2,207,298)	147,073,192	51,263,000	198,336,192
2040	147,172,963				3,250,000	150,422,963	(1,948,692)	148,474,271	51,257,750	199,732,021
2041	138,698,608				3,250,000	141,948,608	(971,165)	140,977,442	55,319,750	196,297,192
2042	140,395,952				3,250,000	143,645,952	(741,097)	142,904,855	55,316,450	198,221,305
2043	146,507,434				3,250,000	149,757,434	(502,723)	149,254,711	55,312,700	204,567,411
2044	146,170,915				3,250,000	149,420,915	(255,779)	149,165,136	55,321,450	204,486,586
2045	74,090,504				3,250,000	77,340,504	-	77,340,504	64,570,000	141,910,504
2046	49,159,025				3,250,000	52,409,025	-	52,409,025	64,569,550	116,978,575
2047	42,708,762				3,250,000	45,958,762	-	45,958,762	64,569,300	110,528,062
2048	42,708,463				3,250,000	45,958,463	-	45,958,463	60,525,500	106,483,963
2049	14,507,998				3,250,000	17,757,998	-	17,757,998	60,524,000	78,281,998
2050	11,873,750				23,250,000	35,123,750	-	35,123,750	30,502,750	65,626,500
2051	-				22,600,000	22,600,000	-	22,600,000	30,498,000	53,098,000
2052	-				21,950,000	21,950,000	-	21,950,000	30,499,000	52,449,000
2053	-				21,300,000	21,300,000	-	21,300,000	16,849,000	38,149,000
2054	-				20,650,000	20,650,000	-	20,650,000	16,849,000	37,499,000
2055-2014 ⁸	-				-	-	-	-	16,849,000	16,849,000
2105	-				-	-	-	-	44,918,000	44,918,000
2106	-				-	-	-	-	44,917,758	44,917,758
2107	-				-	-	-	-	44,918,480	44,918,480
2108	-				-	-	-	-	44,917,986	44,917,986
2109	-				-	-	-	-	44,918,053	44,918,053
2110	-				-	-	-	-	44,918,215	44,918,215
2111	-				-	-	-	-	44,917,860	44,917,860
2112	-				-	-	-	-	44,918,233	44,918,233
2113	-				-	-	-	-	44,918,340	44,918,340
2114	-				-	-	-	-	44,918,040	44,918,040
Total⁹	\$3,974,443,450				\$200,805,556	\$4,175,249,006	\$(86,068,676)	\$4,089,180,330	\$3,193,185,515	\$7,282,365,845

* Certain totals may not add due to rounding. Data shown as of date of posting.

- ¹ Amounts due October 1 are shown as debt service for the preceding Fiscal Year ending September 30 (since the amounts actually are required to be set aside in such Fiscal Year). For example, debt service payments due October 1, 2020, are shown in the Fiscal Year ending September 30, 2020.
- ² Outstanding Subordinate Debt is calculated excluding the impact of Direct Payments related to the Series 2010A Bonds. See “SECURITY FOR THE SERIES 2019A/B/D BONDS – Direct Payments – Sequestration.”
- ³ Interest on Series 2016B Bonds (Environmental Impact Bonds) is calculated through the mandatory tender date of April 1, 2021 at the fixed term rate of 3.43%, and at an assumed rate of 3.25% thereafter through final maturity.
- ⁴ The Authority currently has \$29.2 million of Commercial Paper outstanding, all of which is assumed to remain outstanding upon issuance of the Series 2019A/B/D Bonds. Debt service is based on a hypothetical amortization of \$29.2 million of Commercial Paper over 20 years with an assumed interest rate of 3.25%.
- ⁵ Includes the Authority's Debt Service requirements for Government Notes associated with Jennings Randolph.
- ⁶ Series 2014B Bonds are weekly-reset variable rate bonds payable through a Liquidity Facility provided by TD Bank, N.A., which expires on July 23, 2020. For calculation of the projected debt service requirement, the all-inclusive rate was assumed to be 2.00% in 2020, 2.50% in 2021 and 3.25% thereafter. The debt is assumed to amortize in Fiscal Year 2041 – Fiscal Year 2050.
- ⁷ The Authority currently has \$50.0 million of Extendable Maturity Commercial Paper outstanding. Debt service is based on a hypothetical amortization of 30 years with an assumed interest rate of 3.25%.
- ⁸ Amounts shown for Fiscal Year 2055 – Fiscal Year 2104 are annual totals for each fiscal year and do not represent the cumulative total.
- ⁹ Amounts represent cumulative totals for all fiscal years shown. Totals from consolidated rows are included.
- ¹⁰ Total Subordinate Debt is calculated including the impact of Direct Payments related to the Series 2010A Bonds. With respect to the effect of sequestration on the receipt by the Authority of Direct Payments on its Series 2010A Bonds, a reduction of 5.9% was applied to 2020. Thereafter, the subsidy amount is assumed to be 32% of the interest payments. See “SECURITY FOR THE SERIES 2019A/B/D BONDS – Amendment of the Master Indenture” and for a discussion of the effect of sequestration on the Direct Payments to be received by the Authority, see “SECURITY FOR THE SERIES 2019A/B/D BONDS – Direct Payments - Sequestration.”
- ¹¹ Series 2019C Subordinate Bonds anticipated to be issued by November 6, 2019; Assumes \$100.0 million in proceeds issued at par with an equal principal structure from 10/1/2050 - 10/1/2054; Assumed initial rate of 2.00% through the assumed mandatory tender date of 10/1/2024 and then assumed 3.25% thereafter.
- Source: Authority records.*

List of Outstanding Indebtedness

The Authority's indebtedness as of the date of this Official Statement is set forth in Table 1 below. For a summary of the annual debt service payments for the Authority's existing indebtedness, see "FINANCIAL OPERATIONS – Debt Service."

Table 1. Outstanding Indebtedness
(\$ in thousands)

	Original Principal Amount	Interest Rates	Final Maturity	Amount Outstanding as of 10/1/2019 ¹
Senior Debt				
Series 1998 Bonds	\$266,120	5.50%	2028	\$109,870
Series 2014A Bonds	350,000	4.81	2114	350,000
Series 2017A Bonds	100,000	4.00-5.00	2052	100,000
Series 2017B Bonds	200,000	4.00-5.00	2044	193,760
Series 2018A Bonds	100,000	5.00	2049	100,000
Series 2018B Bonds	200,000	5.00	2049	196,675
Total Senior Debt				\$1,050,305
Subordinate Debt				
<i>Subordinate Bonds</i>				
Series 2010A Bonds	300,000	4.07-5.52 ²	2044	300,000
Series 2012A Bonds	177,430	4.00-5.00	2037	142,665
Series 2012C Bonds	163,215	4.00-5.00	2033	163,215
Series 2013A Bonds	300,000	4.75-5.00	2048	300,000
Series 2014B Bonds	100,000	VR ³	2050	100,000
Series 2014C Bonds	377,700	3.00-5.00	2044	376,580
Series 2015A Bonds	100,000	2.00-5.00	2045	97,420
Series 2015B Bonds	250,000	5.00-5.25	2044	250,000
Series 2016A Bonds	389,110	5.00-5.25	2039	377,575
Series 2016B Bonds (Environmental Impact Bonds)	25,000	3.43 ⁴	2046	25,000
<i>Government Notes</i>				
Jennings Randolph Reservoir Debt	\$18,269	3.25%	2041	\$11,640
<i>Commercial Paper Notes⁵</i>				
Series C CP Notes (taxable)	\$29,200 ⁶	VR	2020 ⁷	\$29,200
<i>Extendable Municipal Commercial Paper Notes</i>				
Series A EMCP Notes	\$50,000 ⁸	VR	N/A ⁹	\$50,000
Total Subordinate Debt				\$2,223,295
Total				\$3,273,600

¹ Amounts outstanding do not reflect any amortization of accrued principal.

² Taking into account the Direct Payment subsidy, the Series 2010A Bonds had an all-in-true interest cost of 3.6%. With respect to the effect of sequestration on the receipt by the Authority of Direct Payments on its Series 2010A Bonds, see "SECURITY FOR THE SERIES 2019A/B/D BONDS – Direct Payments – Sequestration."

³ The Series 2014B Bonds are weekly-reset variable rate bonds supported by a Liquidity Facility provided by TD Bank, N.A.

⁴ Interest on Series 2016B Bonds (Environmental Impact Bonds) is calculated through the mandatory tender date of April 1, 2021 at the fixed term rate of 3.43%, and at an assumed rate of 3.25% thereafter through final maturity.

⁵ Maximum amount authorized for the CP Notes (Series B CP Notes and Series C CP Notes) is \$150 million; the CP Notes are supported by a Letter of Credit provided by Landesbank Hesse-Thüringen Girozentrale; the Series A CP Notes are not currently authorized for issuance.

⁶ Maximum amount authorized to be outstanding at any one time for the Series C CP Notes is \$50 million.

⁷ Final maturity of the CP Notes reflects expiration of current credit facility.

⁸ Maximum amount authorized to be outstanding at any one time for the Series A EMCP Notes is \$100 million.

⁹ The Series A EMCP notes are placed for an original maturity date not to exceed 90 days. At their original maturity date, the EMCP notes may be repaid, remarketed and resold as new Series A EMCP notes, or extended at the option of the Authority to an extended maturity date not greater than 270 days from their initial issuance. Should the Series A EMCP Notes be remarketed and resold, upon such resale the Series A EMCP Notes will mature on such date or dates as provided in the terms of the remarketing and resale (up to a maximum original maturity date of 90 days and a maximum extended maturity date of 270 days).

Source: Authority records.

Outstanding Senior Debt

As indicated in Table 1, as of October 1, 2019, the Authority had Senior Debt outstanding in the aggregate principal amount of \$1,050,305,000 consisting of its Public Utility Senior Lien Revenue Bonds, Series 1998 (the “Series 1998 Senior Bonds”), its Public Utility Senior Lien Revenue Bonds, Series 2014A (Federally Taxable) (Green Bonds) (the “Series 2014A Senior Bonds”), its Public Utility Senior Lien Revenue Bonds, Series 2017A (Green Bonds) (the “Series 2017A Senior Bonds”), its Public Utility Senior Lien Revenue Bonds, Series 2017B (the “Series 2017B Senior Bonds”), its Public Utility Senior Lien Revenue Bonds, Series 2018A (Green Bonds) (the “Series 2018A Senior Bonds”) and its Public Utility Senior Lien Revenue Bonds, Series 2018B (the “Series 2018B Senior Bonds”). The Authority expects to issue additional Senior Debt in the future to finance capital improvements to the System. See “CAPITAL IMPROVEMENT PROGRAM.”

Outstanding Subordinate Debt

The Subordinate Debt summarized in Table 1 consists of the following categories of outstanding debt: (i) Subordinate bonds (including Environmental Impact Bonds); (ii) Government Notes; (iii) Commercial Paper Notes; and (iv) Extendable Municipal Commercial Paper Notes (the “EMCP Notes”). As of October 1, 2019, the Authority had Subordinate Debt outstanding in the aggregate principal amount of \$2,223,295,266.

Subordinate Bonds. As of October 1, 2019, \$2,132,455,000 of Subordinate bonds was outstanding, consisting of its Public Utility Subordinate Lien Revenue Bonds of various series listed in Table 1. The Authority expects to issue additional Subordinate bonds in the future to finance capital improvements to the System. See “CAPITAL IMPROVEMENT PROGRAM.”

Environmental Impact Bonds. On September 29, 2016, the Authority issued \$25 million of tax-exempt Public Utility Subordinate Lien Revenue Bonds, Series 2016B (Environmental Impact Bonds) (the “Series 2016B Bonds”). The Series 2016B Bonds are multimodal variable rate bonds, initially issued bearing a 3.43% fixed rate through the mandatory tender date, April 1, 2021. The Series 2016B Bonds are the Authority’s first environmental impact bonds to finance green infrastructure. The Series 2016B Bonds are designated as environmental impact bonds and, as such, include provisions for the possibility of an outcome payment by the Authority to the original purchasers of the Series 2016B Bonds, and for the possibility of a risk share payment by such original purchasers to the Authority depending upon the results achieved by the green infrastructure financed with the proceeds of the Series 2016B Bonds. The potential outcome payment by the Authority is an unsecured obligation and is estimated to be \$3.3 million, due in Fiscal Year 2021. The net proceeds of the issuance are being used for construction of green infrastructure for the Rock Creek Project A (RC-A). The green infrastructure is designed to mimic natural processes to absorb and slow surges of stormwater during periods of heavy rainfall, reducing the incidence and volume of combined sewer overflows that pollute the District’s waterways. As of October 1, 2019, \$25 million of the Series 2016B Bonds was outstanding.

WIFIA Loans. The Authority has applied for loans to finance a portion of its CIP pursuant to the Water Infrastructure Finance and Innovation Act of 2014 (WIFIA), a federal credit program administered by EPA for eligible water and wastewater infrastructure projects. The application amount is a total of \$144 million to be disbursed over multiple years. If such loans are approved, it is anticipated that (i) the amount of the bonds issued in future years by the Authority will be reduced by the principal amount of the loans received from the WIFIA program; and (ii) the annual debt service payments on such loans will be approximately equal to or less than the debt service that would be required if the Authority issued bonds in lieu of accepting the loan proceeds.

Government Notes. The Authority is responsible for debt service on notes payable to the federal government for the construction of the Jennings Randolph Reservoir. As of October 1, 2019, \$11,640,266 of Government Notes was outstanding. Upon the issuance of the Series 2019A/B/D Bonds, the amount of outstanding Government Notes will remain unchanged.

Commercial Paper Notes. The Authority has established a commercial paper program to provide interim financing for Costs of the System, consisting of three series of notes, each as Subordinate Debt: (i) the tax-exempt Series A CP Notes, which are currently not authorized or enhanced by a liquidity facility (although the Authority has the right to authorize the Series A CP Notes in the future), (ii) the tax-exempt Series B CP Notes in an aggregate principal amount not to exceed \$100 million, and (iii) the taxable Series C CP Notes in an aggregate principal amount not to exceed \$50 million (collectively, the “Commercial Paper Notes”). To provide liquidity and credit support for the Series B CP Notes and the Series C CP Notes, the Authority obtained irrevocable, direct-pay letters of credit (the “Letters of Credit”) issued by Landesbank Hessen-Thüringen Girozentrale, New York Branch (the “Bank”) which expire on May 15, 2020. In connection with the Bank’s issuance of the Letters of Credit, the Authority and the Bank entered into a Reimbursement Agreement for each series of CP Notes, each dated as of May 1, 2015, each as amended (collectively, the “Reimbursement Agreements”) that obligates the Authority to pay Bank Obligations and Reimbursement Obligations (both as defined in the Eleventh Supplemental Indenture relating to the Commercial Paper Notes) and Fee Obligations (as defined in each Reimbursement Agreement) to the Bank. The Bank Obligations, the

Reimbursement Obligations and Fee Obligations are Subordinate Debt under the Indenture. As of October 1, 2019, \$29.2 million of the Series C CP Notes was outstanding.

Extendable Municipal Commercial Paper Notes. The Authority has established an extendable municipal commercial program to provide an additional source of interim financing for Costs of the System. The EMCP Notes are not supported by a credit facility or credit enhancement, but instead are solely supported by a subordinate lien on and pledge of Net Revenues on a parity with the lien on and pledge of Net Revenues that secures Outstanding Subordinate Debt and any other Subordinate Debt that the Authority may issue in the future. The Board has authorized one series of EMCP Notes not to exceed \$100 million outstanding at any one time. As of October 1, 2019, \$50 million of the EMCP Notes was outstanding.

Interest Rate Exchange Agreements and Guaranteed Investment Contracts

The Authority has not previously entered into any interest rate exchange agreements or any guaranteed investment contracts.

THE AUTHORITY

General

The Authority is a corporate body and an independent authority created pursuant to the Act that has a separate legal existence within the District government. It was created in 1996 to expedite the repair, replacement, rehabilitation, modernization and extension of existing water distribution and sewage collection, treatment and disposal systems, and the financing, on a self-sustaining basis, of capital and operation expenses relating thereto. The Authority began operations on October 1, 1996, and in June 2010, adopted a new logo and rebranded itself as “DC Water.” Prior to creation of the Authority, the District, through its Department of Public Works, Water and Sewer Utility Administration (“WASUA”), owned, operated and maintained the System. In accordance with the Act, the District authorized the Authority to use all of the property and assets of the System and transferred to the Authority any liabilities of the District that were directly attributable to the System. The District has retained full legal title to, and a complete equitable interest in, the System. In accordance with the Act, however, the System must remain under the control of the Authority for as long as any Authority revenue bonds remain outstanding.

The Authority currently provides retail water and wastewater services to approximately 700,000 residents of the District of Columbia and wholesale wastewater conveyance and treatment to approximately 1.6 million residents of Prince George’s and Montgomery Counties in Maryland and Fairfax and Loudoun Counties in Virginia. In addition, the Authority annually serves approximately 22.0 million visitors to the area and approximately 800,000 workers in the District. In addition to providing services to the White House, the U.S. Congress and the Supreme Court, the Authority also counts among its customers a number of international organizations, including the International Monetary Fund and numerous diplomatic embassies. The Authority also provides services to a number of nationally recognized cultural and educational institutions, including the John F. Kennedy Center for the Performing Arts, and Georgetown, Howard, American, Catholic and George Washington Universities.

The Authority operates the largest advanced wastewater treatment facility in the United States and is in material compliance with all requisite permits. Since its creation as an independent authority of the District, the Authority has become a leader in the water and wastewater industry. The Board has provided stable leadership and a focus on establishing long-term policies and planning, particularly financial stability. Under its leadership, the Authority has adopted and implemented financial and rate-setting policies that have enhanced financial performance. The Authority’s unrestricted cash, cash equivalents and investment balances have increased from \$55.8 million as of September 30, 1998, to \$232.0 million as of September 30, 2018. The Authority’s operating revenues have increased from \$258.4 million in Fiscal Year 1998 to \$684.5 million in Fiscal Year 2018.

The Authority’s accomplishments are consistently recognized by industry associations and publications. The Government Finance Officers Association (“GFOA”) has given the Authority the Certificate of Achievement for Excellence in Financial Reporting Program every year since 1997, and the Distinguished Budget Presentation Award every year since 2001. In 2016, the Authority also received the Excellence in Government Finance Award, and the Excellence in Public Finance Award for its Environmental Impact Bond, both from the GFOA, the Healthiest Employer Award from *SmartCEO*, the Utility of the Future Award from the *National Association of Clean Water Agencies*, and the Non-Traditional Deal of the Year from *The Bond Buyer* for its Environmental Impact Bond.

In 2017, the Authority received (i) the Utility of the Future in Beneficial Biosolids Refuse from *WEF/WERF/NACWA/EPA*, (ii) the Platinum Peak Performance Award for 5 years of 100% compliance with NPDES requirements from the *National Association of Clean Water Agencies*, (iii) the “Unbuilt” Award and Jurors’ Citation in Conceptual Unbuilt Architecture for the Authority’s Headquarters Building from the *American Institute of Architects, Maryland and Northern Virginia Chapters*, (iv) the Tunneling Achievement Award for the Blue Plains Tunnel from *Breakthroughs in Tunneling*, (v) the Project of the Year, Water/Environment Project of the Year overall and for the Mid-

Atlantic for the Blue Plains Tunnel from *Engineering News Record*, (vi) the Sustainability Initiative of the Year for the Anacostia River Tunnel from the *International Tunneling Awards*, (vii) Excellence in Concrete Award for the First Street Tunnel from *National Capital Chapter American Concrete Institute*, and (viii) 100 Best Fleets and Green Fleet Awards from *National Association of Fleet Administrators*, and (ix) Leading Fleet Award from *Government Fleet*.

In 2018, the Authority received (i) the Utility of the Future Award from the *National Association of Clean Water Agencies*, (ii) Honorable Mention in the Spaces, Place and Cities category in the 2018 Innovation by Design Awards Program by *Fast Company*, (iii) Global Best Project Award – Award of Merit in Water/Wastewater for the Anacostia River Tunnel project from *Engineering News-Record*, (iv) Mid-Atlantic Best Project Awards – Award of Merit Water/Wastewater for the Anacostia River Tunnel from *Engineering News-Record*, (v) Tunneling and Underground Space Award – Sustainability Initiative of the Year from the *International Tunneling Association* for the DC Clean Rivers Project, (vi) 2018 Outstanding Shotcrete Project of the Year in the Underground Category from the *American Shotcrete Association* for the Tuber Creek Sewer Repair, (vii) Excellence in Dispute Avoidance and Resolution Award from the *Disputes Review Board Foundation*, (viii) Distinguished Budget Presentation Award from the *Government and Finance Officers Association*, (ix) Certificate of Achievement for Excellence in Financial Reporting from the *Government and Finance Officers Association*, (x) 100 Best Fleets from *National Association of Fleet Administrators*, (xi) Platinum Peak Performance Award recognizing 100 percent compliance with the NPDES permit limits for a consecutive five-year period from *National Association of Clean Water Agencies*, (xii) Certification in Business Continuity Management System, (xiii) Conditional Accreditation from the *Emergency Management Accreditation Program*.

Purposes and Powers

The Act requires the Authority to establish, fix and revise fees, rates or other charges for the use of, or services furnished, rendered or made available by the System, owned, leased or utilized by the Authority at least in an amount sufficient, together with other revenues available to the Authority, if any, to pay its costs, the principal of and interest on and other requirements pertaining to its bonds, and to make transfers to the District of amounts equal to the debt service payments on the District General Obligation Bonds, which financed WASUA capital projects, as such debt service and transfers become due and payable. All such General Obligation Bonds are now retired.

Pursuant to the Home Rule Act, the Council delegated to the Authority, under the Act, its power to issue revenue bonds, including the Series 2019A/B/D Bonds, for the purpose of financing “water and sewer facilities” (as such term is defined in the Home Rule Act). Pursuant to the Home Rule Act and the Act, the Authority is required to submit its annual operating budget to the District for its review and recommendations; however, the District has no power to change the annual budget of the Authority. After receiving the Authority’s budget, the District then submits its annual operating budget, of which the Authority’s budget is a part, to the U.S. Congress for approval. See “– Authority’s Relationship to the District” and “FINANCIAL OPERATIONS – Annual Budget.”

Board of Directors

The Authority is governed by a Board of Directors consisting of 11 principal and 11 alternate members, each appointed for a staggered four-year term. Six principal members (appointed by the Mayor of the District with the advice and consent of the Council) represent the District and five principal members (appointed by the Mayor on the recommendations of the User Jurisdictions) represent the User Jurisdictions, two each from Prince George’s and Montgomery Counties in Maryland, and one from Fairfax County, Virginia. The powers of the Authority are vested in and exercised by the Board at meetings duly called and held where a quorum of at least six members is present. All Board members participate in decisions directly affecting the management of joint-use facilities which are those facilities used by all three jurisdictions. Only the six members appointed to represent the District participate in those matters that affect District ratepayers and in setting rates, fees and charges for various services that affect only District residents. The Board meets monthly and operates through various standing and ad-hoc committees. The committees include Environmental Quality and Operations, Finance and Budget, Human Resources and Labor Relations, Audit, Strategic Planning, Governance, and District of Columbia Retail Water and Sewer Rates. The current principal members of the Board are listed below.

Principal Board Members	Appointing Authority	Term Start Date*	Term Expiration
Tommy Wells, Chairman	District of Columbia	December 2016	September 2020
Randy Bartlett	Fairfax County	February 2019	September 2019
Ellen O. Boardman	District of Columbia	July 2013	September 2020
Krystal J. Brumfield	District of Columbia	December 2018	September 2022
Rachna Bhatt	District of Columbia	July 2012	September 2022
David Franco	District of Columbia	May 2017	September 2019
Floyd Holt	Prince George's County	February 2019	September 2022
Fariba Kassiri	Montgomery County	June 2019	May 2020
Adam Ortiz	Montgomery County	June 2019	May 2020
Major F. Riddick, Jr.	Prince George's County	March 2019	September 2022
Emile Thompson	District of Columbia	December 2016	September 2020

* Term start date indicates start of the Board member's initial term as a principal member.

Source: Authority records.

The following are short biographies of the principal members of the Board.

Tommy Wells (District of Columbia)

Mr. Wells was appointed as principal member of the Board in December 2016 and as chairman of the Board in September 2017. Mr. Wells has served as the Director of the District of Columbia Department of Energy & Environment since January 2015. He is chiefly responsible for protecting the environment and conserving the natural resources of the District of Columbia. Mr. Wells served as the District Council member representing Ward 6 from 2006 until 2014. During his time on Council, he garnered broad support for his efforts to make the District livable and walkable for all. In 2009, Mr. Wells crafted *The Anacostia River Clean Up and Protection Act of 2009*, to implement a \$0.05 fee on disposable bags. This landmark legislation prompted thousands of District residents to curb use of plastic bags and, instead, opt for reusable green alternatives. Mr. Wells earned a Bachelor of Science in Psychology from the University of Alabama, a Juris Doctor from the Columbus School of Law at Catholic University and a Master of Social Work from the University of Minnesota.

Randy Bartlett (Fairfax County)

Mr. Bartlett was appointed a principal member of the Board in 2019. Mr. Bartlett was appointed director of Fairfax County's Department of Public Works and Environmental Services in November 2018. He has more than 40 years of public works and private engineering experience, including serving as Public Works director in Bedford, VA., Blacksburg, VA., and Arlington County, VA. Mr. Bartlett's areas of responsibility have included water treatment and distribution and wastewater collection and treatment. Prior to his current position, Mr. Bartlett served as the deputy director, leading Fairfax County's Wastewater and Stormwater Management programs. He is a registered engineer in the Commonwealth of Virginia. Mr. Bartlett received a Bachelor of Science in Civil Engineering from Virginia Tech.

Ellen O. Boardman (District of Columbia)

Ms. Boardman was appointed as a principal member of the Board in 2013. Ms. Boardman is a partner at O'Donoghue & O'Donoghue LLP. Prior to joining O'Donoghue & O'Donoghue LLP in 1986, Ms. Boardman served as an attorney for the National Labor Relations Board. Ms. Boardman is a member of the District of Columbia and Maryland bar associations, numerous federal district and appellate courts, and the U.S. Supreme Court. Ms. Boardman is a fellow of the College of Labor and Employment Lawyers, and is listed as a Washington, D.C. Super Lawyer. Ms. Boardman holds a Bachelor of Arts in History from Catholic University and a Juris Doctor from the Columbus School of Law at Catholic University.

Krystal J. Brumfield (District of Columbia)

Ms. Brumfield was appointed as a principal member of the Board in 2018. Ms. Brumfield currently serves as the President and Chief Executive Officer of the Airport Minority Advisory Council (AMAC), a non-profit dedicated to promoting the full participation of minority-owned, women-owned and disadvantaged business enterprises (M/W/DBEs) in contracting opportunities and professional development throughout the aviation and aerospace industries. As President and CEO, Ms. Brumfield works consistently with Congress, the Federal government, aviation trade associations and others serving as a resource for information, education and guidance on business and employment matters. She also provides leadership to AMAC's strategic planning process and implements new programmatic strategic initiatives. Ms. Brumfield previously served as the Vice President and Chief Operating Officer at the DC Chamber of Commerce where she was responsible for developing, implementing, and managing the operational aspects of the annual budget. A graduate of Southern University with a Bachelor of Science

in Accounting, Ms. Brumfield earned a Juris Doctorate from the Southern University Law Center, and obtained a Master of Laws in Taxation from the University of Florida Levin College of Law.

Rachna Bhatt (District of Columbia)

Ms. Bhatt was appointed as a principal member to the Board in July 2012. Ms. Bhatt serves as Director at HRGM Corporation, and has been with HRGM since 2001. Previously, Ms. Bhatt served as an Associate for Wachovia Securities, and as a consultant for Deloitte & Touche, LLP. Ms. Bhatt serves as a board member for the Professional Women in Construction and holds a Virginia Class A Contractor's License. Ms. Bhatt holds a Bachelor of Science in Business Administration from Georgetown University and a Master in Business Administration from The Wharton School, University of Pennsylvania, with a major in Real Estate and Management.

David Franco (District of Columbia)

Mr. Franco was appointed as a principal member to the Board in May 2017. Mr. Franco is principal of Level 2 Development. Mr. Franco co-founded several businesses in the District, including Discount Mart, Trumpets Restaurants, Tracks Nightclub, and Universal Gear. Mr. Franco is committed to helping the residents of the District and has led efforts in the past to address community needs, including preserving the 48-unit Cresthill Apartments, which created home ownership opportunities along the 14th Street corridor for low to medium income residents. Mr. Franco attended the University of Maryland, College Park.

Floyd Holt (Prince George's County)

Mr. Holt was appointed a principal member of the Board in 2019. Mr. Holt is Deputy Chief Administrative Officer for Government Infrastructure, Technology and the Environment for Prince George's County Maryland. He previously worked as Prince George's County's Deputy Director of Central Services. Mr. Holt served as Chief of University Police at Gallaudet University; the world's only liberal arts university for the deaf before joining the Washington Suburban Sanitary Commission as Chief of Public Safety and Internal Investigations. He was later appointed Director of General Services, overseeing Fleet Management and Transportation, Warehousing, Quality Assurance, Procurement and Contracting. Mr. Holt attended the University of Maryland where he received a Bachelor's Degree in Government and Politics with a minor in Law Enforcement. Mr. Holt also holds a Master's in Business Administration from Gallaudet University.

Fariba Kassiri (Montgomery County)

Ms. Kassiri was appointed principal member of the Board in 2019. Ms. Kassiri is the Montgomery County Deputy Chief Administrative Officer (DCAO) and joined the Office of the County Executive in 2006. She is responsible for assisting the Chief Administrative Officer (CAO) in managing the operations and performance of County Government. In doing so, she provides administrative oversight to the directors of County departments and ensures that departments' core activities align with the County's Effective and Sustainable priority outcome and comply with all applicable policies, procedures, and regulations. Prior to joining Montgomery County, Ms. Kassiri spent four years as Special Advisor to the Prince George's County Chief Administrative Officer, providing recommendations to the County Executive and Chief Administrative Officer on a wide array of issues, programs, and policies. Ms. Kassiri holds a Bachelor of Science degree in Civil and Environmental Engineering from the University of Colorado, and a Master's degree in Public Policy specializing in finance and management from the University of Maryland.

Adam Ortiz (Montgomery County)

Mr. Ortiz was appointed principal member of the Board in 2019. Mr. Ortiz is the Director of the Montgomery County Department of Environmental Protection, a \$140 million agency with 300 employees and contractors. The Department oversees programs for watershed restoration, greenhouse gas reduction, renewable energy, sustainability, and environmental compliance. Prior to joining Montgomery County, Mr. Ortiz served as the Director of the Department of Environment for Prince George's County, Maryland, from 2012 through 2018. During his time, Mr. Ortiz oversaw stormwater management, recycling, waste management, animal services, and sustainability programs. From 2007 to 2012, Mr. Ortiz served in the administration of Governor Martin O'Malley where he focused on workforce, higher education, and veterans' affairs as Deputy Chief of Staff for Lieutenant Governor Anthony Brown. From 2005 to 2011, Mr. Ortiz served as Mayor of Edmonston, Maryland. Mr. Ortiz has a B.A. in Public Policy from Goucher College in Towson, Maryland.

Major F. Riddick, Jr. (Prince George's County)

Major Riddick was appointed principal member of the Board in 2019. Major Riddick currently serves as Acting Chief Administrative Officer for Prince George's County government, which he was appointed to in December 2018. Prior to serving as Acting Chief Administrative Officer for Prince George's County, Major Riddick served as President and CEO of Strategic Solutions Center where he worked with clients and partners to focus on technology solutions and management services to improve government efficiency. In 1995, Major Riddick was appointed Chief of Staff for the Governor of Maryland. As Chief of Staff, Mr. Riddick was responsible for the daily operations of state government and for implementing the Governor's priorities. During the last several months of state service, Major

Riddick served as Chief of Technology. In this role, he spearheaded the Governor's mission and vision to make Maryland a digital state by making technology available to all citizens of Maryland. Major Riddick was the first African-American to serve as the Governor's Chief of Staff in the State of Maryland and was the first African-American appointed Chief Administrative Officer for Prince George's County. Major Riddick holds a Bachelor's Degree in Political Science and a Master's Degree in Public Administration from Virginia Tech. He also completed the Executive Training Institute at the J.F.K School of Government, Harvard University.

Emile C. Thompson (District of Columbia)

Mr. Thompson was appointed as a principal member to the Board in December 2016. Mr. Thompson currently serves as an Assistant United States Attorney for the District of Columbia. Prior to that role, Mr. Thompson served as the Chief of Staff to the Deputy Mayor for Public Safety and Justice in the Bowser Administration. In that capacity, Mr. Thompson advised the Deputy Mayor on policies and initiatives throughout the cluster. Mr. Thompson began his legal career as law clerk to the Honorable Herbert B. Dixon, Jr. of the D.C. Superior Court. Mr. Thompson earned a Bachelor of Science in Computer Science from Morehouse College and a Juris Doctorate from the Wake Forest University School of Law.

Organizational Structure

The Authority's day-to-day operations are managed by the Chief Executive Officer (CEO), who is appointed by the Board. The CEO is supported by the Chief Financial Officer and Executive Vice President, Finance and Procurement (CFO); the Chief of Staff; the Executive Vice President, Operations and Engineering; the Executive Vice President, Performance; the Executive Vice President, Administration; and the Executive Vice President, Customer Service. Also reporting to the CEO is the Executive Vice President, Legal Affairs and the Executive Vice President of People and Talent.

The CFO oversees the departments of Finance, Accounting, Budget and Rates and Revenue, and Procurement. The Chief of Staff is responsible for the evaluation, oversight and implementation of all Authority business-related processes, policies, operating procedures. The Executive Vice President of Operations and Engineering oversees Water Operation and Water Quality, Engineering, Wastewater, Permit Operation, and Clean Rivers. The Executive Vice President of Administration oversees Security, Safety, Emergency Management, Fleet Management, and Facilities Management.

The Executive Vice President of Performance oversees Sustainability & Watershed Management, Integration & Delivery, Business Performance Management, and Enterprise Program Management. The Executive Vice President of Customer Experience oversees Customer Care, Marketing & Communication, Business Relations, IT (Infrastructures and application).

Senior Management

The Authority has in place a senior and mid-level management team with a broad range of private and public sector utility experience. The following are short biographies of key members of the Authority's senior management.

David Gadis, CEO and General Manager

Mr. Gadis was appointed CEO and General Manager in 2018. Mr. Gadis brings 20 years of industry experience to the role, most recently as Executive Vice President of Veolia North America (VNA), where he led North American business development operations, and was responsible for corporate growth and \$3 billion in revenue. Mr. Gadis has been a frequent presenter at utility and government services conferences, including the U.S. Conference of Mayors, speaking on both Underground Infrastructure and Managing Utilities, as well as the National League of Cities and the National Association of Public Private Partnerships. Mr. Gadis earned a basketball scholarship to Southern Methodist University and was a four-year basketball player and team captain before graduating from SMU with a B.A. in Marketing Communications.

Matthew T. Brown, CFO and Executive Vice President, Finance and Procurement

Mr. Brown was appointed CFO and Executive Vice President, Finance and Procurement in 2017. From 2015 until his appointment as Chief Financial Officer and Executive Vice President, Finance and Procurement, Mr. Brown served as a principal member and chairman of the Board. Mr. Brown previously served as the Director of the Office of Budget and Finance for the District of Columbia. Prior to that position, Mr. Brown served as the Director of the District's Department of Transportation. Mr. Brown began his career with the New York Office of Management and Budget and has held positions in the Milwaukee Metropolitan Sewerage District, Public Financial Management and the Metropolitan Washington Area Transit Authority. Mr. Brown holds a B.A. in Political Science from Texas Wesleyan University, and an M.P.A. in Budget and Public Finance from The George Washington University.

Biju George, Executive Vice President, Operations and Engineering

Mr. George was appointed Executive Vice President, Operations and Engineering in September 2018, after serving as Chief Operating Officer since February 2015. Mr. George is responsible for the performance management of all operations of the Authority. He participates in the implementation of the Authority's strategic plan and assists the General Manager in developing and implementing the Authority's business plans. Mr. George is the 2014 recipient of the Innovator of the Year Award from the U.S. Environmental Protection Agency. Mr. George has a bachelor's degree in mechanical engineering from the PDA College of Engineering at Gulbarga University. He is a licensed professional engineer in Ohio.

Mustaafa Dozier, Chief of Staff

Mr. Dozier assumed the position of Chief of Staff in August 2015. Mr. Dozier initially joined the Authority in 2011 as the Labor Relations Manager. Prior to joining the Authority, Mr. Dozier served as the Employment and Labor Relations Advisor to the District's Department of Public Works. Mr. Dozier holds a B.A. from Alabama State University and a J.D. from the Howard University School of Law.

Gregory A. Hope, Interim Executive Vice President, Legal Affairs

Mr. Hope was appointed Interim, EVP, Legal Affairs in December 2018, after serving as Associate General Counsel since May 2017, and Principal Counsel since 2013. Prior to joining the Authority in 2005, Mr. Hope worked as the Water Quality Manager for the District of Columbia Environmental Health Administration (now the Department of Energy and Environment) enforcing District water quality laws and regulations in water and wastewater regulatory compliance, enforcement, management and engineering. Mr. Hope holds a B.S. in Chemical Engineer from Howard University and a JD from the University of Maryland. Mr. Hope is a Patent Attorney before the U.S. Patent and Trademark Office. Mr. Hope is admitted to practice law in the District of Columbia, Maryland, the Court of Appeals for the Federal Circuit, and the U.S. Supreme Court.

Leonard R. Benson, Senior Vice President CIP Project Delivery

Mr. Benson was appointed Senior Vice President CIP Project Delivery in September 2018, after serving as Chief Engineer since August 2010, and previously serving as Acting Chief Engineer and Deputy General Manager since May 2008. Mr. Benson transferred to the Authority as Director of Engineering and Technical Services from its predecessor agency when the Authority was created in 1996. Mr. Benson began his career as a Project Manager for the District of Columbia's Department of Highways and Traffic in 1968 and later transferred to the Department of Sanitary Engineering and successor agencies including the Department of Environmental Services and the Department of Public Works. Mr. Benson holds a B.S. in Civil Engineering from the University of Maryland.

Carlton Ray, Director of DC Clean Rivers Project

Mr. Ray joined the Authority in July 2009, and is responsible for the planning, design, construction and implementation of the DC Clean Rivers Project. The 20-year, \$2.4 billion project is designed to capture nearly all combined sewer overflows to the Potomac and Anacostia Rivers and to the Rock Creek during periods of wet weather through a system of deep underground tunnels. Previously, Mr. Ray managed the capital program for the City of Indianapolis, including successfully developing and managing a similar combined sewer overflow abatement program. Mr. Ray has over 30 years' experience in water and wastewater engineering and holds a B.S. in Civil Engineering from Auburn University.

Aklile Tesfaye, Vice President, Wastewater Operations and Engineering

Mr. Tesfaye joined the Authority in 1994. Mr. Tesfaye formerly served as the Director of Wastewater Treatment Operations for the Authority. Mr. Tesfaye is a licensed engineer with the American Academy of Environmental Engineers, and holds several other professional certifications. Mr. Tesfaye received a B.S. in Civil Engineering from the University of Rourke (India; now known as Indian Institute of Technology), an M.S. in Civil Engineering from Tampore University of Technology (Finland) and an M.S. in Environmental Engineering from the University of Maryland (College Park).

Maureen Holman, Executive Vice President, Administration

Ms. Holman has been with DC Water for almost a decade, serving in the Office of the CEO, and was appointed EVP, Administration in November, 2018. Prior to joining DC Water, Ms. Holman served as Interim Director of the District Department of Energy & Environment and as a senior policy analyst in the Office of the City Administrator. Ms. Holman represents DC Water on the Metropolitan Washington Council of Governments Climate, Energy, and Environmental Policy Committee and the DC Green Building Advisory Council; while also serving a Mayoral appointee to the DC Urban Forestry Advisory Committee, the DC Commission on Climate Change and Resiliency and the Leadership Council for a Cleaner Anacostia River. Ms. Holman holds a bachelor's degree in environmental studies from the University of Southern California, a juris doctorate from the University of Georgia School of Law, and a graduate environmental ethics certificate from the UGA College of Environment and Design.

Authority's Relationship to the District

General. In accordance with section 207(e) of the Act, the District retained full legal title to, and a complete equitable interest in, the System; however, the System must remain under the control of the Authority for as long as any Authority revenue bonds remain outstanding. The District also has the power to appoint certain Board members, see “– Board of Directors” above.

According to the Home Rule Act, as amended by the “District of Columbia Water and Sewer Authority Independence Preservation Act,” P.L. 110-273, enacted by the Congress on July 15, 2008, (i) the authority of the District’s Chief Financial Officer to hire, supervise and remove certain financial management employees, set forth in Section 424A of the Home Rule Act (D.C. Official Code Section 1-204.25), does not apply to personnel of the Authority and (ii) the financial management, personnel and procurement functions and responsibilities of the Authority shall be established exclusively pursuant to the rules and regulations adopted by the Board.

Pursuant to the Home Rule Act and the Act, the Authority is required to submit its annual operating budget to the District for its review and recommendations; however, the District has no power to change the annual budget of the Authority. After receiving the Authority’s budget, the District then submits its annual operating budget, of which the Authority’s budget is a part, to the U.S. Congress for approval. See “FINANCIAL OPERATIONS – Annual Budget.”

The Act provides that, subject to the provisions made by the Authority for security of revenue bonds, all revenues, proceeds, and moneys (except those collected or received from the stormwater fee) which are collected or received by the Authority will be credited to a segregated fund and will not, at any time, be transferred to, lapse into, or be commingled with the General Fund of the District or any other funds or accounts of the District, except for limited circumstances under which funds will be transferred to the District to pay for goods and services and property contracted for by the Authority from the District, or as otherwise authorized by law. See “SECURITY AND SOURCE OF PAYMENT FOR THE SERIES 2019A/B/D BONDS – Lien on and Pledge of Net Assets – *Segregated Funds.*”

The Act also provides that, except as provided in the Act, the District will not limit or alter rights vested in the Authority to fulfill agreements made with holders of Authority bonds, or in any way impair the rights and remedies of the holders of Authority bonds. See “COVENANT BY THE DISTRICT OF COLUMBIA.”

The DC Water Consumer Protection Amendment Act of 2018, DC Law 22-299, effective April 11, 2019 (the “OPC Act”), amended the Act authorizing the Office of the People’s Counsel, an independent agency of the District of Columbia government to (1) represent District of Columbia rate payers at DC Water administrative hearings; (2) represent the interests of and advocate for District of Columbia ratepayer’s at public hearings; (3) represent and advocate for District of Columbia ratepayers at proceedings before local and federal regulatory agencies and courts; (4) investigate the services given by, and the rates charges by, the Authority; and (5) advise and educate the Authority customers about their legal rights and responsibilities pursuant to the rules governing service by the Authority. The OPC Act also requires the Authority to provide the public at least 45 days notice to consider adjustments to water and wastewater rates before a public hearing is held and to provide a written response to the OPC if it submits any written comments on the establishment or adjustments of water and wastewater rates. The OPC Act will not have a material impact on the Authority or its finances. See “Customer Base, Rates and Charges – Customer Assistance Programs”.

The Fiscal Year 2019 Budget Support Act of 2018, D.C. Law 22-168, effective October 30, 2018 (the “Budget Act”), amended the Act authorizing the Mayor to establish a financial assistance program to assist residential and nonprofits organizations located in the District with their payment of the Clean Rivers Impervious Area Charge. The District also included \$7 million to fund the programs. On December 28, 2018, DC Water expanded its Customer Assistance Program (CAP) to establish the CAPII program to provide benefits to customers whose household income exceeded the current CAP program of 60% of the state median income, but below 80% of the area median income. DC Water also transferred \$6 million from its Rate Stabilization Fund to fund this program. Based on the level of customer participation in these programs during FY 2019, and the amount of funds remaining, the District and DC Water plan to carryover the remaining funds into FY 2020. The Budget Act will not have a material impact on the Authority or its finances.

Memoranda of Understanding. The Authority is presently operating under, and is in compliance with, the following Memoranda of Understanding (each, a “Memorandum of Understanding” or “MOU”) with the District.

- A January 29, 1998, Memorandum of Understanding provides that the Authority will pay the District a PILOT for government services it receives from the District (the “1998 PILOT MOU”). This MOU provides that, beginning in Fiscal Year 1999, the annual PILOT will be based on the amount due from the Authority to the District for the previous Fiscal Year plus a percentage increase in an amount equivalent to the Authority’s System-wide rate increase for the current Fiscal Year. The District and the Authority amended the 1998 PILOT MOU pursuant to a September 4, 2014 Memorandum of Understanding, as amended and restated on December 15, 2014 (the “2014 PILOT MOU”). According to the 2014 PILOT MOU, the amount of the PILOT payment increases by two percent per annum based

on the amount of the prior year's annual PILOT payment. In addition, the Authority will deduct one-fourth of the annual fire protection service fee for services provided by the Authority to the District from the annual PILOT payment. In Fiscal Year 2018, the Authority made a PILOT payment to the District in the amount of \$16.3 million. The 2014 PILOT MOU will remain in effect until September 30, 2024. If the parties have not executed a new amendment to the 1998 PILOT MOU before September 30, 2024, the terms of the 2014 PILOT MOU will remain in force until a new amendment has been executed.

- A September 12, 2003, Memorandum of Understanding provides that the Authority will make quarterly payments to the District for its public right of way occupancy permit fee (the "2003 ROW MOU"). Under the terms of this MOU, the Authority was obligated to pay the District an annual fee of \$5.1 million through September 30, 2013, the expiration date of the MOU. On October 2, 2014, the District and the Authority entered in a new Memorandum of Understanding (the "2014 ROW MOU") that amended the 2003 ROW MOU to establish the amount of the ROW Fee payment of \$5.1 million to the District for Fiscal Years 2015 to 2024 and revised the expiration date to September 30, 2024. As with the 2014 PILOT MOU, if the parties have not executed a new ROW MOU before September 30, 2024, the terms of the 2014 ROW MOU will remain in force until a new amendment has been executed.
- A July 25, 2008, Memorandum of Understanding between the District Department of Energy and Environment ("DOEE") and the Authority establishes the basis for the billing and collection of a stormwater fee by the Authority on behalf of DOEE, and the transfer of those fees on a pass-through basis to DOEE. This MOU extends for one-year periods at the option of the Parties. See "THE SYSTEM – The Wastewater System – District Stormwater Permit and Management Program" and "CUSTOMER BASE, RATES AND CHARGES – Components of Retail Rates and Charges."
- A May 3, 2013, Memorandum of Understanding between the District of Columbia Fire and Emergency Medical Services Department ("FEMS") and the Authority memorializes the ongoing commitment between the two agencies to share information about public fire hydrant inspections and upgrades. The Authority is required to inspect all public fire hydrants once per year in accordance with National Fire Protection Association ("NFPA") guidelines, and FEMS may, as time permits, also conduct a second inspection of fire hydrants in coordination with the Authority. The Authority is responsible for identifying and installing new hydrants as part of its ongoing capital program, developing manuals and protocols for hydrant inspection and inspection data management, and ensuring that the required preventative maintenance is performed on each hydrant as required by the manufacturer. The Authority is required to flow test all hydrants every six years, and those hydrants that have been upgraded as part of the capital program will be tested upon being placed in service to ensure proper pressure and operation. Furthermore, the Authority has committed to providing water supply personnel on scene to FEMS when requested for two-alarm or greater fires. The Authority annually bills the District to recover the Authority's costs for these fire hydrant protection services activities.
- A September 11, 2014, Memorandum of Understanding provides the terms by which the District and the Authority will cooperate in the execution of the Northeast Boundary Neighborhood Protective Project (the "2014 Bloomingdale MOU"). This MOU established the value of incremental capital expenditures totaling \$58,579,499.00 incurred by the Authority at the request of the District in order to mitigate overland flooding and wastewater backups in the Bloomingdale and LeDroit Park neighborhoods in Northwest Washington, D.C. The District has entered into an agreement with the Authority for the amounts spent pursuant to the 2014 Bloomingdale MOU, to be paid in ten equal annual installments, commencing January 2016, and has made the payments on a timely basis.

Proposed Legislation. In March 2019, legislation was introduced in the Council for the District of Columbia, "Green Building Residential Metering Amendment Act of 2019" which, three (3) years after enactment, would require every residential unit in all new residential buildings to have individual meters for electric, gas and water utility service. **As of the date of this Official Statement, this proposed legislation had not been reported out of committee, but even if it were enacted, it would not have a material impact on the Authority or its finances.**

Employees and Labor Relations

The total number of authorized positions for the Authority for Fiscal Year 2019 is 1,223. As of March 31, 2019, the Authority had 1,120 full-time equivalent employees, of whom 710 were represented by five unions:

- American Federation of Government Employees ("AFGE") consisting of Locals 631, 872 and 2553, representing 473 employees;

- American Federation of State, County and Municipal Employees (“AFSCME”), Local 2091, representing 221 employees; and,
- National Association of Government Employees (“NAGE”), representing 16 employees.

The Authority and the unions operate under a single Master Agreement on Compensation which was signed on July 6, 2017 and is set to expire on September 30, 2019. Negotiations were underway between the Authority and the unions to agree upon a new Master Agreement on Compensation. Between May 21, 2019 and July 31, 2019, however, negotiations were suspended due to the filing of a Notice of Impasse by the unions. On July 31, 2019, the Authority received a ruling from the Public Employee Relation Board stating that the unions and the Authority are to continue negotiating. [As of the date of this Official Statement, the Authority and the union signed a new Master Agreement on Compensation, which is set to expire on [DATE].]

There are five separate working condition agreements with the unions. The working condition agreement with NAGE expired on September 30, 2019. The Authority was negotiating successor agreements on working conditions with the other four unions.

The percentage of current employees eligible to retire within the next five and ten years (based on age and years of service) is shown in Table 2.

Table 2. Percentage of Current Employees Eligible to Retire Within the Next Five and Ten Years
(based on age and years of service)

	03/31/2019	12/31/2024	12/31/2029
Employees	12%	21%	34%
Directors and Executives	9%	21%	42%

Source: Authority records.

People & Talent within the Authority’s Human Resources department launched a Succession Development Pilot Program in the 3rd Quarter of the fiscal year 2019. The pilot program includes critical positions from both leadership and operational rolls across the Authority. The program uses a systematic approach of identifying critical positions, developing internal talent, retaining organizational knowledge, and fostering interdepartmental collaboration.

Retirement/Pension Plan

Most DC Water employees participate in Defined Contribution type retirement plans. In the 401(a) Defined Contribution plan, all contributions are made by DC Water, who contributes 7% of employee base pay each pay period. An additional matching contribution is made (dollar for dollar) when employees defer money into the 457(b). The maximum match is 5%. Employees with salaries more than the social security wage base receive an additional 5% contribution each pay period for the salary above the social security wage base. This plan requires three (3) years of service to be fully vested (Cliff Vesting Schedule). In the 457(b) Deferred Compensation plan, employees may defer salary on a pre-tax basis up to the annual limits established by the IRS. Finally, in the Retirement Health Savings Plan, non-union employees who leave DC Water after 5 years of service with an unused sick leave balance of equal or greater than 100 hours have the value of the sick leave cashed out and deposited into a Retirement Health Savings Plan for the benefit of the employee.

The Authority has a small group (88 as of June 2019) of employees participating under Federal Benefits. Most of the employees were hired before October 1, 1987. In the Civil Service Retirement (CSR) plan, each pay period DC Water contributes 7% of base pay and the employee contributes 7% of base pay into the CSR system. When these employees retire, their pension is paid by the Federal Government and administered by the Office of Personnel Management. DC Water bears no post retirement cost. The Federal Retirement Health and Life plan consists of a grandfathered group who may continue to participate in the Federal Health Benefits Plan at the same cost share arrangement as active employees. The employer share is assumed by the federal government and administered by OPM after retirement.

The Authority has no unfunded pension liability or other post-employment benefits liability under any of the plans described above.

Risk Management and Insurance

The Authority has developed a comprehensive risk management and insurance program which is annually reviewed and periodically bid by management and their independent insurance advisors through qualified

brokers and direct insurance writers. The most recent risk management, insurance assessment and bid process was completed in July 2018. The Authority's insurance policies (including liability insurance and workers' compensation, property, equipment, crime, fiduciary, public officials' and employment practices liability) were renewed July 1, 2018 with coverage through July 1, 2019. Since the passage of the Terrorism Risk Insurance Act of 2002 ("TRIA"), terrorism coverage is included under all insurance policies.

Risks from Unexpected Events

General

The Authority's infrastructure could sustain damage and loss of use as a result of certain unexpected events, such as terrorist attacks, extreme weather events and other natural occurrences, fires and explosions, spills of hazardous substances, strikes and lockouts, sabotage, wars, blockades and riots. While the Authority has attempted to address the risk of loss through the purchase of insurance, certain of these events may not be covered. Furthermore, even for events that are covered by insurance, the Authority cannot guarantee that coverage will be sufficient or that insurers will pay claims in a timely manner. From time to time, the Authority may change the types of, and limits and deductibles on, the insurance coverage that it carries. The Authority cannot predict what effects any of these events may have on the Authority's ability to generate Revenues but the effects may be materially adverse.

Global Climate Change

Numerous scientific studies on global climate change show that, among other effects on the global ecosystem, sea levels will rise, extreme temperatures will become more common and extreme weather events will become more frequent as a result of increasing global temperatures attributable to atmospheric pollution. Over the next 25 to 100 years, such extreme events and conditions are expected to increasingly disrupt and damage critical infrastructure and property as well as regional economies and industries that depend on natural resources and favorable climate conditions. Disruptions could include more frequent and longer-lasting power outages, fuel shortages and service disruptions. Coastal public infrastructure may be threatened by the continued increase in the frequency and extent of high-tide flooding due to sea level rise, and inland infrastructure, including access to roads, the viability of bridges and the safety of pipelines, may be affected by increases in the severity and frequency of heavy precipitation events. Near-coastal areas like the greater Washington, D.C. metropolitan area (which contains areas of land that are at or near sea level) may be at risk of substantial flood damage over time, affecting private development and public infrastructure. As a result, many residents, businesses, and governmental operations within this area could be negatively impacted and possibly displaced, reducing the number of rate payers and users of the system. In addition, local public agencies and governmental entities, could be required to mitigate these climate change effects at a potentially material cost.

Ensure a Safe & Reliable Computing Environment

As a retail utility and critical infrastructure asset, the Authority is at risk from an array of threat sources including the casual hacker to a state sponsored cyber terrorist. It is the Authority's priority and responsibility to maintain a safe and reliable computing environment 24/7. The Authority was the first water utility to adopt the voluntary Cyber Security framework outlined in Executive Order 13636, "Improving Critical Infrastructure Cyber Security," issued in February 2013. This Cyber Security framework is now formally known as the NIST Cybersecurity Framework (the "NIST Framework"). The NIST Framework forms the foundation of the Authority's Cyber Security program. Coupled with a layered defense approach, a default deny strategy, a privilege access control policy and a comprehensive cyber awareness program, the Authority strives to ensure the highest level of protection across its computing environment.

The NIST Framework focuses on five (5) primary pillars of excellence. The Authority helps to:

Identify – Develop an organizational understanding to manage cybersecurity risks to systems, people, assets, data and capabilities. The activities in the Identify Function are foundational for effective use of the NIST framework. Understanding the business context, the resources that support critical functions, and the related cybersecurity risks enables an organization to focus and prioritize its efforts, consistent with its risk management strategy and business needs. Examples of outcome categories include: Asset Management, Business Environment, Governance, Risk Assessment and Risk Management

Protect – Develop and implement appropriate safeguards to ensure delivery of critical services. The Protect Function supports the ability to limit or contain the impact of a potential cybersecurity event. Examples of outcome categories include: Identity Management and Access Control, Awareness and Training, Data Security, Information Protection Processes and Procedures and Patch Management and Protective Technology.

Detect – Develop and implement appropriate activities to identify the occurrence of a cybersecurity event. The Detect Function enables timely discovery of cybersecurity events. Examples of outcome categories include: Anomalies and Event detection, Security Continuous Monitoring and Correlation Analysis.

Respond – Develop and implement appropriate activities to take action when cybersecurity incident is suspected or detected. The Respond Function supports the ability to contain the impact of a potential cybersecurity incident. Examples of outcome categories include: Response Planning, Communications Analysis, Mitigation and Incident Management.

Recover – Develop and implement appropriate activities to maintain plans for resilience and to restore any capabilities or services that were impaired due to a cybersecurity incident. The Recover Function supports timely recovery to normal operations to reduce the impact from a cybersecurity incident. Examples of outcome categories include: Recovery Planning, Backup and Replication and Recovery Management.

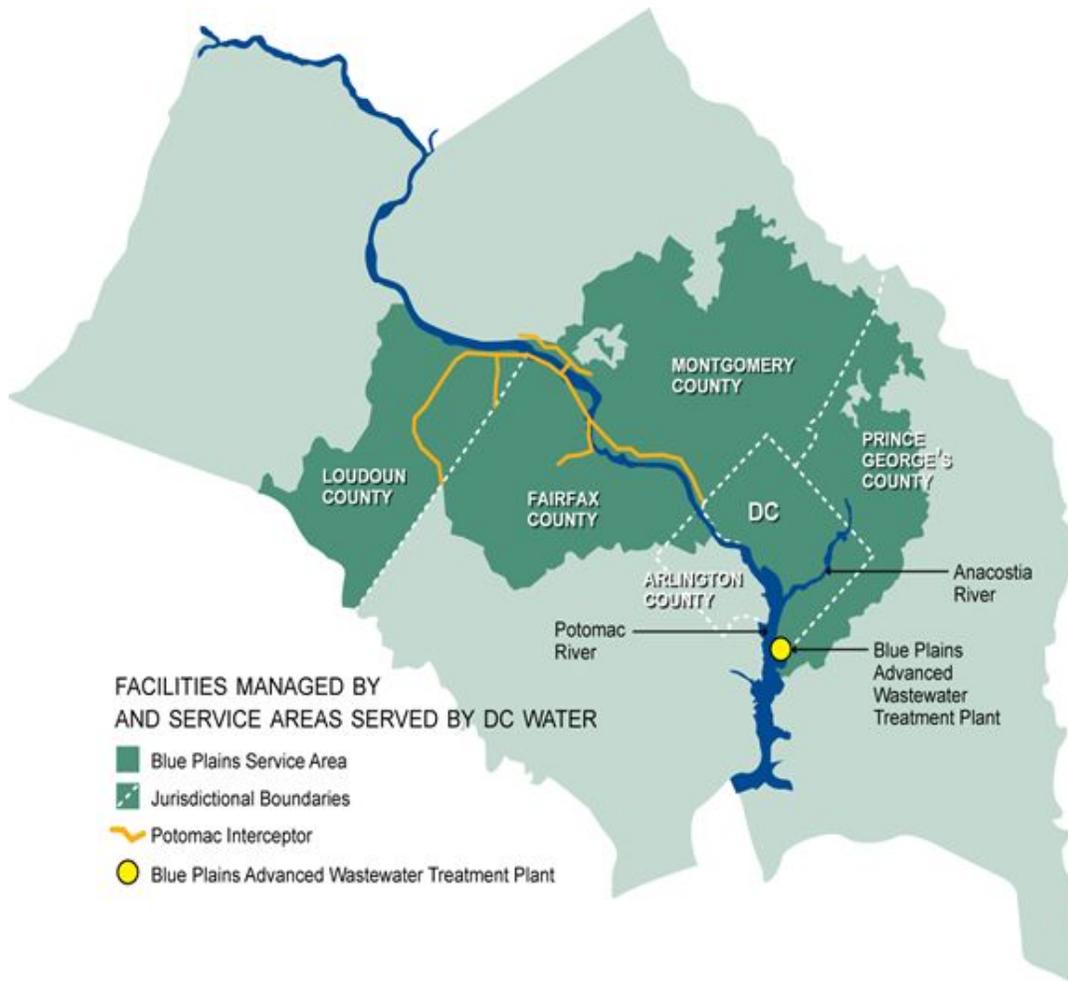
In addition to the NIST Framework, the Authority has implemented information systems with consideration to IT-related risks that could impact the Authority or the Water and Waste Water Systems of the Authority. The information system's goal is met through the following security objectives: confidentiality – data stored on an information systems is not disclosed to unauthorized individuals; integrity – there has not been an unauthorized alteration of the data while in storage or in transit, and the information system is free from unauthorized changes; availability – the system functions as designed and service is available to authorized users upon demand; accountability – actions of an entity may be traced uniquely to that entity; assurance – confidence that the security measures protect the information system and the information it processes.

The Authority also has an established network of resources, which it leverages to proactively assess new and evolving risks including: vendors, WaterISAC, DHS, auditors and peer utilities. These resources contribute to continuously improving the Authority's capabilities. Finally, the Authority has purchased Cyber Liability and Breach Notification insurance coverage for third party liability and privacy notification expenses resulting from data breaches. The total aggregate coverage is \$5 million.

Adopting the NIST Framework and implementing information systems alone will not ensure the Authority and the Water and Waste Water Systems are protected from a cyber-threat. The Authority's success is achieved by institutionalizing the elements of the NIST Framework and information system, so it becomes the way of doing business not something else the Authority does.

THE SYSTEM

The Authority provides retail water distribution to the District and wastewater treatment, collection and disposal services to the District and certain neighboring counties in Maryland and Virginia. The following section describes the Water and Wastewater Systems of the Authority, including a description of the Aqueduct.



The Wastewater System

Blue Plains Advanced Wastewater Treatment Plant

The Authority operates the Blue Plains Advanced Wastewater Treatment Plant (“Blue Plains”), the largest advanced wastewater treatment facility in the United States. The original wastewater treatment facility at the site of Blue Plains was built in 1938. The original facility provided only primary treatment for up to 130 million gallons per day (“mgd”). Subsequently, there have been several expansions and upgrades. Since 1983, Blue Plains has provided advanced treatment, which includes nutrient removal, filtration and dechlorination. The most recent expansion of Blue Plains was completed in 1997, which increased the plant’s capacity to 384 mgd.

Service Area

The Blue Plains service area includes the District (retail service), parts of Fairfax and Loudoun Counties, the Town of Vienna in Virginia, parts of Prince George’s and Montgomery Counties in Maryland, Washington Dulles International Airport and various U.S. Government agencies located in Virginia and Maryland (wholesale service). The population of the Blue Plains service area totals approximately 2.3 million, consisting of approximately 700,000 residents of the District and 1.6 million residents of the surrounding jurisdictions. In addition, the Authority annually serves approximately 22.0 million visitors to the area and approximately 800,000 workers in the District.

Wholesale Customer Agreements

Intermunicipal Agreements – In 1985, the District signed the Blue Plains Intermunicipal Agreement of 1985 (the “1985 IMA”) with Fairfax County in Virginia, Montgomery and Prince George’s Counties in Maryland and the Washington Suburban Sanitary Commission (the “WSSC”) in order to address wastewater treatment, biosolids management and cost allocation rights, obligations and objectives with respect to Blue Plains. A significant portion of the wastewater collection and all of the wastewater treatment and related biosolids management required by the 1985 IMA was provided by the District at Blue Plains until 1996, when the District created the Authority as an independent authority with regional responsibilities to provide those services through the operation and management of Blue Plains and associated facilities. The District, however, retained and continues to hold title to the real property, appurtenances and fixtures of Blue Plains.

The 1985 IMA was replaced in 2012 by a new Intermunicipal Agreement (the “2012 IMA”), which was negotiated, approved and executed by each of the signatories to the 1985 IMA, in addition to the Authority. The 2012 IMA incorporates provisions and establishes terms relating to: facility location; current and long-range infrastructure planning and development; allocation of wastewater treatment capacity of Blue Plains and associated facilities and related peak flows for the collection system; funding and allocation of the capital costs of wastewater treatment, biosolids management and O&M costs; responsibilities with respect to pretreatment and operational requirements; the process of making future wastewater capacity planning decisions, including load allocations; mechanisms for coordination among the parties; and long-term management of the wastewater treatment and disposal process. Under those terms, the cost of operations and maintenance of Blue Plains are shared among the 2012 IMA signatories on an actual basis, whereas the costs of the capital program of Blue Plains are shared among the 2012 IMA signatories commensurate with their respective capacity allocations, with 45.8% of Blue Plains flow capacity allocated to the District and the remainder to the WSSC (on behalf of Montgomery and Prince George’s Counties) and Fairfax County. The 2012 IMA also establishes the Authority’s right to require the User Jurisdictions to off-load flows to other wastewater treatment plants as necessary to provide the Authority capacity as needed to serve the District’s portion of the service area.

Potomac Interceptor Agreements – Since October 1963, the District has entered into separate, limited allocation agreements with several entities that were tributaries to the Potomac Interceptor sewer as provided by statute. Certain of those agreements remain in effect and include users that did not participate in the IMA as signatories, but are allocated flow capacity under the 2012 IMA in accordance with the original individual agreements they entered into with the District prior to the 1985 IMA. Those entities include the Department of Transportation/Federal Aviation Administration on behalf of Washington Dulles International Airport, the Department of the Navy, the National Park Service, and the Town of Vienna, Virginia, which together account for less than 1% of Blue Plains allocated flow capacity. These Potomac Interceptor agreements provide for the pro-rata recovery, through the District, of the Authority’s costs of constructing, operating and maintaining the Potomac Interceptor sewer and certain major interceptor sewers within the Blue Plains service territory. A separate Potomac Interceptor agreement was executed after the 1985 IMA with the Loudoun County Sanitation Authority and is described below.

Loudoun County Sanitation Authority Agreement – In November 1998, the Authority and the District executed an agreement with the Loudoun County Sanitation Authority (“LCSA”) allocating the right to limited Potomac Interceptor flow capacity to the LCSA, including the treatment and disposal of the associated wastewater at Blue Plains. Consistent with that agreement, the 2012 IMA allocates commensurate Blue Plains flow capacity to the LCSA, although it is also not a signatory to the IMA. The agreement requires LCSA to pay for its share of the Potomac Interceptor and Blue Plains operating and capital costs, following the IMA methodology (i.e., based upon metered flows for operating costs and a pro rata capacity allocation for capital costs).

Wastewater Collection

The wastewater collection system consists of approximately 1,900 miles of sanitary, stormwater and combined sewers, 125,000 building sewer laterals, 22 flow-metering stations, nine off-site wastewater pumping stations and 16 stormwater pumping stations. The Authority has completed detailed assessments and a large number of improvements to many of the pumping stations. See “THE SYSTEM – Wastewater Regulation and Permits” below.

Sanitary Sewer System

A sanitary sewer system serves two-thirds of the District’s land area. The system includes 600 miles of interceptor and sewer collection pipes with eight sanitary pumping stations. The typical operation is a gravity flow system with a few pumping stations to pump across higher grades in the District. Over the last 15 years, the Authority has completed a number of upgrades to its sanitary sewer system, which have made the system compliant with new code standards and regulations, and increased the efficiency and effectiveness of several of the system’s pump stations.

Combined Sewer Overflow Wastewater System

Approximately one-third of the District's land area is served by a combined sewer overflow ("CSO") wastewater system that combines both stormwater and wastewater in a single conveyance system. Combined sewer systems are common among older cities throughout the United States. The District's combined sewer system conveys only sanitary flow to Blue Plains during dry weather. During and immediately following periods of heavy rainfall, however, the combined sanitary and stormwater flows frequently exceed the capacity of the combined sewer system and a combination of stormwater and untreated wastewater is discharged through one or more of the 53 existing CSO outfalls authorized in the Authority's NPDES Permit. See "THE SYSTEM - Wastewater Regulation and Permits – NPDES Permit" below.

Biosolids Disposal

In the second quarter of Fiscal Year 2015, the Authority fully implemented its new Blue Plains biosolids processing facilities featuring thermal hydrolysis and anaerobic digestion. Operation of these facilities resulted in a reduction in biosolids production from 1200 tons per day (60 truckloads) to approximately 500 tons per day (25 truckloads). These biosolids are considered Class A (as defined by EPA) and are currently applied directly to farmland at various sites in Virginia, Maryland, and Pennsylvania with disposal in landfills being utilized as an alternate method if weather conditions do not allow land application. Because the biosolids are Class A, the Authority has greater flexibility in its efforts to recycle biosolids produced at Blue Plains than it did prior to the new processing facilities. See "CAPITAL IMPROVEMENT PROGRAM – Categories of CIP Projects – Wastewater Treatment Projects."

Wastewater Regulation and Permits

NPDES Permit. Blue Plains is authorized to discharge treated effluent to the Potomac River through two outfalls (Outfalls 001 and 002) pursuant to an NPDES permit (the "NPDES Permit") that was reissued to the Authority by the U.S. Environmental Protection Agency (the "EPA") effective August 26, 2018. Discharges through Outfall 002, which consist of sanitary flow and some combined sewer flow from the CSO system during and following rainfall events, receive complete treatment. Combined sewer flows that exceed Blue Plains' capacity to provide complete treatment receive partial treatment and are discharged through Outfall 001. The NPDES Permit also authorizes discharges to the Anacostia River, the Potomac River and Rock Creek from the combined sewer system through a total of 53 CSO outfalls and four emergency relief outfalls.

The NPDES Permit requires that discharges from the CSO outfalls not exceed those limits necessary to comply with applicable water quality standards under the Clean Water Act, 33 U.S.C. § 1251 et seq. (the "Clean Water Act"). The Authority was the first agency to meet the voluntary nutrient reduction goal of the 1987 Chesapeake Bay Agreement. See "*The Chesapeake Bay Agreements*" below. The NPDES Permit also requires the development and implementation of a Nine Minimum Controls program (the "NMC Program"), consisting of proper operation and maintenance of the existing collection and treatment system to minimize untreated discharges from the CSO outfalls, as well as the implementation of a CSO Long-Term Control Plan (the "DC Clean Rivers Project")^{*} designed to control CSO discharges to prevent them from causing or contributing to violations of applicable water quality standards.

The DC Clean Rivers Project is being implemented pursuant to a consent decree among the Authority, the District, and the United States dated March 25, 2005 (the "2005 LTCP Consent Decree"). In 2016, the Authority successfully renegotiated an amendment to the 2005 LTCP Consent Decree that modifies the DC Clean Rivers Project to include green/gray infrastructure in the Potomac Watershed and green infrastructure in the Rock Creek Watershed. According to the amended 2005 LTCP Consent Decree, pursuant to the DC Clean Rivers Project, the Authority will construct 17 miles of tunnels with a combined storage capacity of 187 million gallons, five new tunnels, a low lift pumping station, several diversion structures and sewers to collect CSO overflows, and green infrastructure to control selected CSOs. The amended 2005 LTCP Consent Decree does not have an expiration date.

The DC Clean Rivers Project continues on schedule. The FY 2019 – FY 2028 CIP includes approximately \$1.42 billion for the costs of the DC Clean Rivers Project and combined sewer projects. See "CAPITAL IMPROVEMENT PROGRAM – Categories of CIP Projects – Combined Sewer Overflow Projects." Effective May 1, 2009, the Authority implemented a rate structure that more equitably allocates the costs of the DC Clean Rivers Project to retail customers based on the impervious surface area on customers' properties. See "CUSTOMER BASE, RATES AND CHARGES –Components of Retail Rates and Charges – *Clean Rivers Impervious Area Charge.*"

Industrial Pretreatment Program. As with most large wastewater systems, the Authority, under the provisions of the Clean Water Act, operates an industrial pretreatment program to control the discharge into the wastewater system of industrial wastewater containing certain toxins or prohibited pollutants. The Authority regulates

^{*} Note that in prior Official Statements of the Authority the DC Clean Rivers Project was referred to as the "CSO LTCP".

50 “significant industrial users” as defined by EPA regulations. Fourteen of these users are located within the District; the remaining users are located in the User Jurisdictions.

Wastewater Consent Decree and Stipulated Agreement and Orders. Upon its creation, the Authority assumed responsibility for compliance with various legal actions taken against the District related to the operation of, and discharges from, Blue Plains, specifically including a judicial Consent Decree issued in 1995 (the “1995 Consent Decree”) and a subsequent Stipulated Agreement and Order (the “1996 Stipulated Agreement and Order”). The Authority is presently in compliance with all of the requirements under each of the 1995 Consent Decree and the 1996 Stipulated Agreement and Order. The EPA Region III has acknowledged satisfaction of these requirements, although the 1995 Consent Decree remains in effect.

The Chesapeake Bay Agreements. In 1987, the Mayor of the District and the Governors of the Commonwealths of Virginia and Pennsylvania and the State of Maryland entered into the 1987 Chesapeake Bay Agreement, committing each jurisdiction to, and subsequently achieving, a 40% reduction of nutrients, such as nitrogen and phosphorus, reaching the main stem of the Chesapeake Bay by the year 2000. Unlike many municipal wastewater treatment facilities that discharge into the Chesapeake Bay, the Authority has historically removed phosphorus and nitrogen. As a supplemental environmental project in settlement of liability for stipulated penalties under the 1995 Consent Decree, the Authority installed a pilot program to test a nitrogen reduction process on one-half of its wastewater, which demonstrated a greater than 40% nitrogen reduction in completely treated effluent. As a result, in 2000, the Authority began operation of full plant scale biological nutrient removal.

In 2000, the parties entered into Chesapeake 2000, a comprehensive agreement to guide further efforts to improve the water quality in the Chesapeake Bay through 2010. In April 2007, the EPA issued a modification to the Authority’s NPDES Permit, reflecting a new total nitrogen effluent limit for Blue Plains, which was developed to match the goals of Chesapeake 2000. In addition to meeting the new effluent limit for total nitrogen, the Authority had existing NPDES Permit requirements for treating wet weather flows at Blue Plains as part of its long-term control plan for the combined sewer system. In October 2007, the Authority submitted to the EPA the Blue Plains Total Nitrogen Removal/Wet Weather Plan (“TN/Wet Weather Plan”), setting forth the Authority’s proposal and schedule to attain the new nitrogen limit and to satisfy its wet weather treatment obligations. The principal TN/Wet Weather systems include the Blue Plains Enhanced Nitrogen Removal Facilities program (“ENRF”), which was designed to achieve advanced effluent treatment with nitrification and denitrification facilities, and the extension of the tunnels system from Poplar Point to Blue Plains, including tunnel dewatering and enhanced clarification facilities at the tunnels system terminus. In September 2008, the Authority submitted to the EPA a summary report that provided a plan for implementing the wet weather aspects of the TN/Wet Weather Plan. The EPA approved the TN/Wet Weather Plan in July 2010 and incorporated these changes into the amended 2005 LTCP Consent Decree.

The Authority’s current NPDES Permit, issued on September 30, 2010, required the Authority to comply with a new total nitrogen discharge limit by January 1, 2015. The ENRF was completed and began treating the full Blue Plains plant flow in October 2014, satisfying the Authority’s obligation to begin compliance by January 1, 2015. See “CAPITAL IMPROVEMENT PROGRAM – Categories of CIP Projects – Wastewater Treatment Projects.”

On June 16, 2014, the parties to Chesapeake 2000 and the Governors of the State of Delaware, New York and West Virginia entered into the Chesapeake Watershed Agreement (“2014 Chesapeake Agreement”) committing to have in place practices and controls to achieve 60% reduction of nutrients and sediments by 2017. On March 9, 2018, the Authority began operation of all TN/Wet Weather systems, which satisfies the requirements of the 2014 Chesapeake Agreement.

Air Quality Regulations. The Authority has applied for and received from the DOEE numerous air quality permits under Chapter 2 of Title 20 of the District of Columbia Municipal Regulations for several emission sources. The terms of the Chapter 2 air quality permits as well as other applicable requirements relating to air pollution will eventually be incorporated into an air quality operating permit under Chapter 3 of Title 20 of the District of Columbia Municipal Regulations (“Chapter 3 Operating Permit”). The Authority submitted an application to the DOEE for the Chapter 3 Operating Permit in March 2008 and the application was updated in 2016 to include all new sources.

Future Matters. In addition to continued compliance with its current permits and regulations described above, in the future, the Authority’s wastewater discharges may become subject to additional requirements based on new federal or local requirements. As the EPA or the District promulgate additional regulations, the Authority may be required to modify operations and/or construct facilities beyond those contemplated in the CIP. As an example, on November 23, 2015, the Authority filed a declaratory action in the U.S. District Court for the District of Columbia against the EPA, seeking to correct alleged technical errors in a regulatory action related to the Total Maximum Daily Load (“TMDL”) for E. coli. The TMDL, as approved, did not account for the normal day-to-day variability at Blue Plains and, if enforced against the Authority, could have required significant capital improvements at Blue Plains. On January 13, 2017, EPA issued a revised decision rationale, which resolved the issues that the Authority challenged. On March 13, 2017, the parties filed a motion to dismiss the Authority’s complaint and that case was closed. However, the EPA’s revised decisional rationale was challenged in a separate proceeding. On August 12, 2019, the U.S. District Court for the District of Columbia held that the TMDL for E. coli that DOEE developed and the EPA’s approval

(based on its revised decision rationale) did not comply with the Clean Water Act. The court vacated the TMDL, but stayed the vacatur for one year to allow for the development of new TMDL. The Authority will monitor the development of new TMDL and will advocate, as necessary, on behalf of itself and its rate payers.

The Water System

The Washington Aqueduct

Established in 1852, the Washington Aqueduct Division of the U.S. Army Corps of Engineers (the “USACE”) provides water to the District and parts of Virginia. The USACE owns and operates the Washington Aqueduct (the “Aqueduct”), including its two water treatment plants, raw water conduits, reservoirs, pumping stations and treated water transmission lines.

The Aqueduct facilities supply treated water to distribution systems of the Authority, Arlington County, Fairfax County Water Authority (“FCWA”) (collectively, the “Aqueduct Customers”), the federal government, and other parts of northern Virginia. In January 2014, FCWA assumed ownership and operation of the water distribution system previously owned and operated by the City of Falls Church. The Authority is responsible for managing the treated Water System that serves the District and several other governmental customers outside the District. The Authority purchases approximately 73% of the finished water produced by the Aqueduct, and Arlington County and the FCWA purchase the remainder. The Authority’s share of the water purchased from the Aqueduct in the last ten Fiscal Years is set forth in Table 3. For a discussion regarding the reduction in consumption and customer demand, see “CUSTOMER BASE, RATES AND CHARGES – Customer Demand.”

Table 3. Historical Water Demand

Fiscal Year ended September 30	Annual Deliveries to System (MG)	Average Day (MGD)	Max Day (MGD)
2009	39,998	109.6	150.4
2010	38,589	105.7	146.9
2011	37,556	102.9	143.7
2012	36,930	100.9	142.9
2013	34,714	95.1	129.7
2014	34,708	95.1	123.7
2015	38,146	104.5	148.4
2016	36,363	99.4	127.7
2017	35,827	98.2	122.7
2018	34,343	94.1	132.5

Source: Authority records.

The Aqueduct draws water from the Potomac River, which is the predominant source of water in the District and the User Jurisdictions. As a result of the Potomac River’s importance for maintaining adequate water supply, the Interstate Commission on the Potomac River Basin (“ICPRB”) and the Metropolitan Washington Council of Governments (“COG”), have maintained a drought plan since 1978, through which the Potomac River’s water supply is supplemented by a 23.5 billion gallon reserve that is stored at three separate off-river reservoirs. Due to the maintenance of this strategic reserve, the ICPRB has been able to effectively manage drought conditions and effectively allocate water resources during drought events.

The federal Safe Drinking Water Act Amendments of 1996 authorized the Secretary of the Army with the consent of the Authority, the City of Falls Church and Arlington County to either establish a non-federal public or private utility to receive title to operate, maintain and manage the Aqueduct or to allow the USACE to remain as owner and operator with the Authority, the City of Falls Church and Arlington County having some input into strategic operations, direction, operations and capital improvement of the Aqueduct. In May 1998, the Authority, the City of Falls Church, Arlington County and the USACE executed a Memorandum of Understanding that the USACE would continue to own and operate the Aqueduct facilities. In December 2013, the Authority, FCWA, Arlington County and the USACE executed a revised Memorandum of Understanding to include the FCWA as the successor in interest to the City of Falls Church.

The Aqueduct has developed a capital improvement program, including improvements to the Dalecarlia and McMillan Water Treatment Plants (each a “WTP”), raw water conduits, pumping stations and reservoirs. Over the next ten years, the Authority estimates that its share of the cost of the Aqueduct capital improvements will be \$187

million, which is accounted for in the CIP. See “CAPITAL IMPROVEMENT PROGRAM – Categories of CIP Projects – Washington Aqueduct Projects.”

The Trump Administration’s proposed 2018-20 budgets include a proposal to divest the Aqueduct currently operated by USACE to a State or local government or the private sector. In response to those proposals, the Authority is working with the other Aqueduct customers to consider and evaluate a range of possibilities, including, among others: transfer of ownership to an existing public authority (which could include the Authority); enhancing operations and maintaining current ownership; or creating a new regional water authority. At this point, no prediction can be made as to whether a divesting of the Aqueduct will occur, or, if it does, who might acquire the Aqueduct, or what the terms of the acquisition might be.

Water Sales Agreement

Pursuant to a Water Sales Agreement, dated as of July 31, 1997, by and between the Authority and the USACE (the “Water Sales Agreement”), the USACE sells and furnishes to the Authority all of the finished water that the Authority requires for the operation of the Water System to the extent that the USACE has water and facilities available at the Aqueduct. In accordance with the Water Sales Agreement, the Authority is obligated to make monthly payments into an escrow account to be used by the USACE to cover the Authority’s pro rata share, based on its consumption of water, of the costs of the operation and capital improvement of the Aqueduct. The Authority currently contributes approximately 73% of capital and operating expenditures of the Aqueduct. The Water Sales Agreement will remain in effect until September 30, 2023, unless earlier terminated in accordance with its terms. Thereafter, the Water Sales Agreement may continue until terminated by either party giving the other party not less than six months’ prior written notice.

Water Supply

The Aqueduct obtains its water supply from two Potomac River intakes at Great Falls and Little Falls. Two other regional water suppliers, FCWA and WSSC, also obtain for processing at their drinking water treatment facilities water from the same area of the Potomac River. Water for the Authority is withdrawn at the Great Falls intake and flows by gravity through two nine-mile conduits and is then pumped to the Dalecarlia Reservoir. Water also may be withdrawn from the Little Falls intake and pumped to the Dalecarlia Reservoir. The Dalecarlia Reservoir acts as a presedimentation basin for water drawn into the Dalecarlia WTP and for water diverted to the Georgetown Reservoir for subsequent treatment at the McMillan WTP.

In 1978, the United States, the District, the State of Maryland, the Commonwealth of Virginia and the FCWA entered into a Low Flow Allocation Agreement to provide a basis for allocation of resources during severe drought conditions and outline procedures to be followed in such circumstances. Water supply reservoirs developed on Little Seneca Creek and the north branch of the Potomac River are designed to augment the natural flow of the Potomac River during low flow conditions and ensure that the Washington metropolitan area will have sufficient water for years to come.

Raw Water Supply Agreements

A series of agreements ensures the continuous adequate supply of water to the Aqueduct’s and the Authority’s customers. The following are the Authority’s raw water supply agreements:

The Savage Reservoir Maintenance and Operation Cost Sharing Agreement was executed in June 1982. Pursuant to the laws of the State of Maryland, the Upper Potomac River District contracted with the District, WSSC, FCWA and Allegheny County, Maryland, to share the operation, maintenance, repair and replacement costs of the Savage Reservoir project located in western Maryland. This agreement provides for releases from Savage Reservoir that mix with, and thereby reduce, the acidic nature of the Jennings Randolph Lake waters. The Savage Reservoir cost-sharing agreement was incorporated by reference into the Water Supply Coordination Agreement described below.

The Little Seneca Lake Cost Sharing Agreement was executed in July 1982 by and among the District, WSSC and FCWA to construct a dam and reservoir to provide an adequate supply of potable water continuing into the current century. This agreement calls for WSSC to finance, construct, operate and maintain Little Seneca Lake. The Authority’s share of the project and operating and maintenance costs under the agreement is 40%. The Little Seneca Lake Cost Sharing Agreement was incorporated by reference into the Water Supply Coordination Agreement described below.

The Water Supply Coordination Agreement was executed in July 1982 by and among WSSC, FCWA and the Aqueduct to provide for the coordinated operation of its water supply sources and cooperative regional management of the water supply system and the cost-sharing arrangement for any water supply projects for the Washington metropolitan area, if and when they are needed.

The Novation and Future Water Supply Storage Agreement was executed in July 1982, by and among the United States, the Maryland Potomac Water Authority, WSSC, FCWA and the District, to provide for initial water supply storage in the Jennings Randolph Lake reservoir of approximately two billion gallons. The Novation and Future Water Supply Storage Agreement increases the amount of water supply storage to 13.4 billion gallons, or 32% of the reservoir's total storage. Of the remaining reservoir storage 40% is designated for water quality and 28% for flood control.

Water Treatment and Storage

The Authority receives finished water from the Dalecarlia and McMillan WTPs. The original Dalecarlia WTP was completed in 1928, and underwent major expansion and improvements in 1964. The McMillan WTP was constructed in 1985 on the site of the original 1905 plant. The design capacity of the Dalecarlia and McMillan WTPs was based on population growth and water use projections that are greater than have been realized to date. The total treatment capacity of the plants of 384 mgd currently exceeds the day-to-day demands and peak requirements of their respective service areas.

Finished water from the Dalecarlia WTP and McMillan WTPs is pumped by the Dalecarlia Pumping Station and Bryant Street Pumping Station, respectively, to (i) five underground reservoirs (Brentwood, Soldier's Home, Fort Reno No. 1, Fort Stanton No.1 and Fort Stanton No. 2) and three elevated tanks (Fort Reno Elevated Tank No. 2, Good Hope Elevated Tank and Boulevard Elevated Tank) operated by the Authority, and (ii) three reservoirs owned and operated by the Aqueduct (Foxhall, Van Ness and Fort Reno Reservoir No. 2). The combined facilities can store up to 110 million gallons ("mg") of finished water. Flexibility in the distribution system is provided so that each of the two water pumping stations can pump to other reservoirs in the distribution system as circumstances dictate.

In addition to the existing three elevated tanks, the Authority completed a fourth elevated tank – the St. Elizabeth's Elevated Tank in the summer of 2018, which can store up to 2 mg of finished water. The Authority also plans to replace the Ft. Reno Elevated Tank No. 2, which is currently out of service, with another elevated tank with 2 mg capacity in Fiscal Year 2024.

Sold vs. Pumped Ratio

The Authority regularly monitors the ratio of water billed to customers (sold water) versus water it purchases from the Aqueduct (pumped water). Unlike many other water utilities, the Authority does not adjust this ratio for water used in normal system activities, such as firefighting and system maintenance, including flushing of water mains and hydrant testing.

The sold versus pumped ratio increased from 72.14% in 2017 to 74.33% in 2018. Water sales figures are derived from the operating budget of the Authority and may not be consistent with the audited financial statements for each year. The cost of unbilled water is not substantial relative to total annual expenses of the Authority.

Water System Regulation and Permits

Drinking Water Quality

The water operations of the Aqueduct and the Authority are subject to the requirements of the federal Safe Drinking Water Act of 1974, 42 U.S.C. § 300f et. seq., as amended in 1986 and 1996 by Congress. The 1986 amendments to the Safe Drinking Water Act extended the regulatory agenda of the EPA to include, among other things, the development of drinking water standards for 90 contaminants.

The Aqueduct and the Authority are in substantial compliance with all physical, chemical, radiological and bacteriological standards established by the regulations currently in effect under the Safe Drinking Water Act and are studying the potential impacts of proposed rules as well as those still under development by the EPA. As the EPA promulgates additional regulations, there is a potential that the Aqueduct or the Authority will be required to modify operations and/or construct facilities beyond those contemplated by the CIP. The Aqueduct and the Authority management believe, however, that planned capital projects should address all current regulatory requirements.

NPDES Permit and Water Treatment System Sediments

Until April 2003, during high flow periods, the Aqueduct discharged into the Potomac River the river sediments that are removed during the treatment process. The NPDES Permit issued in March 2003 included discharge limitations on sediments. The Aqueduct entered into a Federal Facilities Compliance Agreement ("FFCA") with EPA Region III, which provides a legally mandated plan and an enforceable compliance schedule for achieving the effluent discharge limitations in the NPDES Permit. The Aqueduct evaluated various options for residuals collection, conveyance, processing and disposal and selected a process which dewateres the residuals on site and transports them off-site for disposal. Construction on this project commenced in Fiscal Year 2008, was completed and placed into service on November 22, 2012. The Authority's share of the total cost of this project was \$98.6

million. See “CAPITAL IMPROVEMENT PROGRAM – Categories of CIP Projects – Washington Aqueduct Projects.”

Lead Levels

Pursuant to the Safe Drinking Water Act, the Lead and Copper Rule promulgated in 1991 by the EPA (the “Lead and Copper Rule”) establishes maximum contaminant level goals and action levels for lead and copper. Large water suppliers, such as the Authority, are required to perform periodic monitoring and optimize corrosion control of water so as to minimize leaching of lead and copper contaminants into drinking water. If more than 10% of the tap water samples contain lead above the “action level” of 15 micrograms per liter, the water supplier is required to perform public education and to optimize the corrosion control treatment. If, after optimal corrosion control treatment has been implemented, the lead level in water at the tap continues to exceed the action level, the supplier must annually replace 7% of existing lead service lines that it owns. Alternatively, the water supplier may demonstrate through testing that individual lead service lines that it owns do not have lead levels above the action level (called “sampling in lieu of replacement”). The supplier may perform a combination of these two actions to attain the 7% annual replacement level. In the District, property owners own the lead service lines.

In August 2002, the Authority reported to EPA Region III that results for the sampling period from July 2001 to June 2002 demonstrated lead levels in excess of the threshold for action established by the Lead and Copper Rule. Elevated lead levels were believed to be linked to changes in the Aqueduct’s water treatment methods. In November 2000, the Aqueduct had switched from free chlorine to chloramines disinfection to reduce the concentration of disinfection byproducts under the federal Disinfectant Byproducts Rule. Elevated lead levels began appearing within a year of the chlorine/chloramines switchover.

In February 2004, EPA Region III commenced an audit of the Authority’s compliance with the Lead and Copper Rule and found noncompliance with regard to sampling, monitoring, public notification and reporting requirements. In an Administrative Order dated June 17, 2004, as supplemented on January 14, 2005, and amended on June 8, 2005 (collectively, the “Administrative Order”), EPA Region III and the Authority agreed to remedies for the issues identified by the compliance audit. The Authority and the Aqueduct undertook appropriate measures to implement corrosion control treatment. Lead levels have consistently been below the action level since 2005 and the Authority is no longer subject to the Administrative Order from EPA Region III.

Pursuant to a Consent Agreement and Final Order (“CAFO”) executed on May 2, 2007, the Authority agreed to pay a civil penalty in the amount of \$10,000 to EPA Region III for certain alleged reporting violations of the Lead and Copper Rule. The CAFO resolved all of the civil claims in connection with these allegations. EPA Region III and the DOJ also conducted an investigation to determine whether any criminal violations occurred in connection with the Annual Report on Lead Service Replacement Program the Authority filed with EPA Region III in October 2003 and the two different methods the Authority used to test lead levels. In October 2008, EPA Region III and the DOJ informed the Authority that it would take no adverse action against the Authority, thereby resolving all criminal claims against the Authority in connection with this matter.

In addition to the measures undertaken by the Authority pursuant to the Administrative Order, in 2004 the Authority commenced a voluntary lead service replacement program, even though not legally required to do so under the Lead and Copper Rule. In order to reduce adverse impacts and costs to ratepayers, lead service replacement construction work was performed in conjunction with sewer laterals, small valves and water main repair work, and the replacement of broken or defective hydrants. However, this resulted in a large number of partial lead service replacements because many property owners declined to replace the lead service line on their private property. In 2008, in response to research indicating that partial lead service replacements are not effective in reducing lead levels, the Authority discontinued its accelerated replacement program. In September 2009, the Board approved modifications of the Authority’s lead service replacement policy to encourage full service line replacements and to manage costs. Under the modified policy, public lead service lines (between the main and the property line) will continue to be replaced with copper pipes in conjunction with: (i) the Authority’s water main replacement projects when the Authority must replace the water service pipe to connect to a new water main, and (ii) when the customer replaces the private portion of lead service lines and requests that the Authority replace the public portion of the lead service line.

A study authored by Marc Edwards, PhD, an engineer at the Virginia Polytechnic Institute and State University, and Dana Best, MD, a physician at the Children’s National Medical Center, published in the March 1, 2009, issue of *Environmental Science and Technology*, found that the number of toddlers and infants with high blood-lead concentrations more than doubled in certain District neighborhoods that experienced rising lead concentrations in 2001 (the “Edwards Study”). These findings contradicted a report published by the Centers for Disease Control and Prevention (the “CDC”) on March 30, 2004 (the “2004 CDC Report”), which found that lead might have contributed a small increase in blood lead levels and claimed that no children with dangerously high blood lead levels were found in the District.

The Edwards Study prompted the U.S. House of Representative’s Committee on Science and Technology to open an investigation into the 2004 CDC Report. The Majority Staff of the Subcommittee on

Investigations and Oversight of the Committee on Science and Technology issued a report on May 20, 2010, releasing its findings. The Subcommittee's primary findings include, among others, that (i) the CDC knowingly used flawed data in drafting the 2004 CDC Report, leading to "scientifically indefensible" claims being included in the 2004 CDC Report, and (ii) the CDC failed to publicize later research showing that the harm was more serious than the 2004 CDC Report suggested. In May and June 2010, the CDC issued two notices to the readers of its digest, *Morbidity and Mortality Weekly Report*, admitting that the 2004 CDC Report was misleading and that it "should not be used to make conclusions about the contribution of water lead to blood levels in DC, to predict what might occur in other situations where lead levels in drinking water are high, or to determine safe levels of lead in drinking water."

In December 2010, the CDC published a study of the District's water supply conducted from 1998 to 2006, which concluded that children living in the District were exposed to high levels of lead despite an attempt to prevent the water from being contaminated by partial lead service replacements. The 2010 CDC Study confirms information the Authority received in previous years which led the Authority in 2008 to discontinue the partial lead service line replacements. Partial line replacements can cause agitation that temporarily releases lead into the home, which can cause a temporary spike in lead levels. As described above, the Authority modified its lead service line replacement program in 2009 and continues its efforts to address lead in drinking water by: (i) monitoring household lead levels to ensure drinking water is in compliance with the EPA drinking water standards, (ii) conducting research on household plumbing characteristics, (iii) offering free lead testing, (iv) recommending full lead service replacements on public and private property, (v) providing free water filters and lead testing following a full or partial lead service line replacement, (vi) recommending that pregnant women and children under the age six should use filtered tap water for drinking and cooking until all sources of lead impacting water are removed, and (vii) participating in coordinated District interagency meetings and responses to lead in water issues.

The Authority estimates the cost of the lead service line replacement program in the CIP at \$63.2 million over the next 10 years. From the inception of the line replacement program through September 30, 2018, the Authority expended \$214.8 million on the lead service line replacement program. See "CAPITAL IMPROVEMENT PROGRAM – Categories of CIP Projects – Water Projects."

The Lead Water Service Line Replacement and Disclosure Amendment Act of 2018, D.C. Law 22-241, effective March 13, 2019 (the "Line Replacement Act"), established new programs that will fund the replacement of the lead service lines on private property. The Authority is prohibited, however, from replacing only a portion of a lead water service line that is on public property. The Line Replacement Act accomplishes four things:

- (1) Full Lead Water Service Line Replacement. The Line Replacement Act authorizes the Authority to use District appropriated funds to pay for the costs to replace the lead water service line on private property when the Authority is replacing the lead water service line in conjunction with water main replacements or after an emergency replacement of the water main or lead water service line;
- (2) Lead Water Service Line Replacement Payment Assistance Program. In cases where the water service line on public property is not lead, the District has budgeted appropriated funds to assist all District homeowners to provide 50% to 100% of the costs, depending on their household income, to pay for the lead water service line replacement on private property. This provision was funded by the District's budget and included in the Authority's Fiscal Year 2020 budget. Under this program, the Authority is responsible for certifying that the work is done, and paying the contractor from funds provided by the District;
- (3) Voluntary Lead Service Pipe Replacement Program. In cases when there are lead service lines on private property and in public space, but the District's funds are insufficient to cover the costs, or where the Authority does not have any planned activities to replace water mains and the lead water service lines connected to them within two years, or the street is not under a DDOT moratorium, the property owner may participate in the Authority's Voluntary Lead Service Pipe Replacement program. Under this program, the property owner agrees to pay the costs for the replacement of the lead pipe on private property and the Authority will replace the pipe in the public space at the same time; and
- (4) Education. Creates a new series of outreach, education and disclosure requirements for home sellers and real estate agents to increase awareness of lead service issues.

As of the date of this Official Statement, the District has proposed funding for both these programs in the Fiscal Year 2020 Budget, but their implementation will not have a material impact on the Authority or its finances.

Protection of the Water System and Wastewater System

In 2000, the Authority developed and implemented an extensive security program in conjunction with the District's Metropolitan Police Department and various federal agencies, including the Federal Bureau of Investigation and the Bureau of Alcohol, Tobacco and Firearms (the "2000 Security Program"). After the events of

September 11, 2001, and in response to certain provisions of the Bioterrorism Act of 2002 and amendments to the Safe Drinking Water Act pertaining to security for community water systems, the Authority implemented additional security measures beyond the 2000 Security Program.

The Aqueduct and each of the Aqueduct Customers have independent obligations under law to protect the community water systems they operate. Both the Authority and the Aqueduct completed studies of Water System vulnerability using the Sandia National Laboratories RAM-W methodology. The vulnerability reports were submitted to EPA Region III in March 2003 to fulfill the Bioterrorism Act requirement for a vulnerability assessment.

Blue Plains and the primary water and wastewater distribution facilities it operates are fenced, gated and manned 24 hours a day by security officers. Major security technology video surveillance, intrusion alarm monitoring, and access control management system upgrades are utilized, with significant security technology upgrades in progress at several facilities and properties. The secondary distribution facilities are monitored by vehicular security patrols as well as some security technologies. The Authority also employs cameras and other monitoring equipment at these facilities.

Access to facilities operated by the Aqueduct is also controlled, and the Aqueduct has increased security at both staffed and remotely operated facilities. In conformance with the requirements of the Safe Drinking Water Act, the Aqueduct contracted with the Interstate Commission on the Potomac River Basin to develop a source water assessment and monitoring program. The program was implemented in 2002. In 2003, the Aqueduct together with the Fairfax County Water Authority and the WSSC founded the Potomac River Drinking Water Source Protection Partnership to further the goals of watershed protection. In 2014, the Aqueduct and the Authority collaborated with the Metropolitan Washington Council of Governments to pilot a web-based regional source water assessment tool (“WaterSuite”) building on the static 2002 assessment prepared by the Interstate Commission on the Potomac River Basin. The WaterSuite tool emphasizes chemicals stored throughout the watershed and draws upon federal, state, and local databases for insights into potential chemical contaminants. The physical security of the Aqueduct facilities that (i) collect water from the Potomac River, (ii) process the water to Safe Drinking Water Act standards, and (iii) deliver the water into the Authority’s distribution system are all maintained via a wide variety of means including gated facilities, armed guards, video surveillance, and employee protocols. All Aqueduct employees have current federal background investigations that are required for their employment. The electronic business records of the Aqueduct are handled on systems accredited by the Department of Defense to give a high assurance of control over unauthorized intrusion. The industrial control systems that function to control treatment plant processes and data transfer operate in a contained environment (i.e., no connection to the Internet). These systems are also accredited by Department of Defense and Department of the Army agencies and are constantly monitored for possible compromise. The Aqueduct is currently upgrading all elements of its industrial control system for both increased reliability as well as security.”

For information regarding the cyber security measures taken to protect the Authority and the Water and Waste Water Systems, see “THE AUTHORITY – Risks from Unexpected Events – Ensure a Safe and Reliable Computing Environment.”

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CAPITAL IMPROVEMENT PROGRAM

General

The Authority utilizes an annually adopted ten-year Capital Improvement Program to plan and manage the capital investments necessary to fulfill its service missions, comply with regulatory requirements and preserve and upgrade its Water and Wastewater Systems. The Authority updates the CIP annually in conjunction with its budget process, based on detailed project review by engineering staff, external engineering consultants retained by the Authority and senior management.

The Authority evaluates and prioritizes capital projects based on specific criteria. These criteria are fundamental in developing a CIP based on demonstrated needs and are set forth in Table 4 and described below.

Table 4. Capital Improvement Program Criteria
(\$ in thousands)¹

Fiscal Year	Mandates ²	Health and Safety ³	Board Policy ⁴	Potential Failure ⁵	High Profile Good Neighbor ⁶	Good Engineering/High Payback ⁷	Good Engineering/Lower Payback ⁸	Total
FY 2019	\$210,807	\$13,874	\$33,472	\$36,117	\$8,132	\$87,332	\$49,385	\$439,117
FY 2020	150,388	3,821	67,776	42,560	501	98,520	56,776	420,342
FY 2021	139,790	5,858	72,529	41,437	924	112,534	93,944	467,016
FY 2022	191,411	6,928	53,535	37,742	3,315	149,552	119,241	561,724
FY 2023	151,297	2,099	42,382	72,801	1,281	151,811	108,335	530,006
FY 2024	64,692	5,368	50,055	34,511	558	158,304	109,120	422,607
FY 2025	55,919	12,457	54,634	35,514	1,415	183,675	106,744	450,358
FY 2026	144,295	18,846	48,081	40,102	2,679	162,071	169,379	585,454
FY 2027	97,067	8,604	44,926	31,137	89	152,165	201,677	535,666
FY 2028	<u>83,286</u>	<u>1,511</u>	<u>65,369</u>	<u>33,705</u>	--	<u>167,928</u>	<u>192,690</u>	<u>544,490</u>
Total	1,288,951	79,366	532,760	405,626	18,893	1,423,892	1,207,291	4,956,780
% of Total	26.0%	1.6%	10.7%	8.2%	0.4%	28.7%	24.4%	

¹ Column and row totals may not add due to rounding.

² Agreements, regulatory standards, court orders, issues and permits requirements, stipulated agreements, etc.

³ Projects required to address public safety.

⁴ Projects undertaken as a result of the Board's commitment to outside agencies.

⁵ Projects related to facilities in danger of failing or critical to meeting permit requirements.

⁶ Projects that address public concerns.

⁷ Projects that are necessary to fulfill mission and upgrade facilities.

⁸ Lower priority projects.

Source: Authority records.

Since its creation in 1996 through September 30, 2018, the Authority has expended approximately \$6.5 billion, on a cash disbursement basis, for capital improvement projects, including \$2.7 billion for projects at Blue Plains, \$952 million for Water System infrastructure projects, \$1.7 billion for the DC Clean Rivers Project and combined sewer projects, \$395 million for sanitary sewer projects, \$40 million for stormwater projects, \$66 million for non-process facilities, \$77 million for meter replacement/Automated Meter Reading ("AMR") projects, \$262 million for capital equipment, and \$293 million for projects at the Aqueduct.

The Authority estimates the cost of the Fiscal Year 2019 - 2028 CIP at \$4.96 billion on a cash disbursement basis, including approximately \$979 million for wastewater treatment projects at Blue Plains, \$1.3 billion for the DC Clean Rivers Project and combined sewer projects, \$945 million for Water System infrastructure projects, \$957 million for sanitary sewer projects, \$69 million for stormwater projects, \$138 million for non-process facilities, \$312 million for capital equipment, \$187 million for Washington Aqueduct Division projects and \$29 million for meter replacement/AMR projects. The Board approved the CIP on April 4, 2019.

An overview of the CIP project categories and the sources of funding is set forth in Table 5.

**Table 5. Fiscal Year 2019 - 2028 Capital Improvement Program
Sources and Uses of Capital Funds
Fiscal Years ended/ending September 30
(\$ in thousands)^{1,2}**

Actual(s) ³	Projected										Total (FY19-FY28)	
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027		2028
BEGINNING BALANCE	\$172,706	\$282,107	\$146,623	\$126,525	\$121,691	\$122,820	\$122,241	\$142,368	\$152,463	\$101,684	\$110,769	\$282,107
SOURCES OF FUNDS:												
Proceeds from Rev. Bonds	\$346,672	\$110,000	\$190,000	\$225,470	\$282,036	\$224,077	\$125,000	\$140,000	\$168,381	\$176,895	\$172,490	\$1,814,349
System Availability Fee (SAF)	0	1,130	5,775	7,700	7,700	7,700	7,700	7,700	7,700	7,700	7,700	68,505
Transfer from Operations (CRIAC)	0	31,270	34,769	39,522	42,586	45,708	47,120	47,247	48,193	49,571	50,415	436,401
Transfer from Operations (Pay-Go)	113,021	69,989	59,732	100,316	113,858	132,832	165,152	164,901	179,571	182,295	198,129	1,366,775
EPA Grants /FEMA Grants/DC												
Reimbursement	25,332	16,385	38,990	15,858	15,858	15,858	15,858	15,858	10,000	10,000	10,000	164,665
CSO Grants	14,054	8,000	-	-	-	-	-	-	-	-	-	8,000
Wholesale Customer Capital												
Contributions	98,522	63,877	67,321	71,625	97,995	101,012	80,655	83,347	119,146	116,520	119,986	921,484
Interest Income	1,730	2,981	3,658	1,691	2,820	2,241	1,250	1,400	1,684	1,769	1,725	21,219
Total Sources	\$599,330	\$303,633	\$400,244	\$462,182	\$562,853	\$529,428	\$442,735	\$460,453	\$534,675	\$544,750	\$560,446	\$4,801,398
USES OF FUNDS:												
Water System Projects	\$69,006	\$61,885	\$71,721	\$96,300	\$101,039	\$84,395	\$96,491	\$103,325	\$106,145	\$105,338	\$118,377	\$945,016
Blue Plains Projects	106,104	69,979	66,620	76,510	97,635	110,047	82,434	81,249	133,338	137,575	123,351	978,738
Sanitary Sewer Projects	46,888	44,927	43,646	57,249	85,588	97,220	98,194	115,011	140,020	134,664	140,615	957,134
Combined Sewer	12,420	7,490	4,219	9,444	8,015	8,647	13,519	8,852	5,801	5,593	7,598	79,178
Combined Sewer LTCP (DC Clean Rivers Project)	175,874	187,859	147,208	139,786	191,573	151,411	64,415	55,689	144,295	97,067	83,286	1,262,589
Stormwater Projects	1,988	4,220	8,571	8,118	8,587	3,725	4,987	7,564	7,494	5,239	10,102	68,607
Non Process Facilities	35,526	15,309	36,002	26,793	20,665	6,831	11,058	10,396	3,901	3,553	3,560	138,068
Washington Aqueduct Division	13,194	12,930	15,532	15,909	15,536	35,006	14,830	32,731	9,034	12,298	23,321	187,127
Capital Equipment	14,430	27,400	17,105	30,027	29,656	29,295	33,750	32,610	32,496	31,409	31,349	295,097
Meter Replacement / AMR / CIS	14,499	7,118	9,718	6,880	3,430	3,430	2,930	2,930	2,930	2,930	2,930	45,226
Total Uses	\$489,929	\$439,117	\$420,342	\$467,016	\$561,724	\$530,007	\$422,608	\$450,357	\$585,454	\$535,666	\$544,489	\$4,956,780
Sources Minus Uses	109,401	(135,484)	(20,098)	(4,834)	1,129	(579)	20,127	10,096	(50,779)	9,084	15,957	(155,382)
Capital Contingency Reserve for Clean Rivers	-	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000
Sources Minus Uses Net of Reserves	<u>109,401</u>	<u>(165,484)</u>	<u>(50,098)</u>	<u>(34,834)</u>	<u>(28,871)</u>	<u>(30,579)</u>	<u>(9,873)</u>	<u>(19,904)</u>	<u>(80,779)</u>	<u>(20,916)</u>	<u>(14,043)</u>	<u>(185,382)</u>
Ending Balance	\$282,107	\$146,623	\$126,525	\$121,691	\$122,820	\$122,241	\$142,368	\$152,463	\$101,684	\$110,769	\$126,725	\$126,725

¹ Totals may not add due to rounding.

² Beginning in Fiscal Year 2019, the Authority will set aside \$30 million of cash on hand from the above sources to serve as a contingency for the DC Clean Rivers Project. The ending balance shown above in each year beginning in Fiscal Year 2019 is inclusive of these funds and assumes that such funds are not drawn down through Fiscal Year 2028.

³ Preliminary results, unaudited.

Source: Authority records.

Categories of CIP Projects

Water System Projects. Projects in the water service area are designed to maintain an adequate and reliable potable water supply to customers and to provide required fire protection for the District. Categories of projects include the rehabilitation and replacement of water mains, water service connections, storage facilities, and pumping stations. The Authority has completed several critical improvements to the Water System, including cross connection removal, and major pumping station and storage facility rehabilitation.

The CIP includes approximately \$945 million in projected disbursements for Water System projects, including new system storage facilities, large diameter water main rehabilitation, 1% renewal of small diameter water mains (including ancillary items, such as fire hydrants, valves and service connections) DDOT-related water main projects, and continued funding for the water lead program. See “THE SYSTEM – The Water System – Water System Regulation and Permits – Lead Levels.”

Blue Plains – Wastewater Treatment Projects. Capital projects in the wastewater treatment service area are required to rehabilitate, upgrade or provide new facilities at Blue Plains to ensure that it can reliably meet its NPDES Permit requirements and produce a consistent, high-quality dewatered solids product for land application. The Authority has undertaken several major capital improvement projects to rehabilitate, replace or add new processes and capacity at Blue Plains in recent years, including: (i) a new facility was placed in service in 2015 to comply with NPDES requirements to reduce nitrogen in the plant effluent; (ii) facilities to digest solids after thermal hydrolysis treatment were placed in operation in 2015, reducing the volume by 50% (reducing hauling and recycling costs) and resulting in production of Class A biosolids, which can be applied to land without any pathogen-related restrictions at the site and also can be bagged and marketed to the public for application to lawns and gardens, thereby increasing beneficial reuse options; (iii) a combined heat and power facility to utilize digester gas produced by the process to generate electricity (up to one-third of plant needs) along with steam for the thermal hydrolysis and digestion process, and a belt filter press facility to dewater the Class A product were placed in service in 2016; (iv) a facility upgrade to improve secondary treatment performance for more efficient overall nitrogen removal capability was completed in 2018; (v) construction of a new facility to treat high nitrogen load dewatering recycles was completed in 2018; (vi) the design phase for an upgrade of a raw wastewater pump station, the filtration and disinfection facility and the gravity thickener complex will be completed in 2018; and (vii) an upgrade of one of the influent pumping facilities, which is expected to be completed in 2019; and (viii) a tunnel dewatering pump station and enhanced clarification facilities to pump out and treat flows captured through the Authority’s ongoing combined sewer overflow projects were completed and placed in operation in 2018.

The projected ten-year disbursements for wastewater treatment projects are approximately \$979 million, which includes approximately \$901 million in disbursements for liquid, plant-wide and solids processing projects such as major improvements to filtration and pumping facilities, and \$78 million for the ENRF program projects such as the Tunnel Dewatering Pump Station and Enhanced Clarification Facility.

Sanitary Sewer Projects. The CIP includes approximately \$957 million in projected disbursements for sanitary sewer projects including the rehabilitation of six sanitary sewer pumping stations – Potomac, Main & O, Swirl Facility, East Side, and 3rd & Constitution Avenue, as well as sewer condition assessments that cover 60 miles of the system per year through year 2026. Rehabilitation of the District’s major assets including the Potomac Interceptor, B Street/New Jersey Avenue Trunk Sewer, Northeast Boundary Trunk Sewer, Anacostia Force Main and portions of the other 35 major sewers are also included. Creekbed sewers and sewers under buildings will largely be rehabilitated as part of these projects. The program to rehabilitate other small and large diameter sewers including replacement and lining of laterals, and replacement of manholes, is an ongoing project of the Authority.

In 2016, the Authority completed a Sewer System Asset Management Plan. This Plan includes a risk tool that calculates the consequence of failure and likelihood of failure for each sewer in the system. This information can then be used to prioritize sewers for inspection/condition assessment and/or rehabilitation. The Plan also includes a high level risk assessment for all pumping stations in the system which can also be used to help prioritize proposed CIP projects for these facilities. The Sewer System Facilities Plan represents the culmination of an initiative involving sewer inspection and condition assessment, development of a sewer GIS database, hydraulic monitoring and modeling to assess system capacity and the development of prioritized activities for system improvement.

Combined Sewer Overflow Projects. The CIP includes \$1.34 billion for the DC Clean Rivers Project and combined sewer projects. The DC Clean Rivers Project is designed to control combined sewer overflow discharges to prevent them from causing or contributing to violations of applicable water quality standards. See “THE SYSTEM – Wastewater Regulation and Permits – NPDES Permit.” Through the DC Clean Rivers Project, the Authority will construct combined sewage storage/conveyance tunnels that are designed to intercept and store water until Blue Plains can receive and treat the combined sewage. The DC Clean Rivers Project includes a variety of capital improvement projects throughout the System including three large tunnel systems which will accommodate the storage of combined sewer overflows (“CSOs”) from storm events until they can be conveyed to Blue Plains for treatment. Approximately one-third of the System is served by a combined sewer system, in which both sanitary sewage and

stormwater flow through the same pipes. When the collection system reaches capacity, typically during periods of heavy rainfall, the system is designed to overflow the excess diluted sewage or CSOs.

The DC Clean Rivers Project also includes the Authority's green infrastructure initiative. See "THE SYSTEM – Wastewater Regulation and Permits." The green infrastructure initiative is cost-neutral (as compared to the Authority's tunnel options) and will reduce the size of the tunnels required to serve the Rock Creek and Potomac River by implementing new environmental technologies on a significant scale. Green infrastructure technologies capture, infiltrate, treat and reuse polluted stormwater runoff before it enters the sewer system. Examples of green infrastructure technologies include rain gardens, porous pavements, bioswales, green roofs, infiltration planters, trees and tree boxes, and rainwater harvesting for non-potable uses such as landscape irrigation. See "DEBT SERVICE REQUIREMENTS – Outstanding Subordinate Debt – Subordinate Bonds - Environmental Impact Bonds."

When completed, the DC Clean Rivers Project will reduce the combined sewer overflows by at least 96% (exceeding the EPA standard of 85%), reducing pollution to the Potomac, Anacostia and Rock Creek waterways, improving water quality, and reducing locally generated debris from the combined sewer system and local waterways. The Authority expects to implement the DC Clean Rivers Project, which commenced in March 2005, over a 25-year period, at a total estimated cost (including funds spent prior to Fiscal Year 2018) of \$2.8 billion.

Stormwater Projects. The projected disbursements for the stormwater service area in the CIP are approximately \$69 million and include extensions to the system and relief of certain sewers as well as rehabilitation or replacement of deteriorated storm sewers. Also, included in the budget is the rehabilitation of the stormwater pumping stations operated and maintained by the District.

Non-Process Facilities Projects. This area accommodates projects approved under the non-process facilities master plan and related improvements necessary to support Authority critical operations. The CIP includes approximately \$138 million in projected disbursements for facility land use projects. In fiscal year 2019, the Authority completed its Administrative Headquarters Building at the Main & O Street Campus and relocated over 300 employees into the new LEED Platinum facility.

Washington Aqueduct Projects. The Aqueduct provides wholesale water treatment services to the Authority and other Aqueduct Customers. See "THE SYSTEM – The Water System – The Washington Aqueduct." Under federal legislation enacted and a memorandum of understanding executed in 1997, the Aqueduct Customers have a role in the oversight of the Aqueduct's operations and its capital improvement program. The Aqueduct successfully designed, constructed and implemented a new orthophosphate corrosion control system at its water treatment plants in 2005 that meets the optimal corrosion control requirements of the Lead and Copper Rule. As a result, periodic sampling by the Authority shows that lead levels are below the action level, which supported the decision of the Authority to significantly modify its lead pipe replacement program. The CIP includes approximately \$187 million for Aqueduct projects. See "THE SYSTEM – The Water System – Water System Regulation and Permits – NPDES Permit and Water Treatment System Sediments."

Capital Equipment Projects. The CIP includes approximately \$295 million for major information technology projects, vehicle fleet upgrades, and large equipment projects at Blue Plains and the major water and sewer pumping stations.

Meter Replacement Projects. The CIP includes approximately \$45 million for ongoing meter replacements and continued automated meter reading system improvements and upgrades to the AMR equipment. This planned upgrade is part of the Authority's preventative maintenance program for the advanced meter infrastructure, which collects data from approximately 120,000 meter readings per day and is an essential asset to the Authority's billing process. The upgrades allow the Authority to move to the current version of AMI software and replace aging meters and meter data communication equipment.

CIP Financing Sources

The Authority expects to finance the CIP from multiple sources including (i) revenue bonds, (ii) income from certain fees and charges, pay-as-you-go funds and interest income (all of which constitute Revenues under the Indenture), as well as (iii) federal and other grants and wholesale customer contributions (which are excluded from the definition of Revenues under the Indenture). The CIP financing sources are summarized below.

Revenue Bonds/Commercial Paper Notes. The Authority expects to finance approximately \$1.81 billion, or 37.8%, of the sources of funds with new long-term debt. The Authority has used, and expects to use in the future, its Commercial Paper Notes and EMCP Notes to fund capital needs on an interim basis, followed by issuance of long-term revenue bonds (or other forms of indebtedness, as appropriate) to retire outstanding Commercial Paper Notes and EMCP Notes and provide permanent financing for CIP costs. As approved by the Board, the total amount of Commercial Paper Notes outstanding at any time cannot exceed \$150 million. As of the date of this Official Statement, \$29.2 million of the Series C CP Notes were outstanding. In addition, the Authority anticipates using proceeds from the EMCP Notes as an additional CIP financing source. As approved by the Board, the total amount of Series A

EMCP Notes outstanding at any one time cannot exceed \$100 million. As of the date of this Official Statement, \$50 million of the Series A EMCP Notes were outstanding.

System Availability Fee. On February 1, 2018, the Board approved a new System Availability Fee (“SAF”) to be effective June 1, 2018. The SAF is intended to be a one-time fee, assessed to a property owner of any premises, building or structure, to recover the cost of system capacity servicing all metered water service and sanitary sewer connections renovation or redevelopment projects that require an upsized meter size connection to the water and sewer system in the District. For a renovation or redevelopment project on a property that already has the Authority meters and accounts, credits will be applied for the older meters being removed from the system. Such fees are common in the industry and among utilities in the region. The SAF is based on meter size. The Authority currently expects to finance \$68 million, or 1.4%, of the sources of funds with revenues generated by the SAF.

Clean Rivers Impervious Area Charge. The Authority currently expects to finance about \$436 million, or 9.1%, of the sources of funds with revenues received from the Clean Rivers Impervious Area Charge (“CRIAC”), which was implemented in Fiscal Year 2009 to recover the costs of the DC Clean Rivers Project. For more information regarding the CRIAC, see “CUSTOMER BASE, RATES AND CHARGES – Components of Retail Rates and Charges – Clean Rivers Impervious Area Charge.”

Pay-As-You-Go Funds. The Authority expects to finance approximately \$1.36 billion, or 28.5%, of the sources of funds with pay-as-you-go funds. Revenues in excess of those required to meet operating and maintenance expenses, to make debt service payments and to fund reserves can be used, at the discretion of the Authority, to fund a portion of the CIP. The projected financial operations of the Authority assume that such amounts are used as a source of funds for the CIP. In addition, the Authority established a separate line item in its operating budget beginning in Fiscal Year 2015 to provide funds for additional cash-financed capital construction, the defeasance of debt, or other uses at the discretion of the Authority. The projected financial operations of the Authority assume that the amounts in this line item are also used a source of funds for the CIP. The Board has also adopted a policy that authorizes any funds in excess of the operations and maintenance reserve and any other significant one-time cash infusions to be used to finance the CIP or to pay off higher cost debt. The projected financial operations of the Authority assume at this time that no funds are available from these potential sources.

Interest Income on Bond Proceeds. The Authority estimates that \$21 million in interest income, or 0.4%, will be available to finance the CIP. Subject to Federal tax law requirements relating to use of the proceeds of tax-exempt bonds, the Authority uses interest earned on the proceeds of its bonds as a source of funds for the CIP. This interest income is treated as non-operating revenue of the Authority that is available to pay debt service, if needed. The use of this income for capital funding purposes represents another source of pay-as-you-go capital.

Federal and Other Grants. The Authority expects to finance approximately \$172 million, or 3.6%, of the sources of funds with federal and other grants. The Authority receives annual grants from the federal government under the Clean Water Act and Safe Drinking Water Act for a variety of projects at Blue Plains and for the Water System to improve drinking water supplies and wastewater treatment. Unlike most public water or wastewater utilities, the Authority receives appropriations in the form of grants and not as loans pursuant to a State Revolving Fund program. Under the terms of these grants, payments to the Authority are made on a reimbursable basis, with unclaimed appropriations remaining available to be obligated in subsequent years. In addition, the Authority has received a special Congressional appropriation for improvements to the combined sewer system. Under the Wet Weather Water Quality Act of 2000 that codified the EPA’s 1994 National CSO Policy, the U.S. Congress authorized grant funding for the DC Clean Rivers Project. These appropriations require a 50% match from the Authority. As of March 2019, the Authority received \$8.0 million in grant funding for the DC Clean Rivers Project, and in Fiscal Years 2016 through 2018, the Authority received an average of \$14 million each year for such funding. The Authority also expects to be reimbursed by the District for certain capital investments. Federal and other grants do not constitute Revenues under the Indenture.

Wholesale Customer Contributions. The Authority expects to finance approximately \$921 million, or 19.2%, of the sources of funds with wholesale customer contributions. Under the terms of the 2012 IMA, the Authority’s wholesale customers share the cost of operating, maintaining and making capital improvements at Blue Plains. A separate agreement with the Loudoun County Sanitation Authority (“LCSA”) allows the Authority to recoup capital and operating costs from the LCSA on the same basis as provided for in the 2012 IMA. Contribution levels are governed by the agreements that provide for the pro-rata reimbursement for capital improvements based on the capacity allocated to each wholesale customer. As of the date of this Official Statement, all wholesale customers were current on their capital contributions payments. Wholesale customer contributions do not constitute Revenues under the Indenture.

Cost Estimates

Although actual bid prices for recent construction projects, on average, have been slightly below the engineering cost estimates for such projects, the costs shown in the CIP reflect the Authority’s practice of increasing

construction cost estimates by 3% annually to the midpoint of construction. There are no assurances that the actual rate of inflation in construction costs will not increase significantly above the assumed rate of inflation or that such increases will not have an adverse impact on the financial operations of the Authority.

An additional consideration regarding the construction cost estimates is the value of change orders relative to the total cost of construction work performed. The cost of construction-related change orders executed by the Authority for contracts closed during the five-year period from Fiscal Year 2014 through Fiscal Year 2018 was \$50,872,045, or 5.7% of the total original value of the contracts of \$897,320,435 for this period. The relatively low value of change orders compared to the total construction costs incurred is an indication that project designs are thorough and that projects are being effectively managed during construction.

CUSTOMER BASE, RATES AND CHARGES

Customer Categories and Accounts

As of September 30, 2018, the System had 124,906 active, metered water and wastewater accounts (30 of which are accounts of the Authority and 2 of which are accounts of the Aqueduct). Except for wholesale accounts, the majority of accounts receive both water and wastewater service. The Authority's customer accounts are divided into three categories: (i) residential, multifamily and commercial, (ii) governmental and (iii) wholesale. The number of accounts in each of the categories as of September 30, 2018 is set forth in Table 6.

Table 6. Customer Categories and Accounts

<u>Customer Category</u>	<u>Number of Accounts</u>	<u>% of Total Operating Revenue</u>
Residential, Multifamily, Commercial	122,793	62%
Governmental (Federal, District and D.C. Housing Authority) ¹	2,106	17
Wholesale	7	18
Total	<u>124,906</u>	<u>97%²</u>

¹ The D.C. Housing Authority is the only District agency that is billed separately. The remaining District agencies are billed as part of a composite bill for the government.

² The remaining 3% of the Authority's operating revenue comes from capital contributions, interest income, and other revenue.

Source: Authority records and the Authority's CAFR.

Customer Base

The Authority's customer and revenue base is diverse, consisting of a wide variety of residential, commercial and governmental customers, as well as wholesale wastewater customers. In Fiscal Year 2018, the residential, commercial and multifamily customer revenue represented approximately 62% of total operating revenue.

The commercial portion of the customer base includes a variety of uses, including nationally recognized universities and regional hospitals, commercial office space with tenants that are national associations, lobbying firms, major law firms and large hotels. Table 7 reflects the Authority's ten largest commercial customer accounts in Fiscal Year 2018, which in aggregate represented 2.57% of total operating revenues.

Table 7. Ten Largest Commercial Customers (2018)

Customer	Revenue	% of Total Operating Revenues
Howard University	\$3,879,664	0.57%
George Washington University	2,522,689	0.37%
Georgetown University	2,118,763	0.31%
William C Smith & Co.	2,078,614	0.30%
Washington Hospital Center	2,003,511	0.29%
Metropolitan Washington Airports Authority	1,280,248	0.19%
Amtrak	1,046,179	0.15%
American University	1,004,977	0.15%
Medstar - Georgetown University Hospital	850,673	0.12%
Children's Hospital	831,854	0.12%
Total	\$17,617,172	2.57%

Source: Authority records.

Table 8 reflects the Authority's ten largest government customers in Fiscal Year 2018, which in aggregate represented 5.57% of total operating revenues.

Table 8. Ten Largest Government Customers (2018)

Customer	Revenue	% of Total Operating Revenues
U.S General Service Administration	\$8,096,034	1.18%
D.C. Housing Authority	5,176,951	0.76%
U.S. Congress	5,061,870	0.74%
Smithsonian Institution	4,683,524	0.68%
Bolling Air Force Base	4,187,710	0.61%
U.S. National Park Service	3,298,927	0.48%
Federal Naval Research Lab	2,209,408	0.32%
U.S. Department of Defense	2,082,125	0.30%
U.S. Department of the Navy	1,732,073	0.25%
D.C. Board of Education	1,569,405	0.23%
Total	\$38,098,027	5.57%

Source: Authority records.

Customer Demand

Table 9 shows the average percentage of annual water consumption by customer category from Fiscal Year 2014 through Fiscal Year 2018. The results illustrate the diversification of the Authority's customer base.

Table 9. Average Annual Consumption By Customer CategoryFiscal Years 2014 – 2018
(millions of Ccf)

Customer	Average Annual Consumption	% of Total Consumption
Residential Single-Family	7.27	21.0
Commercial	12.76	36.9
Residential Multi-Family	8.27	23.9
D. C. Municipal Government	1.05	3.0
Federal Government	4.44	12.8
D. C. Housing Authority	0.78	2.3
Total Consumption	34.56	100.0

Source: Authority Records. Totals may not add due to rounding.

Table 10 shows projected annual consumption for the Authority's customer categories for Fiscal Years 2019 through 2023. The Authority's use of the AMR program, including the replacement and repair of meters, significantly reduces estimated meter readings and improves the reporting of actual consumption.

Table 10. Projected Annual Consumption by Major Customer Category^{1,2}Fiscal Years ending September 30
(millions of Ccf)

	2019	2020	2021	2022	2023
Residential Single-Family	7.00	6.93	6.86	6.79	6.72
Commercial ³	11.54	11.42	11.31	11.20	11.09
Residential Multi-Family	8.38	8.30	8.21	8.13	8.05
D. C. Municipal Government ⁴	1.01	1.00	0.99	0.98	0.97
Federal Government	4.30	4.26	4.22	4.18	4.13
D.C. Housing Authority	0.79	0.78	0.77	0.77	0.76
Total Consumption	33.02	32.69	32.36	32.04	31.72

¹Totals may not add due to rounding.

²Total water consumption in Fiscal Years 2020 - 2023 reflects the assumption of a 1% annual decline.

³Reflects consumption at commercial facilities and selected facilities at Soldiers' Home.

⁴Reflects consumption at District of Columbia Government facilities and the Authority facilities.

Source: Amawalk

Some fluctuation in consumption can occur in a given year due to variations in weather conditions and other factors such as billing adjustments. Consumption declined in Fiscal Year 2014 by 3.6%. About 70% of the total decline in Fiscal Year 2014 was attributable to reductions in use by the federal government due to federal initiatives to reduce water use, billing adjustments and other factors. In Fiscal Year 2015, total consumption increased by 5.0% with nearly all of that increase attributable to the federal government. In Fiscal Year 2016 and 2017, total consumption decreased by 1.7% each year. In Fiscal Year 2018, total consumption decreased by 0.9%. See “– Rate-Setting Authority” for additional information.

The Authority anticipates that consumption will total 33.02 million Ccf in Fiscal Year 2019, representing a decrease of 3.0% from the prior year. The Authority assumes that long-term total water consumption will decline at the rate of 1% per year beginning in Fiscal Year 2020, recognizing that weather conditions and other factors may affect water demand in a given year. The expectation that future sales will decline is consistent with recent trends in the Washington, D.C. region as well as the projected sales in other large cities in the northeast United States.

There is some risk that consumption could be lower than anticipated during the Projection Period. The risk is mitigated to some extent in that revenues from the federal government are determined in advance and then subject to a true-up after the year is completed. For example, the significant reduction in actual federal consumption in Fiscal Year 2014 (compared to the budgeted consumption that was billed for Fiscal Year 2014) was reflected in the reconciliation credit to the federal government for Fiscal Year 2017. In addition, the consumption risk is mitigated to a significant extent by retail revenue that is not consumption-related: customer receipts from the meter charge, the

Water System Replacement Fee and the CRIAC, are unaffected by changes in the quantity of customer water use. Consumption-based retail water and wastewater revenues within the District are estimated to comprise about 61% of total revenues (excluding the PILOT/ROW Fee) in Fiscal Years 2019 through 2023. The Authority evaluates its water consumption projections annually in connection with its budget preparations and more frequently if the need arises.

Rate-Setting Authority

The Authority recovers the costs of operations, maintenance and debt service through retail rates and fees, wholesale customer charges and other miscellaneous non-operating income such as interest earnings. The Board establishes the Authority's rates, fees and charges. Only the six Board members representing the District vote on setting retail water and wastewater rates and fees for the retail customers who are customers within the District. No approvals from federal or local officials are required in order to set rates.

Retail Rates, Fees and Charges

The Authority adopted several changes to its retail rate structure that went into effect in Fiscal Year 2016. These changes were designed to better align the Authority's revenues and expenditures by establishing customer class-based volumetric water rates based upon peaking factors, to create a more progressive rate structure for its residential customers by establishing lifeline water rates that discount core consumption and to fund the Authority's water main replacement program by establishing the monthly, fixed Water System Replacement Fee (the "Water System Replacement Fee"). For a summary of the Authority's retail rates, fees and charges, see "-- Components of Retail Rates and Charges" and "-- Historical and Projected Retail Rates" below.

Historically, the Authority adopted its budgets and its retail rates and charges on an annual basis. The budget process is expected to remain the same during the Projection Period: budgeted revenues, operating expenses and CIP expenditures will be adopted annually by the Board. Beginning with Fiscal Year 2017, the Authority started setting retail rates and charges for a two-year period – i.e., in calendar year 2016 the Board adopted (i) rates and charges effective October 1, 2016 (Fiscal Year 2017) and (ii) rates and charges to be effective October 1, 2017 (Fiscal Year 2018). Similarly, in calendar year 2018 the Board adopted (i) rates and charges to be effective October 1, 2018 (Fiscal Year 2019) and (ii) rates and charges to be effective October 1, 2019 (Fiscal Year 2020). The benefits of the multi-year rate setting include: greater revenue certainty, increased budget discipline, and better alignment between revenues and expenditures. The retail rates and charges are expected to change in each year. See "-- Historical and Projected Retail Rates" and "THE AUTHORITY – Authority's Relationship to the District." If the Authority determines that revenues are materially less than expected and/or debt service or operating expenses are materially higher than budgeted, the Authority has the ability to adjust its retail rates and charges during the Fiscal Year. Historically, there has been no need for the Authority to make such changes during a Fiscal Year.

The total revenues and revenue requirements remain unchanged for Fiscal Year 2020 from the budget adopted by the Board in calendar year 2018; however, the Authority is considering modifying the adopted wastewater rate and the adopted CRIAC. As described herein, the proposed wastewater rate for Fiscal Year 2020 would increase from the adopted rate and the CRIAC would decrease from the adopted rate, with the resulting revenues being relatively unchanged.

The Authority receives annual grant funding under the Clean Water Act which requires the maintenance of wastewater charges sufficient to defray costs of operation, maintenance and replacement and surcharges for industrial discharges into the System's sewers levied in conformity with formulas set forth in the Clean Water Act and regulations thereunder. See "CAPITAL IMPROVEMENT PROGRAM - CIP Financing Sources."

Federal Government Charges

The Authority's forecasted water and wastewater charges for the federal government are prepared and included in the federal budget 18 months in advance of the commencement of the Authority's Fiscal Year based on the prevailing consumption estimates, projected retail rate increases as included in the current ten-year financial plan and adjustments for prior year true-ups. The federal government budgets for and pays its bills quarterly directly from the U.S. Treasury based on the estimates provided by the Authority in advance. Under the current billing process, any differences between the projected and the actual charges are netted against a future year's billing. Federal government revenues are expected to constitute approximately 7.5% of the Authority's total annual revenues during Fiscal Year 2019 through Fiscal Year 2023 (excluding the PILOT/ROW Fee).

Water consumption billed to Federal accounts in recent years has shown significant year to year fluctuation and an overall reduction compared to prior years. The Authority has adjusted its future forecasts for federal revenue primarily due to four factors:

- i. A previous executive order created a requirement for federal agencies to reduce potable water and landscaping use water by 2% annually through conservation measures until 2020; Authority conversations and investigations with federal property managers show that significant progress is being made toward this goal through plumbing fixture replacement.

- ii. In the District, the Telework Enhancement Act (the “Telework Act”) has resulted in a significant shift to employees working from home, reducing water used at the workplace, and, pursuant to the Telework Act, GSA has strategically reduced the number of buildings it owns and operates in the District in favor of placing employees in shared rental spaces. In the latter case, the water reduction observed in federal buildings is partially made up in the commercial customer billing of the Authority.
- iii. There have been significant adjustments made to federal bills as a result of property sales and transfers between the federal and District governments.
- iv. The Authority accelerated a testing and calibration program on large capacity meters installed at federal properties and observed that some of the meters had degraded and were measuring less water than was actually being consumed. Where possible, the Authority is retroactively billing for the difference in consumption.

Wholesale Customer Charges

The Authority provides wholesale wastewater treatment services to User Jurisdictions at Blue Plains. Each wholesale customer’s share of operating costs at Blue Plains is recovered in accordance with the Blue Plains Intermunicipal Agreement of 1985, the 2012 IMA, the Potomac Interceptor Agreements and the Loudoun County Sanitation Authority Agreement (as discussed in more detail in “THE SYSTEM – The Wastewater System”), and is based on actual costs of operating and maintaining the plant and the collection facilities, prorated to each User Jurisdiction based on its respective actual share of wastewater flows. A User Jurisdiction’s share of capital costs is based on its share of capacity allocations in the plant. Both operating and capital payments are made on a quarterly basis. Wholesale customer revenues are expected to constitute approximately 11.5% of the Authority’s total annual revenues during Fiscal Year 2019 through Fiscal Year 2023 (excluding the PILOT/ROW Fee).

Wholesale customers are billed based on the adopted budget for that Fiscal Year. Capital-related charges are billed quarterly with payments due on the 15th day of the second month following the end of the quarter. The operating and maintenance-related charges are billed annually by mid-October and payments are due each November, February, May and August. Following each Fiscal Year, the Authority prepares a reconciliation that determines the actual costs and each wholesale customer’s appropriate share of such costs. Adjustments are then billed or credited to the wholesale customers in the first quarter of the subsequent Fiscal Year.

Components of Retail Rates and Charges

The primary retail rates and fees include water and wastewater charges, the clean rivers impervious area charge, the PILOT/ROW Fee and the stormwater fee.

Water and Wastewater Charges

Water and Wastewater Consumption Rates. Water and wastewater consumption rates are based on metered water usage and are stated in terms of hundred cubic feet (“Ccf”). Through Fiscal Year 2015, each of the Authority’s three customer classes (i.e., Residential, Multi-Family and Non-Residential) were charged the same consumption rates. In Fiscal Year 2015, the Authority retained Raftelis Financial Consultants, Inc. (“RFC”) to analyze the allocation of costs between the water and wastewater rates, as well as the peak demand factors of its various customer classes, and to prepare a cost of service study (the “2015 COS Study”). Based on the findings of the 2015 COS Study, the Authority’s management recommended a restructuring of the rates, charges and fees to the Board to include water rate classes for Residential, Multi-Family and Non-Residential customers. Wastewater rates remain uniform for all customers. The Board adopted this new rate structure for Fiscal Year 2016, effective October 1, 2015. Water and wastewater consumption rates increased 5.0% in each of Fiscal Years 2017 and 2018.

The Authority undertakes a cost of service study every three years to ensure that its rates are appropriately capturing actual expenditures. The cost of service study prepared by RFC in 2018 (the “2018 COS Study”) recommended no changes to the water rate structure and classes in Fiscal Year 2019, but did recommend decreases in water rates, an increase to the wastewater rate and a reduction in the CRIAC to better align rates and revenues with the cost of providing services. The estimated overall increase in water and wastewater consumption-based rates for Fiscal Year 2019 is 13.0% and Fiscal Year 2020 is 11.5%. The CRIAC was reduced by 8.7% and 9.0%, respectively.

Customer Metering Fee. The Authority assesses a metering fee to recover costs associated with installing, operating and maintaining meters and the AMR system. The metering fee is charged as a separate line item on retail customer bills and varies by meter size. The metering fee is assumed to remain unchanged in Fiscal Years 2019 through 2023, providing \$11.5 million in Fiscal Year 2019 and \$10.8 million in revenue per year each year after.

Water System Replacement Fee. The Authority implemented the meter-based Water System Replacement Fee in Fiscal Year 2016 in order to recover the cost of the 1% renewal and replacement program for water service lines. The Water System Replacement Fee is assumed to remain unchanged in Fiscal Years 2019 through 2023. It is anticipated that the Water System Replacement Fee will generate \$40.5 million in Fiscal Year 2019 and \$39.7 million in revenue per year from Fiscal Years 2020 through 2023.

Clean Rivers Impervious Area Charge

Overview. In Fiscal Year 2009, the Authority approved the development and implementation of the CRIAC to recover the costs of the DC Clean Rivers Project, mandated by the EPA Region III pursuant to the 2005 LTCP Consent Decree. The DC Clean Rivers Project will be implemented over a 25-year period at a total cost of \$2.8 billion. See “THE SYSTEM – Wastewater Regulation and Permits – NPDES Permit.” For an explanation of the different term contemplated for the DC Clean Rivers Project in the CIP and under the 2005 LTCP Consent Decree, see “CAPITAL IMPROVEMENT PLAN – Categories of CIP Projects – Combined Sewer Overflow Projects.” Prior to the implementation of the CRIAC, the DC Clean Rivers Project cost was bundled in the wastewater rate based on the amount of water consumed.

The CRIAC is based on the amount of impervious area on a property, rather than on the amount of water consumption, which is a more equitable method of recovering the DC Clean Rivers Project costs. It allows the Authority to expand its customer base by charging all properties that generate stormwater, including those that may not use water (e.g., parking lots). An impervious area is a man-made surface that cannot be easily penetrated by water, such as a rooftop, a paved driveway, a patio, a swimming pool or a parking lot that impedes the percolation of water into the subsoil and plant growth. The Authority maintains a database in which it classifies each parcel located within the District as pervious or impervious. This database and the classifications therein provide the basis for the District’s billing of the CRIAC.

All residential customers are charged Equivalent Residential Units (“ERUs”) based upon six tiers that reflect the amount of impervious surface area on each residential lot. The tiers and the number of properties within each tier are shown as of September 30, 2018 in Table 11.

Table 11. Equivalent Residential Unit Tiers

<u>Tiers</u>	<u>Size of Impervious Area (square feet)</u>	<u>Equivalent Residential Unit</u>	<u>No. of Properties (as of August 2019)</u>
Tier 1	100 – 600	0.6	18,799
Tier 2	700 – 2,000	1.0	81,034
Tier 3	2,100 – 3,000	2.4	6,255
Tier 4	3,100 – 7,000	3.8	2,796
Tier 5	7,100 – 11,000	8.6	146
Tier 6	11,100 and more	13.5	68

Source: Authority records.

The CRIAC is applied to all lots, parcels, properties and private streets throughout the District that are greater than 100 square feet, except for District or federally owned rights-of-way. The CRIAC is added to the customer’s metered service bill and billed monthly unless the property is impervious only and has no other metered water or wastewater service. The CRIAC will be reviewed regularly and adjusted as appropriate by the Board.

CRIAC rates in Fiscal Year 2020 are expected to be lower than in the prior year and wastewater rates are expected to be higher due to both: a) increases in the cost of service, and b) an allocation of a portion of the costs of the LTCP to wastewater charges in lieu of the CRIAC. The allocation of a portion of LTCP costs to wastewater charges is based on an analysis prepared by the Authority which estimates that sanitary sewage comprises 37% of combined wastewater and stormwater. DC Water expects to allocate a portion of the LTCP costs to wastewater charges in three stages, beginning with an 18% allocation in Fiscal Year 2020. In Fiscal Years 2021 and 2022, the allocated portions will be 28% and 37%, respectively. Allocated LTCP costs in Fiscal Year 2023 are expected to remain at the 37% level. Amawalk reviewed the Authority’s analysis and found it to be reasonable and consistent with industry practice. As a result of the changes in LTCP cost allocation, the CRIAC rate in Fiscal Year 2020 is expected to be \$20.94 per ERU, a decrease of 9.0% from the prior year. In Fiscal Years 2021 and 2022, with an increasing share of LTCP costs being assigned to the wastewater rate instead of the CRIAC, the projected CRIAC rates are \$20.95 and \$19.85 per ERU, respectively. In Fiscal Year 2023, the projected CRIAC rate is \$21.45 per ERU.

CRIAC Incentive Program. The Water and Sewer Authority Equitable Ratemaking Amendment Act of 2008 (the “2008 Amendment Act”), approved by the Council in 2008, and signed by the Mayor of the District on January 23, 2009, amended the Act to authorize the Authority’s CEO to restrict combined sewer flow into the District

from Maryland and Virginia and to require the Authority to, among other things, offer financial assistance programs to mitigate the impact of any increases in retail water and wastewater rates on low-income residents of the District, including a low-impact design incentive program. The 2008 Amendment Act also amended the District of Columbia Public Works Act of 1954 to broaden the bases for the determination of sanitary sewer service charges to include impervious surface area and to provide for an appeal process for the assessment of an impervious surface fee.

The 2008 Amendment Act requires the Authority, together with the DOEE, to establish an incentive program to institute certain eligible best management practices that reduce the amount of stormwater runoff generated from a property. In 2013, the Authority created the CRIAC Incentive Program, which provides a 4% maximum incentive credit. In 2019, the Authority strengthened the CRIAC Incentive Program to provide a 20% maximum incentive credit. The actual credit amount is calculated based upon a formula provided by the DOEE.

CRIAC Credit. In Fiscal Year 2016, the Board asked management to evaluate and propose recommendations for expansion of the Customer Assistance Program (“CAP”) to include fees assessed for the CRIAC. The staff evaluated the three options for CRIAC credit: (i) dollar credit, (ii) ERU credit, and (iii) percent of CRIAC credit (25%, 50%, 75%). Based on the detailed analysis, the management made recommendations to the Board to expand the CAP to low-income customers to include a CRIAC credit in the monthly bills. On December 1, 2016, the Board adopted the expansion of the CAP for eligible single-family residential accounts and individually metered accounts to include a fifty percent (50%) credit of the monthly billed CRIAC. The CRIAC credit was implemented in Fiscal Year 2017. See “– Customer Assistance Programs” below.

PILOT/Right of Way Occupancy Fee

These fees recover the cost of the PILOT and Right of Way fees (collectively, the “PILOT/ROW Fee”), which are charges levied by the District for payments in lieu of taxes and occupancy or use of public spaces or rights of way including that used by the Authority for its underground infrastructure. The Authority passes the PILOT/ROW Fee through to retail customers based on metered water consumption as a separate line item on the bills. Effective October 1, 2018 (i.e., for Fiscal Year 2019), the Authority’s PILOT/ROW Fee is \$0.68 per Ccf. The PILOT/ROW Fee is expected to increase to \$0.70 per Ccf effective October 1, 2019 (Fiscal Year 2020) and then increase gradually each year through Fiscal Year 2023.

Stormwater Fee

The Authority’s retail water and wastewater bills also include a stormwater fee levied on behalf of the District government, which the Authority transfers to DOEE on a pass-through basis. The stormwater fee is charged as a separate line item on retail customer bills. The DOEE has rate-setting authority for stormwater services provided by the District and the Authority expects to work collaboratively with the DOEE to set future rates. See “THE AUTHORITY – Authority’s Relationship to the District.” The stormwater fee charged to retail customers is \$2.67 per ERU, which rate has been in effect since October 1, 2016. The stormwater fee is expected to remain the same for Fiscal Years 2020 through 2023.

Although the Authority no longer administers the program, pursuant to the July 25, 2008 MOU with DOEE, the Authority retains a portion of the stormwater fee revenues to cover its share of District stormwater expenditures. See “THE AUTHORITY – Authority’s Relationship to the District – *Memoranda of Understanding*” and “FINANCIAL OPERATIONS – System Revenues – *Stormwater Revenues.*” The stormwater fees that are transferred to the District do not constitute Revenues under the Indenture, however, the stormwater fee revenues that are retained by the Authority to cover its share of stormwater expenditures are considered non-operating revenues of the Authority and do constitute Revenues under the Indenture.

Historical and Projected Retail Rates

The Board approves the Authority’s retail water and wastewater rates as part of the ten-year financial plan, which includes annual rate increases, in line with the Board’s policy of implementing rate increases in a gradual and predictable manner.

Table 12 sets forth historical water and wastewater rates and the CRIAC of the Authority. Table 13 sets forth the adopted and projected water consumption and wastewater usage rates as well as the CRIAC of the Authority for Fiscal Years 2019 through 2023. Revenue resulting from the CRIAC will recover the majority of the cost of the LTCP for the period of Fiscal Year 2019 through Fiscal Year 2023.

Federal government customers in Virginia pay the Arlington County retail rate, which is currently \$3.52 per Ccf for water. Federal government customers in Maryland pay according to the WSSC rates, which include a fixed charge and a consumption-based charge that increases with higher levels of usage.

Table 12. Historical Water and Wastewater Retail Rates and Charges¹
 (\$ per Ccf for Water and Wastewater, Other Charges are \$ Per Unit as Noted)

Fiscal Year	Water Consumption Rate	Wastewater Usage Rate	Combined Rate	Water and Wastewater Percent Increase	CRIAC Rate (Per ERU)	Meter Charge (Per 5/8" Meter)³	Water System Replacement Fee (Per 5/8" Meter)³
2014	3.61	4.41	8.02	5.5%	11.85	3.86	
2015	3.88	4.74	8.62	7.5	16.75	3.86	
2016 ²							
Residential – 0-4 Ccf	3.08	5.44	8.52	6.5	20.30	3.86	6.30
Residential - >4 Ccf	3.87	5.44	9.31				
Multi-Family	3.45	5.44	8.89				
Non-Residential	3.99	5.44	9.43				
2017 ²							
Residential – 0-4 Ccf	3.23	5.71	8.94	5.0	22.24	3.86	6.30
Residential - >4 Ccf	4.06	5.71	9.77				
Multi-Family	3.62	5.71	9.33				
Non-Residential	4.19	5.71	9.90				
2018 ²							
Residential – 0-4 Ccf	3.39	6.00	9.39	5.0	25.18	3.86	6.30
Residential - >4 Ccf	4.26	6.00	10.26				
Multi-Family	3.80	6.00	9.80				
Non-Residential	4.40	6.00	10.40				

¹ Rates and charges are billed monthly.

² Percent increase reflects the overall average increase for all customers; the increases for individual customers vary by customer class and consumption.

³ The Meter Charge and the Water System Replacement Fee as shown reflect a customer with a 5/8" meter. The Charge and the Fee vary by the size of the meter.

Source: Authority records.

Table 13. Current and Projected Retail Rates and Charges¹
 (\$ per Ccf for Water and Wastewater, Other Charges are \$ Per Unit as Noted)

	Units	Current	Proposed ²	Projected ²		
		2019	2020	2021	2022	2023
Water Rates						
Residential - 0-4 Ccf	Ccf	2.91	3.06	3.44	3.84	4.17
Residential - >4 Ccf	Ccf	3.90	4.10	4.61	5.14	5.58
Multi-Family	Ccf	3.37	3.54	3.98	4.44	4.82
Non-Residential	Ccf	4.05	4.25	4.78	5.33	5.78
Wastewater Rates	Ccf	7.75	8.89	10.00	11.15	12.10
Water & Wastewater % Change ^{3,4,5}	%	13.0%	11.5%	12.5%	11.5%	8.5%
CRIAC	ERU	23.00	20.94	20.95	19.85	21.45
Meter Charge ⁶	5/8" Meter	3.86	3.86	3.86	3.86	3.86
Water System Replacement Fee ⁶	5/8" Meter	6.30	6.30	6.30	6.30	6.30

¹ Rates and charges are billed monthly.

² Rates for Fiscal Years 2020 through 2023 are projected and subject to change.

³ Water and wastewater percent change reflects the overall average increase for all customers; the increases for individual customers will vary by customer class and consumption.

⁴ In Fiscal Year 2019, the decrease in water rates and the CRIAC and the increase in wastewater rates is based on adjustments recommended by the Cost of Service Study. See "Components of Retail Rates and Charges." The net increase in total charges (i.e., water, sewer, CRIAC, Meter Charge, WSRF) relative to Fiscal Year 2018 for an average residential customer is expected to be 5.9%.

⁵ In Fiscal Year 2020 through 2022, an increasing percentage of the cost of the LTCP is recovered through wastewater rates, resulting in higher wastewater rates and a decrease in the CRIAC compared to Fiscal Year 2019. The net increase in total charges (i.e., water, sewer, CRIAC, Meter Charge, WSRF) relative to the prior year for an average residential customer is projected to be 5.7%, 8.5%, and 7.3%, respectively.

⁶ The Meter Charge and the Water System Replacement Fee as shown reflect a customer with a 5/8" meter. The Charge and the Fee vary by the size of the meter.

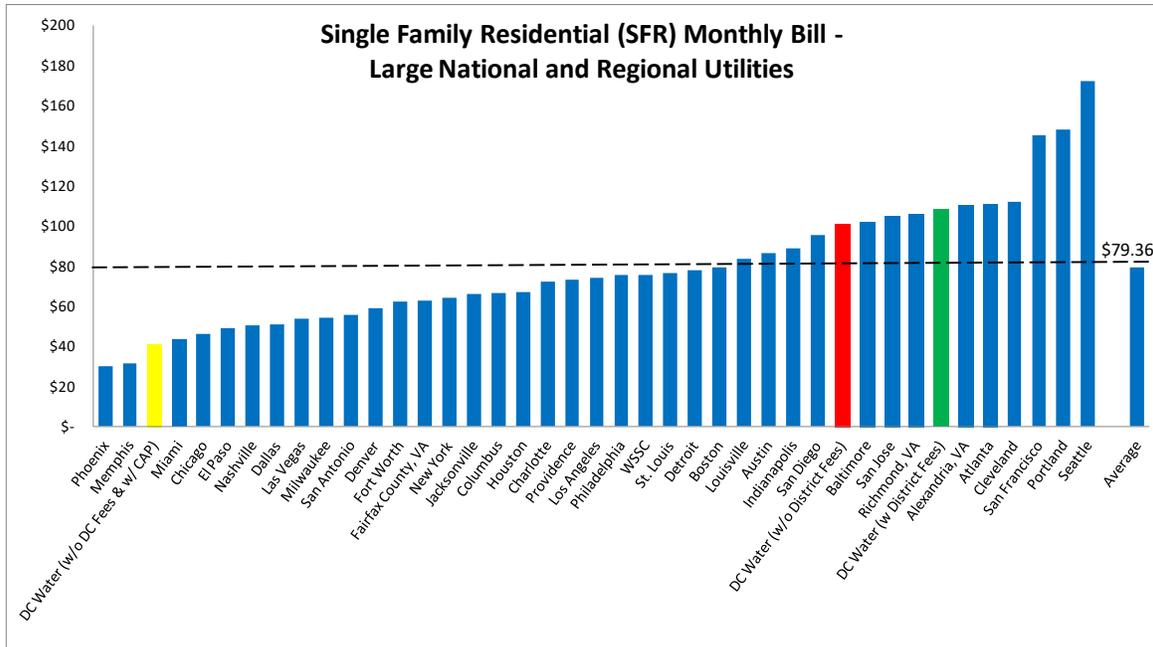
Source: Authority records.

Retail Rate Comparison

The Authority's retail rates are comparable to those of other utilities in the metropolitan Washington, D.C., region and other similar utilities in the eastern United States and nationally. Table 14 compares the Authority's combined water, wastewater and impervious area residential charges to these utilities. The table reflects the Authority's Fiscal Year 2019 rate and fee charges; rates for other utilities are as of July 1, 2019. The Authority's Fiscal Year 2019 rate and fee charges are shown both with and without the pass-through of the District's PILOT/ROW Fee in the amount of \$0.68 per Ccf, and the DOEE residential stormwater rate of \$2.67 per ERU per month.

The Authority offers assistance to qualifying low income ratepayers through its Customer Assistance Program (CAP). Table 14 also illustrates the monthly bill for a CAP customer with average Single Family Residential characteristics.

Table 14. Comparison of Average Authority Water and Wastewater Bill to Bills of Other Utilities^{1,2}



¹ Assumes average residential consumption of 6.20 Ccf, or 4,638 gallons, per month.

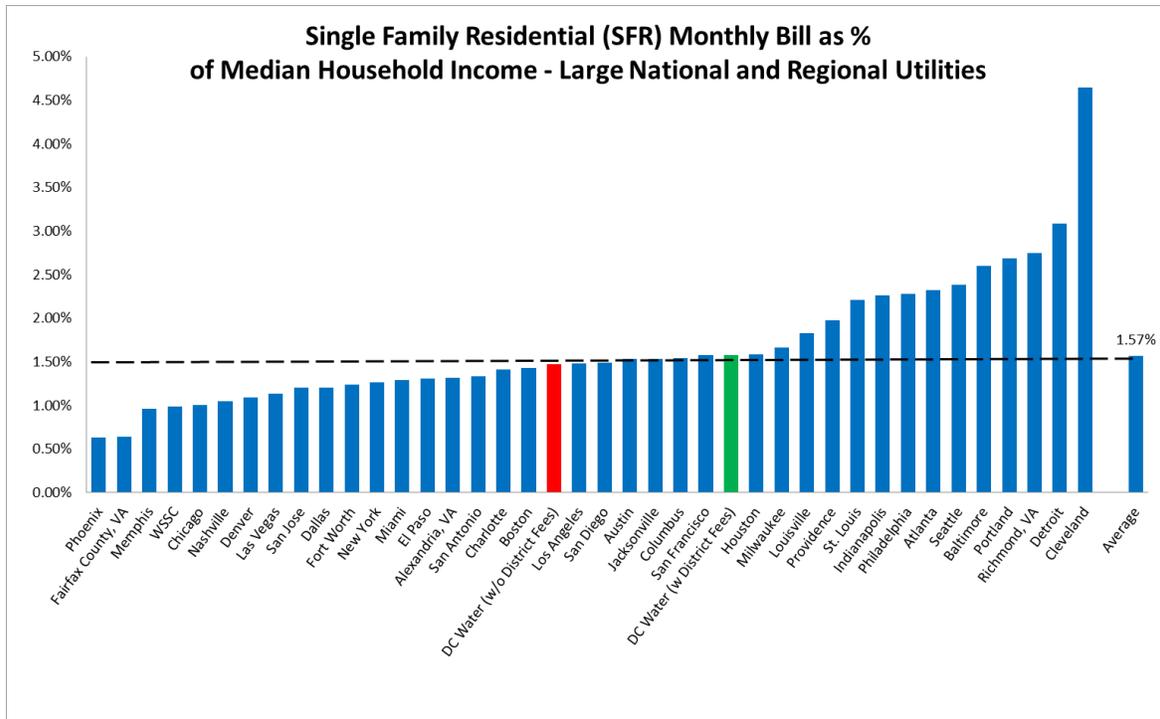
² User charges are based upon information provided by the identified cities and standardized assumptions regarding water consumption, wastewater discharge, stormwater drainage area and other factors. Actual charges in each city will vary in accordance with local usage patterns. There may be significant differences in typical single family residential usage among cities which results in charges that are different than shown above. Some cities bill for sewer use on the basis of winter water consumption which could affect sewer billings if a customer's use was not uniform throughout the year. Wastewater charges include stormwater charges in those cities where separate stormwater fees are assessed. Some cities use property tax revenue or other revenues to pay for part of the cost of water, wastewater or stormwater services. In such situations, the user charges will not reflect the full cost of water, wastewater or stormwater services. Some cities impose charges that become part of the cost of water/wastewater services. Water/wastewater bills in some cities are subject to sales taxes, gross receipts taxes and/or other fees. Affordability programs are used by many cities to reduce the annual charges to eligible customers.

³ Charges for all cities reflect rate schedules in effect on July 1, 2019.

Source: Amawalk

The median income in the District is competitive with the median income in many other jurisdictions. Table 15 illustrates the Authority's charges for a single family residential customer as a percentage of median income compared to similar data for other water and wastewater utilities.

Table 15. Comparison of Average Authority Water and Wastewater Bill (As Percentage of Median Income) to Bills of Other Utilities^{1,2}



¹ Assumes average residential consumption of 6.20 Ccf, or 4,638 gallons, per month.

² Reflects rates and fee in place as of July 1, 2019.

Source: Amawalk

Collections

The Authority has implemented policies and business practices intended to optimize the collection of customer billings. Measures are taken, including cross checks with property records, to ensure that all users of the Authority’s system are being billed. With the implementation of the AMR system, the Authority can access customer usage data at any time and can alert customers to apparent leaks promptly. In September 2013, the Authority achieved the lowest 90-day receivable balance in the Authority’s history at \$4.9 million. The Authority typically maintains a 90-day receivable balance of less than 2.0% of Operating Reserves. This is the result of a comprehensive strategy that integrates several consumer services functions along with an aggressive customer contact process that addresses collections issues early when outstanding balances are within the range of customers’ ability to pay, improved lien processing for delinquent accounts, and enhanced coordination efforts with other District agencies.

The Authority’s collection program includes: (i) assessing customers a 10% late fee if their bill is not paid by day 31 after the date of billing, and sending customers a friendly reminder notice; (ii) placing a call to the customer using an automatic notification call program on day 34; (iii) sending the customer notice of intent to disconnect service on day 39 (which, in accordance with District laws and regulations gives customer 15 days to pay the delinquent bill and maintain service); (iv) mailing to the owner of the property an intent to place a lien on the property on day 65 (which gives the owner 10 additional days to pay the bill before a lien is placed on their property) and imposing an additional 1% penalty per month on all delinquent balances after 60 days; (v) placing a call to the customer on day 67 to inform him/her of the Authority’s intent to place a lien on the property if the delinquent bill is not paid; and (vi) placing a lien on the property on day 80. The lien becomes a part of the public record and appears on the owner’s credit report and adversely affects their FICO score. The Authority will remove a lien only if the delinquent account balance is paid in full, and/or if the lien was placed in error. Once paid, the lien is removed and reflected as “satisfied” on the credit report but the customer’s FICO score is not changed unless the customer contacts the credit bureau. The Authority’s liens are continuous, which entitles the Authority to collect the current outstanding balance owed by a customer regardless of the balance at the time the lien was placed.

The Authority utilizes collection analysts who make calls to owners of delinquent accounts with a focus on the top 250 delinquent accounts. The Authority also takes legal action to have delinquent multi-family apartment building owners placed in receivership. This may result in the Authority receiving a percentage of the tenants' rent that is collected by a court-appointed Receiver before the owner can collect any rent. The account stays in receivership until paid in full.

After all efforts to collect have been exhausted, and as a last resort, the Authority will disconnect service for non-payment and not restore it until the delinquent bill is paid. The AMR system allows the Authority to know if water is being used after service has been disconnected due to non-payment. If this occurs, the meter will be removed or locked and service will not be restored until the delinquent amount, plus any applicable fees, are paid in full.

Table 16 shows the cumulative retail (including commercial) customer balances that were delinquent more than 90 days. There is one government delinquency to report, which is related to DC Government/Municipal property. It is noted that collection efforts were suspended in October 2017 in preparation for the implementation of the new Customer Information System. Collection efforts resumed in July 2018. The receivable balances have declined during the first six months of Fiscal Year 2019 as shown in Table 16.

Table 16. Retail Customer Cumulative Delinquent Balances
(\$ in millions)

<u>As of September 30,</u>	<u>Amount¹</u>	<u>Percent of Operating Revenue</u>
2014	5.3	1.1
2015	6.5	1.2
2016	7.7	1.3
2017	8.4	1.4
2018	13.4	2.1
2019 (Q2 YTD March)	11.8 ²	1.7 ³

¹ Amounts shown are as of the end of each Fiscal Year for amounts delinquent more than 90 days and do not include previously disputed amounts for Howard University (now resolved) and the Soldiers' Home discussed below.

² Amount shown is from October 2018 Finance & Budget Committee - through September 30, 2018 and April 2019 Finance & Budget Committee - through March 31, 2019.

³ This percentage is for the projected revenue of FY 2019.

Source: Authority records.

Special Accounts

The Authority has historically provided some U.S. Soldiers and Airmen's Home ("Soldiers' Home") accounts with free water service in exchange for the use of certain parcels of Soldiers' Home property to maintain a reservoir that provides water to the District. The Authority contends that the Soldiers' Home is required to pay for sewer service and impervious area fees, as well as water services for certain accounts, and has sought payment for these services and fees since 2010. The parties were unable to resolve this matter over the years, and in January 2018, the Authority filed a lawsuit against the Soldier's Home to recover payments for sewer service charges from 2010 to present. The amount of unpaid charges sought is \$13.7 million. Other than the free water service provided to the Soldier's Home, there are no other exempt accounts, nor does the Authority anticipate the addition of any new exempted accounts.

Customer Assistance Programs

The Authority sponsors two programs to assist low income customers in paying their water bills: Customer Assistance Program and Serving People by Lending A Supporting Hand ("S.P.L.A.S.H.").

Customer Assistance Program. The Authority implemented the CAP in 2001 providing a discount of up to 4 Ccf per month of water service for single family residential homeowners that meet income eligibility guidelines. The CAP has been enhanced in subsequent years, as summarized below. Enhancements were effective either on the first day of the Fiscal year or during the year shown.

Fiscal Year CAP Enhancement

2004	Include tenants who meet the financial eligibility requirements and whose primary residence is separately metered by the Authority
2009	Provide a discount of 4 Ccf per month of water and sewer services
2011	Provide a discount of the first 4 Ccf of PILOT/ROW Fee
2016	Provide a 100% discount of the new Water System Replacement Fee (WSRF)
2017	Provide a 50% credit on the billed Clean Rivers Impervious Area Charge (CRIAC)
2018	Provide a discount of 3 Ccf per month of water and sewer services (excluding PILOT/ROW) for expanded income guidelines
2018	Provide a 50% credit on the billed Clean Rivers Impervious Area Charge (CRIAC) for expanded income guidelines
2018	Provide a 75% credit on the billed Clean Rivers Impervious Area Charge (CRIAC) for eligible customers under expanded income guidelines (excludes water and sewer services credits)
2018	Provide up to 90% credit on the billed Clean Rivers Impervious Area Charge (CRIAC) for eligible non-profit organizations
2019	Introduced CAP II and CAP III program for customers not eligible for the CAP program

Table 17A sets forth the number of customers assisted and the total discount provided through the CAP discount since Fiscal Year 2015. The projected revenues of the Authority take into consideration the discounts provided to low-income customers under the CAP. As of Fiscal Year 2019, DC Water proposed an expanded program (CAP II) for low-income residential customers who do not qualify for CAP with a household income up to 80% of the Area Median Income (AMI). Eligible customers receive a discount of up to 3 Ccf per month for water and sewer services and a 50% discount for the CRIAC. Additionally, a new District-funded program (CAP III) will 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 CAP II. An eligible customer under CAP III receives a 75% discount for the CRIAC. Table 17B sets for the number of customers assisted and the total discount provided through the CAP II and CAP III discount for Fiscal Year 2019. The CRIAC Nonprofit Relief Program, was also created in 2019 and is designed to provide CRIAC credits to nonprofit organizations as determined by the District Department of the Environment. An eligible customer under the Nonprofit Relief Program receives up to a 90% discount for CRIAC.

Table 17A. Customer Assistance Program Discount

Fiscal Year	Customers Assisted	Water/Wastewater PILOT/ROW (\$)	WSRF Discount (\$)¹	CRIAC Credit (\$)¹	Total Amount
2015	4,498	1,207,986	-	-	1,207,986
2016	4,379	808,797	185,013	-	993,810
2017	4,244	810,295	195,328	129,674	1,135,297
2018	4,324	737,199	176,403	274,972	1,188,574
2019 ²	3,846	279,430	61,706	91,299	432,435

¹ The CAP data for 2016 and 2017 reflect partial-year benefits for the WSRF discount and CRIAC credit, as they became effective on May 1, 2017. Benefits provided in Fiscal Year 2018 and future Fiscal Years will include the full effect of the WSRF discount and the CRIAC credit.

² Q2 YTD March

Source: Authority records.

Table 17B. Customer Assistance Program II and III Discount

Fiscal Year	Customers Assisted	Water/Wastewater PILOT/ROW (\$)	WSRF Discount (\$)	CRIAC Credit (\$)	Total Amount
2019 – CAP II ¹	66	9,252	-	3,936	13,187
2019 – CAP III ¹	27	-	-	4,716	4,716

¹ Q2 YTD March

Source: Authority records

S.P.L.A.S.H. Through the S.P.L.A.S.H. program, the Authority offers assistance to families in need so that they can receive critical water services. S.P.L.A.S.H. is funded solely by contributions from the community, customers and from the Authority employees. The Authority has redesigned its water and sewer bills to make it easier for its customers to make contributions to S.P.L.A.S.H. The Authority pays all administrative costs of this program, which is administered directly by the Greater Washington Urban League (GWUL). All contributions are deposited in a bank account from which the (GWUL) makes payments on behalf of eligible customers. Every dollar received by the Authority is distributed to eligible customers. Table 18 shows the number of customers assisted by the Authority and the total amount distributed through the S.P.L.A.S.H. program since Fiscal Year 2015.

Table 18. S.P.L.A.S.H Program Distribution

<u>Fiscal Year</u>	<u>Participating Customers</u>	<u>S.P.L.A.S.H Value</u>
2015	351	115,684
2016	309	101,098
2017	331	103,283
2018	212	104,361
2019 ¹	155	52,454.02

¹ Q2 YTD March

Source: Authority records.

Customer Service Operations

The Department of Customer Services reports to the Assistant General Manager of Customer Care and Operations and is responsible for meter installations, meter reading, meter testing, billing and collections. The Authority continuously evaluates its customer service offerings to ensure that customers receive the best possible service.

FINANCIAL OPERATIONS

Historical Financial Operations

The Authority derives its revenues primarily from retail customer payments for water, wastewater and stormwater services, which account for 82.0% of total revenues, and wholesale customer payments for wastewater treatment services, which account for 11.5% of total revenues (excluding the PILOT/ROW Fee for Fiscal Years 2019 through 2023). The Authority’s operating revenues have steadily increased since its creation, due largely to rate and fee increases approved by the Board, which are discussed in more detail in the section entitled “RATES AND CHARGES – Historical and Projected Water and Wastewater Retail Rates.”

The Authority is committed to optimizing the cost of service it offers and as a result places emphasis on managing its expenses. The Authority’s Budget Department closely monitors spending to ensure compliance with approved operating and capital budgets. This includes preparation of daily and monthly management reports for each operating unit and financial system controls that prevent overspending. The Authority’s Finance Department provides detailed monthly reports on cash and investments, revenues, operating budget and capital spending to the Board’s Finance and Budget Committee. In addition, the Authority’s Department of Engineering and Technical Services provides quarterly updates on the CIP status to the Board’s Environmental Quality and Sewerage Services and Water Quality and Water Services Committees, as well as to the Finance and Budget Committee. For Fiscal Years 2014 through 2018, actual expenses of the Authority were less than the budgeted amount.

Table 19A presents historical revenues, expenses and changes in net position using information contained in the audited financial statements for Fiscal Years 2014 through 2018. Table 19B presents historical revenues, expenses and changes in net position for the first six months of Fiscal Year 2018 and the first six months of Fiscal Year 2019. The Authority’s complete financial statements for the Fiscal Years ended September 30, 2018, and 2017, are attached hereto as APPENDIX B.

Table 19A. Historical Revenues, Expenses and Change in Net Position
(\$ in thousands)

	Fiscal Year Ended September 30				2018
	2014	2015	2016	2017	
Operating revenues					
Residential, commercial and multi-family customers	\$295,209	\$335,711	\$382,552	\$401,246	\$425,492
Federal government	39,001	54,274	63,417	67,672	73,551
District government and DC Housing Authority	28,852	32,948	38,185	40,683	42,710
Charges for wholesale wastewater treatment	96,845	112,522	91,873	101,619	121,961
Other	13,917	14,460	19,762	32,149	20,788
Total Operating Revenues	473,824	549,915	595,789	643,169	684,502
Operating expenses					
Personnel services	108,467	115,233	124,239	132,124	142,342
Contractual services	68,172	66,241	74,086	72,611	74,627
Chemicals, supplies and small equipment	31,748	32,935	29,524	33,381	31,152
Utilities and rent	29,939	30,848	23,934	24,262	26,163
Depreciation and amortization	77,833	83,857	89,512	97,900	115,453
Water purchases	28,407	29,109	26,345	26,796	28,357
Payment in lieu of taxes and right of way fee	11,458	20,437	20,744	21,057	21,376
Total operating expenses	356,024	378,660	388,384	408,131	439,470
Operating income	117,800	171,255	207,405	235,038	245,032
Nonoperating revenue (expenses)					
Interest income	977	1,316	2,629	3,740	5,866
Interest expense and fiscal charges	(69,288)	(61,409)	(69,118)	(68,293)	(93,956)
Total nonoperating revenue (expenses)	(68,311)	(60,093)	(66,489)	(64,553)	(88,090)
Change in net position before Federal grants and contributions	49,489	111,162	140,916	170,485	156,942
Contributions of capital from Federal government	94,690	67,965	32,431	24,066	30,419
Change in net position	144,179	179,127	173,347	194,551	187,361
Net position, beginning of year	\$1,206,636	\$1,350,815	\$1,529,942	\$1,703,289	\$1,897,840
Net position, end of year	\$1,350,815	\$1,529,942	\$1,703,289	\$1,897,840	\$2,085,201

Source: Authority records.

Table 19B. Statements of Revenues, Expenses and Changes in Net Position
For the six months ended March 31, 2019 and March 31, 2018
(\$ in thousands)

	2019	2018
Operating revenues		
Residential, commercial and multi-family customers	\$212,473	\$194,218
Federal government	35,513	33,372
District government and DC Housing Authority	22,222	20,955
Charges for wholesale wastewater treatment	58,556	61,433
Other	13,555	9,061
Total Operating Revenues	<u>342,319</u>	<u>319,039</u>
Operating expenses		
Personnel services	74,779	74,351
Contractual services	33,652	34,509
Chemicals, supplies and small equipment	17,525	16,734
Utilities and rent	13,500	13,525
Depreciation and amortization	72,596	52,458
Water purchases	14,905	12,439
Payment in lieu of taxes and right of way fee	10,851	10,688
Total operating expenses	<u>237,781</u>	<u>214,704</u>
Operating income	104,538	104,335
Nonoperating revenue (expenses)		
Interest income	4,861	1,656
Interest expense and fiscal charges	(31,499)	(31,561)
Total nonoperating revenue (expenses)	<u>(26,638)</u>	<u>(29,905)</u>
Change in net position before Federal grants and contributions	77,900	74,430
Contributions of capital from Federal government	6,622	7,739
Change in net position	84,522	82,169
Net position, beginning of period	<u>\$2,085,201</u>	<u>\$1,897,840</u>
Net position, end of period	<u>\$2,169,723</u>	<u>\$1,980,009</u>

Source: Unaudited Quarterly Authority records.

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Historical Debt Service Coverage

The Authority has exceeded the Rate Covenant requirement of 1.20x Senior Debt service coverage set forth in the Indenture and the Authority's policy goal of 1.40x Senior Debt service coverage in each of the last five Fiscal Years, as shown in Table 20.

Table 20. Historical Debt Service Coverage¹
(\$ in thousands)

	Fiscal Year ended September 30				
	2014	2015	2016	2017	2018
Revenues:					
Retail	\$351,148	\$382,012	\$451,467	\$474,462	\$498,394
Wholesale	70,763	81,230	79,784	81,136	81,022
Other Non-Operating	56,082	75,354	58,078	61,419	51,756
(Contributions to/Transfers from Rate Stabilization Fund)	6,500	(10,000)	(19,000)	(10,000)	-
Total Revenues (A)	\$484,493	\$528,596	\$570,329	\$607,017	\$631,172
Operating Expenses (B)	281,918	273,486	298,452	292,812	298,761
Revenues Less Operating Expenses (C=A-B)	\$202,575	\$255,109	\$271,877	\$314,205	\$332,411
Debt Service:					
Senior Debt Service (D)	\$42,041	\$55,746	\$46,829	\$51,945	\$67,296
Subordinate Debt Service (E)	78,124	84,925	105,252	109,263	111,104
Total Outstanding and Projected Debt Service (F=D+E)	\$120,165	\$140,671	\$152,081	\$161,208	\$178,400
Calculation of Net Revenues Available for Senior Debt Service:					
Revenues Less Operating Expenses (C)	\$202,575	\$255,109	\$271,877	\$314,205	\$332,411
Prior Year Federal Billing Reconciliation	(6,000)	(5,053)	(11,679)	(19,201)	(9,019)
(Refund to)/Payment from wholesale customers	(10,069)	(2,483)	(13,017)	(10,906)	8,987
(Additions to)/Transfers from DC PILOT Fund	(7,676)	-	-	-	-
Customer Rebate	(5,100)	-	-	-	-
Net Revenues Available for Senior Debt Service (G)	\$173,730	\$247,574	\$247,181	\$284,098	\$332,379
Senior Debt Service Coverage (G/D)	4.13x	4.44x	5.28x	5.47x	4.94x
Calculation of Subordinate Debt Service Coverage:					
Net Revenue Available for Senior Debt Service	\$173,730	\$247,574	\$247,181	\$284,098	\$332,379
Less Senior Debt Service (D)	(42,041)	(55,746)	(46,829)	(51,945)	(67,296)
Net Revenues Available for Subordinate Debt Service (G-D)	\$ 131,689	\$191,827	\$200,352	\$232,153	\$265,083
Subordinate Debt Service Coverage ((G-D)/E)	1.69x	2.26x	1.90x	2.12x	2.39x
Combined Debt Service Coverage (G/F)	1.45x	1.76x	1.63x	1.76x	1.86x

¹ Prepared in accordance with the Indenture, which closely corresponds to cash basis accounting. Debt service on the Series 2010A Bonds (which is included in Subordinate Debt Service above) reflects the Direct Payments the Authority receives from the U.S. Treasury. The Authority has agreed to deposit the Direct Payments related to the Series 2010A Bonds directly into the Series 2010A Interest Account of the Subordinate Lien Bond Fund to pay interest when due on the Series 2010A Bonds. With respect to the effect of Sequestration on the receipt by the Authority of Direct Payments on its Series 2010A Bonds, see "SECURITY FOR THE SERIES 2019A/B/D BONDS – Direct Payments – Sequestration."

Source: Authority records.

Annual Budget*Annual Budget Process*

The Authority's budgetary process is based on an integrated approach that links its operating and capital requirements to its ten-year financial plan. Preparation of the Authority's budget begins with the preparation of the ten-year financial plan in the spring of each year. The Authority's operating budgets and the CIP are developed based on the financial parameters laid out in the financial plan and in Board policy. Management presents its proposed operating budgets, the CIP and the ten-year financial plan to the Board's Environmental Quality and Sewerage Services, Water Quality and Water Services, and Finance and Budget Committees for their review, with final action by the full Board typically scheduled for January of each year. Upon final approval by the Board, the Authority's budget is forwarded to the District for inclusion in its submission to the President as described below.

Under the Act and the Federal Act, the Authority is required to prepare and annually submit to the Mayor of the District for inclusion in the annual budget of the District estimates of the expenditures and appropriations necessary for the operation of the Authority for each Fiscal Year. All such estimates are required to be forwarded by the Mayor to the Council for its action without revision, but subject to the Mayor's recommendations. The Council may comment or make recommendations concerning such annual estimates but has no authority to revise such estimates. Such annual estimates constitute a part of the annual budget of the District required to be submitted by the

Mayor to the President of the United States for transmission by the President to the U.S. Congress. In accordance with the District's Home Rule Act, except as noted below, no amount may be obligated or expended by any officer or employee of the District, including the Authority, unless such amount has been approved by act of Congress and then only according to such act. Pursuant to the Federal Act, the limitation described in the preceding sentence is not applicable to expenditures by the Authority for any of the following purposes: (i) any amount obligated or expended from the proceeds of any revenue bonds of the Authority; (ii) any amount obligated or expended for debt service on such revenue bonds; (iii) any amount obligated or expended to secure any revenue bonds of the Authority; or (iv) any amount obligated or expended for repair, maintenance, or capital improvement to the System facilities financed by any revenue bonds of the Authority. In addition, pursuant to Public Law 105-33 (D.C. Code Section 1-204.45a(b)), if the Authority has excess revenues, such excess revenues may be obligated or expended for capital projects.

The Approved Fiscal Year 2019 and Fiscal Year 2020 Budgets

The Board adopted the Fiscal Year 2019 operating budget (the "Fiscal Year 2019 Budget") on March 1, 2018 and the Fiscal Year 2020 operating budget (the "Fiscal Year 2020 Budget") on April 4, 2019.

The Fiscal Year 2019 Budget for operating expenditures totals \$582.8 million, which is \$20.8 million or 3.7% higher than the Approved Fiscal Year 2018 Budget, primarily due to the increase in debt service cost associated with the Authority's CIP. The Fiscal Year 2020 Budget for operating expenditures totals \$614.5 million, which is \$31.7 million or 5.4% higher than the Approved Fiscal Year 2019 Budget, primarily due to increase in debt service cost associated with the Authority's CIP and an increase to the Professional Services in the Operations and Maintenance budget.

Commencing in Fiscal Year 2018, the Authority anticipates that the difference between actual and budgeted operating expenses will be less than in previous years due to budget planning that focuses on having actual expenses more closely aligned with budgeted expenses. Beginning in Fiscal Year 2015, the Authority includes a separate line item in its operating budget to provide funds for additional cash-financed capital construction, the defeasance of debt, or other uses at the discretion of the Authority. The amounts in this line item could alternatively be used by the Authority to help address potential shortfalls in cash receipts or increases in expenses, should the need arise. In addition, the Authority has the ability to adjust its rates, as necessary, to provide the required revenues in each year.

Projected Financial Operations

Table 21 was prepared by Amawalk in its capacity as the financial feasibility consultant to the Authority, and it shows (i) the actual cash flows, cash reserves and debt service coverage for Fiscal Year 2018 and (ii) projected cash flows, cash reserves and debt service coverage for Fiscal Years 2019 through 2023. The projected revenues reflect the increases in rates and charges adopted by the Authority for Fiscal Year 2019 and the anticipated increases in rates and charges for Fiscal Years 2020 through 2023.

The projected financial results for Fiscal Years 2019 through 2023 incorporate assumptions as of the date of this Official Statement. The projected debt service requirements include anticipated debt service on the Series 2019A/B/D Bonds and the Series 2019C Subordinate Bonds. The first payment of debt service for the Series 2019A/B/D Bonds and the Series 2019C Subordinate Bonds is expected to be made in Fiscal Year 2020. Excluding the issuance of the Series 2019A/B/D Bonds and the Series 2019C Subordinate Bonds, the Authority anticipates issuing approximately \$731.6 million of new money bonds from Fiscal Year 2021 through and including Fiscal Year 2023. There are no deposits to the debt service reserve fund assumed for the Series 2019A/B/D Bonds, and any anticipated future bonds; the Authority may decide to make contributions to the debt service reserve fund in the future at its discretion.

The Authority has the option to issue future bonds as either Senior Debt or Subordinate Debt. The combined debt service coverage would remain the same if the Authority were to elect to issue Senior Debt in lieu of Subordinate Debt or vice versa in a given year. Decisions regarding the issuance of future debt as Senior Debt will be made by the Authority at the time of debt issuance.

For more information in respect of Amawalk's analysis, see "FINANCIAL FEASIBILITY OPINION LETTER" in Appendix A.

Table 21. Analysis of Actual and Projected Financial Results

Fiscal Years ended/ending September 30
(\$ in thousands)

	Actual			Projected		
	2018 ²	2019	2020	2021	2022	2023
Revenues and Payment Obligations						
Revenues						
Retail Revenues ¹	\$498,394	\$530,984	\$538,362	\$589,407	\$629,329	\$672,857
Wholesale Revenues	81,022	82,992	79,224	81,600	84,048	86,570
Other Non-Operating Revenues	51,756	62,361	62,886	69,183	74,083	76,885
Transfer from RSF	0	6,000	0	0	0	0
(Contributions to RSF)	0	(6,000)	0	0	0	0
Total Revenues	631,173	676,337	680,472	740,191	787,461	836,313
Prior Year Federal Billing Reconciliation	(9,019)	(5,821)	1,317	2,233	0	0
Projected Billing Refunds	0	(11,000)	(4,000)	(4,000)	0	0
(Refund to)/Payment from IMA	8,987	(15,446)	(3,448)	0	0	0
Transfer to CAP Fund	0	(10,246)	0	0	0	0
Curing Pad + ERP	0	0	(4,316)	0	0	0
Net Revenues (A)	631,141	633,825	670,025	738,424	787,461	836,313
Operating Expenses (B)	298,761	311,166	325,847	335,892	346,249	356,928
Net Revenues Available for Debt Service (C=A-B)	332,380	322,659	344,178	402,533	441,212	479,385
Total Senior Debt Service (D) ^{3,4,5}	67,296	75,609	76,385	76,386	76,386	84,239
Total Subordinate Debt Service (E) ^{3,4,5,6,7,8}	111,104	118,412	136,826	151,236	168,964	178,835
Total Outstanding & Projected Debt Service (F=D+E)	178,399	194,021	213,211	227,622	245,350	263,074
Debt Service Coverage						
Calculation of Net Revenues Available for Senior Debt Service						
Senior Debt Service Coverage (C/D)	4.94x	4.27x	4.51x	5.27x	5.78x	5.69x
Calculation of Subordinate Debt Service Coverage						
Net Revenue Available for Senior Debt Service (C)	332,380	322,659	344,178	402,533	441,212	479,385
Less Senior Debt Service (D)	(67,296)	(75,609)	(76,385)	(76,386)	(76,386)	(84,239)
Net Revenue Available for Subordinate Debt Service (C-D)	265,084	247,049	267,793	326,146	364,826	395,146
Subordinate Debt Service Coverage [(C-D)/E]	2.39x	2.09x	1.96x	2.16x	2.16x	2.21x
Combined Debt Service Coverage (C/F)	1.86x	1.66x	1.61x	1.77x	1.80x	1.82x
Subordinated Payment Obligations						
Payment In Lieu of Taxes/Right of Way Fee (G)	21,376	21,702	22,034	22,372	22,718	23,070
Defeasance/Cash Financed Capital Construction (H) ⁹	35,260	26,999	28,556	30,589	39,123	48,715
Revenues Less Disbursements (I=A-B-F-G-H)	97,344	79,937	80,378	121,949	134,021	144,525
Reserve Balances						
Beginning Cash Reserve Balance (J)	147,212	166,796	171,342	180,000	185,000	194,000
Cash Reserve Balance Breakdown						
Beginning Undesignated Reserve Balance	63,078	80,091	86,548	93,139	95,692	103,018
Additions to/(Transfers from) Undesignated Reserve						
Annual Balance from Operations	97,376	122,450	90,825	123,715	134,021	144,525
Prior Year Federal Billing Reconciliation	(9,019)	(5,821)	1,317	2,233	0	0
Projected Billing Refunds	0	(11,000)	(4,000)	(4,000)	0	0
(Refund to)/Payment from IMA	8,987	(15,446)	(3,448)	0	0	0
Transfer to CAP Fund	0	(10,246)	0	0	0	0
Curing Pad + ERP	0	0	(4,316)	0	0	0
Pay-Go Capital Financing	(77,761)	(75,391)	(71,720)	(116,949)	(125,021)	(137,525)
(Transfers to)/Transfers from 60-Day Reserve	(2,571)	1,912	(2,067)	(2,447)	(1,674)	(1,726)
Ending Undesignated Reserve Balance	80,091	86,548	93,139	95,692	103,018	108,292
Beginning 60-Day Operating Reserve Balance	49,134	51,705	49,794	51,861	54,308	55,982
Additions to/(Transfers from) 60-Day Reserve	2,571	(1,912)	2,067	2,447	1,674	1,726
60-Day Operating Reserve Balance	51,705	49,794	51,861	54,308	55,982	57,708
Beginning Renewal & Replacement Balance	35,000	35,000	35,000	35,000	35,000	35,000
Additions to/(Transfers from) Renewal & Replacement Reserve	0	0	0	0	0	0
Renewal & Replacement Balance	35,000	35,000	35,000	35,000	35,000	35,000
Ending Balance Cash Reserve	166,796	171,342	180,000	185,000	194,000	201,000

District Stormwater Fee - DC Water Share (K)	1,247	1,263	1,000	1,000	1,000	1,000
Cash Reserve Requirement Per Board Policy [Maximum of (B-K)*(120/365) or \$125.5 Million] ¹⁰	125,500	125,500	125,500	125,500	125,500	125,500
Beginning Rate Stabilization Fund Balance	61,450	61,450	61,450	61,450	61,450	61,450
Transfers from Operations (Additions to Rate Stabilization Fund)	0	6,000	0	0	0	0
Additions to Operations/(Transfers from) Rate Stabilization Fund	0	(6,000)	0	0	0	0
Rate Stabilization Fund Balance	61,450	61,450	61,450	61,450	61,450	61,450

¹ Includes retail revenue from water and wastewater charges as well as the Clean Rivers Impervious Area Charge.

² Preliminary results, unaudited.

³ Debt service is shown on a cash basis, and may differ from the CAFR.

⁴ Anticipated future bonds in Fiscal Year 2023 are currently assumed to be issued on a senior lien basis. Anticipated future bonds in Fiscal Years 2019, 2021, and 2022 are currently assumed to be issued on a subordinate lien basis. The Authority may decide in the future to issue bonds on a senior or subordinate basis. Debt service for the anticipated Fiscal Year Series 2019A/B/D Bonds is calculated based on an assumed annual true interest cost of 3.34%, a term of 30 years and level debt service. Debt service for the anticipated 2019 Series C Bonds is based on an assumed annual true interest cost of 3.09%, a term of 35 years and with no principal payments during the period of Fiscal Year 2019 through Fiscal Year 2023. Debt service for anticipated future bonds starting in Fiscal Year 2020 is calculated based on a term of 35 years and level annual debt service and assumed annual interest rates of 5.50% in Fiscal Year 2020, and 6.00% in Fiscal Year 2021 and all subsequent years.

⁵ Total Senior Debt Service (D) and Total Subordinate Debt Service (E) includes debt service payments on anticipated future bonds of the Authority, based on the terms noted in footnote 4 above. The Authority has applied for loans to finance a portion of its CIP pursuant to the Water Infrastructure Finance and Innovation Act of 2014 (WIFIA), a federal credit program administered by EPA for eligible water and wastewater infrastructure projects. The application amount is a total of \$144 million to be disbursed over multiple years. If such loans are approved, it is anticipated that: a) the amount of the bonds issued in future years by DC Water will be reduced by the principal amount of the loans received from the WIFIA program; and b) the annual debt service payments on such loans will be approximately equal to or less than the debt service that would be required if the Authority issued bonds in lieu of accepting the loan proceeds.

⁶ The Total Subordinate Debt Service is net of the Build America Bonds (BABs) subsidies the Authority expects to receive from the United States Treasury equal to approximately 32% of the interest payable on the Series 2010A Bonds. It reflects the reduction in BABs subsidy payments due to expected effects of sequestration. See "SECURITY FOR THE SERIES 2019A/B/D BONDS - Direct Payments – Sequestration."

⁷ Subordinated debt service includes an allowance in each year for the interest costs of both Commercial Paper and Extendible Maturity Commercial Paper. See "DEBT SERVICE REQUIREMENTS."

⁸ The Series 2016B Bonds are designated as environmental impact bonds and, as such, include provisions for the possibility of an outcome payment by the Authority to the original purchasers of the Series 2016B Bonds, and for the possibility of a risk share payment by such original purchasers to the Authority depending upon the results achieved by the green infrastructure financed with the proceeds of the Series 2016B Bonds. The Series 2016B Bonds are subordinate, multimodal variable rate bonds, initially issued bearing a 3.43% fixed rate through the mandatory tender date, April 1, 2021 (Fiscal Year 2021). The subordinate debt service shown above includes principal and interest payments through Fiscal Year 2021 and assumes that no outcome payment is payable by the Authority. In the event that an outcome payment is necessary, the Authority estimates that its maximum obligation would be \$3.3 million, payable in full in Fiscal Year 2021. Any outcome payment up to and including the maximum obligation would not be material to the annual cash flows of the Authority. In the event that the maximum obligation amount has to be paid in Fiscal Year 2021: a) the projected Senior Debt Service Coverage does not change, b) the projected Subordinate Debt Service Coverage would be 2.12, and c) the Projected Combined Coverage would be 1.75.

⁹ Beginning in Fiscal Year 2016, the Authority included funds in its annual budget that are intended to be used to defease outstanding debt or pay for construction on a cash basis. These funds are separate from the Pay-Go Capital Financing amounts referenced under Reserve Funds above and are presently assumed to be added to the Pay-Go amounts and deposited in total as a source of funds for the CIP. Alternatively, these funds could be used to cover unexpected declines in revenues or increases in expenses. The Authority reserves the right to modify the amount of the funds and the usage of funds during each year.

¹⁰ Board financial policy requires the maintenance of a cash equivalent to 120 days of operating costs less District stormwater revenues, but not less than a cash balance of \$125.5 million. Actual results are projected to be higher than required under Board policy; see the explanation provided herein.

Source: Amawalk (Totals may not add due to rounding.)

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System Revenues

The Authority collects revenues from retail and wholesale customers as well as other sources that include fees paid by developers and interest earnings on available funds. Authority revenues also include transfers from the Rate Stabilization Fund. Table 22 shows historical revenues of the Authority for Fiscal Year 2018, and the projected revenues for Fiscal Years 2019 through 2023.

Table 22. Historical and Projected Revenue on a Cash Basis

Fiscal Years ended/ending September 30
(\$ in thousands)¹

	Actual ²		Projected ³			
	2018	2019	2020	2021	2022	2023
Retail Revenue						
Residential, Commercial, Multi-Family	\$260,495	\$299,698	\$321,081	\$361,757	\$399,734	\$429,339
D.C. Municipal Government	10,979	7,066	10,000	11,114	12,263	13,172
Federal Government	39,552	41,525	47,940	56,031	60,915	65,432
D.C. Housing Authority	7,137	9,269	9,720	10,828	11,973	12,860
Groundwater ⁴	0	0	5	5	5	5
Metering Fee	11,745	11,544	10,776	10,776	10,776	10,776
Water System Replacement Fee ⁵	40,896	40,527	39,717	39,717	39,717	39,717
CRIAC	<u>127,591</u>	<u>121,356</u>	<u>99,123</u>	<u>99,179</u>	<u>93,946</u>	<u>101,556</u>
Total Retail Revenue	\$498,394	\$530,984	\$538,362	\$589,407	\$629,329	\$672,857
Wholesale Revenue						
Loudoun County & Potomac Interceptor	\$9,942	\$10,257	\$10,203	\$10,509	\$10,825	\$11,149
WSSC	57,210	58,335	54,520	56,155	57,840	59,575
Fairfax County	<u>13,870</u>	<u>14,401</u>	<u>14,501</u>	<u>14,936</u>	<u>15,384</u>	<u>15,845</u>
Total Wholesale Revenue	\$81,022	\$82,992	\$79,224	\$81,600	\$84,048	\$86,570
Other Revenues						
District Stormwater Fee – D.C. Water Share	\$1,247	\$1,263	\$1,000	\$1,000	\$1,000	\$1,000
Transfer from Rate Stabilization Fund	0	6,000	0	0	0	0
Miscellaneous Revenues	26,881	36,719	35,615	36,836	36,928	37,108
Aqueduct Debt Service Revenue from Falls Church and Arlington	193	193	193	193	193	193
Interest Income	2,200	3,151	3,966	8,782	13,244	15,514
PILOT/D.C. Right of Way Occupancy Fee	<u>21,236</u>	<u>21,035</u>	<u>22,113</u>	<u>22,372</u>	<u>22,718</u>	<u>23,070</u>
Total Other Revenue	\$51,756	\$68,361	\$62,886	\$69,183	\$74,083	\$76,885
Total Operating Cash Receipts	\$631,173	\$682,337	\$680,472	\$740,191	\$787,461	\$836,313
Less: Contributions to Rate Stabilization Fund	0	(6,000)	0	0	0	0
Total Operating Cash Receipts with RSF Transfers	\$631,173	\$676,337	\$680,472	\$740,191	\$787,461	\$836,313

¹ All figures are presented on a cash receipt basis. Totals may not add due to rounding.

² Preliminary results, unaudited.

³ Fiscal Year 2019 - 2023 revenue projections are based on the Authority's financial plan.

⁴ Groundwater revenue refers to receipts from customers that pump groundwater into the sewer system.

⁵ The meter-based Water System Replacement Fee to recover the cost of the 1% renewal and replacement program for water service lines was implemented beginning in Fiscal Year 2016.

Source: Amawalk.

An overview of the revenue components on a cash basis is provided below.

Retail Water and Wastewater Revenues

Retail revenues comprise the vast majority of all System revenues. In Fiscal Years 2014 through 2018, retail revenues accounted for approximately 78.6% of total revenue (excluding the PILOT/ROW Fee and the effects of withdrawals from the Rate Stabilization Fund), wholesale customer payments represented about 14.4% of total revenues, with the remaining 7.0% coming from a variety of sources, such as interest income, the District fire protection fee, IMA contributions for indirect costs and fees from service installations. Retail revenues are derived primarily from water and wastewater service charges of the Authority that are based on water consumption as described earlier in this Official Statement. Other sources of retail revenue include the customer metering fee, CRIAC, and Water System Replacement Fee. See “CUSTOMER BASE, RATES AND CHARGES – Components of Retail Rates and Charges.”

The Authority has projected that revenues from retail customers, excluding the PILOT/ROW Fees, will be \$531.0 million in Fiscal Year 2019, or 81% of the Authority’s total revenues (excluding the PILOT/ROW Fee and transfers from the Rate Stabilization Fund). This amount includes approximately \$121.4 million from the CRIAC and \$40.5 million from the Water System Replacement Fee. Without the CRIAC and the Water System Replacement Fee, Fiscal Year 2019 projected revenue is expected to be \$39.2 million, or 11.9%, higher than the Fiscal Year 2018 revenues from retail customers. The projected increase in retail revenue assumes the consumption of retail customers will be lower in Fiscal Year 2019 compared to Fiscal Year 2018. Cash Receipts for the first nine months of Fiscal Year 2019 (through March 31, 2019) (excluding the PILOT/ROW Fee) were slightly higher than budget for this period. As of the date of this Official Statement, it is not possible to predict whether full-year cash receipts will be higher, lower or the same as the budgeted receipts.

Revenues from retail customers are projected to be \$538.4 million in Fiscal Year 2020. This amount includes approximately \$99.1 million from the CRIAC and \$39.7 million from the Water System Replacement Fee and excludes the PILOT/ROW Fee. Without the effects of the CRIAC and the Water System Replacement Fee, the Fiscal Year 2020 projected revenue represents an increase of \$30.4 million or 8.2% compared to the projected Fiscal Year 2019 revenues.

Revenues from retail customers are projected to be \$589.4 million in Fiscal Year 2021. This amount includes approximately \$99.2 million from the CRIAC and \$39.7 million from the Water System Replacement Fee and excludes the PILOT/ROW Fee. Without the effects of the CRIAC and the Water System Replacement Fee, the Fiscal Year 2020 projected revenue represents an increase of \$51.0 million or 12.8% compared to the projected Fiscal Year 2020 revenues.

Retail revenues in Fiscal Years 2022 and 2023 are anticipated to increase in each year reflecting both the effects of anticipated changes in rates (as illustrated in Table 13) as well as the expectation that water demand will decrease by 1% annually.

Clean Rivers Impervious Area Charge Revenues

The revenues from the CRIAC were \$127.6 million in Fiscal Year 2018. CRIAC revenues are projected to decrease to \$121.4 million in Fiscal Year 2019 due to a rate adjustment. Rates and revenues from the CRIAC in Fiscal Year 2020 are expected to be lower than in the prior year and rates and revenues from wastewater charges are expected to be higher due to both: a) increases in the cost of service, and b) an allocation of a portion of the costs of the LTCP to wastewater charges in lieu of the CRIAC. The allocation of a portion of LTCP costs to wastewater charges is based on an analysis prepared by the Authority which estimates that sanitary sewage comprises 37% of combined wastewater and stormwater. DC Water expects to allocate a portion of the LTCP costs to wastewater charges in three stages, beginning with an 18% allocation in Fiscal Year 2020. In Fiscal Years 2021 and 2022, the allocated portions are expected to be 28% and 37%, respectively. Allocated LTCP costs in Fiscal Year 2023 are expected to remain at the 37% level. Amawalk reviewed the Authority’s analysis and found it to be reasonable and consistent with industry practice. The expected reduction in Fiscal Year 2020 CRIAC revenue of \$22.2 million represents a decrease of 18.3% from the prior year. The revenues from the CRIAC in Fiscal Year 2023 are expected to increase reflecting the effects of projected rate increases.

Water System Replacement Fee

The revenues from Water System Replacement Fee were \$40.9 million in Fiscal Year 2018. It is anticipated that the Water System Replacement Fee will generate \$40.5 million in Fiscal Year 2019 and \$39.7 million in revenue per year from Fiscal Years 2020 through 2023.

Stormwater Revenues

In Fiscal Year 2018, the Authority collected \$1.2 million in stormwater fees from its retail accounts to cover its share of District stormwater expenditures, and it anticipates that it will collect \$1.3 million in Fiscal Year 2019. The Authority assumes that it will continue collecting \$1.0 million in stormwater fees in each of the Fiscal Years

2020 through 2023. The District Council has stormwater rate-setting authority for stormwater services provided by the District. The projected revenue from stormwater fees that are payable to the District are based on the current stormwater rate. For more information regarding the stormwater fee, see “CUSTOMER BASE, RATES AND CHARGES – Components of Retail Rates and Charges – Stormwater Fee.”

Wholesale Revenues

The Authority’s wholesale revenues for wastewater operations are stable and reflect modest increases in the cost of service and changes in the volumes of wastewater flow from suburban customers. In Fiscal Year 2018, the Authority received \$81.0 million in revenue from its wholesale customers pursuant to the IMA. Revenues from wholesale customers are expected to increase to \$83.0 million in Fiscal Year 2019 and then decrease to \$79.2 million in Fiscal Year 2020. The revenues from the wholesale customers in Fiscal Years 2021 through 2023 are projected to increase reflecting the effects of projected rate increases as well as the expectation that water demand will decrease by 1% annually.

Loan Repayment from Arlington County and Falls Church

The Authority provided a loan to the Aqueduct to finance certain improvements at the Aqueduct. This loan is repaid to the Authority by Arlington County, Virginia, and Falls Church, Virginia, as Aqueduct Customers, in the form of a credit that is issued to the Authority on the monthly water bills generated by the Aqueduct. The amount of the credit is determined by the Aqueduct in accordance with the Water Sales Agreement, and the annual amount is expected to be \$193,246 from Fiscal Year 2019 through Fiscal Year 2023.

Interest Income on Reserve Funds

Interest income is earned on the available funds of the Authority and a portion of the interest earnings may be used to pay operating and maintenance expenses or capital costs of the Authority.

Interest earnings will fluctuate from year to year based on changes in cash flow, reserve requirements, fund balances and market conditions affecting interest rates and other investment terms. The Authority has projected interest earnings of \$3.2 million in Fiscal Year 2019, \$4.0 million in Fiscal Year 2020, \$8.8 million in Fiscal Year 2021, \$13.2 million in Fiscal Year 2022 and \$15.5 million in Fiscal Year 2023, including interest earned from the bond reserves. The assumed annual interest earnings rates for the funds are 1.5% in Fiscal Year 2019, 2.0% in Fiscal Year 2020, 3.0% in Fiscal Year 2021 and 4.0% in Fiscal Years 2022 and 2023. Projected fund balances and interest rate assumptions are reviewed annually as part of the Authority’s budget process. The Authority assumes for forecasting purposes that interest earnings rates will increase over time while simultaneously assuming that borrowing rates for future Authority debt will be higher than the assumed rates for Fiscal Year 2019.

Miscellaneous Revenue

The Authority realizes revenue from several sources classified as miscellaneous, such as charges for late payments by customers, service installation charges, service line repairs, engineering reviews, the sale of manuals, the District fire protection fee, and fees charged to commercial waste haulers. Miscellaneous revenues in Fiscal Year 2018 were \$26.9 million. Revenues from these sources are expected to increase to \$36.7 million in Fiscal Year 2019. Miscellaneous revenues are expected to total \$35.6 million per year in Fiscal Year 2020, \$36.8 million in Fiscal Year 2021, \$36.9 million in Fiscal Year 2022, and \$37.1 million in Fiscal Year 2023.

These amounts also include payments for various development-related services provided by the Authority and charges to the District for fire protection services. The Authority’s annual investments (operating and capital) in fire protection assets and services increased significantly following the execution of the Memorandum of Understanding between the Authority and the District of Columbia Fire and EMS Department (FEMS) on October 25, 2007. The fees charged by the Authority are intended to recover the costs incurred by the Authority related to fire protection services provided by the water system including, but not limited to, the ability to deliver water for firefighting as well as maintaining and upgrading fire hydrants. The Authority’s investments will continue in future years but at a pace that is much lower than the peak years of Fiscal Year 2008 and Fiscal Year 2009. The projected miscellaneous revenues assume that the District will make such payments in each year or that a combination of payments and credits against Authority payments to the District will result in the Authority receiving the full amounts expected from the District.

PILOT/ROW Fee

The total combined revenues from the PILOT/ROW Fee are assumed in the financial forecast to total \$21.7 million in Fiscal Year 2019, and increase to \$23.1 million in Fiscal Year 2023. The Authority and the District have negotiated new MOUs for both the PILOT and the ROW (see “THE AUTHORITY – Authority’s Relationship to the District”).

System Expenditures*Operating Expenses*

Table 23 presents the historical Operating and Maintenance (“O&M”) expenses of the Authority for Fiscal Year 2018, and the projected O&M expenses for Fiscal Years 2019 through 2023 on a cash disbursement basis.

The projected expenses for Fiscal Year 2019 reflect the current adopted budget of the Authority which represents a 4.2% increase over the expenses for Fiscal Year 2018, excluding the PILOT/ROW Fee payments to the District. The anticipated expenses for Fiscal Year 2020 reflect an annual increase of 4.7% over the projected expenses for Fiscal Year 2019, excluding the PILOT/ROW Fee payments to the District.

Table 23. Historical and Projected Operation and Maintenance Costs on a Cash Disbursement Basis
Fiscal Years ended/ending September 30
(\$ in thousands)¹

	Actual²		Projected³			
	2018	2019	2020	2021	2022	2023
Personnel Services	\$138,993	\$137,253	\$147,932	\$152,370	\$156,941	\$161,649
Contractual Services	73,404	78,725	81,886	84,343	86,873	89,479
Water Purchases	27,665	32,617	34,929	35,977	37,056	38,168
Chemical & Supplies	34,679	35,738	33,158	34,153	35,177	36,233
Utilities & Rent	23,414	25,966	26,953	28,031	29,152	30,318
Small Equipment	606	867	989	1,019	1,049	1,081
Total O&M Expenses	298,761	311,166	325,847	335,892	346,249	356,928
PILOT/D.C. ROW Occupancy Fee	\$21,376	\$21,702	\$22,034	\$22,372	\$22,718	\$23,070
Total Expenses	\$320,137	\$332,868	\$347,881	\$358,264	\$368,967	\$379,998

¹ All figures are presented on a cash disbursement basis. Totals may not add due to rounding.

² Preliminary results; unaudited.

³ Fiscal Year 2019 - 2023 cost projections are based on the Authority’s financial plan.

Source: Amawalk

Table 24 provides a comparison of the budgeted versus actual costs for Fiscal Years 2017 and 2018 as well as the first six months of Fiscal Year 2019 on an accrual basis. As illustrated in Table 24, the Authority has historically under-spent its annual budget as a whole as well as its O&M expenses as one component of the budget. Individual line items of expense may be higher or lower in a given year but aggregate expenses are historically less than budgeted.

Table 24. Budget to Actual Expense Comparison
Fiscal Years Ended September 30
(\$ in thousands)¹

Category	2017			2018			2019 (YTD March)		
	Approved Budget	Actual Cost	Variance	Approved Budget	Actual Cost	Variance	Approved Budget	Actual Cost	Variance
Personnel Service	\$144,761	\$149,293	\$ (4,532)	\$149,193	\$138,993	\$10,200	\$162,620	\$75,717	\$86,903
Contractual Service	82,760	72,951	9,809	79,353	73,404	5,949	81,679	38,012	43,667
Water Purchase	29,278	26,796	2,482	30,156	27,665	2,491	30,520	14,737	15,783
Chemical & Supplies	34,709	31,373	3,336	30,659	34,679	(4,020)	32,091	17,523	14,568
Utilities & Rent	28,670	24,260	4,410	29,399	23,414	5,985	32,091	12,909	19,182
Small Equipment	1,230	1,178	52	1,071	606	465	1,240	177	1,063
Debt Service	169,346	165,836	3,510	185,480	178,399	7,081	199,025	95,937	103,088
Cash Financed Capital Improvements	24,014	24,199	(185)	35,260	35,260	0	26,999	-	26,999
PILOT/ROW	21,057	21,057	-	21,376	21,376	(0)	21,702	10,851	10,851
Total Budgetary Basis Expenditures	\$535,825	\$516,943	\$23,510	\$540,886	\$533,796	\$7,090	\$582,781	\$265,863	\$316,918

¹ All figures are presented on an accrual basis.
Source: Authority records.

Several factors affecting future expenses are described herein. The Authority has undertaken long-term initiatives to optimize the cost of service. Management's forecast of operations and maintenance expenses reflects continued emphasis on managing such expenses. Examples of historical and ongoing initiatives are outlined in the description of the major categories of expense. Management continually monitors expenditures and reports the results monthly to the Board's Finance and Budget Committee. The Authority also has the option, in any given year, to defer certain expenses in order to stay within its budget and conform to Board policy requirements.

Labor-Related Expenses

Personnel costs are directly affected by staffing levels, salaries and wages, fringe benefits including retirement contributions, overtime expenditures and other factors.

Certain individuals at the Authority are responsible for planning and implementing the CIP. The salaries, wages and fringe benefits of such personnel are charged to capital projects and are paid for through the sources of funds for the CIP.

Salaries and Fringe Benefits. The Authority provides its employees with a comprehensive fringe benefit package, including coverage for health insurance, group term life insurance, dental care, vision care, disability coverage and retirement plans. The fringe benefit component of total labor costs in recent years has been impacted by the increasing cost of health care coverage. Fringe benefits are budgeted to be 22% of the total personnel services budget in Fiscal Year 2019 and 23% of the total personnel services budget in Fiscal Year 2020.

While employed by the Authority, employees contribute to a retirement fund and the Authority contributes a proportional match. Once an employee retires, the Authority has no further financial obligations relating to those employees. Some retired employees may be eligible to receive a federal pension. In addition, the federal government also may assume the employer portion of the healthcare coverage for eligible employees. The Authority is and expects to continue to remain current with its benefit payments.

See "THE AUTHORITY – Employees and Labor Relations" herein for further information regarding the Authority's labor force and the status of collective bargaining agreements.

Overtime Expenses. The Authority uses overtime work by its employees to address unplanned repairs and service needs (e.g., to repair water main breaks that occur outside of normal business hours) as well as to provide resources to offset unfilled positions and to reduce the need for contractual labor. Overtime expenses in Fiscal Year 2018, including an allowance for fringe benefits, totaled \$42.8 million, or about 27.2% of total personnel services costs.

Total Personnel Expenses. On an accrual basis, the Authority's personnel costs increased at an annual average of 5.8% per year from Fiscal Year 2014 through Fiscal Year 2018. Budgeted personnel expenses for Fiscal Year 2019 are \$162.6 million, a 3.2% increase over Fiscal Year 2018. In Fiscal Year 2020, personnel expenses are expected to increase 5.0% from the prior year. Beginning in Fiscal Year 2021, personnel expenses are projected to increase at an average annual rate of 3.0%. The projected rate of increase is supported by the Authority's demonstrated ability to maintain adequate staffing levels and reduce overtime costs through improvements in its facilities and business practices, as well as the expectation that new employees in the upcoming years will have lower salaries and benefits compared to the employees who will retire during that same period.

Non-Labor Operating Expenses

There are four major categories of non-labor related operating expenses: contractual services (which includes the processing and disposal of biosolids), water purchases, chemicals and supplies, and utilities and rent (which includes electricity needed to operate the Authority facilities). A brief overview of the four major categories of non-labor expenses is provided below.

Contractual Services. Contractual services include the outside services necessary for the Authority to operate and maintain facilities, including the hauling of biosolids from the Blue Plains treatment facility to the disposal location, building maintenance and repair, the maintenance of certain machinery, equipment and vehicles, and other contractual or professional services.

The actual costs on an accrual basis for contractual services in FY 2019 (Q2) were \$38.0 million. The budgeted amounts for contractual services in Fiscal Year 2019 and Fiscal Year 2020 are \$81.7 million and \$81.9 million, respectively. Contractual services expenses are assumed to increase at the average annual rate of 3.0% for Fiscal Years 2021 through 2023.

Also included within contractual services is the Authority's purchase of annual insurance policies. The policies cover property, equipment, worker's compensation, umbrella and excess liability, crime and fidelity, public officials' liability, and fiduciary liability.

Water Purchases. The Authority purchases all of its treated drinking water from the Aqueduct on the basis of a 1997 agreement between the Authority and the Corps of Engineers, the operator of the Aqueduct. Under the terms of the agreement and based on its usage in relation to the other Aqueduct Customers, the Authority pays an average of approximately 75% of the Aqueduct's operating costs. The Authority's share of Aqueduct capital costs is reflected in the Authority's CIP.

On an accrual basis, the actual operating costs for water purchases in Fiscal Year 2019(Q2) were \$14.7 million. The budgeted amount for water purchases in Fiscal Year 2019 and Fiscal Year 2020 is \$30.5 million and \$34.9 million, respectively. An average annual increase in water supply costs is assumed at approximately 3.0% in Fiscal Years 2021 through 2023.

Chemicals and Supplies. The chemicals and supplies component of the Authority's operating and maintenance expenses includes, but is not limited to, office, laboratory, custodial and maintenance supplies, automotive supplies, uniforms, and chemicals. Chemicals are the largest portion of this component. The Authority continues to implement a QA/QC program for managing dry polymer selection, procurement, and use. The most cost effective dry polymer products, for different process applications at Blue Plains, are selected based on laboratory and full scale tests. The selected products are "fingerprinted" to verify the consistency in the quality of future deliveries.

The actual expenses for chemicals and supplies in Fiscal Year 2019(Q2), on an accrual basis, were \$17.5 million. The budgeted expenses for chemicals and supplies in Fiscal Year 2019 and Fiscal Year 2020 are \$32.1 million and \$33.2 million, respectively. The average annual increase of costs for chemicals and supplies is assumed at 3.0% in Fiscal Years 2021 through 2023.

Utilities and Rent. The Authority is a major user of energy, primarily for the operation of the Blue Plains Wastewater Treatment Facilities. In Fiscal Year 2018, approximately 63% of the expenses associated with utilities and rent were attributable to the cost of power. The combined heat and power facility provides over 23% of the plant's energy needs. See "CAPITAL IMPROVEMENT PROGRAM – Categories of CIP Projects – Blue Plains – Wastewater Treatment Projects." The Authority has taken a proactive approach to the procurement of power and its pricing. On October 1, 2014, the Authority entered into a five-year full service electricity contract, with five optional years, to purchase power from Constellation New Energy, Inc., previously ConEdision Solutions. As part of its power purchasing strategy in the deregulated environment, this contract allows the Authority to lock in blocks of power at a fixed price when futures pricing meets budget targets. To the extent that the Authority has power needs that exceed the locked in fixed price blocks, the price of the additional power would be established each day at market rates with direct pass-through of all costs. This contract includes an enhanced process for block power purchases that gives the Authority access to the wholesale market. The Authority's Department of Finance, Accounting and Budget monitors the energy market on a continuous basis. The contract was modified and extended through September 30, 2020. **[ADD DISCUSSION OF PPA AT BLUE PLAINS.]**

Reserve Funds

The Authority maintains various reserve funds as previously described herein. See "SECURITY FOR THE SERIES 2019A/B/D BONDS – Certain Reserve Funds – Discretionary Reserves; – Operating Reserve Fund; – Rate Stabilization Fund; and – Renewal and Replacement Reserve Fund."

Financial Policies

The Authority has developed a ten-year financial plan to ensure compliance with certain Indenture requirements and the Board's financial policies. This plan is updated annually, taking into account revisions to the CIP, current and prior year financial performance and other changes. The Board adopted a series of financial policies in 1997 that the Authority utilizes to develop its ten-year financial plan, operating budgets and rate proposals. The policies summarized below reflect revisions adopted by the Board and effective September 30, 2018.

Capital Financing Policy

In order to secure the lowest practical cost of capital to finance the Authority's long-term capital program, the Authority will aim to achieve the following goals:

- i. Maintain Senior Debt service coverage of 1.40x.*
- ii. Maintain cash reserves equivalent to 120 days of budgeted operations and maintenance costs calculated on an average daily balance basis with the objective of maintaining at least \$125.5 million in operating reserves. The annual reserve amount will be formally approved by the Board as part of its annual approval of the operating and capital budgets. The operating reserve requirement will be evaluated every five years by the Authority's independent rate consultant in conjunction with the Indenture-required system assessment. At a minimum include in the operating reserve any reserve requirements contained in the Indenture, excluding any debt service reserve funds and the rate stabilization fund.
- iii. Utilize operating cash in excess of the Board's reserve requirement and any other significant one-time cash infusions for capital financing or for repayment of higher cost debt.
- iv. Whenever possible, use the least costly type of financing for capital projects, based on a careful evaluation of the Authority's capital and operating requirements and financial position for each year.
- v. Attempt to match the period of debt repayment, in total, with the lives of the assets financed by any such debt.
- vi. Finance its capital equipment needs (e.g., computer equipment and systems; minor utility equipment such as pumps, motors, etc.) and certain taxable costs of the Aqueduct with operating cash or short-term financing instruments with the same or shorter average lives as the related assets.

Rate-Setting Policies

The Authority's rate-setting policies are based on the following principles:

- i. Rates and fees will be based on the actual cost to deliver each service.
- ii. Current rates must be sufficient to cover current costs and to meet all bond covenants.
- iii. The Authority will achieve a positive net income and cash flow each year.
- iv. Rates will be based on an annually updated ten-year financial plan (both operating and capital).
- v. Rate increases will be implemented in a gradual and predictable manner, avoiding large one-time rate increases.
- vi. Contributions to and usage of the Rate Stabilization Fund as needed to avoid "rate shock." Each year, after reviewing financing improvements from cash and any other non-recurring financing uses of excess operating cash, the annual Rate Stabilization Fund deposit, if any, is determined.

Debt Policy

On October 1, 2015, the Board adopted a revised debt policy. This policy provides detailed guidelines that the Authority's management applies to the Authority's current and future debt portfolio. The goals of this policy

*This policy goal exceeds the Rate Covenant requirement of 1.20x as provided in the Indenture.

are to ensure compliance with all laws, legal agreements, contracts and adopted policies related to debt issuance and management; to promote cooperation and coordination with all stakeholders in the financing and delivery of services; to promote sound financial management to maximize and best utilize future debt capacity; and to ensure that the duties and responsibilities of those charged with the implementation of the Debt Policy are clearly conveyed and understood.

Cash Management and Investment Policies

In May 2014, the Board amended its comprehensive Statement of Investment Policy. The statement outlines broad investment policies to include delegation of certain authority to the CEO, investment objectives, collateralization of deposits, selection of financial institutions, protection of funds, permitted investments, limits on maturities, investment of bond proceeds and investment reporting.

The Office of Treasury and Debt produces daily and monthly internal reports on all cash management and investment activities, with significant peer oversight within the Chief Financial Officer's office, monthly reports to the CEO and quarterly reports to the Board's Finance and Budget Committee that enables them to monitor compliance with Board policies.

Extendable Municipal Commercial Paper Policy

On October 1, 2015, the Board adopted a formal policy relating to the Authority's EMCP Notes. The goal of this policy is to ensure that the Authority is able to pay (either from its own funds, the proceeds of a new issuance of Series A Notes, or a new issue of bonds or Commercial Paper Notes) the principal of and interest on any outstanding EMCP Notes on the original maturity date or extended maturity date thereof, as the case may be.

ENGINEERING FEASIBILITY REPORT

The Authority retained Johnson, Mirmiran & Thompson, Inc. ("JMT") to prepare the Independent Engineering Inspection of the DC Water Wastewater and Water Systems dated March 25, 2018 (the "Independent Engineering Inspection"), a copy of which is available on the Authority's website at www.dewater.com. Pursuant to the Indenture requirement for an inspection of the System at least once every five years, an independent engineering inspection reviews the Authority's progress in implementing capital projects and its plans to initiate additional capital improvements. The inspection evaluates the adequacy of the Authority's CIP to maintain its water and wastewater infrastructure and to continue providing reliable service of a high quality to its customers.

The Engineering Feasibility Opinion Letter summarizes the findings and conclusions from the Independent Engineering Inspection, which are based upon information provided by the Authority or others which is summarized or referred to therein. JMT's principal findings and conclusions are set forth below. The Engineering Feasibility Opinion Letter should be read in combination with the Independent Engineering Inspection. The Independent Engineering Inspection should be read in its entirety for a complete understanding of the assumptions, considerations, estimates and calculations upon which these conclusions are based.

- The Authority has continued implementing its vision and strategic plan, focusing on increasing the operational efficiency of the Water and Wastewater Systems and providing satisfactory service to its customers.
- The Authority staff, including both management and key operations and maintenance personnel, is well qualified, effectively organized, and is staffed at a sufficient level to meet the mission of providing a safe and dependable drinking water and sanitary sewer service while striving to sustain the environment.
- The existing Water and Wastewater Systems appear to be effectively maintained and operated.
- The Authority has priorities establishing best management practices to maintain all of its assets with the goal to maximize service life while minimizing costs and ensuring sustainability.
- The Authority has developed and continues to implement thorough capital programs for ensuring the integrity of the Water and Wastewater Systems.
- Through appropriate management, operational practices, technology, staffing, tools and equipment and selective outsourcing, the Authority has developed capital, operations and maintenance programs that should ensure the continued effective operation of the systems for the foreseeable future. The systems should continue to provide high levels of service with minimal disruption.
- The Authority's wastewater and drinking water facilities are in material compliance with all applicable permits and regulations and continue to provide uninterrupted service to its wholesale and retail

customers. Such compliance is anticipated to continue through the foreseeable future without any identified negative impacts.

- Substantial progress has been made by the Authority in improving the operating condition of existing facilities. The CIP is structured to provide a systematic program to replace and rehabilitate aging infrastructure on a priority basis.
- Implementation of the Authority's CIP is intended to address identified system needs and priorities and within a controlled budgetary process.

FINANCIAL FEASIBILITY OPINION LETTER

The Authority retained Amawalk Consulting Group LLC as its financial feasibility consultant, in which capacity Amawalk prepared the Financial Feasibility Opinion Letter dated [___], 2019, which is attached hereto as APPENDIX A. Amawalk provides financial and management consulting services to water and wastewater utilities, local governments and other organizations. Examples of the consulting services offered by the firm include: cost of service and rate studies; financial modeling; feasibility studies to support the issuance of debt; competitive assessments, including benchmarking and implementation of best practices; analyses supporting the consolidation of services; and the formation/start-up of public authorities including transition planning.

The conclusions set forth in the Financial Feasibility Opinion Letter reflect Amawalk's analysis of the Authority's anticipated financial results for Fiscal Years 2019 to 2023. Amawalk has assisted the Authority in preparing certain portions of this Official Statement relating to historical and projected financial performance of the Authority. The Financial Feasibility Opinion Letter has not been updated to reflect any changes occurring after the date of the Financial Feasibility Opinion Letter. The Financial Feasibility Opinion Letter presents findings and conclusions based upon the analysis of financial statements and reports prepared by or for the Authority and other information provided by the Authority or others which is summarized or referred to therein, including conclusions, assumptions, considerations and recommendations regarding the operation of the System, the necessary improvements and betterments thereto and the steps that should be taken to assure adequate reliable bulk power supply at reasonable cost. Set forth below are Amawalk's principal conclusions. The Financial Feasibility Opinion Letter and this Official Statement should be read in its entirety for a complete understanding of the assumptions, considerations, estimates and calculations upon which these conclusions are based.

Amawalk concluded that the Authority has the ability to effectively execute its mission, operate its System to provide uninterrupted service, maintain regulatory compliance, and finance and implement its CIP within the parameters set forth in the Indenture and the applicable Board policies. In addition, Amawalk makes the following observations:

- The Authority's financial forecast is viable, consistent with industry standards, and its projections are expected to meet the Board's debt service coverage and reserve requirements and targets.
- Revenues of the Authority (including projected revenue increases resulting from anticipated future rate increases to be implemented by the Authority) in the Reporting Period will be sufficient to pay: (i) the actual Operating Expenses; (ii) Annual Debt Service on Senior Debt; (iii) any amount necessary to be deposited in any Account in the Debt Service Reserve Fund relating to a Series of Bonds to restore the amount on deposit therein to the Series Debt Service Reserve Requirement; (iv) the amount required to pay Annual Debt Service on the Subordinate Debt (including any reserves in connection therewith and the restoration thereof); (v) any amount necessary to be deposited in the Operating Reserve Fund and the Renewal and Replacement Reserve Fund to maintain the required balances therein; and (vi) any amount necessary to make any payments in lieu of taxes in such Fiscal Years. Sufficient funds are projected to be on deposit in each of the required reserve funds during the Reporting Period.
- Pursuant to Board policy, the Authority maintains operating reserves that are greater than \$125.5 million or 120 days of budgeted operation and maintenance expenses. This policy requirement exceeds the minimum Operating Reserve fund requirements set forth in the Indenture. The Authority's actual cash on hand has exceeded the levels required by Board policy in recent years. Amawalk reviewed the operating reserve policies of the Authority in 2018 and concluded that the current Board policy provides for an appropriate level of reserves. Amawalk further recommended that the Board consider amending its policy to a minimum of \$140.0 million or 140 days of budgeted operation and maintenance expenses which would be consistent with the projected balances in the Authority's Financial Plan. In January 2019, Authority staff recommended to further enhance the Authority's cash position and maintain a target of 250 days of cash on hand. There can be no assurance that the Board will maintain or modify its current financial policy.

- The water and wastewater rates, fees and charges of the Authority, including projected increases for FY 2020 through FY 2023, are somewhat higher than the average of other utilities. Relative to median household income, the single family residential charges of the Authority are reasonable and affordable compared to the charges of other major cities as well as utilities in the region. In addition, the Authority utilizes its well-established affordability programs to assist low income customers in paying their bills.

In the analysis of the forecast of future operations summarized in this Official Statement, Amawalk has reviewed certain assumptions with respect to conditions, events and circumstances which may occur in the future. These assumptions are reasonable and attainable as of the date of the Financial Feasibility Opinion Letter, although actual results may differ from those forecast as influenced by the conditions, events and circumstances which actually occur.

INDEPENDENT SUSTAINABILITY CONSULTANT OPINION LETTER

The Authority retained Vigeo to prepare an Independent Sustainability Consultant Opinion on the Series 2019A Project based on issuer, project and reporting standards and commitments described in an Opinion Letter dated [DATE], which is attached hereto as APPENDIX G. Vigeo is a research agency that provides non-financial ratings and research on issuers – of equity and debt – environmental, social and governance performance to investors (through the business brand of Vigeo Rating) and sustainability consulting services to organizations (through the business brand of Vigeo Enterprise). Vigeo provides an opinion based solely on the environmental, social and governance criteria and assessment. Vigeo is not and does not purport to be a financial advisor or financial analyst or to express any opinion on the quality of the security or sources of payment for the Series 2019A Bonds. Accordingly, no financial evaluations, positive or negative, should be attributed to Vigeo. Vigeo does not guarantee that the Authority will honor the current and future commitments to standards and reporting identified in its Opinion Letter.

The Opinion of the Independent Sustainability Consultant presents findings and conclusions based upon the analysis of the Authority’s environmental, social and governance policies, guidelines and results according to criteria aligned with public international standards, in compliance with the ISO 26000 guidelines, and organized in 6 domains: Environment, Human Resources, Human Rights, Community Involvement, Business Behavior and Corporate Governance. Vigeo’s review uses information provided by the Authority or others and from internal interviews with department managers and representatives.

The Opinion of the Independent Sustainability Consultant should be read in its entirety for a complete understanding of the assumptions, considerations, estimates and calculations upon which these conclusions are based.

TAX MATTERS

Series 2019A/B Bonds

In the opinion of Squire Patton Boggs (US) LLP and Parker Poe Adams & Bernstein LLP, Co-Bond Counsel, under existing law: (i) interest on the Series 2019A/B Bonds is excluded from gross income for federal income tax purposes under Section 103 of the Internal Revenue Code of 1986, as amended (the “Code”), and is not an item of tax preference for purposes of the federal alternative minimum tax; and (ii) the Series 2019A/B Bonds and the interest thereon are exempt from District taxation, except estate, inheritance and gift taxes. Co-Bond Counsel expresses no opinion as to any other tax consequences regarding the Series 2019A/B Bonds.

The opinion on federal tax matters will be based on and will assume the accuracy of certain representations and certifications, and continuing compliance with certain covenants of the Authority contained in the transcript of proceedings, and that are intended to evidence and assure the foregoing, including that the Series 2019A/B Bonds are and will remain obligations the interest on which is excluded from gross income for federal income tax purposes. Co-Bond Counsel will not independently verify the accuracy of the Authority’s certifications and representations or the continuing compliance with the Authority’s covenants.

The opinion of Co-Bond Counsel is based on current legal authority and covers certain matters not directly addressed by such authority. It represents Co-Bond Counsel’s legal judgment as to exclusion of interest on the Series 2019A/B Bonds from gross income for federal income tax purposes but is not a guaranty of that conclusion. The opinion is not binding on the Internal Revenue Service (“IRS”) or any court. Co-Bond Counsel expresses no opinion about (i) the effect of future changes in the Code and the applicable regulations under the Code or (ii) the interpretation and the enforcement of the Code or those regulations by the IRS.

The Code prescribes a number of qualifications and conditions for the interest on state and local government obligations to be and to remain excluded from gross income for federal income tax purposes, some of

which require future or continued compliance after issuance of the obligations. Noncompliance with these requirements by the Authority may cause loss of such status and result in the interest on the Series 2019A/B Bonds being included in gross income for federal income tax purposes retroactively to the date of issuance of the Series 2019A/B Bonds. The Authority has covenanted to take the actions required of it for the interest on the Series 2019A/B Bonds to be and to remain excluded from gross income for federal income tax purposes, and not to take any actions that would adversely affect that exclusion. After the date of issuance of the Series 2019A/B Bonds, Co-Bond Counsel will not undertake to determine (or to so inform any person) whether any actions taken or not taken, or any events occurring or not occurring, or any other matters coming to Co-Bond Counsel's attention, may adversely affect the exclusion from gross income for federal income tax purposes of interest on the Series 2019A/B Bonds or the market value of the Series 2019A/B Bonds.

Interest on the Series 2019A/B Bonds may be subject to a federal branch profits tax imposed on certain foreign corporations doing business in the United States and to a federal tax imposed on excess net passive income of certain S corporations. Under the Code, the exclusion of interest from gross income for federal income tax purposes may have certain adverse federal income tax consequences on items of income, deduction or credit for certain taxpayers, including financial institutions, certain insurance companies, recipients of Social Security and Railroad Retirement benefits, those that are deemed to incur or continue indebtedness to acquire or carry tax-exempt obligations, and individuals otherwise eligible for the earned income tax credit. The applicability and extent of these and other tax consequences will depend upon the particular tax status or other tax items of the owner of the Series 2019A/B Bonds. Co-Bond Counsel will express no opinion regarding those consequences.

Payments of interest on tax-exempt obligations, including the Series 2019A/B Bonds, are generally subject to IRS Form 1099-INT information reporting requirements. If a Series 2019A/B Bond owner is subject to backup withholding under those requirements, then payments of interest will also be subject to backup withholding. Those requirements do not affect the exclusion of such interest from gross income for federal income tax purposes.

Co-Bond Counsel's engagement with respect to the Series 2019A/B Bonds ends with the issuance of the Series 2019A/B Bonds, and, unless separately engaged, Co-Bond Counsel is not obligated to defend the Authority or the owners of the Series 2019A/B Bonds regarding the tax status of interest thereon in the event of an audit examination by the IRS. The IRS has a program to audit tax-exempt obligations to determine whether the interest thereon is includible in gross income for federal income tax purposes. If the IRS does audit the Series 2019A/B Bonds, under current IRS procedures, the IRS will treat the Authority as the taxpayer and the beneficial owners of the Series 2019A/B Bonds will have only limited rights, if any, to obtain and participate in judicial review of such audit. Any action of the IRS, including but not limited to selection of the Series 2019A/B Bonds for audit, or the course or result of such audit, or an audit of other obligations presenting similar tax issues, may affect the market value of the Series 2019A/B Bonds.

Prospective purchasers of the Series 2019A/B Bonds upon their original issuance at prices other than the respective prices indicated on the inside cover of this Official Statement, and prospective purchasers of the Series 2019A/B Bonds at other than their original issuance, should consult their own tax advisors regarding other tax considerations such as the consequences of market discount, as to all of which Co-Bond Counsel expresses no opinion.

Risk of Future Legislative Changes and/or Court Decisions

Legislation affecting tax-exempt obligations is regularly considered by the United States Congress. Court proceedings may also be filed, the outcome of which could modify the tax treatment of obligations such as the Series 2019A/B Bonds. There can be no assurance that legislation enacted or proposed, or actions by a court, after the date of issuance of the Series 2019A/B Bonds will not have an adverse effect on the tax status of interest on the Series 2019A/B Bonds or the market value or marketability of the Series 2019A/B Bonds. These adverse effects could result, for example, from changes to federal or state income tax rates, changes in the structure of federal or state income taxes (including replacement with another type of tax), or repeal (or reduction in the benefit) of the exclusion of interest on the Series 2019A/B Bonds from gross income for federal or state income tax purposes for all or certain taxpayers.

For example, federal tax legislation that was enacted on December 22, 2017 reduced corporate tax rates, modified individual tax rates, eliminated many deductions, repealed the corporate alternative minimum tax, and eliminated the tax-exempt advance refunding of tax-exempt bonds and tax-advantaged bonds, among other things. Additionally, investors in the Series 2019A/B Bonds should be aware that future legislative actions might increase, reduce or otherwise change (including retroactively) the financial benefits and the treatment of all or a portion of the interest on the Series 2019A/B Bonds for federal income tax purposes for all or certain taxpayers. In all such events, the market value of the Series 2019A/B Bonds may be affected and the ability of holders to sell their Bonds in the secondary market may be reduced.

Investors should consult their own financial and tax advisors to analyze the importance of these risks.

Original Issue Discount and Original Issue Premium

Certain of the Series 2019A/B Bonds (“Discount Bonds”) may be offered and sold to the public at an original issue discount (“OID”). OID is the excess of the stated redemption price at maturity (the principal amount) over the “issue price” of a Discount Bond. The issue price of a Discount Bond is the initial offering price to the public (other than to bond houses, brokers or similar persons acting in the capacity of underwriters or wholesalers) at which a substantial amount of the Discount Bonds of the same maturity is sold pursuant to that offering. For federal income tax purposes, OID accrues to the owner of a Discount Bond over the period to maturity based on the constant yield method, compounded semiannually (or over a shorter permitted compounding interval selected by the owner). The portion of OID that accrues during the period of ownership of a Discount Bond (i) is interest excluded from the owner’s gross income for federal income tax purposes to the same extent, and subject to the same considerations discussed above, as other interest on the Series 2019A/B Bonds, and (ii) is added to the owner’s tax basis for purposes of determining gain or loss on the maturity, redemption, prior sale or other disposition of that Discount Bond. A purchaser of a Discount Bond in the initial public offering at the issue price (described above) for that Discount Bond who holds that Discount Bond to maturity will realize no gain or loss upon the retirement of that Discount Bond.

Certain of the Series 2019A/B Bonds (“Premium Bonds”) may be offered and sold to the public at a price in excess of their stated redemption price at maturity (the principal amount). That excess constitutes bond premium. For federal income tax purposes, bond premium is amortized over the period to maturity of a Premium Bond, based on the yield to maturity of that Premium Bond (or, in the case of a Premium Bond callable prior to its stated maturity, the amortization period and yield may be required to be determined on the basis of an earlier call date that results in the lowest yield on that Premium Bond), compounded semiannually. No portion of that bond premium is deductible by the owner of a Premium Bond. For purposes of determining the owner’s gain or loss on the sale, redemption (including redemption at maturity) or other disposition of a Premium Bond, the owner’s tax basis in the Premium Bond is reduced by the amount of bond premium that is amortized during the period of ownership. As a result, an owner may realize taxable gain for federal income tax purposes from the sale or other disposition of a Premium Bond for an amount equal to or less than the amount paid by the owner for that Premium Bond. A purchaser of a Premium Bond in the initial public offering who holds that Premium Bond to maturity (or, in the case of a callable Premium Bond, to its earlier call date that results in the lowest yield on that Premium Bond) will realize no gain or loss upon the retirement of that Premium Bond.

Owners of Discount and Premium Bonds should consult their own tax advisors as to the determination for federal income tax purposes of the existence of OID or bond premium, the determination for federal income tax purposes of the amount of OID or bond premium properly accruable or amortizable in any period with respect to the Discount or Premium Bonds, other federal tax consequences in respect of OID and bond premium, and the treatment of OID and bond premium for purposes of state and local taxes on, or based on, income.

Series 2019D Bonds

In the opinion of Squire Patton Boggs (US) LLP and Parker Poe Adams & Bernstein LLP, Co-Bond Counsel, under existing law, the Series 2019D Bonds and the interest thereon are exempt from District taxation, except estate, inheritance and gift taxes. Co-Bond Counsel expresses no opinion as to any other tax consequences regarding the Series 2019D Bonds. INTEREST ON THE SERIES 2019D BONDS IS NOT EXCLUDED FROM GROSS INCOME FOR FEDERAL INCOME TAX PURPOSES. THE LEGAL DEFEASANCE OF THE SERIES 2019D BONDS MAY RESULT IN A DEEMED SALE OR EXCHANGE OF THE SERIES 2019D BONDS UNDER CERTAIN CIRCUMSTANCES; OWNERS OF THE SERIES 2019D BONDS SHOULD CONSULT THEIR TAX ADVISORS AS TO THE FEDERAL INCOME TAX CONSEQUENCES OF SUCH AN EVENT. PROSPECTIVE PURCHASERS OF THE SERIES 2019D BONDS SHOULD CONSULT THEIR TAX ADVISORS AS TO THE FEDERAL, STATE AND LOCAL, AND FOREIGN TAX CONSEQUENCES OF THEIR ACQUISITION, OWNERSHIP AND DISPOSITION OF THE SERIES 2019D BONDS.

The following discussion is generally limited to “U.S. owners,” meaning beneficial owners of Series 2019D Bonds that for United States federal income tax purposes are individual citizens or residents of the United States, corporations or other entities taxable as corporations created or organized in or under the laws of the United States or any state thereof (including the District of Columbia), and certain estates or trusts with specific connections to the United States. Partnerships holding the Series 2019D Bonds, and partners in such partnerships, should consult their tax advisors regarding the tax consequences of an investment in the Series 2019D Bonds (including their status as U.S. owners).

Prospective purchasers of the Series 2019D Bonds upon their original issuance at prices other than the respective prices indicated on the inside cover of this Official Statement, and prospective purchasers of the Series 2019D Bonds at other than their original issuance, should consult their own tax advisors regarding other tax considerations such as the consequences of market discount, as to all of which Co-Bond Counsel expresses no opinion.

Payment of Interest

In general, interest paid or accrued on the Series 2019D Bonds, including qualified stated interest on Discount Series 2019D Bonds (as defined below), if any, will be treated as ordinary income to U.S. owners. A U.S. owner using the accrual method of accounting for U.S. federal income tax purposes must include interest paid or accrued on the Series 2019D Bonds in ordinary income as the interest accrues, while a U.S. owner using the cash receipts and disbursements method of accounting for U.S. federal income tax purposes must include interest in ordinary income when payments are received or constructively received by the owner, except as described below under the section entitled “*Original Issue Discount and Original Issue Premium.*”

Original Issue Discount and Original Issue Premium

Certain of the Series 2019D Bonds (“Discount Series 2019D Bonds”) may be offered and sold to the public at an original issue discount (“OID”). OID is the excess of the stated redemption price at maturity (the principal amount) over the “issue price” of a Discount Series 2019D Bond, provided that excess equals or exceeds a statutory *de minimis* amount (one-quarter of one percent of the Discount Series 2019D Bond’s stated redemption price at maturity multiplied by the number of complete years to its maturity (or, if required by applicable Treasury Regulations, to an earlier call date)). The issue price of a Discount Series 2019D Bond is the initial offering price to the public (other than to bond houses, brokers or similar persons acting in the capacity of underwriters or wholesalers) at which a substantial amount of the Discount Series 2019D Bonds of the same maturity is sold pursuant to that offering. For federal income tax purposes, OID accrues to the owner of a Discount Series 2019D Bond over the period to maturity based on the constant yield method, compounded semiannually (or over a shorter permitted compounding interval selected by the owner). The portion of OID that accrues during the time a U.S. owner owns a Discount Series 2019D Bond (i) is interest includable in the U.S. owner’s gross income for federal income tax purposes, and (ii) is added to the U.S. owner’s tax basis for purposes of determining gain or loss on the maturity, redemption, prior sale, or other disposition of the Discount Series 2019D Bond. The effect of OID is to accelerate the recognition of taxable income for a U.S. owner using the cash method of accounting during the term of the Discount Series 2019D Bond.

Certain of the Series 2019D Bonds (“Premium Series 2019D Bonds”) may be offered and sold to the public at a price in excess of their stated redemption price at maturity (the principal amount). If a U.S. owner purchases a Premium Series 2019D Bond, that owner will be considered to have purchased such Premium Series 2019D Bond with “amortizable bond premium” equal in amount to such excess. The U.S. owner may elect (which election shall apply to all securities purchased at a premium by such U.S. owner), in accordance with the applicable provisions of Section 171 of the Code, to amortize that premium as an offset to the interest payments on the Premium Series 2019D Bond using a constant yield to maturity method over the remaining term of the Premium Series 2019D Bond (or, if required by applicable Treasury Regulations, to an earlier call date). Pursuant to Section 67(b)(11) of the Code, the amortization of that premium is not considered a miscellaneous itemized deduction. Any amortization of bond premium will reduce the basis of the Premium Series 2019D Bond pursuant to Section 1016(a)(5) of the Code.

Owners of Series 2019D Discount and Premium Bonds should consult their own tax advisors as to the determination for federal income tax purposes of the existence of OID or bond premium, the determination for federal income tax purposes of the amount of OID or bond premium properly accruable or amortizable in any period with respect to the Series 2019 D Discount or Premium Bonds, other federal tax consequences in respect of OID and bond premium, and the treatment of OID and bond premium for purposes of state and local taxes on, or based on, income.

Sale, Exchange, Retirement or Other Taxable Disposition of Series 2019D Bonds

Upon the sale, exchange, retirement or other taxable disposition of a Series 2019D Bond, a U.S. owner will recognize gain or loss equal to the difference between the amount realized from the sale, exchange, retirement or other disposition and the owner’s adjusted basis in the Series 2019D Bond or applicable portion of the adjusted basis. The owner’s adjusted basis generally will equal the cost of the Series 2019D Bond to the owner, increased by any OID includable in the owner’s ordinary income for the Series 2019D Bond and reduced by any principal payments on the Series 2019D Bond previously received by the owner (including any other payments on the Series 2019D Bond that are not qualified stated interest payments) and by any amortizable bond premium allowed as a deduction as described above under the section entitled “*Original Issue Discount and Original Issue Premium.*” Any gain or loss recognized upon a sale, exchange, retirement or other disposition of a Series 2019D Bond (excluding amounts attributable to accrued interest or OID) will generally be capital gain or loss and will be long-term capital gain or loss if the U.S. owner’s holding period in the Series 2019D Bond exceeds one year. Long-term capital gains of individuals are currently eligible for reduced rates of taxation. The deductibility of capital losses is subject to limitations.

Information Reporting and Backup Withholding

General information reporting requirements will apply to payments of principal and interest made on Series 2019D Bonds and the proceeds of the sale of Series 2019D Bonds to non-corporate holders of the Series 2019D Bonds, and “backup withholding,” currently at a rate of 24%, will apply to such payments if the owner fails to provide an accurate taxpayer identification number in the manner required or fails to report all interest required to be shown on its federal income tax returns. A beneficial owner of Series 2019D Bonds that is a U.S. owner generally can obtain complete exemption from backup withholding by providing a properly completed IRS Form W-9 (Request for Taxpayer Identification Number and Certification).

Medicare Tax Affecting U.S. Owners

A U.S. owner that is an individual or estate, or a trust not included in a special class of trusts that is exempt from such tax, is subject to a 3.8% Medicare tax on the lesser of (1) the U.S. owner's "net investment income" for the taxable year and (2) the excess of the U.S. owner's modified adjusted gross income for the taxable year over a certain threshold (which in the case of individuals is between \$125,000 and \$250,000, depending on the individual's circumstances). A U.S. owner's net investment income generally includes interest income on, and net gains from the disposition of, Series 2019D Bonds, unless such interest income or net gains are derived in the ordinary course of a trade or business (other than a trade or business that consists of certain passive or trading activities). A U.S. owner that is an individual, estate, or trust, should consult its tax advisor regarding the applicability of the Medicare tax.

Non-U.S. Owners

Under the Code, interest and OID on any Series 2019D Bond whose beneficial owner is not a U.S. owner is generally not subject to United States income tax or withholding tax (including backup withholding) if the non-U.S. owner provides the payor of interest on the Series 2019D Bonds with an appropriate statement as to its status as a non-U.S. owner. This statement can be made on IRS Form W-8BEN or a successor form. If, however, the non-U.S. owner conducts a trade or business in the United States and the interest or OID on the Series 2019D Bonds held by the non-U.S. owner is effectively connected with such trade or business, that interest or OID will be subject to United States income tax but will generally not be subject to United States withholding tax (including backup withholding). The foregoing is a brief summary of certain federal income tax consequences to a non-U.S. owner. *Non-U.S. owners should consult their tax advisors regarding the tax consequences of an investment in the Series 2019D Bonds.*

Foreign Account Tax Compliance Act

The Foreign Account Tax Compliance Act ("FATCA") generally imposes a 30% withholding tax on interest payments to (i) certain foreign financial institutions (including certain investment funds) that fail to certify their FATCA status and (ii) non-financial foreign entities if certain disclosure requirements related to direct and indirect United States shareholders are not satisfied. Proposed Treasury Regulations, which may be relied upon until final Treasury Regulations are promulgated, suspend the requirement to apply the 30% withholding tax to gross proceeds from the sale or other disposition of Series 2019D Bonds. This requirement otherwise would have applied to a sale or other disposition of Series 2019D Bonds made on or after January 1, 2019.

In the case of payments made to a "foreign financial institution" (generally including an investment fund), as a beneficial owner or as an intermediary, the FATCA withholding tax generally will be imposed, subject to certain exceptions, unless such institution (i) enters into (or is otherwise subject to) and complies with an agreement with the U.S. government (a "FATCA Agreement") or (ii) is required by and complies with applicable foreign law enacted in connection with an intergovernmental agreement between the United States and a foreign jurisdiction (an "IGA"), in either case to, among other things, collect and provide to the U.S. or other relevant tax authorities certain information regarding U.S. account holders of such institution. In the case of payments made to a foreign entity that is not a financial institution (as a beneficial owner), the FATCA withholding tax generally will be imposed, subject to certain exceptions, unless such entity either provides the withholding agent with a certification that it does not have any "substantial" U.S. owner (generally, any specified U.S. person that directly or indirectly owns more than a specified percentage of such entity) or identifies its "substantial" U.S. owners.

If Series 2019D Bonds are held through a foreign financial institution that enters into (or is otherwise subject to) a FATCA Agreement, such foreign financial institution (or, in certain cases, a person paying amounts to such foreign financial institution) generally will be required, subject to certain exceptions, to withhold the 30% FATCA tax on payments of dividends or the items described above made to (i) a person (including an individual) that fails to comply with certain information requests or (ii) a foreign financial institution that has not entered into (and is not otherwise subject to) a FATCA Agreement and that is not required to comply with FATCA pursuant to applicable foreign law enacted in connection with an IGA. Coordinating rules may limit duplicative withholding in cases where the withholding described above in "Non-U.S. Owners" or "Information Reporting and Backup Withholding" also applies.

If any amount of, or in respect of, U.S. withholding tax were to be deducted or withheld from payments on Series 2019D Bonds as a result of a failure by an investor (or by an institution through which an investor holds the Series 2019D Bonds) to comply with FATCA, none of the Authority, any paying agent or any other person would, pursuant to the terms of the Series 2019D Bonds, be required to pay additional amounts with respect to any Series 2019D Bond as a result of the deduction or withholding of such tax. *Non-U.S. owners should consult their tax advisors regarding the application of FATCA to the ownership and disposition of Series 2019D Bonds.*

COVENANT BY THE DISTRICT OF COLUMBIA

Under the Act, the District pledges to the Authority and any holders of the bonds that, except as provided under the Act, the District will not limit or alter rights vested in the Authority to fulfill agreements made with holders

of the bonds, or in any way impair the rights and remedies of the holders of the bonds until the bonds, together with interest thereon, with interest on any unpaid installments of interest and all costs and expenses in connection with any action or proceedings by or on behalf of the holders of the bonds, are fully met and discharged.

LITIGATION

There is not now pending or, to the best of the Authority's knowledge, threatened any litigation restraining or enjoining the issuance or delivery of the Series 2019A/B/D Bonds or questioning or affecting the validity of the Series 2019A/B/D Bonds, the proceedings and authority under which they are to be issued, nor is the creation, organization, or existence of the Authority being contested. Nor is there any litigation pending or, to the best of the Authority's knowledge, threatened which (i) in any manner questions the right of the Authority to operate the System or its right to conduct its activities in accordance with the provisions of the Act and of the Indenture or (ii) if determined adversely to the Authority, would have a material adverse impact on the financial condition of the Authority.

The Authority is subject to a variety of suits and proceedings arising out of its ordinary course of operations, some of which may be adjudicated adversely to the Authority. Any such litigation is of a routine nature which does not affect the right of the Authority to conduct its business or the validity of its obligations.

LEGAL MATTERS

Certain legal matters relating to the issuance of the Series 2019A/B/D Bonds are subject to the approving opinions of Squire Patton Boggs (US) LLP and Parker Poe Adams & Bernstein LLP, Co-Bond Counsel, which will be furnished upon delivery of the Series 2019A/B/D Bonds, substantially in the form set forth as APPENDIX F. Squire Patton Boggs (US) LLP and Parker Poe Adams & Bernstein LLP also serve as Co-Disclosure Counsel to the Authority in connection with the preparation of this Official Statement. Certain legal matters will be passed upon for the Authority by its General Counsel, and for the Underwriters by their co-counsel, Orrick, Herrington & Sutcliffe LLP and McKenzie & Associates.

INDEPENDENT AUDITORS

The financial statements of the Authority for Fiscal Years ended September 30, 2018 and 2017 included in this Official Statement have been audited by KPMG LLP ("KPMG"). KPMG has not been engaged to perform and has not performed, since the date of its report included herein, any procedures on the financial statements addressed in that report. KPMG also has not performed any procedures relating to this Official Statement.

VERIFICATION OF MATHEMATICAL COMPUTATIONS

Prior to the delivery of the Series 2019D Bonds, [NAME], Certified Public Accountants, an independent accounting firm, as Verification Agent, will deliver a report on the mathematical accuracy of certain computations contained in schedules relating to the refunding of the Refunded Bonds provided to them by the Representative (as defined below). These computations will relate to the adequacy of the money and maturing principal amounts of the securities on deposit in the Series 2019D Escrow Account for the payment, when due, of principal of and interest on the Refunded Bonds. The Verification Agent will express no opinion on the assumptions provided to it, nor as to the exclusion from gross income for federal income tax purposes of the interest on the Series 2019D Bonds.

THE TRUSTEE

The Authority has appointed Wells Fargo Bank, N.A., a national banking association organized under the laws of the United States, to serve as Trustee. The Trustee is to carry out those duties assignable to it under the Master Indenture. Except for the contents of this section, the Trustee has not reviewed or participated in the preparation of this Official Statement and assumes no responsibility for the nature, contents, accuracy or completeness of the information set forth in this Official Statement or for the recitals contained in the Indenture or the Series 2019A/B/D Bonds, or for the validity, sufficiency, or legal effect of any of such documents.

Furthermore, the Trustee has no oversight responsibility, and is not accountable, for the use or application of the proceeds of such Series 2019A/B/D Bonds by the Authority. The Trustee has not evaluated the risks, benefits, or propriety of any investment in the Series 2019A/B/D Bonds and makes no representation, and has reached no conclusions, regarding the value or condition of any assets or revenues pledged or assigned as security for the Series 2019A/B/D Bonds, the technical or financial feasibility of the Project, or the investment quality of the Series

2019A/B/D Bonds, about all of which the Trustee expresses no opinion and expressly disclaims the expertise to evaluate.

RATINGS

Standard & Poor's Global Ratings Services ("S&P"), Moody's and Fitch Ratings ("Fitch") have assigned long-term municipal bond ratings of "[]," "[]" and "[]" respectively, to the Series 2019A/B/D Bonds. A securities rating is not a recommendation to buy, sell or hold the Series 2019A/B/D Bonds and may be subject to revision or withdrawal at any time. A rating reflects only the view of the rating agency giving such rating. An explanation of the significance of the ratings may be obtained from: S&P at 55 Water Street, New York, New York 10041; from Moody's at 7 World Trade Center, New York, New York 10007; and from Fitch Ratings at 300 West 57th Street New York, New York 10019. There is no assurance that a rating will apply for any given period of time, or that a rating will not be revised or withdrawn. A revision or withdrawal of a rating may have an effect on the market price of or the market for the Series 2019A/B/D Bonds.

CONTINUING DISCLOSURE

In accordance with the requirements of the Rule promulgated by the SEC, the Authority will enter into the Continuing Disclosure Agreement dated the date of delivery of the Series 2019A/B/D Bonds, which will constitute a written undertaking for the benefit of the Owners of the Series 2019A/B/D Bonds, solely to assist the Underwriters in complying with subsection (b)(5) of the Rule. Pursuant to the Continuing Disclosure Agreement, the Authority has covenanted to provide certain financial information on an annual basis and to provide notice of certain enumerated events. See APPENDIX D – "Form of the Continuing Disclosure Agreement" for detailed provisions of the Continuing Disclosure Agreement.

FINANCIAL ADVISOR

PFM Financial Advisors LLC has served as financial advisor (the "Financial Advisor") to the Authority with respect to the issuance of the Series 2019A/B/D Bonds.

UNDERWRITING

Siebert Cisneros Shank & Co., L.L.C., on behalf of itself and as representative (the "Representative") of the underwriters identified on the front cover of this Official Statement (collectively, the "Underwriters"), has agreed to purchase from the Authority the Series 2019A/B/D Bonds at an aggregate purchase price equal to \$[] (which amount constitutes the aggregate principal amount of the Series 2019A/B/D Bonds of \$[], plus original issue premium of \$[], less the Underwriters' discount of \$[]).

A Bond Purchase Agreement by and among the Authority and the Representative, on behalf of itself and as representative of the Underwriters dated [], 2019 (the "Series 2019A/B Bond Purchase Agreement"), provides that the Underwriters will purchase all of the Series 2019A/B Bonds, if any are purchased, and the obligation to make such purchases is subject to certain terms and conditions set forth in the Series 2019A/B Bond Purchase Agreement, the approval of certain legal matters by counsel and certain other conditions. A Bond Purchase Agreement by and among the Authority and the Representative, on behalf of itself as representative of the Underwriters dated [], 2019 (the "Series 2019D Bond Purchase Agreement"), provides that the Underwriters will purchase all of the Series 2019D Bonds, if any are purchased, and the obligation to make such purchases is subject to certain terms and conditions set forth in the Series 2019D Bond Purchase Agreement, the approval of certain legal matters by counsel and certain other conditions.

The Series 2019A/B/D Bonds may be offered and sold to certain dealers (including dealers depositing the Series 2019A/B/D Bonds into investment trusts) at prices lower than the public offering prices and such public offering prices may be changed from time to time by the Underwriters.

The Underwriters and their respective affiliates are full service financial institutions engaged in various activities, which may include sales and trading, commercial and investment banking, advisory, investment management, investment research, principal investment, hedging, market making, brokerage and other financial and non-financial activities and services. Certain of the Underwriters and their respective affiliates have provided, and may in the future provide, a variety of these services to the Authority and to persons and entities with relationships with the Authority, for which they received or will receive customary fees and expenses.

In the ordinary course of their various business activities, the Underwriters and their respective affiliates, officers, directors and employees may purchase, sell or hold a broad array of investments and actively trade securities, derivatives, loans, commodities, currencies, credit default swaps and other financial instruments for their own account and for the accounts of their customers, and such investment and trading activities may involve or relate to assets, securities and/or instruments of the Authority (directly, as collateral securing other obligations or otherwise) and/or persons and entities with relationships with the Authority. The Underwriters and their respective affiliates may also communicate independent investment recommendations, market color or trading ideas and/or publish or express independent research views in respect of such assets, securities or instruments and may at any time hold, or recommend to clients that they should acquire, long and/or short positions in such assets, securities and instruments.

In addition, certain of the Underwriters have entered into distribution agreements with other broker-dealers (that have not been designated by the Authority as Underwriters) for the distribution of the Series 2019A/B/D Bonds at the original issue prices. Such agreements generally provide that the relevant Underwriter will share a portion of its underwriting compensation or selling concession with such broker-dealers.

LEGALITY FOR INVESTMENT

The Act provides that the bonds of the Authority are legal instruments in which public officers and public bodies of the District, insurance companies, insurance company associations and other persons carrying on an insurance business, banks, bankers, banking institutions, including savings and loan associations, building and loan associations, trust companies, savings banks, savings associations, investment companies and other persons carrying on a banking business, administrators, guardians, executors, trustees and other fiduciaries and other persons authorized to invest in bonds or in other obligations of the District, may legally invest funds, including capital, in their control.

The bonds are also, by the Act, securities which legally may be deposited with, and received by, public officers and public bodies of the District or any agency of the District for any purpose for which the deposit of bonds or other obligations of the District is authorized by law.

RELATIONSHIP OF PARTIES

In addition to representing the Authority as Co-Bond Counsel and Co-Disclosure Counsel, Squire Patton Boggs (US) LLP from time to time represents the Authority in other matters, including environmental, regulatory and personnel matters. From time to time, Squire Patton Boggs (US) LLP also represents one or more members of the underwriting group as its or their counsel in municipal bond transactions and other matters, but not in any matters related to the Authority.

MISCELLANEOUS

All estimates, assumptions, statistical information and other statements contained herein, while taken from sources considered reliable, are not guaranteed. To the extent that any statements herein include matters of opinion, or estimates of future expenses and income, whether or not expressly so stated, they are intended merely as such and not as representations of fact.

The agreement of the Authority with the holders of the Series 2019A/B/D Bonds is fully set forth in the Indenture. Neither any advertisement of the Series 2019A/B/D Bonds nor this Official Statement is to be construed as constituting an agreement with the purchasers of the Series 2019A/B/D Bonds.

The information contained herein should not be construed as representing all conditions affecting the Authority or the Series 2019A/B/D Bonds. The foregoing statements relating to the Act, the Federal Act, the Indenture and other documents are summaries of certain provisions thereof, and in all respects are subject to and qualified in their entirety by express reference to the provisions of such documents in their complete forms.

The attached Appendices A through F are integral parts of this Official Statement and should be read in their entirety, together with all of the foregoing statements.

**DISTRICT OF COLUMBIA
WATER AND SEWER AUTHORITY**

By: _____
Matthew T. Brown
Chief Financial Officer and Executive Vice
President, Finance and Procurement

APPENDIX A
FINANCIAL FEASIBILITY OPINION LETTER OF
AMAWALK CONSULTING GROUP LLC
DATED [___], 2019

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APPENDIX B

**AUDITED FINANCIAL STATEMENTS OF THE AUTHORITY
FOR THE YEARS ENDED SEPTEMBER 30, 2018, AND 2017**

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APPENDIX C
GLOSSARY AND SUMMARY OF THE INDENTURE

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APPENDIX D
FORM OF CONTINUING DISCLOSURE AGREEMENT

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FORM OF CONTINUING DISCLOSURE AGREEMENT

This Continuing Disclosure Agreement (the “Disclosure Agreement”) is executed and delivered by the District of Columbia Water and Sewer Authority (the “Issuer”) in connection with the issuance of its Public Utility Subordinate Lien Revenue Bonds, Series 2019A (Green Bonds) (the “Series 2019A Bonds”), its Public Utility Subordinate Lien Revenue Bonds, Series 2019B (the “Series 2019B Bonds”) and its Public Utility Subordinate Lien Revenue Refunding Bonds, Series 2019D (Federally Taxable) (the “Series 2019D Bonds” and, together with the Series 2019A Bonds and the Series 2019B Bonds, the “Series 2019A/B/D Bonds”). The Series 2019A/B/D Bonds are being issued pursuant to the Master Indenture of Trust, dated as of April 1, 1998 (the “Master Indenture”), as amended and supplemented to the date of delivery of the Series 2019A Bonds and the Series B Bonds (the “Series 2019A/B Bonds”) (the “Indenture”), including by the Twenty-Fourth Supplemental Indenture of Trust, to be dated the date of issuance and delivery of the Series 2019A/B Bonds (the “Twenty-Fourth Supplemental Indenture”) and by the Twenty-Sixth Supplemental Indenture of Trust, to be dated the date of issuance and delivery of the Series 2019D Bonds (the “Twenty-Sixth Supplemental Indenture”) each by and between the Authority and Wells Fargo Bank, N.A., as trustee (the “Trustee”). The Issuer covenants and agrees as follows:

SECTION 1. Purpose of the Disclosure Agreement. This Disclosure Agreement is being executed and delivered by the Issuer for the benefit of the Holders and Beneficial Owners of the Series 2019A/B/D Bonds and in order to assist the Participating Underwriter in complying with Securities and Exchange Commission (“S.E.C.”) Rule 15c2-12(b)(5).

SECTION 2. Definitions. In addition to the definitions set forth in the Indenture, which apply to any capitalized term used in this Disclosure Agreement unless otherwise defined in this Section, the following capitalized terms shall have the following meanings:

“Annual Report” shall mean any Annual Report provided by the Issuer pursuant to, and as described in, Sections 3 and 4 of this Disclosure Agreement.

“Beneficial Owner” shall mean any person who has or shares the power, directly or indirectly, to make investment decisions concerning ownership of any Bonds (including persons holding Bonds through nominees, depositories or other intermediaries).

“Dissemination Agent” shall mean the Issuer, or any successor Dissemination Agent designated in writing by the Issuer and which has filed with the Issuer a written acceptance of such designation.

“Holder” shall mean the person in whose name any Bond shall be registered.

“Listed Events” shall mean any of the events listed in Section 5(a) or (b) of this Disclosure Agreement.

“MSRB” shall mean the Municipal Securities Rulemaking Board or any other entity designated or authorized by the Securities and Exchange Commission to receive reports pursuant to the Rule. Until otherwise designated by the MSRB or the Securities and Exchange Commission, filings with the MSRB are to be made through the Electronic Municipal Market Access (EMMA) website of the MSRB, currently located at <http://emma.msrb.org>.

“Participating Underwriter” shall mean the original underwriter of the Series 2019A/B/D Bonds required to comply with the Rule in connection with offering of the Series 2019A/B/D Bonds.

“Rule” shall mean Rule 15c2-12(b)(5) adopted by the Securities and Exchange Commission under the Securities Exchange Act of 1934, as the same may be amended from time to time.

SECTION 3. Provision of Annual Reports.

(a) The Issuer shall, or shall cause the Dissemination Agent to, not later than 240 days after the end of the Issuer’s fiscal year (which shall be June 1 of each year, so long as the Issuer’s fiscal year ends on September 30), commencing with the report for the fiscal year ending September 30, 2019 (which is due not later than June 1, 2019), provide to the MSRB an Annual Report which is consistent with the requirements of Section 4 of this Disclosure Agreement. The Annual Report may cross-reference other information as provided in Section 4 of this Disclosure Agreement; provided that the audited financial statements of the Issuer may be submitted separately from the balance of the Annual Report and later than the date required above for the filing of the Annual Report if they are not available by that date. If the Issuer’s fiscal year changes, it shall give notice of such change in a filing with the MSRB. The Annual Report shall be submitted on a standard form in use by industry participants or other appropriate form and shall identify the Series 2019A/B/D Bonds by name and CUSIP number.

(b) Not later than 15 business days prior to said date, the Issuer shall provide the Annual Report to the Dissemination Agent (if other than the Issuer). If the Issuer is unable to provide to the MSRB an Annual Report by the date required in subsection (a), the Issuer shall, in a timely manner, send or cause to be sent to the MSRB a notice to that effect.

(c) The Dissemination Agent shall (if the Dissemination Agent is other than the Issuer) file a report with the Issuer certifying that the Annual Report has been provided pursuant to this Disclosure Agreement, stating the date it was provided to the MSRB.

SECTION 4. Content of Annual Reports. The Issuer's Annual Report shall contain or include by reference the following:

(a) the Issuer's comprehensive annual financial report (the "CAFR"), which includes audited financial statements prepared in accordance with generally accepted accounting principles in effect from time to time. If the Issuer's audited financial statements are not available by the time the Annual Report is required to be provided to the MSRB pursuant to Section 3(a), the Annual Report shall contain unaudited financial statements in a format similar to the financial statements contained in the final Official Statement, and the audited financial statements shall be provided to the MSRB in the same manner as the Annual Report when they become available; and

(b) to the extent not included in the CAFR, material historical financial and operating data concerning the Issuer and the Revenues of the Issuer generally of the type found in the tables included in the Issuer's Official Statement dated [DATE] relating to the Series 2019A/B/D Bonds (the "Official Statement") under the captions "THE SYSTEM," "CAPITAL IMPROVEMENT PROGRAM," "CUSTOMER BASE, RATES AND CHARGES" and "FINANCIAL OPERATIONS."

Any or all of the items listed above may be set forth in one or a set of documents or may be included by specific reference to other documents, including Official Statements of debt issues of the Issuer or related public entities, which have been made available to the public on the MSRB's website. The Issuer shall clearly identify each such other document so included by reference.

SECTION 5. Reporting of Significant Events.

(a) The Issuer shall give, or cause to be given, notice of the occurrence of any of the following events with respect to the Series 2019A/B/D Bonds in a timely manner not later than ten business days after the occurrence of the event:

1. Principal and interest payment delinquencies;
2. Unscheduled draws on debt service reserves reflecting financial difficulties;
3. Unscheduled draws on credit enhancements reflecting financial difficulties;
4. Substitution of credit or liquidity providers, or their failure to perform;
5. Adverse tax opinions or issuance by the Internal Revenue Service of proposed or final determination of taxability or of a Notice of Proposed Issue (IRS Form 5701 TEB);
6. Tender offers;
7. Defeasances;
8. Rating changes; or
9. Bankruptcy, insolvency, receivership or similar event of the obligated person.

Note: for the purposes of the event identified in subparagraph (9), the event is considered to occur when any of the following occur: the appointment of a receiver, fiscal agent or similar officer for an obligated person in a proceeding under the U.S. Bankruptcy Code or in any other proceeding under state or federal law in which a court or governmental authority has assumed jurisdiction over substantially all of the assets or business of the obligated person, or if such jurisdiction has been assumed by leaving the existing governmental body and officials or officers in possession but subject to the supervision and orders of a court or governmental authority, or the entry of an order confirming a plan of reorganization, arrangement or liquidation by a court or governmental authority having supervision or jurisdiction over substantially all of the assets or business of the obligated person.

(b) The Issuer shall give, or cause to be given, notice of the occurrence of any of the following events with respect to the Series 2019A/B/D Bonds, if material, in a timely manner not later than ten business days after the occurrence of the event:

1. Unless described in paragraph 5(a)(5), other material notices or determinations by the Internal Revenue Service with respect to the tax status of the Series 2019A/B/D Bonds or other material events affecting the tax status of the Series 2019A/B/D Bonds;
2. Modifications to rights of Bond holders;
3. Optional, unscheduled or contingent Bond calls;
4. Release, substitution, or sale of property securing repayment of the Series 2019A/B/D Bonds;
5. Non-payment related defaults;
6. The consummation of a merger, consolidation, or acquisition involving an obligated person or the sale of all or substantially all of the assets of the obligated person, other than in the ordinary course of business, the entry into a definitive agreement to undertake such an action or the termination of a definitive agreement relating to any such actions, other than pursuant to its terms;
7. Appointment of a successor or additional trustee or the change of name of a trustee;
8. Incurrence of a financial obligation of the Issuer or obligated person, if material, or agreement to covenants, events of default, remedies, priority rights, or other similar terms of a financial obligation of the Issuer or obligated person, any of which affect security holders, if material; or
9. Default, event of acceleration, termination event, modification of terms, or other similar events under the terms of the financial obligation of the Issuer or obligated person, any of which reflect financial difficulties.

For purposes of items 8 and 9 above, “financial obligation” means: (i) a debt obligation; (ii) a derivative instrument entered into in connection with, or pledged as security or a source of payment for, an existing or planned debt obligation; or (iii) a guarantee of (i) or (ii).

(c) Whenever the Issuer obtains knowledge of the occurrence of a Listed Event described in Section 5(b), the Issuer shall determine if such event would be material under applicable federal securities laws.

(d) If the Issuer learns of the occurrence of a Listed Event described in Section 5(a), or determines that knowledge of a Listed Event described in Section 5(b) would be material under applicable federal securities laws, the Issuer shall within ten business days of occurrence file a notice of such occurrence with the MSRB. Notwithstanding the foregoing, notice of the Listed Event described in subsections 5(a)(7) or 5(b)(3) need not be given under this subsection any earlier than the notice (if any) of the underlying event is given to Holders of affected Bonds pursuant to the Indenture.

SECTION 6. Format for Filings with MSRB. Any report or filing with the MSRB pursuant to this Disclosure Agreement must be submitted in electronic format, accompanied by such identifying information as is prescribed by the MSRB.

SECTION 7. Termination of Reporting Obligation. The Issuer’s obligations under this Disclosure Agreement shall terminate upon the legal defeasance, prior redemption or payment in full of all of the Series 2019A/B/D Bonds. If such termination occurs prior to the final maturity of the Series 2019A/B/D Bonds, the Issuer shall give notice of such termination in a filing with the MSRB.

SECTION 8. Dissemination Agent. The Issuer may, from time to time, appoint or engage a Dissemination Agent to assist it in carrying out its obligations under this Disclosure Agreement, and may discharge any such Dissemination Agent, with or without appointing a successor Dissemination Agent. The Dissemination Agent shall not be responsible in any manner for the content of any notice or report prepared by the Issuer pursuant to this Disclosure Agreement. The initial Dissemination Agent shall be the Issuer.

SECTION 9. Amendment; Waiver. Notwithstanding any other provision of this Disclosure Agreement, the Issuer may amend this Disclosure Agreement, and any provision of this Disclosure Agreement may be waived, provided that the following conditions are satisfied:

- (a) If the amendment or waiver relates to the provisions of Sections 3(a), 4, 5(a) or 5(b), it may only be made in connection with a change in circumstances that arises from a change in legal requirements, change in law, or change in the identity, nature or status of an obligated person with respect to the Series 2019A/B/D Bonds, or the type of business conducted;

(b) The undertaking, as amended or taking into account such waiver, would, in the opinion of nationally recognized bond counsel, have complied with the requirements of the Rule at the time of the original issuance of the Series 2019A/B/D Bonds, after taking into account any amendments or interpretations of the Rule, as well as any change in circumstances; and

(c) The amendment or waiver does not, in the opinion of nationally recognized bond counsel, materially impair the interests of the Holders or Beneficial Owners of the Series 2019A/B/D Bonds.

In the event of any amendment or waiver of a provision of this Disclosure Agreement, the Issuer shall describe such amendment in the next Annual Report, and shall include, as applicable, a narrative explanation of the reason for the amendment or waiver and its impact on the type (or in the case of a change of accounting principles, on the presentation) of financial information or operating data being presented by the Issuer. In addition, if the amendment relates to the accounting principles to be followed in preparing financial statements, (i) notice of such change shall be given in a filing with the MSRB, and (ii) the Annual Report for the year in which the change is made should present a comparison (in narrative form and also, if feasible, in quantitative form) between the financial statements as prepared on the basis of the new accounting principles and those prepared on the basis of the former accounting principles.

SECTION 10. Additional Information. Nothing in this Disclosure Agreement shall be deemed to prevent the Issuer from disseminating any other information, using the means of dissemination set forth in this Disclosure Agreement or any other means of communication, or including any other information in any Annual Report or notice required to be filed pursuant to this Disclosure Agreement, in addition to that which is required by this Disclosure Agreement. If the Issuer chooses to include any information in any Annual Report or notice in addition to that which is specifically required by this Disclosure Agreement, the Issuer shall have no obligation under this Disclosure Agreement to update such information or include it in any future Annual Report or notice of occurrence of a Listed Event or any other event required to be reported.

SECTION 11. Default. In the event of a failure of the Issuer to comply with any provision of this Disclosure Agreement, any Holder or Beneficial Owner of the Series 2019A/B/D Bonds may take such actions as may be necessary and appropriate, including seeking mandate or specific performance by court order, to cause the Issuer to comply with its obligations under this Disclosure Agreement; provided, that any such action may be instituted only in the District of Columbia. The sole remedy under this Disclosure Agreement in the event of any failure of the Issuer to comply with this Disclosure Agreement shall be an action to compel performance.

SECTION 12. Beneficiaries. This Disclosure Agreement shall inure solely to the benefit of the Issuer, the Dissemination Agent, the Participating Underwriter and Holders and Beneficial Owners from time to time of the Series 2019A/B/D Bonds, and shall create no rights in any other person or entity.

Date: [__], 2019

DISTRICT OF COLUMBIA WATER AND SEWER
AUTHORITY

By: _____
Matthew T. Brown
Chief Financial Officer and Executive Vice President,
Finance and Procurement

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APPENDIX E

DTC BOOK-ENTRY SYSTEM AND GLOBAL CLEARANCE PROCEDURES

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The information set forth in this Appendix E is subject to any change in or reinterpretation of the rules, regulations and procedures of DTC, Euroclear or Clearstream Banking (DTC, Euroclear and Clearstream Banking together, the “Clearing Systems”) currently in effect. The information set forth in this Appendix E concerning the Clearing Systems has been obtained from sources that the Authority believes to be reliable, but none of the Authority, the Trustee or the Underwriters take any responsibility for the accuracy, completeness or adequacy of the information in this section. Investors wishing to use the facilities of any of the Clearing Systems are advised to confirm the continued applicability of the rules, regulations and procedures of the relevant Clearing System. The Authority will not have any responsibility or liability for any aspect of the records relating to, or payments made on account of, beneficial ownership interests in the Series 2019A/B/D Bonds held through the facilities of any Clearing System or for maintaining, supervising or reviewing any records relating to such beneficial ownership interests.

NEITHER THE AUTHORITY NOR THE TRUSTEE WILL HAVE ANY RESPONSIBILITY OR OBLIGATIONS TO DIRECT PARTICIPANTS OR THE PERSONS FOR WHOM THEY ACT AS NOMINEES WITH RESPECT TO THE PAYMENTS TO OR THE PROVIDING OF NOTICE FOR DIRECT PARTICIPANTS, INDIRECT PARTICIPANTS OR BENEFICIAL OWNERS.

SO LONG AS CEDE & CO. IS THE REGISTERED OWNER OF THE SERIES 2019A/B/D BONDS, AS NOMINEE OF DTC, REFERENCES HEREIN TO THE BONDHOLDERS OR REGISTERED OWNERS OF THE SERIES 2019A/B/D BONDS SHALL MEAN CEDE & CO. AND SHALL NOT MEAN THE BENEFICIAL OWNERS OF THE SERIES 2019A/B/D BONDS.

DTC BOOK-ENTRY ONLY SYSTEM

The description that follows of the procedures and record keeping with respect to beneficial ownership interests in the Series 2019A/B/D Bonds, payments of principal, premium, if any, and interest on the Series 2019A/B/D Bonds to DTC, its nominee, Participants, or Beneficial Owners, confirmation and transfer of beneficial ownership interests in the Series 2019A/B/D Bonds and other bond-related transactions by and between DTC, Participants and Beneficial Owners is based on information furnished by DTC. The Authority and the Underwriters take no responsibility for the accuracy thereof.

The Depository Trust Company, New York, New York (“DTC”) will act as securities depository for the Series 2019A/B/D Bonds. The Series 2019A/B/D Bonds will be issued as fully registered securities registered in the name of Cede & Co. (DTC’s partnership nominee) or such other name as may be requested by an authorized representative of DTC. One fully registered Series 2019A/B/D Bond will be issued for the Series 2019A/B/D Bonds of each series and maturity in the aggregate principal amount of such maturity, and will be deposited with DTC.

DTC, the world’s largest securities depository, is a limited purpose trust company organized under the New York Banking Law, a “banking organization” within the meaning of the New York Banking Law, a member of the Federal Reserve System, a “clearing corporation” within the meaning of the New York Uniform Commercial Code, and a “clearing agency” registered pursuant to the provisions of Section 17A of the Securities Exchange Act of 1934, as amended. DTC holds and provides asset servicing for over 3.5 million issues of U.S. and non-U.S. equity issues, corporate and municipal debt issues, and money market instruments (from over 100 countries) that DTC’s participants (“Direct Participants”) deposit with DTC. DTC also facilitates the post-trade settlement among Direct Participants of sales and other securities transactions in deposited securities, through electronic computerized book-entry transfers and pledges between Direct Participants’ accounts. This eliminates the need for physical movement of securities certificates. Direct Participants include both U.S. and non-U.S. securities brokers and dealers, banks, trust companies, clearing corporations, and certain other organizations. DTC is a wholly-owned subsidiary of The Depository Trust & Clearing Corporation (“DTCC”). DTCC is the holding company for DTC, National Securities Clearing Corporation and Fixed Income Clearing Corporation, all of which are registered clearing agencies. DTCC is owned by the users of its regulated subsidiaries. Access to the DTC system is also available to others such as both U.S. and non-U.S. securities brokers, and dealers, banks, trust companies, and clearing corporations that clear through or maintain a custodial relationship with a Direct Participant, either directly or indirectly (“Indirect Participants”). DTC has a Standard & Poor’s rating of AA+. The DTC Rules applicable to its Participants are on file with the Securities and Exchange Commission. More information about DTC can be found at www.dtcc.com and www.dtc.org.

Purchases of the Series 2019A/B/D Bonds under the DTC system must be made by or through Direct Participants, who will receive a credit for such Series 2019A/B/D Bonds on DTC’s records. The ownership interest of each actual purchaser of each Series 2019A/B/D Bonds Bond (the “Beneficial Owner”) is in turn to be recorded on the Direct and Indirect Participants’ records. Beneficial Owners will not receive written confirmation from DTC of their purchase. Beneficial Owners are, however, expected to receive written confirmations providing details of the transaction, as well as periodic statements of their holdings, from the Direct or Indirect Participant through which the Beneficial Owner entered into the transaction. Transfers of ownership interests in the Series 2019A/B/D Bonds are to be accomplished by entries made on the books of Direct and Indirect Participants acting on behalf of Beneficial

Owners. Beneficial Owners will not receive certificates representing their ownership interests in the Series 2019A/B/D Bonds, except in the event that use of the book-entry system for the Series 2019A/B/D Bonds is discontinued.

To facilitate subsequent transfers, all Series 2019A/B/D Bonds deposited by Direct Participants with DTC are registered in the name of DTC's partnership nominee, Cede & Co., or such other name as may be requested by an authorized representative of DTC. The deposit of the Series 2019A/B/D Bonds with DTC and their registration in the name of Cede & Co. or such other DTC nominee do not effect any change in beneficial ownership. DTC has no knowledge of the actual Beneficial Owners of the Series 2019A/B/D Bonds; DTC's records reflect only the identity of the Direct Participants to whose accounts such Series 2019A/B/D Bonds are credited, which may or may not be the Beneficial Owners. The Direct and Indirect Participants will remain responsible for keeping account of their holdings on behalf of their customers.

Conveyance of notices and other communications by DTC to Direct Participants, by Direct Participants to Indirect Participants, and by Direct Participants and Indirect Participants to Beneficial Owners will be governed by arrangements among them, subject to any statutory or regulatory requirements as may be in effect from time to time.

Redemption notices shall be sent to DTC. If less than all of the Series 2019A/B/D Bonds are being redeemed, DTC's practice is to determine by lot the amount of the interest of each Direct Participant in such issue to be redeemed.

THE TRUSTEE, AS LONG AS A BOOK-ENTRY ONLY SYSTEM IS USED FOR THE SERIES 2019A/B/D BONDS, WILL SEND ANY NOTICE OF REDEMPTION OR OTHER NOTICES ONLY TO DTC. ANY FAILURE OF DTC TO ADVISE ANY PARTICIPANT, OR OF ANY PARTICIPANT TO NOTIFY ANY BENEFICIAL OWNER OF ANY NOTICE AND OF ITS CONTENT OR EFFECT WILL NOT AFFECT THE VALIDITY OR SUFFICIENCY OF THE PROCEEDINGS RELATING TO THE REDEMPTION OF THE SERIES 2019A/B/D BONDS CALLED FOR REDEMPTION OR OF ANY OTHER ACTION PREMISED ON SUCH NOTICE.

Neither DTC nor Cede & Co. (nor any other DTC nominee) will consent or vote with respect to the Series 2019A/B/D Bonds unless authorized by a Direct Participant in accordance with DTC's MMI Procedures. Under its usual procedures, DTC mails an Omnibus Proxy to the Authority as soon as possible after the record date. The Omnibus Proxy assigns Cede & Co.'s consenting or voting rights to those Direct Participants to whose accounts the Series 2019A/B/D Bonds are credited on the record date (identified in a listing attached to the Omnibus Proxy).

Principal and interest payments on the Series 2019A/B/D Bonds will be made to Cede & Co., or such other nominee as may be requested by an authorized representative of DTC. DTC's practice is to credit Direct Participants' accounts upon DTC's receipt of funds and corresponding detail information from the Authority or the Trustee on the payable date in accordance with their respective holdings shown on DTC's records. Payments by Participants to Beneficial Owners will be governed by standing instructions and customary practices, as is the case with securities held for the accounts of customers in bearer form or registered in "street name," and will be the responsibility of such Participant and not of DTC, the Trustee, or the Authority, subject to any statutory or regulatory requirement as may be in effect from time to time. Payment of principal and interest to Cede & Co., or such other nominee as may be requested by an authorized representative of DTC, is the responsibility of the Authority or the Trustee, disbursement of such payments to Direct Participants shall be the responsibility of DTC, and disbursement of such payments to the Beneficial Owners shall be the responsibility of Direct and Indirect Participants.

DTC may discontinue providing its services as securities depository with respect to the Series 2019A/B/D Bonds at any time by giving reasonable notice to the Authority or the Trustee. Under such circumstances, in the event that a successor securities depository is not obtained, Series 2019A/B/D Bonds Bond certificates are required to be printed and delivered. The Authority may decide to discontinue use of the system of book-entry transfers through DTC (or a successor securities depository). In that event, Series 2019A/B/D Bonds Bond certificates will be printed and delivered.

So long as Cede & Co. is the registered owner of the Series 2019A/B/D Bonds, as partnership nominee for DTC, references herein to Bondholders or registered owners of the Series 2019A/B/D Bonds (other than under the caption "TAX MATTERS") shall mean Cede & Co. and shall not mean the Beneficial Owners of the Series 2019A/B/D Bonds.

When reference is made to any action which is required or permitted to be taken by the Beneficial Owners, such reference shall only relate to those permitted to act (by statute, regulation or otherwise) on behalf of such Beneficial Owners for such purposes.

NEITHER THE AUTHORITY NOR THE TRUSTEE WILL HAVE ANY RESPONSIBILITY OR OBLIGATION TO DTC PARTICIPANTS, TO INDIRECT PARTICIPANTS, OR TO ANY BENEFICIAL OWNER WITH RESPECT TO (I) THE ACCURACY OF ANY RECORDS MAINTAINED BY DTC, CEDE & CO., ANY DTC PARTICIPANT, OR ANY INDIRECT PARTICIPANT; (II) ANY NOTICE THAT IS PERMITTED OR REQUIRED TO BE GIVEN TO THE OWNERS OF THE SERIES 2019A/B/D BONDS; (III) THE SELECTION BY

DTC OR ANY DTC PARTICIPANT OR INDIRECT PARTICIPANT OF ANY PERSON TO RECEIVE PAYMENT IN THE EVENT OF A PARTIAL REDEMPTION OF THE SERIES 2019A/B/D BONDS; (IV) THE PAYMENT BY DTC OR ANY DTC PARTICIPANT OR INDIRECT PARTICIPANT OF ANY AMOUNT WITH RESPECT TO THE PRINCIPAL OR REDEMPTION PREMIUM, IF ANY, OR INTEREST DUE WITH RESPECT TO THE SERIES 2019A/B/D BONDS; (V) ANY CONSENT GIVEN OR OTHER ACTION TAKEN BY DTC AS THE OWNER OF THE SERIES 2019A/B/D BONDS; OR (VI) ANY OTHER MATTER.

EUROCLEAR AND CLEARSTREAM BANKING

Euroclear and Clearstream Banking each hold securities for their customers and facilitate the clearance and settlement of securities transactions by electronic book-entry transfer between their respective account holders. Euroclear and Clearstream Banking provide various services including safekeeping, administration, clearance and settlement of internationally traded securities and securities lending and borrowing. Euroclear and Clearstream Banking also deal with domestic securities markets in several countries through established depository and custodial relationships. Euroclear and Clearstream Banking have established an electronic bridge between their two systems across which their respective participants may settle trades with each other.

Euroclear and Clearstream Banking customers are worldwide financial institutions, including underwriters, securities brokers and dealers, banks, trust companies and clearing corporations. Indirect access to Euroclear and Clearstream Banking is available to other institutions that clear through or maintain a custodial relationship with an account holder of either system, either directly or indirectly.

Clearing and Settlement Procedures

The Series 2019D Bonds sold in offshore transactions will be initially issued to investors through the book-entry facilities of DTC, or Clearstream Banking and Euroclear in Europe if the investors are participants in those systems, or indirectly through organizations that are participants in the systems. For any of such Series 2019D Bonds, the record holder will be DTC's nominee. Clearstream Banking and Euroclear will hold omnibus positions on behalf of their participants through customers' securities accounts in Clearstream Banking's and Euroclear's names on the books of their respective depositories.

The depositories, in turn, will hold positions in customers' securities accounts in the depositories' names on the books of DTC. Because of time zone differences, the securities account of a Clearstream Banking or Euroclear participant as a result of a transaction with a participant, other than a depository holding on behalf of Clearstream Banking or Euroclear, will be credited during the securities settlement processing day, which must be a business day for Clearstream Banking or Euroclear, as the case may be, immediately following the DTC settlement date. These credits or any transactions in the securities settled during the processing will be reported to the relevant Euroclear participant or Clearstream Banking participant on that business day. Cash received in Clearstream Banking or Euroclear as a result of sales of securities by or through a Clearstream Banking participant or Euroclear participant to a Direct Participant, other than the depository for Clearstream Banking or Euroclear, will be received with value on the DTC settlement date but will be available in the relevant Clearstream Banking or Euroclear cash account only as of the business day following settlement in DTC.

Transfers between DTC participants will occur in accordance with DTC rules. Transfers between Clearstream Banking participants or Euroclear participants will occur in accordance with their respective rules and operating procedures. Cross-market transfers between persons holding directly or indirectly through DTC, on the one hand, and directly or indirectly through Clearstream Banking participants or Euroclear participants, on the other, will be effected in DTC in accordance with DTC rules on behalf of the relevant European international clearing system by the relevant depositories; however, cross-market transactions will require delivery of instructions to the relevant European international clearing system by the counterparty in the system in accordance with its rules and procedures and within its established deadlines in European time. The relevant European international clearing system will, if the transaction meets its settlement requirements, deliver instructions to its depository to take action to effect final settlement on its behalf by delivering or receiving securities in DTC, and making or receiving payment in accordance with normal procedures for same day funds settlement applicable to DTC. Clearstream Banking participants or Euroclear participants may not deliver instructions directly to the depositories.

The Authority will not impose any fees in respect of holding the Series 2019D Bonds; however, holders of book-entry interests in the Series 2019D Bonds may incur fees normally payable in respect of the maintenance and operation of accounts in DTC, Euroclear and Clearstream Banking.

Initial Settlement

Interests in the Series 2019D Bonds will be in uncertified book-entry form. Purchasers electing to hold book-entry interests in the Series 2019D Bonds through Euroclear and Clearstream Banking accounts will follow the settlement procedures applicable to conventional Eurobonds. Book-entry interests in the Series 2019D Bonds will be credited to Euroclear and Clearstream Banking participants' securities clearance accounts on the business day following the date of delivery of the Series 2019D Bonds against payment (value as on the date of delivery of the

Series 2019D Bonds). Direct Participants acting on behalf of purchasers electing to hold book-entry interests in the Series 2019D Bonds through DTC will follow the delivery practices applicable to securities eligible for DTC's Same Day Funds Settlement system. Direct Participants' securities accounts will be credited with book-entry interests in the Series 2019D Bonds following confirmation of receipt of payment to the Authority on the date of delivery of the Series 2019D Bonds.

Secondary Market Trading

Secondary market trades in the Series 2019D Bonds will be settled by transfer of title to book-entry interests in DTC, Euroclear and Clearstream Banking. Title to such book-entry interests will pass by registration of the transfer within the records of DTC, Euroclear or Clearstream Banking, as the case may be, in accordance with their respective procedures. Book-entry interests in the Series 2019D Bonds may be transferred within DTC in accordance with procedures established for this purpose by DTC. Book-entry interests in the Series 2019D Bonds may be transferred within Euroclear and within Clearstream Banking and between Euroclear and Clearstream Banking in accordance with procedures established for these purposes by Euroclear and Clearstream Banking. Transfer of book-entry interests in the Series 2019D Bonds between DTC, Euroclear or Clearstream Banking may be effected in accordance with procedures established for this purpose by DTC, Euroclear and Clearstream Banking.

General

None of DTC, Euroclear or Clearstream Banking is under any obligation to perform or continue to perform the procedures referred to above, and such procedures may be discontinued at any time.

None of the Authority, the Trustee or the Underwriters will have any responsibility for the performance by DTC, Euroclear or Clearstream Banking or their respective direct or indirect participants or account holders of their respective obligations under the rules and procedures governing their operations or the arrangements referred to above.

The information in this Appendix E concerning DTC, Euroclear and Clearstream Banking has been obtained from sources that the Underwriters believe to be reliable, but the Underwriters take no responsibility for the accuracy thereof or make any representation as to the completeness or the accuracy of such information or as to the absence of material adverse changes in such information subsequent to the date hereof.

APPENDIX F
PROPOSED FORM OF OPINION OF CO-BOND COUNSEL

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**APPENDIX G –
OPINION LETTER OF INDEPENDENT SUSTAINABILITY CONSULTANT, DATED [DATE]**

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DRAFT
09-19-19

Presented and Adopted: September 27, 2019
Subject: Authorizing the Sale and Setting Terms and Details
of the Series 2019D Subordinate Refunding Bonds

#19-_____
RESOLUTION
OF THE
BOARD OF DIRECTORS
OF THE
DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY

The members of the Board of Directors (“Board”) of the District of Columbia Water and Sewer Authority (“Authority”), at the Board meeting held on September 27, 2019, upon consideration of a joint use matter, decided by a vote of _____ (_____) in favor and _____ (_____) opposed, to authorize and approve the sale of the Authority’s Public Utility Subordinate Lien Revenue Refunding Bonds, Series 2019D (the “Series 2019D Subordinate Refunding Bonds”) on the following terms and details.

WHEREAS, the Authority is authorized pursuant to the *Water and Sewer Authority Establishment and Department of Public Works Reorganization Act of 1996*, as amended, D.C. Code Section 34-2201.01 et seq. (the “WASA Act”), and the *District of Columbia Water and Sewer Authority Act of 1996*, Public Law 104-184; 110 Stat. 1696, to issue revenue bonds for undertakings authorized by the WASA Act, including to finance or refinance any cost, as defined in the WASA Act, D.C. Code Section 34-2202.01(2); and

WHEREAS, in accordance with the WASA Act, the Authority and Wells Fargo Bank, National Association, as trustee (the “Trustee”) (its predecessors in that capacity having been Norwest Bank Minnesota, N.A. and Wells Fargo Bank Minnesota, N.A.), entered into the Master Indenture of Trust, dated as of April 1, 1998 (the “Master Indenture” and, as supplemented and amended, the “Indenture”), to provide for financing or refinancing the acquisition, construction, operation, maintenance and extension of the System (as defined in the Master Indenture) by the issuance of bonds, notes and other obligations payable solely from Net Revenues (as such terms are defined in the Master Indenture); and

WHEREAS, the Authority has heretofore entered into twenty-three (23) supplemental indentures of trust with the Trustee in connection with the issuance of Senior Debt and Subordinate Debt (both as defined in the Indenture) or to amend and clarify the Master Indenture; and

WHEREAS, by Resolution #19-49, adopted September 5, 2019, the Board authorized the issuance of the Series 2019A/B Subordinate Bonds (as defined therein) to, among other things, finance a portion of the costs of the Authority’s DC Clean Rivers Project and certain Costs of the System; and

WHEREAS, the Authority now intends also (i) to issue Public Utility Subordinate Lien Revenue Refunding Bonds, Series 2019D (Federally Taxable) (the “Series 2019D Subordinate Refunding Bonds”) to: (a) refund some or all of the Authority’s outstanding Public Utility Subordinated Lien Revenue Bonds, Series 2013A (the “Series 2013A Subordinate Bonds”); (b) fund a Series 2019D Debt Service Reserve Requirement, (as defined herein), if determined necessary; and (c) pay certain costs of issuance; (iii) to designate the Series 2019D Subordinate Refunding Bonds as Subordinate Debt for purposes of the Indenture; and (iv) to secure the Series 2019D Subordinate Refunding Bonds by a pledge of Net Revenues subordinate to the pledge of Net Revenues that secures Senior Debt and on a parity with the pledge of Net Revenues that secures other Subordinate Debt, including, without limitation, other Subordinate Debt that the Authority may issue from time to time in the future; and

WHEREAS, the Board has also determined that Resolution #19-49 should be amended as set forth in this Resolution in connection with the issuance of the Series 2019D Subordinate Refunding Bonds; and

WHEREAS, the Finance and Budget Committee met on September 26, 2019, to review the issuance of the Series 2019D Subordinate Refunding Bonds and has recommended approval of this Resolution by the Board.

NOW, THEREFORE BE IT RESOLVED THAT:

Section 1. Definitions and Interpretations. Unless otherwise defined herein and unless the context indicates otherwise, the terms used herein and defined in the Indenture (including the Twenty-Sixth Supplemental Indenture as hereby approved) shall have the meanings assigned to them therein. In addition, the following terms used as defined terms in this Resolution shall have the meaning assigned to them in this Section:

“Authorized Officials” means the Chairman and Vice Chairman of the Board and the CEO and General Manager, Chief Financial Officer and Executive Vice President, Finance and Procurement, Controller, Budget Director, Finance Director and Rates and Revenue Director of the Authority, including any of the foregoing who are in an interim, acting or similar capacity, provided that any official other than the Chairman shall be designated by the Chairman as his designee for the purpose of executing and delivering any document authorized hereunder.

“Bond Purchase Agreement” means the Bond Purchase Agreement between the Authority and the Series 2019D Original Purchasers, dated as of the same date as the Certificate of Award.

“Certificate of Award” means the certificate of an Authorized Official awarding the Series 2019D Subordinate Refunding Bonds to the Series 2019D Original Purchasers and specifying terms of the Series 2019D Subordinate Refunding Bonds, as provided for in Section 4 of this Resolution.

“Continuing Disclosure Agreement” means the Continuing Disclosure Agreement executed by the Authority, dated as of the same date as the date of issuance and delivery of the Series 2019D Subordinate Refunding Bonds, as originally executed and as it may be amended from time to time in accordance with its terms.

“Escrow Agent” means the Trustee as Escrow Agent.

“Escrow Agreement” means the Escrow Agreement, dated the same date as the Series 2019D Subordinate Refunding Bonds, between the Authority and the Escrow Agent, providing for the Refunded Bonds to be deemed paid and no longer Outstanding under the Indenture.

“Financial Advisor” means PFM Financial Advisors LLC.

“Interest Payment Dates” means for the Series 2019D Subordinate Refunding Bonds, each April 1 and October 1, commencing on the April 1 or October 1 specified in the Certificate of Award as the first Interest Payment Date, and thereafter during the time the Series 2019D Subordinate Refunding Bonds are Outstanding.

“Refunded Bonds” means any Outstanding Series 2013A Subordinate Bonds to be caused to be deemed paid and no longer Outstanding under the Indenture as the result of the deposit of proceeds of the Series 2019D Subordinate Refunding Bonds and any other funds in escrow under the Escrow Agreement and identified as the Refunded Bonds in the Certificate of Award.

“Refunding Savings Threshold” means that, as the result of the advance refunding of the Refunded Bonds with proceeds of Series 2019D Subordinate Refunding Bonds and any other legally available funds, the Authority will achieve an aggregate reduction in bond debt service that has a present value at the time of sale of the Series 2019D Subordinate Refunding Bonds equal to at least ten percent (10%) of the aggregate principal amount of the Refunded Bonds and will fulfill any other standards that any Authorized Official executing the Certificate of Award deems appropriate.

“Series 2019D Debt Service Reserve Requirement” means, if determined in the Certificate of Award to be necessary, a required fund balance in the Series 2019D Debt Service Reserve Account or Accounts established under the Twenty-Sixth Supplemental Indenture, the amount of which shall be specified in the Certificate of Award.

“Series 2019D Original Purchasers” for the Series 2019D Subordinate Refunding Bonds means the purchasers identified as such in the Bond Purchase Agreement.

“Twenty-Sixth Supplemental Indenture” means the Twenty-Sixth Supplemental Indenture of Trust by and between the Authority and the Trustee, dated as of the same date as and relating to the Series 2019D Subordinate Refunding Bonds.

Any reference to the Authority or the Board, or to their members or officers, or to other public officers, boards, commissions, departments, institutions, agencies, bodies or entities, shall include those who or which succeed to their functions, duties or

responsibilities by operation of law and also those who or which at the time may legally act in their place.

Section 2. Authorization, Designation and Purposes of Series 2019D Subordinate Refunding Bonds. The Authority is authorized to issue, sell and deliver, as provided in this Resolution and the Certificate of Award, bonds in an aggregate principal amount not greater than the amount determined in the Certificate of Award to be sufficient to accomplish the purposes for which their issuance is authorized, which shall be designated "Public Utility Subordinate Lien Revenue Refunding Bonds, Series 2019D (Federally Taxable)," and constitute Subordinate Debt under the Indenture, for the following purposes: (i) advance refunding the Refunded Bonds and causing them to be deemed paid and no longer Outstanding for purposes of the Indenture; (ii) funding a Series 2019D Debt Service Reserve Requirement, if determined necessary; and (iii) paying issuance costs of the Series 2019D Subordinate Refunding Bonds (including the fees and costs of any escrow bidding agent or verification agent engaged pursuant to Section 6); provided, however, that before an Authorized Official executes a Certificate of Award applicable to the Series 2019D Subordinate Refunding Bonds, the Authority's Financial Advisor shall have given the Authority a written certification that identifies the Refunded Bonds (consistently with this Resolution) and determines that the Authority's issuance and sale of the Series 2019D Subordinate Refunding Bonds on the terms set forth in the Certificate of Award and the application of the proceeds of the Series 2019D Subordinate Refunding Bonds and any other legally available funds to advance refund the Refunded Bonds identified in the Financial Advisor's certificate, will meet the Refunding Savings Threshold. The proceeds from the sale of the Series 2019D Subordinate Refunding Bonds shall be allocated and deposited for those purposes and as provided in the Twenty-Sixth Supplemental Indenture. Any designation of bonds authorized above may be revised or clarified in the Certificate of Award.

Section 3. Terms and Provisions Applicable to the Series 2019D Subordinate Refunding Bonds.

(a) Form, Transfer and Exchange. The Series 2019D Subordinate Refunding Bonds: (i) shall initially be issued only in fully registered form and substantially in the forms attached as an exhibit to the Twenty-Sixth Supplemental Indenture; (ii) shall initially be issued only to a Depository for holding in a book entry system, and shall be registered in the name of the Depository or its nominee, as Holder, and immobilized in the custody of the Depository, and (iii) shall not be transferable or exchangeable except as provided in the Twenty-Sixth Supplemental Indenture.

(b) Denominations and Dates. The Series 2019D Subordinate Refunding Bonds shall be dated as of the date of issuance and delivery, but in no event later than March 31, 2020; provided, however, if the date of issuance is after December 31, 2019, the designation may be altered from "2019D". There shall be a single Series 2019D Subordinate Refunding Bond representing each interest rate for each maturity of the Series 2019D Subordinate Refunding Bonds bearing the same series or subseries designation.

(c) Principal Maturities. The principal of the Series 2019D Subordinate Refunding Bonds shall be paid in such amounts on each principal retirement date (whether at stated maturity date or a mandatory redemption date) as set forth in the Certificate of Award, provided that the final principal retirement date shall be no later than December 31, 2059.

(d) Interest Rates and Interest Rate Periods for the Series 2019D Subordinate Refunding Bonds. The Series 2019D Subordinate Refunding Bonds shall bear interest on their unpaid principal amount payable on each Interest Payment Date, commencing on the first Interest Payment Date specified in the Certificate of Award, at such fixed rates per annum as set forth in the Certificate of Award as provided in Section 4(c) hereof, provided, however, that the "true interest cost" (i.e., interest cost on bonds defined as the rate, compounded semiannually, necessary to discount the amounts payable on the respective interest and principal payment dates to the purchase price received for the bonds) on the Series 2019D Subordinate Refunding Bonds shall not exceed a rate that would cause the Refunding Savings Threshold not to be achieved. The principal of the Series 2019D Subordinate Refunding Bonds shall be paid in such amounts on each principal retirement date (whether at stated maturity date or a mandatory redemption date) as set forth in the Certificate of Award, provided that the principal retirement schedule shall be consistent with the achievement of the Refunding Savings Threshold.

(e) Optional and Mandatory Redemption.

(i) *Make Whole Optional Redemption* - The Series 2019DA Subordinate Refunding Bonds shall be subject to redemption prior to their stated maturities, at the option of the Authority, on any date from any source of available funds, as a whole or in part, as specified in Section 301(a) of the Twenty-Sixth Supplemental Indenture.

(ii) *Mandatory Sinking Fund Redemption* - Any Series 2019D Subordinate Refunding Bonds may be designated in the Certificate of Award as Term Bonds and be subject to mandatory sinking fund redemption by lot on specified principal retirement dates at a price equal to 100% of the principal amount to be redeemed, plus accrued interest to the date of redemption.

(f) Redemption Provisions. Redemption of Series 2019D Subordinate Refunding Bonds shall be effected in accordance with Article IV of the Master Indenture; provided, however, that notices of redemption of the Series 2019D Subordinate Refunding Bonds sent pursuant to Section 402 of the Master Indenture may specify that the redemption is conditional upon the Authority's depositing the funds needed to effect that redemption prior to the specified redemption date.

(g) Places and Manner of Payment. The principal of and the interest and any redemption premium on the Series 2019D Subordinate Refunding Bonds shall be payable at the places and in the manner specified in the Twenty-Sixth Supplemental Indenture.

(h) Execution. The Authorized Officials are, and each of them is, authorized and directed to execute the Series 2019D Subordinate Refunding Bonds, and the Secretary of the Board is authorized and directed to affix the seal of the Authority to the Series 2019D Subordinate Refunding Bonds and to deliver them to the Trustee for authentication in accordance with the Indenture.

Section 4. Sale of Series 2019D Subordinate Refunding Bonds.

(a) General. The Series 2019D Subordinate Refunding Bonds shall be awarded and sold to the Series 2019D Original Purchasers in accordance with the Bond Purchase Agreement and the Certificate of Award, at a purchase price of not less than ninety-five percent (95%) of the aggregate of the products from multiplying the principal amount of each Series 2019D Subordinate Refunding Bonds times the percentage of such principal amount at which such Series 2019D Subordinate Refunding Bond shall be initially offered to the public, after subtracting from the aggregate of such products the premium payable for any municipal bond insurance policy applicable to the Series 2019D Subordinate Refunding Bonds.

(b) Bond Purchase Agreement. The Authorized Officials are, and each of them is, authorized and directed to execute and deliver the Bond Purchase Agreement between the Authority and the Series 2019D Original Purchasers, substantially in the form presented to this Authority, but with such changes not inconsistent with the Indenture and this Resolution and not substantially adverse to the Authority as may be approved by the Authorized Official executing the same on behalf of the Authority. The approval of any such changes by such Authorized Official and the determination by such Authorized Official that no such change is substantially adverse to the Authority shall be conclusively evidenced by the execution of the applicable Bond Purchase Agreement by such Authorized Official. The price for and terms of the Series 2019D Subordinate Refunding Bonds and the sale thereof, all as provided in this Resolution, the Bond Purchase Agreement, the Certificate of Award and the Twenty-Sixth Supplemental Indenture, are hereby approved and determined to be in the best interests of the Authority.

(c) Certificate of Award. Such sale and award shall be further evidenced by the Certificate of Award executed by an Authorized Official. The terms of the Series 2019D Subordinate Refunding Bonds approved in the Certificate of Award shall be incorporated into the Twenty-Sixth Supplemental Indenture. The Certificate of Award, subject to the restrictions set forth herein, shall: (i) with respect to each series or subseries of the Series 2019D Subordinate Refunding Bonds, specify the aggregate principal amount, the purchase price, the first Interest Payment Dates, the interest rate or rates, the principal retirement dates, the mandatory sinking fund requirements (if any), the redemption dates, and the redemption prices thereof; (ii) specify whether a municipal bond insurance policy, letter of credit, or other credit or liquidity facility shall be obtained with respect to any of the Series 2019D Subordinate Refunding Bonds and, if so, from whom and on what terms; (iii) specify the amount, if any, of the Series 2019D Debt Service Reserve Requirement and determine whether it shall be met entirely with (A) cash and Permitted Investments (as defined in the Indenture); (B) a Qualified Reserve Credit Facility (as defined in the Indenture); or (C) a specified combination of (A) and (B);

and (iv) include any additional information that may be required or permitted to be stated therein by the terms of this Resolution and the Bond Purchase Agreement.

(d) Authorization of Bond Insurance and Qualified Reserve Credit Facilities. The submission of any applications to: (i) recognized providers of municipal bond insurance requesting the issuance of one or more municipal bond insurance policies to insure the Authority's obligation to make payments of principal of and interest on any of the Series 2019D Subordinate Refunding Bonds, and (ii) potential providers of Qualified Reserve Credit Facilities, is hereby ratified and approved. The Authorized Officials are, and each of them is, hereby authorized to specify in the Certificate of Award that the Authority shall accept one or more commitments for insurance from such providers, and one or more commitments for a Qualified Reserve Credit Facility. There is hereby authorized to be paid from the moneys deposited in the Series 2019D Costs of Issuance Subaccount such amount as is required to pay the premium and expenses for such insurance policies and Qualified Reserve Credit Facilities relating to the Series 2019D Subordinate Refunding Bonds. The Authorized Officials are, and each of them is, hereby further authorized to enter into a reimbursement agreement with the provider of any Qualified Reserve Credit Facility to provide for the Authority's reimbursement of the provider for any amounts drawn under the Qualified Reserve Credit Facility in a manner consistent with the Indenture. Any determination of the Authorized Officials under this paragraph shall be based on the written advice of the Financial Advisor.

(e) Certificates. The Authorized Officials are, and each of them is, authorized and directed, in their official capacities, to execute and deliver to the Series 2019D Original Purchasers the certificates required by the Bond Purchase Agreement to be executed on behalf of the Authority.

(f) Delivery of Bonds. The Authorized Officials are, and each of them is, authorized and directed to make the necessary arrangements with the Series 2019D Original Purchasers to establish the date, location, procedure and conditions for the delivery of the Series 2019D Subordinate Refunding Bonds to the Series 2019D Original Purchasers. The Authorized Officials are, and each of them is, further authorized and directed to make the necessary arrangements for the printing of the Series 2019D Subordinate Refunding Bonds, and the execution, authentication and delivery of the Series 2019D Subordinate Refunding Bonds to DTC for the accounts of the Series 2019D Original Purchasers, in accordance with this Resolution and the Indenture, and upon the receipt of payment of the purchase price, to cause such amount to be applied in accordance with the terms and provisions of this Resolution and the Indenture.

Section 5. Allocation of Proceeds of the Series 2019D Subordinate Refunding Bonds. The proceeds from the sale of the Series 2019D Subordinate Refunding Bonds shall be allocated, deposited and credited for the purposes approved in this Resolution and as specified in the Twenty-Sixth Supplemental Indenture.

Section 6. Twenty-Sixth Supplemental Indenture and Other Documents. The Authorized Officials are, and each of them is, authorized in connection with the issuance of the Series 2019D Subordinate Refunding Bonds, to execute, acknowledge and deliver

in the name of and on behalf of the Authority, the Twenty-Sixth Supplemental Indenture, substantially in the form thereof submitted to the Authority at or prior to this meeting, but with such changes therein as may be permitted by the Indenture and this Resolution and approved by the Authorized Officer executing the document on behalf of the Authority. The approval of those changes shall be conclusively evidenced by the execution of the document by an Authorized Official.

The Authorized Officials are, and each of them is, authorized in connection with the issuance of the Series 2019D Subordinate Refunding Bonds, to execute, acknowledge and deliver in the name of and on behalf of the Authority, the Escrow Agreement, substantially in the form thereof submitted to the Authority at or prior to this meeting, but with such changes therein as may be permitted by the Indenture and this Resolution and approved by the Authorized Officer executing the document on behalf of the Authority. If in the Certificate of Award, an Authorized Official determines that it is in the Authority's best interest to authorize the purchase of open-market securities to effect the advance refunding of the Refunded Bonds, PFM Asset Management LLC shall be the Authority's agent for the purchase of such securities. With respect to the Escrow Agreement and to the extent any escrow securities are to be purchased thereunder, the Certificate of Award shall designate an independent firm experienced in the preparation of verification reports to verify or certify such escrow securities to be of such maturities and interest payment dates, and to bear such interest, as will, without further investment or reinvestment of either the principal amount thereof or the interest earnings therefrom, be sufficient together with any cash deposited with and to be retained in that form by the Escrow Agent, to pay the principal of and interest and any premium on the Refunded Bonds, on their respective maturity or redemption date or dates, as provided in the Escrow Agreement.

The Authorized Officials and any other member, officer or employee of the Authority are each authorized to execute and deliver, on behalf of the Authority, such other certificates, documents and instruments related to the Series 2019D Subordinate Refunding Bonds as are necessary in connection with the transactions authorized in this Resolution, and to do all other things required of them or the Authority pursuant to the Indenture, the Twenty-Sixth Supplemental Indenture, the Bond Purchase Agreement, the Escrow Agreement and this Resolution.

No covenant, agreement or obligation contained herein shall be deemed to be a covenant, agreement or obligation of any present or future member of the Board or officer, employee or agent of the Authority in his or her individual capacity, and neither the members of the Board nor any officer of the Authority executing the Series 2019D Subordinate Refunding Bonds shall be liable personally thereon or be subject to any personal liability or accountability by reason of the issuance thereof. No member of the Board or officer, employee, agent or advisor of the Authority shall incur any personal liability with respect to any other action taken by him pursuant to this Resolution or the Indenture or any other document authorized by this Resolution, provided such member, officer, employee, agent or advisor acts in good faith.

Section 7. Official Statement; Continuing Disclosure. The Authorized Officials shall cause to be prepared and issued on behalf of the Authority, an official statement (the "Official Statement") relating to the original issuance of the Series 2019D Subordinate Refunding Bonds and the Series 2019A/B Subordinate Bonds. The Authorized Officials are, and each of them is, authorized to execute the Official Statement on behalf of the Authority, which shall be in substantially the form of the Official Statement submitted to the Authority at this meeting, with such changes as the Authorized Official who executes it may approve, the execution thereof on behalf of the Authority by an Authorized Official to be conclusive evidence of such authorization and approval (including approval of any such changes), and copies thereof are hereby authorized to be prepared and furnished to the Series 2019D Original Purchasers for distribution to prospective purchasers of the Series 2019D Subordinate Refunding Bonds, the Series 2019A/B Original Purchasers for distribution to prospective purchasers of the Series 2019A/B Subordinate Refunding Bonds and other interested persons. The preliminary Official Statement, shall be "deemed substantially final" by the Authority within the meaning of Rule 15c2-12 of the Securities Exchange Commission, subject to completion as provided below.

The distribution by the Authority and by the Series 2019D Original Purchasers and the Series 2019A/B Original Purchasers of the preliminary Official Statement and the Official Statement, in such form and with any changes as may be approved in writing by an Authorized Official, is hereby authorized and approved.

The Authority shall make sufficient copies of the Official Statement, with any supplements, available to the Series 2019D Original Purchasers to sell book entry interests in the Series 2019D Subordinate Refunding Bonds, the Series 2019A/B Original Purchasers to sell book entry interests in the Series 2019A/B Subordinate Refunding Bonds and will provide copies as appropriate to the Municipal Securities Rulemaking Board through its Electronic Municipal Market Access website at www.emma.msrb.org.

The Authorized Officials are each hereby authorized to furnish such information, to execute such instruments and to take such other action in cooperation with the Series 2019D Original Purchasers as may be reasonably requested to qualify the Series 2019D Subordinate Refunding Bonds for offer and sale under the Blue Sky or other securities laws and regulations and to determine their eligibility for investment under the laws and regulations of such states and other jurisdictions of the United States of America as may be designated by the Series 2019D Original Purchasers; provided, however, that the Authority shall not be required to register as a dealer or broker in any such state or jurisdiction or become subject to the service of process in any jurisdiction in which the Authority is not now subject to such service.

In addition to the information authorized pursuant to Resolution 19-49 with respect to the Series 2019A/B Original Purchasers and the Series 2019A/B Subordinate Refunding Bonds, the Authorized Officials are each hereby further authorized: (i) to supplement and complete the "deemed substantially final" preliminary Official Statement by affixing thereto or inserting therein information to identify the Series 2019D Original Purchasers and to specify the final principal amount, interest rates and redemption provisions of the Series 2019D Subordinate Refunding Bonds, the price of the Series

2019D Subordinate Refunding Bonds to the general public, any credit enhancement provisions with respect to the Series 2019D Subordinate Refunding Bonds and any change in ratings of the Series 2019D Subordinate Refunding Bonds resulting from such credit enhancement, and such other information as is necessary to supplement and complete the Official Statement with the approved and agreed upon terms of Series 2019D Subordinate Refunding Bonds, and (ii) to make such other changes to the preliminary Official Statement or the Official Statement as are, in the judgment of an Authorized Official, necessary and appropriate in order to make the preliminary Official Statement or the Official Statement not materially misleading and to comply with applicable securities laws or otherwise to enable the Authority to fulfill its obligations regarding the preliminary Official Statement or the Official Statement under the Bond Purchase Agreement.

The Authority hereby covenants and agrees that it will comply with and carry out all of the provisions of the Continuing Disclosure Agreement. Notwithstanding any other provision of this Resolution or the Indenture, failure of the Authority to comply with the Continuing Disclosure Agreement shall not be considered an Event of Default; however, any Holder of Series 2019D Subordinate Refunding Bonds may, and the Trustee may (and, at the request of the Holders of at least 25% in aggregate principal amount of Outstanding Series 2019D Subordinate Refunding Bonds, shall) take such actions as may be necessary and appropriate, including seeking mandamus or specific performance by court order, to cause the Authority to comply with its obligations under this paragraph. The Authorized Officials are, and each of them is, hereby authorized and directed to execute and deliver the Continuing Disclosure Agreement in substantially the form submitted to the Authority at or prior to this meeting with such changes therein as may be approved by the officer executing the Continuing Disclosure Agreement. The approval of those changes shall be conclusively evidenced by the execution of the Continuing Disclosure Agreement by an Authorized Official.

Section 8. General. The appropriate officers and employees of the Authority will do all things necessary and proper to implement and carry out the orders and agreements set forth or approved in this Resolution for the proper fulfillment of the purposes thereof. The Authority shall furnish to the Series 2019D Original Purchasers of the Series 2019D Subordinate Refunding Bonds a true and certified transcript of all proceedings relating to the authorization and issuance of the Series 2019D Subordinate Refunding Bonds along with other information as is necessary or proper with respect to the Series 2019D Subordinate Refunding Bonds.

Section 9. Multiple Series. Notwithstanding anything herein to the contrary, the Series 2019D Subordinate Refunding Bonds may be issued in one or more separate series or subseries, each bearing a distinctive designation, provided that the Series 2019D Subordinate Refunding Bonds of all series in the aggregate, must satisfy the requirements and comply with the restrictions of this Resolution and the Indenture. Separate series and subseries of Series 2019D Subordinate Refunding Bonds may be issued at the same or different times and so may have different dates of issuance. The Series 2019D Subordinate Refunding Bonds of each series and subseries shall be designated as provided in the applicable Certificate of Award. A separate Certificate of

Award may be delivered for each series or subseries, and each reference in this Resolution to the Certificate of Award shall refer to each and all such Certificates of Award. A separate Supplemental Trust Indenture may be entered into for each series or subseries, and each reference in this Resolution to the Twenty-Sixth Supplemental Indenture shall refer to each and all such Supplemental Trust Indentures, but any Supplemental Trust Indenture subsequent to the Twenty-Sixth Supplemental Indenture shall bear a different designation. A separate Bond Purchase Agreement and Continuing Disclosure Agreement may be entered into for each series or subseries, and each reference in this Resolution to the Bond Purchase Agreement or to the Continuing Disclosure Agreement shall refer to each and all such Bond Purchase Agreements or Continuing Disclosure Agreements, respectively. A separate Official Statement may be prepared for each series or subseries, and each reference in this Resolution to the Official Statement shall refer to each and all such Official Statements.

Section 10. Amendment of Resolution 19-49. Nothing in this Resolution shall diminish the authorization granted in Resolution #19-49. The Board has determined that Resolution #19-49 should be amended to indicate that the term "Official Statement" used and defined therein refers to the official statement relating to the original issuance of the Series 2019D Subordinate Refunding Bonds and the Series 2019A/B Subordinate Bonds, which shall be in substantially the form of the Official Statement submitted to the Authority at this meeting, with such changes as the Authorized Official who executes it may approve, the execution thereof on behalf of the Authority by an Authorized Official to be conclusive evidence of such authorization and approval (including approval of any such changes). Notwithstanding anything herein to the contrary, separate Official Statements may be prepared for Series 2019D Subordinate Refunding Bonds and the Series 2019A/B Subordinate Bonds, and, in such event, each reference in this Resolution to the Official Statement shall refer to the Official Statement for the Series 2019D Subordinate Refunding Bonds and the references in Resolution #19-49 to the Official Statement shall refer to the Official Statement for the Series 2019A/B Subordinate Bonds.

This Resolution is effective immediately.

Secretary to the Board of Directors

DRAFT
09-19-19

TWENTY-SIXTH SUPPLEMENTAL INDENTURE OF TRUST

between

**DISTRICT OF COLUMBIA
WATER AND SEWER AUTHORITY**

and

**WELLS FARGO BANK, NATIONAL ASSOCIATION
AS TRUSTEE**

Dated November [___], 2019

THIS TWENTY-SIXTH SUPPLEMENTAL INDENTURE OF TRUST dated the ____ day of November, 2019 (as defined in more detail below, the “**Twenty-Sixth Supplemental Indenture**”), by and between the District of Columbia Water and Sewer Authority (the “**Authority**”), an independent authority of the District of Columbia (the “**District**”), and Wells Fargo Bank, National Association, a national banking association, having a corporate trust office in Philadelphia, Pennsylvania, as trustee (in such capacity, together with any successor in such capacity, herein called the “**Trustee**”), provides:

WHEREAS, the Authority and the Trustee (its predecessor in that capacity having been Norwest Bank, N.A.) entered into the Master Indenture of Trust, dated as of April 1, 1998 (the “**Master Indenture**” and, as previously supplemented and amended by the First Supplemental Indenture, the Second Supplemental Indenture, the Third Supplemental Indenture, the Fourth Supplemental Indenture, the Fifth Supplemental Indenture, the Sixth Supplemental Indenture, the Seventh Supplemental Indenture, the Eighth Supplemental Indenture, the Ninth Supplemental Indenture, the Tenth Supplemental Indenture, the Eleventh Supplemental Indenture, the Twelfth Supplemental Indenture, the Thirteenth Supplemental Indenture, the Fourteenth Supplemental Indenture, the Fifteenth Supplemental Indenture, the Sixteenth Supplemental Indenture, the Seventeenth Supplemental Indenture, the Eighteenth Supplemental Indenture, the Nineteenth Supplemental Indenture, the Twentieth Supplemental Indenture, the Twenty-First Supplemental Indenture, the Twenty-Second Supplemental Indenture, the Twenty-Third Supplemental Indenture, the Twenty-Fourth Supplemental Indenture and the Twenty-Fifth Supplemental Indenture all as hereinafter defined, and as it may further be supplemented and amended in accordance with its terms, the “**Indenture**”), to provide for financing or refinancing the acquisition, construction, operation, maintenance and extension of the System (as defined in the Master Indenture) by the issuance of bonds, notes and other obligations payable solely from Net Revenues (as defined in the Master Indenture); and

WHEREAS, pursuant to the First Supplemental Indenture of Trust, dated as of April 1, 1998 (the “**First Supplemental Indenture**”), between the Authority and the Trustee, the Authority issued its Public Utility Revenue Bonds, Series 1998 (the “**Series 1998 Senior Lien Bonds**”) in the aggregate principal amount of \$266,120,000 to finance Costs of the System (as defined in the Master Indenture) and to refund then outstanding debt of the Authority; and

WHEREAS, the Master Indenture permits the Authority, for certain purposes and subject to certain conditions, to issue Other System Indebtedness (as defined therein) secured on a parity with the Series 1998 Senior Lien Bonds and referred to collectively with the Series 1998 Senior Lien Bonds as “**Senior Debt**,” and also permits the Authority to issue Subordinate Debt (as defined therein), to which it has pledged to its payment Net Revenues as a subordinate lien pledge after the pledge of Net Revenues to Senior Debt; and

WHEREAS, pursuant to the Second Supplemental Indenture of Trust, dated as of November 1, 2001 (the “**Second Supplemental Indenture**”), between the Authority and the Trustee, the Authority amended and supplemented the Master Indenture in accordance with its terms to clarify provisions thereof related to certain forms of Indebtedness (as defined in the Master Indenture, i.e., Senior Debt and Subordinate Debt) and thereby facilitate the issuance of such forms of Indebtedness; and

WHEREAS, pursuant to the Third Supplemental Indenture of Trust, dated as of November 1, 2001 (the “**Third Supplemental Indenture**”), between the Authority and the Trustee, the Authority (i) issued its Commercial Paper Notes defined therein as the Series A-B Notes, (ii) designated the Series A-B Notes as Subordinate Debt for purposes of the Indenture, and (iii) made provision for the securing of the Series A-B Notes and of the Reimbursement Obligations to the Bank that provided the Letters of Credit (all as defined therein) that secure the Series A-B Notes; and

WHEREAS, pursuant to the Fourth Supplemental Indenture of Trust, dated August 12, 2003: (the “**Fourth Supplemental Indenture**”), between the Authority and the Trustee, the Authority (i) issued its Public Utility Subordinated Lien Revenue Bonds, Series 2003, dated August 12, 2003 (the “**Series 2003 Subordinated Bonds**”), in the aggregate principal amount of \$176,220,000 to finance certain Costs of the System and retire Series A-B Notes, (ii) designated the Series 2003 Subordinated Bonds as Subordinate Debt for purposes of the Indenture, and (iii) secured the Series 2003 Subordinated Bonds by a pledge of Net Revenues subordinate to the pledge of Net Revenues that secures Senior Debt and on a parity with the pledge of Net Revenues that secures other Subordinate Debt, including, without limitation, other Subordinate Debt that the Authority may issue from time to time in the future; and

WHEREAS, pursuant to the Fifth Supplemental Indenture of Trust, dated August 3, 2004 (the “**Fifth Supplemental Indenture**”), between the Authority and the Trustee, the Authority: (i) issued its Public Utility Subordinated Lien Revenue Bonds, Series 2004, as Subseries 2004A-1, Subseries 2004A-2, Subseries 2004B-1 and Subseries B-2 (collectively, the “**Series 2004 Subordinated Bonds**”) in the aggregate principal amount of \$295,000,000 to finance certain Costs of the System, (ii) designated the Series 2004 Subordinated Bonds as Subordinate Debt for purposes of the Indenture, and (iii) secured the Series 2004 Subordinated Bonds by a pledge of Net Revenues subordinate to the pledge of Net Revenues that secures Senior Debt and on a parity with the pledge of Net Revenues that secures other Subordinate Debt, including, without limitation, other Subordinate Debt that the Authority may issue from time to time in the future; and

WHEREAS, pursuant to the Sixth Supplemental Indenture of Trust, dated June 6, 2007 (the “**Sixth Supplemental Indenture**”), between the Authority and the Trustee, the Authority: (i) issued its Public Utility Subordinated Lien Revenue Bonds, Series 2007A (the “**Series 2007A Subordinated Bonds**”), in the aggregate principal amount of \$218,715,000 to finance certain Costs of the System and retire Series A-B Notes, (ii) designated the Series 2007A Subordinated Bonds as Subordinate Debt for purposes of the Indenture, and (iii) secured the Series 2007A Subordinated Bonds by a pledge of Net Revenues subordinate to the pledge of Net Revenues that secures Senior Debt and on a parity with the pledge of Net Revenues that secures other Subordinate Debt, including, without limitation, other Subordinate Debt that the Authority may issue from time to time in the future; and

WHEREAS, pursuant to the Seventh Supplemental Indenture of Trust, dated June 6, 2007 (the “**Seventh Supplemental Indenture**”), between the Authority and the Trustee, the Authority: (i) issued its Public Utility Subordinated Lien Taxable Revenue Bonds, Series 2007B (the “**Series 2007B Subordinated Bonds**”), in the aggregate principal amount of \$59,000,000 to finance certain Costs of the System, (ii) designated the Series 2007B Subordinated Bonds as Subordinate

Debt for purposes of the Indenture, and (iii) secured the Series 2007B Subordinated Bonds by a pledge of Net Revenues subordinate to the pledge of Net Revenues that secures Senior Debt and on a parity with the pledge of Net Revenues that secures other Subordinate Debt, including, without limitation, other Subordinate Debt that the Authority may issue from time to time in the future; and

WHEREAS, pursuant to the Eighth Supplemental Indenture of Trust, dated April 24, 2008 (the “**Eighth Supplemental Indenture**”), between the Authority and the Trustee, the Authority: (i) issued its Public Utility Subordinated Lien Revenue Refunding Bonds, Series 2008 (the “**Series 2008 Subordinated Bonds**”), in the aggregate principal amount of \$290,375,000 to (a) currently refund all of the outstanding Series 2004 Subordinated Bonds and a portion of the Series 2007B Subordinated Bonds, and (b) pay issuance costs of the Series 2008 Subordinated Bonds, (ii) designated the Series 2008 Subordinated Bonds as Subordinate Debt for purposes of the Indenture, and (iii) secured the Series 2008 Subordinated Bonds by a pledge of Net Revenues subordinate to the pledge of Net Revenues that secures Senior Debt and on a parity with the pledge of Net Revenues that secures other Subordinate Debt, including, without limitation, other Subordinate Debt that the Authority may issue from time to time in the future; and

WHEREAS, pursuant to the Ninth Supplemental Indenture of Trust, dated December 19, 2008 (the “**Ninth Supplemental Indenture**”), between the Authority and the Trustee, the Authority agreed to confer on the Holders of the Series 2003 Subordinated Bonds additional rights related to the Reserve Credit Facility (as defined therein) and to cure any ambiguity or omission in the Indenture regarding the obligations of the Authority as a consequence of a downgrade of the Reserve Policy related to the Series 2003 Subordinated Bonds, or in the event that the Reserve Policy were to cease to be in effect; and

WHEREAS, pursuant to the Tenth Supplemental Indenture of Trust, dated February 12, 2009 (the “**Tenth Supplemental Indenture**”), between the Authority and the Trustee, the Authority (i) issued its Public Utility Senior Lien Revenue Bonds, Series 2009A (the “**Series 2009A Senior Lien Bonds**”), in the aggregate principal amount of \$300,000,000 to finance certain Costs of the System and retire Series A-B Notes, (ii) designated the Series 2009A Senior Lien Bonds as Senior Debt for purposes of the Indenture, and (iii) secured the Series 2009A Senior Lien Bonds by a pledge of Net Revenues on a parity with the pledge of Net Revenues that secures other Senior Debt, including, without limitation, other Senior Debt that the Authority may issue from time to time in the future; and

WHEREAS, pursuant to the Eleventh Supplemental Indenture of Trust, dated June 2, 2010, as supplemented and amended by the First Amendment to Eleventh Supplemental Indenture of Trust, dated April 5, 2013, and by the Second Amendment to Eleventh Supplemental Indenture of Trust, dated May 18, 2015 (together, the “**Eleventh Supplemental Indenture**”), each between the Authority and the Trustee, the Authority: (i) authorized the issuance of its (a) Commercial Paper Notes, Series A (the “**2010 Series A Notes**”) in the aggregate principal amount of \$0 to finance certain Costs of the System, (b) Commercial Paper Notes, Series B (the “**2010 Series B Notes**”) in the aggregate principal amount of \$100,000,000 to finance certain Costs of the System, and (c) Commercial Paper Notes, Series C (the “**2010 Series C Notes**”) and, together with the 2010 Series A Notes and the 2010 Series B Note, the “**Series 2010 Notes**”) in the aggregate principal

amount of \$50,000,000 to finance certain Costs of the System, (ii) designated the Series 2010 Notes as Subordinate Debt for purposes of the Indenture, and (iii) made provision for the securing of the Series 2010 Notes and of the Authority's reimbursement obligations to the Bank (as defined in the Eleventh Supplemental Indenture) that provided the Substitute Letters of Credit (as defined in the Eleventh Supplemental Indenture) that secure the Series 2010 Notes; and

WHEREAS, pursuant to the Twelfth Supplemental Indenture of Trust, dated October 27, 2010 (the "**Twelfth Supplemental Indenture**"), between the Authority and the Trustee, the Authority: (i) issued its Public Utility Subordinate Lien Revenue Bonds, Series 2010A (Federally Taxable – Issuer Subsidy – Build America Bonds) (the "**Series 2010A Subordinated Bonds**") in the aggregate principal amount of \$300,000,000 to finance certain Costs of the System, and fund capitalized interest on a portion of the Series 2010A Subordinate Bonds, subject to specified limitations, (ii) designated the Series 2010A Subordinate Bonds as Subordinate Debt for purposes of the Indenture, (iii) secured the Series 2010A Subordinate Bonds by a pledge of Net Revenues subordinate to the pledge of Net Revenues that secures Senior Debt and on a parity with the pledge of Net Revenues that secures other Subordinate Debt, including, without limitation, other Subordinate Debt that the Authority may issue from time to time in the future, and (iv) included provisions in the Indenture related to potential Direct Payments (as defined therein) received or expected to be received by the Authority, including certain provisions requiring the consent of the holders of a majority of Outstanding Bonds; and

WHEREAS, pursuant to the Thirteenth Supplemental Indenture of Trust, dated March 22, 2012 (the "**Thirteenth Supplemental Indenture**"), between the Authority and the Trustee, the Authority: (A) (i) issued its Public Utility Subordinate Lien Revenue Bonds, Series 2012A (the "**Series 2012A Subordinated Bonds**") in the aggregate principal of \$177,430,000 to finance certain Costs of the System and pay certain costs of issuance, (ii) designated the Series 2012A Subordinate Bonds as Subordinate Debt for purposes of the Indenture, and (iii) secured the Series 2012A Subordinate Bonds by a pledge of Net Revenues subordinate to the pledge of Net Revenues that secures Senior Debt and on a parity with the pledge of Net Revenues that secures other Subordinate Debt, including, without limitation, other Subordinate Debt that the Authority may issue from time to time in the future; (B) (i) issued its Public Utility Subordinate Lien Multimodal Revenue Bonds, Series 2012B (the "**Series 2012B Subordinated Bonds**") in the aggregate principal amount of \$100,000,000 to finance certain Costs of the System, fund capitalized interest on a portion of the Series 2012B Subordinate Bonds subject to specified limitations, and pay certain costs of issuance, (ii) designated the Series 2012B Subordinate Bonds as Subordinate Debt for purposes of the Indenture, and (iii) secured the Series 2012B Subordinate Bonds by a pledge of Net Revenues subordinate to the pledge of Net Revenues that secures Senior Debt and on a parity with the pledge of Net Revenues that secures other Subordinate Debt, including, without limitation, other Subordinate Debt that the Authority may issue from time to time in the future; and (C) (i) issued its Public Utility Subordinate Lien Revenue Refunding Bonds, Series 2012C (the "**Series 2012C Subordinated Bonds**") in the aggregate principal amount of \$163,215,000, and applied the proceeds thereof, together with any other funds of the Authority, to advance refund the Series 2003 Subordinated Bonds and caused them to be deemed paid and no longer Outstanding for purposes of the Indenture, and paid certain costs of issuance, (ii) designated the Series 2012C Subordinate Bonds as Subordinate Debt for purposes of the Indenture, and (iii) secured the Series 2012C Subordinate Bonds by a pledge of Net Revenues subordinate to the pledge of Net Revenues

that secures Senior Debt and on a parity with the pledge of Net Revenues that secures other Subordinate Debt, including, without limitation, other Subordinate Debt that the Authority may issue from time to time in the future; and

WHEREAS, pursuant to the Fourteenth Supplemental Indenture of Trust, dated August 1, 2013 (the “**Fourteenth Supplemental Indenture**”), between the Authority and the Trustee, the Authority: (i) issued its Public Utility Subordinate Lien Revenue Bonds, Series 2013A (the “**Series 2013A Subordinate Bonds**”) in the aggregate principal amount of \$300,000,000 to finance certain Costs of the System, and pay certain costs of issuance, (ii) designated the Series 2013A Subordinate Bonds as Subordinate Debt for purposes of the Indenture, and (iii) secured the Series 2013A Subordinate Bonds by a pledge of Net Revenues subordinate to the pledge of Net Revenues that secures Senior Debt and on a parity with the pledge of Net Revenues that secures other Subordinate Debt, including, without limitation, other Subordinate Debt that the Authority may issue from time to time in the future; and

WHEREAS, pursuant to the Fifteenth Supplemental Indenture of Trust, dated July 23, 2014 (the “**Fifteenth Supplemental Indenture**”), between the Authority and the Trustee, the Authority (i) issued its Public Utility Senior Lien Revenue Bonds, Series 2014A (Federally Taxable) (Green Bonds) (the “**Series 2014A Senior Bonds**”) in the aggregate principal amount of \$350,000,000 to finance certain Costs of the System and pay certain costs of issuance, (ii) designated the Series 2014A Senior Lien Bonds as Senior Debt for purposes of the Indenture, and (iii) secured the Series 2014A Senior Lien Bonds by a pledge of Net Revenues on a parity with the pledge of Net Revenues that secures other Senior Debt, including, without limitation, other Senior Debt that the Authority may issue from time to time in the future; and

WHEREAS, pursuant to the Sixteenth Supplemental Indenture of Trust, dated July 23, 2014 (the “**Sixteenth Supplemental Indenture**”), between the Authority and the Trustee, the Authority: (i) issued its Public Utility Subordinate Lien Multimodal Revenue Bonds, Series 2014B (the “**Series 2014B Subordinate Bonds**”) in the aggregate principal amount of \$100,000,000 to finance certain Costs of the System and pay certain costs of issuance, (ii) designated the Series 2014B Subordinate Bonds as Subordinate Debt for purposes of the Indenture, and (iii) secured the Series 2014B Subordinate Bonds by a pledge of Net Revenues subordinate to the pledge of Net Revenues that secures Senior Debt and on a parity with the pledge of Net Revenues that secures other Subordinate Debt, including, without limitation, other Subordinate Debt that the Authority may issue from time to time in the future; and

WHEREAS, pursuant to the Seventeenth Supplemental Indenture of Trust, dated November 20, 2014 (the “**Seventeenth Supplemental Indenture**”), between the Authority and the Trustee, the Authority: (i) issued its Public Utility Subordinate Lien Revenue Refunding Bonds, Series 2014C (the “**Series 2014C Subordinate Bonds**”) in the aggregate principal amount of \$377,700,000 to (a) advance refund all or a portion of the Authority’s outstanding Series 2007A Subordinated Bonds, the Series 2008A Subordinated Bonds, and the Series 2009A Senior Lien Bonds, and current refund all of the Authority’s outstanding Subseries 2012B-1 of the Series 2012 Subordinate Bonds, and (b) pay issuance costs of the Series 2014C Subordinate Bonds, (ii) designated the Series 2014C Subordinate Bonds as Subordinate Debt for purposes of the Indenture, and (iii) secured the Series 2014C Subordinate Bonds by a pledge of Net Revenues subordinate to

the pledge of Net Revenues that secures Senior Debt and on a parity with the pledge of Net Revenues that secures other Subordinate Debt, including, without limitation, other Subordinate Debt that the Authority may issue from time to time in the future; and

WHEREAS, pursuant to the Eighteenth Supplemental Indenture of Trust, dated October 15, 2015 (the “**Eighteenth Supplemental Indenture**”), between the Authority and the Trustee, the Authority: (i) issued its Public Utility Subordinate Lien Revenue Bonds, Series 2015A (the “**Series 2015A Subordinate Bonds**”) in the aggregate principal amount of \$100,000,000 to (a) finance certain Costs of the System, and (b) pay issuance costs of the Series 2015A Subordinate Bonds, (ii) designated the Series 2015A Subordinate Bonds as Subordinate Debt for purposes of the Indenture, (iii) secured the Series 2015A Subordinate Bonds by a pledge of Net Revenues subordinate to the pledge of Net Revenues that secures Senior Debt and on a parity with the pledge of Net Revenues that secures other Subordinate Debt, including, without limitation, other Subordinate Debt that the Authority may issue from time to time in the future, (iv) issued its Public Utility Subordinate Lien Revenue Bonds, Series 2015B (the “**Series 2015B Subordinate Bonds**”) and, together with the Series 2015A Subordinate Bonds, the “**Series 2015A/B Subordinate Bonds**”) in an aggregate principal amount of \$250,000,000 to (a) finance certain Costs of the System, and (b) pay issuance costs of the Series 2015B Subordinate Bonds, (v) designated the Series 2015B Subordinate Bonds as Subordinate Debt for purposes of the Indenture, and (vi) secured the Series 2015B Subordinate Bonds by a pledge of Net Revenues subordinate to the pledge of Net Revenues that secures Senior Debt and on a parity with the pledge of Net Revenues that secures other Subordinate Debt, including, without limitation, other Subordinate Debt that the Authority may issue from time to time in the future; and

WHEREAS, pursuant to the Nineteenth Supplemental Indenture of Trust, dated December 1, 2015 (the “**Nineteenth Supplemental Indenture**”) between the Trustee and the Authority, the Authority authorized (i) the issuance of its Extendable Municipal Commercial Paper Notes, Series A (the “**Series A EMCP Notes**”) in the aggregate principal amount of not to exceed \$100,000,000 outstanding at any time to finance certain Costs of the System, (ii) designated the Series A EMCP Notes as Subordinate Debt for purposes of the Indenture, and (iii) secured the Series A EMCP Notes by a pledge of Net Revenues subordinate to the pledge of Net Revenues that secures Senior Debt and on a parity with the pledge of Net Revenues that secures other Subordinate Debt, including, without limitation, other Subordinate Debt that the Authority may issue from time to time in the future; and

WHEREAS, pursuant to the Twentieth Supplemental Indenture of Trust, dated February 24, 2016 (the “**Twentieth Supplemental Indenture**”) between the Trustee and the Authority, the Authority (i) issued its Public Utility Subordinate Lien Revenue Refunding Bonds, Series 2016A (the “**Series 2016A Subordinate Bonds**”) in the aggregate principal amount of \$389,110,000 to (a) refund all or a portion of the Authority’s outstanding Series 2007A Subordinated Bonds, Series 2008A Subordinated Bonds, and Series 2009A Senior Lien Bonds, and (b) pay issuance costs of the Series 2016A Subordinate Bonds, (ii) designated the Series 2016A Subordinate Bonds as Subordinate Debt for purposes of the Indenture, and (iii) secured the Series 2016A Subordinate Bonds by a pledge of Net Revenues subordinate to the pledge of Net Revenues that secures Senior Debt and on a parity with the pledge of Net Revenues that secures other

Subordinate Debt, including, without limitation, other Subordinate Debt that the Authority may issue from time to time in the future; and

WHEREAS, pursuant to the Twenty-First Supplemental Indenture of Trust, dated September 29, 2016 (the “**Twenty-First Supplemental Indenture**”) between the Trustee and the Authority, the Authority (i) issued its Public Utility Subordinate Lien Revenue Bonds, Series 2016B (Environmental Impact Bonds) (the “**Series 2016B Subordinate Bonds**”) in the aggregate principal amount of \$25,000,000 to (a) finance certain Costs of the System (specifically, a portion of the costs of the Authority’s DC Clean Rivers Project); and (b) pay certain costs of issuance, (ii) designated the Series 2016B Subordinate Bonds as Subordinate Debt, as Variable Rate Indebtedness and as Tender Indebtedness for purposes of the Indenture, and (iii) secured the Series 2016B Subordinate Bonds by a pledge of Net Revenues subordinate to the pledge of Net Revenues that secures Senior Debt and on a parity with the pledge of Net Revenues that secures other Subordinate Debt, including, without limitation, other Subordinate Debt that the Authority may issue from time to time in the future; and

WHEREAS, pursuant to the Twenty-Second Supplemental Indenture of Trust, dated February 23, 2017 (the “**Twenty-Second Supplemental Indenture**”), between the Authority and the Trustee, the Authority: (i) issued its Public Utility Senior Lien Revenue Bonds, Series 2017A (the “**Series 2017A Senior Lien Bonds**”) in the aggregate principal amount of \$100,000,000 to (a) finance certain Costs of the System (specifically, a portion of the costs of the Authority’s DC Clean Rivers Project), and (b) pay issuance costs of the Series 2017A Senior Lien Bonds, (ii) designated the Series 2017A Senior Lien Bonds as Senior Debt for purposes of the Indenture, (iii) secured the Series 2017A Senior Lien Bonds by a pledge of Net Revenues on a parity with the pledge of Net Revenues that secures other Senior Debt, including, without limitation, other Senior Debt that the Authority may issue from time to time in the future, (iv) issued its Public Utility Senior Lien Revenue Bonds, Series 2017B (the “**Series 2017B Senior Lien Bonds**” and, together with the Series 2017A Senior Lien Bonds, the “**Series 2017A/B Senior Lien Bonds**”) in an aggregate principal amount of \$200,000,000 to (a) finance certain Costs of the System, and (b) pay issuance costs of the Series 2017B Senior Lien Bonds, (v) designated the Series 2017B Senior Lien Bonds as Senior Debt for purposes of the Indenture, and (vi) secured the Series 2017B Senior Lien Bonds by a pledge of Net Revenues on a parity with the pledge of Net Revenues that secures other Senior Debt, including, without limitation, other Senior Debt that the Authority may issue from time to time in the future; and

WHEREAS, pursuant to the Twenty-Third Supplemental Indenture of Trust, dated April 30, 2018 (the “**Twenty-Third Supplemental Indenture**”), between the Authority and the Trustee, the Authority: (i) issued its Public Utility Subordinate Lien Revenue Bonds, Series 2018A (the “**Series 2018A Senior Lien Bonds**”) in the aggregate principal amount of \$100,000,000 to (a) finance certain Costs of the System (specifically, a portion of the costs of the Authority’s DC Clean Rivers Project), and (b) pay issuance costs of the Series 2018A Senior Lien Bonds, (ii) designated the Series 2018A Senior Lien Bonds as Senior Debt for purposes of the Indenture, (iii) secured the Series 2018A Senior Lien Bonds by a pledge of Net Revenues on a parity with the pledge of Net Revenues that secures other Senior Debt, including, without limitation, other Senior Debt that the Authority may issue from time to time in the future, (iv) issued its Public Utility Senior Lien Revenue Bonds, Series 2018B (the “**Series 2018B Senior Lien Bonds**” and, together with the

Series 2018A Senior Lien Bonds, the “**Series 2018A/B Senior Lien Bonds**”) in an aggregate principal amount of \$200,000,000 to (a) finance certain Costs of the System, (b) pay issuance costs of the Series 2018B Senior Lien Bonds and (c) refund all of the Authority’s then outstanding Commercial Paper Notes, Series B, (v) designated the Series 2018B Senior Lien Bonds as Senior Debt for purposes of the Indenture, and (vi) secured the Series 2018B Senior Lien Bonds by a pledge of Net Revenues on a parity with the pledge of Net Revenues that secures other Senior Debt, including, without limitation, other Senior Debt that the Authority may issue from time to time in the future; and

WHEREAS, pursuant to the Twenty-Fourth Supplemental Indenture of Trust, dated November __, 2019 (the “Twenty-Fourth Supplemental Indenture”), between the Authority and the Trustee, the Authority: (i)(a) issued its Public Utility Subordinate Lien Revenue Bonds, Series 2019A (Green Bonds) (the “**Series 2019A Subordinate Bonds**”) in the aggregate principal amount of \$[_____] to (1) finance certain Costs of the System (specifically, a portion of the costs of the Authority’s DC Clean Rivers Project), and (2) pay issuance costs of the Series 2019A Subordinate Bonds, (b) designated the Series 2019A Subordinate Bonds as Subordinate Debt for purposes of the Indenture, and (iii) secured the Series 2019A Subordinate Bonds by a pledge of Net Revenues subordinate to the pledge of Net Revenues that secures Senior Debt and on a parity with the pledge of Net Revenues that secures other Subordinate Debt, including, without limitation, other Subordinate Debt that the Authority may issue from time to time in the future, and (ii)(a) issued its Public Utility Subordinate Revenue Bonds, Series 2019B (the “**Series 2019B Subordinate Bonds**”) and, together with the Series 2019A Subordinate Bonds, the “**Series 2019A/B Subordinate Bonds**”) in an aggregate principal amount of \$[_____] to (1) finance certain Costs of the System, and (2) pay issuance costs of the Series 2019B Subordinate Bonds, (b) designated the Series 2019B Subordinate Bonds as Subordinate Debt for purposes of the Indenture, and (iii) secured the Series 2019B Subordinate Bonds by a pledge of Net Revenues subordinate to the pledge of Net Revenues that secures Senior Debt and on a parity with the pledge of Net Revenues that secures other Subordinate Debt, including, without limitation, other Subordinate Debt that the Authority may issue from time to time in the future; and

WHEREAS, pursuant to the Twenty-Fifth Supplemental Indenture of Trust, dated November __, 2019 (the “Twenty-Fifth Supplemental Indenture”), between the Authority and the Trustee, the Authority: (a) issued its Public Utility Subordinate Lien Multimodal Revenue Bonds, Series 2019C (the “**Series 2019C Subordinate Bonds**”) in the aggregate principal amount of \$[_____] to (1) finance certain Costs of the System, and (2) pay issuance costs of the Series 2019C Subordinate Bonds, (b) designated the Series 2019C Subordinate Bonds as Subordinate Debt for purposes of the Indenture, and (iii) secured the Series 2019C Subordinate Bonds by a pledge of Net Revenues subordinate to the pledge of Net Revenues that secures Senior Debt and on a parity with the pledge of Net Revenues that secures other Subordinate Debt, including, without limitation, other Subordinate Debt that the Authority may issue from time to time in the future; and

WHEREAS, the Authority now intends to: (i) issue Public Utility Subordinate Lien Revenue Refunding Bonds, Series 2019D (Federally Taxable) (the “**Series 2019D Subordinate Bonds**”) in the aggregate principal amount of \$[_____] to (a) refund all or a portion of the Authority’s outstanding Series 2013A Subordinated Bonds (the “**Refunded Bonds**”), and (b)

pay issuance costs of the Series 2019D Subordinate Bonds, (ii) designate the Series 2019D Subordinate Bonds as Subordinate Debt for purposes of the Indenture, and (iii) secure the Series 2019D Subordinate Bonds by a pledge of Net Revenues subordinate to the pledge of Net Revenues that secures Senior Debt and on a parity with the pledge of Net Revenues that secures other Subordinate Debt, including, without limitation, other Subordinate Debt that the Authority may issue from time to time in the future.

NOW THEREFORE, in consideration of the premises and the mutual covenants and agreements hereinafter contained, the parties hereto agree, as follows:

**ARTICLE I
TWENTY-SIXTH SUPPLEMENTAL INDENTURE**

Section 101. Authorization of Twenty-Sixth Supplemental Indenture.

This Twenty-Sixth Supplemental Indenture is authorized and executed by the Authority and delivered to the Trustee pursuant to and in accordance with Articles III and X of the Master Indenture. All terms, covenants, conditions and agreements of the Indenture shall apply with full force and effect to the Series 2019D Subordinate Bonds as Subordinate Debt and to the Holders thereof as Holders of Subordinate Debt, except as otherwise provided in this Twenty-Sixth Supplemental Indenture.

Section 102. Definitions.

Except as otherwise defined in this Twenty-Sixth Supplemental Indenture, capitalized words and terms defined in the Master Indenture as amended by the First Supplemental Indenture, the Second Supplemental Indenture, the Third Supplemental Indenture, the Fourth Supplemental Indenture, the Fifth Supplemental Indenture, the Sixth Supplemental Indenture, the Seventh Supplemental Indenture, the Eighth Supplemental Indenture, the Ninth Supplemental Indenture, the Tenth Supplemental Indenture, the Eleventh Supplemental Indenture, the Twelfth Supplemental Indenture, the Thirteenth Supplemental Indenture, the Fourteenth Supplemental Indenture, the Fifteenth Supplemental Indenture, the Sixteenth Supplemental Indenture, the Seventeenth Supplemental Indenture, the Eighteenth Supplemental Indenture, the Nineteenth Supplemental Indenture, the Twentieth Supplemental Indenture, the Twenty-First Supplemental Indenture, the Twenty-Second Supplemental Indenture, the Twenty-Third Supplemental Indenture, the Twenty-Fourth Supplemental Indenture and the Twenty-Fifth Supplemental Indenture are used in this Twenty-Sixth Supplemental Indenture with the meanings assigned to them therein. In addition, the following words as used in this Twenty-Sixth Supplemental Indenture have the following meanings unless the context or use clearly indicates another or different intent or meaning:

“Book-entry form” or “book-entry system” means a form or system under which the physical Series 2019D Subordinate Bond certificates in fully registered form are issued only to a Depository or its nominee as Holder, with the certificated Series 2019D Subordinate Bonds held by and “immobilized” in the custody of the Depository, and the book-entry system, maintained by and the responsibility of the Depository and not maintained by or the responsibility of the

Authority or the Trustee, is the record that identifies, and records the transfer of the interests of, the owners of beneficial, book-entry interests in the Series 2019D Subordinate Bonds.

“Depository” means any securities depository that is a clearing agency under federal law operating and maintaining, with its participants or otherwise, a book-entry system to record ownership of book-entry interests in Series 2019D Subordinate Bonds, and to effect transfers of book-entry interests in Series 2019D Subordinate Bonds, and includes and means initially The Depository Trust Company (a limited purpose trust company) (“DTC”), New York, New York.

“Interest Payment Dates” for the Series 2019D Subordinate Bonds means each April 1 and October 1 commencing [April 1, 2020], and thereafter during the time the Series 2019D Subordinate Bonds are outstanding.

“Series 2019D Construction Account” means the Series 2019D Construction Account established by this the Twenty-Sixth Supplemental Indenture in the Construction Fund.

“Series 2019D Costs of Issuance Subaccount” means the Series 2019D Costs of Issuance Subaccount established by this Twenty-Sixth Supplemental Indenture in the Series 2019D Construction Account of the Construction Fund.

“Series 2019D Escrow Account” means the Series 2019D Escrow Account established by this Twenty-Sixth Supplemental Indenture.

“Series 2019D Resolution” means Resolution No. 19-[___] adopted by the Authority’s Board on September 27, 2019, respectively, authorizing the Series 2019D Subordinate Bonds.

“Series 2019D Subordinate Bond Event of Default” means any of the events defined as such in Section 703 of this Twenty-Sixth Supplemental Indenture.

“Series 2019D Subordinate Bondholder” or “holder of Series 2019D Subordinate Bonds” means the registered owner of a Series 2019D Subordinate Bond.

“Series 2019D Subordinate Bonds Interest Subaccount” means the Series 2019D Subordinate Bonds Interest Subaccount established by this Twenty-Sixth Supplemental Indenture in the Subordinate Interest Account in the Subordinate Bond Fund.

“Series 2019D Subordinate Bonds Principal Subaccount” means the Series 2019D Subordinate Bonds Principal Subaccount established by this Twenty-Sixth Supplemental Indenture in the Subordinate Principal Account in the Subordinate Bond Fund.

“Series 2019D Subordinate Debt Service Reserve Requirement” means zero.

“Twenty-Sixth Supplemental Indenture” means this Twenty-Sixth Supplemental Indenture of Trust, dated November [___], 2019, between the Authority and the Trustee, which supplements and amends the Master Indenture, as previously supplemented and amended by the First Supplemental Indenture, the Second Supplemental Indenture, the Third Supplemental Indenture, the Fourth Supplemental Indenture, the Fifth Supplemental Indenture, the Sixth Supplemental Indenture, the Seventh Supplemental Indenture, the Eighth Supplemental Indenture, the Ninth

Supplemental Indenture, the Tenth Supplemental Indenture, the Eleventh Supplemental Indenture, the Twelfth Supplemental Indenture, the Thirteenth Supplemental Indenture, the Fourteenth Supplemental Indenture, the Fifteenth Supplemental Indenture, the Sixteenth Supplemental Indenture, the Seventeenth Supplemental Indenture, the Eighteenth Supplemental Indenture, the Nineteenth Supplemental Indenture, the Twentieth Supplemental Indenture, the Twenty-First Supplemental Indenture, the Twenty-Second Supplemental Indenture, the Twenty-Third Supplemental Indenture, the Twenty-Fourth Supplemental Indenture and the Twenty-Fifth Supplemental Indenture.

Section 103. Reference to Articles and Sections.

Unless otherwise indicated, all references herein to particular articles or sections are references to articles or sections of this Twenty-Sixth Supplemental Indenture.

**ARTICLE II
AUTHORIZATION, DETAILS AND FORM
OF SERIES 2019D SUBORDINATE BONDS**

Section 201. Authorization of Series 2019D Subordinate Bonds.

Pursuant to Article III of the Master Indenture and, specifically, Section 305 thereof, and the Series 2019D Resolution, the Authority is authorized to issue the Series 2019D Subordinate Bonds in the aggregate principal amount of \$[000,000,000] for the purpose of: (i) refunding all or a portion of the Series 2013A Subordinated Bonds and (ii) paying issuance costs of the Series 2019D Subordinate Bonds. The Series 2019D Subordinate Bonds shall be issued as Subordinate Debt pursuant to the Indenture.

Section 202. Details of Series 2019D Subordinate Bonds.

The Series 2019D Subordinate Bonds shall be designated “Public Utility Subordinate Lien Revenue Refunding Bonds, Series 2019D (Federally Taxable),” shall be dated November [___], 2019, shall be issuable only as fully registered bonds in denominations of \$5,000 and multiples thereof, shall be numbered R-1 upward and shall bear interest at rates, payable semiannually on the Interest Payment Dates, until their final payment or maturity, and shall mature on October 1 in years and amounts, as follows:

Due (Oct. 1)	Principal Amount	Interest Rate
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Each Series 2019D Subordinate Bond shall bear interest: (a) from its date, if such Series 2019D Subordinate Bond is authenticated prior to the first Interest Payment Date, or (b) otherwise from the Interest Payment Date that is, or immediately precedes, the date on which such Series 2019D Subordinate Bond is authenticated; provided, however, that if at the time of authentication of any Series 2019D Subordinate Bond payment of interest is in default, such Series 2019D Subordinate Bond shall bear interest from the date to which interest has been paid. The interest payable on the Series 2019D Subordinate Bonds will be computed on the basis of a 360-day year of twelve 30-day months.

Principal of and premium, if any, on the Series 2019D Subordinate Bonds shall be payable to the registered owners thereof upon the surrender of the applicable Series 2019D Subordinate Bonds at the designated office of the Trustee. Interest on the Series 2019D Subordinate Bonds shall be payable by check or draft mailed to the registered owners at their addresses as they appear on the fifteenth day of the month preceding the Interest Payment Date on the registration books kept by the Trustee; provided, however, if the Series 2019D Subordinate Bonds are registered in the name of a Depository or its nominee as registered owner or at the option of a registered owner of at least \$1,000,000 of Series 2019D Subordinate Bonds, payment shall be made by wire transfer to an account within the United States pursuant to the wire instructions received by the Trustee with respect to each such payment from such registered owner. Principal, premium, if any, and interest shall be payable in lawful money of the United States of America.

Section 203. Form of Bonds.

The Series 2019D Subordinate Bonds shall be in substantially the form set forth in **Exhibit A**, with such appropriate variations, omissions and insertions as are permitted or required by the Indenture.

Section 204. Depository Provisions.

The Series 2019D Subordinate Bonds shall initially be issued to a Depository for holding in a book-entry system. Those Series 2019D Subordinate Bonds shall be registered in the name of the Depository or its nominee, as registered owner, and immobilized in the custody of the Depository or the Trustee on behalf of the Depository; and shall not be transferable or

exchangeable, except for transfer to another Depository or to another nominee of a Depository, without further action by the Authority.

If any Depository determines not to continue to act as a Depository for the Series 2019D Subordinate Bonds for holding in a book-entry system or the Authority determines to remove the Series 2019D Subordinate Bonds from a Depository, the Authority may attempt to have established a securities depository/book-entry system relationship with another qualified Depository. If the Authority does not or is unable to do so, the Authority, after making provision for notification of the owners of book-entry interests by appropriate notice to the then Depository and any other arrangements it deems necessary, shall permit withdrawal of the Series 2019D Subordinate Bonds from the Depository, and shall execute and direct the Trustee to authenticate and deliver Series 2019D Subordinate Bond certificates, in fully registered form, to the assigns of the Depository or its nominee (if such Series 2019D Subordinate Bonds were held by a nominee), all at the cost and expense (including costs of printing or otherwise preparing and delivering replacement Series 2019D Subordinate Bonds), if the event is not the result of Authority action or inaction, of those persons requesting that authentication and delivery. Series 2019D Subordinate Bond certificates authenticated and delivered pursuant to this paragraph shall be in authorized denominations. In the event that Series 2019D Subordinate Bonds shall cease to be in book-entry form, then the Authority or the Depository shall provide to the Trustee the name, address of record and taxpayer identification number of each registered holder thereof. The Trustee may rely on such information without any investigation.

If the Series 2019D Subordinate Bonds are withdrawn from a Depository and printed bond certificates in fully registered form are or are to be authenticated and delivered pursuant to this Section, and if the Authority, without the consent of or notice to any of the holders of the Series 2019D Subordinate Bonds, may authorize the exchange of Series 2019D Subordinate Bond certificates in fully registered form or Series 2019D Subordinate Bonds under a book-entry system for coupon bonds payable to bearer, in an aggregate principal amount not exceeding the then unmatured and unredeemed principal amount of the Series 2019D Subordinate Bonds, bearing interest at the same rate and maturing on the same date, with coupons attached representing all unpaid interest due or to become due thereon. Such certificated Series 2019D Subordinate Bonds will be registrable, transferable and exchangeable as set forth in Section 204 and Section 205 of the Master Indenture.

So long as a Depository holds the Series 2019D Subordinate Bonds in a book-entry system (A) it or its nominee shall be the registered owner of the Series 2019D Subordinate Bonds, (B) notwithstanding anything to the contrary in this Twenty-Sixth Supplemental Indenture, determinations of persons entitled to payment of principal, premium, if any, and interest, transfers of ownership and exchanges and receipt of notices shall be the responsibility of the Depository and shall be effected pursuant to rules and procedures established by such Depository, (C) the Authority and the Trustee shall not be responsible or liable for maintaining, supervising or reviewing the records maintained by the Depository, its participants or persons acting through such participants, and (D) references in this Twenty-Sixth Supplemental Indenture to registered owners of the Series 2019D Subordinate Bonds shall mean such Depository or its nominee and shall not mean the beneficial owners of the Series 2019D Subordinate Bonds.

Section 205. Delivery of Series 2019D Subordinate Bonds.

The Trustee shall authenticate and deliver the Series 2019D Subordinate Bonds when there have been filed with or delivered to it the following items:

- (a) An original executed counterpart of this Twenty-Sixth Supplemental Indenture;
- (b) A certified copy of applicable resolution(s) of the Board of Directors of the Authority and related Certificate of Award: (i) authorizing the execution and delivery of the Twenty-Sixth Supplemental Indenture, and (ii) authorizing the issuance, sale, award, execution and delivery of the Series 2019D Subordinate Bonds.
- (c) A certificate signed by an Authorized Representative of the Authority and dated the date of such issuance, to the effect that:
 - (1) Either: (A) upon and immediately following such issuance, no Event of Default has occurred which has not been cured or waived, and no event or condition exists which, with the giving of notice or lapse of time or both, would become an Event of Default, or (B) if any such event or condition is happening or existing, specifying such event or condition, stating that the Authority will act with due diligence to correct such event or condition after the issuance of the Series 2019D Subordinate Bonds, and describing in reasonable detail the actions to be taken by the Authority toward such correction; and
 - (2) All required approvals, limitations, conditions and provisions precedent to the issuance of the Series 2019D Subordinate Bonds have been obtained, observed, met and satisfied.
- (d) An Opinion or Opinions of Counsel, subject to customary exceptions and qualifications, substantially to the effect that this Twenty-Sixth Supplemental Indenture has been duly authorized, executed and delivered to the Trustee, is a valid, binding and enforceable obligation of the Authority, and complies in all respects with the requirements of the Indenture.
- (e) An opinion or opinions of Bond Counsel, subject to customary exceptions and qualifications, substantially to the effect that the issuance of the Series 2019D Subordinate Bonds has been duly authorized, that the Series 2019D Subordinate Bonds are valid and binding limited obligations of the Authority, and that the interest on the Series 2019D Subordinate Bonds is excludable from gross income for purposes of District of Columbia income taxation.
- (f) A certificate of an Authorized Representative of the Authority, stating that rates, fees and charges are in effect or scheduled to go into effect to meet the Rate Covenant immediately after the issuance of the Series 2019D Subordinate Bonds.
- (g) A request and authorization of the Authority, signed by an Authorized Representative of the Authority, to the Trustee to authenticate and deliver such Bonds to the purchaser upon payment to the Trustee in immediately available funds for the account of the Authority of a specified sum plus accrued interest to the date of delivery.

ARTICLE III
REDEMPTION OF SERIES 2019D SUBORDINATE BONDS

Section 301. Redemption Dates and Prices.

The Series 2019D Subordinate Bonds may not be called for redemption by the Authority except as provided below:

(a) Make-Whole Optional Redemption.

[The Series 2019D Subordinate Bonds are subject to redemption prior to their stated maturities, at the option of the Authority, on any date from any source of available funds, as a whole or in part, at a redemption price equal to the principal amount thereof plus the Make-Whole Premium (as defined in this Section 301(a)), if any, plus accrued interest to the date fixed for redemption. For purposes of this Section 301(a), the following terms have the meaning ascribed to them below:

“Make-Whole Premium” means, with respect to any Series 2019D Subordinate Bond to be redeemed, an amount calculated by a Designated Institution (as defined in this Section 301(a)) equal to the positive difference, if any, between:

(1) the sum of the present values, calculated as of the date fixed for redemption of:

(a) each interest payment that, but for the redemption, would have been payable on the Series 2019D Subordinate Bond or a portion thereof being redeemed on each regularly scheduled Interest Payment Date occurring after the date fixed for redemption through the maturity date of such Series 2019D Subordinate Bond (excluding any accrued interest for the period prior to the date fixed for redemption); provided that if the date fixed for redemption is not a regularly scheduled Interest Payment Date with respect to such Series 2019D Subordinate Bond, the amount of the next regularly scheduled interest payment will be reduced by the amount of interest accrued on such Series 2019D Subordinate Bond to the date fixed for redemption; plus

(b) the principal amount that, but for such redemption, would have been payable on the maturity date of the Series 2019D Subordinate Bond or portion thereof being redeemed; minus

(2) the principal amount of the Series 2019D Subordinate Bonds or portion thereof being redeemed.

The present values of the interest and principal payments referred to in (1) above will be determined by discounting the amount of each such interest and principal payment from the date that each such payment would have been payable but for the redemption to the date fixed for redemption on a semiannual basis (assuming a 360-day year consisting of twelve 30-day months) at a discount rate equal to the Comparable Treasury Yield (as defined in this Section 301(a)), plus 30 basis points.

“Comparable Treasury Yield” means the yield appearing in the most recently published statistical release designated “H.15(519) Selected Interest Rates” under the heading “Treasury Constant Maturities,” or any successor publication selected by the Designated Banking Institution that is published weekly by the Board of Governors of the Federal Reserve System and that establishes yields on actively traded United States Treasury securities adjusted to constant maturity, for the maturity corresponding to the remaining term to maturity of the Series 2019D Subordinate Bond being redeemed. The Comparable Treasury Yield shall be determined at least two business days but not more than 45 calendar days preceding the applicable date fixed for redemption. If the H.15(519) statistical release sets forth a weekly average yield for United States Treasury securities that have a constant maturity that is the same as the remaining term to maturity of the Series 2019D Subordinate Bond being redeemed, then the Comparable Treasury Yield will be equal to such weekly average yield. In all other cases, the Comparable Treasury Yield will be calculated by interpolation on a straight-line basis, between the weekly average yields on the United States Treasury securities that have a constant maturity (i) closest to and greater than the remaining term to maturity of the Series 2019D Subordinate Bond being redeemed; and (ii) closest to and less than the remaining term to maturity of the Series 2019D Subordinate Bond being redeemed. Any weekly average yields calculated by interpolation will be rounded to the nearest 1/100th of 1%, with any figure of 1/200th of 1% or above being rounded upward. If, and only if, weekly average yields for United States Treasury securities for the preceding week are not available in the H.15(519) statistical release or any successor publication, then the Comparable Treasury Yield will be the rate of interest per annum equal to the semiannual equivalent yield to maturity of the Comparable Treasury Price (each as defined in this Section 301(a)) as of the date fixed for redemption.

“Comparable Treasury Issue” means the United States Treasury selected by the Designated Banking Institution as having a maturity comparable to the remaining term to maturity of the Series 2019D Subordinate Bond being redeemed that would be utilized, at the time of selection and in accordance with customary financial practice, in pricing new issues of corporate debt securities of comparable maturity to the remaining term to maturity of the Series 2019D Subordinate Bond being redeemed.

“Designated Banking Institution” means an investment banking institution of national standing which is a primary United States government securities dealer in the City of New York designated by the Authority (which may be one of the underwriters of the Series 2019D Subordinate Bonds).

“Comparable Treasury Price” means, with respect to any date on which a Series 2019D Subordinate Bond or portion thereof is being redeemed, either (a) the average of five Reference Treasury Dealer (as defined in this Section 301(a)) quotations for the date fixed for redemption, after excluding the highest and lowest such quotations, and (b) if the Designated Banking Institution is unable to obtain five such quotations, the average of the quotations that are obtained. The quotations will be the average, as determined by the Designated Banking Institution, of the bid and asked prices for the Comparable Treasury Issue (expressed in each case as a percentage of principal amount) quoted in writing to the Designated Banking Institution, at 2:00 p.m. New York City time on a business day at least two business days but no more than 45 calendar days preceding the applicable date fixed for redemption.

“Reference Treasury Dealer” means a primary United States Government securities dealer in the United States appointed by the Authority and reasonably acceptable to the Designated Banking Institution (which may be one of the underwriters of the Series 2019D Subordinate Bonds).]

(b) Mandatory Redemption.

The Series 2019D Subordinate Bonds bearing interest at a rate of ___%, and maturing on _____ 1, 20__ (the “___ Term Series 2019D Subordinate Bonds”), are required to be redeemed prior to maturity on October 1 in years and amounts upon payment of 100% of the principal amount thereof plus interest accrued to the redemption date, as follows:

<u>Year</u>	<u>Amount</u>
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* Final Maturity

The Trustee shall provide for a mandatory redemption of the Series 2019D Subordinate Term Bonds in accordance with the schedules set forth above; provided, however, that on or before the 70th day next preceding any such mandatory redemption date, the Authority may:

(1) deliver to the Trustee for cancellation Series 2019D Subordinate Term Bonds of the maturity required to be redeemed on such mandatory redemption date in any aggregate principal amount desired; or

(2) instruct the Trustee in writing to apply a credit against the Authority’s next mandatory redemption obligation for any such Series 2019D Subordinate Term Bonds that previously have been redeemed (other than through mandatory redemption) and canceled but not theretofore applied as a credit against any mandatory redemption obligation.

Upon the occurrence of any of the events described in clauses (1) or (2) of the preceding sentence, the Trustee shall credit against the Authority’s mandatory redemption obligation on the next mandatory redemption date the amount of such Series 2019D Subordinate Term Bonds so delivered or previously redeemed. Any principal amount of such Series 2019D Subordinate Term Bonds in excess of the principal amount required to be redeemed on such mandatory redemption date shall be similarly credited in an amount equal to the principal of such Series 2019D Subordinate Term Bonds so purchased towards the sinking fund installments for the Series 2019D Subordinate Term Bonds of such maturity on a pro rata basis in accordance with a certificate of an Authorized Representative of the Authority, which will direct the reduction of a ratable portion of each annual mandatory sinking fund installment requirement in accordance with the procedures set forth below. Within seven days of receipt of such Series 2019D Subordinate Term Bonds or instructions to apply as a credit, any amounts remaining in the Sinking Fund Account in excess of

the amount required to fulfill the remaining required mandatory redemption obligation on the next mandatory redemption date shall be used in such manner as determined at the written direction of the Authority.

The particular maturities of the Series 2019D Subordinate Bonds to be redeemed at the option of the Authority will be selected from such maturities as shall be determined by the Authority, upon advice from Co-Bond Counsel.

If less than all the Series 2019D Bonds of a particular maturity shall be called for any optional redemption or mandatory sinking fund redemption: (i) if the Series 2019D Bonds are not registered in book entry only form, any redemption of less than all of the Series 2019D Bonds will be allocated among the registered owners of such Series 2019D Bonds being redeemed as nearly as practicable in proportion to the amounts of the principal amounts of the Series 2019D Bonds owned by each registered owner, in authorized denominations, calculated based on the formula: $(\text{principal to be redeemed}) \times (\text{principal amount owned by such owner}) / (\text{total principal amount outstanding})$, and the particular Series 2019D Bonds to be redeemed will be determined by the Trustee in any manner as the Trustee in its sole discretion deems fair and appropriate and (ii) if the Series 2019D Bonds are in book entry only form and so long as DTC or a successor securities depository is the sole registered owner of the Series 2019D Bonds, any redemption of less than all of the Series 2019D Bonds will be done in accordance with DTC's procedures in effect at such time. It is the Authority's intent that redemption allocations made by DTC, the DTC Participants or such other intermediaries that may exist between the Authority and the Beneficial Owners be made in accordance with these same proportional provisions; provided, however, the Authority provides no assurance that DTC, the DTC Participants or any other intermediary will allocate redemptions among Beneficial Owners on such a proportional basis.

Section 302. Notice of Redemption.

Notice of redemption of Series 2019D Subordinate Bonds shall be given in the manner set forth in Section 402 of the Master Indenture, as though the Series 2019D Subordinate Bonds constituted "Bonds" for purposes of that Section; provided, however, that notices of redemption of Series 2019D Subordinate Bonds sent pursuant to Section 402 of the Master Indenture shall either (i) explicitly state that the proposed redemption is conditioned on there being on deposit in the applicable fund or account on the redemption date sufficient money to pay the full redemption price of the Series 2019D Subordinate Bonds to be redeemed, or (ii) be sent only if sufficient money to pay the full redemption price of the Series 2019D Subordinate Bonds to be redeemed is on deposit in the applicable fund or account. Notwithstanding the foregoing and the otherwise applicable requirement of Section 402 of the Master Indenture that the Trustee send notice of a call for redemption not fewer than 30 days prior to the redemption date, the Trustee may send any notice of redemption of Series 2019D Subordinate Bonds not fewer than 20 days prior to the redemption date or such shorter period of time as may be acceptable to the Depository while the Series 2019D Subordinate Bonds are in book-entry form and registered with a Depository, initially DTC.

**ARTICLE IV
APPLICATION OF PROCEEDS OF SERIES 2019D SUBORDINATE BONDS**

Section 401. Application of Proceeds of Series 2019D Subordinate Bonds; Application of Related Amounts.

The net proceeds of the Series 2019D Subordinate Bonds in the amount of \$[_____], which represents the par amount of the Series 2019D Subordinate Bonds (\$[_____]), minus the underwriters' discount (\$_____), and plus original issue premium (\$_____) by the Original Purchasers, at the request and direction of the Authority shall be applied as follows:

(a) \$[000,000,000.00] shall be deposited in the Series 2019D Escrow Account together with \$[0,000,000.00] from the Series 2013A Subordinated Bonds Interest Subaccount in the Subordinate Interest Account in the Subordinate Bond Fund; and

(b) \$[000,000.00] shall be deposited in the Series 2019D Costs of Issuance Subaccount of the Series 2019D Construction Account of the Construction Fund and used to pay costs of issuance of the Series 2019D Bonds.

**ARTICLE V
FUNDS AND ACCOUNTS**

Section 501. Series 2019D Construction Account and Series 2019D Escrow Account.

In the Construction Fund, there shall be established a Series 2019D Construction Account and, within that Account, a Series 2019D Costs of Issuance Subaccount. The portion of the proceeds of the Series 2019D Subordinate Bonds specified in Section 401(b) shall be deposited in the Series 2019D Costs of Issuance Subaccount and used to pay costs of issuance related to the Series 2019D Subordinate Bonds. When all costs of issuance have been paid or moneys have been reserved to pay all remaining unpaid costs of issuance, the balance of any Series 2019D Subordinate Bond proceeds remaining in excess of the amount to be reserved for payment of unpaid costs of issuance shall be deposited in the Subordinate Bond Fund to be used solely to pay principal of and interest on the Series 2019D Subordinate Bonds, in either case to the extent approved by Bond Counsel.

The Trustee shall establish and hold the Series 2019D Escrow Account for the purpose of receiving the proceeds of the Series 2019D Subordinate Bonds to be deposited therein pursuant to Section 401. Those proceeds, together with any other funds to be deposited in the Series 2019D Escrow Account pursuant to the Escrow Agreement, shall be applied pursuant to the Escrow Agreement to the payment of the principal of, interest on, and redemption price of the Refunded Bonds.

Section 502. Series 2019D Subordinate Bonds Subaccounts in the Subordinate Interest Account and Subordinate Principal Account.

(a) Within the Subordinate Interest Account there shall be established a “Series 2019D Subordinate Bonds Interest Subaccount.” Within the Subordinate Principal Account there shall be established a “Series 2019D Subordinate Bonds Principal Subaccount.”

(b) In accordance with Section 604(e) of the Master Indenture, Net Revenues shall be deposited in the Series 2019D Subordinate Bonds Interest Subaccount on or prior to the last Business Day of each of the six months prior to any month in which an Interest Payment Date occurs, in an amount equal to one-sixth (1/6) of the interest due and payable on the Series 2019D Subordinate Bonds on such Interest Payment Date.

(c) In accordance with Section 604(e) of the Master Indenture, Net Revenues shall be deposited in the Series 2019D Subordinate Bonds Principal Subaccount on or prior to the last Business Day of each of the twelve months prior to any month in which principal of Series 2019D Subordinate Bonds is payable on their stated maturity date or pursuant to mandatory redemption requirements, in an amount equal to one-twelfth (1/12) of the principal amount scheduled to be due and payable on the Series 2019D Subordinate Bonds in such month.

**ARTICLE VI
SECURITY FOR SERIES 2019D SUBORDINATE BONDS**

Section 601. Security for Series 2019D Subordinate Bonds.

The Series 2019D Subordinate Bonds shall be secured as Subordinate Debt under the Indenture, including, without limitation, by a pledge of: (i) Net Revenues subordinate to the pledge of Net Revenues that secures Senior Debt and on a parity with the pledge of Net Revenues that secures Subordinate Debt, including, without limitation, any other Subordinate Debt that the Authority may issue in the future, without preference, priority or distinction of any Series 2019D Subordinate Bond over any other Series 2019D Subordinate Bond or of any Subordinate Debt over any other Subordinate Debt, as provided in the Indenture; and (ii) the moneys and Permitted Investments in the Subordinate Bond Fund on a parity with the pledge of Net Revenues that secures other Subordinate Debt, including, without limitation, any other Subordinate Debt that the Authority may issue in the future, without preference, priority or distinction of any Series 2019D Subordinate Bond over any other Series 2019D Subordinate Bond or of any Subordinate Debt over any other Subordinate Debt, as provided in the Indenture.

Pursuant to the WASA Act (as defined in the Master Indenture), the Authority hereby includes in this Twenty-Sixth Supplemental Indenture the pledge of the District to the Authority and any holders of its bonds that, except as provided in the WASA Act, the District will not limit or alter rights vested in the Authority to fulfill agreements made with holders of the bonds, or in any way impair the rights and remedies of the holders of the bonds until the bonds, together with the interest thereon, with interest on any unpaid installments of interest, and all costs and expenses in connection with any action or proceedings by or on behalf of the holders of the bonds are fully met and discharged.

**ARTICLE VII
DEFAULTS AND REMEDIES**

Section 701. Application of Article IX and Other Remedies Provisions of the Master Indenture.

The Series 2019D Subordinate Bonds do not constitute “Bonds” under the Master Indenture. Accordingly, the provisions of Article IX of the Master Indenture that confer certain rights upon the Holders of Bonds or a specified percentage thereof do not apply to the Series 2019D Subordinate Bonds or to the Series 2019D Subordinate Bondholders. Pursuant to Section 305 of the Master Indenture, the Series 2019D Subordinate Bonds, as Subordinate Debt, may not be accelerated if any Senior Debt is outstanding.

Section 702. Rights of Series 2019D Subordinate Bondholders Upon Occurrence of Events of Default.

In addition to and in furtherance and implementation of the rights that Series 2019D Subordinate Bondholders have under the penultimate paragraph of Section 906 of the Master Indenture, Sections 703 through 711, inclusive, of this Twenty-Sixth Supplemental Indenture shall apply to the Series 2019D Subordinate Bonds.

Section 703. Events of Default.

Each of the following events shall be a Series 2019D Subordinate Bond Event of Default:

- (a) Default in the due and punctual payment of the principal of or premium, if any, on any Series 2019D Subordinate Bond (whether at maturity or call for redemption);
- (b) Default in the due and punctual payment of the interest on any Series 2019D Subordinate Bond;
- (c) Failure of the Authority to make the deposits required by subsection (e) or subsection (f) of Section 604 of the Master Indenture at the time and in the amount required from Net Revenues available for such deposit under the Indenture; or
- (d) Failure of the Trustee to apply moneys in accordance with the penultimate paragraph of Section 906 of the Master Indenture.

Section 704. Remedies of Series 2019D Subordinate Bondholders.

Upon the occurrence and continuation of a Series 2019D Subordinate Bond Event of Default, the Trustee may, and if requested by the holders of not less than 25% in aggregate principal amount of outstanding Series 2019D Subordinate Bonds and if indemnified to its reasonable satisfaction, shall proceed to protect and enforce their rights by mandamus or other suit, action or proceeding at law or in equity, including an action for specific performance.

No remedy conferred by this Indenture upon or reserved to the Trustee and Series 2019D Subordinate Bondholders is intended to be exclusive of any other remedy, but each such remedy shall be cumulative and shall be in addition to any other remedy given to the Trustee and Series 2019D Subordinate Bondholders hereunder or now or hereafter existing at law, in equity or by statute.

No delay or omission to exercise any right or power accruing upon any default or Series 2019D Subordinate Bond Event of Default shall impair any such right or power or shall be construed to be a waiver of any such default or Series 2019D Subordinate Bond Event of Default or acquiescence therein, and every such right and power may be exercised from time to time and as often as may be deemed expedient.

No waiver of any default or Series 2019D Subordinate Bond Event of Default hereunder by the Trustee or Series 2019D Subordinate Bondholders shall extend to or shall affect any subsequent Series 2019D Subordinate Bond Event of Default or shall impair any rights or remedies consequent thereon.

Section 705. Right of Series 2019D Subordinate Bondholders to Direct Proceedings.

The holders of a majority in aggregate principal amount of Series 2019D Subordinate Bonds then outstanding shall have the right, at any time, by an instrument or instruments in writing executed and delivered to the Trustee, to direct the method and place of conducting all proceedings to be taken in connection with the enforcement of the terms and conditions of this Twenty-Sixth Supplemental Indenture or any other proceedings hereunder; provided, however, that the Trustee is provided indemnity satisfactory to it and such direction shall not be otherwise than in accordance with the provisions of law and of the Indenture.

Section 706. Application of Moneys.

All moneys received by the Trustee pursuant to any right given or action taken under the provisions of this Article shall, after payment of the cost and expenses of the proceedings resulting in the collection of such moneys, the outstanding fees, expenses, liabilities and advances incurred or reasonably anticipated to be made by the Trustee, and the fees and the expenses of the Authority in carrying out this Twenty-Sixth Supplemental Indenture, be deposited in the Series 2019D Subordinate Bonds Interest Subaccount or the Series 2019D Subordinate Bonds Principal Subaccount, as the case may be, and applied as follows and for no other purpose:

- (a) All such moneys shall be applied:

First - To the payment to the persons entitled thereto of all installments of interest then due on the Series 2019D Subordinate Bonds, in the order of the maturity of the installments of such interest and, if the amount available shall not be sufficient to pay in full any particular installment, then to the payment ratably, according to the amounts due on such installment, to the persons entitled thereto, without any discrimination or preference except as to any difference in the respective rates of interest specified in the Series 2019D Subordinate Bonds; and

Second - To the payment to the persons entitled thereto of the unpaid principal of and premium, if any, on any of the Series 2019D Subordinate Bonds which shall have become due (other than Series 2019D Subordinate Bonds called for redemption for the payment of which moneys are held pursuant to the provisions of the Indenture), in the order of their due dates, and, if the amount available shall not be sufficient to pay in full Series 2019D Subordinate Bonds due on any particular date, then to the payment of such principal and premium, if any, ratably, according to the amount of such principal due on such date, to the persons entitled thereto, without any discrimination or preference.

(b) Whenever moneys are to be applied pursuant to the provisions of this Section, such moneys shall be applied at such times and from time to time as the Trustee shall determine, having due regard to the amount of such moneys available for application and the likelihood of additional moneys becoming available for such application in the future. Whenever the Trustee shall apply such moneys, it shall fix the date (which shall be an Interest Payment Date unless it shall deem another date more suitable) on which such application is to be made and on such date interest shall cease to accrue on the amounts of principal to be paid. The Trustee shall give such notice as it may deem appropriate of the deposit with it of any such moneys and of the fixing of any such date.

Section 707. Remedies Vested in Trustee.

All rights of action (including the right to file proof of claims) under this Twenty-Sixth Supplemental Indenture or under any of the Series 2019D Subordinate Bonds may be enforced by the Trustee without the possession of any of the Series 2019D Subordinate Bonds or the production thereof in any trial or other proceeding relating thereto and any such suit or proceeding instituted by the Trustee may be brought in its name as Trustee without the necessity of joining as plaintiffs or defendants any Series 2019D Subordinate Bondholders, and any recovery of judgment shall be for the equal benefit of the Series 2019D Subordinate Bondholders.

Section 708. Limitation on Suits.

Except to enforce the rights given under Sections 704 and 705 of this Twenty-Sixth Supplemental Indenture, no Series 2019D Subordinate Bondholder shall have any right to institute any action, suit or proceeding at law or in equity for the enforcement of the Indenture or for the execution of any trust thereof or any other remedy hereunder, unless: (a) a Series 2019D Subordinate Bond Event of Default has occurred and is continuing and the Holders of 25% in aggregate principal amount of Series 2019D Subordinate Bonds then outstanding have made written request to the Trustee and offered it reasonable opportunity either to proceed to exercise the powers hereinbefore granted or to institute such action, suit or proceeding in its own name, (b) such requesting Series 2019D Subordinate Bondholders have offered to the Trustee indemnity as provided in Section 1101(1) of the Master Indenture, (c) the Trustee has thereafter failed or refused to exercise the powers hereinbefore granted, or to institute such action, suit or proceeding in its own name, (d) no direction inconsistent with such written request has been given to the Trustee by the holders of a majority in aggregate principal amount of Series 2019D Subordinate Bonds then outstanding, and (e) notice of such action, suit or proceeding is given to the Trustee; it being understood and intended that no one or more Series 2019D Subordinate Bondholders shall have any right in any manner whatsoever to affect, disturb or prejudice the Indenture by its or their

action or to enforce any rights hereunder except in the manner herein provided, and that all proceedings at law or in equity shall be instituted and maintained in the manner herein provided and for the equal benefit of all Series 2019D Subordinate Bondholders then outstanding. The notification, request and offer of indemnity set forth above, at the option of the Trustee, shall be conditions precedent to the execution of the powers and trusts of this Twenty-Sixth Supplemental Indenture and to any action or cause of action for the enforcement of this Twenty-Sixth Supplemental Indenture or for any other remedy hereunder.

Section 709. Termination of Proceedings.

In case the Trustee shall have proceeded to enforce any right under this Twenty-Sixth Supplemental Indenture and such proceedings shall have been discontinued or abandoned for any reason or shall have been determined adversely to the Trustee, then and in every such case the Authority and the Trustee shall be restored to their former positions and rights hereunder, and all rights, remedies and powers of the Trustee shall continue as if no such proceedings had been taken.

Section 710. Waivers of Events of Default.

Subject to the Indenture (including, without limitation, Section 1101 of the Master Indenture), the Trustee may in its discretion waive any Series 2019D Subordinate Bond Event of Default hereunder or any action taken pursuant to any Series 2019D Subordinate Bond Event of Default, and shall do so at the written request of the holders of: (a) a majority in aggregate principal amount of Series 2019D Subordinate Bonds then outstanding in respect of which default in the payment of principal and/or premium, if any, and/or interest exists, or (b) a majority in aggregate principal amount of Series 2019D Subordinate Bonds then outstanding in the case of any other Series 2019D Subordinate Bond Event of Default; provided, however, that there shall not be waived without the written consent of all then Outstanding Series 2019D Subordinate Bondholders (A) any Series 2019D Subordinate Bond Event of Default in the payment of the principal of any Outstanding Series 2019D Subordinate Bonds (whether at maturity or by mandatory redemption), or (B) any default in the payment when due of the interest on any such Series 2019D Subordinate Bonds unless, prior to such waiver or rescission,

- (i) there shall have been paid or provided for all arrears of interest with interest, to the extent permitted by law, at the rate borne by the Series 2019D Subordinate Bonds on overdue installments of interest, all arrears of principal and premium, if any, and all expenses of the Trustee in connection with such default, and
- (ii) in case of any such waiver or rescission or in the case of any discontinuance, abandonment or adverse determination of any proceeding taken by the Trustee on account of any such default, the Authority, the Trustee, and the Series 2019D Subordinate Bondholders shall be restored to their former positions and rights hereunder respectively.

No such waiver or rescission relating to the Series 2019D Subordinate Bonds shall extend to any subsequent or other default or impair any right consequent thereon.

Section 711. Non-Impairment of Authority's Obligation to Pay Principal, Premium and Interest.

Nothing in this Twenty-Sixth Supplemental Indenture shall, however, affect or impair the obligation of the Authority to pay the principal of, premium, if any, and interest on each of the Series 2019D Subordinate Bonds to the respective Holders thereof at the time and place, from the source and in the manner specified in the Indenture.

**ARTICLE VIII
MISCELLANEOUS**

Section 801. Limitation of Rights.

With the exception of rights herein expressly conferred, nothing expressed or mentioned in or to be implied from this Twenty-Sixth Supplemental Indenture or the Series 2019D Subordinate Bonds is intended or shall be construed to give to any person other than the parties hereto and the Series 2019D Subordinate Bondholders any legal or equitable right, remedy or claim under or in respect to this Twenty-Sixth Supplemental Indenture or any covenants, conditions and agreements herein contained since this Twenty-Sixth Supplemental Indenture and all of the covenants, conditions and agreements hereof are intended to be and are for the sole and exclusive benefit of the parties hereto and the Series 2019D Subordinate Bondholders as herein provided.

Section 802. Severability.

If any provision of this Twenty-Sixth Supplemental Indenture shall be held invalid by any court of competent jurisdiction, such holding shall not invalidate any other provision hereof, and this Twenty-Sixth Supplemental Indenture shall be construed and enforced as if such illegal provision had not been contained herein.

Section 803. Successors and Assigns.

This Twenty-Sixth Supplemental Indenture shall be binding upon, inure to the benefit of and be enforceable by the parties and their respective successors and assigns.

Section 804. Limitations on Liability.

No covenant, agreement or obligation contained herein shall be deemed to be a covenant, agreement or obligation of any present or future member of the Board of Directors of the Authority or officer, employee or agent of the Authority in his or her individual capacity, and neither the members of the Board of Directors of the Authority nor any officer of the Authority executing the Series 2019D Subordinate Bonds shall be liable personally on the Series 2019D Subordinate Bonds or be subject to any personal liability or accountability by reason of the issuance thereof. No member of the Board of Directors of the Authority or officer, employee, agent or advisor of the Authority shall incur any personal liability with respect to any other action taken by him or her pursuant to this Twenty-Sixth Supplemental Indenture or the Indenture or any other document authorized by the Indenture, provided such member, officer, employee, agent or advisor acts in good faith.

Section 805. Applicable Law.

This Twenty-Sixth Supplemental Indenture shall be governed by the applicable laws of the District of Columbia.

Section 806. Counterparts.

This Twenty-Sixth Supplemental Indenture may be executed in several counterparts, each of which shall be deemed an original and all of which together shall constitute but one and the same instrument.

[Balance of page intentionally left blank]

IN WITNESS WHEREOF, the Authority and the Trustee have caused this Twenty-Sixth Supplemental Indenture to be executed in their respective corporate names as of the date first above written.

**DISTRICT OF COLUMBIA WATER
AND SEWER AUTHORITY**

By: _____
Matthew Brown
Chief Financial Officer and Executive Vice
President, Finance and Procurement

**WELLS FARGO BANK, NATIONAL ASSOCIATION,
AS TRUSTEE**

By: _____
Its _____

EXHIBIT A

SERIES 2019D SUBORDINATE BOND FORM

Unless this certificate is presented by an authorized representative of The Depository Trust Company, a New York corporation (“DTC”), to the Authority or its agent for registration of transfer, exchange, or payment, and any certificate is registered in the name of Cede & Co., or in such other name as is requested by an authorized representative of DTC (and any payment is made to Cede & Co. or to such other entity as is requested by an authorized representative of DTC), **ANY TRANSFER, PLEDGE, OR OTHER USE HEREOF FOR VALUE OR OTHERWISE BY OR TO ANY PERSON IS WRONGFUL** inasmuch as the registered owner hereof, Cede & Co., has an interest herein.

REGISTERED NO.

R-__

REGISTERED

\$ _____

UNITED STATES OF AMERICA

DISTRICT OF COLUMBIA

WATER AND SEWER AUTHORITY

**PUBLIC UTILITY SUBORDINATE LIEN REVENUE
REFUNDING BOND, SERIES 2019D
(Federally Taxable)**

INTEREST RATE

_____%

MATURITY DATE

October 1, 20__

DATED DATE

November [____],
2019

CUSIP

254845 ____

REGISTERED OWNER: CEDE & CO.

PRINCIPAL AMOUNT: _____ DOLLARS

The District of Columbia Water and Sewer Authority (the “Authority”), for value received, hereby promises to pay upon surrender hereof at the designated corporate trust office of Wells Fargo Bank, National Association, as trustee, or its successor in trust (the “Trustee”), under the Indenture, as hereinafter defined, solely from the sources and as hereinafter provided, to the registered owner hereof, or registered assigns or legal representative, the principal sum stated above on the maturity date stated above, subject to prior redemption as hereinafter provided, and to pay, solely from such sources, interest hereon semiannually on each April 1 and October 1, beginning April 1, 2020, at the annual rate stated above, calculated on the basis of a 360-day year of twelve 30-day months. Interest is payable from the date of this Series 2019D Subordinate Bond (unless payment of interest hereon is in default, in which case this Series 2019D Subordinate Bond shall bear interest from the date to which interest has been paid). Interest is payable by check or

draft mailed to the registered owner hereof at its address as it appears on the fifteenth day of the month preceding each interest payment date on registration books kept by the Trustee; provided, however, that if the Series 2019D Subordinate Bonds, as hereinafter defined, are registered in the name of a securities depository or its nominee as registered owner or at the option of a registered owner of at least \$1,000,000 of Series 2019D Subordinate Bonds, payment will be made by wire transfer to an account within the United States pursuant to the most recent wire instructions received by the Trustee from such registered owner. Principal, premium, if any, and interest are payable in lawful money of the United States of America. Capitalized terms which are not defined herein shall have the meanings set forth in the Indenture.

Notwithstanding any other provision hereof, this Series 2019D Subordinate Bond is subject to book-entry form maintained by The Depository Trust Company (“DTC”), and the payment of principal, premium, if any, and interest, the providing of notices and other matters shall be made as described in the Authority’s Blanket Letter of Representations to DTC.

This Series 2019D Subordinate Bond is one of an issue of \$_____ Public Utility Subordinate Lien Revenue Refunding Bonds, Series 2019D (Federally Taxable) (the “Series 2019D Subordinate Bonds”), of like date and tenor, except as to number, denomination, rate of interest, privilege of redemption and maturity. The Series 2019D Subordinate Bonds are issued under a Master Indenture of Trust, dated as of April 1, 1998, between the Authority and the Trustee (f.k.a. Norwest Bank, N.A.) (the “Master Indenture”), as amended and supplemented by the Twenty-Sixth Supplemental Indenture of Trust, dated as of November [REDACTED], 2019, between the Authority and the Trustee (the “Twenty-Sixth Supplemental Indenture”), and as previously amended and supplemented by the First Supplemental Indenture, the Second Supplemental Indenture, the Third Supplemental Indenture, the Fourth Supplemental Indenture, the Fifth Supplemental Indenture, the Sixth Supplemental Indenture, the Seventh Supplemental Indenture, the Eighth Supplemental Indenture, the Ninth Supplemental Indenture, the Tenth Supplemental Indenture, the Eleventh Supplemental Indenture, the Twelfth Supplemental Indenture, the Thirteenth Supplemental Indenture, the Fourteenth Supplemental Indenture, the Fifteenth Supplemental Indenture, the Sixteenth Supplemental Indenture, the Seventeenth Supplemental Indenture, the Eighteenth Supplemental Indenture, the Nineteenth Supplemental Indenture, the Twentieth Supplemental Indenture, the Twenty-First Supplemental Indenture, the Twenty-Second Supplemental Indenture, the Twenty-Third Supplemental Indenture, the Twenty-Fourth Supplemental Indenture and the Twenty-Fifth Supplemental Indenture, all as defined in the Twenty-Sixth Supplemental Indenture (the “Indenture”). The Series 2019D Subordinate Bonds are secured under the Indenture as Subordinate Debt by a pledge of Net Revenues subordinate to the pledge that secures Senior Debt and on a parity to the pledge that secures other Subordinate Debt. Reference is hereby made to the Indenture for a description of the provisions, among others, with respect to the nature and extent of the security, the rights, duties and obligations of the Authority and the Trustee, the rights of the holders of the Series 2019D Subordinate Bonds and the terms upon which the Series 2019D Subordinate Bonds are issued and secured.

The Series 2019D Subordinate Bonds and the premium, if any, and the interest thereon are limited obligations of the Authority payable from Net Revenues of the System, subject to the prior payment therefrom of the principal of and interest due and payable on all Senior Debt heretofore and hereafter issued or incurred by the Authority, and from certain other funds and accounts pledged thereto by, and on the terms set forth in, the Indenture. The Series 2019D Subordinate Bonds shall be without recourse to the District of Columbia (the “District”). The Series 2019D Subordinate Bonds shall not be general obligations of the District, shall not be a pledge of or involve the faith and credit or the taxing power of the District, shall not constitute a debt of the District, and shall not constitute lending of the public credit for private undertakings.

The Series 2019D Subordinate Bonds maturing on or after _____ are subject to redemption prior to maturity at the option of the Authority on or after [_____] , 20[____], from any source, in whole or in part on any date, in such order of maturities as shall be determined by the Authority (and by lot within a maturity), at a redemption price of 100% of the principal amount thereof, together with accrued interest, if any, to the redemption date.

The Term Series 2019D Subordinate Bonds maturing on _____, and bearing interest at rates of ____%, are required to be redeemed prior to maturity on October 1 in years and amounts upon payment of 100% of the principal amount thereof plus interest accrued to the redemption date, as follows:

Year	Amount
------	--------

† Final Maturity

The particular maturities of the Series 2019D Subordinate Bonds to be redeemed at the option of the Authority will be selected from such maturities as shall be determined by the Authority, upon advice from Co-Bond Counsel.

If less than all the Series 2019D Bonds of a particular maturity shall be called for any optional redemption or mandatory sinking fund redemption: (i) if the Series 2019D Bonds are not registered in book entry only form, any redemption of less than all of the Series 2019D Bonds will be allocated among the registered owners of such Series 2019D Bonds being redeemed as nearly as practicable in proportion to the amounts of the principal amounts of the Series 2019D Bonds owned by each registered owner, in authorized denominations, calculated based on the formula: (principal to be redeemed) x (principal amount owned by such owner) / (total principal amount outstanding), and the particular Series 2019D Bonds to be redeemed will be determined by the Trustee in any manner as the Trustee in its sole discretion deems fair and appropriate and (ii) if the Series 2019D Bonds are in book entry only form and so long as DTC or a successor securities depository is the sole registered owner of the Series 2019D Bonds, any redemption of less than all of the Series 2019D Bonds will be done in accordance with DTC’s procedures in effect at such time. It is the Authority’s intent that redemption allocations made by DTC, the DTC Participants or such other intermediaries that may exist between the Authority and the Beneficial Owners be made in accordance with these same proportional provisions; provided, however, the Authority

provides no assurance that DTC, the DTC Participants or any other intermediary will allocate redemptions among Beneficial Owners on such a proportional basis.

If any of the Series 2019D Subordinate Bonds or portions thereof are called for redemption, the Trustee shall send notice of the call for redemption, identifying the Series 2019D Subordinate Bonds or portions thereof to be redeemed, not fewer than 30 nor more than 60 days prior to the redemption date, by facsimile, registered or certified mail or overnight express delivery, to the registered owner of each Series 2019D Subordinate Bond; provided, however, the Trustee may send any notice of redemption of Series 2019D Subordinate Bonds not fewer than 20 days prior to the redemption date or such shorter period of time as may be acceptable to the Depository while the Series 2019D Subordinate Bonds are in book-entry form and registered with a Depository. Provided funds for their redemption are on deposit at the place of payment on the redemption date, all Series 2019D Subordinate Bonds or portions thereof so called for redemption shall cease to bear interest on such date, shall no longer be secured by the Indenture and shall not be deemed to be Outstanding under the provisions of the Indenture. If a portion of the Series 2019D Subordinate Bonds shall be called for redemption, a new Series 2019D Subordinate Bond in principal amount equal to the unredeemed portion hereof will be issued to DTC or its nominee upon the surrender hereof, or if the book-entry system is discontinued, to the registered owners of the Series 2019D Subordinate Bonds.

The registered owner of this Series 2019D Subordinate Bond shall have no right to enforce the provisions of the Indenture or to institute action to enforce the covenants therein or to take any action with respect to any Event of Default or Series 2019D Subordinate Bond Event of Default under the Indenture or to institute, appear in or defend any suit or other proceedings with respect thereto, except as provided in the Indenture. Specifically, and without limiting the generality of the foregoing, the Series 2019D Subordinate Bonds, as Subordinate Debt, may not be accelerated if any Senior Debt is outstanding. Modifications or alterations of the Indenture, or of any supplement thereto, may be made only to the extent and in the circumstances permitted by the Indenture.

No covenant, agreement or obligation contained herein shall be deemed to be a covenant, agreement or obligation of any present or future member of the Board of Directors of the Authority or officer, employee or agent of the Authority in his or her individual capacity, and neither the members of the Board of Directors of the Authority nor any officer of the Authority executing the Series 2019D Subordinate Bonds shall be liable personally on the Series 2019D Subordinate Bonds or be subject to any personal liability or accountability by reason of the issuance thereof. No member of the Board of Directors of the Authority or officer, employee, agent or advisor of the Authority shall incur any personal liability with respect to any other action taken by him or her pursuant to this Series 2019D Subordinate Bond, the Twenty-Sixth Supplemental Indenture or the Indenture or any other document authorized by the Indenture, provided such member, officer, employee, agent or advisor acts in good faith.

The Series 2019D Subordinate Bonds are issuable as registered bonds initially in denominations of \$5,000 and integral multiples thereof. Upon surrender for transfer or exchange of this Series 2019D Subordinate Bond at the principal corporate trust office of the Trustee, together with an assignment duly executed by the registered owner or its duly authorized attorney or legal representative in such form as shall be satisfactory to the Trustee, the Authority shall

execute, and the Trustee shall authenticate and deliver in exchange, a new Series 2019D Subordinate Bond or Series 2019D Subordinate Bonds in the manner and subject to the limitations and conditions provided in the Indenture, having an equal aggregate principal amount, in authorized denominations, of the same series, form and maturity, bearing interest at the same rate and registered in the name or names as requested by the then registered owner hereof or its duly authorized attorney or legal representative. Any such exchange shall be at the expense of the Authority, except that the Trustee may charge the person requesting such exchange the amount of any tax or other governmental charge required to be paid with respect thereto.

The Trustee shall treat the registered owner as the person exclusively entitled to payment of principal, premium, if any, and interest and the exercise of all other rights and powers of the owner, except that interest payments shall be made to the person shown as owner on the fifteenth day of the month preceding each interest payment date.

All acts, conditions and things required to happen, exist or be performed precedent to and in the issuance of this Series 2019D Subordinate Bond have happened, exist and have been performed.

This Series 2019D Subordinate Bond shall not become obligatory for any purpose or be entitled to any security or benefit under the Indenture or be valid until the Trustee shall have executed the Certificate of Authentication appearing hereon and inserted the date of authentication hereon.

IN WITNESS WHEREOF, the DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY has caused this Series 2019D Subordinate Bond to be executed by the manual or facsimile signatures of the Chairman of the Board of Directors, its seal to be affixed hereto or a facsimile to be printed hereon and attested by the manual or facsimile signature of the Secretary to the Authority, and this Series 2019D Subordinate Bond to be dated November [____], 2019.

ATTEST:

Secretary to the Authority

Chairman

[SEAL]

CERTIFICATE OF AUTHENTICATION

Date Authenticated: _____

This Series 2019D Subordinate Bond is one of the Series 2019D Subordinate Bonds described in the within mentioned Indenture.

Wells Fargo Bank, National Association,
Trustee

By _____
Authorized Officer or Employee

ASSIGNMENT

FOR VALUE RECEIVED the undersigned hereby sell(s), assign(s) and transfer(s) unto

(please print or typewrite name and address, including zip code, of Transferee)

PLEASE INSERT SOCIAL SECURITY OR OTHER
IDENTIFYING NUMBER OF TRANSFEREE

: :
: :
: :
: :

the within Series 2019D Subordinate Bond and all rights thereunder, hereby irrevocably
constituting _____ and _____ appointing

_____, Attorney, to transfer said Series
2019D Subordinate Bond on the books kept for the registration thereof, with full power of
substitution in the premises.

Dated: _____

Signature Guaranteed

NOTICE: Signature(s) must be guaranteed by an Eligible Guarantor Institution such as a Commercial Institution such as a Commercial Bank, Trust Company, Securities Broker/Dealer, Credit Union, or Savings Association who is a member of a medallion program approved by The Securities Transfer Association, Inc.

NOTICE: The signature above must correspond with the name of the registered owner as it appears on the front of this Series 2019D Subordinate Bond in every particular, without alteration or enlargement or any change whatsoever.

M&A draft 9/19/19

BOND PURCHASE AGREEMENT

\$300,000,000*

DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY
Public Utility Subordinate Lien Revenue Refunding Bonds, Series 2019D (Federally Taxable)

_____, 2019

District of Columbia Water and Sewer Authority
1385 Canal Street S.E.
Washington, DC 20003

Ladies and Gentlemen:

Siebert Cisneros Shank & Co., L.L.C., as representative of the underwriters (the “Representative”) on behalf of itself and on behalf of J.P. Morgan Securities LLC, FTN Financial Capital Markets, Jefferies LLC, Morgan Stanley & Co. LLC, Raymond James and Stern Brothers & Co. (collectively, the “Underwriters”), offer to enter into this bond purchase agreement (this “Agreement”) with the District of Columbia Water and Sewer Authority (the “Authority”). The offer made hereby is subject to acceptance thereof by execution of this Agreement and its delivery to the Representative, on behalf of the Underwriters, at or prior to 5:00 p.m., New York, New York Time, on the date hereof, or on such other date as may be agreed upon by the Underwriters. Upon such acceptance, this Agreement shall be in full force and effect in accordance with its terms and shall be binding upon the Authority and the Underwriters. If this offer is not so accepted, it is subject to withdrawal by the Representative on behalf of the Underwriters upon written notice delivered to the Authority at any time prior to acceptance. Terms used but not defined herein are defined in the Indenture identified below.

1. **Purchase and Sale of Bonds.** On the terms and conditions and on the basis of the representations, warranties, covenants and agreements set forth herein, the Representative, on behalf of the Underwriters, hereby agrees to purchase from the Authority for offering to the public, and the Authority hereby agrees to sell and deliver to the Underwriters for such purpose, all (but not less than all) of its Public Utility Subordinate Lien Revenue Refunding Bonds, Series 2019D (Federally Taxable), in the original principal amount of \$300,000,000* (the “Bonds”) The proceeds of the Bonds will be used to (i) refund all or a portion of the Authority’s outstanding Series 2013A Bonds, and (ii) pay the costs of issuing the Bonds. The purchase price of the Bonds will be \$_____ (the par amount of the Bonds less the Underwriters’ discount of \$_____ plus original issue premium of \$_____). The Bonds will mature on the dates and in the amounts and will bear interest and will be subject to redemption prior to maturity as set forth on Exhibit A hereto.

* Preliminary, subject to change.

2. **Bond Authorization.** The Bonds shall be issued under and pursuant to provisions of the laws of the United States of America and the District of Columbia (the “District”), including particularly, an act of the Council of the District entitled the “Water and Sewer Authority Establishment and Department of Public Works Reorganization Act of 1996,” as amended, codified at District of Columbia Official Code Ann. Sections 34-2201.01 *et seq.*, and the acts amendatory thereof and supplemental thereto (the “Act”), and an act of the United States Congress entitled the “District of Columbia Water and Sewer Authority Act of 1996” (Public Law 104-184), as amended (the “Federal Act”), and all proceedings necessary to authorize and provide for the issuance of the Bonds, including Resolution No.19- adopted by the Board of Directors of the Authority, on September __, 2019 (the “Resolution”), and the Master Indenture of Trust, dated as of April 1, 1998 (the “Master Indenture”), between the Authority and Wells Fargo Bank, N.A., as trustee (the “Trustee”), as amended and supplemented, including by the Twenty-Sixth Supplemental Indenture of Trust, dated as of the Closing Date (as defined below) (the “Twenty-Sixth Supplemental Indenture,” and together with the Master Indenture as previously amended and supplemented, the “Indenture”), between the Authority and the Trustee, substantially in the forms previously delivered to us.

3. **Closing.** At 11:00 a.m. Eastern Standard Time on _____, 2019, or at such other time and date as may be mutually agreed upon by the Authority and the Underwriters (the “Closing Date”), the Authority will, subject to the terms and conditions hereof, deliver the Bonds to the Underwriters in definitive form, duly executed and authenticated, together with the other documents hereinafter required, and, subject to the terms and conditions hereof, the Underwriters will accept such delivery and pay the purchase price of the Bonds as set forth in Section 1 hereof in federal funds to the order of the Authority (the “Closing”). Delivery of the Bonds will be made through the facilities of The Depository Trust Company, New York, New York. The Closing will occur at the offices of Squire Patton Boggs (US) LLP, Washington, D.C., or such other place as may be mutually agreed on by the Authority and the Underwriters.

4. **Public Offering of the Bonds.** It is a condition of the Authority’s obligation to sell and deliver the Bonds to the Underwriters, and of the obligation of the Underwriters to purchase and accept delivery of the Bonds, that the entire principal amount of the Bonds is sold and delivered by the Authority and accepted and paid for by the Underwriters at the Closing. The Underwriters intend to make an initial public offering of all of the Bonds at prices not in excess of the initial public offering prices set forth on the cover page of the Official Statement. The Underwriters may offer and sell the Bonds to certain dealers (including dealers depositing Bonds into investment trusts) at prices lower than the initial public offering prices.

5. **Preliminary and Final Official Statement.** The Authority ratifies and consents to the legally permissible use by the Underwriters, prior to the date hereof, of the Preliminary Official Statement, dated _____, 2019, relating to the Bonds (the “Preliminary Official Statement”) in connection with the public offering of the Bonds and the Authority represents that such Preliminary Official Statement is deemed final as of its date and as of the date hereof under Rule 15c2-12 (“Rule 15c2-12”) promulgated by the U.S. Securities and Exchange Commission (the “SEC”) under the Securities Exchange Act of 1934, as amended (the “1934 Exchange Act”), except for Permitted Omissions (as defined in Rule 15c2-12). The form of the final Official Statement of the Authority relating to the Bonds, dated _____, 2019, including the cover page and Appendices thereto, and any revisions, amendments or supplements thereto (the “Official

Statement”) as have been approved by the Authority, Co-Bond Counsel, and the Representative. The Authority authorizes, approves, ratifies and confirms the distribution of the Preliminary Official Statement and the Official Statement in paper and electronic format by the Underwriters in connection with the public offering and sale of the Bonds.

The Authority agrees to provide to the Underwriters, at such addresses as the Underwriters specify, as many copies of the Official Statement as the Underwriters reasonably request as necessary to comply with Rule G-32 and all other applicable rules of the Municipal Securities Rulemaking Board (the “MSRB”). The Authority agrees to deliver the Official Statement within seven business days after the date hereof and not later than one business day before the Closing Date and in sufficient time to accompany any confirmation that requests payment from any customer and to permit the Underwriters to comply with the requirements of Rule 15c2-12 (defined below). The Preliminary Official Statement and the Official Statement may be revised, amended, changed or supplemented by the Authority after the execution of this Agreement only with the permission of the Underwriters.

If, during the period from the date hereof to and including the date which is 25 days after the “end of the underwriting period” (as hereinafter defined), there shall exist any event, including, but not limited to, any material adverse change in the financial condition, results of operation or condition, financial or otherwise, of the Authority, and of which the Authority has knowledge, which, in the opinion of the Underwriters and counsel to the Underwriters or in the opinion of the Authority, requires a supplement or amendment to the Official Statement so that it will not contain an untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading, when it is delivered to a potential investor, the Authority will supplement or amend or cause to be supplemented or amended the Official Statement in a form and in a manner approved by the Underwriters and the Authority and will furnish to the Underwriters such supplement or amendment in sufficient quantity to permit the Underwriters to comply with the requirements of Rule 15c2-12 (“Rule 15c2-12”) promulgated by the Securities and Exchange Commission (the “SEC”) under the 1934 Exchange Act.

For the purpose of the preceding paragraph, the Authority may assume that the “end of the underwriting period” (in accordance with and as defined in Rule 15c2-12) means the Closing Date unless the Representative advises the Authority in writing on the Closing Date that there remains an unsold balance of the Bonds, in which case the “end of the underwriting period” means the date as of which the Representative notifies the Authority that the Underwriters, directly or as a syndicate, no longer retain an unsold balance of the Bonds for sale to the public. The deemed end of the underwriting period, in order to allow the Underwriters to comply with Rule 15c2-12, shall be extended for additional periods of 30 days each upon receipt of written notification from the Underwriters that any Bonds remain unsold however, in no event shall the “end of the underwriting period” extend beyond the date sixty (60) days from the Closing Date. The Representative agrees to provide to the Authority written notification that none of the Bonds remain unsold which will be deemed the end of the underwriting period.

The Representative hereby agrees to deliver a copy of the printed paper form of the Official Statement to the MSRB in an electronic format prescribed by the MSRB for its

Electronic Municipal Market Access (“EMMA”) website at www.emma.msrb.org within one (1) business day of receipt of the executed final Official Statement by the Underwriters.

6. **Representations, Warranties and Covenants of the Authority.** The Authority hereby represents, warrants, covenants and agrees as follows:

a. The Authority is, and at the Closing Date will be, a duly organized and validly existing corporate body and independent authority of the District established under the laws of the United States and the District, including the Act and the Federal Act, with the full legal right, power and authority to (i) adopt the Resolution, (ii) execute, deliver and perform its obligations under this Agreement, the Indenture, the Certificate of Award of the Authority establishing the purchase price, maturities, interest rates, redemption provisions and other terms of the Bonds, dated the date hereof (the “Certificate of Award”), and the Continuing Disclosure Agreement of the Authority dated as of the Closing Date (the “Continuing Disclosure Agreement,” and together with this Agreement and the Indenture, the “Bond Documents”); (iii) perform its obligations under the Water Sales Agreement, dated as of July 31, 1997, between the Authority and the United States of America, acting through the Secretary of the Army (the “Water Sales Agreement”) and the Blue Plains Intermunicipal Agreement of 2012 between the District, Fairfax County, Virginia, Montgomery County, Maryland, Prince George’s County, Maryland and the Washington Suburban Sanitary Commission (the “IMA,” and together with the Water Sales Agreement, the “System Agreements”), (iv) sell, issue and deliver the Bonds to the Underwriters as provided herein, and (v) carry out and consummate the transactions contemplated by the Resolution, the Escrow Agreement, the Bond Documents, the Preliminary Official Statement, the Official Statement and the System Agreements; and the Authority has complied, and at the Closing Date will be in compliance, in all material respects, with the Act and the Federal Act and with the obligations on its part in connection with the issuance of the Bonds contained in the Bonds, the Escrow Agreement, the Resolution, the Indenture, the Preliminary Official Statement, the Official Statement and this Agreement.

b. The Authority (i) has duly and validly adopted the Resolution, (ii) has authorized the execution and delivery of the Bond Documents, (iii) is authorized to execute, issue, sell and deliver the Bonds in book-entry form, (iv) is authorized to appoint, and has appointed, Wells Fargo Bank, N.A., as Trustee (the “Trustee”), (v) is authorized to apply and will apply the proceeds of the Bonds as provided in and subject to all of the terms and provisions of the Resolution, including the payment or reimbursement of the Authority expenses incurred in connection with the negotiation, marketing, issuance and delivery of the Bonds to the extent required by Section 14, (vi) has taken or will take on or before the Closing Date, all action necessary or appropriate for (a) execution, issuance, sale and delivery of the Bonds in book-entry form to the Underwriters, (b) approval, execution and delivery of and the performance by the Authority of its obligations contained in the Bonds and the Bond Documents, (c) the approval, distribution and use of the Preliminary Official Statement and the approval, execution, distribution and use of the Official Statement for use by the Underwriters in connection with the public offering of the Bonds and (d) the consummation by it of all other transactions described in the Official Statement, the Bond Documents and any and all such other agreements and documents as may be required to be executed, delivered and/or received by the Authority in order to carry out, give effect to, and consummate the transactions described herein and in the Official Statement.

c. The adoption of the Resolution, the execution and delivery of the Bond Documents, the execution, issuance, sale and delivery of the Bonds in book-entry form and the performance by the Authority of its obligations hereunder and thereunder, and the performance by the Authority of its obligations under the System Agreements (collectively, the “Authority Undertakings”) are within the corporate powers of the Authority and are not in conflict with and will not constitute a breach, default or result in a violation of (i) the Act, (ii) any federal constitutional or federal or District statutory provision, including the Federal Act, (iii) any agreement or other instrument to which the Authority is a party, or (iv) any order, rule, regulation, decree or ordinance of any court of competent jurisdiction, government or governmental authority having jurisdiction over the Authority or its property.

d. The District has authorized the Authority to use all of the property and assets of the water distribution and wastewater collection, treatment and disposal systems of the Authority (the “System”), uninterrupted by the District, for as long as any revenue bonds of the Authority, including the Bonds, remain outstanding. The Authority has the full legal right, power and authority to operate the System and to collect and pledge the Revenues therefrom in accordance with the Indenture.

e. The Resolution or other appropriate actions adopted or taken by the Authority establishing the rates and charges for services of the System described in the Preliminary Official Statement and the Official Statement have been duly adopted or taken and are in full force and effect.

f. The System Agreements and all other agreements, permits, licenses, consents, approvals, actions, consent decrees and settlement orders material to the operation and management of the System, including the collection of the Revenues therefrom as described in the Preliminary Official Statement and the Official Statement, are in full force and effect as of the date hereof and will be on the Closing Date, and the Authority is not and will not be in default thereunder or in breach thereof. The System Agreements have been duly authorized, executed and delivered by the Authority and constitute valid and binding obligations of the Authority enforceable in accordance with their respective terms, subject to applicable bankruptcy, insolvency and similar laws affecting creditors’ rights generally and subject, as to enforceability, to general principles of equity.

g. The Bonds, when issued, delivered to the Underwriters and paid for, in accordance with the Act, the Resolution, the Indenture and this Agreement, will have been duly authorized, executed, issued and delivered by the Authority and will constitute valid and binding obligations of the Authority, enforceable against the Authority in accordance with their terms, subject to applicable bankruptcy, insolvency, reorganization, moratorium and similar laws affecting creditors’ rights generally and subject, as to enforceability, to general principles of equity. The Bonds are not a pledge of and do not involve the faith and credit or the taxing power of the District and the District shall not be liable thereon. The Bonds, the Indenture and the Resolution conform to the descriptions thereof contained in the Preliminary Official Statement and the Official Statement and the proceeds of the sale of the Bonds will be applied as described in the Preliminary Official Statement and the Official Statement.

h. The Authority is not currently failing to comply and except as disclosed in the Preliminary Official Statement and the Official Statement, has not failed to comply during the past five years with any continuing disclosure obligation pursuant to Rule 15c2-12. The Authority has agreed to deliver to the Underwriters a Continuing Disclosure Agreement with respect to the Bonds that complies with the requirements of Rule 15c2-12.

i. This Agreement constitutes, and, upon execution and delivery by the Authority and the other parties thereto, each of the other Bond Documents will constitute, the valid, binding and enforceable obligation of the Authority in accordance with their respective terms, subject to applicable bankruptcy, insolvency, and similar laws affecting creditors' rights generally and subject, as to enforceability, to general principles of equity.

j. The Authority is not in material breach of or material default under any applicable constitutional provision or law of the United States, the District or any applicable judgment or decree, or any loan agreement, indenture, bond, note, resolution, agreement or other instrument to which it is a party or to which it or any of its property or assets is otherwise subject, and no event has occurred and is continuing which, with the passage of time or the giving of notice, or both, would constitute a default or event of default under any such instrument; and the execution and delivery of the Bonds, this Agreement and the other Bond Documents and the adoption of the Resolution, and compliance with the provisions contained therein and herein, and in the System Agreements, do not conflict with or constitute a breach of or default under any constitutional provision, law, administrative regulation, judgment, decree, loan agreement, indenture, bond, note, resolution, agreement, or other instrument to which it is a party or any of its property or assets are otherwise subject, nor will any such execution, delivery, adoption, or compliance result in the creation or imposition of any lien, charge, or other security interest or encumbrance of any nature whatsoever upon any of its property or assets or under the terms of any such law, regulation or instrument, except as provided by the Bonds.

k. All authorizations, approvals, licenses, permits, consents and orders of any governmental authority, legislative body, board, agency or commission having jurisdiction of the matter have been duly obtained or, with respect to the issuance of the Bonds, will be obtained prior to the issuance of the Bonds, which are required for the due authorization by or which would constitute a condition precedent to or the absence of which would materially adversely affect the due performance by the Authority of its obligations in connection with the issuance of the Bonds and under this Agreement, except for such approvals, consents and orders as may be required under the Blue Sky or securities laws of any state in connection with the offering and sale of the Bonds.

l. Except as otherwise described in the Preliminary Official Statement and the Official Statement, there is no litigation, action, suit, proceeding, inquiry or investigation, at law or in equity, before or by any court, government agency, public board or body, pending or, to the best knowledge of the Authority, threatened against the Authority (i) affecting or seeking to prohibit, restrain or enjoin the issuance, sale or delivery of the Bonds, the use of the Preliminary Official Statement or the Official Statement or the collection of the Revenues pledged to the payment of the principal of and interest on the Bonds, (ii) in any way contesting or affecting any authority for the issuance of the Bonds or the validity, enforceability, due authorization, execution or delivery of the Bonds, including this Agreement or the other Bond Documents, or

the validity or enforceability of the System Agreements, nor, to the best knowledge of the Authority, is there any basis therefor, wherein an unfavorable decision, ruling or finding would materially adversely affect the validity or enforceability of the Bonds or the Bond Documents, (iii) questioning the tax-exempt status of the Bonds under the laws of the District, (iv) affecting or in any way contesting the corporate existence or powers of the Authority or the titles of the officers of the Authority to their respective offices, (v) which may result in any material adverse change in the business or the financial condition or the financial prospects of the Authority or (vi) asserting that the Preliminary Official Statement or the Official Statement or any supplement thereto contains any untrue statement of a material fact or omits any material fact necessary to make the statements therein, in light of the circumstances under which they were made, not misleading.

m. The Authority will furnish such information, execute such instruments and take such other action in cooperation with the Underwriters as the Underwriters may reasonably request in order to (i) qualify the Bonds for offer and sale under the Blue Sky or other securities laws and regulations of such states and other jurisdictions of the United States as the Underwriters may designate, (ii) determine the eligibility of the Bonds for investment under the laws of such states and other jurisdictions, and (iii) continue such qualifications in effect so long as required for the distribution of the Bonds and will advise the Representative promptly of receipt by the Authority of any written notification with respect to the suspension of the qualification of the Bonds for sale in any jurisdiction or the initiation or threat of any proceeding for that purpose; provided, however, that the Authority will not be required to execute a general or special consent to service of process or qualify to do business in connection with any such qualification or determination in any jurisdiction.

n. The audited balance sheets of the Authority for the years ended September 30, 2018 and September 30, 2017, and the related statements of revenues, expenditures and changes in net assets and cash flows for the fiscal year ended on such date, as set forth in the Preliminary Official Statement and the Official Statement, are true, complete and correct and fairly present the financial condition of the Authority as of such date and the results of its operations for such fiscal year. There has been no material adverse change in the financial condition of the Authority since September 30, 2018, except as described in the Preliminary Official Statement and the Official Statement. The financial statements of, and other financial information of the Authority in the Preliminary Official Statement and in the Official Statement fairly present the financial position and results of the Authority as of the dates and for the periods therein set forth, and except as noted in the Preliminary Official Statement and in the Official Statement, the other historical financial information set forth in the Preliminary Official Statement and in the Official Statement has been presented on a basis consistent with that of the Authority's audited financial statements included or incorporated by reference in the Preliminary Official Statement and in the Official Statement.

o. The Authority has duly authorized, approved and delivered the Preliminary Official Statement and the Official Statement to the Underwriters.

p. The Preliminary Official Statement, as of its date and as of the date of this Agreement, did not and does not, and the Official Statement, is, as of its date and (unless the Official Statement is amended or supplemented pursuant to this Agreement) at all times

subsequent thereto during the period up to and including the Closing Date, did not and will not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading. If between the date of the Official Statement and the Closing Date any event shall occur or any pre-existing fact or condition shall become known to the Authority that might or would cause the Official Statement, as then supplemented or amended, to contain any untrue statement of a material fact or to omit to state a material fact necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading, the Authority shall promptly notify the Underwriters thereof, and if in the reasonable opinion of the Representative, such event, fact or condition requires the preparation and publication of a supplement or amendment to the Official Statement, the Authority will at its expense supplement or amend the Official Statement in a form and in a manner approved by the Underwriters, which approval shall not be unreasonably withheld. If the Official Statement is supplemented or amended as aforesaid, at the time of each supplement or amendment thereto and (unless subsequently again supplemented or amended pursuant to such paragraph) at all times subsequent thereto during the underwriting period, as defined in Section 5, the Official Statement as so supplemented or amended will not contain any untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary to make the statements therein, in the light of the circumstances under which made, not misleading.

q. The obligation of the Authority to know or provide information within the knowledge of the Authority is limited to providing information that is in the actual knowledge of, or reasonably should have been in the actual knowledge of, the key staff members of the Authority listed in the Official Statement under the caption "Senior Management" or their respective successors.

r. The Authority undertakes that, for a period beginning with the day on which the Bonds are delivered to the Underwriters and ending on the 25th day following the end of the underwriting period, as defined in Section 5, it will apprise the Underwriters of all material developments, if any, occurring with respect to the Authority, and if requested by the Underwriters, at the Authority's expense, prepare a supplement to the Official Statement in respect of any such material event.

s. The Authority has not been notified of any listing or proposed listing by the Internal Revenue Service to the effect that the Authority is a bond issuer whose arbitrage certificates may not be relied upon.

t. Any certificate signed by an authorized delegate of the Authority in connection with the transactions described in this Agreement will be deemed a representation, warranty, covenant and agreement by the Authority to the Underwriters as to the statements made therein.

u. Prior to the Closing, the Authority will not take any action within or under its control that will cause any adverse change of a material nature in the Authority's financial position, or its results of operations or condition, financial or otherwise.

v. The Authority will not, prior to the Closing, offer or issue any bonds, notes or other obligations for borrowed money or incur any material liabilities, direct or contingent, except in the ordinary course of business, without the prior approval of the Representative, other than its Public Utility Subordinate Lien Revenue Bonds Series 2019A and Series 2019B and its Public Utility Subordinate Lien Multimodal Revenue Bonds Series 2019C, dated the date of Closing.

w. The Bonds and the Twenty-Sixth Supplemental Indenture conform to the descriptions thereof contained in the Preliminary Official Statement and the Official Statement under the caption “THE SERIES 2019A/B/D BONDS” and in Appendix C “GLOSSARY AND SUMMARY OF THE INDENTURE.”

7. **Representations of Underwriters.** The Underwriters represent and warrant that they will offer the Bonds only pursuant to the Official Statement and the Underwriters agree to make a public offering of the Bonds at the initial offering prices or yields set forth in the Official Statement as the Underwriters may deem necessary or desirable in connection with the offering and sale of the Bonds and to sell the Bonds to dealers (including dealer banks and dealers depositing Bonds into investment trusts) and others at prices lower than the public offering prices. The Underwriters agree to deliver a final Official Statement to all purchasers of the Bonds in accordance with all applicable legal requirements.

8. **Rights to Cancellation by Underwriters.** The Underwriters will have the right to cancel their obligation to purchase, accept delivery of and to pay for the Bonds if between the date hereof and the Closing Date, the market price or marketability of the Bonds or the ability of the Underwriters to enforce contracts for the sale of the Bonds shall be materially adversely affected in the reasonable judgment of the Representative, on behalf of the Underwriters, by the occurrence of any of the following: (a) legislation has been enacted by or introduced in Congress or a decision by a federal court of the United States or the United States Tax Court has been rendered, or a ruling, regulation or official statement by or on behalf of the Treasury Department of the United States, the Internal Revenue Service or other governmental agency has been made or proposed to be made with respect to federal taxation on revenues or other income to be derived from the operation of the Authority, or other actions or events have occurred which have the purpose or effect, directly or indirectly, of materially adversely affecting the federal income tax consequences of any of the transactions contemplated in connection herewith, including the tax-exempt status of bonds issued by the Authority under the Internal Revenue Code of 1986, as amended, or (b) legislation has been enacted, or actively considered for enactment with an effective date being prior to the date of the issuance of the Bonds, or a decision by a court of the United States has been rendered, or a ruling or regulation by the SEC or another governmental agency having jurisdiction of the subject matter has been made, the effect of which is that the Bonds are not exempt from the registration or other requirements of the Securities Act of 1933, as amended and as then in effect (the “1933 Securities Act”), or that the Indenture is not exempt from the qualification or other requirements of the Trust Indenture Act of 1939, as amended and as then in effect (the “Trust Indenture Act”), or (c) a stop order, ruling or regulation by the SEC has been issued or made, the effect of which is that the issuance, offering or sale of the Bonds as contemplated hereby or by the Official Statement is or would be in violation of any provision of the 1933 Securities Act, or of the 1934 Exchange Act, or of the Trust Indenture Act, or (d) there

exists any event which in the reasonable judgment of the Underwriters either (i) makes untrue or incorrect any statement or information of a material fact contained in the Official Statement or (ii) is not reflected in the Official Statement but should be reflected therein in order to make the statements and information contained therein, in light of the circumstances under which they were made, not misleading, and, in either such event the Authority refuses to permit the Official Statement to be supplemented to correct or supply such statement or information, or the statement or information as supplemented is such as in the reasonable judgment of the Underwriters would materially adversely affect the market for the Bonds or the sale, at the contemplated offering price, by the Underwriters of the Bonds, or (e) there has occurred any new outbreak of hostilities (including, without limitation, an act of terrorism) or escalation of hostilities existing prior to the date hereof or any other extraordinary event, material national or international calamity or crisis, including a financial crisis, not existing on the date hereof, or (f) any new restriction on transactions in securities materially affecting the market for securities (including the imposition of any limitation on interest rates or the establishment of minimum or maximum prices) or any material increase of restrictions now in force (including the extension of credit by, or a charge to the net capital requirements of, Underwriters) shall have been established by the New York Stock Exchange, the SEC, any other federal agency, the Congress of the United States, or by Executive Order, or (g) there is in force a general suspension of trading in securities on the New York Stock Exchange or any other national securities exchange or (h) a general banking moratorium has been declared by Federal, District or New York authorities, or (i) there has occurred since the date hereof any material adverse change in the affairs of the Authority from that reflected in the financial information and data of the Authority included in or as an appendix to the Official Statement, other than as previously disclosed to the Underwriters, or (j) a material disruption in securities settlement, payment or clearance services shall have occurred, or (k) there shall have occurred any downgrading or published negative credit watch or similar published information from a rating agency that on the date hereof has published a rating (or has been asked to furnish a rating on the Bonds) on any of the Authority's debt obligations, which action reflects a change or possible change in the ratings accorded any such obligations of the Authority (including any rating to be accorded to the Bonds) or (l) there shall have occurred any downgrading or published negative credit watch or similar published information from a rating agency that at the date of this Agreement has published a rating (or has been asked to furnish a rating on the Bonds) on any of the Authority's debt obligations, which action reflects a change or possible change, in the ratings accorded any such obligations of the Authority (including any rating to be accorded the Bonds).

9. **Rights to Cancellation by the Authority.** The Authority will have the right to cancel its obligation to issue, sell and deliver the Bonds if between the date hereof and the Closing Date, the market price or marketability of the Bonds shall be materially adversely affected, in the reasonable judgment of the Authority, by the occurrence of any of the following: (a) legislation has been enacted by or introduced in Congress or a decision by a federal court of the United States or the United States Tax Court has been rendered, or a ruling, regulation or official statement by or on behalf of the Treasury Department of the United States, the Internal Revenue Service or other governmental agency has been made or proposed to be made with respect to federal taxation on revenues or other income to be derived from the operation of the Authority, or other actions or events have occurred which have the purpose or effect, directly or indirectly, of materially adversely affecting the federal income tax consequences of any of the transactions contemplated in connection herewith, or (b) legislation has been enacted, or actively

considered for enactment with an effective date being prior to the date of the issuance of the Bonds, or a decision by a court of the United States has been rendered, or a ruling or regulation by the SEC or another governmental agency having jurisdiction of the subject matter has been made, the effect of which is that the Bonds are not exempt from the registration or other requirements of the 1933 Securities Act, or that the Indenture is not exempt from the qualification or other requirements of the Trust Indenture Act, or (c) a stop order, ruling or regulation by the SEC has been issued or made, the effect of which is that the issuance, offering or sale of the Bonds as contemplated hereby or by the Official Statement is or would be in violation of any provision of the 1933 Securities Act, or of the 1934 Exchange Act, or of the Trust Indenture Act, or (d) there has occurred any new outbreak of hostilities (including, without limitation, an act of terrorism) or escalation of hostilities existing prior to the date hereof or any other extraordinary event, material national or international calamity or crisis, including a financial crisis, not existing on the date hereof, or (e) any new restriction on transactions in securities materially affecting the market for securities (including the imposition of any limitation on interest rates or the establishment of minimum or maximum prices) or any material increase of restrictions now in force (including the extension of credit by, or a charge to the net capital requirements of, Underwriters) shall have been established by the New York Stock Exchange, the SEC, any other federal agency, the Congress of the United States, or by Executive Order, or (f) there is in force a general suspension of trading in securities on the New York Stock Exchange or any other national securities exchange or (g) a general banking moratorium has been declared by Federal, District or New York authorities, or (h) a material disruption in securities settlement, payment or clearance services shall have occurred.]

10. **Conditions to Obligations of Underwriters at Closing.** The Underwriters have entered into this Agreement in reliance on the representations, warranties, covenants and agreements of the Authority contained herein, and in reliance on the representations, warranties, covenants and agreements to be contained in the documents and instruments to be delivered at the Closing and on the performance by the Authority of its obligations hereunder, as of the Closing Date. Accordingly, the Underwriters' obligations under this Agreement to purchase, to accept delivery of and to pay for the Bonds, are conditioned on the performance by the Authority of its obligations to be performed hereunder and the delivery of such documents and instruments enumerated herein in form and substance reasonably satisfactory to the Underwriters and Orrick, Herrington & Sutcliffe LLP, and McKenzie & Associates, co-counsel to the Underwriters, at or before the Closing, and are also subject to the following additional conditions:

a. The representations, warranties, covenants and agreements of the Authority contained herein are true, complete and correct on the date hereof and on and as of the Closing Date, as if made on the Closing Date;

b. The provisions of the Act and the Federal Act, as in effect on the date of this Agreement, shall be in full force and effect and shall not have been amended, except as to amendments which, in the reasonable opinion of the Underwriters, are not adverse to the interest of the Underwriters or the Bondholders;

c. At the time of the Closing, the Resolution is in full force and effect in accordance with its terms and has not been amended, modified or supplemented, and the Official

Statement has not been supplemented or amended, except in any such case as may have been agreed to by the Underwriters;

d. At the time of the Closing, all official action of the Authority relating to the Bonds, the Bond Documents and the System Documents are in full force and effect in accordance with their respective terms and have not been amended, modified or supplemented, except in each case as may have been agreed to by the Underwriters;

e. At the time of the Closing the Authority will perform or will have performed all of its obligations required under or specified in this Agreement, the Resolution and the Indenture, or contemplated by the Resolution, the Indenture or the Official Statement, to be performed prior to the Closing; and

f. At or before the Closing, the Underwriters will have received true and correct copies of each of the following documents:

- i. A certified copy of the Resolution;
- ii. The Official Statement and each supplement or amendment, if any, thereto, executed by the Authority;
- iii. Counterparts of each of the fully executed Bond Documents and the System Agreements;
- iv. The approving opinion of Co-Bond Counsel in substantially the form attached to Preliminary Official Statement and the Official Statement as Appendix F and a supplemental opinion, dated the Closing Date, in form and substance satisfactory to the Underwriters, and reliance letters with respect to such opinions addressed to Wells Fargo Bank, N.A., as Trustee;
- v. An opinion, dated the Closing Date, of the Interim Executive Vice President Legal Affairs, of the Authority, substantially in the form of Exhibit B hereto;
- vi. An opinion, dated the Closing Date, of Orrick, Herrington & Sutcliffe LLP and McKenzie & Associates, co-counsel to the Underwriters, substantially in the form of Exhibit C hereto;
- vii. An opinion, dated the Closing Date, of Squire Patton Boggs (US) LLP and Parker Poe Adams & Bernstein LLP, in their capacity as co-disclosure counsel to the Authority, in form and substance satisfactory to the Underwriters and their co-counsel;
- viii. An opinion, dated the Closing Date, of counsel to the Trustee, in a form approved by the Underwriters and their co-counsel;
- ix. A manually signed Financial Feasibility Opinion Letter dated _____, 2019, of Amawalk Consulting Group LLC (the "Financial Feasibility Consultant"), regarding the financial feasibility of the issuance of the Bonds in substantially the form

attached to the Preliminary Official Statement and the final Official Statement as Appendix A and a certificate of the Financial Feasibility Consultant with respect to the issuance and sale of the Bonds, permitting the use of such letter and references to said firm in the Preliminary Official Statement and the Official Statement in form and substance satisfactory to the Underwriters;

x. One or more certificates of the Authority, dated the Closing Date, (A) to the effect that the representations, warranties, covenants and agreements of the Authority herein are true and correct on and as of the Closing Date as if made on the Closing Date, and that the Authority has performed all obligations to be performed hereunder as of the Closing Date; (B) to the effect that the Bond Documents, the Bonds and the System Agreements have not been modified, amended or repealed after the date hereof without the written consent of the Underwriters; (C) to the effect that no material change has occurred with respect to the System from the period from the date of this Agreement through the Closing Date;

xi. [Reserved];

xii. Evidence that Moody's Investors Service, Inc. ("Moody's") and S&P Global Ratings Services ("S&P") and Fitch Ratings ("Fitch") have issued ratings on the Bonds of "___", "___" and "___" respectively;

xiii. [A verification report of _____ (the "Verification Agent") dated the date of Closing;] and

xiv. Such additional legal opinions, certificates, instruments and other documents as the Underwriters may reasonably request to evidence the truth and accuracy, as of the Closing Date, of the Authority's representations, warranties, covenants and agreements contained herein and of the statements and information contained in the Official Statement and the due performance or satisfaction by the Authority on or prior to the Closing Date of all the agreements then to be performed and conditions then to be satisfied by it.

All the opinions, letters, certificates, instruments and other documents mentioned above or elsewhere in this Agreement will be deemed to be in compliance with the provisions hereof if, but only if, they are in form and substance satisfactory to the Underwriters.

11. **Obligations Upon Cancellation.** If the Authority is unable to satisfy the conditions to the obligations of the Underwriters to purchase, to accept the delivery of and to pay for the Bonds contained in this Agreement, or if the obligations of the Underwriters to purchase, to accept delivery of and to pay for the Bonds is terminated for any reason permitted by this Agreement, this Agreement will terminate and neither the Underwriters nor the Authority will be under any further obligation hereunder, except that the Authority and the Underwriters shall pay their respective expenses as set forth in Section 14.

12. **Certain Information Provided by Underwriters.** The Underwriters confirm and the Authority acknowledges that the statements with respect to the public offering of the Bonds by the Underwriters set forth on the cover page of the Official Statement, the legend

concerning over-allotments in the Official Statement and the text under the caption “UNDERWRITING” in the Official Statement constitute the only information concerning the Underwriters furnished in writing to the Authority by or on behalf of the Underwriters for inclusion in the Official Statement.

13. **No Advisory or Fiduciary Role.** The Authority acknowledges and agrees that: (i) the transactions contemplated by this Agreement are arm’s-length, commercial transactions between the Authority and the Underwriters in which the Underwriters are acting solely as principals, and are not acting as an agent, a municipal advisor, financial advisor or fiduciary to the Authority; (ii) the Underwriters have not assumed any advisory or fiduciary responsibility to the Authority with respect to the transactions contemplated hereby and the discussions, conferences, negotiations, undertakings and procedures leading thereto (irrespective of whether the Underwriters or their affiliates have provided other services or are currently providing other services to the Authority on other matters); (iii) the only obligations the Underwriters have to the Authority with respect to the transaction contemplated hereby expressly are set forth in this Agreement; (iv) the Authority has consulted its own financial and/or municipal, legal, accounting, tax, and other advisors, as applicable, to the extent it has deemed appropriate; and (v) this Agreement expresses the entire relationship between the parties hereto.

14. **Expenses.** The Authority will pay all costs of issuance of the Bonds including, but not limited to (a) the cost of preparation and posting of the Preliminary Official Statement and the cost of preparation, posting, printing and delivery of the Official Statement, including the number of copies the Underwriters and the Authority deem reasonable; (b) any cost of preparation of the Bonds; (c) the fees and disbursements of Co-Bond Counsel; (d) the fees and disbursements of any accountants, consultants, financial advisors or additional legal counsel retained in connection with the issuance of the Bonds, including the Independent Engineer and the Financial Feasibility Consultant; (e) fees for Bond ratings and CUSIP numbers; (f) the expenses of travel, lodging and meals for Authority representatives in connection with the negotiation, marketing, issuance and delivery of the Bonds; (g) all advertising expenses in connection with the public offering of the Bonds, including investor meetings; (h) the costs of filing fees required by any of the Blue Sky laws; and (i) all reasonable and necessary out-of-pocket associated with the issuance of the Bonds. The Authority shall reimburse the Underwriters for the fees and expenses of Underwriters’ counsel, any expense advanced or incurred by the Underwriters for which the Authority is responsible hereunder including (f) above and other reasonable expenses incurred in connection with the performance of Underwriters’ obligations hereunder (reimbursement may be included in the expense component of the Underwriters’ discount, which the Underwriters acknowledge includes their expenses as set forth in Section 1).

15. **Notices.** Any notice or other communication to be given to the Authority under this Agreement may be given by delivering the same in writing to the address shown on the first page of this Agreement to the attention of the Chief Financial Officer, and any notice or other communication to be given to the Representative under this Agreement may be given by delivering the same in writing to Siebert Cisneros & Shank & Co., L.L.C., 100 Wall Street, 18th floor, New York, NY10005, Attention: _____, Managing Director.

16. **Parties in Interest; Survival of Representations and Warranties.** This Agreement, when accepted in accordance with the provisions hereof, shall constitute the entire agreement between the Authority and the Underwriters and is made solely for the benefit of the Authority and the Underwriters (including the successors or assigns of the Authority or the Underwriters) and no other person will acquire or have any right hereunder or by virtue hereof. All of the Authority's and Underwriters' representations, warranties, covenants and agreements contained in this Agreement will remain operative and full force and effect regardless of (a) any investigations made by or on behalf of the Underwriters; or (b) delivery of and payment for the Bonds pursuant to this Agreement.

17. **Effective Date.** This Agreement will become effective upon its acceptance by the Authority, as evidenced by the execution hereof by the appropriate official of the Authority, and will be valid and enforceable at the time of such acceptance.

18. **Execution in Counterparts.** This Agreement may be executed in counterparts each of which shall be regarded as an original and all of which shall constitute one and the same document.

19. **Finder.** The Authority represents and warrants that no finder or other agent of a finder has been employed or consulted by it in connection with this transaction.

20. **Governing Law.** This Agreement shall be governed by and construed in accordance with the laws of the District of Columbia.

SIEBERT CISNEROS SHANK & CO., L.L.C.
J.P. MORGAN SECURITIES LLC
FTN FINANCIAL CAPITAL MARKETS
JEFFERIES LLC
MORGAN STANLEY & CO. LLC
RAYMOND JAMES
STERN BROTHERS & CO.

By: SIEBERT CISNEROS SHANK & CO., L.L.C.,
as Representative of the Underwriters

By: _____
Authorized Representative

[SIGNATURE PAGE TO SERIES 2019D BOND PURCHASE AGREEMENT]

Accepted: _____, 2019

DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY

By _____

Name: Matthew Brown

Title: Chief Financial Officer and Executive Vice
President Finance and Procurement

[SIGNATURE PAGE TO SERIES 2019D BOND PURCHASE AGREEMENT]

EXHIBIT A

\$300,000,000*

DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY
Public Utility Subordinate Lien Revenue Refunding Bonds
Series 2019D (Federally Taxable)

Serial Bonds

Year	Principal Amount	Interest Rate	Yield*
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2019D Term Bonds

\$ __,000,000 ____% Term Bonds, due October 1, 20__, Yield ____%*

*Priced to the par call date.

* Preliminary, subject to change.

TERMS OF REDEMPTION

Optional Redemption

The Series 2019D Bonds are subject to optional redemption prior to maturity on or after April 1, 202_ from any source, in whole or in part on any date, in such order of maturities as shall be determined by the Authority (and by lot within a maturity), at a redemption price of 100% of the principal amount thereof, together with accrued interest, if any, to the redemption date.

MANDATORY SINKING FUND REDEMPTION

The \$00,000,000 Series 2019D Term Bonds maturing on October 1, 20__ shall be subject to mandatory sinking fund redemption, on October 1 of that respective year, as follows:

<u>Year</u>	<u>Principal Amount</u>
20__	\$
20__	
20__	
20__	

*Final maturity.

EXHIBIT B

FORM OF AUTHORITY'S INTERIM EXECUTIVE VICE PRESIDENT, LEGAL AFFAIRS
OPINION

_____, 2019

District of Columbia Water and Sewer Authority
1385 Canal Street S.E.
Washington, DC 20003

\$300,000,000*

DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY
Public Utility Subordinate Lien Revenue Refunding Bonds, Series 2019D (Federally Taxable)

Ladies and Gentlemen:

I am the Interim Executive Vice President, Legal Affairs to the District of Columbia Water and Sewer Authority (the "Authority") and in connection with the issuance by the Authority of its Public Utility Subordinate Lien Revenue Refunding Bonds, Series 2019D (Federally Taxable), in the original principal amount of \$300,000,000* (the "Bonds"). I have reviewed an executed copy of the Bond Purchase Agreement, dated _____, 2019, between the Authority and Siebert Cisneros Shank & Co., L.L.C., as Representative on behalf of the Underwriters, with respect to the Bonds (the "Bond Purchase Agreement") and the Preliminary Official Statement, dated _____, 2019 (the "Preliminary Official Statement") and the Official Statement, dated _____, 2019, being distributed in connection with the issuance of the Bonds (collectively, the "Official Statement"). Capitalized terms used and not defined herein shall have the respective meanings given to such terms in the Bond Purchase Agreement.

I have also examined an act of the Council of the District of Columbia entitled the "Water and Sewer Authority Establishment and Department of Public Works Reorganization Act of 1996," codified, as amended, at District of Columbia Official Code Ann. Sections 34-2201.01 *et seq.*, and the acts amendatory thereof and supplemental thereto (the "Act"), and an act of the United States Congress entitled the "District of Columbia Water and Sewer Authority Act of 1996" (Public Law 104-184), as amended (the "Federal Act"), certified copies of proceedings of the Authority authorizing the issuance of the Bonds, including the Resolution and such other proceedings as I have considered necessary or advisable to render the following opinions.

In rendering the following opinions, I have relied on representations of the Authority as to matters of fact without independent investigation or verification and, as to matters of law, the representations of Co-Bond Counsel without independent research or verification and have assumed the genuineness of all signatures, the authenticity of all documents tendered to me as originals and the conformity to original documents of all documents submitted to me as certified or photostatic copies.

Based upon review of the materials described above and subject to the recitals and qualifications herein contained, to the best of my knowledge, information and belief, it is my opinion that:

1. The Authority is a body corporate duly created, organized and validly existing as an independent authority of the District under the Act and under the Federal Act (the Act and the Federal Act being sometimes hereinafter referred to as, the “Acts”). The Authority has the full legal right, power and authority to (i) adopt the Resolution, (ii) issue the Bonds, (iii) execute, deliver and perform its obligations under the Bond Documents, and (iv) perform its obligations under the System Agreements.

2. The Federal Act was duly enacted by Congress and the Act was duly enacted by the Council of the District of Columbia. The Acts remain in full force and effect. The Act transferred all assets and liabilities of the Water and Sewer Utility Administration (“WASUA”) as indicated on the balance sheet prepared by WASUA, effective April 17, 1996, on an interim basis for the exclusive use and possession of the Authority for so long as any revenue bonds of the Authority, including the Bonds, remain outstanding.

3. The Resolution was adopted by the Authority and has not been amended since the date of the adoption thereof and remains in full force and effect as of the date hereof.

4. (i) The adoption of the Resolution, the issuance of the Bonds, the execution and delivery of the Bond Documents and the performance of the Authority’s obligations thereunder, and (ii) the performance of the Authority’s obligations under the System Agreements, under the circumstances contemplated thereby, do not and will not in any material respect conflict with or constitute on the part of the Authority, a breach of or default under any agreement or other instrument to which the Authority is a party, or any existing law, administrative regulation, court order, settlement order or consent decree to which the Authority is subject.

5. Except as otherwise described in the Preliminary Official Statement and the Official Statement, there is no action, suit, proceeding, inquiry or investigation, at law or in equity, before or by any court, government agency, public board or body, pending or, to the best of my knowledge, threatened against the Authority (i) seeking to prohibit, restrain or enjoin the issuance, sale or delivery of the Bonds, the use of the Official Statement or the collection of the revenues pledged to the payment of the principal of and interest on the Bonds, (ii) in any way contesting or affecting any authority for the issuance of the Bonds or the validity, enforceability, due authorization, execution or delivery of the Bonds, including the Bond Purchase Agreement or the other Bond Documents, or the validity or enforceability of the System Agreements, (iii) questioning the status of the Bonds under the laws of the District or the United States, (iv) in any way contesting the corporate existence or powers of the Authority or the titles of the officers of the Authority to their respective offices, (v) which may result in any material adverse change in the business or the financial condition or the financial prospects of the Authority or (vi) asserting that the Preliminary Official Statement or the Official Statement contains any untrue statement of a material fact or omits any material fact necessary to make the statements therein, in light of the circumstances under which they were made, not misleading.

6. The statements and information contained in the Preliminary Official Statement and the Official Statement under the caption entitled "LITIGATION," are true, correct and complete in all material respects, and the information under such caption does not contain any untrue statement of a material fact and does not omit to state any material fact required to be stated therein or necessary to make the statements therein, in light of the circumstances under which they were made, not misleading in any material respect.

7. Pursuant to the Acts, the Authority has the full legal right, power and authority to operate the System and to collect and pledge the Revenues therefrom in accordance with the Indenture.

8. The Authority has approved the form of the Preliminary Official Statement and the Official Statement, the execution of the Official Statement and the delivery of the Official Statement to the purchasers of the Bonds.

9. The Authority has obtained the consents, approvals, authorizations or other orders required for the consummation of the transactions contemplated by the Bond Purchase Agreement, including the issuance of the Bonds.

This opinion and all documents which relate to this opinion are to be construed in accordance with the laws of the District and the United States of America. This opinion is rendered solely for the use of the Authority and may not be relied on by any other person.

Very truly yours,

Interim Executive Vice President Legal Affairs

EXHIBIT C

FORM OF OPINION OF UNDERWRITERS' COUNSEL

_____, 2019

\$300,000,000*

DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY

Public Utility Subordinate Lien Revenue Refunding Bonds, Series 2019D (Federally Taxable)

Siebert Cisneros Shank & Co., L.L.C., as Representative
100 Wall Street, 18th floor
New York, NY 10005

Ladies and Gentlemen:

We have acted as counsel for you as the representative (the "Representative") acting on behalf of yourself and other underwriters (the "Underwriters") in connection with your purchase from the District of Columbia Water and Sewer Authority (the "Authority") of its Public Utility Subordinate Lien Revenue Refunding Bonds, Series 2019D (Federally Taxable), in the original principal amount of \$300,000,000* (the "Bonds"), pursuant to the Bond Purchase Agreement, dated _____, 2019 (the "Purchase Agreement"), between you and the Authority. The Bonds are to be issued pursuant to the Master Indenture of Trust, dated as of April 1, 1998 (the "Master Indenture"), as amended and supplemented to the date of delivery of the Bonds (the "Indenture"), including by the Twenty-Sixth Supplemental Indenture of Trust, to be dated the date of issuance and delivery of the Bonds (the "Twenty-Sixth Supplemental Indenture"), each by and between the Authority and Wells Fargo Bank, N.A., as trustee (the "Trustee"). The proceeds of the Bonds will be used to (i) refund all or a portion of the Authority's outstanding Series 2013A Bonds, and (ii) pay the costs of issuing the Bonds. Capitalized terms not otherwise defined herein shall have the meanings ascribed thereto in the Purchase Agreement.

In that connection, we have reviewed the Indenture, the Preliminary Official Statement of the Authority dated _____, 2019 (the "Preliminary Official Statement") and the Official Statement of the Authority, dated _____, 2019, with respect to the Bonds (the "Official Statement"), the Continuing Disclosure Agreement, dated _____, 2019 (the "Continuing Disclosure Agreement"), the Purchase Agreement, certificates of the Authority, the Trustee and others, the opinions referred to in paragraph 10(f)(vi) of the Purchase Agreement, and such records and documents, and we have made such investigations of law, as we have deemed appropriate as a basis for the opinions and conclusions hereinafter expressed. We do not assume any responsibility for any electronic version of the Official Statement and assume that any such version is identical in all material respects to the printed version.

In arriving at the opinions and conclusions hereinafter expressed, we are not expressing any opinion or view on, and with your permission are assuming and relying on, the validity, accuracy and sufficiency of the records, documents, certificates and opinions referred to above, including the accuracy of all factual matters represented and legal conclusions contained therein,

including (without limitation) any representations and legal conclusions regarding the due authorization, issuance, delivery, validity and enforceability of the Bonds, and any laws, documents and instruments that may be related to the issuance, payment or security of the Bonds. We have assumed that all records, documents, certificates and opinions that we have reviewed, and the signatures thereto, are genuine.

Based on and subject to the foregoing, and in reliance thereon, as of the date hereof, we are of the following opinions or conclusions:

1. The Bonds are not subject to the registration requirements of the Securities Act of 1933, as amended, and the Indenture is exempt from qualification pursuant to the Trust Indenture Act of 1939, as amended.

2. We are not passing upon and do not assume any responsibility for the accuracy, completeness or fairness of any of the statements contained in the Preliminary Official Statement and the Official Statement and make no representation that we have independently verified the accuracy, completeness or fairness of any such statements. In our capacity as your counsel, to assist you with your responsibility with respect to the Preliminary Official Statement and the Official Statement, we participated in conferences with your representatives and representatives of the Authority, Squire Patton Boggs (US) LLP and Parker Poe Adams & Bernstein LLP, as co-bond counsel and as co-disclosure counsel, financial advisors, feasibility consultants and others, during which the contents of the Official Statement and related matters were discussed. Based on our participation in the above-mentioned conferences (which did not extend beyond the date of the Official Statement), and in reliance thereon, on oral and written statements and representations of the Authority and others and on the records, documents, certificates, opinions and matters herein mentioned (as set forth above), we advise you as a matter of fact and not opinion that, during the course of our representation of you on this matter, no facts came to the attention of the attorneys in our firm rendering legal services to you in connection with the Preliminary Official Statement and the Official Statement which caused us to believe that the Preliminary Official Statement and the Official Statement as of their dates and as of the date hereof (except for any CUSIP numbers, financial, accounting, statistical or economic, engineering or demographic data or forecasts, numbers, charts, tables, graphs, estimates, projections, assumptions or expressions of opinion, any information about litigation to which the Authority is a party, any management discussion and analysis, Appendices to the Preliminary Official Statement and the Official Statement, or any information about book-entry, DTC, ratings, rating agencies, and tax exemption of the Bonds, which we expressly exclude from the scope of this paragraph and as to which we express no opinion or view) contained or contains any untrue statement of a material fact or omitted or omits to state any material fact necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading. No responsibility is undertaken or view expressed with respect to any other disclosure document, materials or activity, or as to any information from another document or source referred to by or incorporated by reference in the Preliminary Official Statement and the Official Statement.

3. In our opinion, the Continuing Disclosure Agreement with respect to the Bonds for the benefit of the holders thereof, satisfies in all material respects the requirements for such an

agreement in paragraph (b) (5) of the Rule 15c2-12; provided that, for purposes of this opinion, we are not expressing any view regarding the content of the Official Statement that is not expressly stated in numbered paragraph 2 of this letter.

We are furnishing this letter to you pursuant to paragraph 10(f)(vi) of the Purchase Agreement solely for your benefit as the Representative. We disclaim any obligation to update this letter. This letter is not to be used, circulated, quoted or otherwise referred to or relied upon for any other purpose or by any other person. This letter is not intended to, and may not, be relied upon by owners of Bonds or by any other party to whom it is not specifically addressed.

Very truly yours,

DRAFT
09-19-19

ESCROW AGREEMENT

Among

DISTRICT OF COLUMBIA
WATER AND SEWER AUTHORITY

WELLS FARGO BANK, National Association.
as Trustee

and

WELLS FARGO BANK, National Association
as Escrow Agent

with respect to

\$_[_____]
Public Utility Subordinate Lien Revenue Refunding Bonds
Series 2019D
(Federally Taxable)

Dated: November [___], 2019

ESCROW AGREEMENT

This ESCROW AGREEMENT is made and entered into as of November ___, 2019 between the District of Columbia Water and Sewer Authority (the “Authority”) and Wells Fargo Bank, National Association., a national banking association, having a corporate trust office in Philadelphia, Pennsylvania, as the trustee (in such capacity, the “Trustee”), and as the escrow agent (in such capacity, the “Escrow Agent”).

WITNESSETH:

WHEREAS, the Authority has heretofore duly issued, pursuant to a Master Indenture of Trust, dated as of April 1, 1998 (the “Master Indenture”), as supplemented and amended through the Fourteenth Supplemental Indenture of Trust, dated August 1, 2013, its Public Utility Subordinated Lien Revenue Bonds, Series 2013A (the “Series 2013A Bonds”), of which \$300,000,000 is currently outstanding; and

WHEREAS, the Authority has decided to issue its Public Utility Subordinate Lien Revenue Refunding Bonds, Series 2019D (Federally Taxable) (the “Series 2019D Bonds”), in an aggregate principal amount of \$[000,000,000], pursuant to the Master Indenture, as previously amended and supplemented and as further supplemented by the Twenty-Sixth Supplemental Indenture of Trust, dated November 6, 2019, by and between the Authority and the Trustee (the “Twenty-Sixth Supplemental Indenture” and, together with the Master Indenture, as previously amended and supplemented, the “Indenture”); and

WHEREAS, a portion of the proceeds of the Series 2019D Bonds, together with other funds of the Authority, will be used to purchase, on behalf of and for the account of the Authority, escrow securities in the par amount, at the yield and with the maturity set forth in **Appendix C** attached hereto (the “Escrow Securities”) which, along with cash, shall be deposited in the Series 2019D Escrow Account established pursuant to the Twenty-Sixth Supplemental Indenture; and

WHEREAS, the cash and the Escrow Securities deposited into the Series 2019D Escrow Account, together with investment income thereon, will provide sufficient funds to (i) pay interest on the Series 2013A Bonds identified in **Appendix A** (the “Refunded Bonds”) prior to October 1, 2023 as specified in **Appendix B**; (ii) redeem the Refunded Bonds on October 1, 2023 as specified in **Appendix B** (collectively, the payments set forth in **Appendix B** are referred to as the “Refunded Bond Payments”); and

WHEREAS, the Authority is entering into this Escrow Agreement with the Escrow Agent simultaneously with the delivery of the Series 2019D Bonds in order to insure that the required procedures will be followed to make the Refunded Bond Payments; and

WHEREAS, the Authority has taken action to cause to be delivered to the Escrow Agent for deposit in or credit to the Series 2019D Escrow Account immediately available funds from the proceeds of the Series 2019D Bonds and other funds of the Authority, which will be used to

purchase the Escrow Securities and which, together with the investment earnings thereon and certain uninvested cash, will be sufficient to make the Refunded Bond Payments, and to have the mathematical accuracy of the computations relating to the sufficiency of such Series 2019D Escrow Account moneys to be verified by [_____], Certified Public Accountants (the “Verification Agent”).

NOW, THEREFORE, the Authority and the Escrow Agent hereby agree as follows:

Section 1. Funding and Maintenance of the Series 2019D Escrow Account.

(a) The Authority hereby directs the Trustee to transfer to the Escrow Agent \$[000,000,000.00] of the proceeds of the Series 2019D Bonds and \$[0,000,000.00] from the Series 2013A Subordinate Bonds Interest Subaccount in the Subordinate Interest Account, for deposit into the Series 2019D Escrow Account.

(b) The Escrow Agent hereby acknowledges the receipt and deposit in the Series 2019D Escrow Account of an amount equal to \$[000,000,000.00] in immediately available funds.

(c) Until all principal of, premium, if any, and interest on the Refunded Bonds have been paid in full, the Escrow Agent shall maintain the Series 2019D Escrow Account as a special segregated and irrevocable escrow account. The Series 2019D Escrow Account shall be for the benefit of the holders of the Refunded Bonds. All securities, investments and moneys held therein shall be wholly segregated from all other securities, investments or moneys on deposit with the Escrow Agent, if any. All securities, investments and moneys held in the Series 2019D Escrow Account shall be irrevocably pledged to secure the payment of the principal of, premium, if any, and interest on the Refunded Bonds.

Section 2. Investment of the Series 2019D Escrow Account.

(a) The Escrow Agent represents and acknowledges that, concurrently with the deposit of the amounts into the Series 2019D Escrow Account as described in Section 1 hereof, it shall apply \$[000,000,000.00] of such funds to purchase, on behalf of and for the account of the Authority, the Escrow Securities as shown on Appendix C. The remaining deposit of \$[00.00] shall be held in cash. The Escrow Securities shall be non-callable prior to the date upon which such securities shall be needed to pay the applicable Refunded Bond Payment. The Escrow Securities may be sold, transferred, disposed of or redeemed only at the direction of the Authority, as set forth in subsection (d) hereof, and shall mature on or before the time the proceeds thereof will be required for the payment of the applicable Refunded Bond Payment.

(b) Any amounts received from the Escrow Securities or held in cash referenced in clause (a) above that are not needed at the time of receipt to make the aforesaid payments on the Refunded Bonds shall remain in trust for the benefit of the holders of the Refunded Bonds, uninvested, until applied as aforesaid; provided, that such amounts shall be applied to the purchase

of Substitute Obligations (as defined in Section 2(d)(ii) hereof), and the interest thereon shall be applied in such manner, as may be specified in writing by the Authority, but only if the Escrow Agent receives (i) the certificate of an independent public accountant described in Section 2(d)(ii)(A) hereof with respect to such purchase of Substitute Obligations and such application of the interest thereon, and (ii) an approving opinion of Bond Counsel to the effect that such use of funds will not adversely affect the exclusion from gross income for federal income tax purposes of interest on the Refunded Bonds.

(c) The Series 2019D Escrow Account shall be maintained to and including the date upon which the Escrow Agent makes the final payment of the principal of, premium, if any, and interest on the Refunded Bonds, whereupon the Escrow Agent shall, upon the written direction of the Authority, sell or redeem any Escrow Securities remaining in the Series 2019D Escrow Account and shall deliver to the Authority any money received from such sales and any money then remaining in the Series 2019D Escrow Account.

Based on the report, dated [____], 2019, prepared by the Verification Agent (the “Verification Report”), a copy of which is attached as **Appendix D** hereto, which verifies the mathematical accuracy of the computations prepared by [____TBD____], as representative of the underwriters (the “Underwriters”) named in the Bond Purchase Agreement for the Series 2019D Bonds dated October [____], 2019, entered into by and between the Authority and the Underwriters, and confirms the Underwriters’ calculations that the Escrow Securities, together with the investment earnings thereon and certain uninvested cash on deposit in the Series 2019D Escrow Account will be sufficient to make the Refunded Bond Payments as specified in **Appendix B**, the Authority represents that the Escrow Securities and certain uninvested cash on deposit in the Series 2019D Escrow Account, together with interest thereon, will be sufficient to (i) pay interest on the Refunded Bonds prior to October 1, 2023; and (ii) redeem the Refunded Bonds on October 1, 2023. The Escrow Agent shall not be liable or responsible (y) for the accuracy of the Verification Report or (z) the accuracy of the Underwriters’ calculations with respect to required deposits into the Series 2019D Escrow Account.

(d) (i) Except as otherwise provided in this Section 2, the Escrow Agent shall have no power or duty to invest any funds held under this Escrow Agreement or to sell, redeem, transfer or otherwise dispose of or make substitutions of the Escrow Securities. Subject to the provisions of subsection (b), any funds held in the Series 2019D Escrow Account that are not invested shall be held in cash.

(ii) At the request of the Authority and upon compliance with the conditions contained herein, the Escrow Agent shall sell, transfer or otherwise dispose of or request the redemption of all or a portion of the Escrow Securities, and shall substitute for such Escrow Securities, direct non-callable obligations of the United States of America (the “Substitute Obligations”), whereupon, references in this Escrow Agreement to Escrow Securities shall include any such Substitute Obligations. The Authority hereby covenants and agrees that it will not request the Escrow Agent to exercise any of the powers described

in this Section in any manner which would adversely affect the exclusion from gross income for Federal income tax purposes of interest on the Refunded Bonds. The Escrow Agent shall purchase such Substitute Obligations with the proceeds derived from the sale, transfer, disposition or redemption of such Escrow Securities. The transaction may be effected only if the Authority delivers to the Escrow Agent:

(A) a report of nationally recognized independent certified public accountants which verifies the mathematical accuracy of the computations which reflect the principal amount of such Substitute Obligations, together with the interest income to be received thereon, will be sufficient to make timely payments on the Refunded Bonds;

(B) a certificate of the Authority that, based on such verification report prepared by independent certified public accountants, the amount deposited in the Series 2019D Escrow Account will be sufficient to pay the Refunded Bond Payments as specified in **Appendix B**;

(C) a certificate of the Trustee acknowledging the deposit of moneys and the receipt of the verification report described in (A) above as to the sufficiency of the Substitute Obligations to make the Refunded Bond Payments; and

(D) an opinion of Bond Counsel to the effect that the sale, transfer, disposition or redemption of the Escrow Securities and purchase of such Substitute Obligations (i) will not affect the exclusion from gross income for Federal income tax purposes of interest on the Refunded Bonds, and (ii) is permitted hereunder.

The Escrow Agent shall not be liable or responsible for any loss resulting from any investment or reinvestment made pursuant to this subsection unless such loss is due to the gross negligence or willful misconduct of the Escrow Agent.

(e) The Escrow Agent shall have no liability for the payment of the principal of, premium, if any, and interest on the Refunded Bonds, except from the Escrow Securities and moneys on deposit in the Series 2019D Escrow Account.

Section 3. Payment and Redemption of the Refunded Bonds. The Authority hereby requests and irrevocably instructs the Escrow Agent, and the Escrow Agent hereby agrees, to collect and deposit in the Series 2019D Escrow Account the principal of and interest on the Escrow Securities held for the account of the Series 2019D Escrow Account as promptly as such principal and interest becomes due, and to apply such principal and interest, together with any other moneys and the principal of and interest on any other securities deposited in the Series 2019D Escrow Account to pay the Refunded Bond Payments specified in **Appendix B**.

Section 4. Defeasance and Redemption Notices.

(a) The Authority hereby requests and irrevocably instructs the Trustee and the Trustee hereby agrees to promptly provide notice by first class mail to the Municipal Securities Rulemaking Board (“MSRB”), Standard & Poor’s, a division of The McGraw-Hill Companies, Inc. (“S&P”), Moody’s Investor Service, Inc. (“Moody’s”) and Fitch Ratings, Inc. (“Fitch”) of the advanced refunding of the Refunded Bonds and the deposit of the Escrow Securities and any money in escrow for that purpose. A form of the defeasance notice for each of the Refunded Bonds is attached as **Appendix E** hereto.

(b) The Authority hereby requests and irrevocably instructs the Trustee and the Trustee hereby agrees to provide notice of redemption of the Refunded Bonds not less than thirty (30) days nor more than sixty (60) days prior to October 1, 2023, in the form of the notice attached hereto as **Appendix F**, by registered or certified mail or overnight express delivery, to (a) the registered owner of each the Refunded Bonds at the address as it appears on the registration books kept by the Trustee and (b) MSRB.

(c) To the extent permitted by the bond documents pertaining to the Refunded Bonds, any of the notices provided in this Section 4 may be provided by means of facsimile transmission, email transmission or other similar electronic means of communications providing evidence of transmission.

Section 5. Possible Deficiencies.

(a) If at any time the Escrow Agent has actual knowledge that the moneys in the Series 2019D Escrow Account, including the anticipated proceeds of the Escrow Securities, will not be sufficient to make all payments required by Section 3 hereof, the Escrow Agent shall notify the Authority in writing as soon as is reasonably practicable of the amount of such deficiency and the reason therefor, if the reason is known to the Escrow Agent.

(b) Upon receipt of the notice specified in subsection (a) hereof, the Authority shall cause to be irrevocably deposited in the Series 2019D Escrow Account, from any legally available moneys, such additional moneys as may be required to fully meet the aggregate amounts to become due and payable for the principal of, premium, if any, and interest on the Refunded Bonds as the same may become due and payable.

(c) The Escrow Agent shall in no manner be responsible for the Authority’s failure to make such deposit.

Section 6. Duties of Escrow Agent. So long as the Refunded Bonds are outstanding, the Escrow Agent shall forward a monthly statement to the Authority describing the Escrow Securities held, including the income earned thereon and the maturities thereof, and any withdrawals of moneys from the Series 2019D Escrow Account since the last statement furnished pursuant to this Section.

Section 7. Fees and Costs.

(a) The Escrow Agent shall be compensated, based on itemized invoices submitted to the Authority, for its reasonable fees, expenses and disbursements incurred with respect to service rendered hereunder.

(b) The Escrow Agent also shall be entitled to additional fees and reimbursements for costs incurred, including, but not limited to, legal and accountants' services, in connection with any litigation which may at any time be instituted involving this Escrow Agreement.

(c) The right to receive compensation notwithstanding, the Escrow Agent acknowledges that it, as Escrow Agent, has no claim for any such payment under the Indenture and that it has no lien on the moneys on deposit in the Series 2019D Escrow Account for such payment.

(d) In the event of the resignation of the Escrow Agent prior to the expiration of this Escrow Agreement, the Escrow Agent shall rebate to the Authority a ratable portion of any fee theretofore paid by the Authority to the Escrow Agent for its services under this Escrow Agreement.

(e) The provisions of this Section 7 shall survive the termination of this Agreement and the resignation or removal of the Escrow Agent.

Section 8. Resignation of Escrow Agent. The Escrow Agent may resign and be discharged of its duties hereunder provided that: (i) the Authority has received written notice at least thirty (30) days prior to such resignation; (ii) the Authority has appointed a successor to the resigning party; (iii) the Authority has received an instrument of acceptance in form and substance acceptable to it, executed by the successor; and (iv) the resigning party has duly delivered to its successor hereunder all of the escrow documents including the Indenture and this Escrow Agreement, the Escrow Securities, and moneys and investments held by the resigning party. Such resignation shall take effect only upon the occurrence of all of the events listed in clauses (i) through (iv) above. Upon receipt by the Authority of the written notice described in clause (i) above, the Authority shall use its best efforts to obtain a successor to such resigning party as soon as possible. Notwithstanding the foregoing, if the Authority fails to appoint a successor within thirty (30) days, the Escrow Agent reserves the right to petition a court of competent jurisdiction to appoint a successor.

Section 9. Termination of Escrow Agreement. This Escrow Agreement shall terminate when the principal of, premium, if any, and interest on the Refunded Bonds have been paid in full; provided, that moneys held by the Escrow Agent for the payment and discharge of any of the Refunded Bonds which remain unclaimed five (5) years after the date when all of such Refunded Bonds shall have become due and payable, either at their stated maturity dates or by call for earlier

redemption, shall at the written request of the Authority, be repaid by the Escrow Agent to the Authority, as its absolute property, free from the lien created by the Indenture. The Escrow Agent shall thereupon be released and discharged with respect thereto and hereto and the holders of such Refunded Bonds shall look only to the Authority for the payment of such Refunded Bonds.

Section 10. Benefit of Agreement; Amendments.

(a) This Agreement is made for the benefit of the Authority and the holders from time to time of the Refunded Bonds except as otherwise expressly provided herein.

(b) This Agreement shall not be repealed, revoked, rescinded, altered, amended or supplemented in whole or in part without the written consent of the Escrow Agent and the holders of the unpaid Refunded Bonds; provided, however, that upon prior written notice to Moody's, Fitch and S&P and (1) receipt by each such agency of draft copies of any such proposed amendment, and (2) receipt from each such agency of the notice that such amendment shall not adversely affect its rating on the Refunded Bonds, the Authority and the Escrow Agent may, without the consent of, or notice to, such holders, enter into such amendment to this Agreement that will not adversely affect the rights of such holders and that will not be inconsistent with the terms and provisions of this Agreement (the "Amendment"), for any one or more of the following purposes:

(i) to correct or cure any ambiguity or formal defect or omission in this Agreement;

(ii) to grant to, or confer upon, the Escrow Agent for the benefit of such holders any additional rights, remedies, powers or authority that may lawfully be granted to, or conferred upon, such holders or the Escrow Agent;

(iii) to subject to this Agreement additional funds, securities or property;

(iv) to sever any invalid provision from this Agreement.

(c) The Escrow Agent shall not undertake or execute any Amendment unless it has received:

(i) If the Amendment affects the aggregate amount or payment terms of the Escrow Securities, an opinion of an independent certified public accountant reasonably acceptable to the Authority that after such Amendment the interest on and maturing principal of the Escrow Securities, without further reinvestment, and any other funds then held pursuant to this Agreement will provide moneys in amounts and at times as necessary to pay all principal of and redemption premium and interest on the Refunded Bonds as the same are due or are called for redemption as set forth in Section 2; and

(ii) An opinion of Bond Counsel that the Amendment (A) will not affect the exclusion from gross income for Federal income tax purposes of interest on the Refunded Bonds, (B) is in compliance with the Internal Revenue Code of 1986, as amended, and (C) the Amendment complies with the requirements of this Section 10.

(d) The Authority shall provide Moody's, Fitch and S&P with written notice prior to such time as this Agreement shall be replaced, revoked, rescinded, altered, amended or supplemented at the following addresses:

Moody's Investors Service, Inc.
Public Finance Rating Desk/Refunded Bonds
7 World Trade Center
250 Greenwich Street, 23rd Floor
New York, NY 10007

Standard & Poor's, a division of The McGraw-Hill Companies, Inc.
25 Broadway, 21st Floor
New York, New York 10004

Fitch Ratings
300 West 57th Street
New York, New York 10004

Section 11. Notices. Any notice, authorization, request or demand required or permitted to be given hereunder shall be in writing and shall be deemed to have been duly given when mailed by registered or certified mail, postage prepaid, addressed as follows:

If to the Authority, at:

District of Columbia Water and Sewer Authority
1385 Canal Street, S.E.
Washington, DC 20003
Attn: Chief Financial Officer and Executive Vice
President Finance and Procurement

If to the Escrow Agent, at:

Wells Fargo Bank, National Association
Corporate Trust Services
123 S. Broad Street
Suite 1500; MAC Y1379-157
Philadelphia, PA 10109

Any of such addresses may be changed at any time upon written notice of such change being sent by United States registered mail, postage prepaid, to the other parties by the party affecting the change. Any notices to the holders of the Refunded Bonds shall be made in a manner as prescribed in the Indenture.

Section 12. Time of Performance. Whenever, under the terms of this Escrow Agreement, the performance date of any act to be done hereunder shall fall on a day which is not a legal banking day or upon which the Escrow Agent is not open for business, the performance thereof on the next succeeding business day shall be deemed to be in full compliance with this Escrow Agreement. The Escrow Agent shall perform all obligations imposed upon it under this Escrow Agreement in a timely manner.

Section 13. Reliance by Escrow Agent; Force Majeure; No Special, Indirect or Consequential Damages.

(a) The Escrow Agent shall be entitled to rely and act upon any notice, resolution, request, consent, order, certificate, report, opinion, bond or other paper or document reasonably believed by it to be genuine and to have been signed and presented by the proper party or parties. The Escrow Agent may consult with Bond Counsel, or, in the discretion of the Escrow Agent, it may consult with its own counsel as to anything arising in connection with the duties herein undertaken, and it shall not be liable for any action taken or omitted by it in good faith in reasonable reliance upon such written instructions or upon the written opinions of such counsel; provided, however, that before relying upon the opinion of its own counsel it shall furnish to the Authority and to Bond Counsel a copy of such opinion.

(b) In no event shall the Escrow Agent be liable for any failure or delay in the performance of its obligations hereunder because of circumstances beyond the Escrow Agent's control, including, but not limited to, acts of God, flood, war (whether declared or undeclared), terrorism, fire, riot, strikes or work stoppages for any reason, embargo, government action, including any laws, ordinances, regulations or the like which restrict or prohibit the providing of the services contemplated by this Agreement, inability to obtain material, equipment, or communications or computer facilities, or the failure of equipment or interruption of communications or computer facilities, and other causes beyond the Escrow Agent's control whether or not of the same class or kind as specifically named above.

(c) Anything in this Agreement to the contrary notwithstanding, in no event shall the Escrow Agent be liable for special, indirect or consequential loss or damage of any kind whatsoever (including but not limited to lost profits), even if the Escrow Agent has been advised of the likelihood of such loss or damage and regardless of the form of action.

Section 14. Governing Law. To the fullest extent permitted by law, this Escrow Agreement shall be interpreted, construed and enforced pursuant to the laws of the District.

Section 15. Severability. If any provision of this Escrow Agreement shall for any reason be held to be invalid or unenforceable, the invalidity or unenforceability of such provision shall not affect any of the remaining provisions of this Escrow Agreement. The Escrow Agent shall provide Moody's, Fitch and S&P with written notice, at the addresses set forth in Section 10, if any provision of this Escrow Agreement should be held to be invalid or unenforceable.

Section 16. Execution of Counterparts. This Escrow Agreement may be executed in any number of counterparts each of which shall for all purposes be deemed to be an original and all of which shall together constitute but one and the same instrument.

Section 17. Successors of the Escrow Agent. Any corporation or association into which the Escrow Agent may be converted or merged or with which it may be consolidated or to which it may sell or transfer its corporate trust business and assets as a whole or substantially as a whole, or any corporation or association resulting from any such conversion, sale, merger, consolidation or transfer to which it is a party, ipso facto shall be and become the successor Escrow Agent hereunder, vested and subject to all duties and obligations imposed hereunder with all of the trusts, powers, discretions, immunities, privileges and all other matters as was its predecessor, without the execution or filing of any instrument or any further act, deed or conveyance on the part of any of the parties hereto, anything herein to the contrary notwithstanding; provided, that the Escrow Agent shall promptly give notice of such conversion, sale, merger, consolidation or transfer to the Authority, and the Authority shall have 45 days to exercise an option to appoint a successor Escrow Agent by an instrument in writing delivered to the then current Escrow Agent.

IN WITNESS WHEREOF, the parties hereto have caused this Escrow Agreement to be executed each on its behalf as of the day and year first above written.

**DISTRICT OF COLUMBIA WATER
AND SEWER AUTHORITY**

By: _____
Matthew Brown
Chief Financial Officer and Executive Vice
President Finance and Procurement

**WELLS FARGO BANK, NATIONAL
ASSOCIATION., AS TRUSTEE**

By: _____
Name: _____
Title: _____

**WELLS FARGO BANK, NATIONAL
ASSOCIATION., AS ESCROW AGENT**

By: _____
Name: _____
Title: _____

APPENDIX A

LISTING OF REFUNDED BONDS

Maturity (October 1)	Principal Amount	Interest Rate	CUSIP

APPENDIX B

REFUNDED BOND PAYMENTS

Date	Interest	Redeemed Principal	Total
04/01/2020			
10/01/2020			
04/01/2021			
10/01/2021			
04/01/2022			
10/01/2022			
04/01/2023			
10/01/2023			
Total:			

APPENDIX C

DESCRIPTION OF THE ESCROW SECURITIES

Type of Security	CUSIP	Maturity Date	Par Amount	Interest Rate	Price	Cost	Accrued Interest	Total Cost
Totals								

APPENDIX D

VERIFICATION REPORT

PPAB 5105496v5

APPENDIX E

FORM OF DEFEASANCE NOTICE

DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY

**Public Utility Subordinated Lien Revenue Bonds
Series 2013A**

On November 6, 2019, the District of Columbia Water and Sewer Authority (the “Authority”) deposited in escrow with Wells Fargo Bank, National Association., as escrow agent (the “Escrow Agent”) under the Escrow Agreement dated November 6, 2019, by and among the Authority, the Escrow Agent and Wells Fargo Bank, National Association, as the trustee (the “Escrow Agreement”), relating to the outstanding maturities of the Authority’s Public Utility Subordinated Lien Revenue Bonds, Series 2013A listed below (the “Refunded Bonds”), escrow securities that have been certified by [_____], Certified Public Accountants, to be of such maturities and interest payment dates and bearing such interest as will, without further investment or reinvestment, except as provided in the Escrow Agreement, provide moneys to pay when due the interest on and the principal of the Refunded Bonds through their redemption date of October 1, 2023:

Year	Amount	Rate	CUSIP

As a result of this deposit, the Refunded Bonds are deemed to have been paid and no longer to be outstanding bonds of the Authority.

The CUSIP numbers printed herein are inserted for the convenience of the holders, and no representation is made as to the correctness of such numbers either as printed on the Refunded Bonds or as contained herein.

_____, 2019

**WELLS FARGO BANK, NATIONAL
ASSOCIATION, Escrow Agent**

NOTICE REQUIREMENTS:

As soon as possible after the funding of the Series 2019D Escrow Account, notice shall be provided to the Municipal Securities Rulemaking Board, Moody's Investors Service, Standard & Poor's Ratings Services, and Fitch Ratings, Inc.

APPENDIX F

FORM OF REDEMPTION NOTICE

DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY

**Public Utility Subordinated Lien Revenue Bonds
Series 2013A**

NOTICE IS HEREBY GIVEN pursuant to a Master Indenture of Trust, dated as of April 1, 1998, by and between the District of Columbia Water and Sewer Authority (the “Authority”) and Norwest Bank Minnesota, N.A., predecessor to Wells Fargo Bank, National Association, as trustee, as supplemented and amended through the Fourteenth Supplemental Indenture of Trust, dated August 1, 2013, by and between the Authority and Wells Fargo Bank Minnesota, N.A., predecessor to Wells Fargo Bank, National Association, as trustee (as supplemented and amended, the “Indenture”), providing for the issuance of the Authority’s \$300,000,000 Public Utility Subordinated Lien Revenue Bonds, Series 2013A (the “Series 2013A Bonds”), that the following Series 2013A Bonds (the “Refunded Bonds”) will be redeemed on October 1, 2023:

Year	Amount	Rate	CUSIP

The Refunded Bonds will be redeemed at a redemption price of 100% of the principal amount thereof together with interest accrued to October 1, 2023. Holders of the Refunded Bonds should present them for redemption on or before October 1, 2023, by mail to:

Registered/Certified Mail

Wells Fargo Bank, N.A.
Corporate Trust Operations
MAC N9300-070
P.O. Box 1517
Minneapolis, MN 55480-1517

Air Courier

Wells Fargo Bank, N.A.
Corporate Trust Operations
MAC N9300-070
600 Fourth Street South, 7th Floor
Minneapolis, MN 55479

Interest on the Refunded Bonds will cease to accrue on October 1, 2023.

Redemption of the Refunded Bonds is conditioned upon the Authority depositing with the Trustee moneys and/or securities sufficient to pay the principal and accrued interest on the Refunded Bonds as of October 1, 2023. Failure of the Authority to make such deposit shall not constitute an

event of default under the Trust Agreement.

IMPORTANT: The CUSIP numbers printed herein are inserted for the convenience of the holders, and no representation is made as to the correctness of such numbers either as printed on the Refunded Bonds or as contained herein.

IMPORTANT INFORMATION REGARDING TAX CERTIFICATION AND POTENTIAL WITHHOLDING:

Pursuant to U.S. federal tax laws, you have a duty to provide the applicable type of tax certification form issued by the U.S. Internal Revenue Service (“IRS”) to Wells Fargo Bank, N.A. Corporate Trust Services to ensure payments are reported accurately to you and to the IRS. In order to permit accurate withholding (or to prevent withholding), a complete and valid tax certification form must be received by Wells Fargo Bank, N.A. Corporate Trust Services before payment of the redemption proceeds is made to you. Failure to timely provide a valid tax certification form as required will result in the maximum amount of U.S. withholding tax being deducted from any redemption payment that is made to you.

DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY

By: **WELLS FARGO BANK, NATIONAL ASSOCIATION**, as Trustee

_____, 2023



**D.C. WATER AND SEWER AUTHORITY
BOARD OF DIRECTORS
FINANCE & BUDGET
OCTOBER COMMITTEE MEETING**

**Thursday, October 24, 2018; 11:00 a.m.
Blue Plains Wastewater Treatment Plant
5000 Overlook Avenue, SW, DC
AGENDA**

Call to Order	Chairperson
September 2019 Financial Report	Chief Financial Officer
Agenda for November Committee Meeting	Chairperson
Adjournment	Chairperson

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