



**Committee:** T&E  
**Committee Review:** Completed  
**Staff:** Keith Levchenko, Senior Legislative Analyst  
**Purpose:** preliminary decisions – straw vote expected  
**Keywords:** #WSSCCIP, Water and Sewer

AGENDA ITEM #6  
 April 21, 2020  
**Worksession**

**SUBJECT**

FY21-26 Capital Improvements Program – Washington Suburban Sanitary Commission (WSSCWATER)

**EXPECTED ATTENDEES (WSSCWATER)**

- Carla Reid, General Manager/CEO
- Patricia Colihan, Chief Financial Officer
- Mark Brackett, Capital Budget Section Manager

**FISCAL SUMMARY**

**FY21-26 versus Approved FY20-25 Expenditures (in 000's)\***

	Six-Year Total		FY20	FY21	FY22	FY23	FY24	FY25	FY26
<b>FY20-25 Approved</b>	<b>3,653,151</b>		638,526	687,013	668,268	580,262	552,943	526,139	
<b>FY21-26 Agency Request</b>	<b>3,712,427</b>			624,302	712,767	689,658	595,657	527,055	562,988
change from amended	59,276	1.6%		(62,711)	44,499	109,396	42,714		
<b>FY21-26 CE Rec</b>	<b>3,712,427</b>			624,302	712,767	689,658	595,657	527,055	562,988
change from amended (\$,%)	59,276	1.6%		(62,711)	44,499	109,396	42,714		
change from Agency Req (\$,%)	-	0.0%		-	-	-	-	-	-
<b>Committee Rec</b>	<b>3,712,427</b>			624,302	712,767	689,658	595,657	527,055	562,988
change from amended (\$,%)	59,276	1.6%		(62,711)	44,499	109,396	42,714		
change from Agency Req (\$,%)	-	0.0%		-	-	-	-	-	-
change from CE Rec (\$,%)	-	0.0%		-	-	-	-	-	-

\*Includes both CIP Expenditures and all debt-financed non-cip costs

- Six-Year Proposed Total = \$3.71 billion (and increase of \$59.3 million or 1.6 percent)
- Four new projects (Six-Year Total = \$45.4 million in new spending)
- Major Six-Year Increases in Projects:
  - Blue Plains Projects (+\$75.3 million, +20.4 percent) (WSSCWATER reviewing DCWater #s)
  - Large Diameter Water Pipe Rehabilitation Program (+\$53.4 million, +13.6 percent)
  - Potomac WFP Consent Decree Program (+\$42.0 million, +35.6 percent)
- Major Six-Year Decreases in Projects:
  - Water Reconstruction Program (-\$42.0 million, -6.1 percent)
  - Sewer Reconstruction Program (-\$61.7 million, -14.2 percent)
  - Trunk Sewer Reconstruction Program (-\$18.8 million, -6.4 percent)

## OTHER ISSUES

- Other Projects of Interest
  - Piscataway Bio-Energy Project
  - Advanced Metering Infrastructure
- FY20-25 Amendment to the WSSCWATER CIP: Customer Resource Building (see Agenda Item #17)
- Potential Impacts of the I-495, I-270 Road Widening P3 Project on WSSCWATER Infrastructure – Joint Bi-County T&E/TIEE discussion occurred on March 12, 2020.

## COMMITTEE RECOMMENDATION

- Approve the WSSCWATER CIP as proposed by WSSC. *NOTE: The WSSCWATER CIP may be revisited by the T&E Committee and Full Council during consideration of the WSSCWATER Operating Budget and customer volumetric rates in early May.*

### **This report contains:**

- T&E Committee March 2, 2020 Council Staff Report

Pages 1-16, ©1-100

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Council Staff Report from March 2, 2020

Worksession

MEMORANDUM

February 26, 2020

TO: Transportation and Environment Committee

FROM: Keith Levchenko, Senior Legislative Analyst

SUBJECT: **Item #1a: Worksession: FY21-26 Capital Improvements Program: Washington Suburban Sanitary Commission (WSSCWATER)<sup>1</sup>**

**Item #1b: FY20-25 Amendment to the WSSCWATER Capital Improvements Program: Customer Resource Building, +\$13.5 million**

PURPOSE: To review the WSSCWATER FY21-26 CIP and FY20-25 CIP Amendment

**Summary**

- Six-Year Proposed CIP Total: \$1.99 billion (Increase of \$112.7 million or +6.0 percent)
- Six-Year Proposed CIP Total plus "Information Only" projects= \$3.71 billion
  - o Increase of \$59.3 million (+1.6 percent) from the Approved CIP+Information Only
  - o Four new projects: (Six-Year Total = \$45.4 million in new spending)
- Major Six-Year Increases in Projects:
  - o Blue Plains Projects (+\$75.3 million, +20.4 percent) (WSSCWATER reviewing DCWater #s)
  - o Large Diameter Water Pipe Rehabilitation Program (+\$53.4 million, +13.6 percent)
  - o Potomac WFP Consent Decree Program (+\$42.0 million, +35.6 percent)
- Major Six-Year Decreases in Projects
  - o Water Reconstruction Program (-\$42.0 million, -6.1 percent)
  - o Sewer Reconstruction Program (-\$61.7 million, -14.2 percent)
  - o Trunk Sewer Reconstruction Program (-\$18.8 million, -6.4 percent)
- Other Projects of Interest
  - o Piscataway Bio-Energy Project
  - o Advanced Metering Infrastructure
- FY20-25 WSSCWATER CIP Amendment: Customer Resource Building acquisition

**Council Staff Recommendation:** Approve WSSCWATER's Proposed FY21-26 CIP and FY20-25 CIP amendment

<sup>1</sup> Key words: #WSSCWATERCapitalBudget, Capital projects, utilities, WSSCWATER.

**Attachments to this memorandum include:**

- County Executive's Recommended FY21-26 Capital Improvements Program (WSSCWATER) (©1-5)
- Excerpts from WSSCWATER's Proposed FY21-26 CIP (©6-45)
- Piscataway WRRF Bio-Energy Project Presentation to Commissioners 2/19/2020 (©46-53)
- Advanced Metering Infrastructure (AMI) Overview to Commissioners 2/19/2020 (©54-65)
- 1/30/2020 Transmittal Letter from WSSCWATER: Customer Resource Building Amendment (©66-75)
- Customer Resource Building Acquisition Options (Preliminary Analysis) (©71) and Questions and Answers (©72-75)
- WSSCWATER FY2021 Capital Budget Briefing Slides for T&E Committee (©76-100)

The following officials and staff from WSSCWATER are expected to attend this meeting:

- Eloise Foster, Commission Vice-Chair
- Fausto Bayonet, Commissioner
- Howie Denis, Commissioner
- Carla Reid, General Manager/CEO
- Joe Beach, Deputy General Manager for Administration
- James Price, Deputy General Manager for Operations
- Monica Johnson, Deputy General Manager for Strategic Partnerships
- Al Roshdieh, General Services Director
- Patti Colihan, Chief Financial Officer
- Letitia Carolina-Powell, Budget Division Manager
- Mark Brackett, Capital Budget Section Manager

**BACKGROUND/TIMELINE**

Under Md. Public Utilities Code Ann. §23-304, WSSCWATER must prepare and submit a six-year CIP proposal to the County Executives and County Councils of Montgomery and Prince George's Counties by October 1 of each year.

Unlike other County agency CIP proposals that are reviewed biennially, Montgomery County reviews the WSSCWATER CIP every year.<sup>2</sup> Also, unlike other agencies, WSSCWATER's CIP and Operating budgets are not included within the County's Spending Affordability processes. Instead, WSSCWATER is subject to a separate affordability process, with both Montgomery and Prince George's County Council review and approval in the fall of each year.

**The FY21-26 WSSCWATER CIP and Operating Budget Review Timeline**

- October 1, 2019: WSSCWATER transmitted its Proposed FY21-26 CIP
- November 5, 2019: Council approval of WSSCWATER's FY21 Spending Control Limits
- January 15, 2020: County Executive's recommendations transmitted (©1-5)
- January 30, 2020: WSSCWATER transmitted a Proposed Amendment to the FY20-25 CIP: Customer Resource Building (©66-70)

<sup>2</sup> WSSCWATER's full FY21-26 Proposed CIP and Approved FY20-25 CIP publications are available for download at: <https://www.WSSCWATER.com/financial#currentbudget>

- February 5 and 6, 2020: Council public hearings on the FY21 Capital Budget and FY21-26 CIP
- March 1, 2020: WSSCWATER transmittal of its Proposed FY21 Budget
- **March 2, 2020: T&E Committee review of the WSSCWATER CIP**
- March, 17, 2020: Council review of the WSSCWATER CIP
- April, 2020: T&E Committee review of the WSSCWATER Proposed FY21 Budget
- Early May 2020: Council review of the WSSCWATER Proposed FY21 Budget
- May 7, 2020: Bi-County meeting between Montgomery County and Prince George’s County Councils on the WSSCWATER CIP and Operating Budget, as well as any other Bi-County budget issues

Spending Control Limits/Affordability

Last fall, the two Councils came to agreement on FY21 spending control limits. Both Councils supported a rate increase limit of 7.0 percent, along with agreed-upon ceilings for New Water and Sewer Debt, Total Water and Sewer Debt Service, and Total Water/Sewer Operating Expenses.

Both the FY19-24 CIP and FY20-25 CIP’s included bond-funded cuts totaling over \$183 million. These cuts were made to reduce debt service impacts on the WSSCWATER Operating Budget and keep debt service as a percentage of total expenditures under the 40 percent spending affordability target. WSSC has noted a number of potential impacts from these capital deferrals (see ©99)

WSSCWATER’s FY21 Proposed Operating Budget will be transmitted by March 1

**COUNTY EXECUTIVE RECOMMENDATIONS**

(See ©1-5)

The County Executive’s recommendations for the FY21-26 WSSCWATER CIP were transmitted on January 15. He does not recommend any changes to WSSCWATER’s Proposed CIP.

A recommendation from the County Executive on WSSCWATER’s FY20-25 CIP Amendment: Customer Resource Building is expected shortly.

**FISCAL OVERVIEW**

The following chart presents WSSCWATER’s proposed versus approved expenditures for its CIP, as well as for its “Information Only” projects.

**Table 1:**  
**Total WSSC Capital Expenditures (CIP+Information Only)**  
**Proposed FY21-26 CIP versus Approved FY20-25 CIP**  
**(\$s in 000s)**

Grand Total	Approved FY20	Six-Year Total	FY21	FY22	FY23	FY24	FY25	FY26
<b>CIP Total</b>								
Approved FY20-25	383,320	1,872,520	405,291	364,006	266,933	244,881	208,089	
Proposed FY21-26		1,985,172	375,073	432,950	393,425	304,396	229,627	249,701
Difference		112,652	(30,218)	68,944	126,492	59,515	21,538	
% Change		6.0%	-7.5%	18.9%	47.4%	24.3%	10.4%	
<b>Information Only*</b>								
Approved FY20-25**	255,206	1,780,631	281,722	304,262	313,329	308,062	318,050	
Proposed FY21-26		1,727,255	249,229	279,817	296,233	291,261	297,428	313,287
Difference		(53,376)	(32,493)	(24,445)	(17,096)	(16,801)	(20,622)	
% Change		-3.0%	-11.5%	-8.0%	-5.5%	-5.5%	-6.5%	
<b>CIP + Information Only</b>								
Approved FY20-25	638,526	3,653,151	687,013	668,268	580,262	552,943	526,139	
Proposed FY21-26		3,712,427	624,302	712,767	689,658	595,657	527,055	562,988
Difference		59,276	(62,711)	44,499	109,396	42,714	916	
% Change		1.6%	-9.1%	6.7%	18.9%	7.7%	0.2%	

\*Information Only projects are multi-year projects which do not meet the State definition for inclusion in the CIP.

\*\*Approved Information Only expenditures have been adjusted to include "Other Capital Programs" expenditures.

### Fiscal Highlights

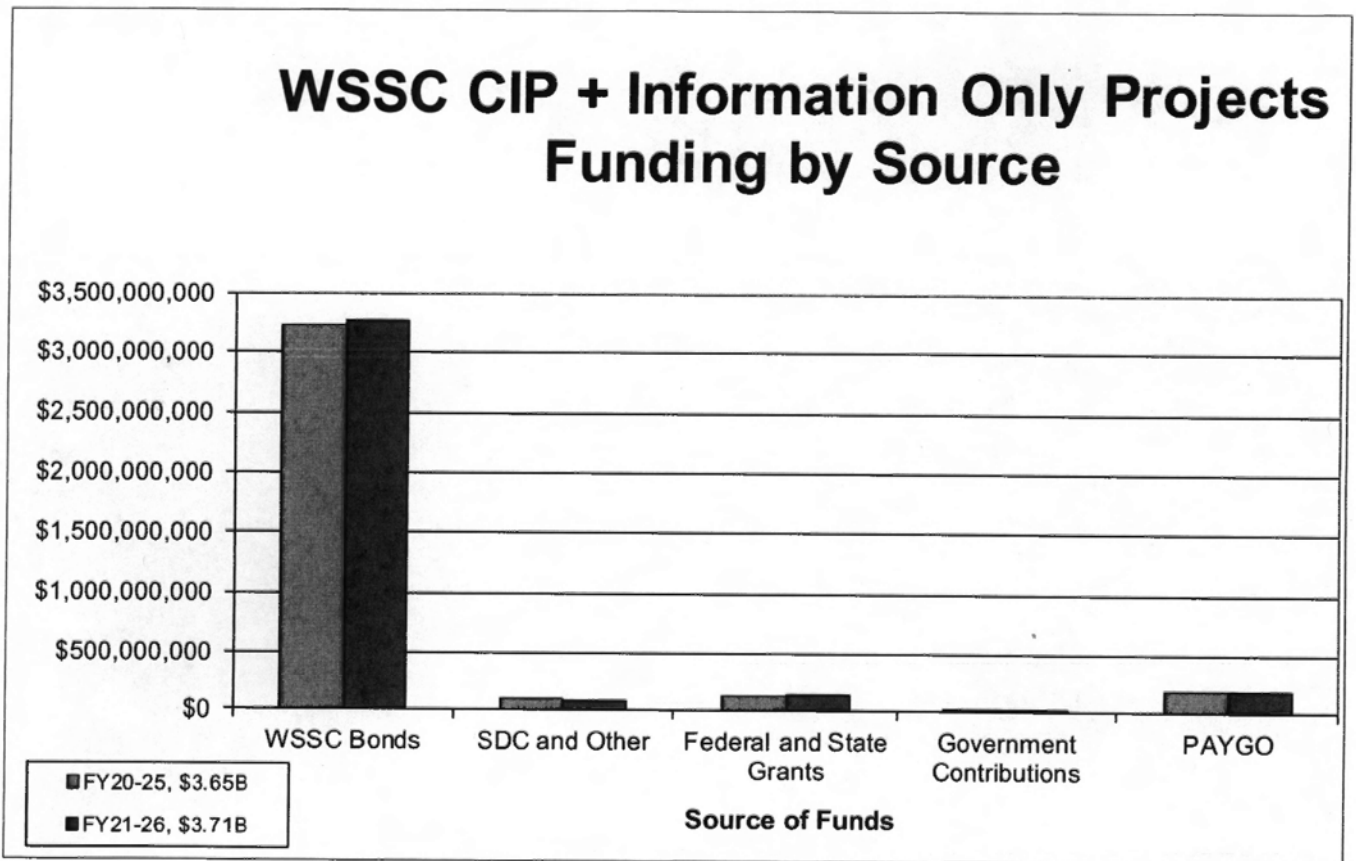
- WSSCWATER's Proposed FY21-26 CIP is \$1.985 billion (an increase of \$112.7 million or 6.0 percent). The largest increases involve: The Large Diameter Water Pipe Rehabilitation Program (+\$53.4 million), the Potomac WFP Consent Decree (\$42.0 million), and the Blue Plains projects in total (+\$75.3 million). The largest decrease is in the Trunk Sewer Reconstruction program (-\$18.8 million). The major changes by project are presented later.
- "Information Only" projects (which are presented in the CIP but are not formally part of the CIP) continue to represent a large portion of WSSCWATER's infrastructure-related work. FY21-26 CIP expenditures for these projects are proposed to be \$1.73 billion. A new information only project Other Capital Programs is included for FY21-26. However, the costs included in this project have been included in the WSSCWATER Capital Budget. Beginning with this CIP, WSSCWATER has opted to reflect all non-CIP debt-financed costs in the Information Only section of the CIP going forward. Comparing the FY21-26 costs to the comparable FY20-25 costs, the Information Only projects decrease by 3.0 percent. This is because six-year costs for the Water Reconstruction and Sewer Reconstruction projects<sup>5</sup> are both proposed to go down.
- When factoring in WSSCWATER's "Information Only" projects (with the FY20-25 adjustment noted earlier), overall capital expenditures are up \$59.3 million (or 1.6 percent).

<sup>5</sup>Nearly 60 percent of the "Information Only" proposed project totals is for water and sewer main reconstruction to address aging infrastructure as well as to meet Consent Decree requirements (in the case of sewer reconstruction).

- Removing Prince George’s County projects results in an FY21-26 total of \$3.4 billion (an increase of 2.4 percent from the FY20-25 CIP).
- Blue Plains projects total \$443.5 million for FY21-26 (an increase of \$75.3 million or 20.4 percent from the FY20-25 CIP). *NOTE: WSSCWATER staff are currently reviewing DCWater’s latest cost estimates and cost-share assumptions for these projects, and any revisions (if needed) will be forwarded to both Councils later this spring.*

Funding Sources

The following chart compares funding sources for the Approved FY20-25 CIP and the Proposed FY21-26 CIP (not including “Information Only” projects).



Each of these funding sources, and how they relate to WSSCWATER projects, is described on ©11. Bond funding has long been the dominant funding source (over 88 percent of funding in the Proposed CIP).<sup>6</sup> The FY21-26 Proposed CIP + Information Only projects assumes bond funding will increase by \$45.9. SDC, PAYGO, and federal/state grants make up the other major sources of funding. WSSCWATER also pursues Federal and State funding for eligible projects.

<sup>6</sup> The resulting debt service from WSSCWATER’s bond funding in the CIP makes up more than one-third of WSSCWATER’s annual Water and Sewer Operating Expenses.

## **GROWTH FUNDING**

WSSCWATER's capital expenditures can be divided into three categories: growth, environmental regulations, and system improvements. The pie chart on ©15 show the proportions of these categories in the CIP for FY21. System improvements is the dominant category (93 percent).

WSSCWATER estimates that approximately \$84.6 million (or 2.3 percent) of total proposed expenditures in the six-year period are needed to accommodate growth.

The major sources used to fund growth are:

- System Development Charge (SDC);
- Direct Developer Contributions; and
- Payments by Applicants.

Many of the projects in the WSSCWATER CIP are funded with the above-mentioned sources. For instance, water and sewer projects needed to accommodate growth in Clarksburg are funded with these sources.

The SDC is a major source of funding for much of the new water/sewer infrastructure built in the County. WSSCWATER estimates approximately \$144.8 million in revenue over the six-year period. Developer credits and SDC exemptions<sup>8</sup> reduce the net revenue to about \$120.8 million. For more background on the SDC, please see ©12.

Overall, WSSCWATER estimates a surplus in growth funding versus expenditures over the six-year period of \$60.1 million, as shown on ©13.

The SDC Fund has a balance of approximately \$12 million (as of December 31, 2019).

WSSCWATER's Preliminary Proposed Operating Budget (i.e., public hearing draft) for FY21 assumes no change in SDC rates.<sup>9</sup>

### **WSSCWATER FY21-26 PROJECT HIGHLIGHTS**

For a full list of WSSCWATER's projects included in the FY21-26 Proposed CIP, please see:

- Montgomery County Water Projects (©20)
- Montgomery County Sewer Projects (©21)
- Bi-County Water Projects (©23)
- Bi-County Sewer Projects (©28)
- Information Only Projects (©38)
- Prince George's County Water and Sewer Projects (©44-45)

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<sup>8</sup> For purposes of projecting future SDC balances, WSSCWATER assumes Montgomery and Prince George's counties utilize the full \$1.0 million in exemptions each fiscal year. Any amounts within each county's \$500,000 share not used in each year carry over to the next fiscal year. As of December 31, 2019, Montgomery County had \$7.7 million in exemption capacity.

<sup>9</sup> NOTE: For many years (and as proposed for FY21), WSSCWATER has increased the maximum allowable charge (as permitted under State law) but has left the actual rate charged unchanged.



## New Projects

There are four new projects proposed (see ©18), including one sewer project in Montgomery County:

- Shady Grove Neighborhood Center (PDF on ©22) (developer-funded): Six-year total = \$3.4 million. This project provides for the construction of 4,475 feet of sewer main to serve the Shady Grove Neighborhood Center subdivision.
- Regional Water Supply Resiliency (PDF on ©27) (funded with Federal Aid): Six-year total = \$15.0 million. This project provides for the planning, engineering, community outreach and coordination with multiple jurisdictions in the region for a raw water supply reservoir and conveyance system to address long-term water supply needs in the metropolitan region.
- Laboratory Division Building Expansion (Information-Only Project)(PDF on ©41) (funded with WSSCWATER Bonds): Six-year total = \$20.6 million. This project provides for the planning, design, and construction of a 12,405 square foot expansion to the Consolidated laboratory Facility to accommodate increased workload. The laboratory was built in 2000. The workload of the facility is expected to grow from 500,000 tests per year to 750,000 tests per year. Currently some lab work is contracted out due to space limitations.
- Other Capital Programs (Information-Only Project)(PDF on ©43) (funded with WSSCWATER Bonds): Six-year total = \$431.2 million (but a net impact of \$7.1 million when subtracting FY20-25 estimated costs). This project presents multi-year costs for miscellaneous non-CIP projects which are already built into the WSSCWATER Capital Budget each year. Costs beyond FY21 are order of magnitude costs.

**Council Staff does not have any issues with these projects. WSSCWATER staff will be available to discuss these projects with the Committee.**

## Montgomery County and Bi-County Projects

Each Council generally focuses on the projects within its county and the Bi-County projects. The following chart summarizes six-year program information for Montgomery County and Bi-County projects only. Prince George's County projects are listed on ©44-45.

**Table 2:**  
**Total WSSC Expenditures (Montgomery County and Bi-County Only)**  
**(CIP+Information Only)**  
**Proposed FY20-25 CIP versus Approved FY19-24 CIP**  
**(\$s in 000s)**

Grand Total	Approved FY19	Six-Year Total	FY20	FY21	FY22	FY23	FY24	FY25
<b>CIP Total</b>								
Approved FY19-24	300,035	1,536,866	318,950	285,341	229,735	209,261	193,544	
Proposed FY20-25		1,669,764	299,833	330,802	318,345	262,828	217,943	240,013
Difference		132,898	(19,117)	45,461	88,610	53,567	24,399	
% Change		8.6%	-6.0%	15.9%	38.6%	25.6%	12.6%	
<b>Information Only*</b>								
Approved FY19-24**	255,206	1,780,631	281,722	304,262	313,329	308,062	318,050	
Proposed FY20-25		1,727,255	249,229	279,817	296,233	291,261	297,428	313,287
Difference		(53,376)	(32,493)	(24,445)	(17,096)	(16,801)	(20,622)	
% Change		-3.0%	-11.5%	-8.0%	-5.5%	-5.5%	-6.5%	
<b>CIP + Information Only</b>								
Approved FY19-24	555,241	3,317,497	600,672	589,603	543,064	517,323	511,594	
Proposed FY20-25		3,397,019	549,062	610,619	614,578	554,089	515,371	553,300
Difference		79,522	(51,610)	21,016	71,514	36,766	3,777	
% Change		2.4%	-8.6%	3.6%	13.2%	7.1%	0.7%	

\*Information Only projects are multi-year projects which do not meet the State definition for inclusion in the CIP.

\*\*Approved Information Only expenditures have been adjusted to include "Other Capital Programs" expenditures.

Montgomery County and Bi-County expenditures are up 2.4 percent for similar reasons noted for the Total WSSC CIP/Information Only numbers.

Montgomery County and Bi-County Projects (Major Changes Summary)

The following table presents the major six-year cost changes (both increases and decreases) for the Montgomery County and Bi-County projects.

**Table 3:  
FY21-26 Major Changes in 6 Year Costs (MC and Bi-County Only + Information Only)**

Six-Year Cost Change (in 000s)	Project	Comment
431,183	Other Capital Programs	Costs previously only shown in the WSSC Operating Budget are now reflected across the six-year period.
75,290	Blue Plains Projects	WSSC is reviewing DCWater's assumptions
53,412	Large Diameter Water Pipe Rehabilitation Program	Six-year cost increase reflects latest expenditure and schedule estimates based on WSSC's Buried Water Asset Systems Asset Management Plan
42,000	Potomac WFP Consent Decree Program	Total project costs increased based on revised scope in the Long-Term Upgrade Plan approved by MDE.
20,580	Laboratory Building Expansion	New Project
18,884	Advanced Metering Infrastructure	Total project cost increased for inflation.
15,000	Regional Water Supply Resiliency	Federally-Funded New Project
4,032	Shady Grove Station Sewer Augmentation	Developer-Funded project
2,733	Shady Grove Neighborhood Center	New Developer-Funded Project
3,345	Energy Performance Program	
(1,048)	Potomac WFP Main Zone Pipeline	Minor cost reduction
(1,430)	Patuxent Raw Water Pipeline	Minor cost change
(1,720)	Cabin John Trunk Sewer Relief	Developer-Funded project now on Pending Closeout
(2,229)	Cabin Branch Wastewater Pumping Station	Developer-Funded project now on Pending Closeout
(3,400)	Septage Discharge Facility Planning & Implementation	Total cost is up due to more refined cost estimates. Six-year cost is down as project moves through construction.
(6,396)	Brink Zone Reliability Improvements	Six-year cost down as project moves to completion during FY21.
(6,816)	Ducket and Brighton Dam Upgrades	Six-year cost down as project moves through construction with completion in FY21.
(7,668)	Potomac WFP Pre-Filter Chlorination & Air Scour Improvements	Six-year cost down as project moves through construction with completion in FY21.
(8,465)	Piscataway WWTP Bio-Energy Project	Total Costs increased by \$19.2m based upon 30% design estimate and to reflect recent market trends in construction costs for labor, steel, diesel, misc. metals, concrete, electrical, and other materials. 6 year costs down as project moves through design.
(18,835)	Trunk Sewer Reconstruction Program	Total project cost is down based on recommendations from the Buried Wastewater Assets System Asset Management Plan. SSO Consent Decree Schedule completion deadline of 2022.
(42,050)	Water Reconstruction Program	
(61,647)	Sewer Reconstruction Program	

Many projects are seeing cost drops as they move through construction, and others are receiving inflationary increases. However, there are some other large fluctuations (up and down) in several major projects. The largest increases involve: The Large Diameter Water Pipe Rehabilitation Program (+53.4 million), the Potomac WFP Consent Decree (\$42.0 million), and the Blue Plains projects in total (+\$75.3 million). The largest decrease is in the Trunk Sewer Reconstruction program (-\$18.8 million). The four new projects are also reflected in this chart which increase the six-year total by \$45.4 million.

## REVIEW OF SELECTED PROJECTS

### Blue Plains Project Costs (PDFs on ©29-34)

**Table 4: Blue Plains Projects: Expenditures (in \$000s)**

	Approved FY20	Six-Year Total	FY21	FY22	FY23	FY24	FY25	FY26
<b>Total Blue Plains Project Costs</b>								
Approved FY20-25	62,106	368,196	74,101	76,159	55,788	49,428	50,614	
Proposed FY21-26		443,486	59,506	72,534	81,362	69,207	66,905	93,972
Difference		75,290	(14,595)	(3,625)	25,574	19,779	16,291	
% Change		20.4%	-19.7%	-4.8%	45.8%	40.0%	32.2%	
<b>CE Recommended FY21-26</b>		443,486	59,506	72,534	81,362	69,207	66,905	93,972
\$ Change from Proposed		-	-	-	-	-	-	-
% Change from Proposed		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

The Blue Plains projects make up a sizable portion (39.6 percent) of WSSCWATER's Sewer CIP (22.3 percent of WSSCWATER's Proposed CIP and 11.9 percent of the Proposed CIP when including WSSCWATER's Information Only projects). WSSCWATER's Proposed CIP assumes \$443.5 million over the FY21-26 period. This is an increase of \$75.3 million (or 20.4 percent) from the FY20-25 CIP. There are substantial increases in the Liquid Train Part II project (especially in Years 6 and beyond) for the renewal and replacement of components expected to reach the end of their useful life. The Biosolids Part II project cost increase relates to rehabilitation and upgrade of the gravity thickeners and the Class A biosolids process facilities.

DC Water's latest capital expenditure totals were approved by the DC Water Board of Directors after WSSCWATER transmitted its CIP last fall. WSSCWATER is still reviewing the DCWater budget cost share and expenditure projections and will transmit any revised proposed PDFs for the Blue Plains projects (if necessary) later this spring.

### Potomac WFP Consent Decree Program (PDF on ©24)

This project was created four years ago to provide for the short- and long-term work required as a result of the Potomac Water Filtration Plant Consent Decree entered by the U.S. District Court on April 15, 2016. The Consent Decree requires WSSCWATER to pursue both short-term operational and capital improvements to significantly reduce the pounds per day of solids discharged to the Potomac River and long-term improvements to meet future MDE permit requirements.

The Consent Decree required WSSCWATER to submit a final audit report and draft long-term upgrade plan to MDE by January 1, 2017. The audit report identified current conditions and recommended short-term operational and capital improvements (capped at \$8.5 million in the Consent Decree) to significantly reduce solids discharged by April 1, 2020. The required short-term upgrades are scheduled for completion by the April 2020 deadline. This work will result in a treatment capacity of approximately 144,000 dry pounds per day. As noted last year, this would still leave an estimated 15 days per year when this capacity is exceeded (based on 2003 to 2015 data). The short-term improvements were developed in the context of the future long-term strategies (with the short-term measures being either necessary or complementary to the long-term efforts).

The Long-Term Upgrade Plan identified capital costs ranging from \$165 million to \$461 million to meet the Consent Decree requirements by the deadline of January 1, 2026. The consultant did a detailed

analysis of three options (after screening out numerous others), all of which involve various improvements and new facilities at the current plant. Each of the three options was costed out at treatment capacities of 301,000 dry pounds per day (addressing the 99<sup>th</sup> percentile of solids) and 688,000 dry pounds per day (which would address the peak solids volumes experienced in all storms in the historical record since 2003). At the 99<sup>th</sup> percentile, one could expect one or two basin-wide storms per year that may exceed this capacity. Ultimately, WSSCWATER chose the option with the lowest net present cost (looking at total estimated operating and maintenance costs and capital costs) at both treatment levels.

In late 2017, the Maryland Department of the Environment (MDE) approved WSSCWATER's short-term plan but rejected the long-term plan, noting that treating to the 99<sup>th</sup> percentile would still result in an estimated three days per year of unauthorized discharges. MDE noted that it would approve a plan that addressed solids to the 99.9<sup>th</sup> percentile, since that would result in no expected unauthorized discharges during the year. However, the additional capital cost to get from the 99<sup>th</sup> to the 99.9<sup>th</sup> percentile would cost an additional \$35 to \$40 million. In September 2018, WSSCWATER transmitted its revised Long-Term Upgrade Plan that expanded the work to get to the 99.9<sup>th</sup> percentile. **The additional costs for this expanded effort are now included in the FY21-26 project expenditures. The long-term plan improvements are currently in design with completion scheduled to meet the deadline of January 2026.**

Large Diameter Water Pipe & Large Valve Rehabilitation Program (\$446.2 million over six years, PDF on ©25-26)

This project, added to the CIP ten years ago, funds the rehabilitation of transmission mains (pipes greater than 16 inches in diameter) in lengths of 100 feet or greater. WSSCWATER's transmission system (like the smaller water distribution lines) is aging, and WSSCWATER moved to a more systematic inspection, repair, and replacement approach as a result. The inspections, fiber optic monitoring, and repairs on shorter sections of pipe remain in the Operating Budget.

WSSCWATER has approximately 1,061 miles of large diameter water main (mains ranging in size from 16 inches to 96 inches in diameter), of which 350 miles are pre-cast concrete cylinder pipe (PCCP), 350 miles are cast iron, 326 miles are ductile iron, and 35 miles are steel. PCCP pipe is the highest priority for inspection, monitoring, repair, and replacement because PCCP pipe can fail in a more catastrophic manner than pipes made out of other materials, such as iron or steel. Both counties have experienced large PCCP pipe failures. Montgomery County experienced large pipe failures in June 2008 (Derwood), December 2008 (River Road), and March 2013 (Chevy Chase Lake).

This project also includes WSSCWATER's large valve inspection and repair program (added five years ago). WSSCWATER estimates that it has nearly 1,500 large diameter (greater than 16-inch diameter) valves.

The proposed six-year cost for this project is \$446.2 million (an increase of \$53.4 million or 13.6 percent). WSSCWATER has noted the increase in the project primarily being due to WSSCWATER's Asset Management Plan recommendations to increase ferrous pipe replacements from 4 to 6 miles per year and continue implementing the PCCP replacement program to get to 2 miles of replacement per year by FY2023.

**WSSCWATER's Large Diameter Water Pipe Rehabilitation Program continues to be high priority for Montgomery County (and for Prince George's County), given the potential impacts when these large pipes fail (especially PCCP).**

Trunk Sewer Reconstruction Program (PDF on ©37)

Proposed FY21-26 expenditures for this project are \$277.9 million (an \$18.8 million decrease, 6.5 percent, from the Approved \$296.8 million).

This project was added ten years ago (funded partially by bond-funded dollars removed from the Sewer Reconstruction Program "Information Only" project) to address Consent Decree requirements to eliminate sanitary sewer overflows (SSOs). Under the terms of the Consent Decree (signed in December 2005 with the United States Environmental Protection Agency (EPA), the State of Maryland, and four conservation groups), WSSCWATER expects to spend an estimated \$2.1 billion across 24 sewer-shed basins with 7,000 assets over a 1,000 square mile area. Rehabilitation work was supposed to be completed within 10 years (2015). Because of delays in acquiring environmental permits, WSSCWATER received a deadline extension to 2022 for program completion. All basins had work either completed or underway by the 2015 deadline.

Piscataway WRRF Bio-Energy Project (PDF on ©35-36)

This project represents WSSCWATER's long-term solution to address its biosolids disposal. This project provides for a comprehensive design, construction, maintenance, monitoring, and verification effort to generate approximately 2.0 MW of electricity and reduce biosolids by 50 to 55 percent of current output through an anaerobic digestion/Combined Heat & Power process. This project is expected to provide energy savings, reduced biosolids disposal costs, and reduced chemical costs totaling about \$3.7 million in savings per year. The project will also avoid the need for capital work at other facilities estimated at \$67.4 million. The project is sized for WSSCWATER biosolids with future accommodation of fats, oils, and grease (FOG).

Proposed FY21-26 expenditures for this project are \$212.3 million (a decrease of \$8.5 million). The decrease is a result of costs expected to be incurred through FY20 (and therefore coming out of the six-year period). The total project cost has increased by \$19.2 million (7.3 percent), based on construction industry escalations for labor and materials as was noted for a similar increase last year.

Early work (sitework, demolition, and utility relocation) began on this project in September 2019. Construction is scheduled to begin later this spring and be completed by June 2024. A recent presentation provided to the Commissioners is attached on ©46-53.

**“Information Only” Projects (see ©38-43)**

**Table 5: Information-Only Projects**

Project	Six-Year						
	Total	FY21	FY22	FY23	FY24	FY25	Fy26
<b>Information Only Projects</b>							
Water Reconstruction	651,222	72,494	85,068	101,030	115,018	131,051	146,561
Sewer Reconstruction	372,224	55,495	59,657	61,447	63,290	65,192	67,143
Laboratory Division Building Expansion	20,580	1,276	9,525	9,779	-	-	-
Engineering Support Program	114,000	18,000	18,000	18,000	20,000	20,000	20,000
Energy Performance	17,142	7,595	4,841	3,331	1,375	-	-
Water Storage Facility Rehab Program	18,150	1,650	3,300	3,300	3,300	3,300	3,300
Speciality Valve Vault Rehab Program	6,595	1,132	2,214	1,213	1,266	443	327
Advanced Metering Infrastructure	95,584	20,687	30,906	30,906	13,085	-	-
Other Capital Programs	431,183	70,610	66,021	67,227	73,927	77,442	75,956
D'Arcy Park North Relief Sewer	575	290	285	-	-	-	-
<b>Information Only Projects Total</b>	<b>1,727,255</b>	<b>249,229</b>	<b>279,817</b>	<b>296,233</b>	<b>291,261</b>	<b>297,428</b>	<b>313,287</b>

**Water Reconstruction Program (PDF on ©39)**

This “Information Only” project funds small water main replacement throughout the WSSCWATER service area. The project does not include any funding for “major capital projects” as defined in state law. The estimated six-year cost is \$651.2 million, which reflects a decrease of \$42.1 million or -6.0 percent from the FY20-25 six-year total of \$693.3 million.

Over the past ten years, WSSCWATER had ramped up the annual number of miles of pipe to be replaced. Beginning with the Approved FY10-15 CIP, budgeted and actual replacement miles began to increase steadily. The budget level for FY10 was 27 miles per year. The following years saw increases, with 55 miles of replacement budgeted in FY18 (although 48 miles were completed). For FY19, WSSCWATER had 45 miles budgeted. Cuts in this program were approved for FY19 (and projected in FY20 through FY24) to help reduce debt service impacts on the WSSCWATER Operating Budget. In WSSCWATER’s Proposed CIP, further reductions through FY24 are assumed. However, the program is assumed to begin ramping back up in the later years of the CIP. Costs have also been increased to reflect higher unit construction costs.

Six-year costs are down because WSSCWATER is proposing a second straight year of 25 miles to be replaced. WSSCWATER has noted that it “continues to invest in new technology and tools to develop a more efficient and effective program (pressure monitoring system, satellite and other leak detection technologies.” Given that WSSCWATER has done a substantial amount of catch-up in this project over the past decade, a second year of lower miles of replacement should not have a significant impact on system condition.

**Sewer Reconstruction Program (PDF on ©40)**

This “Information Only” project funds comprehensive sewer system evaluations and rehabilitation programs. WSSCWATER has approximately 5,500 miles of sewer pipe.

The six-year cost is \$372.2 million, which is down \$61.6 million (-14.2 percent) from the FY20-25 level of \$433.9 million. The proposed costs reflect the current plan for the completion of Phase 2 Consent Decree work. As with the Water Reconstruction Program above, the sewer reconstruction project does not include funding for “major capital projects” as defined in state law. Capital-size projects that are

identified in this project become stand-alone projects or are dealt with in the Trunk Sewer Rehabilitation project.

The project continues to assume the replacement of about 20 miles per year. Cost projections have been lowered based upon a projected lower per mile cost for rehabilitation.

#### Advanced Metering Infrastructure (PDF on ©42)

This project provides for the implementation of a system-wide automated meter reading infrastructure system to maximize customer service and operational efficiency. The six-year cost is \$95.6 million, up \$18.9 million (24.6 percent) from the approved six-year total of \$96.8 million. However, most of that six-year increase is from scheduled expenditures being delayed into the six-year period. The total project cost has been increased for inflation (2.9 percent) and is now estimated at \$99.6 million.

A project summary presentation provided to Commissioners at its February 19 meeting is attached on ©54-65.

The customer benefits of such a system include: monthly billings based on actual water usage, more rapid identification of leaks, and the ability of the customer to better monitor water usage. For WSSCWATER, the elimination of the need for manual reading of all customer meters presents significant cost savings. WSSCWATER would also gain the capability to do more and better analysis of actual water usage and potential future billing structures.

A study completed in March 2011 identified about \$11.4 to \$15.4 million in annual savings that could be achieved upon full implementation, which would provide for a six- to eight-year payback.

AMI vendor proposals were received in December 2019 and a contract award is planned for July 2020.

WSSCWATER and the Council have received some correspondence from WSSCWATER customers concerned about the potential health effects of the smart meter technology (specifically radio frequency or RF exposure) as well as privacy issues.

WSSCWATER has information on its AMI project and responses to concerns on its website (<https://www.wsscwater.com/AMI>) and will be available at the Committee worksession to discuss this issue further.

Also, at its February 19 meeting, Commissioners received a briefing<sup>12</sup> from Leeka Kheifets, a Professor at the UCLA Fielding School of Public Health on her report on the potential impacts on human health of advanced metering infrastructure. In her report<sup>13</sup> she concludes that, “the exposures to RF from smart meters are neither long enough nor strong enough to approach the safety standards set by the Federal Communications Commission (FCC) and other bodies.”

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<sup>12</sup> Ms. Kheifets' briefing slides are available at:  
<https://www.wsscwater.com/files/live/sites/wsscwater/files/Commission%20Agendas/2020%20agendas/february/Dr.%20Kheifets%20AMI%20RF%20Study%20Presentation.pdf>

<sup>13</sup> Her report is available on the WSSCWATER website at:  
<https://www.wsscwater.com/files/live/sites/wsscwater/files/ami/Final%20RF%20Report.pdf>



WSSCWATER staff noted at the February 19 Commission meeting that they will brief Commissioners at the May meeting regarding potential opt-out options. WSSCWATER staff had previously noted that an opt-out provision would dilute the cost savings expected from early leak detections and non-revenue water mitigation as well as result in costs for a dual metering infrastructure and dual billing structure. WSSCWATER also notes the differences between op-out provisions for electric utilities versus opt-outs for water utilities and provides information on other water utilities. No water utilities in the Washington DC area or Maryland who have AMI or AMR have opt-out provisions. Some utilities in other parts of the country offer opt-out provisions but with significant monthly charges (and one-time charges in some cases).

According to WSSCWATER, installation of AMI technology is scheduled to begin in late 2020. Project completion is scheduled for late 2024.

### **AGENDA ITEM #1b**

#### **FY20-25 Amendment to the WSSCWATER Capital Improvements Program**

- **A-101.05, Customer Resource Building, +\$13.5 Million**
- **W-172.07, Patuxent Raw Water Pipeline**
- **S-170.08, Septage Discharge Facility**

#### Background

On February 5, 2020, the County Council received a request from WSSCWATER (see ©66-70) for an amendment to the FY20-25 WSSCWATER CIP to provide for the acquisition and build-out of a 120,904 square foot office building located at 14400 Sweitzer Lane in Laurel, Maryland. WSSCWATER is seeking the acquisition of this building in order to alleviate space issues at its Richard G. Hocevar Headquarters Building (RGH), avoid current lease costs, provide needed swing space for renovations at RGH, improve security by moving all public facing functions to the newly acquired building, provide needed parking, generate revenue from lease income, and potentially provide for a multi-Agency Service Center through co-located services with other government agencies.

To offset the initial expenditure impact in FY20, WSSCWATER has identified two ongoing projects (Patuxent Raw Water Pipeline and Septage Discharge Facility Planning & Implementation) which WSSCWATER recommends amending to move spending from FY20 to FY22.

A recommendation from the County Executive on this amendment is expected shortly. A public hearing is scheduled for March 3, 2020.

#### Cost/Benefit Analysis of the Building Acquisition

WSSCWATER reviewed several cost/benefit scenarios (see ©71) to phase renovations at the RGH. The scenarios include three building acquisition scenarios (100% finance, 50% finance, cash purchase) and a no purchase scenario where space is leased during the RGH renovation period.

The lease space scenario would cost \$5.9 million over 10 years. All three “purchase” scenarios result in lower 10-year costs than the lease scenario. A key reason is the revenue WSSCWATER would obtain from leasing two of the four floors of the building. Annual lease income is projected at \$1.6 million

per year based on current leases at the building. The 100% finance scenario has the lowest net present value of the options. However, given that WSSCWATER's debt service is already close to its "no more than 40% of expenditures" target, WSSCWATER may need to consider the 50% finance or the cash purchase. Regardless of the financing option chosen, WSSC will need to incorporate the FY20 fiscal impact into its long-term fiscal plan and its FY22 spending affordability assumptions for later this fall.

WSSCWATER staff's responses to Council staff's questions regarding the amendment are attached on ©72-75. WSSCWATER staff will be available to discuss the costs and benefits of this proposed acquisition.

### **Council Staff Recommendation**

**Council Staff recommends preliminary approval of WSSCWATER's Proposed FY21-26 Capital Improvements Program (CIP). Final action on the WSSCWATER CIP will occur at the Bi-County meeting on May 7.**

**Council Staff also recommends approval of WSSCWATER's Proposed CIP Amendment for the Customer Resource Building acquisition.**

### **Attachments**

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# Washington Suburban Sanitary Commission

## AGENCY DESCRIPTION

The Washington Suburban Sanitary Commission (WSSC) is a bi-county agency directed by a board of six commissioners, three each from Prince George's County and Montgomery County. The commissioners are appointed by the respective jurisdiction's Executive and confirmed by its County Council.

The WSSC is responsible for providing water and sanitary sewer service within the Washington Suburban Sanitary District, which includes most of Montgomery and Prince George's Counties and which, in Montgomery County, excludes the Town of Poolesville and portions of the City of Rockville.

## PROGRAM DESCRIPTION AND OBJECTIVES

The principal objective of the Capital Improvements Program (CIP) is the programming of planning, design, land acquisition, and construction activities on a yearly basis for major water and sewerage facilities. These facilities may be necessary for system improvements and/or service to existing customers, to comply with Federal and/or State environmental mandates, and to support new development in accordance with the counties' approved plans and policies for orderly growth and development.

The CIP submission includes all major projects, defined as extensions, projects, or programs involving water and sewer facilities. Major projects include: water mains 16 inches in diameter or larger, sewer mains 15 inches in diameter or larger, water or sewage pumping stations, force mains, storage facilities, and other major facilities.

The section following this narrative ordinarily shows only the WSSC project description forms (PDFs) for which the Executive recommends changes to the Commission's request. Those PDFs would be preceded by project briefs which provide a description of the change and the Executive's rationale. The complete set of PDFs submitted by the Commission can be found on the WSSC website at <http://www.wsscwater.com>.

In addition, a report noting the Commission's request by project follows the same report outlining the County Executive's recommendation by project. For this year's proposed CIP budget, these additional documents will not follow this narrative given that the Executive is not recommending changes to the budget proposed by WSSC.

## PROGRAM CONTACTS

Contact Mark Brackett of WSSC's Budget Division at 301.206.8179 or Rafael Murphy of the Office of Management and Budget at 240.777.2775 for more information regarding this agency's capital budget.

## CAPITAL PROGRAM REVIEW

This narrative applies only to the Montgomery County and bi-county water and sewerage projects. Projects that serve only Prince George's County are not included.

### Agency Request

The total of \$1.67 billion in six-year expenditures proposed by the WSSC for FY21-26 is \$132.9 million (8.6 percent) above the FY20-25 approved total of \$1.54 billion. The increase in six-year costs is the net result of cost changes in both the water and sewer projects with the largest cost increases seen in the Blue Plains Waste Water Treatment Plant projects and the Large Diameter Water

Pipe Rehabilitation Program.

The FY21-26 CIP request includes 29 ongoing projects, four closeout projects, and seven pending closeout projects. There are four new projects (including Information Only projects).

The following table compares the proportion of funding for Montgomery, Prince George's, and bi-county projects in the Commission's proposed CIP:

<b>MONTGOMERY COUNTY/PRINCE GEORGE'S COUNTY/BI-COUNTY SPLIT</b>						
<b>(FY21-26 Proposed CIP)</b>						
	<b>FY21</b>		<b>6-Year</b>		<b>Total Cost</b>	
	<b>\$ (000)</b>	<b>% of Total</b>	<b>\$ (000)</b>	<b>% of Total</b>	<b>\$ (000)</b>	<b>% of Total</b>
Montgomery County Water Projects	1,821	0.5%	6,081	0.3%	55,801	1.5%
Montgomery County Sewer Projects	9,637	2.6%	29,032	1.5%	55,371	1.5%
Prince George's County Water Projects	36,484	9.7%	182,193	9.2%	293,581	8.1%
Prince George's County Sewer Projects	38,756	10.3%	133,215	6.7%	464,580	12.9%
Bi-County Water Projects	85,314	22.7%	677,513	34.1%	960,670	26.6%
Bi-County Sewer Projects	203,061	54.1%	957,138	48.2%	1,777,847	49.3%
<b>TOTAL</b>	<b>375,073</b>	<b>100.0%</b>	<b>1,985,172</b>	<b>100.0%</b>	<b>3,607,850</b>	<b>100.0%</b>
All Montgomery County Projects	11,458	3.1%	35,113	1.8%	111,172	3.1%
All Prince George's County Projects	75,240	20.1%	315,408	15.9%	758,161	21.0%
All Bi-County Projects	288,375	76.9%	1,634,651	82.3%	2,738,517	75.9%

Source: WSSC Budget Division.

**Executive Recommendation**

The County Executive recommends adoption of the FY21-26 CIP as proposed by WSSC.

**HIGHLIGHTS**

- Add a new information only project, Laboratory Division Building Expansion, which will accommodate an increased analytical workload and reduce risk by eliminating the need to contract out regulatory compliance testing.
- Continue development of capital projects aimed to address long-term issues in water and sewer management including the Piscataway Bio Energy Project, to address biosolids management, and Advanced Metering Infrastructure (AMI) which improves billing efficiency, leak detection, system-wide monitoring, and allows for monthly billing.
- Continue water and sewer line infrastructure reconstruction, replacing and rehabilitating 25 miles of water mains and 20 miles of sewer main in FY21.
- Continue to address the consent decrees with the Maryland Department of the Environment (MDE) related to the Potomac Water Filtration Plant and the Trunk Sewer Reconstruction Program.
- Continue to support operations at DC Water's facility in Blue Plains. Support to Blue Plains projects represents 27% of the bi-county and Montgomery County's WSSC six-year CIP.

**SPENDING CONTROL LIMITS**

In order to reduce the magnitude of water and sewer rate increases, the Montgomery and Prince George's County Councils adopted a spending affordability process in April 1994. The process requires the counties to set annual ceilings on WSSC's water and sewer rates and debt (both bonded indebtedness and debt service), and then to adopt corresponding limits on the size of the capital and operating

budgets.

While the spending limits technically apply only to the first year of the six-year program, the purpose of the limits includes controlling debt, debt service, and rate increases over the longer term. The FY21 spending control limits adopted by the Montgomery County Council are shown below with their outyear projections. The first year of the Commission's proposed CIP is consistent with the approved FY21 spending control limits shown below, as is the County Executive's Recommended CIP for WSSC.

<b>FY21 WSSC SPENDING CONTROL LIMITS ADOPTED BY THE MONTGOMERY COUNTY COUNCIL (AND OUTYEAR PROJECTIONS)</b>						
	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>FY25</b>	<b>FY26</b>
New Debt Requirement (\$000)	\$409,922	\$503,092	\$495,728	\$403,775	\$357,972	\$379,483
Total W/S Operating Budget (\$000)	\$837,660	\$882,989	\$926,486	\$981,021	\$1,046,657	\$1,098,999
Debt Service (\$000)	\$313,865	\$336,142	\$365,610	\$389,665	\$415,351	\$438,129
Average Rate Increase	7.0%	8.0%	7.0%	7.0%	6.5%	6.5%

Source: Montgomery County Council Resolution 19-293 and WSSC Budget Division.

## **WSSC'S LEVEL OF BONDED INDEBTEDNESS**

### **Debt Service**

The County Executive and County Council monitor the WSSC's bonded indebtedness and debt service level. Total outstanding water and sewer bond debt has risen 82 percent since FY15, and total water and sewer debt service is up 38 percent over the same period, as shown in the following table:

<b>WSSC BONDED INDEBTEDNESS AND DEBT SERVICE</b>						
(\$ in Millions)	<b>ACTUAL FY15</b>	<b>ACTUAL FY16</b>	<b>ACTUAL FY17</b>	<b>ACTUAL FY18</b>	<b>ACTUAL FY19</b>	<b>ESTIMATED FY20</b>
End of Fiscal Year - Total Outstanding Bond Debt (includes Storm Water Drainage Bonds)	\$2,171.4	\$2,470.4	\$2,813.4	\$3,202.4	\$3,340.0	\$3,685.6
Outstanding Water and Sewer Bond Debt	\$1,947.5	\$2,284.1	\$2,625.6	\$3,060.2	\$3,205.6	\$3,551.2
Total Debt Service - All Operating Funds	\$248.0	\$228.5	\$250.7	\$275.1	\$292.7	\$319.9
Debt Service as a % of Total Operating Exp.	38.0%	35.7%	36.7%	38.5%	38.5%	39.1%
Debt Service in Water/Sewer Operating Exp.	\$222.0	\$210.4	\$236.7	\$257.5	\$275.4	\$306.3
Water/Sewer Debt Service as a % of Total Water/Sewer Operating Expenditures	35.5%	33.9%	35.4%	37.0%	37.2%	38.2%

Source: WSSC Budget Division

The debt service ratio is projected to be 37.5 percent in FY21.

<b>PROJECTED WSSC DEBT SERVICE RATIO UNDER THE COUNTY'S APPROVED SPENDING CONTROL LIMITS</b>						
	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>FY25</b>	<b>FY26</b>
Debt Service as a % of Total Water and Sewer Operating Expenditures	37.5%	38.1%	39.5%	39.7%	39.7%	39.9%

Source: WSSC Budget Division

### **Debt Capacity**

State law provides for the option of a tax levy against all assessable property in the Washington Suburban Sanitary District by Montgomery and Prince George's counties to pay for the principal and interest on WSSC bonds. This provision, which would be

exercised only if requested by the WSSC, does not constitute a pledge of the full faith and credit of the two counties. The amount of debt that the WSSC issues is therefore a factor in rating agency assessments of the credit worthiness of Montgomery County. In addition, increasing levels of debt service can lead to increases in the combined water and sewer rate.

## **"INFORMATION ONLY" PROJECTS**

The WSSC is obligated by State law to submit for CIP review and approval only major water and sewerage projects. However, the Commission under takes other kinds of capital projects which are shown separately in the CIP. These "Information Only" projects may be included for a number of reasons, including: fiscal planning purposes; to improve the reader's understanding of the full scope of a specific set of projects; or in response to a request from one or both of the county governments. "Information Only" projects are subject to review and approval as part of the annual WSSC Operating and Capital Budgets, which are acted on by the Council in the spring.

The FY21-26 "Information Only" projects include the Water and Sewer Reconstruction projects, Engineering Support Program, Laboratory Division Building Expansion, Energy Performance Program, Specialty Valve Vault Rehabilitation Program, Other Capital Programs, D'Arcy Park North Relief Sewer, Advanced Metering Infrastructure, and the Water Storage Facility Rehabilitation Program.

The total FY21-26 budget for the "Information Only" projects is \$1,727.3 million, a 27.3 percent increase from the \$1,356.5 million approved for the FY20-25 CIP. This increase is primarily the result of the addition of the Other Capital Programs and Laboratory Division Building Expansion projects as well as other cost changes throughout the existing projects.

Total proposed FY21-26 spending on the Water and Sewer Reconstruction "Information Only" projects will decrease by \$103.7 million (9.2 percent). The accompanying metrics for miles of water main replacement and sewer main rehabilitation can be seen below in the following table.

<b>SMALL WATER AND SEWER MAIN RECONSTRUCTION INCLUDED IN WSSC'S PROPOSED FY21-26 CIP</b>								
	<b>Approved</b>	<b>FY21-26</b>						<b>FY21-26</b>
	<b>FY20</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>FY25</b>	<b>FY26</b>	<b>Total</b>
<b>Water Main Replacement (mi.)</b>	25	25	31	37	42	47	52	234
<b>Sewer Main Rehabilitation (mi.)</b>	20	20	22	22	22	22	22	130

Source: WSSC Budget Division

## **PROGRAM FUNDING**

The WSSC CIP is funded through a variety of sources described below.

### **WSSC Bonds**

The WSSC raises revenue for CIP projects by issuing water and sewer bonds. These bonds are amortized through periodic charges to the users of water and sewer services. Bond funding for the FY21-26 CIP, as recommended by the County Executive, is \$1,599.9 million.

### **System Development Charge**

The System Development Charge (SDC) is a charge to new development to pay for the part of the CIP which is needed to accommodate growth. The WSSC collects SDC revenue from charges to builders based on the number and type of plumbing fixtures installed in new construction projects. The County Executive recommends that \$14.8 million in SDC funds be used to fund growth projects in FY21-26.

### **State Aid**

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The total State Aid budgeted for the FY21-26 CIP and recommended by the County Executive is \$3.0 million. WSSC asserts that all Commission projects receiving State Aid conform to the requirements of local plans, as required by the Maryland Economic Growth, Resource Protection and Planning Act.

### **Federal Aid**

The total Federal Aid budgeted for the FY21-26 CIP and recommended by the County Executive is \$15.0 million.

### **Municipal Financing**

The WSSC CIP contains projects in which neighboring jurisdictions such as the District of Columbia and the City of Rockville join the Commission in financing the construction of sewerage facilities serving the metropolitan area. These jurisdictions contribute an agreed-upon share of the project cost. A total of \$26.8 million in project expenditures is recommended to be financed by these jurisdictions during FY21-26.

### **Contributions**

When the actual costs of water and sewerage facilities required to serve new development are estimated to exceed expected revenues, the difference may be financed by developers in the form of contributions. Contributions toward CIP projects are estimated at \$10.2 million for FY21-26.

## **STATUTORY AUTHORITY**

The Montgomery County CIP review process for the WSSC is governed by laws and regulations of the State of Maryland, the Charter of Montgomery County, and the Montgomery County Code. Relevant projects authorized for Montgomery County review include only Montgomery and bi-county water and sewer projects.

The Montgomery County Executive reviews relevant WSSC CIP proposals and includes them, along with comments and recommendations, in the Executive's Recommended Capital Improvements Program Budget. After a public hearing and subsequent committee work sessions, the Montgomery County Council approves by resolution WSSC's six year capital program and annual operating and capital budgets, with modifications as desired.

Bi-county projects are projects located completely or partially within Montgomery County or Prince George's County that are designed to provide service in whole or in substantial part to the other county. A proposed bi-county project may be disapproved only with the concurrence of the governing body of the county which is to receive the designated service. However, the county in which the project is to be physically located has the authority to direct modifications in project location and scheduling, provided that such modifications or changes do not prevent the service from being available when needed.

This authority to modify the project location may only be exercised during the year in which the project is first introduced. Thereafter, the authority to make modifications is limited to those changes that would not result in substantial net additional costs to WSSC, unless the county directing the modification reimburses WSSC for any additional net cost increases resulting from the modification.

WSSC is responsible for constructing approved capital projects on a schedule as close as possible to the schedule set forth in the adopted CIP. The Commission is limited to undertaking only those projects which are scheduled in the first year of the program. However, it is not obligated to implement any project determined to be not financially feasible.

**Washington Suburban Sanitary Commission**  
**Proposed**  
**Six-Year Capital Improvements Program**  
**Fiscal Years 2021 - 2026**

**October 1, 2019**

**Chris Lawson, Chair**  
**T. Eloise Foster, Vice Chair**  
**Fausto R. Bayonet, Commissioner**

**Howard A. Denis, Commissioner**

**Carla A. Reid, General Manager/CEO**  
**ATTEST: Sheila R. Finlayson, Esq., Corporate Secretary**

***Investing in The Future***

*On our cover: Local middle school students participate in WSSC Water's Sewer Science educational program. With simulated laboratory activities, this hands-on initiative helps build the future water workforce by teaching the next generation about careers in the water sector. WSSC Water offers a wide range of targeted outreach programs focused on science, technology, engineering and math to cultivate and attract potential future employees of diverse genders, ethnicities, and perspectives from the communities we proudly serve.*

6



**WASHINGTON SUBURBAN SANITARY COMMISSION  
PROPOSED CAPITAL IMPROVEMENTS PROGRAM  
FISCAL YEARS 2021-2026**

**LEGAL AUTHORITY AND RESPONSIBILITY**

**Statutory Basis**

Under Section 23-304 of the Public Utilities Article of the Annotated Code of Maryland, the Washington Suburban Sanitary Commission (WSSC) is responsible for annually preparing a Six-Year Capital Improvements Program (CIP) for major water and sanitary sewerage facilities and transmitting it to the County Council and the County Executive of Montgomery County and the County Executive of Prince George's County by October 1 each year. The Commission, where required by the two County Councils' final action on the program, must revise the same and then, prior to the commencement of the first fiscal year of the six-year program, adopt the Capital Improvements Program.

Section 23-303 defines major projects for inclusion in the CIP as water mains at least 16 inches in diameter, sewer mains at least 15 inches in diameter, water or sewage pumping stations, force mains, storage facilities, and other major facilities. Project information presented in this document complies with all legal requirements of the ten-year water and sewerage plans and is in direct support of the two counties' approved land use plans and policies for orderly growth and development. By WSSC Resolution No. 2019-2228 dated June 19, 2019, the Commission adopted the FYs 2020-2025 CIP.

**WSSC's Role**

The Commission is a bi-county agency established more than 100 years ago, in 1918, by an act of the Maryland General Assembly. The WSSC is responsible for planning, designing, constructing, operating, and maintaining water and sewerage systems, and acquiring facility sites and rights-of-way in order to provide potable water and sanitary sewer services to residents, businesses, and federal, state, and local municipalities within the Washington Suburban Sanitary District (WSSD). The WSSD encompasses nearly all of Montgomery and Prince George's Counties and provides water and sewer service to approximately 1.8 million customers in an area of nearly 1,000 square miles. A board of six commissioners directs the WSSC, three appointed by the County Executive of Prince George's County and confirmed by the Prince George's County Council, and three appointed by the Montgomery County Executive and confirmed by the Montgomery County Council. Commissioners serve four-year staggered terms.

### WSSC's Mission

We are entrusted by our community to provide safe and reliable water, life's most precious resource, and return clean water to our environment, all in an ethical, sustainable, and financially responsible manner.

### WSSC's Responsibilities

The WSSC's primary responsibilities include:

- protecting the health and safety of the residents of both counties by providing an adequate supply of safe drinking water;
- meeting fire-fighting requirements;
- collecting and adequately treating wastewater before it is returned to the waters of the State of Maryland;
- managing and safeguarding the watershed and the water supply by implementing sound forestation and land use practices within the watershed buffer;
- monitoring the collection and treatment of wastewater;
- discharging an effluent cleansed of nutrients, pollutants, and hazardous materials;
- managing treated wastewater biosolids responsibly and cost effectively;
- maintaining the existing water and wastewater infrastructures;
- planning for the orderly growth of the Sanitary District and WSSC services to meet the needs of the communities we serve;
- monitoring adherence to all plumbing and gasfitting standards and ensuring proper coordination with other public utilities; and
- managing operations to provide efficient service to its customers while keeping costs as low as possible.

The projects contained in this Capital Improvements Program represent the WSSC's plan to successfully meet its responsibilities. The WSSC strives to maintain a balance between the use of valuable resources and the public's demand for clean water. Meeting these responsibilities helps ensure that we fulfill our core mission and strengthen our local economies while assuring that we maintain fair, ethical and equitable contracting practices. This will allow us to secure high quality and competitively priced goods and services from our diverse and talented local businesses in Prince George's and Montgomery Counties.

## PROGRAM OVERVIEW

### Objective

The principal objective of the Capital Improvements Program (CIP) is the six-year programming of planning, design, land acquisition, and construction activities on a yearly basis for major water and sewerage infrastructure projects and programs. These projects and programs may be necessary for system improvements for service to existing customers, to comply with federal and/or state environmental mandates, or to support new development in accordance with the counties' approved plans and policies for orderly growth and development.

### Spending Affordability and Fiscal Implications

Projects in this CIP are primarily financed with funds from the Water Supply and Sewage Disposal Bond Funds. The Commission largely finances these projects with the proceeds from the sale of long-term debt. Water supply bonds are issued to finance the planning, design, and construction of major water treatment, storage, and transmission facilities. Sewage disposal bonds are issued to finance the planning, design, and construction of major sewage collection, treatment, and disposal facilities.

The water supply and sewage disposal bonds are repaid to bond holders over a 30-year period by annual principal and interest payments or debt service. In this manner, the initial high cost of capital improvements is spread over time and paid for by future customers who will benefit from the facilities, as well as by current customers. The annual debt service on outstanding bonds is paid from the Commission's operating funds. The primary funding source for the repayment of debt is the revenue generated by water consumption and sewer use charges. Water and sewer charges are set on an annual basis to cover both operational and debt service costs (associated with the water supply and sewage disposal bonds) of the Commission. It is through this capital project financing process that the size of the CIP impacts the size of water and sewer bond issues, the associated debt service costs, and, ultimately, our customers' water and sewer bills.

Several capital spending and funding practices are noteworthy. The Commission:

- continues an aggressive program to rehabilitate or replace the older portions of the Commission's 5,700 miles of water main and 5,600 miles of sewer main infrastructure;
- funds capital facilities needed to accommodate growth with the System Development Charge (SDC). This charge is reviewed annually by the County Councils. (Refer to Appendices A and B for details. A comparison of SDC revenues and estimated growth spending for the six-year program period is displayed on the table titled "Growth Funding Gap" in the Funding Growth section of this document.);

- uses PAYGO (Pay-As-You-Go): the practice of using current revenues, when budgeted, to the extent practical to help fund the capital program, thereby reducing the need for debt financing;
- maximizes and manages the collection of funding from alternative sources including state and federal grants, and payments from other jurisdictions for projects which specifically benefit them. The amount of these collections varies from year to year. The WSSC's reliance on rate-supported debt to build the capital program is reduced to the extent that these sources are available to help fund capital projects; and
- does not allow the use of rate-supported debt to fund CIP-sized water and sewer projects requested by Applicants in support of new development. These projects, identified as Development Services Process (DSP) projects, may only proceed if built at the Applicant's expense. (An explanation of the DSP process is included in the Development Services Process section of this document.) However, since these projects are eligible for SDC credits (to the extent that SDC funds are available), the Applicants should eventually recoup their costs. (Refer to Appendix B for definitions and details.)

In May 1993, the Montgomery and Prince George's County Councils created the Bi-County Working Group on WSSC Spending Controls (Working Group) to review WSSC finances and recommend spending control limits. The Working Group's January 1994 report recommended "the creation of a spending affordability process that requires the Counties to set annual ceilings on the WSSC's rates and debt (debt in this context means both bonded indebtedness and debt service), and then place corresponding limits on the size of the capital and operating budgets of the Commission." The objective of this process is to create a framework for controlling costs and achieving low or moderate water/sewer bill increases, as well as slowing the rate at which the WSSC is incurring debt, thus reducing the portion of WSSC water/sewer bills dedicated to paying off debt. This valuable, annual process focuses debate on the need to balance affordability considerations against providing the resources necessary to serve existing customers, meet environmental mandates, and provide the facilities needed for growth.

The Commission has submitted a CIP and budget, which generally conforms to the Spending Affordability Guidelines (SAG) established by both county governments every year since 1994. Through FY'20, projects were reduced or deferred by nearly \$272 million. For FY'21, CIP and Information Only combined spending was within guidelines as submitted.

The FY'21 combined expenditures (CIP & Information Only projects) are estimated at \$624.3 million, which represents an increase of approximately \$54.6 million above the approved funding level for FY'20. The increase is primarily due to including the new Other Capital project in the Information Only section, the programmed increase in pipe replacements in the Large Diameter Water Pipe Reconstruction Program, and the 3.8 mile Prince George's County 450A Zone Water Main project entering into the construction phase in FY'21.

### Funding Sources

The projects included in this combined program are funded primarily by issuance of water and sewer rate-supported debt (WSSC Bonds). To a lesser degree, projects may also be funded by the following:

- State Grants – a share of the support provided on a local level. The State of Maryland provides funding under a separate grants program for enhanced nutrient removal at existing wastewater treatment plants (water resource recovery facilities) and for the rehabilitation of sewer mains as part of the Chesapeake Bay Program;
- Federal Grants - Department of Energy grants related to WSSC's Energy Performance Program and Piscataway Bioenergy projects to promote and develop green energy sources;
- Local Government Contributions – payments to the WSSC for co-use of regional facilities, or funding provided by county governments for projects they are sponsoring;
- PAYGO – when budgeted, the practice of using current revenues to the extent practical to help fund the capital program, thereby reducing the need for debt financing;
- SDC – anticipated revenue from the System Development Charge (SDC); and
- Contribution/Other – projects funded by Applicants for growth projects where the County Councils have directed that no WSSC rate-supported debt be used to pay for the project.

(Please refer to Figure 3 near the end of this section, which displays the funding allocations for the major funding sources.)

### Funding Growth

The portion of the combined program needed to accommodate growth is approximately \$84.6 million, which equals 2% of all expenditures in the combined six-year program, and \$25.7 million or 4% of the FY '21 budget. The funding sources for this part of the program are System Development Charge (SDC) revenues and payments by Applicants. In the event that growth costs are greater than the income generated by growth funding sources, either SDC supported or rate-supported water/sewer bonds may be used to close any gap.

The Maryland General Assembly, in 1993, first approved legislation authorizing the Montgomery and Prince George's County Councils to establish, and the WSSC to impose, a System Development Charge. This is a charge on new development to pay for that part of the Commission's Capital Improvements Program needed to accommodate growth in the WSSC's customer base. In accordance with the enabling legislation, the Councils approved, and the Commission began to phase in, this charge beginning in FY '94. The SDC charge was approved at the maximum rate of \$160 per fixture unit by Commission Resolution No. 95-1457, adopted May 24, 1995, and became effective July 1, 1995. In the 1998 legislative session, the General Assembly modified the charge by passage of House Bill 832 setting the fee at \$200 per fixture unit with a provision for annual inflation adjustments. Subsequent resolutions have established a process for approving partial and full exemptions for elderly housing and biotechnology properties, as well as exemptions for properties in designated economic revitalization areas and properties used primarily for recreational and educational programs and services to youth. For FY '20, the Montgomery County and Prince George's Councils increased the maximum allowable charge by the 1.5% increase in the CPI-U but maintained the current rate of \$203 per fixture unit. The Commission adopted the Councils' actions by Resolution Number 2019-2225 dated June 19, 2019. Policies and other information associated with the System Development Charge are included in this document in Appendices A through D.

It is estimated that there will be an overall growth funding surplus of \$60.1 million over the six-year program period. The gap or surplus between growth funding sources (SDC, developer contributions, and Applicant payments under System Extension Permits) and the estimated growth-related expenditures vary over the six-year period. If growth-related expenditures were to exceed the available SDC account balance in any given fiscal year, it is anticipated that WSSC would issue new SDC supported debt to cover this temporary gap. The debt will be repaid through future SDC collections, as allowed by State Law. Further, it is currently anticipated that no significant additional growth projects will evolve in the later years of the six-year period. (A listing of SDC-eligible projects is included in Appendix D.)

An estimate of the gap or surplus for each fiscal year is presented in the table that follows. To estimate the gap/surplus for an individual fiscal year, it is assumed that approximately 80% of the eligible expenditures will actually be incurred in a given year due to scheduling and other delays. The projected gap/surplus is the difference between the eligible expenditures adjusted for completion and the sum of the various funding sources.

**GROWTH FUNDING GAP**  
**(In Millions)**

	<u>FY'21</u>	<u>FY'22</u>	<u>FY'23</u>	<u>FY'24</u>	<u>FY'25</u>	<u>FY'26</u>	<u>6 YEAR TOTAL</u>
<b>CIP GROWTH EXPENDITURES</b>	\$25.8	\$27.4	\$19.2	\$11.1	\$0.5	\$0.7	\$84.7
Expenditures Adjusted for Completion	20.6	27.1	20.9	12.7	2.6	0.7	84.6
<b>FUNDING SOURCES</b>							
Privately Funded Projects	13.0	7.1	2.1	0.7	0.5	0.5	23.9
Estimated SDC Revenue	23.3	23.3	24.3	24.3	24.3	25.3	144.8
Less SDC Developer Credits	(5.0)	(4.0)	(3.0)	(2.0)	(2.0)	(2.0)	(18.0)
Less SDC Exemptions <sup>1</sup>	(1.0)	(1.0)	(1.0)	(1.0)	(1.0)	(1.0)	(6.0)
<b>TOTAL FUNDING SOURCES</b>	\$30.3	\$25.4	\$22.4	\$22.0	\$21.8	\$22.8	\$144.7
<b>FUNDING GAP/(SURPLUS) ADJUSTED FOR COMPLETION</b>	<b>(\$9.7)</b>	<b>\$1.7</b>	<b>(\$1.5)</b>	<b>(\$9.3)</b>	<b>(\$19.2)</b>	<b>(\$22.1)</b>	<b>(\$60.1)</b>

<sup>1</sup> Each County may grant SDC exemptions, as identified in Appendix A, totaling up to \$500,000 per fiscal year as provided for in Maryland State Law (Public Utilities Article, Section 25-403(b)). Unused exemption amounts are available for use in future fiscal years. Cumulative unused SDC exemptions totaled approximately \$6.9 million for Montgomery County and \$3.9 million for Prince George's County through June 30, 2010.

**Expenditures**

The Proposed FYs 2021-2026 combined program includes 55 CIP and 10 Information Only projects for a grand total of \$5.6 billion dollars. The grand total is \$498 million greater than the Adopted FYs 2020-2025 combined program primarily due to the inclusion of the Other Capital project which was added this cycle so as to reflect all capital expenditures, not just CIP and Information Only projects, in the document. Expenditures for the combined six-year program period are estimated at \$3.7 billion. FY'21 expenditures are estimated at \$624.3 million of which, \$123.6 million is for the Water Program, \$251.5 million is for the Sewerage Program, and \$249.2 million is for the Information Only Projects. System Extension Process (SEP) growth projects are estimated at \$23.4 million in the six-year program with approximately \$15.9 million programmed in FY'21. There are four new projects this cycle. New projects are shown on the New Projects Listing near the end of this section.

A table comparing the Adopted FYs 2020-2025 CIP to the Proposed FYs 2021-2026 CIP follows:

**WSSC CIP - COMPARISON**

(In Thousands)

	<u>COMBINED PROGRAM</u>	<u>TOTAL SIX-YEAR</u>	<u>BUDGET YEARS COMPARISON</u>
Adopted FYs 2020-2025	\$5,059,114	\$3,229,062	\$569,664
Proposed FYs 2021-2026	5,557,072	3,712,427	624,302
Change	\$497,958	\$483,365	\$54,638

Combined six-year program expenditures are estimated at approximately \$3.7 billion, \$865.8 million for the Water Program, \$1.1 billion for the Sewerage Program, and \$1.7 billion for the Information Only Projects. This is a \$483.4 million increase from the combined six-year total in the Adopted FYs 2020-2025 CIP. The overall increase is primarily due to including the new Other Capital project in the Information Only section and the programmed increase in pipe replacements in the Large Diameter Water Pipe Reconstruction Program.

**Expenditure Categories**

Expenditures are divided into three main categories: projects needed for growth, projects needed to implement environmental regulations, and projects needed for system improvements. The categories are defined as follows:

Growth – any project, or part of a project, that increases the demand for treatment and delivery of potable water and/or increases system requirements to collect and treat more sewage in response to new, first time, service hookups to the WSSC’s existing customer base.

Environmental Regulations – any project which is required to meet changes in federal regulations, such as the Clean Water Act, or in response to more stringent state operating permit requirements, but does not increase system capacity. Any part of this type of a project that provides for additional capacity is for growth.

System Improvements – any project which improves or replaces components of existing water and sewerage systems or provides for mainline relocations required in response to county or state transportation department road or transit projects where the intended purpose is not to increase the capacity of any system components. This category also includes program-sized water main extensions for which the primary function is to provide water supply redundancy to pressure zones or smaller areas in the Sanitary District or for system loops to improve maintainability and reliability. Any part of this type of a project not dictated by maintenance or rehabilitation needs and that provides for additional capacity is for growth. (Please refer to Figure 4 near the end of this section, which displays funding allocations for all three categories.)

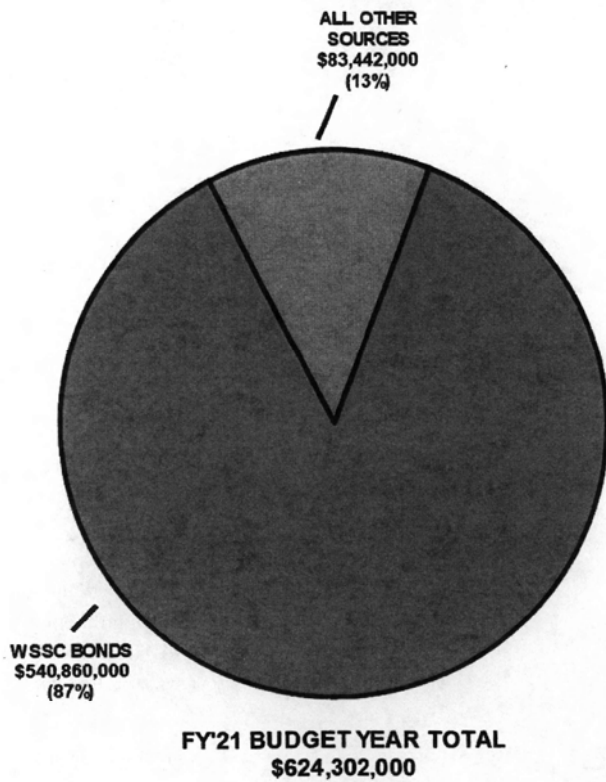
(11)



FIGURE 3

# WSSC PROPOSED FYS 2021-2026 CIP

COMBINED PROGRAM FUNDING BY SOURCE

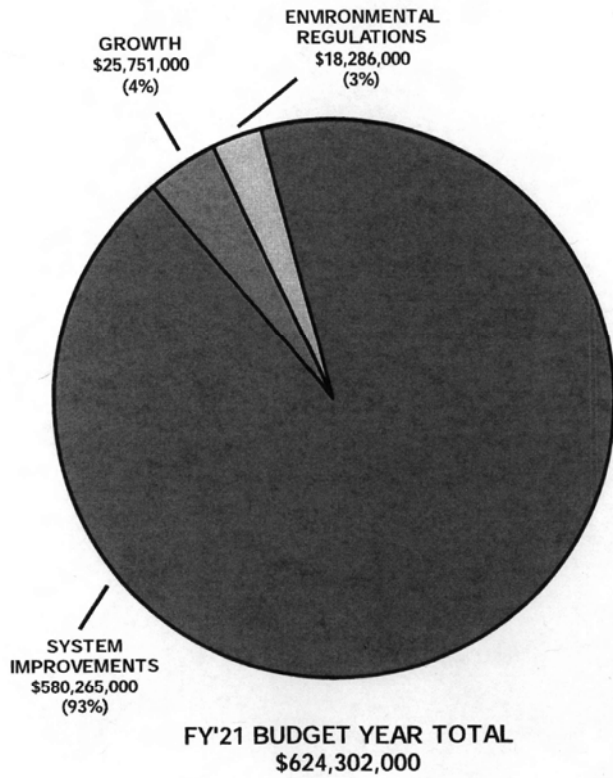


Nearly 90% of the FY'21 Capital Budget is funded through long-term debt.

Funding Source	FY'21 Amount
Federal & State Grants	23,000,000
SDC & Others	25,750,600
Local Government Contributions	3,675,000
WSSC Bonds	540,860,400
PAYGO	31,016,000
<b>Total</b>	<b>624,302,000</b>

FIGURE 4

# WSSC PROPOSED FYS 2021-2026 CIP COMBINED PROGRAM BY MAJOR CATEGORY



Over 90% of the FY'21 Capital Budget is for reinvestment in our system infrastructure.

Major Category	FY'21 Amount
System Improvements	580,265,050
Growth	25,750,950
Environmental	18,286,000
<b>Total</b>	<b>624,302,000</b>

**FINANCIAL SUMMARY**

(ALL FIGURES IN THOUSANDS)

**EXPENDITURE PROJECTIONS**

	EST. TOTAL COST	EXPEND THRU 19	EST. EXPEND 20	TOTAL SIX YEARS	EXPENDITURE SCHEDULE						BEYOND SIX YEARS	PAGE NUM
					YR 1 21	YR 2 22	YR 3 23	YR 4 24	YR 5 25	YR 6 26		
Montgomery County Water Projects	55,801	38,090	11,630	6,081	1,821	325	2,278	1,657	0	0	0	1-1
Prince George's County Water Projects	293,581	82,483	20,625	182,193	38,484	55,457	40,853	35,064	7,380	6,955	8,280	5-1
Bi-County Water Projects	960,670	94,088	82,065	677,513	85,314	111,620	125,584	124,445	116,415	114,135	107,004	3-1
<b>TOTAL WATER PROJECTS</b>	<b>1,310,052</b>	<b>214,661</b>	<b>114,320</b>	<b>865,787</b>	<b>123,619</b>	<b>167,402</b>	<b>168,715</b>	<b>161,166</b>	<b>123,795</b>	<b>121,090</b>	<b>115,284</b>	
Montgomery County Sewerage Projects	55,371	19,663	6,676	29,032	9,637	6,633	10,468	2,294	0	0	0	2-1
Prince George's County Sewerage Projects	464,580	267,948	61,701	133,215	38,756	46,691	34,227	6,504	4,304	2,733	1,716	6-1
Bi-County Sewerage Projects	1,777,847	447,382	180,190	957,138	203,061	212,224	180,015	134,432	101,528	125,878	193,137	4-1
<b>TOTAL SEWERAGE PROJECTS</b>	<b>2,297,798</b>	<b>734,993</b>	<b>248,567</b>	<b>1,119,385</b>	<b>251,454</b>	<b>265,548</b>	<b>224,710</b>	<b>143,230</b>	<b>105,832</b>	<b>128,611</b>	<b>194,853</b>	
<b>TOTAL CIP PROGRAM</b>	<b>3,607,850</b>	<b>949,654</b>	<b>362,887</b>	<b>1,985,172</b>	<b>375,073</b>	<b>432,950</b>	<b>393,425</b>	<b>304,396</b>	<b>229,627</b>	<b>249,701</b>	<b>310,137</b>	
Total Information Only Projects	1,949,222	1,092	218,904	1,727,255	249,229	279,817	296,233	291,261	297,428	313,287	1,971	7-1
<b>COMBINED PROGRAM</b>	<b>5,557,072</b>	<b>950,746</b>	<b>581,791</b>	<b>3,712,427</b>	<b>624,302</b>	<b>712,767</b>	<b>689,658</b>	<b>595,657</b>	<b>527,055</b>	<b>562,988</b>	<b>312,108</b>	

**FUNDING SOURCES**

WSSC Bonds	4,480,446	448,110	494,215	3,276,917	540,860	624,206	610,699	526,097	469,915	505,140	261,204
PAYGO	248,128	0	31,016	186,096	31,016	31,016	31,016	31,016	31,016	31,016	31,016
State Grants	382,481	238,190	21,291	123,000	21,500	21,500	20,000	20,000	20,000	20,000	0
System Development Charge	315,523	224,205	22,325	60,713	9,530	22,555	17,801	10,597	0	230	8,280
Contribution/Other	66,115	32,072	10,109	23,934	16,221	4,812	1,397	500	502	502	0
Government Contributions	48,809	7,599	2,835	26,767	3,675	4,678	4,745	3,447	4,122	6,100	11,608
Federal Grants	15,570	570	0	15,000	1,500	4,000	4,000	4,000	1,500	0	0
<b>COMBINED PROGRAM</b>	<b>5,557,072</b>	<b>950,746</b>	<b>581,791</b>	<b>3,712,427</b>	<b>624,302</b>	<b>712,767</b>	<b>689,658</b>	<b>595,657</b>	<b>527,055</b>	<b>562,988</b>	<b>312,108</b>

**WSSC FYS 2021 - 2026 CIP  
NEW PROJECTS LISTING  
(ALL FIGURES IN THOUSANDS)**

<b>Agency Number</b>	<b>Project Name</b>	<b>Total Project Cost</b>	<b>6 Year Program Cost</b>	<b>Budget Year Cost</b>	<b>% of Growth</b>
<b><u>Montgomery County Sewer Projects</u></b>					
S-85.22	Shady Grove Neighborhood Center	\$3,391	\$2,733	\$1,367	100%
<b><u>Bi-County Water Projects</u></b>					
W-175.05	Regional Water Supply Resiliency	15,000	15,000	1,500	0%
<b><u>Information Only Projects</u></b>					
A-101.04	Laboratory Division Building Expansion	21,844	20,580	1,276	0%
A-110.00	Other Capital Programs	500,045	431,183	70,610	0%
<b>TOTALS</b>		<b>\$540,280</b>	<b>\$469,496</b>	<b>\$74,753</b>	

**WSSC FYS 2021 - 2026 CIP**  
**ALL PROJECTS PENDING CLOSE-OUT**  
**(ALL FIGURES IN THOUSANDS)**

Agency Number	Project Name	Estimated Total Cost	Expenditures Thru FY'19	Estimated Expenditures FY'20	Remarks
<b><u>Montgomery County Water Projects</u></b>					
W-3.02	Olney Standpipe Replacement	\$8,019	\$7,608	\$411	Project completion expected in FY'20.
W-46.15	Clarksburg Elevated Water Storage Facility	7,208	7,024	184	Project completion expected in FY'20.
W-138.02	Shady Grove Standpipe Replacement	12,052	11,644	408	Project completion expected in FY'20.
<b><u>Montgomery County Sewer Projects</u></b>					
S-84.60	Cabin Branch Wastewater Pumping Station	3,435	2,099	1,336	Project completion expected in FY'20.
S-84.61	Cabin Branch WWPS Force Main	542	289	253	Project completion expected in FY'20.
S-84.69	Clarksburg WWPS Force Main	-	-	-	Project combined with S-84.68.
S-103.16	Cabin John Trunk Sewer Relief	14,516	14,516	-	Project completed.
<b><u>Prince George's County Water Projects</u></b>					
W-34.03	Water Transmission Improvements 385B Pressure Zone	14,320	13,765	555	Project completion expected in FY'20.
W-62.05	Clinton Zone Water Storage Facility Implementation	10,036	9,681	355	Project completion expected in FY'20.
W-65.10	St. Barnabas Elevated Tank Replacement	12,318	12,136	182	Project completion expected in FY'20.
<b><u>Prince George's County Sewer Projects</u></b>					
S-57.92	Western Branch Facility Upgrade	52,672	52,437	235	Project completion expected in FY'20
S-75.19	Brandywine Woods Wastewater Pumping Station	-	-	-	Project canceled
S-75.20	Brandywine Woods WWPS Force Main	12	12	-	Project canceled
<b>TOTALS</b>		<b>\$135,130</b>	<b>\$131,211</b>	<b>\$3,919</b>	
13 Projects Pending Close-Out					

**FINANCIAL SUMMARY**

DATE: October 1, 2019

(ALL FIGURES IN THOUSANDS)

**MONTGOMERY COUNTY WATER PROJECTS**

AGENCY NUMBER	PROJECT NAME	EST. TOTAL COST	EXPEND THRU 19	EST. EXPEND 20	TOTAL SIX YEARS	EXPENDITURE SCHEDULE						BEYOND SIX YEARS	PAGE NUM
						YR 1 21	YR 2 22	YR 3 23	YR 4 24	YR 5 25	YR 6 26		
W-46.24	Clarksburg Area Stage 3 Water Main, Part 4	4,515	3,798	278	439	439	0	0	0	0	0	0	1-3
W-46.25	Clarksburg Area Stage 3 Water Main, Part 5	2,845	450	1,987	408	408	0	0	0	0	0	0	1-4
W-80.04	Brink Zone Reliability Improvements	16,192	7,566	6,007	619	619	0	0	0	0	0	0	1-5
W-113.20	White Oak Water Mains Augmentation	4,970	0	355	4,615	366	325	2,278	1,657	0	0	0	1-6
	Projects Pending Close-Out	27,279	26,276	1,003	0	0	0	0	0	0	0	0	1-7
<b>TOTALS</b>		<b>55,801</b>	<b>38,090</b>	<b>11,630</b>	<b>6,081</b>	<b>1,821</b>	<b>325</b>	<b>2,278</b>	<b>1,657</b>	<b>0</b>	<b>0</b>	<b>0</b>	

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**FINANCIAL SUMMARY**

DATE: October 1, 2019

(ALL FIGURES IN THOUSANDS)

**MONTGOMERY COUNTY SEWER PROJECTS**

AGENCY NUMBER	PROJECT NAME	EST. TOTAL COST	EXPEND THRU 19	EST. EXPEND 20	TOTAL SIX YEARS	EXPENDITURE SCHEDULE						BEYOND SIX YEARS	PAGE NUM	
						YR 1 21	YR 2 22	YR 3 23	YR 4 24	YR 5 25	YR 6 26			
S-84.87	Milstone Center Sewer Main	834	288	0	546	522	24	0	0	0	0	0	0	2-3
S-84.88	Clarksburg Wastewater Pumping Station & Sewer Improvements	4,954	1,254	3,082	618	618	0	0	0	0	0	0	0	2-4
S-85.21	Shady Grove Station Sewer Augmentation	6,982	519	353	6,110	5,773	244	93	0	0	0	0	0	2-5
S-85.22	Shady Grove Neighborhood Center	3,391	0	658	2,733	1,367	1,366	0	0	0	0	0	0	2-6
S-94.13	Damascus Town Center WWPS Replacement	9,669	215	534	8,920	652	2,901	5,129	238	0	0	0	0	2-7
S-94.14	Spring Gardens WWPS Replacement	11,048	483	460	10,105	705	2,098	5,246	2,056	0	0	0	0	2-8
	Projects Pending Close-Out	18,493	16,904	1,589	0	0	0	0	0	0	0	0	0	2-9
<b>TOTALS</b>		<b>55,371</b>	<b>19,663</b>	<b>6,676</b>	<b>29,032</b>	<b>9,637</b>	<b>6,633</b>	<b>10,468</b>	<b>2,294</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	

21

# Shady Grove Neighborhood Center

A. Identification and Coding Information		
Agency Number	Project Number	Update Code
S - 000085.22		Add

PDF Date	October 1, 2019
Date Revised	

Pressure Zones	
Drainage Basins	Watts Branch 15
Planning Areas	Gallthersburg & Vicinity PA 20

## B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'19	Estimate FY'20	Total 6 Years	Year 1 FY'21	Year 2 FY'22	Year 3 FY'23	Year 4 FY'24	Year 5 FY'25	Year 6 FY'26	Beyond 6 Years
Planning, Design & Supervision	527		350	177	89	88					
Land											
Construction	2,493		293	2,200	1,100	1,100					
Other	371		15	356	178	178					
<b>Total</b>	<b>3,391</b>		<b>658</b>	<b>2,733</b>	<b>1,367</b>	<b>1,366</b>					

## C. Funding Schedule (000's)

Contributions/Other	3,391		658	2,733	1,367	1,366					
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## D. Description & Justification

### DESCRIPTION

This project provides for the planning, design and construction of 3,600 feet of 15-inch sewer main and 875 feet of 18-inch sewer main to serve the Shady Grove Neighborhood Center Subdivision.

### JUSTIFICATION

Shady Grove Neighborhood Center Planning Analysis (March, 2019). The existing sewer system cannot handle the projected flows that will be generated by the Shady Grove Neighborhood Center. The timing and scheduling of this project is dependent on the developer.

### COST CHANGE

Not applicable.

### OTHER

The present project scope was developed for the FY2021 CIP and has an estimated total cost of \$3,391,000. The expenditures and schedule projections shown in Block B are based on information provided by the developer. The estimated completion date is developer dependent. No WSSC rate supported debt will be used for this project.

### COORDINATION

Coordinating Agencies: Maryland Department of the Environment; Maryland-National Capital Park & Planning Commission; Montgomery County Government  
Coordinating Projects: Not Applicable

E. Annual Operating Budget Impact (000's)		FY of Impact
Staff & Other		
Maintenance	\$90	
Debt Service		
<b>Total Cost</b>	<b>\$90</b>	
Impact on Water and Sewer Rate		

## F. Approval and Expenditure Data (000's)

Date First in Program	FY 21
Date First Approved	FY 21
Initial Cost Estimate	
Cost Estimate Last FY	
Present Cost Estimate	3,391
Approved Request Last FY	
Total Expense & Encumbrances	
Approval Request Year 1	1,367

## G. Status Information

Land Status	Not Applicable
Project Phase	Planning
Percent Complete	40 %
Estimated Completion Date	Developer Dependent
Growth	100%
System Improvement	
Environmental Regulation	
Population Served	7,000
Capacity	1.40 to 2.45 MGD

## H. Map



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**FINANCIAL SUMMARY**

DATE: October 1, 2019

(ALL FIGURES IN THOUSANDS)

**BI-COUNTY WATER PROJECTS**

AGENCY NUMBER	PROJECT NAME	EST. TOTAL COST	EXPEND THRU 19	EST. EXPEND 20	TOTAL SIX YEARS	EXPENDITURE SCHEDULE						BEYOND SIX YEARS	PAGE NUM	
						YR 1 21	YR 2 22	YR 3 23	YR 4 24	YR 5 25	YR 6 26			
W-73.22	Potomac WFP Pre-Filter Chlorination & Air Scour Improvements	24,404	12,700	8,713	2,991	2,991	0	0	0	0	0	0	0	3-4
W-73.30	Potomac WFP Submerged Channel Intake	88,177	4,348	0	0	0	0	0	0	0	0	83,829	3-5	
W-73.32	Potomac WFP Main Zone Pipeline	37,745	1,400	880	35,465	688	7,387	13,640	10,340	3,410	0	0	3-6	
W-73.33	Potomac WFP Consent Decree Program	202,032	8,307	11,025	180,125	10,500	26,250	31,500	30,975	30,450	30,450	22,575	3-7	
W-139.02	Duckett & Brighton Dam Upgrades	41,942	31,909	10,011	22	22	0	0	0	0	0	0	3-8	
W-161.01	Large Diameter Water Pipe & Large Valve Rehabilitation Program	489,509	0	43,301	446,208	58,139	67,803	76,426	79,120	81,045	83,875	0	3-9	
W-172.07	Patuxent Raw Water Pipeline	33,788	13,476	4,582	15,730	9,670	6,160	0	0	0	0	0	3-12	
W-172.08	Rocky Gorge Pump Station Upgrade	24,980	21,948	2,640	392	392	0	0	0	0	0	0	3-13	
W-175.05	Regional Water Supply Resiliency	15,000	0	0	15,000	1,500	4,000	4,000	4,000	1,500			3-14	
W-202.00	Land & Rights-of-Way Acquisition - Bi-County Water	3,093	0	913	1,580	1,512	20	18	10	10	10	600	3-15	
<b>TOTALS</b>		<b>960,670</b>	<b>94,088</b>	<b>82,065</b>	<b>677,513</b>	<b>85,314</b>	<b>111,620</b>	<b>125,584</b>	<b>124,445</b>	<b>116,415</b>	<b>114,135</b>	<b>107,004</b>		

23

# Potomac WFP Consent Decree Program

<b>A. Identification and Coding Information</b>			PDF Date	October 1, 2019	Pressure Zones	Polomac WFP HGPOWF
Agency Number	Project Number	Update Code	Date Revised		Drainage Basins	
W - 000073.33	173801	Change			Planning Area	BI-County

## B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'19	Estimate FY'20	Total 6 Years	Year 1 FY'21	Year 2 FY'22	Year 3 FY'23	Year 4 FY'24	Year 5 FY'25	Year 6 FY'26	Beyond 6 Years
Planning, Design & Supervision	40,154	6,154	3,500	26,500	4,000	5,000	5,000	4,500	4,000	4,000	4,000
Land	1,000	1,000									
Construction	151,653	1,163	7,000	126,000	6,000	20,000	25,000	25,000	25,000	25,000	17,500
Other	9,225		525	7,625	500	1,250	1,500	1,475	1,450	1,450	1,075
<b>Total</b>	<b>202,032</b>	<b>8,307</b>	<b>11,025</b>	<b>180,125</b>	<b>10,500</b>	<b>26,250</b>	<b>31,500</b>	<b>30,975</b>	<b>30,450</b>	<b>30,450</b>	<b>22,575</b>

## C. Funding Schedule (000's)

WSSC Bonds	202,032	8,307	11,025	160,125	10,500	26,250	31,500	30,975	30,450	30,450	22,575
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## D. Description & Justification

### DESCRIPTION

The Potomac WFP Consent Decree Program provides for the planning, design, and construction required for the implementation of Short-Term Operational and Long-Term Capital Improvements at the Potomac Water Filtration Plant (WFP) to allow the Commission to meet the new discharge limitations identified in the Consent Decree.

### JUSTIFICATION

The Consent Decree (CD) was Entered by the U.S. District Court of Maryland on April 15, 2016. Under the terms of the CD the Commission is required to "undertake short-term operational changes and capital improvements at the Potomac WFP that will enable WSSC to reduce significantly the pounds per day of solids discharged to the River" (CD Section II, Paragraph 6.I); and to plan, design, and implement long term "upgrades to the existing Plant or to design and construct a new plant to achieve the effluent limits, conditions, and waste load allocations established by the Maryland Department of the Environment (the Department) and/or in this Consent Decree, and incorporated in a new discharge permit to be issued by the Department" (CD Section II, Paragraph 6.II). The CD required the Commission to submit a Draft Audit Report and Draft Long-Term Upgrade Plan to the Citizens and the Department by November 15, 2016, and final reports to the Citizens and the Department by January 1, 2017. The Final Audit and Long-Term Upgrade Plan Reports were submitted to the Citizens and the Department on December 29, 2016. The Department reviews the Audit Report and selects recommended improvements in operations, monitoring, and waste tracking, along with select capital projects that can be completed no later than April 1, 2020 and that are necessary to achieve the goals identified in CD Section IV, Paragraph 24. Additionally, the work required to implement the Long-Term Capital Improvements Project(s) shall be fully implemented in accordance with the schedule set forth in the Long-Term Upgrade Plan. The Commission shall be subject to a lump-sum stipulated penalty in accordance with the CD for failure to implement the Long-Term Capital Improvement Project(s) by January 1, 2026.

### COST CHANGE

Costs were increased for inflation and are based on recommendations in the approved revised LTUP Report dated September 2018.

### OTHER

The project scope has remained the same. Expenditure and schedule projections shown above are Order of Magnitude level estimates. The expenditure and schedule projections shown above also include \$1,000,000 for Supplemental Environmental Projects included under CD Section IX, Paragraph 50. Preliminary planning work began in FY '16 under ESP project W-708.48, Potomac WFP Consent Decree Projects; operational requirements identified in CD Section IV. Interim Performance Measures and Plant Improvements are currently underway under ESP project W-708.47, Potomac WFP Turbidity Monitoring.

### COORDINATION

Coordinating Agencies: Maryland Department of the Environment; Montgomery County Government; National Park Service; Prince George's County Government; U.S. Environmental Protection Agency, Region III  
Coordinating Projects: W - 000073.30 - Potomac WFP Submerged Channel Intake; W - 000073.32 - Potomac WFP Main Zone Pipeline

<b>E. Annual Operating Budget Impact (000's)</b>		FY of Impact
Staff & Other		
Maintenance		
Debt Service	\$13,142	28
Total Cost	\$13,142	28
Impact on Water and Sewer Rate	\$0.03	28

## F. Approval and Expenditure Data (000's)

Date First in Program	FY 17
Date First Approved	FY 16
Initial Cost Estimate	27,250
Cost Estimate Last FY	163,823
Present Cost Estimate	202,032
Approved Request Last FY	9,975
Total Expense & Encumbrances	8,307
Approval Request Year 1	10,500

## G. Status Information

Land Status	Land Acquired
Project Phase	Design
Percent Complete	0 %
Estimated Completion Date	January 2027
Growth	
System Improvement	
Environmental Regulation	100%
Population Served	
Capacity	

## H. Map

MAP NOT AVAILABLE

24

# Large Diameter Water Pipe & Large Valve Rehabilitation Program

A. Identification and Coding Information			PDF Date	October 1, 2019	Pressure Zones	
Agency Number	Project Number	Update Code	Date Revised		Drainage Basins	
W - 000161.01	113803	Change			Planning Areas	Bi-County

## B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'19	Estimate FY'20	Total 6 Years	Year 1 FY'21	Year 2 FY'22	Year 3 FY'23	Year 4 FY'24	Year 5 FY'25	Year 6 FY'26	Beyond 6 Years
Planning, Design & Supervision	58,925		6,472	52,453	8,301	8,314	8,826	8,154	8,708	9,150	
Land											
Construction	386,082		32,893	353,189	44,552	53,324	80,651	62,773	64,970	66,919	
Other	44,502		3,936	40,566	5,286	6,165	6,949	7,193	7,367	7,606	
<b>Total</b>	<b>489,509</b>		<b>43,301</b>	<b>446,208</b>	<b>58,139</b>	<b>67,803</b>	<b>76,426</b>	<b>79,120</b>	<b>81,045</b>	<b>83,675</b>	

## C. Funding Schedule (000's)

WSSC Bonds	489,509		43,301	446,208	58,139	67,803	76,426	79,120	81,045	83,675	
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## D. Description & Justification

### DESCRIPTION

The purpose of this Program is to plan, inspect, design, and rehabilitate or replace large diameter water transmission mains and large system valves that have reached the end of their useful life. Condition assessment and/or corrosion monitoring is performed on metallic pipelines, including ductile iron, cast iron, and steel, to identify lengths of pipe requiring replacement or rehabilitation and cathodic protection. The PCCP Inspection and Condition Assessment and Monitoring Program identifies individual pipe segments that require repair or replacement to assure the continued safe and reliable operation of the pipeline. The Program also identifies extended lengths of pipe that require the replacement of an increased number of pipe segments in varying stages of deterioration that are most cost effectively accomplished by the replacement or rehabilitation of long segments of the pipeline or the entire pipeline. Rehabilitation or replacement of these mains provides value to the customer by minimizing the risk of failure and ensuring a safe and reliable water supply. The Program includes installation of Acoustic Fiber Optic Monitoring equipment in order to accomplish these goals in PCCP mains.

\*EXPENDITURES FOR LARGE DIAMETER WATER PIPE REHABILITATION ARE EXPECTED TO CONTINUE INDEFINITELY.

### JUSTIFICATION

WSSC has approximately 1,031 miles of large diameter water main ranging from 16-inch to 96-inch in diameter. This includes 335 miles of cast iron, 326 miles of ductile iron, 35 miles of steel, and 335 miles of PCCP. Internal inspection and condition assessment is performed on PCCP pipelines 36-inch and larger in diameter. Of the 335 miles of PCCP, 140 miles are 36-inch diameter and larger. The inspection program includes internal visual and sounding, sonic/ultrasonic testing, and electromagnetic testing to establish the condition of each pipe section and determine if maintenance repairs, rehabilitation, or replacement are needed.

The planning and design phase evaluates the alignment, hydraulic capacity, and project coordination amongst other factors in an effort to re-engineer these pipelines to meet today's design standards. The design effort includes the preparation of bid ready contract documents including all needed rights-of-way acquisitions and regulatory permits. The constructed system is inspected and an as-built plan is produced to serve as the renewed asset record.

In July 2013, WSSC's Acoustic Fiber Optic monitoring system identified breaking wires in a 54-inch diameter PCCP water transmission main in the Forestville area of Prince George's County. Upon attempting to close nearby valves to isolate the failing pipe for repair, WSSC crews encountered an inoperable valve with a broken gear, requiring the crew to drop back to the next available valve. This dropping-back to another valve would block one of the major water mains serving Prince George's County, significantly enlarging the shutdown area and reduce our capacity to supply water to over 100,000 residents. In order to minimize the risk associated with inoperable large valves and possible water outages, the large valve inspection and repair program was initiated to systematically inspect, exercise, repair, or replace any of the nearly 1,500 large diameter valves and vaults located throughout the system.

Utility Wide Master Plan (December 2007); 30 Year Infrastructure Plan (2007); FY 2021 Water Network Asset Management Plan (May 2019).

### COST CHANGE

Program costs reflect the latest expenditure and schedule estimates based upon the recommendations from the Buried Water Asset Systems Asset Management Plan.

(25)

E. Annual Operating Budget Impact (000's)		FY of Impact
Staff & Other		
Maintenance		
Debt Service	\$31,843	
Total Cost	\$31,843	
Impact on Water and Sewer Rate	\$0.07	

## F. Approval and Expenditure Data (000's)

Date First in Program	FY 11
Date First Approved	FY 11
Initial Cost Estimate	
Cost Estimate Last FY	433,056
Present Cost Estimate	489,509
Approved Request Last FY	40,385
Total Expense & Encumbrances	
Approval Request Year 1	58,139

## G. Status Information

Land Status	Not Applicable
Project Phase	On-Going
Percent Complete	0 %
Estimated Completion Date	On-Going
Growth	
System Improvement	100%
Environmental Regulation	
Population Served	
Capacity	

## H. Map



**OTHER**

The project scope has remained the same. Expenditure and schedule projections shown in Block B above are Order of Magnitude estimates and are expected to change based upon the results of the ongoing inspections and condition assessments. Additional costs associated with PCCP inspection/condition assessment, large valve inspection/repairs, and emergency repairs are included in the Operating Budget.

**COORDINATION**

Coordinating Agencies: Local Community Civic Associations; Maryland State Highway Administration; Maryland-National Capital Park & Planning Commission; Montgomery County Department of Public Works and Transportation; Montgomery County Government;(including localities where work is to be performed); Prince George's County Government;(including localities where work is to be performed); Prince George's County Department of Permitting Inspection and Enforcement

Coordinating Projects: W - 000001.00 - Water Reconstruction Program; W - 000107.00 - Specialty Valve Vault Rehabilitation Program

# Regional Water Supply Resiliency

<b>A. Identification and Coding Information</b>			PDF Date	October 1, 2019	Pressure Zones	
Agency Number	Project Number	Update Code	Date Revised		Drainage Basins	
W - 000175.05		Add			Planning Areas	Montgomery County PA

## B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'19	Estimate FY'20	Total 6 Years	Year 1 FY'21	Year 2 FY'22	Year 3 FY'23	Year 4 FY'24	Year 5 FY'25	Year 6 FY'26	Beyond 6 Years
Planning, Design & Supervision	15,000			15,000	1,500	4,000	4,000	4,000	1,500		
Land											
Construction											
Other											
<b>Total</b>	<b>15,000</b>			<b>15,000</b>	<b>1,500</b>	<b>4,000</b>	<b>4,000</b>	<b>4,000</b>	<b>1,500</b>		

## C. Funding Schedule (000's)

Federal Aid	15,000			15,000	1,500	4,000	4,000	4,000	1,500		
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## D. Description & Justification

**DESCRIPTION**  
 This project includes planning, preliminary engineering, community outreach, and coordination with elected officials for a regional raw water supply reservoir and raw water conveyance system to serve the long-range water supply needs of the Washington metropolitan region. A new regional reservoir is needed to mitigate against drought and contamination events in the Potomac River which could curtail or halt withdrawal from the river for days to months. This project will include the performance of a business case to evaluate conveyance alternatives and provide a recommendation for subsequent preliminary design.

**JUSTIFICATION**  
 Justification for the project is based in part on two independent studies. A study conducted by the Metropolitan Washington Council of Governments (COG) in 2016 concluded that the Washington metropolitan region needed, among other capital projects and initiatives, an off-river raw water storage reservoir to provide the necessary resiliency for water quantity and quality in the region in the event of a contamination in the Potomac River. A separate study conducted by the Interstate Commission for the Potomac River Basin (ICPRB) in 2017 concluded that the region needed additional off-river raw water reservoir capacity as part of the regional water supply system to ensure adequate water supply to the region in the event of a drought.

**COST CHANGE**  
 Not applicable.

**OTHER**  
 The present project scope was developed for the FY'21 CIP and has an estimated cost of \$15,000,000.

This project will be contingent upon receipt of federal grant funding and the execution of other relevant cost sharing agreements between WSSC and other ICPRB CO-OP Operations Committee members. Placement of the proposed work in the CIP will enable WSSC to solicit funding opportunities in a timely fashion.

**COORDINATION**  
 Coordinating Agencies: Federal and State Grant Agencies; Interstate Commission on the Potomac River Basin; Local Community Civic Associations; Maryland Department of the Environment; Maryland-National Capital Park & Planning Commission; Montgomery County Department of Environmental Protection; Montgomery County Government; National Park Service; Prince George's County Government; Prince George's County Department of Permitting Inspection and Enforcement  
 Coordinating Projects: Not Applicable

<b>E. Annual Operating Budget Impact (000's)</b>		FY of Impact
Staff & Other		
Maintenance		
Debt Service		
Total Cost		
Impact on Water and Sewer Rate		

<b>F. Approval and Expenditure Data (000's)</b>	
Date First in Program	FY 21
Date First Approved	FY 21
Initial Cost Estimate	15,000
Cost Estimate Last FY	
Present Cost Estimate	15,000
Approved Request Last FY	
Total Expense & Encumbrances	
Approval Request Year 1	1,500

<b>G. Status Information</b>	
Land Status	Land and R/W to be acquired
Project Phase	Planning
Percent Complete	0 %
Estimated Completion Date	TBD
Growth	
System Improvement	100%
Environmental Regulation	
Population Served	1,800,000
Capacity	7.5 BG

**H. Map**

MAP NOT APPLICABLE

(2)

**FINANCIAL SUMMARY**  
(ALL FIGURES IN THOUSANDS)

DATE: October 1, 2019

**BI-COUNTY SEWER PROJECTS**

AGENCY NUMBER	PROJECT NAME	EST. TOTAL COST	EXPEND THRU 19	EST. EXPEND 20	TOTAL SIX YEARS	EXPENDITURE SCHEDULE						BEYOND SIX YEARS	PAGE NUM
						YR 1 21	YR 2 22	YR 3 23	YR 4 24	YR 5 25	YR 6 26		
S-22.06	Blue Plains WWTP: Liquid Train Projects, Part 2	310,880	0	22,831	166,285	23,432	28,827	20,859	22,116	23,339	47,712	121,764	4-3
S-22.07	Blue Plains WWTP: Biosolids Management, Part 2	75,220	0	10,164	59,673	11,347	12,840	17,303	8,670	7,300	2,213	5,383	4-4
S-22.09	Blue Plains WWTP: Plant-wide Projects	111,706	0	10,487	85,492	10,811	14,584	22,288	13,912	9,577	14,320	15,727	4-5
S-22.10	Blue Plains WWTP: Enhanced Nutrient Removal	440,738	412,789	1,507	21,469	294	319	1,844	1,900	5,794	11,318	4,973	4-6
S-22.11	Blue Plains: Pipelines & Appurtenances	172,974	0	17,117	110,567	13,622	15,964	19,068	22,609	20,895	18,409	45,290	4-7
S-103.02	Piscataway Bioenergy	281,208	29,189	39,709	212,310	61,320	69,720	49,770	31,500	0	0	0	4-8
S-170.08	Septage Discharge Facility Planning & Implementation	40,381	5,404	12,461	22,516	12,461	2,769	0	3,643	3,643	0	0	4-10
S-170.09	Trunk Sewer Reconstruction Program	343,807	0	65,864	277,943	69,491	67,081	48,763	29,962	30,860	31,786	0	4-11
S-203.00	Land & Rights-Of-Way Acquisition - Bi-County Sewer	933	0	50	883	283	120	120	120	120	120	0	4-12
<b>TOTALS</b>		<b>1,777,847</b>	<b>447,392</b>	<b>180,190</b>	<b>957,138</b>	<b>203,061</b>	<b>212,224</b>	<b>180,015</b>	<b>134,432</b>	<b>101,528</b>	<b>125,878</b>	<b>193,137</b>	

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**BLUE PLAINS WASTEWATER TREATMENT PLANT PROJECTS**  
(ALL FIGURES IN THOUSANDS)

AGENCY NUMBER	PROJECT NAME	ADOPTED FY'20 TOTAL COST	PROPOSED FY'21 TOTAL COST	CHANGE \$	CHANGE %	SIX-YEAR COST	COMPLETION DATE (est)
S-22.06	Blue Plains WWTP: Liquid Train Projects, Part 2	\$247,693	\$310,880	\$63,187	25.5%	\$166,285	On-Going
S-22.07	Blue Plains WWTP: Biosolids Management, Part 2	41,472	75,220	33,748	81.4%	59,673	On-Going
S-22.09	Blue Plains WWTP: Plant-wide Projects	117,624	111,706	(5,918)	-5.0%	85,492	On-Going
S-22.10	Blue Plains WWTP: Enhanced Nutrient Removal	394,543	440,738	46,195	11.7%	21,469	Jun-26
S-22.11	Blue Plains: Pipelines & Appurtenances	152,284	172,974	20,690	13.6%	110,567	On-Going
	<b>TOTALS</b>	<b>\$953,616</b>	<b>\$1,111,518</b>	<b>\$157,902</b>	<b>16.6%</b>	<b>\$443,486</b>	

**Summary:** These five projects, with an estimated total cost of \$1.1 billion, provide funding for the upgrade, expansion, and enhancement of wastewater treatment and solids handling facilities at the Regional Blue Plains Wastewater Treatment Plant, located in the District of Columbia. Whereas typical WSSC projects encompass planning, design, construction, and start-up for a single project, with defined starting and ending dates, the Blue Plains projects are comprised of many sub-projects and are "open-ended." As the Blue Plains Facility Plans move forward and new sub-projects are approved, the costs of these new sub-projects are added to the appropriate existing Blue Plains project. The expenditures displayed represent the WSSC's calculated share. There are four main funding divisions: liquid treatment train (S-22.06); biosolids management (S-22.07); plant-wide projects (S-22.09); and, pipelines & appurtenances (S-22.11). Project S-22.10 Enhanced Nutrient Removal (ENR) will achieve nutrient removal levels surpassing Biological Nutrient Removal (BNR) as determined in the Tributary Strategy process of 2005 in order to meet Chesapeake Bay water quality targets.

**Cost Impact:** These five Blue Plains projects, which comprise one of the largest groups of expenditures in the CIP, represent 22% of the Six-Year WSSC CIP program. The figures shown above are derived from the latest available spending projections provided by the District of Columbia Water and Sewer Authority (DCWASA). Spending at the DCWASA staff-proposed rate in future years may challenge the WSSC's ability to stay within County-established spending affordability limits. It is, therefore, recommended that the coordination of development and approval of the DCWASA's and WSSC's CIPs be sustained in order that the economic development and environmental objectives of the region be met, without causing a rapid increase in WSSC customers' bills. An explanation of the cost changes for each project is included on the individual project description forms that immediately follow this summary page.

## Blue Plains WWTP: Liquid Train Projects, Part 2

A. Identification and Coding Information			PDF Date	October 1, 2019	Pressure Zones
Agency Number	Project Number	Update Code	Date Revised		Drainage Basins
S - 000022.06	954811	Change			Bi-County 30
					Planning Areas
					Bi-County

### B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'19	Estimate FY'20	Total 6 Years	Year 1 FY'21	Year 2 FY'22	Year 3 FY'23	Year 4 FY'24	Year 5 FY'25	Year 6 FY'26	Beyond 6 Years
Planning, Design & Supervision											
Land											
Construction	307,802		22,605	164,639	23,200	28,542	20,653	21,897	23,108	47,239	120,558
Other	3,078		226	1,646	232	285	206	219	231	473	1,206
<b>Total</b>	<b>310,880</b>		<b>22,831</b>	<b>166,285</b>	<b>23,432</b>	<b>28,827</b>	<b>20,859</b>	<b>22,116</b>	<b>23,339</b>	<b>47,712</b>	<b>121,764</b>

### C. Funding Schedule (000's)

	Total	Thru FY'19	Estimate FY'20	Total 6 Years	Year 1 FY'21	Year 2 FY'22	Year 3 FY'23	Year 4 FY'24	Year 5 FY'25	Year 6 FY'26	Beyond 6 Years
WSSC Bonds	293,816		21,578	157,158	22,146	27,245	19,714	20,902	22,058	45,093	115,080
City of Rockville	17,064		1,253	9,127	1,286	1,582	1,145	1,214	1,281	2,619	6,684

### D. Description & Justification

#### DESCRIPTION

This project provides funding for WSSC's share of Blue Plains liquid train projects for which construction began after June 30, 1993. Major projects include: Filtration/Disinfection Facilities Phases I & II, upgrading influent screening, and upgrading effluent filters.

#### JUSTIFICATION

This is a continuation of the DCWASA's upgrading of the Blue Plains Wastewater Treatment Plant. The Blue Plains Intermunicipal Agreement of 2012, the DCWASA Master Plan (1998), Blue Plains Facilities Master Plan (2016), and the DCWASA Approved FY 2020 Capital Improvements Program.

#### COST CHANGE

Costs in Year 6 and beyond reflect programmed costs for renewal and replacement of components expected to have reached the end of their useful life, including mechanical treatment components and some structural rebuilds of tanks and filters.

#### OTHER

The project scope has remained the same. Project costs are derived from the DCWASA Capital & Operating Budget 10-year forecast of spending and DCWASA's latest project management data, and fully reflect DCWASA's current cost estimates and expenditure schedules. Given the open-ended nature of the Blue Plains projects, this PDF does not fully reflect the total project costs. These projects are, in fact, expected to continue indefinitely. As new sub-projects are added to the Blue Plains facility plans, the associated costs will be added to this project. The funding schedule also indicates the calculated Rockville share of the cost.

#### COORDINATION

Coordinating Agencies: City of Rockville;(responsible for a share of funding); District of Columbia Water and Sewer Authority;(responsible for design and construction)  
Coordinating Projects: S - 000022.10 - Blue Plains WWTP: Enhanced Nutrient Removal

E. Annual Operating Budget Impact (000's)		FY of Impact
Staff & Other		
Maintenance		
Debt Service	\$19,113	
Total Cost	\$19,113	
Impact on Water and Sewer Rate	\$0.04	

### F. Approval and Expenditure Data (000's)

Date First in Program	FY 95
Date First Approved	FY 95
Initial Cost Estimate	
Cost Estimate Last FY	247,693
Present Cost Estimate	310,880
Approved Request Last FY	22,631
Total Expense & Encumbrances	
Approval Request Year 1	23,432

### G. Status Information

Land Status	Not Applicable
Project Phase	On-Going
Percent Complete	0 %
Estimated Completion Date	On-Going
Growth	
System Improvement	100%
Environmental Regulation	
Population Served	
Capacity	169.6 / 370 MGD

### H. Map

MAP NOT AVAILABLE

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## Blue Plains WWTP: Biosolids Management, Part 2

A. Identification and Coding Information			PDF Date	October 1, 2019	Pressure Zones	
Agency Number	Project Number	Update Code	Date Revised		Drainage Basins	Bi-County 30
S - 000022.07	954812	Change			Planning Areas	Bi-County

### B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'19	Estimate FY'20	Total 6 Years	Year 1 FY'21	Year 2 FY'22	Year 3 FY'23	Year 4 FY'24	Year 5 FY'25	Year 6 FY'26	Beyond 6 Years
Planning, Design & Supervision											
Land											
Construction	74,474		10,063	59,081	11,234	12,713	17,132	8,584	7,227	2,191	5,330
Other	746		101	592	113	127	171	86	73	22	53
<b>Total</b>	<b>75,220</b>		<b>10,164</b>	<b>59,673</b>	<b>11,347</b>	<b>12,840</b>	<b>17,303</b>	<b>8,670</b>	<b>7,300</b>	<b>2,213</b>	<b>5,383</b>

### C. Funding Schedule (000's)

	Total	WSSC Bonds	City of Rockville	WSSC Bonds	City of Rockville	WSSC Bonds	City of Rockville	WSSC Bonds	City of Rockville	WSSC Bonds	City of Rockville	
WSSC Bonds	71,090			9,606	56,396	10,724	12,136	16,353	8,194	6,899	2,091	5,088
City of Rockville	4,130			558	3,277	623	705	950	476	401	122	295

### D. Description & Justification

#### DESCRIPTION

This project provides funding for WSSC's share of the Blue Plains biosolids handling projects for which construction began after June 30, 1993. Major projects include: Gravity Thickener Facility upgrades; and Solids Processing Building/Dewatered Sludge Loading Facility.

#### JUSTIFICATION

This project is needed to implement a set of facilities which will provide a permanent biosolids management program for Blue Plains. The Blue Plains Intermunicipal Agreement of 2012; the DCWASA Master Plan (1998); EPMC IV Facility Plan, CH2MHILL (2001); the Biosolids Management at DCWASA Blue Plains Wastewater Treatment Plant Phase II - Design and Cost Considerations for Treatment Alternatives Report (December 2007); Blue Plains Facilities Master Plan (2016); and the DCWASA Approved FY2020 Capital Improvement Program.

#### COST CHANGE

Cost increase in FY'22 through FY'25 reflects two major initiatives: 1) to rehabilitate and upgrade the gravity thickeners; 2) to rehabilitate the Class A biosolids process facilities.

#### OTHER

The project scope has remained the same. Project costs are derived from the DCWASA Capital & Operating Budget 10-year forecast of spending and DCWASA's latest project management data, and fully reflect DCWASA's current cost estimates and expenditure schedules. Given the open-ended nature of the Blue Plains projects, this PDF does not fully reflect the total project costs. These projects are, in fact, expected to continue indefinitely. As new sub-projects are added to the Blue Plains facility plans, the associated costs will be added to this project. Portions of the program have been financed by low interest loans through the Maryland Department of the Environment's Water Quality Administration State Revolving Loan Program. The funding schedule also indicates the calculated Rockville share of the cost.

#### COORDINATION

Coordinating Agencies: City of Rockville;(responsible for a share of funding); District of Columbia Water and Sewer Authority;(responsible for design and construction)  
Coordinating Projects: Not Applicable

E. Annual Operating Budget Impact (000's)		FY of Impact
Staff & Other		
Maintenance		
Debt Service	\$4,625	
Total Cost	\$4,625	
Impact on Water and Sewer Rate	\$0.01	

### F. Approval and Expenditure Data (000's)

Date First in Program	FY 95
Date First Approved	FY 95
Initial Cost Estimate	
Cost Estimate Last FY	41,472
Present Cost Estimate	75,220
Approved Request Last FY	10,164
Total Expense & Encumbrances	
Approval Request Year 1	11,347

### G. Status Information

Land Status	Not Applicable
Project Phase	On-Going
Percent Complete	0 %
Estimated Completion Date	On-Going
Growth	
System Improvement	100%
Environmental Regulation	
Population Served	
Capacity	169.6 / 370 MGD

### H. Map



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## Blue Plains WWTP: Plant-wide Projects

A. Identification and Coding Information		
Agency Number	Project Number	Update Code
S - 000022.09	023805	Change

PDF Date	October 1, 2019
Date Revised	

Pressure Zones	
Drainage Basins	Bl-County 30
Planning Areas	Bl-County

### B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'19	Estimate FY'20	Total 6 Years	Year 1 FY'21	Year 2 FY'22	Year 3 FY'23	Year 4 FY'24	Year 5 FY'25	Year 6 FY'26	Beyond 6 Years
Planning, Design & Supervision											
Land											
Construction	110,599		10,383	84,844	10,704	14,439	22,067	13,774	9,482	14,178	15,572
Other	1,107		104	848	107	145	221	138	95	142	155
<b>Total</b>	<b>111,706</b>		<b>10,487</b>	<b>85,492</b>	<b>10,811</b>	<b>14,584</b>	<b>22,288</b>	<b>13,912</b>	<b>9,577</b>	<b>14,320</b>	<b>15,727</b>

### C. Funding Schedule (000's)

WSSC Bonds	105,573		9,911	80,798	10,218	13,783	21,064	13,148	9,051	13,534	14,864
City of Rockville	8,133		576	4,694	593	801	1,224	764	526	786	863

### D. Description & Justification

#### DESCRIPTION

This project provides funding for WSSC's share of Blue Plains plant-wide projects for which construction began after June 30, 1993. Major projects include: Electrical system upgrades, Floodwall construction, Lighting upgrades, Chemical system upgrades, Process Computer Control system, and Miscellaneous projects.

#### JUSTIFICATION

This is a continuation of the DCWASA's upgrading of the Blue Plains Wastewater Treatment Plant. The Blue Plains Intermunicipal Agreement of 2012; the WASA Master Plan (1998); Blue Plains Facilities Master Plan (2016), and the DCWASA Approved FY 2020 Capital Improvement Program.

#### COST CHANGE

Not applicable.

#### OTHER

The project scope has remained the same. Project costs are derived from the DCWASA Capital & Operating Budget 10-year forecast and latest project management data, and reflect DCWASA's current expenditure estimates and schedules. Given the open-ended nature of the project, this PDF does not fully reflect the total project costs. These projects are, in fact, expected to continue indefinitely. As new sub-projects are added to the Blue Plains facility plans, the associated costs will be added to this project. The funding schedule also indicates the calculated Rockville share of the cost.

#### COORDINATION

Coordinating Agencies: City of Rockville;(responsible for a share of funding); District of Columbia Water and Sewer Authority;(responsible for design and construction)  
Coordinating Projects: Not Applicable

E. Annual Operating Budget Impact (000's)		FY of Impact
Staff & Other		
Maintenance		
Debt Service	\$6,868	
Total Cost	\$6,868	
Impact on Water and Sewer Rate	\$0.02	

### F. Approval and Expenditures Data (000's)

Date First in Program	FY 95
Date First Approved	FY 02
Initial Cost Estimate	
Cost Estimate Last FY	117,624
Present Cost Estimate	111,706
Approved Request Last FY	10,487
Total Expense & Encumbrances	
Approval Request Year 1	10,811

### G. Status Information

Land Status	Not Applicable
Project Phase	On-Going
Percent Complete	0 %
Estimated Completion Date	On-Going
Growth	
System Improvement	100%
Environmental Regulation	
Population Served	
Capacity	159.6 / 370 MGD

### H. Map

MAP NOT AVAILABLE

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## Blue Plains WWTP: Enhanced Nutrient Removal

<b>A. Identification and Coding Information</b>			PDF Date	October 1, 2019	Pressure Zones	
Agency Number	Project Number	Update Code	Date Revised		Drainage Basins	BI-County 30
S - 000022.10	083800	Change			Planning Areas	BI-County

### B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'19	Estimate FY'20	Total 6 Years	Year 1 FY'21	Year 2 FY'22	Year 3 FY'23	Year 4 FY'24	Year 5 FY'25	Year 6 FY'26	Beyond 6 Years
Planning, Design & Supervision											
Land											
Construction	440,462	412,789	1,492	21,257	291	316	1,826	1,881	5,737	11,206	4,924
Other	276		15	212	3	3	18	19	57	112	49
<b>Total</b>	<b>440,738</b>	<b>412,789</b>	<b>1,507</b>	<b>21,469</b>	<b>294</b>	<b>319</b>	<b>1,844</b>	<b>1,900</b>	<b>5,794</b>	<b>11,318</b>	<b>4,973</b>

### C. Funding Schedule (000's)

Funding Source	Total	FY'19	FY'20	Total 6 Years	FY'21	FY'22	FY'23	FY'24	FY'25	FY'26	Beyond 6 Years
WSSC Bonds	192,669	167,000	677	20,292	278	302	1,743	1,796	5,476	10,697	4,700
State Aid	238,981	238,190	791								
City of Rockville	9,088	7,599	39	1,177	16	17	101	104	318	621	273

### D. Description & Justification

#### DESCRIPTION

This project provides funding for WSSC's share of the Blue Plains Enhanced Nutrient Removal projects required to achieve nutrient removal to levels below BNR levels to meet the Chesapeake Bay water quality targets determined in the 2005 Tributary Strategies Process and DC Water's 2010 NPDES permit. Major projects to achieve enhanced nutrient removal have been completed and are operational. Additional projects are required to ensure NPDES permit compliance, as flows and levels to the plant increase. The projects will include ongoing program management upgrades to the secondary treatment facilities.

#### JUSTIFICATION

The funding schedule reflects the final cost sharing agreement with the Maryland Department of the Environment, Chesapeake Bay Program Tributary Strategies Process (2005); Blue Plains Strategic Process Study, Metcalf & Eddy (2005); Selection of the Enhanced Nitrogen Removal Process Alternative for the Blue Plains Advanced Wastewater Treatment Facility, Metcalf & Eddy (2009); Blue Plains Facilities Master Plan (2016); DCWASA Approved FY2020 Capital Improvement Program; and the Blue Plains Intermunicipal Agreement of 2012.

#### COST CHANGE

ENR upgrades are substantially complete. Future upgrades are planned for secondary treatment to provide full nitrification under future flow conditions.

#### OTHER

The project scope has remained the same. Project costs are derived from the DCWASA Capital & Operating Budget 10-year forecast and latest project management data, and reflect DCWASA's current expenditure estimates and schedules. Total Nitrogen Secondary Treatment Upgrades are scheduled to be initiated in FY23 or later. At this time there are no additional BRF grant funds approved for this project. Projects extending beyond those supported by State Aid include rehabilitation and upgrades to older projects. Portions of the program have been financed by low interest loans through the Maryland Department of the Environment's Water Quality Administration State Revolving Loan Program. The funding schedule also indicates the calculated Rockville share of the cost.

#### COORDINATION

Coordinating Agencies: City of Rockville;(responsible for a share of funding); District of Columbia Water and Sewer Authority;(responsible for design and construction); Maryland Department of the Environment; U.S. Environmental Protection Agency, Region III  
Coordinating Projects: S - 000022.06 - Blue Plains WWTP: Liquid Train Projects, Part 2.

<b>E. Annual Operating Budget Impact (000's)</b>		FY of Impact
Staff & Other		
Maintenance		
Debt Service	\$12,533	28
Total Cost	\$12,533	28
Impact on Water and Sewer Rate	\$0.03	28

### F. Approval and Expenditure Data (000's)

Date First in Program	FY 08
Date First Approved	FY 07
Initial Cost Estimate	648
Cost Estimate Last FY	394,543
Present Cost Estimate	440,738
Approved Request Last FY	1,507
Total Expense & Encumbrances	412,789
Approval Request Year 1	294

### G. Status Information

Land Status	Not Applicable
Project Phase	Construction
Percent Complete	96 %
Estimated Completion Date	July 2026
Growth	
System Improvement	
Environmental Regulation	100%
Population Served	
Capacity	169.2 / 370 MGD

### H. Map



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## Blue Plains: Pipelines & Appurtenances

A. Identification and Coding Information		
Agency Number	Project Number	Update Code
S - 000022.11	113804	Change

PDF Date	October 1, 2019	Pressure Zones	
Date Revised		Drainage Basins	Bi-County 30
		Planning Areas	Bi-County

### B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'19	Estimate FY'20	Total 6 Years	Year 1 FY'21	Year 2 FY'22	Year 3 FY'23	Year 4 FY'24	Year 5 FY'25	Year 6 FY'26	Beyond 6 Years
Planning, Design & Supervision											
Land											
Construction	171,260		16,948	109,471	13,487	15,805	18,879	22,385	20,688	18,227	44,841
Other	1,714		169	1,096	135	159	189	224	207	182	449
<b>Total</b>	<b>172,974</b>		<b>17,117</b>	<b>110,567</b>	<b>13,622</b>	<b>15,964</b>	<b>19,068</b>	<b>22,609</b>	<b>20,895</b>	<b>18,409</b>	<b>45,290</b>

### C. Funding Schedule (000's)

WSSC Bonds	160,580	16,708	102,075	12,465	14,391	17,743	21,720	19,299	16,457	41,797
City of Rockville	12,394	409	8,492	1,157	1,573	1,325	889	1,596	1,952	3,493

### D. Description & Justification

#### DESCRIPTION

This project provides funding for WSSC's share of Blue Plains-associated projects which are "outside the fence" of the treatment plant. Major projects include: Potomac Interceptor Rehabilitation; Upper Potomac Interceptor; Potomac Sewage Pumping Station Rehabilitation; Main Sewage Pumping Station Intermediate repairs; Renovations to the central operations facility; Rehabilitation of the Anacostia and Potomac force mains; Influent Sewers Rehabilitation; and projects associated with the Combined Sewer Overflow (CSO) Long Term Control Plan (Clean Rivers Program) (Anacostia and Potomac Tunnels).

#### JUSTIFICATION

This is a continuation of DCWASA's upgrading of the Blue Plains-associated projects outside the fence. The Blue Plains Intermunicipal Agreement of 2012; the WASA Master Plan (1998); Technical Memorandum No. 1, Multi-Jurisdictional Use Facilities Capital Cost Allocation, (June 2013); and the DCWASA Approved FY2020 Capital Improvement Program.

#### COST CHANGE

Not applicable.

#### OTHER

The project scope has remained the same. Project costs are derived from the DC-WASA Capital & Operating Budget 10-year forecast and project management data, and reflect WASA's expenditure estimates and schedules. Given the open-ended nature of the project, this PDF does not fully reflect the total project costs. These projects are, in fact, expected to continue indefinitely. As new sub-projects are added to the Blue Plains facility plans, the associated costs will be added to this project. The funding schedule also indicates the calculated Rockville share of the cost which varies by project based on the City's relative share of WSSC's flow as derived in the Multijurisdiction Use Facilities Study.

#### COORDINATION

Coordinating Agencies: City of Rockville;(responsible for a share of funding); District of Columbia Water and Sewer Authority;(responsible for design and construction)  
Coordinating Projects: Not Applicable

E. Annual Operating Budget Impact (000's)		FY of Impact
Staff & Other		
Maintenance		
Debt Service	\$10,446	
Total Cost	\$10,446	
Impact on Water and Sewer Rate	\$0.02	

### F. Approval and Expenditure Data (000's)

Date First in Program	FY 11
Date First Approved	FY 02
Initial Cost Estimate	
Cost Estimate Last FY	152,284
Present Cost Estimate	172,974
Approved Request Last FY	17,117
Total Expense & Encumbrances	
Approval Request Year 1	13,622

### G. Status Information

Land Status	Not Applicable
Project Phase	On-Going
Percent Complete	0 %
Estimated Completion Date	On-Going
Growth	
System Improvement	45%
Environmental Regulation	55%
Population Served	
Capacity	

### H. Map

MAP NOT AVAILABLE

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# Piscataway Bioenergy

<b>A. Identification and Coding Information</b>			PDF Date	October 1, 2019	Pressure Zones	
Agency Number	Project Number	Update Code	Date Revised		Drainage Basins	
S - 000103.02	153802	Change			Planning Areas	BI-County

## B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'19	Estimate FY'20	Total 6 Years	Year 1 FY'21	Year 2 FY'22	Year 3 FY'23	Year 4 FY'24	Year 5 FY'25	Year 6 FY'26	Beyond 6 Years
Planning, Design & Supervision	48,397	28,379	10,818	9,200	2,400	2,400	2,400	2,000			
Land											
Construction	220,810	810	27,000	193,000	56,000	64,000	45,000	28,000			
Other	12,001		1,891	10,110	2,920	3,320	2,370	1,500			
<b>Total</b>	<b>281,208</b>	<b>29,189</b>	<b>39,709</b>	<b>212,310</b>	<b>61,320</b>	<b>69,720</b>	<b>49,770</b>	<b>31,500</b>			

## C. Funding Schedule (000's)

WSSC Bonds	277,138	28,619	39,208	209,310	59,820	68,220	49,770	31,500			
Federal Aid	570	570									
State Aid	3,500		500	3,000	1,500	1,500					

## D. Description & Justification

### DESCRIPTION

This project will develop a comprehensive program for the engineering, design, construction, maintenance, and monitoring and verification necessary to add sustainable energy equipment and systems to produce biogas and electricity at Piscataway WRRF. It will provide a reduction in operations, maintenance, chemicals, biosolids transportation, and biosolids disposal costs. It will also enhance existing operating conditions and reliability while continuing to meet all permit requirements, and ensure a continued commitment to environmental stewardship at WSSC sites. The scope of work includes, but is not limited to, the addition of anaerobic digestion equipment; thermal hydrolysis pretreatment equipment; gas cleaning, storage, and upgrade systems; tanks; piping; valves; pumps; biosolids pre- and post dewatering; cake receiving and blending; cake storage; effluent disinfection systems; instrumentation; flow metering; power measurement; and combined heat and power generation systems.

### JUSTIFICATION

In March 2009, the WSSC received approval for a federal Department of Energy grant of \$570,900 for the feasibility study/conceptual design phase. On June 16, 2010, the WSSC awarded the study contract to AECOM Technical Services, Inc., of Laurel, Maryland. The study was completed in December 2011, and the Thermal Hydrolysis/Mesophilic Anaerobic Digestion/Combined Heat & Power facility was recommended to be constructed and was presented to the Commission in April 2012.

The EPA is urging wastewater utilities to utilize this commercially available technology (anaerobic digestion) to produce power at a cost below retail electricity, displace purchased fuels for thermal needs, produce renewable fuel for green power programs, enhance power reliability for the wastewater treatment plant to prevent sanitary sewer overflows, reduce biosolids production and improve the health of the Chesapeake Bay, and to reduce greenhouse gas (GHG) and other air pollutants. In April 2009, the EPA announced that greenhouse gases contributed to air pollution that may endanger public health or welfare, and began proceedings to regulate CO2 under the Clean Air Act. In June 2014, the EPA announced a proposed rule to reduce carbon emissions from power plants by 30% by 2030, compared to the levels in 2005. Based on AECOM's feasibility study work as of May 2011, a regional/centralized plant based on a Thermal Hydrolysis/Mesophilic Anaerobic Digestion/Combined Heat & Power (TH/MAD/CHP) process supplemented by restaurant grease fuel design was recommended.

The environmental benefits are estimated as follows: Recover approximately 2 MW of renewable energy from wastewater biomass; reduce Greenhouse Gas production by 11,800 tons/year; reduce biosolids output by 50 - 55% of current output; reduce lime demand by 4,100 tons/year; maintain permitted nutrient load limits to the Chesapeake Bay; reduce 5 million gallons/year of grease discharge to sewers; produce pathogen-free Class A Biosolids.

The economic benefits are estimated as follows: Recover more than \$1.5 million of renewable energy costs/year; reduce biosolids disposal costs by - \$1.7 million/year; reduce chemical costs by - \$500,000/year; hedge against rising costs of power fuel and chemicals; provide a net payback over time.

Plans & Studies: Appel Consultants, Urban Waste Grease Resource Assessment-NREL (November 1998); Environmental Protection Agency (EPA), Opportunities For and Benefits Of Combined Heat and Power at Wastewater Treatment Facilities (December 2006); Brown & Caldwell, Anaerobic Digestion and Electric Generation Options for WSSC (November 2007); Metcalf & Eddy, WSSC Sludge Digestion Study for Piscataway and Seneca (December 2007); Black & Veatch, WSSC Digester Scope and Analysis (December 2007); JMT, Prince George's County Septage (FOG) Discharge Facility Study (February 2008); JMT, Western Research Institute (WRI) Biogas Feasibility Study Scope of Work - WSSC (April 2008); JMT, Montgomery County Septage (FOG) Discharge Facility Study (January 2010); Facility Plan for the Rock Creek Wastewater Treatment Plant (January 2010); AECOM Technical Services, Inc., Anaerobic Digestion/Combined Heat & Power Study (December 2011, Executive Summary Revised May 2013), HDR Inc. Design Development Report

<b>E. Annual Operating Budget Impact (000's)</b>		FY of Impact
Staff & Other		
Maintenance		
Debt Service	\$18,028	25
Total Cost	\$18,028	25
Impact on Water and Sewer Rate	\$0.04	25

## F. Approval and Expenditure Data (000's)

Date First in Program	FY 15
Date First Approved	FY 10
Initial Cost Estimate	345
Cost Estimate Last FY	261,993
Present Cost Estimate	281,208
Approved Request Last FY	58,118
Total Expense & Encumbrances	29,189
Approval Request Year 1	61,320

## G. Status Information

Land Status:	Public/Agency owned land
Project Phase	Construction
Percent Complete	2 %
Estimated Completion Date	December 2023

Growth	
System Improvement	100%
Environmental Regulation	
Population Served	
Capacity	

## H. Map

MAP NOT AVAILABLE

(March 2017).

**COST CHANGE**

Cost increased based upon 30% design estimate and to reflect continuing market trends in construction industry escalations for costs of labor, steel, diesel, miscellaneous metals, concrete, electrical and process equipment, and other materials.

**OTHER**

The project scope has remained the same. The Commission has a defined scope and estimated capital cost, and is able to proceed with the detailed design and construction of the anaerobic digestion, biomass, and combined heat and power generation system facilities for treating all biosolids from WSSC's Damascus, Seneca, Parkway, Western Branch, and Piscataway WRRFs. The Montgomery and Prince George's County Councils were briefed and approved the project by resolution on November 25, 2014, and September 9, 2014, respectively. In April 2017 the Maryland Energy Administration notified WSSC of approval of grant funding up to \$500,000. In June 2017 WSSC was approved for a \$3 million grant through the Maryland Department of the Environment's Energy Water Infrastructure Program (EWIP). WSSC has also applied for grants from the local power utility. WSSC will continue to apply for other available funding sources. The Commission retained the following consulting services: in 2015 - Hawkins, Delafield and Wood - procurement; Raffetis Financial Consultants - financial; in 2016 - HDR Inc for program management and construction management for the Bio-Energy project. In Sept 2017 issued a Request for Proposals (RFP) to two design-build entities for a progressive design-build delivery of the Bio-Energy Project. Transporting of biosolids from Western Branch WRRF to Piscataway included in FY2019 program update. A portion of this project will be financed by low interest loans through the Maryland Department of the Environment's Water Quality Administration State Revolving Loan Program. In June 2018 the Commission awarded a Progressive Design-Build Contract to PC Construction for the Bioenergy Project.

**COORDINATION**

Coordinating Agencies: Chesapeake Bay Critical Areas; Maryland Department of the Environment; Maryland Energy Administration; Maryland-National Capital Park & Planning Commission;(Mandatory Referral Process); Montgomery County Department of Environmental Protection; Montgomery County Government; Prince George's County Government; SMECO; Washington Gas Light Company

Coordinating Projects, S - 000096.14 - Piscataway WRRF Facility Upgrades, S - 000170.08 - Septage Discharge Facility Planning & Implementation

# Trunk Sewer Reconstruction Program

A. Identification and Coding Information		
Agency Number	Project Number	Update Code
S - 000170.09	113805	Change

PDF Date	October 1, 2019
Date Revised	

Pressure Zones	
Drainage Basins	Bi-County 30
Planning Areas	Bi-County

## B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'19	Estimate FY'20	Total 6 Years	Year 1 FY'21	Year 2 FY'22	Year 3 FY'23	Year 4 FY'24	Year 5 FY'25	Year 6 FY'26	Beyond 6 Years
Planning, Design & Supervision	44,184		5,126	39,058	6,287	6,931	6,358	6,303	6,492	6,687	
Land											
Construction	268,369		54,750	213,619	56,887	54,053	37,972	20,935	21,563	22,209	
Other	31,254		5,988	25,266	6,317	6,097	4,433	2,724	2,805	2,890	
<b>Total</b>	<b>343,807</b>		<b>65,864</b>	<b>277,943</b>	<b>69,491</b>	<b>67,081</b>	<b>48,763</b>	<b>29,962</b>	<b>30,860</b>	<b>31,786</b>	

## C. Funding Schedule (000's)

WSSC Bonds	343,807	65,864	277,943	69,491	67,081	48,763	29,962	30,860	31,786
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## D. Description & Justification

### DESCRIPTION

The Trunk Sewer Reconstruction Program provides for the inspection, evaluation, planning, design, and construction required for the rehabilitation of sewer mains and their associated manholes in environmentally sensitive areas (ESA). This includes both trunk sewers 15-inches in diameter and greater, along with associated smaller diameter pipe less than 15-inches in diameter. The smaller diameter pipe is included due to its location within the ESA. The Program also includes planning, design, and construction for the prioritized replacement of force mains.

### JUSTIFICATION

Under the terms of the Consent Decree the WSSC Trunk Sewer Inspection Program inspected all required sewers in 21 basins by December 2010 and completed Sewer System Evaluation Surveys (SSES) for 9 basins. WSSC shall conduct rainfall, groundwater, and flow monitoring to determine Inflow/Infiltration (I/I) rates and identify areas of limited capacity through collection system modeling. Where appropriate, WSSC shall use additional means to identify sources of I/I, including CCTV, smoke, and/or dye testing. All the Trunk Sewer Inspections, SSES work, and other related collection system evaluations are complete. Due to the delay in receiving permits, as well as Right-of-Entry permissions and subcontractor availability, trunk sewer reconstruction work has been delayed. All USACE and MDE permits have been received. WSSC Sanitary Sewer Overflow Consent Decree (December 7, 2005). Second Amendment to WSSC Sanitary Sewer Overflow Consent Decree (December 4, 2015)

### COST CHANGE

Program costs reflect the latest expenditure and schedule estimates based upon the recommendations from the Buried Wastewater Assets System Asset Management Plan.

### OTHER

The project scope has remained the same. Reconstruction work will include: reduction of I/I; replacement of substandard sewer segments; in situ lining of sewer segments; pipeline and manhole protection; rebuilding of manholes; and correction of structural defects and poor alignment. The reconstruction work in each sewer basin will be prioritized to most effectively prevent SSOs and backups. A Second Amendment to the Consent Decree extending WSSC's deadline to FY 2022 was agreed to by the U.S. Environmental Protection Agency, U.S. Department of Justice, and Maryland Department of the Environment and was entered by the U.S. District Court. All construction contracts for ESA work have been awarded and the approved amounts have been utilized in the current budget projections. As actual construction progresses the projections may be updated. Most of the upfront costs are associated with the construction of access roads and by-pass pumping. After completion of a majority of the Priority 1 construction activities associated with the Consent Decree, Phase 2 work (Priority 2 & 3 plus any newly identified Priority 1) is programmed at roughly five miles per year beginning in FY 2024. Land costs are included in WSSC Project S-203.00.

### COORDINATION

Coordinating Agencies: Maryland Department of Natural Resources; Maryland Department of the Environment; Maryland Historical Trust; Maryland State Highway Administration; Maryland-National Capital Park & Planning Commission; Montgomery County Department of Public Works and Transportation; National Park Service; Prince George's County Department of Permitting Inspection and Enforcement; U.S. Army Corps of Engineers; U.S. Environmental Protection Agency, Region III  
Coordinating Projects: S - 000001.01 - Sewer Reconstruction Program

E. Annual Operating Budget Impact (000's)		FY of Impact
Staff & Other		
Maintenance		
Debt Service	\$22,365	
Total Cost	\$22,365	
Impact on Water and Sewer Rate	\$0.05	

## F. Approval and Expenditure Data (000's)

Date First in Program	FY 11
Date First Approved	FY 11
Initial Cost Estimate	
Cost Estimate Last FY	371,635
Present Cost Estimate	343,807
Approved Request Last FY	75,326
Total Expense & Encumbrances	
Approval Request Year 1	69,491

## G. Status Information

Land Status	Land and R/W to be acquired
Project Phase	On-Going
Percent Complete	0%
Estimated Completion Date	On-Going
Growth	
System Improvement	100%
Environmental Regulation	
Population Served	
Capacity	

## H. Map

MAP NOT APPLICABLE

**FINANCIAL SUMMARY**

(ALL FIGURES IN THOUSANDS)

DATE: October 1, 2019

**INFORMATION ONLY PROJECTS**

AGENCY NUMBER	PROJECT NAME	EST. TOTAL COST	EXPEND THRU 19	EST. EXPEND 20	TOTAL SIX YEARS	EXPENDITURE SCHEDULE						BEYOND SIX YEARS	PAGE NUM
						YR 1 21	YR 2 22	YR 3 23	YR 4 24	YR 5 25	YR 6 26		
W-1.00	Water Reconstruction Program	721,454	0	70,232	651,222	72,494	85,068	101,030	115,018	131,051	146,561	0	7-3
S-1.01	Sewer Reconstruction Program	425,442	0	53,218	372,224	55,495	59,657	61,447	63,290	65,192	67,143	0	7-4
A-101.04	Laboratory Division Building Expansion	21,844	21	1,243	20,580	1,276	9,525	9,779	0	0	0	0	7-5
A-102.00	Engineering Support Program	132,000	0	18,000	114,000	18,000	18,000	18,000	20,000	20,000	20,000	0	7-6
A-103.00	Energy Performance Program	20,236	0	3,094	17,142	7,595	4,841	3,331	1,375	0	0	0	7-7
W-105.00	Water Storage Facility Rehabilitation Program	18,700	0	550	18,150	1,650	3,300	3,300	3,300	3,300	3,300	0	7-8
W-107.00	Specialty Valve Vault Rehabilitation Program	8,957	0	391	6,595	1,132	2,214	1,213	1,266	443	327	1,971	7-9
A-108.00	Advanced Metering Infrastructure	99,603	980	3,039	95,584	20,687	30,906	30,906	13,085	0	0	0	7-10
A-110.00	Other Capital Programs	500,045	0	68,862	431,183	70,610	66,021	67,227	73,927	77,442	75,956	0	7-11
S-300.01	D'Arcy Park North Relief Sewer	941	91	275	575	290	285	0	0	0	0	0	7-12
<b>TOTALS</b>		<b>1,949,222</b>	<b>1,092</b>	<b>218,904</b>	<b>1,727,255</b>	<b>249,229</b>	<b>279,817</b>	<b>296,233</b>	<b>291,261</b>	<b>297,428</b>	<b>313,287</b>	<b>1,971</b>	

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# Water Reconstruction Program

<b>A. Identification and Coding Information</b>			PDF Date	October 1, 2019	Pressure Zones	Bi-County
Agency Number	Project Number	Update Code	Date Revised		Drainage Basins	
W - 000001.00		Change			Planning Areas	Bi-County

## B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'19	Estimate FY'20	Total 6 Years	Year 1 FY'21	Year 2 FY'22	Year 3 FY'23	Year 4 FY'24	Year 5 FY'25	Year 6 FY'26	Beyond 6 Years
Planning, Design & Supervision	106,361		11,034	95,327	11,798	12,058	14,489	16,126	19,353	21,503	
Land											
Construction	526,277		49,938	476,339	51,143	62,227	73,928	84,905	96,147	107,989	
Other	88,816		9,260	79,556	9,553	10,783	12,613	13,987	15,551	17,069	
<b>Total</b>	<b>721,454</b>		<b>70,232</b>	<b>651,222</b>	<b>72,494</b>	<b>85,068</b>	<b>101,030</b>	<b>115,018</b>	<b>131,051</b>	<b>146,561</b>	

## C. Funding Schedule (000's)

WSSC Bonds	721,454		70,232	651,222	72,494	85,068	101,030	115,018	131,051	146,561	
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## D. Description & Justification

**DESCRIPTION**  
 The purpose of this program is to renew and extend the useful life of water mains, house connections, and large water services. Portions of the water system are more than 80 years old. Bare cast iron mains, installed generally before 1965, permit the build-up of tuberculation which can reduce flow and cause discoloration at the customer's tap. Selected replacement is necessary to supply water in sufficient quantity, quality, and pressure for domestic use and fire fighting. As the system ages, water main breaks are increasing. Selected mains are chronically breaking and other mains are undersized for the current flow standards. Replacement, rehabilitation via structural lining, and the addition of cathodic protection to these mains provides added value to the customer. Galvanized, copper, and cast iron water mains, as well as all other water main appurtenances including meter and PRV vaults are replaced on an as needed basis when they have exceeded their useful life.  
 \* EXPENDITURES FOR WATER RECONSTRUCTION ARE EXPECTED TO CONTINUE INDEFINITELY.

**JUSTIFICATION**  
 The program's projected work units and expenditure levels for FY '21 are as follows: design and construction of main replacement and associated water house connection renewals, 25 miles - \$54.8M; cathodic protection - \$1.5M; design and construction of large water service replacements - \$11.0M; emergency contracts at depots - \$5.2M. Note: The specific mix and type of water main reconstruction may vary in any given year depending on the nature and priority of the work to be addressed. Program level may be adjusted in future years based upon the results of the Asset Management Plan. Based upon the prioritization and recommendations in the FY 2021 Enterprise Asset Management Plan, the number of miles of water main replacement was maintained at 25 miles per year.  
 Flow studies, water system modeling, and field surveys are routinely conducted. The annual Buried Water Assets System Asset Management Plan identifies the business risk exposure of the water distribution system. FY 2021 Enterprise Asset Management Plan (May 2019).

**COST CHANGE**  
 Program costs reflect the latest expenditure and schedule estimates based on the recommendations from the FY 2021 Enterprise Asset Management Plan.

**OTHER**  
 The water reconstruction program has been ongoing since 1979. Funding in the six-year program period is subject to Spending Affordability Guideline limits. The following work accomplishments through FY '19 summarize the magnitude of the reconstruction effort: 1,886 miles rehabilitated or replaced; 258 large water service/meters replaced. It is anticipated water reconstruction activity will be a perpetual element of future work programs.

**COORDINATION**  
 Coordinating Agencies: Local Community Civic Associations; Maryland State Highway Administration; Montgomery County Department of Public Works and Transportation; Montgomery County Government; Prince George's County Government; Prince George's County Department of Permitting Inspection and Enforcement  
 Coordinating Projects: W - 000161.01 - Large Diameter Water Pipe & Large Valve Rehabilitation Program

<b>E. Annual Operating Budget Impact (000's)</b>		FY of Impact
Staff & Other		
Maintenance		
Debt Service	\$46,932	
Total Cost	\$46,932	
Impact on Water and Sewer Rate	\$0.10	

<b>F. Approval and Expenditure Data (000's)</b>	
Date First in Program	
Date First Approved	
Initial Cost Estimate	
Cost Estimate Last FY	815,164
Present Cost Estimate	721,454
Approved Request Last FY	75,784
Total Expense & Encumbrances	
Approval Request Year 1	72,494

<b>G. Status Information</b>	
Land Status	Not Applicable
Project Phase	On-Going
Percent Complete	0 %
Estimated Completion Date	On-Going
Growth	
System Improvement	100%
Environmental Regulation	
Population Served	
Capacity	

**H. Map**

MAP NOT APPLICABLE

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# Sewer Reconstruction Program

A. Identification and Coding Information			PDF Date	October 1, 2019	Pressure Zones
Agency Number	Project Number	Update Code	Date Revised		Drainage Basins
S - 000001.01		Change			Bl-County 30
					Planning Areas
					Bl-County

## B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'19	Estimate FY'20	Total 6 Years	Year 1 FY'21	Year 2 FY'22	Year 3 FY'23	Year 4 FY'24	Year 5 FY'25	Year 6 FY'26	Beyond 6 Years
Planning, Design & Supervision	39,302		4,460	34,842	5,212	5,581	5,748	5,921	6,098	6,281	
Land											
Construction	347,464		43,920	303,544	45,238	48,653	50,113	51,615	53,166	54,759	
Other	38,676		4,838	33,838	5,045	5,423	5,586	5,754	5,927	6,103	
<b>Total</b>	<b>425,442</b>		<b>53,218</b>	<b>372,224</b>	<b>55,495</b>	<b>59,657</b>	<b>61,447</b>	<b>63,290</b>	<b>65,192</b>	<b>67,143</b>	

## C. Funding Schedule (000's)

WSSC Bonds	285,442	33,218	252,224	35,495	39,657	41,447	43,290	45,192	47,143
State Aid	140,000	20,000	120,000	20,000	20,000	20,000	20,000	20,000	20,000

## D. Description & Justification

### DESCRIPTION

This program funds a comprehensive sewer system rehabilitation program in residential areas. The main component of this program is the rehabilitation and/or repair of sewer mains less than 15-inches in diameter and sewer house connections. The program addresses infiltration and inflow control, exposed pipe problems, and future capacity needs for the basin. The rehabilitation and repair funded by this program includes the rehabilitation and repair recommended by comprehensive basin studies as well as that resulting from sewer systems evaluations, line blockage assessments, field surveys, and closed circuit TV inspections. This program does not include funding for any major capital projects (e.g. CIP size relief or replacement sewers) that may result from a comprehensive basin study. These are funded separately in the CIP.

\* EXPENDITURES FOR SEWER RECONSTRUCTION ARE EXPECTED TO CONTINUE INDEFINITELY.

### JUSTIFICATION

The program's projected work units and expenditure levels for FY '21 are as follows: 20 miles of mainline design & construction - \$29.7M; 6 miles of lateral line construction and associated sewer house connection renewals - \$23.6M; emergency repairs - \$2.3M. Note: The specific mix and type of sewer reconstruction may vary in any given year depending on identified system defects. The work units and associated costs are based on our historical experience with regards to timing of design and construction work and availability of authorized contractors for proprietary rehabilitation techniques. Comprehensive Basin Studies, Sewer System Evaluation Surveys, Line Blockage Assessments, field surveys, closed circuit TV inspections, and/or other activities investigating specific portions of the collection system. Annual Buried Wastewater Assets System Asset Management Plan. FY2021 Enterprise Asset Management Plan (May 2019).

### COST CHANGE

The overall program cost estimate reflects the current plan for the completion of Phase 2 (Priority 2 and Priority 3) Consent Decree work.

### OTHER

The project scope has remained the same. The program schedule and expenditures shown above reflect the terms of the Sanitary Sewer Overflow Consent Decree. The Consent Decree between WSSC, Maryland Department of the Environment (MDE), and the EPA was entered into on December 7, 2005. WSSC has applied for low interest loans through the MDE's Water Quality Administration State Revolving Loan Program and grant funding from the MDE Bay Restoration Fund for portions of this program. The sewer reconstruction program was established in 1979. Expenditures for grouting repairs are included in the operating budget. The following work accomplishments through FY '19 summarize the magnitude of this reconstruction effort: sewer main reconstruction, 503 miles; and sewer house connection renewals, 22,429. It is anticipated that sewer reconstruction activity will be a perpetual element of future work programs.

### COORDINATION

Coordinating Agencies: Local Community Civic Associations; Maryland Department of the Environment; Maryland State Highway Administration; Montgomery County Department of Public Works and Transportation; Montgomery County Government; Prince George's County Government; Prince George's County Department of Permitting Inspection and Enforcement; U.S. Environmental Protection Agency, Region III  
Coordinating Projects: S - 000170,09 - Trunk Sewer Reconstruction Program

E. Annual Operating Budget Impact (000's)		FY of Impact
Staff & Other		
Maintenance		
Debt Service	\$18,568	
Total Cost	\$18,568	
Impact on Water and Sewer Rate	\$0.04	

## F. Approval and Expenditure Data (000's)

Date First in Program	
Date First Approved	
Initial Cost Estimate	
Cost Estimate Last FY	496,842
Present Cost Estimate	425,442
Approved Request Last FY	64,684
Total Expense & Encumbrances	
Approval Request Year 1	55,495

## G. Status Information

Land Status	Not Applicable
Project Phase	On-Going
Percent Complete	0 %
Estimated Completion Date	On-Going
Growth	
System Improvement	100%
Environmental Regulation	
Population Served	
Capacity	

## H. Map

MAP NOT APPLICABLE



# Laboratory Division Building Expansion

A. Identification and Coding Information			PDF Date	October 1, 2019	Pressure Zones	
Agency Number	Project Number	Update Code	Date Revised		Drainage Basins	
A-000101.04		Add			Planning Areas	

## B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'19	Estimate FY'20	Total 6 Years	Year 1 FY'21	Year 2 FY'22	Year 3 FY'23	Year 4 FY'24	Year 5 FY'25	Year 6 FY'26	Beyond 6 Years
Planning, Design & Supervision	3,862	21	1,130	2,711	1,160	800	751				
Land											
Construction	15,998			15,998		7,959	8,139				
Other	1,984		113	1,871	116	866	889				
<b>Total</b>	<b>21,844</b>	<b>21</b>	<b>1,243</b>	<b>20,580</b>	<b>1,276</b>	<b>9,525</b>	<b>9,779</b>				

## C. Funding Schedule (000's)

WSSC Bonds	21,844	21	1,243	20,580	1,276	9,525	9,779				
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## D. Description & Justification

### DESCRIPTION

This project provides for the planning, design, and construction of a 12,405 square-foot expansion to the Consolidated Laboratory Facility to accommodate the increased analytical workload, ensure that all data meets requirements set forth by the regulators, and to improve the safety of WSSC's employees and customers.

### JUSTIFICATION

WSSC's Consolidated Laboratory Facility is an MDE-certified laboratory constructed in 2000 to meet the original laboratory program of a maximum of 500,000 tests per year. During the past 19 years, WSSC has experienced a significant increase in the analytical workload, number of employees, and number of instruments, and also added new functions with the creation of the Water Quality Division. The historical workload of 500,000 tests per year is expected to grow to over 750,000 tests per year in the coming years.

Currently, WSSC depends on subcontract laboratories for critical and regulatory analysis that cannot be handled in-house due to space, infrastructure, and instrument constraints. Lack of control and supervision by qualified WSSC staff on the regulatory samples tested in subcontract laboratories has resulted in errors in the past that could potentially lead to a citation/violation for WSSC. Additionally, increased analytical time involved with subcontract analysis may delay response to critical water contamination events, which could jeopardize the safety of WSSC's customers. An MDE Laboratory audit recommended having separate rooms for analyzing wastewater and drinking water microbiological samples. Lab Expansion Business Case Evaluation, CDM Smith (March 2019).

### COST CHANGE

Not applicable.

### OTHER

The present project scope was developed for the FY 2021 CIP and has an estimated cost of \$21,844,000. The expenditure and schedule projections shown in Block B are planning level estimates and may change based upon site conditions and design constraints. The Water Quality Division is in the process of implementing a Water Quality Surveillance and Response System to continuously monitor and respond to drinking water contamination events on a real-time basis from a centralized Water Quality Control Center. The Water Quality Division also manages the Contamination Rapid Response Team (CRRT) and the response to all water quality related customer complaints. Planning work began in FY 2019 under ESP project A-852.03, Laboratory Services Building Expansion.

### COORDINATION

Coordinating Agencies: Maryland Department of the Environment; Montgomery County Government; Prince George's County Government; U.S. Environmental Protection Agency, Region III  
 Coordinating Projects: Not Applicable

E. Annual Operating Budget Impact (000's)			FY of Impact
Staff & Other			
Maintenance			
Debt Service	\$1,421		24
<b>Total Cost</b>	<b>\$1,421</b>		<b>24</b>
Impact on Water and Sewer Rate			

## F. Approval and Expenditure Data (000's)

Date First in Program	FY 21
Date First Approved	FY 21
Initial Cost Estimate	21,844
Cost Estimate Last FY	
Present Cost Estimate	21,844
Approved Request Last FY	
Total Expense & Encumbrances	21
Approval Request Year 1	1,276

## G. Status Information

Land Status	Public/Agency owned
	Kind
Project Phase	Design
Percent Complete	0 %
Estimated Completion Date	June 2023

Growth	
System Improvement	100%
Environmental Regulation	
Population Served	
Capacity	750,000 tests annually

## H. Map

MAP NOT APPLICABLE



# Advanced Metering Infrastructure

<b>A. Identification and Coding Information</b>			PDF Date	October 1, 2019	Pressure Zones	
Agency Number	Project Number	Update Code	Date Revised		Drainage Basins	
A - 000109.00		Change			Planning Areas	Bi-County

## B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'19	Estimate FY'20	Total 6 Years	Year 1 FY'21	Year 2 FY'22	Year 3 FY'23	Year 4 FY'24	Year 5 FY'25	Year 6 FY'26	Beyond 6 Years
Planning, Design & Supervision	450	450									
Land											
Construction	90,186	530	2,763	86,893	18,806	28,096	28,096	11,895			
Other	8,967		276	8,691	1,881	2,810	2,810	1,190			
<b>Total</b>	<b>99,603</b>	<b>980</b>	<b>3,039</b>	<b>95,584</b>	<b>20,687</b>	<b>30,906</b>	<b>30,906</b>	<b>13,085</b>			

## C. Funding Schedule (000's)

WSSC Bonds	99,603	980	3,039	95,584	20,687	30,906	30,906	13,085			
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## D. Description & Justification

### DESCRIPTION

This project provides for the implementation of a system-wide automated meter reading infrastructure system (System), new comprehensive customer billing system, new data analysis software, and software integration with the Commission's data management system. All meters will receive new Meter Interface Units with internal antenna capable of obtaining and transmitting the meter register reading. All readings will be collected remotely by either a fixed or cellular communication network.

### JUSTIFICATION

The System will be required to obtain accurate register readings from a variety of water meters located in indoor, pit-set, and underground vault settings, and be universally compatible with the existing meters in the distribution system.  
 Dial Outbound AMR Trial Final Report, Metering Services, Inc. (1990); An Economic Evaluation of AMR for WSSC, Marilyn Harrington (1992); Cost of Meter Reading Study, Marilyn Harrington (2000); The WSSC Experience with Radio-Frequency AMR on Commercial & Industrial Meters (2002); Radio Frequency Solution for Meter Reading (2003); AMR Phase I (July 2005); Customer Care Team Departmental Action Item#20 - AMR Installation (2007); Advanced Metering Infrastructure Study, R.W. Beck (March 2011).

### COST CHANGE

Order of Magnitude cost estimates were increased for inflation.

### OTHER

The project scope has remained the same. AMI will improve both customer service and operational efficiency. The expected results include: Monthly billing based on actual meter readings. This would reduce bill size to help customers stay current with their payments, help customers develop a greater awareness of their water consumption, and ensure that problems such as excessive consumption due to leaks are addressed more quickly; Active notification of customers with abnormal consumption that might signify leaks before they get high consumption bills; Reduced customer calls; Reduced field investigation visits; Provide opportunities to employ more sophisticated rate structures; Analysis of individual consumption patterns to detect meters suspected of wearing out, or perform meter sizing analysis to ensure that large meters are optimally sized; Monitoring of individual consumption to perform precise, targeted conservation enforcement during droughts; Opportunities to improve the monitoring and operation of the distribution system, in order to detect and reduce non-revenue water. Schedule and expenditure estimates are Order of Magnitude estimates originating from the March 2011 study. These estimates are expected to change based upon the latest technology available at the time the project is bid. The AMI project has been delayed until the replacement of the Commission's Customer Service Information System (CSIS) is completed. Implementation of the new customer billing software, Customer2Meter (C2M), and pilot testing of the latest meter technology is underway.

### COORDINATION

Coordinating Agencies: Montgomery County Government; Prince George's County Government  
 Coordinating Projects: Not Applicable

<b>E. Annual Operating Budget Impact (000's)</b>		FY of Impact
Staff & Other		
Maintenance		
Debt Service	\$6,479	25
<b>Total Cost</b>	<b>\$6,479</b>	<b>25</b>
Impact on Water and Sewer Rate	\$0.01	25

## F. Approval and Expenditure Data (000's)

Date First in Program	FY 13
Date First Approved	FY 13
Initial Cost Estimate	66,000
Cost Estimate Last FY	96,750
Present Cost Estimate	99,603
Approved Request Last FY	17,577
Total Expense & Encumbrances	980
Approval Request Year 1	20,687

## G. Status Information

Land Status	Not Applicable
Project Phase	Planning
Percent Complete	80 %
Estimated Completion Date	June 2024
Growth	
System Improvement	100%
Environmental Regulation	
Population Served	1,800,000
Capacity	

## H. Map



## Other Capital Programs

<b>A. Identification and Coding Information</b>			PDF Date	October 1, 2019	Pressure Zones	
Agency Number	Project Number	Update Code	Date Revised		Drainage Basins	
A - 000110.00		Add			Planning Areas	Bi-County

### B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'19	Estimate FY'20	Total 6 Years	Year 1 FY'21	Year 2 FY'22	Year 3 FY'23	Year 4 FY'24	Year 5 FY'25	Year 6 FY'26	Beyond 6 Years
Planning, Design & Supervision											
Land											
Construction	239,400		34,200	205,200	34,200	34,200	34,200	34,200	34,200	34,200	
Other	260,645		34,662	225,983	36,410	31,821	33,027	39,727	43,242	41,756	
<b>Total</b>	<b>500,045</b>		<b>68,862</b>	<b>431,183</b>	<b>70,610</b>	<b>66,021</b>	<b>67,227</b>	<b>73,927</b>	<b>77,442</b>	<b>75,956</b>	

### C. Funding Schedule (000's)

WSSC Bonds	500,045	68,862	431,183	70,610	66,021	67,227	73,927	77,442	75,956
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### D. Description & Justification

#### DESCRIPTION

Other Capital Programs (OCP) includes miscellaneous capital projects, programs and expenditures for common, non-CIP, enterprise-wide activities such as Relocations, New Water & Sewer House Connections, Purchase of Water Meters, Paving and General Construction of Local Lines.  
 \*EXPENDITURES FOR OTHER CAPITAL PROGRAMS ARE EXPECTED TO CONTINUE INDEFINITELY.

#### JUSTIFICATION

The OCP does not include proposed "major projects" which, by law, must be programmed in the WSSC Six-Year Capital Improvements Program (CIP) or projects to serve new development.

#### COST CHANGE

Not applicable.

#### OTHER

The OCP summarizes capital expenditures and allocated costs that are not already included in the CIP or in other Information Only projects. Expenditures for the budget year are estimated during the annual CIP update cycle each summer for the Proposed CIP document. The estimates will be revised and updated during the annual budget update cycle each fall for the Proposed Operating & Capital Budget document. Future years are Order of Magnitude estimates and are expected to change with each update cycle.

#### COORDINATION

Coordinating Agencies: Not Applicable  
 Coordinating Projects: Not Applicable

<b>E. Annual Operating Budget Impact (000's)</b>		FY of Impact
Staff & Other		
Maintenance		
Debt Service	\$32,529	
Total Cost	\$32,529	
Impact on Water and Sewer Rate	\$0.07	

### F. Approval and Expenditure Data (000's)

Date First in Program	FY 21
Date First Approved	FY 21
Initial Cost Estimate	
Cost Estimate Last FY	
Present Cost Estimate	500,045
Approved Request Last FY	
Total Expense & Encumbrances	
Approval Request Year 1	70,610

### G. Status Information

Land Status	Not Applicable
Project Phase	On-Going
Percent Complete	0 %
Estimated Completion Date	On-Going
Growth	
System Improvement	100%
Environmental Regulation	
Population Served	
Capacity	

### H. Map



(F)  
W

**FINANCIAL SUMMARY**

DATE: October 1, 2019

(ALL FIGURES IN THOUSANDS)

**PRINCE GEORGE'S COUNTY WATER PROJECTS**

AGENCY NUMBER	PROJECT NAME	EST. TOTAL COST	EXPEND THRU 19	EST. EXPEND 20	TOTAL SIX YEARS	EXPENDITURE SCHEDULE						BEYOND SIX YEARS	PAGE NUM	
						YR 1 21	YR 2 22	YR 3 23	YR 4 24	YR 5 25	YR 6 26			
W-12.02	Prince George's County HG415 Zone Water Main	3,910	531	1,105	2,274	2,201	73	0	0	0	0	0	0	5-2
W-34.02	Old Branch Avenue Water Main	22,908	2,888	5,574	14,446	7,772	6,674	0	0	0	0	0	0	5-3
W-34.04	Branch Avenue Water Transmission Improvements	42,931	21,964	4,343	16,624	3,520	9,460	3,311	333	0	0	0	0	5-4
W-34.05	Marlboro Zone Reinforcement Main	4,263	532	2,496	1,235	1,235	0	0	0	0	0	0	0	5-5
W-62.06	Rosaryville Water Storage Facility	8,510	0	0	230	0	0	0	0	0	230	8,280	0	5-6
W-84.02	Ritchie Marlboro Road Transmission & PRV	9,729	8,947	713	69	69	0	0	0	0	0	0	0	5-7
W-84.03	Smith Home Farms Water Main	2,883	974	606	1,303	439	435	429	0	0	0	0	0	5-8
W-84.04	Westphalia Town Center Water Main	1,708	639	45	1,024	342	404	278	0	0	0	0	0	5-9
W-84.05	Prince George's County 450A Zone Water Main	79,598	2,498	567	76,523	18,403	16,375	15,325	13,225	8,925	6,270	0	0	5-10
W-93.01	Konterra Town Center East Water Main	2,121	67	714	1,340	814	526	0	0	0	0	0	0	5-11
W-105.01	Marlton Section 18 Water Main, Lake Marlton Avenue	2,737	30	1	2,706	429	457	457	453	455	455	0	0	5-12
W-111.05	Hillmeade Road Water Main	5,718	5,511	138	69	69	0	0	0	0	0	0	0	5-13
W-120.14	Timothy Branch Water Main	3,381	618	1,782	981	981	0	0	0	0	0	0	0	5-14
W-137.03	South Potomac Supply Improvement, Phase 2	66,520	1,702	1,449	63,369	210	21,053	21,053	21,053	0	0	0	0	5-15
	Projects Pending Close-Out	36,674	35,682	1,092	0	0	0	0	0	0	0	0	0	5-16
<b>TOTALS</b>		<b>293,581</b>	<b>82,483</b>	<b>20,625</b>	<b>182,193</b>	<b>36,184</b>	<b>55,457</b>	<b>40,853</b>	<b>35,064</b>	<b>7,380</b>	<b>6,955</b>	<b>8,280</b>		

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**FINANCIAL SUMMARY**

DATE: October 1, 2019

(ALL FIGURES IN THOUSANDS)

**PRINCE GEORGE'S COUNTY SEWER PROJECTS**

AGENCY NUMBER	PROJECT NAME	EST. TOTAL COST	EXPEND THRU 19	EST. EXPEND 20	TOTAL SIX YEARS	EXPENDITURE SCHEDULE						BEYOND SIX YEARS	PAGE NUM	
						YR 1 21	YR 2 22	YR 3 23	YR 4 24	YR 5 25	YR 6 26			
S-27.08	Westphalia Town Center Sewer Main	1,523	829	487	207	141	54	12	0	0	0	0	0	6-2
S-28.18	Konterra Town Center East Sewer	8,484	6,492	0	1,992	1,992	0	0	0	0	0	0	0	6-3
S-43.02	Broad Creek WWPS Augmentation	188,381	177,807	10,408	166	166	0	0	0	0	0	0	0	6-4
S-68.01	Landover Mall Redevelopment	1,381	25	105	1,251	649	414	47	47	47	47	0	0	6-5
S-75.21	Mattawoman WWTP Upgrades	20,394	0	3,190	15,488	3,630	4,928	3,762	1,584	792	792	1,716	0	6-6
S-77.20	Parkway North Substation Replacement	8,535	1,377	5,663	1,495	1,357	138	0	0	0	0	0	0	6-7
S-86.19	Southlake Subdivision Sewer	820	214	222	384	167	197	0	0	0	0	0	0	6-8
S-96.14	Piscataway WRRF Facility Upgrades	180,304	24,728	39,350	96,226	28,284	39,674	26,860	1,408	0	0	0	0	6-9
S-131.05	Pleasant Valley Sewer Main, Part 2	910	24	212	674	419	174	81	0	0	0	0	0	6-10
S-131.07	Pleasant Valley Sewer Main, Part 1	1,854	98	495	1,261	1,029	232	0	0	0	0	0	0	6-11
S-131.10	Fort Washington Forest No. 1 WWPS Augmentation	4,451	3,425	1,004	22	22	0	0	0	0	0	0	0	6-12
S-157.02	Western Branch WRRF Process Train Improvements	14,859	480	330	14,049	880	880	3,465	3,465	3,465	1,894	0	0	6-13
	Projects Pending Close-Out	52,684	52,449	235	0	0	0	0	0	0	0	0	0	6-14
	<b>TOTALS</b>	<b>464,580</b>	<b>267,948</b>	<b>61,701</b>	<b>133,215</b>	<b>38,756</b>	<b>46,691</b>	<b>34,227</b>	<b>6,504</b>	<b>4,304</b>	<b>2,733</b>	<b>1,716</b>		

45



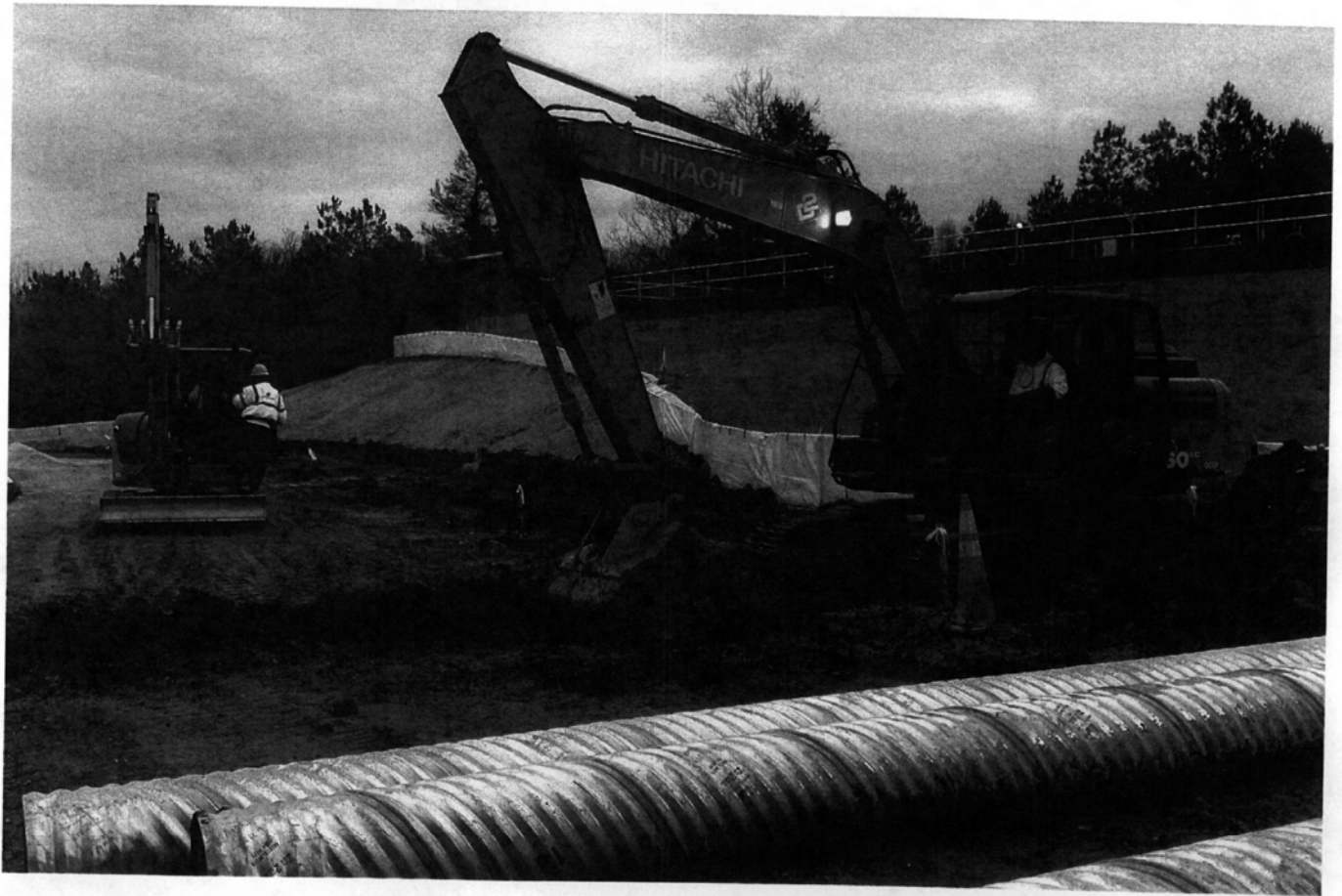
Piscataway Bioenergy Project

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February 19, 2020

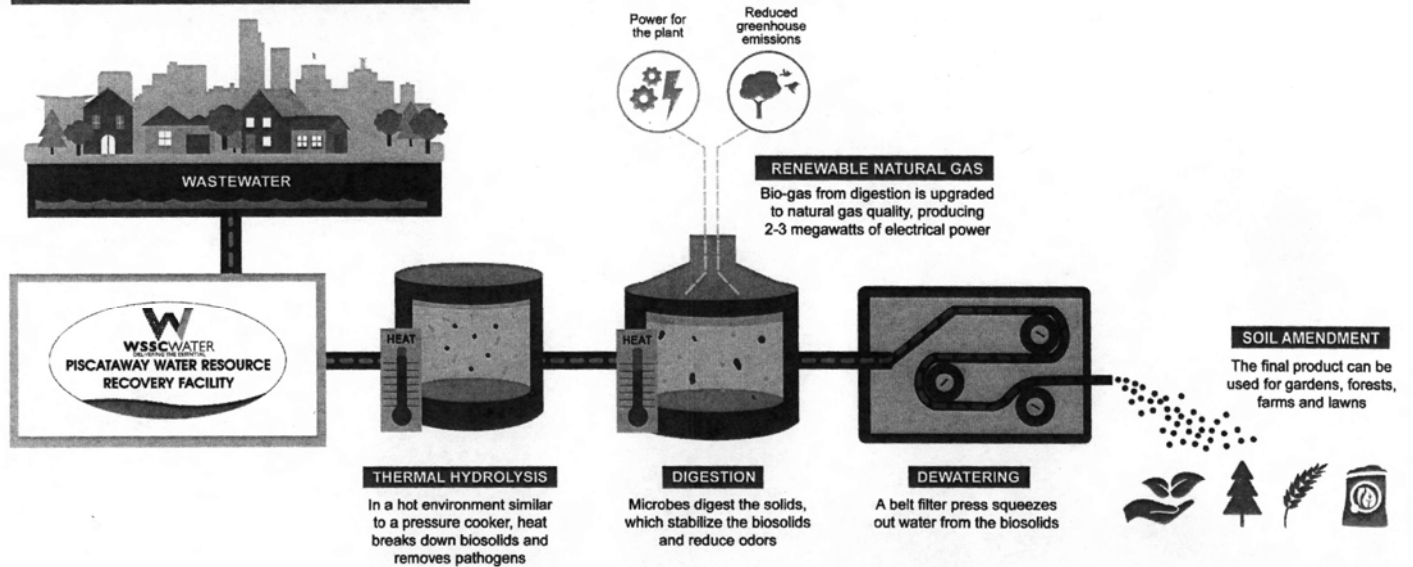






# Innovative New Treatment Processes

## THE BIOENERGY PRODUCTION PROCESS



# PISCATAWAY BIOENERGY PROJECT

RENDERING OF COMPLETED BIOENERGY PROJECT



WSSC Water will transform sewage into renewable energy at the Piscataway Water Resource Recovery Facility (formerly known as the Piscataway Wastewater Treatment Plant). Using cutting-edge "green" technology, the Piscataway Bioenergy Project will reduce WSSC Water's greenhouse gas emissions by 15 percent, while saving customers more than \$3 million per year.

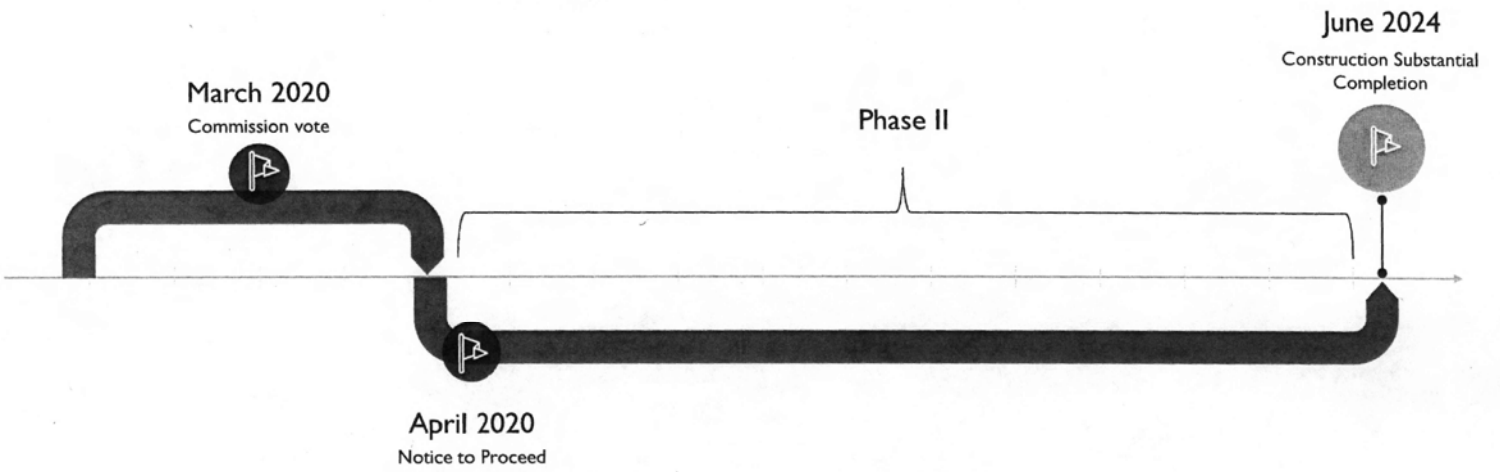
GRAND OPENING EXPECTED IN 2024

## BENEFITS

- SUSTAINABLE
- SAFE
- GREEN ENERGY
- COST SAVINGS

50

# Upcoming Project Milestones



# Bioenergy Construction

**Guaranteed Maximum Price  
\$271,567,017**

**Phase I  
\$43,959,933**

**Phase II  
\$227,607,084**

Maryland  
Department of the  
Environment (MDE)  
Commitment for  
Water Quality State  
Revolving Fund  
Loans \$128,300,000

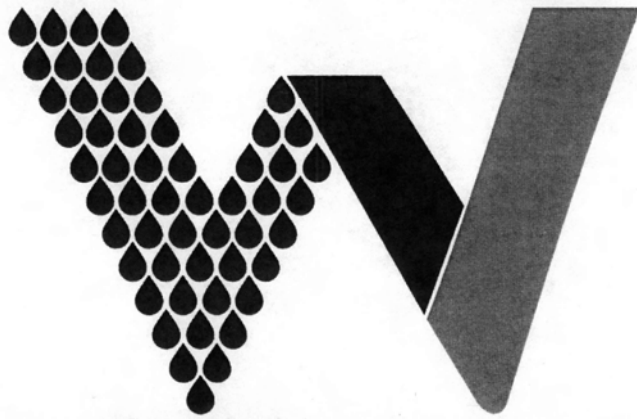
Maryland Energy  
Administration  
Grant \$500,000

MDE Energy Water  
Infrastructure  
Program Grant  
\$3,000,000

Bond Funding







# WSSC WATER

DELIVERING THE ESSENTIAL

Advanced Metering Infrastructure (AMI) Overview

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February 19, 2020





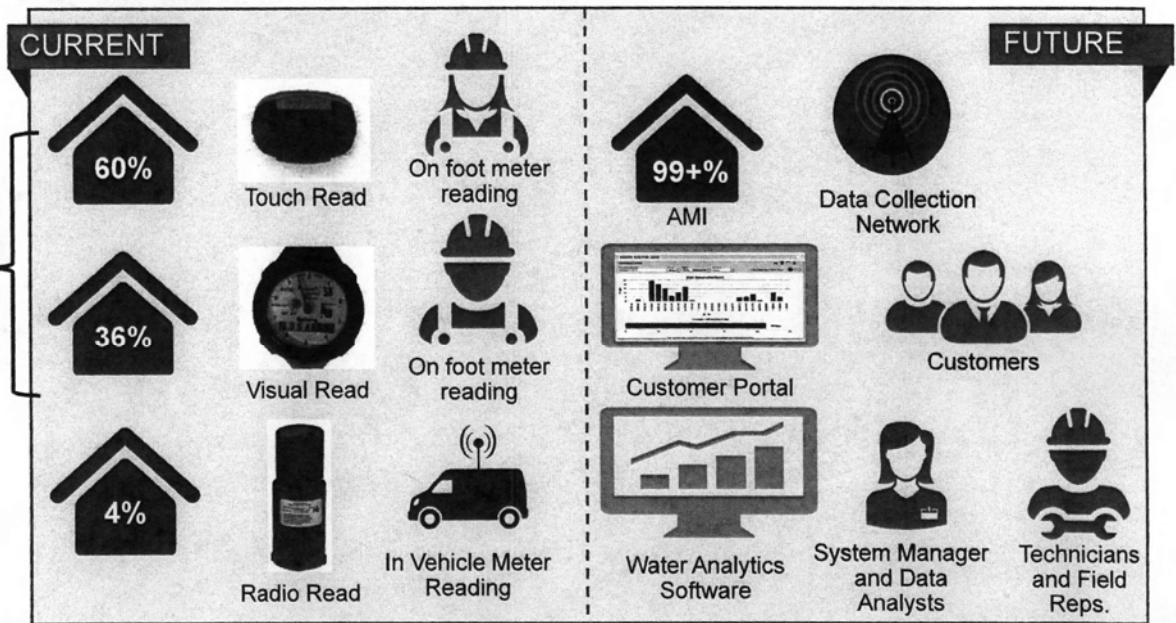
# Agenda

- Metering at WSSC Water
- Summary of AMI as a Capital Project
- Project Scope and Goals
- Benefits of AMI
- Project Milestones & Timeline
- Communications Activities to Date
- Customer Feedback to Date
- Radio Frequency Safety Study Results – Leeka Kheifets, Ph.D.
- Questions



# Metering at WSSC Water

96% of meters are currently read on foot



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# AMI in the Capital Improvements Program

- The AMI project was first included in the FY 2013-2018 Capital Improvements Program (CIP), adopted by the Commissioners in June 2012
- The initial order of magnitude cost estimate for the AMI project was \$86.0 million, based upon the R.W. Beck Study
- The AMI project cost estimate has been increased each year by the recommended rate of inflation

<b>A- 109.00, Advanced Metering Infrastructure</b>							
<b>CIP Cost Estimate History (\$ in millions)</b>							
	FY '13	FY '14	FY '15 -'17	FY '18	FY '19	FY '20	FY '21
Approved	\$ 86.0	\$ 89.5	\$ 89.5	\$ 92.1	\$ 93.9	\$96.8	\$ 99.6
Inflation Applied		4.1%	0.0%	2.9%	2.0%	3.0%	2.9%



## AMI Spent to Date

Fiscal Year	Amount
FY '19	\$687,509
FY '20	\$508,069

\$1,195,578 has been expended on the AMI project through December 31, 2019

# AMI Project Scope and Goals

## Project Scope

Select a vendor to deliver a complete AMI solution, and to serve as the single point of responsibility for:

- Water meter replacements
- Installation of AMI on 99+% of meters
- Distribution system leak detection and advanced sensors
- Integrate AMI with relevant enterprise information systems, including Oracle Customer-to-Meter (C2M)
- Implement new and improved customer portal functions

## Project Goals

- Improve customer experience:
  - usage information
  - leak notifications
  - monthly billing
- Improve billing accuracy
  - reduce estimated bills
- Free up meter reading resources for other uses
- Reduce non-revenue water
- Reduce carbon footprint



# Benefits of AMI



Enhances Customer Experience



Expands Innovation and Modernization Efforts



Improves Accuracy of Meter Reading and Billing

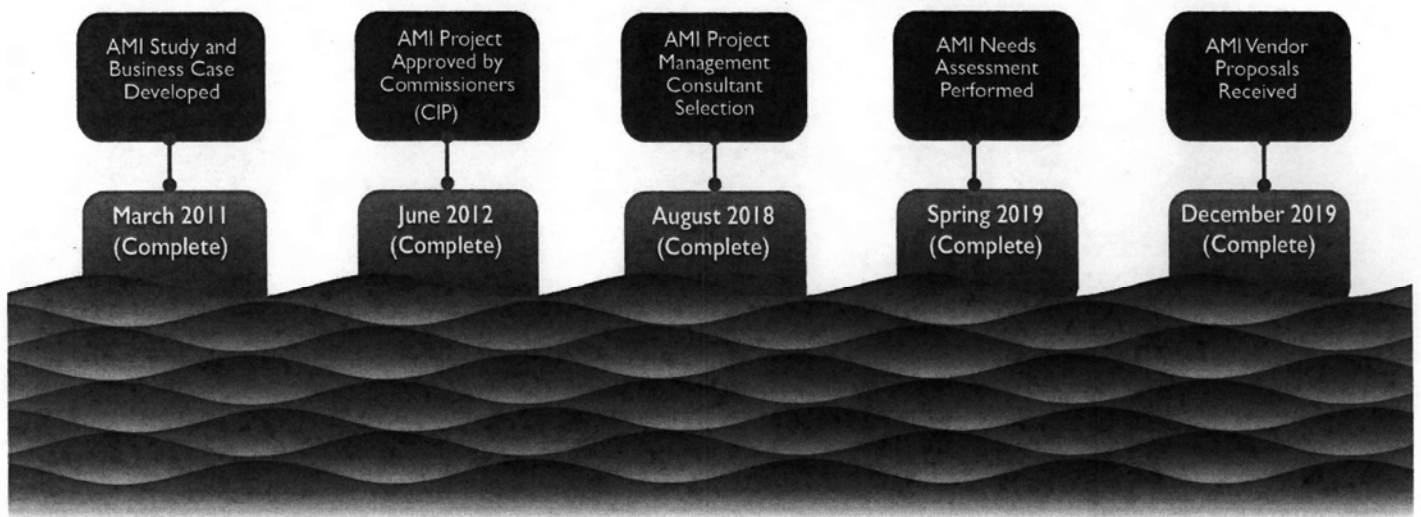


Increases Operational Control



Provides Environmental Benefits

# Project Milestones & Timeline



## Communications Activities to Date

- Developed comprehensive communications plan
- Held employee stakeholder workshop
- Included AMI information at Open Houses
- Created webpage: [wsscwater.com/AMI](http://wsscwater.com/AMI)
- GM/CEO briefed Prince George's County House and Senate Delegations
- Created templates and a process for responding to customer emails





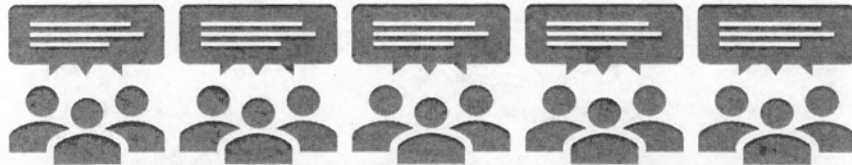
# AMI Feedback to Date



Customers

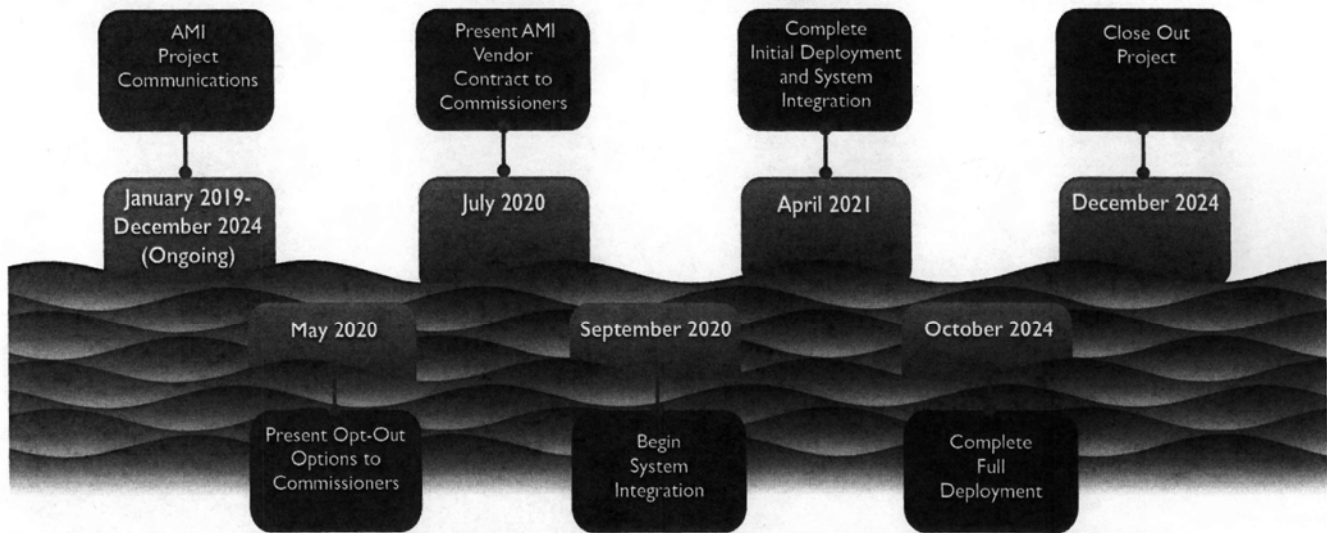


Emails Received



Majority of Concerns = Radio Frequency (RF) exposure

# Next Steps



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COMMISSIONERS  
 Chris Lawson, Chair  
 T. Eloise Foster, Vice Chair  
 Fausto R. Bayonet  
 Keith E. Bell  
 Howard A. Denis  
 Sandra L. Thompson

GENERAL MANAGER  
 Carla A. Reid

January 30, 2020

The Honorable Angela D. Alsobrooks, Prince George's County Executive  
 The Honorable Marc Elrich, Montgomery County Executive  
 The Honorable Todd M. Turner, Chair, Prince George's County Council  
 The Honorable Sidney Katz, President, Montgomery County Council

Dear Ms. Alsobrooks, Mr. Elrich, Mr. Turner, and Mr. Katz:

The purpose of this letter is to request approval of an amendment to the WSSC Water Adopted Fiscal Years 2020-2025 Capital Improvements Program (CIP). The amendment provides for the addition of one new CIP project, A-101.05, Customer Resource Building, and offsetting reductions to two existing CIP projects, W-172.07, Patuxent Raw Water Pipeline and S-170.08, Septage Discharge Facility Planning & Implementation. The projects to be reduced fully offset the new project and no increase to the FY 2020 Approved Budget is required.

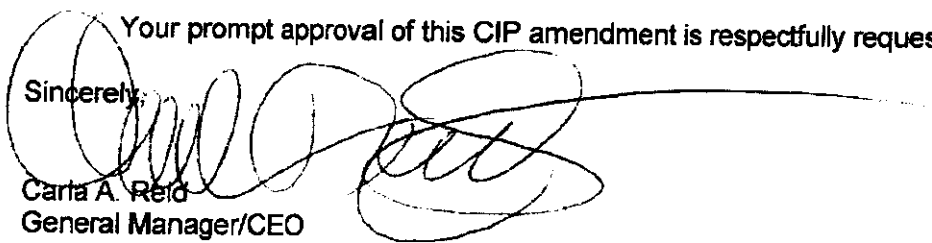
At the January 15, 2020 meeting the WSSC Water Commissioners unanimously approved transmittal of this amendment to the counties for your review and approval.

The table below summarizes the changes to the projects. Amended project description forms are attached.

**FY20 CIP Amendment**

			FY20 Budgeted	FY20 Amendment
A	101.05	Customer Resource Building	-	13,500,000
W	172.07	Patuxent Raw Water Pipeline	8,580,000	1,695,000
S	170.08	Septage Discharge Facility	<u>12,276,000</u>	<u>5,661,000</u>
		sub total	20,856,000	20,856,000
		FY2020 Net Change		0

Your prompt approval of this CIP amendment is respectfully requested.

Sincerely,  
  
 Carla A. Reid  
 General Manager/CEO

## Septage Discharge Facility Planning & Implementation

A. Identification and Coding Information		
Agency Number	Project Number	Update Code
S - 000170.08	103802	Change

PDF Date	October 1, 2019
Date Revised	January 15, 2020

Pressure Zones	
Drainage Basins	
Planning Area	BI-County

### B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'18	Estimate FY'19	Total 6 Years	Year 1 FY'20	Year 2 FY'21	Year 3 FY'22	Year 4 FY'23	Year 5 FY'24	Year 6 FY'25	Beyond 6 Years
Planning, Design & Supervision	4,880	4,080	40	760	166	360	234				
Land											
Construction	25,095	1,095	1,200	22,800	4,980	10,800	7,020				
Other	2,480		124	2,356	515	1,116	725				
<b>Total</b>	<b>32,455</b>	<b>5,175</b>	<b>1,364</b>	<b>25,916</b>	<b>5,661</b>	<b>12,276</b>	<b>7,979</b>				

### C. Funding Schedule (000's)

WSSC Bonds	32,455	5,175	1,364	25,916	5,661	12,276	7,979				
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### D. Description & Justification

#### DESCRIPTION

This project provides for the planning, design, and construction of a new Septage and Fats, Oils, Grease (FOG) discharge facility at the abandoned Rock Creek WRRF, and new Septage discharge facilities at Anacostia WWPS No. 2 and Piscataway WRRF.

#### JUSTIFICATION

Currently septage waste is collected at three locations: Muddy Branch Road Disposal Site in Montgomery County, and Ritchie Road Disposal Site and Bladensburg Disposal Site in Prince George's County (the Temple Hills Road site was closed down on July 1, 2015). The types of waste collected are as follows: Septic Tank Pump-Out (Sludge), Waste Holding Tank Discharge (Gray Water), Grease Trap Pump Out (FOG), Bus Holding Tank Discharge (Sewage and Chemicals), and Small Food Service Providers (Low Volume FOG Waste). FOG wastes should not be discharged to the Commission's sewerage system without treatment. Septage Discharge Facility Study for Montgomery County: Final Report, JMT (July 2012); Septage Discharge Facility Study for Prince George's County: Final Report, JMT (July 2012).

#### COST CHANGE

The estimated construction cost of the three facilities has increased based upon more refined cost estimates for all three sites.

#### OTHER

The project scope has remained the same. The design of the Rock Creek and Anacostia sites are 100% complete. The design of the Piscataway site is 90% complete. The expenditures and schedule projections shown in Block B are estimates at the current design stages at each site, and may change based upon actual bids. The design and construction of the FOG Discharge Facility at the Piscataway WRRF has been moved to the Piscataway WRRF Bio-Energy Project.

The Rock Creek and Anacostia sites will be advertised as one project in 2019. The design of the Piscataway site will be completed with construction deferred until 2023, after the performance of the Rock Creek and Anacostia sites have been evaluated, and coordinated with the construction schedule of other Piscataway facility projects.

#### COORDINATION

Coordinating Agencies: Maryland Department of Natural Resources; Maryland Department of the Environment; Maryland-National Capital Park & Planning Commission; (Mandatory Referral); Montgomery County Department of Environmental Protection; Montgomery County Government; Prince George's County Department of Environmental Resources; Prince George's County Government.  
Coordinating Projects: S - 000090.14 - Piscataway WRRF Facility Upgrades; S - 000103.02 - Piscataway Bioenergy

E. Annual Operating Budget Impact (000's)		FY of Impact
Staff & Other		
Maintenance		
Debt Service	\$2,111	23
<b>Total Cost</b>	<b>\$2,111</b>	<b>23</b>
Impact on Water and Sewer Rate	\$0.05	23

### F. Approval and Expenditure Data (000's)

Date First in Program	FY 10
Date First Approved	FY 10
Initial Cost Estimate	10,835
Cost Estimate Last FY	30,494
Present Cost Estimate	32,455
Approved Request Last FY	5,229
Total Expense & Encumbrances	5,175
Approval Request Year 1	5,661

### G. Status Information

Land Status	Public/Agency owned land
Project Phase	Design
Percent Complete	70 %
Estimated Completion Date	June 2022
Growth	
System Improvement	100%
Environmental Regulation	
Population Served	
Capacity	

### H. Map



2

# Patuxent Raw Water Pipeline

## A. Identification and Coding Information

Agency Number	Project Number	Update Code
W - 000172.07	063804	Change

PDF Date	October 1, 2018
Date Revised	January 15, 2020

Pressure Zones	Prince George's Main HG320A
Drainage Basins	
Planning Areas	Bi-County

## B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'18	Estimate FY'19	Total 6 Years	Year 1 FY'20	Year 2 FY'21	Year 3 FY'22	Year 4 FY'23	Year 5 FY'24	Year 6 FY'25	Beyond 6 Years
Planning, Design & Supervision	5,957	5,377	180	400	40	200	160				
Land	218	219									
Construction	26,325	7,525	3,500	15,200	1,501	7,500	6,099				
Other	1,838		378	1,560	154	780	626				
<b>Total</b>	<b>34,439</b>	<b>13,121</b>	<b>4,158</b>	<b>17,160</b>	<b>1,695</b>	<b>8,580</b>	<b>6,885</b>				

## C. Funding Schedule (000's)

WSSC Bonds	34,439	13,121	4,158	17,160	1,695	8,580	6,885				
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## D. Description & Justification

### DESCRIPTION

This project provides for the planning, design, and construction of approximately 2.5 miles of new 48-inch diameter raw water pipeline from the Rocky Gorge Raw Water Pumping Station to the Patuxent Water Filtration Plant, cleaning of the existing water lines, and replacement of valves.

### JUSTIFICATION

The existing raw water supply facilities are hydraulically limited to 72 MGD with all pumps running at the Rocky Gorge Pumping Station. In order to convey more than 72 MGD of raw water, a new raw water pipeline is required. A fourth raw water pipeline from the Rocky Gorge Pumping Station to the Patuxent Plant and modification/expansion of the Rocky Gorge Pumping Station will provide a firm raw water pumping transmission capacity of 110 MGD. These improvements, in conjunction with expansion of the Patuxent Water Filtration Plant, will give the Plant a firm nominal capacity of 72 MGD, with an emergency capacity of 110 MGD. Patuxent WFP Facility Plan (April 1997); In-House Study (April 2002).

### COST CHANGE

Not applicable.

### OTHER

The project scope has remained the same. The Rocky Gorge Valve Replacement and the cleaning of existing raw water pipelines are 100% complete. The new raw water pipeline is currently in design. Expenditure and schedule estimates for the new raw water pipeline may change based upon design constraints and permitting issues. The project has been delayed due to a lengthy permit and right-of-way acquisition process. As with any construction project, areas disturbed by construction will be restored. This restoration includes paving of impacted roads in accordance with Prince George's County Policy and Specifications for Utility Installation and Maintenance Manual (Section 4.7.2).

### COORDINATION

Coordinating Agencies: Baltimore Gas & Electric; Interstate Commission on the Potomac River Basin; Local Community Civic Associations; (West Laurel Civic Association); Maryland Department of the Environment; Maryland-National Capital Park & Planning Commission; Montgomery County Government; Prince George's County Government  
Coordinating Projects: W - 000172.05 - Patuxent WFP Phase II Expansion; W - 000172.08 - Rocky Gorge Pump Station Upgrade

E. Annual Operating Budget Impact (000's)	FY of Impact
Staff & Other	
Maintenance	\$341 23
Debt Service	\$2,240 23
<b>Total Cost</b>	<b>\$2,581 23</b>
Impact on Water and Sewer Rate	\$0.05 23

## F. Approval and Expenditure Data (000's)

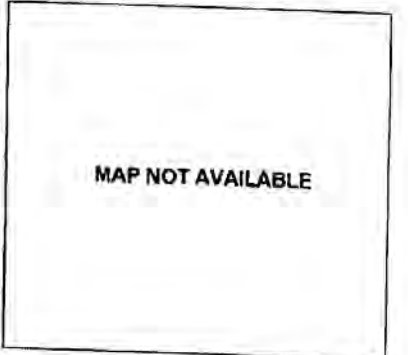
Date First in Program	FY 08
Date First Approved	FY 03
Initial Cost Estimate	16,730
Cost Estimate Last FY	33,863
Present Cost Estimate	34,439
Approved Request Last FY	378
Total Expense & Encumbrances	13,121
Approval Request Year 1	1,695

## G. Status Information

Land Status	Land Acquired
Project Phase	Design
Percent Complete	99 %
Estimated Completion Date	June 2022

Growth	
System Improvement	100%
Environmental Regulation	
Population Served	
Capacity	

## H. Map



99

# Customer Resource Building

## A. Identification and Coding Information

Agency Number	Project Number	Update Code
A - 000101.05		Add

PDF Date January 15, 2020

Date Revised

Pressure Zones

Drainage Basins

Planning Area BI-County

## B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'18	Estimate FY'19	Total 6 Years	Year 1 FY'20	Year 2 FY'21	Year 3 FY'22	Year 4 FY'23	Year 5 FY'24	Year 6 FY'25	Beyond 6 Years
Planning, Design & Supervision											
Land											
Construction	13,500			13,500	13,500						
Other											
<b>Total</b>	<b>13,500</b>			<b>13,500</b>	<b>13,500</b>						

## C. Funding Schedule (000's)

WSSC Bonds	13,500			13,500	13,500						
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## D. Description & Justification

### DESCRIPTION

The project provides for the acquisition and build-out of the office building located at 14400 Swelizer Lane.

### JUSTIFICATION

Acquisition of the building provides the following benefits: alleviates space issues at the Richard G. Hocevar Headquarters Building (RGH); avoids current lease costs; provides needed swing space for renovations at the RGH; improves security at the RGH by moving all public facing functions to the new building including Development Services - Permitting, Cashier functions, and Inspectors for both Regulatory and Construction Divisions; provides needed parking; generates revenue from lease income; and, potential to serve as a Multi-Agency Service Center through co-located services with other government agencies. Additional benefits include: location across the street from the RGH; economical and secure IT connectivity; and, investment in an asset vs. lease.

### COST CHANGE

Not applicable.

### OTHER

The present project scope was developed as an amendment to the FY2020 CIP and has a projected total cost of \$13,500,000. The schedule and expenditure information shown in Block B are based upon the best available information for purchase of the building, partial build-out of space and related costs. Constructed in 2000, this modern, Class A, LEED Silver Certified, four story building with approximately 121,000 square feet of space and 479 parking spaces is located on 1.84 acres, across the street from the RGH, near the Montgomery and Prince George's County line. In comparison, the estimated new construction cost including land for a building this size is approximately \$36 million. The CIP amendment for the acquisition of the building requires the approval of both the Montgomery and Prince George's County Councils.

### COORDINATION

Coordinating Agencies: Montgomery County Government; Prince George's County Government  
Coordinating Projects: Not Applicable

E. Annual Operating Budget Impact (000's)		FY of Impact
Staff & Other	\$(2,249)	21
Maintenance	\$1,104	21
Debt Service	\$824	21
Total Cost	\$(321)	21
Impact on Water and Sewer Rate		

## F. Approval and Expenditure Data (000's)

Date First In Program	FY 20
Date First Approved	FY 20
Initial Cost Estimate	13,500
Cost Estimate Last FY	
Present Cost Estimate	13,500
Approved Request Last FY	
Total Expense & Encumbrances	
Approval Request Year 1	13,500

## G. Status Information

Land Status	Not Applicable
Project Phase	Not Applicable
Percent Complete	0 %
Estimated Completion Date	June 2020
Growth	
System Improvement	100%
Environmental Regulation	
Population Served	
Capacity	

## H. Map

MAP NOT AVAILABLE

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**bcc: Commissioners  
Commission/Corporate Secretary's Office  
Office of the Inspector General  
General Counsel's Office  
Engineering & Construction Department  
Finance Department  
Budget Division**

**Mr. Robert Williams  
Mr. J. Kenneth Battle, Jr.  
Ms. Canjor Reed  
Mr. Brent Johnson  
Ms. Marlene Michaelson  
Mr. Keith Levchenko  
Mr. Rafael Murphy**



## Acquisition Options (Preliminary Analysis\*)

	Purchase 100% Finance	Purchase 50% Finance	Cash Purchase	Lease Space
Square Feet (SF)	120,904			30,226
price per SF	\$ 110.00			\$ 22.00
Purchase Amount Financed	\$ 13,299,440	\$ 6,649,720	\$ -	
add build-out	639,240	639,240	639,240	
<b>Annual debt service</b>	<b>824,000</b>	<b>412,000</b>	<b>38,000</b>	<b>-</b>
plus Operating costs	1,269,492			
adj - water bill	(24,708)			
adj - taxes 2 floors	(140,456)			
less lease income	(1,584,541)			
less swing lease avoided	(664,972)			
<b>Net Operating impact</b>	<b>(1,145,186)</b>	<b>(1,145,186)</b>	<b>(1,145,186)</b>	<b>664,972</b>
<b>Annual Impact \$</b>	<b>(321,186)</b>	<b>(733,186)</b>	<b>(1,107,186)</b>	<b>\$ 664,972</b>
<i>less Konterra lease option avoided in Years 4-5</i>	<i>(310,100)</i>	<i>(310,100)</i>	<i>(310,100)</i>	

\* preliminary analysis based upon information provided by WSSC's broker; further evaluation required  
 Note: totals do not include one-time operating costs for furniture (\$880k) and IT (\$600k)

## Acquisition Annual Impacts (Preliminary)

	Purchase 100% Finance	Purchase 50% Finance	Cash Purchase	Lease Space
Year 0: purchase	\$ -	\$ 6,649,720	\$ 13,299,440	\$ -
Year 1	\$ (321,186)	\$ (593,542)	\$ (827,898)	\$ 664,972
Year 2	\$ (355,541)	\$ (624,965)	\$ (856,388)	\$ 684,921
Year 3	\$ (390,928)	\$ (657,357)	\$ (885,786)	\$ 705,469
Year 4: Konterra avoided	\$ (737,476)	\$ (1,000,848)	\$ (1,226,220)	\$ 726,633
Year 5: Konterra avoided	\$ (784,341)	\$ (1,044,592)	\$ (1,266,843)	\$ 748,432
Year 6	\$ (503,584)	\$ (760,649)	\$ (979,713)	\$ 770,885
Year 7	\$ (543,412)	\$ (797,223)	\$ (1,013,033)	\$ 794,011
Year 8	\$ (584,434)	\$ (834,923)	\$ (1,047,412)	\$ 817,832
Year 9: Lease savings ends	\$ 215,679	\$ (31,418)	\$ (240,515)	
Sum (Yrs 0-9)	\$ (4,005,222)	\$ 304,205	\$ 4,955,633	\$ 5,913,154
Net Present Value (Yrs 0-30)	\$ (461,875)	\$ 724,413	\$ 2,667,950	

Note: Years 10-30: add 3% inflation

## **WSSC CIP Amendment: Customer Resource Building Questions and Answers**

1. Can you elaborate on the current space issues at RGH? As we previously discussed, WSSC had authorized workyears of approximately 2,200 before the CAP reductions in the mid-2000s. Today the authorized workyears are 1,776.

As part of the CAP Re-Engineering approved workyears were reduced. However, some of those were vacant positions and some were outside of the RGH building (including eliminating maintenance Crew Chief positions at the depots). As for the impact on the RGH, in addition to the expected increased efficiencies reducing the "permanent" headcount, many of the re-engineering recommendations included bringing in temporary, non-permanent contractors, only when needed, to meet the workload. Recently, contractors working in the RGH building on projects where it would not make sense to hire full-time permanent employees include the staff augmentation required for Consent Decree pipeline design work, Cornerstone implementation and other IT project support. In addition to the 864 employees assigned to the RGH, we have several hundred contractors and temporary employees assigned to the RGH and additional staff and contractors working next door in leased space at Konterra.

2. When does WSSC expect to begin renovations of RGH? What will the scope and cost of these renovations be and will this be done as a capital project or within the Operating Budget?

Originally constructed in 1989, we currently expect to resume renovations of the RGH in fall 2020. The scope includes: replacement of HVAC systems that are inefficient, obsolete and orphaned; replacement of electrical wiring and systems to bring them up to date and latest code requirements; paint, carpet, ceilings, including public and common areas, including required ADA code renovations; and, new employee workstations for more efficient space use. Our current estimate is approximately \$2.3 million per floor (plus annual inflation) for the 10 remaining floors (9<sup>th</sup> floor and cafeteria are complete). In addition, the lobby level will be redesigned with the entire One-Stop-Shop (north-end of RGH) converted into new office space (no cost estimate yet). The RGH renovations will be primarily completed from capital funds already budgeted annually in the Engineering Support Program (ESP). Only some IT costs and furniture costs for the new workstations will be added to the operating budget (~\$1.1M per floor).

3. Please list all of the WSSC functions that would move to the purchased building.

In the short-term, the Customer Resource Building (CRB) would be used as temporary swing space enabling us to renovate an entire floor of the RGH, all at one time (avoiding sunk operating costs for temporary lease space during ongoing renovations). This is the safest, quickest and most cost-efficient plan for renovating the RGH. Ultimately, the plan is for all customer-facing functions to be moved to the CRB including: the One-Stop-Shop for all Development Services permitting functions; cashier functions; and, both Regulatory and Construction inspection services. We also envision that in the future there is potential to co-locate other local government offices at the CRB to offer improved service to all County residents.

4. Please elaborate on how security will be improved at RGH by moving all public facing functions to the purchased building.

By moving public facing functions to the CRB, we will avoid some previously planned costs for security upgrades to prevent open visitor access including: new security checkpoint scanner systems (similar to those found in the EOB, Stella-Werner, CAB and Wayne K. Curry buildings); turnstile-type barriers (similar to Metro) with card readers on employee entry floors; hard-barrier glass doors with card

readers for elevator lobbies on all floors; and, additional security cameras and monitoring systems. Nearly all of these costs would have to be added to the operating budget.

5. How much parking does WSSC have now (distinguish between employee and visitor).

Currently the RGH has 899 employee and Commission vehicle parking spaces in the RGH garage, 170 surfacing customer parking spaces around the RGH, and, via the lease arrangement with Konterra, 34 additional parking spaces next door – only while we continue to lease office space from Konterra. (Total count 1,103).

6. How many spaces does WSSC need to accommodate staff, visitors, and contractors on a regular basis?

On a “regular” day, we already fill over 95% of the spaces available. On Tuesdays (bid day), and during special events, we normally have cars double parked in front and across the street, parked around the circle, and parked in spaces at Konterra - that are over and above our agreed allotment. (Konterra has formally notified us of our “ongoing pattern of infringement”. The building across the street has gone as far as to post “private parking only” signs at their entrances.)

7. How many additional spaces will WSSC obtain at the new building (479 is mentioned for the new building in the PDF, but I assume some of these would be reserved for folks leasing portions of the building from WSSC).

Spaces are allocated based upon square footage occupied so WSSC would immediately gain half or approximately 240 additional parking spaces.

8. How much of the purchased 4 story 121,000 square foot building will WSSC occupy? How much will be leased to others?

Initially WSSC would occupy the two lower floors. The two upper floors are leased (63,000 SF) through December 2025.

9. You mentioned that WSSC did a 10 year NPV analysis for the building purchase (versus other options). Please provide this analysis and the major assumptions included.

For the 30-year Net Present Value analysis we looked at the first 8-9 years to compare the lease vs. purchase impacts during the renovation period for the RGH building. Year 9 would be the first “post-renovation” year, used as the new baseline. Years 10-30 are then inflated at 3% and the NPV is calculated for the 30-year period. See attached.

The attached preliminary analysis assumes: \$13.9 million borrowed; 5.0% interest rate on new debt; 30 year life; 3% inflation; 4% discount rate; 2.1% interest rate on income; swing lease costs and Konterra lease costs are avoided.

10. How much build-out/reconfiguration/rehab will WSSC need to make before or soon after move-in? Are these costs included in the CIP amendment?

The second floor can be occupied soon after acquisition as the floor is fully finished and needs only minor changes and IT fit-out. The first floor is approximately 50% finished. These costs are included in the CRB CIP amendment.

11. How much annual additional revenue will be generated from leasing portions of the purchased building?

The leasing of the top two floors provides approximately \$1.6 million in annual revenue. Leasing the two upper floors will produce a net positive cashflow for the entire building (not including debt service).

12. How much lease savings (from moving some WSSC functions from leased space to this building) are you assuming?

The lease cost (costs avoided) is estimated to be \$6.5 million over the 8 years required to renovate the RGH.

13. Please note any other major costs/revenues assumed in the analysis.

The preliminary analysis assumes a \$13.3 million purchase price plus \$639,240 to build-out the first floor space. The options looked at 100% financed, 50% financed and a 100% cash purchase. Operating costs were adjusted to remove the estimated water utility bill and 50% of the tax bill to account for WSSC Water owning/using the space. The swing lease costs and Konterra lease costs (years 4 & 5) are not currently budgeted, these are avoided costs. Interest income foregone is included in the analysis.

14. To offset the building acquisition cost, the proposed action for Wednesday would also include FY20 reductions in two WSSC projects: the Trunk Sewer Reconstruction Program and the Patuxent Raw Water Pipeline.

**Update:** In reviewing the amendment item with the Commissioners prior to the meeting, the Commissioners requested that we not make any reductions/deferrals to the Trunk Sewer Reconstruction Program. In response, at the Commission meeting, we recommended reducing/deferring the Septage Discharge Facility Implementation project in place of the Trunk Sewer project.

15. What are the impacts of these cuts in each project in FY20?

None. Based upon the latest schedule projections available, the funding amounts cut from the two offsetting projects would not be spent prior to June 30, 2020.

16. Are these reductions assumed to be cost deferrals (with the expenses restored in FY21 or beyond) or permanent reductions in these projects?

The reductions are cost deferrals based upon the latest schedule projections. Full funding for both projects is included in the FY'21 Proposed CIP.

17. Does WSSC currently have staff in leased space who could move to the new building or to RGH if the new building is acquired? It looks like the NPV analysis only counts avoided lease costs from folks who would have to move out of the RGH during its renovations.

Staff currently in leased space at Konterra could be relocated to the RGH. However, our current lease with Konterra runs through year 3, so we could only avoid that cost in years 4 and 5 (lease option years), as shown.

18. Are the debt service costs from the two financing options included in the "plus operating costs" line? If not, where are those costs reflected? How much are the debt service costs per year under the 50% and 100% financing options?

Debt service costs are shown separately on the Annual Debt Service line for each of the three options. Adding together the Net Operating Impact line and Annual Debt Service line results in the Annual Impact line. Debt service costs per year under the 50% and 100% financing options are \$412,000 and \$824,000, respectively.



FY2021 Capital Budget

Montgomery County T&E Committee

March 2, 2020

## **FY 2021 Capital Budget Strategic Priorities**

Spending affordability and the Capital Improvements Program (CIP) support the following WSSC priorities:

- Optimize Infrastructure
  - Achieve Industry-leading Reliability And Asset Integrity
  
- Spend Customer Dollars Wisely
  - Improve Operational Efficiency
  - Improve Fixed Asset Utilization
  - Improve Financial Process Efficiency and Fiscal Sustainability



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## **FY 2021 Capital Budget CIP Review Process**

- Staff draft document (June)
- Worksession with GM (July 2<sup>nd</sup>)
- Worksession with Counties (July 9<sup>th</sup> and 10<sup>th</sup>)
- Worksession with Commissioners (July 17<sup>th</sup>)
- Public Hearings (September 4<sup>th</sup> and 5<sup>th</sup>)
- Commission approval to transmit (September 18<sup>th</sup>)
- County Executive and Council review and approval (March through May 2020)
- Bi-County Meeting (May 7<sup>th</sup>)
- Adopted CIP (June 2020)





## **FY 2021 Capital Budget Capital Spending – Policy Guidelines**

Attain goal of a sustainable and affordable CIP through:

- Key financial metrics to assess debt service levels while balancing rate and operating growth
  - New debt issuance and related debt service expense must stay within the following guidelines:
    - Debt service coverage: 1.10
    - Debt service as a percent of total expenditures: <40%
- Leveraging multi-year financial planning to establish capital planning expectations for resource capacity and affordability
  - Bond issuance limits set over the capital planning period to smooth out demands
    - Eliminate front loading of projects in CIP years
    - Greater attention on project prioritization
    - Scale down project bond funding to align with affordability



# **FY 2021 Capital Budget**

## **Capital Spending – Policy Guidelines**

- Maintain adequate liquidity and fund balance reserves
  - Total operating expenditure growth cannot outpace total revenue growth. This includes the impact of debt service expense and PAYGO.
    - Days operating reserves-on-hand: 60-90 days
    - Ending fund balance as a percent of operating revenue: 10% minimum



## **FY 2021 Capital Budget Motivating Concerns**

- Momentum of Capital Budget
  - FY'10 Capital Budget of \$371.1M has grown to \$638.5M in FY'20
- Outstanding debt growth +132%, from \$1.36B in FY'10 to \$3.16B in FY'19
  - Higher borrowing costs due to interest rate risk



## **FY 2021 Capital Budget Fiscally Responsible CIP**

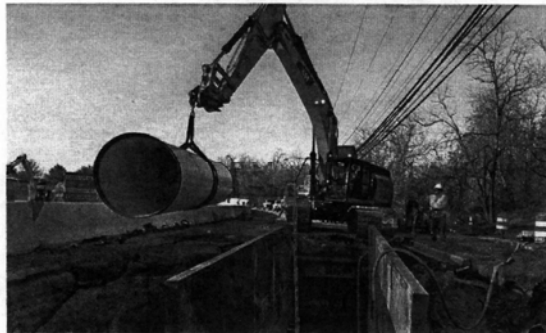
Results in:

- Maintaining our AAA credit rating
  - Adhering to financial metrics and guidelines
- An affordable CIP
  - Fits within rate increases as proposed
  - Aligns anticipated bond issuance limits over the six-year program
  - Keeps project funding in line with what is affordable
- Increased use of PAYGO to lower debt service expense and improve metric results - especially with rate risk

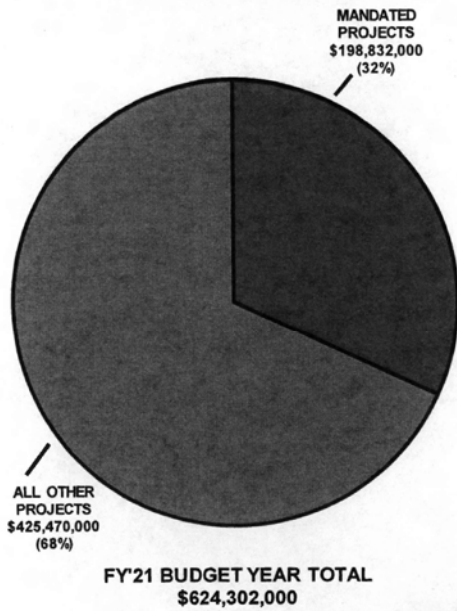


# FY 2021 Capital Budget Capital Improvements Program

- Six-year program cost \$3.7 billion
  - Bond funded \$3.3 billion (plus PAYGO of \$186 million)
  - Mandated projects \$1.3 billion (34%)
    - Blue Plains \$443 million
    - Consent Decree \$810 million
    - Other Regulatory & Agreement \$16 million
- FY'21 Budget Year cost \$624.3 million
  - Bond funded \$540.9 million (plus PAYGO of \$31.0 million)
  - Mandated projects \$198.8 million (32%)



# FY 2021 Capital Budget Mandated Projects



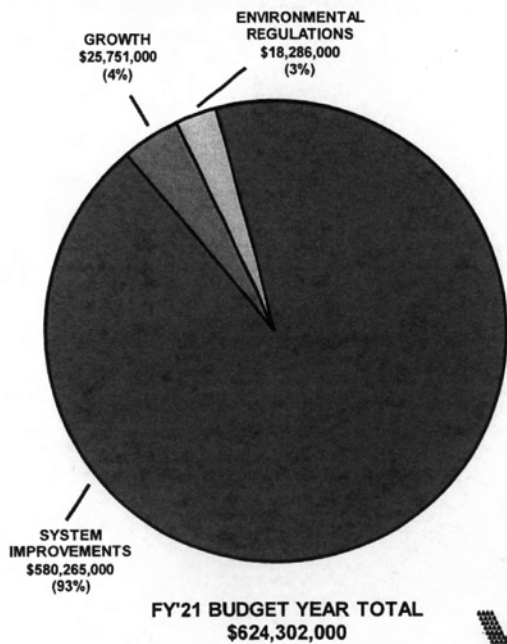
In the FY'21 Capital Budget nearly one third (32%) of the planned spending is mandated by existing Multi-Jurisdiction agreements or by Consent Decrees.

Mandated Projects	FY'21 Amount
Consent Decrees	135,674,000
Blue Plains	59,506,000
Other Agreements	3,652,000
<b>Total</b>	<b>198,832,000</b>



(87)

# FY 2021 Capital Budget Major Categories



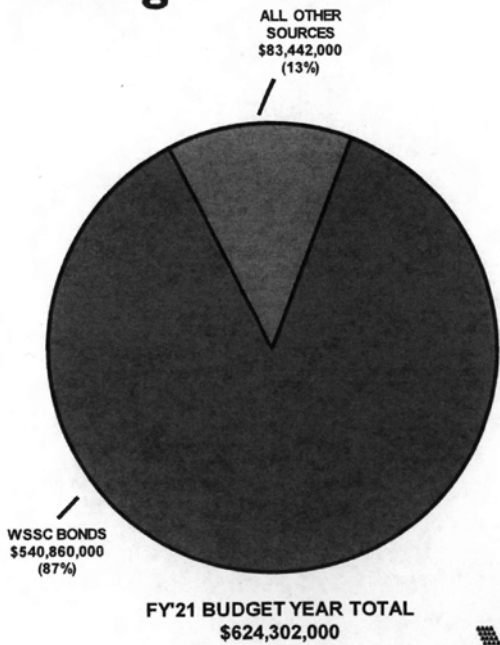
Over 90% of the FY'21 Capital Budget is for reinvestment in our system infrastructure.

Major Category	FY'21 Amount
System Improvements	580,265,050
Growth	25,750,950
Environmental	18,286,000
<b>Total</b>	<b>624,302,000</b>



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# FY 2021 Capital Budget Funding



Nearly 90% of the FY'21 Capital Budget is funded through long-term debt.

Funding Source	FY'21 Amount
Federal & State Grants	23,000,000
SDC & Others	25,750,600
Local Government Contributions	3,675,000
WSSC Bonds	540,860,400
PAYGO	31,016,000
<b>Total</b>	<b>624,302,000</b>



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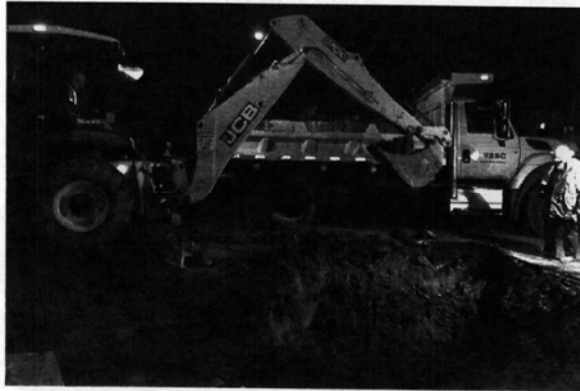


# FY 2021 Capital Budget Highlighted Projects

## Sewer Reconstruction Program

(S-1.01; page 7-4)

- Nearly 5,000 miles of sewer main and associated sewer house connections
- Rehabilitate 20 miles per year
- Consent Decree: all 131.4 miles released for construction; 131.0 completed
- Funding via MDE low-interest loans and Bay grants
- FY'21 program 20 miles sewer mains; 6 miles lateral lines and house connections
- FY'21 budget \$ 55.5 million



# FY 2021 Capital Budget Highlighted Projects

## Water Reconstruction Program

(W-1.00; page 7-3)

- Over 4,500 miles of water main and associated water house connections
- Rehabilitated on average more than 50 miles per year over past 10 years
- Investing in new technology and tools to develop a more efficient and effective program
- FY'21 program 25 miles
- FY'21 budget \$72.5 million



# FY 2021 Capital Budget Highlighted Projects

## Large Diameter Water Pipe & Valve

### Program

(W-161.01; page 3-9)

- Program scope: over 1,000 miles of water pipe and over 1400 large water valves
- Over 100 miles of PCCP pipe inspected and monitored 24/7; avoided 25 imminent pipe failures
- Over 8,000 pipe joints repaired; 700 pipe segments repaired/replaced
- Over 1,200 valves inspected and repaired as needed
- FY'21 budget \$58.1 million



# FY 2021 Capital Budget Highlighted Projects

## Trunk Sewer Reconstruction Program

(S-170.09; page 4-11)

- Inspection and evaluation of all 24 sewer basins complete (over 1300 miles inspected)
- Comprehensive rehabilitation of sewer pipes in Environmentally Sensitive Areas currently underway to reduce infiltration and inflow
- Replacement of pipe; relining of pipe; pipeline protection; and, rehabilitation of manholes and force mains
- Over 155 of 156 miles released for construction; 121.8 miles completed
- Sanitary Sewer Overflow Consent Decree deadline extended to 2022
- FY'21 budget \$69.5 million



## FY 2021 Capital Budget Highlighted Projects

### Potomac Water Filtration Plant

The Potomac plant produces an average of 106 million gallons of water per day (mgd)

#### Consent Decree Program (W-73.33, page 3-7)

- Short-term Capital Projects currently in construction, expect to complete April 2020
- Long-term Upgrade Plan approved by MDE currently in design
- Revised cost estimate \$202 million
- FY'21 budget \$10.5 million



# FY 2021 Capital Budget Highlighted Projects

## Patuxent Water Filtration Plant

The Patuxent plant in Laurel produces an average of 56 million gallons of water per day (mgd)

- Raw Water Pipeline (W-172.07, page 3-12)  
New raw water pipeline to plant; final permits received; expect to go to construction late summer; FY'21 budget \$9.6 million
- Rocky Gorge Pump Station Upgrade (W-172.08, page 3-13)  
Upgrades to expand plant to pump up to 110 MGD of raw water up to plant; currently in construction; FY'21 budget \$400,000



# FY 2021 Capital Budget Highlighted Projects

## Blue Plains WWTP

(S-22.series, page 4-2)

The Blue Plains WWTP is owned and operated by DC Water. WSSC's share of the capital costs of the plant is approximately 46%

- The Blue Plains WWTP treats approximately 65% of WSSC's wastewater
- The largest projects include the Long-Term Control Plan tunnels, and the Enhanced Nutrient Removal projects
- At \$443 million, Blue Plains projects represent 22% of the six-year CIP program
- The FY'21 budget, at \$59.5 million, represents 16% of the budget year



# FY 2021 Capital Budget Highlighted Projects

## Broad Creek WWPS Augmentation

(S-43.02, page 6-5)

- Piscataway WRRF headworks and storage upgrade; northern end of force main and southern end of force main projects construction completed
- Pumping station modifications in construction with expected completion summer 2020
- Project Update Newsletters sent out to citizens and stakeholders
- FY'21 budget \$166,000





# FY 2021 Capital Budget Highlighted Projects

## Piscataway Bioenergy

(S-103.02; p.4-8)

- Innovative project that will transform sewage into renewable energy
- Recover 2-3 megawatts of renewable energy
- Treat biosolids from 5 Water Resource Recovery Facilities
- Reduce Greenhouse Gas Emissions
- Protect the Chesapeake Bay
- Projected economic benefit of \$3.7M per year
- Construction started May 2019
- FY'21 budget \$61.3 million



## FY 2021 Capital Budget Highlighted Projects

- Advanced Metering Infrastructure (AMI) (A-109.00; p. 7-10): Implementation of a system-wide fully automated meter reading infrastructure system and new comprehensive customer billing and data analysis integration software.
- AMI will improve both customer service and operational efficiency including:
  - Monthly billing based on fully automated, actual meter readings. Reduced bill amount will help customers stay current with payments, help customers develop a greater awareness of their water consumption, and ensure that any excessive consumption due to leaks are addressed more quickly
  - Active notification of customers with abnormal consumption that might signify leaks before customers get high consumption bills
  - Reduced customer calls and reduced field investigation visits
  - Opportunities to employ more sophisticated rate structures; Analysis of individual consumption patterns to detect meters suspected of wearing out, or perform meter sizing analysis to ensure that large meters are optimally sized
  - Monitoring of individual consumption to perform precise, targeted conservation enforcement during droughts; Opportunities to improve the monitoring and operation of the distribution system, in order to detect and reduce non-revenue water
- Schedule and expenditure estimates are order of magnitude estimates, plus inflation, originating from the March 2011 study and are expected to change based upon the latest technology available at the time the project is bid. (Total Cost: \$99.6M)



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## FY 2021 Capital Budget New Projects

- Shady Grove Neighborhood Center (S-85.22; p.2-6) This project provides for the planning, design and construction of 3,600 feet of 15-inch sewer main and 875 feet of 18-inch sewer main to serve the Shady Grove Neighborhood Center Subdivision. (Developer funded; Total Cost: \$3.4M)
- Regional Water Supply Resiliency (W-175.05; p.3-14) This project provides for a regional raw water supply reservoir and raw water conveyance system to serve the long-range water supply needs of the Washington metropolitan region. The project will be contingent upon receipt of federal grant funding and the execution of other relevant cost sharing agreements between WSSC and other ICPRB CO-OP Operations Committee members. (Grant funded; Initial Cost: \$15.0M)
- Laboratory Division Building Expansion (A-101.04; p.7-5) This project provides for the planning, design, and construction of a 12,405 square-foot expansion to the Consolidated Laboratory Facility to accommodate the increased analytical workload, ensure that all data meets requirements set forth by the regulators, and to improve the safety of WSSC's employees and customers. (Bond funded; FY'21 estimate: \$1.3M)
- Other Capital Programs (A-110.00; p.7-11) This project includes miscellaneous capital projects, programs, allocated costs and expenditures for common, non-CIP, enterprise-wide activities such as Relocations, New Water & Sewer House Connections, Purchase of Water Meters, Paving and General Construction of Local Lines. (Bond funded; FY'21 estimate: \$70.6M)



## **FY 2021 Capital Budget Projects Closing Out**

- Thirteen projects pending close out (page 3)
- Total cost \$135.1 million
  - W-3.02 Olney Standpipe Replacement
  - W-46.15 Clarksburg Elevated Water Storage Facility
  - W-138.02 Shady Grove Standpipe Replacement
  - S-84.60 Cabin Branch Wastewater Pumping Station
  - S-84.61 Cabin Branch WWPS Force Main
  - S-84.69 Clarksburg WWPS Force Main
  - S-103.16 Cabin John Trunk Sewer Relief
  
  - W-34.03 Water Transmission Improvements 385B Pressure Zone
  - W-62.05 Clinton Zone Water Storage Facility Implementation
  - W-65.10 St. Barnabas Elevated Tank Replacement
  - S-57.92 Western Branch Facility Upgrade
  - S-75.19 Brandywine Woods Wastewater Pumping Station
  - S-75.20 Brandywine Woods WWPS Force Main



## **FY 2021 Capital Budget Impacts of Reductions**

- Capital project deferral impacts
  - Increased frequency of breaks and leaks; delayed response time; loss of service disruption to customers and businesses
  - Increased frequency of sanitary sewer overflows; community and recreational impacts; possible fines for failing to meet Consent Decree deadlines
  - Increased Operating & Maintenance costs
  - Delayed needed rehabilitation of depot facilities
  - Delayed risk reduction at Potomac WFP
  - Delayed risk reduction and benefits of expanded Patuxent WFP
  - Increased backlog of water tanks needing rehabilitation
  - Deferred corrections of water deficiencies in Clinton Zone
  - Delayed benefits of AMI including monthly billing
  - Possible water quality violations at Laboratory



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# Questions?

