

Resolution No:	<u>18-1150</u>
Introduced:	<u>May 24, 2018</u>
Adopted:	<u>May 24, 2018</u>

**COUNTY COUNCIL
FOR MONTGOMERY COUNTY, MARYLAND**

By: County Council

SUBJECT: Approval of the FY 2019-2024 Capital Improvements Program for the Washington Suburban Sanitary Commission

Background

1. As required by Section 23-304 of the Public Utilities Article of the Maryland Code, before October 1 of each year, the Washington Suburban Sanitary Commission (WSSC) must prepare and submit to the County Executive and County Council of Montgomery County a 6-year Capital Improvements Program (CIP) for water and sewer facilities.
2. On October 1, 2017, WSSC transmitted its Proposed CIP for Fiscal Years 2019-2024.
3. On January 16, 2018, the County Executive transmitted his recommendations regarding the FY 2019-2024 WSSC CIP.
4. Section 23-306 of the Public Utilities Article of the Maryland Code authorizes the Council to approve, disapprove, or modify the WSSC CIP.
5. Section 23-305 of the Public Utilities Article of the Maryland Code requires that before final action on the WSSC CIP is taken, public hearings must be held on the Program. The Council held public hearings on the CIP on February 6 and 7, 2018.
6. The Council considered the recommendations of the Executive and the Montgomery County Planning Board regarding the CIP and reviewed the project description forms.
7. The Council recognizes that the information and documentation contained in the CIP are an integral part of the Comprehensive Water Supply and Sewerage Systems Plan which must be submitted to the State Department of the Environment in accordance with Section 9-501 et seq. of the Environment Article of the Maryland Code.
8. On May 10, 2018, the Montgomery County and Prince George's County Councils jointly reviewed their respective proposed additions to, deletions from, increases to, and decreases in the WSSC capital and operating budgets and further considered all proposed changes. The Councils agree on changes to the WSSC Proposed CIP.

Action

The County Council for Montgomery County, Maryland approves the following resolution for the Washington Suburban Sanitary Commission:

1. The Council approves the projects in the WSSC Proposed CIP for FY 2019-2024 as transmitted on October 1, 2017, except those projects which are approved as modified by the Montgomery and Prince George's County Councils. Amended project description forms are attached to this resolution and are identified by the following WSSC project numbers:

A-102.00, S-22.06, S-22.07, S-22.09, S-22.10, S-22.11, S-103.02, S-170.09, W-1.00, W-73.30, W-161.01, W-172.07

2. The Council approves the close out of the projects in Part I.

This is a correct copy of Council action.


Megan Davey Limarzi, Esq.,
Clerk of the Council

Engineering Support Program

A. Identification and Coding Information		
Agency Number	Project Number	Update Code
A-102.00		Change

PDF Date	October 1, 2017
Date Revised	Feb. 21, 2018

Pressure Zones	
Drainage Basins	
Planning Areas	Bi-County;

B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'17	Estimate FY'18	Total 6 Years	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision											
Land											
Site Improvements & Utilities											
Construction	122,000		14,000	108,000	14,000	18,000	18,000	18,000	20,000	20,000	
Other											
Total	122,000		14,000	108,000	14,000	18,000	18,000	18,000	20,000	20,000	

C. Funding Schedule (000's)

WSSC Bonds	122,000		14,000	108,000	14,000	18,000	18,000	18,000	20,000	20,000	
------------	---------	--	--------	---------	--------	--------	--------	--------	--------	--------	--

D. Description & Justification

DESCRIPTION

The Engineering Support Program (ESP) represents a consolidation of a diverse group of projects whose unified purpose is to support the extensive water and sewer infrastructure and numerous support facilities that are owned, operated, and maintained by the WSSC. EXPENDITURES FOR ENGINEERING SUPPORT ARE EXPECTED TO CONTINUE INDEFINITELY.

JUSTIFICATION

ESP projects are identified primarily through the WSSC's Asset Management Planning process. Engineering services are provided for planning, design, and construction to meet a wide range of needs. As such, ESP projects are diverse in scope and typically include work needed to upgrade operating efficiency, modify existing processes, satisfy regulatory requirements, improve safety and security, or rehabilitate aging facilities. The ESP does not include proposed "major projects" which, by law, must be programmed in the WSSC Six-Year Capital Improvements Program or projects to serve new development.

Asset Management Implementation Plan, Stearns & Wheeler (April 2008).

COST CHANGE

The cost schedule above no longer shows operating costs. All operating costs are now reflected in the appropriate organization budget. The annual capital funding level has been increased based upon higher projected needs for facilities requiring rehabilitation.

OTHER

The ESP process provides a stable funding level for projects that require engineering support. Each year, the requested projects will be prioritized and then initiated subject to the available funding for the fiscal year.

COORDINATION

Coordinating Agencies: Not Applicable
Coordinating Projects: Not Applicable

E. Annual Operating Budget Impact (000's)

		FY of Impact
Staff		
Maintenance		
Other Project Costs		
Debt Service	\$7,936	25
Total Cost	\$7,936	25
Impact on Water and Sewer Rate	\$0.17	25

F. Approval and Expenditure Data (000's)

Date First in Program	FY 87
Date First Approved	FY 87
Initial Cost Estimate	
Cost Estimate Last FY	125,000
Present Cost Estimate	122,000
Approved Request Last FY	18,000
Total Expense & Encumbrances	
Approval Request Year 1	14,000

G. Status Information

Land Status	Not Applicable
Project Phase	On-Going
Percent Complete	0%
Est Completion Date	On-Going

Growth	
System Improvement	
Environmental Regulation	
Population Served	
Capacity	

H. Map

MAP NOT AVAILABLE

Blue Plains WWTP: Liquid Train Projects, Part 2

A. Identification and Coding Information		
Agency Number	Project Number	Update Code
S-22.06	954811	Change

PDF Date	October 1, 2017
Date Revised	Feb. 21, 2018

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

B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'17	Estimate FY'18	Total 6 Years	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision	37,934		2,305	21,493	3,398	2,769	3,795	3,678	2,446	5,407	14,136
Land											
Site Improvements & Utilities											
Construction	152,980		8,091	99,696	13,900	18,302	17,626	21,262	17,423	11,183	45,193
Other	1,909		104	1,212	173	211	214	249	199	166	593
Total	192,823		10,500	122,401	17,471	21,282	21,835	25,189	20,068	16,756	59,922

C. Funding Schedule (000's)

WSSC Bonds	182,238		9,924	115,681	16,512	20,114	20,447	23,806	18,966	15,836	56,633
City of Rockville	10,585		576	6,720	959	1,168	1,188	1,383	1,102	920	3,289

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: Dual Purpose Sedimentation Basins Rehabilitation, Filtration/Disinfection Facilities Phases I&II, and Grit Chamber Buildings 1&2.

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); and the DCWASA Approved FY 2018 Capital Improvements 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 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. Life to date expenditures for this program are approximately \$370 million.

COORDINATION

Coordinating Agencies: District of Columbia Water and Sewer Authority; (responsible for design and construction); City of Rockville; (responsible for a share of funding)

Coordinating Projects: S-22.10-Blue Plains WWTP: Enhanced Nutrient Removal;

E. Annual Operating Budget Impact (000's)

	FY of Impact
Staff	
Maintenance	
Other Project Costs	
Debt Service	\$11,855
Total Cost	\$11,855
Impact on Water and Sewer Rate	\$0.27

F. Approval and Expenditure Data (000's)

Date First in Program	FY 95
Date First Approved	FY 96
Initial Cost Estimate	
Cost Estimate Last FY	173,026
Present Cost Estimate	192,823
Approved Request Last FY	13,154
Total Expense & Encumbrances	
Approval Request Year 1	17,471

G. Status Information

Land Status	Not Applicable
Project Phase	On-Going
Percent Complete	
Est Completion Date	On-Going

Growth	
System Improvement	100%
Environmental Regulation	
Population Served	
Capacity	370 MGD

H. Map

MAP NOT AVAILABLE

Blue Plains WWTP: Biosolids Management, Part 2

A. Identification and Coding Information		
Agency Number	Project Number	Update Code
S-22.07	954812	Change

PDF Date	October 1, 2017
Date Revised	Feb. 21, 2018

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

B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'17	Estimate FY'18	Total 6 Years	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision	7,506		1,317	5,486	814	1,490	1,352	875	483	472	703
Land											
Site Improvements & Utilities											
Construction	32,779		4,975	27,804	6,998	8,682	7,222	4,040	612	250	0
Other	403		63	333	78	102	86	49	11	7	7
Total	40,688		6,355	33,623	7,890	10,274	8,660	4,964	1,106	729	710

C. Funding Schedule (000's)

WSSC Bonds	38,455		6,006	31,778	7,457	9,710	8,185	4,692	1,045	689	671
City of Rockville	2,233		349	1,845	433	564	475	272	61	40	39

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: new Digestion Facilities; Gravity Thickener Facilities; 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); and the DCWASA Approved FY 2018 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 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. Life to date expenditures for this program are approximately \$410 million.

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	
Maintenance	
Other Project Costs	
Debt Service	\$2,502
Total Cost	\$2,502
Impact on Water and Sewer Rate	\$0.06

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	36,101
Present Cost Estimate	40,688
Approved Request Last FY	2,557
Total Expense & Encumbrances	
Approval Request Year 1	7,890

G. Status Information

Land Status	Not Applicable
Project Phase	On-Going
Percent Complete	
Est Completion Date	On-Going

Growth	
System Improvement	100%
Environmental Regulation	
Population Served	
Capacity	370 MGD

H. Map

MAP NOT AVAILABLE

Blue Plains WWTP: Plant-wide Projects

A. Identification and Coding Information		
Agency Number	Project Number	Update Code
S-22.09	023805	Change

PDF Date	October 1, 2017
Date Revised	Feb. 21, 2018

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

B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'17	Estimate FY'18	Total 6 Years	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision	22,038		1,624	17,552	2,327	2,201	4,268	3,774	3,046	1,936	2,862
Land											
Site Improvements & Utilities											
Construction	87,135		4,926	63,747	5,798	7,517	13,384	15,007	13,449	8,592	18,462
Other	1,092		66	813	81	97	177	188	165	105	213
Total	110,265		6,616	82,112	8,206	9,815	17,829	18,969	16,660	10,633	21,537

C. Funding Schedule (000's)

WSSC Bonds	104,212		6,253	77,604	7,756	9,276	16,850	17,928	15,745	10,049	20,355
City of Rockville	6,053		363	4,508	450	539	979	1,041	915	584	1,182

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: Plant-wide Fine Bubble Aeration, Plant-wide Painting of Steel Pipes, 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); and the DCWASA Approved FY 2018 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. Life to date expenditures for this program are approximately \$210 million.

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	
Maintenance	
Other Project Costs	
Debt Service	\$6,779
Total Cost	\$6,779
Impact on Water and Sewer Rate	\$0.16

F. Approval and Expenditure Data (000's)

Date First in Program	FY 95
Date First Approved	FY 02
Initial Cost Estimate	
Cost Estimate Last FY	98,436
Present Cost Estimate	110,265
Approved Request Last FY	7,021
Total Expense & Encumbrances	
Approval Request Year 1	8,206

G. Status Information

Land Status	Not Applicable
Project Phase	On-Going
Percent Complete	
Est Completion Date	On-Going

Growth	
System Improvement	100%
Environmental Regulation	
Population Served	
Capacity	370 MGD

H. Map

MAP NOT AVAILABLE

Blue Plains WWTP: Enhanced Nutrient Removal

A. Identification and Coding Information		
Agency Number	Project Number	Update Code
S-22.10	083800	Change

PDF Date	October 1, 2017
Date Revised	Feb. 21, 2018

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

B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'17	Estimate FY'18	Total 6 Years	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision	108,555	88,248	8,280	9,848	5,224	888	848	746	1,083	1,059	2,179
Land											
Site Improvements & Utilities											
Construction	295,294	252,534	21,755	3,794	3,038	660	12	4	65	15	17,211
Other	631		300	137	83	15	9	8	11	11	194
Total	404,480	340,782	30,335	13,779	8,345	1,563	869	758	1,159	1,085	19,584

C. Funding Schedule (000's)

WSSC Bonds	174,541	129,184	20,469	6,938	3,991	700	358	309	861	719	17,950
State Aid	221,703	205,998	8,677	6,437	4,122	822	490	431	248	324	591
City of Rockville	8,236	5,600	1,189	404	232	41	21	18	50	42	1,043

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 include: Enhanced Nitrogen Removal North, Enhanced Clarification Facilities, Enhanced Nitrogen Removal Facilities, Biosolids Filtrate Treatment Facilities, Combined Heat & Power as Back-up Power, Biosolids Blending Development Center, ENR Program Management, and Wet Weather Mitigation. Diversion at Bolling and Tunnel Dewatering Pump Station.

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); DCWASA Approved FY 2018 Capital Improvement Program, and the Blue Plains Intermunicipal Agreement of 2012.

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. Total Nitrogen Secondary Treatment Upgrades will take place after 2021. 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: Maryland Department of the Environment; U.S. Environmental Protection Agency, Region III; District of Columbia Water and Sewer Authority; (responsible for design and construction); City of Rockville; (responsible for a share of funding)

Coordinating Projects: S-22.06-Blue Plains WWTP: Liquid Train Projects, Part 2;

E. Annual Operating Budget Impact (000's)

	FY of Impact
Staff	
Maintenance	
Other Project Costs	
Debt Service	\$11,354
Total Cost	\$11,354
Impact on Water and Sewer Rate	\$0.26

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	381,788
Present Cost Estimate	404,480
Approved Request Last FY	28,619
Total Expense & Encumbrances	340,782
Approval Request Year 1	8,345

G. Status Information

Land Status	Not Applicable
Project Phase	Construction
Percent Complete	86%
Est Completion Date	FY 2026

Growth	
System Improvement	
Environmental Regulation	100%
Population Served	
Capacity	370 MGD

H. Map

MAP NOT AVAILABLE

Blue Plains: Pipelines & Appurtenances

A. Identification and Coding Information		
Agency Number	Project Number	Update Code
S-22.11	113804	Change

PDF Date	October 1, 2017
Date Revised	Feb. 21, 2018

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

B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'17	Estimate FY'18	Total 6 Years	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision	24,248		4,438	18,568	3,833	3,066	4,053	3,440	2,781	1,395	1,242
Land											
Site Improvements & Utilities											
Construction	122,130		17,515	88,719	19,328	11,199	18,526	13,495	13,124	13,047	15,896
Other	1,464		220	1,073	232	143	226	169	159	144	171
Total	147,842		22,173	108,360	23,393	14,408	22,805	17,104	16,064	14,586	17,309

C. Funding Schedule (000's)

WSSC Bonds	140,202		21,329	104,118	22,573	14,076	22,393	16,426	15,146	13,504	14,755
City of Rockville	7,640		844	4,242	820	332	412	678	918	1,082	2,554

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: A new headquarters building; Potomac Interceptor Rehabilitation; Upper Potomac Interceptor; Potomac Sewage Pumping Station Rehabilitation; Influent Sewers Rehabilitation; and projects associated with the Combined Sewer Overflow (CSO) Long Term Control Plan (Clean Rivers Program) (e.g. Anacostia Tunnel).

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 FY 2018 Capital Improvement Program.

COST CHANGE

The expenditure schedule has been updated to reflect the latest estimates for the Long Term Control Plan projects.

OTHER

The project scope has remained the same. Project costs are derived from the DC-WASA Capital & Operating Budget 10-year forecast and latest project management data, and reflect WASA'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 which varies by project based on the City's relative share of WSSC's flow as derived in the Multijurisdiction Use Facilities Study. Life to date expenditures for this program are approximately \$125 million.

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	
Maintenance	
Other Project Costs	
Debt Service	\$9,120
Total Cost	\$9,120
Impact on Water and Sewer Rate	\$0.21

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	98,924
Present Cost Estimate	147,842
Approved Request Last FY	12,926
Total Expense & Encumbrances	
Approval Request Year 1	23,393

G. Status Information

Land Status	Not Applicable
Project Phase	On-Going
Percent Complete	
Est Completion Date	On-Going

Growth	
System Improvement	45%
Environmental Regulation	55%
Population Served	
Capacity	

H. Map

MAP NOT AVAILABLE

Piscataway WWTP Bio-Energy Project

A. Identification and Coding Information		
Agency Number	Project Number	Update Code
S-103.02	153802	Change

PDF Date	October 1, 2017
Date Revised	Feb. 21, 2018

Pressure Zones	
Drainage Basins	
Planning Areas	Bi-County;

B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'17	Estimate FY'18	Total 6 Years	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision	41,161	6,871	6,250	28,040	12,700	9,820	4,550	920	50		
Land											
Site Improvements & Utilities											
Construction	196,000		2,200	193,800	25,700	62,800	65,500	32,000	7,800		
Other	11,516		423	11,093	1,910	3,631	3,503	1,646	403		
Total	248,677	6,871	8,873	232,933	40,310	76,251	73,553	34,566	8,253		

C. Funding Schedule (000's)

WSSC Bonds	244,607	6,301	8,873	229,433	38,310	74,751	73,553	34,566	8,253		
Federal Aid	570	570									
State Aid	3,500			3,500	2,000	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 WWTP. 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 at a location to be determined 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.

E. Annual Operating Budget Impact (000's)

		FY of Impact
Staff		
Maintenance		
Other Project Costs		
Debt Service	\$15,912	24
Total Cost	\$15,912	24
Impact on Water and Sewer Rate	\$0.37	24

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	162,190
Present Cost Estimate	248,677
Approved Request Last FY	3,990
Total Expense & Encumbrances	6,871
Approval Request Year 1	40,310

G. Status Information

Land Status	Public/Agency owned land
Project Phase	Design
Percent Complete	10%
Est Completion Date	July 2022
Growth	
System Improvement	100%
Environmental Regulation	
Population Served	
Capacity	

H. Map

MAP NOT AVAILABLE

Piscataway WWTP Bio-Energy Project

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 (March 2017).

COST CHANGE

Cost increased to reflect early design level estimate and inclusion of FOG Facility and Utility Water Upgrades from Piscataway WWTP Facility Plant, and biosolids transported from Western Branch WWTP.

OTHER

The project scope has changed to include a FOG Facility, Utility Water Upgrades at Piscataway Plant, and biosolids transported from Western Branch WWTP. 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 WWTPs. 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; Raffelis Financial Consultants - financial; in 2016 - HDR Inc for program management and construction management for the Bio-Energy project. 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.

COORDINATION

Coordinating Agencies: Montgomery County Government; Prince George's County Government; Maryland-National Capital Park & Planning Commission; (Mandatory Referral Process); Montgomery County Department of Environmental Protection; Maryland Department of the Environment; Chesapeake Bay Critical Areas; Maryland Energy Administration Washington Gas Light Company;
Coordinating Projects: S-96.14-Piscataway WWTP Facility Upgrades; S-170.08-Septage Discharge Facility Planning & Implementation;

Trunk Sewer Reconstruction Program

A. Identification and Coding Information		
Agency Number	Project Number	Update Code
S-170.09	113805	Change

PDF Date	October 1, 2017
Date Revised	Feb. 21, 2018

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

B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'17	Estimate FY'18	Total 6 Years	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision	101,445		30,311	71,134	16,771	14,971	11,693	9,051	9,232	9,416	
Land											
Site Improvements & Utilities											
Construction	298,461		97,690	200,771	57,908	44,372	42,467	18,306	18,672	19,046	
Other	40,167		13,556	26,611	6,936	6,033	4,340	3,040	3,100	3,162	
Total	440,073		141,557	298,516	81,615	65,376	58,500	30,397	31,004	31,624	

C. Funding Schedule (000's)

WSSC Bonds	440,073		141,557	298,516	81,615	65,376	58,500	30,397	31,004	31,624	
------------	---------	--	---------	---------	--------	--------	--------	--------	--------	--------	--

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.

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 US 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. Beginning in FY 2015, construction work increased in the ESAs as a majority of the work was released for construction. 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 2022. Life to date expenditures for this program are approximately \$461 million. Land costs are included in WSSC Project S-203.00.

COORDINATION

Coordinating Agencies: Maryland State Highway Administration; Montgomery County Department of Public Works and Transportation; Maryland-National Capital Park & Planning Commission; National Park Service; Maryland Department of the Environment; Maryland Department of Natural Resources; (Critical Area Commission, FSD Approval Forest Conservation/Reforestation Rare, Threatened or Endangered Species) Prince George's County Department of Permitting Inspection and Enforcement; U.S. Army Corps of Engineers; U.S. Environmental Protection Agency, Region III; Maryland Historical Trust;

Coordinating Projects: S-1.01-Sewer Reconstruction Program;

E. Annual Operating Budget Impact (000's)

		FY of Impact
Staff		
Maintenance	\$459	25
Other Project Costs		
Debt Service	\$28,627	25
Total Cost	\$29,086	25
Impact on Water and Sewer Rate	\$0.67	25

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	504,500
Present Cost Estimate	440,073
Approved Request Last FY	148,900
Total Expense & Encumbrances	
Approval Request Year 1	81,615

G. Status Information

Land Status	Land and R/W to be acquired
Project Phase	On-Going
Percent Complete	
Est Completion Date	On-Going

Growth	
System Improvement	100%
Environmental Regulation	
Population Served	
Capacity	

H. Map

MAP NOT AVAILABLE

Water Reconstruction Program

A. Identification and Coding Information		
Agency Number	Project Number	Update Code
W-1.00		Change

PDF Date	October 1, 2017
Date Revised	Feb. 21, 2018

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

B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'17	Estimate FY'18	Total 6 Years	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision	142,409		19,137	123,272	19,387	19,891	20,466	20,721	21,176	21,631	
Land											
Site Improvements & Utilities											
Construction	506,113		70,258	435,855	68,917	70,248	71,677	73,506	75,003	76,504	
Other	87,205		13,649	73,556	11,621	11,865	12,122	12,394	12,649	12,905	
Total	735,727		103,044	632,683	99,925	102,004	104,265	106,621	108,828	111,040	

C. Funding Schedule (000's)

WSSC Bonds	735,727		103,044	632,683	99,925	102,004	104,265	106,621	108,828	111,040	
------------	---------	--	---------	---------	--------	---------	---------	---------	---------	---------	--

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'19 (including overhead) are as follows: design and construction of main replacement and associated water house connection renewals, 45 miles - \$84.2M; cathodic protection - \$1.0M; design and construction of large water service replacements - \$8.0M; emergency contracts at depots - \$6.7M. 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 2019 Enterprise Asset Management Plan, the number of miles of water main replacement was reduced from 55 miles to 45 miles per year.

Flow studies, water system modeling, and field surveys are routinely conducted. Water Main Condition Assessment, 1915-1998; Analysis and Recommendations by the Water Main Reconstruction Work Group (June, 1999). FY2018 Buried Water Asset Systems Asset Management Plan, (December 2015) identifies the business risk exposure of the water distribution system. FY2019 Enterprise Asset Management Plan (May 2017)

COST CHANGE

Overall program costs increased for inflation, to reflect higher construction unit costs due to requirements to fill abandoned pipe, and to provide dedicated funding at each depot for emergency/urgent pipe replacements.

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'17 summarize the magnitude of the reconstruction effort: 1,791 miles rehabilitated or replaced; 206 large water service/meters replaced. It is anticipated water reconstruction activity will be a perpetual element of future work programs.

COORDINATION

Coordinating Agencies: 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; Local Community Civic Associations;
Coordinating Projects: Not Applicable

E. Annual Operating Budget Impact (000's)

		FY of Impact
Staff		
Maintenance		
Other Project Costs		
Debt Service	\$47,860	25
Total Cost	\$47,860	25
Impact on Water and Sewer Rate	\$1.05	25

F. Approval and Expenditure Data (000's)

Date First in Program	
Date First Approved	
Initial Cost Estimate	
Cost Estimate Last FY	833,342
Present Cost Estimate	735,727
Approved Request Last FY	111,956
Total Expense & Encumbrances	
Approval Request Year 1	99,925

G. Status Information

Land Status	Not Applicable
Project Phase	On-Going
Percent Complete	0%
Est Completion Date	On-Going

Growth	
System Improvement	
Environmental Regulation	
Population Served	
Capacity	

H. Map

MAP NOT APPLICABLE

Potomac WFP Submerged Channel Intake

A. Identification and Coding Information

Agency Number	Project Number	Update Code
W-73.30	033812	Change

PDF Date October 1, 2017

Date Revised Feb. 21, 2018

Pressure Zones Polomac WFP HGPOWF;

Drainage Basins

Planning Areas BI-County;

E. Annual Operating Budget Impact (000's)

		FY of Impact
Staff		
Maintenance		
Other Project Costs		
Debt Service	\$5,406	25
Total Cost	\$5,406	25
Impact on Water and Sewer Rate	\$0.11	25

B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'17	Estimate FY'18	Total 6 Years	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision	10,652	4,322	500	5,830	67	1,730	1,100	1,000	1,000	933	
Land											
Site Improvements & Utilities											
Construction	68,700			68,700		2,000	22,000	22,000	18,000	4,700	
Other	3,752		25	3,727	3	187	1,155	1,150	950	282	
Total	83,104	4,322	525	78,257	70	3,917	24,255	24,150	19,950	5,915	

C. Funding Schedule (000's)

WSSC Bonds	83,104	4,322	525	78,257	70	3,917	24,255	24,150	19,950	5,915	
------------	--------	-------	-----	--------	----	-------	--------	--------	--------	-------	--

D. Description & Justification

DESCRIPTION

This project includes planning, which involves community outreach and coordination with elected officials, design, and construction of a submerged channel intake to provide an additional barrier against drinking water contamination (particularly Giardia cysts and Cryptosporidium oocysts), as well as to enhance reliability and reduce treatment costs by drawing water from a location with cleaner, more stable water quality.

JUSTIFICATION

The project is expected to pay for itself over time based upon the reduced chemical and solids handling costs resulting from the cleaner raw water source. It also provides for a more reliable supply by eliminating the current problems associated with ice and vegetation blocking the existing bank withdrawal. This project is consistent with the industry's recommended multiple barrier approach.

"Technical Memorandum No. 2 Water Quality Needs Assessment," O'Brien & Gere Engineers, Inc. (November 2001); "Draft Source Water Assessment Study," Maryland Department of the Environment (April 2002); "Potomac WFP Facility Plan," O'Brien & Gere Engineers, Inc. (September 2002). "Draft Feasibility Study Report", Black & Veatch (November 2013).

COST CHANGE

Not applicable.

OTHER

The project scope has remained the same. As part of the planning phase of this project, significant outreach activities will occur. A series of briefings with State legislators, County Council members, County Executive staff and County Council staff will be undertaken prior to commencement of further engineering work. As the planning process moves into its final stages and the National Environmental Policy Act (NEPA) approval process is underway, elected officials, county government staffs, environmental community members, and the general public will be engaged in an on-going information, outreach and project participation program. Expenditure and schedule projections shown above are planning level estimates and may change based on site-specific conditions and design constraints. Both Councils will review the results of the detailed study and must approve continuing with the project before design and construction may proceed. Land costs are included in WSSC Project W-202.00.

COORDINATION

Coordinating Agencies: Montgomery County Government; Prince George's County Government; National Park Service; Montgomery County Department of Environmental Protection; Maryland Department of the Environment; Maryland Department of Natural Resources; Prince George's County Department of Environmental Resources; U.S. Army Corps of Engineers; Maryland-National Capital Park & Planning Commission;

Coordinating Projects: Not Applicable

F. Approval and Expenditure Data (000's)

Date First in Program	FY 04
Date First Approved	FY 03
Initial Cost Estimate	936
Cost Estimate Last FY	83,104
Present Cost Estimate	83,104
Approved Request Last FY	1,523
Total Expense & Encumbrances	4,322
Approval Request Year 1	70

G. Status Information

Land Status	Land and RAW to be acquired
Project Phase	Planning
Percent Complete	95%
Est Completion Date	FY 2024

Growth	
System Improvement	100%
Environmental Regulation	
Population Served	
Capacity	

H. Map

MAP NOT AVAILABLE

Large Diameter Water Pipe & Large Valve Rehabilitation Program

A. Identification and Coding Information		
Agency Number	Project Number	Update Code
W-161.01	113803	Change

PDF Date	October 1, 2017
Date Revised	Feb. 21, 2018

Pressure Zones	
Drainage Basins	
Planning Areas	Bi-County,

B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'17	Estimate FY'18	Total 6 Years	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision	45,049		4,421	40,628	6,441	6,569	6,701	6,835	6,971	7,111	
Land											
Site Improvements & Utilities											
Construction	369,802		46,253	323,549	32,284	48,538	53,170	61,756	63,268	64,533	
Other	20,743		2,534	18,209	1,936	2,755	2,994	3,430	3,512	3,582	
Total	435,594		53,208	382,386	40,661	57,852	62,865	72,021	73,751	75,226	

C. Funding Schedule (000's)

WSSC Bonds	435,594		53,208	382,386	40,661	57,852	62,865	72,021	73,751	75,226	
------------	---------	--	--------	---------	--------	--------	--------	--------	--------	--------	--

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 annually 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 and replace (when necessary) any of the 1500 large diameter valves and vaults located throughout the system.

Utility Wide Master Plan, (December 2007); 30 Year Infrastructure Plan (2007); FY2016 Water Transmission System Asset Management Plan (February 2014); WSSC FY 2018 Buried Water Asset Systems Asset Management Plan (December 2015);

COST CHANGE

Overall program costs were increased for inflation and to reflect higher construction unit costs for pipe replacements due to requirements to fill abandoned pipe.

E. Annual Operating Budget Impact (000's)

		FY of Impact
Staff		
Maintenance		
Other Project Costs		
Debt Service	\$28,336	25
Total Cost	\$28,336	25
Impact on Water and Sewer Rate	\$0.60	25

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	415,928
Present Cost Estimate	435,594
Approved Request Last FY	41,501
Total Expense & Encumbrances	
Approval Request Year 1	40,661

G. Status Information

Land Status	Not Applicable
Project Phase	On-Going
Percent Complete	0%
Est Completion Date	On-Going

Growth	
System Improvement	100%
Environmental Regulation	
Population Served	
Capacity	

H. Map

MAP NOT AVAILABLE

Large Diameter Water Pipe & Large Valve Rehabilitation Program

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 inspections and condition assessments. Life to date expenditures for this program are approximately \$190 million. Additional costs associated with PCCP inspection/condition assessment, large valve inspection/repairs and emergency repairs are included in the Operating Budget.

COORDINATION

Coordinating Agencies: Maryland State Highway Administration; 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); Maryland-National Capital Park & Planning Commission; Prince George's County Department of Permitting Inspection and Enforcement; Local Community Civic Associations;

Coordinating Projects: W-1.00-Water Reconstruction Program; A-107.00-Specialty Valve Vault Rehabilitation Program;

Patuxent Raw Water Pipeline

A. Identification and Coding Information		
Agency Number	Project Number	Update Code
W-172.07	063804	Change

PDF Date	October 1, 2017
Date Revised	Feb. 21, 2018

Pressure Zones	
Drainage Basins	
Planning Areas	Bi-County:

B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'17	Estimate FY'18	Total 6 Years	Year 1 FY'19	Year 2 FY'20	Year 3 FY'21	Year 4 FY'22	Year 5 FY'23	Year 6 FY'24	Beyond 6 Years
Planning, Design & Supervision	5,390	4,770	220	400	20	200	180				
Land											
Site Improvements & Utilities											
Construction	26,367	7,935	3,600	14,832	320	7,416	7,096				
Other	1,906		382	1,524	38	762	724				
Total	33,663	12,705	4,202	16,756	378	8,378	8,000				

C. Funding Schedule (000's)

WSSC Bonds	33,663	12,705	4,202	16,756	378	8,378	8,000				
------------	--------	--------	-------	--------	-----	-------	-------	--	--	--	--

D. Description & Justification

DESCRIPTION

This project provides for 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 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 MG.

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). Land costs are included in WSSC Project W-202.00.

COORDINATION

Coordinating Agencies: Montgomery County Government; Prince George's County Government; Maryland-National Capital Park & Planning Commission; Maryland Department of the Environment; Interstate Commission on the Potomac River Basin; Local Community Civic Associations; (West Laurel Civic Association); Baltimore Gas & Electric;

Coordinating Projects: W-172.05-Patuxent WFP Phase II Expansion; W-172.08-Rocky Gorge Pump Station Upgrade;

E. Annual Operating Budget Impact (000's)

		FY of Impact
Staff		
Maintenance	\$341	22
Other Project Costs		
Debt Service	\$2,190	22
Total Cost	\$2,531	22
Impact on Water and Sewer Rate	\$0.05	22

F. Approval and Expenditure Data (000's)

Date First in Program	FY 06
Date First Approved	FY 03
Initial Cost Estimate	18,750
Cost Estimate Last FY	32,932
Present Cost Estimate	33,663
Approved Request Last FY	4,180
Total Expense & Encumbrances	12,705
Approval Request Year 1	378

G. Status Information

Land Status	Land and R/W to be acquired
Project Phase	Design
Percent Complete	90%
Est Completion Date	FY 2020

Growth	
System Improvement	100%
Environmental Regulation	
Population Served	
Capacity	

H. Map

MAP NOT AVAILABLE

PART I: Washington Suburban Sanitary Commission Capital Projects To Be Closed Out

The Washington Suburban Sanitary Commission has authorized the close out of the following capital projects

Project Number	Project Name
P073800	Seneca WWTP Enhanced Nutrient Removal
P083802	Seneca WWTP Expansion, Part 2
