



**Approved FY 2020 Budgets**  
**Section V: CAPITAL PROGRAMS**



**Anacostia Drinking Water Pump Station**

(\$ in thousands)

FY 2018	FY 2019 - FY 2028 Disbursement Plan											Lifetime
Actual	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY2027	FY2028	10-Yr Total	Budget
\$489,928	\$439,117	\$420,342	\$467,016	\$561,724	\$530,006	\$422,607	\$450,358	\$585,454	\$535,666	\$544,490	\$4,956,780	\$12,127,945



**DC Water Headquarters**



**Anacostia River Tunnel Project**



**Bryant Street Pump Station**

## Overview

DC Water’s Capital Improvement Program (CIP) supports the continuation of major capital asset investment in programs and projects that will upgrade the water distribution and sewer system as well as maintain compliance with federal mandates, and improve the efficiency of operations. The CIP includes all mandated projects, rehabilitation of assets required to meet permit and other regulatory requirements, and projects to meet the immediate needs necessary to maintain existing service levels.

The CIP is presented on two different basis; the ten-year disbursement plan and lifetime budget.

- Ten-Year Disbursement Plan** – This category represents the actual cash disbursements “cash out of the door” for each project, excluding contingencies. It provides a more realistic approach and basis for forecasting the anticipated level of rate increases, as well as, timing for pursuing capital financing. In addition, the ten-year disbursement plan includes projected completion rates, program management, and in-house labor costs.
- Lifetime Budget** – The “lifetime” budget, reflects historical spending prior to, during, and beyond the current ten-year period, including in-house labor. Lifetime budgets represent projects active during the ten-year period, and are the primary area of focus in budget development and day-to-day monitoring. In addition to “active” projects, the lifetime budget includes projects for which all activities have been completed during the previous fiscal year and are listed as “closed” and included in the CIP. Closed projects are dropped from the CIP in the next fiscal year, and new projects are continuously added, as needed, each fiscal year.

Detailed information on the projects can be found online at [www.dewater.com](http://www.dewater.com)

## CIP Development and Approval Process

DC Water’s capital budget review process begins each year in the spring. The Department of Engineering & Technical Services conducts a review of major accomplishments, priorities, status of major projects, and emerging regulatory and related issues impacting the capital program. The review process is a collaborative effort, and involves departments with responsibility for managing the operations of DC Water services and capital projects; staff from the department of Finance; and members of the Executive Team. The CIP is integrated into DC Water’s ten-year financial plan; and is the primary driver of DC Water’s projected rate increases over the ten-year planning period.

This review process spans over several months and culminates with the presentation of the CIP to DC Water’s Board of Directors’ Environmental Quality and Operations; Finance and Budget; and DC Retail Water and Sewer Rates committees in February. The operating budgets, capital improvement program, and ten-year financial plan were adopted by the full Board on April 4, 2019.

After adoption by the Board of Directors, DC Water is required to submit its annual operating and ten-year capital budgets to the Mayor and the District of Columbia Council for review and comment. However, neither has the power to change DC Water’s annual budgets. The District of Columbia includes DC Water’s budgets in their submission to Congress.

## Capital Authority Request

Capital authority represents the amount of Congressionally-authorized funding that DC Water can use to administer its capital program. Sufficient authority is required to be in place prior to contracts being executed. Actual commitments within the eight service areas may vary up or down for a particular year. However, they are “not to exceed the total” FY 2020 – FY 2028 capital authority request in the amount of \$4.5 billion.

It should be noted that the execution of contracts require the approval of the CEO and General Manager, as Contracting Officer, or his delegee. Major projects and contracts valued at \$1 million or more, require DC Water Board approval.

## Capitalization Policy

DC Water’s capitalization policy determines how expenditures will be recognized and accounted. DC Water matches the financing of an asset to its projected useful life and the policy determines how projects will be financed.

### DEFINITION:

- Capital Project – an average life of 30 years and is financed with long-term debt
- Capital Equipment – has a life of at least three years, is financed with short-term debt or cash, an individual component cost of \$5,000 or more. The cost of capital equipment purchases that are part of a clearly identified capital program can be aggregated. In which case, capitalize all cost relating to the capital program at the project level regardless of the individual component amount.

The following guidelines are used to categorize items as either capital equipment or an operating expense.

Expenditure Type	Financial Treatment	Definition
<b>Rehabilitation</b>		
Enhancement	Capitalize	Addition/replacement of a sub-component of an asset, to improve the “attributes” of the asset. This will include all such work as valve replacement or replacement of a section of a pipe.
Refurbishment	Capitalize	Expenditure on an asset that creates a material extension to the Estimated Operating Life (EOL) of the asset. This is distinct from maintenance work, which is carried out to ensure that an asset is able to perform its designated function for its normal EOL. An example of refurbishment would be pipe lining and pipe grouting.
Rebuild	Capitalize	Expenditures to reconstruct, renovate, remodel, remake or reassemble an asset or infrastructure after it has been damaged or destroyed. An example of a rebuild is a valve rehabilitation, reconstruction of the valve elements
<b>Replacement</b>	Capitalize	Expenditure to replace substantially all of an asset. An example is replacement and installation of a new pipe including the ensuing disinfection applications and all associated activities relating to the replacement
<b>Repair</b>	Expense	Expenditure on an asset that maintains or restores the design functionality or attributes of an asset, enabling the asset to perform its intended function during its EOL. Examples of these will include service line repairs such as clamp application on service pipes, bolt application/replacement/adjustment, small scale chemical applications such as use of dechlorinating tablets, meter shut off valve, curb stop, small service line repairs that does not involve replacement nor meter housing, high pressure jet vacuum or any other obstruction removal methodology
<b>Maintenance</b>	Expense	Scheduled and recurring costs for the continued performance of an asset



# Capital Improvement Program

summary overview financial plan rates&rev capital financing departmental glossary

(\$ in thousands)

FY 2018 Actual	FY 2019 - FY 2028 Disbursement Plan											Lifetime Budget	
	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	10-Yr Total		
<b>NON PROCESS FACILITIES</b>	35,527	\$15,309	\$36,002	\$26,793	\$20,665	\$6,831	\$11,058	\$10,396	\$3,901	\$3,553	\$3,560	\$138,067	\$212,833
Facility Land Use	35,527	15,309	36,002	26,793	20,665	6,831	11,058	10,396	3,901	3,553	3,560	138,067	212,833
<b>WASTEWATER TREATMENT</b>	21,590	30,915	37,087	48,495	36,646	38,979	41,124	84,082	107,253	107,354	107,354	553,422	1,166,818
Liquid Processing	17,649	20,223	18,885	25,882	39,576	24,810	17,052	25,410	20,726	7,341	7,341	215,681	494,048
Plantwide	8,652	10,511	19,988	22,645	30,530	15,286	12,862	3,899	1,186	8,304	8,304	131,883	906,481
Solids Processing	58,213	26,042	4,972	549	3,295	3,359	10,211	19,947	8,411	351	351	77,751	998,714
Enhanced Nitrogen Removal Facilities	106,104	69,979	66,620	76,510	97,635	110,047	82,434	133,338	137,575	123,351	123,351	978,738	3,566,060
Subtotal	175,874	187,859	147,208	139,786	191,573	151,411	64,415	55,689	144,295	97,067	83,286	1,262,589	2,764,255
<b>COMBINED SEWER OVERFLOW</b>	3,469	1,685	1,241	743	1,482	2,653	4,046	2,871	1,745	2,718	2,718	23,494	77,756
DC Clean Rivers	8,951	5,805	2,978	8,701	6,533	5,994	9,473	4,542	3,848	4,880	4,880	55,684	191,538
Program Management	188,294	195,350	151,427	149,230	199,588	160,057	77,935	64,541	150,095	102,660	90,884	1,341,767	3,033,549
Combined Sewer	Subtotal	4,220	8,571	8,118	8,587	3,725	4,987	7,564	7,494	5,239	10,102	68,608	123,574
<b>STORMWATER</b>	37	8	17	244	822	770	768	1,410	769	156	3,084	8,048	20,225
Local Drainage	691	1,056	511	598	929	706	742	451	735	713	919	7,360	10,511
On-Going	774	1,996	7,877	6,966	6,429	1,909	3,218	5,492	5,792	4,100	5,773	49,553	61,204
Pumping Facilities	-	-	-	-	-	-	-	-	-	-	-	-	3,237
DDOT	405	1,078	84	223	319	341	260	212	198	269	326	3,310	12,889
Research and Program Management	81	82	82	87	86	-	-	-	-	-	-	337	15,510
Trunk/Force Sewers	Subtotal	4,220	8,571	8,118	8,587	3,725	4,987	7,564	7,494	5,239	10,102	68,608	123,574
<b>SANITARY SEWER</b>	12,186	5,434	2,476	10,012	20,547	21,664	24,747	33,310	42,591	44,337	36,594	241,712	498,192
Collection Sewers	13,884	13,653	12,842	13,483	13,711	13,667	14,185	15,019	15,253	15,111	15,312	142,239	219,540
On-Going	2,248	1,619	1,619	4,868	6,649	6,495	4,935	9,975	10,882	12,457	29,612	89,739	270,778
Pumping Facilities	2,495	3,321	2,452	4,752	3,334	3,942	3,127	3,127	4,126	4,126	4,923	41,919	119,035
Program Management	16,613	20,270	24,257	24,133	37,813	50,321	50,384	53,579	67,961	58,633	54,174	441,526	963,054
Interceptor/Trunk Force Sewers	46,888	44,927	43,646	57,249	85,588	97,220	98,194	115,011	140,020	134,664	140,615	957,135	2,070,599
Subtotal	28,008	30,729	40,948	63,054	58,127	49,881	61,921	68,714	62,636	60,526	82,102	578,638	1,359,993
<b>WATER</b>	5,610	4,338	5,928	6,723	6,307	6,715	7,438	6,544	5,830	6,654	6,706	63,182	243,414
Distribution Systems	14,207	10,080	10,238	10,126	12,297	13,351	15,199	16,789	18,583	20,447	22,981	150,091	215,064
Lead Program	3,341	1,199	2,513	6,282	8,110	2,850	3,947	3,095	3,502	3,523	1,974	36,993	123,911
On-Going	942	992	76	3	5	-	-	-	-	-	-	1,076	33,933
Pumping Facilities	12,807	9,384	5,223	2,549	8,940	7,526	3,913	3,770	8,779	7,098	-	57,181	137,364
Storage Facilities	4,091	5,163	6,795	7,562	7,255	4,073	4,073	4,414	6,815	7,089	4,614	57,854	90,944
Program Management	69,005	61,884	71,720	96,300	101,039	84,395	96,491	103,325	106,145	105,338	118,377	945,015	2,204,622
Subtotal	<b>CAPITAL PROJECTS</b>	391,669	377,987	414,200	513,102	462,275	371,098	382,087	540,993	489,029	486,890	4,429,330	11,211,236
20,299	8,630	27,400	17,105	30,027	29,656	29,295	33,750	32,610	32,496	31,409	31,349	295,098	863,000
<b>CAPITAL EQUIPMENT</b>	8,630	2,618	2,618	2,930	2,930	2,930	2,930	2,930	2,930	2,930	2,930	28,676	16,550
ONGOING METER REPLACEMENT	-	4,500	7,100	3,950	500	500	500	500	500	500	500	16,550	16,550
ERP PROJECT (Financial & HCM)	28,929	34,518	26,823	36,907	33,086	32,725	36,680	35,540	35,426	34,339	34,279	340,324	340,324
SUBTOTAL - CAPITAL EQUIPMENT	13,194	12,930	15,532	15,909	15,336	14,830	14,830	14,830	14,830	12,298	23,321	187,127	187,127
WASHINGTON AQUEDUCT	<b>ADDITIONAL CAPITAL PROGRAMS</b>	47,448	42,355	52,816	48,622	67,731	51,509	68,272	44,461	46,637	57,600	527,450	527,450
42,123	<b>LABOR</b>	\$439,117	\$420,342	\$467,016	\$561,724	\$530,006	\$422,607	\$450,358	\$585,454	\$535,666	\$544,490	\$4,956,780	\$12,127,945
\$489,928	<b>TOTAL CAPITAL BUDGETS</b>	\$439,117	\$420,342	\$467,016	\$561,724	\$530,006	\$422,607	\$450,358	\$585,454	\$535,666	\$544,490	\$4,956,780	\$12,127,945



(\$ in thousands)

## Prioritization Schedule

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

Approximately 26 percent of the current CIP ten-year disbursements are for large regulatory mandates which includes the Clean Rivers Project. As we progress closer to the completion of the mandated projects, DC Water is able to increase investments in upgrading its aging water and sewer infrastructure, starting FY 2021 and beyond.

	MEASURE OF PRIORITY									
	1A		2A	2B	2C	2D	3A		3B	
	Mandates		Health & Safety	Board Policy	Potential Failure	High Profile Good Neighbor	Good Engineering High Payback		Good Engineering Lower Payback	
Agreements, Regulatory standards, Court orders, Issues and Permits requirements, Stipulated Agreements, Etc.		Required to address Public Safety	Undertaken as a result of the Board's commitment to outside agencies	Related to Facilities in danger of failing, or critical to meeting permit requirements	Address Public concerns	Need to fulfill Mission and upgrade Facilities		Lower priority Projects		
FY 2019	\$210,807	48%	\$13,874	\$33,472	\$36,117	\$8,132	\$87,332	20%	\$49,385	\$439,117
FY 2020	150,388	36%	3,821	67,776	42,560	501	98,520	23%	56,776	420,342
FY 2021	139,790	30%	5,858	72,529	41,437	924	112,534	24%	93,944	467,016
FY 2022	191,411	34%	6,928	53,535	37,742	3,315	149,552	27%	119,241	561,724
FY 2023	151,297	29%	2,099	42,382	72,801	1,281	151,811	29%	108,335	530,006
FY 2024	64,692	15%	5,368	50,055	34,511	558	158,304	37%	109,120	422,607
FY 2025	55,919	12%	12,457	54,634	35,514	1,415	183,675	41%	106,744	450,358
FY 2026	144,295	25%	18,848	48,081	40,102	2,679	162,071	28%	169,379	585,454
FY 2027	97,067	18%	8,604	44,926	31,137	89	152,165	28%	201,677	535,666
FY 2028	83,286	15%	1,511	65,369	33,705	-	167,928	31%	192,690	544,490
<b>Total</b>	<b>\$1,288,951</b>		<b>\$79,366</b>	<b>\$532,760</b>	<b>\$405,626</b>	<b>\$18,893</b>	<b>\$1,423,892</b>		<b>\$1,207,291</b>	<b>\$4,956,780</b>
<b>% of Total</b>	<b>26.0%</b>		<b>1.6%</b>	<b>10.7%</b>	<b>8.2%</b>	<b>0.4%</b>	<b>28.7%</b>		<b>24.4%</b>	

(\$ in thousands)

FY 2018 Actual	FY 2019 - FY 2028 Disbursement Plan											Lifetime Budget
	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	10-Yr Total	
\$35,527	\$15,309	\$36,002	\$26,793	\$20,665	\$6,831	\$11,058	\$10,396	\$3,901	\$3,553	\$3,560	\$138,067	\$212,833



**DC Water Headquarters**



**Main Pumping Station**



**Fleet Maintenance Facility**

## Overview

The Non Process Facilities Service Area accommodates projects approved under the Non Process Facilities Master Plan (NPFMP) and related improvements necessary to support DC Water activities and critical operations. The goals of this CIP are the same as those in the NPFMP, which are designed to:

- Optimize efficient use of existing DC Water land and facilities
- Introduce state-of-the-art material management technologies that will enhance inventory security, storage, distribution, and transportation
- Implement Green Strategies and Sustainable Design within DC Water infrastructure and facility planning
- Maximize flexibility throughout DC Water facilities for future treatment needs, distribution system operations, and innovative opportunities

## PROGRAM AREAS

**Facility Land Use** – The primary objective of this service area is to implement the NPFMP. Projects that generally improve DC Water’s operations do not represent a core process area within DC Water’s mission. Therefore, these projects continue to be evaluated and reallocated as needed, into this category. Some of the projects included in this program are:

- **Headquarters Building** – The DC Water Administrative Headquarters Building, located next to the historic Main Pumping Station, is DC Water’s most sustainable construction project ever. The Headquarters anchor DC Water’s new publicly-accessible campus along the Anacostia River. Additionally, by relocating nonessential personnel from the Blue Plains industrial campus, DC Water preserved what little remaining space exists – an irreplaceable commodity – for future process improvements, if required by permit or desired for innovation.
- **Floatable Debris Dock Replacement** – The existing docks are more than 25 years old and need to be replaced. The replacement slips (at least five) and associated new piles will allow flexibility and maneuverability of the boats, overcome the existing draft challenges on the Anacostia River, and most importantly, create safe conditions for the staff and their operations. Future improvements include the installation of a new boat ramp and updated fencing and lighting to further improve the efficiencies of skimmer boat operations.
- **Main & O Redevelopment Efforts** – This project relocates Sewer and Fleet Operations from the Main & O Campus in order to accommodate the redevelopment plans for the District of Columbia in and around the Navy Yard. All cost associated with the acquisition of new land and construction of new facilities will be reimbursed to DC Water by the District of Columbia, with a completion target of 2022 for both facilities.
- **Water System Laboratory Facilities** – A new Water Quality Lab will be designed at Fort Reno, to maximize operations and allow for increased lab services to benefit the entire Water Services department.
- **Renovations to Central Operations Facility** – The 2013 NPFMP called for utilizing the Central Operations Facility as the operations center for Blue Plains as originally intended, consolidating all Engineering staff except Clean Rivers. In addition to efficiently organizing the space vacated by Administrative personnel now located at Headquarters Building, this project consists of identifying a range of potential activities, such as structural requirements, code compliance upgrades, energy efficiency, and resiliency measures, that will modernize and improve operations at the facility.
- **Renovations to Bryant Street Campus** – The 2013 NPFMP required the development of improved spaces for our Water Operations and expanding critical functions through the development of a proper Emergency Operations Center (EOC), while maintaining the Bryant Street Pump Station’s historic character. In addition to efficiently organizing the space vacated by personnel now located at HQO, this project consists of identifying a range of potential activities, such as structural requirements, code compliance upgrades, energy efficiency, and resiliency measures, that will improve operations at the Bryant Street campus.



## ACCOMPLISHMENTS

- The Headquarters Building is now complete and occupied
- Completed the design stage for the new Fleet Service Facility and Sewer Services Field Operations Center
- DC Water is in the schematic design/program development phase for the renovations of Field Operations Center and Bryant Street, to inform the final workplan and budget for the renovations of those facilities
- Received the following awards:
  - American Institute of Architects (AIA) – Northern Virginia Chapter – Juror’s Citation in Conceptual/Unbuilt Architecture
  - American Institute of Architects (AIA) – Maryland Chapter – Jury Citation Award
  - Fast Company Innovation by Design – Spaces, Places and Cities – Honorable Mention

## OPERATIONAL IMPACT OF MAJOR CAPITAL PROGRAMS

**Headquarters Building** – This new building is LEED® Platinum Class A certified, and incorporated environmentally sustainable features used to capture onsite rainfall for irrigation and non-potable water needs inside the facility. Additionally, alternative energy will be supplied by an innovative sewer heat recovery system that will lower operating cost.

(\$ in thousands)

FACILITY LAND USE	FY 2018 Actual	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	10-Yr Total	Lifetime Budget
DS New Headquarters Building	\$35,288	\$10,749	\$7	\$12	\$1	\$0	\$0	\$0	\$0	\$0	\$0	\$10,769	\$76,100
DU Water System Laboratory Facilities	11	72	164	6	0	0	0	0	0	0	0	242	646
HE Bryant Street Pump Station Building Mod.	0	2	1,337	3,334	7,527	0	0	0	0	0	0	12,200	14,370
HF Fort Reno Pump Station	0	0	220	667	1,679	28	0	0	0	0	0	2,594	2,950
HH Main & O Redevelopment Efforts	227	3,112	28,098	7,139	219	0	0	0	0	0	0	38,568	41,031
HJ Central Operations Facility Renovation	1	895	4,261	3,295	0	0	0	0	0	0	0	8,451	12,904
RV Non-Process Area - HVAC And Roofing Projects	0	3	1,681	10,708	10,319	6,803	11,058	10,396	3,901	3,553	3,560	61,981	61,000
HK CMF Renovations And Consolidation	0	0	3	1,002	920	0	0	0	0	0	0	1,925	2,500
NZ Floatable Debris Dock Replacement	0	476	231	630	0	0	0	0	0	0	0	1,337	1,332
<b>TOTAL FACILITY LAND USE BUDGETS</b>	<b>\$35,527</b>	<b>\$15,309</b>	<b>\$36,002</b>	<b>\$26,793</b>	<b>\$20,665</b>	<b>\$6,831</b>	<b>\$11,058</b>	<b>\$10,396</b>	<b>\$3,901</b>	<b>\$3,553</b>	<b>\$3,560</b>	<b>\$138,067</b>	<b>\$212,833</b>
<b>TOTAL NON PROCESS FACILITIES BUDGETS</b>	<b>\$35,527</b>	<b>\$15,309</b>	<b>\$36,002</b>	<b>\$26,793</b>	<b>\$20,665</b>	<b>\$6,831</b>	<b>\$11,058</b>	<b>\$10,396</b>	<b>\$3,901</b>	<b>\$3,553</b>	<b>\$3,560</b>	<b>\$138,067</b>	<b>\$212,833</b>

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\$106,104	\$69,979	\$66,620	\$76,510	\$97,635	\$110,047	\$82,434	\$81,249	\$133,338	\$137,575	\$123,351	\$978,738	\$3,566,060



**Blue Plains Advanced Wastewater Treatment Plant**



**Secondary Sedimentation**



**Nitrification Reactors**

## Overview

Capital projects in the Wastewater Treatment Service Area are required to rehabilitate, upgrade or provide new facilities at Blue Plains to ensure that it can reliably meet its National Pollutant Discharge Elimination System (NPDES) permit requirements and produce a consistent, high-quality dewatered solids product. DC Water’s current NPDES permit is effective from August 26, 2018 through August 25, 2023. This permit requires wastewater treatment to a level that meets one of the most stringent NPDES discharge permits in the United States.

Blue Plains Advanced Wastewater Treatment Plant treated an annual average flow of 300 million gallons per day (MGD) and has a design capacity of 384 MGD, with a peak wet weather design capacity to treat one billion gallons per day. Wastewater flows in from the District of Columbia, Montgomery and Prince George’s Counties in Maryland, and Fairfax and Loudoun counties in Virginia.

## PROGRAM AREAS

**Liquid Processing** – Projects in this program area encompass upgrading and rehabilitating facilities involved in handling flows from the sanitary and combined sewer systems. These flows progress sequentially through the Plant processes and ultimately discharge the treated effluents into the Potomac River.

**Plantwide** – This program provides for upgrading, rehabilitating, or installing support systems and facilities that are required for both the liquid processing and solids processing programs.

**Solids Processing** – Biosolids processing involves reductions in volume along with treatment to meet applicable federal, state and local requirements for beneficial reuse of biosolids. Treatment is provided by a system of processing facilities that include gravity thickening of primary sludge, floatation thickening of the biological waste sludge produced by the secondary and nitrogen removal processes, pre-dewatering of blended thickened solids by centrifuge, pretreatment of solids by thermal hydrolysis, anaerobic digestion, and final dewatering of Class A biosolids by belt filter press.

**Enhanced Nitrogen Removal Facilities** – Provides for new facilities and upgrades to existing facilities needed at Blue Plains to meet the total nitrogen discharge limit assigned to DC Water. In addition to expansion of existing nitrification and denitrification processes, this program includes a new wet weather treatment facility that simultaneously treats combined stored sewage and reduces the peak flow through the biological treatment system. The necessary facilities to meet the current NPDES permit are in operation. However, close out activities continue into fiscal year 2019 and an expansion will be required in the future to treat future increases in influent load to the Plant.

## ACCOMPLISHMENTS

- Substantially completed construction of the Filtrate Treatment Facility – This side-stream treatment project utilizes Anaerobic Ammonium Oxidation (anammox) bacteria to remove nitrogen from the filtrate, and belt filter press facility resulting in savings in electrical power and methanol addition, which are otherwise necessary when the filtrate is processed through the Plant.
- Met Consent Decree date of March 23, 2018 to place in service the Tunnel Dewatering Pump Station and Enhanced Clarification Facility (TDPS/ECF). Over 5.3 billion gallons of combined sewer overflows and nearly 1,400 tons of trash, debris, and other solids were captured and prevented from discharging into the Anacostia River.
- Substantially completed construction of the Enhanced Nitrogen Removal Facility North – This project improved the performance of the secondary treatment facilities by providing limited nitrogen removal and more consistent quality for the downstream nitrogen removal processes.
- Ongoing construction of Raw Wastewater Pump Station 2 – The pump station delivers wastewater from the wastewater collection system to the east preliminary treatment processes at Blue Plains. This project updates aging electrical equipment, both replacing equipment that is beyond its useful life and relocating sensitive electronic equipment to a less corrosive environment to reduce the rate of deterioration of the equipment. The construction contract was issued in September 2016 and is scheduled to be completed by March 2020.
- Began design of upgrades to Screenings, Grit and Primary Treatment Facilities. These upgrades comprise replacement of deteriorated electrical equipment and systems and improvement to the ventilation system to extend the life of equipment in highly corrosive areas.
- Began design of upgrades to the Central Operations Facility (COF) Electrical System. This project replaces the electrical switchgear that supports the COF and the Information Technology building.
- Began design of Final Reclaimed Effluent Pump Station Upgrade. The Reclaimed Final Effluent (RFE) pump system is the source of water for the Process Service Water system (PSW) at Blue Plains.

## OPERATIONAL IMPACT OF MAJOR CAPITAL PROGRAMS

**Tunnel Dewatering Pump Station (TDPS) / Enhanced Clarification Facility (ECF)** – This facility dewateres the Anacostia River Tunnel system that captures and stores combined sewage, preventing it from overflowing into the Anacostia River. The TDPS conveys stored combined sewage from the tunnel to the ECF, for treatment during wet weather events.

**Filtrate Treatment Facility (FTF)** – FTF is part of the Total Nitrogen Removal/Wet Weather plan. This new facility uses six sequencing batch reactors to treat a nitrogen-rich stream from the Final Dewatering Facility’s belt filter presses. The deammonification process represents a breakthrough in nitrogen removal, which lowers the use of methanol relative to treating the flow in the mainstream. It also has approximately 60 percent lower energy demand than the mainstream treatment and lowers greenhouse gas (GHG) emissions.



# Wastewater Treatment

summary overview financial plan rates&rev capital financing departmental glossary

(\$ in thousands)

			FY 2018 Actual	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	10-Yr Total	Lifetime Budget	Completion
<b>LIQUID PROCESSING</b>																
A2	Liquid Processing Program Management	FY 2000 Ongoing	\$1,978	\$912	\$3,292	\$3,779	\$4,537	\$3,655	\$2,626	\$3,284	\$4,529	\$4,647	\$3,992	\$35,252	\$54,828	FY 2031
B6	Primary Sedimentation Tank Covers	FY 2021 Ongoing	0	0	0	546	852	116	3,593	2,997	18,874	7,370	127	34,476	43,598	FY 2028
B7	Primary Sedimentation Tank Odor Scrubblers	FY 2023 Ongoing	0	0	0	0	0	0	686	98	1,736	1,104	12,671	16,297	45,870	FY 2031
BC	Headworks Influent Structures	FY 2017 Ongoing	0	17	469	550	2,512	3,653	1,900	0	0	0	0	9,101	11,970	FY 2024
BG	Dual Purpose Rehabilitation	FY 2008 Ongoing	2,434	1,617	18	0	0	0	0	0	0	0	0	1,635	32,250	FY 2021
BP	Grit Chamber Facilities Phase II	FY 2015 Ongoing	19	356	45	0	0	0	0	0	0	0	0	401	530	FY 2019
BQ	Grit and Screenings and Primary	FY 2017 Ongoing	0	1,636	1,456	1,582	9,406	7,642	610	0	0	0	0	22,332	37,987	FY 2024
BR	Nitrification/Denitrification Facility	FY 2005 Ongoing	2,724	1,542	926	907	1,473	120	168	80	17	0	0	5,234	54,568	FY 2025
BT	Filtration/Disinfection Facility Phase II	FY 2007 Ongoing	98	373	285	61	797	1,024	111	0	0	0	0	2,652	24,018	FY 2024
BV	Raw Wastewater Pump Station No. 2 Upgrades	FY 2012 Ongoing	9,697	8,594	3,678	0	0	0	0	0	0	0	0	12,272	46,870	FY 2020
I4	Grit Removal Facilities - 20 Year Rebuild	FY 2026 Ongoing	0	0	0	0	0	0	0	0	1,933	7,862	13,929	23,724	52,500	FY 2030
I5	Raw Water Pump Stations 1 & 2 - 20 Year Rebuild	FY 2021 Ongoing	0	0	0	22	868	780	8,819	10,617	1,967	0	0	23,072	29,000	FY 2025
I7	Primary Treatment - 20 Year Rebuild	FY 2024 Ongoing	0	0	0	0	0	0	589	7,093	16,742	13,046	6,557	44,027	54,600	FY 2028
RN	Liquids Processing Rehabilitation	FY 2020 New	0	0	0	619	224	0	116	1,838	11,687	3,567	293	18,345	23,321	FY 2028
IY	Effluent Filter Upgrade	FY 2017 Ongoing	1,167	2,856	2,507	7,366	13,048	10,236	9,340	7,591	10,182	38,817	20,522	122,466	165,588	FY 2029
IZ	Replace/Upgrade Influent Screens	FY 2015 Ongoing	26	877	3,556	3,891	4,157	562	0	248	2,613	2,261	5,529	23,695	81,476	FY 2032
J2	Replace/Upgrade Primary Treatment Mechanisms	FY 2018 Ongoing	81	165	1,108	2,652	2,991	2,423	1,795	426	17	30	1,010	12,615	22,752	FY 2030
J6	Deammonification Project	FY 2012 Ongoing	0	9	87	295	1,468	818	14	0	0	0	0	2,690	3,503	FY 2024
JC	Secondary East and West - 20 Year Rebuild	FY 2025 Ongoing	0	0	0	0	0	0	0	479	5,408	13,877	17,527	37,290	96,000	FY 2032
LC	Effluent Disinfection Upgrades	FY 2023 Ongoing	0	0	0	0	0	1	700	5	257	427	4,784	6,175	8,011	FY 2030
LF	Nitrification Reactor/Sedimentation - 20 Year Rebuild	FY 2024 Ongoing	0	0	0	0	0	0	0	3,270	8,119	14,244	20,412	46,045	138,000	FY 2033
OZ	Grit Chambers 1 & 2 Upgrades	FY 2016 Ongoing	2,340	1,301	247	390	519	3,970	3,575	0	0	0	0	10,002	15,129	FY 2024
PD	Secondary East & West Upgrades	FY 2015 Ongoing	194	183	0	0	307	402	3,788	3,099	0	0	0	7,778	9,685	FY 2025
PE	Nitrification Reactor/Sedimentation Upgrades	FY 2017 Ongoing	125	202	1,303	1,851	1,188	1,245	551	0	0	0	0	6,341	10,665	FY 2024
UC	Filtration/Disinfection Facility	FY 2000 Ongoing	707	849	11,937	12,575	4,146	0	0	0	0	0	0	29,508	104,100	FY 2022
	<b>TOTAL LIQUID PROCESSING BUDGETS</b>		<b>\$21,590</b>	<b>\$21,488</b>	<b>\$30,915</b>	<b>\$37,087</b>	<b>\$48,495</b>	<b>\$36,646</b>	<b>\$38,979</b>	<b>\$41,124</b>	<b>\$84,082</b>	<b>\$107,253</b>	<b>\$107,354</b>	<b>\$553,422</b>	<b>\$1,166,818</b>	

			FY 2018 Actual	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	10-Yr Total	Lifetime Budget	Completion
<b>PLANTWIDE</b>																
AL	Plantwide Project Program Management	FY 2000 Ongoing	\$3,846	\$1,643	\$3,408	\$4,202	\$4,840	\$4,981	\$4,505	\$2,352	\$1,547	\$1,087	\$3	\$28,568	\$49,515	FY 2029
AZ	Central Operations Facility Renovation	FY 2001 Ongoing	928	112	89	0	0	0	0	0	0	0	0	202	17,885	FY 2020
BY	Additional Chemical Systems Phase III	FY 2024 Ongoing	0	0	0	0	0	0	109	379	734	790	477	2,491	3,822	FY 2029
CH	Miscellaneous Facility Projects	FY 2004 Ongoing	138	107	31	2	0	0	0	0	0	0	0	139	8,039	FY 2020
CV	Laboratory Upgrades	FY 2005 Ongoing	3	45	582	4	0	0	0	0	0	0	0	631	9,268	FY 2020
CW	Security at Blue Plains	FY 2004 Ongoing	688	809	695	533	6	0	0	0	0	0	0	2,043	6,568	FY 2021
DQ	Non-OEM PLC Interfaces/Replacements	FY 2009 Ongoing	64	7	0	0	0	0	0	0	0	0	0	7	2,185	FY 2019
EI	Plantwide Painting of Steel Pipes	FY 2011 Ongoing	0	0	0	0	0	214	1,478	1,387	1,148	0	0	4,227	4,960	FY 2026
GP	Instrumentation & Control & Electric Program Management	FY 2009 Ongoing	1,166	1,075	102	0	0	0	0	0	0	0	0	1,177	5,075	FY 2019

(\$ in thousands)

PLANTWIDE (cont.)	FY 2018 Actual	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	10-Yr Total	Lifetime Budget	Completion
GW Control Systems Replacement	0	0	0	355	410	486	851	1,941	6,584	10,490	5,646	26,763	37,000	FY 2030
HL DWT - Process and Operations Jobs	184	714	845	83	18	990	0	0	0	0	0	2,650	7,417	FY 2023
IC Electrical Monitoring Systems	0	0	238	343	1,509	5,987	2,060	0	0	0	0	10,137	13,611	FY 2024
IT Hauled Waste Receiving Facility	0	0	0	0	4	4	1,518	1,425	1,398	0	0	4,345	5,000	FY 2026
IU Solar Photovoltaic System	0	2	156	196	31	0	0	0	0	0	0	385	960	FY 2021
IV Blue Plains IT Backbone Fibre-Optic Cables Tubes	85	388	336	1,521	194	212	0	0	0	0	0	2,651	5,899	FY 2023
JF Construction of Flood Seawall	0	0	2,245	1,256	1,482	2,932	1,677	352	0	0	0	9,943	13,553	FY 2025
LP Wastewater Asset Management Technical	243	244	273	258	210	322	0	0	0	0	0	1,307	10,000	FY 2023
LS Miscellaneous Facility Projects FY 2013	2,622	1,892	1,875	254	251	237	615	385	378	381	382	6,651	16,952	FY 2030
LX Process Control System Upgrade	0	0	0	1,561	1,489	2	0	0	0	0	0	3,051	4,000	FY 2022
OD Plantwide Paving	750	363	77	405	405	1,566	1,401	1,315	325	0	0	5,856	8,240	FY 2025
OE Plantwide Drainage & Runoff	551	253	4,213	1,017	3	971	1,910	2,535	1,604	0	0	12,507	17,289	FY 2026
OG City Water & Sewer Upgrades at Wastewater	0	0	0	0	18	438	412	0	0	0	0	869	1,250	FY 2024
OH Plantwide Demolition	0	0	0	0	0	0	36	1,279	4,540	3,005	522	9,381	11,100	FY 2028
OI Plantwide Painting & Signage	0	0	0	0	0	0	106	242	43	0	0	391	450	FY 2025
OM Plantwide Hot Water System/ Loop Rehabilitation	830	2,837	1,515	0	0	0	0	0	0	0	0	4,352	6,654	FY 2020
ON Plantwide Grounding Upgrades	0	0	0	0	82	280	898	925	1,504	837	11	4,537	5,500	FY 2027
OP Plantwide Sump Pump Rehabilitation	0	0	0	0	0	0	105	295	290	164	2	855	1,000	FY 2027
OQ Plantwide Roofing Upgrades	0	0	0	0	95	391	695	349	3,293	3,640	0	8,463	10,000	FY 2027
OS Plantwide Lighting Upgrades	39	1,285	868	231	0	0	0	0	0	0	0	2,384	3,015	FY 2020
PF Chemical System/Building Upgrades	4,152	1,661	281	565	584	4,003	2,715	1,560	1,727	35	0	13,130	23,482	FY 2026
TA Process Computer Control System	733	0	0	0	0	0	0	0	0	0	0	0	64,182	FY 2019
TZ Electric Power System - Power Gear	406	1,577	1,550	6,023	13,982	14,583	2,779	0	0	0	0	40,495	69,092	FY 2024
YD Miscellaneous Projects	218	762	843	77	271	977	940	331	294	296	298	5,090	51,084	FY 2029
<b>TOTAL PLANTWIDE BUDGETS</b>	<b>\$17,649</b>	<b>\$15,777</b>	<b>\$20,223</b>	<b>\$18,885</b>	<b>\$25,882</b>	<b>\$39,576</b>	<b>\$24,810</b>	<b>\$17,052</b>	<b>\$25,410</b>	<b>\$20,726</b>	<b>\$7,341</b>	<b>\$215,681</b>	<b>\$494,048</b>	

SOLIDS PROCESSING	FY 2018 Actual	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	10-Yr Total	Lifetime Budget	Completion
AM Solids Processing Program Management	\$390	\$338	\$1,990	\$1,995	\$2,206	\$1,761	\$1,132	\$714	\$448	\$451	\$453	\$11,489	\$18,205	FY 2028
BX Gravity Thickener Upgrades Phase II	1,175	2,072	7,159	16,749	14,308	7,232	10	0	0	0	0	47,530	66,066	FY 2023
EV Area Substation No. 6	0	189	0	0	0	0	0	0	0	0	0	189	22,104	FY 2019
I3 Biosolids Blending Development Center	406	46	0	0	0	4	1,598	2,800	0	0	0	4,448	5,923	FY 2025
LD Pre-Dewatering Additional Centrifuges	0	0	427	413	2,996	3,474	441	0	0	0	0	7,752	10,118	FY 2024
LE High Strength Waste Receiving Facility (includes Fats, Oils & Grease)	0	0	0	0	225	531	3,436	463	0	0	0	4,655	6,008	FY 2025
RM Biosolids Rehabilitation	0	0	0	0	168	14,833	4,243	6,147	1,284	264	265	27,204	79,996	FY 2033
XA New Digestion Facilities	6,160	3,943	474	334	0	0	0	0	0	0	0	4,752	552,896	FY 2021
XB Centrifuge Thickener Facility	36	32	0	0	0	0	0	0	0	0	0	32	48,726	FY 2019
XZ Solids Processing Building / Dewatered Sludge Loading Facility	486	51	459	497	2,742	2,695	4,425	2,738	2,167	471	7,586	23,831	96,440	FY 2032
<b>TOTAL SOLIDS PROCESSING BUDGETS</b>	<b>\$8,652</b>	<b>\$6,672</b>	<b>\$10,511</b>	<b>\$19,988</b>	<b>\$22,645</b>	<b>\$30,530</b>	<b>\$15,286</b>	<b>\$12,862</b>	<b>\$3,899</b>	<b>\$1,186</b>	<b>\$8,304</b>	<b>\$131,883</b>	<b>\$906,481</b>	



# Wastewater Treatment

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capital

(\$ in thousands)

	FY 2018 Actual	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	10-Yr Total	Lifetime Budget	Completion
<b>ENHANCED NITROGEN REMOVAL</b>														
BI Enhanced Nitrogen Removal (ENR) North	\$3,891	\$781	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$781	\$77,076	FY 2019
E8 Enhanced Clarification Facilities	28,567	9,354	808	102	563	1,500	1,611	0	0	0	0	13,938	193,628	FY 2024
E9 Nitrogen Removal Facilities	133	359	71	0	0	0	0	0	0	0	0	431	272,930	FY 2019
EE Filtrate Treatment Facilities	6,586	1,847	418	45	0	0	0	0	0	0	0	2,310	108,521	FY 2022
EG Blue Plains Tunnel	6	42	8	0	0	0	0	0	0	0	0	50	177,532	FY 2020
FG Secondary Treatment Upgrades for Total Nitrogen	31	46	379	46	0	1,754	1,739	10,211	19,947	8,411	351	42,883	57,168	FY 2028
FR Blue Plains Tunnel Dewatering Pumping Station	4,010	1,651	757	324	0	0	0	0	0	0	0	2,731	35,617	FY 2021
FS Bolling Overflow & Diversion	8,106	4,272	0	0	0	0	0	0	0	0	0	4,272	55,937	FY 2019
LM Enhanced Nitrogen Removal Program Management	6,884	7,691	2,531	32	51	41	9	0	0	0	0	10,355	20,303	FY 2025
<b>TOTAL ENHANCED NITROGEN REMOVAL BUDGETS</b>	<b>\$58,213</b>	<b>\$26,042</b>	<b>\$4,972</b>	<b>\$549</b>	<b>\$614</b>	<b>\$3,295</b>	<b>\$3,359</b>	<b>\$10,211</b>	<b>\$19,947</b>	<b>\$8,411</b>	<b>\$351</b>	<b>\$77,751</b>	<b>\$998,714</b>	
<b>TOTAL WASTEWATER TREATMENT BUDGETS</b>	<b>\$106,104</b>	<b>\$69,979</b>	<b>\$66,620</b>	<b>\$76,510</b>	<b>\$97,635</b>	<b>\$110,047</b>	<b>\$82,434</b>	<b>\$81,249</b>	<b>\$133,338</b>	<b>\$137,575</b>	<b>\$123,351</b>	<b>\$978,738</b>	<b>\$3,566,060</b>	



(\$ in thousands)

FY 2018 Actual	FY 2019 - FY 2028 Disbursement Plan											Lifetime Budget
	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	10-Yr Total	
\$188,294	\$195,350	\$151,427	\$149,230	\$199,588	\$160,057	\$77,935	\$64,541	\$150,095	\$102,660	\$90,884	\$1,341,767	\$3,033,549



**Northeast Boundary Tunnel Boring Machine, Chris**



**Northeast Boundary Tunnel**



**Kennedy Street Green Infrastructure**

## Overview

Similar to more than 700 older communities in the Mid-Atlantic, Northeast, and Midwest portions of the country, a portion of the District of Columbia is served by a combined sewer system. Approximately one-third of the system is combined, mostly in the downtown and older parts of the city. In dry weather, the system delivers wastewater to the Blue Plains Advanced Wastewater Treatment Plant. In wet weather, rain water also enters the system and, if the conveyance capacity of the system is exceeded, the excess flow spills into the waterways of the District of Columbia. This discharge is called Combined Sewer Overflow (CSO). There are 48 potentially active CSO outfalls in the District.

DC Water has continued to implement its CSO Long Term Control Plan (LTCP), called the DC Clean Rivers project, to reduce CSO's that discharge to the Anacostia and Potomac Rivers, as well as Rock Creek. DC Water obtained an amendment to the CSO Consent Decree in January of 2016 which allows DC Water to evaluate Green Infrastructure for control of certain CSOs and extend the completion milestone to 2030. First phase of Anacostia River tunnel system was completed and all structures south of RFK stadium are in operation since March 2018. When fully implemented, CSO's will be reduced by a projected 96 percent during an average year (98 percent on the Anacostia River), resulting in improved water quality and significantly reducing debris on our nations capital waterways.

## PROGRAM AREAS

**DC Clean Rivers** – The plan includes a variety of improvements throughout portion of the District served by combined sewers. For the Anacostia River, the plan includes constructing a series of massive tunnels and diversion facilities to control CSO’s and to relieve surface flooding, and a tunnel dewatering pumping station and increased wet weather flow treatment at Blue Plains, with system completion in 2025. In addition, the amended plan includes a combination of green infrastructure in large scale and a tunnel system to control Potomac River overflows with project completion in 2030. Green infrastructure will also be constructed to control CSOs to Piney Branch/Rock Creek, with the first project anticipated for completion in 2019.

**Program Management** – The CSO Program Manager is responsible for evaluation of combined sewer systems, as well as management for sewer pumping station replacement and other sewer infrastructure projects.

**Combined Sewer** – Projects within the Combined Sewer Program Area include rehabilitation and/or relocation of combined sewers, control of wet weather related pollution, and upgrades to pumping stations. Most projects in this Program Area are related to the Nine Minimum Controls and include planned upgrades to facilities based on our long term facilities plan.

## ACCOMPLISHMENTS

- Continued construction of the Northeast Boundary Tunnel, the final segment of the Anacostia River Tunnel System
- Substantially completed construction of the first Rock Creek Green Infrastructure project
- Began post construction monitoring of the first Rock Creek Green Infrastructure project
- Substantially completed the first Potomac Green Infrastructure project
- Began post construction monitoring of the first Potomac Green Infrastructure project
- Developing the Finding of No Significant Impact (FONSI) for the Potomac River Tunnel Environmental Assessment (EA) – The last step of the National Environmental Policy Act (NEPA)
- Developing a Programmatic Agreement for the Potomac River Tunnel EA – The last step of the National Historic Preservation Act (NHPA) Section 106 compliance process
- Completed and submitted the Potomac River Tunnel Facility Plan to the Environmental Protection Agency (EPA) in accordance with the Long-Term Control Plan Consent Decree which required submittal by December 31, 2018
- Received EPA approval of the Facility Plan for Potomac River Tunnel on March 5, 2019
- The new approved National Pollutant Discharge Elimination System (NPDES) Permit increases the dry weather permitted capacity of Blue Plains from 370 mgd to 384 mgd with no new capital investments required. This has a value of at least \$140 million

- Received the following awards:
  - Engineering News Records Award of Merit in the Water/Wastewater category for the Anacostia River Tunnel project
  - Excellence in Dispute Avoidance and Resolution Award for the Anacostia River Tunnel Project from the Dispute Resolution Board Foundation
  - International Tunneling Association (ITA) Sustainability Initiative of the Year (2017) Award for the Anacostia River Tunnel Project in Paris, France from the International Tunneling and Underground Space Association
  - American Shotcrete Association (ASA) 2018 Outstanding Shotcrete Project of the Year in the Underground Category - Tiber Creek Sewer

## OPERATIONAL IMPACT OF MAJOR CAPITAL PROGRAMS

**DC Clean Rivers** – This project aims to control CSO’s to the Anacostia and Potomac Rivers and Rock Creek to meet the District’s water quality standards, while improving the health of the Chesapeake Bay. This ongoing project includes green infrastructure initiatives that will divert stormwater runoff prior to entering the sewer system. The first portion of Anacostia River Tunnel System, between Blue Plains and Overflow and Diversion Facilities (CSO-019) is complete. All structures south of RFK Stadium are in operation since March 20, 2018. As of March 31, 2019, the first portion of the Anacostia River Tunnel system had captured approximately 5.3 billion gallons of combined sewer overflows and nearly 1,400 tons of trash, debris, and other solids. The system is achieving a 90% CSO capture rate, exceeding the projected 80% capture rate at this stage of implementation. The tunnel system will improve operational flexibility by providing alternate means of transferring flow to Blue Plains, thereby allowing temporary diversion of flows to the tunnel to facilitate operation, maintenance and rehabilitation throughout the combined sewer system.

**Potomac Pump Station Upgrades** – Upgrades nearing completion address health & safety improvements and increase the reliability of the pumping station.



# Combined Sewer Overflow

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(\$ in thousands)

DC CLEAN RIVERS	FY 2018 Actual	Start	Status	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	10-Yr Total	Lifetime Budget	Completion
CY Anacostia Long Term Control Plan Projects	\$132,757	FY 2005	Ongoing	\$156,598	\$133,751	\$124,994	\$135,818	\$80,017	\$0	\$0	\$0	\$0	\$0	\$631,178	\$1,943,834	FY 2025
CZ Potomac Long Term Control Plan Projects	25,919	FY 2008	Ongoing	17,338	9,238	11,856	42,315	45,725	59,556	41,044	116,979	84,013	48,648	476,713	562,323	FY 2029
DZ Rock Creek CSS LTCP Project	17,198	FY 2008	Ongoing	13,922	4,219	2,936	13,440	25,670	4,859	14,645	27,316	13,054	34,638	154,697	258,099	FY 2030
<b>TOTAL DC CLEAN RIVERS BUDGETS</b>	<b>\$175,874</b>			<b>\$187,859</b>	<b>\$147,208</b>	<b>\$139,786</b>	<b>\$191,573</b>	<b>\$151,411</b>	<b>\$64,415</b>	<b>\$55,689</b>	<b>\$144,295</b>	<b>\$97,067</b>	<b>\$83,286</b>	<b>\$1,262,589</b>	<b>\$2,764,255</b>	
<b>PROGRAM MANAGEMENT</b>																
AV Combined Sewer Overflow Program Management	\$3,469	FY 2000	Ongoing	\$1,685	\$1,241	\$743	\$1,482	\$2,653	\$4,046	\$4,310	\$2,871	\$1,745	\$0	\$20,776	\$57,756	FY 2027
RP CSO Program Management	0	FY 2027	New	0	0	0	0	0	0	0	0	0	2,718	2,718	20,000	FY 2027
<b>TOTAL PROGRAM MANAGEMENT BUDGETS</b>	<b>\$3,469</b>			<b>\$1,685</b>	<b>\$1,241</b>	<b>\$743</b>	<b>\$1,482</b>	<b>\$2,653</b>	<b>\$4,046</b>	<b>\$4,310</b>	<b>\$2,871</b>	<b>\$1,745</b>	<b>\$2,718</b>	<b>\$23,494</b>	<b>\$77,756</b>	
<b>COMBINED SEWER</b>																
BA DC Water Low Impact Development Projects	\$0	FY 2001	Ongoing	\$131	\$272	\$22	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$425	\$2,870	FY 2021
EJ Potomac Pumping Station - Phase III Rehabilitation	5,200	FY 2008	Ongoing	1,344	160	0	0	0	0	0	0	0	0	1,504	35,571	FY 2020
EK Long Term Rehabilitation - Main & O Pump Station	0	FY 2021	Ongoing	0	0	17	48	1,360	4,958	3,546	2,887	3,806	4,840	21,463	55,644	FY 2031
EQ Potomac Pumping Station-Phase IV Rehabilitation	0	FY 2019	Ongoing	44	97	1,280	0	0	0	0	0	0	0	1,421	2,325	FY 2021
FQ Main & O Street PS Intermediate Upgrade	2,951	FY 2009	Ongoing	4,185	2,435	5,038	1,204	1,461	153	0	0	0	0	14,477	37,349	FY 2024
FX Rehabilitation Northeast Boundary Sewer - Phase 1	116	FY 2014	Ongoing	22	5	8	18	33	35	40	42	42	40	287	4,617	FY 2031
FZ Tiber Creek Sewer Lining - Phase 1	0	FY 2011	Ongoing	0	0	424	188	0	200	69	0	0	0	882	1,197	FY 2026
G7 Combined Sewers Under Buildings	4	FY 2009	Ongoing	64	10	1,750	2,757	67	0	0	0	0	0	4,647	16,463	FY 2023
IH Combined Sewer Rehabilitation 2	651	FY 2012	Ongoing	15	0	160	2,203	2,739	705	0	0	0	0	5,823	26,934	FY 2024
IP Tiber Creek Trunk Sewer Rehabilitation	0	FY 2018	Ongoing	0	0	0	0	0	0	0	0	0	0	0	-	FY 2024
OB FY 2024 - Inflatable Dams Replacement	0	FY 2022	Ongoing	0	0	0	115	334	3,421	887	0	0	0	4,757	6,675	FY 2025
<b>TOTAL COMBINED SEWER BUDGETS</b>	<b>\$8,951</b>			<b>\$5,805</b>	<b>\$2,978</b>	<b>\$8,701</b>	<b>\$6,533</b>	<b>\$5,994</b>	<b>\$9,473</b>	<b>\$4,542</b>	<b>\$2,930</b>	<b>\$3,848</b>	<b>\$4,880</b>	<b>\$55,684</b>	<b>\$191,538</b>	
<b>TOTAL COMBINED SEWER OVERFLOW BUDGETS</b>	<b>\$188,294</b>			<b>\$195,350</b>	<b>\$151,427</b>	<b>\$149,230</b>	<b>\$199,588</b>	<b>\$160,057</b>	<b>\$77,935</b>	<b>\$64,541</b>	<b>\$150,095</b>	<b>\$102,660</b>	<b>\$90,884</b>	<b>\$1,341,767</b>	<b>\$3,033,549</b>	

(\$ in thousands)

FY 2018 Actual	FY 2019 - FY 2028 Disbursement Plan											Lifetime Budget
	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	10-Yr Total	
\$1,988	\$4,220	\$8,571	\$8,118	\$8,587	\$3,725	\$4,987	\$7,564	\$7,494	\$5,239	\$10,102	\$68,608	\$123,574



**City Street Catch Basin**



**Stormwater Overflow**



**Potomac River**

## Overview

Stormwater runoff occurs when rain or snowmelt flows over impervious surfaces or surfaces that do not allow water to soak into the ground such as roads, driveways, sidewalks, parking lots, and buildings. The District is required to meet certain regulatory requirements in managing its separate stormwater system under the District’s Municipal Separate Storm Sewer System (MS4) permit issued by the federal government.

The stormwater system has about 575 miles of storm sewer pipes and 16,000 manholes, about 15,000 catch basins and inlets, and other special structures and related facilities. Some components of the existing storm sewer system are over 100 years old. DC Water is responsible for the maintenance and replacement of the publicly-owned collection and conveyance facilities that transport stormwater runoff to the Anacostia and Potomac Rivers, Rock Creek, and other receiving streams within the District of Columbia. This year’s ten-year CIP adds funding for pumps, valves, piping, ventilators and other equipment replacements and upgrades needed in the Stormwater pump stations.

## PROGRAM AREAS

**Local Drainage** – This category includes several projects for investigation, design and rehabilitation of local sewers to relieve local flooding and to address short term needs for improvements to storm sewers located in the separate and combined sewer areas.

**On-Going** – These include storm sewer rehabilitation projects carried out by DC Water’s Department of Sewer Services. These annual projects also provide funding to assist in immediate storm sewer construction to alleviate flooding.

**Pumping Facilities** – DC Water’s 16 stormwater pump stations serve critical areas of the District and are integral to the road network to maintain safe passage of vehicles through areas that do not drain without the assistance of mechanical means. DC Water has projects to upgrade all 16 of these stormwater pump stations to replace aging equipment and improve reliability, safety, and code compliance.

**DDOT** – The annual program of stormwater infrastructure projects are coordinated with street rehabilitation or other construction work performed by the DDOT. In an effort to ease public disruption and save paving costs, DC Water coordinates its activities with those by DDOT.

**Research and Program Management** – Provides engineering program management services for the stormwater service area capital projects and required technical assessments and hydraulic studies required to assess problems in the stormwater system. It also provides engineering services for condition assessment of the storm sewer system.

**Trunk/Force Sewers** – Provides for the design and construction services for stormwater interceptors, trunk sewers and force mains that require upgrades. Sewers rehabilitated by this project are defined by the major planning and condition assessment program underway for the stormwater sewer system. As the assessment of the storm sewer system progresses and specific rehabilitation needs are identified, jobs will be created under this program area to remediate system problems.

## ACCOMPLISHMENTS

- Refurbished failing major stormwater outfall structure at 14<sup>th</sup> & Gallatin Streets, NE
- Finalized Infiltration and Inflow (I&I) study for the collection system
- Construction continued for the rehabilitation and improvement of the Watts Branch Storm Sewer Phase 3
- Installed new pumps, piping, valves at 1<sup>st</sup> & Canal Stormwater Pump Station
- Construction is scheduled to begin for the rehabilitation of 14<sup>th</sup> Street Bridge SW in 2019 and is partially supported by Federal Emergency Management Agency (FEMA) grant funding
- Began rebuilds at the following Stormwater pump stations: Kenilworth Stormwater Pump Station and 1<sup>st</sup> & D Streets

## OPERATIONAL IMPACT OF MAJOR CAPITAL PROGRAMS

**Stormwater Pumping Stations Rehabilitation** – This project implements the highest priority rehabilitation or upgrades, addresses issues related to health and safety and station reliability, and will reduce maintenance needs.

(\$ in thousands)

LOCAL DRAINAGE	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	10-Yr Total	Lifetime Budget	Completion
GY Storm Sewer Rehabilitation at Various Locations	\$8	\$0	\$175	\$349	\$23	\$0	\$0	\$0	\$0	\$0	\$555	\$5,908	FY 2023
RR Local Storm Sewer Rehabilitation	0	0	0	0	0	0	0	0	156	3,084	3,240	7,300	FY 2029
IE Storm Sewer Rehabilitation 3	0	17	69	474	747	768	1,410	769	0	0	4,253	7,017	FY 2026
<b>TOTAL LOCAL DRAINAGE BUDGETS</b>	<b>\$8</b>	<b>\$17</b>	<b>\$244</b>	<b>\$822</b>	<b>\$770</b>	<b>\$768</b>	<b>\$1,410</b>	<b>\$769</b>	<b>\$156</b>	<b>\$3,084</b>	<b>\$8,048</b>	<b>\$20,225</b>	

ON-GOING	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	10-Yr Total	Lifetime Budget	Completion
FN FY2017 - DSS Stormwater Projects	\$57	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$57	\$1,000	FY 2019
H5 FY2018 - DSS Stormwater Projects	584	66	0	0	0	0	0	0	0	0	650	770	FY 2020
HM FY2019 - DSS Stormwater Projects	415	232	0	0	0	0	0	0	0	0	647	794	FY 2020
JH FY2020 - DSS Stormwater Projects	0	213	405	0	0	0	0	0	0	0	618	820	FY 2021
LO FY2021 - DSS Stormwater Projects	0	0	193	437	0	0	0	0	0	0	630	845	FY 2022
M8 FY2022 - DSS Stormwater Projects	0	0	0	492	197	0	0	0	0	0	688	820	FY 2023
MG FY2023 - DSS Stormwater Projects	0	0	0	0	509	206	0	0	0	0	715	845	FY 2024
NV FY2024 - DSS Stormwater Projects	0	0	0	0	0	536	210	0	0	0	746	870	FY 2025
PI FY2025 - DSS Stormwater Projects	0	0	0	0	0	0	241	517	0	0	757	896	FY 2026
T7 FY2028 - DSS Stormwater Projects	0	0	0	0	0	0	0	0	0	425	425	979	FY 2029
QA FY2026 - DSS Stormwater Projects	0	0	0	0	0	0	0	218	483	0	702	923	FY 2027
T9 FY2027 - DSS Stormwater Projects	0	0	0	0	0	0	0	0	230	494	725	950	FY 2028
<b>TOTAL ON-GOING BUDGETS</b>	<b>\$691</b>	<b>\$511</b>	<b>\$598</b>	<b>\$929</b>	<b>\$706</b>	<b>\$742</b>	<b>\$451</b>	<b>\$735</b>	<b>\$713</b>	<b>\$919</b>	<b>\$7,360</b>	<b>\$10,511</b>	

PUMPING FACILITIES	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	10-Yr Total	Lifetime Budget	Completion
NG Stormwater Pumping Station Rehabilitation	\$1,996	\$7,877	\$6,966	\$6,429	\$1,909	\$3,218	\$5,492	\$5,792	\$4,100	\$5,773	\$49,553	\$61,204	FY 2028
<b>TOTAL PUMPING FACILITIES BUDGETS</b>	<b>\$1,996</b>	<b>\$7,877</b>	<b>\$6,966</b>	<b>\$6,429</b>	<b>\$1,909</b>	<b>\$3,218</b>	<b>\$5,492</b>	<b>\$5,792</b>	<b>\$4,100</b>	<b>\$5,773</b>	<b>\$49,553</b>	<b>\$61,204</b>	

  

DDOT	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	10-Yr Total	Lifetime Budget	Completion
H4 FY 2018 - DDOT Stormwater Projects	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,017	FY 2019
HP FY 2019 - DDOT Stormwater Projects	0	0	0	0	0	0	0	0	0	0	0	220	FY 2020
<b>TOTAL DDOT BUDGETS</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$3,237</b>	

(\$ in thousands)

	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	10-Yr Total	Lifetime Budget	Completion
<b>FY 2018 Actual</b>													
RESEARCH & PROGRAM MANAGEMENT													
AT Stormwater Program Management	\$405	\$84	\$223	\$319	\$341	\$260	\$195	\$0	\$0	\$0	\$2,500	\$11,389	FY 2025
RQ Storm Water Program Management	0	0	0	0	0	0	16	198	269	326	810	1,500	FY 2030
<b>TOTAL RESEARCH &amp; PROGRAM MANAGEMENT BUDGETS</b>	<b>\$405</b>	<b>\$84</b>	<b>\$223</b>	<b>\$319</b>	<b>\$341</b>	<b>\$260</b>	<b>\$212</b>	<b>\$198</b>	<b>\$269</b>	<b>\$326</b>	<b>\$3,310</b>	<b>\$12,889</b>	
<b>FY 2018 Actual</b>													
TRUNK/FORCE SEWERS													
BO Future Stormwater Projects	\$81	\$82	\$87	\$86	\$0	\$0	\$0	\$0	\$0	\$0	\$337	\$15,510	FY 2022
<b>TOTAL TRUNK/FORCE SEWERS BUDGETS</b>	<b>\$81</b>	<b>\$82</b>	<b>\$87</b>	<b>\$86</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$337</b>	<b>\$15,510</b>	
<b>TOTAL STORMWATER BUDGETS</b>	<b>\$1,988</b>	<b>\$8,571</b>	<b>\$8,118</b>	<b>\$8,587</b>	<b>\$3,725</b>	<b>\$4,987</b>	<b>\$7,564</b>	<b>\$7,494</b>	<b>\$5,239</b>	<b>\$10,102</b>	<b>\$68,608</b>	<b>\$123,574</b>	



(\$ in thousands)

FY 2018 Actual	FY 2019 - FY 2028 Disbursement Plan											Lifetime Budget
	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	10-Yr Total	
\$46,888	\$44,927	\$43,646	\$57,249	\$85,588	\$97,220	\$98,194	\$115,011	\$140,020	\$134,664	\$140,615	\$957,135	\$2,070,599



**Sewer Line Rehabilitation Perma-liner**



**Catch Basin**



**Linear Pipe Restoration**

## Overview

DC Water is responsible for wastewater collection in the District of Columbia, including operation and maintenance of the sanitary sewer system. The sewer system includes approximately 720 miles of sanitary sewers, 6,000 manholes, and nine wastewater pumping stations. DC Water is also responsible for sewer lateral connections from the sewer mains to the property lines of residential, government, and commercial properties. In addition, DC Water is responsible for the 50-mile long Potomac Interceptor System, which provides conveyance of wastewater from Dulles International Airport, and areas in Virginia and Maryland, to the Blue Plains AWWTP.

### PROGRAM AREAS

**Collection Sewers** – Projects to rehabilitate sanitary sewer pipes based on the findings of inspection and assessment conducted on these assets.

**On-Going** – Urgent projects managed by the Department of Sewer Services including the replacement of sewer laterals, sewer mains, inspection and cleaning of sewer laterals and mains.

**Pumping Facilities** – Projects required for the upgrade of existing wastewater pumping stations, as well as projects for the engineering and construction of new wastewater pumping facilities to enhance the reliability and integrity of DC Water’s sanitary sewer system.

**Program Management** – Engineering program management services for the sewer system capital improvement program, including assessing system needs, developing facilities plans, developing design scopes of work, preparing cost estimates, preparing task orders or agreements, and reviewing design documents.

**Interceptor/Trunk Force Sewers** – The replacement or rehabilitation of large diameter sewers that have reached the end of their useful life or are in need of major rebuild or refurbishment.

## ACCOMPLISHMENTS

- DC Water completed over eight miles of Closed Circuit Television (CCTV) inspection and sonar inspection of the Potomac Interceptor
- Design services began for portable generators to serve Main & O Street, and Potomac pump stations. Construction commenced in 2018
- DC Water is participating with the District Department of Energy and Environment (DDEE) on a stream restoration project, along Pope Branch, to protect the sewer in the stream valley
- Completed the calibration of a new sewer system hydraulic model which will greatly increase DC Water’s predictive capabilities for system performance and will support a variety of planning and operations & maintenance (O&M) activities
- Completed revisions to Standard Operating Procedures (SOPs) for existing pump stations. These new SOPs will enhance the standardization of typical pump station operations, as well as a variety of preventive and corrective maintenance activities
- Assessment and cleaning of Oxon Run completed. Managed the removal of obstructions and major blockages in Oxon Run Sewers
- Construction of the rehabilitation of the Low Area Trunk Sewer commenced in 2018
- Emergency rehabilitation of 3rd and Constitution Pump Station completed to facilitate Low Area Trunk Sewer rehabilitation
- Purchased and installed new screen at East Side Pump Station
- Construction for the rehabilitation and cleaning of B Street & New Jersey Avenue Trunk Sewer commenced in 2018
- In-house design for rehabilitation of local sewers began. This project includes 14 miles of sewers ranging from 8 inches to 27 inches

## OPERATIONAL IMPACT OF MAJOR CAPITAL PROGRAMS

**Pump Stations** – The updating of SOPs will enhance the standardization of typical pump station operations, as well as a variety of preventive and corrective maintenance activities.

**Ongoing and Local Sewer Rehabilitation** – Renewal of small diameter sewer infrastructure will reduce emergency repair and maintenance demands for these neighborhood sewers.

(\$ in thousands)

COLLECTION SEWERS		Start	Status	FY 2018 Actual	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	10-Yr Total	Lifetime Budget	Completion
G1	Small Local Sewer Rehabilitation 1	FY 2009	Ongoing	\$4,368	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,202	\$29,128	FY 2021
G8	Small Local Sewer Rehabilitation 2	FY 2009	Closed	47	0	0	0	0	0	0	0	0	0	0	0	1,364	FY 2018
GA	Small Local Sewer Rehabilitation 4	FY 2014	Ongoing	196	0	0	0	0	0	0	0	0	0	0	673	9,062	FY 2019
J3	Sewer Upgrade - City Wide	FY 2000	Ongoing	7,575	7	381	1,243	0	0	0	0	0	0	0	3,146	18,315	FY 2022
JX	Sanitary Sewer Rehabilitation 10	FY 2016	Ongoing	0	8	16	5,585	1,486	0	0	0	0	0	0	7,405	13,604	FY 2023
QS	Local Sewer Rehabilitation 5	FY 2019	New	0	30	768	7,989	10,482	15,188	4,636	0	0	0	0	39,094	59,418	FY 2024
QX	Local Sewer Assessment 1	FY 2019	New	0	5	1,685	1,332	1,175	1,135	0	0	0	0	0	5,332	8,264	FY 2023
QT	Local Sewer Rehabilitation 6	FY 2021	New	0	0	0	0	995	2,775	14,857	19,000	5,266	0	0	42,893	63,846	FY 2026
QY	Local Sewer Rehabilitation 2	FY 2021	New	0	0	0	0	1,068	1,079	2,591	2,398	2,558	0	0	9,695	16,553	FY 2026
RG	Local Sewer Rehabilitation 9	FY 2024	New	0	0	0	0	0	1,943	8,013	14,410	12,158	7,013	43,538	70,000	FY 2028	
QU	Local Sewer Rehabilitation 7	FY 2023	New	0	0	0	0	0	0	720	3,900	19,026	24,448	50,280	71,964	FY 2028	
QW	Local Sewer Rehabilitation 8	FY 2025	New	0	0	0	0	0	0	0	0	1,323	4,785	30,455	119,100	FY 2030	
QZ	Local Sewer Assessment 3	FY 2026	New	0	0	0	0	0	0	0	0	8	2,945	5,999	17,200	FY 2030	
U3	B Street & New Jersey Avenue Trunk Sewer	FY 2021	Ongoing	0	0	0	0	0	0	0	0	0	0	0	0	-	FY 2025
<b>TOTAL COLLECTION SEWERS BUDGETS</b>				<b>\$12,186</b>	<b>\$5,434</b>	<b>\$2,476</b>	<b>\$10,012</b>	<b>\$20,547</b>	<b>\$21,664</b>	<b>\$24,747</b>	<b>\$33,310</b>	<b>\$42,591</b>	<b>\$44,337</b>	<b>\$36,594</b>	<b>\$241,712</b>	<b>\$498,192</b>	
ON-GOING		Start	Status	FY 2018 Actual	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	10-Yr Total	Lifetime Budget	Completion
BF	FY2011 - DSS Sanitary Sewer Projects	FY 2011	Closed	\$31	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,808	FY 2017
D6	FY2014 - DSS Sanitary Sewer Projects	FY 2013	Ongoing	1,909	17	0	0	0	0	0	0	0	0	0	17	10,651	FY 2018
DI	FY2015 - DSS Sanitary Sewer Projects	FY 2014	Closed	1,126	116	0	0	0	0	0	0	0	0	0	116	11,275	FY 2018
DW	FY2016 - DSS Sanitary Sewer Projects	FY 2015	Ongoing	820	717	0	0	0	0	0	0	0	0	0	717	15,631	FY 2020
FP	FY2017 - DSS Sanitary Sewer Projects	FY 2016	Ongoing	8,222	966	0	0	0	0	0	0	0	0	0	966	12,150	FY 2019
H6	FY2018 - DSS Sanitary Sewer Projects	FY 2017	Ongoing	1,731	4,997	947	0	0	0	0	0	0	0	0	5,943	11,923	FY 2020
HN	FY2019 - DSS Sanitary Sewer Projects	FY 2018	Ongoing	0	6,363	1,909	0	0	0	0	0	0	0	0	\$8,272	\$12,200	FY 2019
J1	FY2020 - DSS Sanitary Sewer Projects	FY 2019	Ongoing	0	0	6,869	5,793	0	0	0	0	0	0	0	12,662	12,568	FY 2021
LN	FY2021 - DSS Sanitary Sewer Projects	FY 2020	Ongoing	0	0	0	5,010	6,636	0	0	0	0	0	0	11,646	12,945	FY 2022
M9	FY2022 - DSS Sanitary Sewer Projects	FY 2021	Ongoing	0	0	0	0	5,404	6,918	0	0	0	0	0	12,322	13,335	FY 2023
MF	FY2023 - DSS Sanitary Sewer Projects	FY 2022	Ongoing	0	0	0	0	0	5,963	6,460	0	0	0	0	12,423	13,735	FY 2024
NW	FY2024 - DSS Sanitary Sewer Projects	FY 2023	Ongoing	0	0	0	0	0	0	5,698	6,260	0	0	0	11,959	14,225	FY 2025
OX	FY2025 - DSS Sanitary Sewer Projects	FY 2024	Ongoing	0	0	0	0	0	0	0	5,491	6,385	0	0	11,876	14,650	FY 2026
PZ	FY2026 - DSS Sanitary Sewer Projects	FY 2025	Ongoing	0	0	0	0	0	0	0	0	5,662	6,889	0	12,551	15,090	FY 2027
Q3	FY2003 - DSS Sanitary Sewer Projects	FY 2002	Ongoing	45	139	0	0	0	0	0	0	0	0	0	139	12,784	FY 2019
QQ	DDCS Sewer Pumping Project Ongoing FY19-28	FY 2019	New	0	241	2,221	1,910	1,191	562	1,448	2,334	2,290	1,428	1,274	14,899	-	FY 2028
QR	DDCS Stormwater Pumping Project Ongoing	FY 2019	New	0	97	896	771	480	225	579	934	916	571	509	5,978	-	FY 2028
T6	FY2028 - DSS Sanitary Sewer Projects	FY 2028	New	0	0	0	0	0	0	0	0	0	0	0	6,414	16,020	FY 2028
T8	FY2027 - DSS Sanitary Sewer Projects	FY 2026	Ongoing	0	0	0	0	0	0	0	0	0	6,223	7,116	15,550	FY 2028	
<b>TOTAL ON-GOING BUDGETS</b>				<b>\$13,884</b>	<b>\$13,653</b>	<b>\$12,842</b>	<b>\$13,483</b>	<b>\$13,711</b>	<b>\$13,667</b>	<b>\$14,185</b>	<b>\$15,019</b>	<b>\$15,253</b>	<b>\$15,111</b>	<b>\$15,312</b>	<b>\$142,239</b>	<b>\$219,540</b>	

(\$ in thousands)

PUMPING FACILITIES	Start	Status	FY 2018 Actual										10-Yr Total	Lifetime Budget	Completion			
			FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028						
CX Sewer Facilities Security Upgrades	FY 2009	Ongoing	\$77	\$102	\$119	\$43	\$44	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$308	\$1,417	FY 2022
GZ Sewer Instrumentation & Control	FY 2011	Ongoing	240	879	348	0	0	0	0	0	0	0	0	0	0	1,227	9,141	FY 2020
LY Sewer Facilities Security Upgrades	FY 2019	Ongoing	0	0	40	89	91	53	0	0	0	0	0	0	0	273	2,000	FY 2023
MB 3rd Street & Constitution Ave NW - Pumping Station	FY 2013	Ongoing	98	96	10	0	1,247	2,430	383	0	0	0	0	0	0	4,166	7,501	FY 2024
MC Additional Sewer SCADA System Sites	FY 2015	Ongoing	1,296	637	56	856	1,833	830	0	0	0	0	0	0	0	4,211	8,099	FY 2022
PM East Side Pumping Station	FY 2018	Ongoing	0	426	439	1,015	1,428	0	0	0	0	0	0	0	0	3,307	4,000	FY 2022
RH Sewer Pump Stations Upgrades	FY 2019	New	0	109	591	2,836	928	1,104	0	0	0	0	0	0	0	5,568	8,644	FY 2023
RU Sewer Pump Station Upgrades - Pumps & VFDs	FY 2021	New	0	0	0	0	988	1,682	4,503	9,975	7,260	4,390	0	0	0	28,797	35,950	FY 2027
RS Sewer Pump Station Upgrades 2	FY 2025	New	0	0	0	0	0	0	0	0	3,622	5,318	20,402	0	29,342	150,720	FY 2032	
RT Sewer Pump Station Upgrades 3	FY 2026	New	0	0	0	0	0	0	0	0	0	2,750	9,209	0	11,959	42,600	FY 2034	
PT Existing Sewer Facilities Building Optimization	FY 2020	Ongoing	0	0	16	29	92	396	50	0	0	0	0	0	0	582	705	FY 2023
<b>TOTAL PUMPING FACILITIES BUDGETS</b>			<b>\$1,711</b>	<b>\$2,248</b>	<b>\$1,619</b>	<b>\$4,868</b>	<b>\$6,649</b>	<b>\$6,495</b>	<b>\$4,935</b>	<b>\$9,975</b>	<b>\$10,882</b>	<b>\$12,457</b>	<b>\$29,612</b>	<b>\$89,739</b>	<b>\$270,778</b>			

PROGRAM MANAGEMENT	Start	Status	FY 2018 Actual										10-Yr Total	Lifetime Budget	Completion			
			FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028						
AU Sanitary Sewer Program Management	FY 2000	Ongoing	\$1,765	\$1,482	\$1,990	\$3,456	\$3,966	\$4,340	\$3,303	\$2,489	\$0	\$0	\$0	\$0	\$0	\$21,025	\$65,441	FY 2025
DN Sewer Inspection Program	FY 2009	Ongoing	541	1,745	352	1,192	2,799	628	640	638	626	630	471	0	0	9,721	27,794	FY 2029
QH Sanitary Sewer Program Management FY26-30	FY 2025	New	0	0	0	0	0	0	0	0	2,708	3,495	4,452	0	10,655	20,800	FY 2030	
LR Sanitary Sewer Asset Management	FY 2013	Ongoing	188	94	110	105	104	105	0	0	0	0	0	0	518	5,000	FY 2023	
<b>TOTAL PROGRAM MANAGEMENT BUDGETS</b>			<b>\$2,495</b>	<b>\$3,321</b>	<b>\$2,452</b>	<b>\$4,752</b>	<b>\$6,868</b>	<b>\$5,073</b>	<b>\$3,942</b>	<b>\$5,127</b>	<b>\$3,334</b>	<b>\$4,126</b>	<b>\$4,923</b>	<b>\$48,919</b>	<b>\$119,035</b>			

INTERCEPTOR/TRUNK FORCE	Start	Status	FY 2018 Actual										10-Yr Total	Lifetime Budget	Completion			
			FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028						
A4 Future Sewer System Upgrades	FY 2003	Ongoing	\$542	\$3,126	\$19	\$2,039	\$1,192	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$6,376	\$44,313	FY 2024
DM Upper Anacostia Main Interceptor Relief Sewer	FY 2009	Ongoing	0	0	0	88	266	256	213	70	2,660	5,159	1,408	0	0	10,119	17,141	FY 2028
DR Low Area Trunk Sewer Rehabilitation	FY 2007	Ongoing	243	4,740	3,857	69	0	0	0	0	0	0	0	0	8,665	22,714	FY 2020	
FW Rehab Piney Branch Trunk Sewer	FY 2011	Ongoing	39	51	848	524	4,970	11,605	5,168	0	0	0	0	0	23,166	40,480	FY 2024	
FY Rehab Upstream Rock Creek Main Interceptor	FY 2012	Ongoing	187	48	22	0	0	0	0	0	0	0	0	0	70	2,515	FY 2029	
G2 Sewer Structure Rehabilitation 1	FY 2009	Ongoing	26	16	89	122	1,397	299	0	0	0	0	0	0	1,922	9,225	FY 2023	
G4 Upper Potomac Intercept Sewer Rehabilitation	FY 2000	Ongoing	3,453	855	0	0	0	0	0	0	0	0	0	0	855	7,213	FY 2024	
G5 Sewer Rehab Near Creek Beds	FY 2009	Ongoing	1,111	877	951	3,817	2,450	700	624	5,134	12,194	7,591	1,231	0	35,568	73,451	FY 2028	
G6 Sanitary Sewers Under Buildings 1	FY 2009	Ongoing	0	26	0	851	1,295	14	0	0	0	0	0	0	2,185	6,805	FY 2022	
GG Large Sewer Rehabilitation 2	FY 2012	Closed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	468	FY 2018
GH Large Sewer Rehabilitation 3	FY 2012	Ongoing	0	33	0	0	0	6,368	5,077	0	0	0	0	0	11,478	20,200	FY 2024	
H5 Rehabilitation of Inflow Sewers	FY 2018	Ongoing	0	0	175	555	648	896	869	3,535	8,306	5,302	1,336	0	21,622	37,430	FY 2030	
HT Rehabilitation of Anacostia Force Main	FY 2012	Ongoing	64	603	4,928	1,612	0	0	0	264	344	255	2,630	0	10,636	21,520	FY 2030	
IF Sanitary Sewer Rehabilitation 2	FY 2014	Ongoing	194	96	0	0	0	0	0	0	0	0	0	0	96	1,594	FY 2019	
IK Potomac Force Main Rehabilitation	FY 2012	Ongoing	0	0	0	443	67	182	234	1,675	880	0	0	0	3,481	6,127	FY 2026	
IL Creekbed Sewer Rehabilitation 2	FY 2012	Ongoing	8,815	4,114	990	850	599	631	3,507	3,486	2,220	0	127	0	16,524	58,214	FY 2031	
IM Creekbed Sewer Rehabilitation 3	FY 2012	Ongoing	1	0	63	259	1,343	104	124	1,192	1,203	142	141	0	4,570	15,497	FY 2032	
IN Upper East Side Trunk Sewer Rehabilitation	FY 2012	Ongoing	0	0	0	286	531	502	1,120	5,853	2,904	0	0	0	11,196	19,044	FY 2026	
IQ Slash Run Sewer Rehabilitation	FY 2023	Ongoing	0	0	0	0	0	0	335	674	4,992	374	0	0	6,375	10,000	FY 2027	



# Sanitary Sewer

capital

(\$ in thousands)

	FY 2018 Actual	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	10-Yr Total	Lifetime Budget	Completion
<b>INTERCEPTOR/TRUNK FORCE (cont.)</b>														
J0 B Street New Jersey Avenue Trunk Sewer Rehab	44	2,774	2,370	286	0	0	0	0	0	0	0	5,430	17,825	FY 2020
J1 Oxon Run Sewer Rehabilitation	29	124	0	0	0	0	0	(0)	0	0	0	124	1,848	FY 2031
JK Little Falls Rehabilitation Project	0	0	0	0	0	0	0	0	0	0	0	0	-	FY 2029
LZ Potomac Interceptor Projects - Rehab. Phase 2	909	2,789	9,376	7,569	19,634	12,103	4,335	9,688	10,191	5,302	2,803	83,789	144,461	FY 2029
N7 Potomac Sewer System Rehabilitation	954	2	37	182	102	0	0	0	0	0	0	323	48,909	FY 2022
O4 Southwest Interceptor Rehabilitation	0	0	0	0	0	0	165	1	0	0	0	166	275	FY 2027
O7 East Rock Creek Diversion Rehabilitation	0	0	0	0	0	0	0	0	0	0	0	0	-	FY 2023
RA Major Sewer Assessment and Heavy Cleaning 1	0	0	2	3,794	156	1,751	1,915	2,050	78	0	0	9,745	15,800	FY 2025
RC Major Sewer Rehabilitation 1	0	0	148	660	2,882	9,805	18,065	12,135	4,393	79	0	48,167	79,998	FY 2026
RE Major Sewer Rehabilitation 3	0	0	0	0	0	54	880	1,471	3,253	13,681	23,242	42,581	88,255	FY 2030
RD Major Sewer Rehabilitation 2	0	0	0	0	0	202	1,675	4,962	7,753	11,427	7,944	33,964	73,128	FY 2031
RJ Creekbed Sewer Rehabilitation 4	0	0	0	0	0	0	0	0	0	2,576	6,539	9,116	22,000	FY 2029
RL Potomac Interceptor Projects - Rehab Phase 3	0	0	0	0	0	0	0	0	4,053	4,082	4,101	12,236	22,500	FY 2029
OA West Rock Creek Diversion Rehabilitation	0	0	0	0	0	0	0	0	0	0	0	0	-	FY 2025
RB Major Sewer Assessment and Heavy Cleaning 2	0	0	0	0	0	0	0	0	2,538	2,666	2,671	7,875	14,100	FY 2028
PJ Re-Activation of Anacostia Force Main/Gravity Main as Relief to Anacostia Force Main	0	0	381	129	281	4,849	6,077	1,390	0	0	0	13,108	20,001	FY 2024
PU Easby Point Trunk Sewer	0	0	0	0	0	0	0	0	0	0	0	0	-	FY 2023
PV Broad Branch Trunk Sewer	0	0	0	0	0	0	0	0	0	0	0	0	-	FY 2026
<b>TOTAL INTERCEPTOR/TRUNK FORCE SEWER BUDGETS</b>	<b>\$16,613</b>	<b>\$20,270</b>	<b>\$24,257</b>	<b>\$24,133</b>	<b>\$37,813</b>	<b>\$50,321</b>	<b>\$50,384</b>	<b>\$53,579</b>	<b>\$67,961</b>	<b>\$58,633</b>	<b>\$54,174</b>	<b>\$441,526</b>	<b>\$963,054</b>	

<b>TOTAL SANITARY SEWER BUDGETS</b>	\$46,888	\$44,927	\$43,646	\$57,249	\$85,588	\$97,220	\$98,194	\$115,011	\$140,020	\$134,664	\$140,615	\$957,135	\$2,070,599
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(\$ in thousands)

FY 2018 Actual	FY 2019 - FY 2028 Disbursement Plan											Lifetime Budget
	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	10-Yr Total	
\$69,005	\$61,884	\$71,720	\$96,300	\$101,039	\$84,395	\$96,491	\$103,325	\$106,145	\$105,338	\$118,378	\$945,015	\$2,204,622



**Meter Reading**



**12th Street Water Main Break**



**Water Meter Installation**

## Overview

Delivery of safe, clean, high-quality drinking water is one of DC Water's highest priorities. Drinking water in the District of Columbia comes from the Potomac River. The U.S. Army Corps of Engineers, Washington Aqueduct (Aqueduct), is a federally owned agency responsible for treating the drinking water. DC Water purchases water from the Aqueduct and is responsible for maintaining the distribution system that delivers drinking water to customers. DC Water distributes drinking water through 1,100 miles of pipes to more than 700,000 residents and businesses in the District of Columbia.

The DC Water distribution system begins at the water treatment plant and ends at private service lines. Customer service lines connect to the mains in the streets and deliver water to residents and commercial buildings, eventually reaching taps. Water is continuously moving through our distribution system, typically at a high flow rate that keeps the water fresh. However, once the water leaves the main and enters a customer's service line, the flow of water is dependent on individual water usage.

DC Water is committed to providing customers with the highest quality drinking water and continuously works to deliver water that goes beyond federal standards. We accomplish this goal by aiming to meet target levels that are stricter than water quality standards required by the EPA. We have a dedicated Drinking Water division that collects and analyzes water samples throughout the District of Columbia. These monitoring programs include sampling and analyses that are required by EPA and additional sampling programs conducted voluntarily by DC Water.

DC Water conducts compliance monitoring on a daily basis to ensure that water quality meets EPA standards. Water quality technicians collect and analyze samples for lead and copper, total coliform (bacteria) and disinfection byproduct levels. Compliance monitoring ensures that drinking water treatment effectively prevents pipe corrosion, removes bacteria and other contaminants, and minimizes potentially harmful treatment byproducts.

DC Water operates voluntary sampling programs to support our commitment to providing high-quality drinking water to our customers. Water quality technicians collect and analyze hundreds of water samples throughout the District of Columbia. The Drinking Water division responds quickly to customer complaints and conducts water quality monitoring among the District’s most vulnerable populations. DC Water operates two mobile laboratories that allow technicians to conduct on-site water quality tests and respond to emergencies. The Drinking Water division also distributes hundreds of lead test kits each year to residents and assists residents with identifying lead sources.

## PROGRAM AREAS

***Distribution Systems*** – Provides for the rehabilitation, replacement or extension of the water distribution system through several projects. The distribution systems program area is the largest for drinking water and includes three primary elements: small diameter water main renewal, large diameter water main rehabilitation, and valve replacements.

***Lead Program*** – The replacement of approximately 20,960 lead water service lines with copper piping has been completed. Additional replacement continues throughout the water distribution system as part of water main renewal projects and for customers that request full replacement.

***On-Going*** – Includes small projects for urgent replacements of water main breaks, valves and fire hydrants, water service connections, and other minor water main rehabilitation work.

***Pumping Facilities*** – Rehabilitate or upgrade water-pumping stations in the system. All four water pumping stations have completed major upgrades within the last fifteen years, and only minor projects are anticipated for the near future.

***Storage Facilities*** – Rehabilitation or upgrade of elevated tanks and reservoirs. Studies to the system have identified the need for upgrades and/or new storage facilities to support changing development patterns, for regulatory compliance, to provide additional water pressure to certain areas of the District, and to provide redundant service during unplanned outages.

***DDOT*** – Projects for the relocation, rehabilitation, replacement and extension of water mains, for which the work is completed under the District of Columbia’s District Department of Transportation (DDOT) construction contracts for street paving or reconstruction. This program is being closed and combined with distribution projects.

***Program Management*** – Provides engineering program management services for the drinking water system capital improvements program, including asset management, developing facilities plans, advancement of the smart infrastructure program, conceptual designs, design scopes of work, cost estimates, and design document review.

## ACCOMPLISHMENTS

- The water service area continues to install small diameter water mains to meet the DC Water Board goal of renewing 1% percent of the system annually. This renewal includes a combination of replacement with new water mains to reduce water quality degradation from tuberculation as well as replacement to reduce the likelihood of water main breaks.
- DC Water continues its Pipe Condition Assessment (PCA) of large diameter water mains. The assessments include detailed field inspection and leak detection of five miles of high-risk water transmission mains annually. Recommendations for rehabilitation result in targeted capital projects to address the identified pipe sections in need of replacements or refurbishments.
- The construction of the new St. Elizabeth Water Tower, and the creation of the new Anacostia pressure zone was completed. This was the capstone to increase pressure by 22 psi to over 6,000 customers in Ward 8, to improve residential water service as well as provide additional fire protection for the neighborhoods around Congress Heights.

## OPERATIONAL IMPACT OF MAJOR CAPITAL PROGRAMS

**Water Mains** – During FY 2018, the Authority continued renewal of small diameter water pipes with the goal of 1% annual renewal. Large water main rehabilitation projects continued with two projects using internal structural techniques on the existing transmission system. The capital expenditures for linear water asset renewal yields reduced reactive maintenance due to breaks and other unscheduled repairs, particularly helpful in reducing long-term maintenance costs.

**Water Pumping and Storage** – Two minor reservoir upgrade projects were completed in FY 2018, to maintain regulatory compliance as well as for operational improvements. One minor pump station upgrade project was completed in coordination with the new Anacostia pressure zone. We are continuing with minor upgrades to reduce maintenance costs and avoid the need for major upgrades later.





(\$ in thousands)

ON-GOING	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	10-Yr Total	Lifetime Budget	Completion
D5 FY 2014 - DWS Water Projects	\$434	\$99	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$533	\$10,248	FY 2020
DG FY 2015 - DWS Water Projects	4	0	0	0	0	0	0	0	0	0	0	8,806	FY 2019
DY FY 2016 - DWS Water Projects	1,776	0	0	0	0	0	0	0	0	0	151	10,330	FY 2018
FK FY2017 - DWS Water Projects	7,539	0	0	0	0	0	0	0	0	0	516	9,918	FY 2020
GS FY 2018 - DWS Water Projects	4,540	66	0	0	0	0	0	0	0	0	4,918	9,630	FY 2020
HY FY 2019 - DWS Water Projects	3,171	552	0	0	0	0	0	0	0	0	3,723	9,631	FY 2020
JA FY 2020 - DWS Water Projects	0	8,692	930	0	0	0	0	0	0	0	9,622	15,070	FY 2021
KW FY 2021 - DWS Water Projects	0	0	8,245	1,917	0	0	0	0	0	0	10,162	11,630	FY 2022
KX FY 2022 - DWS Water Projects	0	0	0	8,391	1,861	0	0	0	0	0	10,252	11,664	FY 2023
KY FY 2023 - DWS Water Projects	0	0	0	0	9,286	2,171	0	0	0	0	11,458	13,150	FY 2024
KZ FY 2024 - DWS Water Projects	0	0	0	0	0	10,567	2,624	0	0	0	13,191	14,452	FY 2025
L1 FY 2025 - DWS Water Projects	0	0	0	0	0	0	11,306	2,626	0	0	13,932	14,780	FY 2026
QJ DDCS Water Pumping and Storage Projects	956	828	951	0	0	0	0	0	0	0	2,735	3,000	FY 2021
QK DDCS Water Pumping and Storage Projects	0	0	0	1,989	2,203	2,461	2,859	3,088	3,427	3,784	19,813	19,040	FY 2028
L7 FY2028 - DWS Water Projects	0	0	0	0	0	0	0	0	0	16,346	16,346	19,575	FY 2029
L2 FY 2026 - DWS Water Projects	0	0	0	0	0	0	0	12,869	2,231	0	15,100	15,890	FY 2027
L6 FY 2027 - DWS Water Projects	0	0	0	0	0	0	0	0	14,789	2,851	17,640	18,250	FY 2028
<b>TOTAL ON-GOING BUDGETS</b>	<b>\$10,080</b>	<b>\$10,238</b>	<b>\$10,126</b>	<b>\$12,297</b>	<b>\$13,351</b>	<b>\$15,199</b>	<b>\$16,789</b>	<b>\$18,583</b>	<b>\$20,447</b>	<b>\$22,981</b>	<b>\$150,991</b>	<b>\$215,064</b>	
<b>PUMPING FACILITIES</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>10-Yr Total</b>	<b>Lifetime Budget</b>	<b>Completion</b>
AY Upgrades to Fort Reno Pumping Station	\$518	\$265	\$121	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$905	\$14,041	FY 2021
F8 16th & Alaska Avenue Pumping Station	0	0	0	0	0	0	0	0	0	0	0	4,993	FY 2020
FD Water Facility Security System Upgrades	62	30	16	0	0	0	0	0	0	0	107	2,132	FY 2021
FH Discharge Piping Bryant Street Pumping Station	0	0	0	0	0	0	0	0	0	0	0	14,569	FY 2018
HI Bryant Street Pump Station Phase III	0	0	28	207	304	2,617	1,245	0	0	0	4,400	5,920	FY 2025
HR Anacostia Pump Station Improvements Phase II	0	0	0	0	135	163	675	2,384	89	0	3,446	4,700	FY 2026
HV Bryant Street Pump Station - Spill Header Flow	41	63	1,839	2,387	542	0	0	0	0	0	4,871	7,845	FY 2023
JB Bryant Street PS Improvements - Phase II	303	406	1,598	3,472	0	0	0	0	0	0	5,779	12,178	FY 2022
LT Water-System SCADA	275	1,749	2,681	1,105	0	0	0	0	0	0	5,809	8,364	FY 2022
LU Water Facilities Security System Upgrades 2	0	0	0	105	331	519	334	224	0	0	1,512	2,000	FY 2026
M7 Replacement of Anacostia Pump Station	72	0	0	0	0	0	0	0	0	0	0	33,505	FY 2019
OW Water System Sensor Program (WaSSP)	0	0	0	603	606	618	617	605	609	611	4,269	5,600	FY 2028
OR Fort Reno Pump Station Improvements Phase II	0	0	0	0	0	31	224	289	2,825	1,364	4,733	6,430	FY 2028
PS Existing Water Facilities Building Optimization	0	0	0	119	386	0	0	0	0	0	505	695	FY 2023
S6 West Venturi Meter - Bryant Street Pumping	0	0	0	112	545	0	0	0	0	0	657	940	FY 2023
<b>TOTAL PUMPING FACILITIES BUDGETS</b>	<b>\$1,199</b>	<b>\$2,513</b>	<b>\$6,282</b>	<b>\$8,110</b>	<b>\$2,850</b>	<b>\$3,947</b>	<b>\$3,095</b>	<b>\$3,502</b>	<b>\$3,523</b>	<b>\$1,974</b>	<b>\$36,993</b>	<b>\$123,911</b>	

(\$ in thousands)

DDOT	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	10-Yr Total	Lifetime Budget	Completion
<b>FY 2018 Actual</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$49</b>	<b>\$17,171</b>	<b>FY 2020</b>
BO BO FY 2010 - DDOT Water Projects	80	14	0	0	0	0	0	0	0	0	94	8,738	FY 2020
BN FY 2011 - DDOT Water Projects	41	376	25	3	4	0	0	0	0	0	408	6,474	FY 2022
CJ FY 2012 - DDOT Water Projects	0	486	38	0	0	0	0	0	0	0	525	1,549	FY 2020
CM FY 2013 - DDOT Water Projects	<b>\$992</b>	<b>\$76</b>	<b>\$3</b>	<b>\$4</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$1,076</b>	<b>\$33,933</b>	
<b>TOTAL DDOT BUDGETS</b>													

STORAGE FACILITIES	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	10-Yr Total	Lifetime Budget	Completion
<b>FY 2018 Actual</b>	<b>\$2,904</b>	<b>\$4,361</b>	<b>\$1,276</b>	<b>\$1,869</b>	<b>\$236</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$9,084</b>	<b>\$37,383</b>	<b>FY 2022</b>
FA Water Storage Facility Upgrades	0	0	98	285	703	1,975	1,199	491	0	0	4,751	7,000	FY 2026
HW Rehabilitation of Elevated Water Tanks	9,903	7,709	841	5,100	1,077	0	0	0	0	0	15,448	47,055	FY 2023
MA Saint Elizabeth Water Tank	0	257	142	147	241	834	1,169	1,341	589	0	4,742	9,720	FY 2027
MQ 2MG 4th High Storage Tank	0	0	0	1,489	5,200	513	321	1,851	2,995	0	12,679	19,171	FY 2027
QG Anacostia First and Second High Storage	0	76	0	50	69	591	1,081	5,096	3,515	0	10,477	17,034	FY 2027
MR 2nd High Water Storage	<b>\$12,807</b>	<b>\$9,384</b>	<b>\$5,223</b>	<b>\$8,940</b>	<b>\$7,526</b>	<b>\$3,913</b>	<b>\$3,770</b>	<b>\$8,779</b>	<b>\$7,098</b>	<b>\$0</b>	<b>\$57,181</b>	<b>\$137,364</b>	
<b>TOTAL STORAGE FACILITIES BUDGETS</b>													

PROGRAM MANAGEMENT	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	10-Yr Total	Lifetime Budget	Completion
<b>FY 2018 Actual</b>	<b>\$0</b>	<b>\$1,759</b>	<b>\$3,785</b>	<b>\$5,183</b>	<b>\$3,942</b>	<b>\$2,223</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$22,187</b>	<b>\$30,610</b>	<b>FY 2024</b>
KV Water Program Management Services 2F	0	0	0	0	0	1,851	4,414	6,815	7,089	4,614	24,783	35,480	FY 2029
LB Water Program Management Services 2G	100	81	91	79	90	0	0	0	0	0	420	5,000	FY 2023
LQ Water Service Area Asset Management	3,991	3,323	2,919	2,300	40	0	0	0	0	0	10,464	19,854	FY 2022
ME Water System Program Management Services	<b>\$4,091</b>	<b>\$5,163</b>	<b>\$6,795</b>	<b>\$7,562</b>	<b>\$4,073</b>	<b>\$4,073</b>	<b>\$4,414</b>	<b>\$6,815</b>	<b>\$7,089</b>	<b>\$4,614</b>	<b>\$57,854</b>	<b>\$90,944</b>	
<b>TOTAL PROGRAM MANAGEMENT BUDGETS</b>													

<b>TOTAL WATER BUDGETS</b>	<b>\$61,884</b>	<b>\$71,720</b>	<b>\$96,300</b>	<b>\$101,039</b>	<b>\$84,395</b>	<b>\$96,491</b>	<b>\$103,325</b>	<b>\$106,145</b>	<b>\$105,338</b>	<b>\$118,378</b>	<b>\$945,015</b>	<b>\$2,204,622</b>
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(\$ in thousands)

	FY 2018 Actual	FY 2019 - FY 2028 Disbursement Plan										10-Yr Total	Lifetime Budget
		FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028		
CAPITAL EQUIPMENT	\$28,929	\$34,518	\$26,823	\$36,907	\$33,086	\$32,725	\$36,680	\$35,540	\$35,426	\$34,339	\$34,279	\$340,324	\$340,324
WASHINGTON AQUEDUCT	13,194	12,930	15,532	15,909	15,536	35,006	14,830	32,731	9,034	12,298	23,321	187,127	187,127
ADDITIONAL CAPITAL PROGRAMS	\$42,123	\$47,448	\$42,355	\$52,816	\$48,622	\$67,731	\$51,509	\$68,272	\$44,461	\$46,637	\$57,600	\$527,450	\$527,450



Maintenance Services



Mobile Command Center



Meter Replacement Program

## Overview

Additional Capital Programs is a subset of DC Water’s Capital Improvement Program (CIP) and is comprised of Capital Equipment and the Washington Aqueduct.

**Capital Equipment** – This category accounts for over 60% of the Additional Capital Programs Budget and includes capital equipment purchases, refurbishment, replacement and enhancement of operational facilities, vehicle equipment, office renovations, mechanical equipment, and IT software/hardware needs. This year’s ten-year CIP adds funding in the latter years that were previously underfunded in the prior plan. The current capital equipment disbursement budget includes the following cluster groups:

- Administration** – Capital equipment within this cluster are primarily for the departments of Emergency Management, Facilities Management, Fleet Management, Security, and Safety. The activities/purchases include, plumbing, elevators, photocopiers, appliances, furniture, vehicles, buses, vacuum trucks, boats, backhoes, cranes, trailers, forklifts, fire suppression system equipment, renovations, cameras, and sensors.
- Customer Experience** – The cluster is comprised of the following departments: Customer Care, Marketing & Communications, Industry & Business Relations, and Information Technology (IT). The activities/purchases support the enhancements, replacements, and upgrades of residential and commercial water meters. The IT department includes equipment purchases for infrastructure and enterprise projects which include: laptops, cabling, radios, servers, telephones, and software applications.
- Finance and Procurement** – This cluster includes the departments of Finance and Procurement & Compliance. The activities/purchases are primarily for reserve funds to support additional capital equipment needs for new facilities, unplanned emergencies, and capital equipment requiring long-lead times.

- Operations & Engineering** – This cluster is comprised of Wastewater Operations, Water Operations, Sewer Operations, and Engineering. The capital equipment activities/purchases support work attributable to rehabilitation, replacement, and continuous improvements or enhancements for pumps, screens, large motors, centrifuges, process control systems, actuators, flow meters, and Supervisory Control and Data Acquisition (SCADA) hardware. In addition, it includes the purchases of pipes/fittings, manhole covers/frames, sewer cameras, trenchless, generators, and various other equipment for the plant, distribution and collection systems.

**Washington Aqueduct** – The Washington Aqueduct, managed by the U.S. Army Corps of Engineers (USACE), provides wholesale water treatment services to DC Water and wholesale customers in Northern Virginia, (Arlington County and Fairfax County Water Authority). DC Water purchases approximately 74 percent of the water produced by the Aqueduct’s two treatment facilities, the Dalecarlia and McMillan Treatment Plants, and thus is responsible for approximately 74 percent of the Aqueduct’s operating and capital costs. Under federal legislation and a memorandum of understanding enacted in 1997 and updated in 2013, when Fairfax Water replaced the City of Falls Church, DC Water and the Aqueduct’s wholesale customers in Northern Virginia inherited a much greater role in oversight of the Aqueduct’s operations and its Capital Improvement Program, than prior to 1997.

The USACE, in accordance with Federal procurement regulations, requires DC Water to remit cash in an amount equal to the total project cost in advance of advertising contracts, and these funds are transferred immediately to a USACE/U.S. Treasury account to be drawn down during the execution of the project, through completion, with no interest going to DC Water. Over the years, extensive discussions with the U.S. Office of Management and Budget (OMB) and the USACE resulted in a proposal in the President’s FY 2006 and FY 2007 budgets that would allow Aqueduct customers to deposit funds for any projects required by their National Pollutant Discharge Elimination System (NPDES) permit (including the residuals project) to a separate escrow account, allowing the Aqueduct customers to retain interest on these funds. The proposal was submitted in May 2006 to the Senate and House. During FY 2006, the USACE briefed the Senate Environment and Public Works Committee staff and in conjunction with DC Water, briefed the Senate Homeland Security and Government Affairs committee staff. Additionally, DC Water and Washington Aqueduct staff provided DC Delegate Norton’s office with the Administration’s proposal. Neither committees acted on the proposal.

We continue to pursue other options that would be more favorable to DC Water, including transferring dollars on a phased basis, utilizing taxable bonds, or taxable commercial paper. In the past, some of these options have not been viewed favorably by the U.S. Treasury, but we will continue our outreach efforts to Congressional staff, federal agencies and the Corps on this critical issue.

DC Water’s share of Washington Aqueduct’s infrastructure improvements to achieve established service levels for FY 2019 – FY 2028 is \$187.1 million. The increased investments of \$67.1 million fully funds Washington Aqueduct’s risk-based asset management CIP, except the following projects: Federally Owned Water Mains, Travilah Quarry Acquisition Outfitting, and Advanced Treatment.

# Additional Capital Programs

	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	10-Yr Total
<b>FY 2018 Actual</b>											
<b>CAPITAL EQUIPMENT OPERATIONS &amp; ENGINEERING</b>											
WASTEWATER OPERATIONS											
EQP4710 Wastewater Operations	\$ 39	\$ 100	\$ 100	\$ 100	\$ 100	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 500
EQP4730 Process Engineering	163	350	475	475	475	-	-	-	-	-	2,325
EQP4830 Maintenance Services	1,685	3,160	3,920	4,040	3,940	-	-	-	-	-	18,660
EQP4210 Pumping Services	2,113	1,700	1,900	1,950	2,000	-	-	-	-	-	9,200
Subtotal	4,000	5,950	6,395	6,565	6,515	-	-	-	-	-	30,685
WATER OPERATIONS											
EQP4410 Water Operations	101	610	700	700	700	-	-	-	-	-	3,300
EQP4110 Water Quality and Technology	48	125	125	125	125	-	-	-	-	-	650
Subtotal	150	740	825	825	825	-	-	-	-	-	3,950
SEWAGE OPERATIONS											
EQP4610 Sewer Operations	310	225	260	260	260	-	-	-	-	-	1,265
Subtotal	310	225	260	260	260	-	-	-	-	-	1,265
ENGINEERING											
EQP4310 Engineering & Technical Services	77	20	175	25	25	-	-	-	-	-	265
Subtotal	77	20	175	25	25	-	-	-	-	-	265
<b>FINANCE &amp; PROCUREMENT</b>											
FINANCE											
EQP2410 Finance	333	800	10	10	10	-	-	-	-	-	840
EQP2411 Reserve Fund	1,503	7,000	10,000	9,000	9,000	33,750	32,610	32,496	31,409	31,349	197,615
Subtotal	1,837	7,800	10,010	9,010	9,010	33,750	32,610	32,496	31,409	31,349	198,455
<b>CUSTOMER EXPERIENCE</b>											
CUSTOMER CARE											
EQP2340 AMR Replacement	8,630	-	-	-	-	-	-	-	-	-	-
EQP2350 On-Going Replacement	1,662	2,618	2,930	2,930	2,930	2,930	2,930	2,930	2,930	2,930	28,676
Subtotal	10,292	2,618	2,930	2,930	2,930	2,930	2,930	2,930	2,930	2,930	28,676
INFORMATION TECHNOLOGY											
EQP2110 IT Infrastructure	1,754	3,050	2,767	3,081	2,650	-	-	-	-	-	14,148
EQP2115 IT Enterprise Technology	6,375	6,245	8,540	4,500	4,500	-	-	-	-	-	30,735
Subtotal	8,129	9,295	11,140	7,581	7,150	-	-	-	-	-	44,883
<b>ADMINISTRATION</b>											
EQP3410 Facilities Management	1,481	2,855	1,805	1,995	1,890	-	-	-	-	-	10,355
EQP3610 Security	517	515	515	450	450	-	-	-	-	-	2,480
EQP5610 Fleet Management	2,137	4,500	3,460	3,500	3,700	-	-	-	-	-	19,160
EQPXXX Emergency Management	-	-	50	50	50	-	-	-	-	-	150
Subtotal	4,135	7,870	5,780	6,595	5,890	6,010	-	-	-	-	32,145
<b>TOTAL CAPITAL EQUIPMENT</b>	\$28,929	\$34,518	\$26,823	\$33,086	\$32,725	\$36,680	\$35,540	\$35,426	\$34,339	\$34,279	\$340,324
<b>WASHINGTON AQUEDUCT</b>	13,194	12,930	15,532	15,909	15,536	14,830	32,731	9,034	12,298	23,321	187,127
<b>TOTAL ADDITIONAL CAPITAL PROGRAMS</b>	\$42,123	\$47,448	\$42,355	\$52,816	\$48,622	\$51,509	\$68,272	\$44,461	\$46,637	\$57,600	\$527,450