



DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY

Board of Directors

Environmental Quality and Operations Committee

Thursday, May 20, 2021
9:30 a.m.

Microsoft Teams Meeting

Join on your computer or mobile app

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Or call in (audio only)

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Phone Conference ID: 298 780 467#

9:30 a.m.	I.	Call to Order	Adam Ortiz Chair
	II.	Roll Call	Linda Manley Board Secretary
9:35 a.m.	III.	AWTP Status Update	Aklile Tesfaye
		1. BPAWTP Performance	
9:45 a.m.	IV.	CIP Quarterly Update	Paul Guttridge
10:00 a.m.	V.	Lead Free DC Program Accelerating Lead Service Line Replacement	John Deignan
		1. Action Item:	Jason Hughes
		a. Recommendation of Final Approval to Revise the Resolutions for Implementing the Lead Service Line Replacement Policy	
10:25 a.m.	VI.	Solar Status Update - Follow-up	David Parker
10:40 a.m.	VII.	Water Operation Updates	
		1. Fire Hydrants	Marlee Franzen
		2. Water Quality	Maureen Schmelling
10:50 a.m.	VIII.	Other Business / Emerging Issues	
10:55 a.m.	IX.	Executive Session*	Adam Ortiz Chair

11:00 a.m. X. **Adjournment**

Follow-up Items from Prior Meetings:

1. *Director, Wastewater Engineering: Provide the Committee with more information on the estimated power generation and consumption at the Blue Plains AWTP. [On Current Agenda]*
2. *SVP, CIP Project Delivery: Modify the Fact Sheet for Contract No.: 180080 - Reclaimed Final Effluent Pump Systems (RFEPS) Upgrades to indicate that this was a best value selection and not a strictly low bid selection. [Made correction immediately after April 15th EQ & Ops meeting and the fact sheet was forwarded to BOD Secretary]*
3. *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: July 2021]*

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 – April 2021

<p>Accomplishments & Priorities</p>	<p>Tunnel Flow Meter Replacement Lead by Wastewater Treatment Highlights Cross-Departmental Collaboration</p> <p>Since the commissioning of the Anacostia River Tunnel in March 2018, over 10 billion gallons of combined sewage has been captured and sent to Blue Plains for treatment, with an impressive 90.2% capture rate. The complex network of diversion structures, drop shafts, and tunnels is supported by a similarly complex set of instrumentation. The instrumentation allows for remote monitoring of the tunnel system and includes open channel flow meters, rainfall gauges, and level sensors - all contributing to operations at Blue Plains and reporting of wet weather events.</p> <p>In late 2020, DC Water’s Process Engineering Maintenance team noticed issues with the flow meters. “Around the same time frame, we started to lose communication with the flow meters. There were 10 sites across the city that were affected, totaling 14 sensors” noted Robert Hopkins, Specialist II, Instrumentation, Process Engineering Maintenance. “We began to troubleshoot immediately, and scheduled field inspections to the sites”. The flow meters use a combination of area and velocity to determine flow, and are installed in the diversion lines within the system. “Sometimes debris or dirt can interrupt the signal, but the inspections found that the meters were clean and installed correctly, so it led us to a problem with the sensors themselves” added Joel Gregory, Supervisor, Equipment Reliability.</p> <p>After discussions with the manufacturer, the meters were determined to have suffered ‘early mortality’. Despite them being outside of warranty period, the discussions lead to the manufacturer agreeing to replace the units for upgraded versions at no cost to DC Water. The replacement would form another project for the Process Engineering Maintenance team to work through. With locations requiring difficult access into confined spaces, and deep diversion shafts, the physical replacement was done in tandem with an experienced contractor. “We were able to configure the connections to our control system as our contractor worked on the physical installation of the sensors” added Hopkins. The various locations required different tools and techniques to support the work, including traffic management at Structures 15 and 15A, and entry into a 40ft shaft at the CSO19 Diversion.</p> <p>The contract was supported by DC Clean Rivers and the Department of Wastewater Engineering, as well as Procurement. On site installation work was supported by the Department of Safety & Health, and the Department of Pumping and Sewer Operations.</p>
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**Accomplishments
&
Priorities**

The sensor installation, completed in April 2021, now includes an updated sensor model with a target life expectancy of seven years, providing improved granularity of wet weather reporting across the combined sewer system.



Figure 1. Staff performing above ground support in preparation of entries and connecting sensors.

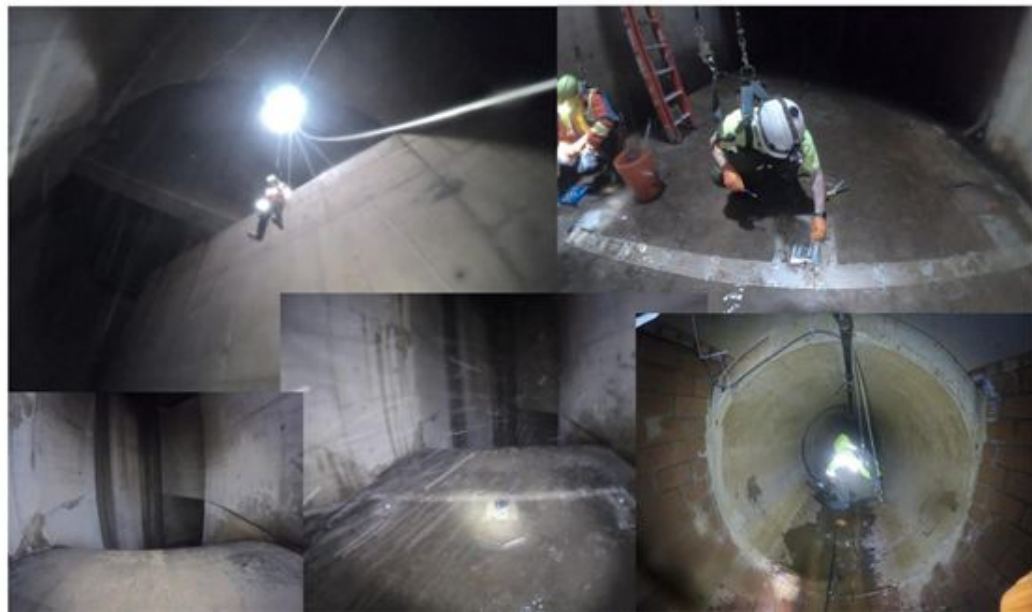
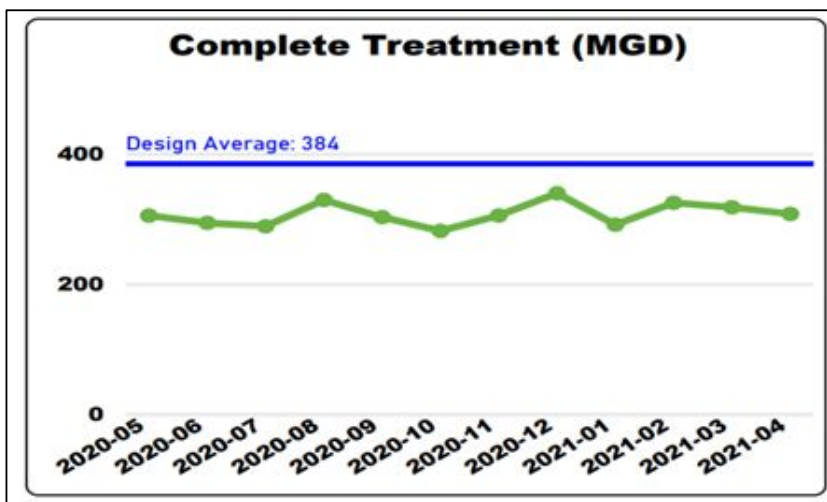


Figure 2. Staff performing confined space entry for diversion to shaft at CSO-019 and other

Operational Performance

Blue Plains Complete Treatment Performance: The plant performance for the month of April 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 307 MGD. There was no treated captured combined flow directed to Outfall 001 from the Wet Weather Treatment Facility (WWTF).

Figure 3. Monthly Average Influent Flow Trend to Complete Treatment (MGD)



Wet Weather Treatment Facility (WWTF) Performance: In April 2021, a total of 17 MG of combined wet weather flow, captured in the tunnel system, was treated through the plant. There was no measured overflow that took place on this month (Table 1).

Table 1. Wet Weather Treatment Facility (WWTF) Performance

	April 2021 (Draft)	Calendar Year 2021 (Through April)
Total Precipitation, inches (DCA gauge)	0.97	11.34
Total Volume Captured in the Anacostia Tunnel, MG	17	486
Measured Overflow, MG	0	0
Percent Captured**	100%	100%
Screenings and Grit Capture, tons	287	1,050

Note

*Based on preliminary data.

**Expected Capture ~80%

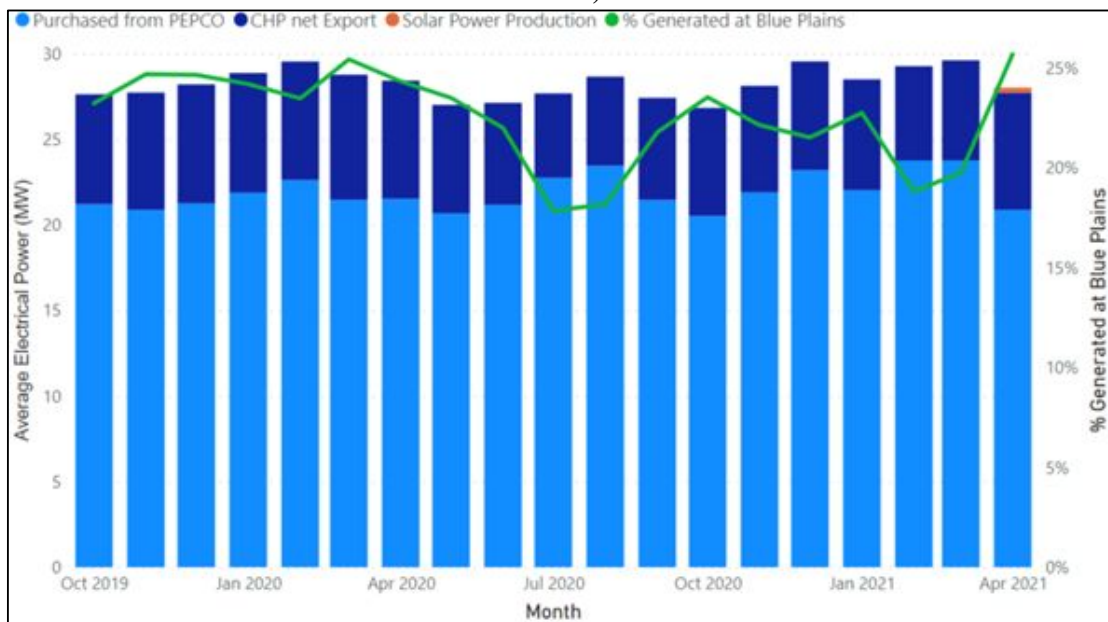
Operational Performance

Blue Plains Electrical Report: After multiple outages that took place in February and March to improve plant reliability, the Combined Heat and Power (CHP) facility had an excellent performance in April. The gas turbines at this facility were able to produce an average of 8.1 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 6.8 MW as shown in the graph below.

Although the solar system is still in the commissioning phase, the newly installed solar panels started exporting electricity to the plant in April. During the peak production period, the solar panels generated as much as 2.6 MW of electricity. The daily average production was approximately 0.6 MW. The commercial operation date when the solar provider can start billing DC Water for the electrical production has yet to begin. The solar contractor is working to complete all the technical requirements and begin performance testing in the upcoming months.

The total electricity consumption at Blue Plains averaged 27.7 MW during the month of April. Out of total electrical consumption, 26% of electricity was generated onsite between CHP and solar panels, which greatly exceeded the plant performance metrics of 20%. DC Water purchased an average of 20.9 MW of electricity from PEPCO as shown in the graph below.

Figure 4. Blue Plains Energy Report – October 2019 to April 2021: Average Electricity Purchased from PEPCO (light blue), Net Production from CHP (dark blue), Solar Power Production (orange) and % of Total Plant Electricity Use Generated Onsite (green line on right Y-axis)



Note: Solar panel power monitors are still in commissioning phase and do not reflect the total production for the month of April.

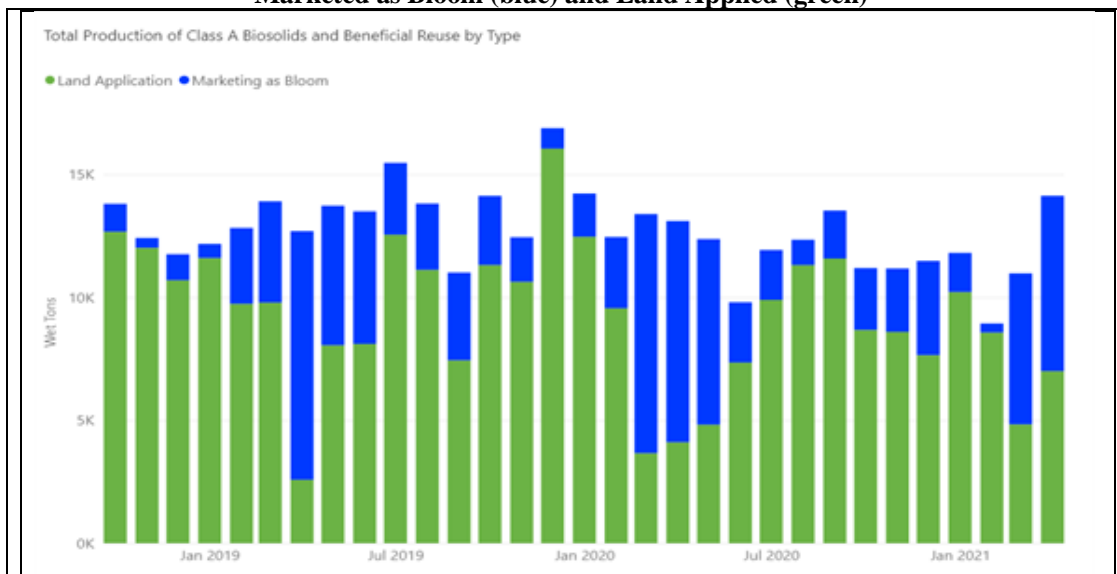
Operational Performance

Class A Biosolids Production: In April, biosolids hauling averaged 470 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 April, Blue Drop sold 7,128 wet tons of Bloom (Figure 3). The remaining 6,972 wet tons not sold into the market were land applied through DC Water (through Blue Drop) and WSSC contracts.

Figure 5. Tons of Class A Biosolids Produced - October 2018 to April 2021 Marketed as Bloom (blue) and Land Applied (green)



Progress Report

Water Quality & Pretreatment: During the month, The Pretreatment team conducted an inspection and compliance monitoring at one Significant Industrial User*. In addition, team issued or renewed eight Temporary Discharge Authorization permits**; and seven Waste Hauler permits***.

Note:

* Industrial user with an average process wastewater flow of >25,000 gallons or more per day and/or contributes >5% or more of the total inflow or organic loading to Blue Plains Advanced Wastewater Treatment Plant, or has a reasonable potential for violating any pretreatment standard or requirement, for harming the environment, or for causing a threat to wastewater utility personnel.

** DC Water allows residents, businesses, and government agencies to discharge stormwater, groundwater, and surface water runoff from construction/dewatering projects or other temporary water discharges (e.g., power wash runoff, hydro-demolition wastewater, etc.) to the District's wastewater system on a case-by-case basis.

*** DC Water allows businesses and government agencies with a permit to discharge domestic (i.e., residential-type) septage, grease trap waste, uncontaminated non-wastewater flows, and other non-hazardous waste (allowed on a case-by-case basis) at the Blue Plains Advanced Wastewater Treatment Plant (AWTP). It is illegal to discharge hauled waste directly to the District's wastewater system anywhere else within the District of Columbia.

District of Columbia Water and Sewer Authority

Capital Improvement Program Report



FY-2021 2nd Quarter
January 1st through March 31st, 2021

Board of Directors
Environmental Quality and Operations Committee

David L. Gadis, CEO and General Manager
Leonard R. Benson, Senior Vice President, CIP Project Delivery

May 2021

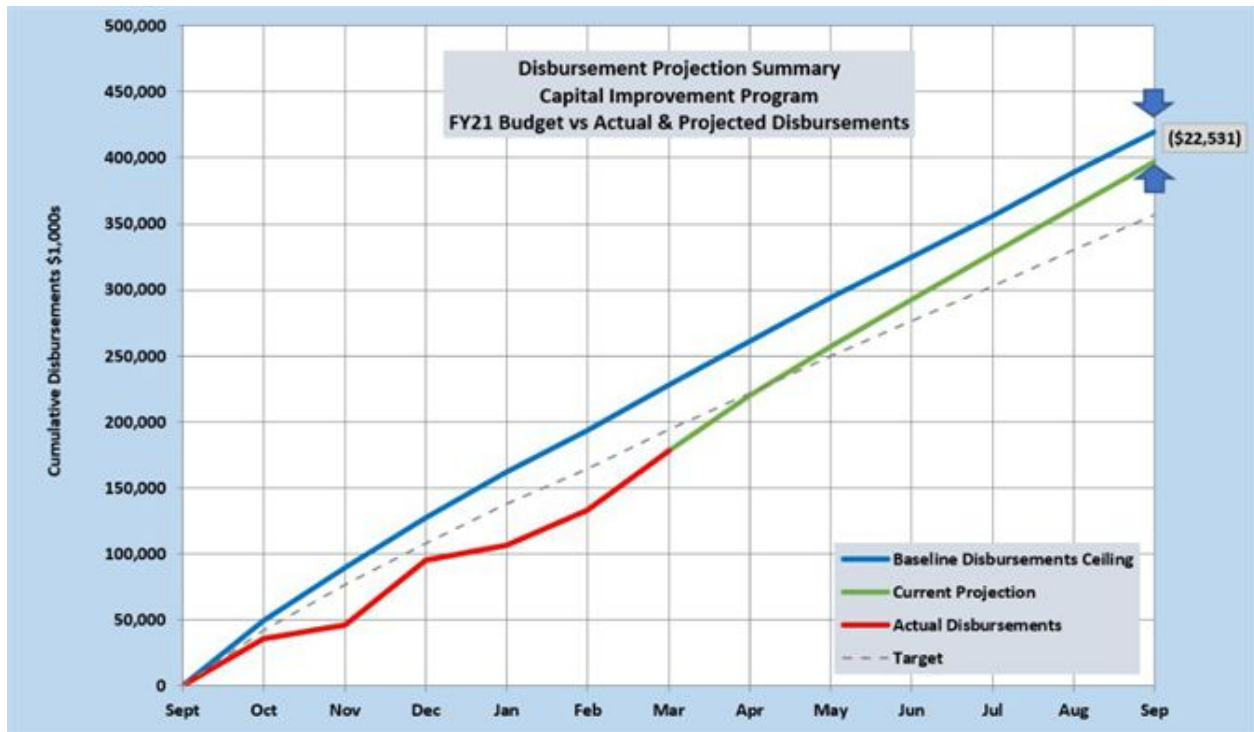


Capital Improvement Program Report 2nd Quarter FY2021

CIP Disbursement Performance

Current projected program disbursements through the end of the fiscal year compared with the proposed FY21 baseline budget ceiling are shown in the chart below:

Disbursement Summary



Current projected fiscal year 2021 CIP disbursements are \$397,141,000 through the end of September 2021, which is on track to meet the approved baseline disbursement projection of \$419,673,000.

Current disbursement projections within the service areas are as follows:

Non-Process Facilities

Baseline Disbursements	\$38,002,000
Projected Disbursements	\$33,058,000 (\$4.94M below baseline projection)

Significant project variances are listed below:

- *Facility Land Use Program Area:*



Capital Improvement Program Report 2nd Quarter FY2021

- The forecast disbursements for Project HH Main & O Redevelopment Efforts (Formerly New Fleet Management Facility) The forecast disbursements for Project HH00 are \$2.4M under the baseline due permitting delays for the Fleet Facility.

Wastewater Treatment Service Area

Baseline Disbursements	\$78,993,000
Projected Disbursements	\$83,931,000 (\$4.9M above baseline projection)

Significant project variances are listed below:

- *Solids Processing Program Area – (\$3.2M above baseline)*
 - The forecast disbursements for Project BX - Gravity Thickener Upgrades Phase II are \$1.9M above the baseline due to work currently progressing slightly ahead of the forecast baseline schedule; additionally, an invoice anticipated to be paid in September was paid in October.
 - The forecast disbursements for Project AM - Solids Processing Program Management are \$1.5M above the baseline due to invoices anticipated to be paid in September being paid in October and a re-adjustment of the remaining spending forecast.
- *Liquid Processing Program Area – (\$3.9M below baseline)*
 - Project IZ - Replace Influent Screens is projected \$3.6M under for FY21 due to delays in installation of new screen equipment.
- *Plantwide Program Area – (\$1.9M above baseline)*
 - The disbursements for Project AL - Plantwide Project Program Management, are \$1.7M over the baseline due to invoices anticipated to be paid in September paid in October and a re-adjustment of the remaining spending forecast.
- *Nitrogen Removal Program area – (\$3.8M above baseline)*
 - The disbursements for Project LM - ENR Program Management are \$1.1M above baseline due to an invoice anticipated to be paid in September that was paid in October.
 - The forecast disbursements for Project E8 have increased by \$3M to account for potential retainage payment this fiscal year that was not anticipated in the baseline forecast.

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

CSO Program Area

Baseline Disbursements	\$5,403,000
Projected Disbursements	\$3,987,000 (\$1.4M below baseline projection)

Significant project variances are listed below:

- The disbursements for Project FQ – Man & O Pump Stations Intermediate Upgrades are \$0.7M below the baseline. This work is associated with Miscellaneous Contract 7, which is proceeding later than expected.



Capital Improvement Program Report 2nd Quarter FY2021

DC Clean Rivers Program Area

Baseline Disbursements	\$165,434,000
Actual Disbursements	\$165,431,000

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

Stormwater Service Area

Baseline Disbursements	\$5,936,000
Projected Disbursements	\$3,318,000 (\$2.6M below baseline projection)

Significant project variances are listed below:

- *Storm Pumping Facilities Program Area – (\$2.5 M below baseline)*
 - The disbursements for Project NG - Storm Pump Stations Rehabilitation are \$2.0M below the baseline due to the Kenilworth DDOT construction contract procurement being delayed. Additionally, 1st and D Street pump station work was rescheduled to allow for higher priority work (Inflatable Dams) to proceed.

Sanitary Sewer Service Area

Baseline Disbursements	\$50,538,000
Projected Disbursements	\$37,537,000 (\$13.0M below baseline projection)

Significant project variances for the first quarter are listed below:

- *Interceptor/ Trunk Force Sewers Program Area (\$9.4 M below baseline)*
 - The disbursements for Project LZ – Potomac Interceptor Projects – Rehab Phase II are \$5 M below the baseline due to an extended schedule for the CFR/NEPA and design for Clara Barton Parkway.
 - The disbursements for Project RD – Major Sewer Rehab 2 are \$1.2 M below the baseline. This project will now be executed in partnership with DOEE and other agencies to create a holistic improvement to Oxon Run, the sewers, the adjacent park land, and other infrastructure. As such, our schedule will be adjusted to follow DDOE’s plan for bidding and executing this work, which is later than we previously planned.
- *Sanitary Program Management Program Area (\$1.6 M below baseline)*
 - The disbursements for Project AU – Sanitary Sewer Program Management are \$1.6 M below baseline due to transition to the new Program Management Agreement.

Water Service Area

Baseline Disbursements	\$75,367,000
Projected Disbursements	\$72,696,000 (\$2.7M below baseline projection)



Capital Improvement Program Report 2nd Quarter FY2021

Significant project variances for the first quarter are listed below:

- *Water Distribution System Program (\$5.5M below baseline projection)*
 - The disbursements for Project F1 - Small Diameter Water Main Rehab 13 are \$1.3M below the forecast partially due to cost savings from transfer of paving to a Pepco project.
 - Project GR - Small Diameter Water Main Rehab 15 are \$1.5M below baseline due to Oregon Avenue DDOT activity as payment depends on DDOT schedule.
 - Project FT – Water Main Rehab Phase 2 are \$2.5M below baseline due to delay caused by schedule conflict with Clean Rivers project.
 - Project HX - Small Diameter Water Main Rehab 16 are \$2.1 M below baseline due to Florida Avenue DDOT activity as payment depends on DDOT schedule.
- *Water Lead-free DC Program Area (\$1.9M above baseline projection)*
 - The disbursements for Project BW – Lead Free DC Project – are \$1.9M above the baseline due to the higher-than-expected participation by homeowners to replace their lead services under the voluntary program.



Capital Improvement Program Report 2nd Quarter FY2021

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

All priority 1 projects are on schedule and within budget.

Significant Contract Actions Anticipated – 6 Month Look-Ahead

Project	Name	Contract Type	Joint Use?	Cost Range	Committee	BOD
G500	Soapstone Valley Creekbed Sewer Rehab	Construction	No	\$5M-\$10M	EQ & Ops Jun	Jul
Multiple	Miscellaneous Facilities Upgrade 7	Construction	Yes	\$30M-\$35M	EQ & Ops Jun	Jul
CZ00	Potomac River Tunnel Contract A – Advanced Utility Construction	Construction	Yes	\$5M-\$15M	EQ & Ops Jun	Jul



Capital Improvement Program Report 2nd Quarter FY2021

Schedule - Key Performance Indicators Capital Improvement Program

Summary:

For the 2nd Quarter, all the Key Performance Indicators (KPIs) completed this period were achieved within 90 days of their target date.

#	Performance
9	KPIs completed within threshold
4	KPIs completed outside threshold
9	Total KPIs completed to date
33	Total KPIs due this year

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

Jobs SD01 and SC01 are both delayed due to the extended time needed to finalize the Program/Design Management contract for the Non-process Service Area.
Job DE04 substantial completion was prolonged due to traffic control issues during construction.
Job NG05 was purposely delayed to allow higher prioritized work to proceed.

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

Quarter	Job Code	Job Name	Activity Name	Due Date (Baseline)	Estimated Complete Date	Actual Complete Date	Variance (positive is early)	Met within 90 days
Q2	RC07	Major Sewer Rehab 1-5 Northeast Boundary	Design Start Milestone	1-Jan-21	1-Jan-21	22-Mar-21	-80	✓
Q2	KE01	Small Dia Water Main Rehab 18A	Design Start Milestone	28-Jan-21	28-Jan-21	9-Dec-20	50	✓
Q2	SD01	Main PS Building Modifications - Historic Restoration	KPI Design Start Milestone	29-Jan-21	30-Jul-21		-182	☐
Q2	F201	Small Diameter Water Main Repl 14A	Construction Start Milestone	2-Feb-21	2-Feb-21	1-Feb-21	1	✓
Q2	LD00	Pre-Dewatering Additional Centrifuges	Design Start Milestone	4-Feb-21	4-Feb-21	1-Mar-21	26	✓
Q2	KE02	Small Dia Water Main Rehab 18B	Design Start Milestone	22-Feb-21	22-Feb-21	1-Jan-21	52	✓



Capital Improvement Program Report 2nd Quarter FY2021

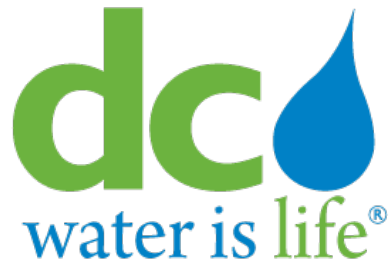
Quarter	Job Code	Job Name	Activity Name	Due Date (Baseline)	Estimated Complete Date	Actual Complete Date	Variance (positive is early)	Met within 90 days
Q2	CZ05	CSO 025/026 Separation	Consent Decree Construction Start KPI	22-Mar-21	22-Mar-21	26-Jan-21	55	✓
Q3	SC01	Main & O Seawall Restoration (Phase 2 HQO)	KPI Design Start Milestone	31-Mar-21	30-Jul-21		-121	☐
Q3	HH02	New Sewer Services Headquarters	Construction Substantial Completion Milestone	31-May-21	31-Jul-21		-61	☐
Q3	BV01	RWWPS No. 2 Upgrades	Construction Substantial Completion Milestone	1-Apr-21	1-Apr-21	9-Mar-23	23	✓
Q3	KE03	Small Dia Water Main Rehab 18C	Design Start Milestone	3-Apr-21	3-Apr-21	8-Feb-21	0	✓
Q3	KF01	SDWM Renewal 19A	Design Start Milestone	29-Apr-21	29-Apr-21	1-Mar-21	59	✓
Q3	DE04	Small Dia Water Main Repl 12B2 (Colonial Village & Bunker Hill)	Construction Substantial Completion	30-Apr-21	31-Jul-21		-92	☐
Q3	FA03	Soldiers Home Reservoir Upgrade	Construction Substantial Completion	21-May-21	31-Jul-21		-70	☐
Q3	KF02	SDWM Renewal 19B	Design Start Milestone	30-May-21	30-May-21		0	☐
Q3	IY03	High & Low PSW Pumps Evaluation and Replacement	Construction Start Milestone	7-Jun-21	7-Jun-21		0	☐
Q3	LZ07	PI Phase 5 Pipe Rehab between MH31 and MH30	Design-Build NTP - Phase II	13-Jun-21	13-Jun-21		0	☐
Q4	JF03	Construction of Flood Seawall Segment C	Segment C Construction Substantial Completion Milestone	14-Jun-21	28-Jun-21		-14	☐
Q4	G502	Creekbed Sewer Rehabilitation Soapstone Valley	Construction Start Milestone	1-Jul-21	1-Jun-21		30	☐
Q4	IL06	Creekbed Sewer Rehabilitation Fenwick Branch E Beach Dr & Red Bud Lane	Design Start KPI Milestone	1-Jul-21	1-Jul-21		0	☐
Q4	FT03	Out of Service LDWM Elimination Contract 1	Design Start Milestone	10-Jul-21	10-Jul-21		0	☐



Capital Improvement Program Report 2nd Quarter FY2021

Quarter	Job Code	Job Name	Activity Name	Due Date (Baseline)	Estimated Complete Date	Actual Complete Date	Variance (positive is early)	Met within 90 days
Q4	F102	Small Diameter Water Main Repl 13B	Construction Substantial Completion	13-Jul-21	13-Jul-21		0	☐
Q4	F202	Small Diameter Water Main Repl 14B	Construction Start Milestone	15-Jul-21	1-Jun-21		44	☐
Q4	F101	Small Diameter Water Main Repl 13A	Construction Substantial Completion	16-Jul-21	16-Jul-21		0	☐
Q4	QS02	Local Sewer Rehab Project 5-2	Design Start Milestone	16-Jul-21	16-Jul-21		0	☐
Q4	KF03	SDWM Renewal 19C	Design Start Milestone	30-Jul-21	30-Jul-21		0	☐
Q4	EK01	Long Term Rehabilitation - Main Pump Station - Ph. 1	Concept Design Start Milestone	1-Aug-21	1-Aug-21		0	☐
Q4	IY10	Filter Underdrain and Backwash System Upgrade (FUBS)	Design Start Milestone	2-Aug-21	2-Aug-21		0	☐
Q4	F203	Small Diameter Water Main Repl 14C	Construction Start Milestone	10-Aug-21	4-May-21		98	☐
Q4	NG05	Stormwater Pump Station Rehab - 1st and D	Construction Start Milestone	9-Sep-21	3-Aug-22		-328	☐
Q4	I801	Large Valve Replacements 11R	Construction Substantial Completion	30-Sep-21	30-Sep-21		0	☐
Q4	IL10	Creekbed Sewer Rehabilitation Rock Creek Oregon Avenue	Construction Substantial Completion	30-Sep-21	30-Sep-21		0	☐
Q4	F103	Small Diameter Water Main Repl 13C	Construction Substantial Completion	30-Sep-21	30-Sep-21		0	☐

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



Lead Free DC Program – Accelerating Lead Service Line Replacement

Environmental Quality and Operations Committee

May 20, 2021

John Deignan
Program Manager, Lead Services
Department of Water Quality & Technology



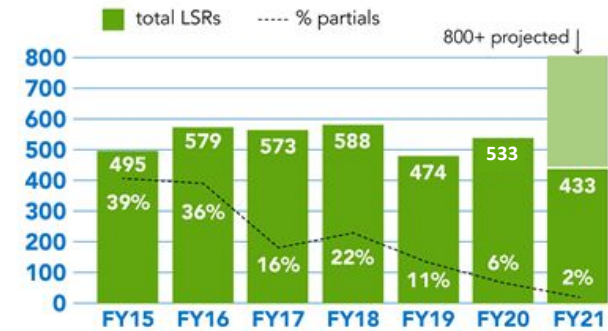
Replacement Progress and Current Status

- COVID impact on our capital program deferred some projects that would address lead.
- DC Water has completed more than **350** free and discounted replacements, saving customers more than **\$1 million** in private-side costs.
- We project replacing **800+** LSLs this year, roughly **60%** more than average replacements over the last decade.
- We have built a model based on **water quality** and **equity** to plan projects that will accelerate our rate of replacement to meet our aggressive 2030 goal.

Lead Free DC Phase I LSL Replacements			
Program Area	FY20	FY21*	Total
Lead Pipe Replacement Assistance Program (LPRAP)	129	250	379
Voluntary Full Replacement Program (VFRP)	301	400	701
Small Diameter Water Main CIP & Emergency Repairs (CIPERR)	103	150	253
Total	533	800	1333

*Estimated based on current replacement rate.

% of Total LSL Replacements that were Partial Replacements





Current Board Policy

These are the current Board Lead Service Line Replacement Policy requirements adopted and effective per Resolution #19-36:

1. Lead service lines will continue to be replaced in conjunction with water main replacement/rehabilitation activities, providing specific information about the risks related to partial replacements to any customer not undertaking a full replacement and additional mitigation efforts to help address such risks.
2. With discretionary funds expressly allocated in the annual budget of the Authority for that budget year for the purpose stated in this paragraph, and at locations to be determined by the Authority, lead service lines will be replaced where the owner agrees to participate and pay for the private side replacement.
3. The total expenditures for discretionary lead service line replacements not associated with water main replacements shall not exceed \$3,500,000 in budget year without the approval of the Board of Directors.
4. The General Manager is to implement this resolution, and is to review the financial impact of the actions resulting from this resolution.



Section 1

Program Overview



Lead Free DC Program Overview

- **Inventory**
- **Replacement**
- **Stakeholder Engagement**
- **Enhancement Opportunities**



dc LEAD FREE DC Background

- Homeowner owns the entire service line.
- DC Water is responsible for maintaining the portion of the service line in “public space.”
- DC Water uses ratepayer funds for “**public-side**” service line replacement and water main work (**Figures 1 and 2**).
- DC Water needs homeowner consent and funding source for “**private-side**” service line replacement (**Figures 3 and 4**) per D.C. Law 22-241.
- **Regulatory Developments:**
 - Amendments to DC's lead law expanded eligibility for free and discounted lead, galvanized pipe replacements in March 2021. Brass may be funded in FY 2022.
 - Revisions to the federal lead and copper rule released at the end of 2020 requires a LSR plan. EPA has not published rule guidance.

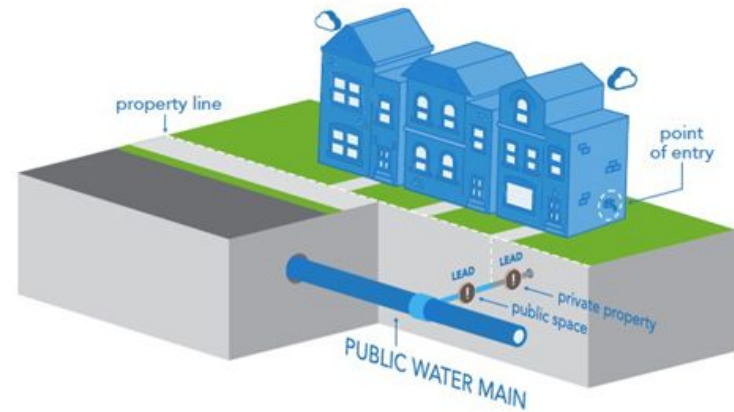


Figure 1



Figure 2

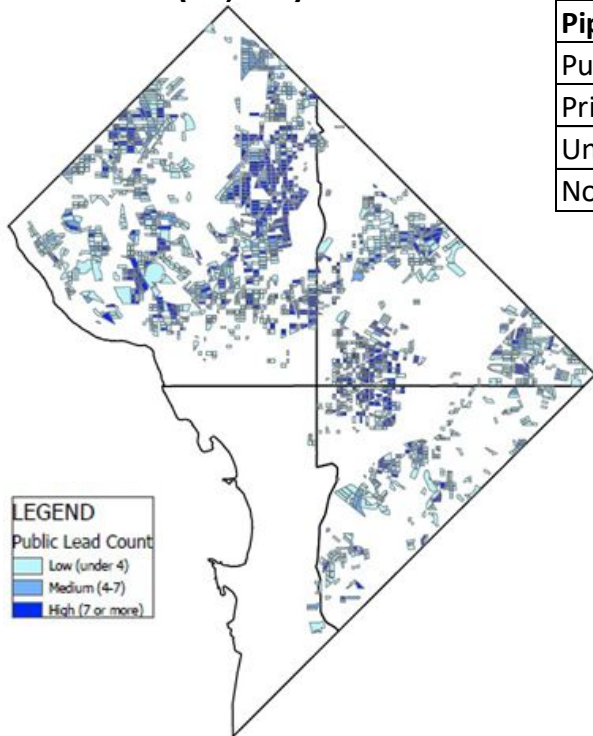


Figure 3



Lead Service Line Inventory

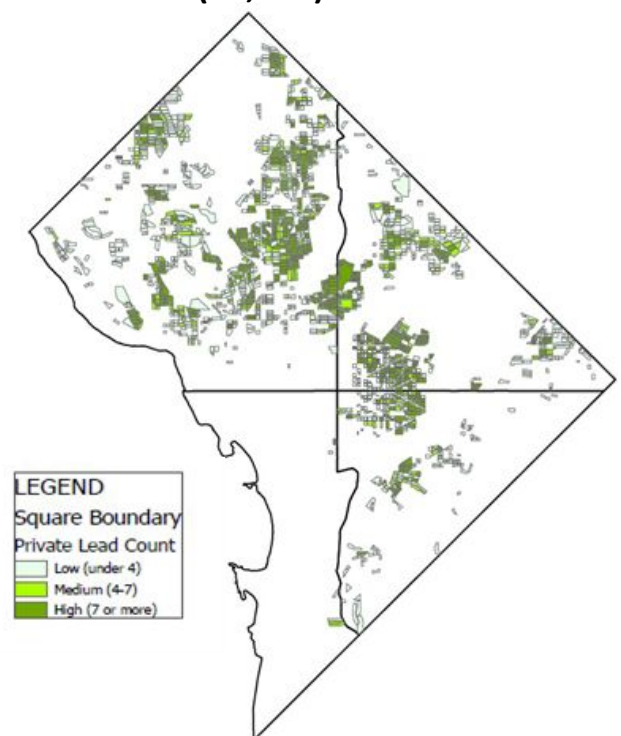
**Full Lead Service Lines
(10,400)**



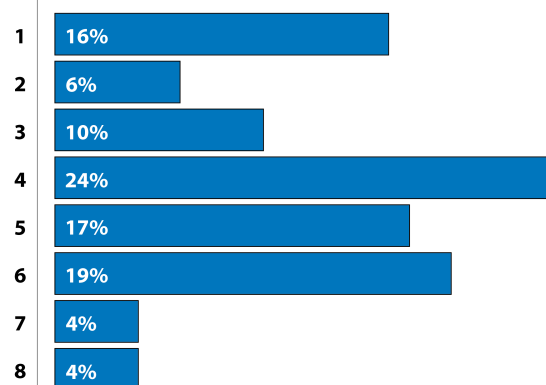
Total Number of Lead Service Lines (LSLs) in Washington, DC

Pipe Material	Number of Service Lines
Public and Private Lead	10,400
Private Side-Only Lead	11,200
Unknown	14,700
Non-lead	101,400

**Private-side Only Lead Service Lines
(11,200)**



Ward Distribution of Lead Service Lines by Ward



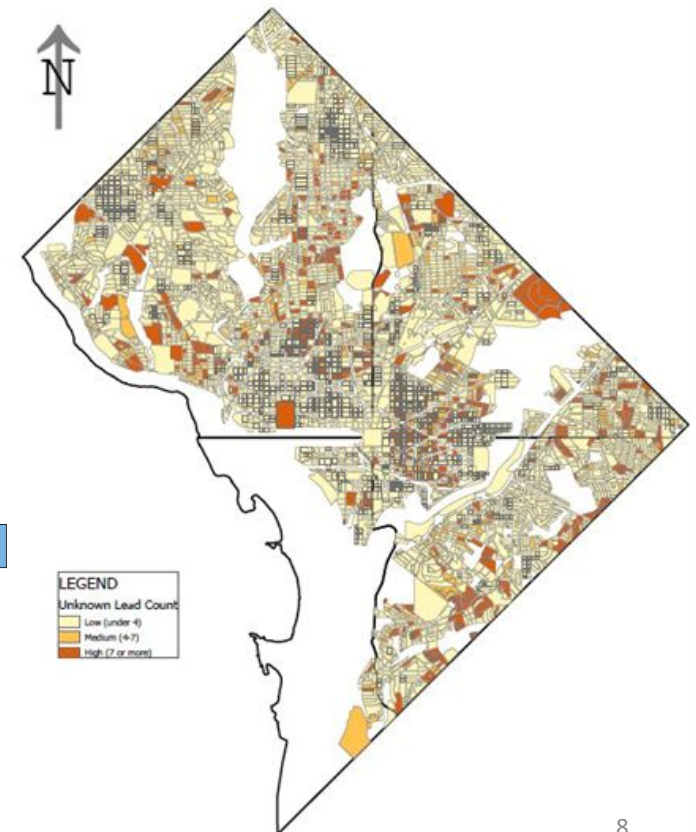


Unknown Service Line Materials

- A significant number of service lines with unknown material type are in neighborhoods developed since 1980. Because of the development year, these are likely non-lead.
- Service lines with unknown material type are likely lead if they are scattered in areas where identified lead service lines are prevalent.
- DC Water will begin targeted outreach efforts in areas likely to have lead service lines based on water main age.
 - Prioritize efforts by vulnerable populations and areas that are historically underserved.

Ward	Distribution of Service Lines with Unknown Pipe Material by Ward
1	9%
2	12%
3	10%
4	11%
5	18%
6	17%
7	12%
8	11%

Service Lines with Unknown Pipe Material





Lead Free DC Program Areas: LPRAP

Lead Pipe Replacement Assistance Program (LPRAP)

- Description:
 - Customer-initiated replacements where only the private-side is lead.
 - The District pays for 50%, 80%, or 100% of homeowner's private-side replacement costs depending on income and subject to costs cap.
- Equity Opportunity:
 - Low-income residents receive free private-side replacement, subject to cap.
 - Small business participation.
- Policy Needs:
 - Ensure consideration and support of a District-wide mandate for total LSL replacement by 2030.
 - Require replacement during sale/transfer of property.
- Minimum Number to Replace by 2030:
 - 8,800 LSLs (1,110 per year)
- Funding Gaps:
 - \$43 million - \$70 million





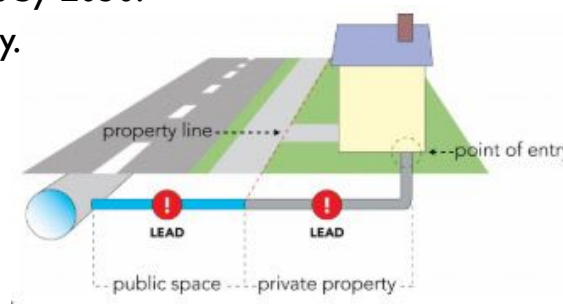
Lead Free DC Program Areas: VFRP

Voluntary Full Replacement Program (VFRP)

- Description:
 - Customer-initiated replacements where both the public-side and private-side are lead.
 - The homeowner pays for 100% of private-side replacement costs.
- Equity Opportunity:
 - Provide replacement assistance for low-income homeowners like LPRAP.
 - Provide free replacement for VFRP eligible households with populations at risk (e.g. children, pregnant individuals).
- Policy Needs:
 - Amend D.C. Law 22-241 to expand District lead assistance funding to VFRP; expand legal definition of “emergency repair.”
 - Ensure participation by mandating total replacement by 2030.
 - Require replacement during sale/transfer of property.
- Minimum Number to Replace by 2030:
 - 2000 LSLs (200 per year)
- Funding Gap:
 - \$8 million – \$13 million



Photo credit: Customer Kim Roberts, “Hooray for DC Water who just replaced the lead pipe going from the street to my house. If you're a DC resident and haven't gotten your free water test yet, I'd recommend it.” (8/6/2020)

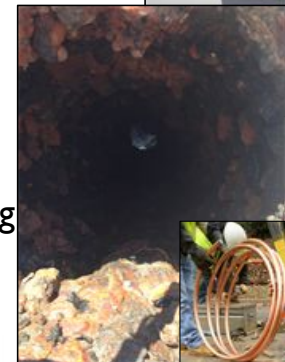
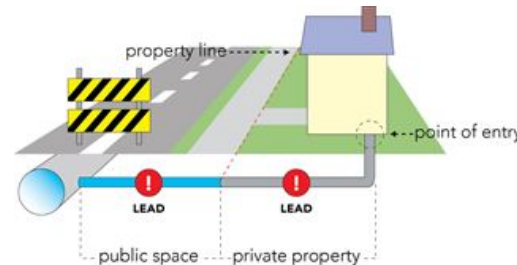




Lead Free DC Program Areas: CIPERR

Capital Improvement Projects & Emergency Repairs (CIPERR)

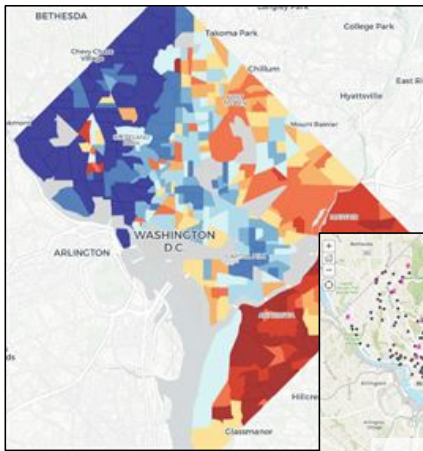
- Description:
 - DC Water-initiated, block-by-block replacement projects to replace small diameter water mains **and/or** lead service lines as well as replacements during emergency repairs.
 - District pays for 100% of private-side replacement costs.
- Equity Opportunity:
 - Prioritize project execution according to equity factors and vulnerable populations.
- Policy Needs:
 - Ensure coordination with District agencies (e.g., DDOT, DCRA) to streamline permitting and optimize execution of construction.
 - Incentivize homeowner participation.
 - Establish a capital fund.
- Minimum Number to Replace by 2030:
 - 17,200 (2,150 per year)
- Funding Gap:
 - \$261 million - \$424 million



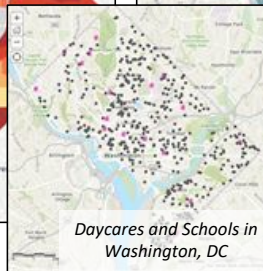
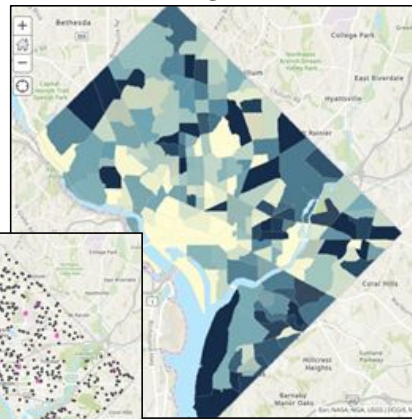


Refining the Lead Free DC Program Plan: CIPERR

Area Deprivation Index in Washington, DC



Density of Children in Washington, DC



Daycares and Schools in Washington, DC

Water Quality Factors

Equity Factors

LOF Category
Physical Condition
<i>Main Breaks</i>
Performance
<i>Iron Concentration</i>
<i>Chlorine Concentration</i>
<i>Service Line Material</i>

COF Category
Health/Social Equity
<i>Area Deprivation Index</i>
Vulnerable Populations
<i>Children under 18</i>
<i>Licensed Childcare Facility</i>

- Block-by-block projects will be executed based on system improvement (**water quality and water main integrity**) and social impact (**equity**) of LSL replacement.
- Prioritize replacements for:
 - **Underserved Areas**, measured by Area Deprivation Index
 - **Vulnerable Populations**, e.g. young children, charter schools and daycares, pregnant women
- Expanding the definition of “emergency” under D.C. Law 22-241 will facilitate free private-side replacements for populations at risk (e.g., children, pregnant individuals).



Section 2

Ramping Up to Phase II



Phased Implementation

- **Ramping up Replacement Rate in Phase II:**

- **Block-by-Block:** LSL projects prioritized by equity in addition to ongoing program and CIP projects.
- Estimated 7000 LSLs will be replaced.

Fiscal Year	CIPERR	VFRP	LPRAP	Annual LSL Total	Rate of Replacement	Phase		
FY2021	150	400	250	800	3%	Phase I		
FY2022	2050	300	400	2750	10%	Phase I	Phase II	
FY2023	3037	200	800	4037	14%			Phase III design
FY2024	3476	183	1225	4885	17%		Phase II wrap-up	
FY2025	2001	183	1225	3410	12%			
FY2026	2674	183	1225	4083	15%			Phase III
FY2027	2033	183	1225	3441	12%			
FY2028	967	183	1225	2375	8%			
FY2029	812	183	1225	2220	8%			Phase III wrap-up
GRAND TOTAL	17200	2000	8800	28000				

Annual LSL replacements per program area were generated by the Lead Free DC prioritization model which is based on water quality and equity factors. The numbers in this table are rounded for simplicity. Annual CIPERR replacement based on current schedule of DC Water CIP projects. VFRP and LPRAP are customer-initiated programs so LSL rate is dependent on customer participation.



Section 3

Planning Level Cost Estimate



What Comprises Lead Free DC costs?

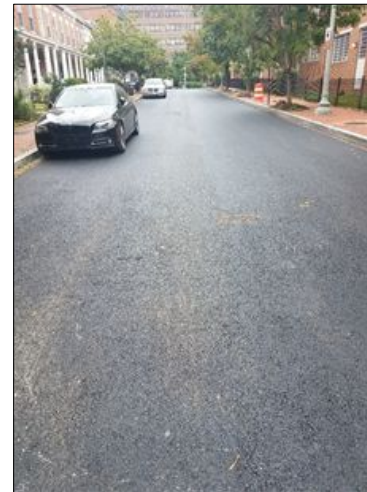
- **Construction Costs**

- LSL replacement, material, labor
- Water main replacement (if necessary)
- Restoration (by-block restoration is curb-to-curb repaving, along with street beautification such as tree replacement)



- **Programmatic Costs**

- Project estimates include the costs of:
 - Planning,
 - Survey, Design and Permitting,
 - Construction Management,
 - Communication and Outreach, and
 - Data and Program Management.





Planning Level Cost Estimates

Planning Level Cost Estimate to Eliminate All Lead Lines by 2030		
Lead Free DC Program Area	High Cost Estimate	Low Cost Estimate
CIPERR, PUBLIC-SIDE COSTS*,** -By Block: LSLs -By Block: LSLs and Water Main -By Premise: LSL	\$962 M***	\$822 M***
VFRP, PUBLIC-SIDE COSTS* -By Premise: LSL	\$35 M***	\$35 M***
<i>Public-side Subtotal</i>	<i>\$997 M</i>	<i>\$857 M</i>
CIPERR, PRIVATE-SIDE COSTS** -By Block: LSLs -By Block: LSLs and Water Main -By Premise: LSL	\$59 M	\$36 M
VFRP, PRIVATE-SIDE COSTS** -By Premise: LSL	\$13 M	\$8 M
LPRAP, PRIVATE-SIDE COSTS** -By Premise: LSL	\$70 M	\$43 M
<i>Private-side Subtotal</i>	<i>\$142 M</i>	<i>\$87 M</i>
GRAND TOTAL	\$1,139 M	\$944 M
Currently Funded*	\$632 M	\$632 M
Currently Unfunded**	\$507 M	\$312 M

***DC Water's capital improvement plan (CIP) currently funds \$597 M for CIPERR and \$35 M for VFRP public-side costs (\$632 M total). These funded amounts were not adjusted for the high and low cost estimate. Only unfunded amounts were adjusted in the high and low cost estimate.

- **Cost Estimate Range**

- Re-evaluated assumptions related to unfunded water main replacement and reduced total mileage for replacement by 2030.

- **Assumptions**

- 50% of unknown services are lead.
- CIP projects will address more lead.
- Does not include possible synergies or savings from DDOT coordination.
- Full participation from homeowners.

- **Risks**

- Program management, delivery and uncertainties will impact costs.
- Limit to overall construction in the city and execution resource availability.
- Schedule of construction to meet 2030 goal.
- Additional poor condition water mains will need to be replaced during construction.



Financing – Phase II needs

- ~\$130 million needed to complete Phase II

Fiscal Year	CIPERR: By Block: LSLs & Water Main (CIP SDWMR 152 miles; funded)	CIPERR: By Block: LSLs & Water Main (LFDC 22 miles)	CIPERR: By Block: LSLs	CIPERR: By Premise: LSL, Vulnerable Populations	VFRP: By Premise: LSL, Full	LPRAP: By Premise: LSL, Private-only	Annual Total LSLs	Annual Total Cost (FUNDED)	Annual Total Cost (UNFUNDED)	Phase	
FY2021	150	0	0	0	400	250	800	\$ 28,390,026	\$ 4,924,249	Phase I	
FY2022	150	0	1543	0	300	400	2393	\$ 28,390,026	\$ 47,951,840	Phase II	
FY2023	150	0	1716	458	200	800	3324	\$ 28,390,026	\$ 59,105,589		Phase III design
FY2024	563	377	1759	458	183	1234	4574	\$ 91,138,320	\$ 90,990,931	Phase II wrap-up	
FY2025	563	377	0	458	183	1234	2815	\$ 91,138,320	\$ 45,940,237	Phase III	
FY2026	563	377	0	458	183	1234	2815	\$ 91,138,320	\$ 45,940,237		
FY2027	563	377	1863	458	183	1234	4678	\$ 91,138,320	\$ 93,668,098	Phase IV	
FY2028	563	377	946	458	183	1234	3761	\$ 91,138,320	\$ 70,162,831		
FY2029	563	377	0	458	183	1234	2815	\$ 91,138,320	\$ 45,940,237	Phase III wrap-up	
GRAND TOTAL	3830	2260	7826	3208	1997	8854	27975	\$ 632,000,000	\$ 504,624,250		



Section 4

Stakeholder Engagement & Enhancement Opportunities



Stakeholder Engagement

- We want to hear from you – our customers! Our goal is to engage stakeholders at every step of the plan, listen carefully and incorporate input wherever we can.
- Stakeholder Advisory Group
- DC Council, including Council Office of Racial Equity (CORE)
- Partnership with Agencies
 - DMOI Cluster
 - DMPED, Office of Planning
 - DOEE, DDOT, DCRA
 - DHS, DOH
 - Mayor's Office of Community Relations and Services
- Connect with Vulnerable Populations (e.g., *children and pregnant individuals*) and Historically Underserved Communities
 - DC Maternal & Infant Health Initiative, Thrive by Five
 - OSSE, DC Charter School Alliance and DC Charter School Board
 - DOEE (Lead Safe Healthy Homes)
 - Mayor's Office of Racial Equity
- Community Partners – DC Realtors Assoc., Sierra Club, DC Environmental Network, Resilient DC, DC Policy Center, DC Fiscal Policy Institute, Martha's Table and more!





Customer Outreach

- Mailers, fact sheets, door hangers
- Newsletters, bill messages, traditional and social media, community listservs
- Community meetings and events
- Plans for targeted digital outreach & advertisements with DOEE





Enhancement Opportunities

Socialization of Lead Free DC Program

- **Enhancing Interagency Coordination**

- Renewed area of coordination for identified planned work
- DCRA & DOEE Data Collection
- Vulnerable Populations Data Share

- **Legislation/Policy Measures**

- Emergency Mandate for Lead Removal
- Other legislative action that will facilitate the 2030 lead removal goal

- **Find & Pursue Robust Funding Opportunities**

- Request to District for funding
- Develop Roadmap for federal opportunities



Action Item: Approve Revised LSLR Policy

The Board approves the Lead Free DC Plan as proposed subject to approval of any contracts necessary to implement the program. The General Manager is directed to perform the following:

1. Implement the Lead Free DC Plan as proposed to replace all lead, galvanized and brass service lines in public space and private property (if funded) by 2030.
2. Replace lead, galvanized and brass service lines on private property paid for by funds provided by the property owner, District or federal funds, or from other non-DC Water sources to replace public portion if the owner voluntarily pays for replacement on their property.
3. Total discretionary funds for the replacement of lead, galvanized, and brass service lines in public space when the property owner voluntarily agrees to pay for the private side replacement shall not exceed \$10 Million in a budget year without the approval of the Board of Directors.
4. Implement the requirements in the *Lead Water Service Line Replacement and Disclosure Amendment Act of 2018*, as amended.
5. Seek and advocate for funding to assist property owners to pay for the replacement of lead, galvanized and brass service lines on private property.
6. Work with DDOT and private developers (if applicable) to replace lead, galvanized, and brass service lines in conjunction with their replacement of small diameter water mains.
7. Implement programs to identify all unknown service lines and replace identified lead service lines.
8. Provide information about the risks related to a partial lead, galvanized or brass service line to property owners that have partial lead service lines or do not consent to replace the lead, galvanized or brass service lines and the additional mitigation efforts they need to perform to reduce the risks of lead.
9. Report to the Board annually on the status of the lead, galvanized and brass service line replacement, funding efforts for private replacements and any identified impediments to replacing all lead, galvanized and brass service lines in public space by 2030.



How We Meet the 2030 GoalTOGETHER!



It will take **innovation,**
diverse funding sources,
and **strong partnerships**
with the District and
customers



Action Item

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Board of Directors
Environmental Quality and Operations Committee
District of Columbia Water And Sewer Authority



Blue Plains Renewal Energy Portfolio May 2021
Follow-up from Solar Status Update at March 2021 Meeting



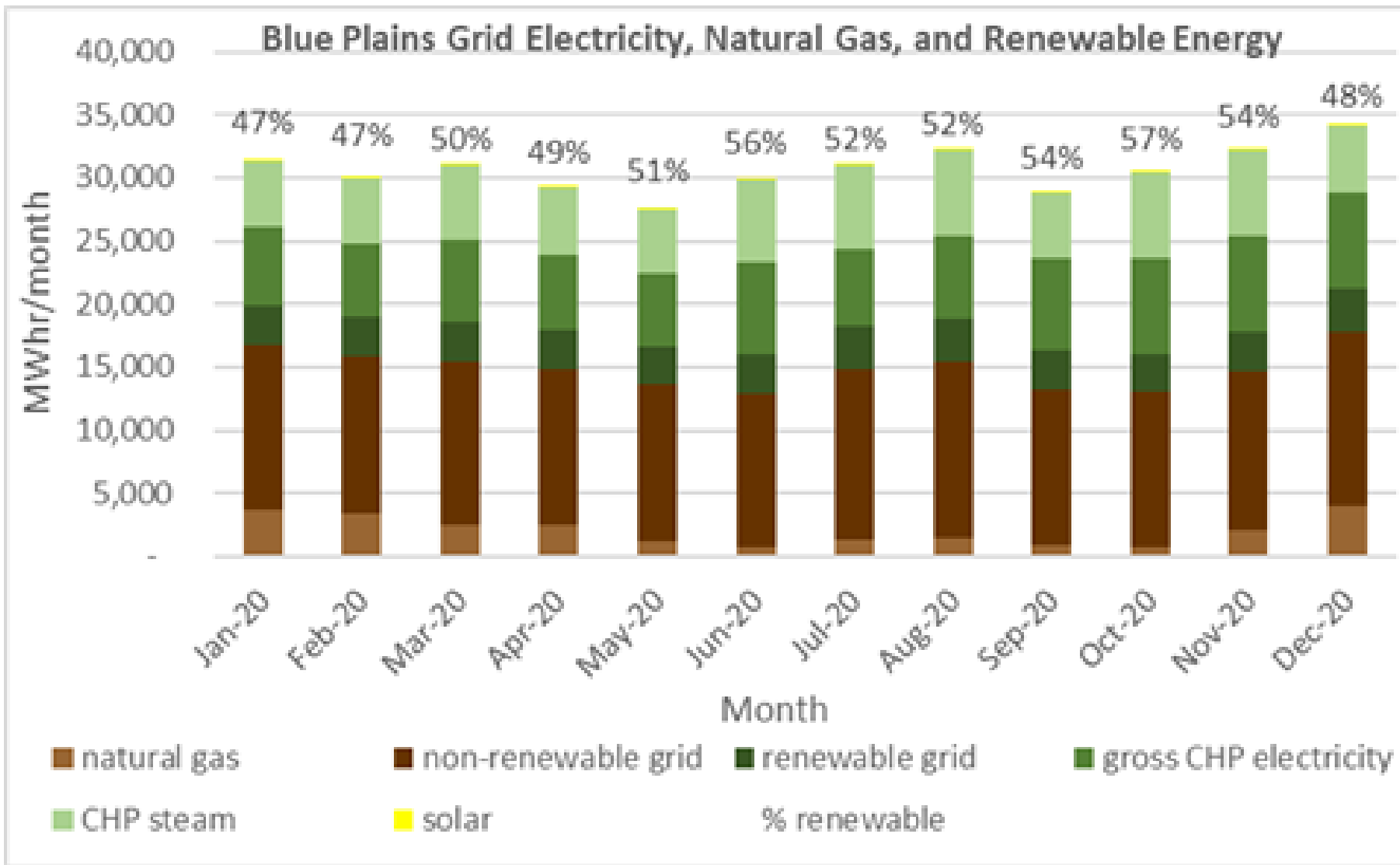
Follow-up from Solar Status Update at March 2021 Meeting

Follow-up Item to response to question from Randy Bartlett at March 2021 Meeting:
Provide the Committee with more information on the estimated power generation and consumption at the Blue Plains AWTP, including details on renewable energy





Estimated Power Consumption at Blue Plains



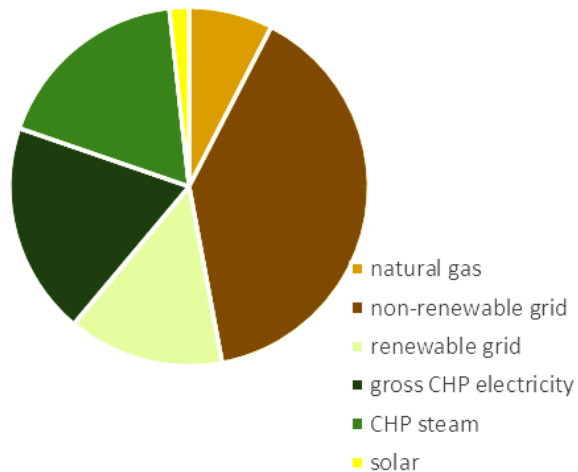


Estimated Power Consumption at Blue Plains

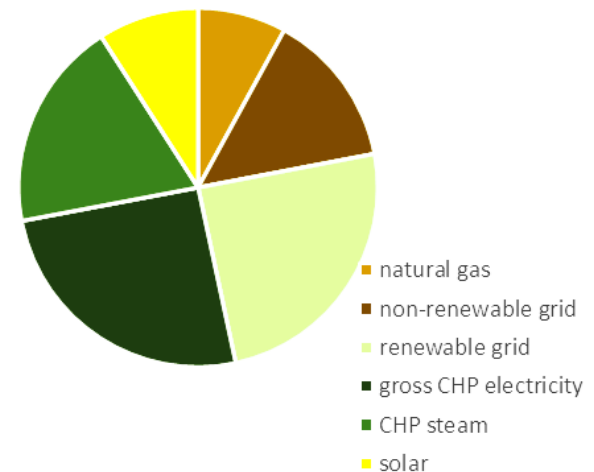
2021: Estimate based on projected production and use.

2027: Anticipated increase in percent renewable for grid power, plus Blue Plains Solar Phase II, and offsite solar net metered back to Blue Plains

2021 - 52.9% renewable

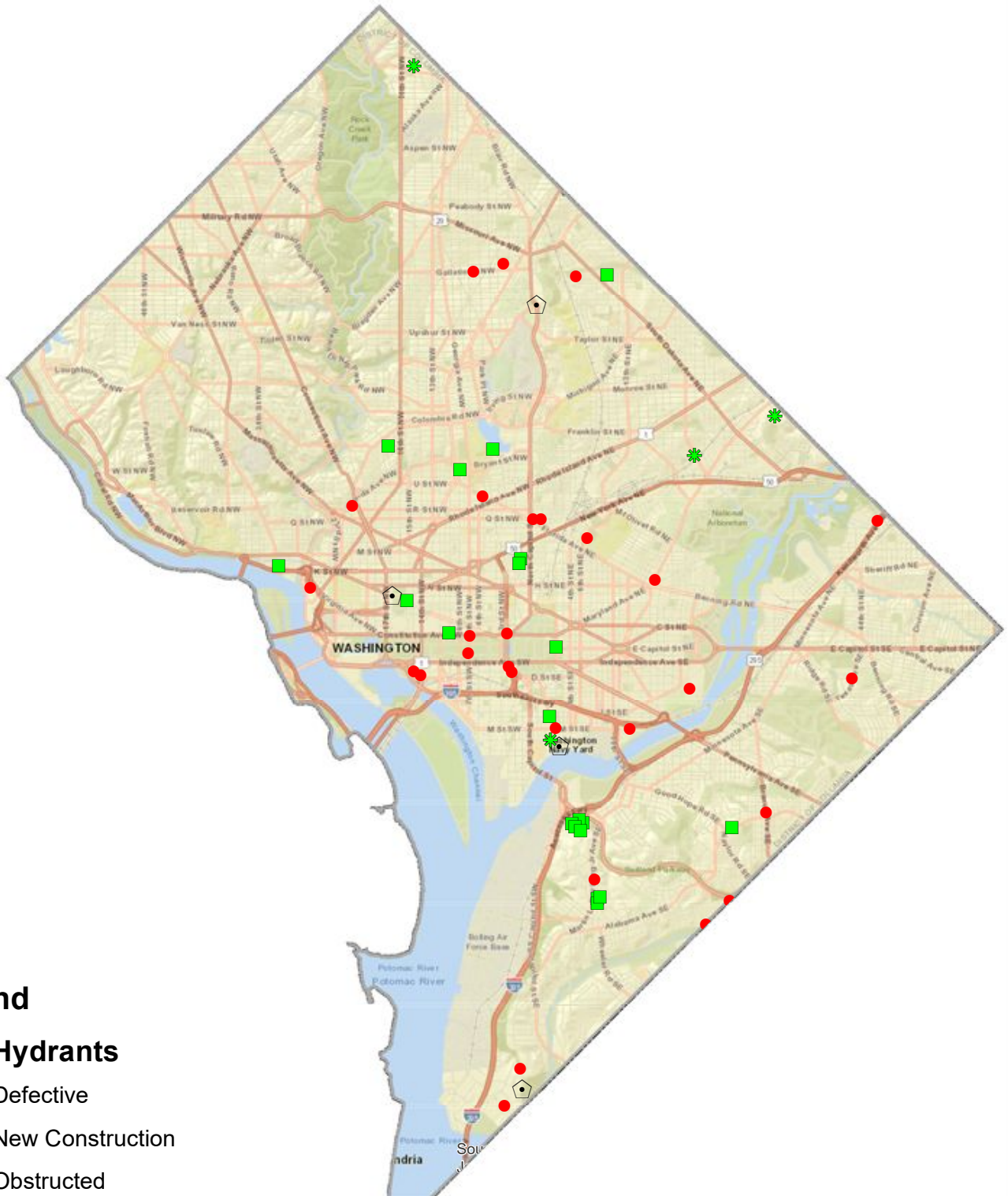


2027 - 78% renewable



Map of Public Out-of-Service Hydrants

May 05, 2021



Legend

OOS Hydrants

- Defective
- * New Construction
- ⬠ Obstructed
- Temporary

Status Report of Public Fire Hydrants for DC Water Services Committee - May 5, 2021

	February Cmte. Report (February 03, 2021)	March Cmte. Report (March 05, 2021)	April Cmte. Report (April 05, 2021)	May Cmte. Report (May 05, 2021)
Public Fire Hydrants:	9,430	9,812	9,813	9,808
In Service:	9,359	9,744	9,746	9,752
Marked Out-of-Service (OOS)	71	68	67	56
OOS - defective requiring repair/replacement	48	36	40	25
% OOS requiring repair or replacement (DC Water goal is 1% or less OOS)	0.51%	0.37%	0.41%	0.25%
OOS - due to inaccessibility or temp construction work	23	32	27	31

Note: The number of public hydrants in the DC Water system fluctuates; this number fluctuates as hydrants are added and removed during development or construction activities as well as at the request of the Fire Dept.

Breakdown of Public Fire Hydrants Out-of-Service (OOS) as of May 5, 2021 56

Breakdown of Defective

	0-7 Days	8-14 Days	15-30 Days	31-60 Days	61-90 Days	91-120 Days	> 120 Days	Total
Hydrant Needs Repair/Investigation	0	1	0	0	0	0	3	4
Needs Valve Investigation for Low Flow/Pressure or Shut Test for Replacement	0	0	0	2	0	0	5	7
Needs Replacement	1	1	0	2	1	0	9	14

Defective 25 ←

Breakdown of Others

	0-7 Days	8-14 Days	15-30 Days	31-60 Days	61-90 Days	91-120 Days	> 120 Days	Total
Temporarily OOS as part of operations such as a main repair	3	0	1	1	2	2	14	23
Construction* - OOS	0	0	0	0	1	0	3	4
Obstructed Hydrant – OOS hydrant due to operation impeded by an obstruction.	0	0	0	0	0	1	3	4

Others 31 ←

*Fire hydrants not accessible due to construction activities. Also includes new hydrants which have not yet been commissioned or old hydrants which will be abandoned as part of ongoing construction projects.

Status of Private Fire Hydrants-Based on FEMS Inspection Reporting

Private Hydrants:	1,295
• In Service:	1,155
• Out-of-Service (OOS):	140

Status Report for EPA Drinking Water Regulated Monitoring May 10, 2021

Total Coliform Rule Update

DC Water collected 244 samples in April 2021 and zero were positive for total coliform.

Lead and Copper Rule Update

DC Water distributed 168 sample kits to customers between January and April, receiving 84 valid compliance samples. Among them, test results are available for 69 samples. Table 1 shows the January through March results and Table 2 describes the locations with lead results greater than 15 ppb.

Table 1. LCR Lead Samples Results

	1 st Semester 2021	
	1 st Draw	2 nd Draw
90th Percentile, ppb	2.3	3.9
Number of Samples	69	69
Number of Samples > 15 ppb	1	0

Table 2. Homes with Lead Results Greater than 15 ppb

Home	Pipe Material	Lead (ppb)		Iron (ppb)	
		1 st Draw	2 nd Draw	1 st Draw	2 nd Draw
702 9 th St SE	Full Lead Service Line	36	5.1	437	0