DISTRICT OF COLUMBIA
WATER AND SEWER AUTHORITY
Board of Directors
Meeting of the
Environmental Quality and Operations Committee

Thursday, January 20, 2022
9:30 a.m.

Microsoft Teams
Join on your computer or mobile app
Click here to join the meeting
Or call in (audio only)
+1 202-753-6714,,142812080#
Phone Conference ID: 142 812 080#

9:30 a.m.	**I.**	**Call to Order**	Howard Gibbs Vice Chair
	II.	**Roll Call**	Linda Manley Board Secretary
9:35 a.m.	**III.**	**AWTP Status Update**	Aklile Tesfaye
		1. BPAWTP Performance	
9:50 a.m.	**IV.**	**Action Items**	Joel Grosser/Kishia Powell
		Joint Use	
		1. Contract No.: WAS-12-063-AA-RA - Protective Security Services, Allied University Security Services	
		2. Contract No.: 16-PR-HCM-44AC/AD – Temporary Staffing Services, MB Staffing and Premier Staffing	
		3. Contract No.: DCFA 514 - CM -BOA 9 – Wastewater Treatment Facilities, WSP USA, Inc.	
		4. Contract No.: DCFA 528 - CM -BOA 10 – Wastewater Treatment Facilities, AECOM	
		5. Contract No.: 220010 - Inspection & Cleaning of Small and Large Diameters Sewers, RedZone	
		Non-Joint Use	
		1. None	
10:05 a.m.	**V.**	**FY22 to FY31 Proposed Capital Budget**	Kishia Powell
10:50 a.m.	**VI.**	**Other Business / Emerging Issues**	
10:55 a.m.	**VII.**	**Executive Session***	Howard Gibbs

11:00 a.m. **VIII.** **Adjournment** Howard Gibbs

Follow-up Items from Prior Meetings:

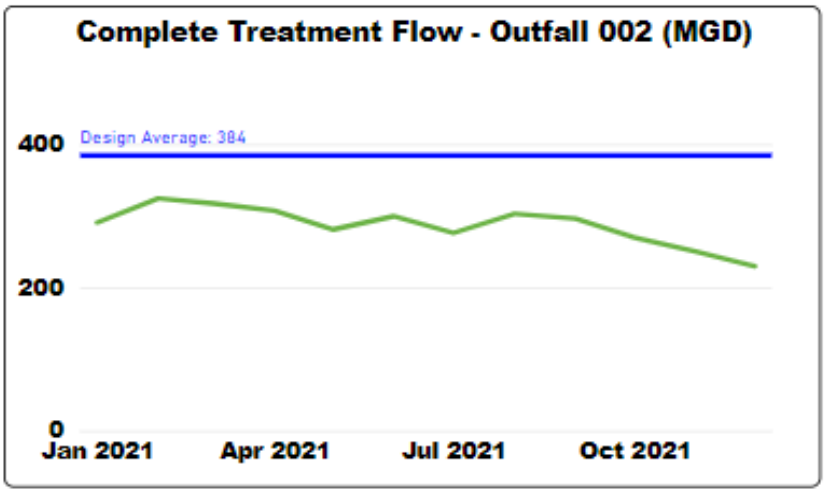
1. Director, DCW Resource Recovery: To provide an in-depth presentation to the Committee on Bloom and the Sierra Club report at a future committee meeting **[Target: March EQ&Ops Cmte Meeting)**

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.

Wastewater Operations

Blue Plains Advanced Wastewater Treatment Plant – December 2021

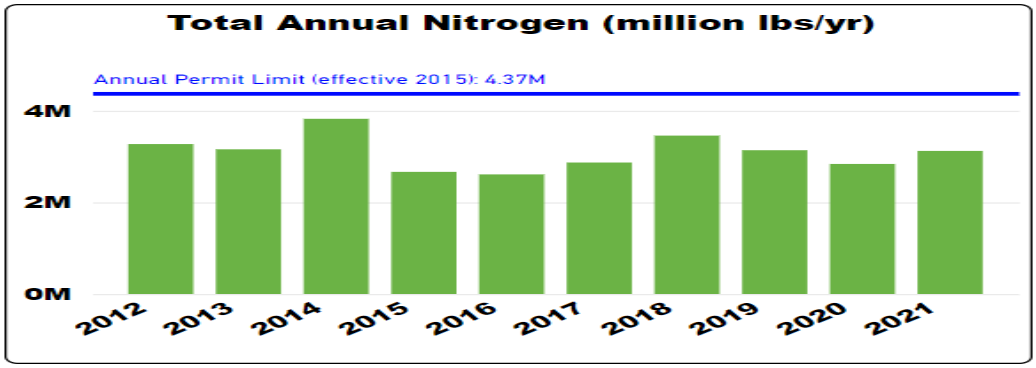
Accomplishments & Priorities	**Integrating Management of Change in Asset Management** Management of Change (MOC) is a formalized process for identifying, assessing, and tracking modifications to assets, policies and procedures, documentation, technology, training, etc. The MOC process ensures that all requests are initiated and tracked electronically using existing technology, IBM Maximo, DC Water's computerized maintenance management system, allowing all associated work to be captured and become part of the asset lifecycle history. The process also ensures that assets are updated including red-lining service manuals and modifying the bill of material for spare parts. Completing the documentation ensures others can see the change and can be used as a base for future capital projects. It is well known in Asset Reliability Engineering that 80% of the life cycle cost of assets are paid for by operations and maintenance (O&M). Therefore, changes to equipment to reduce cost, improve reliability, increase safety and resilience will have a long-term impact. The MOC process aims to ensure that any change request is formally reviewed and well documented by qualified personnel prior to approval while making certain that the asset's functional purpose is maintained or enhanced. The process is accessible to all Maximo users and has documented over 168 MOCs. The imperatives of Reliable, Resilience, Sustainable and Health, Safe and Well are at the core objectives of the Blue Plains MOC process. With the MOC process, DWT has executed many asset modifications that focus on the Health, Safe and Well Imperative like installing a hoist system to safely maintain heavy equipment and change a shaft seal to stop leaking of sludge that creating slippery and hazardous conditions. The focus on the Resilience Imperative introduced changes to help us adapt to shocks and stresses in our system by changing an asset power source to prevent service interruptions should one of the MCC's lose power or be shut down for maintenance. The MOC decision making focuses a lot on the Resilience Imperative approach using life-cycle analysis of an asset such as changing from plug valves to knife gate valves to reduce maintenance cost and downtime. The focus on the Reliable Imperative reviews the request based on data such as the increased failures on the Thermal Hydrolysis Process (THP) valves and the change to a different more reliable manufacturer. The MOC process embodies the Sustainable Imperative that increases operational efficiency by

	identifying opportunities to better control expenditures (cost, labor and downtime) that enable us to find cost savings and invest them back into the organization to be more Resilient, Reliable and Safe.
Operational Performance	**Blue Plains Complete Treatment Performance:** The plant performance for the month of December 2021 was excellent with all effluent parameters well below the seven-day and monthly NPDES permit requirements. The monthly average flow through complete treatment (Outfall 002) was 229 MGD. There was no treated captured combined flow directed to Outfall 001 from the Wet Weather Treatment Facility (WWTF). *Figure 1. Monthly Average Influent Flow Trend to Complete Treatment (MGD)* 

Operational Performance

Total Nitrogen (TN) Removal Performance: Figure 2 below shows total annual nitrogen discharge, in million pounds per year, over a 10-year period ending December 2021. For the calendar year 2021, the total nitrogen discharged through Outfall 002 was approximately 3.16 million pounds or 1.22 million pounds below the 4.37 million pounds required to protect the Chesapeake Bay. The permit limit is considered as one of the most stringent limits in the world. The performance corresponds to an average flow of 304 MGD, maximum month flow of 375 MGD, and average wastewater temperature above 16 ºC observed during the period. The Blue Plains Enhanced Nitrogen Removal Facility (ENRF) is designed to meet the TN discharge limits at influent loads corresponding to annual average flows of 370 MGD, maximum month flows of 485 MGD, and operating wastewater temperatures below 12ºC.

Figure 2. Blue Plains Total Annual Nitrogen Discharged to Outfall 002.



Wet Weather Treatment Facility (WWTF) Performance: In December 2021, a total of 11 MG of combined wet weather flow, captured in the tunnel system, was treated through the plant. There was no measured overflow that took place this month (Table 1).

Table 1. Wet Weather Treatment Facility (WWTF) Performance

	December 2021*	Calendar Year 2021 (Through December)
Total Precipitation, inches (DCA gauge)	0.38	42.01
Total Volume Captured in the Anacostia Tunnel, MG	11	2,390
Measured Overflow, MG	0	86
Percent Captured**	100%	97%
Screenings and Grit Capture, tons		2,892

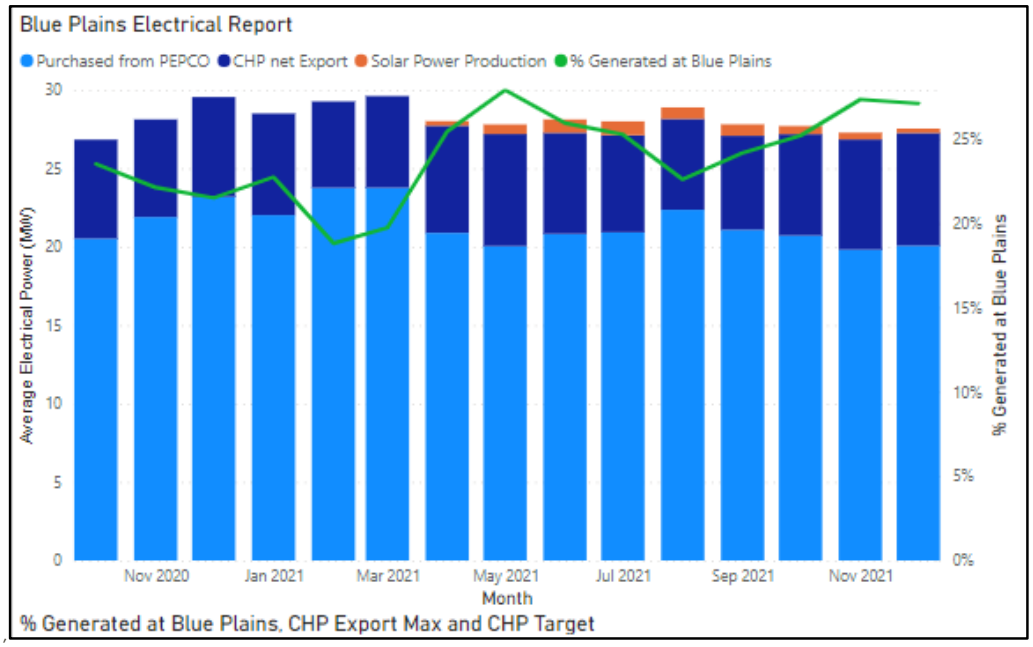
Note: *Based on preliminary data.

**Expected Capture ~80%

Operational Performance

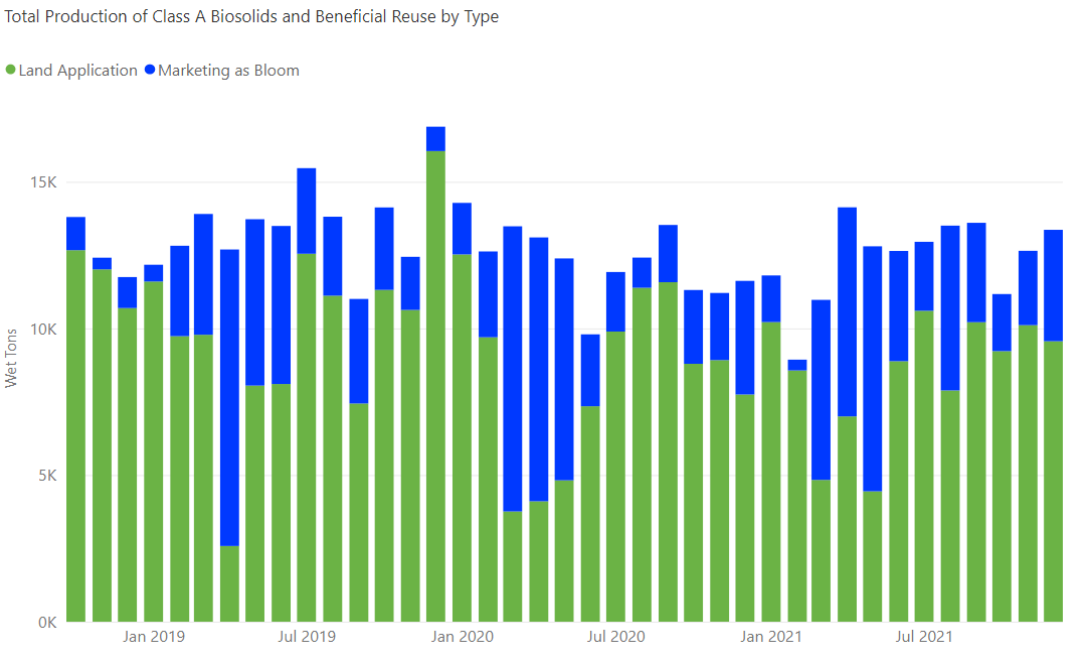
Blue Plains Electrical Energy Use and Generation: The Combined Heat and Power (CHP) facility produced an average of 8.5 megawatts (MW) of renewable electricity during this month. Contractually, the CHP performance is evaluated based on the net electricity export to the Blue Plains grid, which averaged 7.2 MW as shown in Figure 2 below. The solar system produced an additional 0.28 MW of power on average. The total electricity consumption at Blue Plains averaged 27.3 MW during the month of November. Out of total electrical consumption, 27% of electricity was generated onsite between CHP and solar panels, which surpassed the plant performance metrics of 20%. DC Water purchased an average of 20.1 MW of electricity from PEPCO as shown in the graph below.

Figure 3. Blue Plains Energy Report – Average Electricity Purchased from PEPCO (light blue), Net Export from CHP (dark blue), Solar Power Production (orange) and % of Total Plant Electricity Use Generated Onsite (green line on right Y-axis)



Class A Biosolids Production: In December, biosolids hauling averaged 431 wet tons per day (wtpd). All biosolids produced during the month met Class A Exceptional Quality (EQ) requirements required by EPA. Fecal Coliform values on daily process monitoring samples remained below the 1,000 MPN*/gram required for Class A biosolids - consistent with the low levels measured historically.

*Most Probable Number (MPN) per gram measures statistical probability of number of organisms

Operational Performance	**Bloom Marketing**: The average quantities of Class A biosolids transported and applied on farms and the quantities marketed as Bloom are shown on the graph below. In December, Blue Drop sold 3,798 wet tons of Bloom (Figure 3). The remaining 9,563 wet tons not sold into the market were land applied through DC Water (through Blue Drop) and WSSC contracts. *Figure 4. Tons of Class A Biosolids Produced - October 2018 to December 2021 Marketed as Bloom (blue) and Land Applied (green)* 
Progress Report	**Water Quality & Pretreatment:** The Final Rulemaking for the new FY22 sewer rate of $3.03/Ccf for high flow filter backwash was published in the DC Register and became effective on December 17, 2021. This new rate was developed to accommodate the anticipated 2.8 MGD filter backwash discharge from the Washington Aqueduct in early 2022. Elaine Wilson (Manager, Water Quality and Pretreatment) presented proposed revisions to the Intermunicipal Agreement (IMA) Operating Agreement (OA) #5 to the Metro Washington Council of Governments (MWCOG) Regional Committee on December 16, 2021. Proposed revisions to OA#5, last updated in 2016, including changing the prohibition on out of service area trucked waste to a conditional acceptance if approved by DC Water and monitoring for and prohibiting all trucked waste containing measurable Polychlorinated biphenyls (PCBs) were acceptable to the Regional Committee members and approved for submittal to the Legal Workgroup.

Progress Report

Research & Development:

Solids concentration measurements are used to manage, for example dilution rates for the thermal hydrolysis process. Mixed liquor sensors based on the dual scattered light method are a proven technology and commonly used in wastewater resource recovery facilities. In biosolids processing facilities where thickened sludge is processed, solids measurement become more challenging and labor intensive. There are different types of sensors used for measuring Total Solids (TS) concentrations such as microwave technology, infrared suspended solids, density meter with ultra-sonic technology etc. Due to measuring limitations driven by locations, TS concentration range, maintenance requirements and accuracy, there is a need for TS measurement sensors with low maintenance, low cost, and fast and reliable response especially for application with TS concentrations above 2% TS. Currently at Blue Plains, operators are doing field measurements (up to 6 times per day) to provide the necessary data for decision making. Density meters are being evaluated but remain labor intensive and are expensive (~$20k). Therefore, the research team proposed the ***use of a passive acoustic sensor as an inexpensive, flexible location, and maintenance-free device to measure the TS concentrations of different types of sludge***. The acoustic sensor is mounted on the outside of the pipe and thus never touches the sludge, decreasing the need for maintenance significantly. Acoustics have been used in other sectors to measure particle size distribution and bubble concentration and principles of viscosity measurements are acoustic based. The research team developed a prototype acoustic sensor setup, and the prototypes were installed in 3 locations within the biosolids treatment facility at Blue Plains WWRF providing a wide range of TS concentrations targeted from about 3-17% TS.

Initial results show successful TS predictions in each location despite differences in pipe size, pipe material, flow regime and TS concentration range. We continue to perform additional sampling to increase the dataset and optimize the models further. The next step would be to evaluate if one can develop a global prediction model that, with only a few samples, can be trained to the new location and thus might potentially allow for rapid deployment.

F*igure 5. Passive Acoustic Sensors under development for use by Operators as alternative but more reliable, low maintenance, and inexpensive tool to enhance monitoring of solids*

Progress Report

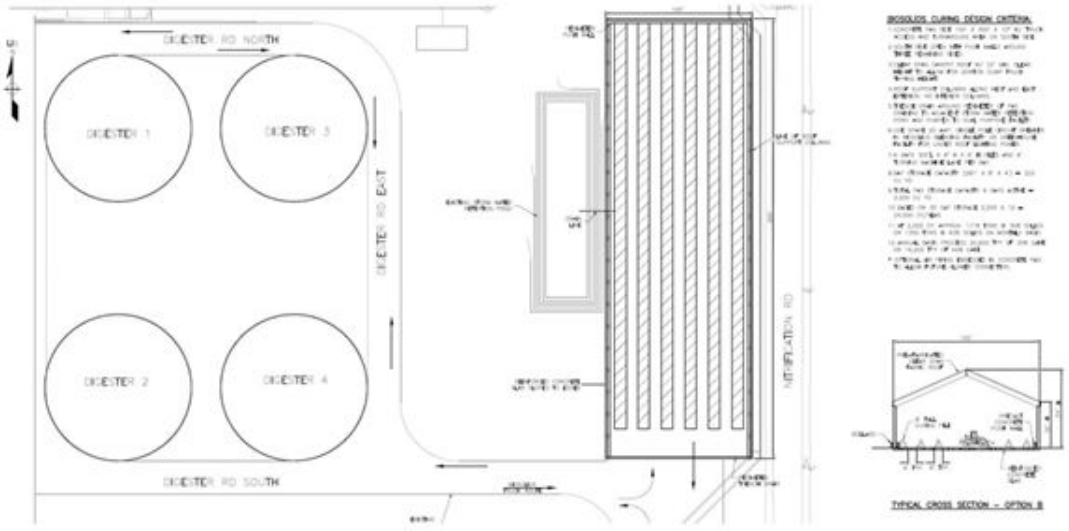
Bloom Product Blending and Curing

At Blue Plains, we have a small blending facility in which we make a series of blends for sale to construction firms, landscapers, and contractors. At this facility we can make up to 200 cubic yards (cy) of material per day, containing approximately 50-75 tons of Bloom per day, or approximately 15,000 tons per year (10% of total annual production). Volumes are limited by space constraints and product quality preservation – if the mixes sit outside and soak in rain, they lose value. In order to combat this, we erected a hoop storage building to store mixes in anticipation of sales orders. This allows us to produce more and do so ahead of orders.

Figure 6. Blending Facility and Hoop Storage Building

In June 2022 we will begin the design for a curing pad, to be located adjacent to the blending facility. Making cured Bloom will allow us to sell the products at a much higher price, and we can bag material for sale in hardware stores. Currently, we sell bagged material that we ship to VA for bagging and then back into DC for sales. All this transportation adds to costs and cuts into revenue, and the curing pad will allow us to be much more efficient. At full capacity, this facility will cure approximately 20,0000 tons per year and will increase on-site production of blended and cured bloom to 35,000 tons per year (22% of total annual production). Construction is due to begin in FY23.

Figure 7. Curing Pad Initial Design



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

ACTION REQUESTED

GOODS AND SERVICES CONTRACT OPTION YEAR
PROTECTIVE SERVICES
(Joint Use)

Approval to exercise option year 9 for protective services in the amount of $6,530,000.00.

CONTRACTOR/SUB/VENDOR INFORMATION

PRIME:	SUBS:	PARTICIPATION:
Allied Universal Security Services 1551 N. Tustin Avenue Suite 650 Santa Ana, CA 92705	Preeminent Protective Services Inc. 1050 17th Street, NW, Suite 600 Washington, DC 20036 LSBE	15% LSBE

DESCRIPTION AND PURPOSE

Base Year Contract Value:	$4,934,348.12
Base Year Contract Date:	12-16-2012 – 12-15-2013
Option Year 1 – Option Year 4 Value:	$20,143,632.25
Option Year 1 – Option Year 4 Dates:	01-16-2014 – 02-13-2018
Option Year 5 Value:	$5,847,481.76
Option Year 5 Dates*:	02-14-2018 – 02-13-2019
Option Year 6 Value:	$5,300,000.00
Option Year 6 Dates:	02-14-2019 – 02-13-2020
Prior Modification Value	$891,102.47
Prior Modification Dates:	12-16-2020 – 03-13-2020
Option Year 7 Value:	$5,436,000.00
Option Year 7 Dates:	03-14-2020 – 03-13-2021
Option Year 8 Value:	$5,500,000.00
Option Year 8 Dates:	03-14-2021 – 03-13-2022
Option Year 9 Value:	**$6,530,000.00**
Option Year 9 Dates:	**03-14-2022 – 03-13-2023**

* During option year 4, DC Water resolicited this contract. Incumbent Allied Universal Security was again awarded with the work and the contract was extended.

Purpose of the Contract:
The purpose of this contract is to purchase protective services. The contractor, Allied Universal Security, provides protective services for all of DC Water's facilities and personnel.

Contract Scope:
The contact will provide highly trained and reliable commissioned Special Police Officers (SPOs) to safeguard DC Water's property and personnel, to prevent and deter unauthorized access or removal of property, and to assist DC Water in all other security related matters. This is last year of this contract and new solicitation will be issued in 2022.

Spending Previous year:

Cumulative Contract Value:	12-16-2012 to 03-13-2022: $48,052,564.00
Cumulative Contract Spending:	12-16-2012 to 12-01-2021: $43,924,844.00

Contractor's Past Performance:
According to the COTR, the Contractor's quality of products and services, timeliness of deliverables; conformance to DC Water's policies, procedures and contract terms; and invoicing, all meet expectations and requirements.

PROCUREMENT INFORMATION

Contract Type:	Goods and Services	**Award Based On:**	Highest Rated Offeror
Commodity:	Security	**Contract Number:**	WAS-12-063-AA-RA
Contractor Market:	Open Market with Preference Points for Local and Small Businesses		

BUDGET INFORMATION

Funding:	Operating	**Department:**	Department of Security
Service Area:	Blue Plains AWTP	**Department Head:**	Ivelisse Cassas

ESTIMATED USER SHARE INFORMATION

User	Share %	Dollar Amount
District of Columbia	70.05%	$4,574,265.00
Washington Suburban Sanitary Commission	21.95%	$1,433,335.00
Fairfax County	5.15%	$336,295.00
Loudoun County	2.54%	$165,862.00
Other (PI)	0.31%	$20,243.00
TOTAL ESTIMATED DOLLAR AMOUNT	**100.00%**	**$6,530,000.00**

Maureen Holman Esq. /01/04/2022
Maureen Holman Date
VP of Shared Services

Dan Bae
C=US, E=dan.bae@dcwater.com, O=District of Columbia Water and Sewer Authority, OU=VP of Procurement & Compliance, CN=Dan Bae
2022.01.04 18:50:02-05'00'
Dan Bae Date
VP of Procurement and Compliance

Matthew T. Brown
Digitally signed by Matthew T. Brown
Date: 2022.01.06 09:40:03 -05'00'
Matthew T. Brown Date
CFO and EVP of Finance and Procurement

_____/_____
David L. Gadis Date
CEO and General Manager

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

ACTION REQUESTED

GOODS AND SERVICES CONTRACT MODIFICIATION
For Temporary Staffing Services
(Joint Use and Non-Joint Use)

Approval to add funding to the Temporary Staffing Services contracts with Mb Staffing Services LLC in the amount of $1,956,094.00 and Premier Staffing Source Inc. in the amount of $200,000.00.

CONTRACTOR/SUB/VENDOR INFORMATION		
PRIME:	**SUBS:**	**PARTICIPATION:**
Mb Staffing Services LLC 819 7th St. Suite 311 Washington, DC 20001	N/A	LSBE - 100%
Premier Staffing Source Inc. 4640 Forbes Boulevard, Suite # 200A Lanham, MD 20706	N/A	LSBE - 100%

DESCRIPTION AND PURPOSE		
	Mb Staffing	**Premier Staffing**
Original Contracts Value:	$200,000.00	$200,000.00
Original Contracts Dates:	11-01-2016 – 10-31-2017	11-01-2016 – 10-31-2017
No. of Option Years in the Contract:	4	4
Base Year Modification Value:	$319,912.31	$0.00
Base Year Modification Dates:	04-01-2017 – 10-31-2017	
Option Year No.1 Value:	$1,299,689.60	$100,000.00
Option Year No.1 Dates:	11-01-2017 – 10-31-2018	11-01-2017 – 10-31-2018
Option Year No. 2 Value:	$2,030,300.00	$648,862.00
Option Year No. 2 Dates:	11-01-2018 – 10-31-2019	11-01-2018 – 10-31-2019
Option Year 2 Modification Value:	$187,200.00	$12,800.00
Option Year 2 Modification Dates:	10-01-2019 – 10-31-2019	10-01-2019 – 10-31-2019
Option Year No. 3 Value:	$1,009,026.16	$173,000.00
Option Year No. 3 Dates:	11-01-2019 – 10-31-2020	11-01-2019 – 10-31-2020
Option Year No.3 Modification Value:	$410,657.91	$408,795.00
Option Year No.3 Modification Dates:	10-04-2019 – 10-31-2020	11/05/2019 – 10-31-2020
Option Year No. 4 Value:	$1,318,610.56	$155,000.00
Option Year No. 4 Dates:	11-01-2020 – 10-31-2021	11-01-2020 – 10-31-2021
Option Year No. 4 Extension Value:	$0.00	$0.00
Option Year No. 4 Extension Dates:	11-01-2021 – 10-31-2022	11-01-2021 – 10-31-2022
Option Year No. 4 Additional Funding:	**$1,956,094.00**	**$200,000.00**

Purpose of the Contract:

The purpose of this contract is to supply Temporary Staffing Services for DC Water. These services are needed for special projects (including long and short-term) and staff vacancies. Departments submit individual requests for temporary staffing services as their needs arise.

Contract Modification:

This contract action adds funding to extend Option Year 4 of the two current Temporary Staffing contracts. Following are the associated breakdowns of the Capital budget of $1,017,700.00 and the Operating budget of $1,138,394.00, totaling $2,156,094.00:

Department-Unit	Operating Budget	Capital Budget
Engineering		$1,017,700.00
Customer Service	$350,000.00	
Procurement-Water Works	$100,000.00	
Waste-Water Treatment	$238,394.00	
People and Talent	$425,000.00	
Board Secretary	$25,000.00	
TOTAL	$1,138,394.00	$1,017,700.00

Spending Previous Year:

Cumulative Contracts' Value:	11-01-2016 to 10-31-2021:	$8,473,853.54
Cumulative Contract Spending:	11-01-2016 to 01-12-2021:	$7,259,405.32

Contractor's Past Performance:

According to the COTR, the Contractor's quality and timeliness of deliverables, conformance to DC Water's policies, procedures and contract terms, and invoicing all meet expectations and requirements.

PROCUREMENT INFORMATION

Contract Type:	Fixed Hourly Rate	**Award Based On:**	Highest Ratings
Commodity:	Good and Services	**Contract Number:**	16PRHCM44AC/AD
Contractor Market:	Open Market with Preference Points for LBE and LSBE Participation		

BUDGET INFORMATION

Funding:	Operating	**Department:**	DC Water Wide
Project Area:	DC Water Wide	**Department Head:**	Lisa Stone

ESTIMATED USER SHARE INFORMATION

User – Operating	Share %	Dollar Amount
District of Columbia	42.79%	$487,118.79
Washington Suburban Sanitary Commission	41.94%	$477,442.44
Fairfax County	9.83%	$111,904.13
Loudoun Water	4.85%	$55,212.11
Other (PI)	0.59%	$6,716.52
TOTAL ESTIMATED DOLLAR AMOUNT	**100.00%**	**$1,138,394.00**

BUDGET INFORMATION

Funding:	Capital	**Department:**	Wastewater Engineering
Service Area:	Wastewater	**Department Head:**	David Parker
Project:	CW, TZ		

User - Capital	**Share %**	**Dollar Amount**
District of Columbia	41.22%	$99,217.00
Washington Suburban Sanitary Commission	45.84%	$110,337.00
Fairfax County	8.38%	$20,171.00
Loudoun Water	3.73%	$8,978.00
Other (PI)	0.83%	$1,998.00
TOTAL ESTIMATED DOLLAR AMOUNT	**100.00%**	**$240,700.00**

BUDGET INFORMATION

Funding:	Capital	**Department:**	Engineering and Technical Services (DETS)
Service Area:	Sanitary Sewer, Water, Combined Sewer	**Department Head:**	Mark Babbitt (Acting)
Project:	FQ, HX, A4		

User - Capital	**Share %**	**Dollar Amount**
District of Columbia	100%	$777,000.00
Washington Suburban Sanitary Commission	0%	$0.00
Fairfax County	0%	$0.00
Loudoun Water	0%	$0.00
Other (PI)	0%	$0.00
TOTAL ESTIMATED DOLLAR AMOUNT	**100.00%**	**$777,000.00**

Lisa Stone
Digitally signed by Lisa Stone
Date: 2022.01.13 09:18:23 -05'00'
_____/_____
Lisa Stone Date
CPIO and EVP, People and Talent

Kishia L Powell
Digitally signed by Kishia L Powell
Date: 2022.01.13 09:38:09 -05'00'
_____/_____
Kishia L. Powell Date
COO and EVP

Dan Bae
C=US, E=dan.bae@dcwater.com, O=District of Columbia Water and Sewer Authority, OU=VP of Procurement & Compliance, CN=Dan Bae
2022.01.13 09:55:01 -05'00'
_____/_____
Dan Bae Date
VP, Procurement and Compliance

Matthew T. Brown
Digitally signed by Matthew T. Brown
Date: 2022.01.13 12:16:10 -05'00'
_____/_____
Matthew T. Brown Date
CFO and EVP, Finance and Procurement

_____/_____
David L. Gadis Date
CEO and General Manager

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

ACTION REQUESTED

ENGINEERING SERVICES:

Construction Management Basic Ordering Agreement (BOA-9)
Wastewater Treatment Facilities
(Joint Use)

Approval to execute an architectural and engineering services contract not to exceed $8,000,000.00 for the contract period of three years plus two renewal periods of one year each. The renewal periods will be approved at DC Water's sole discretion.

CONTRACTOR/SUB/VENDOR INFORMATION

PRIME:	SUBS:		PARTICIPATION:
WSP USA, Inc 1250 23rd Street NW, Suite 300 Washington, DC 20037 Headquarters New York, NY	Techno Consultant Inc Princeton, NJ	DBE	9.0%
	BVF Engineering Columbia, MD	DBE	8.0%
	DME Engineering Laurel, MD	DBE	7.0%
	DMY Capitol Washington, DC	DBE	5.0%
	SZ PM Consultants Washington, DC	WBE	6.0%

DESCRIPTION AND PURPOSE

Contract Value, Not-To-Exceed:	$8,000,000.00	
Contract Time:	1,096 Days	(3 Years, 2 option years)
Anticipated Contract Start Date:	04-01-2022	
Anticipated Contract Completion Date:	04-01-2025	

Other firms submitting proposals/qualification statements:

AECOM*

Black and Veatch

Brown and Caldwell

Delon, Hampton & Associates

Gannett Fleming

Johnson, Mirmiran and Thompson

Ramboll*

Whitman Requardt and Associates

* Asterisk indicates short listed firms.

Purpose of the Contract:

To provide onsite construction management and related engineering services for the DC Water Blue Plains Advanced Wastewater Treatment Plant on as as-needed basis through individually negotiated task orders.

Contract Scope:

- Task orders will provide construction management and related engineering services for CIP projects as needed.

- Professional services are anticipated in the following disciplines: civil, structural architectural, process mechanical, plumbing, HVAC, instrumentation, and control and electrical.
- Projects will include upgrades and additions to various facilities and structures at the Blue Plains Advanced Wastewater Treatment Plant
- Additional projects will include critical upgrades at the various DC Water Storm and Sanitary Pump Stations and the various assets associated with DC Water's collection system
- Work will be accomplished through a series of definitive Task Orders. Each task order will identify the scope of work, deliverables, compensation, and schedule for performance.

PROCUREMENT INFORMATION

Contract Type:	Cost Plus Fixed Fee	**Award Based On:**	Highest Ranking Score
Commodity:	Engineering Services	**Contract Number:**	DCFA #514 WSA
Contractor Market:	Open Market		

BUDGET INFORMATION

Funding:	Capital	**Department:**	Wastewater Engineering
Service Area:	Wastewater	**Department Head:**	David Parker
Project:	BC, BQ, BT, V1		

ESTIMATED USER SHARE INFORMATION

User	Share %	Dollar Amount
District of Columbia	41.22%	$ 3,297,600.00
Federal Funds	0.00%	$
Washington Suburban Sanitary Commission	45.84%	$ 3,667,200.00
Fairfax County	8.38%	$ 670,400.00
Loudoun County & Potomac Interceptor	4.56%	$ 364,800.00
Total Estimated Dollar Amount	**100.00%**	**$ 8,000,000.00**

Salil M Kharkar

Digitally signed by Salil M Kharkar
DN: dc=com, dc=dcwasa, ou=WASA Users, ou=Waste Water Operations, cn=Salil M Kharkar, email=Salil.Kharkar@dcwater.com
Date: 2022.01.05 14:56:15 -05'00'

Salil Kharkar / Date
Senior Technical Advisor to COO

Matthew T. Brown

Digitally signed by Matthew T. Brown
Date: 2022.01.06 09:58:56 -05'00'

Matthew T. Brown / Date
CFO and EVP
Finance and Procurement

Dan Bae
C=US, E=dan.bae@dcwater.com, O=District of Columbia Water and Sewer Authority, OU=VP of Procurement & Compliance, CN=Dan Bae
2022.01.06 09:28:55-05'00'

Dan Bae, VP / Date
Procurement and Compliance

David L. Gadis / Date
CEO and General Manager

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

ACTION REQUESTED

ENGINEERING SERVICES:

Construction Management Basic Ordering Agreement (BOA-10) - Wastewater Treatment Facilities (Joint Use)

Approval to execute an architectural and engineering services contract not to exceed $8,000,000.00 for the contract period of three years plus two renewal periods of one year each. The renewal periods will be approved at DC Water's sole discretion.

CONTRACTOR/SUB/VENDOR INFORMATION

PRIME:	SUBS:		PARTICIPATION:
AECOM 3101 Wilson BLVD – STE 900 Arlington, VA 22201 <u>Headquarters</u> Los Angeles, CA	Cube Root Corporation Washington, DC	DBE	10.0%
	SZ PM Consultants Washington, DC	DBE	10.0%
	BVF Engineering Columbia, MD	DBE	5.0%
	Winstead Management Group Richmond, VA	DBE	5.0%
	Sigma Associates Washington, DC	WBE	7.0%
	The Robert Balter Company Owings Mills MD	WBE	4.0%

AECOM has established a Mentor-Protégé relationship with Cube Root Corporation and SZ PM Consultants, in support of the DBE/WBE utilization for this project.

DESCRIPTION AND PURPOSE

Contract Value, Not-To-Exceed:	$8,000,000.00	
Contract Time:	1,096 Days	(3 Years, 2 option years)
Anticipated Contract Start Date:	04-01-2022	
Anticipated Contract Completion Date:	04-01-2025	

Other firms submitting proposals/qualification statements:

Black and Veatch
Brown and Caldwell
Delon, Hampton & Associates
Gannett Fleming
Johnson, Mirmiran and Thompson
Ramboll*
Whitman Requardt and Associates
WSP USA, INC*
* Asterisk indicates short listed firms.

Purpose of the Contract:

To provide onsite construction management and related engineering services for the DC Water Blue Plains Advanced Wastewater Treatment Plant on as as-needed basis through individually negotiated task orders.

Contract Scope:

- Task orders will provide construction management and related engineering services for CIP projects as needed.
- Professional services are anticipated in the following disciplines: civil, structural architectural, process mechanical, plumbing, HVAC, instrumentation, and control and electrical.
- Projects will include upgrades and additions to various facilities and structures at the Blue Plains Advanced Wastewater Treatment Plant.
- Additional projects will include critical upgrades at the various DC Water Storm and Sanitary Pump Stations and the various assets associated with DC Water's collection system.
- Work will be accomplished through a series of definitive Task Orders. Each task order will identify the scope of work, deliverables, compensation, and schedule for performance.

PROCUREMENT INFORMATION

Contract Type:	Cost Plus Fixed Fee	**Award Based On:**	Highest Ranking Score
Commodity:	Engineering Services	**Contract Number:**	DCFA #528 WSA
Contractor Market:	Open Market		

BUDGET INFORMATION

Funding:	Capital	**Department:**	Wastewater Engineering
Service Area:	Wastewater	**Department Head:**	David Parker
Project:	LD, JF, IC, TZ, V1		

ESTIMATED USER SHARE INFORMATION

User	Share %	Dollar Amount
District of Columbia	41.22%	$ 3,297,600.00
Federal Funds	0.00%	$
Washington Suburban Sanitary Commission	45.84%	$ 3,667,200.00
Fairfax County	8.38%	$ 670,400.00
Loudoun County & Potomac Interceptor	4.56%	$ 364,800.00
Total Estimated Dollar Amount	**100.00%**	**$ 8,000,000.00**

Salil M Kharkar

Digitally signed by Salil M Kharkar
DN: dc=com, dc=dcwasa, ou=WASA Users, ou=Waste Water Operations, cn=Salil M Kharkar, email=Salil.Kharkar@dcwater.com
Date: 2022.01.05 14:53:58 -05'00'

Salil Kharkar / Date
Senior Technical Advisor to COO

Matthew T. Brown

Digitally signed by Matthew T. Brown
Date: 2022.01.06 09:57:01 -05'00'

Matthew T. Brown / Date
CFO and EVP
Finance and Procurement

Dan Bae
C=US, E=dan.bae@dcwater.com, O=District of Columbia Water and Sewer Authority, OU=VP of Procurement & Compliance, CN=Dan Bae
2022.01.06 09:29:16-05'00'

Dan Bae, VP / Date
Procurement and Compliance

David L. Gadis / Date
CEO and General Manager

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

ACTION REQUESTED

CONSTRUCTION CONTRACT:
Inspection and Cleaning of Small and Large Diameter Sewers (Joint Use)

Approval to execute a construction contract for $5,998,550.00

CONTRACTOR/SUB/VENDOR INFORMATION

PRIME:	SUBS:		PARTICIPATION:
RedZone Robotics, Inc 195 Thorn Hill Road Suite 110 Warrendale, PA 15086	Arthur Engineering Services, LLC Laurel, MD	DBE	12.5%
	EBA Engineering, Inc Laurel, MD	DBE	5.0%
	CCTV Master, LLC Baltimore, MD	DBE	7.5%
	Sunrise Safety Services, Inc Glen Burnie, MD	WBE	5.0%
	Traffic Services & Control, LLC Oxon Hill, MD	WBE	5.0%

Redzone Robotics Inc has established Mentor-Protégé relationships with Arthur Engineering Inc., Sunrise Safety Services, and Traffic Services and Control, in support of the DBE/WBE utilization for this project.

DESCRIPTION AND PURPOSE

Contract Value, Not-To-Exceed:	$5,998,550.00
Contract Time:	1,095 Days (3 Years)
Anticipated Contract Start Date (NTP):	03-10-2022
Anticipated Contract Completion Date:	03-09-2025
Bid Opening Date:	10-20-2021
Bids Received:	3
Other Bids Received	
Savin Engineers, P.C.	$8,814,850.00
Mobile Dredging and Video Pipe	$9,986,925.00

Purpose of the Contract:

This contract is needed to procure competent contractors to help DC Water with the assessment of local sewers. Under this contract, DC Water plans to inspect a total of 120 miles of local sewers from FY22 to FY25.

Contract Scope:

Scope of this contract includes:

1. Project management including coordination with internal and external agencies, preparation of traffic control plans, and acquisition of permits.
2. CCTV inspection of approximately 190,000 linear feet of combined and sanitary sewers.
3. Light cleaning and CCTV inspection of approximately 190,000 linear feet of sanitary sewers.
4. Combined CCTV/Sonar inspection of approximately 158,000 linear feet of sanitary sewers.
5. Sonar inspection of approximately 1,500 linear feet of combined and sanitary sewers.
6. Laser/CCTV inspection of approximately 32,000 linear feet of combined and sanitary sewers.
7. Multi-Sensor Inspection of approximately 62,000 linear feet of combined and sanitary sewers.
8. Inspection of approximately 1,800 manholes and structures.

Federal Grant Status:

- Construction Contract is not eligible for Federal grant funding assistance.

PROCUREMENT INFORMATION

Contract Type:	Unit Price	**Award Based On:**	Best Value
Commodity:	Construction	**Contract Number:**	220010
Contractor Market:	Open Market		

BUDGET INFORMATION

Funding:	Capital	**Department:**	Engineering and Technical Services
Service Area:	Sanitary	**Department Head:**	Mark Babbitt (Acting)
Project:	QX		

ESTIMATED USER SHARE INFORMATION

User	Share %	Dollar Amount
District of Columbia*	100.00%	$5,998,550.00
Federal Funds	0.00%	$0.00
Washington Suburban Sanitary Commission	0.00%	$0.00
Fairfax County	0.00%	$0.00
Loudoun County & Potomac Interceptor	0.00%	$0.00
Total Estimated Dollar Amount	**100.00%**	**$5,998,550.00**

*Work under this contract will be assigned as needed under specific tasks. It is anticipated that Joint Use work may be assigned during the contract period. As tasks are developed for work associated with specific sewers and costs are developed, the individual users will be notified and billed according to agreed cost-sharing.

Salil M Kharkar / January 6, 2022
Salil M Kharkar / Date
Senior Technical Advisor to COO

Dan Bae / January 6, 2022
Dan Bae, VP / Date
Procurement and Compliance

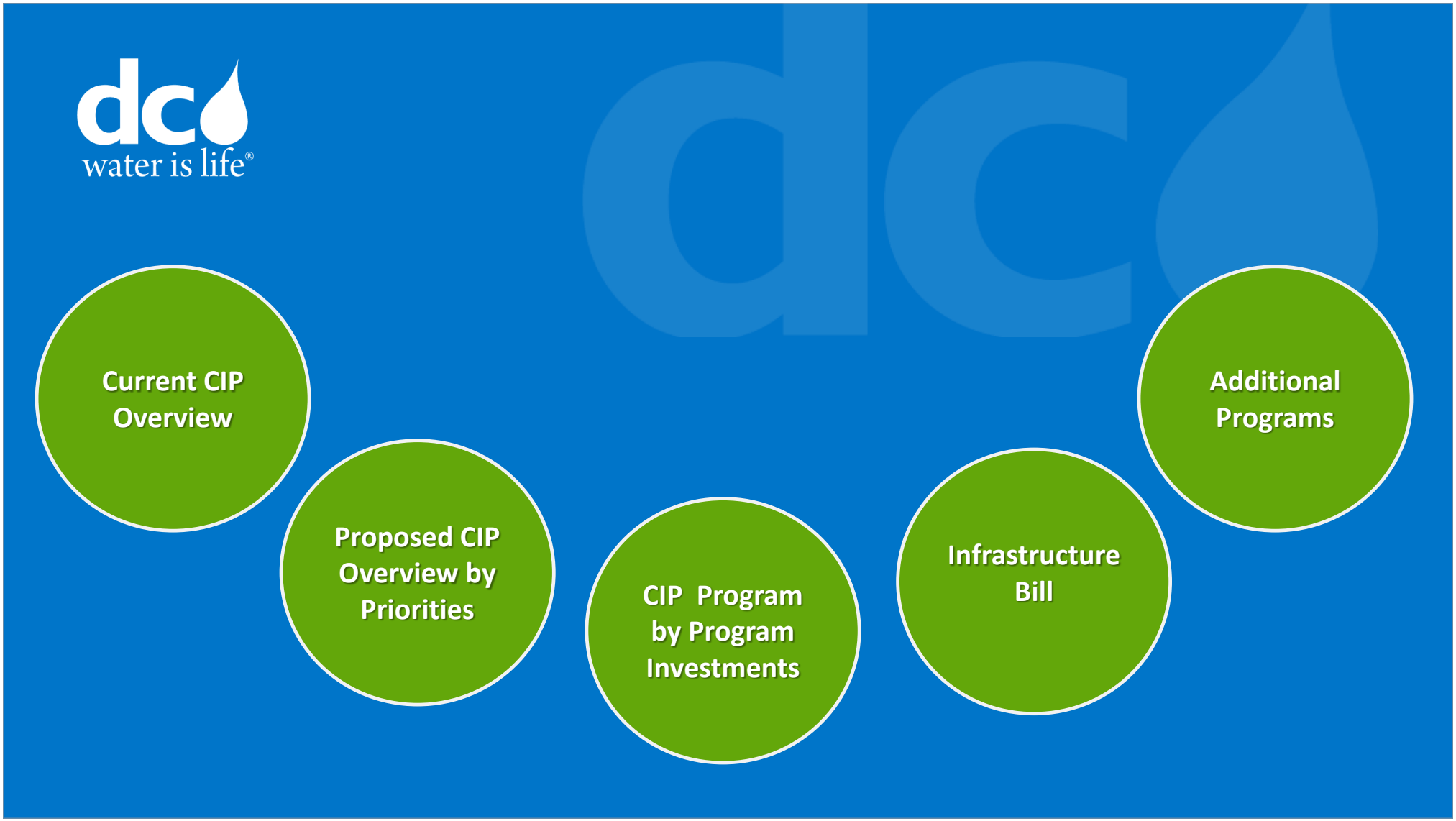
Matthew T. Brown / January 6, 2022
Matthew T. Brown / Date
CFO and EVP
Finance and Procurement

/
David L. Gadis / Date
CEO and General Manager

dc water is life®

Proposed FY2022 – 2031 Capital Improvement Program

Presentation to Environmental Quality and Operations Committee • January 20, 2022


dc water is life®
Current CIP Overview
Proposed CIP Overview by Priorities
CIP Program by Program Investments
Infrastructure Bill
Additional Programs

DC Water

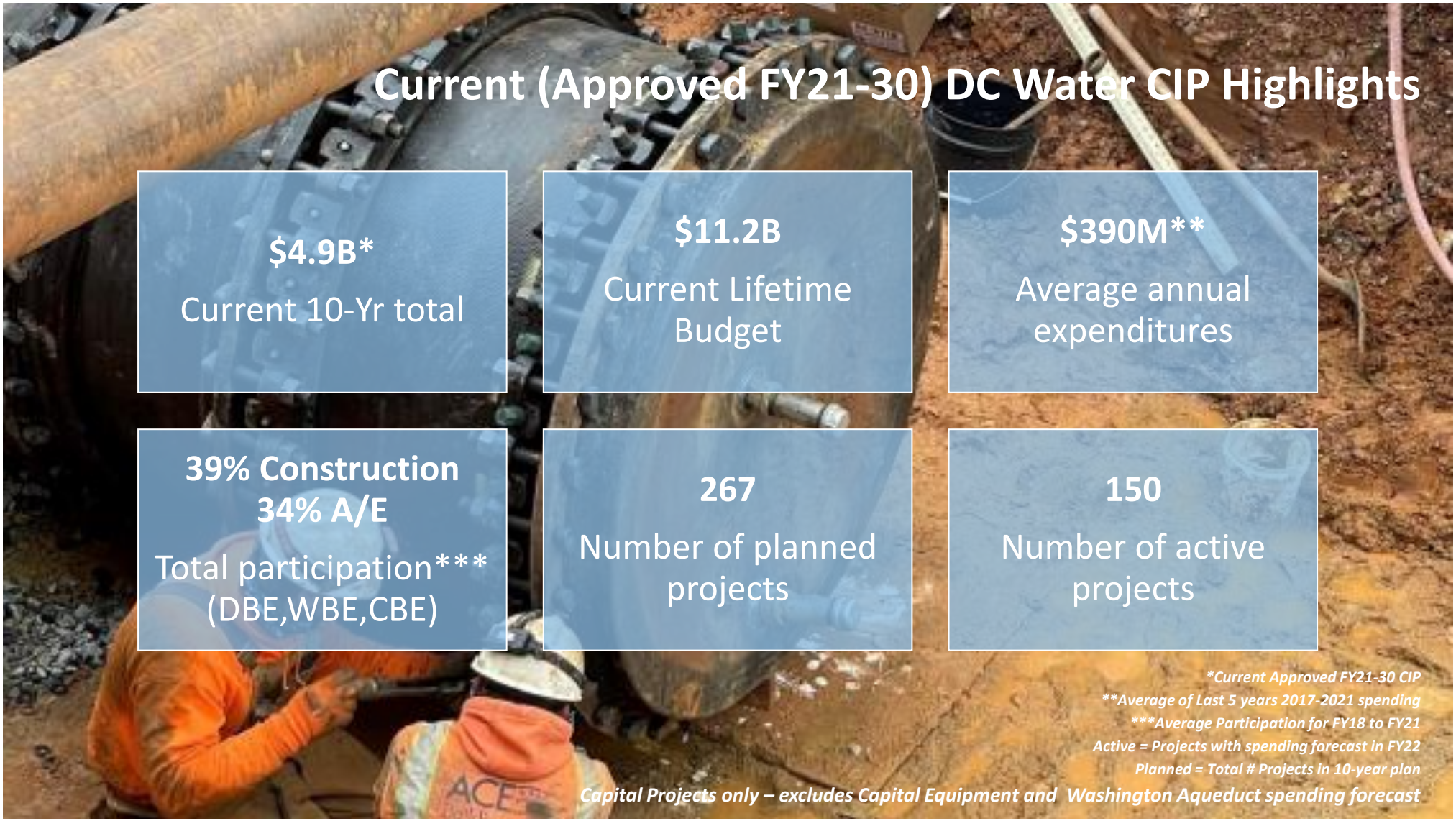
- Our responsibilities include managing over **$7.5 billion in assets**, including the world's largest Advance Wastewater Treatment and Resource Recovery Facility, Blue Plains.
- We make infrastructure investments that help protect **$122 billion in the District's GDP.**
- For every **$1 million** we invest in capital,
  there is an economic impact of **15.5 jobs**
  (direct, indirect and induced).
- DC Water's **economic impact, over 10 years, is an estimated 83,700 jobs.**

DC Water System Overview

To distribute drinking water, DC Water operates more than **1,350 miles** of pipes, **four** pumping stations, five reservoirs, four elevated water storage tanks, 43,860 valves and 9,500 public hydrants.

To collect wastewater, DC Water operates **1,800 miles** of sanitary and combined sewers, 22 flow-metering stations, and **nine** off-site wastewater pumping stations.

To treat wastewater, DC Water operates the **Blue Plains** Advanced Wastewater Treatment Plant, the largest advanced wastewater treatment facility in the world.

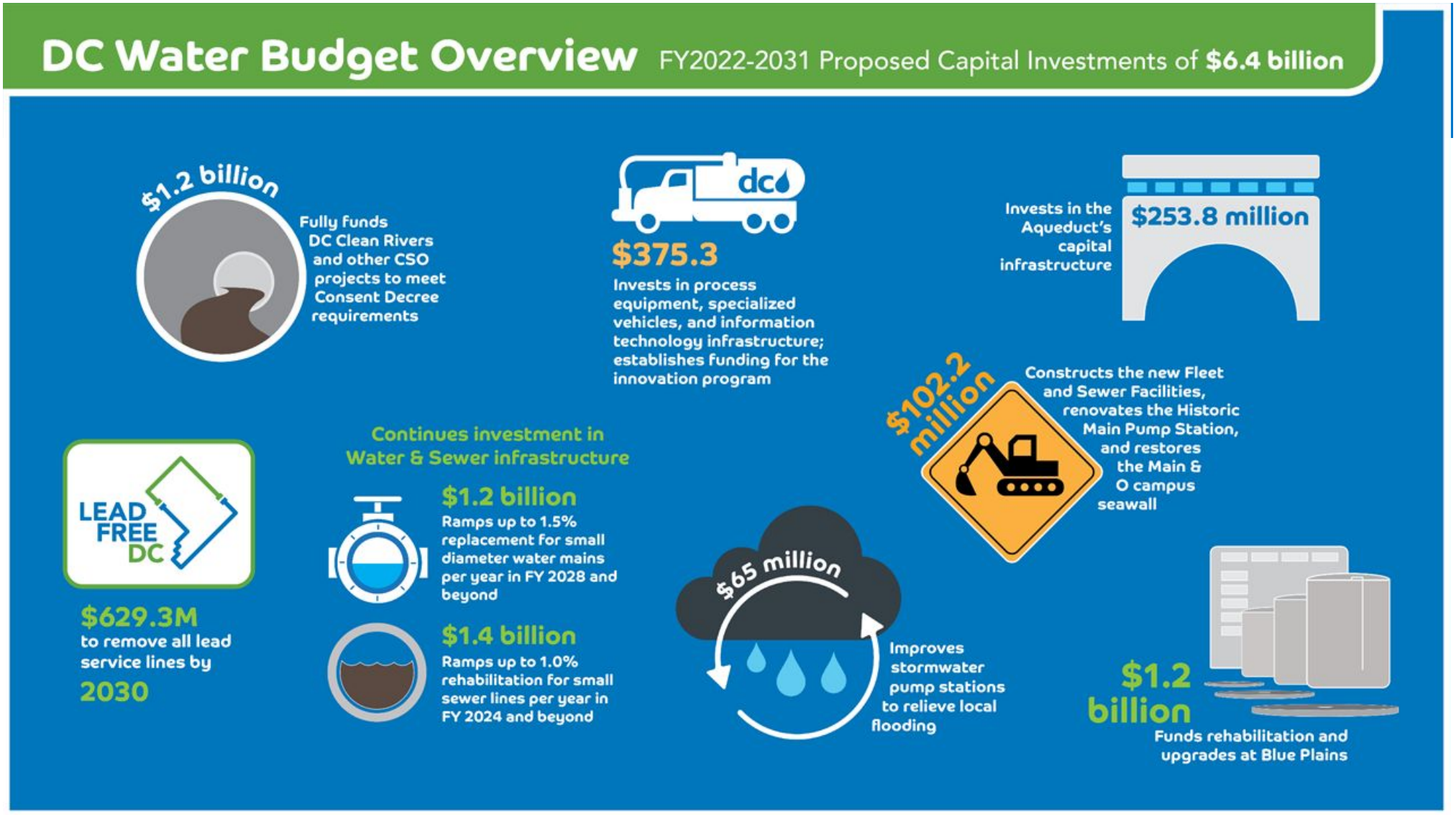

Current (Approved FY21-30) DC Water CIP Highlights
$4.9B*
Current 10-Yr total
$11.2B
Current Lifetime Budget
$390M**
Average annual expenditures
39% Construction
34% A/E
Total participation***
(DBE,WBE,CBE)
267
Number of planned projects
150
Number of active projects
*Current Approved FY21-30 CIP
**Average of Last 5 years 2017-2021 spending
***Average Participation for FY18 to FY21
Active = Projects with spending forecast in FY22
Planned = Total # Projects in 10-year plan
Capital Projects only – excludes Capital Equipment and Washington Aqueduct spending forecast

The Capital Improvement Program

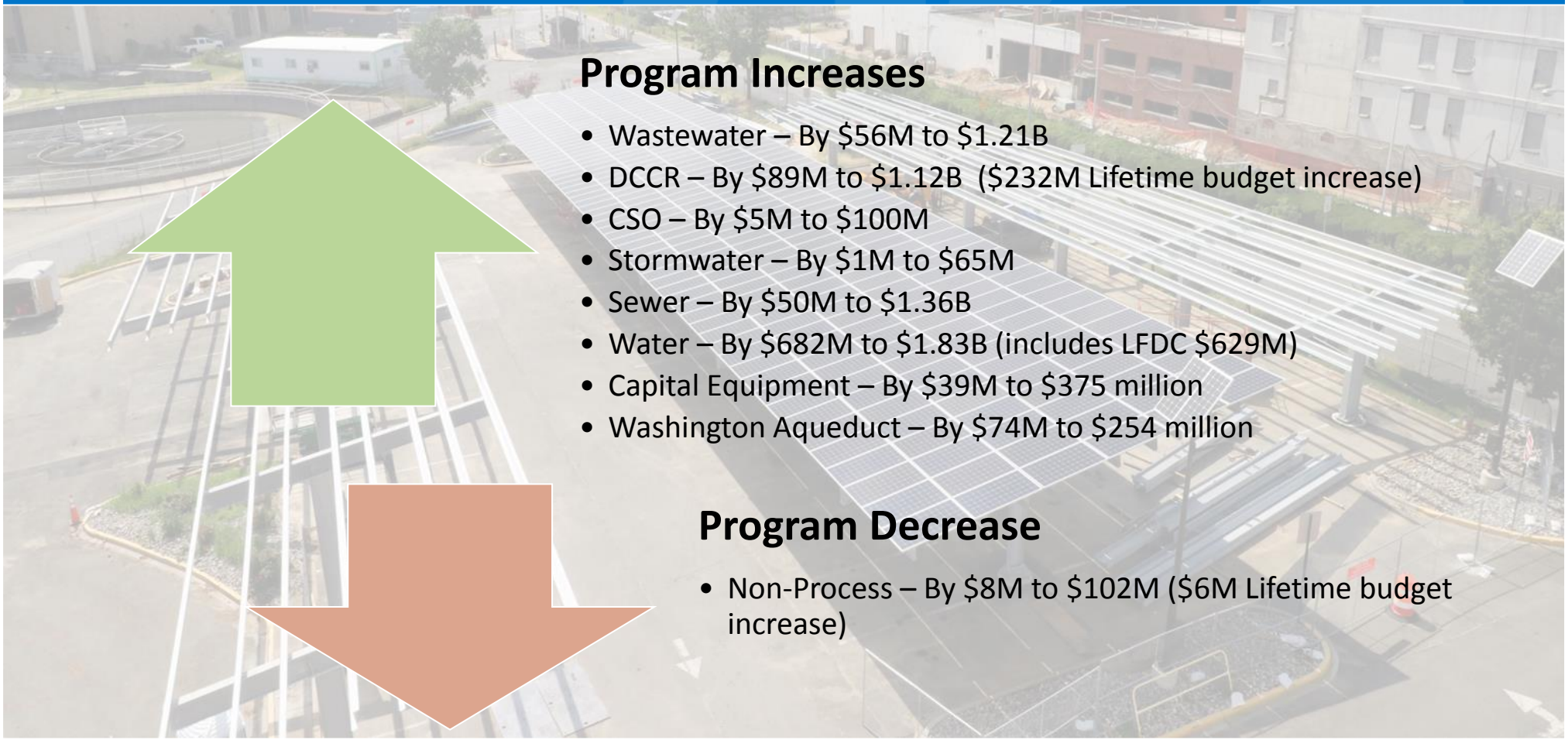
- The **proposed ten-year CIP budget of $6.4 billion** includes previous amendments to the FY 2022 budget for the Lead Free DC initiative, carry-over of funds for the purchase of vehicles and projected increase in the Aqueduct's capital projects
- The **proposed lifetime budget is $13.38 billion** and covers total commitments, including labor, for active projects prior to, during, and beyond the ten-year window

$ in 000's	FY 2022 - 2031 CIP Disbursement Plan											Last Years	(Increase)/	Lifetime
	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	10-yr Total	!0-yr	Decrease	Budget
NON PROCESS FACILITIES	31,439	12,051	28,160	14,422	6,620	3,351	1,778	387	2,000	2,000	102,208	109,776	7,568	215,847
WASTEWATER TREATMENT	85,978	78,574	117,545	116,402	132,436	165,310	129,249	121,373	126,710	141,086	1,214,664	1,158,991	(55,673)	3,445,105
COMBINED SEWER OVERFLOW	152,267	117,704	77,304	105,185	161,941	171,760	220,123	153,173	51,403	6,306	1,217,166	1,122,976	(94,190)	3,216,072
STORMWATER	7,031	11,527	5,553	5,813	4,985	6,158	4,620	4,499	6,330	8,722	65,236	63,894	(1,342)	120,933
SANITARY SEWER	68,084	103,383	150,828	130,967	160,400	205,946	183,824	149,256	129,368	80,069	1,362,125	1,312,973	(49,152)	2,166,442
WATER	165,313	227,116	218,339	194,652	202,046	191,451	192,665	192,324	124,683	120,842	1,829,430	1,147,717	(681,713)	3,167,891
CAPITAL PROJECTS	510,112	550,355	597,728	567,442	668,428	743,975	732,259	621,011	440,494	359,025	5,790,828	4,916,327	(874,501)	12,332,290
CAPITAL EQUIPMENT	40,519	37,021	36,156	35,307	39,671	41,813	36,203	36,203	36,203	36,203	375,302	336,036	(39,266)	375,302
WASHINGTON AQUEDUCT	16,875	59,628	34,749	17,164	27,825	37,122	14,723	11,940	19,831	13,911	253,768	180,125	(73,643)	253,768
ADDITIONAL CAPITAL PROJECTS	57,394	96,649	70,905	52,471	67,496	78,935	50,926	48,143	56,034	50,114	629,070	516,161	(112,909)	629,070
LABOR														416,097
TOTAL CAPITAL BUDGETS	567,507	647,004	668,633	619,913	735,924	822,910	783,185	669,154	496,528	409,140	6,419,899	5,432,489	(987,410)	13,377,458

	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	10-yr Total			Lifetime Budget
Prior Year Board Approved CIP	471,267	476,140	540,585	500,427	499,918	681,280	632,075	568,067	572,262	490,468	-	5,432,489	-	-	12,133,115
Delta (inc)/dec	471,267	(91,367)	(106,419)	(168,206)	(119,995)	(54,644)	(190,836)	(215,119)	(96,892)	(6,060)	(409,140)	(987,410)	-	-	(1,244,343)


DC Water Budget Overview FY2022-2031 Proposed Capital Investments of $6.4 billion
$1.2 billion
Fully funds DC Clean Rivers and other CSO projects to meet Consent Decree requirements
dc
$375.3
Invests in process equipment, specialized vehicles, and information technology infrastructure; establishes funding for the innovation program
Invests in the Aqueduct's capital infrastructure
$253.8 million
$102.2 million
Constructs the new Fleet and Sewer Facilities, renovates the Historic Main Pump Station, and restores the Main & O campus seawall
LEAD FREE DC
$629.3M
to remove all lead service lines by
2030
Continues investment in Water & Sewer infrastructure
$1.2 billion
Ramps up to 1.5% replacement for small diameter water mains per year in FY 2028 and beyond
$1.4 billion
Ramps up to 1.0% rehabilitation for small sewer lines per year in FY 2024 and beyond
$65 million
Improves stormwater pump stations to relieve local flooding
$1.2 billion
Funds rehabilitation and upgrades at Blue Plains

Proposed Changes to 10-year CIP by Service Area



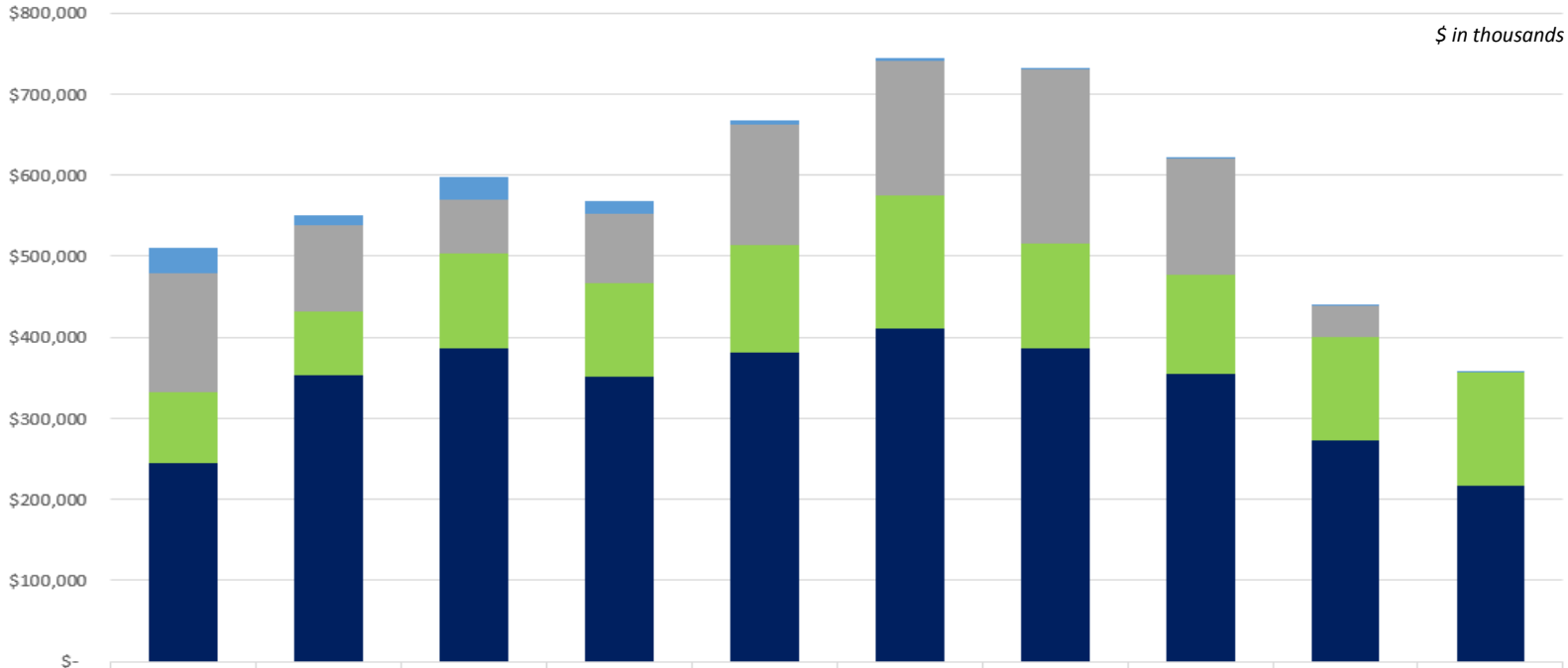
Program Increases

- Wastewater – By $56M to $1.21B
- DCCR – By $89M to $1.12B ($232M Lifetime budget increase)
- CSO – By $5M to $100M
- Stormwater – By $1M to $65M
- Sewer – By $50M to $1.36B
- Water – By $682M to $1.83B (includes LFDC $629M)
- Capital Equipment – By $39M to $375 million
- Washington Aqueduct – By $74M to $254 million

Program Decrease

- Non-Process – By $8M to $102M ($6M Lifetime budget increase)

DC Water 10-Year CIP Projects Spending Projection



$ in thousands

	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31
Non-Process Facilities	$31,439	$12,051	$28,160	$14,422	$6,620	$3,351	$1,778	$387	$2,000	$2,000
Clean Rivers	$147,347	$106,774	$66,064	$85,968	$147,762	$165,363	$214,664	$143,867	$39,054	$-
Wastewater Treatment	$85,978	$78,574	$117,545	$116,402	$132,436	$165,310	$129,249	$121,373	$126,710	$141,086
Water & Sewer Infrastucture*	$245,348	$352,955	$385,959	$350,650	$381,610	$409,950	$386,568	$355,385	$272,730	$215,939

*Includes the following Service Areas: Water, Sanitary Sewer, Stormwater, and non-Clean Rivers portion of Combined Sewer Overflow Capital Projects only – excludes Capital Equipment and Washington Aqueduct spending forecast

- Cash disbursements basis

Prioritization of CIP Spending

- As large regulatory mandated projects are completed, increased investments can be made in our aging water and sewer infrastructure

Higher Priority → Lower Priority

	1A		2A	2B	2C	2D	3A		3B	
	Mandates		**Health & Safety**	**Board Policy**	**Potential Failure**	**High Profile Good Neighbor**	**Good Engineering High Payback**		**Good Engineering Lower Payback**	
	Agreements, Regulatory standards, Court orders, Issues and Permits requirements, Stipulated Agreements, Etc.		Required to address Public Safety	Undertaken as a result of the Board's commitment to outside agencies	Related to Facilities in danger of failing, or critical to meeting permit requirements	Address Public concerns	Need to fulfill Mission and upgrade Facilities		Lower priority Projects	
FY 2022	$154,484	27%	$15,029	$150,006	$37,778	$1,971	$139,063	25%	$69,176	$567,507
FY 2023	$106,827	17%	$55,821	$187,621	$45,608	$964	$161,338	25%	$88,825	647,004
FY 2024	$66,090	10%	$22,047	$155,503	$45,047	$699	$216,669	32%	$162,579	668,633
FY 2025	$85,968	14%	$7,998	$144,127	$51,131	$1,736	$193,652	31%	$135,302	619,914
FY 2026	$147,762	20%	$11,743	$134,922	$37,683	$1,189	$237,784	32%	$164,842	735,924
FY 2027	$165,363	20%	$23,506	$120,645	$57,975	$1,621	$247,881	30%	$205,919	822,910
FY 2028	$214,664	27%	$12,922	$130,675	$48,912	$2,712	$191,334	24%	$181,967	783,185
FY 2029	$143,867	21%	$4,455	$140,653	$27,111	$0	$188,048	28%	$165,022	669,155
FY 2030	$39,054	8%	$2,680	$68,989	$40,732	$0	$176,511	36%	$168,563	496,528
FY 2031	$0	0%	$2,516	$68,037	$19,560	$0	$124,905	31%	$194,121	409,139
Total	**$1,124,077**		**$158,715**	**$1,301,178**	**$411,536**	**$10,891**	**$1,877,185**		**$1,536,316**	**$6,419,899**
% of Total	**17.5%**		**2.5%**	**20.3%**	**6.4%**	**0.2%**	**29.2%**		**23.9%**	

$ in thousands - Cash disbursements basis

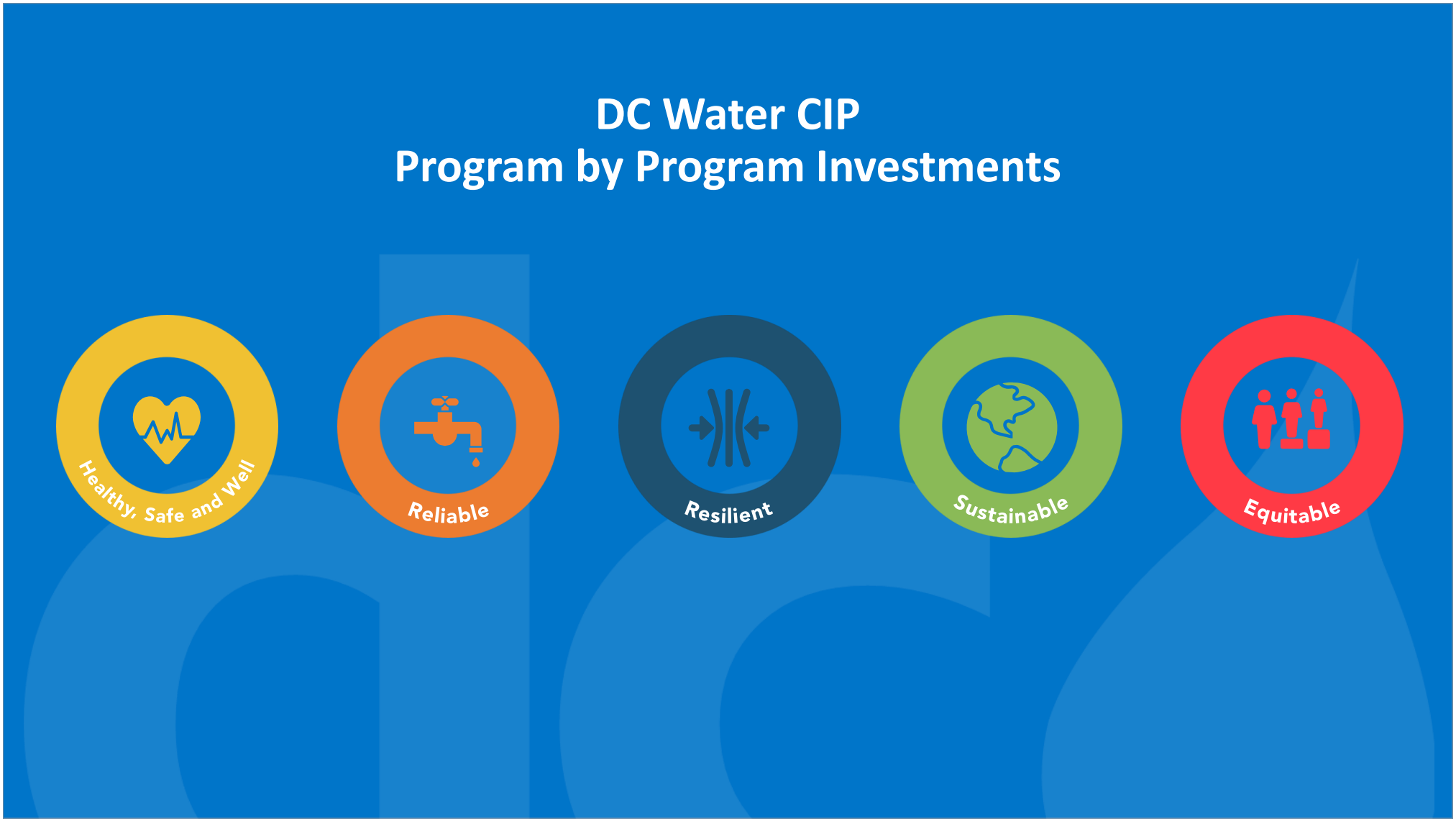
10

CIP by Priority

10-Year Capital Projects - Total $5.79 billion, an increase of $870 million

	Dominant Priority	Secondary Priority	
DC Clean Rivers $1.12 B	1A Mandates		Anacostia, Potomac and Rock Creek
Blue Plains $1.21 B	3B Good Engineering	2C Potential Failure; 1A Mandates	Blue Plains Switchgear, Biosolids Blending Development Center, Blue Plains Solids Processing Building
Water $1.20 B	2B Board Policy	3A Good Engineering High Payback	Small Diameter Water Main Replacements, Fire Hydrant Replacements, Large Diameter Water Main Rehabs
LFDC $629 M	2B Board Policy		Lead Free DC
Sewer $1.36 B	3A Good Engineering High Payback	2C Potential Failure	Local Sewer Rehabs, Potomac Interceptor Rehabs, Major Sewer Rehabs
Non-Process $102 M	3B Good Engineering	2B Board Policy	Main and O redevelopment Efforts,
Stormwater $65 M	3B Good Engineering		Storm Water Pump Stations Rehab, Storm Sewer Rehabs

DC Water CIP
Program by Program Investments



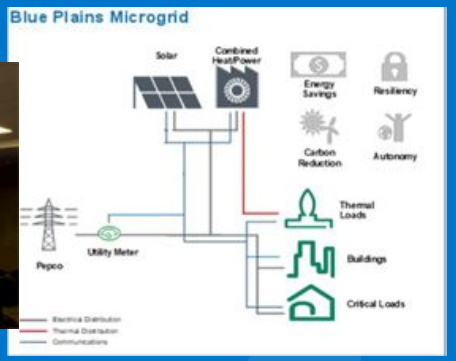
Wastewater Blue Plains ($1.22 billion)

Program Portfolio

Liquid Processing - $658 million

384 MGD Average; 780 MGD Peak

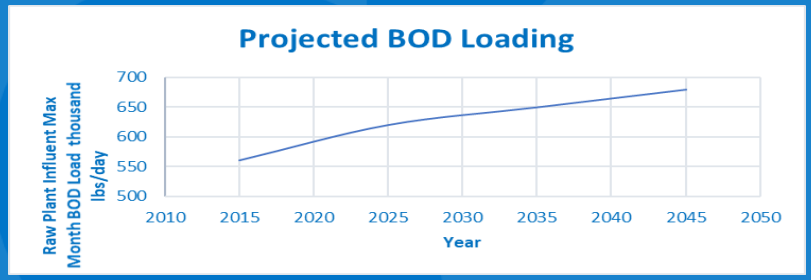
Plantwide - $282 million



Solids Processing - $214 million

Enhanced Nitrogen Removal Facilities - $60 million

>90% complete; Expansion of secondary treatment to meet nitrogen discharge permit limit with future load



13

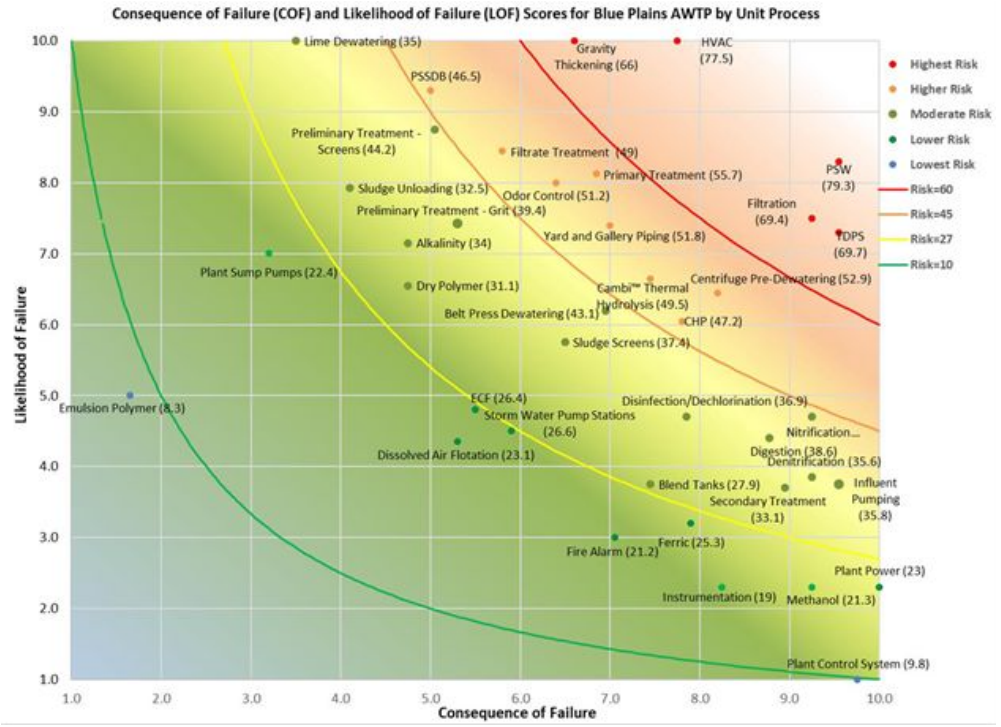
Blue Plains Major Projects – Investments for Reliability

Reliable

68 Planned projects to address plant reliability

Filter Influent Pump Installation

Gravity Thickener Phase 2



Blue Plains Major Projects – Investments for Sustainability and Resilience

Design-Build Project to install remaining portions of floodwall to protect Blue Plains from 500-year frequency event.

Biosolids Curing Pad to produce cured product and diversify product market.

Solar Panels to be installed on roof of Curing Pad

15

Sewer ($1.36 billion)

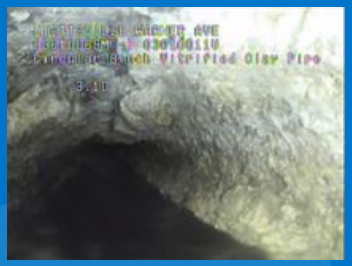
Program Portfolio

Sanitary interceptor/trunk sewers/force mains $639 million

- Program is for 170 miles of sewers
- Assessment of about 10 miles of Sanitary interceptor/trunk/force mains a year.
- Rehabilitation major sewers such as Anacostia Force Main and Gravity Sewer, Potomac Interceptor, and others.

Sewer Ongoing $144 million

- Inspection of 1,400 miles <12-inch diameter local sewers at 12 mi/month.
- Cleaning and root control
- Emergency repair of collapsed and broken sewers.



Sanitary Collection Sewers $326 million

- Inspection of about 40 miles of collection sewers (>12-in and <60-in dia.) a year.
- Rehabilitation of 1% of the collection sewers a year as of 2024.

16

Sewer ($1.36 billion)

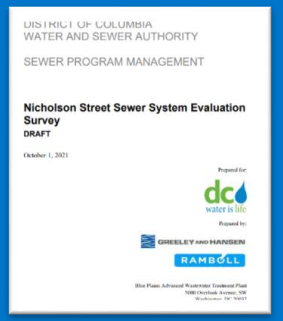
Program Portfolio

Sanitary Pumping Facilities $170 million

- Maintain compliance with consent decree for firm capacity
- Address reliability and resiliency for climate change and flood hazards
- SCADA, Electrical, Mechanical
- Code Compliance, Safety

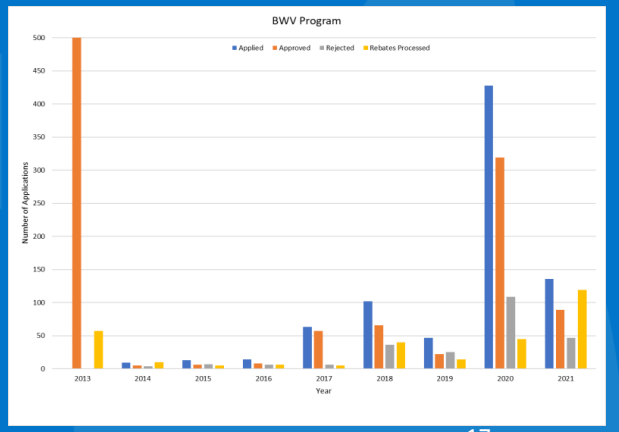
Sewer Program Management $84 million

- September 10, 2020 Flooding Study and BWV Program



Limited SSES:

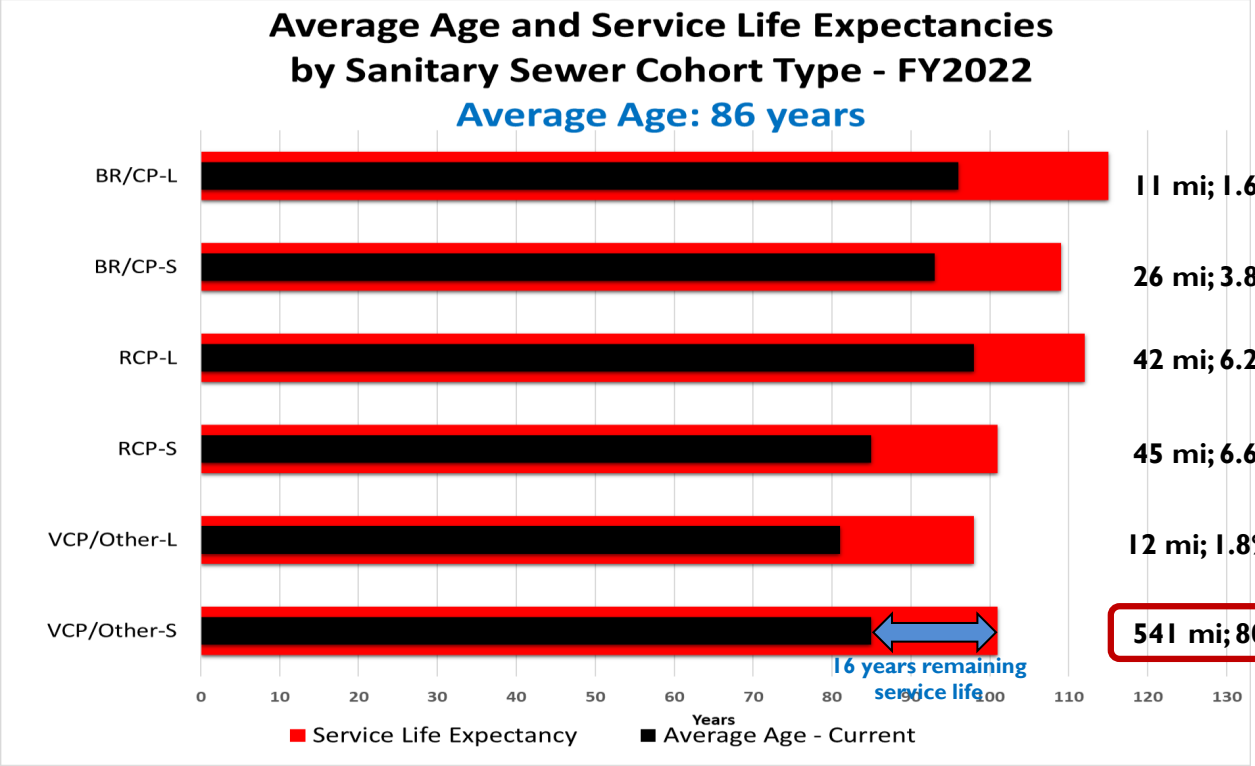
- Smoke testing
- Flow testing
- CCTV Inspection



17

Sewer System Age

Average Age and Service Life Expectancies by Sanitary Sewer Material Type



Small SEWER
Average Age
86 Years
541 miles with 16 years life remaining

18

Combined Sewer Overflow without Clean Rivers ($100 million) and Stormwater ($65 million)

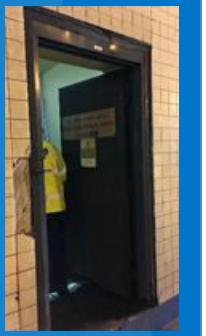
Program Portfolios

- **Maintain compliance with consent decree for firm capacity at CSO pump stations**
- **Address reliability and resiliency for climate change and flood hazards**

Combined Sewer Overflow $100 million

- Main Pump Station
- Potomac Pump Station
- Inflatable Dams at CSO Outfalls

16 Stormwater Pumping Facilities $43 million



- Pumps, Electrical, and code compliance upgrades
- SCADA monitoring and control
- Safety and security

19

Water ($1.83 billion)

Program Portfolio

Water Distribution $880 million

Small Diameter Water Main Replacement:

- Currently 1% goal; additional budget needed to ramp up to 1.5% starting FY28.
- As of now, 60 miles replaced, 21 miles in construction, 49 miles in design, 17 miles in planning.

Large Diameter Water Mains:

- Restart Large Valve Replacement (LVR) Program.
- Continue inspecting 5 miles/year.

Water Storage Facilities $51 million

Water Storage Facilities

- 7 active storage facilities
  - 5 storage facilities scheduled for upgrades
- 2 storage facilities will be mothballed
- Construct a new storage facility in 2nd High - feasibility

Water Pumping Stations $42 million

- Upgrade 4 pumping stations: Bryant Street, Ft Reno, and Anacostia and 16th St.

20

Water ($1.83 billion)

Program Portfolio

Water Ongoing $177 million

- Fire hydrant replacement
- Valve replacement
- Replacement of distribution mains with WQ issues
- Flushing of the water distribution system
- Repair pipe breaks

Third Street Tunnel Water Main Repair

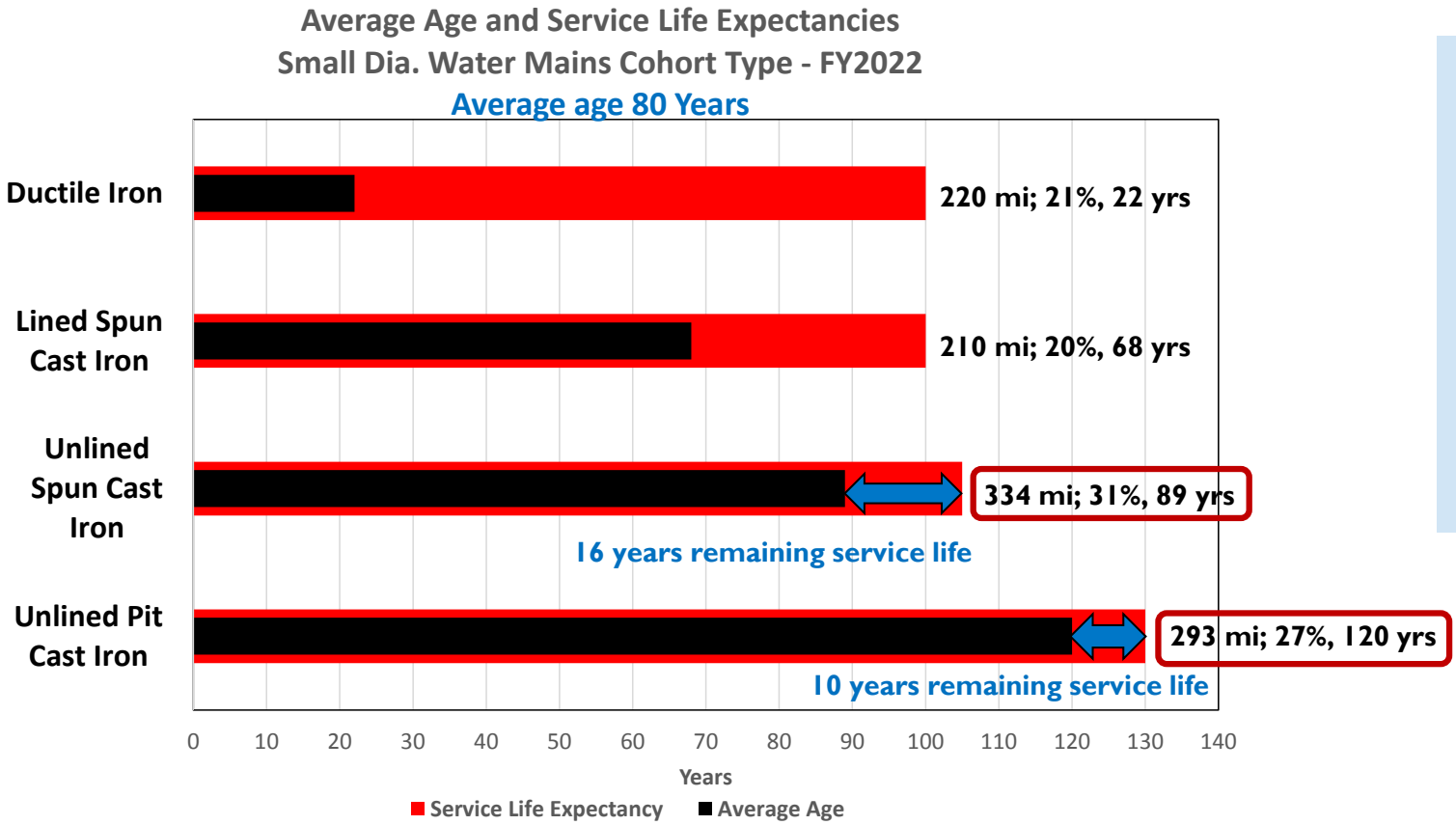
Water Program Management $51 million

- Vulnerability assessment and emergency response support
- District Metering
- Asset Management of water mains
- Master Plan / Facilities Plan support
- Water assets feasibility studies
- Planning support, project development for CIP projects
- Water System Program strategy development support

21

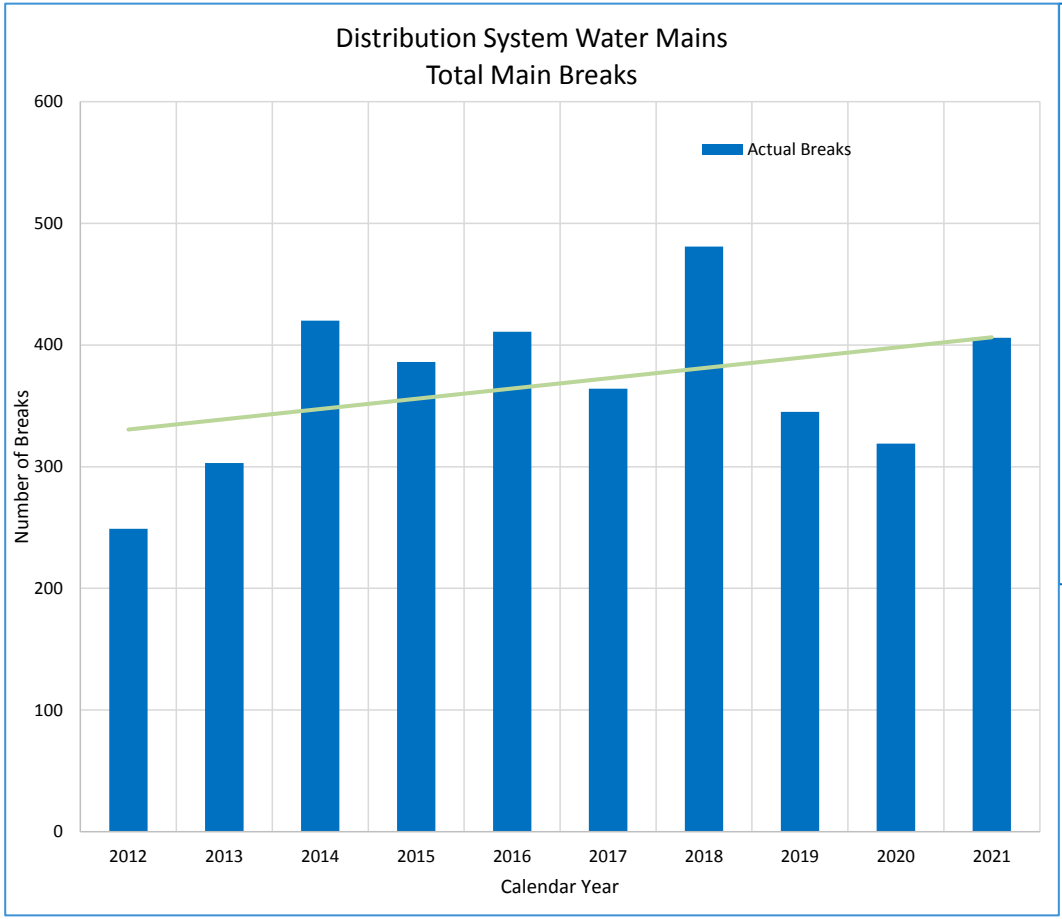
Water System Age

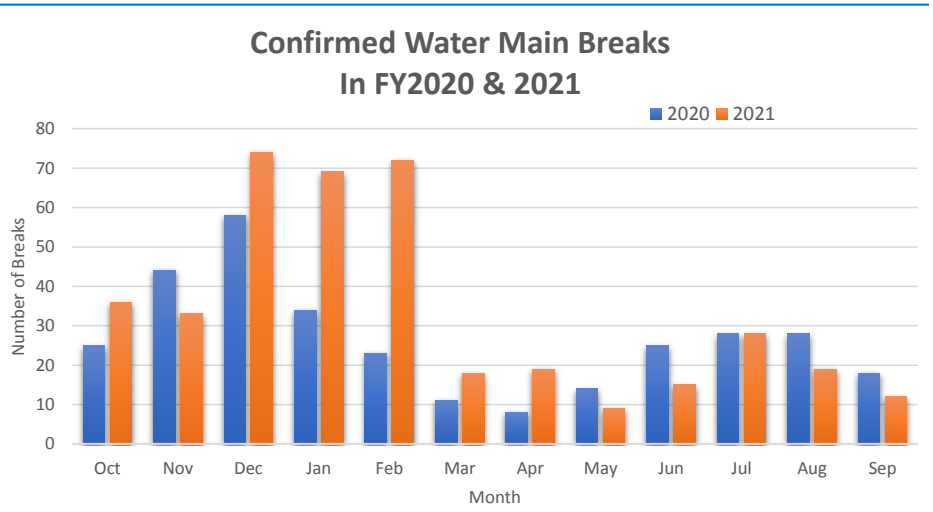
Average Age and Service Life Expectancies by SDWM Cohort pipe material



WATER
1,063 miles
Average Age 80 Years
627 miles with less than 16 years life remaining

Small Diameter Water Mains – Break History

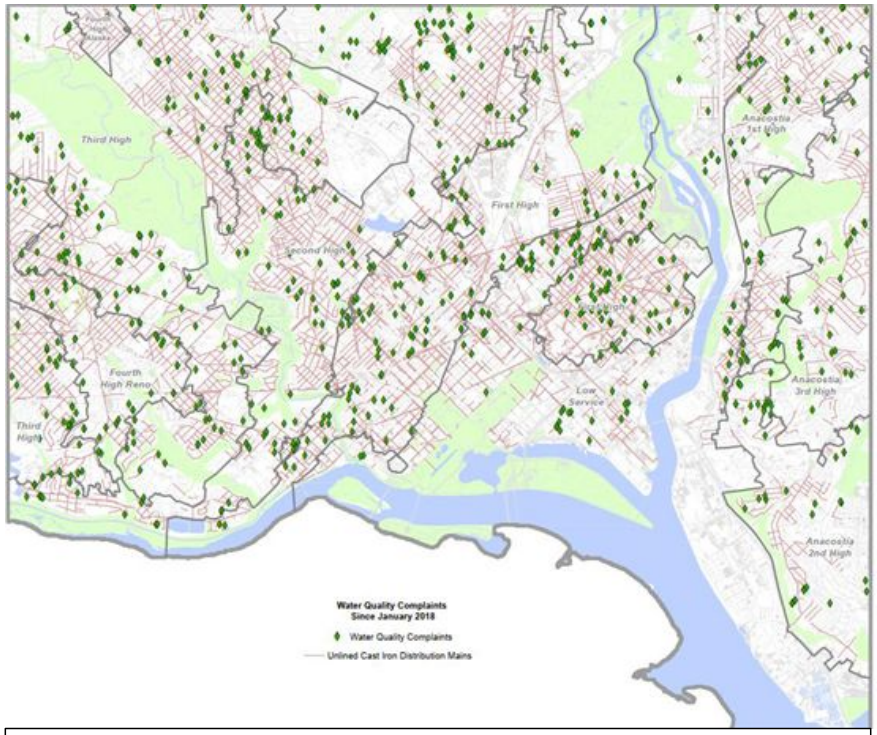




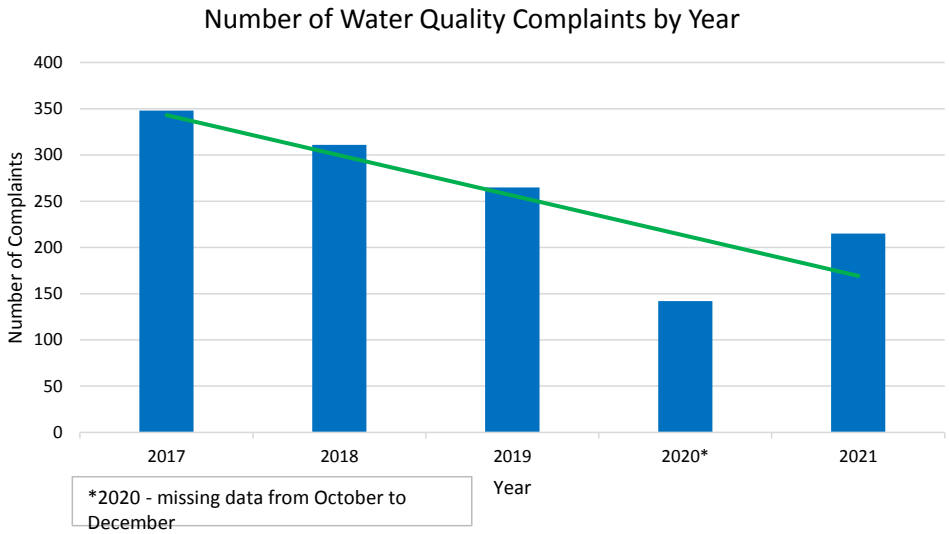
- The AWWA Partnership for Safe Water Distribution System Optimization Program goal for a fully optimized distribution system is 15 breaks/100 miles/year
- DC Water averages 35 breaks/100miles/year

23

Water Quality Data

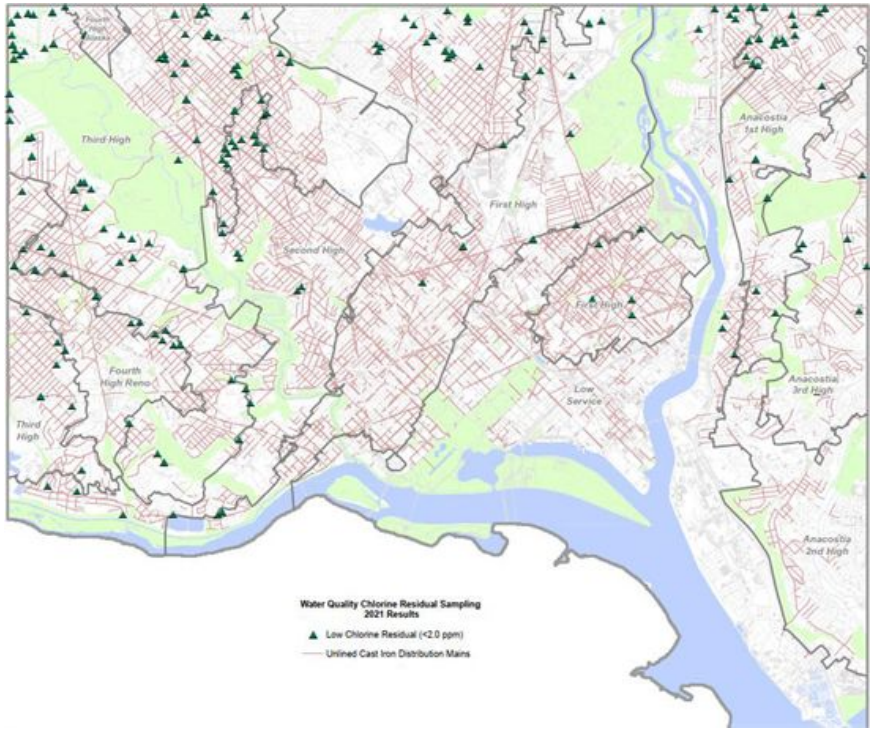


Water Quality (WQ) Complaints (2018 – 2021)

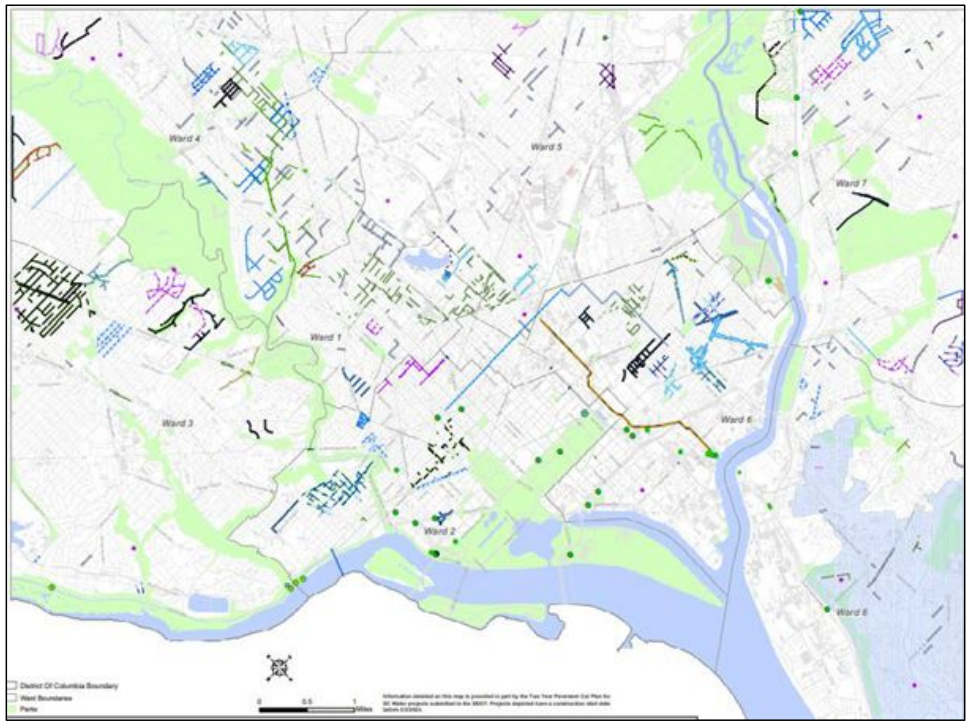


- ~60% of the SDWM budget allocated to WQ
- Flushing and other operations help to address WQ complaints

Water Quality Data



Water Quality Sampling, Chlorine Residual Results (2021)



CIP Projects- two year look ahead (Jan. 2022)

Lead Free DC (LFDC) Program

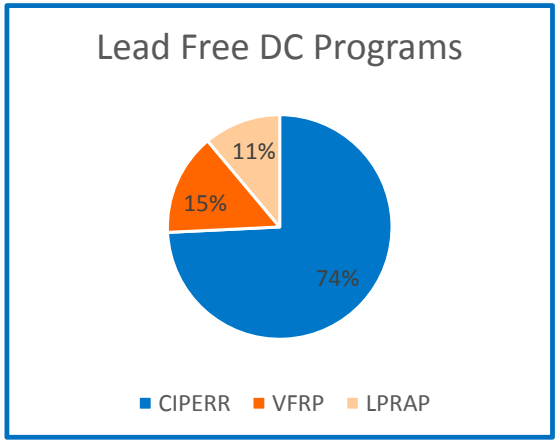
- Lead Free DC Initiative will replace more than 28,000 service lines with lead or galvanized-iron pipe by 2030
- DC Water developed a model to use water quality and health equity data to prioritize lead service line replacement projects for vulnerable populations most impacted by lead exposure in historically underserved communities
- Ranks blocks according to the health benefit and social impact of lead service line replacement so that projects can be funded and executed equitably
- Estimated cost of **$629 million** for replacement work, plus additional and separate funds for small diameter water main replacement

Table: LFDC Proposed Budget

$ in thousands

Program	Public Side	Private Side	Total FY22-30
CIPERR	$ 409,523	$ 57,007	$ 466,530
VFRP	$ 84,307	$ 7,951	$ 92,258
LPRAP		$ 70,163	$ 70,163
Total	**$ 493,830**	**$ 135,121**	**$ 628,951**

Capital Improvement Project and Emergency Repair Replacement ("CIPERR")p-'	Lead Pipe Replacement Assistance Program ("LPRAP")	Voluntary Full Replacement Program ("VFRP")
■ Public Space: Lead ■ Private Property: Lead	■ Public Space: Non-Lead ■ Private Property: Lead	■ Public Space: Lead ■ Private Property: Lead
■ DC Water pays 100% of public-side costs ■ The District pays 100% of private-side replacement costs	■ The District pays 50-100% of private-side replacement costs	■ DC Water pays 100% of public-side costs ■ Property owner pays 100% of private-side replacement costs
■ DC Water-initiated replacements during planned CIP work and emergency repairs	■ Customer-initiated replacements	■ Customer-initiated replacements

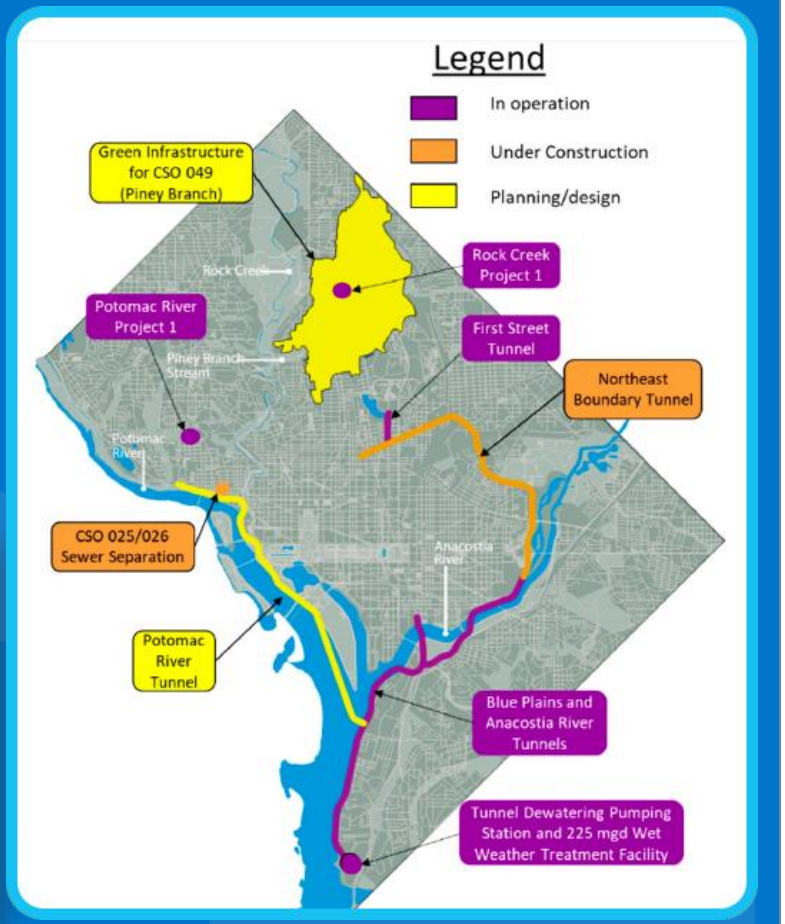


26

DC Clean Rivers ($1.12 Billion)

Program Portfolio

- **Anacostia LTCP Projects ($188 million)**
- **Potomac LTCP Projects ($742 million)**
- **Rock Creek LTCP Projects ($187 million)**



Clean Rivers – What Has Been Achieved?

- Approx. $1.88 billion has been invested
- Achieved:

Receiving Water	CSO Volume Reduction (mg/avg yr)	
	Current	Ultimate Target
Anacostia • Anacostia Tunnel • Sewer separation • Rehab pump stations and inflatable dams	90%	98%
Potomac • Rehab pump stations and inflatable dams	40%	93%
Rock Creek • GI, sewer separation and diversion improvements	13%	90%
Total System	67%	96%

Anacostia Tunnel from Mar 2018 – Nov 2021:

- Over **12.4 billion gallons** and **7,854 tons of trash,** debris, and other solids captured
- 90% capture (80% planned)

28

Clean Rivers – What Will Remaining Projects Achieve?

Area	Description	Status as of Jan 2022	Construction Timeframe	Approx. Remaining Cost ($M)
CY - Anacostia				
Northeast Boundary Tunnel	90 mg tunnel	Construction	2017-2023	$188
CZ – Potomac				
CSO 025/026 Separation	Separate 2 CSO areas	Construction	2021-2022	$742
Potomac Tunnel – Advance Utility Construction	Electric services & utility relocation	Construction	2021-2023	
Potomac Tunnel Construction	29,000’ of 18’ ID tunnel	Design	2023-2030	
DZ - Rock Creek				
Rock Creek GI Project B	22 ac of GI	Construction	2022-2024	$187
Rock Creek GI Project C	25 ac of GI	No activity	2025-2027	
Rock Creek GI Project D	25 ac of GI	No activity	2028-2030	
Piney Branch Storage	4.2 mg storage facility	NEPA	2026-2029	

Project Performance

- Increase CSO capture from 90% to 98%
- Flooding relief in Northeast Boundary

- Increase CSO capture from 40% to 93%

- Increase CSO capture from 13% to 90%






29

Clean Rivers – Project Benefits

- CSO reduction – meets District Water Quality Standards
- Flooding relief in Northeast Boundary
- Provides equalization enabling nutrient reduction at Blue Plains to meet Chesapeake Bay TMDL
- Resiliency:
  - Provides redundancy when Blue Plains is out of service
  - Provides redundancy for pumping stations in the system, in the event of outage or to perform planned work

Clean Rivers – Project Benefits

- Eliminates five (5) inflatable dams
  - Three (3) on Anacostia River (completed)
  - Two (2) on Potomac River (upcoming as part of Potomac Tunnel)
- Eliminates Swirl Facility near RFK Stadium (completed)
- Benefits
  - Reduces risk of flooding
  - Reduces system complexity and costs
  - Reduces O&M costs – estimated savings of $1 million/yr.

Inflatable Dam

Swirl Facility Tank

Non-Process Facilities ($102 million)

Program Portfolio

Main and O Redevelopment Efforts $22 million

Sewer Services Facility

Main & O Seawall Restoration $12 million

575 Linear Feet

Historic Building Restoration, Main Pump Station $15 million

Built 1904

Floatable Debris Dock Replacement $5 million

32

Non-Process Facilities ($102 million)

Program Portfolio

Healthy, Safe and Well | Reliable | Resilient

COF/CMF Renovations $6 million

Bryant St Pump Station Building Modifications $12 million

Roof and HVAC Replacements $19 million

1.9 million sf total roof area and over 2,000 HVAC assets

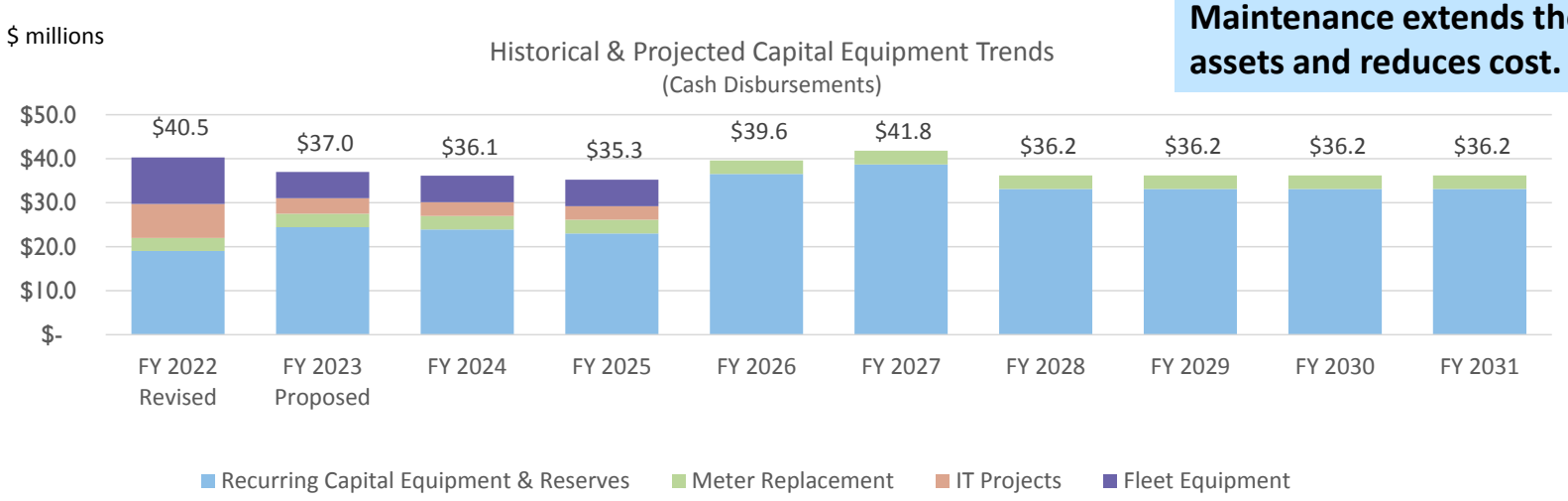
33

DC Water Capital Equipment

Capital Equipment

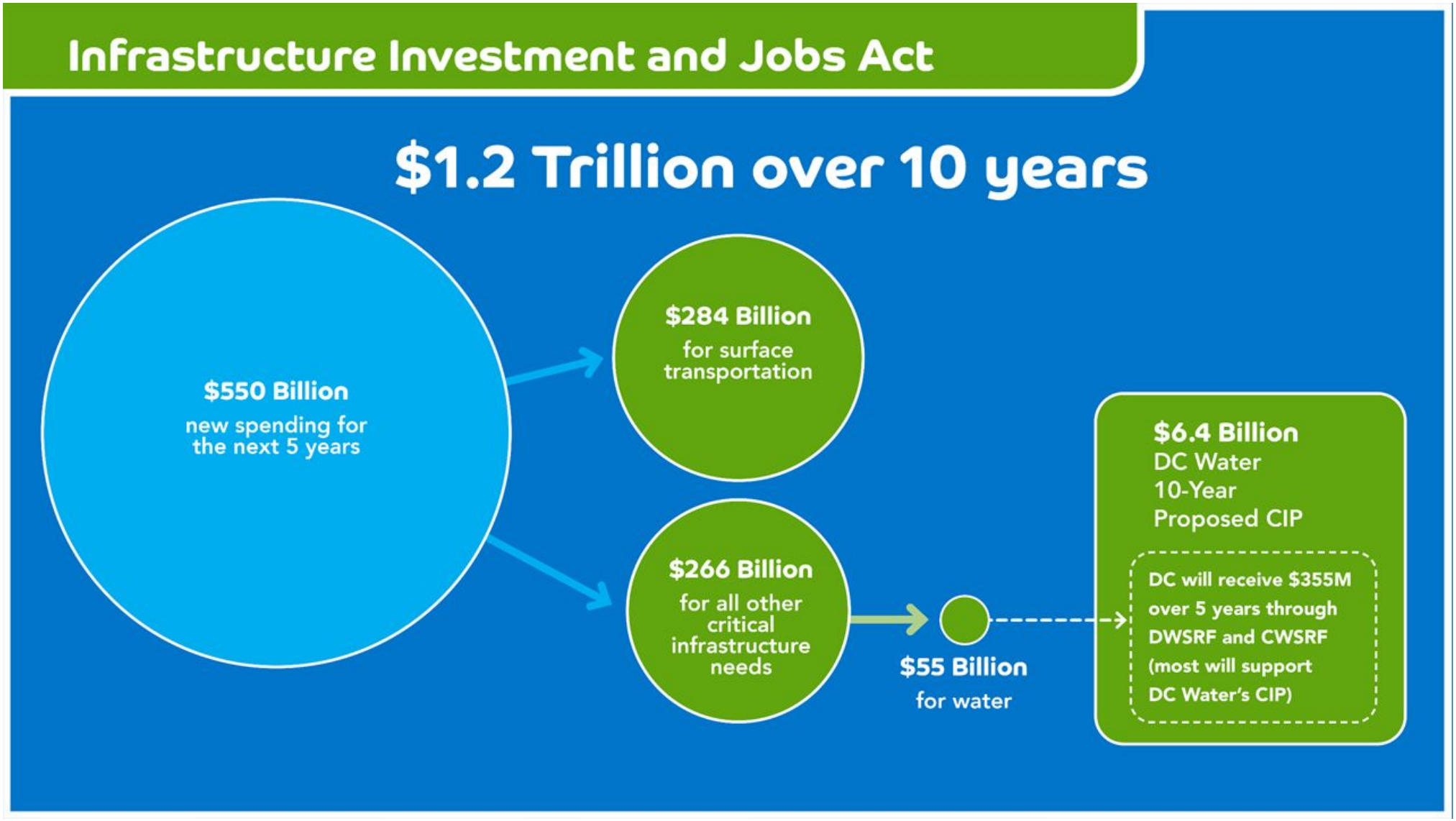
- The overall FY 2022 budget is $40.5 million and reflects the Board-approved carry-over of $4.5 million from FY 2021 for the purchase of vehicles (anticipated for delivery in FY 2022)
- Ten-year disbursements of $375.3 million for capital equipment include:
  - **Recurring Capital Equipment and Reserves** – This covers the purchase/replacement of pumps, motors, HVACs, roof, renovations, laptops, computers, servers, fire hydrants and includes the Authority-wide reserves for new facilities and unplanned equipment needs
  - **Information Technology (IT) Projects** – Funds new projects and upgrades to various Authority-wide technology systems
  - **Fleet Equipment** – Earmarks $18 million from FY 2023 through FY 2025 to reduce backlog and help ensure that crews have the required equipment such as backhoes, jet-vacs, small and large dump trucks to meet operational needs

Preventive/Predictive/Proactive Maintenance extends the life of assets and reduces cost.



35

Infrastructure Bill Funding


Infrastructure Investment and Jobs Act
$1.2 Trillion over 10 years
$550 Billion
new spending for the next 5 years
$284 Billion
for surface transportation
$266 Billion
for all other critical infrastructure needs
$55 Billion
for water
$6.4 Billion
DC Water
10-Year
Proposed CIP
DC will receive $355M over 5 years through DWSRF and CWSRF (most will support DC Water's CIP)

Federal/Infrastructure Funding
Safe Drinking and Clean Water

Equitable

Source	Anticipated DC Water 2022 to 2026 Total	Prospective Eligible Projects	DC Match
Clean Water Baseline (Current Grants)	$15.0M	Wastewater Treatment, Sewer System	45%
Clean Water Supplemental	$57.9M	Wastewater Treatment, Sewer System, Green Infrastructure	10% years 1 and 2 20% years 3 to 5
Clean Water Emerging Contaminants	$4.8M*	Wastewater treatment research projects	0%
Drinking Water Baseline (Current Grants)	$54.1M	Small Diameter Water mains, Water Storage Facilities, Water pump stations	20%
Drinking Water Supplemental	$100.9M	Small Diameter Water mains, Water Storage Facilities, Water pump stations	10% years 1 and 2 20% years 3 to 5
Drinking Water Lead Service Lines	$86.9M**	Lead Free DC Program. Public and Private side eligible	0%
Drinking Water Emerging Contaminants	$38.2M*	Washington Aqueduct emerging contaminant projects	0%

* $'s are DC Total, DC Water anticipated undetermined. **Additional $47.8M anticipated for 2026 to 2030 for total of $134.8M

Based on competing projects, DC Dept. of Energy & Environment (DOEE) determines allocations to DC Water

Infrastructure Investment and Jobs Act Funding Alignment

President's Infrastructure Bill Priorities	Infrastructure Investment and Jobs Act (pre-Reconciliation)	Proposed Projects/Program Areas
$15 billion in the EPA's DWSRF and Water Infrastructure Improvements for the Nation Act (WIIN) for lead service line replacement	• **$15B Lead (DWSRF**/WIIN) • CDBG Funding	• Lead Free DC (Unfunded costs for LSLs, restoration and program management; limited water main replacement)
Upgrade and modernize America's drinking water, wastewater, and stormwater systems, tackle new contaminants, and support clean water infrastructure	• **$11.7B CWSRF** • **$11.7B DWSRF** • **$5B PFAS** • $1.4B Sewer Overflow/Stormwater Reuse Grants • $900M Other water provisions • $665M (ACOE) water-related environmental infrastructure assistance; Continuing Authorities Program (CAP) • $110B Roads and Bridges (GI and Stormwater facilities) • $1B - BRIC Program • $3.5B FEMA • $1B Cybersecurity Grant Program	• Water Distribution System, Pumping and Storage • Wastewater Treatment • Sanitary Sewer • Stormwater • Washington Aqueduct CIP • Alternative Water Supply (Travilah)
Spur jobs modernizing power generation and delivering clean electricity	• $5B Electric Grid Reliability and Resilience • $250M Rural and Municipal Utility Advanced Cybersecurity Grant/Technical Assistance Program • $550M Energy Efficiency and Conservation Block Grant • $7.5B Electric Vehicles • $2.5B Charging and Refueling Grant Program • $5B EV Charging Formula Program	• Solar • Thermal Energy Recovery • Renewable Natural Gas

39

Opportunities, Risks and Sensitivities

Opportunities - Optimization and Revenue

- Programmatic Access to capture Federal and Industry Funding Opportunities
- Implement Granulation (Increasing sludge density) Technologies to Reduce Cost of Future Capacity
- Full Plant Deammonification (nitrogen removal with Annamox) to reduce Cost and Dependence on Chemicals
- Enhance/Expand Class A Biosolids Processing Facilities to Increase Biogas Production
  - Receiving facilities for Fats, Oils, Grease / Food Waste
- Implement Resource Recovery Options
  - Renewable Natural Gas (RNG)
  - Expansion of Solar Power Generation
  - Heat Recovery Options at Blue Plains / Sewer Heat Recovery for District Heating
- Implement a Microgrid within Blue Plains - Optimal Renewable Energy Distribution
- Diversify Bloom Products and Marketing

Risks and Sensitivities

- Stormwater System Repair and Maintenance
- Supply Chain Disruption and Inflation
- Regulatory
  - Total Maximum Daily Load (TMDL) – Trash, Bacteria, PCBs, PFAS, CEC
  - Watershed Implementation Plans (WIPs) – Nitrogen from behind Conowingo Dam
  - Permitting – New NPDES Permit Conditions
  - Biosolids Land Application – PFAS, CEC, Phosphorus
  - Consent Decrees – Sewer System Overflow
- Climate Change – Seawall, Facility Hardening, CSO Program, Stormwater Capacity
- Community Driven Odor Control Infrastructure – Blue Plains, Main & O pumps stations
- Washington Aqueduct Capital Program Uncertainties and Potential for Privatization

Washington Aqueduct CIP

FY2023 and FY2024 CIP Budgets

FY2023 $81.8M, FY2024 $47.7M

Budget Increase:
DC Water's share (FY2023 ~$59.55M, FY2024 ~$34.73M)

- Budgets reflect costs of total project vs. costs of partial repairs to aging infrastructure
- Cost Drivers
  - Underfunded projects due to increased project costs
  - Partial repairs prolonged total project completion creating increased future costs for customers
  - Stalled/delayed projects now require additional funding

Asset Management Strategy

Path Forward:

Asset management driven capital planning

- FEM Database – assessing efficiency
- Assess aging infrastructure
- Revise 10-year CIP/CIP prioritization
- Acquisition strategy


dc
water is life®