


T&E COMMITTEE #1
February 11, 2016

Worksession

MEMORANDUM

February 9, 2016

TO: Transportation, Infrastructure, Energy & Environment Committee

FROM:  Keith Levchenko, Senior Legislative Analyst

SUBJECT: **Worksession: FY17-22 Capital Improvements Program: Washington Suburban Sanitary Commission (WSSC)**

Council Staff recommends approval of WSSC's Proposed FY17-22 Capital Improvements Program (CIP), with the caveat that WSSC plans to submit updated Blue Plains project costs and a new Potomac Water Filtration Plant Consent Decree project later this spring. The Council can review these items as part of its review of the WSSC Operating Budget in early May.

Attachments to this memorandum include:

- County Executive's Recommended FY17-22 Capital Improvements Program (WSSC Excerpt) (©1-3)
- Excerpts from WSSC's Proposed FY17-22 CIP¹ (©4-31)
- Sanitary Sewer Overflow (SSO) Consent Decree Update to Commissioners (dated January 20, 2016) (©32-46)

¹ WSSC's full FY17-22 Proposed CIP and Approved FY16-21 CIP publications are available for download at:
<https://www.wsscwater.com/financial#currentbudget>

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

WSSC

- Howie Dennis, Commissioner
- Carla Reid, General Manager/CEO
- Theon Grojean, Engineering & Construction Project Delivery Group Leader
- Yvette Downs, Chief Financial Officer
- Leticia Carolina-Powell, Budget Group Leader
- Mark Brackett, Budget Unit Coordinator

County Government

- Dave Lake, Manager, Water and Wastewater Management, Department of Environmental Protection (DEP)
- 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 FY17-22 WSSC CIP and Operating Budget Review Timeline

- October 1, 2015: WSSC transmitted its Proposed FY17-22 CIP (Excerpts on ©4-31)
- October 27, 2015: Council approval of WSSC's FY17 Spending Control Limits
- January 15, 2016: County Executive's recommendations transmitted (©1-3)
- February 9 and 11, 2016: Council public hearings on the FY17-22 CIP
- **February 11, 2016: T&E Committee review of the WSSC CIP**
- March 1, 2016: WSSC transmittal of its Proposed FY17 Budget
- March, 1, 2016: Council review of the WSSC CIP
- April 2016: T&E Committee review of the WSSC Operating Budget
- Early May: Council review of the WSSC Operating Budget
- May 12, 2016: Bi-County meeting between Montgomery County and Prince George's County Councils on the WSSC CIP and Operating Budget, as well as any other Bi-County budget issues

FISCAL OVERVIEW

Fiscal Highlights

- WSSC's FY17-22 CIP is \$1.98 billion (a decrease of \$107 million, or 5.1 percent, from the FY16-21 CIP). The largest decreases are in the Blue Plains projects (-\$69 million) and the Trunk Sewer Reconstruction project (-\$30.5 million).
- Montgomery County and Bi-County projects total \$1.55 billion (a decrease of \$103.7 million, or 6.3 percent, from the FY16-21 CIP for reasons similar to the overall WSSC CIP noted above).

- Blue Plains projects total \$331.8 million for FY17-22 (a decrease of \$69 million or -17.2 percent from the FY16-21 CIP), primarily as a result of projects moving through construction (especially the Enhanced Nutrient Removal (ENR) project) and out of the six-year period. This total represents about 16.8 percent of the total WSSC CIP and about 27.8 percent of WSSC's sewer projects. *NOTE: WSSC staff have indicated that it expects to transmit revised numbers for the Blue Plains projects.*
- NOTE: "Information Only" projects (which are presented in the CIP but 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.² However, FY17-22 expenditures are projected to be \$1.187 billion (an increase of 43.4 million or 3.8 percent from the FY16-21 projected amount of \$1.14 billion). The largest increases are in the Sewer Reconstruction (\$45.6 million) and Energy Performance (\$18.4 million) programs.*

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

Table 1: Total WSSC Expenditures
Proposed FY17-22 CIP versus Approved FY16-21 CIP
 (\$s in 000s)

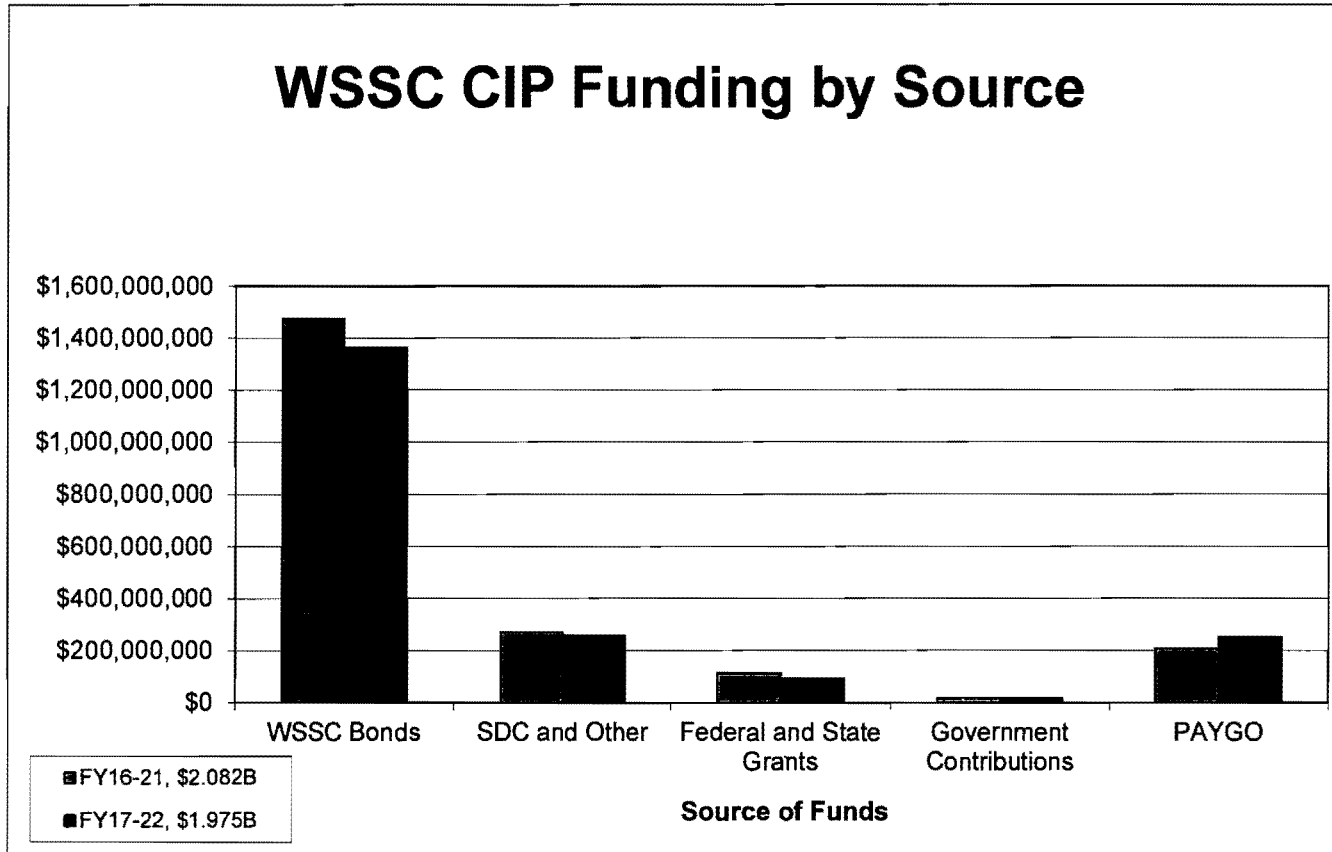
	Approved FY16	Six-Year Total	FY17	FY18	FY19	FY20	FY21	FY22
Total Water Projects								
Approved FY16-21	139,905	767,397	165,963	157,583	126,862	102,461	74,623	
Proposed FY17-22		783,491	180,983	179,124	143,870	101,765	89,153	88,596
Difference		16,094	15,020	21,541	17,008	(696)	14,530	
% Change		2.1%	9.1%	13.7%	13.4%	-0.7%	19.5%	
Total Sewer Projects								
Approved FY16-21	406,689	1,314,654	300,810	274,640	144,357	103,398	84,760	
Proposed FY17-22		1,191,553	311,743	301,794	210,603	186,356	117,127	63,930
Difference		(123,101)	10,933	27,154	66,246	82,958	32,367	
% Change		-9.4%	3.6%	9.9%	45.9%	80.2%	38.2%	
Total								
Approved FY16-21	546,594	2,082,051	466,773	432,223	271,219	205,859	159,383	
Proposed FY17-22		1,975,044	492,726	480,918	354,473	288,121	206,280	152,526
Difference		(107,007)	25,953	48,695	83,254	82,262	46,897	
% Change		-5.1%	5.6%	11.3%	30.7%	40.0%	29.4%	

As shown on the chart, WSSC is recommending a decrease in expenditures (-5.1 percent, -\$107 million). This decrease follows a major increase (26%) in WSSC's budget from last year. The major elements of this year's decrease are 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 FY16-21 CIP and the Proposed FY17-22 CIP.



Each of these funding sources and how it relates to WSSC projects is 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 in recent years (based on recommendations from the Bi-County Infrastructure Funding Working Group several years ago), bond funding has dropped to about 68 percent of the CIP. SDC and Other (which is primarily made up of developer contributions) is the second largest funding source, making up about 12.9 percent of revenues over the six-year period. PAYGO makes up about 12.7 percent of CIP funding.

GROWTH FUNDING

WSSC estimates that approximately \$254.2 million (or 12.9 percent) of total proposed expenditures in the six-year period are needed to accommodate growth.³ This is down from the FY16-21 CIP (\$270.3 million).

³ Environmental regulations and system improvements (7 percent and 80 percent of requested FY17-22 CIP expenditures, respectively) are the two other major categories of spending (see ©7). 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 \$191.8 million in revenue over the six-year period. Developer credits and SDC exemptions⁴ reduce the net revenue to about \$175.6 million. For more background on the SDC, please see ©5.

Overall, WSSC estimates a deficit in growth funding versus expenditures over the six-year period of \$33.2 million, as shown on ©6. This deficit is down substantially from last year's estimated deficit of \$69.8 million because of increases in estimated SDC revenue (+\$12.7 million) and an increase in privately funded projects (+\$6.1 million).

The SDC Fund has a balance of approximately \$2.0 million (as of December 31, 2015). This balance has been declining for a number of years. There are significant annual gaps shown in FY17, FY18, and FY19. Five 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 expects to issue debt on behalf of the SDC fund for the next four to five fiscal years. Council Staff asked WSSC staff about this assumption going forward and WSSC responded:

WSSC is still comfortable assuming no increase in SDC rates at this time as there are no major growth projects on the horizon after FY2019. Therefore, the existing rates appear to be able to support debt service payments for the short term deficit funding. As rates and revenues are reviewed over the next year, this item will be included as part of the review to validate the staff assumptions.

WSSC's Proposed Operating Budget for FY17 will be transmitted by March 1. The Proposed Operating Budget will include recommended FY17 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

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 \$5.8 million in exemption capacity. Prince George's County has \$3.4 million in exemption capacity.

⁵ NOTE: For many years, WSSC has increased the maximum allowable charge (as permitted under State law), but has left the actual rate charged unchanged.

Montgomery County and Bi-County Projects

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

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

	Approved FY16	Six-Year Total	FY17	FY18	FY19	FY20	FY21	FY22
Total Water Projects								
Approved FY15-20	96,733	567,102	113,253	112,003	98,025	84,713	62,375	
Proposed FY16-21		553,295	114,418	111,673	109,685	89,791	71,930	55,798
Difference		(13,807)	1,165	(330)	11,660	5,078	9,555	
% Change		-2.4%	1.0%	-0.3%	11.9%	6.0%	15.3%	
Total Sewer Projects								
Approved FY15-20	322,289	1,085,265	241,702	242,808	127,465	87,164	63,837	
Proposed FY16-21		995,401	250,961	236,114	171,354	169,414	105,814	61,744
Difference		(89,864)	9,259	(6,694)	43,889	82,250	41,977	
% Change		-8.3%	3.8%	-2.8%	34.4%	94.4%	65.8%	
Total								
Approved FY15-20	419,022	1,652,367	354,955	354,811	225,490	171,877	126,212	
Proposed FY16-21		1,548,696	365,379	347,787	281,039	259,205	177,744	117,542
Difference		(103,671)	10,424	(7,024)	55,549	87,328	51,532	
% Change		-6.3%	2.9%	-2.0%	24.6%	50.8%	40.8%	

Montgomery County and Bi-County expenditures are down 6.3 percent for similar reasons noted earlier for the overall WSSC CIP.

COUNTY EXECUTIVE RECOMMENDATIONS (See ©1-3)

The County Executive recommendations for WSSC were transmitted on January 15 as part of his FY17-22 Recommended CIP. He does not recommend any changes to WSSC's Proposed CIP.

WSSC FY17-22 PROJECT HIGHLIGHTS

New Projects

- There are no new projects within the WSSC CIP. There is one new "Information Only" project, Brighton Dam Operations & Maintenance Facility and Site Improvements, (\$6.5 million total project cost) which is discussed later.

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.

**Table 4:
FY17-22 Major Changes in 6 Year Costs
(MC and Bi-County Projects Only)**

Cost in (\$000s)	Project	Comment
7,802	Duckett and Brighton Dam Upgrades	Costs increased based on engineer's estimates for the Brighton Dam work.
7,110	Cabin John Trunk Sewer Relief	Developer-Funded Project: Costs updated based on information provided by the developer.
6,213	Patuxent Raw Water Pipeline	The cost was increased based on a change in alignment needed to avoid BGE gas line relocations
4,548	Potomac WFP Pre-Filter Chlorination & Air Scour Improvements	Total project cost has increased based on an updated cost estimate for construction of the new air scour system
3,662	Piscataway WWTP Bio-Energy Project	Some slippage in expenditures from FY15 into the six-year period. No change in total project cost.
1,263	Clarksburg Elevated Water Storage Facility	Costs increased due to the increased storage capacity of the facility, resulting in a revised construction estimate
(1,091)	Bi-County Water Tunnel	moving through construction, updated costs
(2,195)	Rocky Gorge Pump Station Upgrade	moving through construction, total costs up based upon revised construction estimates.
(2,476)	Potomac WFP Submerged Channel Intake	Cost changed based on XXXXXXXXXXXX. No change in scope at this time.
(3,397)	Potomac WFP outdoor Substation No. 2 Replacement	moving through construction, updated costs
(3,889)	Potomac WFP Corrosion Mitigation	6 year cost down as project moves through construction.
(10,102)	Patuxent WFP Phase II Expansion	6 year cost is down as construction moves forward. Total project cost is down slightly (-\$773k) based on latest revised construction cost estimates.
(12,418)	Large Diameter Water Pipe Rehabilitation Program	No change in scope. Cost change based on current assumed expenditure schedule.
(30,453)	Trunk Sewer Reconstruction Program	Overall project cost is up \$42.7m because of the addition of the 102-inch Anacostia pressure sewer rehab project. Six-year costs are down because ofXXXXXXXXXXXXXXXXXX
(69,023)	Blue Plains Projects	ENR project down substantially as projects move through construction. Plantwide projects up. NOTE: Mid-cycle updates expected.

Unlike in past years, with the exception of the Blue Plains projects, projects such as the Trunk Sewer Reconstruction Program and the Large Diameter Water Pipe Rehabilitation program are not experiencing dramatic fluctuations (both up and down) as seen in recent years.

There are also some cost decreases within the six-year CIP period, especially as some large projects move through construction. The Blue Plains projects are discussed separately later. The biggest cost change in the Blue Plains projects is in the ENR project, which is moving through construction. *NOTE: WSSC expects to transmit an update to the ENR project pending Commission action at its April meeting.*

WSSC also expects to transmit a Potomac Water Filtration Plant Consent Decree project pending Commission action in April. The Council discussed this consent decree issue last summer. The Consent

Decree has been signed by all parties, but is still awaiting approval by the US District Court.⁶ WSSC is assuming an order-of-magnitude estimate of \$27.3 million for this project, with about \$2.7 million in FY17. WSSC will have a better idea of the scale of the project and the impact on other Potomac WFP projects once the Audit Report (as agreed to in the Consent Decree), due January 1, 2017, is completed and approved.

The impact of the change in the Blue Plains projects and the addition of the Potomac Water Filtration Plant Consent Decree Project can be discussed by the Council during its review of the WSSC Operating Budget in early May.

REVIEW OF SELECTED PROJECTS

Blue Plains Project Costs (PDFs on ©18-23)

As noted earlier, the Blue Plains projects make up a sizable portion of WSSC's Sewer CIP. WSSC's Proposed CIP assumes \$331.8 million over the FY17-22 period. This is a decrease of \$69 million (or 17.2 percent) from the FY16-21 CIP.

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

	Approved FY16	Six-Year Total	FY17	FY18	FY19	FY20	FY21	FY22
Total Blue Plains Project Costs								
Approved FY16-21	105,834	400,797	87,599	74,381	48,655	47,290	37,038	
Proposed FY17-22		331,774	86,264	74,033	48,640	47,976	37,077	37,784
Difference		(69,023)	(1,335)	(348)	(15)	686	39	
% Change		-17.2%	-1.5%	-0.5%	0.0%	1.5%	0.1%	

DC Water's latest capital expenditure totals were approved by the DC Water Board of Directors on December 3, 2015; its latest adjustments are therefore not reflected in the WSSC CIP transmitted last fall. WSSC expects to transmit updated "mid-cycle" numbers after the WSSC Commissioners' April meeting, and these new numbers can be presented to the Council during its review of the WSSC Operating Budget in early May.

The updated numbers assume a six-year total of \$351.2 million (about \$19.5 million higher than the six-year total shown above (\$331.8 million)) in WSSC's Proposed CIP. About \$5.7 million of this increase would be funded with State aid, another \$459,000 by the City of Rockville, and about \$13.3 million by WSSC bonds. In FY17, the overall increase is estimated to be about \$2.6 million. However, State aid is assumed to be up by \$5.5 million in FY17, so WSSC bond requirements would be lower in FY17. **These changes are relatively small and can be reviewed in early May as part of the Council's review of the WSSC Operating Budget.**

Large Diameter Water Pipe Rehabilitation Program (\$274.8 million over six years, PDF on ©15-16)

This project, added to the CIP six 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

⁶ A copy of the Consent Decree submitted to the US District Court of Maryland is available for download at:
<http://www.montgomerycountymd.gov/COUNCIL/Resources/Files/REPORTS/2015-10-30FinalfiledConsentDecree.pdf>

miles are ductile iron, and 35 miles are steel. PCCP pipe is the highest priority for inspection, monitoring, repair, and replacement because PCCP pipe can fail in a more catastrophic manner than pipes made out of other materials, such as iron or steel. Both counties have experienced large PCCP pipe failures. Montgomery County experienced large pipe failures in June 2008 (Derwood), December 2008 (River Road), and March 2013 (Chevy Chase Lake). Prince George's County experienced a large pipe failure in January 2011.

Prior to this project, WSSC 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 mains,⁷ 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. WSSC's transmission system (like the smaller water distribution lines) is aging, and WSSC has moved 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.

Below is an update provided by WSSC for the Large Diameter Water Pipe Program.

The Large Diameter Water Pipe Program PCCP Segment Replacement (\$10M) and the PCCP Segment Carbon Fiber Repair (\$12.5M) have reached a steady state and are ongoing as programmed. The Non-PCCP Pipe Replacement reduction reflects recent actual lower unit costs (\$12.4M). The Large Valve Rehab Program will shift from design (\$0.6M) in FY'16, to design and construction in FY'17 (\$5.8M) with 5 valves programmed for FY'17.

The Utility Services Team will continue working on broken mains through the winter and expects to begin Large Valve construction work as early as the spring of 2016. New equipment to operate the large valves is on order and a support vehicle has been provided.

The miles of PCCP inspection and condition assessment are currently programmed at steady state of 20 miles per year through FY'22.

The major cost areas for the large diameter water pipe program:

	FY'16	FY'17
PCCP Segment Replacement	\$10.0M	\$10.0M
PCCP Segment Carbon Fiber Repair	\$12.5M	\$12.5M
Non-PCCP Pipe Replacement	\$17.4M	\$12.4M
Cathodic Protection	\$1.6M	\$1.6M
Large Valve Replacement	\$0.6M	\$5.8M
Large Dia. PCCP Inspection in Miles	20 Miles	20 Miles

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

Follow-up on status of the 234 "T" saddle junctions: WSSC continues inspecting outlets as they're encountered during annual PCCP inspections. In FY15, WSSC inspected approximately 20 miles of PCCP mains, which includes 190 outlets of all types (including sidelines outlets, air release valves, blow-offs with entry ports, and entry ports only). Out of these 190 outlets, there are 85 outlets that have their saddle plate located within 2 feet of end rings. Among the 85 outlets, WSSC found two outlets that required repair work and they were both repaired in FY'15. During FY16 inspections WSSC has inspected 23 outlets of all types and there are 5 outlets that have their saddle plate located within 2 feet of end rings. Among the 5 outlets, none require repair. As WSSC continues to inspect its PCCP mains according to the PCCP inspection schedule, all outlets will be inspected with special attention given to outlets that have saddle plates within 2 feet of end rings. Follow up actions will be taken when necessary.

This project also includes WSSC's large valve inspection and repair program (added last year). WSSC estimates that it has nearly 1,500 large diameter (greater than 16 inch diameter) valves. Below is an update on this program provided by WSSC:

The large valve inspection program is in the second year of operations. We are utilizing a contract to conduct valve exercising and repairs. Currently there are 1,473 large valves in the inventory. Beginning in April 2014 until December 2014 we inspected 583 valves. During the period January through December 2015 we inspected an additional 483 valves. We are currently projecting that the last 407 valves will be inspected by December 2016.

Between January 2015 and December 2015 WSSC carried out minor and major repairs on 149 large valves. Through December 31, 2015, non-functioning valves made up 28.7% of the total number of valves inspected. (A large valve is considered non-functioning if it falls within any of these three categories: non-locatable, non-accessible, and/or non-operability. At the time of the inspection, all issues are documented and proper action is taken to address the problem.)

The Large Diameter Water Pipe Rehabilitation Program 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 ©14)

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 FY22 (one year later than the approved PDF, which itself had reflected several years of delay). Based on the current schedule, WSSC

expects to brief both Councils on this project by the end of 2016. **As noted in the PDF, both Councils will be briefed on the project and must concur before design and construction would proceed.**

WSSC provided the following update to this project:

The Submerged Channel Intake Project is still at the planning phase (i.e. Feasibility and Environmental Assessment (EA) Reports). The delay, from FY18 to FY19, is due to the National Park Service taking much longer to review and approve the EA than we had planned. Based on the current NPS review, the EA is expected to be ready for public review by March 31, 2016. We expect to brief the two County Councils by the fall of 2016 when (if) the NPS issues the Findings-of-no-significant-impact (FONSI) document.

This project could also be affected by work ultimately required under the Potomac Water Filtration Plant Consent Decree discussed earlier.

Trunk Sewer Reconstruction Program (PDF on ©26)

Proposed FY17-22 expenditures for this project are \$483.1 million (a decrease of \$30.5 million or 5.9% from the approved six-year total of \$513.6 million).

This project was added six 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 \$1.5 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, work has extended beyond the consent decree deadline. However, all basins had work either completed or underway by the 2015 deadline.

Below is an update from WSSC on the Consent Decree.

WSSC has requested an extension to 2024 for the completion of the program. The DOJ, EPA and MDE have concurred with the request. The request has been filed and the 30-day public comment period is over. WSSC is continuing to work with the DOJ to get an extension to the Consent Decree. The previous deadline was December 7, 2017. The projected schedule presented at the January 20, 2016 Commissioners' meeting reflects the additional time requested to complete the remaining work. The schedule and the associated estimated spending assumes approval of the extension request. Meanwhile, construction work is continuing in the field.

For a detailed update on the status of Consent Decree work, please see the presentation provided to WSSC Commissioners on January 20, 2016 (©32-46).

WSSC has experienced some slippage in expenditures in the past several years. The factors causing this slippage are noted below.

Slippage has been due mainly to the delay initiating projects in Environmentally Sensitive Areas (ESA). The permitting process has been very lengthy and in the case of the National Park Service, we are still working on securing these permits. Additionally, acquisition of some Rights-Of-Entry (ROEs) has been very difficult and lengthy, sometimes requiring legal intervention. These two factors are primary reasons for requesting the extension to the Consent Decree. We expect the progress of work to accelerate as we work through the permit/ROE process.

“Information Only” Projects

Table 7: Information-Only Projects

Project	Six-Year Total	FY17	FY18	FY19	FY20	FY21	FY22
Information Only Projects							
Water Reconstruction	611,706	100,226	102,296	102,296	102,296	102,296	102,296
Sewer Reconstruction	312,101	55,811	49,114	51,794	51,794	51,794	51,794
Engineering Support Program	87,000	17,000	14,000	14,000	14,000	14,000	14,000
Energy Performance	27,190	18,210	8,540	110	110	110	110
Entrepreneurial Projects	12,338	2,891	1,723	194	3,956	770	2,804
Water Storage Facility Rehab Program	30,000	5,000	5,000	5,000	5,000	5,000	5,000
Asset Management Plan	-	-	-	-	-	-	-
Speciality Valve Vault Rehab Program	13,723	7,053	1,473	2,297	1,648	1,252	-
Advanced Metering Infrastructure	86,100	960	13,484	26,360	26,360	18,936	-
Brighton Dam Operations & Maintenance Facility and Site Improvements	5,951	-	1,357	2,588	1,645	361	-
D'Arcy Park North Relief Sewer	514	259	255	-	-	-	-
Information Only Projects Total	1,186,623	207,410	197,242	204,639	206,809	194,519	176,004

Brighton Dam Operations & Maintenance Facility and Site Improvements (PDF on ©31)

This project provides for the replacement of two existing facilities with a single new 4,100 square foot facility with office space for 14 employees. The project also will reconfigure the parking area to accommodate visiting groups, relocate the existing fuel facilities, and provide a water storage tank for fire protection and a new septic system. The total project cost is \$6.5 million, with a completion date of July 2019.

The existing facilities include a double-wide trailer dating back to the 1990s and a visitor center which is subject to insect infestation and inadequate compliance with ADA standards.

WSSC's facilities at the dam provide high visibility for security of the dam and maintenance of the property, community engagement and education, and rapid emergency response capabilities within the watershed.

Council Staff recommends approval of this new project.

Water Reconstruction Program (PDF on ©28)

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 \$611.7 million, which reflects a slight decrease of \$17 million (-2.7%) from six-year costs assumed last year. As noted by WSSC,

The \$17 million decrease is related to two components. The scope for design and construction of cathodic protection was revised from 10 miles to 6 miles per year. In addition, a larger portion of the 12 miles of in-house design was shifted from contractor to internal design.

Over the past seven 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 now up to a steady state of about 57 miles of replacement per year, which provides for a replacement cycle of slightly less than 100 years.

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.

Sewer Reconstruction Program (PDF on ©29)

This "information only" project funds comprehensive sewer system evaluations and rehabilitation programs. The six-year cost is \$312.1 million, which is up \$45.6 million (+17.1%) from the FY16-21 level of \$266.48 million. This increase reflects continued adjustments in the schedule for Phase II work and additional work identified. 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 ©30)

This project provides for the implementation of a system-wide automated meter reading infrastructure system 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 six to eight year payback.

Funding in FY14 and FY15 provided 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 (CSIS), which is needed so the system can receive the volume of data that will come from AMR meters. Below is an update from WSSC on the CSIS system and AMI schedule:

CSIS implementation process will begin this spring with expectation to go live in mid-2018. AMI draft requirements are in progress with vendor selection expected in FY2017. Installation and customer rollout (~500,000 meters distributed over nearly 1,000 square miles) currently projected for FY2019 through FY2023.

Summary of Council Staff Recommendations

Council Staff recommends approval of WSSC's Proposed FY17-22 Capital Improvements Program (CIP), with the caveat that WSSC plans to submit updated Blue Plains project costs and a new Potomac Water Filtration Plant Consent Decree project later this spring. The Council can review these items as part of its review of the WSSC Operating Budget in early May.

Attachments

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Washington Suburban Sanitary Commission (WSSC)

AGENCY DESCRIPTION

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

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

PROGRAM DESCRIPTION AND OBJECTIVES

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

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

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

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

PROGRAM CONTACTS

Contact Mark Brackett of WSSC's Budget Group at 301.206.8179 or Matt Schaeffer of the Office of Management and Budget at 240.777.2766 for more information regarding this agency's capital budget.

CAPITAL PROGRAM REVIEW

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

Agency Request

The total of \$1,548.7 million in six-year expenditures proposed by the WSSC for FY17-22 is \$103.7 million (6.3 percent) under the FY16-21 approved total of \$1,652.4 million. The decrease in six-year costs is the net result of cost changes in both the water and sewer projects with the largest cost changes seen in the Blue Plains projects and the Trunk Sewer Reconstruction Program.

The FY17-21 CIP request includes 40 ongoing, five closeout projects, and three pending closeout projects. There are no new proposed projects.

The following table compares the six-year expenditures and funding approved for FY16-21, requested by WSSC for FY17-22, and recommended by the County Executive for FY17-22.

MONTGOMERY COUNTY/PRINCE GEORGE'S COUNTY/BI-COUNTY SPLIT						
(FY17-22 Proposed CIP)						
	FY17		5-Year		Total Cost	
	\$ (000)	% of Total	\$ (000)	% of Total	\$ (000)	% of Total
Montgomery County Water Projects	12,956	2.6%	30,139	1.5%	43,095	1.0%
Montgomery County Sewer Projects	12,345	2.5%	25,847	1.3%	38,192	1.9%
Prince George's County Water Projects	66,565	13.9%	230,196	11.7%	316,433	7.2%
Prince George's County Sewer Projects	60,782	12.3%	196,152	9.9%	456,800	10.4%
Bi-County Water Projects	101,462	20.6%	523,156	26.5%	867,508	18.8%
Bi-County Sewer Projects	238,616	48.4%	969,654	49.1%	2,619,359	59.7%
TOTAL	492,725	100.0%	1,975,044	100.0%	4,386,164	100.0%
All Montgomery County Projects	25,301	5.1%	55,986	2.8%	126,064	2.9%
All Prince George's County Projects	127,347	25.8%	426,348	21.6%	773,233	17.6%
All Bi-County Projects	340,078	69.0%	1,492,710	75.6%	3,486,857	79.5%

Executive Recommendation

The County Executive recommends adoption of the FY17-22 CIP as proposed by WSSC.

HIGHLIGHTS

- Continue construction of improvements to wastewater treatment and solids handling facilities at the regional Blue Plains Advanced Wastewater Treatment Plant in order to achieve environmental goals and improve efficiency.
- Continue the Large Diameter Water Pipe & Large Valve Rehabilitation Program to repair, replace, monitor, and protect large cast iron and pre-stressed concrete cylinder pipe (PCCP) water mains and rehabilitate large valves.
- Continue the Trunk Sewer Reconstruction Program to inspect, evaluate and repair sewer mains in environmentally sensitive areas.
- Continue a high level of replacement of small diameter water mains by maintaining the FY16 measure of 57 miles in FY17.

SPENDING CONTROL LIMITS

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

While the spending limits technically apply only to the first year of the six-year program, the purpose of the limits includes controlling debt, debt service, and rate increases over the longer term. The FY17 spending control limits adopted by the Montgomery County Council are shown below with their outyear projections. The first year of the Commission's proposed CIP is consistent with the approved FY17 spending control limits shown below, as is the County Executive's recommended CIP for WSSC.

FY17 WSSC SPENDING CONTROL LIMITS ADOPTED BY THE MONTGOMERY COUNTY COUNCIL (AND OUTYEAR PROJECTIONS)						
	FY17	FY18	FY19	FY20	FY21	FY22
New Debt Requirement (\$000)	\$476,810	\$462,345	\$396,326	\$365,349	\$303,170	\$238,095
Total W/S Operating Budget (\$000)	\$729,168	\$768,561	\$818,731	\$866,077	\$908,595	\$944,876
Debt Service (\$000)	\$250,762	\$273,606	\$296,463	\$317,287	\$333,817	\$343,669
Average Rate Increase	3.5%	10.3%	7.6%	6.8%	5.8%	4.5%

Source: Montgomery County Council Resolution 18-303 and WSSC Budget Group.

WSSC'S LEVEL OF BONDED INDEBTEDNESS

Debt Service

The Executive and Council monitor the WSSC's bonded indebtedness and debt service level. Total outstanding water and sewer bond debt has risen 96.2 percent since FY09, and total water and sewer debt service is up 57.3 percent over the same period, as shown in the following table. However debt service as a percentage of water and sewer operating expenditures remained relatively stable between FY09 and FY15, averaging 34.8 percent.

WSSC BONDED INDEBTEDNESS AND DEBT SERVICE							
(\$ in Millions)	ACTUAL	ACTUAL	ACTUAL	ACTUAL	ACTUAL	ESTIMATED	
	FY11	FY12	FY13	FY14	FY15	FY16	
End of Fiscal Year - Total Outstanding Bond Debt (including Storm Water Drainage Bonds)	\$1,421.8	\$1,556.8	\$1,678.3	\$1,952.5	\$2,171.4	\$2,456.8	
Outstanding Water and Sewer Bond Debt	\$1,076.8	\$1,240.1	\$1,595.5	\$1,696.7	\$1,747.5	\$2,059.0	
Total Debt Service - All Operating Funds	\$239.6	\$273.0	\$277.6	\$249.1	\$248.0	\$255.3	
Debt Service as a % of Total Operating Exp.	41.8%	39.3%	39.1%	40.6%	38.0%	36.0%	
Debt Service in Water/Sewer Operating Exp.	\$152.5	\$175.7	\$184.2	\$210.8	\$227.0	\$235.6	
Water/Sewer Debt Service as a % of Total Water/Sewer Operating Expenditures	31.5%	39.0%	34.2%	36.7%	35.5%	34.3%	

Source: WSSC Budget Group

The debt service ratio is projected to be 34.4 percent in FY17 and is not projected to go over 40 percent during the next six fiscal years. WSSC continues to meet the Commission's goal to keep the debt service ratio under 40 percent.

PROJECTED WSSC DEBT SERVICE RATIO UNDER THE COUNTY'S APPROVED SPENDING CONTROL LIMITS						
	FY17	FY18	FY19	FY20	FY21	FY22
Debt Service as a % of Total Water and Sewer Operating Expenditures	34.4%	35.6%	36.2%	36.6%	36.7%	36.4%

Source: WSSC Budget Group

Debt Capacity

State law provides for the option of a tax levy against all assessable property in the Washington Suburban Sanitary District by Montgomery and Prince George's Counties to pay for the principal and interest on WSSC bonds. This provision, which would be exercised only if requested by the WSSC, does not constitute a pledge of the full faith and credit of the two counties. However, WSSC bonds are part of the overlapping debt of County agencies. As of June 30, 2014, WSSC debt represented 57.8 percent of Montgomery County's gross overlapping debt. The amount of debt that the WSSC issues is therefore a factor in rating agency assessments of the credit worthiness of Montgomery County. In addition, increasing levels of debt service can lead to increases in the combined water and sewer rate.

"INFORMATION ONLY" PROJECTS

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

The FY17-22 "Information Only" projects include the Water and Sewer Reconstruction projects, Engineering Support Program, Advanced Metering Infrastructure, and Entrepreneurial Projects.

The total FY17-22 budget for the Information Only projects is \$1,186.6 million, a 3.8 percent increase from the \$1,143.3 million approved for the FY16-21 CIP. This increase is the net result of cost changes throughout the projects.

Total proposed FY17-22 spending on the Water and Sewer Reconstruction "Information Only" projects will increase by \$28.6 million (3.2 percent). The accompanying metrics for miles of water main replacement and sewer main rehabilitation can be seen below in the following table.

SMALL WATER AND SEWER MAIN RECONSTRUCTION INCLUDED IN WSSC'S PROPOSED FY17-22 CIP								
	Approved	Proposed FY17-22						FY17-22
	FY16	FY17	FY18	FY19	FY20	FY21	FY22	Total
Water Main Replacement (mi.)	57	57	57	57	57	57	57	342
Sewer Main Rehabilitation (mi.)	2	17	11	13	13	13	13	80

Source: WSSC Budget Group

PROGRAM FUNDING

The WSSC Capital Improvements Program is funded through a variety of sources described below.

WSSC Bonds

The WSSC raises revenue for CIP projects by issuing water and sewer bonds. These bonds are amortized through periodic charges to the users of water and sewer services. Bond funding for the FY17-22 CIP, as recommended by the Executive, is \$1,403.8 million.

System Development Charge

The System Development Charge (SDC) is a charge to new development to pay for the part of the CIP which is needed to accommodate growth. The WSSC collects SDC revenue from charges to builders based on the number and type of plumbing fixtures installed in new construction projects. The Executive recommends that \$6.4 million in SDC funds be used to fund growth projects in FY17-22.

State Aid

The total State Aid budgeted for the FY17-22 CIP and recommended by the Executive is \$21.8 million. WSSC asserts that all Commission projects receiving State Aid conform to the requirements of local plans, as required by the Maryland Economic Growth, Resource Protection and Planning Act.

Municipal Financing

The WSSC CIP contains projects in which neighboring jurisdictions such as the District of Columbia and the City of Rockville join the Commission in financing the construction of sewerage facilities serving the metropolitan area. These jurisdictions contribute an agreed-upon share of the project cost. A total of \$15.9 million in project expenditures is recommended to be financed by these jurisdictions during FY17-22.

Contributions

When the actual costs of water and sewerage facilities required to serve new development are estimated to exceed expected revenues, the difference may be financed by developers in the form of contributions. Contributions toward CIP projects are estimated at \$30.0 million for FY17-22.

STATUTORY AUTHORITY

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

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

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

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

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

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 Piscataway WWTP Bio-Energy projects to promote and develop green energy sources;
- Local Government Contributions – payments to the WSSC for co-use of regional facilities, or funding provided by county governments for projects they are sponsoring;
- PAYGO – when budgeted, the practice of using current revenues to the extent practical to help fund the capital program, thereby reducing the need for debt financing;
- SDC – anticipated revenue from the System Development Charge (SDC); and
- Contribution/Other – projects funded by Applicants for growth projects where the County Councils have directed that no WSSC rate-supported debt be used to pay for the project.

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 \$254 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, either SDC supported or rate-supported water/sewer bonds may be used to close any gap.

The Maryland General Assembly, in 1993, first approved legislation authorizing the Montgomery and Prince George's County Councils to establish, and the WSSC to impose, a System Development Charge. This is a charge on new development to pay for that part of the Commission's Capital Improvements Program needed to accommodate growth in the WSSC's customer base. In accordance with the enabling legislation, the Councils approved, and the Commission began to phase in, this charge beginning in FY'94. The SDC charge was 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 and properties used primarily for recreational and educational programs and services to youth. For FY'16, the Montgomery County and Prince George's Councils increased the maximum allowable charge by the 1.0% increase in the CPI-U, but maintained the current rate of \$203 per fixture unit by Resolution Numbers 18-162 approved May 21, 2015, and, CR-25-2015 approved May 28, 2015, respectively. The Commission adopted the Councils' actions by Resolution Number 2015-2084 dated June 17, 2015. 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 \$33.2 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, it is anticipated that 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 currently anticipated that no significant additional growth projects will evolve in the later years of the six-year period. (A listing of SDC-eligible projects is included in Appendix D.)

An estimate of the gap or surplus for each fiscal year is presented in the table that follows. To estimate the gap/surplus for an individual fiscal year, it is assumed that 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'17</u>	<u>FY'18</u>	<u>FY'19</u>	<u>FY'20</u>	<u>FY'21</u>	<u>FY'22</u>	<u>6 YEAR TOTAL</u>
CIP GROWTH EXPENDITURES	\$97.8	\$89.5	\$40.4	\$6.2	\$6.0	\$14.3	\$254.2
Expenditures Adjusted for Completion	78.2	91.2	50.2	13.1	6.0	12.6	251.3
FUNDING SOURCES							
Privately Funded Projects	15.8	16.0	7.4	1.7	0.7	0.9	42.5
Estimated SDC Revenue	29.8	30.0	32.0	32.0	34.0	34.0	191.8
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	\$42.9	\$43.3	\$36.7	\$31.0	\$32.0	\$32.2	\$218.1
FUNDING GAP							
ADJUSTED FOR COMPLETION	\$35.3	\$47.9	\$13.5	(\$17.9)	(\$26.0)	(\$19.6)	\$33.2

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 \$5.3 million for Montgomery County and \$2.9 million for Prince George's County through June 30, 2015.

Expenditures

The FYs 2017-2022 Capital Improvements Program includes 82 projects for a grand total of \$4.4 billion dollars. Expenditures for the six-year program period are estimated at \$2.0 billion. FY'17 expenditures are estimated at \$492.7 million, which is \$53.9 million less than the funding level approved for FY'16. Of the \$492.7 million, \$181.0 million is for the Water Program and \$311.7 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 \$42.8 million, with approximately \$19.8 million programmed in FY'17. There is one new project in the Information Only section of the CIP. New projects are shown on the New Projects Listing near the end of this section.

A table comparing the Adopted FYs 2016-2021 CIP to the Proposed FYs 2017-2022 CIP follows:

FIGURE 3

WSSC PROPOSED FYS 2017-22 CIP

SIX-YEAR PROGRAM EXPENDITURES BY MAJOR CATEGORY*

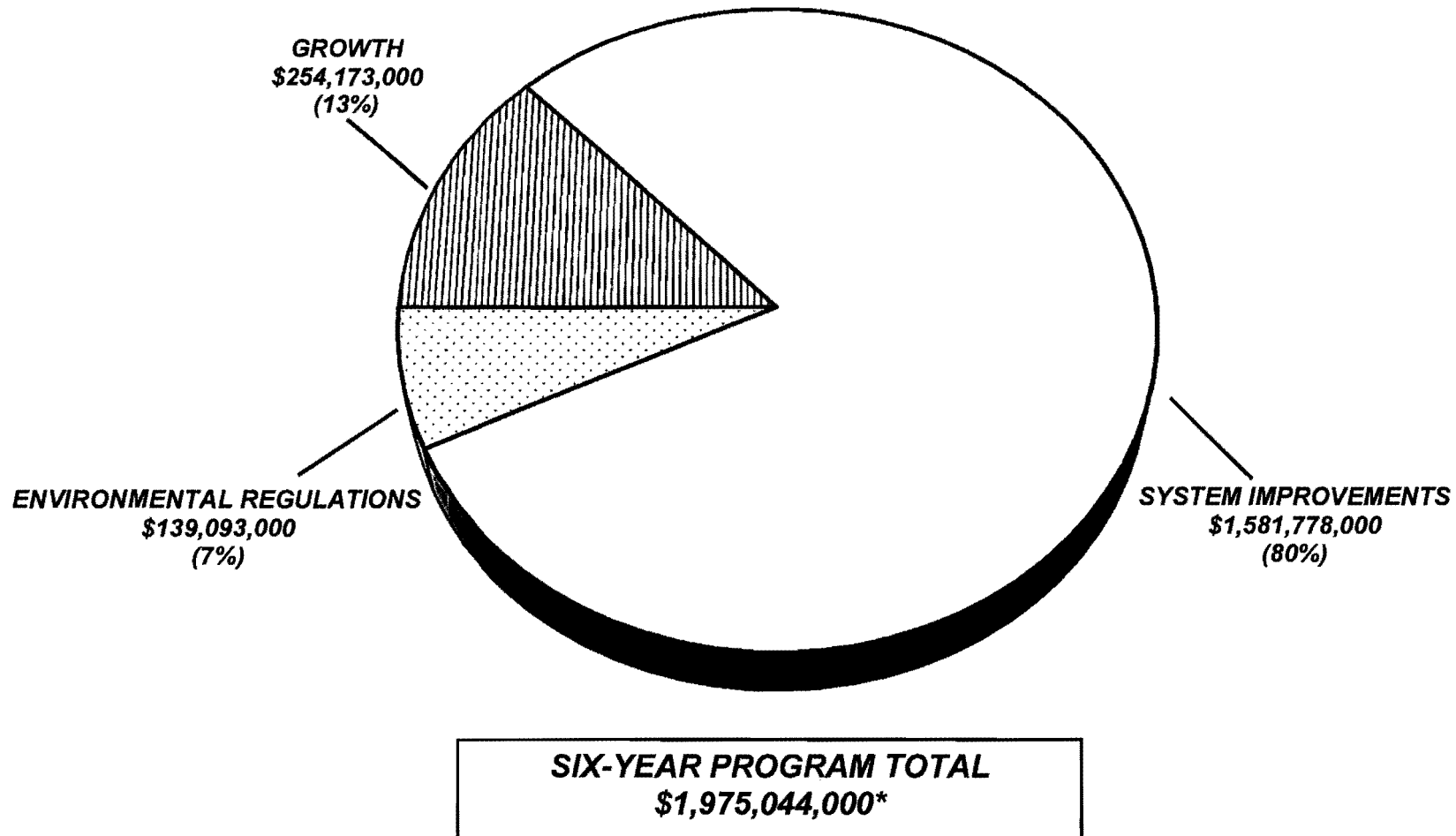
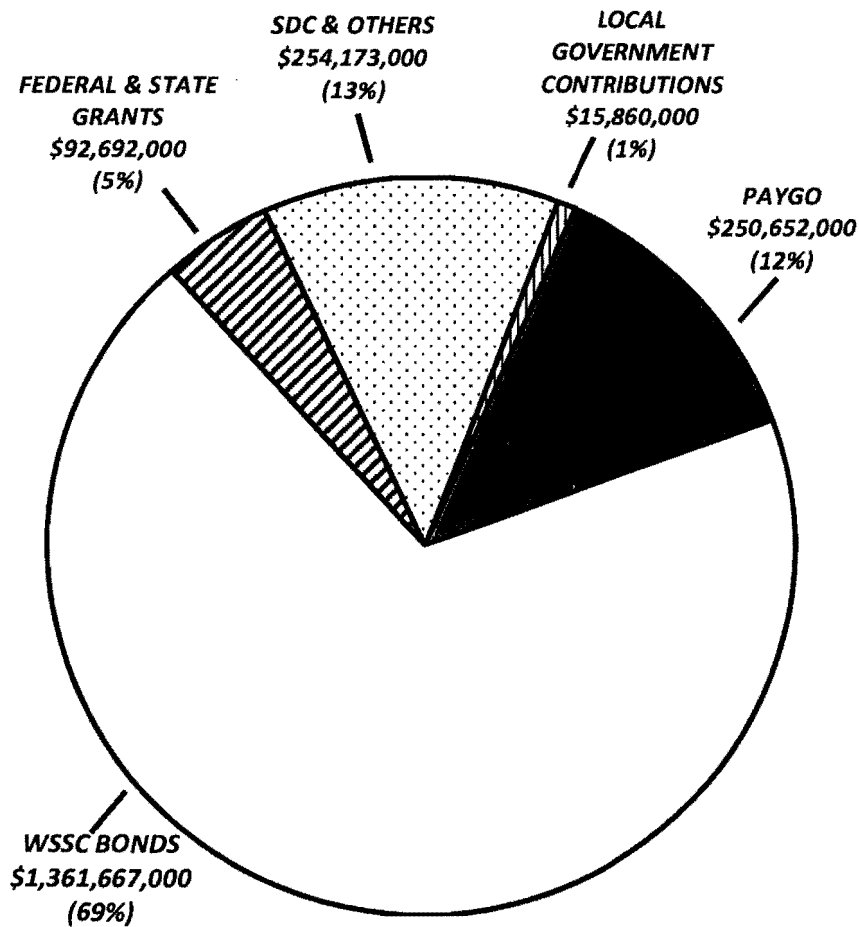


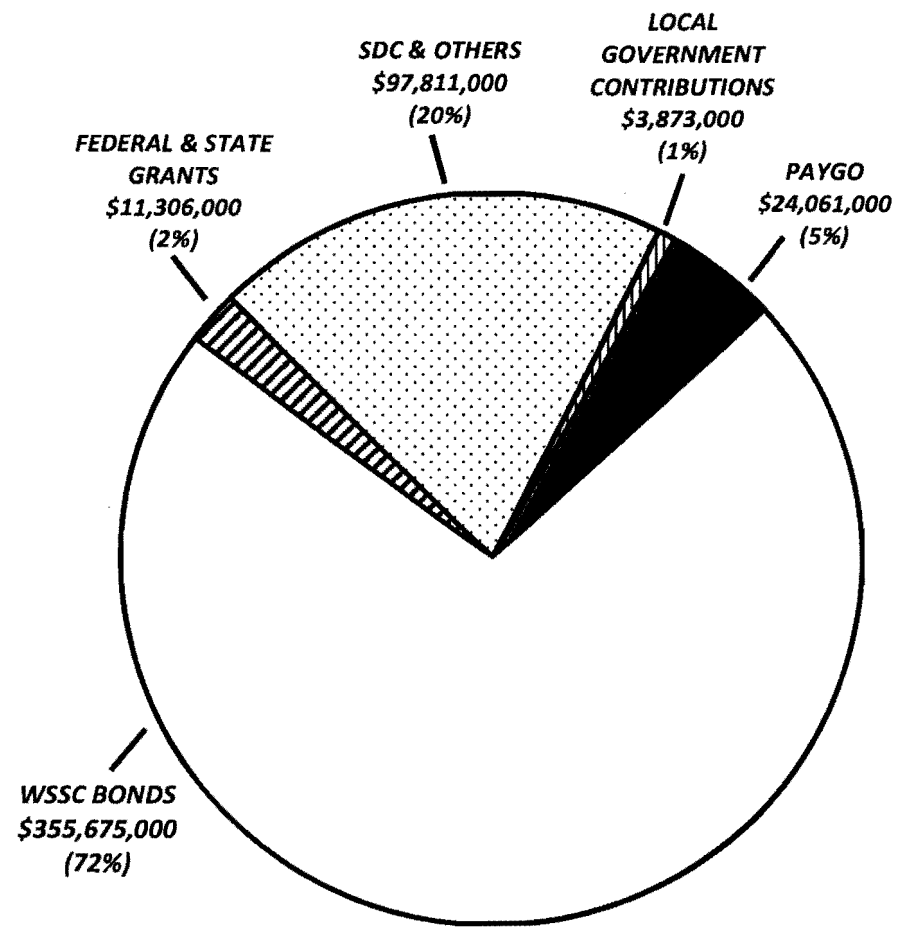
FIGURE 4

WSSC PROPOSED FYS 2017-22 CIP

FUNDING BY SOURCE*



SIX-YEAR PROGRAM TOTAL
\$1,975,044,000*



FY'17 BUDGET YEAR TOTAL
\$492,726,000*

*Totals do not include expenditures for Information Only Projects in the six-year program and budget year, respectively.

FINANCIAL SUMMARY

DATE: October 1, 2015

(ALL FIGURES IN THOUSANDS)

TOTAL WSSC CIP

AGENCY NUMBER	PROJECT NAME	EST. TOTAL COST	EXPEND THRU 15	EST. EXPEND 16	TOTAL SIX YEARS	EXPENDITURE SCHEDULE						BEYOND SIX YEARS	PDF PAGE NUM
						YR 1 17	YR 2 18	YR 3 19	YR 4 20	YR 5 21	YR 6 22		
	Montgomery County Water Projects	43,936	8,778	5,019	30,139	12,956	15,676	1,507	0	0	0	0	1-1
	Prince George's County Water Projects	316,433	36,420	29,393	230,196	66,565	67,451	34,185	11,974	17,223	32,798	20,424	5-1
	Bi-County Water Projects	867,508	267,328	77,024	523,156	101,462	95,997	108,178	89,791	71,930	55,798	0	3-1
	TOTAL WATER PROJECTS	1,227,877	312,526	111,436	783,491	180,983	179,124	143,870	101,765	89,153	88,596	20,424	
	Montgomery County Sewerage Projects	82,128	51,103	5,178	25,847	12,345	10,415	3,041	46	0	0	0	2-1
	Prince George's County Sewerage Projects	456,800	175,751	82,491	196,152	60,782	65,680	39,249	16,942	11,313	2,186	2,406	6-1
	Bi-County Sewerage Projects	2,619,359	1,384,251	212,960	969,554	238,616	225,699	168,313	169,368	105,814	61,744	52,594	4-1
	TOTAL SEWERAGE PROJECTS	3,158,287	1,611,105	300,629	1,191,553	311,743	301,794	210,603	186,356	117,127	63,930	55,000	
	TOTAL WSSC PROGRAM	4,386,164	1,923,631	412,065	1,975,044	492,726	480,918	354,473	288,121	206,280	152,526	75,424	
	Total Information Only Projects	1,459,597	60,335	184,255	1,186,623	208,767	198,473	203,696	205,525	194,158	176,004	28,384	7-1

FINANCIAL SUMMARY

(ALL FIGURES IN THOUSANDS)

DATE: October 1, 2015

MONTGOMERY COUNTY WATER PROJECTS

AGENCY NUMBER	PROJECT NAME	EST. TOTAL COST	EXPEND THRU 15	EST. EXPEND 16	TOTAL SIX YEARS	EXPENDITURE SCHEDULE						BEYOND SIX YEARS	PDF PAGE NUM
						YR 1 17	YR 2 18	YR 3 19	YR 4 20	YR 5 21	YR 6 22		
W-3.02	Olney Standpipe Replacement	9,284	1,334	532	7,418	3,560	3,560	298	0	0	0	0	1-2
W-46.14	Clarksburg Area Stage 3 Water Main, Parts 1, 2 & 3	5,900	2,832	805	2,263	1,751	446	66	0	0	0	0	1-4
W-46.15	Clarksburg Elevated Water Storage Facility	5,982	311	276	5,395	1,285	3,522	588	0	0	0	0	1-5
W-46.24	Clarksburg Area Stage 3 Water Main, Part 4	3,791	1,434	495	1,862	1,149	630	83	0	0	0	0	1-6
W-46.25	Clarksburg Area Stage 3 Water Main, Part 5	1,624	0	1,425	199	147	52	0	0	0	0	0	1-7
W-90.04	Brink Zone Reliability Improvements	6,874	295	529	6,050	1,438	4,140	472	0	0	0	0	1-8
W-138.02	Shady Grove Standpipe Replacement	9,064	1,368	744	6,952	3,626	3,326	0	0	0	0	0	1-9
	Projects Pending Close-Out	1,417	1,204	213	0	0	0	0	0	0	0	0	1-10
	TOTAL MONTGOMERY COUNTY WATER PROJECTS	43,936	8,778	5,019	30,139	12,956	15,676	1,507	0	0	0	0	

FINANCIAL SUMMARY

(ALL FIGURES IN THOUSANDS)

DATE: October 1, 2015

MONTGOMERY COUNTY SEWER PROJECTS

AGENCY NUMBER	PROJECT NAME	EST. TOTAL COST	EXPEND THRU 15	EST. EXPEND 16	TOTAL SIX YEARS	EXPENDITURE SCHEDULE						BEYOND SIX YEARS	PDF PAGE NUM
						YR 1 17	YR 2 18	YR 3 19	YR 4 20	YR 5 21	YR 6 22		
S-25.03	Twinbrook Commons Sewer	1,004	607	59	338	159	87	46	46	0	0	0	2-2
S-25.04	Mid-Pike Plaza Sewer Main, Phase 1	4,053	3,730	199	124	124	0	0	0	0	0	0	2-3
S-25.05	Mid-Pike Plaza Sewer Main, Phase 2	6,094	119	1,434	4,541	3,107	1,434	0	0	0	0	0	2-4
S-53.21	Seneca WWTP Enhanced Nutrient Removal	13,975	13,833	120	22	22	0	0	0	0	0	0	2-6
S-53.22	Seneca WWTP Expansion, Part 2	30,484	29,955	507	22	22	0	0	0	0	0	0	2-7
S-84.47	Clarksburg Triangle Outfall Sewer, Part 2	2,539	1,126	782	631	555	76	0	0	0	0	0	2-9
S-84.60	Cabin Branch Wastewater Pumping Station	2,342	12	13	2,317	449	1,566	302	0	0	0	0	2-10
S-84.61	Cabin Branch WWPS Force Main	424	0	17	407	143	240	24	0	0	0	0	2-11
S-84.65	Tapestry Wastewater Pumping Station	1,354	65	500	789	461	328	0	0	0	0	0	2-12
S-84.66	Tapestry WWPS Force Main	134	13	54	67	37	30	0	0	0	0	0	2-13
S-85.21	Shady Grove Station Sewer Augmentation	2,254	23	305	1,926	1,181	745	0	0	0	0	0	2-14
S-103.16	Cabin John Trunk Sewer Relief	15,113	21	429	14,663	6,085	5,909	2,669	0	0	0	0	2-15
	Projects Pending Close-Out	2,358	1,599	759	0	0	0	0	0	0	0	0	2-16
	TOTAL MONTGOMERY COUNTY SEWER PROJECTS	82,128	51,103	5,178	25,847	12,345	10,415	3,041	46	0	0	0	

FINANCIAL SUMMARY

DATE: October 1, 2015

(ALL FIGURES IN THOUSANDS)

BI-COUNTY WATER PROJECTS

AGENCY NUMBER	PROJECT NAME	EST. TOTAL COST	EXPEND THRU 15	EST. EXPEND 16	TOTAL SIX YEARS	EXPENDITURE SCHEDULE						BEYOND SIX YEARS	PDF PAGE NUM
						YR 1 17	YR 2 18	YR 3 19	YR 4 20	YR 5 21	YR 6 22		
W-73.19	Potomac WFP Outdoor Substation No. 2 Replacement	15,562	1,599	4,654	9,309	6,982	2,327	0	0	0	0	0	3-3
W-73.21	Potomac WFP Corrosion Mitigation	15,508	1,235	12,034	2,239	2,239	0	0	0	0	0	0	3-4
W-73.22	Potomac WFP Pre-Filter Chlorination & Air Scour Improvements	11,200	1,070	901	9,229	2,564	6,152	513	0	0	0	0	3-5
W-73.30	Potomac WFP Submerged Channel Intake	80,537	3,938	315	76,284	1,050	3,098	24,360	24,308	20,055	3,413	0	3-6
W-73.32	Potomac WFP Main Zone Pipeline	35,009	397	402	34,210	353	605	20,052	13,200	0	0	0	3-7
W-127.01	Bi-County Water Tunnel	143,855	139,625	4,198	32	32	0	0	0	0	0	0	3-8
W-139.02	Duckett & Brighton Dam Upgrades	29,692	11,926	4,606	13,160	8,773	4,387	0	0	0	0	0	3-10
W-161.01	Large Diameter Water Pipe & Large Valve Rehabilitation Program	417,169	79,841	28,927	308,401	48,092	51,443	52,751	51,865	51,865	52,385	0	3-11
W-172.05	Patuxent WFP Phase II Expansion	64,838	10,978	16,466	37,394	17,778	14,744	4,872	0	0	0	0	3-14
W-172.07	Patuxent Raw Water Pipeline	32,436	12,264	42	20,130	5,610	8,910	5,610	0	0	0	0	3-15
W-172.08	Rocky Gorge Pump Station Upgrade	19,582	4,455	3,782	11,345	7,564	3,781	0	0	0	0	0	3-16
W-202.00	Land & Rights-of-Way Acquisition - Bi-County Water	2,120	0	697	1,423	425	550	20	418	10	0	0	3-17
TOTAL BI-COUNTY WATER PROJECTS		867,508	267,328	77,024	523,156	101,462	95,997	108,178	89,791	71,930	55,798	0	

POTOMAC WATER FILTRATION PLANT PROJECTS
(costs in thousands)

PROJECT NUMBER	PROJECT NAME	ADOPTED FY'16 TOTAL COST	PROPOSED FY'17 TOTAL COST	CHANGE \$	CHANGE %	SIX-YEAR COST	COMPLETION DATE (est)
W-73.19	Potomac WFP Outdoor Substation No. 2 Replacement	\$14,636	\$15,562	\$926	6.3%	\$9,309	December 2017
W-73.21	Potomac WFP Corrosion Mitigation	15,556	15,508	(48)	-0.3%	2,239	December 2016
W-73.22	Potomac WFP Pre-Filter Chlorination & Air Scour Improvements	7,176	11,200	4,024	56.1%	9,229	July 2018
W-73.30	Potomac WFP Submerged Channel Intake	82,638	80,537	(2,101)	-2.5%	76,284	FY 2022
	TOTALS	\$120,006	\$122,807	\$2,801	2.3%	\$97,061	

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: There was a net increase in cost largely due to updated estimates for construction of the new air scour system (W-73.22).

Potomac WFP Submerged Channel Intake

A. Identification and Coding Information		
Agency Number	Project Number	Update Code
W-73.30	033812	Change

PDF Date	October 1, 2015
Date Revised	

Pressure Zones	Potomac WFP HGPOWF;
Drainage Basins	
Planning Areas	Bi-County;

B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'15	Estimate FY'16	Total 6 Years	Year 1 FY'17	Year 2 FY'18	Year 3 FY'19	Year 4 FY'20	Year 5 FY'21	Year 6 FY'22	Beyond 6 Years
Planning, Design & Supervision	10,188	3,938	300	5,950	1,000	1,250	1,200	1,150	1,100	250	
Land											
Site Improvements & Utilities											
Construction	66,700			66,700		1,700	22,000	22,000	18,000	3,000	
Other	3,649		15	3,634	50	148	1,160	1,158	955	163	
Total	80,537	3,938	315	76,284	1,050	3,098	24,360	24,308	20,055	3,413	

C. Funding Schedule (000's)

WSSC Bonds	80,537	3,938	315	76,284	1,050	3,098	24,360	24,308	20,055	3,413	
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D. Description & Justification

DESCRIPTION

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

JUSTIFICATION

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

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

COST CHANGE

Not applicable.

OTHER

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

COORDINATION

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

Coordinating Projects: Not Applicable

E. Annual Operating Budget Impact (000's)

		FY of Impact
Staff		
Maintenance		
Other Project Costs		
Debt Service	\$5,541	23
Total Cost	\$5,541	23
Impact on Water and Sewer Rate	\$0.11	23

F. Approval and Expenditure Data (000's)

Date First in Program	FY 04
Date First Approved	FY 03
Initial Cost Estimate	936
Cost Estimate Last FY	82,638
Present Cost Estimate	80,537
Approved Request Last FY	1,100
Total Expense & Encumbrances	3,938
Approval Request Year 1	1,050

G. Status Information

Land Status	Land and R/W to be acquired
Project Phase	Planning
Percent Complete	95%
Est Completion Date	FY 2022

Growth	
System Improvement	100%
Environmental Regulation	
Population Served	
Capacity	

H. Map

MAP NOT AVAILABLE

Large Diameter Water Pipe & Large Valve Rehabilitation Program

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

PDF Date	October 1, 2015
Date Revised	

Pressure Zones	
Drainage Basins	
Planning Areas	Bi-County;

B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'15	Estimate FY'16	Total 6 Years	Year 1 FY'17	Year 2 FY'18	Year 3 FY'19	Year 4 FY'20	Year 5 FY'21	Year 6 FY'22	Beyond 6 Years
Planning, Design & Supervision	34,395	7,818	3,261	23,316	3,842	3,710	3,743	3,842	3,842	4,337	
Land											
Site Improvements & Utilities											
Construction	366,662	72,023	24,241	270,398	41,960	45,283	46,496	45,553	45,553	45,553	
Other	16,112		1,425	14,687	2,290	2,450	2,512	2,470	2,470	2,495	
Total	417,169	79,841	28,927	308,401	48,092	51,443	52,751	51,865	51,865	52,385	

C. Funding Schedule (000's)

WSSC Bonds	417,169	79,841	28,927	308,401	48,092	51,443	52,751	51,865	51,865	52,385	
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D. Description & Justification

DESCRIPTION

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

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

JUSTIFICATION

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

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

In July 2013, WSSC's Acoustic Fiber Optic monitoring system identified breaking wires in a 54-inch diameter PCCP water transmission main in the Forestville area of Prince George's County. Upon attempting to close nearby valves to isolate the failing pipe for repair, WSSC crews encountered an inoperable valve with a broken gear, requiring the crew to drop back to the next available valve. This dropping-back to another valve would block one of the major water mains serving Prince George's county, significantly enlarging the shutdown area and reduce our capacity to supply water to over 100,000 residents. In order to minimize the risk associated with inoperable large valves and possible water outages, the large valve inspection and repair program was initiated to systematically inspect, exercise, repair and replace (when necessary) any of the 1500 large diameter valves and vaults located throughout the system.

Utility Wide Master Plan, (December 2007); 30 Year Infrastructure Plan (2007); FY2016 Water Transmission System Asset Management Plan (February 2014); WSSC FY 2017 Buried Water Asset Systems Asset Management Plan (December 2014);

COST CHANGE

Not applicable.

E. Annual Operating Budget Impact (000's)

		FY of Impact
Staff		
Maintenance		
Other Project Costs		
Debt Service	\$28,703	23
Total Cost	\$28,703	23
Impact on Water and Sewer Rate	\$0.58	23

F. Approval and Expenditure Data (000's)

Date First in Program	FY 11
Date First Approved	FY 11
Initial Cost Estimate	60,000
Cost Estimate Last FY	411,331
Present Cost Estimate	417,169
Approved Request Last FY	48,293
Total Expense & Encumbrances	79,841
Approval Request Year 1	48,092

G. Status Information

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

Growth	
System Improvement	100%
Environmental Regulation	
Population Served	
Capacity	

H. Map

MAP NOT AVAILABLE

15

Large Diameter Water Pipe & Large Valve Rehabilitation Program

OTHER

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

COORDINATION

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

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

DATE: October 1, 2015

FINANCIAL SUMMARY

(ALL FIGURES IN THOUSANDS)

BI-COUNTY SEWER PROJECTS

AGENCY NUMBER	PROJECT NAME	EST. TOTAL COST	EXPEND THRU 15	EST. EXPEND 16	TOTAL SIX YEARS	EXPENDITURE SCHEDULE						BEYOND SIX YEARS	PDF PAGE NUM
						YR 1 17	YR 2 18	YR 3 19	YR 4 20	YR 5 21	YR 6 22		
S-22.06	Blue Plains WWTP: Liquid Train Projects, Part 2	391,324	296,766	8,008	80,962	15,901	19,878	20,107	9,521	6,579	8,976	5,588	4-3
S-22.07	Blue Plains WWTP: Biosolids Management, Part 2	409,584	375,478	4,558	29,262	8,401	5,541	2,720	2,784	7,884	1,932	286	4-4
S-22.09	Blue Plains WWTP: Plant-wide Projects	298,436	191,793	5,977	74,502	6,766	6,646	8,688	21,577	14,176	16,649	26,164	4-5
S-22.10	Blue Plains WWTP: Enhanced Nutrient Removal	389,343	246,917	65,284	73,333	37,105	29,689	3,392	2,267	544	336	3,809	4-6
S-22.11	Blue Plains: Pipelines & Appurtenances	181,910	69,441	22,007	73,715	18,091	12,279	13,733	11,827	7,894	9,891	16,747	4-7
S-103.02	Piscataway WWTP Bio-Energy Project	144,020	1,362	998	141,660	4,254	13,252	47,934	55,440	20,780	0	0	4-8
S-170.08	Septage Discharge Facility Planning & Implementation	14,478	919	751	12,808	2,455	3,728	3,779	2,135	711	0	0	4-10
S-170.09	Trunk Sewer Reconstruction Program	790,060	201,575	105,357	483,128	145,521	134,664	67,950	63,807	47,236	23,950	0	4-11
S-203.00	Land & Rights-Of-Way Acquisition - Bi County Sewer	204	0	20	184	122	22	10	10	10	10	0	4-12
	TOTAL BI-COUNTY SEWER PROJECTS	2,619,359	1,384,251	212,960	969,554	238,616	225,699	168,313	169,368	105,814	61,744	52,594	

BLUE PLAINS WASTEWATER TREATMENT PLANT PROJECTS
(costs in thousands)

PROJECT NUMBER	PROJECT NAME	ADOPTED FY'16 TOTAL COST	PROPOSED FY'17 TOTAL COST	CHANGE \$	CHANGE %	SIX-YEAR COST	COMPLETION DATE (est)
S-22.06	Blue Plains WWTP: Liquid Train Projects, Part 2	\$345,636	\$391,324	\$45,688	13.2%	\$80,962	On-Going
S-22.07	Blue Plains WWTP: Biosolids Management, Part 2	409,909	409,584	(325)	-0.1%	29,262	On-Going
S-22.09	Blue Plains WWTP: Plant-wide Projects	286,513	298,436	11,923	4.2%	74,502	On-Going
S-22.10	Blue Plains WWTP: Enhanced Nutrient Removal	386,171	389,343	3,172	0.8%	73,333	On-Going
S-22.11	Blue Plains: Pipelines & Appurtenances	178,731	181,910	3,179	1.8%	73,715	On-Going
	TOTALS	\$1,606,960	\$1,670,597	\$63,637	4.0%	\$331,774	

Summary: These five projects, with an estimated total cost of \$1.7 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 38% 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.

Blue Plains WWTP: Liquid Train Projects, Part 2

A. Identification and Coding Information

Agency Number	Project Number	Update Code
S-22.06	954811	Change

PDF Date	October 1, 2015
Date Revised	

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

3. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'15	Estimate FY'16	Total 6 Years	Year 1 FY'17	Year 2 FY'18	Year 3 FY'19	Year 4 FY'20	Year 5 FY'21	Year 6 FY'22	Beyond 6 Years
Planning, Design & Supervision	117,115	96,807	3,204	15,726	4,289	3,877	2,945	2,139	1,360	1,116	1,378
Land											
Site Improvements & Utilities											
Construction	273,274	199,959	4,725	64,435	11,455	15,804	16,963	7,288	5,154	7,771	4,155
Other	935		79	801	157	197	199	94	65	89	55
Total	391,324	296,766	8,008	80,962	15,901	19,878	20,107	9,521	6,579	8,976	5,588

C. Funding Schedule (000's)

WSSC Bonds	369,842	280,475	7,569	76,517	15,028	18,787	19,003	8,998	6,218	8,483	5,281
City of Rockville	21,482	16,291	439	4,445	873	1,091	1,104	523	361	493	307

D. Description & Justification

DESCRIPTION

This project provides funding for WSSC's share of Blue Plains liquid train projects for which construction began after June 30, 1993. Major projects include: Dual Purpose Sedimentation Basins Rehabilitation, Headworks HVAC Rehabilitation, Raw Wastewater Pumping Station No. 2, Primary Treatment Facilities Phase II, and Grit Chamber Facilities Phase II.

JUSTIFICATION

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

The Blue Plains Intermunicipal Agreement of 2012; the DCWASA Master Plan (1998); and the DCWASA Approved FY 2015 Capital Improvements Program.

COST CHANGE

Cost increase is primarily due to the addition of new projects for Replace/Upgrade Primary Treatment Mechanisms, Grit Chambers 1 & 2 Upgrades, Secondary East & West Upgrades, and Nitrification Reactor/Sedimentation Upgrades.

OTHER

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

COORDINATION

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

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

E. Annual Operating Budget Impact (000's)

	FY of Impact
Staff	
Maintenance	
Other Project Costs	
Debt Service	\$25,447
Total Cost	\$25,447
Impact on Water and Sewer Rate	\$0.57

F. Approval and Expenditure Data (000's)

Date First in Program	FY 95
Date First Approved	FY 95
Initial Cost Estimate	69,745
Cost Estimate Last FY	345,636
Present Cost Estimate	391,324
Approved Request Last FY	8,008
Total Expense & Encumbrances	296,766
Approval Request Year 1	15,901

G. Status Information

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

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

H. Map

MAP NOT AVAILABLE

Blue Plains WWTP: Biosolids Management, Part 2

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

PDF Date	October 1, 2015
Date Revised	

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

B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'15	Estimate FY'16	Total 6 Years	Year 1 FY'17	Year 2 FY'18	Year 3 FY'19	Year 4 FY'20	Year 5 FY'21	Year 6 FY'22	Beyond 6 Years
Planning, Design & Supervision	139,865	132,179	1,315	6,353	1,645	1,144	511	947	1,425	681	18
Land											
Site Improvements & Utilities											
Construction	269,381	243,299	3,198	22,619	6,673	4,342	2,182	1,809	6,381	1,232	265
Other	338		45	290	83	55	27	28	78	19	3
Total	409,584	375,478	4,558	29,262	8,401	5,541	2,720	2,784	7,884	1,932	286

C. Funding Schedule (000's)

WSSC Bonds	387,123	354,889	4,308	27,656	7,940	5,237	2,571	2,631	7,451	1,826	270
City of Rockville	22,461	20,589	250	1,606	461	304	149	153	433	106	16

D. Description & Justification

DESCRIPTION

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

JUSTIFICATION

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

The Blue Plains Intermunicipal Agreement of 2012; the DCWASA Master Plan (1998); EPMC IV Facility Plan, CH2MHILL (2001); the Biosolids Management at DCWASA Blue Plains Wastewater Treatment Plant Phase II - Design and Cost Considerations for Treatment Alternatives Report (December 2007); and the DCWASA Approved FY 2015 Capital Improvement Program.

COST CHANGE

Not applicable

OTHER

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

COORDINATION

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

Coordinating Projects: Not Applicable

E. Annual Operating Budget Impact (000's)

	FY of Impact
Staff	
Maintenance	
Other Project Costs	
Debt Service	\$26,636
Total Cost	\$26,636
Impact on Water and Sewer Rate	\$0.59

F. Approval and Expenditure Data (000's)

Date First in Program	FY 95
Date First Approved	FY 95
Initial Cost Estimate	77,296
Cost Estimate Last FY	409,909
Present Cost Estimate	409,584
Approved Request Last FY	4,558
Total Expense & Encumbrances	375,478
Approval Request Year 1	8,401

G. Status Information

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

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

H. Map

MAP NOT AVAILABLE

Blue Plains WWTP: Plant-wide Projects

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

PDF Date	October 1, 2015
Date Revised	

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

B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'15	Estimate FY'16	Total 6 Years	Year 1 FY'17	Year 2 FY'18	Year 3 FY'19	Year 4 FY'20	Year 5 FY'21	Year 6 FY'22	Beyond 6 Years
Planning, Design & Supervision	97,507	75,751	1,958	17,702	1,948	1,434	2,398	4,842	4,420	2,660	2,096
Land											
Site Improvements & Utilities											
Construction	199,873	116,042	3,960	56,062	4,751	5,146	6,204	16,521	9,616	13,824	23,809
Other	1,056		59	738	67	66	86	214	140	165	259
Total	298,436	191,793	5,977	74,502	6,766	6,646	8,688	21,577	14,176	16,649	26,164

C. Funding Schedule (000's)

WSSC Bonds	282,066	181,276	5,649	70,413	6,395	6,281	8,211	20,393	13,398	15,735	24,728
City of Rockville	16,370	10,517	328	4,089	371	365	477	1,184	778	914	1,436

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: New Warehouse/Visitor Center/Security Facility, Electrical Power System, and Instrumentation and Control Engineering Program Management.

JUSTIFICATION

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

The Blue Plains Intermunicipal Agreement of 2012; the WASA Master Plan (1998); and the DCWASA Approved FY 2015 Capital Improvement Program.

COST CHANGE

Cost increased for new major projects including Hydrogen Sulfide Mitigation, Roofing Upgrades, and Chemical System/Building Upgrades.

OTHER

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

COORDINATION

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

Coordinating Projects: Not Applicable

E. Annual Operating Budget Impact (000's)

	FY of Impact
Staff	
Maintenance	
Other Project Costs	
Debt Service	\$19,408
Total Cost	\$19,408
Impact on Water and Sewer Rate	\$0.43

F. Approval and Expenditure Data (000's)

Date First in Program	FY 95
Date First Approved	FY 02
Initial Cost Estimate	84,650
Cost Estimate Last FY	286,513
Present Cost Estimate	298,436
Approved Request Last FY	5,977
Total Expense & Encumbrances	191,793
Approval Request Year 1	6,766

G. Status Information

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

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

H. Map

MAP NOT AVAILABLE

Blue Plains WWTP: Enhanced Nutrient Removal

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

PDF Date	October 1, 2015
Date Revised	

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

3. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'15	Estimate FY'16	Total 6 Years	Year 1 FY'17	Year 2 FY'18	Year 3 FY'19	Year 4 FY'20	Year 5 FY'21	Year 6 FY'22	Beyond 6 Years
Planning, Design & Supervision	103,641	71,823	9,920	20,946	7,671	7,553	2,736	2,128	536	322	952
Land											
Site Improvements & Utilities											
Construction	284,293	175,094	54,718	51,662	29,067	21,842	622	117	3	11	2,819
Other	1,409		646	725	367	294	34	22	5	3	38
Total	389,343	246,917	65,284	73,333	37,105	29,689	3,392	2,267	544	336	3,809

C. Funding Schedule (000's)

WSSC Bonds	172,787	79,612	40,911	48,664	26,412	19,586	1,271	860	217	318	3,600
State Aid	206,525	162,686	21,997	21,842	9,159	8,965	2,047	1,357	314	0	0
City of Rockville	10,031	4,619	2,376	2,827	1,534	1,138	74	50	13	18	209

D. Description & Justification

DESCRIPTION

This project provides funding for WSSC's share of the Blue Plains Enhanced Nutrient Removal projects required to achieve nutrient removal to levels below BNR levels to meet the Chesapeake Bay water quality targets determined in the 2005 Tributary Strategies Process and DC Water's 2010 NPDES permit. Major projects include: Enhanced Nitrogen Removal North, Enhanced Clarification Facilities, Enhanced Nitrogen Removal Facilities, Biosolids Filtrate Treatment Facilities, and Wet Weather Mitigation, Diversion at Bolling and Tunnel Dewatering Pump Station.

JUSTIFICATION

The funding schedule reflects the final cost sharing agreement with the Maryland Department of the Environment. Chesapeake Bay Program Tributary Strategies Process (2005); Blue Plains Strategic Process Study, Metcalf & Eddy (2005); Selection of the Enhanced Nitrogen Removal Process Alternative for the Blue Plains Advanced Wastewater Treatment Facility, Metcalf & Eddy (2009); DCWASA Approved FY 2015 Capital Improvement Program, and the Blue Plains Intermunicipal Agreement of 2012.

COST CHANGE

Not applicable.

OTHER

The project scope has remained the same. Project costs are derived from the DCWASA Capital & Operating Budget 10-year forecast and latest project management data, and reflect DCWASA's current expenditure estimates and schedules. Total Nitrogen Secondary Treatment Upgrades will take place after 2021. Projects extending beyond those supported by State Aid include rehabilitation and upgrades to older projects. Portions of the program have been financed by low interest loans through the Maryland Department of the Environment's Water Quality Administration State Revolving Loan Program. The funding schedule also indicates the calculated Rockville share of the cost.

COORDINATION

Coordinating Agencies: Maryland Department of the Environment; U.S. Environmental Protection Agency, Region III; District of Columbia Water and Sewer Authority; (responsible for design and construction); City of Rockville; (responsible for a share of funding)
Coordinating Projects: S-22.06-Blue Plains WWTP: Liquid Train Projects, Part 2;

E. Annual Operating Budget Impact (000's)

	FY of Impact
Staff	
Maintenance	
Other Project Costs	
Debt Service	\$11,889
Total Cost	\$11,889
Impact on Water and Sewer Rate	\$0.26

F. Approval and Expenditure Data (000's)

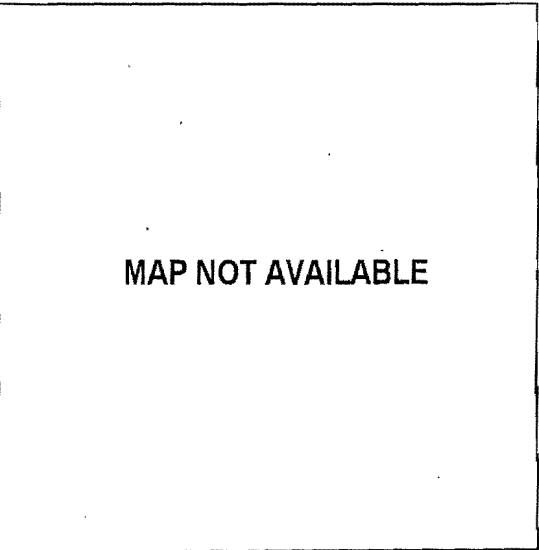
Date First in Program	FY 08
Date First Approved	FY 07
Initial Cost Estimate	648
Cost Estimate Last FY	386,171
Present Cost Estimate	389,343
Approved Request Last FY	65,284
Total Expense & Encumbrances	246,917
Approval Request Year 1	37,105

G. Status Information

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

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

H. Map



Blue Plains: Pipelines & Appurtenances

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

PDF Date	October 1, 2015
Date Revised	

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

B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'15	Estimate FY'16	Total 6 Years	Year 1 FY'17	Year 2 FY'18	Year 3 FY'19	Year 4 FY'20	Year 5 FY'21	Year 6 FY'22	Beyond 6 Years
Planning, Design & Supervision	40,429	16,377	4,659	15,887	3,628	2,798	2,605	2,454	2,430	1,972	3,506
Land											
Site Improvements & Utilities											
Construction	139,747	53,064	17,130	56,478	13,739	9,307	11,007	9,237	5,347	7,841	13,075
Other	1,734		218	1,350	724	174	121	136	117	78	166
Total	181,910	69,441	22,007	73,715	18,091	12,279	13,733	11,827	7,894	9,891	16,747

C. Funding Schedule (000's)

WSSC Bonds	173,469	66,663	21,127	70,822	17,457	11,609	13,232	11,303	7,550	9,671	14,857
City of Rockville	8,441	2,778	880	2,893	634	670	501	524	344	220	1,890

D. Description & Justification

<p>DESCRIPTION</p> <p>This project provides funding for WSSC's share of Blue Plains-associated projects which are "outside the fence" of the treatment plant. Major projects include: A new headquarters building; Potomac Interceptor Rehabilitation; Upper Potomac Interceptor; Potomac Sewage Pumping Station Rehabilitation; Influent Sewers Rehabilitation; and projects associated with the Combined Sewer Overflow (CSO) Long Term Control Plan (e.g. Anacostia Tunnel).</p> <p>JUSTIFICATION</p> <p>This is a continuation of DCWASA's upgrading of the Blue Plains-associated projects outside the fence.</p> <p>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 2015 Capital Improvement Program.</p> <p>COST CHANGE</p> <p>Not applicable.</p> <p>OTHER</p> <p>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.</p> <p>COORDINATION</p> <p>Coordinating Agencies: City of Rockville; (responsible for a share of funding); District of Columbia Water and Sewer Authority; (responsible for design and construction)</p> <p>Coordinating Projects: Not Applicable</p>

E. Annual Operating Budget Impact (000's)

	FY of Impact
Staff	
Maintenance	
Other Project Costs	
Debt Service	\$11,936
Total Cost	\$11,936
Impact on Water and Sewer Rate	\$0.27

F. Approval and Expenditure Data (000's)

Date First in Program	FY 11
Date First Approved	FY 02
Initial Cost Estimate	102,833
Cost Estimate Last FY	178,731
Present Cost Estimate	181,910
Approved Request Last FY	22,007
Total Expense & Encumbrances	69,441
Approval Request Year 1	18,091

G. Status Information

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

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

H. Map

MAP NOT AVAILABLE



Piscataway WWTP Bio-Energy Project

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

PDF Date	October 1, 2015
Date Revised	

Pressure Zones	
Drainage Basins	
Planning Areas	Bi-County;

B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'15	Estimate FY'16	Total 6 Years	Year 1 FY'17	Year 2 FY'18	Year 3 FY'19	Year 4 FY'20	Year 5 FY'21	Year 6 FY'22	Beyond 6 Years
Planning, Design & Supervision	23,922	1,362	950	21,610	4,050	4,120	6,150	6,300	990		
Land											
Site Improvements & Utilities											
Construction	113,300			113,300		8,500	39,500	46,500	18,800		
Other	6,798		48	6,750	204	632	2,284	2,640	990		
Total	144,020	1,362	998	141,660	4,254	13,252	47,934	55,440	20,780		

C. Funding Schedule (000's)

WSSC Bonds	72,120	791	499	70,830	2,127	6,626	23,967	27,720	10,390		
Federal Aid	71,900	571	499	70,830	2,127	6,626	23,967	27,720	10,390		

D. Description & Justification

DESCRIPTION

This project will develop a comprehensive program for the engineering, design, construction, maintenance, and monitoring and verification necessary to add sustainable energy equipment and systems to produce biogas and electricity at Piscataway WWTP. 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

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. 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.

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.

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).

E. Annual Operating Budget Impact (000's)

	FY of Impact	
Staff		
Maintenance		
Other Project Costs		
Debt Service	\$4,962	22
Total Cost	\$4,962	22
Impact on Water and Sewer Rate	\$0.11	22

F. Approval and Expenditure Data (000's)

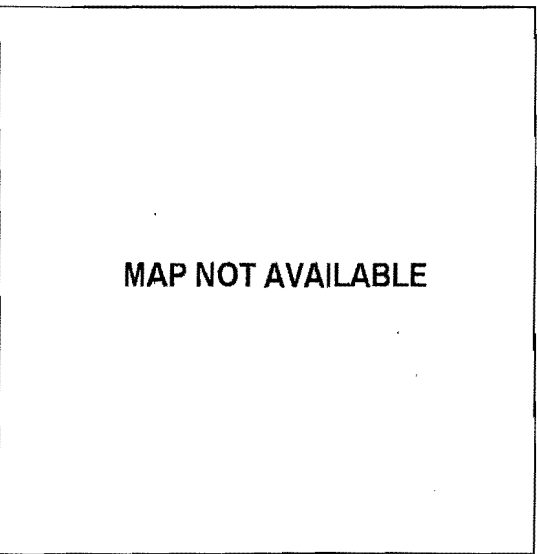
Date First in Program	FY 15
Date First Approved	FY 10
Initial Cost Estimate	345
Cost Estimate Last FY	144,019
Present Cost Estimate	144,020
Approved Request Last FY	14,276
Total Expense & Encumbrances	1,362
Approval Request Year 1	4,254

G. Status Information

Land Status	Public/Agency owned land
Project Phase	Design
Percent Complete	0%
Est Completion Date	June 2021

Growth	
System Improvement	100%
Environmental Regulation	
Population Served	
Capacity	

H. Map



Piscataway WWTP Bio-Energy Project

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

COST CHANGE

Not applicable.

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 for treating all biosolids from WSSC's Damascus, Seneca, Parkway and Piscataway WWTPs. The Montgomery and Prince George's County Councils have been briefed on the project and approved by resolution on November 25, 2014, and September 9, 2014, respectively, so the project can proceed. 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. The project name was updated to reflect the final site location at the Piscataway WWTP.

COORDINATION

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

Trunk Sewer Reconstruction Program

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

PDF Date	October 1, 2015
Date Revised	

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

B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'15	Estimate FY'16	Total 6 Years	Year 1 FY'17	Year 2 FY'18	Year 3 FY'19	Year 4 FY'20	Year 5 FY'21	Year 6 FY'22	Beyond 6 Years
Planning, Design & Supervision	174,416	50,830	20,571	103,015	30,769	31,598	12,855	12,026	8,712	7,055	
Land											
Site Improvements & Utilities											
Construction	563,645	150,745	74,500	338,400	102,000	89,900	49,800	46,900	35,300	14,500	
Other	51,999		10,286	41,713	12,752	13,166	5,295	4,881	3,224	2,395	
Total	790,060	201,575	105,357	483,128	145,521	134,664	67,950	63,807	47,236	23,950	

C. Funding Schedule (000's)

WSSC Bonds	790,060	201,575	105,357	483,128	145,521	134,664	67,950	63,807	47,236	23,950	
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D. Description & Justification

DESCRIPTION

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

JUSTIFICATION

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

COST CHANGE

The increase in the overall program costs is attributed to the addition of the 102-inch diameter Anacostia pressure sewer rehabilitation project, partially offset by revised lower estimates for work within the ESA and a reduction in the Other cost calculation. An assessment of the pressure sewer first began in 2011 following an inquiry from Prince George's County and the Army Corps of Engineers due to its crossing a levee under their jurisdiction.

OTHER

The project scope has remained the same. Reconstruction work will include: reduction of I/I; replacement of substandard sewer segments; in situ lining of sewer segments; pipeline and manhole protection; rebuilding of manholes; and correction of structural defects and poor alignment. The reconstruction work in each sewer basin will be prioritized to most effectively prevent SSOs and backups. The Consent Decree requires that all rehabilitation work be substantially complete by December 5, 2015. WSSC is negotiating with U.S. Environmental Protection Agency, U.S. Department of Justice, and Maryland Department of the Environment on a Consent Decree extension. All construction contracts for ESA work have been awarded and the approved amounts have been utilized in the current budget projections. As actual construction progresses the projections may be updated. Beginning in FY 2015, construction work has increased in the ESAs as a majority of the work was released for construction. Most of the upfront costs are associated with the construction of access roads and by-pass pumping. After completion of a majority of the Priority 1 construction activities associated with the Consent Decree, Phase 2 work (Priority 2 & 3 plus any newly identified Priority 1) is programmed at roughly five miles per year. Land costs are included in WSSC Project S-203.00.

COORDINATION

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

Coordinating Projects: S-1.01-Sewer Reconstruction Program;

E. Annual Operating Budget Impact (000's)

	FY of Impact	
Staff		
Maintenance		
Other Project Costs		
Debt Service	\$54,360	23
Total Cost	\$54,360	23
Impact on Water and Sewer Rate	\$1.21	23

F. Approval and Expenditure Data (000's)

Date First in Program	FY 11
Date First Approved	FY 11
Initial Cost Estimate	504,993
Cost Estimate Last FY	747,314
Present Cost Estimate	790,060
Approved Request Last FY	191,866
Total Expense & Encumbrances	201,575
Approval Request Year 1	145,521

G. Status Information

Land Status	Land and R/W to be acquired
Project Phase	Construction
Percent Complete	31%
Est Completion Date	See Block D

Growth	
System Improvement	100%
Environmental Regulation	
Population Served	
Capacity	

H. Map

MAP NOT APPLICABLE

DATE: October 1, 2015

FINANCIAL SUMMARY

(ALL FIGURES IN THOUSANDS)

INFORMATION ONLY PROJECTS

AGENCY NUMBER	PROJECT NAME	EST. TOTAL COST	EXPEND THRU 15	EST. EXPEND 16	TOTAL SIX YEARS	EXPENDITURE SCHEDULE						BEYOND SIX YEARS	PDF PAGE NUM
						YR 1 17	YR 2 18	YR 3 19	YR 4 20	YR 5 21	YR 6 22		
W-1.00	Water Reconstruction Program	713,042	0	101,336	611,706	100,226	102,296	102,296	102,296	102,296	102,296	0	7-3
S-1.01	Sewer Reconstruction Program	350,741	0	38,640	312,101	55,811	49,114	51,794	51,794	51,794	51,794	0	7-4
A-102.00	Engineering Support Program	105,000	0	18,000	87,000	17,000	14,000	14,000	14,000	14,000	14,000	0	7-5
A-103.00	Energy Performance Program	66,435	32,035	6,880	27,190	18,210	8,540	110	110	110	110	330	7-6
A-104.00	Entrepreneurial Projects	45,023	4,114	517	12,338	2,891	1,723	194	3,956	770	2,804	28,054	7-8
A-105.00	Water Storage Facility Rehabilitation Program	35,000	0	5,000	30,000	5,000	5,000	5,000	5,000	5,000	5,000	0	7-9
A-107.00	Specialty Valve Vault Rehabilitation Program	33,147	10,204	9,220	13,723	7,053	1,473	2,297	1,648	1,252	0	0	7-10
A-109.00	Advanced Metering Infrastructure	89,500	875	2,525	86,100	960	13,484	26,360	26,360	18,936	0	0	7-11
A-145.01	Brighton Dam Operations & Maintenance Facility and Site Improvements	6,448	330	167	5,951	1,357	2,588	1,645	361	0	0	0	7-12
S-300.01	D'Arcy Park North Relief Sewer	849	90	245	514	259	255	0	0	0	0	0	7-13
	Projects Pending Close-Out	14,412	12,687	1,725	0	0	0	0	0	0	0	0	7-14
	TOTAL INFORMATION ONLY PROJECTS	1,459,597	60,335	184,255	1,186,623	208,767	198,473	203,696	205,525	194,158	176,004	28,384	

Water Reconstruction Program

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

PDF Date	October 1, 2015
Date Revised	

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

B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'15	Estimate FY'16	Total 6 Years	Year 1 FY'17	Year 2 FY'18	Year 3 FY'19	Year 4 FY'20	Year 5 FY'21	Year 6 FY'22	Beyond 6 Years
Planning, Design & Supervision	94,972		14,097	80,875	13,105	13,554	13,554	13,554	13,554	13,554	
Land											
Site Improvements & Utilities											
Construction	493,094		69,432	423,662	69,432	70,846	70,846	70,846	70,846	70,846	
Other	124,976		17,807	107,169	17,689	17,896	17,896	17,896	17,896	17,896	
Total	713,042		101,336	611,706	100,226	102,296	102,296	102,296	102,296	102,296	

C. Funding Schedule (000's)

WSSC Bonds	713,042		101,336	611,706	100,226	102,296	102,296	102,296	102,296	102,296	
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D. Description & Justification

DESCRIPTION

The purpose of this program is to renew and extend the useful life of water mains, house connections, and large water services. Portions of the water system are more than 80 years old. Bare cast iron mains, installed generally before 1965, permit the build-up of tuberculation which can reduce flow and cause discoloration at the customer's tap. Selected replacement is necessary to supply water in sufficient quantity, quality and pressure for domestic use and fire fighting. As the system ages, water main breaks are increasing. Selected mains are chronically breaking and other mains are undersized for the current flow standards. Replacement, rehabilitation via structural lining, and the addition of cathodic protection to these mains provides added value to the customer. Galvanized, copper and cast iron water 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.

JUSTIFICATION

The program's projected work units and expenditure levels for FY'17 (including overhead) are as follows: design and construction of main replacement and associated water house connection renewals, 57 miles - \$92.3M; cathodic protection - \$1.4M; 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.

Flow studies, water system modeling, and field surveys are routinely conducted. Water Main Condition Assessment, 1915-1998; Analysis and Recommendations by the Water Main Reconstruction Work Group (June, 1999). FY2017 Buried Water Asset Systems Asset Management Plan, (December 2014) identifies the business risk exposure of the water distribution system.

COST CHANGE

Not applicable.

OTHER

The water reconstruction program has been ongoing since 1979. Funding in the six-year program period is subject to Spending Affordability Guideline limits. The following work accomplishments through FY'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

Coordinating Agencies: Maryland State Highway Administration; Montgomery County Department of Public Works and Transportation; Montgomery County Government; Prince George's County Government; Prince George's County Department of Permitting Inspection and Enforcement; Local Community Civic Associations;
Coordinating Projects: Not Applicable

E. Annual Operating Budget Impact (000's)

		FY of Impact
Staff		
Maintenance		
Other Project Costs		
Debt Service	\$49,061	23
Total Cost	\$49,061	23
Impact on Water and Sewer Rate	\$1.04	23

F. Approval and Expenditure Data (000's)

Date First in Program	
Date First Approved	
Initial Cost Estimate	
Cost Estimate Last FY	728,037
Present Cost Estimate	713,042
Approved Request Last FY	101,658
Total Expense & Encumbrances	
Approval Request Year 1	100,226

G. Status Information

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

Growth	
System Improvement	
Environmental Regulation	
Population Served	
Capacity	

H. Map

MAP NOT APPLICABLE

Sewer Reconstruction Program

A. Identification and Coding Information		
Agency Number	Project Number	Update Code
S-1.01		Change

PDF Date	October 1, 2015
Date Revised	

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

3. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'15	Estimate FY'16	Total 6 Years	Year 1 FY'17	Year 2 FY'18	Year 3 FY'19	Year 4 FY'20	Year 5 FY'21	Year 6 FY'22	Beyond 6 Years
Planning, Design & Supervision	80,925		9,292	71,633	11,914	11,515	12,051	12,051	12,051	12,051	
Land											
Site Improvements & Utilities											
Construction	234,744		25,484	209,260	38,316	32,688	34,564	34,564	34,564	34,564	
Other	35,072		3,864	31,208	5,581	4,911	5,179	5,179	5,179	5,179	
Total	350,741		38,640	312,101	55,811	49,114	51,794	51,794	51,794	51,794	

C. Funding Schedule (000's)

WSSC Bonds	350,741		38,640	312,101	55,811	49,114	51,794	51,794	51,794	51,794	
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D. Description & Justification

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

JUSTIFICATION
The work units and associated costs are based on our historical experience with regards to timing of design and construction work and availability of authorized contractors for proprietary rehabilitation techniques. The program's projected work units and expenditure levels for FY'17 (including overhead) are as follows: 17 mile of mainline construction - \$25.7M; 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.

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. WSSC FY2017 Buried WasteWater Asset Systems Asset Management Plan (December 2014).

COST CHANGE

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

OTHER

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

Coordinating Agencies: 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 Permitting Inspection and Enforcement; U.S. Environmental Protection Agency, Region III; (SSO Consent Decree Compliance); Local Community Civic Associations;

Coordinating Projects: S-170.09-Trunk Sewer Reconstruction Program;

E. Annual Operating Budget Impact (000's)

		FY of Impact
Staff		
Maintenance		
Other Project Costs		
Debt Service	\$24,133	23
Total Cost	\$24,133	23
Impact on Water and Sewer Rate	\$0.54	23

F. Approval and Expenditure Data (000's)

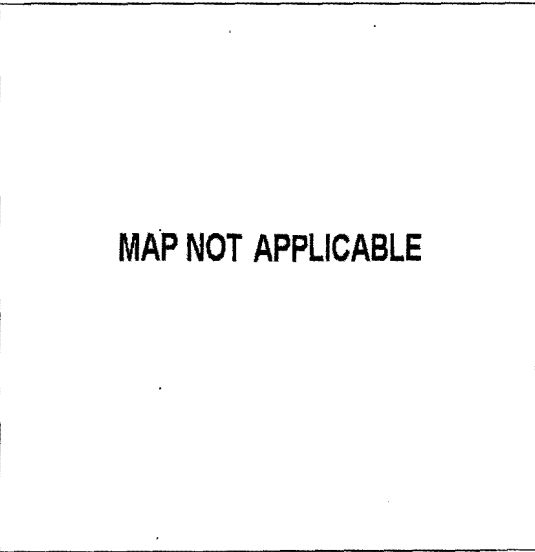
Date First in Program	
Date First Approved	
Initial Cost Estimate	
Cost Estimate Last FY	308,099
Present Cost Estimate	350,741
Approved Request Last FY	34,784
Total Expense & Encumbrances	
Approval Request Year 1	55,811

G. Status Information

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

Growth	
System Improvement	100%
Environmental Regulation	
Population Served	
Capacity	

H. Map



Advanced Metering Infrastructure

A. Identification and Coding Information		
Agency Number	Project Number	Update Code
A-109.00		Change

PDF Date	October 1, 2015
Date Revised	

Pressure Zones	
Drainage Basins	
Planning Areas	Bi-County;

B. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'15	Estimate FY'16	Total 6 Years	Year 1 FY'17	Year 2 FY'18	Year 3 FY'19	Year 4 FY'20	Year 5 FY'21	Year 6 FY'22	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		
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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

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.

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

COST CHANGE

Not applicable.

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

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

E. Annual Operating Budget Impact (000's)

	FY of Impact	
Staff		
Maintenance		
Other Project Costs		
Debt Service	\$6,158	22
Total Cost	\$6,158	22
Impact on Water and Sewer Rate	\$0.13	22

F. Approval and Expenditure Data (000's)

Date First in 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 Expense & Encumbrances	875
Approval Request Year 1	960

G. Status Information

Land Status	Not Applicable
Project Phase	Planning
Percent Complete	15%
Est Completion Date	FY 2020

Growth	
System Improvement	
Environmental Regulation	
Population Served	
Capacity	

H. Map

MAP NOT AVAILABLE

Brighton Dam Operations & Maintenance Facility and Site Improvements

A. Identification and Coding Information			PDF Date	October 1, 2015	Pressure Zones	
Agency Number	Project Number	Update Code	Date Revised		Drainage Basins	
A-145.01		Add			Planning Areas	Montgomery County PA;

3. Expenditure Schedule (000's)

Cost Elements	Total	Thru FY'15	Estimate FY'16	Total 6 Years	Year 1 FY'17	Year 2 FY'18	Year 3 FY'19	Year 4 FY'20	Year 5 FY'21	Year 6 FY'22	Beyond 6 Years
Planning, Design & Supervision	650	330	145	175	80	50	30	15			
Land											
Site Improvements & Utilities											
Construction	4,999			4,999	1,100	2,200	1,400	299			
Other	799		22	777	177	338	215	47			
Total	6,448	330	167	5,951	1,357	2,588	1,645	361			

C. Funding Schedule (000's)

WSSC Bonds	6,448	330	167	5,951	1,357	2,588	1,645	361			
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D. Description & Justification

DESCRIPTION

This project provides for the replacement of two existing facilities with a new ADA compliant 4,100 square foot facility with office space for 14 employees. The project also includes a new parking configuration to facilitate visiting groups, relocation of existing fuel facilities and a new underground water storage tank to provide fire protection for the new facility and nearby residents. Green initiatives such as water reclamation and LEED building guidelines are also being considered in the design.

JUSTIFICATION

The Patuxent Watershed Unit stationed at Brighton Dam has been staffed in a double wide trailer since the early 1990's. The existing facilities have several problems including but not limited to: the presence of mold, ventilation deficiencies and structural issues. The existing visitor center is subject to insect infestation and inadequate compliance with ADA standards. Traffic flow at the facility is constricted and unsafe during peak demand periods. The fuel pump location is highly visible and is not secured. The current state of the existing facilities necessitates replacement. In addition to facility replacement, the project includes comprehensive site improvement work to address septic/well system capacities, site access and traffic/parking, and relocation of the existing fueling station to a more secure location within the premises.

Memorandum from James Neustadt, Director of Communication to Gary Gumm, Chief Engineer, (July 28, 2011); Memorandum from Karen Wright, System Control Group Leader, to James Price, Chief of Plant Operations (May 12, 2012); Basis of Design Report, Mimar Architects (April, 2015).

COST CHANGE

Not applicable.

OTHER

The present project scope was developed for the FY 2017 CIP and has an estimated total cost of \$6,448,000. The expenditure and schedule projections shown in Block B above are planning level estimates and are expected to change as the project moves through design and construction. The offices at Brighton Dam provide WSSC with high visibility for security of the dam, enhanced community engagement and education, efficient maintenance of the property and amenities, and rapid emergency response capabilities within the watershed. Prior year expenditures were for the preliminary study and planning for this project, completed under ESP project W-705.63, Brighton Dam Trailer Replacement. The study has confirmed the land is suitable for a new septic system utilizing Best Management Practices for Nitrogen removal and the adequacy of the existing well to meet occupancy and use demands.

COORDINATION

Coordinating Agencies: Montgomery County Department of Environmental Protection; Maryland Department of the Environment; Montgomery County Government; (Anticipates Mandatory Referral Submissions); Coordinating Projects: Not Applicable

E. Annual Operating Budget Impact (000's)

		FY of Impact
Staff		
Maintenance		
Other Project Costs		
Debt Service	\$444	21
Total Cost	\$444	21
Impact on Water and Sewer Rate	\$0.01	21

F. Approval and Expenditure Data (000's)

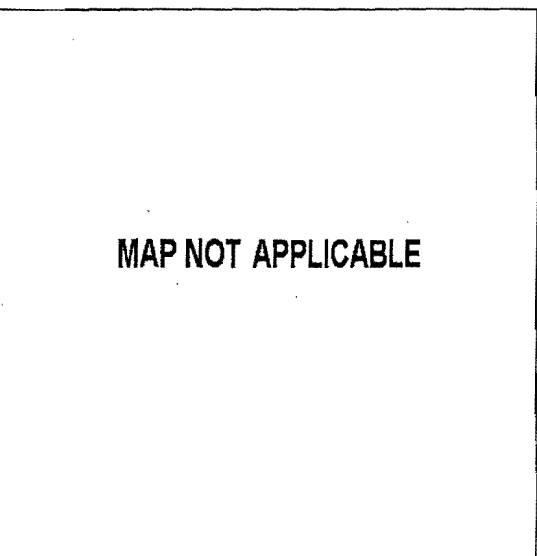
Date First in Program	FY 17
Date First Approved	FY 17
Initial Cost Estimate	6,447
Cost Estimate Last FY	
Present Cost Estimate	6,448
Approved Request Last FY	
Total Expense & Encumbrances	330
Approval Request Year 1	1,357

G. Status Information

Land Status	Public/Agency owned land
Project Phase	Design
Percent Complete	20%
Est Completion Date	July 2019

Growth	
System Improvement	100%
Environmental Regulation	
Population Served	
Capacity	

H. Map



Sanitary Sewer Overflow (SSO) Consent Decree Update

Commissioner Meeting

January 20, 2016

Agenda

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

Schedule Update Roads

- 6 IDIQ Contracts
- 135 Construction Task Orders (CTO)
- 3 Prime Contractors
- 131.4 sewer miles awarded for construction
- 121.73 sewer miles rehabilitated as of December 21, 2015

Schedule Update

Roads (Basin Level Update)

Sligo Creek	100%	→	100%
Cabin John	98%	→	98%
Paint Branch	100%	→	100%
Lower Anacostia	97%	→	97%
Beaverdam	96%	→	96%
Seneca Creek	96%	→	96%
Dulles Interceptor	100%	→	100%
Muddy Branch	100%	→	100%
Broad Creek	99%	→	99%
Piscataway	99%	→	99%
Parkway	87%	→	94%

Western Branch	100%	→	100%
Mattawoman	100%	→	100%
Northwest Branch	99%	→	99%
Horsepen Branch	100%	→	100%
Northeast Branch	79%	→	79%
Oxon Run	97%	→	97%
Rock Creek	96%	→	96%
Rock Run	100%	→	100%
Little Falls	92%	→	96%
Watts Branch	92%	→	96%

Note:

No Roads work in Patuxent North basin

Schedule Update

Environmentally Sensitive Areas (ESA)

- 16 IDIQ Contracts
- 10 ESA Contractors
- ESA includes a total of 233 CTOs
 - 165 (70.8%) CTOs issued for construction
- ESA includes a total of 156.38 miles
 - 108.04 (69.1%) miles awarded for construction
 - 57.67 miles rehabilitated as of December 21, 2015

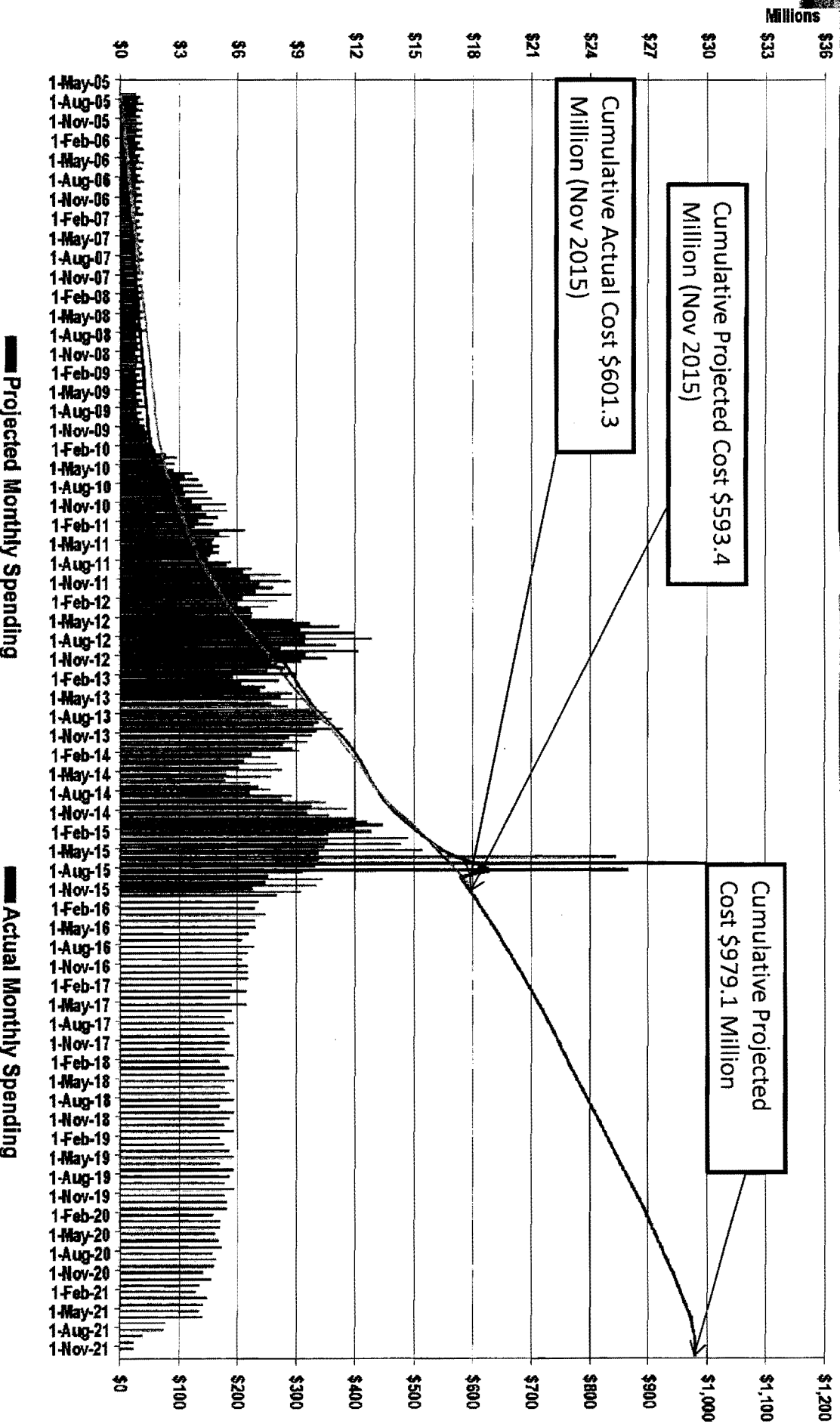
Schedule Update

ESA (Basin Level)

Rock Run	1%	→	6%	Muddy Branch	36%	→	45%
Paint Branch	5%	→	34%	Western Branch	0%	→	1%
Beaverdam	47%	→	63%	Seneca Creek	31%	→	49%
Piscataway	5%	→	7%	Watts Branch	2%	→	16%
Rock Creek	33%	→	48%	Parkway	3%	→	4%
Sligo Creek	18%	→	37%	Oxon Run	1%	→	2%
Cabin John	40%	→	44%	Horsepen Branch	75%	→	80%
Northeast Branch	11%	→	16%	Dulles Interceptor	50%	→	50%
Lower Anacostia	50%	→	67%	Mattawoman	100%	→	100%
Northwest Branch	2%	→	11%	Monocacy	0%	→	0%
Broad Creek	78%	→	79%	Patuxent North	0%	→	0%
Little Falls	2%	→	10%	Patuxent Center	100%	→	100%

Consent Decree Costs

Article 6 – Design and Construction Costs (Oct 2015)



Consent Decree Costs

Description	Projected Total Cost to Date	Actual Cost to Date
Consent Decree (All Articles)	\$1,480,467,330.87	\$864,157,810.43
Article 06	\$1,030,365,211.26	\$625,263,998.61
<i>All other Articles Total Cost</i>	\$447,830,944.61	\$236,867,998.61
General Cost	\$38,242,843.00	\$17,972,072.00
Article 02	\$88,748,679.77	\$52,266,304.77
Article 03	\$44,438,066.84	\$22,546,178.84
Article 04	\$33,532,801.00	\$15,719,350.00
Article 05	\$2,708,764.00	\$2,708,764.00
Article 07	\$11,298,130.00	\$44,151.00
Article 10	\$189,891,319.00	\$96,350,536.00
Article 11	\$34,052,744.00	\$24,217,545.00
Supplemental Environmental Projects	\$5,043,097.00	\$5,043,097.00
Stipulated Penalties	\$2,145,675.00	\$2,026,094.87

Rehabilitation Phase

Areas of Concern

- Rights of Entry (ROE)
- National Park Service (NPS)
- Stream Stabilization Permits
- Consent Decree Modification

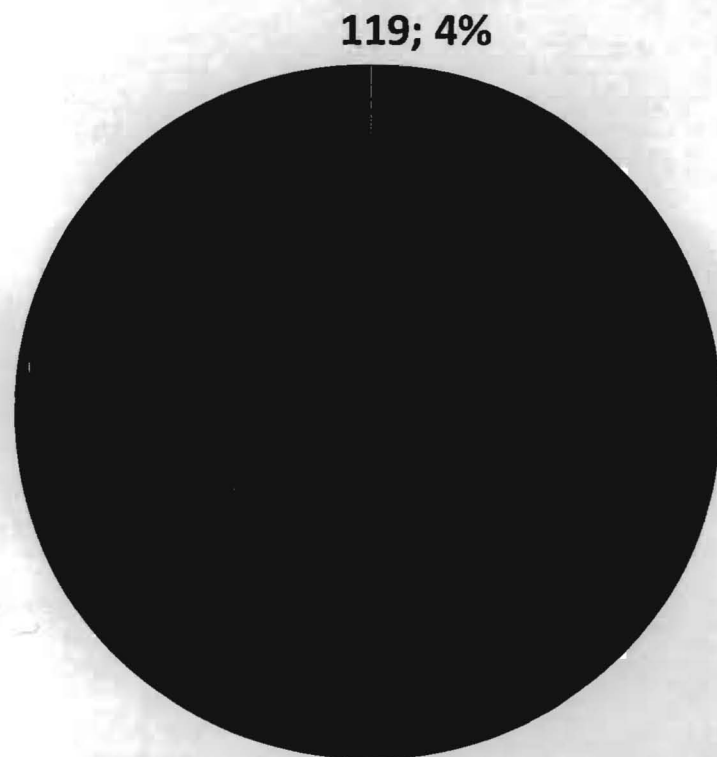
Areas of Concern

Rights of Entry

- Total outstanding ROEs have decreased from 127 to 120 since October 2015
- 17 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 10 ROEs

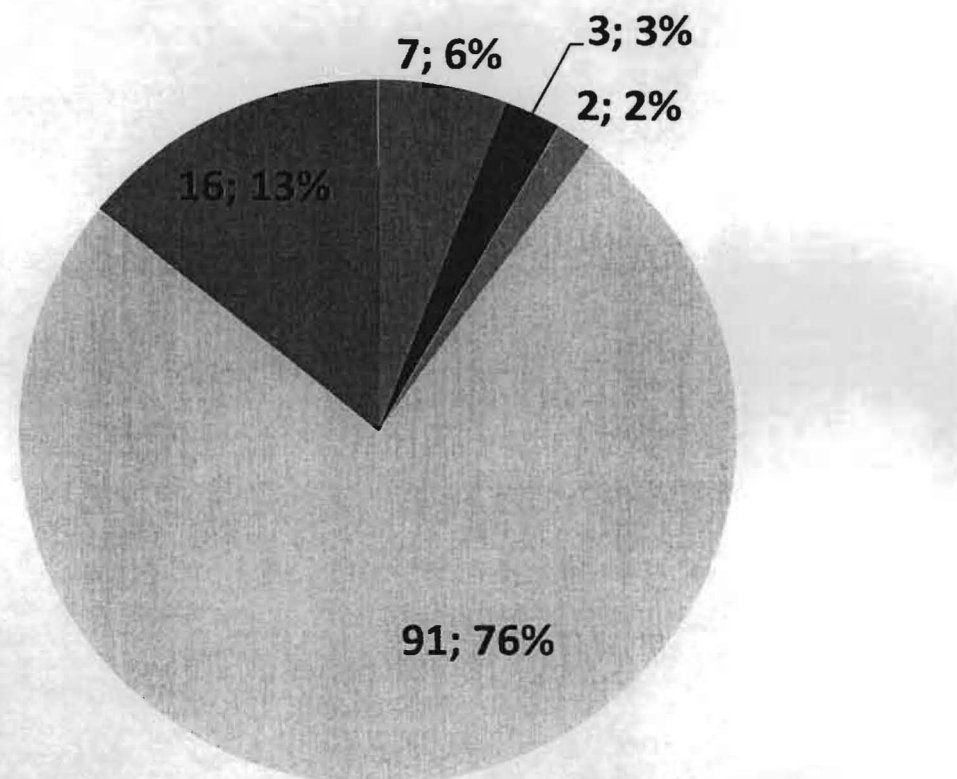
Areas of Concern Rights of Entry

Outstanding vs Received ROE's



■ Total Outstanding ■ Total Received

Breakdown of Outstanding ROE's



■ Private - Individual Home Owners ■ Private - Home Owners Association
 ■ Private - Commercial Enterprises ■ Public - Governments, Utilities, Agencies
 ■ WSSC Legal/Land Unit Involvement

Areas of Concern

National Park Service (NPS)

- WSSC continues to incur delays due to delays in acquiring NPS permits
- WSSC met with NPS on 9/25/2015 to discuss the possibility of approving Broad Creek projects under Categorical Exclusion
- WSSC responded to additional questions asked by NPS on 11/30/2015 in relation to approving Broad Creek projects under Categorical Exclusion
- WSSC received a letter in response to the meeting on 9/2/2015: WSSC to pay \$510,000 in cost recovery to NPS for the first year, NPS proposed Environmental Impact Statement (EIS) pathway for WSSC's work in Northeast basin (Greenbelt Parks)
- WSSC to respond back to NPS on the cost recovery

Areas of Concern

Stream Permits (M-NCPPC)

- 35 Stream stabilization permits in Montgomery County, Maryland w/ M-NCPPC (Parks)
- 32 approved stream stabilization permits as of September 2015
- 3 permits outstanding
- Met with Parks on October 19, 2015 to discuss procedures and update current processes



Areas of Concern

Consent Decree Extension

- WSSC has negotiated the terms of a Second Amendment to the Consent Decree with EPA, DOJ and MDE that provides an extension for work delayed by the permitting processes in ESAs
- The extension period is for up to six (6) years, with mandatory progress milestones during the extension period
- Extension period for projects requiring NPS permits runs for up to two (2) years from receipt of permit
- The Second Amendment was lodged with U.S. District Court for approval on November 30, 2015; the public comment period expired on January 5, 2016.
- The parties to the Second Amendment await Court review and approval

Questions & Answers