


T&E COMMITTEE #1
February 23, 2015

Worksession

MEMORANDUM

February 20, 2015

TO: Transportation, Infrastructure, Energy & Environment Committee

FROM:  Keith Levchenko, Senior Legislative Analyst

SUBJECT: **Worksession: FY16-21 Capital Improvements Program: Washington Suburban Sanitary Commission (WSSC)**

Council Staff Recommendation:

Approve WSSC's Proposed FY16-21 Capital Improvements Program (CIP) with the following changes:

- Update the Blue Plains Projects based on the latest Information from DCWater
- Remove two new projects from the CIP (*neither is needed as a result of the Anaerobic Digestion/Combined Heat & Power project being approved by both Councils last fall*)
 - Piscataway WWTP Post Lime System
 - Piscataway WWTP Backup Generators

Attachments to this memorandum include:

- County Executive's Recommendations of January 15, 2015 for the FY16-21 WSSC CIP (©1-4)
- Excerpts from WSSC's Proposed FY16-21 CIP¹ (©5-35)
- Sanitary Sewer Overflow (SSO) Consent Decree Update to Commissioners (dated January 27, 2015) (©36-54)

¹ WSSC's full FY16-21 Proposed Capital Improvements Program Document is available for download at:
<https://www.wsscwater.com/budget>

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

WSSC

Roscoe Moore, Commissioner
Jerry Johnson, General Manager/CEO
Gary Gumm, Chief Engineer
Yvette Downs, Chief Financial Officer
Leticia Carolina-Powell, Acting Budget Group
Leader
Mark Brackett, Budget Unit Coordinator

County Government

Dave Lake, Manager, Water and Wastewater
Management, Department of Environmental
Protection (DEP)
Mary Beck, Manager, Office of Management and
Budget (OMB)
Matt Schaeffer, Management and Budget
Specialist, OMB

BACKGROUND/TIMELINE

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

Unlike other County agency CIP proposals that are reviewed biennially, Montgomery County reviews the WSSC CIP every year. Also, unlike other agencies, WSSC's budget is not included within the County's Spending Affordability process. Instead, WSSC is subject to a separate affordability process, with both Montgomery and Prince George's County Council approval in the fall of each year.

The FY16-21 WSSC CIP timeline

- October 1, 2014: WSSC transmitted its Proposed FY16-21 CIP (Excerpts on ©5-35)
- October 21, 2014: Council Approval of WSSC's FY16 Spending Control Limits
- January 15, 2015: County Executive's recommendations transmitted (©1-4)
- **February 23, 2015: T&E Committee review of the WSSC CIP**
- February 24, 2015: Council's Public Hearing on amendments to the FY15-20 CIP and FY16-21 WSSC CIP
- March 1, 2015: WSSC transmittal deadline for its Proposed FY16 Budget
- March 17, 2015: Council review of the WSSC CIP
- April 2014: T&E Committee review of the WSSC Operating Budget
- Early May: Council review of the WSSC CIP and Operating Budget
- May 7, 2015: Bi-County Meeting between Montgomery County and Prince George's County on the WSSC CIP and Operating Budget, as well as any other Bi-County budget issues

FISCAL OVERVIEW

Fiscal Highlights

- WSSC's FY16-21 CIP is \$2.04 billion (an increase of \$422.2 million, or 26 percent, from the FY15-20 CIP). The largest single increase in the CIP is in the Trunk Sewer Reconstruction project (up \$285.4 million) to address consent decree-related projects.
- Montgomery County and Bi-County projects total \$1.57 billion (an increase of \$362.6 million, or 30 percent, from the FY15-20 CIP for reasons similar to the overall WSSC CIP noted above)

- Blue Plains projects total \$319 million for FY16-21 (a decrease of \$42.8 million or 11.8 percent from the FY15-20 CIP), primarily as a result of projects moving through construction (especially the Enhanced Nutrient Removal (ENR) and biosolids projects) and out of the six-year period. This total represents about 16 percent of the total WSSC CIP and about 25 percent of WSSC's sewer projects. *NOTE: The midcycle update information provided by WSSC subsequent to the CIP transmittal assumes total Blue Plains project costs of \$400.8 million.*
- NOTE: "Information Only" projects (which are presented in the CIP but which are not formally part of the CIP and not in the above CIP totals) continue to represent a large portion of WSSC's infrastructure-related work. However, FY16-21 expenditures are projected to be \$1.14 billion (a decline of \$177.7 million, or 13 percent from the FY15-20 projected amount of \$1.3 billion). This reduction is primarily the result of projected reductions in the sewer reconstruction program (as WSSC focuses on trunk sewer work in the Bi-County sewer project) and reductions in the water reconstruction program, as WSSC is not applying an inflation factor per economic trends in the 20-City Construction Cost Index and the Baltimore Region Construction Index and marginal changes in the scope of work assumed in FY16.²*

The following chart presents WSSC's proposed CIP expenditures. This chart includes capital water and sewer expenditures for both Montgomery and Prince George's counties.

Table 1: Total WSSC Expenditures
Proposed FY16-21 CIP versus Approved FY15-20 CIP
 (\$s in 000s)

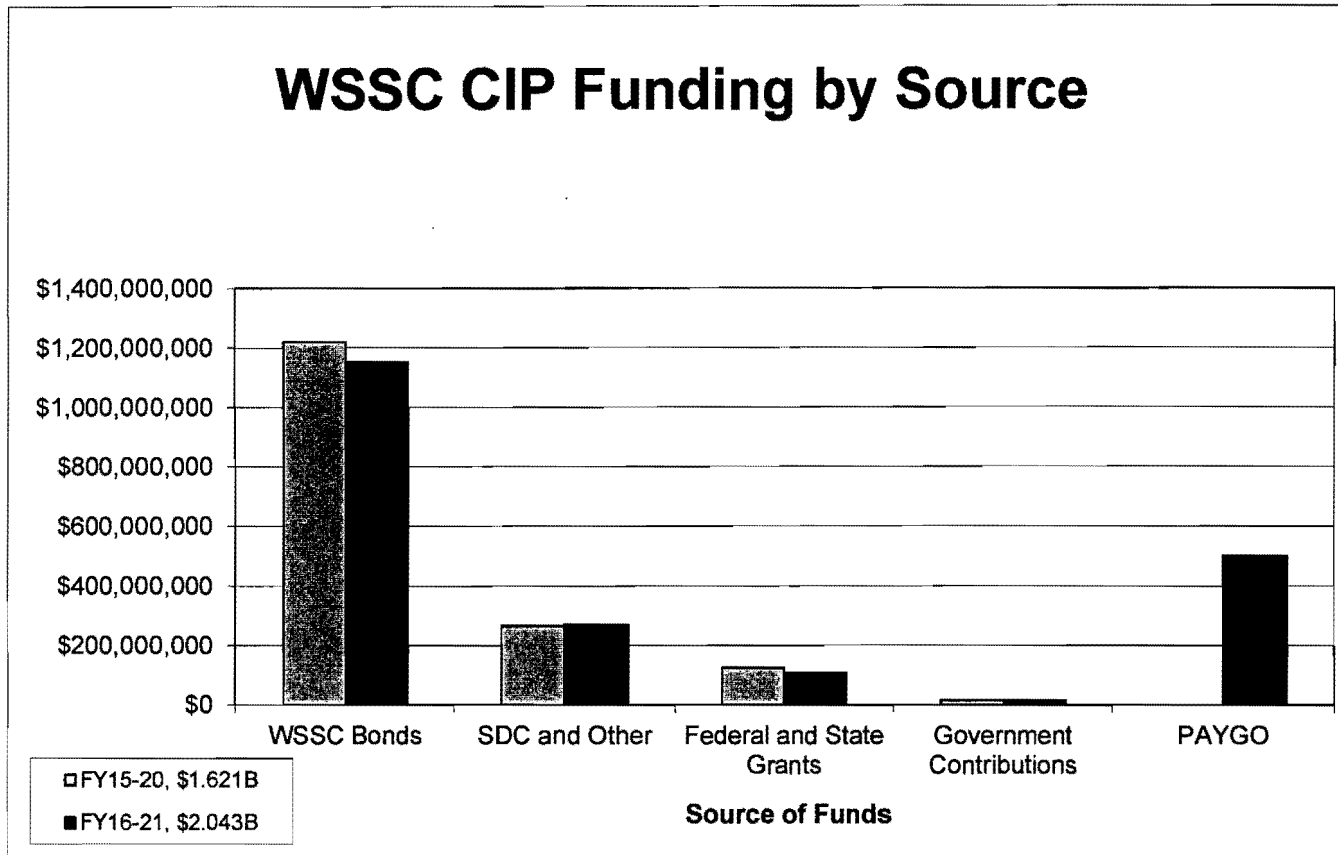
	Approved FY15	Six-Year Total	FY16	FY17	FY18	FY19	FY20	FY21
Total Water Projects								
Approved FY15-20	129,931	613,407	124,382	138,573	93,127	64,280	63,114	
Proposed FY16-21		767,397	139,905	165,963	157,583	126,862	102,461	74,623
Difference		153,990	15,523	27,390	64,456	62,582	39,347	
% Change		25.1%	12.5%	19.8%	69.2%	97.4%	62.3%	
Total Sewer Projects								
Approved FY15-20	342,105	1,007,404	247,482	157,900	137,017	94,490	28,410	
Proposed FY16-21		1,275,608	402,975	305,307	280,720	139,211	80,568	66,827
Difference		268,204	155,493	147,407	143,703	44,721	52,158	
% Change		26.6%	62.8%	93.4%	104.9%	47.3%	183.6%	
Total								
Approved FY15-20	472,036	1,620,811	371,864	296,473	230,144	158,770	91,524	
Proposed FY16-21		2,043,005	542,880	471,270	438,303	266,073	183,029	141,450
Difference		422,194	171,016	174,797	208,159	107,303	91,505	
% Change		26.0%	46.0%	59.0%	90.4%	67.6%	100.0%	

As shown on the chart, WSSC is recommending a significant increase in expenditures (26.0 percent, \$422.2 million. This increase is nearly equal to the decrease in the WSSC CIP last year (-20.5 percent, -\$418.7 million). This increase is broken down by project later.

² Nearly 80 percent of the "Information Only" project total is for water and sewer main reconstruction, a major infrastructure issue that has been the subject of much discussion in recent years. These non-CIP projects are discussed in both the CIP and Operating Budget context because, while they are part of WSSC's overall multi-year effort to address infrastructure needs, they are funded on an annual basis and must fit within WSSC's spending control limits set each year.

Funding Sources

The following chart compares funding sources between the Approved FY15-20 CIP and the Proposed FY16-21 CIP.



Each of these funding sources and how they relate to WSSC projects are described on ©5 and presented in pie chart form on ©9. Bond funding has long been the dominant funding source (typically 75 percent of revenues). However, with WSSC increasing its PAYGO assumptions going forward (based on recommendations from the Bi-County Infrastructure Funding Working Group), bond funding has dropped to about 56 percent of the CIP. PAYGO makes up about 25 percent of the CIP funding. SDC and Other (which is primarily made up of developer contributions) is now the third largest funding source, making up about 13 percent of revenues over the six-year period.

GROWTH FUNDING

WSSC estimates that approximately \$270.3 million (or 13.0 percent) of total proposed expenditures in the six-year period are needed to accommodate growth.³ This is up slightly from the FY15-20 CIP (\$264.2 million).

³ Environmental regulations and system improvements (10 percent and 77 percent of requested FY16-21 CIP expenditures, respectively) are the two other major categories of spending (see ©8). Note: “information only” projects are not included in these totals.

The major sources used to fund growth are:

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

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

The System Development Charge (SDC) is a major source of funding for much of the new water/sewer infrastructure built in the County. WSSC estimates approximately \$179.2 million in revenue over the six-year period. Developer credits and SDC exemptions⁴ reduce the net revenue to about \$162.1 million. For more background on the SDC, please see ©6.

Overall, WSSC estimates a deficit in growth funding versus expenditures over the six-year period of 69.8 million, as shown on ©7. This deficit is down slightly from last year's estimated deficit of \$78.2 million.

The SDC Fund has a balance of \$24.2 million (as of December 31, 2014). There are significant annual gaps shown in FY16, FY17, and FY18. Four years ago, the Council agreed with WSSC staff that, as an alternative to an increase in the SDC charge, WSSC could use debt (financed with SDC funds) to address any actual gaps that may occur in the next few years and then use future projected SDC surpluses to pay back the debt over time. Both Councils supported this proposed approach.

WSSC's Proposed Operating Budget for FY16 will be transmitted by March 1. The Proposed Operating Budget will include recommended FY16 SDC charges, which both Councils will act on as part of the action on the WSSC Operating Budget. The assumptions noted above presume no increase in SDC rates.⁵

Montgomery County and Bi-County Projects

Each Council generally focuses on the projects within its county as well as the Bi-County projects. The following chart summarizes six-year program information for Montgomery County and Bi-County projects only.

⁴ For purposes of projecting future SDC balances, WSSC assumes Montgomery and Prince George's Counties utilize the full \$1.0 million in exemptions each fiscal year. Any amounts within each County's \$500,000 share not used in a given year carry over to the next fiscal year. As of December 31, 2015, Montgomery County has \$5.5 million in exemption capacity. Prince George's County has \$2.9 million in exemption capacity.

⁵ For many years, WSSC has increased the maximum allowable charge (as permitted under State law), but has left the actual rate charged unchanged. Given that there are no new major SDC funded projects coming up in the WSSC CIP and that the bond-funding approach above should provide a short-term means to cover the annual projected gaps, WSSC may continue to recommend leaving rates unchanged for FY16.

Table 2: Total WSSC Expenditures (Montgomery County and Bi-County Only)
Proposed FY16-21 CIP versus Approved FY15-20 CIP
(\$s in 000s)

	Approved FY15	Six-Year Total	FY16	FY17	FY18	FY19	FY20	FY21
Total Water Projects								
Approved FY15-20	91,892	446,211	82,871	96,712	73,946	49,652	51,138	
Proposed FY16-21		567,102	96,733	113,253	112,003	98,025	84,713	62,375
Difference		120,891	13,862	16,541	38,057	48,373	33,575	
% Change		27.1%	16.7%	17.1%	51.5%	97.4%	65.7%	
Total Sewer Projects								
Approved FY15-20	252,897	761,805	164,956	123,001	107,255	85,286	28,410	
Proposed FY16-21		1,003,511	315,883	237,574	229,553	113,915	61,947	44,639
Difference		241,706	150,927	114,573	122,298	28,629	33,537	
% Change		31.7%	91.5%	93.1%	114.0%	33.6%	118.0%	
Total								
Approved FY15-20	344,789	1,208,016	247,827	219,713	181,201	134,938	79,548	
Proposed FY16-21		1,570,613	412,616	350,827	341,556	211,940	146,660	107,014
Difference		362,597	164,789	131,114	160,355	77,002	67,112	
% Change		30.0%	66.5%	59.7%	88.5%	57.1%	84.4%	

Montgomery County and Bi-County expenditures are up 30 percent for similar reasons noted earlier for the overall WSSC CIP.

COUNTY EXECUTIVE RECOMMENDATIONS (See ©1-4)

The County Executive recommendation was transmitted on January 15, and the only change recommended for the WSSC CIP is to remove funding from the Anaerobic Digestion/Combined Heat & Power project (\$138 million in the FY16-21 period), as reflected in the table below:

Table 3: CE Recommended Changes to the WSSC FY16-21 CIP

	Six-Year Total	FY16	FY17	FY18	FY19	FY20	FY21
WSSC Proposal	2,043,005	542,880	471,270	438,303	266,073	183,029	141,450
change from Approved FY15-20	422,194						
CE Changes	-						
- Remove Funding for Anaerobic Digestion Project	(137,998)	(14,276)	(42,826)	(42,826)	(38,070)	-	-
Total CE Changes	(137,998)	(14,276)	(42,826)	(42,826)	(38,070)	-	-
CE Recommended Totals	1,905,007	528,604	428,444	395,477	228,003	183,029	141,450
change from Approved FY15-20 CIP	284,196						

The FY16 change reflects about a \$14.3 million reduction, of which about \$7.1 million is in WSSC bonds. (The balance is in Federal aid.)

The Anaerobic Digestion/Combined Heat & Power project (PDF attached on ©22-23) was discussed at the Council last year during the WSSC CIP process and then again last fall when both Councils approved the project moving into design.⁶

WSSC FY16-21 PROJECT HIGHLIGHTS

New Projects

- There are no new projects within the Montgomery County Water or Sewer sections of the CIP. One SDC-funded project (Clarksburg Area Stage 3 Water Main, Part 5) was broken out of the existing Part 4 project in order to coordinate with pending area road projects.
- There are two new Prince George's County Sewer Projects:
 - Piscataway WWTP Post Lime System (\$20.9 million) (PDF on ©27-28)
 - Piscataway WWTP Backup Generators (\$21,9 million) (PDF on ©29-30)

However, both projects were included in WSSC's proposed CIP prior to both Councils' actions last fall approving WSSC's Anaerobic Digestion/Combined Heat and Power (AD/CHP) project. WSSC has confirmed that neither project is needed with the AD/CHP project now moving forward. **Council Staff recommends removal of both of these projects.**

Summary of Major Changes by Project

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

⁶ For more information, the November 25, 2014 Council approval packet for this project is available for download at: http://montgomerycountymd.granicus.com/MetaViewer.php?view_id=6&clip_id=8307&meta_id=74156

**Table 4:
FY16-21 Major Changes in 6 Year Costs
(MC and Bi-County Projects Only)**

Cost in (\$000s)	Project	Comment
285,417	Trunk Sewer Reconstruction Program	cost increase from costs slipping from prior years and increased costs related to extensive access roads, by-pass pumping, and stream stabilization to meet permit requirements.
53,898	Potomac WFP Submerged Channel Intake	cost increase based on November 2013 Draft Feasibility Report
46,046	Large Diameter Water Pipe Rehabilitation Program	increase in PCCP replacement and repairs as well as the ramp up in # of miles of cast iron pipe being replaced and receiving cathodic protection.
33,082	Potomac WFP Main Zone Pipeline	order of magnitude estimate for design and construction work now included in project.
3,410	Septage Discharge Facility Planning & Implementation	refinement of estimated engineering and construction costs and addition of design services during construction costs.
2,013	Brink Zone Reliability Improvements	change in scope of project (from prefab pumping station to a built-in-place booster water pumping station)
1,188	Olney Standpipe Replacement	cost up based on more definitive Engineer's estimate and additional inspection services
1,126	Rocky Gorge Pump Station Upgrade	minimal change in total project cost. Some slippage of costs into six-year period.
(42,805)	Blue Plains Projects	ENR and Biosolids projects down substantially as projects move through construction. Plantwide projects up. NOTE: Mid-cycle updates costs are up.
(7,202)	Patuxent WFP Phase II Expansion	6 year cost is down as construction moves forward. Total project cost is up based on revised construction cost estimates, but 6 year cost is down as construction moves forward.
(2,686)	Potomac WFP Pre-Filter Chlorination & Air Scour Improvements	cost down based on cost of executed design contract
(1,948)	Seneca WWTP Expansion Part 2	moving through construction
(1,581)	Potomac WFP Corrosion Mitigation	cost down based on more definitive Engineer's estimate
(1,539)	Potomac WFP outdoor Substation No. 2 Replacement	moving through construction, updated costs
(1,278)	Bi-County Water Tunnel	moving through construction, updated costs

On the cost increase side, of particular note, the Trunk Sewer Reconstruction Program represents the largest increase by far. The six-year costs in this project were actually reduced by \$456 million last year as WSSC pushed out priority 2 asset work in order to focus on completing as much priority 1 work by the Consent Decree deadline. However, costs are increasing for FY16-21, partly due to slippage from prior years and also due to cost increases associated with building access roads, bypass pumping, and stream stabilization. More discussion on this project and the Consent Decree is included later in this memorandum.

There is also a sizeable increase in the Large Diameter Water Pipe Rehabilitation program as the miles of PCCP replacement continue to increase.

There are also some cost decreases, the biggest being in the Blue Plains projects with the ENR and Biosolids projects moving to completion. *NOTE: the mid-cycle update of these costs reflects an increase over the approved six-year period and is discussed later.* The expansion project at the Patuxent

Water Filtration Plant is also beginning to see six-year decreases as the project moves closer to completion.

REVIEW OF SELECTED PROJECTS

Blue Plains Project Cost Estimates (PDFs on ©16-21)

As noted earlier, the Blue Plains projects make up a sizable portion of WSSC's Sewer CIP. WSSC's Proposed CIP assumes \$319 million over the FY16-21 period. This is a decrease of \$42.8 million (or 11.8 percent) from the FY15-20 CIP.

Table 5: Blue Plains Projects: Expenditures (in \$000s)

	Approved FY15	Six-Year Total	FY16	FY17	FY18	FY19	FY20	FY21
Total Blue Plains Project Costs								
Approved FY15-20	118,836	361,848	88,465	61,235	49,234	31,675	12,403	
Proposed FY16-21		319,043	99,428	83,471	61,126	35,105	22,073	17,840
Difference		(42,805)	10,963	22,236	11,892	3,430	9,670	
% Change		-11.8%	12.4%	36.3%	24.2%	10.8%	78.0%	
CE Recommended FY16-21		319,043	99,428	83,471	61,126	35,105	22,073	17,840
\$ Change from Proposed		-	-	-	-	-	-	-
% Change from Proposed		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Mid-Cycle Update								
Proposed FY16-21		400,797	105,834	87,599	74,381	48,655	47,290	37,038
% Change from Approved		10.8%	19.6%	43.1%	51.1%	53.6%	281.3%	
% Change from Proposed		25.6%	6.4%	4.9%	21.7%	38.6%	114.2%	

DC Water's latest capital expenditure totals were approved by the DC Water Board of Directors on February 5, 2015 and therefore not reflected in the WSSC CIP transmitted last fall. However, WSSC staff recently provided updated "mid-cycle" numbers including an overall six-year total of \$400.8 million, which is a 10.8 percent increase from the approved FY15-20 total and a 25.8 percent increase from the numbers assumed in WSSC's Proposed CIP.

Table #6 below shows the increases by project in the mid-cycle update compared to WSSC's proposed CIP. The increases from the Approved CIP are relatively small in the first two years but escalate progressively in the FY18-20 period. The biggest bump in FY16 is from the ENR project, where there have been some cost increases and an acceleration of work. The larger increases in the outyears are from the Plant-wide Projects.

Table 6: FY16-21 Blue Plains Projects: Cost Changes (Proposed to Mid-Cycle Update)

Project	Six-Year Total	FY16	FY17	FY18	FY19	FY20	FY21
Blue Plains Projects							
Liquid Train Part II	28,758	(1,450)	602	6,950	13,983	6,965	1,708
Biosolids Part II	8,377	(2,029)	369	2,140	1,636	(771)	7,032
BNR	-	-	-	-	-	-	-
Plantwide Projects	30,597	(434)	708	(1,901)	2,032	18,630	11,562
ENR	17,782	8,511	1,985	5,921	1,208	115	42
Pipelines and Appurtenances	(3,760)	1,808	464	145	(5,309)	278	(1,146)
Blue Plains Projects Subtotal	81,754	6,406	4,128	13,255	13,550	25,217	19,198
Total Changes	81,754	6,406	4,128	13,255	13,550	25,217	19,198

For FY16, the \$6.4 million increase equates to a debt service impact of approximately \$336,000. However, keeping in mind that two other projects are recommended for removal from the WSSC CIP

(accounting for about \$2.7 million in costs in FY16), the net impact on debt service is about \$147,000. WSSC staff have indicated that this amount can be absorbed within the Operating Budget. Project Description Forms for each of the Blue Plains projects are attached on ©16-21.

Council Staff recommends assuming the “mid-cycle” update numbers for the Blue Plains Projects for the FY16-21 WSSC CIP.

Large Diameter Water Pipe Rehabilitation Program (\$274.8 million over six years, PDF on ©14-15)

This project, added to the CIP five years ago, funds the rehabilitation of transmission mains (pipes greater than 16 inches in diameter) in lengths of 100 feet or greater. WSSC has approximately 1,061 miles of large diameter water main (mains ranging in size from 16 inches to 96 inches in diameter), of which 350 miles are pre-cast concrete cylinder pipe (PCCP), 350 miles are cast iron, 326 miles are ductile iron, and 35 miles are steel. PCCP pipe is the highest priority for inspection, monitoring, repair, and replacement because PCCP pipe can fail in a more catastrophic manner than pipes made out of other materials, such as iron or steel.

In the past, WSSC has dealt with replacement issues on a reactive basis, with expenditures coming out of the Water Main Reconstruction “information only” project as needed. However, as part of this project, WSSC has ramped up its inspection program for its large diameter mains⁷, done immediate repairs where needed, and begun to identify larger replacement projects to be done over time as pipes reach the end of their useful life. In addition to some unexpected large PCCP pipe failures in Montgomery County in 2008 (and a break in Prince George’s County in January 2011 and the most recent large break in Chevy Chase in March 2013), the transmission system (like the smaller water distribution lines) is aging, and WSSC is moving to a more systematic inspection, repair, and replacement approach as a result.

The inspection (assumed at 20 miles per year), fiber optic monitoring, and repairs on shorter sections of pipe remain in the Operating Budget, while the large section replacements are done out of this project.

This project also includes WSSC’s large valve inspection and repair program. WSSC has approximately 1,700 large diameter valves. WSSC plans to inspect at least 430 valves per year over the next four years.

The FY16-21 CIP request is an increase of \$46 million over the FY15-20 Approved CIP and reflects the increased amount of repair and replacement work due primarily to pipeline aging, as well as the inclusion of the valve replacement program.

⁷ WSSC completed its first round of inspections and installation of acoustic fiber optic monitoring for its 48-inch diameter and larger PCCP pipe in FY13.

The FY16 costs are broken down (and compared to FY15 costs) in the following chart provided by WSSC:

Program Costs	FY15	FY16	
Non- PCCP Pipe Replacement	14.1	18.7	higher unit costs
PCCP Segment Replacement	5.7	6.0	inc 55 to 60 segments
PCCP Segment Carbon Fiber Repair	6.3	12.5	inc 72 to 125 segments
Cathodic Protection	0.5	1.6	inc 1 to 37 segments
Large Valve Replacement	-	0.6	new for FY'16

This project is arguably the highest WSSC priority for Montgomery County (and likely for Prince George's County as well). Council Staff recommends approval of the project as proposed by WSSC.

Potomac Submerged Channel Intake (PDF on ©11-12)

Planning work on the Potomac WFP Submerged Channel Intake project is ongoing. A draft feasibility study was completed in December 2013 which narrowed the potential alternatives to be evaluated in the Environmental Assessment, developed under the National Environmental Policy Act (NEPA). As noted in the PDF, "Both Councils will review the results of the detailed study and must approve continuing the project before design and construction proceed."

Potential benefits of the project include improved and more consistent source water quality (thereby reducing water collection and treatment costs) as well as increased operational flexibility of having two available intakes.

The Proposed PDF shows construction extending through FY21 (several years later than the approved PDF). Based on the current schedule, WSSC expects to brief both Councils on this project by the end of 2015. **As noted in the PDF, both Councils will be briefed on the project and must concur before design and construction would proceed.**

The project cost estimate has been increased to reflect the latest assumptions in the draft feasibility study.

Trunk Sewer Reconstruction Program (\$228.2 million over six years, PDF on ©25-26)

This project was added five years ago (funded partially by bond-funded dollars removed from the Sewer Reconstruction Program Information Only project) to address Consent Decree requirements to eliminate sanitary sewer overflows (SSOs). Under the terms of the Consent Decree (signed in December 2005 with the United States Environmental Protection Agency (EPA), the State of Maryland, and four conservation groups), WSSC will spend an estimated \$1.4 billion across 24 sewer-shed basins with 7,000 assets over a 1,000 square mile area. Rehabilitation work is supposed to be completed within 10 years (2015). Because of delays in acquiring environmental permits, some work is expected to extend beyond the consent decree deadline. However, all basins will have work either completed or underway by the 2015 deadline. WSSC is currently working with the EPA and the Justice Department to secure a Consent Decree extension. For a detailed update on the status of Consent Decree work, please see the presentation provided to WSSC Commissioners on January 27, 2015 (©36-54).

For the FY14-19 CIP, WSSC requested a massive increase in project costs (a \$477 million or 230 percent increase over the six-year period), based on having more Sewer System Evaluation Surveys completed. Also, some work previously in the sewer reconstruction program “information only” project had been shifted to this project.

For the FY15-20 CIP, WSSC scaled back what it felt were overly optimistic implementation assumptions, with the pace of “priority 2” work being slowed from 40 miles per year to 5 miles per year. This slowdown pushed most “priority 2” work beyond the six-year period and resulted in a cost decrease in the six-year costs in the project (from \$684.5 million down to \$228.2 million).

For the FY16-21 CIP, WSSC is seeking a large increase in six-year costs partly due to slippage from prior years and also due to cost increases associated with building access roads, bypass pumping, and stream stabilization to meet permit requirements.

“Information Only” Projects

Table 7: FY16-21 Blue Plains Projects: Cost Changes (Proposed to Mid-Cycle Update)

Project	Six-Year Total	FY16	FY17	FY18	FY19	FY20	FY21
Information Only Projects							
Water Reconstruction	628,733	101,658	103,843	105,808	105,808	105,808	105,808
Sewer Reconstruction	266,475	34,784	36,124	41,071	58,449	54,707	41,340
Engineering Support Program	91,000	18,000	17,000	14,000	14,000	14,000	14,000
Energy Performance	8,770	610	2,920	3,920	1,100	110	110
Entrepreneurial Projects	7,937	2,337	589	501	303	3,987	220
Water Storage Facility Rehab Program	30,000	5,000	5,000	5,000	5,000	5,000	5,000
Asset Management Plan	2,975	1,725	1,250	-	-	-	-
Speciality Valve Vault Rehab Program	20,763	7,370	7,161	2,640	1,936	1,089	567
Advanced Metering Infrastructure	86,100	960	13,484	26,360	26,360	18,936	-
D'Arcy Park North Relief Sewer	514	259	255	-	-	-	-
Information Only Projects Total	1,143,267	172,703	187,626	199,300	212,956	203,637	167,045
Total Changes	1,143,267	172,703	187,626	199,300	212,956	203,637	167,045

Water Reconstruction Program (PDF on ©31-32)

This “information only” project funds small water main replacement throughout the WSSC service area. The project does not include any funding for “major capital projects” as defined in State law. The estimated six-year cost is \$628.7 million, which reflects a decrease of \$59.5 million from six-year costs assumed last year.

Over the past six years, WSSC has ramped up the annual number of miles of pipe to be replaced. Beginning with the Approved FY10-15 CIP, budgeted and actual replacement miles began to increase steadily. The budget level for FY10 was 27 miles per year, but this has been increased each year and is up to 60 miles for FY15. For FY16, 57 miles of replacement are proposed. WSSC’s long-term goal is to reach a steady state of approximately 55 miles of replacement per year (or about a 100-year replacement cycle).

This ramp-up, along with other bond-funded costs in the CIP, has had a significant impact on rates of new debt and debt service costs in the Operating Budget. Fortunately, favorable interest rates and WSSC’s move from 20-year debt to 30-year debt (with accompanying reinvestment of a portion of the debt service savings back into PAYGO contributions) have helped temper this impact.

WSSC has proposed a new infrastructure fee and a recalibrated account maintenance fee (consistent with the recommendations of the Bi-County Infrastructure Funding Working Group) with a corresponding reduction in volumetric rates to provide a more stable and predictable revenue stream in future years. Both Councils will consider these fee changes as part of the review of WSSC's FY16 Operating Budget later this spring.

Sewer Reconstruction Program (PDF on ©33-34)

This "information only" project funds comprehensive sewer system evaluations and rehabilitation programs. The six-year cost is \$266.5 million, which is down substantially from the FY15-20 level of \$376.4 million. This reduction is the result of a greater refinement of the magnitude of Priority Two sewer rehabilitation work and revised scheduling, and comes after a reduction in six-year costs last year as a result of WSSC deferring some "priority 2" asset work. As with the Water Reconstruction Program above, the sewer reconstruction project does not include funding for "major capital projects" as defined in State law. Capital-size projects that are identified in this project become stand-alone projects.

WSSC has approximately 5,400 miles of sewer pipe. As discussed in past years, this project is a major element of WSSC's SSO Consent Decree compliance efforts. Expenditures had previously ramped up in this program as a result. WSSC developed a new project in FY11 to deal specifically with trunk sewer reconstruction, and the focus of this project became sewer mains and house connections.

Advanced Metering Infrastructure (PDF on ©35)

This project provides for the implementation of a system-wide automated meter reading infrastructure system in order to maximize customer service and operational efficiency. Order of magnitude costs of \$89.5 million (the same as assumed last year) are proposed as the project is still in the early planning stages.

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

A key question is whether the cost savings and customer benefits from the project are sufficient to justify the major upfront costs. A study completed in March 2011 identified about \$11.4 to \$15.4 million in annual savings that could be achieved upon full implementation, which implies a 6 to 8 year payback.

Funding in FY14 and FY15 is providing for the upgrade of the remaining monthly meters to the AMR standard. Further work has been postponed pending the upgrade of WSSC's Customer Service Information System, which is needed so the system can receive the volume of data that will come from AMR meters. Limited pilot testing and research of the latest technology continues.

OTHER ISSUES

Power Reliability

On September 9, 2013, the Public Safety and T&E Committees held a joint meeting to discuss WSSC Emergency Preparedness issues. At that meeting, WSSC provided an update on its ongoing power reliability study. That project is now complete (project is listed on WSSC's "Pending Close-Out" list).

Of particular concern to the Council is the impact a large-scale electric power outage could have on the County when combined with a loss of key WSSC infrastructure (most notably the Potomac Water Filtration Plant, but also water pumping stations, sewage treatment facilities, and others) which is heavily reliant on electricity. At the meeting in 2013, Councilmember Berliner, citing the Food and Drug Administration's success utilizing a microgrid⁸ at its White Oak headquarters, suggested that WSSC consider the feasibility of creating a "microgrid" for the Potomac Water Filtration Plant.

WSSC has been studying the microgrid potential for the Potomac Water Filtration Plant and issued a Request for Information (RFI) last fall, which resulted in five respondents. Two of the respondents indicated that a micro-grid could be economically feasible. One major issue is the constrained space on the site and the potential "footprint" required for a microgrid.

Council Staff will keep the T&E Committee updated on this issue.

Cost To Extend Sewer to Address Current & Future Septic System Issues

The issue of the often cost-prohibitive nature of extending sewer to areas with failing septic systems (and/or areas where septic systems may currently be functional but not sustainable in the long-term) has come before the Council in several contexts in recent years. There are a number of examples (such as in Potomac and Clarksburg) where properties receive category changes (or would be granted category changes if requested) to allow for the extension of public sewer to address failed septic systems. However, these extensions often cannot ultimately move forward because applicants cannot afford the costs.

The T&E Committee discussed this issue with DEP and WSSC on January 12, 2015.⁹ At that meeting, DEP staff presented the work on this issue done by the Bi-County Workgroup and agreed to work with Council Staff and to reach out to Prince George's County staff to assemble a staff workgroup to develop recommendations for consideration by the Council. The Committee asked DEP to report back on its progress by June 2015.

⁸ A microgrid is an independent power grid which balances energy generation and consumption. Energy generation can involve clean power (such as solar and wind) or brown power such as diesel generators.

⁹ The Council Staff packet from the January 12 meeting is available for download at:
http://www.montgomerycountymd.gov/council/Resources/Files/agenda/cm/2015/150112/20150112_TE4.pdf

Summary of Council Staff Recommendations

Approve WSSC's Proposed FY16-21 Capital Improvements Program (CIP) as reflected in the following table:

**Table 8:
WSSC FY15-20 Approved, FY16-21 Proposed CIP and Council Staff Recommendations**

	FY15	Six-Year Total	FY16	FY17	FY18	FY19	FY20	FY21
FY15-20 Approved CIP	472,036	1,620,811	371,864	296,473	230,144	158,770	91,524	19,918
FY16-21 Proposed CIP		2,043,005	542,880	471,270	438,303	266,073	183,029	141,450
Council Staff Recommendations								
- Revise Blue Plains Costs		81,754	6406	4128	13255	13550	25217	19198
- Remove Piscataway WWTP Post Lime System		20,900	1485	1375	7249	7139	2387	1265
- Remove Piscataway WWTP Backup Generators		21,808	1207	7250	12086	1265		
FY16-21 Council Staff Totals		2,167,467	551,978	484,023	470,893	288,027	210,633	161,913

Attachments

F:\Levchenko\WSSC\WSSC CIP\FY16-21\T&E WSSC CIP 2 23 2015.docx



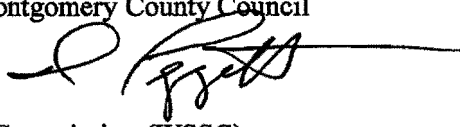
OFFICE OF THE COUNTY EXECUTIVE
ROCKVILLE, MARYLAND 20850

Isiah Leggett
County Executive

MEMORANDUM

January 15, 2015

TO: George Leventhal, President, Montgomery County Council

FROM: Isiah Leggett, County Executive 

SUBJECT: Washington Suburban Sanitary Commission (WSSC)
FY16-21 Capital Improvements Program (CIP) and FY16 CIP Expenditures

I am pleased to transmit to you, in accordance with State law, my recommended FY16-21 CIP and FY16 CIP expenditures for the Washington Suburban Sanitary Commission.

WSSC's Proposed FY16-21 CIP totals \$2.043 billion, of which \$1.571 billion is for Montgomery County and bi-county projects. The latter figure represents a \$363 million (30%) increase over the six-year total for Montgomery County and bi-county projects in the Commission's approved FY15-20 CIP. The majority of this increase (\$293 million) is due to escalating costs associated with WSSC's trunk sewer rehabilitation program as outlined in a consent decree with the Environmental Protection Agency (EPA). I continue to support the Commission with their efforts to comply with the consent decree and understand the challenges that this work brings to our overall efforts to continue repair of our aging infrastructure.

Despite these challenges, WSSC continues to uphold a responsible and robust infrastructure repair program. WSSC is again projecting to replace water mains at very high levels, with a total of 57 miles slated for FY16. And while sewer reconstruction figures continue to decline in FY16 because of the continuing attention to EPA-mandated trunk sewer repairs, WSSC will make progress in the lateral sewer lining program – increasing treatment to 5 miles of sewer (4 miles above FY15 levels) – in an effort to continue progress in sewer line repair while the trunk sewer rehabilitation program takes priority. The chart below is a summary of the current reconstruction and rehabilitation program:

SMALL WATER AND SEWER MAIN RECONSTRUCTION/REHABILITATION FY16-21 Proposed vs. FY15-20 Approved									
	FY15-20 Approved			FY16-21 Proposed					
	FY15	6-Year	Total	FY16		6-Year		Total	
				Amount	% Change	Amount	% Change	Amount	% Change
Reconstruction Costs									
Water Main Replacement (\$000)	104,509	688,275	707,150	101,658	-2.7%	628,733	-8.7%	775,766	9.7%
Sewer Reconstruction (\$000)	16,418	376,473	702,873	34,784	111.9%	266,475	-29.2%	428,819	-39.0%
Reconstruction Mileage									
Water Main Replacement (miles)	60	360	—	57	-5.0%	377	4.7%	—	—
Sewer Reconstruction (miles)									
Sewer Main Reconstruction	3	93	—	2	-33.3%	47	-49.5%	—	—
Lateral Sewer Lining	1	34	—	6	500.0%	36	5.9%	—	—

New Projects

I support both of the new CIP projects entering the Montgomery and bi-county program this year, including:

- A developer-funded continuation into Part 5 of the Clarksburg Area Stage 3 water main infrastructure development. This project continues the water infrastructure development envisioned in the Clarksburg Master Plan of 1994; and
- A consolidation of land and rights-of-way purchases into a bi-county project which gives the Commission more flexibility as factors impact the timeliness or feasibility of some land purchases.

Blue Plains Projects

I am not proposing any changes to the Blue Plains projects since DC Water has not issued revised project estimates. If and when new project estimates become available, I will communicate a recommendation at a time later in the budget process.

Anaerobic Digestion/Combined Heat and Power Project

While I am supportive of investment in maintaining the Commission's aging infrastructure, I also believe the Commission needs to analyze closely any proposed large capital investments as they continue to prioritize projects with a limited amount of resources. To this end, I maintain my previous recommendation on the proposed Anaerobic Digestion/Combined Heat and Power project. While it is true that this technology is both effective and forward-thinking, the Commission must weigh additional investment in this technology against current investments utilizing the same technology in the Blue Plains facility in Washington, DC. In my estimation, a delay and review of the final assessment of capacity in the Blue Plains digester facilities could lead to significant capital savings in future years and subsequent savings for WSSC ratepayers.

Overall, my recommendations attempt to strike a balance between making the investments to ensure the long-term stability of our utility infrastructure and our current uncertain fiscal climate. With this in mind, I am recommending approval of the FY16-21 WSSC CIP budget as proposed with the following exception:

- Do not include at this time planned expenditures on the Anaerobic Digestion/Combined Heat and Power project.

As always, Executive Branch staff are available to assist you in your deliberations. I look forward to discussing with you any policy matters or major resource allocation issues that arise this spring.

IL:mks

c: Timothy L. Firestine, Chief Administrative Officer
Jerry N. Johnson, General Manager/CEO, Washington Suburban Sanitary Commission
Yvette Downs, Chief Financial Officer, Washington Suburban Sanitary Commission
Stephen Farber, Council Administrator, Montgomery County Council
Dave Lake, Department of Environmental Protection

Attachments: Executive Recommendation – Anaerobic Digestion/Combined Heat and Power
Agency Request Compared to Executive Recommended

EXECUTIVE RECOMMENDATION

Anaerobic Digestion Combined Heat and Power (P063808)

Project Category	WSSC	Date Last Modified	1/6/14
Project SubCategory	Sewerage Bi-County	Required Adequate Public Facility	No
Project Administering Agency	W.S.S.C. (AAGE23)	Relocation Impact	None
Project Planning Area	Bi-County	Status	Planning Stage

EXPENDITURE SCHEDULE (\$000s)

	Total	Thru FY14	Est FY15	Total 6 Years	FY 16	FY 17	FY 18	FY 19	FY 20	FY 21	Beyond 6 Yrs
Planning, Design and Supervision	5,750	5,750	0	0	0	0	0	0	0	0	0
Land	0	0	0	0	0	0	0	0	0	0	0
Site Improvements and Utilities	0	0	0	0	0	0	0	0	0	0	0
Construction	0	0	0	0	0	0	0	0	0	0	0
Other	228	228	0	0	0	0	0	0	0	0	0
Total	5,978	5,978	0	0	0	0	0	0	0	0	0

FUNDING SCHEDULE (\$000s)

Federal Aid	3,027	3,027	0	0	0	0	0	0	0	0	0
WSSC Bonds	2,951	2,951	0	0	0	0	0	0	0	0	0
Total	5,978	5,978	0	0	0	0	0	0	0	0	0

COMPARISON (\$000s)

	Total	Thru FY14	Est FY15	Total 6 Yrs	FY16	FY17	FY18	FY19	FY20	FY21	Beyond 6 Yrs	Approp.
Current Approved	5,978	5,978	0	0	0	0	0	0	0	0	0	0
Agency Request	144,019	1,261	4,760	137,998	14,276	42,826	42,826	38,070	0	0	0	14,276
Recommended	0	0	0	0	0	0	0	0	0	0	0	0

Change

	TOTAL	%	6-YEAR	%	APPROP.	%
Agency Request vs Approved	138,041	2,309.2%	137,998	0.0%	14,276	0.0%
Recommended vs Approved	(5,978)	(100.0%)	0	0.0%	0	0.0%
Recommended vs Request	(144,019)	(100.0%)	(137,998)	(100.0%)	(14,276)	(100.0%)

Recommendation

DO NOT INCLUDE IN THE CIP

Comments

The County Executive understands and supports the use of Anaerobic Digestion technology as a step forward in the treatment of biosolids. However, from a fiscal perspective, based on the information provided by WSSC and DC Water regarding the Anaerobic Digesters to date, the County Executive maintains his position that WSSC should not proceed with this project at this time due to WSSC's present investment in Anaerobic Digestion facilities at the Blue Plains WWTP as part of the Intermunicipal Agreement (IMA) of 2012 and the possible available capacity in these existing facilities in Washington, D.C.

Cost Changes

The County Executive recommends removal of all planned funding for the six-year period.

FY16-21 EXECUTIVE RECOMMENDED CIP
Agency Request Compared to Executive Recommended
WSSC

Project Name (Project Number)

	Agency Request	Executive Recommended
Blue Plains WWTP: Plant Wide Projects (P023805)	6,411	6,411
Blue Plains WWTP: Enhanced Nutrient Removal (P083800)	56,773	56,773
Septage Discharge Facility Planning & Implement. (P103802)	758	758
Blue Plains: Pipelines and Appurtenances (P113804)	20,199	20,199
Trunk Sewer Reconstruction Program (P113805)	191,866	191,866
Blue Plains WWTP: Liquid Train PT 2 (P954811)	9,458	9,458
Blue Plains WWTP: Biosolids Mgmt PT2 (P954812)	6,587	6,587
Anaerobic Digestion Combined Heat and Power (P063808)	14,276	0
Sewerage Bi-County	306,328	292,052
Cabin Branch WWPS (P023807)	449	449
Cabin Branch WWPS Force Main (P023808)	143	143
Clarksburg Triangle Outfall Sewer, Part 2 (P023811)	555	555
Seneca WWTP Enhanced Nutrient Removal (P073800)	22	22
Twinbrook Commons Sewer (P083801)	159	159
Tapestry WWPS Force Main (P083804)	46	46
Preserve at Rock Creek Wastewater Pumping Station (P103800)	680	680
Preserve at Rock Creek WWPS Force Main (P103801)	150	150
Mid-Pike Plaza Sewer Main, Phase 1 (P123801)	37	37
Mid-Pike Plaza Sewer Main, Phase 2 (P143801)	3,107	3,107
Cabin John Trunk Sewer Relief (P063807)	2,662	2,662
Shady Grove Station Sewer Augmentation (P063806)	740	740
Land & Rights-of-Way Acquisition - Bi-County (S) (P163800)	300	300
Sewerage Montgomery County	9,050	9,050
Patuxent WFP Phase II Expansion (P033807)	14,372	14,372
Potomac WFP Submerged Channel Intake (P033812)	1,100	1,100
Patuxent Raw Water Pipeline (P063804)	3,095	3,095
Rocky Gorge Pump Station Upgrade (P063805)	6,205	6,205
Duckett and Brighton Dam Upgrades (P073802)	670	670
Potomac WFP Outdoor Substation No. 2 Replacement (P113802)	5,258	5,258
Large Diameter Water Pipe Rehabilitation Program (P113803)	48,293	48,293
Potomac WFP Main Zone Pipeline (P133800)	440	440
Bi-County Water Tunnel (P934855)	1,123	1,123
Land & Rights-of-Way Acquisition - Bi-County (P983857)	1,125	1,125
Potomac WFP Corrosion Mitigation (P143802)	5,165	5,165
Potomac WFP Pre-Filter Chlorination & Air Scour Improvements (P143803)	253	253
Water Bi-County	87,099	87,099
Newcut Road Water Main, Part 2 (P013802)	138	138
Olney Standpipe Replacement (P063801)	2,286	2,286
Shady Grove Standpipe Replacement (P093801)	3,363	3,363
Clarksburg Area Stage 3 Water Main, Part 4 (P113800)	1,149	1,149
Clarksburg Area Stage 3 Water Main, Parts 1, 2 & 3 (P973818)	1,751	1,751
Clarksburg Elevated Water Storage Facility (P973819)	127	127
Brink Zone Reliability Improvements (P143800)	673	673
Clarksburg Area Stage 3 Water Main, Part 5 (P163801)	147	147
Water Montgomery County	9,634	9,634

Funding Sources

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

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

A graph is provided on page 25 which displays the funding allocations for the major funding categories.

Funding Growth

The portion of the CIP needed to accommodate growth is approximately \$270 million, which equals 13% of all expenditures in the six-year program. The major funding sources for this part of the program are System Development Charge (SDC) revenues and payments by Applicants. In the event that growth costs are greater than the income generated by growth funding sources, rate-supported water/sewer bonds may be used to close any gap.

The Maryland General Assembly, in 1993, first approved legislation authorizing the Montgomery and Prince George's County Councils to establish, and the WSSC to impose, a System Development Charge. This is a charge on new development to pay for that part of the Commission's Capital Improvements Program needed to accommodate growth in the WSSC's customer base. In accordance with the enabling legislation, the Councils approved, and the Commission began to phase in, this charge beginning in FY'94. The SDC charge was eventually approved at the maximum rate of \$160 per fixture unit by Commission Resolution No. 95-1457, adopted May 24, 1995, and became effective July 1, 1995. In the 1998 legislative session, the General Assembly modified the charge by passage of House Bill 832 setting the fee at \$200 per fixture unit with a provision for annual inflation adjustments. Subsequent resolutions have established a process for approving partial and full exemptions for elderly housing and biotechnology properties, as well as exemptions for properties in designated economic revitalization areas. For FY'15, the Montgomery County and Prince George's Councils increased the maximum allowable charge by the 1.4% increase in the CPI-U, but maintained the current rate of \$203 per fixture unit by Resolution Numbers 17-1078 approved May 13, 2014, and, CR-38-2014 approved May 27, 2014, respectively. The Commission adopted the Councils' actions by Resolution Number 2014-2053 dated June 18, 2014. Policies and other information associated with the System Development Charge are included in this document in Appendices A through D.

It is estimated that there will be an overall growth funding gap of \$69.8 million over the six-year program period. The gap between growth funding sources (SDC, developer contributions, and Applicant payments under System Extension Permits) and the estimated growth-related expenditures vary over the six-year period. If growth-related expenditures were to exceed the available SDC account balance, WSSC would issue new SDC supported debt to cover this temporary gap rather than increasing the SDC. The debt will be repaid through future SDC collections, as allowed by State Law. Further, it is anticipated that no significant additional growth projects will evolve in the later years of the six-year period. (A listing of SDC-eligible projects is included in Appendix D.)

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

GROWTH FUNDING GAP
(In Millions)

	<u>FY'16</u>	<u>FY'17</u>	<u>FY'18</u>	<u>FY'19</u>	<u>FY'20</u>	<u>FY'21</u>	<u>6 YEAR TOTAL</u>
CIP GROWTH EXPENDITURES	\$97.8	\$80.9	\$50.1	\$24.5	\$11.2	\$5.8	\$270.3
Expenditures Adjusted for Completion	71.5	88.7	57.5	28.5	11.1	5.8	263.1
FUNDING SOURCES							
Privately Funded Projects	14.0	13.7	6.9	1.4	0.2	0.2	36.4
Estimated SDC Revenue	29.3	29.8	30.0	30.0	30.0	30.0	179.1
Less SDC Developer Credits	(1.7)	(1.7)	(1.7)	(1.7)	(1.7)	(1.7)	(10.2)
Less SDC Exemptions ¹	(1.0)	(1.0)	(1.0)	(1.0)	(1.0)	(1.0)	(6.0)
TOTAL FUNDING SOURCES	\$40.6	\$40.8	\$34.2	\$28.7	\$27.5	\$27.5	\$199.3
FUNDING GAP							
ADJUSTED FOR COMPLETION	\$37.6	\$43.5	\$22.1	\$0.9	(\$13.6)	(\$20.7)	\$69.8

¹ Each County may grant SDC exemptions, as identified in Appendix A, totaling up to \$500,000 per fiscal year as provided for in Maryland State Law (Public Utilities Article, Section 25-403(b)). Unused exemption amounts are available for use in future fiscal years. Cumulative unused SDC exemptions totaled approximately \$5.0 million for Montgomery County and \$2.5 million for Prince George's County through June 30, 2014.

Expenditures

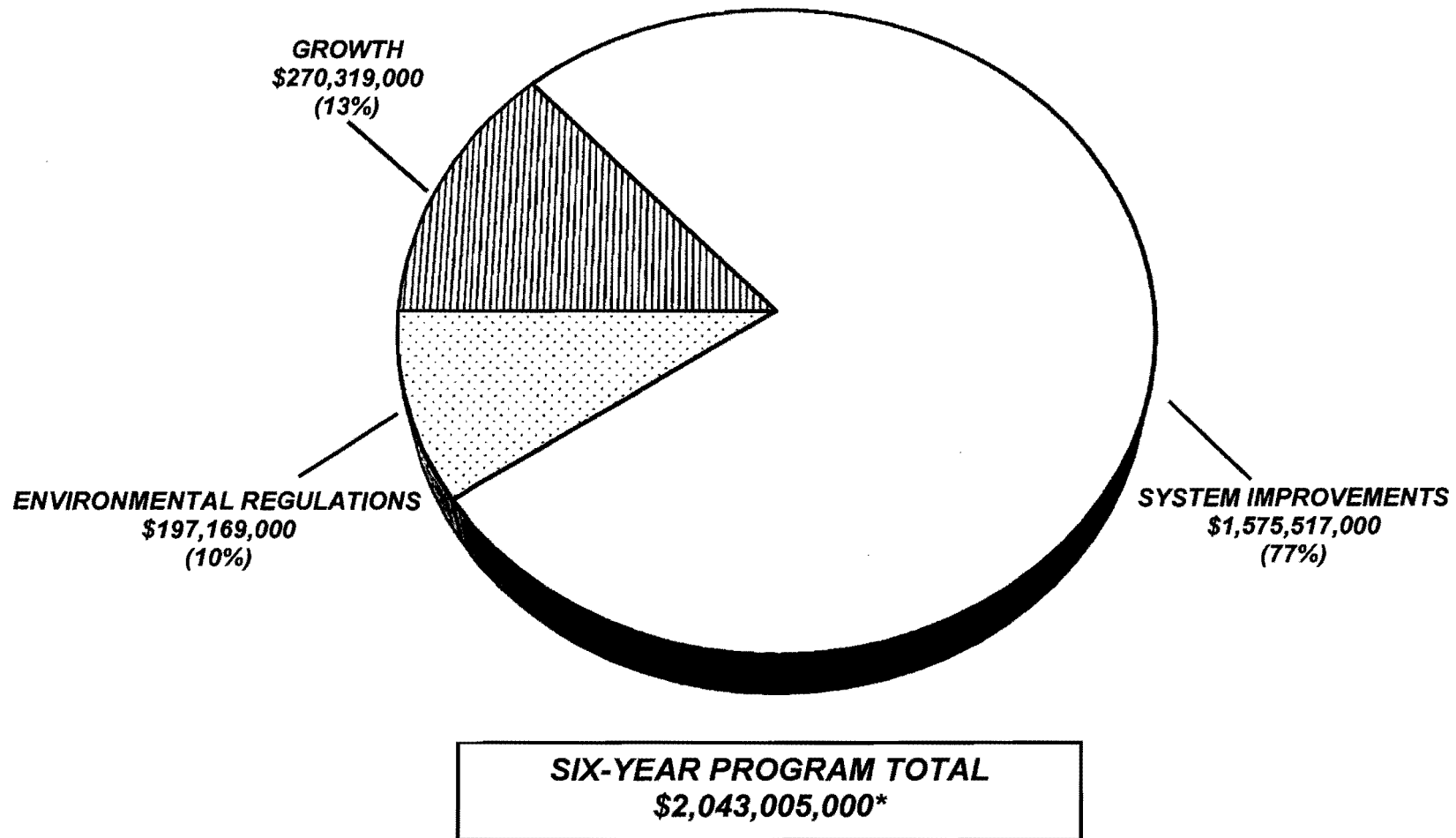
The FYs 2016-2021 Capital Improvements Program includes 86 projects for a grand total of \$4.2 billion dollars. Expenditures for the six-year program period are estimated at \$2.0 billion. FY'16 expenditures are estimated at \$542.9 million, which is \$70.8 million greater than the funding level approved for FY'15. Of the \$542.9 million, \$139.9 million is for the Water Program and \$403.0 million is for the Sewerage Program. More than a third of the projects in this CIP are Development Services Process (DSP) growth projects. The DSP projects' estimated six-year program cost is \$36.5 million, with approximately \$17.5 million programmed in FY'16. There are 3 new projects totaling \$43.3 million in the six-year program period. These projects are shown on the New Projects Listing near the end of this section.

A table comparing the Adopted FYs 2015-2020 CIP to the Proposed FYs 2016-2021 CIP follows:

FIGURE 3

WSSC PROPOSED FYS 2016-21 CIP

SIX-YEAR PROGRAM EXPENDITURES BY MAJOR CATEGORY*

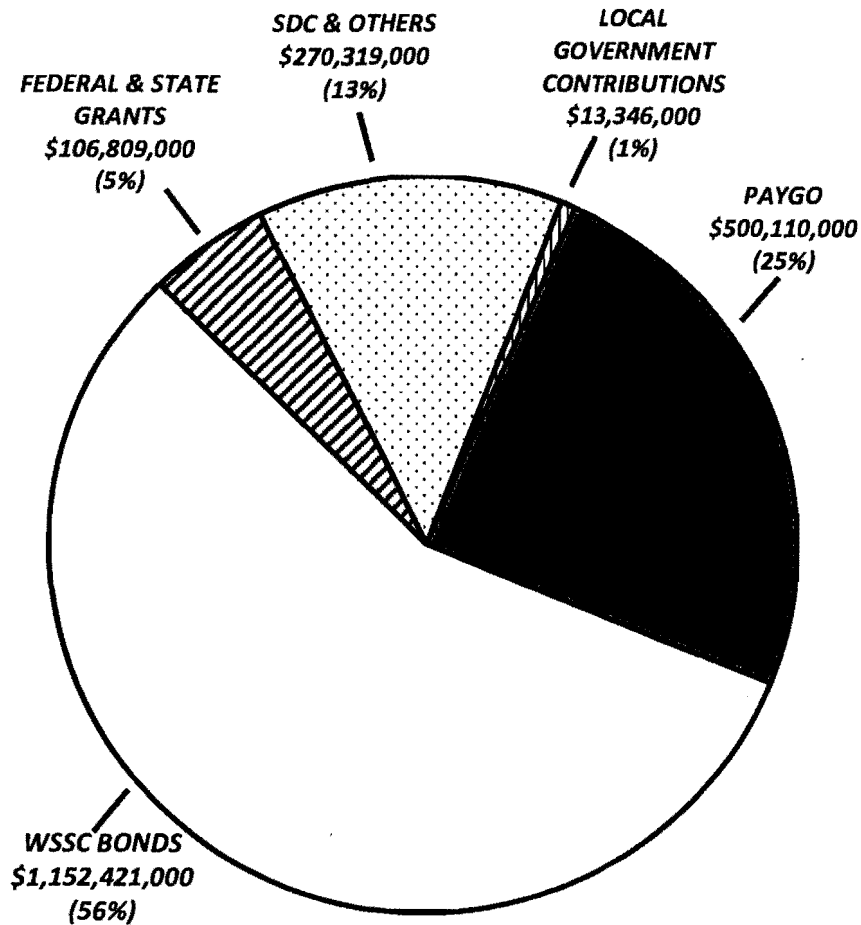


* Totals do not include \$1,117,677,000 in System Improvements project capital expenditures for Information Only Projects.

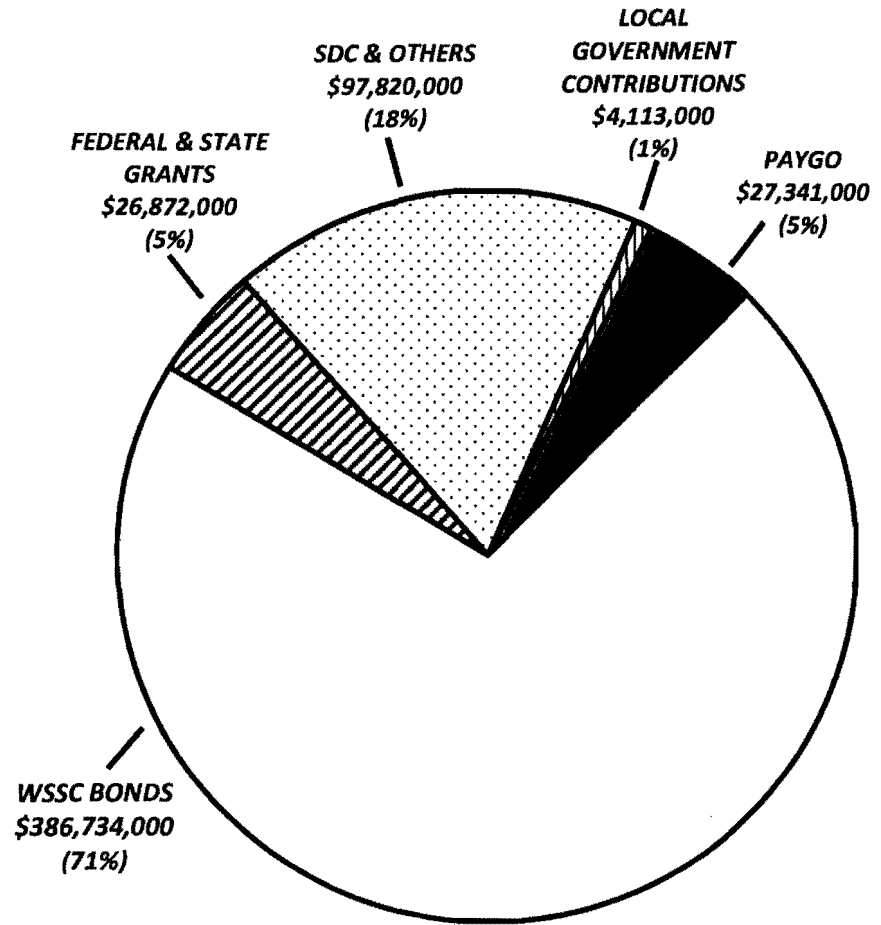
FIGURE 4

WSSC PROPOSED FYS 2016-21 CIP

FUNDING BY SOURCE*



SIX-YEAR PROGRAM TOTAL
\$2,043,005,000*



FY'16 BUDGET YEAR TOTAL
\$542,880,000*

*Totals do not include \$1,117,677,000 and \$167,953,000 in capital expenditures for Information Only projects in the six-year program and budget year, respectively.

POTOMAC WATER FILTRATION PLANT PROJECTS
(costs in thousands)

PROJECT NUMBER	PROJECT NAME	ADOPTED FY'15 TOTAL COST	PROPOSED FY'16 TOTAL COST	CHANGE \$	CHANGE %	SIX-YEAR COST	COMPLETION DATE (est)
W-73.19	Potomac WFP Outdoor Substation No. 2 Replacement	\$15,572	\$14,636	(\$936)	-6.0%	\$12,706	December 2017
W-73.21	Potomac WFP Corrosion Mitigation	18,164	15,556	(2,608)	-14.4%	6,128	December 2016
W-73.22	Potomac WFP Pre-Filter Chlorination & Air Scour Improvements	7,935	7,176	(759)	-9.6%	4,681	February 2018
W-73.30	Potomac WFP Submerged Channel Intake	28,433	82,638	54,205	190.6%	78,760	FY 2021
	TOTALS	\$70,104	\$120,006	\$49,902	71.2%	\$102,275	

Summary: This group of projects represents operational improvements to the Potomac Water Filtration Plant (WFP) in Montgomery County. The Potomac WFP Outdoor Substation No. 2 Replacement project (W-73.19) provides for the replacement of the Outdoor Substation No. 2 (OSS-2) at the Potomac Water Filtration Plant which is over 30 years old and contains 5kV switchgear that houses air magnetic breakers which are obsolete. The Potomac WFP Corrosion Mitigation (W-73.21) provides for upgrading/replacing existing metallic components in the eight sedimentation basins due to accelerated corrosion, along with upgrading components in the rapid mix and flocculation processes. The Potomac WFP Pre-Filter Chlorination & Air Scour Improvements project (W-73.22) provides for a pre-filter chlorination system and evaluation of retrofitting an air scour system into existing plant filters to improve the performance of the underdrain system. The Potomac WFP Submerged Channel Intake project (W-73.30) will provide an additional barrier against drinking water contamination, enhance reliability, and reduce treatment costs by drawing water from a location with a cleaner, more stable water quality. The Potomac WFP Disinfection Byproducts Rule Implementation project (W-73.20) was completed and included on the close out list.

Cost Impact: Costs were decreased based on updated construction cost estimate (W-73.19), more definitive Engineer's estimates (W-73.21) and execution of design contract (W-73.22). The Potomac WFP Submerged Channel Intake (W-73.30) increased based on the November 2013 Draft Feasibility Study Report.

A. Identification and Coding Information			2. Date: October 1, 2014	7. Pre PDF Pg.No.:	8. Req. Adeq. Pub. Fac.
1. Project Number	Agency Number	Update Code	Revised:		
033812	W-73.30	Change			
3. Project Name: Potomac WFP Submerged Channel Intake			5. Agency: WSSC		
4. Program: Sanitation			6. Planning Area: Bi-County		

B. Expenditure Schedule (000's)											
Cost Elements	(8) Total	(9) Thru FY '14	(10) Estimate FY '15	(11) Total 6 Years	(12) Year 1 FY '16	(13) Year 2 FY '17	(14) Year 3 FY '18	(15) Year 4 FY '19	(16) Year 5 FY '20	(17) Year 6 FY '21	(18) Beyond 6 Years
Planning, Design & Supervision	8,738	3,438	400	4,900	1,000	1,200	1,000	1,000	500	200	
Land											
Site Improvements & Utilities											
Construction	66,700			66,700		6,700	20,000	19,000	18,000	3,000	
Other	7,200		40	7,160	100	790	2,100	2,000	1,850	320	
Total	82,638	3,438	440	78,760	1,100	8,690	23,100	22,000	20,350	3,520	

C. Funding Schedule (000's)											
WSSC Bonds	82,638	3,438	440	78,760	1,100	8,690	23,100	22,000	20,350	3,520	

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.

Service Area Potomac WFP Pressure Zone HGPOWF

JUSTIFICATION

Plans & Studies

"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).

Specific Data

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.

Cost Change

Costs increase is based on cost information from the November 2013 Draft Feasibility Study Report.

STATUS Planning (WSSC Contract Nos. BF2028F97 , BF2028I97).

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.

E. Annual Operating Budget Impact (000's)				FY of Impact
Program Costs	Staff	.....	.....
	Other	.....	.....
Facility Costs	Maintenance	.....	.....
	Debt Service	.....	2198	22
Total Costs.....			2198	22
Impact on Water or Sewer Rate.....			4¢	22

F. Approval and Expenditure Data (000's)

Date First in Capital Program	FY 04
Date First Approved	FY 03
Initial Cost Estimate	936
Cost Estimate Last FY	28,433
Present Cost Estimate	82,638
Approved Request, Last FY	1,076
Total Expenditures & Encumbrances	3,438
Approval Request FY 16	1,100
Supplemental Approval Request Current FY (15)	

G. Status Information

Land Status:	Right-of-Way may be required
% Project Completion:	P-90%
Est. Completion Date:	FY 2021

H. Map Map Reference Code:

MAP NOT AVAILABLE

D. DESCRIPTION & JUSTIFICATION (CONT.)

Agency Number: W - 73.30

Project Name: Potomac WFP Submerged Channel Intake

COORDINATION

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 and U.S. Army Corps of Engineers.

NOTE This project supports 100% System Improvement.

A. Identification and Coding Information			2. Date: October 1, 2014	7. Pre PDF Pg.No.:	8. Req. Adeq. Pub. Fac.
1. Project Number	Agency Number	Update Code	Revised:		
133800	W-73.32	Change			
3. Project Name: Potomac WFP Main Zone Pipeline			5. Agency: WSSC		
4. Program: Sanitation			6. Planning Area: Potomac-Cabin John & Vicinity P.A. 29		

B. Expenditure Schedule (000's)											
Cost Elements	(8) Total	(9) Thru FY '14	(10) Estimate FY '15	(11) Total 6 Years	(12) Year 1 FY '16	(13) Year 2 FY '17	(14) Year 3 FY '18	(15) Year 4 FY '19	(16) Year 5 FY '20	(17) Year 6 FY '21	(18) Beyond 6 Years
Planning, Design & Supervision	1,558	458	400	700	400	200	25	25	25	25	
Land											
Site Improvements & Utilities											
Construction	30,000			30,000			5,000	10,000	10,000	5,000	
Other	3,112		40	3,072	40	20	503	1,003	1,003	503	
Total	34,670	458	440	33,772	440	220	5,528	11,028	11,028	5,528	

C. Funding Schedule (000's)											
WSSC Bonds	34,670	458	440	33,772	440	220	5,528	11,028	11,028	5,528	

D. Description & Justification

DESCRIPTION

This project provides for the planning, design and construction of an 84-inch diameter redundancy main from the Main Zone pumping station to the 96-inch diameter and 66-inch diameter main wye connections on River Road. The project will include a rock tunnel segment.

Service Area Montgomery Main Pressure Zone 495A, Prince George's Main Pressure Zone **Capacity** Approximately 200 mgd
HG320A, Prince George's High Pressure Zone HG450A

JUSTIFICATION

Plans & Studies

E-mail from M. Woodcock to C. Fricke and E. Betanzo dated April 27, 2011; "Business Case Evaluation for Potomac Water Treatment Plan - 78 inch finished water main redundancy", O'Brien and Gere Engineers, Inc. (October 2013)

Specific Data

The existing 78-inch diameter PCCP pipeline is the major feed to the 96-inch diameter Montgomery County Main Zone pipeline and the 66-inch diameter River Road pipeline. The primary purpose of this project is to provide redundancy for the existing line. The Business Case recommended a new 84-inch diameter main be installed from the Main Zone pumping station to the 66-inch diameter and 96-inch diameter wye connection. In addition the wye connection will be replaced as part of this project.

Cost Change

Initial cost estimates were increased to include an Order of Magnitude estimate for design and construction work.

STATUS Preliminary Design (WSSC Contract No. BL5285A11,).

OTHER

The project scope has remained the same. Expenditure and schedule projections shown in Block B above are Order of Magnitude estimates and may change based upon site specific conditions and design constraints. Land acquisition costs are included in WSSC Project W-202.00

COORDINATION

Maryland State Highway Administration, Montgomery County Department of Public Works and Transportation, Montgomery County Government, Maryland Department of the Environment, Maryland Department of Natural Resources and U.S. Army Corps of Engineers.

NOTE This project supports 100% System Improvement.



E. Annual Operating Budget Impact (000's)				FY of Impact
Program Costs	Staff			
	Other			
Facility Costs	Maintenance	28		22
	Debt Service	77		22
Total Costs.....		105		22
Impact on Water or Sewer Rate.....				

F. Approval and Expenditure Data (000's)

Date First in Capital Program	FY 13
Date First Approved	FY 13
Initial Cost Estimate	330
Cost Estimate Last FY	1,125
Present Cost Estimate	34,670
Approved Request, Last FY	690
Total Expenditures & Encumbrances	458
Approval Request FY 16	440
Supplemental Approval Request Current FY (15)	

G. Status Information

Land Status:	Right-of-Way may be required
% Project Completion:	D-5%
Est. Completion Date:	FY 2021

H. Map Map Reference Code:

MAP NOT AVAILABLE

A. Identification and Coding Information			2. Date: October 1, 2014	7. Pre PDF Pg.No.: 8. Req. Adeq. Pub. Fac.
1. Project Number	Agency Number	Update Code	Revised:	
113803	W-161.01	Change		
3. Project Name: Large Diameter Water Pipe Rehabilitation Program			5. Agency: WSSC	
4. Program: Sanitation			6. Planning Area: Bi-County	

B. Expenditure Schedule (000's)											
Cost Elements	(8) Total	(9) Thru FY '14	(10) Estimate FY '15	(11) Total 6 Years	(12) Year 1 FY '16	(13) Year 2 FY '17	(14) Year 3 FY '18	(15) Year 4 FY '19	(16) Year 5 FY '20	(17) Year 6 FY '21	(18) Beyond 6 Years
Planning, Design & Supervision	37,692	6,179	3,680	27,833	4,097	4,235	4,936	4,855	4,855	4,855	
Land											
Site Improvements & Utilities											
Construction	356,665	48,716	30,241	277,708	41,896	51,176	46,867	45,923	45,923	45,923	
Other	16,974		1,696	15,278	2,300	2,771	2,590	2,539	2,539	2,539	
Total	411,331	54,895	35,617	320,819	48,293	58,182	54,393	53,317	53,317	53,317	

C. Funding Schedule (000's)											
WSSC Bonds	411,331	54,895	35,617	320,819	48,293	58,182	54,393	53,317	53,317	53,317	

D. Description & Justification

DESCRIPTION

The purpose of this Program is to plan, 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 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 catastrophic 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

Plans & Studies

Utility Wide Master Plan, (December 2007); 30 Year Infrastructure Plan (2007); FY2016 Water Transmission System Asset Management Plan (February 2014); WSSC FY 2016 Buried Water Asset Systems Asset Management Plan (January 2014)

Specific Data

WSSC has approximately 1,061 miles of large diameter water main ranging from 16-inch to 96-inch in diameter. This includes 350 miles of cast iron, 326 miles of ductile iron, 35 miles of steel and 350 miles of PCCP. Internal inspection and condition assessment is performed annually on PCCP pipelines 36-inch and larger in diameter. Of the 350 miles of PCCP, 145 miles are 36-inch diameter and larger, and 59 miles are 54-inch diameter or 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.

WSSC has approximately 1,700 large diameter valves. The large valve inspection and repair program provides for the inspection, exercise, design, and repair or replacement of large diameter valves throughout the system. This program purpose is to minimize the risk associated with large valves inoperability and possible water outages.

Cost Change

The cost increase is due to an increase in PCCP replacement and repairs as well as the continued ramp-up of the number of miles of cast iron pipe being replaced and receiving cathodic protection. The Program includes replacement of up to one mile of the 54-inch

E. Annual Operating Budget Impact (000's)				FY of Impact
Program Costs	Staff	.....	....
	Other	.....	....
Facility Costs	Maintenance	.....	....
	Debt Service	.....	15803	21
Total Costs		.....	15803	21
Impact on Water or Sewer Rate		.....	32¢	21

F. Approval and Expenditure Data (000's)

Date First in Capital Program	FY 11
Date First Approved	FY 11
Initial Cost Estimate	60,000
Cost Estimate Last FY	345,476
Present Cost Estimate	411,331
Approved Request, Last FY	38,275
Total Expenditures & Encumbrances	54,895
Approval Request FY 16	48,293
Supplemental Approval Request Current FY (15)	

G. Status Information

Land Status:	Not applicable
% Project Completion:	On-Going
Est. Completion Date:	On-going

H. Map Map Reference Code:

MAP NOT AVAILABLE

D. DESCRIPTION & JUSTIFICATION (CONT.)

Agency Number: W - 161.01

Project Name: Large Diameter Water Pipe Rehabilitation Program

diameter South Adelphi Main with 60-inch steel main. In addition, design for the new large valve inspection and repair program is included.

STATUS Not Applicable (WSSC Contract Nos. BM5063A09 , BM5063B09).

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. Additional costs associated with inspection, monitoring and emergency repairs are included in the Operating Budget.

COORDINATION

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 Public Works & Transportation, Local Community Civic Associations and WSSC Projects A-107.00, Specialty Valve Vault Rehabilitation Program and W-1.00, Water Reconstruction Program.

NOTE This project supports 100% System Improvement.

BLUE PLAINS WASTEWATER TREATMENT PLANT PROJECTS
(costs in thousands)

PROJECT NUMBER	PROJECT NAME	ADOPTED FY'15 TOTAL COST	PROPOSED FY'16 TOTAL COST	CHANGE \$	CHANGE %	SIX-YEAR COST	COMPLETION DATE (est)
S-22.06	Blue Plains WWTP: Liquid Train Projects, Part 2	\$280,210	\$316,919	\$36,709	13.1%	\$51,236	On-Going
S-22.07	Blue Plains WWTP: Biosolids Management, Part 2	387,209	401,152	13,943	3.6%	23,511	On-Going
S-22.09	Blue Plains WWTP: Plant-wide Projects	212,336	238,803	26,467	12.5%	32,670	On-Going
S-22.10	Blue Plains WWTP: Enhanced Nutrient Removal	366,743	366,625	(118)	0.0%	119,832	On-Going
S-22.11	Blue Plains: Pipelines & Appurtenances	161,952	176,723	14,771	9.1%	91,794	On-Going
	TOTALS	\$1,408,450	\$1,500,222	\$91,772	6.5%	\$319,043	

Summary: These five projects, with an estimated total cost of \$1.5 billion, provide funding for the upgrade, expansion, and enhancement of wastewater treatment and solids handling facilities at the Regional Blue Plains Wastewater Treatment Plant, located in the District of Columbia. Whereas typical WSSC projects encompass planning, design, construction, and start-up for a single project, with defined starting and ending dates, the Blue Plains projects are comprised of many sub-projects and are "open-ended." As the Blue Plains Facility Plans move forward and new sub-projects are approved, the costs of these new sub-projects are added to the appropriate existing Blue Plains project. The expenditures displayed represent the WSSC's calculated share. There are four main funding divisions: liquid treatment train (S-22.06); biosolids management (S-22.07); plant-wide projects (S-22.09); and, pipelines & appurtenances (S-22.11). Project S-22.10 Enhanced Nutrient Removal (ENR) will achieve nutrient removal levels surpassing BNR as determined in the Tributary Strategy process of 2005 in order to meet Chesapeake Bay water quality targets.

Cost Impact: These five Blue Plains projects, the largest group of expenditures in the CIP, represent 36% of the total program. The figures shown above are derived from the latest available spending projections provided by the District of Columbia Water and Sewer Authority (DCWASA). Officials at the DCWASA have indicated that they have the fiscal capacity as well as the engineering capability to implement these projects. Spending at the DCWASA staff-proposed rate in future years may challenge the WSSC's ability to stay within County-established spending affordability limits. It is, therefore, recommended that the coordination of development and approval of the DCWASA's and WSSC's CIPs be sustained in order that the economic development and environmental objectives of the region be met, without causing a rapid increase in WSSC customers' bills. An explanation of the cost changes for each project is included on the individual project description forms that immediately follow this summary page.

A. Identification and Coding Information			2. Date: October 1, 2014	7. Pre PDF Pg.No.: 8. Req. Adeq. Pub. Fac.
1. Project Number	Agency Number	Update Code	Revised:	
954811	S-22.06	Change		
3. Project Name: Blue Plains WWTP: Liquid Train Projects, Part 2			5. Agency: WSSC	
4. Program: Sanitation			6. Planning Area: Bi-County	

B. Expenditure Schedule (000's)											
Cost Elements	(8) Total	(9) Thru FY '14	(10) Estimate FY '15	(11) Total 6 Years	(12) Year 1 FY '16	(13) Year 2 FY '17	(14) Year 3 FY '18	(15) Year 4 FY '19	(16) Year 5 FY '20	(17) Year 6 FY '21	(18) Beyond 6 Years
Planning, Design & Supervision	118,487	94,302	3,580	15,126	3,719	2,880	2,613	1,911	1,956	2,047	5,479
Land											
Site Improvements & Utilities											
Construction	197,688	147,453	5,085	35,603	5,645	12,268	10,187	4,152	575	2,776	9,547
Other	744		87	507	94	151	128	61	25	48	150
Total	316,919	241,755	8,752	51,236	9,458	15,299	12,928	6,124	2,556	4,871	15,176

C. Funding Schedule (000's)											
WSSC Bonds	299,523	228,484	8,272	48,424	8,939	14,459	12,218	5,788	2,416	4,604	14,343
City of Rockville	17,396	13,271	480	2,812	519	840	710	336	140	267	833

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 and Disinfection Rehabilitation, Raw Wastewater Pumping Station No. 2, Dual Purpose Sedimentation Basins Rehabilitation, Primary Treatment Facilities Upgrade Phase II, and Grit Chamber Bldgs 1 & 2.

Service Area Bi-County Area

Capacity 370 MGD

JUSTIFICATION

Plans & Studies

The Blue Plains Intermunicipal Agreement of 2012; the DCWASA Master Plan (1998); and the DCWASA Approved FY 2014 Capital Improvements Program.

Specific Data

This is a continuation of the DCWASA's upgrading of the Blue Plains Wastewater Treatment Plant.

Cost Change

Cost increase is primarily due to revised higher estimates for the Dual Purpose Sedimentation Basins Rehab, Filtration/Disinfection Facilities Rehab Phase II, Grit Chamber Bldgs 1 & 2, Effluent Filter Upgrades, Replace/Upgrade Influent screens. Several projects within this program also experienced higher than estimated expenditures caused by project changes.

STATUS 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.

COORDINATION

City of Rockville (responsible for a share of funding), District of Columbia Water & Sewer Authority (responsible for design and construction) and WSSC Project S-22.10, Blue Plains WWTP: Enhanced Nutrient Removal.

NOTE This project supports 100% System Improvement.

3

E. Annual Operating Budget Impact (000's)			FY of Impact
Program Costs	Staff .....		....
	Other .....		....
Facility Costs	Maintenance .....		....
	Debt Service	18220	....
Total Costs		18220	....
Impact on Water or Sewer Rate		40¢	....

F. Approval and Expenditure Data (000's)

Date First in Capital Program	FY 95
Date First Approved	FY 95
Initial Cost Estimate	69,745
Cost Estimate Last FY	280,210
Present Cost Estimate	316,919
Approved Request, Last FY	9,932
Total Expenditures & Encumbrances	241,755
Approval Request FY 16	9,458
Supplemental Approval Request Current FY (15)	

G. Status Information

Land Status:	Not applicable
% Project Completion:	On-Going
Est. Completion Date:	On-Going

H. Map Map Reference Code:

MAP NOT AVAILABLE

A. Identification and Coding Information

1. Project Number

Agency Number

Update Code

954812

S-22.07

Change

2. Date:

October 1, 2014

7. Pre PDF Pg.No.:

8. Req. Adeq. Pub. Fac.

Revised:

3. Project Name:

Blue Plains WWTP: Biosolids Management, Part 2

4. Program:

Sanitation

6. Planning Area:

Bi-County

5. Agency:

WSSC

B. Expenditure Schedule (000's)											
Cost Elements	(8) Total	(9) Thru FY '14	(10) Estimate FY '15	(11) Total 6 Years	(12) Year 1 FY '16	(13) Year 2 FY '17	(14) Year 3 FY '18	(15) Year 4 FY '19	(16) Year 5 FY '20	(17) Year 6 FY '21	(18) Beyond 6 Years
Planning, Design & Supervision	137,229	124,904	5,905	5,868	1,453	1,537	1,135	215	684	844	552
Land											
Site Improvements & Utilities											
Construction	263,344	217,889	28,045	17,410	5,069	6,415	2,232	858	2,836		
Other	579		340	233	65	80	34	11	35	8	6
Total	401,152	342,793	34,290	23,511	6,587	8,032	3,401	1,084	3,555	852	558

C. Funding Schedule (000's)											
WSSC Bonds	379,130	323,976	32,408	22,219	6,225	7,591	3,214	1,024	3,360	805	527
City of Rockville	22,022	18,817	1,882	1,292	362	441	187	60	195	47	31

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.

Service Area Bi-County Area Capacity 370 MGD

JUSTIFICATION

Plans & Studies

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 2014 Capital Improvement Program.

Specific Data

This project is needed to implement a set of facilities which will provide a permanent biosolids management program for Blue Plains.

Cost Change

Cost increase is due to revised higher estimates for Gravity Thickeners Upgrades Phase II and Dewatering Additional Centrifuges; and, the addition of Combined Heat and Power as backup power project.

STATUS

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.

COORDINATION

City of Rockville (responsible for a share of funding) and District of Columbia Water & Sewer Authority (responsible for design and construction).

NOTE

This project supports 100% System Improvement.

E. Annual Operating Budget Impact (000's)		FY of Impact
Program Costs	Staff .....	....
	Other .....	....
Facility Costs	Maintenance .....	....
	Debt Service	25178
Total Costs.....		25178
Impact on Water or Sewer Rate.....	55¢	21

F. Approval and Expenditure Data (000's)

Date First in Capital Program

FY 95

Date First Approved

FY 95

Initial Cost Estimate

77,296

Cost Estimate Last FY

387,209

Present Cost Estimate

401,152

Approved Request, Last FY

27,969

Total Expenditures & Encumbrances

342,793

Approval Request FY 16

6,587

Supplemental Approval Request
Current FY (15)

G. Status Information

Land Status:

Not applicable

% Project Completion:

On-Going

Est. Completion Date:

On-Going

H. Map

Map Reference Code:

MAP NOT AVAILABLE

A. Identification and Coding Information

1. Project Number	Agency Number	Update Code
023805	S-22.09	Change

2. Date: October 1, 2014

7. Pre PDF Pg.No.: 8. Req. Adeq. Pub. Fac.

Revised:

5. Agency: **WSSC**

3. Project Name: Blue Plains WWTP: Plant-wide Projects

4. Program: **Sanitation** 6. Planning Area: **Bi-County****B.****Expenditure Schedule (000's)**

Cost Elements	(8) Total	(9) Thru FY '14	(10) Estimate FY '15	(11) Total 6 Years	(12) Year 1 FY '16	(13) Year 2 FY '17	(14) Year 3 FY '18	(15) Year 4 FY '19	(16) Year 5 FY '20	(17) Year 6 FY '21	(18) Beyond 6 Years
Planning, Design & Supervision	91,535	72,229	2,323	14,913	3,043	3,046	1,189	3,198	2,193	2,244	2,070
Land											
Site Improvements & Utilities											
Construction	146,702	109,394	7,429	17,434	3,305	2,567	7,101	3,392	725	344	12,445
Other	566		98	323	63	56	83	66	29	26	145
Total	238,803	181,623	9,850	32,670	6,411	5,669	8,373	6,656	2,947	2,614	14,660

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

WSSC Bonds	225,694	171,653	9,309	30,877	6,059	5,358	7,913	6,291	2,785	2,471	13,855
City of Rockville	13,109	9,970	541	1,793	352	311	460	365	162	143	805

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: Plantwide Program Management; comprehensive Management Program; Electrical Power Systems - Switch Gear; Instrumentation, Control, and Electric Engineering Project Management Consultant; New Warehouse Facility; and Central Office Facility (COF) Renovations and Additions. Control System Replacement and Upgrades have been added to this project.

Service Area **Bi-County Area**Capacity **370 MGD****JUSTIFICATION****Plans & Studies**

The Blue Plains Intermunicipal Agreement of 2012; the WASA Master Plan (1998); and the DCWASA Approved FY 2014 Capital Improvement Program.

Specific Data

This is a continuation of the DCWASA's upgrading of the Blue Plains Wastewater Treatment Plant.

Cost Change

Cost increase is due to the addition of Control System upgrade projects and revised higher estimates for other projects in the program.

STATUS 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

City of Rockville (responsible for a share of funding) and District of Columbia Water & Sewer Authority (responsible for design and construction).

NOTE This project supports 100% System Improvement.**E. Annual Operating Budget Impact (000's)**

FY of Impact

Program Costs	Staff .....	....
	Other .....	....
Facility Costs	Maintenance .....	....
	Debt Service	16643
Total Costs.....		16643
Impact on Water or Sewer Rate.....		37¢

F. Approval and Expenditure Data (000's)

Date First in Capital Program	FY 95
Date First Approved	FY 02
Initial Cost Estimate	84,650
Cost Estimate Last FY	212,236
Present Cost Estimate	238,803
Approved Request, Last FY	8,109
Total Expenditures & Encumbrances	181,623
Approval Request FY 16	6,411
Supplemental Approval Request Current FY (15)	

G. Status Information

Land Status:	Not applicable
% Project Completion:	On-Going
Est. Completion Date:	On-Going

H. Map Map Reference Code:**MAP NOT AVAILABLE**

A. Identification and Coding Information

1. Project Number: 083800 Agency Number: S-22.10 Update Code: Change

2. Date: October 1, 2014 Revised:

3. Project Name: Blue Plains WWTP: Enhanced Nutrient Removal 5. Agency: **WSSC**

4. Program: **Sanitation** 6. Planning Area: Bi-County

7. Pre PDF Pg.No.: 8. Req. Adeq. Pub. Fac.

B. Expenditure Schedule (000's)

Cost Elements	(8) Total	(9) Thru FY '14	(10) Estimate FY '15	(11) Total 6 Years	(12) Year 1 FY '16	(13) Year 2 FY '17	(14) Year 3 FY '18	(15) Year 4 FY '19	(16) Year 5 FY '20	(17) Year 6 FY '21	(18) Beyond 6 Years
Planning, Design & Supervision	95,936	61,009	11,283	22,783	6,697	5,832	6,134	2,159	1,467	494	861
Land											
Site Improvements & Utilities											
Construction	268,900	124,930	48,034	95,862	49,514	28,940	17,399	3	3	3	74
Other	1,789		593	1,187	562	348	235	22	15	5	9
Total	366,625	185,939	59,910	119,832	56,773	35,120	23,768	2,184	1,485	502	944

C. Funding Schedule (000's)

	(8) Total	(9) Thru FY '14	(10) Estimate FY '15	(11) Total 6 Years	(12) Year 1 FY '16	(13) Year 2 FY '17	(14) Year 3 FY '18	(15) Year 4 FY '19	(16) Year 5 FY '20	(17) Year 6 FY '21	(18) Beyond 6 Years
WSSC Bonds	148,944	33,930	36,557	77,566	35,053	23,514	17,248	956	594	201	891
State Aid	209,029	150,038	21,230	37,760	19,684	10,240	5,518	1,173	856	289	1
City of Rockville	8,652	1,971	2,123	4,506	2,036	1,366	1,002	55	35	12	52

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. Sub-projects include: Nitrogen Removal Facilities, Centrate Treatment, Enhanced Clarification Facility, Blue Plains Tunnel and Dewatering Pumping Station, and Program Management.

Service Area Bi-County Area **Capacity** 370 MGD

JUSTIFICATION

Plans & Studies

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 2014 Capital Improvement Program, and the Blue Plains Intermunicipal Agreement of 2012.

Specific Data

The funding schedule reflects the final cost sharing agreement with the Maryland Department of the Environment.

Cost Change

Not applicable.

STATUS Not Applicable (WSSC Contract Nos. CB4168L05 , CB4168Q05).

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.

COORDINATION

Maryland Department of the Environment, U.S. Environmental Protection Agency, Region III and District of Columbia Water & Sewer Authority (responsible for design and construction).

NOTE This project supports 100% Environmental Regulation.

E. Annual Operating Budget Impact (000's) FY of Impact

Program Costs	Staff .....	....
	Other .....	....
Facility Costs	Maintenance .....	....
	Debt Service	10488
Total Costs		10488
Impact on Water or Sewer Rate		23¢

F. Approval and Expenditure Data (000's)

Date First in Capital Program	FY 08
Date First Approved	FY 07
Initial Cost Estimate	648
Cost Estimate Last FY	366,743
Present Cost Estimate	366,625
Approved Request, Last FY	49,031
Total Expenditures & Encumbrances	185,939
Approval Request FY 16	56,773
Supplemental Approval Request Current FY (15)	

G. Status Information

Land Status: Not applicable

% Project Completion: On-Going

Est. Completion Date: On-Going

H. Map Map Reference Code:

MAP NOT AVAILABLE

A. Identification and Coding Information			2. Date: October 1, 2014	7. Pre PDF Pg.No.: 8. Req. Adeq. Pub. Fac.
1. Project Number	Agency Number	Update Code	Revised:	
113804	S-22.11	Change		
3. Project Name: Blue Plains: Pipelines & Appurtenances			5. Agency: WSSC	
4. Program: Sanitation			6. Planning Area: Bi-County	

B. Expenditure Schedule (000's)											
Cost Elements	(8) Total	(9) Thru FY '14	(10) Estimate FY '15	(11) Total 6 Years	(12) Year 1 FY '16	(13) Year 2 FY '17	(14) Year 3 FY '18	(15) Year 4 FY '19	(16) Year 5 FY '20	(17) Year 6 FY '21	(18) Beyond 6 Years
Planning, Design & Supervision	35,879	11,492	4,051	18,242	3,372	3,565	3,728	2,710	2,432	2,435	2,094
Land											
Site Improvements & Utilities											
Construction	139,632	42,792	13,845	72,643	16,627	15,594	8,803	16,158	8,984	6,477	10,352
Other	1,212		179	909	200	192	125	189	114	89	124
Total	176,723	54,284	18,075	91,794	20,199	19,351	12,656	19,057	11,530	9,001	12,570

C. Funding Schedule (000's)											
WSSC Bonds	170,315	53,012	17,651	88,851	19,355	18,723	12,389	18,496	11,247	8,641	10,801
City of Rockville	6,408	1,272	424	2,943	844	628	267	561	283	360	1,769

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; Influent Sewers Rehabilitation; and projects associated with the Combined Sewer Overflow (CSO) Long Term Control Plan (e.g. Anacostia Tunnel).

Service Area Bi-County Area

Capacity Various

JUSTIFICATION

Plans & Studies

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 2014 Capital Improvement Program.

Specific Data

This is a continuation of DCWASA's upgrading of the Blue Plains-associated projects outside the fence.

Cost Change

Cost increase is due to revised higher estimates for projects to rehabilitate DCWASA interceptor sewers and pumping stations that carry WSSC wastewater to the Blue Plains WWTP, and the addition of creekbed sewer rehabilitation projects.

STATUS 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 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.

COORDINATION

City of Rockville (responsible for a share of funding) and District of Columbia Water & Sewer Authority (responsible for design and construction).

NOTE This project supports 45% System Improvement and 55% Environmental Regulation.

E. Annual Operating Budget Impact (000's)			FY of Impact
Program Costs	Staff .....		....
	Other .....		....
Facility Costs	Maintenance .....		....
	Debt Service	10801	....
Total Costs.....		10801	....
Impact on Water or Sewer Rate.....		24¢	....

F. Approval and Expenditure Data (000's)

Date First in Capital Program	FY 11
Date First Approved	FY 02
Initial Cost Estimate	102,833
Cost Estimate Last FY	161,952
Present Cost Estimate	176,723
Approved Request, Last FY	23,795
Total Expenditures & Encumbrances	54,284
Approval Request FY 16	20,199
Supplemental Approval Request Current FY (15)	

G. Status Information

Land Status:	Not Applicable
% Project Completion:	On-Going
Est. Completion Date:	On-Going

H. Map Map Reference Code:

MAP NOT AVAILABLE

A. Identification and Coding Information

1. Project Number	Agency Number	Update Code
153802	S-103.02	Change

2. Date: October 1, 2014

7. Pre PDF Pg.No.: 8. Req. Adeq. Pub. Fac.

Revised:

3. Project Name: Anaerobic Digestion/Combined Heat & Power

5. Agency: **WSSC**4. Program: **Sanitation**6. Planning Area: **Bi-County****B. Expenditure Schedule (000's)**

Cost Elements	(8) Total	(9) Thru FY '14	(10) Estimate FY '15	(11) Total 6 Years	(12) Year 1 FY '16	(13) Year 2 FY '17	(14) Year 3 FY '18	(15) Year 4 FY '19	(16) Year 5 FY '20	(17) Year 6 FY '21	(18) Beyond 6 Years
Planning, Design & Supervision	23,921	1,261	4,532	18,128	7,416	3,708	3,708	3,296			
Land											
Site Improvements & Utilities											
Construction	113,300			113,300	6,180	37,080	37,080	32,960			
Other	6,798		228	6,570	680	2,038	2,038	1,814			
Total	144,019	1,261	4,760	137,998	14,276	42,826	42,826	38,070			

C. Funding Schedule (000's)

WSSC Bonds	72,069	690	2,380	68,999	7,138	21,413	21,413	19,035			
Federal Aid	71,950	571	2,380	68,999	7,138	21,413	21,413	19,035			

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 at a location(s) to be determined. The program will provide a reduction in energy and energy-related costs (electricity, natural gas, transportation, and disposal of biosolids) which may in part be guaranteed by the contractor. The potential guaranteed reduction component includes annual avoided energy costs as well as operations and maintenance, chemicals, and biosolids transportation and disposal costs. The program will 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 will include, but is not limited to, the addition of anaerobic digestion equipment, thermal hydrolysis pretreatment equipment, gas cleaning systems, hydrogen sulfide and siloxane removal, tanks, piping, valves, pumps, sludge dewatering/thickening equipment, grit removal, effluent disinfection systems, instrumentation, flow metering, power measurement, and combined heat and power generation systems.

JUSTIFICATION**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).

Specific Data

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.

E. Annual Operating Budget Impact (000's)

FY of Impact

Program Costs	Staff .....	....
	Other .....	....
Facility Costs	Maintenance .....	....
	Debt Service	3425	20
Total Costs		3425	20
Impact on Water or Sewer Rate		8¢	20

F. Approval and Expenditure Data (000's)

Date First in Capital Program	FY 15
Date First Approved	FY 10
Initial Cost Estimate	345
Cost Estimate Last FY	143,980
Present Cost Estimate	144,019
Approved Request, Last FY	7,138
Total Expenditures & Encumbrances	1,261
Approval Request FY 16	14,276
Supplemental Approval Request Current FY (15)	

G. Status Information

Land Status:	No land or R/W required
% Project Completion:	P-99%
Est. Completion Date:	April 2019

H. Map Map Reference Code:**MAP NOT AVAILABLE**

D. DESCRIPTION & JUSTIFICATION (CONT.)

Agency Number: S - 103.02

Project Name: Anaerobic Digestion/Combined Heat & Power

Since April 2012, WSSC staff members have met with and made presentations to Montgomery County Department of Environmental Protection, Prince George's County Department of Environmental Resources staff, both County Councils, and DC Water, in order to gain support for the project.

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 with a 36 month construction period. The environmental benefits and expected outcomes determined from the feasibility study are estimated as follows:

1. Recover 2-3 MW of renewable energy from biomass
2. Reduce Greenhouse Gas production by 11,800 tons/year
3. Reduce biosolids output by more than 50,500 tons/year
4. Reduce lime demand by 4,100 tons/year
5. Reduce nutrient load to the Chesapeake Bay
6. Reduce 5 million gallons/year of grease discharge to sewers
7. Produce Class A Biosolids

The economic benefits determined from the feasibility study are estimated as follows:

1. Recover more than \$1.5 million of renewable energy costs/year
2. Reduce biosolids disposal costs by ~ \$1.7 million/year
3. Reduce chemical costs by ~ \$500,000/year
4. Hedge against rising costs of power, fuel, and chemicals
5. Net Payback over time (net based on capital cost of TH/MAD/CHP minus capital cost of lime stabilization upgrade of WSSC WWTP facilities through 2030) (Any Federal Aid received would shorten the payback period.)

Cost Change

Not applicable.

STATUS Planning

OTHER

The project scope has remained the same. Now that the feasibility study has been completed, the Commission has a defined scope, capital cost, and energy and energy-related cost savings estimates to be able to proceed with the detailed design and construction of the anaerobic digestion, biomass, and combined heat and power generation system facilities.

The Montgomery and Prince George's Councils must be briefed on the project and approve by resolution before the project can move into design.

It is envisioned that either the entire project, or only portions of the project that include the thermal hydrolysis, anaerobic digestion or combined heat and power, include a guarantee by the contractor that the capital cost will be paid back 100% from energy and energy-related cost savings over time. The energy savings for other completed WSSC Energy Performance projects have surpassed the contracts' guaranteed amount every year of the monitoring and verification period. The WSSC will continue to pursue federal capital funding as a source of cost sharing as the project develops. Any Federal Aid received would shorten the payback period. The funding schedule reflects 50% Federal participation.

COORDINATION

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 and WSSC Project S-96.14, Piscataway WWTP Facility Upgrades.

NOTE This project supports 100% System Improvement.

A. Identification and Coding Information			2. Date: October 1, 2014	7. Pre PDF Pg.No.:	8. Req. Adeq. Pub. Fac.
1. Project Number	Agency Number	Update Code	Revised:		
103802	S-170.08	Change			
3. Project Name: Septage Discharge Facility Planning & Implementation			5. Agency: WSSC		
4. Program: Sanitation			6. Planning Area: Bi-County		

B. Expenditure Schedule (000's)											
Cost Elements	(8) Total	(9) Thru FY '14	(10) Estimate FY '15	(11) Total 6 Years	(12) Year 1 FY '16	(13) Year 2 FY '17	(14) Year 3 FY '18	(15) Year 4 FY '19	(16) Year 5 FY '20	(17) Year 6 FY '21	(18) Beyond 6 Years
Planning, Design & Supervision	3,861	815	276	2,770	689	1,385	522	174			
Land											
Site Improvements & Utilities											
Construction	9,280			9,280		4,640	3,480	1,160			
Other	1,233		28	1,205	69	603	400	133			
Total	14,374	815	304	13,255	758	6,628	4,402	1,467			

C. Funding Schedule (000's)											
WSSC Bonds	14,374	815	304	13,255	758	6,628	4,402	1,467			

D. Description & Justification

DESCRIPTION

This project provides for the planning, design and construction of the Septage and Fats, Oils, Grease (FOG) discharge facilities at three locations: (1) the abandoned Rock Creek WWTP, (2) Anacostia WWPS No 2, and (3) Piscataway WWTP.

JUSTIFICATION

Plans & Studies

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).

Specific Data

Currently septage waste is collected at four locations: Muddy Branch Road Disposal Site in Montgomery County, Temple Hill Road Disposal Site, Ritchie Road Disposal Site and Bladensburg Disposal Site in Prince George's County. 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), Small Food Service Providers (Low Volume FOG Waste), and Hazardous Materials. FOG wastes should not be returned to the Commission's waste system without treatment.

Cost Change

Costs have increased due to refinement of the final estimated engineering and construction costs, and the addition of Design Services During Construction costs.

STATUS Preliminary Design (WSSC Contract Nos. CM4363A06 , CM4363B06 , CM4363C06 , CM4363D06).

OTHER

The project scope has remained the same. The expenditures and schedule projections shown in Block B are planning level estimates and may change depending on site-specific conditions and design constraints.

COORDINATION

Montgomery County Government, Prince George's County Government, Maryland-National Capital Park & Planning Commission (Mandatory Referral), Montgomery County Department of Environmental Protection, Prince George's County Department of Environmental Resources, Prince George's County Health Department and WSSC Project S-103.02, Anaerobic Digestion/Combined Heat & Power.

NOTE This project supports 100% System Improvement.

E. Annual Operating Budget Impact (000's)				FY of Impact
Program Costs	Staff	750	....
	Other	482	....
Facility Costs	Maintenance .....		....
	Debt Service	974	....	20
Total Costs.....		2206	....	20
Impact on Water or Sewer Rate.....		5¢	....	20

F. Approval and Expenditure Data (000's)

Date First in Capital Program	FY 10
Date First Approved	FY 10
Initial Cost Estimate	10,835
Cost Estimate Last FY	11,136
Present Cost Estimate	14,374
Approved Request, Last FY	165
Total Expenditures & Encumbrances	815
Approval Request FY 16	758
Supplemental Approval Request Current FY (15)	

G. Status Information

Land Status:	Not determined
% Project Completion:	D-0%
Est. Completion Date:	July 2018

H. Map Map Reference Code:

MAP NOT APPLICABLE



A. Identification and Coding Information			2. Date: October 1, 2014	7. Pre PDF Pg.No.:	8. Req. Adeq. Pub. Fac.
1. Project Number	Agency Number	Update Code	Revised:		
113805	S-170.09	Change			
3. Project Name: Trunk Sewer Reconstruction Program			5. Agency: WSSC		
4. Program: Sanitation			6. Planning Area: Bi-County		

B. Expenditure Schedule (000's)											
Cost Elements	(8) Total	(9) Thru FY '14	(10) Estimate FY '15	(11) Total 6 Years	(12) Year 1 FY '16	(13) Year 2 FY '17	(14) Year 3 FY '18	(15) Year 4 FY '19	(16) Year 5 FY '20	(17) Year 6 FY '21	(18) Beyond 6 Years
Planning, Design & Supervision	136,884	24,731	26,509	85,644	29,686	15,943	19,600	7,243	7,793	5,379	
Land											
Site Improvements & Utilities											
Construction	513,044	73,344	88,800	350,900	133,400	66,700	81,200	26,100	26,100	17,400	
Other	97,386		20,349	77,037	28,780	14,584	17,788	5,884	5,981	4,020	
Total	747,314	98,075	135,658	513,581	191,866	97,227	118,588	39,227	39,874	26,799	

C. Funding Schedule (000's)											
WSSC Bonds	747,314	98,075	135,658	513,581	191,866	97,227	118,588	39,227	39,874	26,799	

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.

JUSTIFICATION

Plans & Studies

WSSC Sanitary Sewer Overflow Consent Decree (December 7, 2005)

Specific Data

Under the terms of the Consent Decree the WSSC Trunk Sewer Inspection Program inspected all required sewers in 21 basins by December 2010 and Sewer System Evaluation Surveys (SSES) were completed 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 now complete. As required by Article 6 of the Consent Decree, a Sewer Basin Repair, Replacement, Rehabilitation Plan (SR3 Plan) for each basin was completed and submitted to the EPA and MDE by March 2013. The SR3 plans encompassing all 24 Consent Decree basins have been approved by the EPA and MDE as of May 2014.

* At the current rate of acquiring environmental permits, the required trunk sewer reconstruction work is expected to extend beyond the Consent Decree's December 2015 deadline. In addition to limited contractor and subcontractor availability, WSSC is continuing to experience significant delays in acquiring both the required permits and Right of Entry permissions to work in the ESA. WSSC worked with the MDE and USACE to identify means to expedite environmental permit approvals with moderate success. The MDE and USACE issued a Program-wide umbrella permit to be followed by modified joint permits for individual sewer basins. To date, the MDE and USACE has issued modified joint permits for 14 sewer basins and continues to process joint permits for the remaining sewer basins.

Cost Change

The increase in the overall program costs is attributed to constructing extensive access roads, by-pass pumping, and stream stabilization required to complete Consent Decree construction activities in the ESA within the constraints of the permits.

E. Annual Operating Budget Impact (000's)				FY of Impact
Program Costs	Staff			
	Other			
Facility Costs	Maintenance			
	Debt Service	31194		22
Total Costs		31194		22
Impact on Water or Sewer Rate		69¢		22

F. Approval and Expenditure Data (000's)

Date First in Capital Program	FY 11
Date First Approved	FY 11
Initial Cost Estimate	504,993
Cost Estimate Last FY	453,402
Present Cost Estimate	747,314
Approved Request, Last FY	114,319
Total Expenditures & Encumbrances	50,580
Approval Request FY 16	191,866
Supplemental Approval Request Current FY (15)	

G. Status Information

Land Status:	Right-of-Way may be required
% Project Completion:	C-31%
Est. Completion Date:	See Block D

H. Map Map Reference Code:

MAP NOT APPLICABLE

D. DESCRIPTION & JUSTIFICATION (CONT.)

Agency Number: S - 170.09

Project Name: Trunk Sewer Reconstruction Program

STATUS Under Construction

OTHER

The project scope remains 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 that will be performed in each sewer basin will be prioritized to most effectively prevent SSOs and backups. The Consent Decree requires that all rehabilitation work be substantially complete by December 5, 2015.

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. For FY2015, construction work will significantly increase in the ESAs, encompassing mainline reconstruction and providing exposed pipeline and manhole protection from high stream flows and stream bank erosion where required.

COORDINATION

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 Public Works & Transportation, U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, Region III, Maryland Historical Trust and WSSC Project S-1.01, Sewer Reconstruction Program.

NOTE This project supports 100% System Improvement.

A. Identification and Coding Information			2. Date: October 1, 2014	7. Pre PDF Pg.No.:	8. Req. Adeq. Pub. Fac.
1. Project Number	Agency Number	Update Code	Revised:		
	S-96.15	Add			
3. Project Name: Piscataway WWTP Post Lime Stabilization			5. Agency: WSSC		
4. Program: Sanitation			6. Planning Area: Accokeek P.A. 83		

B. Expenditure Schedule (000's)											
Cost Elements	(8) Total	(9) Thru FY '14	(10) Estimate FY '15	(11) Total 6 Years	(12) Year 1 FY '16	(13) Year 2 FY '17	(14) Year 3 FY '18	(15) Year 4 FY '19	(16) Year 5 FY '20	(17) Year 6 FY '21	(18) Beyond 6 Years
Planning, Design & Supervision	5,060		60	5,000	1,350	1,250	990	890	370	150	
Land											
Site Improvements & Utilities											
Construction	14,000			14,000			5,600	5,600	1,800	1,000	
Other	1,906		6	1,900	135	125	659	649	217	115	
Total	20,966		66	20,900	1,485	1,375	7,249	7,139	2,387	1,265	

C. Funding Schedule (000's)											
WSSC Bonds	20,966		66	20,900	1,485	1,375	7,249	7,139	2,387	1,265	

D. Description & Justification

DESCRIPTION

This project will provide for the planning, design and construction of a Post- Lime Stabilization Solids Handling facility at the Piscataway Wastewater Treatment Plant. The facilities will be designed to handle 2.5 dry tons per hour of sludge required for a 2030 average daily flow condition (30 MGD) and will include a new solids building, stabilized storage tower, gravity belt thickeners, sludge conveyor to lime stabilization, and post lime stabilization (lime mixers, conveyors, lime silo and biosolids bin). Also included will be building plumbing and fire protection, process piping, electrical and instrumentation equipment. The project also includes new odor control equipment added to the headworks facilities.

Service Area Piscataway Creek Drainage Basin

JUSTIFICATION

Plans & Studies

Update to the Prince George's County Biosolids Master Plan, Post Buckley Schuh & Jernigan (June 1995); Conceptual Design- Western Branch SSI Upgrades, HDR (February 2014)

Specific Data

Piscataway WWTP's solids handling system consists of two stage sludge gravity thickeners (primary sludge and waste sludge in the first stage), where lime and water (slaked lime) is added (pumped) and mixed between the first and second stage thickeners. The pre-lime stabilization system was constructed during the 1970's, before the post lime stabilization was developed commercially.

Numerous studies have shown that it is more cost effective to add lime after dewatering than to add lime in the liquid solids. Lime added to liquid solids creates much more solids to dispose of and is very abrasive to equipment. Additionally, it takes much more lime to increase the solids to pH>11 when added to the liquid solids. The disadvantages of the pre-lime system have been: additional routine maintenance, reduced equipment service life, use of more lime, and increased biosolids trucking and hauling costs. In addition, the high concentration of lime and other components in the dewatering sidestream returned to the Piscataway Raw WWPS has caused reduction in capacity of the plant drain system and reduction in capacity of the Piscataway Raw WWPS which could lead to Sanitary Sewer Overflows during wet weather events.

Cost Change

Not applicable.

STATUS Planning

OTHER

The project scope was developed for the FY 2016 CIP and has a total estimated cost of \$20,966,000. Expenditure and schedule projections shown in Block B above are Order of Magnitude estimates and are expected to change as the project moves into design

E. Annual Operating Budget Impact (000's)				FY of Impact
Program Costs	Staff			
	Other			
Facility Costs	Maintenance			
	Debt Service	1442		22
Total Costs.....		1442		22
Impact on Water or Sewer Rate.....		3¢		22

F. Approval and Expenditure Data (000's)

Date First in Capital Program	FY 16
Date First Approved	FY 16
Initial Cost Estimate	20,966
Cost Estimate Last FY	
Present Cost Estimate	20,966
Approved Request, Last FY	
Total Expenditures & Encumbrances	
Approval Request FY 16	1,485
Supplemental Approval Request Current FY (15)	

G. Status Information

Land Status:	No land or R/W required
% Project Completion:	P-20%
Est. Completion Date:	FY 2021

H. Map Map Reference Code:

MAP NOT APPLICABLE

D. DESCRIPTION & JUSTIFICATION (CONT.)**Agency Number: S - 96.15****Project Name: Piscataway WWTP Post Lime Stabilization**

and construction. This project had been deferred pending a decision on the final siting for the new Anaerobic Digester/Combined Heat & Power project. It now must be included in the FY 2016 CIP so that preliminary planning work can begin. In the event that WSSC project S-103.02, Anaerobic Digester/Combined Heat & Power is approved to proceed to design in FY 2015 this project will not be needed, the project may be removed from the CIP, and the capital cost will be avoided.

COORDINATION

Prince George's County Government, Maryland Department of the Environment and WSSC Projects S-103.02, Anaerobic Digestion/Combined Heat & Power and S-96.14, Piscataway WWTP Facility Upgrades.

NOTE This project supports 100% System Improvement.

A. Identification and Coding Information

1. Project Number	Agency Number	Update Code
	S-96.16	Add

2. Date: October 1, 2014

7. Pre PDF Pg.No.: 8. Req. Adeq. Pub. Fac.

Revised:

5. Agency: **WSSC**

3. Project Name: Piscataway WWTP Backup Generators

4. Program: **Sanitation** 6. Planning Area: Accokeek P.A. 83**B. Expenditure Schedule (000's)**

Cost Elements	(8) Total	(9) Thru FY '14	(10) Estimate FY '15	(11) Total 6 Years	(12) Year 1 FY '16	(13) Year 2 FY '17	(14) Year 3 FY '18	(15) Year 4 FY '19	(16) Year 5 FY '20	(17) Year 6 FY '21	(18) Beyond 6 Years
Planning, Design & Supervision	4,185		60	4,125	1,097	1,358	1,520	150			
Land											
Site Improvements & Utilities											
Construction	15,700			15,700		5,233	9,467	1,000			
Other	1,988		5	1,983	110	659	1,099	115			
Total	21,873		65	21,808	1,207	7,250	12,086	1,265			

C. Funding Schedule (000's)

WSSC Bonds	21,873		65	21,808	1,207	7,250	12,086	1,265			
------------	--------	--	----	--------	-------	-------	--------	-------	--	--	--

D. Description & Justification**DESCRIPTION**

This project provides for the planning, design, and construction of an on-site diesel generation facility at the Piscataway Wastewater Treatment Plant. The facility will consist of two (2) engine-generator sets; rated at 2,725 kW each.

Service Area Piscataway Creek Drainage Basin

JUSTIFICATION**Plans & Studies**

Power Reliability Analysis and Conceptual Design for the Piscataway Wastewater Treatment Plant for on-Site Power Generation, Greeley and Hansen /Shah & Associates (June 2013).

Specific Data

In recent years WSSC has experienced an increase in power outages, both in terms of frequency and length of outages, at critical treatment and pumping facilities. The consequences of such power outages range from a minor inconvenience to a potential compromise of public health and safety, and also include erosion of public trust, negative media coverage, potential fines, and increased regulatory involvement. To address these concerns, WSSC authorized a comprehensive analysis of emergency power capabilities, reliability, and requirements for major pumping stations and treatment facilities for both water and wastewater. Piscataway WWTP is currently supplied by SMECO through four 12.47 kV lines; all four lines are fed from the same high voltage source. In October 2010 and August 2011, the plant experienced complete power outages (all four 12.47 kV lines disrupted at the same time). The analysis revealed that the existing small diesel generator at the Piscataway WWTP is inadequate to provide power to the entire facility during a power outage. Five potential electric supply alternatives were evaluated in detail in the Electric Reliability Analysis report; the most economical was the selection of two (2) 2,725 kW generators to supply electricity to plant processes in the event of a complete utility power outage. A Priority ranking was assigned to each facility that was studied during the analysis, with the facilities receiving the higher priority rankings to be upgraded first. The Piscataway WWTP was ranked 2nd of the twenty-two facilities which were ranked, behind only the Potomac Water Filtration Plant.

Cost Change

Not applicable.

STATUS Planning**OTHER**

The project scope was developed for the FY 2016 CIP and has a total estimated cost of \$21,873,000. Expenditure and schedule projections shown in Block B above are planning level estimates and are expected to change as the project moves into design and construction. The need for this project was first identified in WSSC Project W-73.18 Power Reliability and Arc Flash Implementation. Expenditures shown in FY '15 were transferred from the Power Reliability project. This project had been deferred pending a decision

E. Annual Operating Budget Impact (000's)

FY of Impact

Program Costs	Staff .....	.....
	Other .....	.....
Facility Costs	Maintenance .....	.....
	Debt Service	1505	20
Total Costs.....		1505	20
Impact on Water or Sewer Rate.....		3¢	20

F. Approval and Expenditure Data (000's)

Date First in Capital Program	FY 15
Date First Approved	FY 03
Initial Cost Estimate	21,873
Cost Estimate Last FY	
Present Cost Estimate	21,873
Approved Request, Last FY	
Total Expenditures & Encumbrances	
Approval Request FY 16	1,207
Supplemental Approval Request Current FY (15)	

G. Status Information

Land Status:	No land or R/W required
% Project Completion:	P-75%
Est. Completion Date:	FY 2019

H. Map Map Reference Code:**MAP NOT APPLICABLE**

D. DESCRIPTION & JUSTIFICATION (CONT.)

Agency Number: S - 96.16

Project Name: Piscataway WWTP Backup Generators

on the final siting for the new Anaerobic Digester/Combined Heat & Power project. It now must be included in the FY 2016 CIP so that preliminary planning work can begin. In the event that WSSC project S-103.02, Anaerobic Digester/Combined Heat & Power is approved to proceed to design in FY 2015 this project will not be needed, the project may be removed from the CIP, and the capital cost will be avoided.

COORDINATION

Prince George's County Government, Maryland Department of the Environment and WSSC Projects S-103.02, Anaerobic Digestion/Combined Heat & Power and S-96.14, Piscataway WWTP Facility Upgrades.

NOTE This project supports 100% System Improvement.

A. Identification and Coding Information

1. Project Number	Agency Number	Update Code
	W-1.00	Change

2. Date: October 1, 2014

Revised:

7. Pre PDF Pg.No.: 8. Req. Adeq. Pub. Fac.

5. Agency: **WSSC**

3. Project Name: Water Reconstruction Program

4. Program: **Sanitation** 6. Planning Area: Bi-County**B. Expenditure Schedule (000's)**

Cost Elements	(8) Total	(9) Thru FY '14	(10) Estimate FY '15	(11) Total 6 Years	(12) Year 1 FY '16	(13) Year 2 FY '17	(14) Year 3 FY '18	(15) Year 4 FY '19	(16) Year 5 FY '20	(17) Year 6 FY '21	(18) Beyond 6 Years
Planning, Design & Supervision	105,369		14,518	90,851	14,386	15,293	15,293	15,293	15,293	15,293	
Land											
Site Improvements & Utilities											
Construction	496,151		67,182	428,969	69,432	70,493	72,261	72,261	72,261	72,261	
Other	126,517		17,604	108,913	17,840	18,057	18,254	18,254	18,254	18,254	
Total	728,037		99,304	628,733	101,658	103,843	105,808	105,808	105,808	105,808	

C. Funding Schedule (000's)

WSSC Bonds	728,037		99,304	628,733	101,658	103,843	105,808	105,808	105,808	105,808	
------------	---------	--	--------	---------	---------	---------	---------	---------	---------	---------	--

D. Description & Justification**DESCRIPTION**

The purpose of this program is to renew and extend the useful life of water mains. 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 services, 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.

Service Area Bi-CountyArea

JUSTIFICATION**Plans & Studies**

Flow studies, water system modeling, and field surveys are routinely conducted. A staff level report: Water Main Condition Assessment, 1915-1998; Analysis and Recommendations by the Water Main Reconstruction Work Group (June, 1999) examined the historical main break data for performance measures to define, characterize, and prioritize the future replacement needs of the distribution system. An early outcome of this project identified the need to increase the frequency of water main replacement. "FY2016 Water Distribution System Asset Management Plan" (February 2014).

Specific Data

The program's projected work units and expenditure levels for FY'16 (including overhead) are as follows: design and construction of main replacement and associated water house connection renewals, 57 miles - \$93.8M; cathodic protection - \$1.3M; design and construction of large water service replacements - \$6.5M. 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. WSSC pilot tested one mile of structural lining using new methods intended to add structural integrity to the lined main. An implementation rate of 2 miles/year is planned for the structural lining rehabilitation program.

Cost Change

The six year program cost decreased due to not applying an inflation factor.

E. Annual Operating Budget Impact (000's)

FY of Impact

Program Costs	Staff .....	....
	Other .....	....
Facility Costs	Maintenance .....	....
	Debt Service	61663	20
Total Costs		61663	20
Impact on Water or Sewer Rate		123¢	20

F. Approval and Expenditure Data (000's)

Date First in Capital Program	FY --
Date First Approved	FY --
Initial Cost Estimate	
Cost Estimate Last FY	775,766
Present Cost Estimate	728,037
Approved Request, Last FY	104,509
Total Expenditures & Encumbrances	
Approval Request FY 16	101,658
Supplemental Approval Request Current FY (15)	

G. Status Information

Land Status:	Not applicable
% Project Completion:	On-Going
Est. Completion Date:	On-Going

H. Map Map Reference Code:**MAP NOT APPLICABLE**

D. DESCRIPTION & JUSTIFICATION (CONT.)

Agency Number: W - 1.00

Project Name: Water Reconstruction Program

STATUS Under Construction

OTHER

The project scope has remained the same. 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'14 summarize the magnitude of the reconstruction effort: 1,142 miles rehabilitated, 463 miles replaced, 115 large water service/meters replaced. It is anticipated water reconstruction activity will be a perpetual element of future work programs.

COORDINATION

Maryland State Highway Administration, Montgomery County Department of Public Works and Transportation, Montgomery County Government (including local municipalities where work is to be performed), Prince George's County Government (including local municipalities where work is to be performed), Prince George's County Department of Public Works & Transportation and Local Community Civic Associations.

52

A. Identification and Coding Information

1. Project Number	Agency Number	Update Code
	S-1.01	Change

2. Date: October 1, 2014

7. Pre PDF Pg.No.: 8. Req. Adeq. Pub. Fac.

Revised:

5. Agency: **WSSC**

3. Project Name: Sewer Reconstruction Program

4. Program: **Sanitation** 6. Planning Area: Bi-County**E. Annual Operating Budget Impact (000's)**

FY of Impact

Program Costs	Staff .....	....
	Other .....	....
Facility Costs	Maintenance .....	....
	Debt Service	21197	22
Total Costs.....		21197	22
Impact on Water or Sewer Rate.....	42¢	....	22

F. Approval and Expenditure Data (000's)

Date First in Capital Program	<input type="text"/> FY --
Date First Approved	<input type="text"/> FY --
Initial Cost Estimate	<input type="text"/>
Cost Estimate Last FY	428,819
Present Cost Estimate	308,099
Approved Request, Last FY	16,419
Total Expenditures & Encumbrances	<input type="text"/>
Approval Request FY 16	34,784
Supplemental Approval Request Current FY (15)	<input type="text"/>

G. Status Information

Land Status:	Not applicable
% Project Completion:	On-Going
Est. Completion Date:	On-Going

H. Map Map Reference Code:**MAP NOT APPLICABLE****B.****Expenditure Schedule (000's)**

Cost Elements	(8) Total	(9) Thru FY '14	(10) Estimate FY '15	(11) Total 6 Years	(12) Year 1 FY '16	(13) Year 2 FY '17	(14) Year 3 FY '18	(15) Year 4 FY '19	(16) Year 5 FY '20	(17) Year 6 FY '21	(18) Beyond 6 Years
Planning, Design & Supervision	67,522		9,245	58,277	7,709	7,977	8,966	12,630	11,787	9,208	
Land											
Site Improvements & Utilities											
Construction	209,768		28,217	181,551	23,597	24,535	27,998	39,974	37,449	27,998	
Other	30,809		4,162	26,647	3,478	3,612	4,107	5,845	5,471	4,134	
Total	308,099		41,624	266,475	34,784	36,124	41,071	58,449	54,707	41,340	

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

WSSC Bonds	308,099		41,624	266,475	34,784	36,124	41,071	58,449	54,707	41,340	
------------	---------	--	--------	---------	--------	--------	--------	--------	--------	--------	--

D. Description & Justification**DESCRIPTION**

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

* EXPENDITURES FOR SEWER RECONSTRUCTION ARE EXPECTED TO CONTINUE INDEFINITELY.

Service Area Bi-CountyArea

JUSTIFICATION**Plans & Studies**

Comprehensive Basin Studies, Sewer System Evaluation Surveys, Line Blockage Assessments, field surveys, closed circuit TV inspections, and/or other activities investigating specific portions of the collection system.

Specific Data

The FY'16 work units and associated costs are based on our historical experience with regards to timing of design and construction work, cost per linear foot, availability of authorized contractors for proprietary rehabilitation techniques, and management's availability to oversee and manage the total number of individual contracts. The program's projected work units and expenditure levels for FY'16 (including overhead) are as follows: 2 miles of mainline construction - \$4.7M; 6 miles of lateral line construction and associated sewer house connection renewals - \$28.1M; emergency repairs - \$2M. Note: The specific mix and type of sewer reconstruction may vary in any given year depending on identified system defects.

Cost Change

The overall program cost estimate decreased based on greater refinement of the magnitude of Priority Two sewer rehabilitation work and revised scheduling.

STATUS Under Construction

OTHER

The project scope has remained the same. The program schedule and expenditures shown above reflect the terms of the Sanitary Sewer Overflow Consent Decree. The Consent Decree between WSSC, Maryland Department of the Environment (MDE), and the EPA was entered into on December 7, 2005. The sewer reconstruction program was established in 1979. Expenditures for grouting

D. DESCRIPTION & JUSTIFICATION (CONT.)

Agency Number: S - 1.01

Project Name: Sewer Reconstruction Program

repairs are included in the operating budget.

The following work accomplishments through FY'14 summarize the magnitude of this reconstruction effort: sewer main reconstruction, 373 miles; and sewer house connection renewals, 18,081. It is anticipated that sewer reconstruction activity will be a perpetual element of future work programs.

COORDINATION

Maryland State Highway Administration, Montgomery County Department of Public Works and Transportation, Montgomery County Government (including local municipalities where work is to be performed), Prince George's County Government (including local municipalities where work is to be performed), Maryland Department of the Environment (SSO Consent Decree Compliance), Prince George's County Department of Public Works & Transportation, U.S. Environmental Protection Agency, Region III (SSO Consent Decree Compliance) and Local Community Civic Associations.

A. Identification and Coding Information

1. Project Number	Agency Number	Update Code
	A-109.00	Change

2. Date: October 1, 2014

7. Pre PDF Pg.No.: 8. Req. Adeq. Pub. Fac.

Revised:

5. Agency: **WSSC**

3. Project Name: Advanced Metering Infrastructure

4. Program: **Sanitation** 6. Planning Area:**B.****Expenditure Schedule (000's)**

Cost Elements	(8) Total	(9) Thru FY '14	(10) Estimate FY '15	(11) Total 6 Years	(12) Year 1 FY '16	(13) Year 2 FY '17	(14) Year 3 FY '18	(15) Year 4 FY '19	(16) Year 5 FY '20	(17) Year 6 FY '21	(18) Beyond 6 Years
Planning, Design & Supervision	5,075	75	1,750	3,250	950	600	600	600	500		
Land											
Site Improvements & Utilities											
Construction	83,550	800	750	82,000		12,750	25,500	25,500	18,250		
Other	875		25	850	10	134	260	260	186		
Total	89,500	875	2,525	86,100	960	13,484	26,360	26,360	18,936		

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

WSSC Bonds	89,500	875	2,525	86,100	960	13,484	26,360	26,360	18,936		
------------	--------	-----	-------	--------	-----	--------	--------	--------	--------	--	--

D. Description & Justification**DESCRIPTION**

This project provides for the implementation of a system-wide automated meter reading infrastructure system (System). All meters will receive new Meter Interface Units with internal antenna capable of obtaining and/or transmitting the meter register reading. All readings will be collected remotely by either a mobile system or a fixed network communications system.

JUSTIFICATION**Plans & Studies**

Dial Outbound AMR Trial Final Report, Metering Services, Inc. (1990); An Economic Evaluation of AMR for WSSC, Marilyn Harrington (1992); Cost of Meter Reading Study, Marilyn Harrington (2000); The WSSC Experience with Radio-Frequency AMR on Commercial & Industrial Meters (2002); Radio Frequency Solution for Meter Reading (2003); AMR Phase I (July 2005); Customer Care Team Departmental Action Item #20 - AMR Installation (2007); Advanced Metering Infrastructure Study, R.W. Beck (March 2011).

Specific Data

The System will be required to obtain accurate register readings from a variety of water meters located in indoor, pit-set, and underground vault settings, and be universally compatible with the existing meters and encoder registers in the distribution system.

Cost Change

Not applicable.

STATUS Planning**OTHER**

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

COORDINATION

Montgomery County Government and Prince George's County Government.

E. Annual Operating Budget Impact (000's)

FY of Impact

Program Costs	Staff .....	.....
	Other .....	.....
Facility Costs	Maintenance .....	.....
	Debt Service	6156	20
Total Costs		6156	20
Impact on Water or Sewer Rate		12¢	20

F. Approval and Expenditure Data (000's)

Date First in Capital Program	FY 13
Date First Approved	FY 13
Initial Cost Estimate	86,000
Cost Estimate Last FY	89,500
Present Cost Estimate	89,500
Approved Request, Last FY	960
Total Expenditures & Encumbrances	875
Approval Request FY 16	960
Supplemental Approval Request Current FY (15)	

G. Status Information

Land Status:	Not determined
% Project Completion:	P-15%
Est. Completion Date:	FY 2020

H. Map Map Reference Code:**MAP NOT AVAILABLE**

Sanitary Sewer Overflow (SSO) Consent Decree Update

Commissioner Meeting
January 27, 2015

Agenda

- Schedule Update
- Costs
- Areas of Concern
- Q & A Session

Schedule Update

Roads

- 6 IDIQ Contracts
- 126 Construction Task Orders (CTO)
- 3 Prime Contractors
- 124 sewer miles awarded for construction
- 101.7 sewer miles rehabilitated as of December 21, 2014
- Estimated completion for Consent Decree Roads Projects is December 2015

Schedule Update

Roads (Basin Level Update)

Sligo Creek	100%	→	100%
Cabin John	97%	→	97%
Paint Branch	100%	→	100%
Lower Anacostia	92%	→	93%
Beaverdam	79%	→	86%
Seneca Creek	96%	→	96%
Dulles Interceptor	100%	→	100%
Muddy Branch	100%	→	100%
Broad Creek	99%	→	99%
Piscataway	89%	→	92%
Parkway	21%	→	28%

Western Branch/ Mattawoman	81%	→	93%
Northwest	92%	→	92%
Horsepen	100%	→	100%
Northeast	79%	→	79%
Oxon Run	97%	→	97%
Rock Creek/Patuxent			
North	75%	→	77%
Rock Run	60%	→	73%
Little Falls	68%	→	72%
Watts Branch	46%	→	56%

Schedule Update

Environmentally Sensitive Areas (ESA)

- 16 IDIQ Contracts
- 10 ESA Contractors
- ESA includes a total of 233 CTOs
 - To date, 93 (39.9%) CTOs issued for construction
- ESA includes a total of 150 miles
 - 65.37 (43.6%) miles awarded for construction
 - 14.48 miles rehabilitated as of December 19, 2014

Schedule Update ESA (Basin Level)

Rock Run	0%	→	0%
Paint Branch**	1%	→	1%
Beaverdam*	1%	→	2%
Piscataway	2%	→	2%
Rock Creek*	8%	→	16%
Sligo Creek*	2%	→	3%
Cabin John*	10%	→	18%
Northeast Branch**	0%	→	1%
Lower Anacostia*	2%	→	36%
Northwest Branch	0%	→	1%
Broad Creek*	52%	→	52%
Little Falls*	0%	→	0%

Muddy Branch*	0%	→	0%
Western Branch	0%	→	0%
Seneca Creek*	2%	→	5%
Watts Branch**	0%	→	0%
Parkway	0%	→	3%
Oxon Run**	2%	→	2%
Horsepen Branch*	0%	→	7%
Dulles Interceptor*	0%	→	0%
Mattawoman*	0%	→	41%
Monocacy*	0%	→	0%
Patuxent North*	0%	→	0%
Patuxent Center*	57%	→	86%

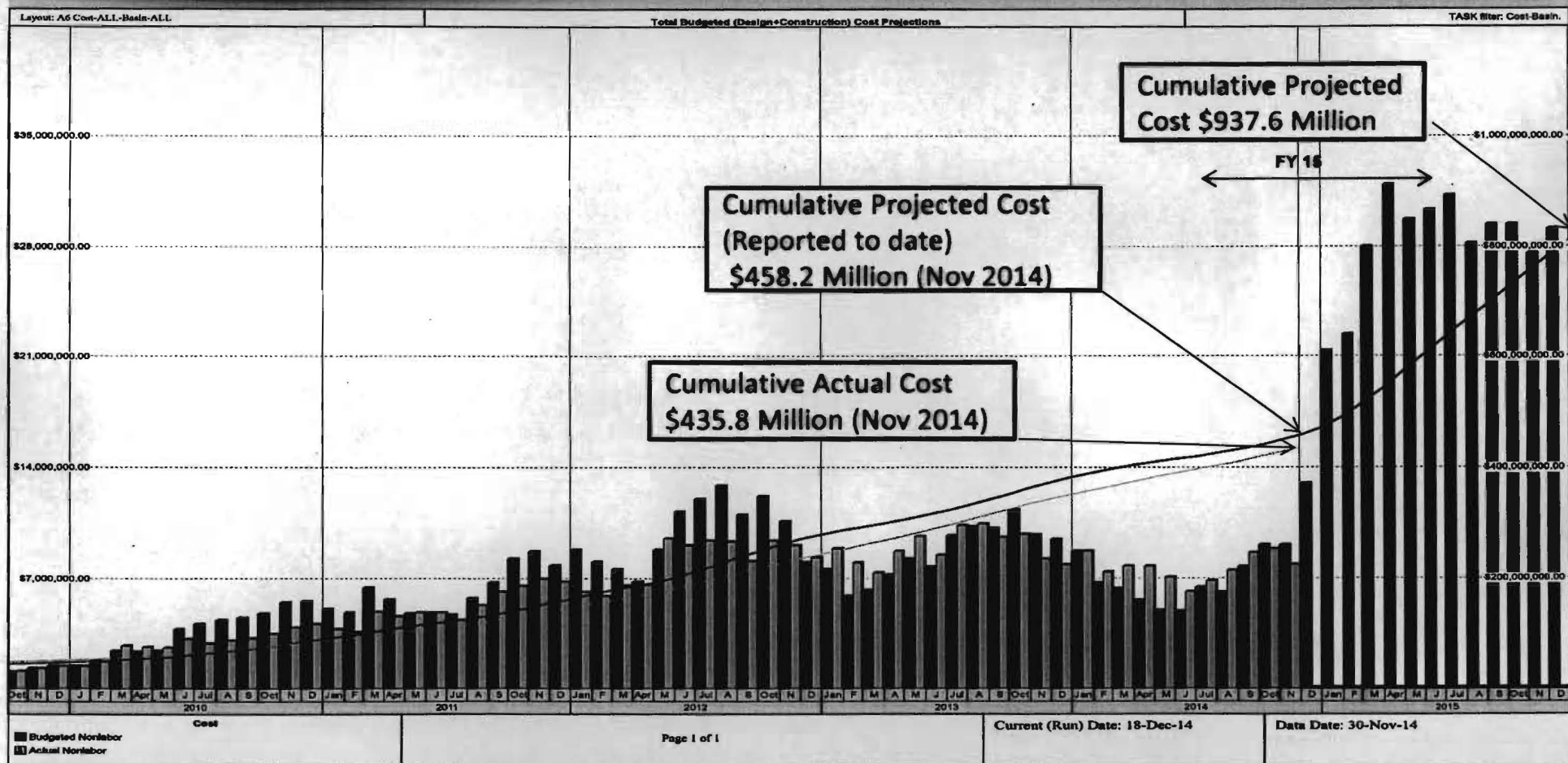
*Basins where ESA work is ongoing

**Basins where ESA work is starting

Other basins waiting for JPAs

Consent Decree Costs

Article 6 – Design and Construction Costs



Consent Decree Costs

Description	Projected Total Cost to Date	Actual Cost to Date
Consent Decree (All Articles)	\$1,415,863,286.78	\$645,414,852.13
Article 06	\$977,401,626.34	\$464,501,329.82
All other Articles Total Cost	\$436,341,610.44	\$179,088,252.44
General Cost	\$59,445,813.75	\$15,146,282.75
Article 02	\$85,252,082.00	\$49,385,861.00
Article 03	\$41,656,161.69	\$19,843,806.69
Article 04	\$32,287,866.00	\$13,392,460.00
Article 05	\$2,708,764.00	\$2,708,764.00
Article 07	\$6,050,000.00	\$0.00
Article 10	\$169,869,633.00	\$50,868,188.00
Article 11	\$34,028,193.00	\$22,699,793.00
Supplemental Environmental Projects	\$5,043,097.00	\$5,043,097.00
Stipulated Penalties	\$2,120,050.00	\$1,825,269.87

Rehabilitation Phase

Areas of Concern

- Joint Permits
 - Maryland Department of Environment (MDE)
 - United States Army Corps of Engineers (USACE)
- Rights of Entry (ROE)
- National Park Service (NPS)
- Stream Stabilization Permits
- Contractor Capacity Limitations
- Modifications to approved permits
- Consent Decree Modification

Areas of Concern Joint Permits

- WSSC holds approved Joint Permits for 19 basins
- WSSC needs Joint Permit approval for 3 more basins
 - WSSC received the proffered permit for Parkway on 12/22/2014 and WSSC is yet to receive final permits
 - MDE needs to approve permit for 2 basins
- WSSC received email from MDE on 12/19/2014 advising the status of pending JPAs



Areas of Concern

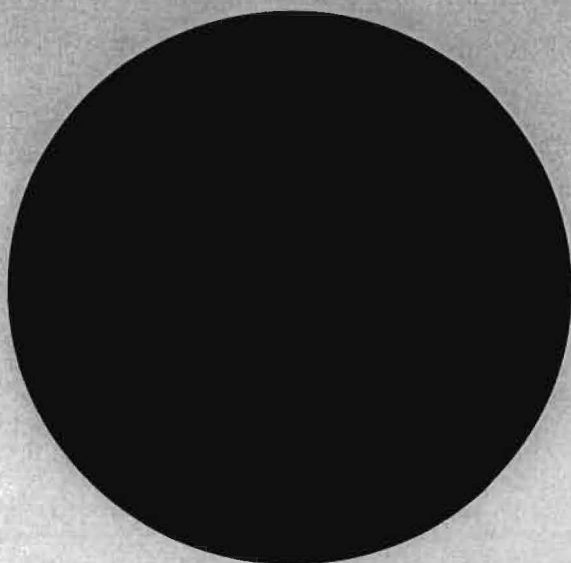
Rights of Entry

- Total outstanding ROEs have decreased from 314 to 270 since October 2014
- 52 ROEs requiring involvement from the General Counsel's Office and Land Unit
- Per the guidance of the Commissioners, WSSC is continuing the policy to contact local County Governments for assistance with securing difficult ROEs prior to implementing condemnation
 - To date, WSSC sent letters on 5 ROEs
 - WSSC will be sending condemnation letter on 2 more ROEs

Areas of Concern

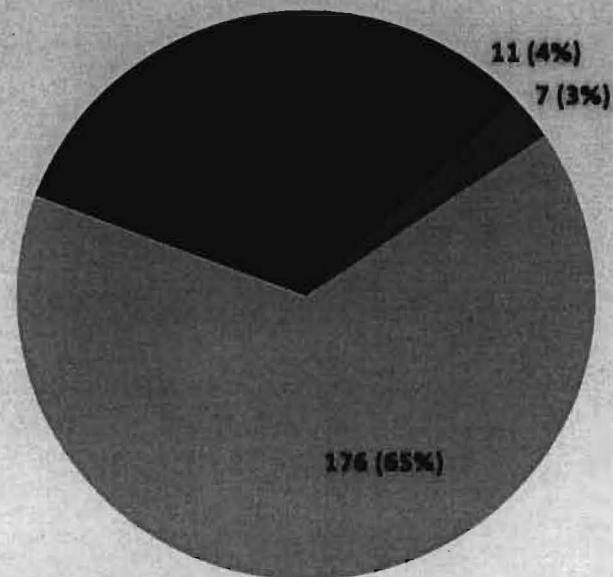
Rights of Entry

Received vs Outstanding ROE



■ Total Outstanding ROE ■ Total Received ROE

Breakdown of Outstanding ROE



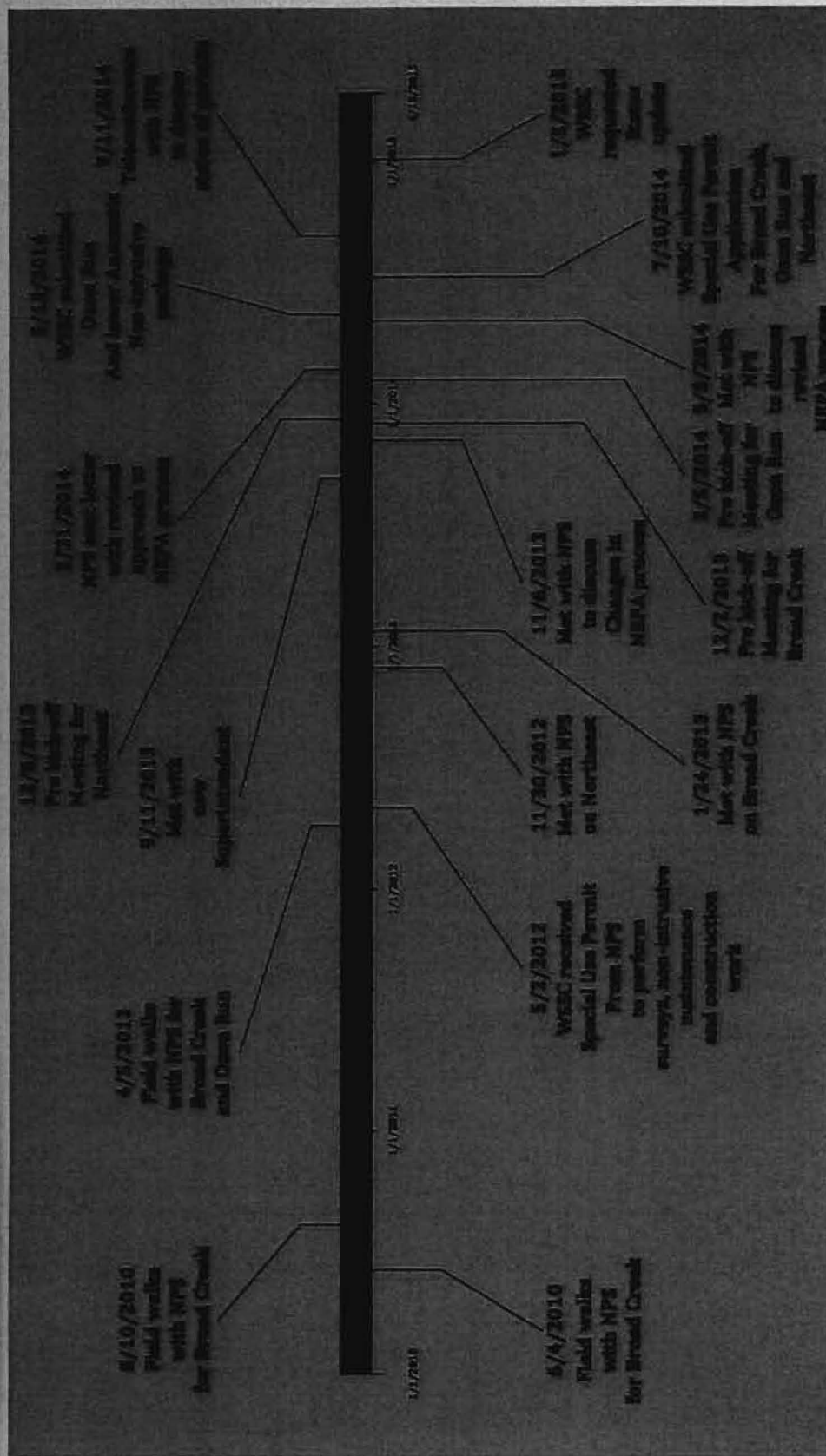
■ Private - Individual Home Owners
■ Private - Commercial Enterprises
■ WSSC Legal/Land Unit Involvement

■ Private - Home Owners Association
■ Public - Governments, Utilities, Agencies

Areas of Concern National Park Service (NPS)

- WSSC is still waiting for a letter from NPS with their responses and requirements in relation to the Special Use Permit applications that WSSC submitted in July 2014
- WSSC provided clarifications on the Oxon Run/Lower Anacostia non-intrusive application submitted by WSSC on 5/15/2014
- WSSC continues to incur delays from waiting for NPS action on permits required under NEPA

Areas of Concern National Park Service (NPS)



Areas of Concern

Stream Permits (M-NCPPC)

- 35 Stream stabilization permits in Montgomery County, Maryland w/ M-NCPPC
- 23 approved stream stabilization permits as of December 2014
- 12 outstanding permits expected within the next 3 months
- WSSC met with M-NCPPC to discuss their requirements on field personnel during construction



Areas of Concern

External Resources

- 233 Construction Task Orders (CTO) under ESA
- ESA Construction Costs Breakdown
 - Restoration - 5%
 - Bypass Pumping - 10%
 - Rehabilitation - 25%
 - Access Roads/Stream Restoration - 60%
- Contractors taking longer than the 10 day duration to sign the NTP

Areas of Concern Joint Permit Modifications

- Completed ESA designs based on two-year old surveys
- Major changes expected in field conditions for stream stabilization sites
- Permit modifications are required to address field changes

Areas of Concern

Consent Decree Extension

- WSSC working with Environmental Protection Agency (EPA) and Department of Justice (DOJ) on Consent Decree extension
- WSSC responded to request for information from EPA and DOJ regarding the need for Consent Decree extension
- WSSC met with EPA, DOJ and Environmental Groups on 12/4/2014 to present status of Consent Decree activities

Questions & Answers