



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

Meeting of the
Environmental Quality and Operations Committee

**Thursday, December 17, 2020
9:30 a.m.**

**Microsoft Teams meeting
Join on your computer or mobile app**

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Or call in (audio only)

**[+1 202-753-6714](tel:+12027536714), [152225459#](tel:+152225459) United States, Washington DC
Phone Conference ID: 152 225 459#**

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	
9:50 a.m.	IV.	CIP Quarterly Update	Paul Guttridge
10:05 a.m.	V.	Brentwood Solar Project	Maureen Holman
10:15 a.m.	VI.	Action Items	Joel Grosser/Len Benson

Joint Use

1. Contract No.: 20-PR-DFM-18 – Temporary Staffing Services, KLSL Consulting
2. Contract No.: 19-PR-DWT-21A -- Supply and Delivery of Methanol, Colonial Chemicals
3. Contract No.: 19-PR-DWT-21B -- Supply and Delivery of Methanol, Mitsubishi International

Non-Joint Use

1. Contract No.: 200060 – Green Infrastructure Maintenance Contract A, Anchor Construction Corporation
2. Contract No.: 200070 – Green Infrastructure Maintenance Contract B, National Service Contractors, Inc.
3. Contract No.: 210010 - National Arboretum Sewer Rehabilitation Construction Contract 2, Structural Preservation Systems, LLC

10:35 a.m.	VII.	Further Discussion: Effects of Increased Wet Weather Events in the District	Carlton Ray
10:55 a.m.	VIII.	Other Business / Emerging Issues	
11:00 a.m.	IX.	Executive Session*	Adam Ortiz Chair
11:30 a.m.	X.	Adjournment	

Follow-up Items from Prior Meetings:

1. SVP, CIP Project Delivery: Include risks associated with a potential privatization of the Washington Aqueduct and its impact on rates as part of the Risks and Sensitivities analysis. **[To be included in the Budget Briefing PPT at the Full Board Meeting – February 4, 2021]**
2. VP, DC Clean Rivers: Schedule a tour of GI Sites **[Target: April 2021]**
3. EVP, Chief Operating Officer - Conduct further discussions on the effects of increased wet weather events in the District including the need to further evaluate current modeling assumptions used to predict the magnitude of such events. **[On Current Agenda]**
4. Risk and Resilience Briefing **[On Current Agenda]**
5. EVP, Chief Operating Officer – brief committee on what efforts have been made to update and improve the Authority’s Emergency Communication protocols, especially in-light of two such previous failures during Boil Water Alerts. **[Target: January 2021]**
6. Director, Process Engineering – provide report on the amount of litter captured through the wet weather tunnel and treatment system. **[Forwarded to BOD Secretary, December 9, 2020]**
7. 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: January 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 – November 2020

Accomplishments & Priorities

Effective Teamwork to Improve Reliability: In 2009, DC Water installed six 400 Horsepower (HP -each) rotary positive displacement blowers that supply 6,040 standard cubic feet per minute (SCFM -each) scour air, as part of a complex system to backwash sand and anthracite coal media in each of the 80 filter cells of the Multimedia Filtration Facility at Blue Plains. Due to recurring vibration issues and nuisance trips of these air blowers, a Root Cause Analysis (RCA) was initiated that involved a cross functional team with staff who have practical knowledge of the operation and maintenance of the blower system. During the past two years, the team focused on completing field investigation and analysis using tools including vibration monitoring equipment that uses motion amplification to identify failures. In addition, the cross functional team developed and implemented corrective actions to prevent recurrence and improve systems availability and reliability.

The Reliability Team (**Ed Blankenship and Carlos Viloria**) provided secure connections for vibration sensors installed on each blower, which were calibrated by the Instrumentation Team (**Joel Gregory and Robert Hopkins**). The Mechanical Team (lead by **Steve Strong and Fred Shinnamon**) found a deficiency in sheave alignment which required cutting back obstructions in the protective cage over the belts and sheaves to correct alignment. The Electrical Team (**Robert Pearson & Bobby Harrod**) had to relocate conduit to

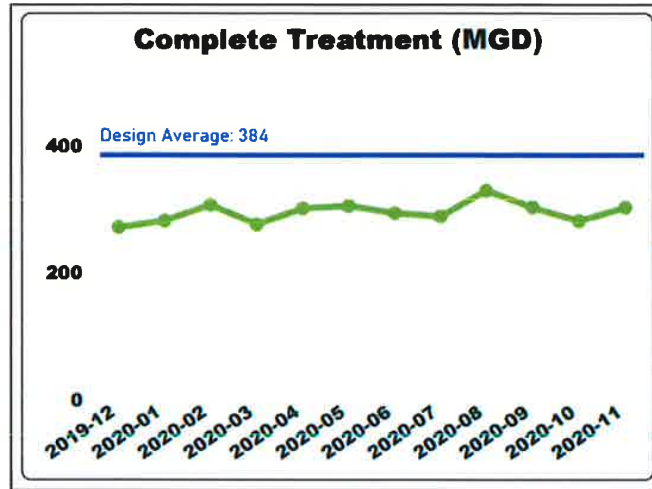


move Resistance Temperature Detectors (RTD) or bearing temperature sensors, to facilitate replacement of one of the blowers (replaced using in-house resources). Voids identified in support beams were filled with grout using specialized services of a contractor and stiffeners were added to pillow block stands to enhance support for rotating shaft. The Asset Management Team (**David Gisborn**) used an enhanced slow-motion camera to capture the vibration before and after the modifications, showing a successful outcome.

All six blowers are now fully functional and reliable and scour air supply system availability of 100% was achieved in November 2020. This successful team effort, demonstrates commitment of employees to adopt maintenance best practices, reduce reactive maintenance, and improve equipment and systems availability and reliability. **Great Teamwork for Reliable Solutions!**

Operational Performance

Blue Plains Complete Treatment Performance: The plant performance for the month of November 2020 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 302 MGD.



Influent Flow to Complete Treatment

Wet Weather Treatment Facility (WWTF) Performance: In November 2020, a total of 435 million gallons (MG) of combined wet weather flows, captured in the tunnel system, were treated through the WWTF. The measured overflow was 7 MG. The volume of captured combined flow treated through the Wet Weather Treatment Facility (WWTF) and directed to Outfall 001 was 245 Million Gallons (MG).

Wet Weather Treatment Facility Performance

	November 2020 (Draft)	Calendar Year 2020 (Through November)
Total Precipitation, inches (DCA gauge)	6.14	52.38
Total Volume Captured in the Anacostia Tunnel, MG	435*	2,736*
Measured Overflow, MG	7*	381*
Percent Captured**	98%*	88%*
Screenings and Grit Capture, tons	68	1,667

Note

*Based on preliminary data. Data unavailable for potential overflows from existing CSOs. Hydraulic model will be used to estimate overflows from existing CSOs.

**Expected Capture ~80%

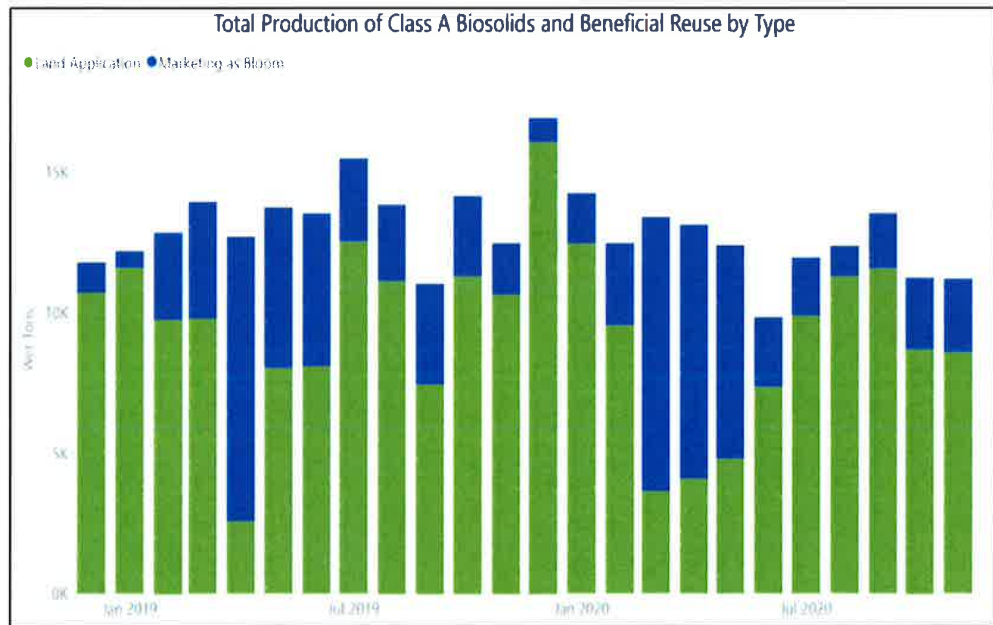
Operational Performance

Class A Biosolids Quality: In November, biosolids hauling averaged 381 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 November, Blue Drop sold 2,381 wet tons of Bloom. This quantity represents more than double what Blue Drop sold last November and includes tonnage for a project in DC – the South Capitol Street Bridge, just downstream of the DC Water headquarters. The project, which started in late October, will purchase approximately 8,000 cubic yards of Bloom over the course of the next 18 months for use in landscaping. This is a year-round project and is another winter option for us, thereby reducing our need for high-cost winter storage. This project represents our first large scale usage project in an urban setting and will pave the way for more such projects. The remaining 9,049 wet tons not sold into the market were land applied through DC Water (through Blue Drop) and WSSC contracts.

**Total Wet Tons of Class A Biosolids Produced - December 2018 to November 2020
Marketed as Bloom (blue) and Land Applied (green)**



Progress Report

Water Quality & Pretreatment

- ✓ Pretreatment Program staff conducted Significant Industrial User* (SIU) compliance monitoring and inspection at Dulles Airport.
- ✓ The following new or renewed wastewater discharge permits were issued: two Temporary Discharge Authorization permits**; and three Waste Hauler permits***.
- ✓ During the month, a total volume of 2.4 million gallons (MG) hauled waste was received from different sources.

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, and/or is a federally mandated categorical industry, and/or has a reasonable potential for adversely affecting the operation of Blue Plains or 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-2020 4th Quarter
July 1st through September 30th, 2020**

**Board of Directors
Environmental Quality and Operations Committee
Finance and Budget Committee**

**David L. Gadis CEO and General Manager
Leonard R. Benson, Senior Vice President CIP Project Delivery
November 2020**

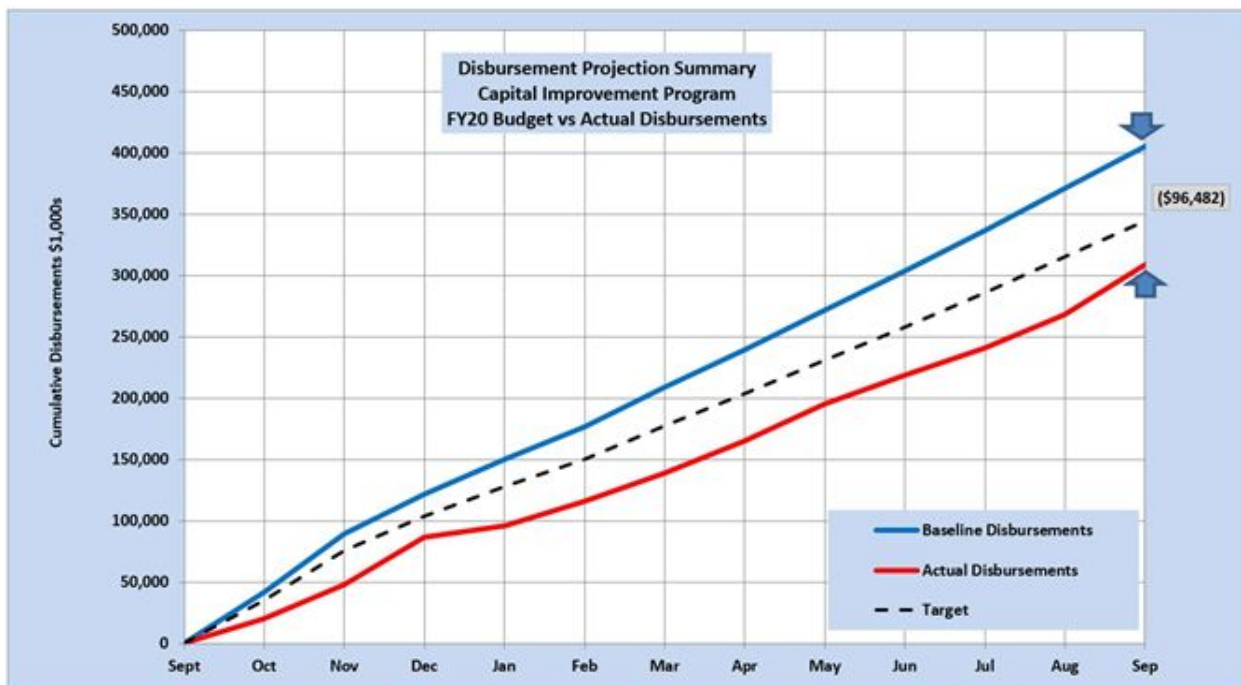


Capital Improvement Program Report 4th Quarter FY2020

CIP Disbursement Performance

FY20 program actual disbursements compared with the FY20 baseline are shown in the chart below:

Disbursement Summary



Fiscal year 2020 CIP disbursements are \$308,552,000, which is below the baseline disbursement ceiling of \$405,004,000.

FY20 disbursements within the service areas are as follows:

Non-Process Facilities

Baseline Disbursements	\$42,066,000
Actual Disbursements	\$10,017,000 (\$32.0M below baseline)

This underspending is mainly due to the delay in receiving funds and subsequent awarding of the Fleet Facility and Sewer Headquarters construction contracts.



Capital Improvement Program Report 4th Quarter FY2020

Wastewater Treatment Service Area

Baseline Disbursements	\$77,536,000
Actual Disbursements	\$48,998,000 (\$28.54M below baseline)

Significant project variances are listed below:

- *Liquid Processing Program Area – (\$9.7M below baseline) –*
 - The disbursements for Project IZ – Replace/Upgrade Influent Screens are \$4.3M less than the baseline, mainly attributable to delay in installing the correct screens and by billing lags in Project UC – Filtration/Disinfection Facility (\$2.0M) .
- *Plantwide Program Area – (\$5.9M below baseline) –*
 - The disbursements for Project JF – Construction of Flood Seawall are \$2.5 less than the baseline due to delays in procuring materials.
 - The disbursements for Projects LS and CW totaled \$1.6M less than the baseline as planned new work was not started to mitigate potential impacts of reduced revenue due to COVID-19.
- *Biosolids Program Area – (\$7.5M below baseline) –*
 - The disbursements for project BX - Gravity Thickener Upgrades Ph II are \$6.9M less than the baseline, mainly attributable to the contract not progressing as quickly as forecast and materials deliveries not occurring as early as anticipated, contract is still expected to finish on time.
- *Nitrogen Removal Program area – (\$5.4M below baseline) –*
 - The disbursements for Project E8 – Enhanced Clarification Facilities are \$1.7M less than the baseline, due to protracted negotiations to close out the contract. This contract also includes Project FR – Tunnel Dewatering Pumping Station, which is \$1.1M below baseline. The disbursements for Project FS, Bolling Overflow and Diversion Structure, are \$1.2M less than the baseline due to the project finishing below the contract value.

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

CSO Service Area

Baseline Disbursements	\$7,952,000
Actual Disbursements	\$3,188,000 (\$4.76M below baseline)

Significant project variances are listed below:

- The disbursements for Project EJ00 - Potomac Pumping Station-Ph III Rehab – were under by \$1M as pump reconditioning work did not start as anticipated.
- The disbursements for Project FQ00 - Main & O St. PS Intermediate Upgrade were under by \$3.2M as O St Ventilation and associated work did not occur as planned



Capital Improvement Program Report 4th Quarter FY2020

DC Clean Rivers Program Area

Baseline Disbursements	\$162,197,000
Actual Disbursements	\$178,635,000 (\$16.4M above baseline)

The disbursements for this program area are higher than the baseline due an accelerated payment in late FY20 to take advantage of lower than expected overall disbursements within the FY20 CIP.

Stormwater Service Area

Baseline Disbursements	\$6,869,000
Actual Disbursements	\$2,590,000 (\$4.3M below baseline)

Significant project variances for this service area below.

- *Stormwater Pumping Facilities Area – (\$3.5M below baseline) –*
 - The disbursements for Project NG – Stormwater Pump Stations Rehabilitation are \$3.5M less than the baseline due to delays in procuring the next Miscellaneous Facilities Upgrades construction contract.

Sanitary Sewer Service Area

Baseline Disbursements	\$44,934,000
Actual Disbursements	\$23,365,000 (\$21.6M below baseline)

Significant project variances are listed below:

- *Sanitary Collection Sewers Area – (\$3.9M below baseline) –*
 - The disbursements for Project QX – Local Sewer Assessment 1 are \$1.8M less than the baseline due to project being deferred due to COVID-19 spending limitations.
- *Sanitary On-going Area – (\$3.6M below baseline) –*
 - This area is below the forecast but within the expected limits of the forecasting accuracy as the size and type of emergency repairs to the sewer system are difficult to predict year on year.
- *Sanitary Trunk Sewers Area – (\$9.2M below baseline) –*
 - The disbursements for Project LZ – Potomac Interceptor Projects - Rehab Phase 2 are \$4.7M less than the baseline. The unique contracting requirements caused delays to the design start.
 - The disbursements for Project IL - Creekbed Sewer Rehabilitation 2 were \$1.2M below the baseline as an unforeseen major redesign for storm water system pushed the finish date by more than a year.



Capital Improvement Program Report 4th Quarter FY2020

Water Service Area

Baseline Disbursements	\$62,163,000
Actual Disbursements	\$41,730,000 (\$20.4M below baseline)

Significant project variances are listed below:

- *Water Distribution System Area – (\$17.4M below baseline) –*
 - The forecast disbursements for Project F1 – Small Diameter Water Main Rehab 13 are \$4.5M less than the baseline because projects were deferred due to COVID-19.
 - The forecast disbursements for Project FT – Water Main Rehabs Phase II are \$2.5M less than the baseline due to the delays due to the potential lack of funding available due to the recent COVID-19 pandemic.
 - The forecast disbursements for Project O3 – Small Diameter Water Main Rehab 11 are \$2.2M less than the baseline due to the delays in closing out this contract.



Capital Improvement Program Report 4th Quarter FY2020

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
Multiple	Water and Sewer Planning and Engineering Services Consultant	Professional Services	Yes	\$15M - \$20M	EQ & Ops Nov	Dec
CZ00	CSO 025/026 Separation	Construction	No	\$4M - \$8M	EQ & Ops Nov	Dec
IY03	Reclaimed Final Effluent Pump Station	Construction	Yes	\$5M-\$15M	EQ & Ops Jan	Feb



Capital Improvement Program Report
4th Quarter FY2020

**Schedule - Key Performance Indicators
Capital Improvement Program**

Summary:

For the fiscal year, 16 of the Key Performance Indicators (KPIs) completed this period were achieved within 90 days of their target date. 3 completed outside of the 90 days target and 11 remaining to be completed, mainly due to delays due to COVID-10.

#	Performance
16	KPIs were completed within threshold
3	KPIs completed outside threshold
19	Total KPIs completed this year
30	Total KPIs due this year

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

- LZ09 – Delay obtaining categorical exclusion from EPA
- F103, F104 – Missed KPI due to delays while evaluating the impact of COVID-19 on the availability of funding.
- IL10 – Additional permitted storm water management work needed resulting from damage caused by torrential rains
- RC07 – Negotiation challenges resulted in consultant withdrawing their proposal.
- BV01 – There are on-going challenges with the rehab of pumps.
- F201, F202, F203 – Missed KPI due to delays while evaluating the impact of COVID-19 on the availability of funding
- I801 – Missed KPI while contractor completes corrective issues and change order work.
- IC01 – Missed KPI due to delays while evaluating the impact of COVID-19 on the availability of funding
- LD00 – Missed KPI due to delays while evaluating the impact of COVID-19 on the availability of funding
- NG05 – Delays in procuring the new construction MFU contractor
- SC01 – The design was rescheduled to be done under the new ALU Program Manager/Design contract.

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

Quarter	Job Code	Job Name	Activity Name	Due Date (Baseline)	Estimated Complete Date	Actual Complete Date	Variance (positive is early)	Met within 90 days
Q1	FA03	Soldiers Home Reservoir Upgrade	Construction Start Milestone	10-Oct-19		09-Oct-19	1	✓
Q1	NG02	Stormwater Pumping Stations Rehabilitation Phase 2	Design Start Milestone	30-Dec-19		26-Dec-19	4	✓



Capital Improvement Program Report 4th Quarter FY2020

Quarter	Job Code	Job Name	Activity Name	Due Date (Baseline)	Estimated Complete Date	Actual Complete Date	Variance (positive is early)	Met within 90 days
Q1	UC06	Upgrades to Filtration Influent Pumps 1-10	Construction Start Milestone	10-Oct-19		10-Oct-19	0	✓
Q2	F101	Small Diameter Water Main Repl 13A	Construction Start Milestone	12-Mar-20		13-Mar-20	-1	✓
Q2	F102	Small Diameter Water Main Repl 13B	Construction Start Milestone	16-Feb-20		27-Feb-20	-11	✓
Q2	FQ02	Main PS Upgrades - NFPA, Odor Control, LAPS	Design Start Milestone	29-Jan-20		19-Jan-20	10	✓
Q2	HX01	SDWM Renewal 16A	Design Start Milestone	02-Jan-20		27-Nov-19	36	✓
Q2	JF03	Construction of Flood Seawall Segment C	Construction Start Milestone	13-Jan-20		29-Jan-20	-16	✓
Q2	LZ04	PI Phase 2 Pipe Rehab at Potomac Crossing	Design Start Milestone	03-Mar-20		25-Feb-20	7	✓
Q2	LZ06	PI Phase 4 Pipe Rehab at Fairfax & Loudoun Co.	Design Start Milestone	01-Jan-20		12-Dec-19	20	✓
Q2	LZ09	PI Phase 6 Pipe Rehab at Clara Barton Pkwy and I-495	Design Start Milestone	29-Feb-20		25-Aug-20	-178	☒
Q2	LZ07	PI Phase 5 Pipe Rehab between MH31 and MH30	Design-Build NTP	23-Feb-20		12-May-20	-79	✓
Q3	C904	66" Low Service Steel Main at 8th Street NE & SE	Construction Substantial Completion	30-Apr-20		13-Jan-20	108	✓
Q3	F103	Small Diameter Water Main Repl 13C	Construction Start Milestone	15-Apr-20		08-Sep-20	-147	☒
Q3	F104	Small Diameter Water Main Repl 13D	Construction Start Milestone	15-May-20		30-Sep-20	-123	☒
Q3	HX02	Small Diameter Water Main Repl 16B	Design Start Milestone	01-Apr-20		31-Jan-20	61	✓
Q3	IL10	Creekbed Sewer Rehabilitation Rock Creek Oregon Avenue	Construction Substantial Completion	30-Apr-20	30-May-21		-395	☒
Q3	J001	B Street/New Jersey Ave. Trunk Sewer Rehab and Cleaning Phase 1	Construction Substantial Completion	30-Sep-20		24-Aug-20	37	✓
Q3	RC07	Major Sewer Rehab 1-5 Northeast Boundary	Design Start Milestone	22-May-20	01-Dec-20		-193	☒
Q4	BV01	RWWPS No. 2 Upgrades	Construction Substantial Completion Milestone	02-Jul-20	01-Apr-21		-273	☒



Capital Improvement Program Report 4th Quarter FY2020

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	DR02	Low Area Trunk Sewer - Rehabilitation	Construction Substantial Completion	10-Jul-20		10-Jul-20	0	✓
Q4	F201	Small Diameter Water Main Repl 14A	Construction Start Milestone	05-Aug-20	01-Feb-21		-180	☒
Q4	F202	Small Diameter Water Main Repl 14B	Construction Start Milestone	15-Aug-20	01-Jun-21		-290	☒
Q4	F203	Small Diameter Water Main Repl 14C	Construction Start Milestone	03-Sep-20	10-Aug-21		-341	☒
Q4	HX03	Small Diameter Water Main Repl 16C	Design Start Milestone	01-Jul-20		20-Feb-20	132	✓
Q4	I801	Large Valve Replacements 11R	Construction Substantial Completion	29-Sep-20	30-Jun-21		-274	☒
Q4	IC01	Electrical & Power Monitoring Systems	Design Start Milestone	28-Sep-20	28-Sep-22		-730	☒
Q4	LD00	Pre-Dewatering Additional Centrifuges	Design Start Milestone	21-Sep-20	4-Jan-21		-105	☒
Q4	NG05	Stormwater Pump Station Rehab - 1st and D	Construction Start Milestone	01-Sep-20	09-Aug-21		-342	☒
Q4	SC01	Main & O Seawall Restoration (Phase 2 HQO)	Design Start Milestone	29-Aug-20	31-Mar-21		-204	☒

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



District of Columbia Water and Sewer Authority
David L. Gadis, CEO & General Manager

Brentwood Reservoir Solar License Agreement

Finance and Budget Committee
December 15, 2020

Environmental Quality and Operations Committee
December 17, 2020

Maureen Holman, EVP, Administration



Brentwood Reservoir Solar License Agreement

- **Background & Project Partners**
- **Unique Opportunity at Brentwood Reservoir**
- **Participation in “Solar for All”**
- **Financial Benefits**
- **Financial Risk**
- **Operational Considerations**

- **Recommendation: Approve License Agreement**



Brentwood Reservoir Community Solar Project

- 1.8 MW of solar panels constructed over Brentwood Reservoir
- 20-year license of surface area to project developer
- No DC Water capital investment
- Anticipated NPV of \$2.9 million for DC Water
- Power enrolled in DC Solar for All program
 - 500 low-income District households will see 50% reduction in electric bill
 - Total expected electric ratepayer savings of \$4-5M
- DC Water external advisors
 - Beveridge & Diamond (legal)
 - PFM Financial Advisors LLC (financing & market analysis)



Brentwood Reservoir Solar License Agreement





Brentwood Reservoir Solar License Agreement

2016 - Urban Ingenuity (UI) engaged by Gallaudet University for district energy microgrid

2018 - UI, National Housing Trust (NHT), and DC Water explore Brentwood site in relation to Gallaudet CHP/microgrid project

- Dec 2018: DC Water enters into initial development agreement for the site (2 extensions signed) to include community solar

2019 - Refined project scope, financial & legal agreements, PEPCO grid studies

- DC Water unwilling to expose ratepayers to actions by underlying owner, the National Park Service (NPS), negotiations paused

2020 - NPS confirms DC Water's administrative control of the site and provides written acknowledgement for Brentwood solar lease

- DC Water and NHT Ingenuity Partners (NHTIP) engage in formal negotiations to license the land at Brentwood Reservoir



Brentwood Reservoir Solar License Agreement

Project Partners

Urban Ingenuity (UI) is a local, small business in the District that promotes clean energy projects that benefit the economics of the local community. UI is currently the Program Administrator for DC's commercial PACE (Property Assessed Clean Energy) Program, which is implemented by the District Department of Energy and Environment (DOEE).

National Housing Trust (NHT) is a national nonprofit that is the nation's leading expert in preserving and improving affordable housing, including installation of sustainable solar power at affordable housing sites across the country.

NHT Ingenuity Power (NHTIP) is the development partnership with Urban Ingenuity (UI) and the National Housing Trust (NHT) that will execute the License Agreement. Projects operational in DC & nationally (NY, NJ, CT, PA, MD, CA) serving affordable housing, non-profits & low-income communities.





Solar for All

A DOEE program that seeks to provide the benefits of solar electricity to 100,000 low-income households and reduce their energy bills by 50% by 2032.

The DCSEU issues Solar for All grants to solar developers like NHTIP to install large community renewable energy facilities (CREFs), or community solar, around the District.

The program allows residents who live in multifamily buildings or whose roofs are not suitable for solar to access savings from these projects.





Brentwood Reservoir Solar License Agreement

Risks Addressed

Site Ownership and Control

- DC Water holds administrative jurisdiction to Brentwood Reservoir
- US Dept. of Interior / National Park Service hold title to property
- NPS letter (May 15, 2020) confirms DC Water has authority to grant long-term license to third party; gives NHTIP comfort to assume site control risks related to federal government

Interconnection

- Feeders near Brentwood are near capacity due to growth of Union Market and NOMA
- Hilly topography limits potential interconnection sites
- NHTIP developed a solution to use local interconnection points in cooperation with Gallaudet University
- Pepco has (now) approved the project



Brentwood Reservoir Solar License Agreement

Risks Addressed (cont'd)

Bankruptcy or Insolvency of Project Company

- Solar Owner must provide evidence of sufficient financing prior to construction of the System
- Solar Owner required to post Solar Decommissioning Bond to pay for the costs of system removal, decommissioning, and site restoration prior to construction and maintain through system removal
- Liquidated Damages due to DC Water in event of Solar Owner default

Damages to DC Water property

- Solar Owner required to maintain liability insurance throughout life of contract



Brentwood Reservoir Solar License Agreement

Business Terms

- **Upfront Completion Payment:** Lump sum payment equal to \$100 per kW of installed nameplate capacity **\$180,000** based on 1.8MW expected project size
- **Annual License Fee:** \$75 per kW of installed nameplate capacity **\$135,000/year** based on 1.8MW expected project size
- **SREC Transfer:** DC Water will receive 10% of the total SRECs in Contract Years 1-5; 15% in Contract Years 6-10; and 20% in Contract Years 10-20 SRECs worth an estimated **\$900,000** PV based on 1.8 MW project size
- **Cost Savings Sharing:** NHTIP will pay DC Water an additional amount equal to 50% of any cost savings based on originally budgeted EPC Costs and Interconnection Costs.

Anticipated revenue: \$4.3M
Net present value: \$2.9M

Financial Benefits

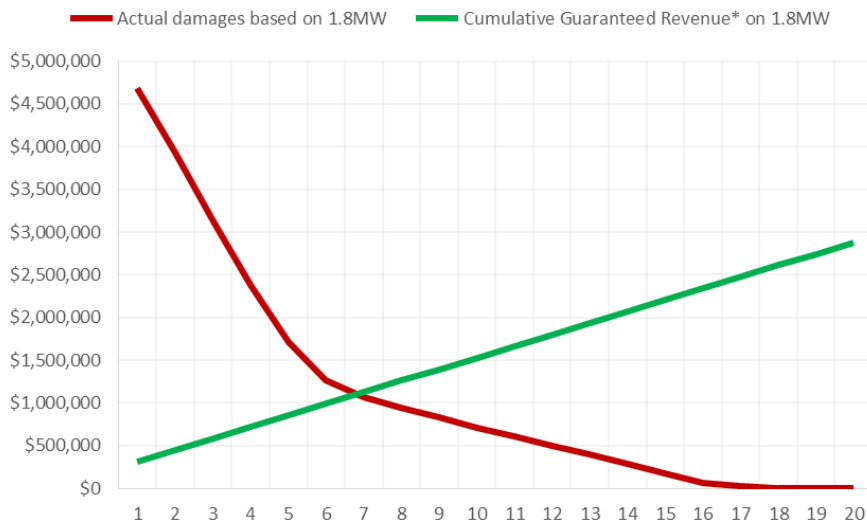
The financial terms include significant guaranteed value (from the license fee) and allow DC Water to share in the upside if SREC prices increase.

		Scenario 1	Scenario 2	Scenario 3	Scenario 4
		Original 2018 Proposal	Current Proposal (Base SREC Case)	Current Proposal (Upside SREC Case)	Current Proposal (Downside SREC Case)
Assumptions					
Upfront Payment	\$/kW	-	100	100	100
Lease Payment	\$/kW	40	75	75	75
SREC Transfer (Years 1-5)	%	0%	10%	10%	10%
SREC Transfer (Years 6-10)	%	0%	15%	15%	15%
SREC Transfer (Years 11-20)	%	0%	20%	20%	20%
Construction Cost Sharing	% Savings	0%	50%	50%	50%
Hypothetical Construction Cost Savings	\$	-	-	-	-
Economics					
Upfront Development Fee	\$PV (5%)	-	180,000	180,000	180,000
Lease Payment	\$PV (5%)	937,728	1,758,240	1,758,240	1,758,240
SREC Transfer	\$PV (5%)	-	941,122	1,224,870	620,588
Construction Savings Sharing	\$PV (5%)	-	-	-	-
Total (5% PV rate)	\$PV (5%)	937,728	2,879,362	3,163,111	2,558,828

Limited Financial Risk Exposure

Within the Agreement there are **liquidated damages** provisions for certain events of default that are under DC Water’s control, including a breach of the covenant that DC Water will make the licensed area available for use by NHTIP within the 20-year license period. Liquidated damages are higher in the initial years because of the tax-equity financing and grant provisions, but these are the years of greatest certainty for DC Water.

DC WATER EXPOSURE TO DAMAGES ENDS IN YEAR 6



DC Water has no planned work at the Brentwood Reservoir in the 10-year CIP after completing a successful \$5.3M upgrade/rehabilitation project in 2016.

Year	Termination Value per 1MW installed capacity	Actual damages based on 1.8MW	Cumulative Guaranteed Revenue* on 1.8MW
1	\$2,599,985	\$4,679,973	\$315,000
2	\$2,181,275	\$3,926,295	\$450,000
3	\$1,737,866	\$3,128,159	\$585,000
4	\$1,318,903	\$2,374,025	\$720,000
5	\$950,804	\$1,711,447	\$855,000
6	\$699,638	\$1,259,348	\$990,000
7	\$590,300	\$1,062,540	\$1,125,000
8	\$525,760	\$946,368	\$1,260,000
9	\$460,506	\$828,911	\$1,395,000
10	\$394,382	\$709,888	\$1,530,000
11	\$335,828	\$604,490	\$1,665,000
12	\$276,983	\$498,569	\$1,800,000
13	\$217,744	\$391,939	\$1,935,000
14	\$158,000	\$284,400	\$2,070,000
15	\$97,621	\$175,718	\$2,205,000
16	\$36,467	\$65,641	\$2,340,000
17	\$13,180	\$23,724	\$2,475,000
18	\$0	\$0	\$2,610,000
19	\$0	\$0	\$2,745,000
20	\$0	\$0	\$2,880,000

* Completion Payment & License Fees only, does not include SREC Transfer Revenue

Operational Considerations

- ✓ Could the solar panels damage the reservoir?
- ✓ What if DC Water needs to perform maintenance on the reservoir while the panels are in place?
- ✓ Are there concerns about access or safety?

- DC Water has the right to be heavily engaged during each phase of the design and sequencing process, providing formal review & comment and requesting design workshops as needed.
- DC Water has the right to “reject and disapprove any part of the Final Design or any Sequencing Plan that would jeopardize the integrity of the Brentwood Reservoir or unreasonably interfere with DC Water’s operation of the Brentwood Reservoir or the Property.”
- DC Water also has the right to request all or part of the system be de-energized to perform maintenance work at the reservoir, for 24 daylight hours/year with a carryover provision allowing up to a maximum of 48 hours downtime annually, though it is not expected to be needed as the majority of work is not performed on the surface.
- DC Water can further reduce the use of downtime provisions through the planning and execution of maintenance work in evening/winter hours whenever feasible.

Unlike the Blue Plains Solar PPA, Engineering review regarding the use and interconnection of electricity onsite was not necessary as all power is being exported.



Recommendation to Approve the Resolution to Execute the Brentwood Community Solar Project License Agreement

This project meets several DC Water objectives, and represents a win-win for our low-income ratepayers:

- A new source of guaranteed non-ratepayer revenue over 20 years
- Improving sustainability and resiliency for DC Water operations and the community in which we serve
- Aligning with District and regional goals to combat climate change and reduce the carbon footprint, while supporting vulnerable communities

DC Water has negotiated business terms that provide significant guaranteed value (with upside related to future SREC values and production) with no capital investment required, and limited risks.



Brentwood Reservoir Solar License Agreement

Thanks to the DC Water Solar Team!

Webster Barnes, Associate General Counsel, Legal Affairs
Ivan Boykin, Finance Director, Finance, Accounting and Budget
Rudy Gonzalez, Capital Programs Procurement Director, Procurement
Chris Peot, Resource Recovery Director, Wastewater Treatment
Saul Kinter, Program Manager Business Development, Wastewater Treatment
Ernest Jolly, Energy Chief, Wastewater Treatment
Kenrick St Louis, VP, Pumping and Sewer Operations

Eric Brown, PFM Financial Advisors LLC
Brook Detterman & James Auslander, Beveridge & Diamond

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

ACTION REQUESTED

**GOODS AND SERVICES CONTRACT OPTION YEAR ONE
For Temporary Staffing Services
(Joint Use - Indirect)**

Approval to execute Option Year 1 for Temporary Staffing Services for Fleet Department in the amount \$1,864,000.

CONTRACTOR/SUB/VENDOR INFORMATION

PRIME:	SUBS:	PARTICIPATION:
KLSL Consulting, LLC 5335 Wisconsin Avenue Suite #440 Washington, DC 20015 (LSBE)		100%

DESCRIPTION AND PURPOSE

Base Contract Value:	\$1,618,558.34
Base Contract Dates:	1/10/2020 – 1/09/2021
Number of Option Years in Contract	1
Modification Value:	\$132,070.00
Modification Dates:	1/31/2020 – 1/09/2021
Option Year 1 Value:	\$1,864,000.00
Option Year 1 Dates:	1/10/2021 – 1/09/2022

Purpose of the Contract:

To supply Temporary Staffing Services to the Fleet Department.

Contract Scope:

This contract provides temporary staff to maintain DC Water’s vehicle and large equipment for the Fleet Department.

Spending Previous Year:

Cumulative Contract Value:	01/10/2020 – 01/09/2021 - \$1,750,628.74
Cumulative Contract Spending:	01/10/2020 – 11/17/2020 - \$1,228,061.00

Contractor’s Past Performance:

According to the COTR, the Contractor’s quality of services, conforms to DC Water’s policies, procedures and contract terms; and invoicing all met expectations and requirements.

PROCUREMENT INFORMATION

Contract Type:	Fixed Hourly Rate	Award Based On:	Lowest Price
Commodity:	Good and Services	Contract Number:	20-PR-DFM-18
Contractor Market:	Open Market with Preference Points for LBE and LSBE Participation		

BUDGET INFORMATION

Funding:	Operating	Department:	Fleet
Project Area:	DC Water Wide	Department Head:	Tim Fitzgerald

ESTIMATED USER SHARE INFORMATION

User – Operating	Share %	Dollar Amount
District of Columbia	87.73%	\$1,635,287.20
Washington Suburban Sanitary Commission	9.22%	\$171,860.80
Fairfax County	1.76%	\$32,806.40
Loudoun Water	0.80%	\$14,912.00
Other (PI)	0.49%	\$9,133.60
TOTAL ESTIMATED DOLLAR AMOUNT	100.00%	\$1,864,000.00

 / December 4, 2020
 Maureen Holman Date
 EVP Administration

_____/_____
 Dan Bae Date
 VP of Procurement and Compliance

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

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

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

ACTION REQUESTED

**GOODS AND SERVICES CONTRACT OPTION YEAR
Supply and Delivery of Methanol
(Joint Use)**

This contract action is to execute option year 1 in the amount of \$6,500,000.00.

CONTRACTOR/SUB/VENDOR INFORMATION

PRIME: Colonial Chemicals, Inc. 916 West Lathrop Avenue Savannah, GA 31415	SUBS: N/A	PARTICIPATION: N/A
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DESCRIPTION AND PURPOSE

Base Period Contract Value:	\$7,000,000.00
Base Contract Period:	01-13-2020 – 01-12-2021
No. of Option Years:	2
Option Year 1 Value:	\$6,500,000.00
Option Year 1 Dates:	01-13-2021 – 01-12-2022

Purpose of the Contract:

To secure the consistent supply and delivery of methanol to the Blue Plains Advanced Wastewater Treatment Plant. The methanol is used as the nutrient for bacteria in the Nitrification section of Blue Plains, where nitrogen is removed to comply with DC Water’s environmental permits as required by the EPA.

Contract Scope:

Under the contract, suppliers will deliver and provide all necessary equipment required to offload methanol into the designated storage tanks at the Blue Plains Wastewater Treatment.

DC Water consumes methanol continuously and due to its critical importance and supply security, DC Water dual-sources methanol to assure continuity of supply. Colonial Chemical was awarded 90% of our volume requirements, and Mitsubishi was awarded 10%.

Spending Previous Year:

Cumulative Contract Value:	01-13-2020 to 01-12-2021: \$7,000,000.00
Cumulative Contract Spending:	01-13-2020 to 11-30-2020: \$4,804,457.00

Contractor’s Past Performance:

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

No LBE/LSBE participation.

PROCUREMENT INFORMATION

Contract Type:	Good and Services	Award Based On:	Best Value
Commodity:	Methanol	Contract Number:	19-PR-DWT-21A
Contractor Market:	Open Market with Preference Points for LBE and LSBE Participation		

BUDGET INFORMATION

Funding:	Operating	Department:	Wastewater Treatment
Service Area:	Blue Plains	Department Head:	Aklile Tesfaye

ESTIMATED USER SHARE INFORMATION

User	Share %	Dollar Amount
District of Columbia	43.44%	\$2,823,600.00
Washington Suburban Sanitary Commission	41.95%	\$2,726,750.00
Fairfax County	9.79%	\$636,350.00
Loudoun Water	4.23%	\$274,950.00
Other (PI)	0.59%	\$38,350.00
TOTAL ESTIMATED DOLLAR AMOUNT	100.00%	\$6,500,000.00

 / 12/3/2020
 Aklile Tesfaye Date
 VP of Wastewater Operation

_____/_____
 Dan Bae Date
 VP of Procurement and Compliance

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

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

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

ACTION REQUESTED

**GOODS AND SERVICES CONTRACT OPTION YEAR
Supply and Delivery of Methanol
(Joint Use)**

This contract action is to execute option year 1 in the amount of \$700,000.00.

CONTRACTOR/SUB/VENDOR INFORMATION

PRIME: Mitsubishi International Corp. 655 Third Avenue New York, NY 10017	SUBS: N/A	PARTICIPATION: N/A
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DESCRIPTION AND PURPOSE

Base Period Contract Value:	\$700,000.00
Base Contract Period:	01-13-2020 – 01-12-2021
No. of Option Years:	2
Option Year 1 Value:	\$700,000.00
Option Year 1 Dates:	01-13-2021 – 01-12-2022

Purpose of the Contract:

To secure the consistent supply and delivery of methanol to the Blue Plains Advanced Wastewater Treatment Plant. The methanol is used as the nutrient for bacteria in the Nitrification section of Blue Plains, where nitrogen is removed to comply with DC Water’s environmental permits as required by the EPA.

Contract Scope:

Under the contract, suppliers will deliver and provide all necessary equipment required to offload methanol into the designated storage tanks at the Blue Plains Wastewater Treatment.

DC Water consumes methanol continuously and due to its critical importance and supply security, DC Water dual-sources methanol to assure continuity of supply. Colonial Chemical was awarded 90% of our volume requirements, and Mitsubishi was awarded 10%.

Spending Previous Year:

Cumulative Contract Value:	01-13-2020 to 01-12-2021: \$700,000.00
Cumulative Contract Spending:	01-13-2020 to 11-30-2020: \$533,828.00

Contractor’s Past Performance:

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

No LBE/LSBE participation.

PROCUREMENT INFORMATION

Contract Type:	Good and Services	Award Based On:	Best Value
Commodity:	Methanol	Contract Number:	19-PR-DWT-21B
Contractor Market:	Open Market with Preference Points for LBE and LSBE Participation		

BUDGET INFORMATION

Funding:	Operating	Department:	Wastewater Treatment
Service Area:	Blue Plains	Department Head:	Aklile Tesfaye

ESTIMATED USER SHARE INFORMATION

User	Share %	Dollar Amount
District of Columbia	43.44%	\$304,080.00
Washington Suburban Sanitary Commission	41.95%	\$293,650.00
Fairfax County	9.79%	\$68,530.00
Loudoun Water	4.23%	\$29,610.00
Other (PI)	0.59%	\$4,130.00
TOTAL ESTIMATED DOLLAR AMOUNT	100.00%	\$700,000.00

 / 12-3-2023
 Aklile Tesfaye Date
 VP of Wastewater Operation

_____/_____
 Dan Bae Date
 VP of Procurement and Compliance

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

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

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

ACTION REQUESTED

GOODS AND SERVICES CONTRACT

**Green Infrastructure Maintenance Contract A
(Non-Joint Use)**

Approval to execute a goods and services contract for \$1,599,454.00

CONTRACTOR/SUB/VENDOR INFORMATION

PRIME:	SUBS:	PARTICIPATION:
Anchor Construction Corporation 2254 25 th Place, NE Washington, DC 20018	Green Up Construction and Maintenance LLC* Philadelphia, PA	60.0%
	Adaptive Green Inc* Washington, DC	15.0%

*Based upon the Green Infrastructure (GI) Memorandum of Agreement with the District of Columbia, this contract shall utilize best efforts to maximize Certified Business Enterprise (CBE) participation, with a goal that at least 50% of the dollar amount of this contract be awarded to CBEs. No Federal funding (i.e. EPA) will be used for this contract.

DESCRIPTION AND PURPOSE

Contract Value, Not-To-Exceed: \$1,599,454.00
 Contract Time: 1095 Days (3 years)
 Anticipated Contract Start Date (NTP): 02-01-2021
 Anticipated Contract Completion Date: 01-31-2024
 Other firms submitting proposals/ qualification statements 3
 Constituent Services Worldwide
 National Service Contractors, Inc
 PMGL Development, LLC

Purpose of the Contract:

The purpose of the contract is for maintenance of DC Water-constructed Green Infrastructure (GI) facilities as part of the practicability assessment for GI. These facilities were constructed to manage stormwater in various parts of the District of Columbia and to mitigate flooding in Bloomingdale and LeDroit Park neighborhoods.

Contract Scope:

This contract shall maintain all DC Water GI facilities located throughout the District or as determined by Clean Rivers, except those in the Rock Creek Sewer shed. The scope of the maintenance shall include:

- Maintain Green Infrastructure (GI) practices constructed under various DC Clean Rivers Contract Divisions. GI practices to be maintained under this contract include, but are not limited to, bioretention, pervious pavement, green roof plantings and infrastructure, and turf pavers.
- Report the maintenance activity using DC Water’s work order management software.
- Obtain all necessary permits to conduct work in accordance with local, state and federal regulations.
- This Contract will be subject to the goals outlined in the Memorandum of Agreement between DC Water and the Government of the District of Columbia regarding Job Opportunities for District Residents and Contracting Opportunities for District Businesses for Designing, Constructing, Inspecting, and Maintaining Green Infrastructure.

Federal Grant Status:

This Contract is not eligible for Federal grant funding assistance.

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

ACTION REQUESTED

GOODS AND SERVICES CONTRACT

**Green Infrastructure Maintenance Contract B
(Non-Joint Use)**

Approval to execute a goods and services contract for \$2,188,090.00

CONTRACTOR/SUB/VENDOR INFORMATION

PRIME:	SUBS:	PARTICIPATION:
National Service Contractors, Inc* 2007B Martin Luther King Jr. Ave SE Washington, DC 20020 CBE	Clean Streams LLC Hyattsville, MD MBE	15.0%
	Furbish Company LLC Baltimore, MD	20.0%

*Based upon the Green Infrastructure (GI) Memorandum of Agreement with the District of Columbia, this contract shall utilize best efforts to maximize Certified Business Enterprise (CBE) participation, with a goal that at least 50% of the dollar amount of this contract be awarded to CBEs. No Federal funding (i.e. EPA) will be used for this contract.

DESCRIPTION AND PURPOSE

Contract Value, Not-To-Exceed:	\$2,188,090.00
Contract Time:	1095 Days (3 years)
Anticipated Contract Start Date (NTP):	02-01-2021
Anticipated Contract Completion Date:	01-31-2024
Other firms submitting proposals/ qualification statements	3
Anchor Construction Corporation	
Constituent Services Worldwide	
PMGL Development, LLC	

Purpose of the Contract:

The purpose of the contract is for maintenance of DC Water-constructed Green Infrastructure (GI) facilities as part of the practicability assessment for GI. These facilities were constructed to manage stormwater in various parts of the District of Columbia.

Contract Scope:

This contract shall maintain all DC Water GI facilities located within the Rock Creek Sewer shed. The scope of the maintenance shall include:

- Maintain Green Infrastructure (GI) practices constructed under various DC Clean Rivers Contract Divisions. GI practices to be maintained under this contract include, but are not limited to, bioretention, pervious pavement, green roof plantings and infrastructure, and turf pavers.
- Report the maintenance activity using DC Water’s work order management software.
- Obtain all necessary permits to conduct work in accordance with local, state and federal regulations.
- This Contract will be subject to the goals outlined in the Memorandum of Agreement between DC Water and the Government of the District of Columbia regarding Job Opportunities for District Residents and Contracting Opportunities for District Businesses for Designing, Constructing, Inspecting, and Maintaining Green Infrastructure.

Federal Grant Status:

This Contract is not eligible for Federal grant funding assistance.

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

ACTION REQUESTED

CONSTRUCTION CONTRACT

**National Arboretum Sewer Rehabilitation Construction Contract 2
(Non-Joint Use)**

Approval to execute a construction contract for \$2,148,600.

CONTRACTOR/SUB/VENDOR INFORMATION

PRIME:	SUBS:	PARTICIPATION:
Structural Preservation Systems, LLC 6955 San Tomas Rd. Elkridge, MD 21075	HEP Construction Washington, DC	MBE 8.0%
<u>Headquarters</u> Columbia, MD	WB Waste Solutions, LLC Hyattsville, MD	MBE 0.2%

DESCRIPTION AND PURPOSE

Contract Value, Not-To-Exceed: \$2,148,600.00
 Contract Time: 178 Days (5 Months, 28 Days)
 Anticipated Contract Start Date (NTP): 02-02-2021
 Anticipated Contract Completion Date: 07-30-2021

Purpose of the Contract:

DC Water requires emergency rehabilitation of the elevated sewer crossing at Hickey Run located on federal property inside the National Arboretum. Failure of this 51-inch diameter pipe could cause an overflow in the environmentally sensitive area and possible damage to property. DC Water has elected a Rider Procurement be awarded to Structural Preservation Systems, LLC who is currently under contract and performing similar consultation / construction work for the Howard County, Maryland Public Works Authority. Riding the referenced Howard County contract will allow DC Water to contract directly with Structural Preservation Systems, LLC as a specialty contractor familiar with the project needs / requirements and previous experience performing similar work.

Contract Scope:

The rehabilitation work is planned for an approximately 58-lineal foot portion of the Eastside Interceptor where it crosses Hickey Run. The scope of work involves external rehabilitation of the existing structure and the replacement/reinforcement of piers and abutments utilizing micro-piles, micro-pile foundation caps, and the V-Wrap Carbon & Glass Fiber System to help strengthen the structural capacity and protect against uplift, progressive collapse, and spalling. Also, asset protection and mitigation measures against future erosion will be included as a part of this project.

Federal Grant Status:

- This contract is not eligible for Federal grant funding assistance



District of Columbia Water and Sewer Authority
David L. Gadis, CEO and General Manager

Briefing on:

*Further Discussion: Effects of Increased Wet Weather
Events in the District*

Briefing for:

Environmental Quality and Operations Committee

December 17, 2020



DCWATER.COM

Agenda

- Sept 10, 2020 flood event
 - Prior studies assessing Northeast Boundary flooding

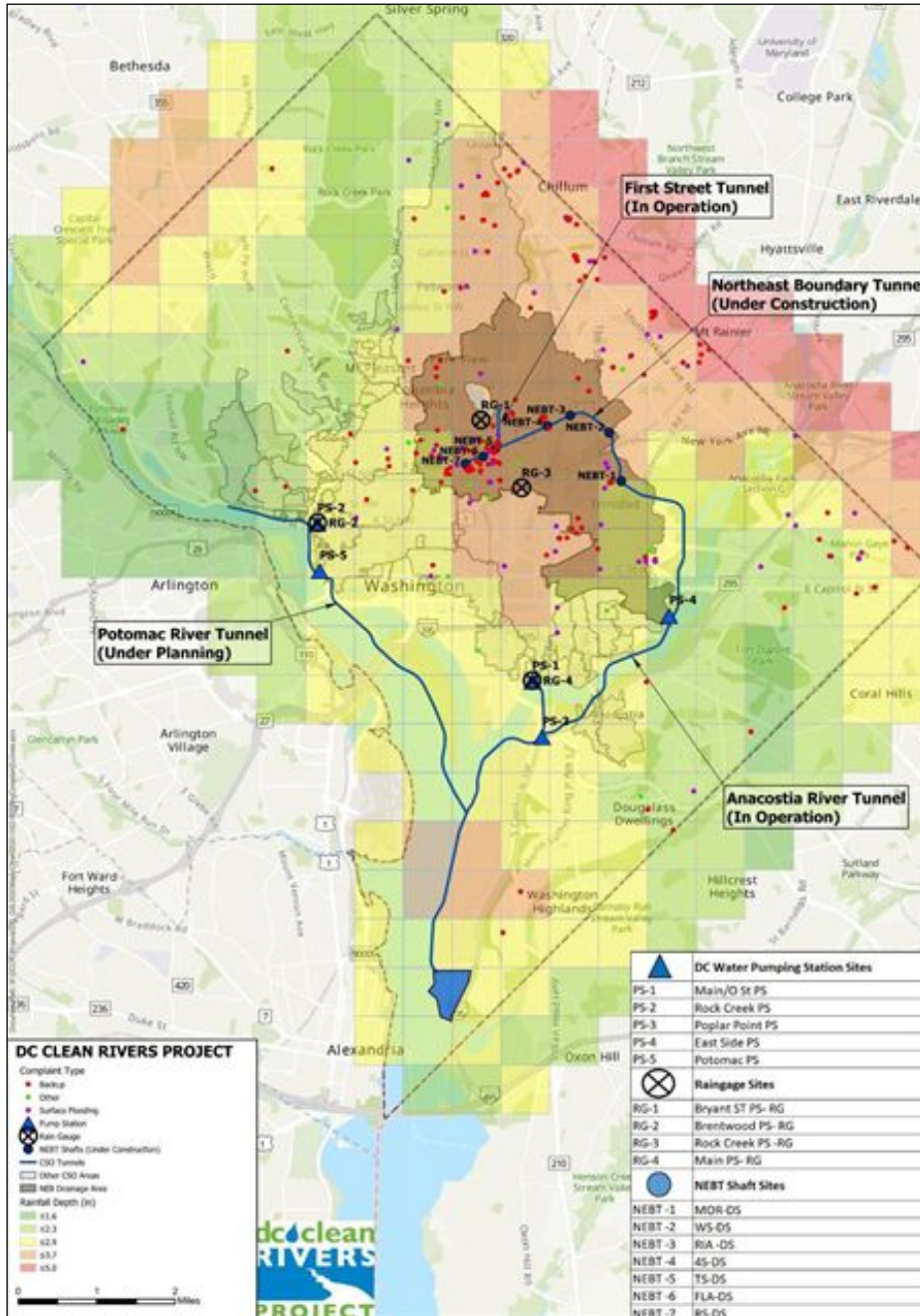
- Federal Legacy

- Prior Facility Plans assessing sewer capacity

- Opportunities for further study due to climate change

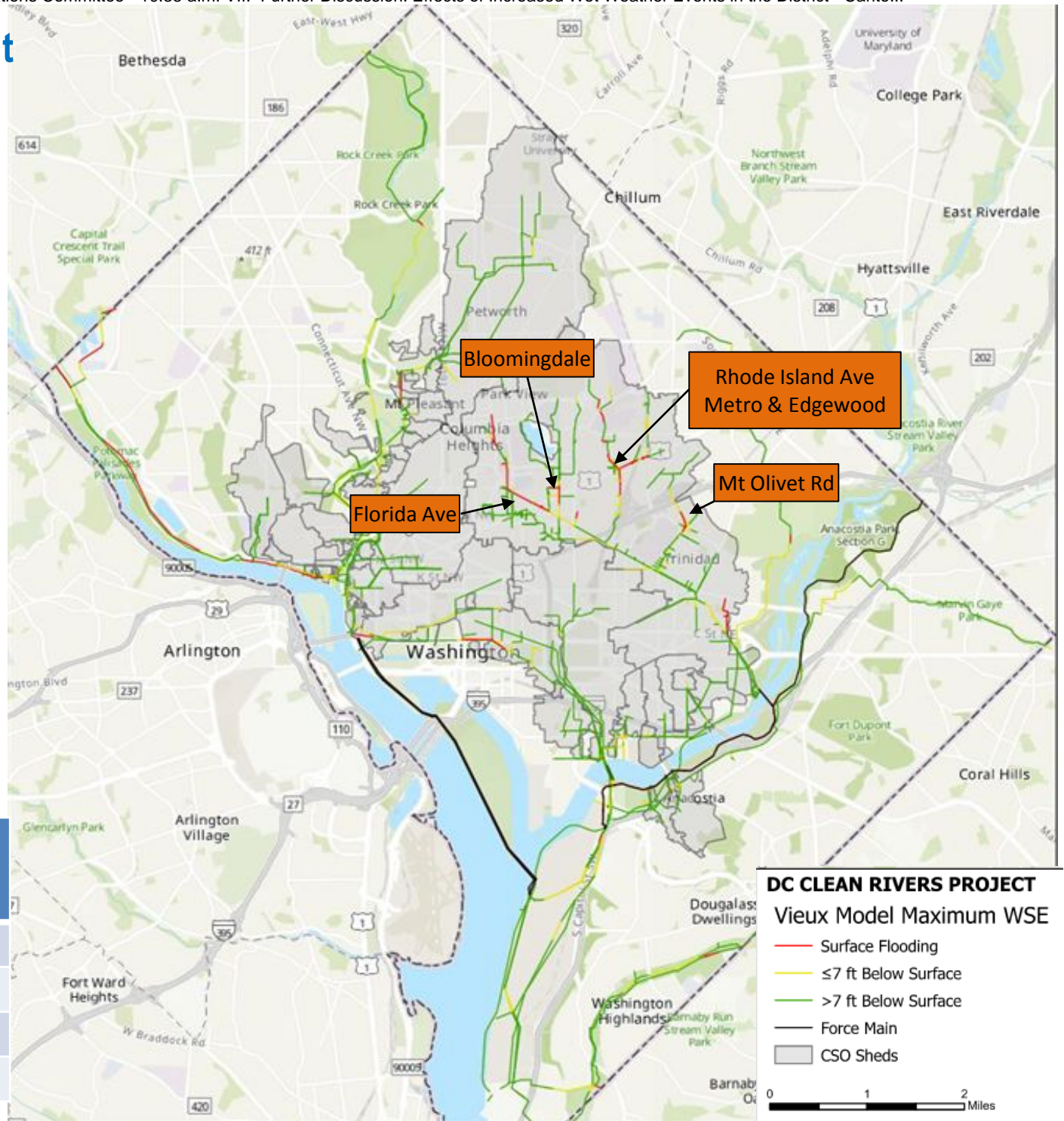


September 10, 2020 Rain Event



- Rainfall had significant geographical variation
- Radar rainfall data (1 kilometer square grids) shows more intense rain in northeast portions of DC and Maryland
- Rainfall in Northeast Boundary drainage area was between a **10 and 25-yr storm**, exceeding capacity of system

Sept 10, 2020 Flood Event Model Results



Model also used to predict CSO overflows for event:

Receiving Water	Captured in Tunnel (mg)	Overflow (mg)
Anacostia	198	145
Potomac		199
Rock Creek		70
Total	198	414

Sept 10, 2020 Flood Event

Prior Studies Assessing Northeast Boundary Flooding

Sept 10 flooding occurred in areas identified as problematic in many prior evaluations

- 1955 - *Investigation of Sewerage System*, Metcalf & Eddy
- 1957 – *Improvements to Sewerage System*, Board of Engineers (Greeley, Marsten, Requardt)
- 1968 – *Report on Planning Studies NE Boundary Relief Sewer*, Burns & McDonnell
- 1998 - *Northeast Boundary Trunk Sewer Special Report Solutions for Local Area Flooding*, Advanced Engineering
- 1999 - *Northeast Boundary Trunk Conceptual Plan for Local Flooding Control*, Greeley and Hansen
- 2002 - *DC Water's Long Term Control Plan*, Greeley and Hansen
- 2012 - *Mayor's Task Force Report on the Prevention of Flooding in Bloomingdale and LeDroit Park*, District of Columbia

Studies recommended relief sewers due to chronic undersizing of existing sewer by Fed Government

Federal Legacy



— Principal Sewers With Discharge to Potomac and Anacostia Rivers and Rock Creek

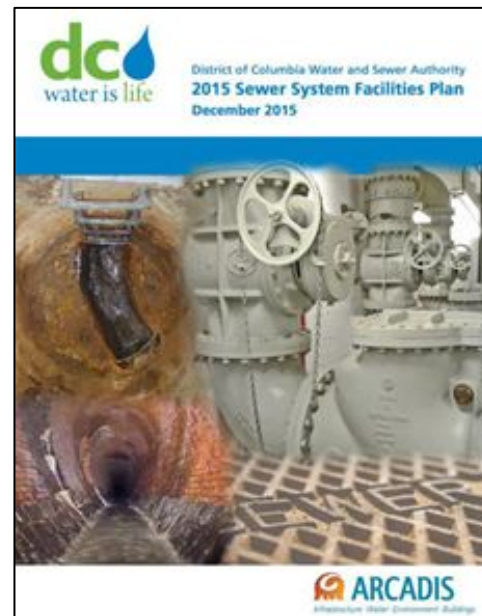
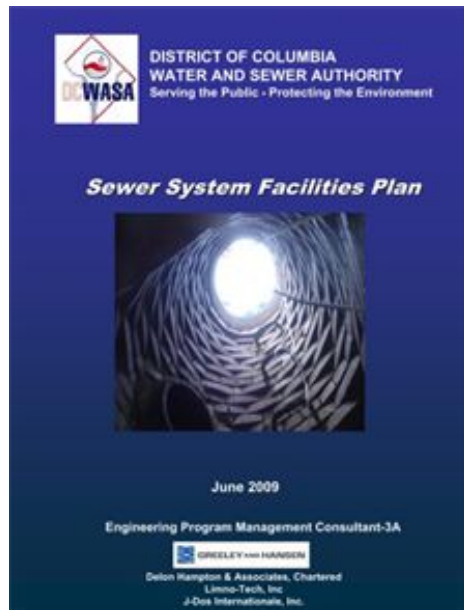


- Federal Government responsible for planning, design, construct of sewers prior to Home Rule (1973)
- Sewers were constructed with different capacities and design standards
- DC Water inherited this system and is dealing with the implications *without dedicated Federal Funding*
 - Flooding
 - Pollution due to combined sewers necessitating Clean Rivers Project

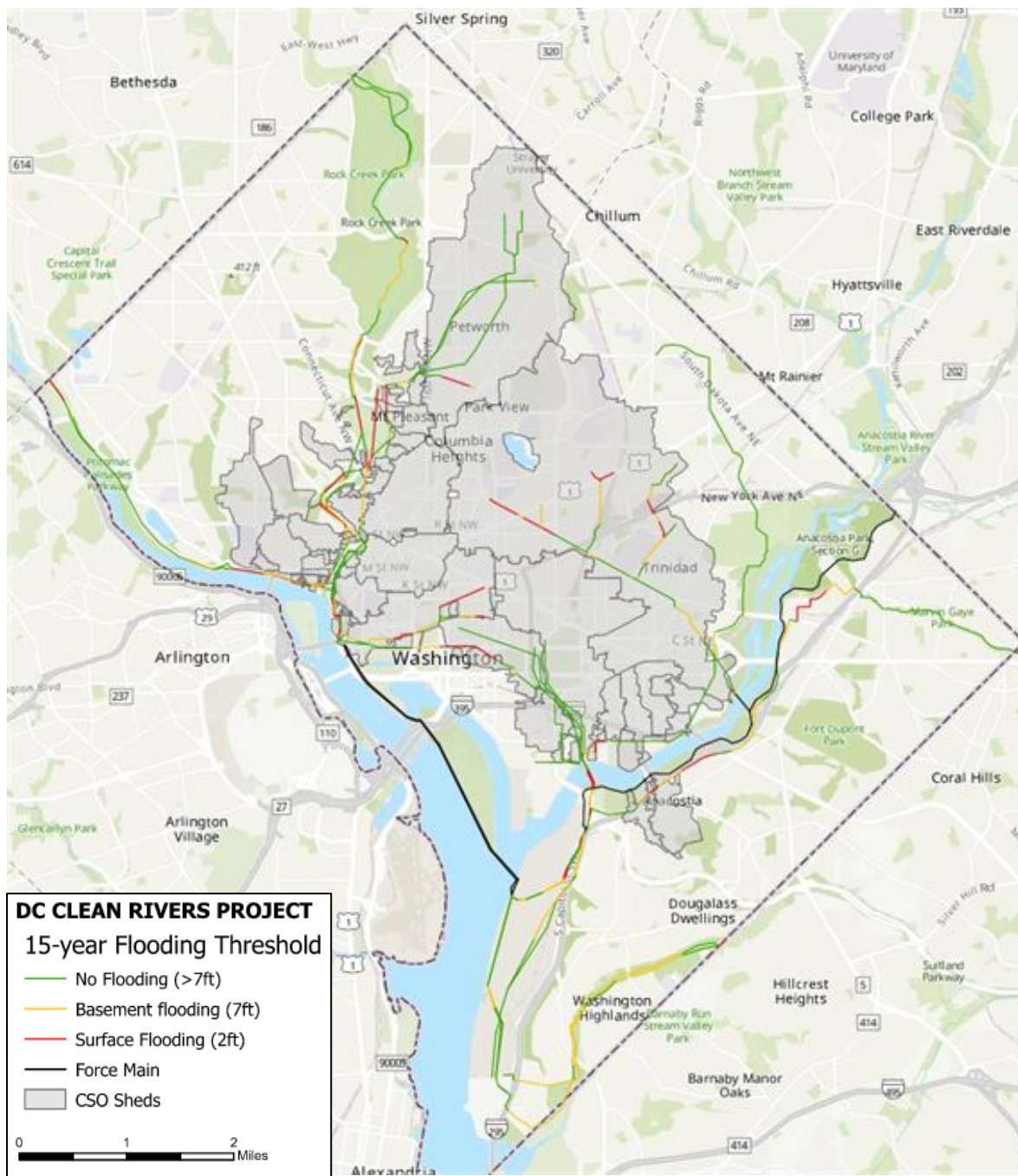
Prior Facility Plans Assessing Sewer Capacity

- 2009 – *Sewer System Facility Plan*, Greeley and Hansen
- 2015 – *Sewer System Facility Plan Update* ARCADIS

- Assessed combined and sanitary system
- Storm sewers not assessed
- Compared current design standard (15-yr 24 hour storm) to capacity of existing sewer
- Identified sewers below current standard
- Focused on chronic flooding areas as opposed to rebuilding entire sewer system to meet current standard



Sewer System Capacity From Prior Facility Plans



- DC Water's current design standard is 15-year 24-hour storm
- Sewers constructed by Federal Gov. from 1870s to *Home Rule* to a variety of different standards
 - Actual performance has changed due to development and climate change
- Reconstruction of entire system is fiscally and practically infeasible
- Focus on chronic problem areas

Climate Change Impacts on System

- Climate change will result in
 - More frequent and more intense rainfall
 - Higher sea levels resulting in higher river tides and floods

- Direct impacts:
 - Sewers currently inadequate will experience more frequent flooding
 - Sewers that are adequate may become inadequate with new areas flooding

} Changes will likely occur over generations (10, 20, ... 100 years)

- DC Water has the tools (model and technical ability) to analyze impacts
 - Mitigations could have major impact on CIP and rates

- DC Water will be working with DOEE on “Integrated Flood Model” project (in procurement)
 - Work with District to develop programs to mitigate risk and address climate change