



**DISTRICT OF COLUMBIA  
WATER AND SEWER AUTHORITY  
Board of Directors**

Meeting of the  
Environmental Quality and Operations Committee

**Thursday, March 18, 2021  
9:30 a.m.**

**Microsoft Teams Meeting**  
Join on your computer or mobile app  
[Click here to join the meeting](#)  
**Or call in (audio only)**  
[+1 202-753-6714, 822177316#](#)  
Phone Conference ID: 822 177 316#

- 9:30 a.m. I. **Call to Order** Adam Ortiz  
Chair
- II. **Roll Call** Alfonso Kilgore Stukes  
Board Operations Specialist
- 9:35 a.m. III. **AWTP Status Update** Akile Tesfaye
  - 1. [BPAWTP Performance](#)
- 9:45 a.m. IV. **10-Year CIP Plan FY2021 - FY2030**
  - 1. Review of Proposed CIP Leonard Benson
  - 2. Response to Board Follow-up Question Maureen Holman
  - 3. **Action Item:** Matthew Brown
    - a. [FY 2021 – FY 2030 Proposed Capital Improvement Program \(10-Year Disbursement Plan and Lifetime Budget\)](#)
- 10:00 a.m. V. **EPA Revised Lead and Copper Rule** Maureen Schmelling
- 10:20 a.m. VI. **Action Items** Joel Grosser/ Leonard Benson
  - Joint Use**
    - 1. [Contract No.: 19-PR-DWT-14 – Belt Press Dewatering Polymer, Polydyne, Inc.](#)
    - 2. [Contract No.: 19-PR-DWT-15 – Centrifuge Pre-Dewatering Polymer, Polydyne, Inc.](#)
  - Non-Joint Use**
    - 1. [Contract No.: 170080 - Small Diameter Water Main 14B, Capital Paving of DC](#)

2. [Contract No. N/A: MOU Contract - Florida Avenue NE From 2<sup>nd</sup> Street NE to H Street NE, District Department of Transportation \(DDOT\)](#)

10:35 a.m.	VII.	<b>Blue Plains Solar Panels</b>	David Parker
10:50 a.m.	VIII.	<b>Other Business / Emerging Issues</b>	
10:55 a.m.	IX.	<b>Executive Session*</b>	Adam Ortiz Chair
11:00 a.m.	X.	<b>Adjournment</b>	

**Follow-up Items from Prior Meetings:**

1. *VP, DC Clean Rivers: Schedule a virtual tour of GI Sites [Target: April 2021]*
2. *SVP, CIP Project Delivery: Provide a compilation of general planning and engineering services contracts executed in 2020 as well as a status update on DC Water's strategy to gradually bring these types of services in-house. [Target: June 2021]*
3. *SVP, CIP Project Delivery: Provide update on the progress of the project to install solar panels on Blue Plains roof tops. [On Current Agenda]*
4. *Director, Water Quality: Provide the Committee with an update on the new Lead and Copper Rule. [On Current Agenda]*

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 – February 2021

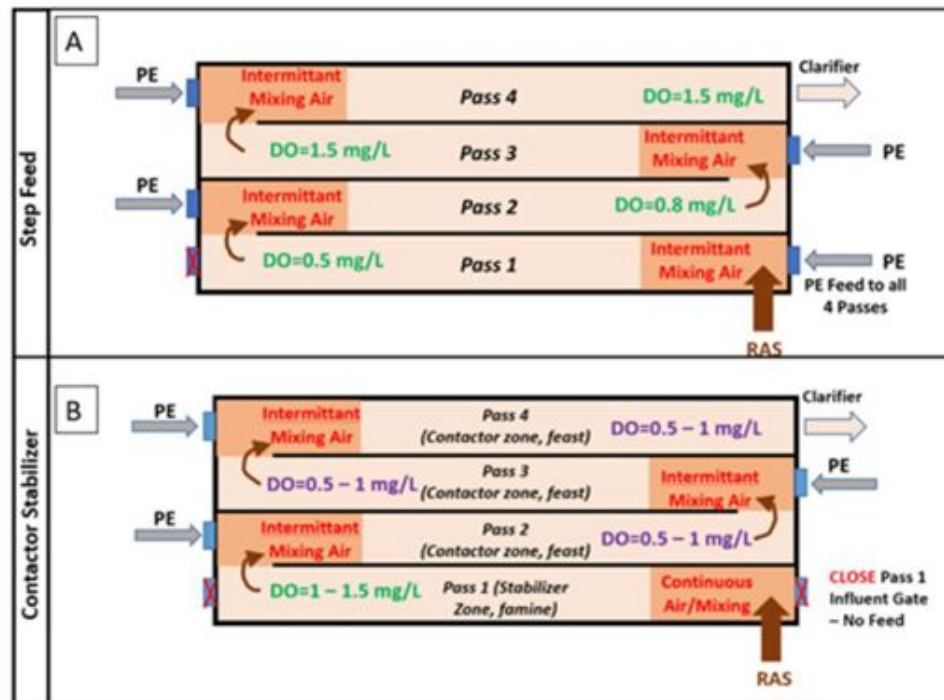
**Accomplishments  
&  
Priorities**

**Testing contact stabilization process to enhance Blue Plains secondary treatment performance and capacity:** Engineering studies and research at Blue Plains have shown that poor flocculation (the extent to which the solids stick together) in secondary treatment affects the quality of secondary clarifier effluent. Flocculation of solids is sensitive and can significantly vary in high-rate biological treatment processes such as the one at Blue Plains. The studies showed that production of extracellular polymeric substances (EPS, or biopolymers) is the most important factor for improving flocculation properties and achieving faster settling. A high-rate Contact Stabilization (CS) process configuration showed good potential for enhancing EPS production and bioflocculation because it exposes the bacteria to a feast-famine regime. This is accomplished by having a zone where return activated sludge (RAS) solids are aerated without having any feed present (creating a famine), followed by a zone where a large amount of feed is added to a small portion of the volume (creating a feast).

Testing of the CS configuration began in the Blue Plains West Secondary treatment process in April 2020, and in the East Secondary Treatment process in August 2020. This treatment mode was easy to implement at Blue Plains because it only required primary effluent feed flow to be diverted around Pass 1 to later passes to allow for a RAS aeration zone or stabilization zone to be created in Pass 1 (Figure 1B). The aim of this work was to test whether these adjustments resulted in any improvement in secondary effluent quality or produce faster settling solids that might also lead to increased treatment capacity within the existing tank volumes.

**The team:** The process engineering group (**Ryu Suzuki, Nicholas Passarelli**) collaborated closely with the R&D group (**Nam Ngo, Maryam Sabur, Baoqiang Li, Haydee De Clippeleir, Christine deBarbadillo**). The R&D group supported the full-scale performance evaluation by conducting detailed weekly settling tests and providing feedback to guide the operations team.

## Accomplishments & Priorities



**Figure 1:** Step-feed configuration aerates RAS and primary effluent together in configuration (A); While contact stabilization aerated RAS without adding primary effluent to create a famine, then feeding to starved biomass to create a feast in configuration (B).

**Decreased and more stable effluent solids increase capacity:** Improved flocculation behavior was observed two weeks after CS implementation. This was confirmed with the special setting test results as well as decreased effluent suspended solids concentrations (ESS). Although there are many factors that affect treatment performance and we still observe variations especially in winter, we have observed overall lower ESS concentrations and performance reliability during the past 6 to 10 months of operation in CS mode. As shown in Table 1, below, secondary effluent average concentrations in West secondary were slightly lower than during prior years of operating in step-feed mode, and the reliability of achieving concentrations lower than 30 mg/L was significantly improved (83% of the time compared to approximately 50% of the time in 2019). Similar trends were observed on the East side. Faster settling solids also affects secondary clarifier capacity, and the results of the settling tests suggest this might be as high as a 28% improvement.

**Accomplishments & Priorities**

**Table 1:** Effluent quality data overview for the secondary system before and after CS implementation.

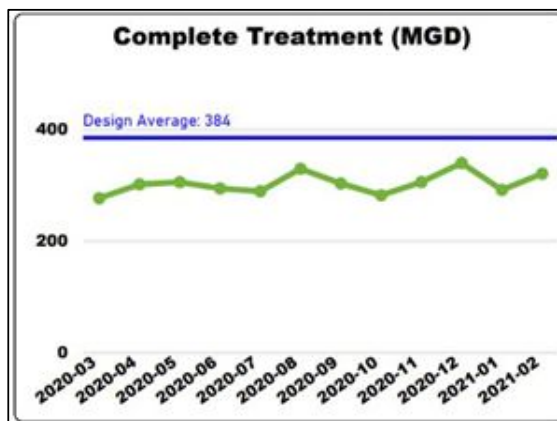
	2018	2019	Early 2020	2020 through Feb 22 <sup>nd</sup> 2021
<b>Mode of operation</b>	<b>Step-feed</b>	<b>Step-feed</b>	<b>Step-feed</b>	<b>Contact Stabilization</b>
<b>WEST secondary</b>				
Average Secondary Effluent Solids Concentrations	27	33	25	<b>23</b>
% days ESS < 30 mg TSS/L	72	50	49	<b>83</b>
<b>EAST secondary</b>				
Average ESS	44	49	33	<b>26</b>
% days ESS < 30 mg TSS/L	41	31	55	<b>77</b>

**Next steps** include (i) quantify potential additional benefits of CS implementation such as decreased odor emission, improved oxygen transfer, capacity and energy improvements on ENR system, (ii) summer sampling campaign for model calibration to extrapolate results to future conditions, and (iii) more detailed quantification of feast famine conditions to adjust inlet gate settings for additional improvements.

**Operational Performance**

**Blue Plains Complete Treatment Performance:** The plant performance for the month of February 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 320 MGD (Figure 2). There was no treated captured combined flow directed to Outfall 001 from the Wet Weather Treatment Facility (WWTF).

**Figure 2. Monthly Average Influent Flow Trend to Complete Treatment (MGD)**



**Operational Performance**

**Wet Weather Treatment Facility (WWTF) Performance:** In February 2021, a total of 151 million gallons (MG) of combined wet weather flow, captured in the tunnel system, was treated through the WWTF. There was no measured overflow to the river, recorded during this month (Table 2).

**Table 2. Wet Weather Treatment Facility (WWTF) Performance**

	February 2021 (Draft)	Calendar Year 2021 (Through February)
Total Precipitation, inches (DCA gauge)	4.66	6.59
Total Volume Captured in the Anacostia Tunnel, MG	151	207
Measured Overflow, MG	0	0
Percent Captured**	100%	100%
Screenings and Grit Capture, tons	150	488

Note

\*Based on preliminary data.

\*\*Expected Capture ~80%

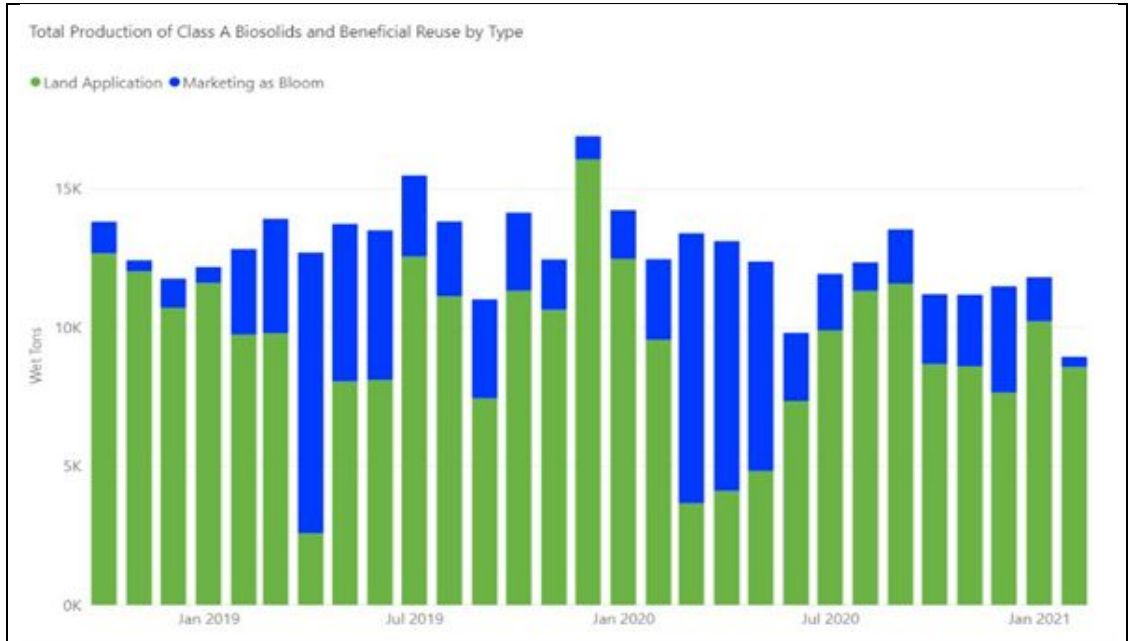
**Class A Biosolids Production:** In February, biosolids hauling averaged 319 wet tons per day (wtpd). All biosolids produced during the month met Class A Exceptional Quality (EQ) requirements required by EPA. Fecal Coliform values on daily process monitoring samples remained below the 1,000 MPN\*/gram 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

**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 February, Blue Drop sold approximately 367 wet tons of Bloom (Figure 3). The remaining 8,567 wet tons not sold into the market were land applied through DC Water (through Blue Drop) and WSSC contracts.

**Operational Performance**

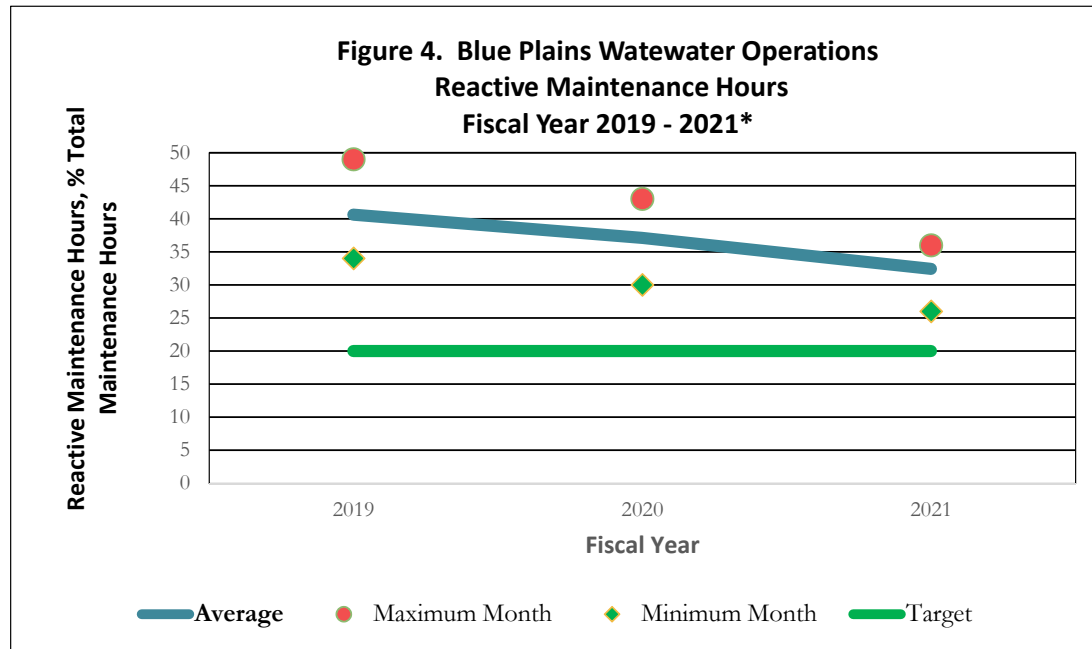
**Figure 3. Tons of Class A Biosolids Produced - October 2019 to February 2021 Marketed as Bloom (blue) and Land Applied (green)**



**Progress Report**

**Blue Plains Wastewater Operations and Maintenance Reactive Maintenance Hours (as percent of total maintenance hours):** DC Water has adopted industry best practice benchmark of less than 20 percent reactive maintenance hours as percent of total maintenance hours. Based on experiences from leading industries, it will require 3 to 5 years to transform to a culture of proactive maintenance and effectively implement proven tools to eliminate or reduce failures that lead to reactive maintenance. Figure 4 shows a descending trend of percent of total reactive maintenance hours, measured as annual average, maximum month, and minimum month during fiscal years 2019, 2020, and 2021 to date\*.

Progress Report







# FY21-30 Proposed CIP Budget

Presentation to the Environmental Quality and Operations Committee

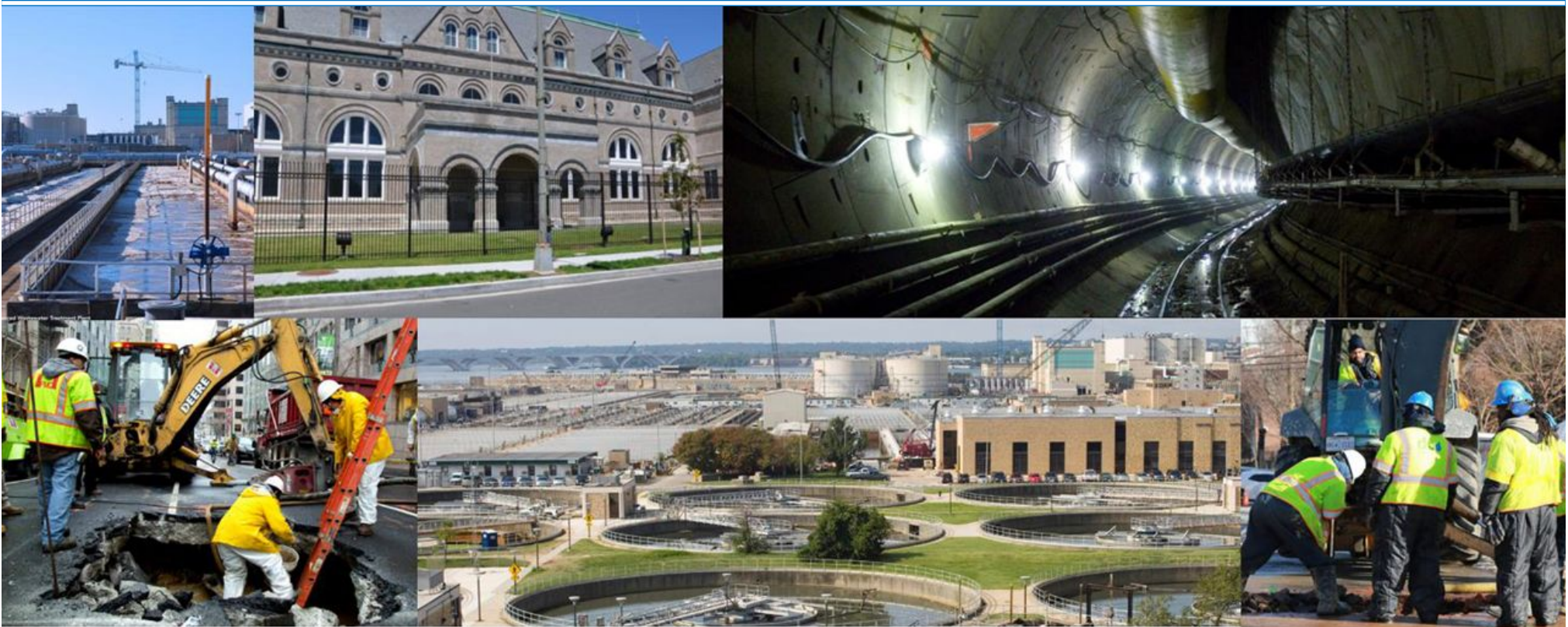
March 18, 2021

**Adam Ortiz, Chair**

**District of Columbia Water and Sewer Authority**

Kishia L. Powell, Chief Operating Officer

Leonard R. Benson, Senior Vice President CIP Project Delivery





## The CIP

The proposed 10-year disbursements (FY 2021 – FY 2030) of \$5.4 billion continues investment in our aging infrastructure

### 💧 Capital Construction Projects - \$4.92 billion

- \$1.03 billion fully funds the DC Clean Rivers' project to meet Consent Decree requirements
- Continues investment in the Water Service area to ramp up to the 1.5% of small diameter water mains replacement per year from FY 2028 onwards, ten-year total of \$1.15 billion in Water infrastructure
- Continues investment in the Sewer Service area (note, removed last years increase ramp up to 1.5% small sewer lines replacement from FY 2027 onwards) holds steady at total of \$1.31 billion in Sewer infrastructure
- Deferred multiple projects in the near-term to account for the COVID-19 revenue impacts while continuing with higher priority projects

### 💧 Additional Capital Programs - \$516.2 million

- \$336.0 million for capital equipment items to meet purchases/replacement of mechanical equipment, operational facilities, vehicle equipment, office renovations, innovation, and information technology infrastructure and systems
- \$180.1 million for DC Water's share of WAD's infrastructure improvements to achieve established service levels



# 10-Year Engineering CIP Options Compared

Service Area	Approved Baseline \$4.9B (FY2020-2029)	Proposed Baseline \$4.9B (FY2021-2030)	Asset Management \$5.4B (FY2019-2028)	Fully Funded \$5.8B (FY2020-2029)
<b>Clean Rivers</b>	<b>Fully funded</b> to meet Consent Decree	<b>Fully funded</b> to meet Consent Decree	<b>Fully funded</b> to meet Consent Decree	<b>Fully funded</b> to meet Consent Decree
<b>Wastewater</b>	<b>Fully funded</b> to meet NPDES Permit and established levels of service	<b>Fully funded</b> to meet NPDES Permit and established levels of service	<b>Fully funded</b> to meet NPDES Permit and established levels of service	<b>Fully funded</b> to meet NPDES Permit and established levels of service
<b>Stormwater*</b>	<b>Fully funded</b>	<b>Fully funded</b>	<b>Fully funded</b>	<b>Fully funded</b>
<b>Water</b>				
Pump Stations & Storage Facilities	<b>Generally funded</b>	<b>Generally funded</b>	<b>Fully Funded</b>	<b>Fully Funded</b>
Small Diameter Water Mains	<b>Increased funding</b> to ramp up to 1.5% per year replacement level from FY 2027 onwards. [16.5 mi/year]	<b>Funded</b> to ramp up to 1.5% per year replacement level from FY 2028 onwards. [16.5 mi/year]	<b>Fully funded to ramp up to 2%</b> replacement level [22 mi/year]	<b>Fully funded to ramp up to 2%</b> replacement level [22 mi/year]
Large Diameter Water Mains	<b>Generally funded</b>	<b>Generally funded</b>	<b>Generally funded</b>	<b>Fully Funded</b>
<b>Sewer</b>				
Pump Stations	<b>Fully funded</b>	<b>Fully funded</b>	<b>Fully funded</b>	<b>Fully funded</b>
Sewer Lines < 60" diameter	<b>Increased funding</b> to ramp up to 1.5% per year rehabilitation level from FY 2027 onwards. [26 mi/year]	<b>Funded to ramp up to 1%</b> per year rehabilitation level [17.5 mi/year] by FY 2024	<b>Fully funded to ramp up to 2.3%</b> rehabilitation level [40 mi/year]	<b>Fully funded to ramp up to 2.3%</b> rehabilitation level [40 mi/year]
Sewer Lines ≥ 60"	<b>Generally Funded</b>	<b>Generally Funded</b>	<b>Generally Funded</b>	<b>Fully funded</b>
<b>Non Process</b>	<b>Fully funded</b>	<b>Fully funded</b>	<b>Fully funded</b>	<b>Fully funded</b>

‘Generally Funded’ = What we know or expect to find can be rehabilitated ‘Underfunded’ = What we know or expect to find is not all funded  
 ‘Fully Funded’ = All needs known or expected are met \*Vertical Stormwater assets



## COVID-19 Impact Summary

- FY20 was an atypical year with budget changes required during the fiscal year. Thru April-June period the CIP schedule was re-baselined to account for anticipated near-term revenue shortfall due to COVID-19 impacts
- The proposed FY 21-30 plan prioritizes projects currently under construction, including the Clean Rivers program, and those that leverage outside funding opportunities
- Overall capital disbursement budget reduced by \$36.3 million in FY 2021 and \$134.9 million in FY 2022 compared to the annual levels in last year's Board-approved Capital Improvement Program
  - Deferred some of the projects at Blue Plains, including; Effluent Filter Upgrade, Filtration/Disinfection Facilities, Biosolids Rehabilitation, Solids Processing Building, Headworks Influent Structures, Electric Power System Switch Gear Upgrade
  - Deferred some of the projects under the Water & Sewer programs including; portions of the Small Diameter Water Mains program, Small and Local Sewers, Large Diameter Water Main replacement #3, Bryant St PS Spill Header, Ft. Stanton Reservoir No. 2 Abandonment



# The Capital Improvement Program

- 💧 The planned ramp-up in the approved CIP Baseline has been deferred due to COVID-19 revenue impacts. Approximately \$171 million deferred from FY 2021/2022 to FY 2023 and beyond
- 💧 The proposed lifetime budget is \$12.13 billion and covers total commitments, including labor, for active projects prior to, during, and beyond the ten-year window

\$ in 000's

	FY 2021 - FY 2030 Proposed Disbursement Plan											10-yr Total	Last Year's CIP	(Increase)/Decrease	Lifetime Budget
	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030					
NON PROCESS FACILITIES	\$38,004	\$12,725	\$21,321	\$22,204	\$6,350	\$5,262	\$3,066	\$844	\$0	\$0	\$109,776	\$137,479	\$27,703	\$210,031	
WASTEWATER TREATMENT	78,992	63,922	97,737	119,659	107,822	139,953	133,832	127,553	133,746	155,775	1,158,991	1,049,252	(109,739)	3,475,135	
COMBINED SEWER OVERFLOW	170,842	165,276	126,598	77,962	77,216	157,621	104,808	91,414	124,593	26,645	1,122,976	1,311,366	188,390	2,979,072	
STORMWATER	5,931	9,228	7,209	5,109	6,328	5,297	5,089	7,718	5,057	6,928	63,894	58,690	(5,204)	121,310	
SANITARY SEWER	50,547	75,437	94,116	126,383	130,552	182,891	214,243	166,734	138,047	134,024	1,312,973	1,228,922	(84,052)	2,095,695	
WATER	75,362	100,209	119,090	112,118	122,534	122,944	126,693	129,781	118,831	120,155	1,147,717	1,136,112	(11,605)	2,346,963	
<b>CAPITAL PROJECTS</b>	<b>419,678</b>	<b>426,797</b>	<b>466,072</b>	<b>463,435</b>	<b>450,803</b>	<b>613,968</b>	<b>587,731</b>	<b>524,044</b>	<b>520,274</b>	<b>443,526</b>	<b>4,916,327</b>	<b>4,921,821</b>	<b>5,493</b>	<b>11,228,206</b>	
CAPITAL EQUIPMENT	36,207	36,019	36,611	28,578	33,103	33,103	33,103	33,103	33,103	33,103	336,036	333,015	(3,021)	336,036	
WASHINGTON AQUEDUCT	15,382	13,324	37,903	8,414	16,012	34,208	11,240	10,919	18,885	13,838	180,125	195,178	15,053	180,125	
<b>ADDITIONAL CAPITAL PROGRAMS</b>	<b>51,589</b>	<b>49,343</b>	<b>74,513</b>	<b>36,992</b>	<b>49,115</b>	<b>67,312</b>	<b>44,344</b>	<b>44,023</b>	<b>51,988</b>	<b>46,942</b>	<b>516,161</b>	<b>528,193</b>	<b>12,032</b>	<b>516,161</b>	
LABOR													-	388,747	
<b>TOTAL CAPITAL BUDGETS</b>	<b>471,267</b>	<b>476,140</b>	<b>540,585</b>	<b>500,427</b>	<b>499,918</b>	<b>681,280</b>	<b>632,075</b>	<b>568,067</b>	<b>572,262</b>	<b>490,468</b>	<b>5,432,489</b>	<b>5,450,013</b>	<b>17,524</b>	<b>12,133,115</b>	
Last Years CIP	507,590	611,008	531,323	438,195	461,193	580,092	589,978	628,404	650,006	-	5,450,013	5,450,013	17,524	12,390,598	
<b>(Increase)/Decrease</b>	<b>\$36,323</b>	<b>\$134,868</b>	<b>(\$9,262)</b>	<b>(\$62,232)</b>	<b>(\$38,725)</b>	<b>(\$101,188)</b>	<b>(\$42,096)</b>	<b>\$60,338</b>	<b>\$77,744</b>	<b>(\$490,468)</b>	<b>\$17,524</b>	<b>-</b>	<b>-</b>	<b>\$257,483</b>	



# Budget Adoption Calendar

- 💧 Committee Reviews, Recommendations & Actions – **March**
- 💧 Budget materials published on website for customers
- 💧 Board Adoption – **April 1**



	Environmental Quality & Operations	DC Retail Water & Sewer Rates	Finance & Budget
FY 2021 - FY 2030 Capital Budget (Disbursements & Lifetime)	Action Required		Action Required
Revise FY 2022 Capital Disbursements	Action Required		Action Required
FY 2022 Operating Budget			Action Required
Intent to Reimburse Capital Expenditures with Proceeds of a Borrowing			Action Required
FY 2021 – FY 2030 Financial Plan		Action Required	Action Required



## Transition to Climate Compliant Fleet

**Ivan Frishberg:**

*“There is an additional \$336mm for capital equipment, which includes vehicles. Per the recent conversations about the importance of fleets that are compliant with the DC Net Zero goals it would be good to understand the long term consequences of purchasing and supporting infrastructure that is fossil fuel based and how we are considering our investments and the transition to climate compliant fleets.”*

***Response from Maureen Holman, Executive Vice-President, Administration***



## Fleet Efforts to Meet DC's Ambitious Climate Goals

**The Clean Energy DC Act mandates that 100% of public fleets are to be zero-emission by 2045 (and 50% zero-emissions by 2030) in accordance with the DC Clean Energy Plan and Climate Mitigation goals.**

DC Water has made great strides in meeting the Mayor's DC Net Zero Goals. Fleet Management leads the effort to modernize and reduce the carbon impact of our fleet while improving air quality across the District.

- I. 60% of DCW heavy vehicles/equipment (Priority #1 units) are clean idle
- II. 10% of our vehicles are electric
- III. 5% hybrid electric plug ins
- IV. 2% biodiesel

Types of fuel being used:

- I. E85
- II. Biodiesel
- III. Compressed Natural Gas (CNG)
- IV. Fuel cell





## Fleet Efforts to Meet DC's Ambitious Climate Goals

US Department of Energy (Energy Efficiency Renewable Energy State & Alternative Fuel Provider Fleets standard compliance reported 23 credits for model year 2020. The annual report shows how DC Water uses the standard compliance method to meet its Energy Policy Act (EPAct) requirements to acquire/purchase alternative fuel vehicles (AFVs)

Leveraging outside grant funding and partnerships:

- Optimus- \$137K to convert B20 to B100 technology- 10 vehicles have been converted to date.
- Diesel Emission Reduction Act (DERA) partnership with DPW/DCW is \$5.1M. The goal is to purchase 18 vehicles in FY21.

DC Water is dedicated to the success of the DERA project and reducing the impact of our heavy vehicles on local air quality, especially NOx emissions. Quarterly reporting to the Metropolitan Washington Council of Governments (MWCOG) and DC Office of Energy and Environment (DOEE) with project details and updates is occurring as required, and coordination with DPW is ongoing.

**ENVIRONMENTAL QUALITY & OPERATIONS COMMITTEE MEETING  
FISCAL YEAR 2021 – FY 2030  
PROPOSED CAPITAL IMPROVEMENT PROGRAM  
ACTION ITEM**

**ACTION ITEM 6B: FY 2021 – FY 2030 Proposed Capital Improvement Program**

DC Water presents its capital improvement program on two different bases:

- a. **Ten-Year Disbursement Plan** – The cash disbursement-based capital plan is utilized to forecast the timing and amount of capital financing, which is the primary basis for projected retail rate increases.
- b. **Lifetime Budget** – The project lifetime budget reflects the total costs of each project active during the ten-year planning period. These costs include historical and projected spending, project contingencies, and labor (listed as separate line item).

As shown in Attachment A-1, the Board of Directors will be asked to approve the following:

- a. **Proposed Revised FY 2021 CIP Disbursement Budget** – the proposed amendment is to reduce \$36.3 million from the Approved FY 2021 CIP Disbursement Budget of \$507.6 million to \$471.3 million
- b. **FY 2021 – FY 2030 Disbursement Plan** – \$5.43 billion
- c. **Lifetime Budget** – \$12.13 billion

**Capital Improvement Program**

\$ in thousands

Attachment A-1

	Approved Budget FY 2021	FY 2021 - FY 2030 CIP Disbursement Plan											Lifetime Budget
		Revised Budget	FY 2021 - FY 2030 CIP Disbursement Plan										
		FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	Total	
<b>NON PROCESS FACILITIES</b>													
Facility Land Use	\$ 31,849	\$ 38,004	\$ 12,725	\$ 21,321	\$ 22,204	\$ 6,350	\$ 5,262	\$ 3,066	\$ 844	\$ -	\$ -	\$ 109,776	\$ 210,031
<b>Subtotal</b>	<b>31,849</b>	<b>38,004</b>	<b>12,725</b>	<b>21,321</b>	<b>22,204</b>	<b>6,350</b>	<b>5,262</b>	<b>3,066</b>	<b>844</b>	<b>-</b>	<b>-</b>	<b>109,776</b>	<b>210,031</b>
<b>WASTEWATER TREATMENT</b>													
Liquid Processing	42,496	27,817	32,187	43,326	57,315	49,011	72,645	95,707	98,920	84,012	82,419	643,359	1,250,842
Plantwide	32,784	18,011	13,638	27,701	28,147	38,830	50,636	29,432	16,268	25,231	21,468	269,362	491,232
Solids Processing	27,314	25,763	17,255	24,181	33,068	19,981	16,672	6,487	10,504	12,838	28,595	195,344	929,651
Enhanced Nitrogen Removal Facilities	382	7,401	842	2,529	1,129	-	-	2,206	1,861	11,665	23,293	50,926	803,410
<b>Subtotal</b>	<b>102,976</b>	<b>78,992</b>	<b>63,922</b>	<b>97,737</b>	<b>119,659</b>	<b>107,822</b>	<b>139,953</b>	<b>133,832</b>	<b>127,553</b>	<b>133,746</b>	<b>155,775</b>	<b>1,158,991</b>	<b>3,475,135</b>
<b>COMBINED SEWER OVERFLOW</b>													
DC Clean Rivers Program	147,565	165,435	160,582	118,360	66,803	58,231	147,834	99,877	86,036	113,315	11,436	1,027,910	2,760,365
Combined Sewer Overflow Program	7,701	5,407	4,694	8,238	11,158	18,986	9,787	4,931	5,378	11,278	15,209	95,066	218,708
<b>Subtotal</b>	<b>155,266</b>	<b>170,842</b>	<b>165,276</b>	<b>126,598</b>	<b>77,962</b>	<b>77,216</b>	<b>157,621</b>	<b>104,808</b>	<b>91,414</b>	<b>124,593</b>	<b>26,645</b>	<b>1,122,976</b>	<b>2,979,072</b>
<b>STORMWATER</b>													
Storm Local Drainage Program	22	-	33	188	1,511	2,773	1,191	1,792	1,970	1,709	260	11,427	18,025
Storm On-Going Program	631	649	1,315	837	866	526	875	843	1,084	1,287	935	9,217	10,788
Storm Pumping Facilities	8,392	5,023	7,314	5,535	1,877	2,400	2,627	2,136	4,279	1,755	5,497	38,443	62,809
Stormwater Program Management	445	164	429	591	653	506	604	318	385	306	236	4,192	14,179
Stormwater Trunk/Force Sewers	141	95	137	58	202	123	-	-	-	-	-	615	15,510
<b>Subtotal</b>	<b>9,631</b>	<b>5,931</b>	<b>9,228</b>	<b>7,209</b>	<b>5,109</b>	<b>6,328</b>	<b>5,297</b>	<b>5,089</b>	<b>7,718</b>	<b>5,057</b>	<b>6,928</b>	<b>63,894</b>	<b>121,310</b>
<b>SANITARY SEWER</b>													
Sanitary Collection System	8,134	2,914	694	16,374	29,071	33,030	58,298	64,514	37,628	30,750	32,132	305,405	512,171
Sanitary On-Going Projectss	12,327	13,267	13,381	12,358	14,453	13,200	13,576	13,988	14,395	14,850	15,289	138,757	198,935
Sanitary Pumping Facilities	5,995	2,076	4,358	6,831	10,669	8,852	12,329	13,824	25,188	30,468	31,299	145,894	251,721
Sanitary Program Management	7,256	7,728	8,099	9,132	8,070	7,451	10,519	9,589	8,680	6,311	5,783	81,361	196,108
Interceptor/Trunk Force Sewers	32,006	24,562	48,905	49,421	64,121	68,019	88,169	112,328	80,843	55,668	49,521	641,557	936,759
<b>Subtotal</b>	<b>65,718</b>	<b>50,547</b>	<b>75,437</b>	<b>94,116</b>	<b>126,383</b>	<b>130,552</b>	<b>182,891</b>	<b>214,243</b>	<b>166,734</b>	<b>138,047</b>	<b>134,024</b>	<b>1,312,973</b>	<b>2,095,695</b>
<b>WATER</b>													
Water Distribution Systems	60,464	46,643	68,528	82,740	71,899	89,272	82,322	85,853	87,095	87,109	84,434	785,895	1,502,345
Lead Free DC Program	5,408	6,179	6,075	5,908	5,869	5,963	5,396	5,428	5,666	5,739	5,390	57,613	243,956
Water On-Going Projects	11,075	12,126	12,480	13,457	15,287	14,274	14,390	16,670	17,818	18,000	19,000	153,502	212,590
Water Pumping Facilities	2,650	1,328	5,045	10,281	6,736	3,947	5,814	2,395	4,495	215	2,571	42,827	72,646
DDOT Water Projects	10	1,016	152	13	-	-	-	-	-	-	-	1,181	33,933
Water Storage Facilities	4,318	4,521	3,056	2,498	9,565	4,724	9,333	7,967	6,841	2,611	3,602	54,718	155,760
Water Service Program Management	4,752	3,550	4,873	4,193	2,762	4,354	5,689	8,380	7,866	5,157	5,157	51,981	125,733
<b>Subtotal</b>	<b>88,677</b>	<b>75,362</b>	<b>100,209</b>	<b>119,090</b>	<b>112,118</b>	<b>122,534</b>	<b>122,944</b>	<b>126,693</b>	<b>129,781</b>	<b>118,831</b>	<b>120,155</b>	<b>1,147,717</b>	<b>2,346,963</b>
<b>CAPITAL PROJECTS</b>	<b>454,118</b>	<b>419,678</b>	<b>426,797</b>	<b>466,072</b>	<b>463,435</b>	<b>450,803</b>	<b>613,968</b>	<b>587,731</b>	<b>524,044</b>	<b>520,274</b>	<b>443,526</b>	<b>4,916,327</b>	<b>11,228,206</b>
<b>CAPITAL EQUIPMENT</b>													
	37,207	36,207	36,019	36,611	28,578	33,103	33,103	33,103	33,103	33,103	33,103	336,036	336,036
<b>WASHINGTON AQUEDUCT</b>													
	16,266	15,382	13,324	37,903	8,414	16,012	34,208	11,240	10,919	18,885	13,838	180,125	180,125
<b>ADDITIONAL CAPITAL PROGRAMS</b>													
	53,473	51,589	49,343	74,513	36,992	49,115	67,312	44,344	44,023	51,988	46,942	516,161	516,161
<b>LABOR</b>													
													388,747
<b>TOTAL CAPITAL BUDGETS</b>	<b>\$ 507,590</b>	<b>\$ 471,267</b>	<b>\$ 476,140</b>	<b>\$ 540,585</b>	<b>\$ 500,427</b>	<b>\$ 499,918</b>	<b>\$ 681,280</b>	<b>\$ 632,075</b>	<b>\$ 568,067</b>	<b>\$ 572,262</b>	<b>\$ 490,468</b>	<b>\$ 5,432,489</b>	<b>\$ 12,133,115</b>



# EPA Revised Lead and Copper Rule

Environmental Quality and Operations  
Committee Meeting, March 18, 2021

Maureen Schmelling  
Director of Water Quality and Technology  
DC Water

# Rule Components

- Corrosion Control
- Lead and Copper Monitoring
- Service Line Inventory
- Lead Service Line Replacement
- Public Education
- Testing in Schools and Daycares

**\*UPDATE\*** - EPA delayed the rule effective date to allow time for additional public comment and review of the rule.

# EPA LCR Summary

LCR Requirement	Current Reg. / (DC Water Ops)	Revised LCR (comply by 2024)
Service Line Material Inventory	(Voluntarily provide Website Map)	Publish and Notify Customers
Action Level (90 <sup>th</sup> Percentile)	15 ppb	15 ppb
Trigger Level (90 <sup>th</sup> Percentile)	New	10 ppb
Mandatory LSR – Action Level Exceedance	7 % of lead service lines the utility owns and partials count	3% of lead and unknown service lines the utility owns (full replacements only)
Mandatory LSR- Trigger Level Exceedance	New	Execute utility-defined LSR plan
Customer Initiated LSR	New (VFR – customer pays for private side and DC Water pays for public)	Utility must replace utility-owned portion within 180 days
Lead Sample Collection	1 <sup>st</sup> Draw, homes with partial or full lead service lines	5 <sup>th</sup> liter, homes with partial or full lead service lines
Optimal Corrosion Control Treatment Monitoring	5 sites quarterly	25-50 sites quarterly (add new site when individual sample >15 ppb)
Pitcher Filter Kits	New (Voluntarily provide after LSRs)	After LSL, water meter, or meter setter replacements
School and Daycare Sampling	New (District tests Public Schools and Daycares)	Once within 2024-2029; upon request following (can exclude if tested by District)

# Corrosion Control Treatment (CCT)

Current corrosion control treatment at both Washington Aqueduct treatment plants—  
orthophosphate (2.5 mg/L)

- Lead 90<sup>th</sup>% > 10 ppb: Utility shall recommend re-optimized optimal CCT
- Lead > 5 ppb – 10 ppb: Not considered “optimized”, requirements not specified

# Monitoring—Sample Sites

Tier	Pipe Material	Building
1	<b>Lead service lines</b>	<b>Single family</b>
2	Lead service lines	Multi-family
3	Galvanized iron line that is or was downstream of lead	Single family
4	Copper pipe installed with lead solder installed before March 21, 1987 (District's lead ban date)	Single family
5	Copper pipe installed with lead solder installed before March 21, 1987 (District's lead ban date)	Multi-family

➤ Same number of sites—100 homes

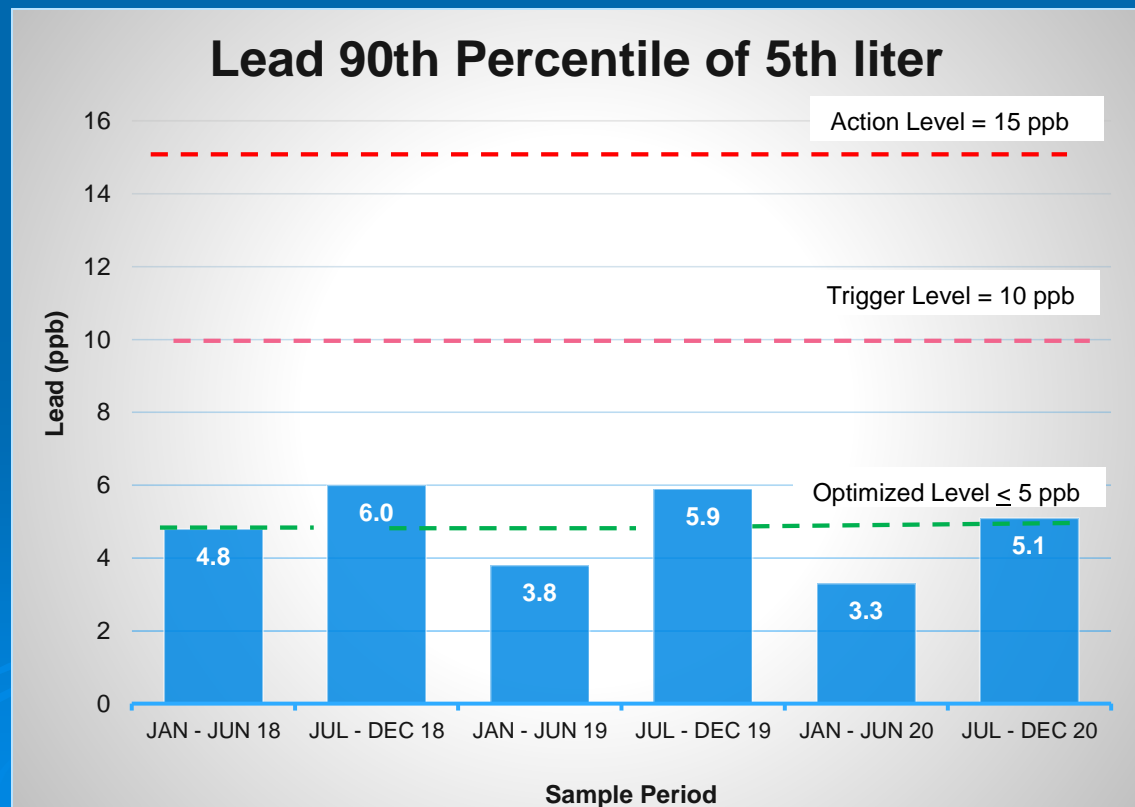


# Monitoring—Lead and Copper

- Annual lead and copper sampling for systems with LSLs
  - Semi-annual > 15 ppb

- Lead Sample is 5<sup>th</sup> liter
  - DC Water's 2<sup>nd</sup> draw

- Copper Sample is 1<sup>st</sup> liter



# Water Quality Parameters

- State determines parameters to monitor corrosion control treatment
  - pH, orthophosphate, alkalinity, chlorine, etc.
  
- 25 – 50 sites, twice every 6 months

# Find and Fix

- Follow-up evaluation for each LCR sample >15 ppb
- Within 5 days of receiving results, test WQPs
  - Within ½ mile, on same size main, and same pressure zone
  - Add site to OCCT quarterly monitoring (max 50 sites)
- Within 30 days, collect sample at each exceedance home
- Must report evaluation with recommendations to EPA
  - State may require Optimization Study

# Service Line Inventory

- Identify service line pipe material
  - Includes all service lines connected to the public distribution system
  - Categorize as Lead, Nonlead, Galvanized Iron, and Unknow



- Make available to the public (Map)

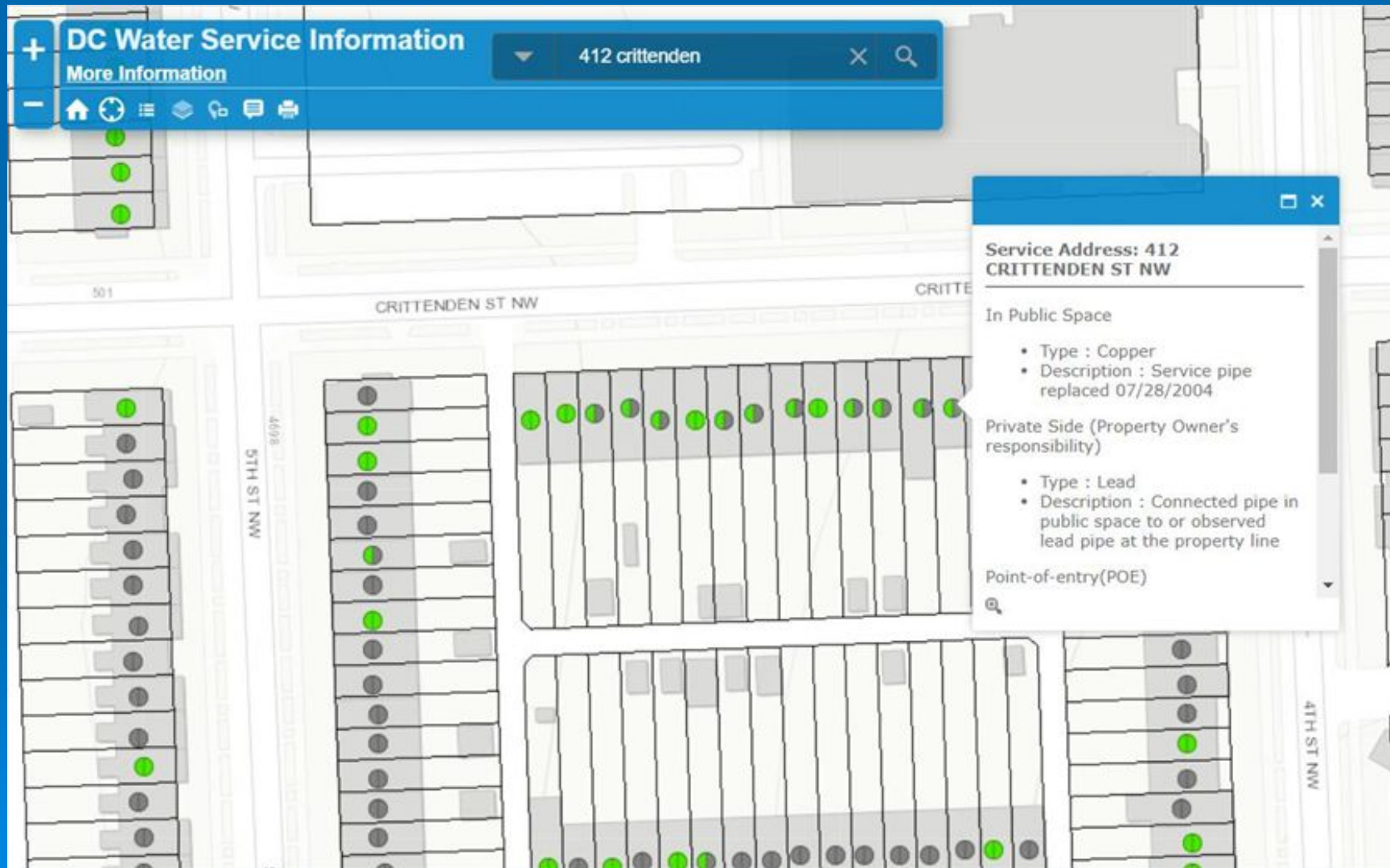
- Due January 2024

The form contains the following information:

- Installation Type:** *Water*
- Address of Residence:** *1155 Hill St NE*
- Plumber Name and License #:** *Michael D. Jones 1240050*
- Public Space Permit Number:** *1240050-212*
- Size of Service Installed:** *2"*
- Service Material:** *Galv*
- Size of Corporation Stop:** *2"*
- Size of Curb Stop:** *2"*
- Street where Main is Located:** *Hill St NE*
- Size of Main:** *8"*
- Additional Remarks:** *517575/3*

The schematic diagram shows a layout with a 'Property Line', 'Curb Line', and 'Meter main'. It includes a 'Water Meter' and various fittings. The diagram is oriented with North (N) at the top.

# DC WATER'S MAP COMPLIES



# Lead Service Line Replacement—Plan

- Submit a plan by January 2024
- Contents
  - Replacement goal rate in the event of a trigger level exceedance (>10 ppb)
  - Funding strategy for conducting lead service line replacements
  - Addressing the unknown service line pipe materials

# LSR when Exceeding Action Level

- Replace 3 percent of total lead and unknown service lines annually
- Full LSRs only count towards required LSRs
  - Full LSR achieved when no lead pipe in service line remains, which includes past-partial replacements
- “The State shall require a system to replace LSLs on a shorter schedule..., taking into account the number of LSLs, where a shorter schedule is feasible.”

# Other LSR Requirements

- Utility must replace LSL it owns within 45 / 180 days when customer notifies utility that they intend to replace their portion
  - DC Water's Voluntary Full Replacement Program meets this requirement
    - Roughly 60% proceed with replacement after enrollment
  
- Water system must offer a water test 3 to 6 months after any LSR



# Health Effects Education

- Annual notification to customers with lead and unknown service lines
- Annual notification to healthcare providers and caregivers

# Public Education

- Disturbances of a lead, galvanized iron, or unknown service line
  - Notify of potential for lead release
  - Provide flushing instructions
  
- Must provide pitcher filter kit for *meter changeout* and service line replacements for lead and unknown services

# Schools and Daycares

- Water system must test water for lead in schools and licensed daycares
  - District's current testing could assist with this requirement
  
- Initial Round within 5 years; upon request thereafter
  - Schools - 5 samples per school
  - \* • Daycares – 2 samples per facility

# District Amendments

- The Mayor signed D.C. Act 23-577, the DC Water Omnibus Amendment Act of 2020
  - Currently under congressional review, expected to be published late March
- Key revisions
  - *Defines LSL to include galvanized iron and brass pipe for assistance*
  - Funding assistance for brass pipe replacement, pending budget if made available in FY 2022
  - Additional reporting requirements for DOEE and DC Water
  - Emergency repairs can proceed if homeowner is not available to give consent for private side work
    - District will pay for private side if homeowner provides consent within 30 days following public side replacement

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

**ACTION REQUESTED**

**GOODS AND SERVICES CONTRACT OPTION YEAR**

**BELT PRESS DEWATERING POLYMER  
(Joint Use)**

Approval to exercise option year 2 for the Belt Press Dewatering Polymer in the amount of \$2,101,000.00.

**CONTRACTOR/SUB/VENDOR INFORMATION**

<b>PRIME:</b> Polydyne, Inc. One Chemical Plant Road Riceboro, GA 31323	<b>SUBS:</b> N/A	<b>PARTICIPATION:</b> N/A
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**DESCRIPTION AND PURPOSE**

Base Year Contract Value:	\$1,781,700.00
Base Year Contract Dates:	05-01-2019 – 04-30-2020
No. of Option Years in Contract:	2
Prior Modifications Value:	\$475,000.00
Prior Modifications Date:	01-18-2020 – 04-30-2020
Option Year 1 Value:	1,803,000.00
Option Year 1 Date:	05-01-2020 – 04-30-2021
<b>Option Year 2 Value:</b>	<b>2,101,000.00</b>
<b>Option Year 2 Date:</b>	<b>05-01-2021 – 04-30-2022</b>

**Purpose of the Contract:**

This contract is to supply and deliver belt press dewatering polymer to DC Water’s Blue Plains Advanced Wastewater Treatment Facility. This polymer conditions biosolids to help remove water in the Final Dewatering Facility at Blue Plains.

**Contract Scope:**

In the belt press dewatering operations, the polymer is used to help remove water from biosolids after the digestion process. Dewatering biosolids improves the quality of this important co-product by removing water to concentrate the solids and reduce its volume, which also reduces the cost to transport biosolids to application sites.

This is the final year of the contract and DC Water will re-evaluate the polymers market to determine whether a new solicitation or extending the current contract will provide best value.

**Spending Previous Year:**

Cumulative Contract Value:	05-01-2019 to 04-30-2021: \$4,059,700.00
Cumulative Contract Spending:	05-01-2019 to 02-28-2021: \$3,756,604.00

**Contractor’s Past Performance:**

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

No LBE/LSBE participation

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**PROCUREMENT INFORMATION**

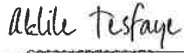
<b>Contract Type:</b>	Good and Services	<b>Award Based On:</b>	Best Value
<b>Commodity:</b>	Dewatering Polymer	<b>Contract Number:</b>	19-PR-DWT-14
<b>Contractor Market:</b>	Open Market with Preference Points for LBE and LSBE Participation		

**BUDGET INFORMATION**

<b>Funding:</b>	Operating	<b>Department:</b>	Wastewater Treatment
<b>Project Area:</b>	Blue Plains	<b>Department Head:</b>	Aklile Tesfaye

**ESTIMATED USER SHARE INFORMATION**

User - Operating	Share %	Dollar Amount
District of Columbia	43.44%	\$912,674.40
Washington Suburban Sanitary Commission	41.95%	\$881,369.50
Fairfax County	9.79%	\$205,687.90
Loudoun Water	4.23%	\$88,872.30
Other (PI)	0.59%	\$12,395.90
<b>TOTAL ESTIMATED DOLLAR AMOUNT</b>	<b>100.00%</b>	<b>\$2,101,000.00</b>

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 Aklile Tesfaye  
 VP of Wastewater Operations

3/4/2021  
 Date

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 Dan Bae  
 VP of Procurement and compliance

\_\_\_\_\_  
 Date

\_\_\_\_\_  
 Matthew T. Brown  
 CFO and EVP of Finance and Procurement

\_\_\_\_\_  
 Date

\_\_\_\_\_  
 David L. Gadis  
 CEO and General Manager

\_\_\_\_\_  
 Date

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

**ACTION REQUESTED**

**GOODS AND SERVICES CONTRACT OPTION YEAR**

**CENTRIFUGE PRE-DEWATERING POLYMER  
(Joint Use)**

Approval to exercise option year 2 for the Centrifuge Pre-Dewatering Polymer in the amount of \$1,800,000.00.

**CONTRACTOR/SUB/VENDOR INFORMATION**

<b>PRIME:</b>	<b>SUBS:</b>	<b>PARTICIPATION:</b>
Polydyne, Inc. One Chemical Plant Road Riceboro, GA 31323	N/A	N/A

**DESCRIPTION AND PURPOSE**

Base Year Contract Value:	\$1,384,900.00
Base Year Contract Dates:	05-01-2019 – 04-30-2020
No. of Option Years in Contract:	2
Prior Modifications Value:	\$475,000.00
Prior Modifications Date:	01-18-2020 – 04-30-2020
Option Year 1 Value:	1,600,000.00
Option Year 1 Date:	05-01-2020 – 04-30-2021
<b>Option Year 2 Value:</b>	<b>1,800,000.00</b>
<b>Option Year 2 Date:</b>	<b>05-01-2021 – 04-30-2022</b>

**Purpose of the Contract:**

This contract is to supply and deliver centrifuge pre-dewatering polymer to DC Water’s Blue Plains Advanced Wastewater Treatment Facility. This polymer conditions biosolids to help remove water in the centrifuge process.

**Contract Scope:**

DC Water has a continuing requirement for the pre-dewatering process. The centrifuge polymer helps remove water from the biosolids before digestion. Dewatering help reduce water content and increase the solids content in the feed to Thermal Hydrolysis (THP). This conditioning improves the performance of the THP and digestion processes, leading to exceptional-quality Bloom that can be applied for beneficial use.

This is the final year of the contract and DC Water will re-evaluate the polymers market to determine whether a new solicitation or extending the current contract will provide best value.

**Spending Previous Year:**

Cumulative Contract Value:	05-01-2019 to 04-30-2021: \$3,459,900.00
Cumulative Contract Spending:	05-01-2019 to 02-28-2021: \$2,912,107.00

**Contractor’s Past Performance:**

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

No LBE/LSBE participation

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**PROCUREMENT INFORMATION**

<b>Contract Type:</b>	Good and Services	<b>Award Based On:</b>	Best Value
<b>Commodity:</b>	Pre-Dewatering Polymer	<b>Contract Number:</b>	19-PR-DWT-15
<b>Contractor Market:</b>	Open Market with Preference Points for LBE and LSBE Participation		

**BUDGET INFORMATION**

<b>Funding:</b>	Operating	<b>Department:</b>	Wastewater Treatment
<b>Project Area:</b>	Blue Plains	<b>Department Head:</b>	Aklile Tesfaye

**ESTIMATED USER SHARE INFORMATION**

User - Operating	Share %	Dollar Amount
District of Columbia	43.44%	\$781,920.00
Washington Suburban Sanitary Commission	41.95%	\$755,100.00
Fairfax County	9.79%	\$176,220.00
Loudoun Water	4.23%	\$76,140.00
Other (PI)	0.59%	\$10,620.00
<b>TOTAL ESTIMATED DOLLAR AMOUNT</b>	<b>100.00%</b>	<b>\$1,800,000.00</b>

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 Aklile Tesfaye  
 VP of Wastewater Operations

3/4/2021  
 Date

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 Dan Bae  
 VP of Procurement and Compliance

Date

\_\_\_\_\_  
 Matthew T. Brown  
 CFO and EVP of Finance and Procurement

Date

\_\_\_\_\_  
 David L. Gadis  
 CEO and General Manager

Date



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

**ACTION REQUESTED**

**CONSTRUCTION CONTRACT:**

**Small Diameter Water Main Replacement 14B  
(Non-Joint Use)**

Approval to execute a construction contract for \$8,003,916.00

**CONTRACTOR/SUB/VENDOR INFORMATION**

<b>PRIME:</b>	<b>SUBS:</b>	<b>PARTICIPATION:</b>
Capitol Paving of D.C., Inc. 2211 Channing Street, N.E P.O. Box 21248 Washington , DC 20018	Amerigal Construction CO, Inc Glen Dale, Maryland DBE	32.0%
	Royal Construction Materials Mclean , VA WBE	6.0%

**DESCRIPTION AND PURPOSE**

Contract Value, Not-To-Exceed:	\$8,003,916.00
Contract Time:	385 Days (1 Year 1 Month)
Anticipated Contract Start Date (NTP):	06-01-2021
Anticipated Contract Completion Date:	06-21-2022
Bid Opening Date:	01-15-2021
Bids Received:	9
Other Bids Received	
Sagres Construction Corporation	\$8,847,263.00
Fort Myer Construction Corporation	\$8,937,726.70
Metro Paving Corporation	\$9,802,066.00
Anchor Construction Corporation, Inc	\$9,864,222.00
Garney Construction	\$9,898,458.00
Civil Construction LLC	\$10,127,256.00
Old Line Construction, Inc	\$10,447,797.00
Spiniello Companies	\$10,973,300.00

**Purpose of the Contract:**

Replacement of small diameter water mains that have experienced failures, or have a history of low water pressure, or water quality issues across various locations within the District of Columbia.

**Contract Scope:**

- Replace 2.76 miles of water mains ranging from four (4) inch to twelve (12) inches and associated valves and appurtenances
- Replace water services 2" and smaller in public and private space as needed
- Replace curb stop / curb stop box, meter box and penetration through building wall and connection to first fitting inside the building including installation of a shut-off valve and pressure reducing valve
- Provide permanent pavement and surface restoration

**Federal Grant Status:**

- Construction contract is funded in part by Federal grant.

**PROCUREMENT INFORMATION**

<b>Contract Type:</b>	Unit Price	<b>Award Based On:</b>	Lowest responsive, responsible bidder
<b>Commodity:</b>	Construction	<b>Contract Number:</b>	170080
<b>Contractor Market:</b>	Open Market		

**BUDGET INFORMATION**

<b>Funding:</b>	Capital	<b>Department:</b>	Engineering and Technical Services
<b>Service Area:</b>	Water	<b>Department Head:</b>	Craig Fricke
<b>Project:</b>	F2,BW		

**ESTIMATED USER SHARE INFORMATION**

User	Share %	Dollar Amount
District of Columbia	24.31%	\$1,945,751.98
Federal Funds	75.69%	\$6,058,164.02
Washington Suburban Sanitary Commission	0.00%	\$0.00
Fairfax County	0.00%	\$0.00
Loudoun County & Potomac Interceptor	0.00%	\$0.00
<b>Total Estimated Dollar Amount</b>	<b>100.00%</b>	<b>\$8,003,916.00</b>

*Leonard R. Benson* \_\_\_\_\_  
 March 11, 2021  
 Leonard R. Benson \_\_\_\_\_  
 SVP, CIP Project Delivery Date

*Dan Bae* \_\_\_\_\_  
 March 11, 2021  
 Dan Bae, VP \_\_\_\_\_  
 Procurement and Compliance Date

*Matthew T. Brown* \_\_\_\_\_  
 March 11, 2021  
 Matthew T. Brown \_\_\_\_\_  
 CFO and EVP Date  
 Finance and Procurement

David L. Gadis \_\_\_\_\_  
 Date  
 CEO and General Manager

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

**ACTION REQUESTED**

**PARTICIPATION IN DDOT PROJECT:**

**DDOT - Florida Avenue NE  
From 2<sup>nd</sup> Street NE to H Street NE  
(Non-Joint Use)**

Approval to participate in DDOT’s project to reconstruct Florida Avenue NE from 2<sup>nd</sup> Street NE to H Street NE under the terms of the 2002 Memorandum of Agreement (MOA) between the District of Columbia Department of Transportation (DDOT) and DC Water for an amount up to \$5,600,000. This amount exceeds the General Manager’s approval authority.

**PARTY INFORMATION**

<b>PARTY:</b>	<b>SUBS:</b>	<b>PARTICIPATION:</b>
District Department of Transportation 55 M Street, SE, Suite 400, Washington, DC 20003	MBE and WBE fair share objectives will follow DDOT goals.	

**DESCRIPTION AND PURPOSE**

Value, Not-To-Exceed: \$5,600,000.00  
 Time: 913 Days (2 Year, 6 Months)  
 Anticipated Start Date: July 2021  
 Anticipated Completion Date: January 2024

**Purpose of DC Water’s Participation:**

Replacement of small diameter water mains that have experienced failures, or have a history of low water pressure, or water quality issues within the District of Columbia.

**Scope of DC Water’s Participation:**

- Replace 2.2 miles of water mains ranging from four (4) inches to twelve (12) inches diameter and associated valves and appurtenances.
- Replace water services 2-inch diameter and smaller in public and private space as needed.
- Replace curb stop/curb stop box, meter box and penetration through building wall and connection to first fitting inside the building including installation of a shut-off valve and pressure reducing valve.

**Federal Grant Status:**

- Work is not eligible for Federal grant funding assistance.

**AGREEMENT INFORMATION**

<b>Contract Type:</b>	MOU	<b>Award Based On:</b>	N/A
<b>Commodity:</b>	Design and Construction	<b>Contract Number:</b>	N/A

**BUDGET INFORMATION**

<b>Funding:</b>	Capital	<b>Department:</b>	Engineering and Technical Services
<b>Service Area:</b>	Water	<b>Department Head:</b>	Craig Fricke
<b>Project:</b>	HX		

**ESTIMATED USER SHARE INFORMATION**

User	Share %	Dollar Amount
District of Columbia	100.00%	\$ 5,600,000.00
Federal Funds	0.00%	\$
Washington Suburban Sanitary Commission	0.00%	\$
Fairfax County	0.00%	\$
Loudoun County & Potomac Interceptor	0.00%	\$
<b>Total Estimated Dollar Amount</b>	<b>100.00%</b>	<b>\$ 5,600,000.00</b>

Leonard  
Benson

Digitally signed by Leonard Benson  
DN: dc=com, dc=dcwasa, ou=WASA Users,  
ou=Engineering, cn=Leonard Benson,  
email=Leonard.Benson@dcwater.com  
Date: 2021.03.09 16:00:21 -05'00'

\_\_\_\_\_/\_\_\_\_\_  
Leonard R. Benson Date  
SVP, CIP Project Delivery

\_\_\_\_\_/\_\_\_\_\_  
Dan Bae, VP Date  
Procurement & Compliance

\_\_\_\_\_/\_\_\_\_\_  
Matthew T. Brown Date  
CFO and EVP  
Finance & Procurement

\_\_\_\_\_/\_\_\_\_\_  
David L. Gadis Date  
CEO & General Manager



# Board of Directors Environmental Quality and Operations Committee

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## District of Columbia Water And Sewer Authority



**Solar Power Purchase Agreement Status Update March 2021**



# Status Update Solar Power Purchase Agreement

## Agenda

- ☀️ Goal
- ☀️ Project Description and Benefits
- ☀️ Project Status
- ☀️ Future Considerations



## Goal of Solar Power Purchase Agreement at Blue Plains

**Generate savings in  
DC Water's operating budget**

### Other Benefits include

- Improved resiliency due to availability of alternative energy source
- Reduction in greenhouse gas emissions
- Capital investment savings
- Condition assessments



## Solar Power Purchase Agreement

- Power Purchase Agreement with Marbury Point, LLC
- Design, Construction, 20 year O&M
- Option to extend for 5 additional years
- Option to purchase in year 6, 10 and at the end of the term
- Intermediate Design for Phase 2



**CONTRACT YEAR 1**

**2.5 cents/KWh**

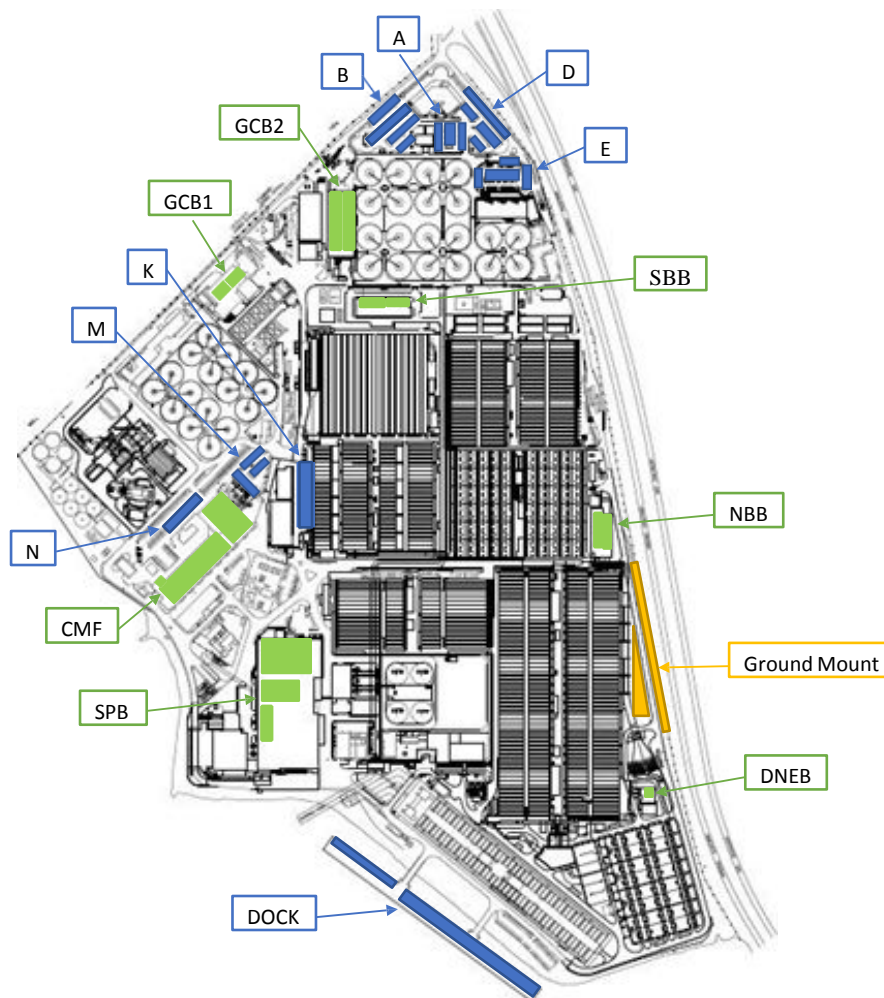
**5,202,000 kWh guaranteed annual power output**





## Blue Plains AWWTP- Site Map Solar Arrays Locations

Interconnection with Blue Plains Power Distribution System	Maximum DC Capacity (kW)
Groundmounts on East Perimeter Grass and Patch North of Denitrification Pumps and Denitrification Electrical Building Roof	410
Central Maintenance Facility (CMF) Roof	561
Central Maintenance Facility Carports Areas K, M and N	573
Solids Processing Building Roof	349
Central Operations Facility (COF) Carports Areas A and B	741
Visitor Center Carports Areas D and E	227
Grit Chamber Building 1 Roof	58
Grit Chamber Building 2 Roof	335
Secondary Blower Building	62
Nitrification Blower Building	93
Dock	1033
<b>Total PV System</b>	<b>4,442</b>



= Carport Arrays  
  = Rooftop Arrays  
  = Ground Mount Arrays



## Projected Cost Savings

Term Year	Guaranteed Energy Output (kWh/yr)	Grid Price Baseline Comparison \$/kWh	Marbury Point Price \$/kWh	Project Cost Savings \$/yr
1	5,202,000	\$ 0.0818	\$ 0.0250	295,578
2	5,176,000	\$ 0.0815	\$ 0.0253	290,943
3	5,150,000	\$ 0.0831	\$ 0.0255	296,847
4	5,125,000	\$ 0.0848	\$ 0.0258	302,390
5	5,099,000	\$ 0.0865	\$ 0.0260	308,485
6	5,074,000	\$ 0.0882	\$ 0.0263	314,228
7	5,048,000	\$ 0.0900	\$ 0.0265	320,516
8	5,023,000	\$ 0.0918	\$ 0.0268	326,462
9	4,998,000	\$ 0.0936	\$ 0.0271	332,514
10	4,973,000	\$ 0.0955	\$ 0.0273	339,168
11	4,948,000	\$ 0.0974	\$ 0.0276	345,430
12	4,923,000	\$ 0.0994	\$ 0.0279	351,799
13	4,899,000	\$ 0.1013	\$ 0.0282	358,349
14	4,874,000	\$ 0.1034	\$ 0.0285	364,938
15	4,850,000	\$ 0.1054	\$ 0.0287	372,198
16	4,825,000	\$ 0.1076	\$ 0.0290	379,007
17	4,801,000	\$ 0.1097	\$ 0.0293	386,009
18	4,777,000	\$ 0.1119	\$ 0.0296	393,127
19	4,753,000	\$ 0.1141	\$ 0.0299	400,363
20	4,730,000	\$ 0.1164	\$ 0.0302	407,803



## Roof Replacement and Warranties

Roof replacement valued at \$3.5-\$4.5M and included in the PPA rate

Key	Building Name	Roof Plan
1.1	Solids Processing Building EL 37.00 - Dissolved Air Flotation (DAF) Area	Replace
1.2	Solids Processing Building EL 63.00 - Former N/S Vacuum Filter Area	Extend Warranty
2	Central Maintenance Facility (CMF)	Replace
3	Grit Chamber Building 1	New Warranty
4	Grit Chamber Building 2	New Warranty
5	Chemical Building (Metal Salts)	Replace
6	Nitrification Blower Building	Extend Warranty
7	Denitrification Electrical Building	Extend Warranty



# Central Maintenance Building (CMF)

## Rooftop Arrays





Parking Lot Arrays

# Visitors Center Parking lot





## Project Status

- ☀ Design Complete
- ☀ Construction 93% Complete
- ☀ Commissioning underway

**FINAL COMMERCIAL OPERATIONS DATE**  
**3/31/2021 Rooftops, groundmounts, carports**  
**5/12/2021 Dock**



# Dock Arrays

Parking lot type mount





# Future Considerations: Phase 2 Solar

## PHASE 2 PROPOSAL INTERMEDIATE DESIGN

- ❖ 8/16/2019 Received an intermediate design over the process facilities, which was a deliverable under the phase 1 PPA. DC Water review comments included a request to propose a system that would generate the maximum power output

## PHASE 2 PROCESS FACILITIES SUBMITTAL DESIGN

- ❖ Maximum case design was proposed for a 13.2MW dc system but design was not advanced to intermediate level
- ❖ Material changes were proposed to PPA conditions including transferring condition risk from Ameresco to DC Water and additional rights for them to terminate

	<b>7.96 MW system</b>	<b>13.2 MW system</b>
Year 1 \$/KwH	\$0.079	\$0.075
20 year NPV	\$1.0M	\$2.3M
Key pricing variables	Capital Cost 8% more due to steel and installation expense O&M cost 20% more due to more difficult access to arrays Array yield is 1% less due to azimuth and tile angle Timing and impact on Environmental Attributes/ ITC	

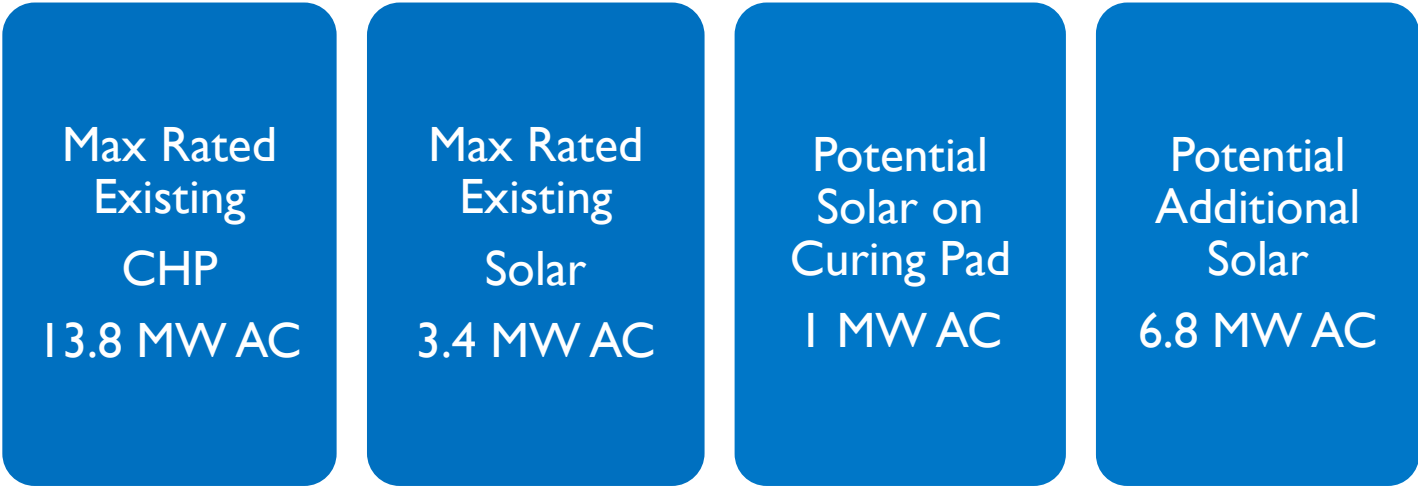
Continue to monitor for favorable opportunities to move forward with Phase 2





## Future Considerations

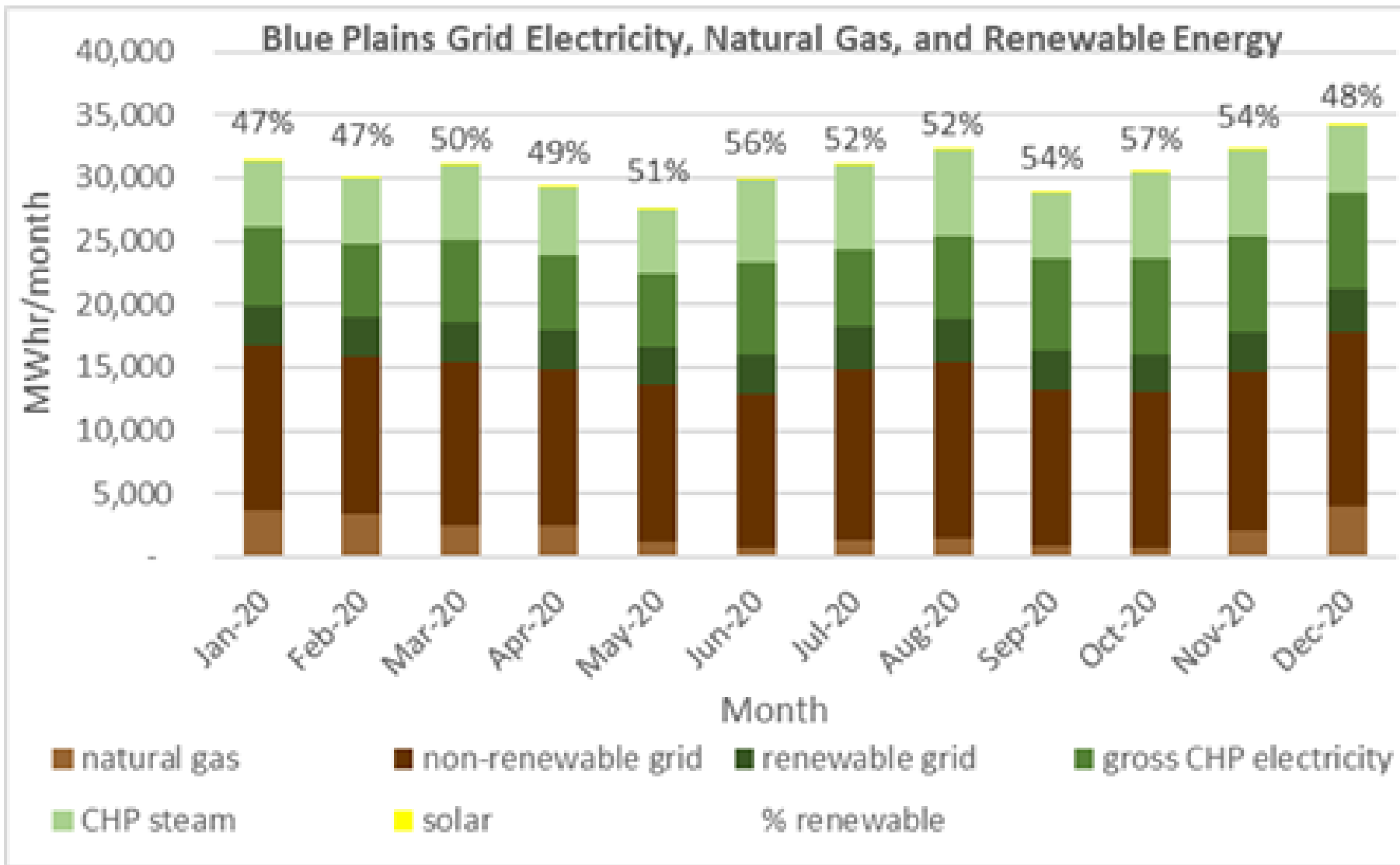
### PEPCO Interconnection 25MW AC



Prior PEPCO Interconnection	Current PEPCO Interconnection
25MW	25MW
5 turbines @ 5MW/Turbine	3 turbines @ 4.6 MW
	Solar @ 11.2MW



# Estimated Power Consumption at Blue Plains





### DC Water Solar Team

