Blue Plains WWTP: Liquid Train Projects, Part 2

A. Identification and Coding Information		
Agency Number	Project Number	Update Code
S - 000022.06	954811	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											
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
Total	**310,880**		**22,831**	**166,285**	**23,432**	**28,827**	**20,859**	**22,116**	**23,339**	**47,712**	**121,764**

C. Funding Schedule (000's)

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	22,831
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

Blue Plains WWTP: Biosolids Management, Part 2

A. Identification and Coding Information		
Agency Number	Project Number	Update Code
S - 000022.07	954812	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											
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
Total	**75,220**		**10,164**	**59,673**	**11,347**	**12,840**	**17,303**	**8,670**	**7,300**	**2,213**	**5,383**

C. Funding Schedule (000's)

WSSC Bonds	71,090		9,606	56,396	10,724	12,135	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 (December2007); Blue Plains Facilities Master Plan (2016); and the DCWASA Approved FY 2020 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

MAP NOT AVAILABLE

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	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	110,599		10,383	84,644	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
Total	**111,706**		**10,487**	**85,492**	**10,811**	**14,584**	**22,288**	**13,912**	**9,577**	**14,320**	**15,727**

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	6,133		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 Expenditure 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	169.6 / 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 - 000022.10	083800	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											
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
Total	**440,738**	**412,789**	**1,507**	**21,469**	**294**	**319**	**1,844**	**1,900**	**5,794**	**11,318**	**4,973**

C. Funding Schedule (000's)

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 FY 2020 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

E. Annual Operating Budget Impact (000's)		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

MAP NOT AVAILABLE

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
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											
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
Total	**172,974**		**17,117**	**110,567**	**13,622**	**15,964**	**19,068**	**22,609**	**20,895**	**18,409**	**45,290**

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 FY 2020 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

Piscataway Bioenergy

A. Identification and Coding Information		
Agency Number	Project Number	Update Code
S - 000103.02	153802	Change

PDF Date	October 1, 2019
Date Revised	

Pressure Zones	
Drainage Basins	
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			
Total	**281,208**	**29,189**	**39,709**	**212,310**	**61,320**	**69,720**	**49,770**	**31,500**			

C. Funding Schedule (000's)

WSSC Bonds	277,138	28,619	39,209	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/Mesophillic 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 Geenhouse 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

E. Annual Operating Budget Impact (000's)		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 anerobic 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; Raftelis 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

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, 2020
Date Revised	January 15, 2020

Pressure Zones	
Drainage Basins	
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	5,055	3,359	561	1,135	561	124		225	225		
Land											
Construction	25,346	2,045	3,967	19,334	10,767	2,393		3,087	3,087		
Other	3,180		1,133	2,047	1,133	252		331	331		
Total	**33,581**	**5,404**	**5,661**	**22,516**	**12,461**	**2,769**		**3,643**	**3,643**		

C. Funding Schedule (000's)

WSSC Bonds	33,581	5,404	5,661	22,516	12,461	2,769		3,643	3,643		

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 the 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 - 000096.14 - Piscataway WRRF Facility Upgrades; S - 000103.02 - Piscataway WWTP Bio-Energy Project

E. Annual Operating Budget Impact (000's)		FY of Impact
Staff & Other		
Maintenance		
Debt Service	$2,627	26
Total Cost	$2,627	26
Impact on Water and Sewer Rate	$0.01	26

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	32,455
Present Cost Estimate	40,381
Approved Request Last FY	12,276
Total Expense & Encumbrances	5,404
Approval Request Year 1	12,461

G. Status Information

Land Status	Public/Agency owned land
Project Phase	Design
Percent Complete	90 %
Estimated Completion Date	June 2025

Growth	
System Improvement	100 %
Environmental Regulation	
Population Served	
Capacity	

H. Map

MAP NOT APPLICABLE

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	
Total	**343,807**		**65,864**	**277,943**	**69,491**	**67,081**	**48,763**	**29,962**	**30,860**	**31,786**	

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	

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

Land & Rights-of-Way Acquisition - Bi-County Sewer

A. Identification and Coding Information		
Agency Number	Project Number	Update Code
S - 000203.00	163800	Change

PDF Date	October 1, 2019
Date Revised	

Pressure Zones	
Drainage Basins	
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	933		50	883	283	120	120	120	120	120	
Construction											
Other											
Total	**933**		**50**	**883**	**283**	**120**	**120**	**120**	**120**	**120**	

C. Funding Schedule (000's)

WSSC Bonds	884		50	834	234	120	120	120	120	120	
SDC	49			49	49						

D. Description & Justification

DESCRIPTION

This PDF provides a consolidated estimate of funding for the acquisition of land and rights-of-way for sewer projects. Expenditures are programmed based upon anticipated schedules and are required for the completion of those specific projects. These costs do not include purchases which have already been completed.

JUSTIFICATION

Consolidation of expenditures for land and rights-of-way acquisitions provides flexibility in expending funds in a specific fiscal year and permits the WSSC to respond to the uncertainty of project-specific implementation schedules. Other considerations include the accommodation of unpredictable delays which impact the timing of a planned purchase, unanticipated rights-of-way requirements due to minor alignment changes identified late in the design phase, and the need to assure the WSSC an equitable negotiation position by avoiding project-specific cost displays prior to contacting property owners.

Acquisition needs are determined by the WSSC and are based upon facility planning efforts, alignment studies, field surveys, realignments required by other agencies, or requirements identified within the Development Services Process.

COST CHANGE

Not applicable.

OTHER

The project scope has remained the same. Expenditure and schedule projections shown in Block B are estimates only and may change based upon actual negotiations. When purchases are complete, the actual cost will be displayed in the expenditure schedule on the appropriate project.

COORDINATION

Coordinating Agencies: Not Applicable
Coordinating Projects: Not Applicable

E. Annual Operating Budget Impact (000's)		FY of Impact
Staff & Other		
Maintenance		
Debt Service	$58	
Total Cost	$58	
Impact on Water and Sewer Rate		

F. Approval and Expenditure Data (000's)

Date First in Program	FY 98
Date First Approved	FY 98
Initial Cost Estimate	
Cost Estimate Last FY	375
Present Cost Estimate	933
Approved Request Last FY	50
Total Expense & Encumbrances	
Approval Request Year 1	283

G. Status Information

Land Status	Land and R/W to be acquired
Project Phase	On-Going
Percent Complete	0 %
Estimated Completion Date	Not Applicable

Growth	5%
System Improvement	95%
Environmental Regulation	
Population Served	
Capacity	

H. Map

MAP NOT APPLICABLE