CIP Lifetime Budgets / Risks & Sensitivities

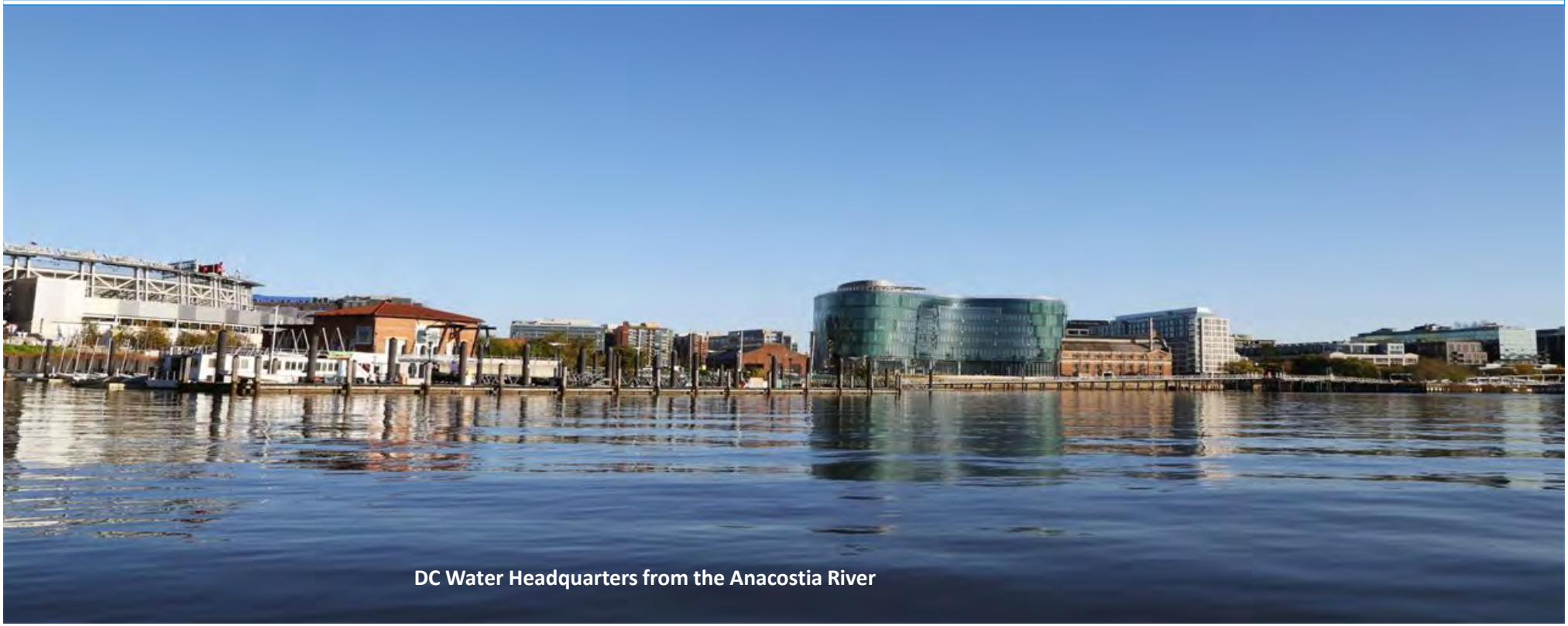
Presentation to the Environmental Quality and Operations Committee

February 20, 2020

Adam Ortiz, Chair

District of Columbia Water and Sewer Authority

Leonard R. Benson, Senior Vice President and Chief Engineer



DC Water Headquarters from the Anacostia River

Capital Improvement Program
Responses to Questions:
Lifetime Budgets & Risks
Leonard Benson

Agenda

Proposed FY 20-29 CIP Budget

The10-year capital program Engineering Projects:

- Begins the implementation of the "Modified Baseline" approved last year, and adds additional funds to reach 1.5% replacement plans for water and sewer infrastructure within the ten-year plan, balancing infrastructure renewal and affordability
- Fully funds the **Clean Rivers** program to meet all consent decree deadlines
- Funds **non-process facilities** including the new Fleet and Sewer Facilities, renovations to the Historic Main Pump Station, and restoration of the Main & O campus seawall
- At **Blue Plains** funds upgrades to Screens, Grit and Primary Facilities, and Process Control Computer System, Efficiency Improvements, and Long-term Concrete Rehabilitation projects
- Advances major rehabilitation of **sanitary collection sewers,** upgrades to sewer pump stations, rehabilitation of the Potomac Interceptor and increased funding to ramp up to 1.5% replacements per year starting FY 2027 and onwards for the **small diameter water mains** and **small sewer lines**
- Includes carryover from prior year to complete the Enterprise Resource Planning (ERP) and Advanced Meter Infrastructure (AMI) projects, and increased funding for Fleet, pumps and other equipment

Screens, Grit & Primary Facilities Upgrades

6th St SW

10-Year Engineering CIP Options Compared

Service Area	Approved Baseline $4.4B (FY19-28)	Proposed Baseline $4.9B (FY20-29)	Asset Management $5.4B (FY19-28)	Fully Funded $5.8B (FY20-29)
Clean Rivers	**Fully funded** to meet Consent Decree	**Fully funded** to meet Consent Decree	**Fully funded** to meet Consent Decree	**Fully funded** to meet Consent Decree
Wastewater	**Fully funded** to meet NPDES Permit and established levels of service	**Fully funded** to meet NPDES Permit and established levels of service	**Fully funded** to meet NPDES Permit and established levels of service	**Fully funded** to meet NPDES Permit and established levels of service
Stormwater	**Fully funded**	**Fully funded**	**Fully funded**	**Fully funded**
Water				
Pump Stations & Storage Facilities	**Generally funded**	**Fully funded**	**Fully Funded**	**Fully Funded**
Small Diameter Water Mains	**Underfunded; (Funded to meet 1%** per year replacement level - **[11 mi/year]**)	**Increased funding** to ramp up to **1.5%** per year replacement level from FY 2027 onwards. **[16.5 mi/year]**	**Fully funded to ramp up to 2%** replacement level **[22 mi/year]**	**Fully funded to ramp up to 2%** replacement level **[22 mi/year]**
Large Diameter Water Mains	**Generally funded**	**Generally funded**	**Generally funded**	**Fully Funded**
Sewer				
Pump Stations	**Fully funded**	**Fully funded**	**Fully funded**	**Fully funded**
Sewer Lines < 60" diameter	**Underfunded (Funded to ramp up to 1.0%** per year rehabilitation level **[17.5 mi/year]** by FY 2023	**Increased funding** to ramp up to **1.5%** per year rehabilitation level from FY 2027 onwards. **[26 mi/year]**	**Fully funded to ramp up to 2.3%** rehabilitation level **[40 mi/year]**	**Fully funded to ramp up to 2.3%** rehabilitation level **[40 mi/year]**
Sewer Lines ≥ 60"	**Generally Funded**	**Generally Funded**	**Generally Funded**	**Fully funded**
Non Process	**Fully funded**	**Fully funded**	**Fully funded**	**Fully funded**

'Generally Funded' = What we know or expect to find can be rehabilitated **'Underfunded'** = What we know or expect to find is not all funded
'Fully Funded' = All needs known or expected are met

CIP Budget Questions

Questions from Environmental Quality and Operations Committee January 16, 2020 Meeting:
1. Sr. VP & Chief Engineer: Provide a detailed briefing on the 10-year CIP Lifetime Budget (i.e., $11.45B) including actual spent-to-date information.
2. Sr. VP & Chief Engineer: Update the 10-year CIP Disbursement Forecast slides and show what the required funding levels would need to be, past FY29, as well as layering in the risk and sensitivity costs if this Proposed CIP budget is approved and implemented.

Proposed FY20 – FY29 CIP

FY20-29 10-year CIP

- The overall increase to Capital Projects compared to the FY19-28 plan is $493M
- The **10-year** CIP disbursements total is: $4.921 Billion
- Total **Lifetime** Budget of approved and proposed projects is: $11.453 Billion

$ in thousands

	Run 6 - FY2020-2029 Proposed Disbursement Plan												Approved Base (FY20-29)	
	FY20*	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	10-Yr Total	**Lifetime	^10-Yr Total	Delta
NON PROCESS FACILITIES														
Facility Land Use	42,066	31,849	20,665	6,831	11,058	10,396	3,901	3,553	3,560	3,600	137,479	221,841	126,358	(11,121)
Subtotal	**42,066**	**31,849**	**20,665**	**6,831**	**11,058**	**10,396**	**3,901**	**3,553**	**3,560**	**3,600**	**137,479**	**221,841**	**126,358**	**(11,121)**
WASTEWATER TREATMENT														-
Liquid Processing	24,516	42,496	43,069	48,748	44,909	31,792	66,989	68,544	99,413	103,740	574,216	1,266,857	635,675	61,459
Plantwide	17,387	32,784	42,213	30,735	37,879	23,127	18,231	25,062	20,506	9,902	257,826	525,997	209,807	(48,019)
Solids Processing	19,847	27,314	27,424	25,852	22,754	15,761	12,658	6,027	10,476	12,858	180,971	924,507	138,068	(42,903)
Enhanced Nitrogen Removal Facilities	15,786	382	672	1,897	1,770	-	-	2,206	1,861	11,665	36,239	980,940	63,374	27,135
Subtotal	**77,536**	**102,976**	**113,378**	**107,232**	**107,312**	**70,680**	**97,878**	**101,839**	**132,256**	**138,165**	**1,049,252**	**3,698,301**	**1,046,924**	**(2,328)**
COMBINED SEWER OVERFLOW														-
DC Clean Rivers Program	162,197	147,565	179,833	129,272	67,536	59,909	148,771	103,265	88,890	115,049	1,202,288	2,764,255	1,189,779	(12,509)
Combined Sewer Program Management	1,287	1,792	2,237	2,972	3,028	2,050	2,629	2,515	3,125	2,519	24,154	77,756	24,327	173
Combined Sewer Overflow Program	7,952	7,701	10,579	13,581	13,703	6,518	4,070	5,057	5,847	9,916	84,924	199,729	59,795	(25,129)
Subtotal	**171,436**	**157,058**	**192,649**	**145,824**	**84,267**	**68,476**	**155,470**	**110,837**	**97,863**	**127,484**	**1,311,366**	**3,041,740**	**1,273,901**	**(37,465)**
STORMWATER														-
Storm Local Drainage Program	12	22	688	594	1,267	1,948	1,164	1,792	1,970	1,709	11,166	18,025	9,749	(1,417)
Storm On-Going Program	1,011	631	1,109	837	866	526	875	843	1,084	1,287	9,069	11,540	7,591	(1,478)
Storm Pumping Facilities	5,310	8,392	4,923	2,259	2,854	1,865	1,698	1,353	3,430	1,755	33,839	61,204	49,311	15,472
Storm DDOT Projects	-	-	-	-	-	-	-	-	-	-	-	3,237	-	-
Stormwater Program Management	410	445	582	367	405	321	464	318	385	306	4,003	12,889	2,538	(1,465)
Stormwater Trunk/Force Sewers	126	141	233	113	-	-	-	-	-	-	613	15,510	255	(358)
Subtotal	**6,869**	**9,631**	**7,535**	**4,170**	**5,392**	**4,660**	**4,201**	**4,306**	**6,869**	**5,057**	**58,690**	**122,404**	**69,444**	**10,754**
SANITARY SEWER														-
Sanitary Collection System	4,613	8,134	33,564	18,009	24,312	33,040	52,923	68,745	65,771	61,043	370,154	569,040	297,321	(72,833)
Sanitary On-Going Projects	12,099	12,327	13,711	13,667	14,185	15,019	15,253	15,111	15,312	14,842	141,529	217,969	143,428	1,899
Sanitary Pumping Facilities	2,570	5,995	6,924	8,240	5,068	10,468	11,639	11,933	27,732	33,628	124,196	270,778	121,119	(3,077)
Sanitary Program Management	4,150	5,464	7,014	5,132	3,913	3,103	3,174	3,900	4,064	4,335	44,250	119,050	42,933	(1,317)
Interceptor/Trunk Force Sewers	21,501	32,006	54,327	43,062	44,084	76,710	76,826	77,100	62,993	60,184	548,794	918,096	481,440	(67,354)
Subtotal	**44,933**	**63,926**	**115,541**	**88,110**	**91,562**	**138,341**	**159,814**	**176,789**	**175,873**	**174,032**	**1,228,922**	**2,094,934**	**1,086,241**	**(142,681)**
WATER														-
Water Distribution Systems	33,872	60,464	62,606	65,093	58,654	64,372	65,350	99,075	117,595	121,131	748,211	1,446,953	669,041	(79,170)
Water Lead Program	4,711	5,408	5,387	5,456	5,627	5,719	5,496	5,744	5,877	5,692	55,117	243,504	64,536	9,419
Water On-Going Projects	10,532	11,075	12,297	13,351	15,199	16,789	18,583	20,447	22,981	23,506	164,761	217,972	163,517	(1,243)
Water Pumping Facilities	1,525	2,650	12,169	6,284	2,567	4,218	7,446	4,163	2,328	-	43,350	85,344	35,794	(7,556)
DDOT Water Projects	1,721	10	8	-	-	-	-	-	-	-	1,739	33,933	84	(1,655)
Water Storage Facilities	6,216	4,318	10,399	13,963	5,610	4,783	11,334	8,985	694	1,360	67,662	155,164	49,158	(18,504)
Water Service Program Management	3,587	4,752	6,012	4,854	5,248	5,884	8,110	8,376	5,441	3,008	55,272	90,944	55,698	426
Subtotal	**62,163**	**88,677**	**108,878**	**109,000**	**92,905**	**101,765**	**116,319**	**146,791**	**154,916**	**154,697**	**1,136,112**	**2,273,813**	**1,037,828**	**(98,284)**
CAPITAL PROJECTS	**405,004**	**454,118**	**558,645**	**461,168**	**392,496**	**394,318**	**537,584**	**544,115**	**571,336**	**603,035**	**4,921,820**	**11,453,033**	**4,640,696**	**(281,124)**

NOTES: * FY20 ceiling includes FY19 carry over of $24,517 M

** Lifetime budget is the total budget, including available budget and the actual spent to date

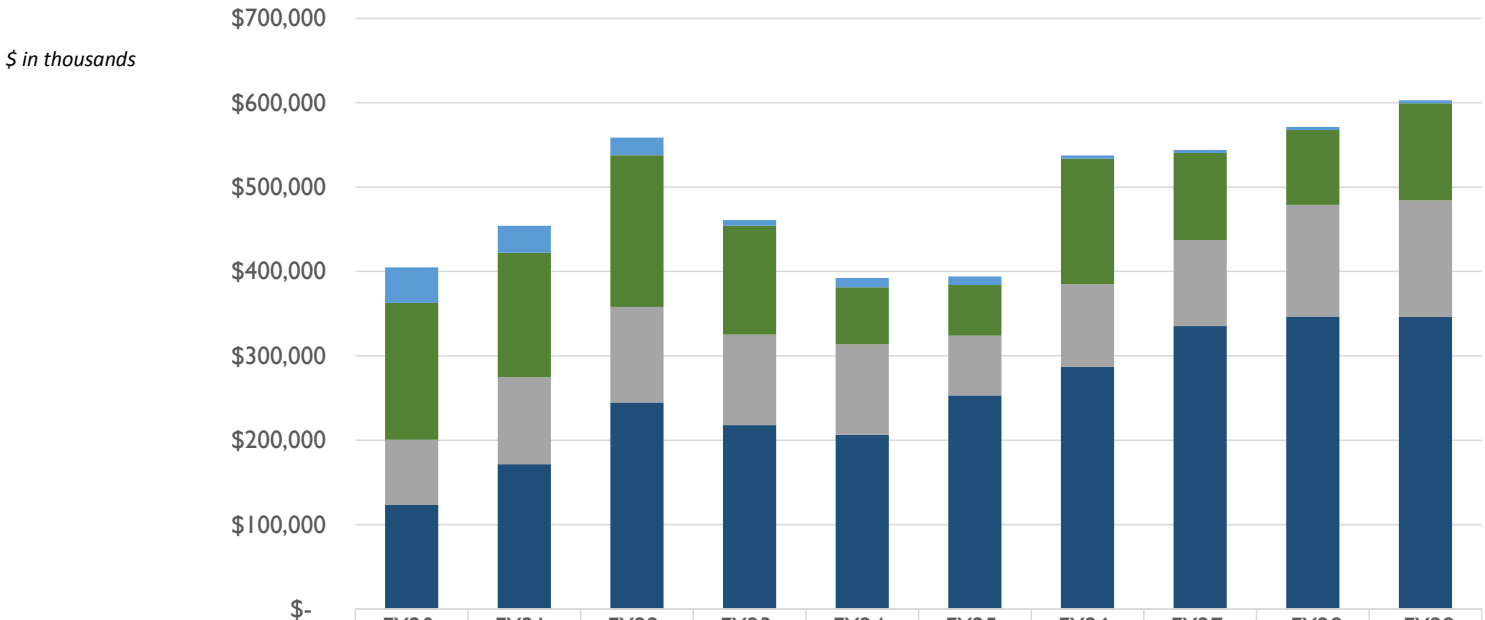
^ The 10-yr total comparison is calculated for the same period FY20-29, i.e. last years Approved (Run5c) years FY20-28 plus this year's new FY29, compared to this proposed Run 6 FY20-29

10-Year CIP Disbursements Forecast

FY20-29 10-year CIP

The **10-year** CIP disbursements are calculated based on:

- Remaining Commitments
- Received Bids
- Detailed estimates
- Schedule dates
- and corresponding cost-curves in the P6 schedule



	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29
Non-Process Facilities	$42,066	$31,849	$20,665	$6,831	$11,058	$10,396	$3,901	$3,553	$3,560	$3,600
Clean Rivers	$162,197	$147,565	$179,833	$129,272	$67,536	$59,909	$148,771	$103,265	$88,890	$115,049
Wastewater Treatment	$77,536	$102,976	$113,378	$107,232	$107,312	$70,680	$97,878	$101,839	$132,256	$138,165
Water & Sewer Infrastucture*	$123,205	$171,727	$244,770	$217,833	$206,591	$253,333	$287,034	$335,458	$346,630	$346,221

* Includes the following Service Areas: Water, Sanitary Sewer, Stormwater, and non-Clean Rivers portion of Combined Sewer Overflow

- Cash disbursements basis

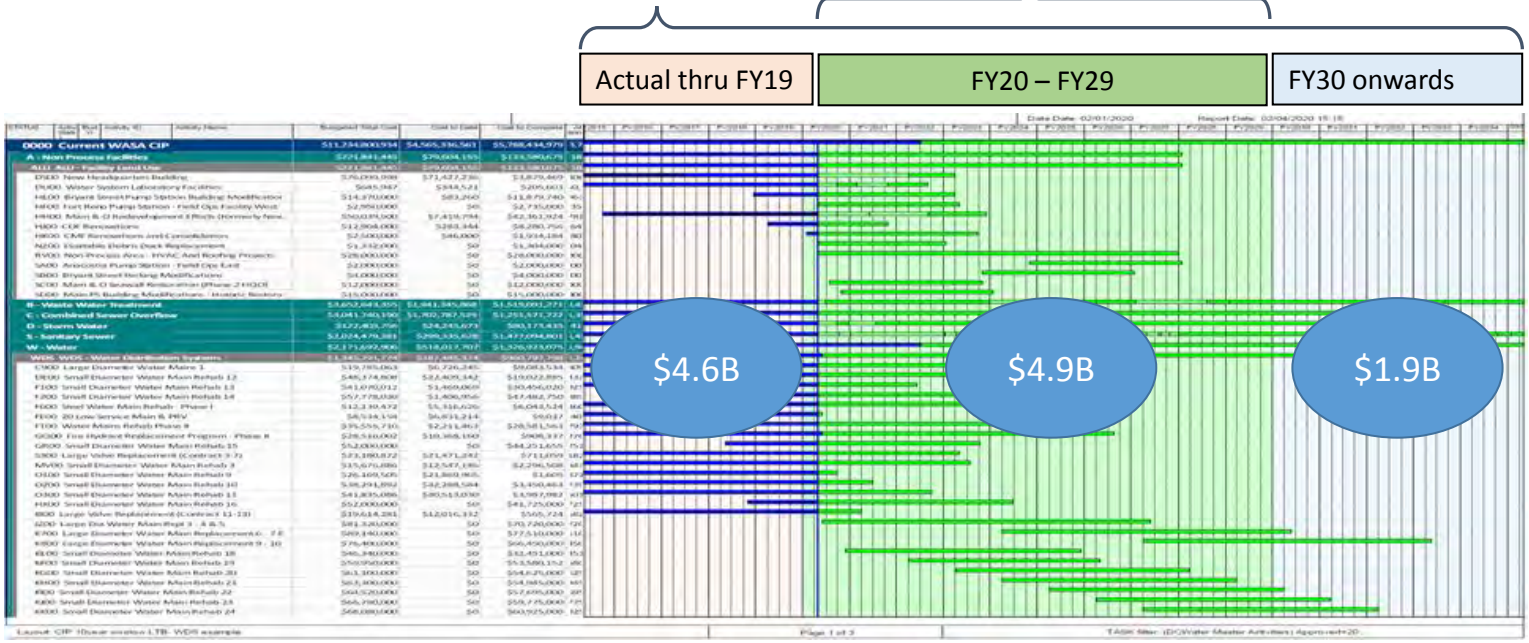
Lifetime Budget vs 10-year Disbursements Forecast

Lifetime Budget vs forecast Disbursements

Lifetime Budget captures all costs of approved projects active during the period of FY20-29 window, including those that started before FY20 and those finishing beyond FY29.

CIP Ten-Year ($4.9B) = Cost to Complete within 10-yr window

Lifetime Budget ($11.4B) = Actual to date + Cost to Complete (+Contingency)



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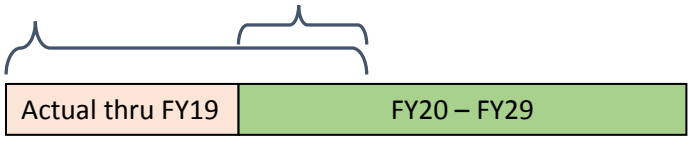
Lifetime vs 10-year Disb. - Project Example

Examples of a Projects Lifetime Budget vs 10-yr Disbursements

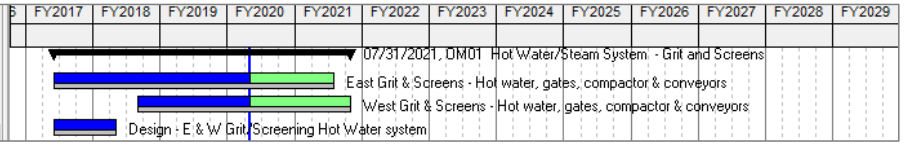
- The Cost forecast is based on Cost to Complete (CTC)
- The Lifetime Budget is equal to the Budgeted Total Cost

OM01 Lifetime is $6M = Actual to date ($4M) + Cost to Complete ($2M)

CIP Ten-Year ($2M) within 10-yr window



Activity ID	Activity Name	Start	Finish	Budgeted Total Cost	Cost to Date	Cost to Complete
OM01 Hot Water/Steam System - Grit and Screens		03/01/2017 A	07/31/2021	$6,076,101	$4,106,606	$1,961,444
OM44201000	East Grit & Screens - Hot water	03/01/2017 A	04/30/2021	$3,038,050	$2,265,713	$772,337
OM44010000	West Grit & Screens - Hot wate	06/01/2018 A	07/31/2021	$3,008,051	$1,810,893	$1,189,107
OM13100000	Design - E & W Grit/Screening	03/01/2017 A	01/31/2018	$30,000	$30,000	$0

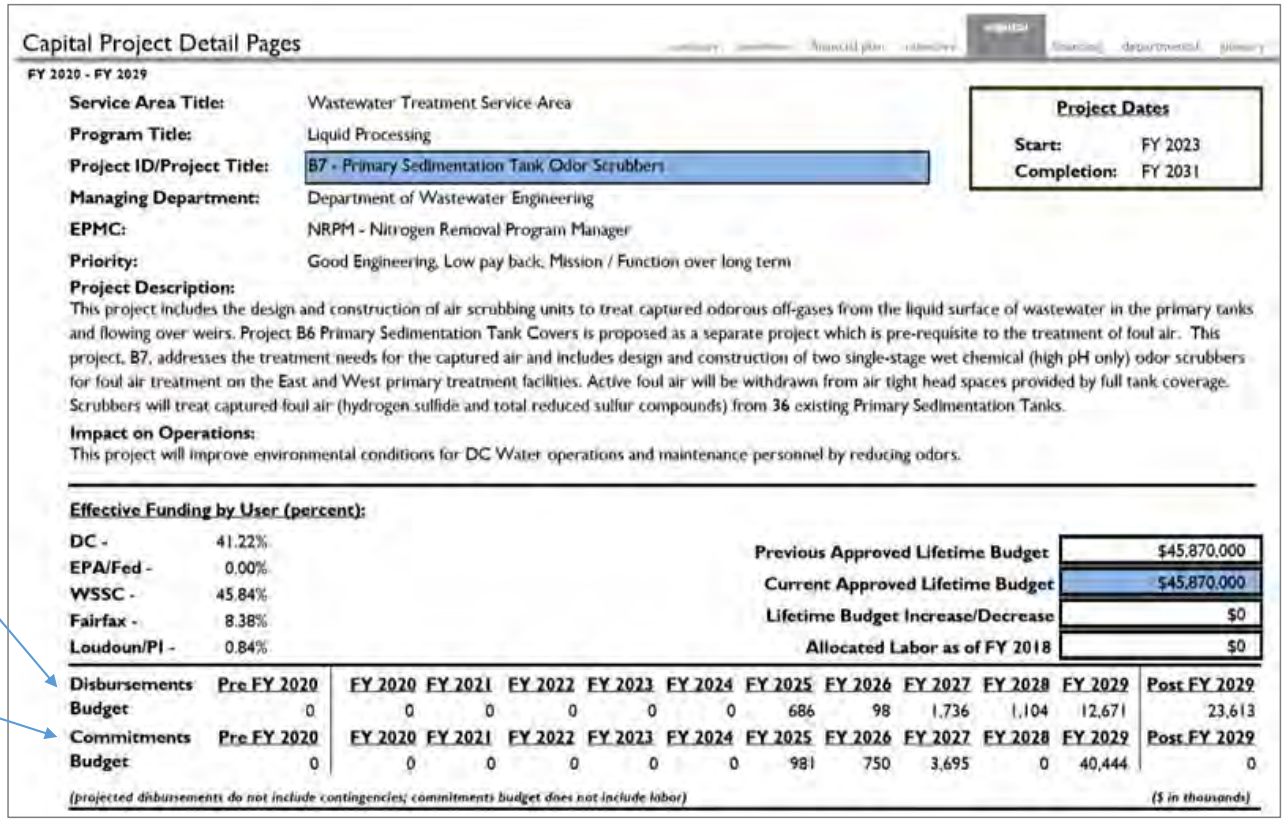


- The above cost loaded schedule generates the Budget Book CIP Section

Lifetime Budget Detail in Budget Book

Budget Book CIP Details

- The CIP has 290+ Projects, and the budget book has details on each including description and IMA cost share % splits
- There are 7,500+ activities in the schedule
- The disbursements table is the 10-year forecast
- The commitments table is based on the lifetime budget and the date the activity starts



Capital Project Detail Pages

FY 2020 - FY 2029

Service Area Title: Wastewater Treatment Service Area
Program Title: Liquid Processing
Project ID/Project Title: B7 - Primary Sedimentation Tank Odor Scrubbers
Managing Department: Department of Wastewater Engineering
EPMC: NRPM - Nitrogen Removal Program Manager
Priority: Good Engineering, Low pay back, Mission / Function over long term

Project Dates
Start: FY 2023
Completion: FY 2031

Project Description:
This project includes the design and construction of air scrubbing units to treat captured odorous off-gases from the liquid surface of wastewater in the primary tanks and flowing over weirs. Project B6 Primary Sedimentation Tank Covers is proposed as a separate project which is pre-requisite to the treatment of foul air. This project, B7, addresses the treatment needs for the captured air and includes design and construction of two single-stage wet chemical (high pH only) odor scrubbers for foul air treatment on the East and West primary treatment facilities. Active foul air will be withdrawn from air tight head spaces provided by full tank coverage. Scrubbers will treat captured foul air (hydrogen sulfide and total reduced sulfur compounds) from 36 existing Primary Sedimentation Tanks.

Impact on Operations:
This project will improve environmental conditions for DC Water operations and maintenance personnel by reducing odors.

Effective Funding by User (percent):

DC -	41.22%
EPA/Fed -	0.00%
WSSC -	45.84%
Fairfax -	8.38%
Loudoun/PI -	0.84%

Previous Approved Lifetime Budget	$45,870,000
Current Approved Lifetime Budget	$45,870,000
Lifetime Budget Increase/Decrease	$0
Allocated Labor as of FY 2018	$0

Disbursements	Pre FY 2020	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	Post FY 2029
Budget	0	0	0	0	0	0	686	98	1,736	1,104	12,671	23,613
Commitments	**Pre FY 2020**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Post FY 2029**
Budget	0	0	0	0	0	0	981	750	3,695	0	40,444	0

(projected disbursements do not include contingencies; commitments budget does not include labor) *($ in thousands)*

For the budget book details FY19-28 refer to DC water website: https://www.dcwater.com/budget-and-financial-planning

CIP Budget Question 2

Questions from Environmental Quality and Operations Committee January 16, 2020 Meeting:
1. Sr. VP & Chief Engineer: Provide a detailed briefing on the 10-year CIP Lifetime Budget (i.e., $11.45B) including actual spent-to-date information.
2. Sr. VP & Chief Engineer: Update the 10-year CIP Disbursement Forecast slides and show what the required funding levels would need to be, past FY29, as well as layering in the risk and sensitivity costs if this Proposed CIP budget is approved and implemented.

CIP Risks/Sensitivities

Regulatory/Consent Decree/Permitting

- E. Coli Total Maximum Daily Load (TMDL) – lawsuit by environmental groups seeking more restrictive TMDL
- EPA developing new Anacostia River trash TMDL
- MS4 permit – rehabilitation of Stormwater Outfalls, total scope and cost unknown (currently $5 million approved)
- National Parks Service permitting requirements for sewer projects
- Anacostia River Sediment Clean-up
- Chesapeake Bay TMDL – Phase 3 Watershed Implementation Plans being prepared, possible TMDL reassessment in the future
- Potential regulation requirements for contaminants (e.g. Polychlorinated Biphenyls (PCBs)
- Green Infrastructure (GI) Practicability Assessment - Clean Rivers practicability assessment of GI to be performed in 2020. Currently, construction of GI in the District is more expensive than originally estimated
- Sanitary Sewer Overflows (SSO) – Risk of SSO Consent Decree
- Odor control for secondary treatment at Blue Plains

CIP Risks/Sensitivities (cont.)

- Blue Plains Process Optimization & Revenue Opportunities
  - Full Plant Deammonification (>$60 million)
  - Additional capacity for Digesters, Thermal Hydrolysis and Combined Heat and Power
  - Resource Recovery (Hot Water Heating Loop; Sludge Drying)
- Other:
  - Lead Service Replacement Program
  - DDOT and Pepco DC Power Line Undergrounding (DC PLUG) – ($57 million, DC Water Share is 50% = $28 million)
  - Condition assessment of large sewers could lead to additional CIP needs
  - Washington Aqueduct
    - Federally Owned Water Main Repairs ($86 million, all DC Water)
    - Travilah Quarry Acquisition & Outfitting
      (Current discussion in range of $750 million to $1 Billion, cost sharing unknown)
    - Advanced Treatment Facilities ($375 million, DC Water share = $280 million)
    - Transmission and Storage upgrades ($300 million, DC Water Share = $225 million)

Risks Cost Forecast

Potential Cost Impacts developed from high-level cost estimates and schedule of Risks & Sensitivities using the following guidelines:

- Cost Estimates are mostly at a high-level (concept design) with both High & Low ranges
- Schedule dates are broad (nearest years starting & finishing) both Early & Late ranges
- Subsequent Risk Ranges based on:
  - Highest Impact (Highest value for Estimate range / Earliest potential Schedule)
  - Moderate Impact (Lowest value for Estimate range / Latest potential Schedule)
  - Lowest Impact – (No risks occur at all, Baseline CIP only)
- Probability is not accounted for in this high-level analysis as it is unquantifiable at this time

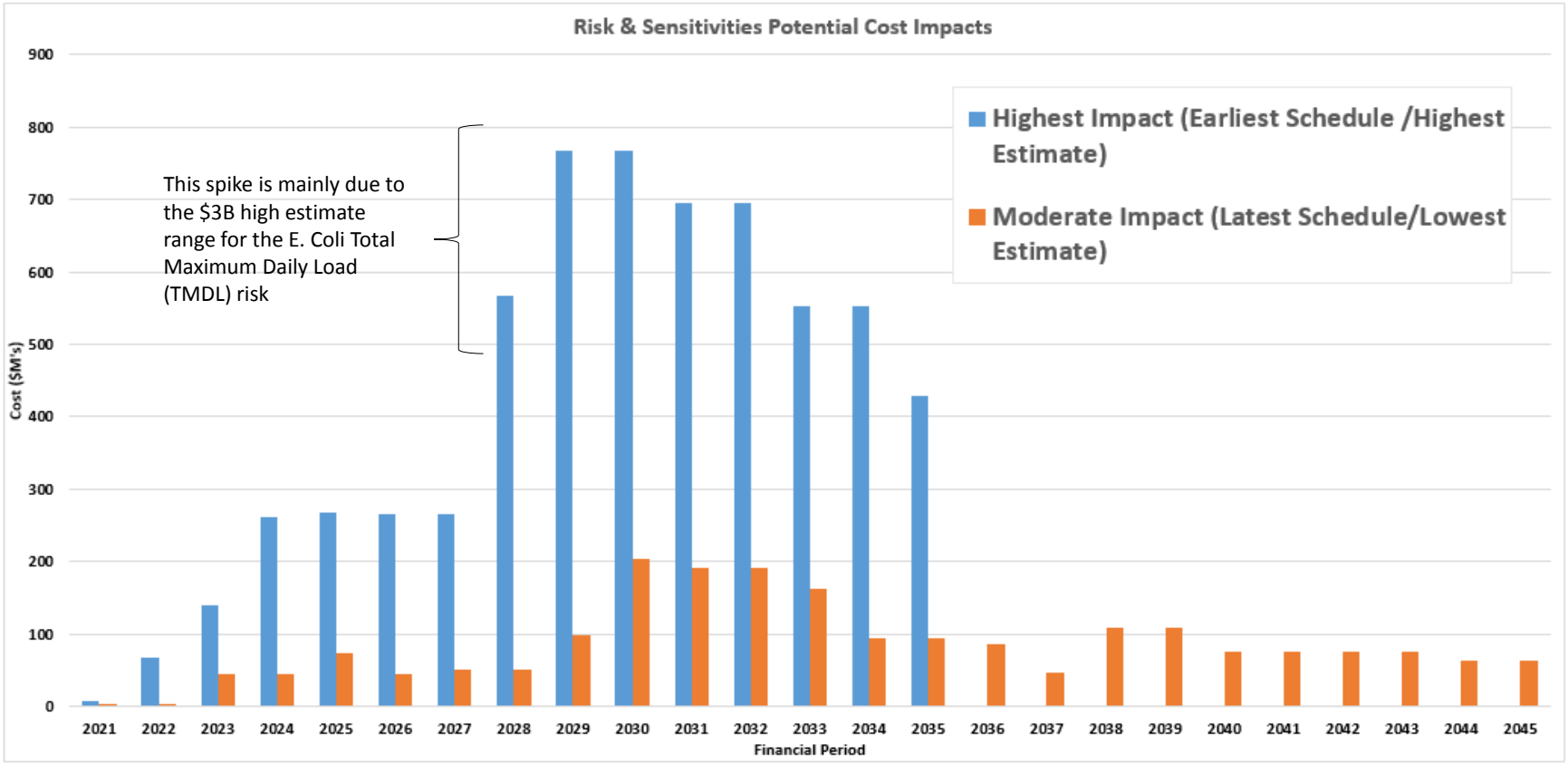
The table on the following slide lists the high/low estimates & schedules

CIP Risks/Sensitivities – Impacts Table

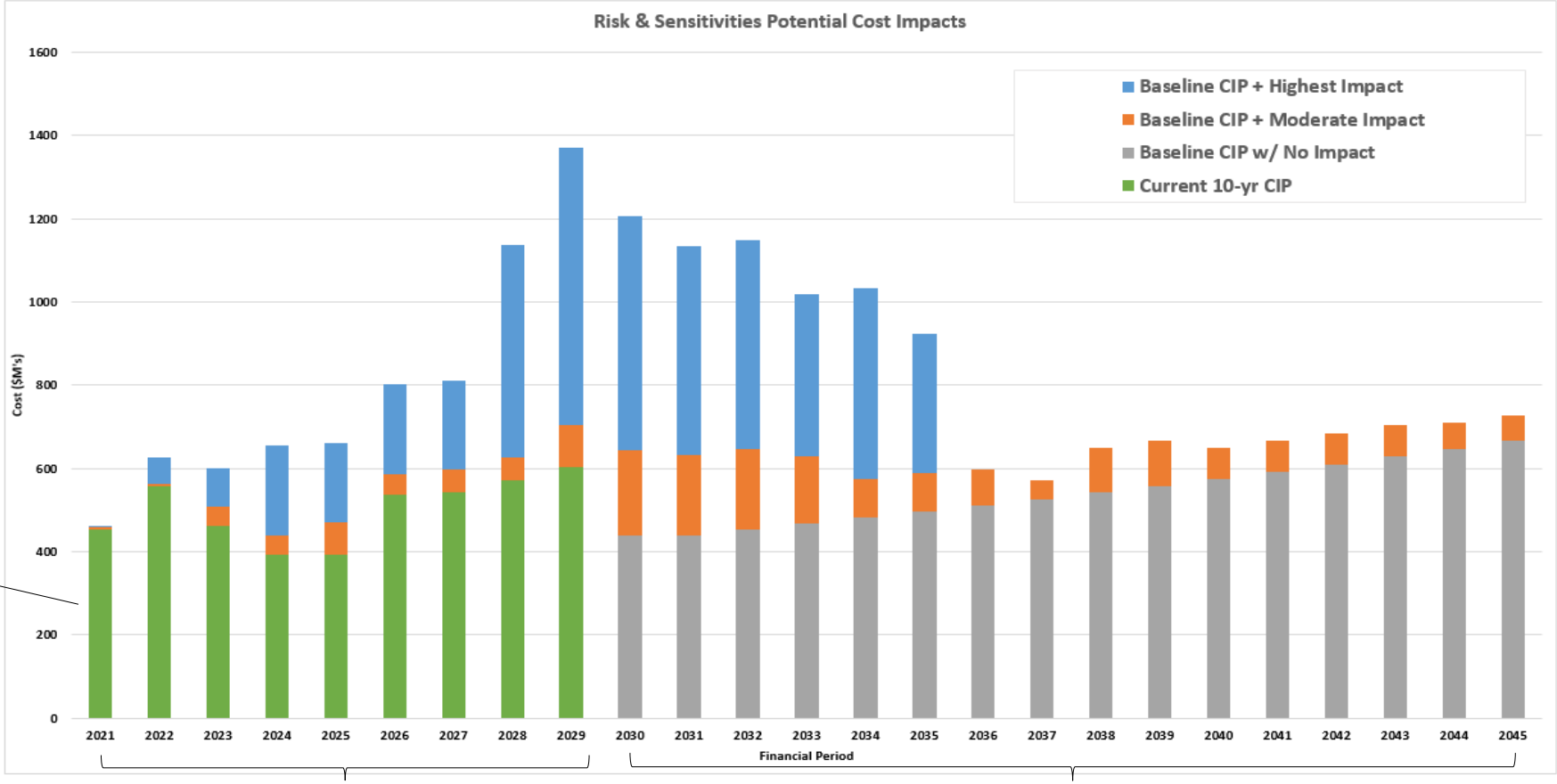
Risk/Sensitivity	Low Cost Estimate	High Cost Estimate	Earliest Schedule	Latest Schedule
Full Plant Deammonification (>$60 million)	$60M	$180M	FY24-FY34	FY29-FY39
Additional capacity for Digesters, Thermal Hydrolysis and Combined Heat and Power	$300M	$675M	FY24-FY34	FY29-FY39
Resource Recovery (Hot Water Heating Loop; Sludge Drying)	$3M	$500M	FY24-FY34	FY29-FY39
Condition assessment of large sewers could lead to additional CIP needs	$70M	$140M	FY22-FY29	FY23-FY30
Condition assessment of large diameter water mains could lead to additional CIP needs	$35M	$49M	FY22-FY29	FY23-FY30
WA: Federally Owned Water Main Repairs ($86 million, all DC Water)	$86M	$86M	FY22-FY24	FY23-FY25
WA: Travilah Quarry Acquisition & Outfitting (Current discussion in range of $750 million to $1Billion, cost sharing estimated as $280-375M)	$280M	$375M	FY29-FY35	FY30-FY36
WA: Advanced Treatment Facilities ($375 million, DC Water share = $280 million)	$280M	$310M	FY29-FY32	FY30-FY33
WA: Transmission and Storage upgrades ($300 million, DC Water Share = $225 million	$225M	$250M	FY23-FY30	FY25-FY32
DDOT and Pepco DC Power Line Undergrounding (DC PLUG) – ($57 million, DC Water Share is 50% = $28 million)	$28M	$52M	FY20-FY28	FY21-FY29
Lead Service Replacement Program	$200M	$400M	FY23-FY32	FY29-FY43
Anacostia River Sediment Clean-up - Early Action Plan	$1M	$5M	FY21-FY25	FY23-FY27
Anacostia River Sediment Clean-up - Long Term	$25M	$200M	FY25-FY30	FY27-FY35
E. Coli Total Maximum Daily Load (TMDL) – lawsuit by environmental groups seeking more restrictive TMDL	$500M	$3,000M	FY28-FY35	FY38-FY45
Odor control for secondary treatment at Blue Plains	$40M	$82M	FY22-FY30	FY27-FY35
Totals	**$2,133M**	**$6,304M**	**FY21-FY35**	**FY21-FY45**

The above table translates into the cost forecasts on the following slide

Risk Impacts Forecast



Risk Impacts + Proposed Baseline CIP Forecast



CIP baseline FY30-45 w/ inflation 3% (Note: DCCR ends in FY30)

Current CIP baseline FY20-29 (DCCR ends FY30)

CIP baseline FY30 onwards based on program averages adjusted for inflation 3%

Summary of 10-Year CIP for Approval

- The proposed ten-year CIP comprises the capital projects ($4.921B) and additional capital programs ($528M). Total $5.450 Billion.

Service Area ($000's)	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	10-Yr Total	Last Year's CIP	(Increase) /Decrease
Non-Process Facilities	$ 42,066	$ 31,849	$ 20,665	$ 6,831	$ 11,058	$ 10,396	$ 3,901	$ 3,553	$ 3,560	$ 3,600	$ 137,479	$ 138,067	$ 588
Wastewater Treatment	77,536	102,976	113,378	107,232	107,312	70,680	97,878	101,839	132,256	138,165	1,049,252	978,738	(70,514)
Clean Rivers	162,197	147,565	179,833	129,272	67,536	59,909	148,771	103,265	88,890	115,049	1,202,288	1,262,589	60,301
Combined Sewer	9,239	9,493	12,816	16,553	16,731	8,568	6,699	7,572	8,972	12,435	109,078	79,178	(29,900)
Stormwater	6,869	9,631	7,535	4,170	5,392	4,660	4,201	4,306	6,869	5,057	58,690	68,608	9,918
Sanitary Sewer	44,933	63,926	115,541	88,110	91,562	138,341	159,814	176,789	175,873	174,032	1,228,922	957,135	(271,787)
Water	62,163	88,677	108,878	109,000	92,905	101,765	116,319	146,791	154,916	154,697	1,136,112	945,015	(191,097)
CAPITAL PROJECTS	**405,004**	**454,118**	**558,645**	**461,168**	**392,496**	**394,318**	**537,584**	**544,115**	**571,337**	**603,035**	**4,921,821**	**4,429,330**	**(492,491)**
Capital Equipment	31,703	37,207	33,790	32,315	33,000	33,000	33,000	33,000	33,000	33,000	333,015	340,324	7,309
Washington Aqueduct	15,515	16,266	18,572	37,841	12,699	33,875	9,508	12,863	24,068	13,971	195,178	187,127	(8,051)
ADDITIONAL CAPITAL PROGRAMS	**47,218**	**53,473**	**52,362**	**70,156**	**45,698**	**66,875**	**42,509**	**45,863**	**57,068**	**46,971**	**528,193**	**527,450**	**(743)**
TOTAL CIP	**$452,223**	**$507,590**	**$611,008**	**$531,322**	**$438,194**	**$461,193**	**$580,093**	**$589,978**	**$628,404**	**$650,006**	**$5,450,013**	**$4,956,780**	**$(493,233)**
Last Years CIP	420,342	467,016	561,724	530,006	422,607	450,358	585,454	535,666	544,490	439,117	4,956,780		
(Increase)/Decrease	(31,880)	(40,574)	(49,284)	(1,317)	(15,587)	(10,835)	5,361	(54,312)	(83,914)	(210,890)	(493,232)		

Action Items

ACTION ITEM 6B: FY 2020 – FY 2029 Proposed Capital Improvement Program (10-Year Disbursement Plan and Lifetime Budget)

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

10-Year Disbursement Plan – The cash disbursement-based capital plan is utilized to forecast the timing and amount of capital financing, which is the primary basis for projected retail rate increases. As shown in Attachment A-1, the Board of Directors will be asked to approve a 10-year disbursement plan of $5.4 billion.

Lifetime Budget – The project lifetime budget reflects the total costs of each project active during the 10-year planning period. These costs include historical and projected spending, project contingencies, and labor (listed as separate line item). As shown in Attachment A-1, the Board of Directors will be asked to approve a lifetime budget of $12.4 billion.

CIP – Attachment 1

Capital Improvement Program

10-Year Disbursement Plan - projected annual cash disbursements, $ in thousands

Attachment A-1

	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	10-Yr Total	Lifetime Budget
NON PROCESS FACILITIES												
Facility Land Use	42,066	31,849	20,665	6,831	11,058	10,396	3,901	3,553	3,560	3,600	137,479	221,841
Subtotal	**42,066**	**31,849**	**20,665**	**6,831**	**11,058**	**10,396**	**3,901**	**3,553**	**3,560**	**3,600**	**137,479**	**221,841**
WASTEWATER TREATMENT												
Liquid Processing	24,516	42,496	43,069	48,748	44,909	31,792	66,989	68,544	99,413	103,740	574,216	1,266,857
Plantwide	17,387	32,784	42,213	30,735	37,879	23,127	18,231	25,062	20,506	9,902	257,826	525,997
Solids Processing	19,847	27,314	27,424	25,852	22,754	15,761	12,658	6,027	10,476	12,858	180,971	924,507
Enhanced Nitrogen Removal Facilities	15,786	382	672	1,897	1,770	-	-	2,206	1,861	11,665	36,239	980,940
Subtotal	**77,536**	**102,976**	**113,378**	**107,232**	**107,312**	**70,680**	**97,878**	**101,839**	**132,256**	**138,165**	**1,049,252**	**3,698,301**
COMBINED SEWER OVERFLOW												
DC Clean Rivers Program	162,197	147,565	179,833	129,272	67,536	59,909	148,771	103,265	88,890	115,049	1,202,288	2,764,255
Combined Sewer Program Management	1,287	1,792	2,237	2,972	3,028	2,050	2,629	2,515	3,125	2,519	24,154	77,756
Combined Sewer Overflow Program	7,952	7,701	10,579	13,581	13,703	6,518	4,070	5,057	5,847	9,916	84,924	199,729
Subtotal	**171,436**	**157,058**	**192,649**	**145,824**	**84,267**	**68,476**	**155,470**	**110,837**	**97,863**	**127,484**	**1,311,366**	**3,041,740**
STORMWATER												
Storm Local Drainage Program	12	22	688	594	1,267	1,948	1,164	1,792	1,970	1,709	11,166	18,025
Storm On-Going Program	1,011	631	1,109	837	866	526	875	843	1,084	1,287	9,069	11,540
Storm Pumping Facilities	5,310	8,392	4,923	2,259	2,854	1,865	1,698	1,353	3,430	1,755	33,839	61,204
Storm DDOT Projects	-	-	-	-	-	-	-	-	-	-	-	3,237
Stormwater Program Managemet	410	445	582	367	405	321	464	318	385	306	4,003	12,889
Stormwater Trunk/Force Sewers	126	141	233	113	-	-	-	-	-	-	613	15,510
Subtotal	**6,869**	**9,631**	**7,535**	**4,170**	**5,392**	**4,660**	**4,201**	**4,306**	**6,869**	**5,057**	**58,690**	**122,404**
SANITARY SEWER												
Sanitary Collection System	4,613	8,134	33,564	18,009	24,312	33,040	52,923	68,745	65,771	61,043	370,154	569,040
Sanitary On-Going Projectss	12,099	12,327	13,711	13,667	14,185	15,019	15,253	15,111	15,312	14,842	141,529	217,969
Sanitary Pumping Facilities	2,570	5,995	6,924	8,240	5,068	10,468	11,639	11,933	27,732	33,628	124,196	270,778
Sanitary Program Management	4,150	5,464	7,014	5,132	3,913	3,103	3,174	3,900	4,064	4,335	44,250	119,050
Interceptor/Trunk Force Sewers	21,501	32,006	54,327	43,062	44,084	76,710	76,826	77,100	62,993	60,184	548,794	918,096
Subtotal	**44,933**	**63,926**	**115,541**	**88,110**	**91,562**	**138,341**	**159,814**	**176,789**	**175,873**	**174,032**	**1,228,922**	**2,094,934**
WATER												
Water Distribution Systems	33,872	60,464	62,606	65,093	58,654	64,372	65,350	99,075	117,595	121,131	748,211	1,446,953
Water Lead Program	4,711	5,408	5,387	5,456	5,627	5,719	5,496	5,744	5,877	5,692	55,117	243,504
Water On-Going Projects	10,532	11,075	12,297	13,351	15,199	16,789	18,583	20,447	22,981	23,506	164,761	217,972
Water Pumping Facilities	1,525	2,650	12,169	6,284	2,567	4,218	7,446	4,163	2,328	-	43,350	85,344
DDOT Water Projects	1,721	10	8	-	-	-	-	-	-	-	1,739	33,933
Water Storage Facilities	6,216	4,318	10,399	13,963	5,610	4,783	11,334	8,985	694	1,360	67,662	155,164
Water Service Program Management	3,587	4,752	6,012	4,854	5,248	5,884	8,110	8,376	5,441	3,008	55,272	90,944
Subtotal	**62,163**	**88,677**	**108,878**	**109,000**	**92,905**	**101,765**	**116,319**	**146,791**	**154,916**	**154,697**	**1,136,112**	**2,273,813**
CAPITAL PROJECTS	**405,004**	**454,118**	**558,645**	**461,168**	**392,496**	**394,318**	**537,584**	**544,115**	**571,337**	**603,035**	**4,921,821**	**11,453,035**
CAPITAL EQUIPMENT	17,105	27,327	30,485	29,385	30,070	30,070	30,070	30,070	30,070	30,070	284,722	**284,722**
ONGOING METER REPLACEMENT	5,498	2,930	2,930	2,930	2,930	2,930	2,930	2,930	2,930	2,930	31,868	**31,868**
ERP PROJECT (Financial & HCM)	9,100	6,950	375	-	-	-	-	-	-	-	16,425	**16,425**
Subtotal	31,703	37,207	33,790	32,315	33,000	33,000	33,000	33,000	33,000	33,000	333,015	333,015
WASHINGTON AQUEDUCT	15,515	16,266	18,572	37,841	12,699	33,875	9,508	12,863	24,068	13,971	195,178	195,178
ADDITIONAL CAPITAL PROGRAMS	**47,218**	**53,473**	**52,362**	**70,156**	**45,699**	**66,875**	**42,508**	**45,863**	**57,068**	**46,971**	**528,193**	**528,193**
LABOR												409,370
TOTAL CAPITAL BUDGETS	**452,223**	**507,590**	**611,008**	**531,323**	**438,195**	**461,193**	**580,092**	**589,978**	**628,404**	**650,006**	**5,450,013**	**12,390,598**

Budget Adoption Calendar

- Wholesale Customer Briefing – **held January 10**
- Committee Reviews – **January**
- Recommendations & Actions – **February**

	Environmental Quality & Operations	DC Retail Water & Sewer Rates	Finance & Budget
FY 2020 - FY 2029 Capital Budget (Disbursements & Lifetime)	Action Required		Action Required
FY 2021 Operating Budget			Action Required
Intent to Reimburse Capital Expenditures with Proceeds of a Borrowing			Action Required
FY 2020 – FY 2029 Financial Plan		Action Required	Action Required
FY 2021 & 2022 Rates, Charges & Fees		Action Required	

- Board Adoption – **March 5**