

T&E COMMITTEE #1  
February 9, 2012

**Worksession**

**MEMORANDUM**

February 7, 2012

TO: Transportation, Infrastructure, Energy and Environment Committee

FROM:  Keith Levchenko, Senior Legislative Analyst

SUBJECT: **Worksession: FY13-18 Capital Improvements Program: Washington Suburban Sanitary Commission (WSSC)**

**Council Staff Recommendations: Approve the WSSC CIP with the following changes:**

- **Revise the Blue Plains projects based on updated DC Water budget information.**
- **Include the new project, Mid-Pike Plaza Phase I (developer-funded).**

Councilmembers were provided a spiral bound copy of WSSC's Proposed FY13-18 CIP. Excerpts from this document are attached to this memorandum. The following officials and staff are expected to attend this meeting:

WSSC

Jerry Johnson, General Manager/CEO  
Gary Gumm, Chief Engineer  
Tom Traber, Chief Financial Officer  
Sheila Cohen, Budget Group Leader  
Mark Brackett, Budget Unit Coordinator

County Government

John Greiner, Office of Management and Budget

**WSSC FY13-18 Highlights**

**Fiscal Highlights**

- WSSC's FY13-18 CIP is about \$1.7 billion (a decrease of \$75.2 million or 4.3% from the FY12-17 CIP)
- Montgomery County and Bi-County projects total \$1.25 billion (a decrease of \$88.6 million or 6.6% from the FY12-17 CIP), primarily as a result of construction costs in FY12 no longer in the six-year totals, as well as lower cost estimates for some projects based on actual bids.

- Blue Plains projects total \$607.7 million for FY13-18 (a decrease of \$96.3 million or 13.7%), primarily as a result of projects moving into construction in FY12 (especially the ENR and biosolids projects) and out of the six-year period.
- “Information Only” projects (which are not formally part of the CIP and not in the above CIP totals) continue to see substantial expenditure growth (Total = \$1.6 billion over six years and \$249.6 million in FY13) as WSSC ramps up its water/sewer reconstruction work.

#### **Other Issues**

- Growth (SDC) Funding Trends (see page 6)
- Cost to Extend Sewer to Address Failing Septic Systems (see page 15)

#### **New Projects (see page 8)**

- One new Bi-County water project: Potomac WFP Main Zone Pipeline (planning dollars only at this time).
- One new “Information Only” project: Advanced Metering Infrastructure (\$86 million order of magnitude cost). An estimated \$11.4 to \$15.4 million per year in efficiencies identified in a 2011 study.
- **Council Staff recommends adding one new project: Mid-Pike Plaza Sewer Main, Phase I (consistent with Council approval of the project as an amendment in the FY12-17 amendment)**

#### **Major Ongoing Projects (see page 8)**

- Large Diameter Water Pipe Rehabilitation Program (\$155.9 million over six years)
- Laytonsville Elevated Tank and Pumping Station (\$5.5 million total cost)
- Patuxent Water Filtration Plant Phase II Expansion (\$64.8 million total cost)
- Potomac Water Filtration Plant Submerged Channel Intake (\$26.7 million total cost, but still in planning. Issue will come back to both Councils before design and construction occur.)
- Bi-County Water Tunnel (\$157.6 million project, completion in December 2013)
- Seneca Wastewater Treatment Plant Expansion Part 2 (\$32.1 million total cost, completion in January 2015)
- Trunk Sewer Rehabilitation Program (\$207.6 million over six-years) to meet Consent Decree issues
- Enhanced Nutrient Removal Projects: FY13-18 Total = \$354.3 million (a decrease of \$82.9 million, almost entirely a result of the Blue Plains ENR project moving into construction)
- **Blue Plains Projects (Latest CIP numbers from DC Water recommended by the CE. Council Staff concurs.)**
- Water Reconstruction Program (\$641.3 million over six years, ramp up to 51 miles per year requested)
- Sewer Reconstruction Program (\$628.9 million over six years, ramp up to 52 miles per year requested)

#### **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 that involves both Montgomery and Prince George's County Council approval in the fall of each year.

The FY13-18 WSSC CIP timeline is presented below:

- September 26, 2011: WSSC transmitted its Proposed FY13-18 CIP (Excerpts on ©1-49)
- October 18, 2011: Council Approval of WSSC's FY13 Spending Control Limits
- January 17, 2012: County Executive's recommendations transmitted (©52-73)
- February 7 and 9, 2012: Council's Public Hearings on the FY13-18 CIP (including WSSC)
- **February 9, 2012: T&E Committee review of the WSSC CIP**
- March 1, 2012: WSSC transmittal deadline for its Proposed FY13 Operating and Capital Budget
- March 6, 2012: Council review of the WSSC CIP
- Mid-May, 2012: Bi-County reconciliation of issues between Montgomery County and Prince George's County on the CIP and Operating Budget for WSSC as well as any other Bi-County budget issues.

### Fiscal Overview

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

Table 1: Total WSSC Expenditures  
Proposed FY13-18 CIP versus Approved FY12-17 CIP  
(\$s in 000s)

	Approved FY12	Six-Year Total	FY13	FY14	FY15	FY16	FY17	FY18
<b>Total Water Projects</b>								
Approved FY12-17	119,165	411,557	118,312	58,548	44,360	33,177	37,995	
Proposed FY13-18		469,158	153,438	106,134	73,469	53,050	50,486	32,581
Difference		57,601	35,126	47,586	29,109	19,873	12,491	
% Change		14.0%	29.7%	81.3%	65.6%	59.9%	32.9%	
<b>Total Sewer Projects</b>								
Approved FY12-17	301,887	1,326,232	380,839	298,120	127,620	122,188	95,578	
Proposed FY13-18		1,193,457	419,546	275,704	197,495	134,088	96,060	70,564
Difference		(132,775)	38,707	(22,416)	69,875	11,900	482	
% Change		-10.0%	10.2%	-7.5%	54.8%	9.7%	0.5%	
<b>Total</b>								
Approved FY12-17	421,052	1,737,789	499,151	356,668	171,980	155,365	133,573	
Proposed FY13-18		1,662,615	572,984	381,838	270,964	187,138	146,546	103,145
Difference		(75,174)	73,833	25,170	98,984	31,773	12,973	
% Change		-4.3%	14.8%	7.1%	57.6%	20.5%	9.7%	

As shown on the chart, WSSC is recommending an overall decrease in expenditures of 4.3 percent (-\$75.2 million).

As in previous years, the six-year cost change reflects a combination of factors, including:

- Large cost projects (such as the Bi-County Water Tunnel and several of the Wastewater Treatment Plant Enhanced Nutrient Removal (ENR) projects) moving towards completion with large expenditures in FY12 no longer in the six-year period of the CIP
- New projects entering the CIP (discussed later)
- Cost changes in various projects based on actual bids for work (such as Trunk Sewer Reconstruction)
- Revised scopes of some projects (such as the Patuxent Water Treatment Plant Phase II Expansion) causing cost increases or decreases.

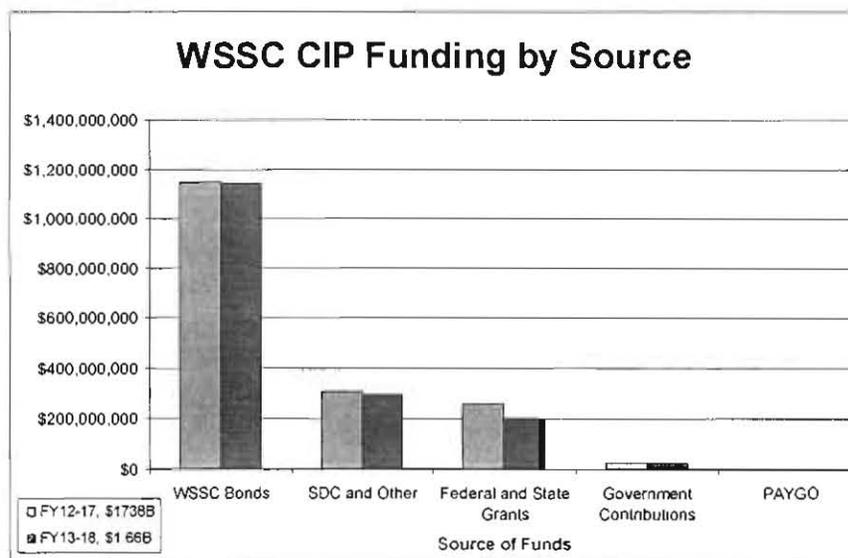
Some of the bigger cost changes are discussed in more detail later.

**It is important to note that the capital program presented in this fiscal overview reflects “major projects” as defined by State law. WSSC has a number of other infrastructure activities (shown in the “Information Only” section of the CIP; summary page attached on ©42) which are not included in the CIP fiscal summary. In fact, the six-year cost estimate for the “Information Only” projects is \$1.6 billion; very close to the Proposed FY13-18 CIP total.**

**About 3/4 of the “Information Only” project totals is for water and sewer main reconstruction, a major infrastructure issue that has been the subject of much discussion over the past several years. These non-CIP projects are discussed in this packet because they are part of WSSC’s overall effort to address infrastructure needs and because the pace of reconstruction is a major policy and fiscal concern.**

Funding Sources

The following chart compares funding sources between the Approved FY12-17 CIP and the Proposed FY13-18 CIP.



State aid is down somewhat in the six-year period as ENR costs in general have also declined within the six-year period.

## Montgomery County and Bi-County Projects

Each Council generally focuses on the projects within its County as well as the Bi-County projects. The following chart summarizes six-year program information for Montgomery County and Bi-County projects only. Once again, the mid-cycle update is not included in the numbers below.

**Table 2: Total WSSC Expenditures (Montgomery County and Bi-County Only)  
Proposed FY13-18 CIP versus Approved FY12-17 CIP  
(\$s in 000s)**

	Approved FY12	Six-Year Total	FY13	FY14	FY15	FY16	FY17	FY18
<b>Total Water Projects</b>								
Approved FY12-17	96,640	349,798	96,149	48,318	39,769	32,352	36,570	
Proposed FY13-18		375,533	124,267	80,267	48,552	41,189	49,002	32,256
Difference		25,735	28,118	31,949	8,783	8,837	12,432	
% Change		7.4%	29.2%	66.1%	22.1%	27.3%	34.0%	
<b>Total Sewer Projects</b>								
Approved FY12-17	213,648	988,111	280,053	199,142	98,602	103,427	93,239	
Proposed FY13-18		873,757	317,600	180,300	133,547	120,165	72,136	50,009
Difference		(114,354)	37,547	(18,842)	34,945	16,738	(21,103)	
% Change		-11.6%	13.4%	-9.5%	35.4%	16.2%	-22.6%	
<b>Total</b>								
Approved FY12-17	310,288	1,337,909	376,202	247,460	138,371	135,779	129,809	
Proposed FY13-18		1,249,290	441,867	260,567	182,099	161,354	121,138	82,265
Difference		(88,619)	65,665	13,107	43,728	25,575	(8,671)	
% Change		-6.6%	17.5%	5.3%	31.6%	18.8%	-6.7%	

Montgomery County and Bi-County expenditures are down by about \$88.6 million. Some of the major changes in projects are presented below:

### Major Changes in 6 Year Costs (MC and Bi-County Projects Only)

(24,256,000)	Bi-County Water Tunnel
(96,343,000)	Blue Plains Projects
42,291,000	Large Diameter Pipe Rehab Program
(3,962,000)	Duckett and Brighton Dam Upgrades Cost Decrease
11,057,000	Patuxent WFP Phase II
(13,797,000)	Anacostia Storage Facility
19,439,000	Trunk Sewer Reconstruction Program

### New Blue Plains Project Cost Estimates

DC Water's FY11-20 CIP was approved by its Board on January 5, 2012, and the latest expenditure totals were not available at the time the WSSC CIP was transmitted last fall. These numbers are reflected in the County Executive's Recommendations for WSSC. Overall, the changes decrease the FY13-18 CIP request by approximately \$3.5 million, as shown in the following chart:

**Table 3: FY13-18 Blue Plains Projects: Cost Changes**

Project	Six-Year						
	Total	FY13	FY14	FY15	FY16	FY17	FY18
<b>Blue Plains Projects</b>							
Liquid Train Part II	216	1,655	317	180	(647)	(810)	(479)
Biosolids Part II	2,010	(800)	1,248	4,190	(1,482)	(878)	(268)
BNR	1,675	(1,335)	1,132	1,773	105	-	-
Plantwide Projects	2,730	2,365	1,565	(272)	(429)	(314)	(185)
ENR	(13,435)	(11,018)	3,276	(29,623)	(9,984)	23,857	10,057
Pipelines and Appurtenances	3,326	(406)	2,228	2,459	253	(561)	(647)
<b>Blue Plains Projects Subtotal</b>	<b>(3,478)</b>	<b>(9,539)</b>	<b>9,766</b>	<b>(21,293)</b>	<b>(12,184)</b>	<b>21,294</b>	<b>8,478</b>
<b>Total Changes</b>	<b>(3,478)</b>	<b>(9,539)</b>	<b>9,766</b>	<b>(21,293)</b>	<b>(12,184)</b>	<b>21,294</b>	<b>8,478</b>

The FY13 change reflects a \$20 million reduction in State aid assumed (mostly in the Blue Plains ENR project) and an increase of \$9.9 million in WSSC bonds (also mostly in the Blue Plains ENR project). The City of Rockville’s Blue Plains contribution to WSSC also went up slightly (by \$572,000).

The operating budget impact of this change is minimal, as the debt service to cover WSSC’s increase is about \$670,000 (about a 0.13% impact on the water and sewer rates).

**County Executive Recommendations (Excerpt Attached on ©60-69)**

The County Executive recommendation was transmitted on January 17, and the only changes recommended were the Blue Plains updated project costs noted earlier.

**Table 4: CE Recommended Changes to the WSSC FY13-18 CIP**

	Six-Year						
	Total	FY13	FY14	FY15	FY16	FY17	FY18
WSSC Proposal	1,662,615	572,984	381,838	270,964	187,138	146,546	103,145
change from Approved FY12-17	(75,174)						
CE Changes	-						
- Revise Blue Plains Costs	(3,478)	(9,539)	9,766	(21,293)	(12,184)	21,294	8,478
<b>Total CE Changes</b>	<b>(3,478)</b>	<b>(9,539)</b>	<b>9,766</b>	<b>(21,293)</b>	<b>(12,184)</b>	<b>21,294</b>	<b>8,478</b>
<b>CE Recommended Totals</b>	<b>1,659,137</b>	<b>563,445</b>	<b>391,604</b>	<b>249,671</b>	<b>174,954</b>	<b>167,840</b>	<b>111,623</b>
change from FY12-17 Approved CIP	(78,652)						

**Council Staff recommends approval of the Blue Plains projects with the adjustments recommended by the County Executive.**

**Growth Funding**

WSSC estimates that approximately \$292 million (or 18.0%) of total proposed expenditures in the six-year period are needed to accommodate growth.<sup>1</sup> This percentage is about the same as the FY12-17 CIP (17.8%).

<sup>1</sup> Environmental regulations and system improvements (26% and 56% of requested FY13-18 CIP expenditures respectively) are the two other major categories of spending (see ©3). Note: “information only” projects are not included in these totals.

The major funding sources used to fund growth are:

- A 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 \$102.3 million in revenue over the six-year period. Developer credits and SDC exemptions<sup>2</sup> reduce the net revenue to about \$81.9 million.

Overall, WSSC estimates a deficit in growth funding versus expenditures over the six-year period of \$184 million, as shown on ©2. This deficit is down slightly from last year's estimate of \$203.5 million as a result of a reduction in estimated SDC-related expenditures during the six-year period.

The SDC Fund has a balance of approximately \$77.7 million (as of December 31, 2011).

WSSC's Proposed Operating Budget for FY13 will be transmitted by March 1. The Proposed Operating Budget is expected to assume to increase the maximum rate for FY13 SDC charges as permitted under State law but leave the actual rate charged unchanged. WSSC believes increasing the potential maximum rate is advisable, since the six-year projections show a deficit in growth funding versus growth expenditures. However, given current economic conditions, WSSC does not recommend increasing the SDC charge at this time.

The SDC fund balance is sufficient to cover only the FY13 projected gap (\$82.9 million). However, there are significant annual gaps shown in FY14 and FY15 as well (\$73.2 million and \$43.4 million respectively). Last year, WSSC staff suggested that, as an alternative to an increase in the SDC charge, it would use debt (financed with SDC funds) to address any actual gaps that may occur in the next few years and then use future SDC revenues to pay back the debt over time. Both Councils supported this proposed approach.

### **Project Discussion**

Council Staff has provided some discussion below of the new projects, as well as some other important capital projects (and groups of projects). As noted earlier, the water and sewer reconstruction projects, while discussed in the CIP context, will be subject to further discussion during the review of the WSSC Operating Budget later this spring.

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<sup>2</sup> For purposes of projecting future SDC balances, WSSC assumes both Counties utilize the full \$1.0 million in exemptions each fiscal year. While, historically, neither county has ever fully used its \$500,000 annual share, the surplus carries over to the next year and is available for use in future years.

## New Projects

WSSC is requesting six new projects within the FY13-18 CIP, totaling \$103.4 million over the six-year period. These new projects include:

- Potomac WFP Main Zone Pipeline (Bi-County Water Project, \$330,000, PDF on ©17)
- Clinton Zone Water Storage Facility Implementation (Prince George's County Water Project, \$7,993,000)
- Prince George's County High Zone Storage Facilities (\$7,274,000)
- Prince George's 450A Zone Water Main (\$374,000)
- Fort Washington Forest No. 1 WWPS Augmentation (Prince George's County Sewer Project, \$1,454,000)
- Advanced Metering Infrastructure (Information Only, \$86,000,000, PDF on ©52). This project is discussed in more detail later.

**In addition, on February 7, 2012, the Council is scheduled to act on a WSSC CIP amendment for a developer-funded project, "Mid-Pike Plaza Sewer Main Phase I" (see public hearing/action memorandum on ©70). Council Staff recommends approval of the amendment and therefore recommends that this new project be reflected in the FY13-18 CIP as well.**

## Major Ongoing Projects

### Large Diameter Water Pipe Rehabilitation Program (\$155.9 million over six years, PDF on ©21-22)

This project, added to the CIP two years ago, funds the replacement of transmission mains (pipes greater than 16 inches in diameter) in lengths of 100 feet or greater. WSSC has approximately 960 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, 225 miles are ductile iron and 35 miles are steel. PCCP pipe is the highest priority for inspection, monitoring, repair, and replacement because PCCP pipe can fail in a more catastrophic manner than pipes made out of other materials such as iron or steel.

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

The inspection, fiber optic monitoring, and smaller repairs remain in the Operating Budget, while the large section replacements are done out of this project. The FY13-18 CIP request reflects a cost

increase based on the additional number of pipe sections (both of PCCP and cast iron) being repaired or replaced due primarily to pipeline aging.

Planned work for the next two fiscal years includes:

**FY 2013**

Middlebrook Road 48" Pipeline  
I-270 Gaithersburg 54"/66" Pipeline  
Brightseat 54" Pipeline  
Robotic Inspection Indian Head Highway 42" Pipeline

**FY 2014**

Montgomery Main Zone (Potomac) 96" Pipeline  
Robotic Inspection Norbeck 42" Pipeline  
Robotic Inspection Pennsylvania Ave. 36" Pipeline

**Laytonsville Elevated Tank and Pumping Station (PDF on ©6-7)**

In 2001, the Council first authorized the extension of public water service to the Town of Laytonsville in order to address well water quality concerns.

This project includes the planning, design and construction of a 1.72 mgd finished water pumping station, 0.5 mg elevated storage tank, approximately 6100 feet of 12 inch transmission main and 10,400 feet of 12 inch recirculation main to provide water service to the Town of Laytonsville. Capital costs are estimated to be \$4.7 million. Approximately \$5.4 million in non CIP-sized infrastructure work is also required.

WSSC and the Town of Laytonsville, along with the developer of a residential housing project in the town, agreed to a funding split for the project that assumed \$3.0 million in contributions. The balance is to be covered from SDC funds. These assumptions are noted on the Project Description Form. A memorandum of understanding was signed on December 2, 2005. For FY13, the project costs have been increased to reflect more recent cost estimates.

According to WSSC's February 2012 update, all water mains have been completed and 54 house connections have been made to date. Bids are currently being evaluated for the Water Pumping Station. A notice to proceed was issued for the Water Storage Facility project on January 23, 2012. Work on both facilities is expected to be completed by the summer of 2013.

**Patuxent WFP Phase II Expansion (PDF on ©23-24)**

This project provides for a number of improvements to the Patuxent Plant and an expanded capacity of 72 mgd with emergency capacity of up to 110 mgd. The scope has been revised to include more residual processing at the plant rather than having the residuals processed at the Parkway Wastewater Treatment Plant. The new scope also includes a relief sewer along Sweitzer Lane to ensure there are no sanitary sewer overflows from wastewater discharges at the Plant. A project cost increase of about \$12.3 million is assumed in the Proposed CIP.

### Potomac Submerged Channel Intake (PDF on ©16)

Planning work on the Potomac WFP Submerged Channel Intake project is ongoing. As noted in the Initiation Report for the ongoing study, “The purpose of the ‘Potomac WFP Submerged Channel Intake Feasibility Study’ is to determine where to locate an offshore raw water intake and to develop and document the related public health, operational, and environmental considerations.” 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.

This study was originally expected to come back to both Councils in 2005. However, work by WSSC and the consultant on an environmental impact statement required by the National Park Service, and other work as required by the Maryland Department of the Environment, caused delays.

Also, subsequent to the completion of the original environmental assessment, WSSC began studying an additional potential intake alternative that would be less costly and more environmentally friendly. WSSC is currently working with the Army Corps of Engineers and the National Park Service to update the draft NEPA assessment application originally submitted in July 2005.

**Both Councils will be briefed on the project and must concur before design and construction would begin.**

The project cost estimate has been increased for inflation and the expenditure schedule revised slightly, with a completion date pushed back a year (now assumed to be FY18).

### Bi-County Water Tunnel (PDF on ©18-20)

This project provides for the construction of 28,400 feet of 84 inch diameter water main to portions of Montgomery and Prince George’s Counties. This project will help serve existing and new growth in Prince George’s County while also addressing potential future water pressure problems in the Silver Spring/Wheaton areas.

As a 99 percent growth-related project (one percent system improvement), the project is funded nearly completely with SDC revenues. The total project cost decreased based upon the final executed contract and schedule. The project will be substantially completed by December 2013, with punch-list items and site and landscaping restoration continuing beyond that date.

### Seneca Wastewater Treatment Plant (Enhanced Nutrient Removal and Expansion Part 2) (\$48.4 million combined over six years, PDFs on ©9-12)

These two CIP projects are actually one project broken out for purposes of isolating the ENR costs for State reimbursement, while also including the expansion of the plant from 20 mgd to 26 mgd. The FY13-18 PDFs reflect cost decreases based on actual bid experience. All of the work is scheduled to be completed by January 2015. The project costs decreased as a result of the actual construction contract awarded. The project is funded by the State and by SDC funds.

Trunk Sewer Reconstruction Program (\$207.7 million over six years, PDF on ©33-34)

This project was added two 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, the State of Maryland, and four conservation groups), WSSC inspected 625 miles of sewers in 21 basins by December 2010, as required. Sewer System Evaluation Studies are to be conducted for 9 basins by December 2013. This work is on schedule. Rehabilitation work is to be completed within 10 years (2015).

This project’s six-year expenditures were substantially reduced last year (about \$300 million) with a focusing of the project on “Priority One” work. For this year, WSSC has increased the annual project costs, based on actual bid experience, with an overall six-year increase of about 10.3%.

Enhanced Nutrient Reduction (ENR) Related Projects (PDFs on ©10, ©14, ©31, ©35, ©37, ©39)

Facility	Total	Through	Six-Year	FY13	FY14	FY15	FY16	FY17	FY18
	Cost	FY12	Total						
Seneca WWTP	13,221	6,250	6,971	5,330	1,090	551			
Damascus WWTP	7,301	4,938	2,363	2,363					
Western Branch WWTP	42,946	6,883	36,063	12,827	12,936	10,300			
Parkway WWTP	19,566	10,956	8,610	7,629	981				
Piscataway WWTP	8,380	7,172	1,208	1,208					
<b>Proposed Total</b>	<b>91,414</b>	<b>36,199</b>	<b>55,215</b>	<b>29,357</b>	<b>15,007</b>	<b>10,851</b>	-	-	-
Blue Plains ENR Project*	427,912	125,984	299,101	84,395	56,537	75,743	60,577	19,778	2,071
<b>Total with Blue Plains</b>	<b>519,326</b>	<b>162,183</b>	<b>354,316</b>	<b>113,752</b>	<b>71,544</b>	<b>86,594</b>	<b>60,577</b>	<b>19,778</b>	<b>2,071</b>

\*Blue Plains ENR Project assumes \$2.8 million in costs beyond FY18.

In 2004, the Maryland Legislature approved the Chesapeake Bay Restoration Act, which authorized the collection of a surcharge on water and sewer utility bills paid by Maryland residents and businesses. Funds raised by this surcharge (commonly known as the “flush tax”) are used to fund the conversion of wastewater treatment plants from biological nutrient removal (BNR) to enhanced nutrient removal (ENR).

Starting with the FY07-12 CIP, the WSSC CIP has included ENR projects at WSSC’s wastewater treatment plants, with State funding assumed to cover the costs. Four years ago, major dollars were added to the equivalent ENR project for the Blue Plains Wastewater Treatment Plant.

For the FY13-18 CIP, WSSC has proposed ENR projects totaling \$354.3 million over the six-year period. This represents about an \$82.9 million or 19% reduction in six-year costs and is primarily the result of a projects moving forward to construction in FY12 (and moving out of the six-year period), especially with regard to the Blue Plains ENR project. The six-year total will drop even further (about \$13.4 million) when taking into account the revised DC Water budget numbers for the Blue Plains ENR project.

The requirements to achieve the ENR standard vary by facility. The agreed-upon cost sharing percentages for each ENR project range from 38 percent to 100 percent State funding, depending on

the scope of work in each project. The following chart provided by WSSC staff shows the State aid split as well as the overall costs for each project.

<b>WSSC ENR PROJECT STATUS</b>					
	<b>Damascus WWTP ENR</b>	<b>Parkway WWTP ENR</b>	<b>Piscataway WWTP ENR</b>	<b>Seneca WWTP ENR</b>	<b>Western Branch WWTP ENR</b>
<b>Permit Status</b>	Complete August 26, 2010 Construction Permit	Complete November 5, 2010 Sediment Control Permit	Complete April 20, 2010 Construction Permit	Complete February 2, 2011 Construction Permit	Complete April 14, 2011 Construction Permit
<b>Bid Opening Date</b>	November 16, 2010	February 9, 2011	August 3, 2010	May 10, 2011	June 24, 2011
<b>Current Status</b>	Under Construction	Under Construction	Under Construction	Under Construction	Under Construction
<b>Notice to Proceed</b>	June 10, 2011	July 11, 2011	January 28, 2011	September 30, 2011	October 31, 2011
<b>Final Completion Date</b>	October 22, 2012	July 16, 2013	July 29, 2012	September 28, 2014	August 16, 2014
<b>FY'13 Proposed CIP</b>	\$7,301,000	\$19,566,000	\$8,380,000	\$13,221,000	\$42,946,000
<b>MDE Funding Percentage</b>	94%	93%	100%	38%	100%

The County Executive recommends approval of the ENR projects as proposed (with revised costs for the Blue Plains ENR project based on the latest DC Water FY13-18 CIP numbers as discussed earlier).

**Council Staff recommends approval of the ENR projects with the cost change in the Blue Plains ENR project noted earlier.**

Blue Plains Projects (PDFs on ©26-32)

The WSSC PDFs for Blue Plains represent WSSC's contribution to improvements at the Blue Plains Plant. WSSC's costs for the Blue Plains projects are summarized in the following table, as is the CE Recommendation.

<b>Blue Plains Projects: Expenditures (in \$000s)</b>								
	<b>Approved FY12</b>	<b>Six-Year Total</b>	<b>FY13</b>	<b>FY14</b>	<b>FY15</b>	<b>FY16</b>	<b>FY17</b>	<b>FY18</b>
<b>Total Blue Plains Project Costs</b>								
Approved FY12-17	159,241	704,040	207,886	136,845	64,326	72,965	62,777	
Proposed FY13-18		607,697	236,295	123,554	101,802	84,825	41,674	19,547
Difference		(96,343)	28,409	(13,291)	37,476	11,860	(21,103)	
% Change		-13.7%	13.7%	-9.7%	58.3%	16.3%	-33.6%	
<b>CE Recommended FY13-18</b>		604,219	226,766	133,320	80,509	72,641	62,968	28,025
\$ Change from Proposed		(3,478)	(9,539)	9,766	(21,293)	(12,184)	21,294	8,478
% Change from Proposed		-0.6%	-4.0%	7.9%	-20.9%	-14.4%	51.1%	43.4%

As shown in the table, WSSC's proposed six-year total is \$607.7 million (a decrease of 13.7% from the Approved FY12-17 CIP). However, as noted earlier, the County Executive is recommending changes in the six-year total for these projects, based on more recent DC Water budget information.

Regional negotiations for a new Blue Plains Intermunicipal Agreement (IMA) to replace the 1985 IMA recently concluded, and briefings for the Blue Plains regional partners who are signatories

to the IMA are in process. The current IMA set capacity allocations for the Blue Plains regional partners (including WSSC). The capacity allocation percentages are used to allocate capital costs for Blue Plains projects. Actual flows to the facility are used to determine operating contributions by the regional partners. The new IMA maintains the same capacity allocation for WSSC.

**Council Staff recommends approval of the Blue Plains project totals as recommended by the County Executive. These numbers are based on the latest project cost estimates included in the DC Water FY11-20 CIP.**

### **“Information Only” Projects**

#### Advanced Metering Infrastructure (PDF on ©52)

This new project involves the study of various automated meter reading systems in FY13 with a goal of implementing a system that maximizes customer service and operational efficiency. Order of magnitude costs of \$86 million are included in the six-year total for the project.

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 (excerpt attached on ©53-59) identified about \$11.4 to \$15.4 million in annual savings that could be achieved upon full implementation.

#### Anaerobic Digestion/Combined Heat & Power (PDF on ©47-49)

This project provides for the design and construction of systems to produce biogas from biosolids at the Seneca and Piscataway Wastewater Treatment Plants. The total project cost is estimated at \$79.3 million.

Cost savings will be achieved from reduced energy purchase costs and from reduced biosolids transportation and disposal costs. The project is intended to include a payback period of no more than 15 years that would be guaranteed by the contractor.

Three years ago, WSSC received a \$570,900 earmark in the FY09 Omnibus Appropriations bill for the study/design of a Combined Anaerobic Digester Fuel Cell project. Additional Federal aid will be sought (and is assumed on the PDF) as the project develops. The feasibility study is currently underway and scheduled for completion shortly. The construction costs shown in the project continue to be “order of magnitude” estimates but have been updated based on more recent information and the addition of thermal hydrolysis pre-treatment to the digester phase to increase the production of biogas.

### Asset Management Program (PDF on ©50-51)

Work continues on WSSC's Asset Management Program (\$13.7 million over the six-year period). Phase I of the work (a broad level review) was completed in December 2007.

Two major findings from this phase of work were:

- The above-ground assets are in good condition with a few exceptions.
  - Process upgrades needed to comply with existing regulations are programmed in the CIP.
  - Non-process rehabilitations at plants, pumping stations, and water storage tanks are needed.
- The renewal of buried assets is WSSC's most immediate challenge.
  - By 2025, approximately 50% of the entire distribution system will reach or exceed its useful life.
  - 85% of the cast iron pipe in the distribution system will exceed its useful life by 2025.
  - Renewal of the collection system piping is driven by compliance with the Consent Decree signed in 2005 to reduce sanitary sewer overflows (SSOs).

Phase II was completed in March 2011 and included the creation of five Asset Management Plans (AMPs), including: Piscataway WWTP, Broad Creek WWPS, Broad Creek Basin, Transmission System, and Distribution Systems). The Piscataway WWTP Upgrades project was the first project to be developed out of this AMP process. Phase II also included the development of 12 asset management processes and 69 asset management procedures.

As described by WSSC last year, the intent of the Asset Management Program is to:

*“provide a level of service and risk based framework to be applied in making capital investment and budgeting decisions on how best to manage the assets. This structured approach will apply rigorous data based financial analysis to prospective projects, programs and initiatives, and will serve as the foundation of business case development for these proposals.”*

### Water Reconstruction Program (PDF on ©43-44)

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 \$641.3 million.

Over the past several 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. For FY13, 51 miles of replacement are proposed. WSSC's long-term goal is to reach a steady state of approximately 55 miles of replacement per year (or about a 100 year replacement cycle).

The need for expanding this program was identified several years ago in the Utility Master Plan effort discussed earlier. Originally, this ramp-up was to be a major multi-year commitment predicated on a substantial increase in the Account Maintenance Fee (ready to serve) charge that was

ultimately not agreed upon by the WSSC Commission. Without a new funding source, the ramp-up must be accommodated within available dollars from annual water and sewer rate increases.

This ramp-up is having an impact on rates of new debt and debt service costs in the Operating Budget. Fortunately, favorable interest rates have helped temper this impact. However, as shown during spending control limit discussions last fall, debt service is expected to climb from about 33.8% now to 42.5% in FY18, assuming no new infrastructure fee or major debt restructuring.

#### Sewer Reconstruction Program (PDF on ©45-46)

This “information only” project funds comprehensive sewer system evaluations and rehabilitation programs. The six-year cost is \$628.9 million. 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 have already ramped up in this program as a result. As mentioned earlier, WSSC developed a new project last year to deal specifically with trunk sewer reconstruction. Costs associated with that work were previously included in this project. The focus of this project is on sewer mains and house connections.

WSSC is planning a major ramp-up of work in FY13 as it works to meet an FY15 Consent Decree deadline to complete “Priority 1” work. Miles of sewer reconstruction will increase from 22 to 55 miles per year. Lateral sewer lining will increase by 100 percent, from 5 to 10 miles per year.

Once this initial wave of required work is completed, WSSC expects the rate of work to stabilize at about 30 miles of mains and 10 miles of laterals per year .

**The water and reconstruction effort is a major area of concern to Montgomery County, given WSSC’s rising debt requirements. The Bi-County Infrastructure Funding Working Group is working with a consultant to identify and review various strategies to address long-term infrastructure needs. An interim report will be presented to the Commission shortly.**

#### Cost To Extend Water/Sewer to Address Failing Septic Systems

At last year’s T&E Committee worksession, Councilmember Floreen asked both WSSC and DEP staff what is being done to address the issue of failing septic systems in Montgomery County. There are a number of examples (such as in Potomac and Clarksburg) where properties receive category changes to allow public water and/or sewer to address failed septic systems but cannot ultimately move forward with the water/sewer main extensions because of cost issues.

Council staff noted at the Committee worksession that all septic systems will ultimately fail over time. If a property does not have sufficient acreage or suitable soil for a replacement well and/or septic field based on newer and stricter permit requirements, then public water and/or sewer may be the only viable long-term option. However, these extensions have gotten increasingly costly in recent

years and, in many cases, the applicant may not be able to afford the cost of the water or sewer main extension.

A staff group with representatives from WSSC, Montgomery County, and Prince George's County studied this issue several years ago and presented recommendations to WSSC leadership that would have revised how water and sewer main extensions are financed in these cases.

Last year, the Bi-County Infrastructure Working Group agreed to take up this extension cost issue again. However, the immediate work of that Group has been focused on analyzing strategies to address WSSC's major infrastructure needs over the next 30 years. The issue of addressing failed septic systems has not been discussed yet.

In the meantime, DPS Well and Septic staff continue to respond to on-site septic system issues that arise. DEP reviews individual applications for category changes for property owners seeking to connect to sewer to address septic failures.

Last spring, the Council approved funding in FY12 for a consultant study of septic issues in the Glen Hills area of Potomac. This large and comprehensive study recently began. Phase I work (identifying current conditions) is expected to be completed this summer. Phase II work (identifying on-site and public sewer-related solutions) is expected to be completed by the end of 2012.

**However, extension costs, whether in Glen Hills or elsewhere, will remain an issue under the current process, and Council Staff recommends that WSSC (either through the Bi-County Infrastructure Group) or another group revisit the extension cost issue in FY13.**

#### **Council Staff Recommendations**

- **Recommend approval of WSSC's CIP changes noted in its mid-cycle update. This update includes revisions to the Blue Plains projects which are consistent with the County Executive's recommendations as well.**
- **Add the "Mid-Pike Plaza Sewer Main" Phase I to the FY13-18 WSSC CIP.**
- **Concur with WSSC on all other projects in the Proposed FY13-18 CIP.**
- **With regard to addressing failing septic systems, Council Staff recommends that WSSC take this issue up during FY13.**

#### *Notes:*

- *The Council will review the Potomac WFP Submerged Channel Intake Project once the feasibility study is completed.*
- *The pace of the Water and Sewer reconstruction effort continues to be an area of major concern. Montgomery County Council and Executive Staff will continue to work with WSSC and Prince George's County staff on long-term funding strategies to ramp up this work via the Bicounty Infrastructure Funding Working Group.*

#### **Attachments**

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# Washington Suburban Sanitary Commission

14501 Sweitzer Lane • Laurel, Maryland 20707-5901

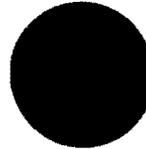
COMMISSIONERS  
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GENERAL MANAGER  
Jerry N. Johnson

September 26, 2011

The Honorable Valerie Ervin  
President  
Montgomery County Council  
Stella Werner Office Building  
100 Maryland Avenue  
Rockville, MD 20850-2371

064897



ENCLS IN FILE

RECEIVED  
MONTGOMERY COUNTY  
PLANNING BOARD  
SEP 29 PM 1:20

Dear Council President Ervin:

On behalf of the Washington Suburban Sanitary Commission (WSSC) and our valued customers, I am hereby transmitting our Proposed Fiscal Years 2013-2018 Capital Improvements Program (CIP). This document includes projects for Prince George's and Montgomery counties, as well as Bi-County projects.

This proposed CIP is the result of work sessions and coordination with representatives from both counties and the Maryland-National Capital Park & Planning Commission. We also received feedback from our customers through our public hearings held on September 14 and 15.

Our proposed CIP includes 93 projects and expenditures of \$1.7 billion over the six-year period. Our most significant projects include the ongoing work at the Blue Plains WWTP, the Trunk Sewer Reconstruction Program, the Broad Creek WWPS Augmentation project, the Large Diameter Water Pipe Rehabilitation Program, and the Bi-County Water Tunnel.

Over the past year the Bi-County Working Group, consisting of representatives from both counties from the County Executives' Offices, the County Councils, WSSC Commissioners, and WSSC staff, has continued its investigation into alternative methods of funding our long-term infrastructure renewal program for the older water and sewer pipes that make up our underground water distribution and wastewater collection systems. With the support of a consultant, the Bi-County Working Group began the process of identifying a broad range of options for addressing this challenge. That work continues with the objective of completing a more in-depth review of various options, and making recommendations to the WSSC Commissioners later this year.

In undertaking the Fiscal Years 2013-2018 Capital Improvements Program, we believe we will continue to enhance our ability to successfully fulfill our core mission while also creating economic opportunity, strengthening local businesses and improving the quality of life for residents in Prince George's and Montgomery counties.

Thank you for your consideration and participation in making this proposed CIP an important investment in the continued quality of our water and sewer services.

Sincerely,

Dr. Roscoe M. Moore, Jr.  
Chair

Enclosures

cc: The Honorable Francoise Carrier, Chair  
Montgomery County Planning Board

1

**GROWTH FUNDING GAP**

**(In Millions)**

	<u>FY'13</u>	<u>FY'14</u>	<u>FY'15</u>	<u>FY'16</u>	<u>FY'17</u>	<u>FY'18</u>	<u>6 YEAR TOTAL</u>
<b>CIP GROWTH EXPENDITURES</b>	\$129.5	\$86.6	\$56.0	\$15.1	\$3.7	\$1.1	\$292.0
Expenditures Adjusted for Completion	103.6	95.2	62.1	23.3	6.0	1.6	291.8
<b>FUNDING SOURCES</b>							
Privately Funded Projects	8.3	8.8	5.3	1.5	0.9	1.1	25.9
Estimated SDC Revenue	15.8	16.6	16.8	17.3	17.8	18.0	102.3
Less SDC Developer Credits	(2.4)	(2.4)	(2.4)	(2.4)	(2.4)	(2.4)	(14.4)
Less SDC Exemptions <sup>1</sup>	(1.0)	(1.0)	(1.0)	(1.0)	(1.0)	(1.0)	(6.0)
<b>TOTAL FUNDING SOURCES</b>	\$20.7	\$22.0	\$18.7	\$15.4	\$15.3	\$15.7	\$107.8
<b>FUNDING GAP</b>							
<b>ADJUSTED FOR COMPLETION</b>	<b>\$82.9</b>	<b>\$73.2</b>	<b>\$43.4</b>	<b>\$7.9</b>	<b>(\$9.3)</b>	<b>(\$14.1)</b>	<b>\$184.0</b>

<sup>1</sup> Each County may grant SDC exemptions, as identified in Appendix A, totaling up to \$500,000 per fiscal year as provided for in Maryland State Law (Article 29, Section 6-113(c)(iv)). Unused exemption amounts are available for use in future fiscal years. Cumulative unused SDC exemptions totaled approximately \$3.8 million for Montgomery County and \$3.0 million for Prince George's County through June 30, 2011.

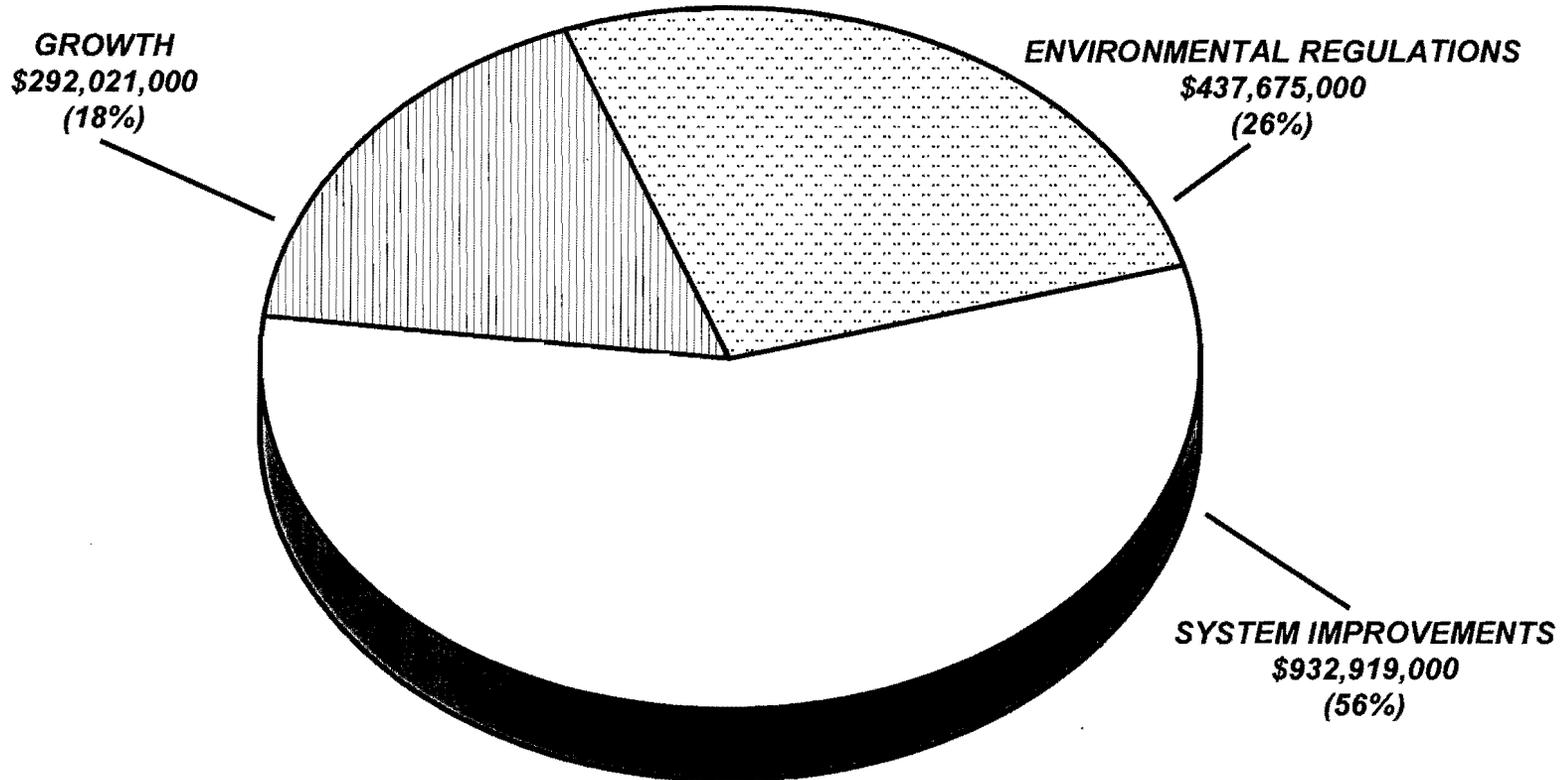
**Expenditures**

The FYs 2013-2018 Capital Improvements Program includes 93 projects for a grand total of over \$3.0 billion dollars. Expenditures for the six-year program period are estimated at \$1.7 billion. FY'13 expenditures are estimated at \$573.0 million, which is \$151.9 million greater than the funding level approved for FY'12. Of the \$573.0 million, \$153.4 million is for the Water Program and \$419.5 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 \$27.7 million, with approximately \$11.6 million programmed in FY'13, approximately the same amount approved last year. There are 6 new CIP projects, including one new Information Only project, totaling \$103.4 million in the six-year program period. These projects are shown on the New Projects Listing near the end of this section. A table comparing the Adopted FYs 2012-2017 CIP to the Proposed FYs 2013-2018 CIP follows:

**FIGURE 3**

# **WSSC PROPOSED FYS 2013-18 CIP**

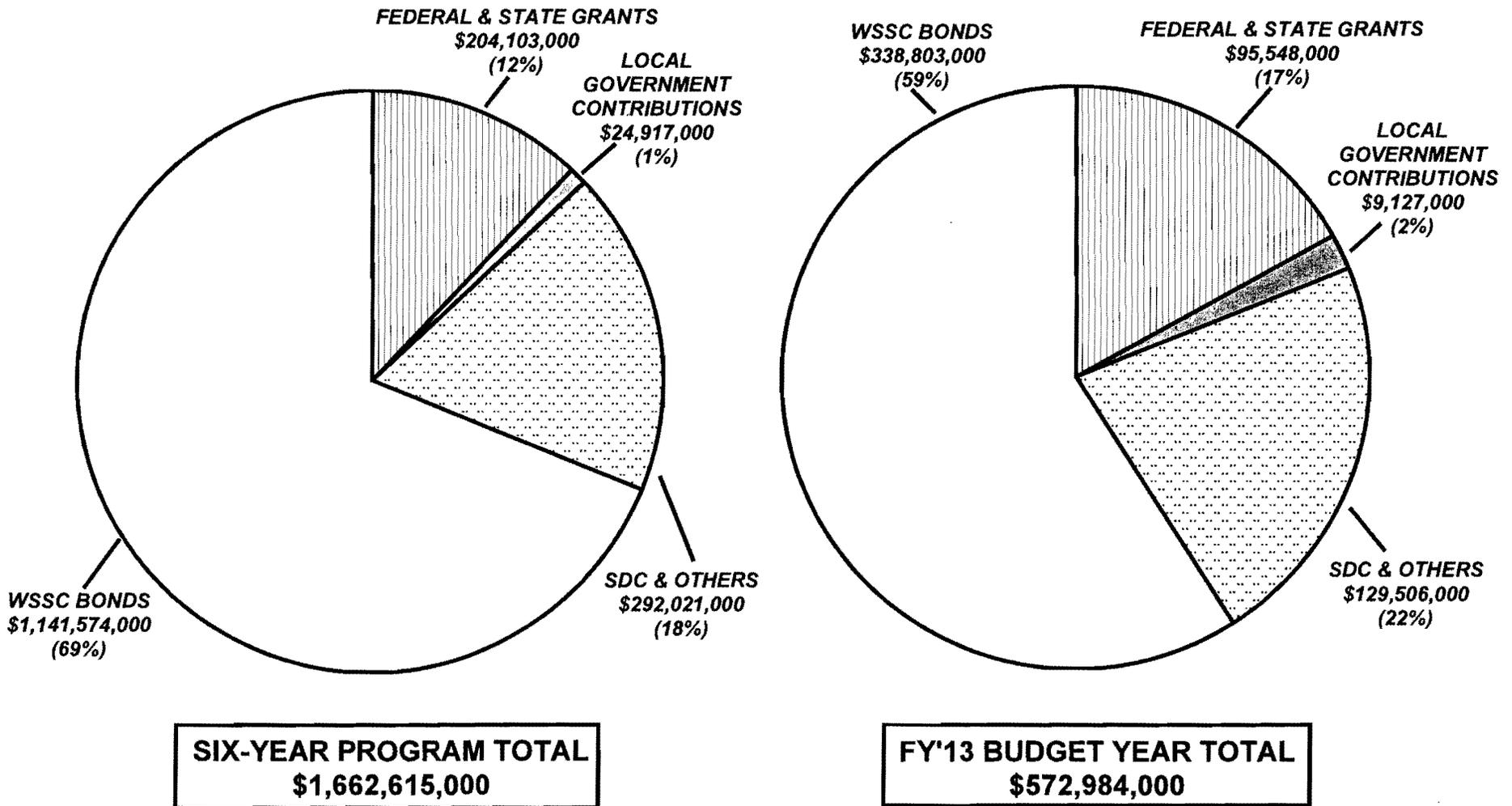
## **SIX-YEAR PROGRAM EXPENDITURES BY MAJOR CATEGORY\***



**SIX-YEAR PROGRAM TOTAL**  
**\$1,662,615,000**

\* Totals do not include \$1,558,993,000 in System Improvements project capital expenditures for Information Only projects.

**FIGURE 4**  
**WSSC PROPOSED FYS 2013-18 CIP**  
**FUNDING BY SOURCE\***



\* Totals do not include \$1,558,993,000 and \$242,652,000 in capital expenditures for Information Only projects in the six-year program and budget year, respectively.

(4)

## FINANCIAL SUMMARY

(ALL FIGURES IN THOUSANDS)

### MONTGOMERY COUNTY WATER PROJECTS

AGENCY NUMBER	PROJECT NAME	EST. TOTAL COST	EXPEND THRU 11	EST. EXPEND 12	TOTAL SIX YEARS	EXPENDITURE SCHEDULE						BUDGET REQUEST 13	PDF PAGE NUM
						YR 1 13	YR 2 14	YR 3 15	YR 4 16	YR 5 17	YR 6 18		
W-3.02	Olney Standpipe Replacement	6,606	1,020	324	5,262	3,220	2,042	0	0	0	0	3,220	1-2
W-46.14	Clarksburg Area Stage 3 Water Main, Parts 1, 2 & 3	3,803	84	335	3,384	1,778	1,119	399	88	0	0	1,778	1-4
W-46.15	Clarksburg Elevated Water Storage Facility	4,313	142	21	4,150	21	144	145	1,923	1,917	0	21	1-5
W-46.18	Newcut Road Water Main, Part 2	1,126	306	136	684	255	429	0	0	0	0	255	1-6
W-46.24	Clarksburg Area Stage 3 Water Main, Part 4	2,073	68	554	1,451	1,176	190	85	0	0	0	1,176	1-7
W-113.19	Countryside Drive Water Loop	352	81	254	17	17	0	0	0	0	0	17	1-8
W-138.02	Shady Grove Standpipe Replacement	8,598	211	316	8,071	1,884	5,442	745	0	0	0	1,884	1-9
W-153.00	Laytonsville Elevated Tank & Pumping Station	5,521	857	1,593	3,071	2,277	794	0	0	0	0	2,277	1-10
W-200.00	Land & Rights-of-Way Acquisition - Montgomery County	202	0	102	100	0	100	0	0	0	0	0	1-12
<b>TOTAL MONTGOMERY COUNTY WATER PROJECTS</b>		<b>32,594</b>	<b>2,769</b>	<b>3,635</b>	<b>26,190</b>	<b>10,628</b>	<b>10,260</b>	<b>1,374</b>	<b>2,011</b>	<b>1,917</b>	<b>0</b>	<b>10,628</b>	

**A. Identification and Coding Information**

1. Project Number Agency Number Update Code  
 023800 W-153.00 Change

2. Date: October 1, 2011

3. Project Name: Laytonsville Elevated Tank & Pumping Station

4. Program: Sanitation 5. Agency: WSSC

6. Planning Area: Goshen, Woodfield & Vicinity P.A. 14

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

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

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

Cost Elements	(8) Total	(9) Thru FY '11	(10) Estimate FY '12	(11) Total 6 Years	(12) Year 1 FY '13	(13) Year 2 FY '14	(14) Year 3 FY '15	(15) Year 4 FY '16	(16) Year 5 FY '17	(17) Year 6 FY '18	(18) Beyond 6 Years
Planning, Design & Supervision	1,262	857	135	270	180	90					
Land											
Site Improvements & Utilities											
Construction	3,650		1,250	2,400	1,800	600					
Other	609		208	401	297	104					
<b>Total</b>	<b>5,521</b>	<b>857</b>	<b>1,593</b>	<b>3,071</b>	<b>2,277</b>	<b>794</b>					

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

Date First in Capital Program	FY 02
Date First Approved	FY 02
Initial Cost Estimate	58
Cost Estimate Last FY	4,678
Present Cost Estimate	5,521
Approved Request, Last FY	1,840
Total Expenditures & Encumbrances	857
Approval Request FY 13	2,277
Supplemental Approval Request Current FY (12)	

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

	(8) Total	(9) Thru FY '11	(10) Estimate FY '12	(11) Total 6 Years	(12) Year 1 FY '13	(13) Year 2 FY '14	(14) Year 3 FY '15	(15) Year 4 FY '16	(16) Year 5 FY '17	(17) Year 6 FY '18	(18) Beyond 6 Years
SDC	2,521	857	93	1,571	1,277	294					
Contribution/Other	3,000		1,500	1,500	1,000	500					

**D. Description & Justification**

**DESCRIPTION**

The project provides for the planning, design, and construction for the creation of a new pressure zone to serve the town of Laytonsville and surrounding communities. Community outreach, site selection, design, and construction of an 0.5 million gallon elevated storage tank and a 1.72 MGD pumping station will be part of this project. The purpose of this project is to provide public water service to existing residences and commercial properties in addition to new homes in the town of Laytonsville and the surrounding communities. To the extent that this project will add new hookups to WSSC's existing customer base, 100% of this project supports future growth. Refer to the definition of growth projects in the Expenditure Section of the Program Overview at the front of this document.

**Service Area** Montgomery High Pressure Zone HG660 **Capacity** 0.5 MG

**G. Status Information**

Land Status: Site acquired  
 % Project Completion: D-99%  
 Est. Completion Date: November 2013

**JUSTIFICATION**

**Plans & Studies**

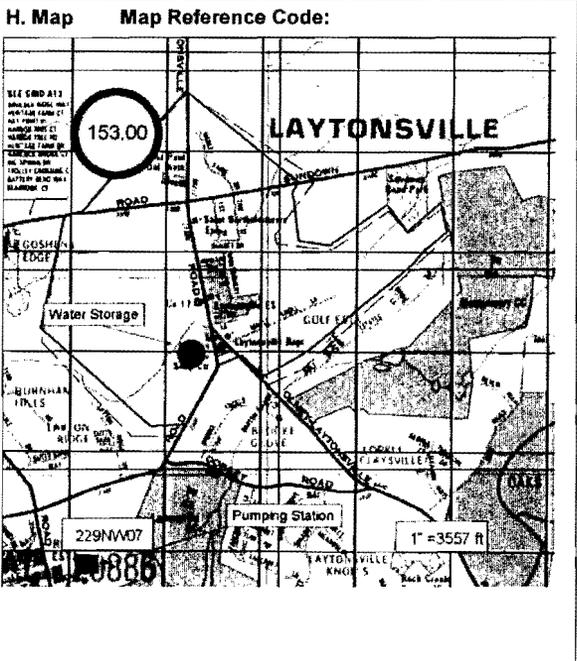
Preliminary Study for the Proposed Water Service Area for Town of Laytonsville (October 1999); Memorandum dated October 18, 2001, from the Manager of the Well and Septic Section, Montgomery County Department of Permitting Services, to Water and Waste Water Management, Montgomery County Department of Environmental Protection, finding that connection to the public water system will help address problems caused by groundwater contamination and lack of available septic replacement areas; Montgomery County Ten-Year Comprehensive Water Supply and Sewerage Systems Plan.

**Specific Data**

The preliminary Study for Proposed Water Service Area for the Town of Laytonsville indicates that, due to high ground elevations, a new pressure zone which entails a pumping station and an elevated storage tank is required. In May 2001, under CR 14-857, the Montgomery County Council acted to permanently restrict the provision of community water service from any properties in the town currently zoned AG and from any properties adjacent to or near the town within the county zoned RDT. The Town of Laytonsville filed a formal application for water service with the WSSC in November 2001.

**Cost Change**

Costs increased as a result of the plans being finished and the subsequent preparation of better estimates for the water storage facility and the redesign of the pumping station has increased the estimated construction cost.



**STATUS** Final Design (WSSC Contract Nos. BM2938A00 , BP2938B00 , BE2938C00).

**OTHER**

The project scope has remained the same. Expenditure and schedule projections shown above are design level estimates and may change based upon site conditions and final bid. It is estimated that an additional \$5.41 million of non-CIP sized pipeline work will also be required. The expenditure and construction schedule presented above reflect that the WSSC, the Developer of the Faulk's property,

6

**D. DESCRIPTION & JUSTIFICATION (CONT.)**

**Agency Number: W - 153.00**

**Project Name: Laytonsville Elevated Tank & Pumping Station**

and the Town of Laytonsville have agreed to the funding mechanism for the Contribution/Other funding shown above in Block C. The project has been delayed due to delays in obtaining the needed permits. The elevated storage tank design is complete and will be bid in Summer 2011. The pumping station is in final design and is expected to be bid in Fall 2011. Project status in Block G reflects the status of the pumping station.

**COORDINATION**

Maryland-National Capital Park & Planning Commission and Montgomery County Department of Environmental Protection.

**NOTE** This project supports 100% Growth.

## FINANCIAL SUMMARY

(ALL FIGURES IN THOUSANDS)

### MONTGOMERY COUNTY SEWER PROJECTS

AGENCY NUMBER	PROJECT NAME	EST. TOTAL COST	EXPEND THRU 11	EST. EXPEND 12	TOTAL SIX YEARS	EXPENDITURE SCHEDULE						BUDGET REQUEST 13	PDF PAGE NUM
						YR 1 13	YR 2 14	YR 3 15	YR 4 16	YR 5 17	YR 6 18		
S-25.03	Twinbrook Commons Sewer	951	566	55	330	110	97	93	30	0	0	110	2-2
S-38.01	Preserve at Rock Creek Wastewater Pumping Station	1,159	0	667	492	492	0	0	0	0	0	492	2-3
S-38.02	Preserve at Rock Creek WWPS Force Main	370	16	15	339	171	168	0	0	0	0	171	2-4
 S-53.21	Seneca WWTP Enhanced Nutrient Removal	13,221	2,202	4,048	6,971	5,330	1,090	551	0	0	0	5,330	2-6
S-53.22	Seneca WWTP Expansion, Part 2	32,134	2,905	8,422	20,807	11,691	6,366	2,750	0	0	0	11,691	2-8
S-61.01	Reddy Branch Wastewater Pumping Station Augmentation	180	0	90	90	90	0	0	0	0	0	90	2-9
S-82.21	Montgomery College Germantown Campus Sewer	746	178	284	284	284	0	0	0	0	0	284	2-10
S-84.47	Clarksburg Triangle Outfall Sewer, Part 2	2,393	80	579	1,734	1,306	388	40	0	0	0	1,306	2-12
S-84.60	Cabin Branch Wastewater Pumping Station	2,207	12	10	2,185	30	535	1,620	0	0	0	30	2-13
S-84.61	Cabin Branch WWPS Force Main	399	0	17	382	134	228	20	0	0	0	134	2-14
S-84.65	Tapestry Wastewater Pumping Station	644	7	299	338	169	169	0	0	0	0	169	2-15
S-84.66	Tapestry WWPS Force Main	126	8	46	72	47	25	0	0	0	0	47	2-16
S-94.11	Damascus Centre WWPS Replacement	1,282	0	24	1,258	28	254	976	0	0	0	28	2-17
 S-94.12	Damascus WWTP Enhanced Nutrient Removal	7,301	1,138	3,800	2,363	2,363	0	0	0	0	0	2,363	2-18
S-103.15	White Flint East (North Bethesda Center) Sewer Main	2,269	218	1,740	311	292	19	0	0	0	0	292	2-20
S-201.00	Land & Rights-of-Way Acquisition - Montgomery County	320	0	300	20	10	10	0	0	0	0	10	2-21
<b>TOTAL MONTGOMERY COUNTY SEWER PROJECTS</b>		<b>65,702</b>	<b>7,330</b>	<b>20,396</b>	<b>37,976</b>	<b>22,547</b>	<b>9,349</b>	<b>6,050</b>	<b>30</b>	<b>0</b>	<b>0</b>	<b>22,547</b>	

 Denotes projects which include an environmental component (see page 15 in the opening narrative.)

**SENECA WASTEWATER TREATMENT PLANT PROJECTS**  
(costs in thousands)

PROJECT NUMBER	PROJECT NAME	ADOPTED FY'12 TOTAL COST	PROPOSED FY'13 TOTAL COST	CHANGE \$	CHANGE %	SIX-YEAR COST	COMPLETION DATE (est)
S-53.21	Seneca WWTP Enhanced Nutrient Removal	\$14,618	\$13,221	(\$1,397)	-9.6%	\$6,971	January 2015
S-53.22	Seneca WWTP Expansion, Part 2	39,321	32,134	(7,187)	-18.3%	20,807	January 2015
	<b>TOTALS</b>	<b>\$53,939</b>	<b>\$45,355</b>	<b>(\$8,584)</b>	<b>-15.9%</b>	<b>\$27,778</b>	

**Summary:** The Seneca WWTP Enhanced Nutrient Removal (ENR) project (S-53.21) provides for the planning, design, and construction of improvements necessary to meet the requirements of MDE's Enhanced Nutrient Removal Program. The Seneca WWTP Expansion, Part 2 project (S-53.22) provides for the planning, design, and construction of improvements at the Seneca WWTP necessary to meet projected growth in this service area by increasing the capacity from 20 MGD to 26 MGD while also meeting the requirements of MDE's Enhanced Nutrient Removal Program. The individual project description forms on the pages following this summary provide additional information.

**Cost Impact:** Project costs for the Seneca WWTP Enhanced Nutrient Removal (ENR) (S-53.21) and the Seneca WWTP Expansion, Part 2 (S-53.22) were revised downward to reflect current construction cost estimates.

**A. Identification and Coding Information**

1. Project Number: 073800    Agency Number: S-53.21    Update Code: Change

2. Date: October 1, 2011    Revised: \_\_\_\_\_

3. Project Name: Seneca WWTP Enhanced Nutrient Removal

4. Program: Sanitation    5. Agency: WSSC

6. Planning Area: Lower Seneca P.A. 18

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

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

Program Costs	Staff .....	.....	
	Other .....	.....	
Facility Costs	Maintenance .....	.....	
	Debt Service .....	583	16
Total Costs.....		583	16
Impact on Water or Sewer Rate.....		1¢	16

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

Cost Elements	(8) Total	(9) Thru FY '11	(10) Estimate FY '12	(11) Total 6 Years	(12) Year 1 FY '13	(13) Year 2 FY '14	(14) Year 3 FY '15	(15) Year 4 FY '16	(16) Year 5 FY '17	(17) Year 6 FY '18	(18) Beyond 6 Years
Planning, Design & Supervision	3,765	2,202	313	1,250	625	547	78				
Land											
Site Improvements & Utilities											
Construction	8,019		3,207	4,812	4,010	401	401				
Other	1,437		528	909	695	142	72				
<b>Total</b>	<b>13,221</b>	<b>2,202</b>	<b>4,048</b>	<b>6,971</b>	<b>5,330</b>	<b>1,090</b>	<b>551</b>				

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

	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
WSSC Bonds	8,198	1,365	2,510	4,323	3,305	676	342				
State Aid	5,023	837	1,538	2,648	2,025	414	209				

**D. Description & Justification**

**DESCRIPTION**

This project provides for the planning, design, and construction of improvements at the Seneca WWTP necessary to meet the requirements of the Maryland Department of the Environment (MDE) Enhanced Nutrient Removal (ENR) Program at 20 MGD. The recommendations include modification of the existing basins to Flexible Modified Ludzack-Ettinger (MLE) mode, methanol storage and distribution system, upgrade of the existing 13 filters, and expansion of the filter gallery to include 3 new sand filters designed for phosphorous removal down to the permit goal of 0.18 mg/l at the maximum month flow of 33 MGD (design flow is 26 MGD).

**Service Area** Seneca Creek Drainage Basin

**JUSTIFICATION**

**Plans & Studies**  
ENR Alternatives for the Seneca Wastewater Treatment Plant, Gannett Fleming (June 2005); Maryland Department of the Environment, Feasibility Study Approval Letter (July 27, 2005); WSSC Preliminary Engineering Report (September 2008); Design Criteria Report (November 2008).

**Specific Data**  
The Bay Restoration Fund Enhanced Nutrient Removal (ENR) Program's purpose is to meet the commitments under the 2000 Chesapeake Bay Agreement. Reductions of nutrient pollutants from all sources including sewage treatment plants are necessary. The ENR strategy builds on the success of the Biological Nutrient Removal (BNR) Program already in place. The MDE is using the Bay Restoration Fund to upgrade the 66 major wastewater treatment plants which discharge to the Chesapeake Bay with ENR technologies. Once upgraded, these plants are expected to reduce nitrogen and phosphorus in the wastewater down to 3 mg/l total nitrogen and 0.3 mg/l total phosphorus, achieving approximately one-third of the needed reduction under the Chesapeake Bay 2000 Agreement. Other pollutants will continue to be reduced by more than 90%.

**Cost Change**  
The cost estimate was revised downward to reflect the current construction cost estimate.

**STATUS** Under Construction (WSSC Contract Nos. CD4260A05, CD4260C05).

**OTHER**  
The project scope has remained the same. The expenditures and schedule projections shown in Block B are based upon bids received. The funding schedule reflects the final cost sharing agreement with MDE.

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

Date First in Capital Program	FY 07
Date First Approved	FY 07
Initial Cost Estimate	22,862
Cost Estimate Last FY	14,618
Present Cost Estimate	13,221
Approved Request, Last FY	4,026
Total Expenditures & Encumbrances	2,202
Approval Request FY 13	5,330
Supplemental Approval Request Current FY (12)	

**G. Status Information**

Land Status: No land or R/W required

% Project Completion: C-0%

Est. Completion Date: January 2015

**H. Map    Map Reference Code:**

MAP NOT AVAILABLE

**D. DESCRIPTION & JUSTIFICATION (CONT.)**

**Agency Number: S - 53.21**

**Project Name: Seneca WWTP Enhanced Nutrient Removal**

**COORDINATION**

Montgomery County Government, Montgomery County Department of Environmental Protection, Maryland Department of the Environment and WSSC Project S-53.22, Seneca WWTP Expansion, Part 2.

**NOTE** This project supports 100% Environmental Regulation.

**A. Identification and Coding Information**

1. Project Number	Agency Number	Update Code
083802	S-53.22	Change

2. Date: October 1, 2011

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

Revised:

3. Project Name: Seneca WWTP Expansion, Part 2

5. Agency: **WSSC**4. Program: **Sanitation** 6. Planning Area: Lower Seneca P.A. 18**B. Expenditure Schedule (000's)**

	(8) Total	(9) Thru FY '11	(10) Estimate FY '12	(11) Total 6 Years	(12) Year 1 FY '13	(13) Year 2 FY '14	(14) Year 3 FY '15	(15) Year 4 FY '16	(16) Year 5 FY '17	(17) Year 6 FY '18	(18) Beyond 6 Years
Cost Elements											
Planning, Design & Supervision	<b>6,060</b>	2,905	631	<b>2,524</b>	1,262	1,104	158				
Land											
Site Improvements & Utilities											
Construction	<b>23,416</b>		7,025	<b>16,391</b>	9,366	4,683	2,342				
Other	<b>2,658</b>		766	<b>1,892</b>	1,063	579	250				
<b>Total</b>	<b>32,134</b>	<b>2,905</b>	<b>8,422</b>	<b>20,807</b>	<b>11,691</b>	<b>6,366</b>	<b>2,750</b>				

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

	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
SDC	<b>32,134</b>	2,905	8,422	<b>20,807</b>	11,691	6,366	2,750				

**D. Description & Justification****DESCRIPTION**

This project provides for the planning, design, and construction of improvements at the Seneca WWTP necessary to meet the projected growth in this service area while adhering to the requirements of the Maryland Department of the Environment (MDE) Enhanced Nutrient Removal (ENR) Program at 26 MGD (an increase from 20 MGD). The project will provide an additional aeration basin, an additional 150-foot clarifier, expansion of the filter gallery to include 4 new sand filters designed for phosphorous removal down to the permit goal of 0.18 mg/l at the maximum month flow of 33 MGD (design flow is 26 MGD), and biosolids handling system improvements. The biosolids handling improvements consist of an additional centrifuge and biosolids conveyance modifications which will provide system redundancy. The electrical distribution system will also be evaluated.

**Service Area** Seneca Creek Drainage Basin

**JUSTIFICATION****Plans & Studies**

ENR Alternatives for the Seneca Wastewater Treatment Plant, Gannett Fleming (June 2005); Maryland Department of the Environment, Feasibility Study Approval Letter (July 27, 2005); WSSC Preliminary Engineering Report (September 2008); Design Criteria Report (November 2008).

**Specific Data**

The planned improvements at the Seneca WWTP will adhere to the requirements of MDE's ENR Program at 26 MGD in accordance with the reduction goals under the Chesapeake Bay 2000 Agreement. The design provides for phosphorous removal down to the permit goal of 0.18 mg/l at the maximum month flow of 33 MGD (design flow is 26 MGD).

**Cost Change**

The cost estimate was revised downward to reflect the current construction cost estimate.

**STATUS** Under Construction (WSSC Contract No. CD4260B05, ).

**OTHER**

The project scope has remained the same. The expenditures and schedule projections shown in Block B are based upon bids received.

**COORDINATION**

Montgomery County Government, Montgomery County Department of Environmental Protection, Maryland Department of the Environment and WSSC Project S-53.21, Seneca WWTP Enhanced Nutrient Removal.

**NOTE** This project supports 100% Growth.

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

Program Costs	Staff	Other	FY of Impact
Facility Costs	Maintenance	Debt Service	
Total Costs			
Impact on Water or Sewer Rate			

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

Date First in Capital Program	FY 08
Date First Approved	FY 07
Initial Cost Estimate	16,478
Cost Estimate Last FY	39,321
Present Cost Estimate	32,134
Approved Request, Last FY	11,695
Total Expenditures & Encumbrances	2,905
Approval Request FY 13	11,691
Supplemental Approval Request Current FY (12)	

**G. Status Information**

Land Status: Public/Agency owned land  
 % Project Completion: C-0%  
 Est. Completion Date: January 2015

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

**A. Identification and Coding Information**

1. Project Number	Agency Number	Update Code
073801	S-94.12	Change

2. Date: October 1, 2011

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

Revised:

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3. Project Name: Damascus WWTP Enhanced Nutrient Removal

5. Agency: **WSSC**4. Program: **Sanitation** 6. Planning Area: Damascus & Vicinity P.A. 11**B.****Expenditure Schedule (000's)**

Cost Elements	(8) Total	(9) Thru FY '11	(10) Estimate FY '12	(11) Total 6 Years	(12) Year 1 FY '13	(13) Year 2 FY '14	(14) Year 3 FY '15	(15) Year 4 FY '16	(16) Year 5 FY '17	(17) Year 6 FY '18	(18) Beyond 6 Years
Planning, Design & Supervision	2,207	1,138	804	265	265						
Land											
Site Improvements & Utilities											
Construction	4,290		2,500	1,790	1,790						
Other	804		496	308	308						
<b>Total</b>	<b>7,301</b>	<b>1,138</b>	<b>3,800</b>	<b>2,363</b>	<b>2,363</b>						

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

WSSC Bonds	416	64	217	135	135						
State Aid	6,885	1,074	3,583	2,228	2,228						

**D. Description & Justification****DESCRIPTION**

This project provides for the planning, design, and construction of improvements at the Damascus WWTP necessary to meet the requirements of the Maryland Department of the Environment (MDE) Enhanced Nutrient Removal (ENR) Program. The project will convert the existing basin configuration to Bardenpho process and provide methanol feed capability. The existing two process trains will be divided into four process trains which will provide tankage/process redundancy for periodic maintenance. Splitting the existing process trains into four trains also allows the treatment capacity to closer match the current influent flows. The carbon source will be designed for methanol and several other biodiesel byproducts. Additional improvements will include modifications to reactors, Final Clarifier Distribution Box, Supplemental Carbon Feed Facilities, Supplemental Carbon Feed Building, demolition of existing facilities, instrumentation, and associated site work.

**Service Area** Patuxent North Drainage Basin

**JUSTIFICATION****Plans & Studies**

ENR Alternatives for Damascus WWTP, Gannett Fleming (June 2005); Maryland Department of the Environment, Feasibility Study Approval Letter (July 27, 2005); Maryland Department of the Environment, Eligibility Determination Letter (December 22, 2008).

**Specific Data**

The Bay Restoration Fund Enhanced Nutrient Removal (ENR) Program's purpose is to meet the commitments under the 2000 Chesapeake Bay Agreement. Reductions of nutrient pollutants from all sources including sewage treatment plants are necessary. The ENR strategy builds on the success of the Biological Nutrient Removal (BNR) Program already in place. The MDE is using the Bay Restoration Fund to upgrade the 66 major wastewater treatment plants which discharge to the Chesapeake Bay with ENR technologies. Once upgraded, these plants are expected to reduce nitrogen and phosphorus in the wastewater down to 3 mg/l total nitrogen and 0.3 mg/l total phosphorus, achieving approximately one-third of the needed reduction under the Chesapeake Bay 2000 Agreement. Other pollutants will continue to be reduced by more than 90%.

**Cost Change**

The cost estimate was increased to reflect the current construction cost.

**STATUS** Under Construction (WSSC Contract No. CD4261A05, ).

**OTHER**

The project scope has remained the same. The expenditures and schedule projections shown in Block B are based upon bids received. The funding schedule reflects the final cost sharing agreement with the MDE.

**E. Annual Operating Budget Impact (000's)**

FY of Impact

Program Costs	Staff .....	....	
	Other .....	....	
Facility Costs	Maintenance .....	....	
	Debt Service .....	35	14
Total Costs.....		35	14
Impact on Water or Sewer Rate.....		....	....

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

Date First in Capital Program	FY 07
Date First Approved	FY 07
Initial Cost Estimate	1,560
Cost Estimate Last FY	7,054
Present Cost Estimate	7,301
Approved Request, Last FY	3,815
Total Expenditures & Encumbrances	1,138
Approval Request FY 13	2,363
Supplemental Approval Request Current FY (12)	

**G. Status Information**

Land Status: No land or R/W required  
 % Project Completion: C-0%  
 Est. Completion Date: October 2012

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

**D. DESCRIPTION & JUSTIFICATION (CONT.)**

**Agency Number: S - 94.12**

**Project Name: Damascus WWTP Enhanced Nutrient Removal**

The anticipated project start date is July 1, 2011, which corresponds to the draft NPDES permit start date. The WSSC will request a waiver of the NPDES permit requirements if necessary.

**COORDINATION**

Montgomery County Government, Montgomery County Department of Environmental Protection and Maryland Department of the Environment.

**NOTE** This project supports 100% Environmental Regulation.

**FINANCIAL SUMMARY**

(ALL FIGURES IN THOUSANDS)

**BI-COUNTY WATER PROJECTS**

AGENCY NUMBER	PROJECT NAME	EST. TOTAL COST	EXPEND THRU 11	EST. EXPEND 12	TOTAL SIX YEARS	EXPENDITURE SCHEDULE						BUDGET REQUEST 13	PDF PAGE NUM
						YR 1 13	YR 2 14	YR 3 15	YR 4 16	YR 5 17	YR 6 18		
W-73.16	Potomac WFP Improvements	130,705	127,162	3,322	221	221	0	0	0	0	0	221	3-4
W-73.18	Power Reliability and Arc Flash Studies	5,537	522	2,715	2,300	2,300	0	0	0	0	0	2,300	3-5
W-73.19	Potomac WFP Outdoor Substation No. 2 Replacement	9,477	118	920	8,439	575	1,898	3,163	2,105	698	0	575	3-6
 W-73.20	Potomac WFP Stage 2 Disinfection Byproducts Rule Implementation	9,457	1,295	638	7,524	6,575	949	0	0	0	0	6,575	3-7
W-73.30	Potomac WFP Submerged Channel Intake	26,714	1,974	333	24,407	405	1,164	990	5,997	13,618	2,233	405	3-8
W-73.32	Potomac WFP Main Zone Pipeline	330	0	0	330	165	165	0	0	0	0	165	3-10
W-127.01	Bi-County Water Tunnel	157,606	57,758	44,961	54,887	44,072	10,815	0	0	0	0	44,072	3-11
W-139.02	Duckett & Brighton Dam Upgrades	18,464	2,112	5,238	11,114	10,258	856	0	0	0	0	10,258	3-14
W-161.01	Large Diameter Water Pipe Rehabilitation Program	181,223	10,100	15,202	155,921	23,714	23,819	23,819	24,523	30,023	30,023	23,714	3-15
 W-172.05	Patuxent WFP Phase II Expansion	64,811	4,694	1,615	58,502	18,260	22,994	14,373	2,875	0	0	18,260	3-18
W-172.07	Patuxent Raw Water Pipeline	21,770	6,375	2,289	13,106	2,987	958	2,737	3,678	2,746	0	2,987	3-20
W-172.08	Rocky Gorge Pump Station Upgrade	16,613	3,936	165	12,512	4,077	6,339	2,096	0	0	0	4,077	3-21
W-202.00	Land & Rights-of-Way Acquisition - Bi-County	110	0	30	80	30	50	0	0	0	0	30	3-22
<b>TOTAL BI-COUNTY WATER PROJECTS</b>		<b>642,817</b>	<b>216,046</b>	<b>77,428</b>	<b>349,343</b>	<b>113,639</b>	<b>70,007</b>	<b>47,178</b>	<b>39,178</b>	<b>47,085</b>	<b>32,256</b>	<b>113,639</b>	

 Denotes projects which include an environmental component (see page 15 in the opening narrative.)

**A. Identification and Coding Information**

2. Date: October 1, 2011      7. Pre PDF Pg.No.:      8. Req. Adeq. Pub. Fac.

1. Project Number	Agency Number	Update Code
033812	W-73.30	Change

Revised: \_\_\_\_\_

3. Project Name: Potomac WFP Submerged Channel Intake      5. Agency: **WSSC**

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

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

Program Costs	Staff .....	.....	
	Other .....	.....	
Facility Costs	Maintenance .....	.....	
	Debt Service .....	2198	19
Total Costs.....		2198	19
Impact on Water or Sewer Rate.....		4¢	19

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

Cost Elements	(8) Total	(9) Thru FY '11	(10) Estimate FY '12	(11) Total 6 Years	(12) Year 1 FY '13	(13) Year 2 FY '14	(14) Year 3 FY '15	(15) Year 4 FY '16	(16) Year 5 FY '17	(17) Year 6 FY '18	(18) Beyond 6 Years
Planning, Design & Supervision	5,503	1,974	303	3,226	368	1,058	900	470	400	30	
Land											
Site Improvements & Utilities											
Construction	18,962			18,962			4,982	11,980	2,000		
Other	2,249		30	2,219	37	106	90	545	1,238	203	
<b>Total</b>	<b>26,714</b>	<b>1,974</b>	<b>333</b>	<b>24,407</b>	<b>405</b>	<b>1,164</b>	<b>990</b>	<b>5,997</b>	<b>13,618</b>	<b>2,233</b>	

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

WSSC Bonds	26,714	1,974	333	24,407	405	1,164	990	5,997	13,618	2,233
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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.

**Service Area** Bi-County Area

**JUSTIFICATION**

**Plans & Studies**

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

**Specific Data**

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

**Cost Change**

Costs were increased for inflation.

**STATUS** Planning (WSSC Contract No. BF2028F97, ).

**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.

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

Date First in Capital Program	FY 04
Date First Approved	FY 03
Initial Cost Estimate	936
Cost Estimate Last FY	25,899
Present Cost Estimate	26,714
Approved Request, Last FY	1,100
Total Expenditures & Encumbrances	1,974
Approval Request FY 13	405
Supplemental Approval Request Current FY (12)	

**G. Status Information**

Land Status: Right-of-Way may be required

% Project Completion: P-90%

Est. Completion Date: FY 2018

**H. Map      Map Reference Code:**

MAP NOT AVAILABLE

16

**A. Identification and Coding Information**

2. Date: October 1, 2011      7. Pre PDF Pg.No.:      8. Req. Adeq. Pub. Fac.

1. Project Number	Agency Number	Update Code
	W-73.32	Add

Revised: \_\_\_\_\_

3. Project Name: Potomac WFP Main Zone Pipeline      5. Agency: **WSSC**

4. Program: **Sanitation**      6. Planning Area: Potomac-Cabin John & Vicinity P.A. 29

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

Program Costs	Staff .....	....	
	Other .....	....	
Facility Costs	Maintenance .....	26	....
	Debt Service .....	29	.... 15
Total Costs.....		55	.... 15
Impact on Water or Sewer Rate.....			....

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

Cost Elements	(8) Total	(9) Thru FY '11	(10) Estimate FY '12	(11) Total 6 Years	(12) Year 1 FY '13	(13) Year 2 FY '14	(14) Year 3 FY '15	(15) Year 4 FY '16	(16) Year 5 FY '17	(17) Year 6 FY '18	(18) Beyond 6 Years
Planning, Design & Supervision	300			300	150	150					
Land											
Site Improvements & Utilities											
Construction											
Other	30			30	15	15					
<b>Total</b>	<b>330</b>			<b>330</b>	<b>165</b>	<b>165</b>					

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

WSSC Bonds	330			330	165	165					
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**D. Description & Justification**

**DESCRIPTION**

This project provides for the initial planning for approximately 1,500 feet of 78-inch diameter water main parallel to the existing 78-inch diameter line leaving the Potomac WFP.

**Service Area** Montgomery Main Pressure Zone HG495, Prince George's Main Pressure Zone HG320, Prince George's High Pressure Zone HG450      **Capacity** Approximately 200 mgd

**JUSTIFICATION**

**Plans & Studies**  
E-mail from M. Woodcock to C. Fricke and E. Betanzo dated April 27, 2011.

**Specific Data**  
The existing 78-inch diameter PCCP line is currently the only line feeding the 96-inch diameter Montgomery Main Zone pipeline and the 66-inch diameter River Road pipeline. The primary purpose of this project is to provide redundancy for the existing line. The actual diameter, length and alignment will be determined during the initial planning/preliminary design phase.

**Cost Change**  
Not applicable.

**STATUS** Planning (WSSC Contract No. BL5285A11, ).

**OTHER**  
The project scope was developed for the FY 2013 CIP and has an Order of Magnitude cost estimate of \$330,000 for the initial planning work. As the project develops, design and construction cost estimates will be added to the project.

**COORDINATION**  
Maryland State Highway Administration, Montgomery County Department of Public Works and Transportation and Montgomery County Government.

**NOTE** This project supports 100% System Improvement.

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

Date First in Capital Program	FY 13
Date First Approved	FY 13
Initial Cost Estimate	330
Cost Estimate Last FY	
Present Cost Estimate	330
Approved Request, Last FY	
Total Expenditures & Encumbrances	
Approval Request FY 13	165
Supplemental Approval Request Current FY (12)	

**G. Status Information**

Land Status: Right-of-Way may be required

% Project Completion: P-0%

Est. Completion Date: Undetermined

**H. Map      Map Reference Code:**

MAP NOT AVAILABLE

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**A. Identification and Coding Information**

1. Project Number: 934855    Agency Number: W-127.01    Update Code: Change

2. Date: October 1, 2011    Revised: \_\_\_\_\_

3. Project Name: Bi-County Water Tunnel

4. Program: Sanitation    5. Agency: WSSC

6. Planning Area: Bi-County

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

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

Program Costs	Staff .....	.....	
	Other .....	.....	
Facility Costs	Maintenance .....	329	15
	Debt Service .....	61	15
Total Costs.....		390	15
Impact on Water or Sewer Rate.....			

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

Cost Elements	(8) Total	(9) Thru FY '11	(10) Estimate FY '12	(11) Total 6 Years	(12) Year 1 FY '13	(13) Year 2 FY '14	(14) Year 3 FY '15	(15) Year 4 FY '16	(16) Year 5 FY '17	(17) Year 6 FY '18	(18) Beyond 6 Years
Planning, Design & Supervision	31,105	22,240	4,400	4,465	4,065	400					
Land											
Site Improvements & Utilities											
Construction	117,424	35,518	36,474	45,432	36,000	9,432					
Other	9,077		4,087	4,990	4,007	983					
<b>Total</b>	<b>157,606</b>	<b>57,758</b>	<b>44,961</b>	<b>54,887</b>	<b>44,072</b>	<b>10,815</b>					

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

Date First in Capital Program	FY 93
Date First Approved	FY 93
Initial Cost Estimate	63,000
Cost Estimate Last FY	158,268
Present Cost Estimate	157,606
Approved Request, Last FY	41,492
Total Expenditures & Encumbrances	57,758
Approval Request FY 13	44,072
Supplemental Approval Request Current FY (12)	

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

	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
WSSC Bonds	700			700	400	300					
SDC	156,906	57,758	44,961	54,187	43,672	10,515					

**D. Description & Justification**

**DESCRIPTION**

This project provides for the design and construction of approximately 28,400 feet of 84-inch diameter water main between the intersection of Tuckerman Lane and Route I-270 and the western terminus of the Bi-County Water Tunnel near the area where Rock Creek crosses the Capital Beltway (Maryland Route 495). The project will be constructed as a deep tunnel, minimizing community and environmental impacts. The project also includes relining 450 feet of existing 96-inch PCCP with 84-inch steel pipe at the I-270 connection between this pipeline and the new tunnel.

**Service Area** Montgomery Main Pressure Zone HG495, Prince George's High Pressure Zone HG450

**JUSTIFICATION**

**Plans & Studies**  
Montgomery and Prince George's Main Zone Facility Plan, Black and Veatch, Inc. (October, 1990); Technical Memoranda #1, 2, & 3 (Draft), Louis Berger & Associates (1997); Updated Water Demand Projections (dated April 6, 2001); and the General Plan. Final Alignment Report, Black and Veatch, Inc. (July, 2005).

**Specific Data**  
This project will significantly increase transmission capacity from the Potomac Water Filtration Plant to the Montgomery County Main Zone and Prince George's County. The alignment study completed in July 2005 recommended that the water main be constructed as a pipeline with a deep rock tunnel from 90 to 250 feet below the ground surface.

**Cost Change**  
The cost decrease reflects the latest available estimates.

**STATUS** Under Construction (WSSC Contract Nos. BL9972A94 , BL9972B94 , BL9972C94).

**OTHER**  
The project scope remains the same. Expenditures shown in Block B above are definitive and are the sum of the design services, construction management services and construction contract amounts. In late 2005, both Councils reviewed the results of the detailed alignment study and agreed upon the final alignment and construction method. Substantial completion of the tunnel is expected in November 2013. Funding shown in FY'14 includes site/landscaping restoration.

As part of the permit requirements for work within Cabin John and Rock Creek Parks, M-NCP&PC calls for stream restoration along Old Farm Creek. This work will be handled under a separate contract with costs tracked under a separate contract number. The relining of 450 feet of existing 96-inch diameter PCCP, estimated to cost \$700,000, is being tracked under a separate contract and is not subject to SDC funding.

**G. Status Information**

Land Status: Site selected  
 % Project Completion: C-30%  
 Est. Completion Date: December 2013

**H. Map    Map Reference Code:**

SEE ATTACHED MAP

19

**D. DESCRIPTION & JUSTIFICATION (CONT.)**

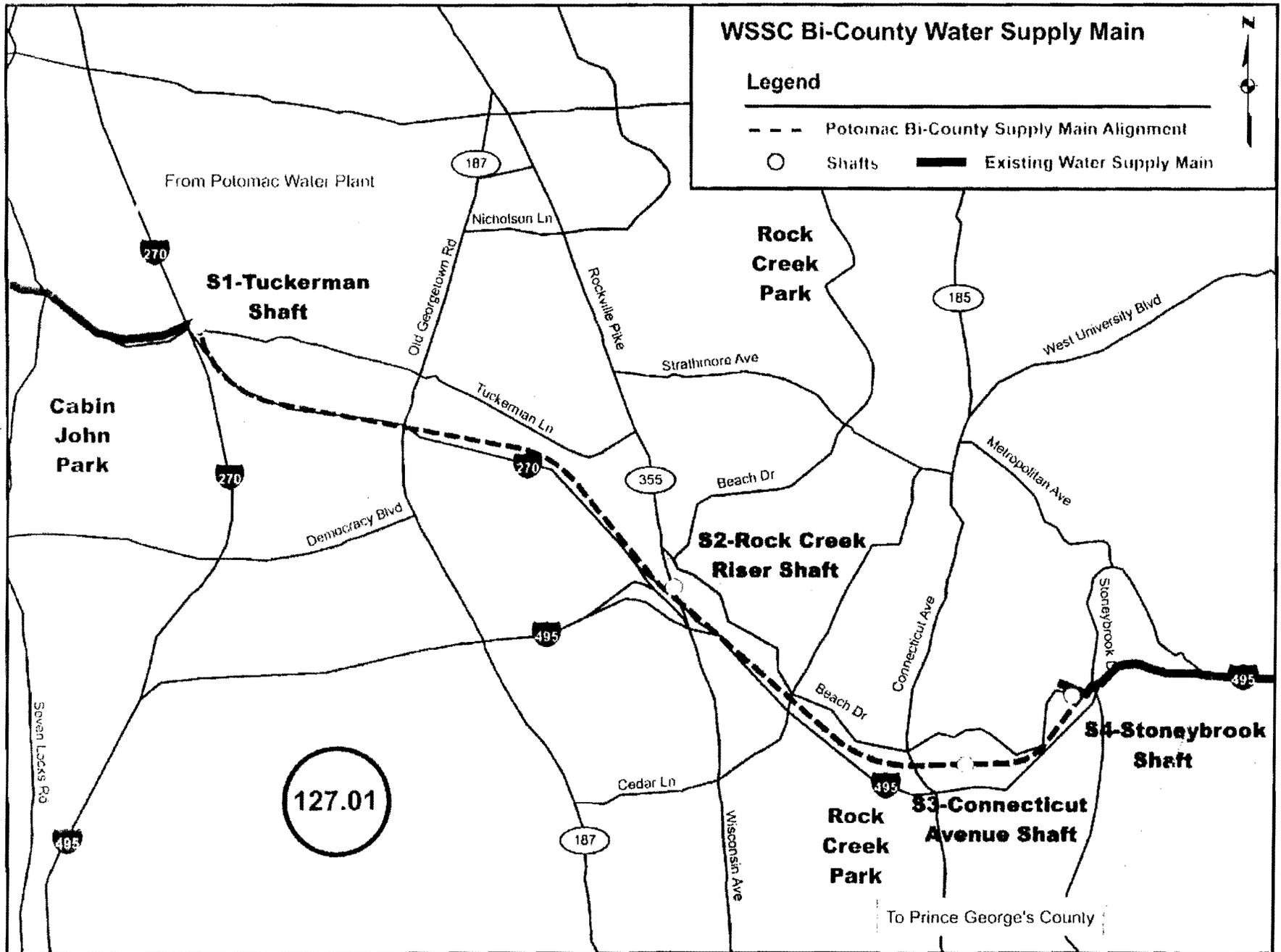
**Agency Number: W - 127.01**

**Project Name: Bi-County Water Tunnel**

**COORDINATION**

Montgomery County Government, Prince George's County Government, Maryland-National Capital Park & Planning Commission (Mandatory Referral submissions are approved), Maryland Department of Natural Resources and Maryland State Department of Transportation.

**NOTE** This project supports 99% Growth and 1% System Improvement.



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**A. Identification and Coding Information**

1. Project Number: 113803    Agency Number: W-161.01    Update Code: Change

2. Date: October 1, 2011    Revised: \_\_\_\_\_

3. Project Name: Large Diameter Water Pipe Rehabilitation Program

4. Program: Sanitation    5. Agency: WSSC

6. Planning Area: Bi-County

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

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

Program Costs	Staff .....	.....	.....
	Other .....	.....	.....
Facility Costs	Maintenance .....	.....	.....
	Debt Service .....	15803	19
Total Costs.....		15803	19
Impact on Water or Sewer Rate.....		31¢	19

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

Cost Elements	(8) Total	(9) Thru FY '11	(10) Estimate FY '12	(11) Total 6 Years	(12) Year 1 FY '13	(13) Year 2 FY '14	(14) Year 3 FY '15	(15) Year 4 FY '16	(16) Year 5 FY '17	(17) Year 6 FY '18	(18) Beyond 6 Years
Planning, Design & Supervision	11,100	600	640	9,860	790	1,430	1,430	2,070	2,070	2,070	
Land											
Site Improvements & Utilities											
Construction	154,568	9,500	13,180	131,888	20,768	20,224	20,224	20,224	25,224	25,224	
Other	15,555		1,382	14,173	2,156	2,165	2,165	2,229	2,729	2,729	
<b>Total</b>	<b>181,223</b>	<b>10,100</b>	<b>15,202</b>	<b>155,921</b>	<b>23,714</b>	<b>23,819</b>	<b>23,819</b>	<b>24,523</b>	<b>30,023</b>	<b>30,023</b>	

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

WSSC Bonds	181,223	10,100	15,202	155,921	23,714	23,819	23,819	24,523	30,023	30,023
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**D. Description & Justification**

**DESCRIPTION**

The purpose of this program is to plan, design and rehabilitate or replace Large Diameter Water Transmission Mains that have reached the end of their useful life. Condition Assessment and/or corrosion monitoring is performed on metallic pipelines, including ductile iron, cast iron, and steel, to identify lengths of pipe requiring replacement or rehabilitation and cathodic protection. The PCCP Inspection and Condition Assessment Program identifies individual pipe sections 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 sections in varying stages of deterioration that are most cost effectively accomplished by the replacement or rehabilitation of long segments of the pipeline or the entire pipeline. Rehabilitation or replacement of these mains provides value to the customer by minimizing the risk of catastrophic failure and ensuring a safe and reliable water supply. The Program includes installation of Acoustic Fiber Optic Monitoring equipment in order to accomplish these goals in PCCP mains.

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

**JUSTIFICATION**

**Plans & Studies**  
Utility Wide Master Plan, (December 2007); 30 Year Infrastructure Plan (2007); FY2012 Water Transmission System Asset Management Plan, GHD, Inc. (March 2011).

**Specific Data**  
WSSC has approximately 960 miles of large diameter water main ranging from 16-inch to 96-inch in diameter. This includes 350 miles of cast iron, 225 miles of ductile iron, 35 miles of steel and 350 miles of PCCP. Internal inspection and condition assessment is performed annually on specific PCCP pipelines. Of the 350 miles of PCCP, 145 miles are 36-inch diameter and larger, and 59 miles are 54-inch diameter or larger. The inspection program includes internal visual and sounding, sonic/ultrasonic testing, and electromagnetic testing to establish the condition of each pipe section and determine if maintenance repairs, rehabilitation, or replacement are needed.

**Cost Change**  
The cost increase is due to an increase in the number of miles of cast iron pipe being replaced and requiring cathodic protection and an increase in the number of PCCP pipe sections that require repair or replacement due primarily to pipeline aging. The cost increase also includes the design and construction of PCCP pipeline improvements including interconnections and entry ports to facilitate inspections of 42-inch diameter and 36-inch diameter PCCP pipelines.

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

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

Date First in Capital Program	FY 11
Date First Approved	FY 11
Initial Cost Estimate	60,000
Cost Estimate Last FY	127,941
Present Cost Estimate	181,223
Approved Request, Last FY	12,276
Total Expenditures & Encumbrances	10,100
Approval Request FY 13	23,714
Supplemental Approval Request Current FY (12)	

**G. Status Information**

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

**H. Map    Map Reference Code:**

**MAP NOT AVAILABLE**

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**D. DESCRIPTION & JUSTIFICATION (CONT.)**

**Agency Number: W - 161.01**

**Project Name: Large Diameter Water Pipe 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 inspection, monitoring and emergency repairs are included in the Operating Budget.

**COORDINATION**

Maryland State Highway Administration, Montgomery County Department of Public Works and Transportation, Montgomery County Government (including localities where work is to be performed), Prince George's County Government (including localities where work is to be performed), Maryland-National Capital Park & Planning Commission, Prince George's County Department of Public Works & Transportation, Local Community Civic Associations and WSSC Projects A-107.00, Pressure Reducing Valve Rehabilitation Program and W-1.00, Water Reconstruction Program.

**NOTE** This project supports 100% System Improvement.

**A. Identification and Coding Information**

1. Project Number: 033807    Agency Number: W-172.05    Update Code: Change

2. Date: October 1, 2011    Revised: \_\_\_\_\_

3. Project Name: Patuxent WFP Phase II Expansion

4. Program: Sanitation    5. Agency: WSSC

6. Planning Area: Bi-County

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

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

Cost Elements	(8) Total	(9) Thru FY '11	(10) Estimate FY '12	(11) Total 6 Years	(12) Year 1 FY '13	(13) Year 2 FY '14	(14) Year 3 FY '15	(15) Year 4 FY '16	(16) Year 5 FY '17	(17) Year 6 FY '18	(18) Beyond 6 Years
Planning, Design & Supervision	9,475	4,694	1,268	3,513	1,139	1,356	848	170			
Land											
Site Improvements & Utilities											
Construction	49,871		200	49,671	15,461	19,548	12,218	2,444			
Other	5,465		147	5,318	1,660	2,090	1,307	261			
<b>Total</b>	<b>64,811</b>	<b>4,694</b>	<b>1,615</b>	<b>58,502</b>	<b>18,260</b>	<b>22,994</b>	<b>14,373</b>	<b>2,875</b>			

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

WSSC Bonds	64,811	4,694	1,615	58,502	18,260	22,994	14,373	2,875			
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**D. Description & Justification**

**DESCRIPTION**

This project provides for the addition of a sixth treatment train, a new electrical substation, a new residuals handling facility, new UV disinfection facilities, upgrades to existing yard piping, and upgrades to chemical facilities at the Patuxent WFP along with an upgrade to the existing potassium permanganate feed system at the Patuxent Pretreatment Facility and a new relief sewer which upgrades the existing sewer system along Sweitzer Lane to accommodate the new residuals facility.

**Service Area** Bi-County Area      **Capacity** 72 MGD nominal/110 MGD emergency

**JUSTIFICATION**

**Plans & Studies**

"Patuxent WFP Facility Plan", O'Brien & Gere Engineers, Inc., (April, 1997); In-House Study (April, 2002); Patuxent Expansion Design Criteria Report (April 2005), "Parkway WWTP Biosolids Facility Plan", CH2M Hill (October 2009); "Evaluation of Residuals Handling Process Alternatives", AECOM Technical Services, (Draft March 2011)

**Specific Data**

Phase II will add a sixth treatment train consisting of a three stage flocculation chamber, sedimentation basin with chain and flight solids removal and plate settlers, disinfectant contact chamber, and two deep bed granular carbon filters. A fourth raw water pipeline from Rocky Gorge Raw Water Pipeline (W-172.07) and the modification and expansion of the Rocky Gorge Water Pumping Station (W-172.08) will provide a firm raw water pumping/transmission capacity of 110 MGD. These improvements will give the plant a firm nominal capacity of 72 MGD, with emergency capacity of 110 MGD. New UV disinfection facilities are being added to the plant in order to assure compliance with future EPA regulations for Cryptosporidium treatment and Stage 2 Disinfection Byproducts Rule effective 2012. This project also adds a residuals handling facility to remove the solids from impacting the Parkway WWTP and a relief sewer along Sweitzer Lane to assure no sanitary sewer overflows (SSO) occur as a result of Plant wastewater discharge.

**Cost Change**

Cost increase is a result of development of a conceptual design level construction cost estimate which incorporates several decisions on residuals handling process technology/equipment selection, building and equipment layout, etc., made by WSSC in spring 2011.

**STATUS** Preliminary Design (WSSC Contract Nos. BF1582H91 , CT1582A91).

**OTHER**

The project scope has remained the same. In the event of an outage at the Potomac WFP, additional capacity at the Patuxent WFP will reduce customer impact. However, emergency conservation measures will still be required. Expenditure estimates shown above are preliminary design estimates and may change as the design progresses.

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

Program Costs	Staff .....	.....	
	Other .....	.....	
Facility Costs	Maintenance .....	.....	
	Debt Service .....	5795	17
<b>Total Costs</b> .....		5795	17
<b>Impact on Water or Sewer Rate</b> .....		11¢	17

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

Date First in Capital Program	FY 04
Date First Approved	FY 03
Initial Cost Estimate	33,002
Cost Estimate Last FY	52,508
Present Cost Estimate	64,811
Approved Request, Last FY	969
Total Expenditures & Encumbrances	4,694
Approval Request FY 13	18,260
Supplemental Approval Request Current FY (12)	

**G. Status Information**

Land Status:	No land or R/W required
% Project Completion:	D-65%
Est. Completion Date:	FY 2016

**H. Map    Map Reference Code:**

MAP NOT AVAILABLE

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**D. DESCRIPTION & JUSTIFICATION (CONT.)**

Agency Number: W - 172.05

Project Name: Patuxent WFP Phase II Expansion

**COORDINATION**

Montgomery County Government, Prince George's County Government, Maryland-National Capital Park & Planning Commission, Maryland Department of the Environment, Maryland State Department of Transportation, Baltimore Gas & Electric and WSSC Projects W-12.02, Prince George's County HG415 Zone Water Main, W-172.07, Patuxent Raw Water Pipeline, W-172.08, Rocky Gorge Pump Station Upgrade and W-73.18, Power Reliability and Arc Flash Studies(Coordination of UV Criteria).

**NOTE** This project supports 80% System Improvement and 20% Environmental Regulation.

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

**BI-COUNTY SEWER PROJECTS**

AGENCY NUMBER	PROJECT NAME	EST. TOTAL COST	EXPEND THRU 11	EST. EXPEND 12	TOTAL SIX YEARS	EXPENDITURE SCHEDULE						BUDGET REQUEST 13	PDF PAGE NUM
						YR 1 13	YR 2 14	YR 3 15	YR 4 16	YR 5 17	YR 6 18		
S-22.06	Blue Plains WWTP: Liquid Train Projects, Part 2	265,857	222,407	8,592	30,080	7,803	4,668	1,619	3,171	7,643	5,176	7,803	4-3
S-22.07	Blue Plains WWTP: Biosolids Management, Part 2	376,062	142,445	70,684	162,931	111,139	38,977	4,714	5,141	2,491	469	111,139	4-4
 S-22.08	Blue Plains WWTP: Biological Nutrient Removal	87,744	64,438	5,992	17,314	11,894	4,497	717	206	0	0	11,894	4-5
S-22.09	Blue Plains WWTP: Plant-wide Projects	201,943	157,824	9,894	29,502	7,801	6,230	3,656	2,242	2,518	7,055	7,801	4-6
 S-22.10	Blue Plains WWTP: Enhanced Nutrient Removal	427,912	36,659	89,325	299,101	84,395	56,537	75,743	60,577	19,778	2,071	84,395	4-7
 S-22.11	Blue Plains: Pipelines & Appurtenances	113,466	25,168	10,466	68,769	13,263	12,645	15,353	13,488	9,244	4,776	13,263	4-8
 S-89.22	Anacostia Storage Facility	19,358	3,861	5,500	9,997	6,050	3,947	0	0	0	0	6,050	4-9
S-89.23	Anacostia No. 2 Screenings Handling System	2,557	293	2,172	92	92	0	0	0	0	0	92	4-11
S-170.08	Septage Discharge Facility Planning & Implementation	11,166	785	41	10,340	330	330	7,260	2,420	0	0	330	4-12
S-170.09	Trunk Sewer Reconstruction Program	228,982	1,381	19,946	207,655	52,286	43,120	18,435	32,890	30,462	30,462	52,286	4-14
<b>TOTAL BI-COUNTY SEWER PROJECTS</b>		<b>1,735,047</b>	<b>655,261</b>	<b>222,612</b>	<b>835,781</b>	<b>295,053</b>	<b>170,951</b>	<b>127,497</b>	<b>120,135</b>	<b>72,136</b>	<b>50,009</b>	<b>295,053</b>	

 Denotes projects which include an environmental component (see page 15 in the opening narrative.)

**Notes for costs beyond six years:**  
 Includes 4,778 for Project S-22.06, Blue Plains WWTP: Liquid Train Projects, Part 2  
 Includes 2 for Project S-22.07, Blue Plains WWTP: Biosolids Management, Part 2  
 Includes 4,723 for Project S-22.09, Blue Plains WWTP: Plant-wide Projects  
 Includes 2,827 for Project S-22.10, Blue Plains WWTP: Enhanced Nutrient Removal  
 Includes 9,063 for Project S-22.11, Blue Plains: Pipelines & Appurtenances

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**BLUE PLAINS WASTEWATER TREATMENT PLANT PROJECTS**  
(costs in thousands)

PROJECT NUMBER	PROJECT NAME	ADOPTED FY'12 TOTAL COST	PROPOSED FY'13 TOTAL COST	CHANGE \$	CHANGE %	SIX-YEAR COST	COMPLETION DATE (est)
S-22.06	Blue Plains WWTP: Liquid Train Projects, Part 2	\$260,854	\$265,857	\$5,003	1.9%	\$30,080	On-Going
S-22.07	Blue Plains WWTP: Biosolids Management, Part 2	340,420	376,062	35,642	10.5%	162,931	On-Going
S-22.08	Blue Plains WWTP: Biological Nutrient Removal	84,265	87,744	3,479	4.1%	17,314	FY 2016
S-22.09	Blue Plains WWTP: Plant-wide Projects	198,769	201,943	3,174	1.6%	29,502	On-Going
S-22.10	Blue Plains WWTP: Enhanced Nutrient Removal	405,761	427,912	22,151	5.5%	299,101	FY 2019
S-22.11	Blue Plains: Pipelines & Appurtenances	95,868	113,466	17,598	18.4%	68,769	On-Going
	<b>TOTALS</b>	<b>\$1,385,937</b>	<b>\$1,472,984</b>	<b>\$87,047</b>	<b>6.3%</b>	<b>\$607,697</b>	

**Summary:** These six projects, with an estimated total cost of \$1.5 billion, provide funding for the upgrade, expansion, and enhancement of wastewater treatment and solids handling facilities at the Regional Blue Plains Wastewater Treatment Plant, located in the District of Columbia. Whereas typical WSSC projects encompass planning, design, construction, and start-up for a single project, with defined starting and ending dates, the Blue Plains projects are comprised of many sub-projects and are "open-ended." As the Blue Plains Facility Plans move forward and new sub-projects are approved, the costs of these new sub-projects are added to the appropriate existing Blue Plains project. The expenditures displayed represent the WSSC's calculated share. There are four main funding divisions: liquid treatment train (S-22.06); biosolids management (S-22.07); plant-wide projects (S-22.09); and, pipelines & appurtenances (S-22.11). Project S-22.08 adds Biological Nutrient Removal (BNR) facilities to the plant. 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 six Blue Plains projects, the largest group of expenditures in the CIP, represent 49% of the total program. The figures shown above are derived from the latest available spending projections provided by the District of Columbia Water and Sewer Authority (DCWASA). Officials at the DCWASA have indicated that they have the fiscal capacity as well as the engineering capability to implement these projects. Spending at the DCWASA staff-proposed rate in future years may challenge the WSSC's ability to stay within County-established spending affordability limits. It is, therefore, recommended that the coordination of development and approval of the DCWASA's and WSSC's CIPs be sustained in order that the economic development and environmental objectives of the region be met, without causing a rapid increase in WSSC customers' bills. An explanation of the cost changes for each project is included on the individual project description forms that immediately follow this summary page.

**A. Identification and Coding Information**

1. Project Number: 954811 Agency Number: S-22.06 Update Code: Change  
 2. Date: October 1, 2011 Revised: \_\_\_\_\_  
 3. Project Name: Blue Plains WWTP: Liquid Train Projects, Part 2  
 4. Program: Sanitation 5. Agency: WSSC  
 6. Planning Area: Bi-County

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

Program Costs	Staff .....	.....
	Other .....	.....
Facility Costs	Maintenance .....	.....
	Debt Service .....	21910
Total Costs.....		21910
Impact on Water or Sewer Rate.....		47¢

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

Cost Elements	(8) Total	(9) Thru FY '11	(10) Estimate FY '12	(11) Total 6 Years	(12) Year 1 FY '13	(13) Year 2 FY '14	(14) Year 3 FY '15	(15) Year 4 FY '16	(16) Year 5 FY '17	(17) Year 6 FY '18	(18) Beyond 6 Years
Planning, Design & Supervision	52,560	40,769	2,098	9,179	1,884	2,296	1,148	1,355	1,361	1,135	514
Land											
Site Improvements & Utilities											
Construction	212,868	181,638	6,409	20,604	5,842	2,326	455	1,785	6,206	3,990	4,217
Other	429		85	297	77	46	16	31	76	51	47
<b>Total</b>	<b>265,857</b>	<b>222,407</b>	<b>8,592</b>	<b>30,080</b>	<b>7,803</b>	<b>4,668</b>	<b>1,619</b>	<b>3,171</b>	<b>7,643</b>	<b>5,176</b>	<b>4,778</b>

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

	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
WSSC Bonds	251,263	210,198	8,120	28,429	7,375	4,412	1,530	2,997	7,223	4,892	4,516
City of Rockville	14,594	12,209	472	1,651	428	256	89	174	420	284	262

**D. Description & Justification**

**DESCRIPTION**

This project provides funding for WSSC's share of Blue Plains liquid train projects for which construction began after June 30, 1993. Major projects include: Filtration and Disinfection Rehabilitation, Raw Wastewater Pumping Station No. 2, and Dual Purpose Sedimentation Basins Rehabilitation.

**Service Area** Bi-County Area

**Capacity** 370 MGD

**JUSTIFICATION**

**Plans & Studies**

The Blue Plains Intermunicipal Agreement of 1985; the DCWASA Master Plan (1998); and the DCWASA Approved FY 2010 - FY 2019 Capital Improvement Program (February 3, 2011).

**Specific Data**

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

**Cost Change**

Cost increase is primarily due to further revised higher estimates for the Primary Treatment Facilities Phase II Upgrade and Grit Chamber Phase II Upgrade projects in later years.

**STATUS** Not Applicable

**OTHER**

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

**COORDINATION**

City of Rockville (responsible for a share of funding), District of Columbia Water & Sewer Authority (responsible for design and construction) and WSSC Projects S-22.08, Blue Plains WWTP: Biological Nutrient Removal and S-22.10, Blue Plains WWTP: Enhanced Nutrient Removal.

**NOTE** This project supports 100% System Improvement.

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

Date First in Capital Program	FY 95
Date First Approved	FY 95
Initial Cost Estimate	69,745
Cost Estimate Last FY	260,854
Present Cost Estimate	265,857
Approved Request, Last FY	9,454
Total Expenditures & Encumbrances	222,407
Approval Request FY 13	7,803
Supplemental Approval Request Current FY (12)	

**G. Status Information**

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

**H. Map Map Reference Code:**

**MAP NOT AVAILABLE**

**A. Identification and Coding Information**

1. Project Number: 954812    Agency Number: S-22.07    Update Code: Change

2. Date: October 1, 2011    Revised: \_\_\_\_\_

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

3. Project Name: Blue Plains WWTP: Biosolids Management, Part 2

4. Program: Sanitation    5. Agency: WSSC    6. Planning Area: Bi-County

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

Program Costs	Staff	.....	....
	Other	.....	....
Facility Costs	Maintenance	.....	....
	Debt Service	.....	30992 ....
Total Costs		.....	30992 ....
Impact on Water or Sewer Rate		.....	67¢ ....

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

Cost Elements	(8) Total	(9) Thru FY '11	(10) Estimate FY '12	(11) Total 6 Years	(12) Year 1 FY '13	(13) Year 2 FY '14	(14) Year 3 FY '15	(15) Year 4 FY '16	(16) Year 5 FY '17	(17) Year 6 FY '18	(18) Beyond 6 Years
Planning, Design & Supervision	86,416	57,488	10,538	18,389	8,889	6,528	1,397	611	626	338	1
Land											
Site Improvements & Utilities											
Construction	287,332	84,957	59,446	142,928	101,150	32,063	3,270	4,479	1,840	126	1
Other	2,314		700	1,614	1,100	386	47	51	25	5	
<b>Total</b>	<b>376,062</b>	<b>142,445</b>	<b>70,684</b>	<b>162,931</b>	<b>111,139</b>	<b>38,977</b>	<b>4,714</b>	<b>5,141</b>	<b>2,491</b>	<b>469</b>	<b>2</b>

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

Date First in Capital Program	FY 95
Date First Approved	FY 95
Initial Cost Estimate	77,296
Cost Estimate Last FY	340,420
Present Cost Estimate	376,062
Approved Request, Last FY	62,573
Total Expenditures & Encumbrances	142,445
Approval Request FY 13	111,139
Supplemental Approval Request Current FY (12)	

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

	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
WSSC Bonds	355,418	134,626	66,804	153,986	105,038	36,837	4,455	4,859	2,354	443	2
City of Rockville	20,644	7,819	3,880	8,945	6,101	2,140	259	282	137	26	

**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 and centrifuge thickener facilities; area electrical substation #6; and solids processing building/dewatered sludge loading facility.

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

**JUSTIFICATION**

**Plans & Studies**  
The Blue Plains Intermunicipal Agreement of 1985; 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 2010 - FY 2019 Capital Improvement Program (February 3, 2011).

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

**Cost Change**  
Cost increase is primarily due to refined estimates as the Anaerobic Digesters and Gravity Thickening Facilities progress through design, and higher costs associated with program management.

**STATUS** Not Applicable

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

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

**NOTE** This project supports 100% System Improvement.

**G. Status Information**

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

**H. Map    Map Reference Code:**

MAP NOT AVAILABLE



**A. Identification and Coding Information**

1. Project Number: 973817 | Agency Number: S-22.08 | Update Code: Change

2. Date: October 1, 2011 | Revised: \_\_\_\_\_

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

3. Project Name: Blue Plains WWTP: Biological Nutrient Removal

4. Program: Sanitation | 5. Agency: WSSC

6. Planning Area: Bi-County

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

Program Costs	Staff .....	.....	
	Other .....	.....	
Facility Costs	Maintenance .....	.....	
	Debt Service .....	3616	17
<b>Total Costs</b> .....		3616	17
Impact on Water or Sewer Rate.....	8¢	.....	17

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

Cost Elements	(8) Total	(9) Thru FY '11	(10) Estimate FY '12	(11) Total 6 Years	(12) Year 1 FY '13	(13) Year 2 FY '14	(14) Year 3 FY '15	(15) Year 4 FY '16	(16) Year 5 FY '17	(17) Year 6 FY '18	(18) Beyond 6 Years
Planning, Design & Supervision	18,850	15,981	1,151	1,718	1,109	609					
Land											
Site Improvements & Utilities											
Construction	68,663	48,457	4,782	15,424	10,667	3,843	710	204			
Other	231		59	172	118	45	7	2			
<b>Total</b>	<b>87,744</b>	<b>64,438</b>	<b>5,992</b>	<b>17,314</b>	<b>11,894</b>	<b>4,497</b>	<b>717</b>	<b>206</b>			

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

Date First in Capital Program	FY 96
Date First Approved	FY 96
Initial Cost Estimate	12,189
Cost Estimate Last FY	84,265
Present Cost Estimate	87,744
Approved Request, Last FY	8,264
Total Expenditures & Encumbrances	64,438
Approval Request FY 13	11,894
Supplemental Approval Request Current FY (12)	

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

	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
WSSC Bonds	41,464	30,450	2,832	8,182	5,621	2,125	339	97			
State Aid	43,872	32,219	2,996	8,657	5,947	2,249	358	103			
City of Rockville	2,408	1,769	164	475	326	123	20	6			

**G. Status Information**

Land Status: Not applicable

% Project Completion: C-90%

Est. Completion Date: FY 2016

**D. Description & Justification**

**DESCRIPTION**

This project provides funding for WSSC's share of the Blue Plains Biological Nutrient Removal Pilot Project and BNR Permanent Facility design and construction. The project includes modifications to the nitrification basins, methanol storage and feed facilities, a control building, addition of fine bubble diffusers, and improvements to the nitrification facilities (Phase II). This project is stipulated in the 1995 Consent Decree signed by the District of Columbia and the United States Department of Justice.

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

**JUSTIFICATION**

**Plans & Studies**  
Porter, MacNamee & Seely Study (1992); Civil Action No. 90-163; Civil Action No. 84-2842 JGP; the DCWASA Master Plan (1998); and the DCWASA Approved FY 2010 - FY 2019 Capital Improvement Program (February 3, 2011).

**Specific Data**  
The initial \$12.1 million Pilot Project was planned as a phased, four year, half-plant trial. For the Pilot, portions of the nitrification basins were converted to anoxic zones with methanol added as the carbon source. After the Pilot Project proved successful in the first two years, the third and fourth years were not required and the design and construction of permanent BNR facilities commenced. The Consent Decree acknowledged that applying this technology was experimental.

**Cost Change**  
Cost increase is based upon actual expenditure data as Nitrification/Denitrification facilities progress through construction.

**STATUS** Under Construction

**OTHER**  
The project scope has remained the same. The expenditure schedule shown above reflects the cost of permanent BNR facilities as required under the Consent Decree. Phase I and portions of Phase II are complete. The Maryland Department of the Environment (MDE) has, by agreement, committed to providing 50% grant funding for eligible costs.

**COORDINATION**  
City of Rockville (responsible for a share of funding), Maryland Department of the Environment and District of Columbia Water & Sewer Authority (responsible for design and construction).

**NOTE** This project supports 100% Environmental Regulation.

**H. Map      Map Reference Code:**

MAP NOT AVAILABLE

29

**A. Identification and Coding Information**

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

2. Date: October 1, 2011

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

Revised:

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

5. Agency: **WSSC**

4. Program: **Sanitation**

6. Planning Area: Bi-County

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

Cost Elements	(8) Total	(9) Thru FY '11	(10) Estimate FY '12	(11) Total 6 Years	(12) Year 1 FY '13	(13) Year 2 FY '14	(14) Year 3 FY '15	(15) Year 4 FY '16	(16) Year 5 FY '17	(17) Year 6 FY '18	(18) Beyond 6 Years
Planning, Design & Supervision	48,738	42,066	981	5,114	1,027	941	976	693	899	578	577
Land											
Site Improvements & Utilities											
Construction	152,768	115,758	8,815	24,096	6,697	5,227	2,644	1,527	1,594	6,407	4,099
Other	437		98	292	77	62	36	22	25	70	47
<b>Total</b>	<b>201,943</b>	<b>157,824</b>	<b>9,894</b>	<b>29,502</b>	<b>7,801</b>	<b>6,230</b>	<b>3,656</b>	<b>2,242</b>	<b>2,518</b>	<b>7,055</b>	<b>4,723</b>

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

	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
WSSC Bonds	190,858	149,160	9,351	27,883	7,373	5,888	3,455	2,119	2,380	6,668	4,464
City of Rockville	11,085	8,664	543	1,619	428	342	201	123	138	387	259

**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: Process Control Computer Systems; Electrical Power Systems Additions, Phases I & II; High Priority Rehabilitation Program; and Plant-wide Fine Bubble Aeration Conversion.

**Service Area** Bi-County Area

**Capacity** 370 MGD

**JUSTIFICATION**

**Plans & Studies**

The Blue Plains Intermunicipal Agreement of 1985; the WASA Master Plan (1998); and the DCWASA Approved FY 2010 - FY 2019 Capital Improvement Program (February 3, 2011).

**Specific Data**

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

**Cost Change**

Not applicable.

**STATUS** Not Applicable

**OTHER**

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

**COORDINATION**

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

**NOTE** This project supports 100% System Improvement.

**E. Annual Operating Budget Impact (000's)**

FY of Impact

Program Costs	Staff .....	.....
	Other .....	.....
Facility Costs	Maintenance .....	.....
	Debt Service .....	16643
<b>Total Costs</b> .....		<b>16643</b>
Impact on Water or Sewer Rate.....		36¢

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

Date First in Capital Program	FY 95
Date First Approved	FY 02
Initial Cost Estimate	84,650
Cost Estimate Last FY	198,769
Present Cost Estimate	201,943
Approved Request, Last FY	7,731
Total Expenditures & Encumbrances	157,824
Approval Request FY 13	7,801
Supplemental Approval Request Current FY (12)	

**G. Status Information**

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

**H. Map Map Reference Code:**

**MAP NOT AVAILABLE**

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**A. Identification and Coding Information**

1. Project Number: 113805 | Agency Number: S-170.09 | Update Code: Change

2. Date: October 1, 2011 | Revised: \_\_\_\_\_

3. Project Name: Trunk Sewer Reconstruction Program

4. Program: Sanitation | 5. Agency: WSSC

6. Planning Area: Bi-County

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

**E. Annual Operating Budget Impact (000's)**

			FY of Impact
Program Costs	Staff .....	.....	
	Other .....	.....	
Facility Costs	Maintenance .....	.....	
	Debt Service .....	44035	19
Total Costs.....		44035	19
Impact on Water or Sewer Rate.....		95¢	19

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

Cost Elements	(8) Total	(9) Thru FY '11	(10) Estimate FY '12	(11) Total 6 Years	(12) Year 1 FY '13	(13) Year 2 FY '14	(14) Year 3 FY '15	(15) Year 4 FY '16	(16) Year 5 FY '17	(17) Year 6 FY '18	(18) Beyond 6 Years
Planning, Design & Supervision	18,535	1,381	1,577	15,577	4,133	3,409	1,457	3,600	1,489	1,489	
Land											
Site Improvements & Utilities											
Construction	180,760		15,767	164,993	41,333	34,087	14,573	25,000	25,000	25,000	
Other	29,687		2,602	27,085	6,820	5,624	2,405	4,290	3,973	3,973	
<b>Total</b>	<b>228,982</b>	<b>1,381</b>	<b>19,946</b>	<b>207,655</b>	<b>52,286</b>	<b>43,120</b>	<b>18,435</b>	<b>32,890</b>	<b>30,462</b>	<b>30,462</b>	

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

WSSC Bonds	228,982	1,381	19,946	207,655	52,286	43,120	18,435	32,890	30,462*	30,462*
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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 15-inches in diameter and larger, and their associated manholes.

**JUSTIFICATION**

**Plans & Studies**  
WSSC Sanitary Sewer Overflow Consent Decree (December 7, 2005)

**Specific Data**  
Under the terms of the Consent Decree the WSSC Trunk Sewer Inspection program will have inspected approximately 625 miles of sewers in 21 basins by December 2010; Sewer System Evaluation Surveys (SSES) will be conducted for 9 basins by December 2013; and WSSC shall conduct rainfall, groundwater and flow monitoring to determine 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.

Once the Trunk Sewer Inspections, SSES work and other related collection system evaluations are complete, a Sewer Basin Repair, Replacement, Rehabilitation Plan (SR3 Plan) for each basin will be completed as required by Article 6 of the Consent Decree. To date, sixteen SR3 Plans have been submitted to the EPA and MDE.

\* At the current rate of acquiring environmental permits, the required trunk sewer reconstruction work is expected to extend beyond the Consent Decree's December 2015 deadline. WSSC is experiencing significant delays in acquiring both permission and required permits to work in environmentally sensitive areas. WSSC is currently working with the environmental regulators to identify ways to expedite environmental permit approvals. In addition, due to the total volume of work in the region, there is limited availability of contractor work crews to perform the work.

**Cost Change**  
The cost has increased due to actual construction contract bids. Work may go beyond six years, based on current productivity and permitting delays.

**STATUS** Planning

**OTHER**  
The project scope remains the same. This project separately identifies the 15-inch diameter and larger trunk sewers included in WSSC's overall plans for sewer reconstruction. The expenditures and schedule shown in Block B above are Order of Magnitude level estimates and are expected to change as individual basin designs are completed and construction contracts are bid. The design work

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

Date First in Capital Program	FY 11
Date First Approved	FY 11
Initial Cost Estimate	504,993
Cost Estimate Last FY	201,056
Present Cost Estimate	228,982
Approved Request, Last FY	19,886
Total Expenditures & Encumbrances	1,381
Approval Request FY 13	52,286
Supplemental Approval Request Current FY (12)	

**G. Status Information**

Land Status: Right-of-Way may be required

% Project Completion: D-5%

Est. Completion Date: See Block D

**H. Map Map Reference Code:**

**NOT APPLICABLE**

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**D. DESCRIPTION & JUSTIFICATION (CONT.)**

**Agency Number: S - 170.09**

**Project Name: Trunk Sewer Reconstruction Program**

for the SR3 Plans pertaining to Trunk Sewer reconstruction began in FY 2010. Construction will begin in each basin as the individual designs are completed over the three-year period.

For FY 2013, construction is scheduled for the Broad Creek Basin, encompassing approximately 8 miles of mainline reconstruction, and providing exposed pipeline and manhole protection from high stream flows and stream bank erosion where required. The schedule assumes WSSC will obtain the Federal 404 Joint Permit in the summer of 2011.

The reconstruction that will be performed in each sewer basin will be prioritized to most effectively prevent SSOs and backups. Reconstruction work will include: reduction of inflow and infiltration; 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 Consent Decree requires that all rehabilitation work be substantially complete by December 5, 2015.

**COORDINATION**

Maryland State Highway Administration, Montgomery County Department of Public Works and Transportation, Maryland-National Capital Park & Planning Commission, National Park Service, Maryland Department of the Environment, Maryland Department of Natural Resources (Critical Area Commission, FSD Approval Forest Conservation/Reforestation Rare, Threatened or Endangered Species), Prince George's County Department of Public Works & Transportation, U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, Region III, Maryland Historical Trust and WSSC Project S-1.01, Sewer Reconstruction Program.

**NOTE** This project supports 100% System Improvement.

**A. Identification and Coding Information**

1. Project Number: \_\_\_\_\_ Agency Number: \_\_\_\_\_ Update Code: \_\_\_\_\_  
 S-57.93 Change

2. Date: October 1, 2011 Revised: \_\_\_\_\_

3. Project Name: Western Branch WWTP Enhanced Nutrient Removal

4. Program: Sanitation 6. Planning Area: \_\_\_\_\_

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

5. Agency: **WSSC**

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

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

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

Cost Elements	(8) Total	(9) Thru FY '11	(10) Estimate FY '12	(11) Total 6 Years	(12) Year 1 FY '13	(13) Year 2 FY '14	(14) Year 3 FY '15	(15) Year 4 FY '16	(16) Year 5 FY '17	(17) Year 6 FY '18	(18) Beyond 6 Years
Planning, Design & Supervision	7,935	4,162	268	3,505	1,241	1,290	974				
Land											
Site Improvements & Utilities											
Construction	31,498	138	2,080	29,280	10,420	10,470	8,390				
Other	3,513		235	3,278	1,166	1,176	936				
<b>Total</b>	<b>42,946</b>	<b>4,300</b>	<b>2,583</b>	<b>36,063</b>	<b>12,827</b>	<b>12,936</b>	<b>10,300</b>				

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

State Aid	(8) Total	(9) Thru FY '11	(10) Estimate FY '12	(11) Total 6 Years	(12) Year 1 FY '13	(13) Year 2 FY '14	(14) Year 3 FY '15	(15) Year 4 FY '16	(16) Year 5 FY '17	(17) Year 6 FY '18	(18) Beyond 6 Years
State Aid	42,946	4,300	2,583	36,063	12,827	12,936	10,300				

**D. Description & Justification**

**DESCRIPTION**

This project provides for the planning, design, and construction of improvements at the Western Branch WWTP necessary to meet the requirements of the Maryland Department of the Environment (MDE) Environmental Nutrient Removal (ENR) Program at 30 MGD. The ENR design continues the operation of the existing 3 sludge systems with upgrades. The upgrades include the addition of a Return Activated Sludge pumping station, ENR monitoring and control enhancements, ENR associated electrical upgrades, and waste activated sludge improvements.

**Service Area** Western Branch Drainage Basin

**JUSTIFICATION**

**Plans & Studies**

Western Branch Enhanced Nutrient Removal Evaluation, Johnson, Mirmiran & Thompson (May 2005); Western Branch Enhanced Nutrient Removal and Facility Upgrade Project - Evaluation Phase, Metcalf and Eddy (August 2007); Maryland Department of the Environment Eligibility Determination Letter (July 24, 2008).

**Specific Data**

The Bay Restoration Fund Enhanced Nutrient Removal (ENR) Program's purpose is to meet the commitments under the 2000 Chesapeake Bay Agreement. Reductions of nutrient pollutants from all sources including sewage treatment plants are necessary. The ENR strategy builds on the success of the Biological Nutrient Removal (BNR) Program already in place. The MDE is using the Bay Restoration Fund to upgrade the 66 major wastewater treatment plants which discharge to the Chesapeake Bay with ENR technologies. Once upgraded, these plants are expected to reduce nitrogen and phosphorus in the wastewater down to 3 mg/l total nitrogen and 0.3 mg/l total phosphorus, achieving approximately one-third of the needed reduction under the Chesapeake Bay 2000 Agreement. Other pollutants will continue to be reduced by more than 90%.

**Cost Change**

Costs were adjusted to reflect 100% design cost estimate.

**STATUS** Final Design Complete (WSSC Contract No. CD4257A05. ).

**OTHER**

The project scope has remained the same. The expenditures and schedule projections shown in Block B are design level estimates and may change based upon the bid received. The funding schedule reflects the final cost sharing agreement with MDE. The permit application process was started in May 2009. The MDE construction permit was obtained in March 2011. The project completion date is January 2015. The WSSC will request a modification of the NPDES permit requirements if necessary.

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

Date First in Capital Program	FY 07
Date First Approved	FY 07
Initial Cost Estimate	70,950
Cost Estimate Last FY	39,563
Present Cost Estimate	42,946
Approved Request, Last FY	14,013
Total Expenditures & Encumbrances	4,300
Approval Request FY 13	12,827
Supplemental Approval Request Current FY (12)	

**G. Status Information**

Land Status:	Not Applicable
% Project Completion:	D-100%
Est. Completion Date:	January 2015

**H. Map Map Reference Code:**

MAP NOT AVAILABLE

35

**D. DESCRIPTION & JUSTIFICATION (CONT.)**

**Agency Number: S - 57.93**

**Project Name: Western Branch WWTP Enhanced Nutrient Removal**

**COORDINATION**

Maryland Department of the Environment, Prince George's County Department of Environmental Resources, Local, State & Congressional Officials, Patuxent River Commission and WSSC Project S-57.92, Western Branch Facility Upgrade.

**NOTE** This project supports 100% Environmental Regulation.

**A. Identification and Coding Information**

2. Date: October 1, 2011      7. Pre PDF Pg.No.:      8. Req. Adeq. Pub. Fac.

1. Project Number	Agency Number	Update Code	Revised:	
	S-77.18	Change		

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

4. Program: **Sanitation**      6. Planning Area: South Laurel - Montpelier P.A. 62

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

Cost Elements	(8) Total	(9) Thru FY '11	(10) Estimate FY '12	(11) Total 6 Years	(12) Year 1 FY '13	(13) Year 2 FY '14	(14) Year 3 FY '15	(15) Year 4 FY '16	(16) Year 5 FY '17	(17) Year 6 FY '18	(18) Beyond 6 Years
Planning, Design & Supervision	4,532	2,216	1,210	1,106	885	221					
Land											
Site Improvements & Utilities											
Construction	13,458	17	6,720	6,721	6,050	671					
Other	1,576		793	783	694	89					
<b>Total</b>	<b>19,566</b>	<b>2,233</b>	<b>8,723</b>	<b>8,610</b>	<b>7,629</b>	<b>981</b>					

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

WSSC Bonds	920	105	410	405	359	46					
State Aid	18,646	2,128	8,313	8,205	7,270	935					

**D. Description & Justification**

**DESCRIPTION**

This project provides for the planning, design, and construction of improvements at the Parkway WWTP necessary to meet the requirements of the Maryland Department of the Environment (MDE) Enhanced Nutrient Removal (ENR) Program. The recommendation is to supplement the current Bardenpho configuration with methanol feed capability in the post-anoxic zones for denitrification. Denitrification filters following the secondary clarifiers are proposed for nitrogen removal. A new pumping station will also be required due to the plant's hydraulic profile. Other upgrades include Backwash Supply Storage, modifications to Reactor Basins, and a Denitrification Chemical Facility.

**Service Area** Parkway Drainage Basin

**JUSTIFICATION**

**Plans & Studies**  
ENR Alternatives for Parkway WWTP, Gannett Fleming (June 2005); WSSC Preliminary Engineering Report (September 2008); Maryland Department of the Environment Eligibility Determination Letter (June 10, 2009).

**Specific Data**  
The Bay Restoration Fund Enhanced Nutrient Removal (ENR) Program's purpose is to meet the commitments under the 2000 Chesapeake Bay Agreement. Reductions of nutrient pollutants from all sources including sewage treatment plants are necessary. The ENR strategy builds on the success of the Biological Nutrient Removal (BNR) Program already in place. The MDE is using the Bay Restoration Fund to upgrade the 66 major wastewater treatment plants which discharge to the Chesapeake Bay with ENR technologies. Once upgraded, these plants are expected to reduce nitrogen and phosphorus in the wastewater down to 3 mg/l total nitrogen and 0.3 mg/l total phosphorus, achieving approximately one-third of the needed reduction under the Chesapeake Bay 2000 Agreement. Other pollutants will continue to be reduced by more than 90%.

**Cost Change**  
The cost estimate was revised to reflect the current construction cost estimate.

**STATUS** Under Construction (WSSC Contract No. CD4259A05, ).

**OTHER**  
The project scope has remained the same. The expenditures and schedule projections shown in Block B are based upon actual bid. The funding schedule reflects the final cost sharing agreement with MDE.

The anticipated start date is September 2011 and the estimated project completion date is September 2013. The WSSC will request a modification of the NPDES permit construction date requirements if necessary.

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

Program Costs	Staff .....	....	
	Other .....	....	
Facility Costs	Maintenance .....	....	
	Debt Service .....	80	15
Total Costs.....		80	15
Impact on Water or Sewer Rate.....			

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

Date First in Capital Program	FY 07
Date First Approved	FY 07
Initial Cost Estimate	11,971
Cost Estimate Last FY	21,181
Present Cost Estimate	19,566
Approved Request, Last FY	9,217
Total Expenditures & Encumbrances	2,233
Approval Request FY 13	7,629
Supplemental Approval Request Current FY (12)	

**G. Status Information**

Land Status: No land or R/W required  
 % Project Completion: C-0%  
 Est. Completion Date: September 2013

**H. Map      Map Reference Code:**

MAP NOT AVAILABLE



**D. DESCRIPTION & JUSTIFICATION (CONT.)**

**Agency Number: S - 77.18**

**Project Name: Parkway WWTP Enhanced Nutrient Removal**

**COORDINATION**

Prince George's County Government, Maryland Department of the Environment, Prince George's County Department of Environmental Resources and Patuxent River Commission.

**NOTE** This project supports 100% Environmental Regulation.

**A. Identification and Coding Information**

1. Project Number: \_\_\_\_\_ Agency Number: \_\_\_\_\_ Update Code: \_\_\_\_\_  
 2. Date: October 1, 2011 Revised: \_\_\_\_\_  
 7. Pre PDF Pg.No.: \_\_\_\_\_ 8. Req. Adeq. Pub. Fac. \_\_\_\_\_

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

4. Program: **Sanitation** 6. Planning Area: Accokeek P.A. 83

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

Cost Elements	(8) Total	(9) Thru FY '11	(10) Estimate FY '12	(11) Total 6 Years	(12) Year 1 FY '13	(13) Year 2 FY '14	(14) Year 3 FY '15	(15) Year 4 FY '16	(16) Year 5 FY '17	(17) Year 6 FY '18	(18) Beyond 6 Years
Planning, Design & Supervision	2,652	1,522	980	150	150						
Land											
Site Improvements & Utilities											
Construction	4,864	240	3,724	900	900						
Other	864		706	158	158						
<b>Total</b>	<b>8,380</b>	<b>1,762</b>	<b>5,410</b>	<b>1,208</b>	<b>1,208</b>						

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

WSSC Bonds	2,056	432	1,327	297	297						
State Aid	6,324	1,330	4,083	911	911						

**D. Description & Justification**

**DESCRIPTION**

This project provides for the planning, design, and construction of improvements at the Piscataway WWTP necessary to meet the requirements of the Maryland Department of the Environment (MDE) Environmental Nutrient Removal (ENR) Program at 30 MGD. The ENR project design includes provisions for the installation of supplemental carbon storage and feed facilities, to include a 1,500 square foot masonry building to house pumping and electrical equipment, an adjacent outdoor bulk storage and containment area for 3 12,000-gallon tanks, a 120 square foot pre-cast concrete engineered building for housing analyzer equipment, a chemical unloading station, and various related improvements associated with the carbon feed system.

**Service Area** Piscataway Creek Drainage Basin

**JUSTIFICATION**

**Plans & Studies**  
 ENR Alternatives for Piscataway WWTP, Gannett Fleming (June 2005); Design Criteria Report, O'Brien & Gere (October 2008); Maryland Department of the Environment Eligibility Determination Letter (April 17, 2009).

**Specific Data**  
 The Bay Restoration Fund Enhanced Nutrient Removal (ENR) Program's purpose is to meet the commitments under the 2000 Chesapeake Bay Agreement. Reductions of nutrient pollutants from all sources including sewage treatment plants are necessary. The ENR strategy builds on the success of the Biological Nutrient Removal (BNR) Program already in place. The MDE is using the Bay Restoration Fund to upgrade the 66 major wastewater treatment plants which discharge to the Chesapeake Bay with ENR technologies. Once upgraded, these plants are expected to reduce nitrogen and phosphorus in the wastewater down to 3 mg/l total nitrogen and 0.3 mg/l total phosphorus, achieving approximately one-third of the needed reduction under the Chesapeake Bay 2000 Agreement. Other pollutants will continue to be reduced by more than 90%.

**Cost Change**  
 Cost estimates were reduced based upon actual bids received.

**STATUS** Under Construction (WSSC Contract No. CD4258A05, ).

**OTHER**  
 The project scope has remained the same. The schedule and expenditure projections shown in Block B are based upon actual bid. This project also includes an engineering records upgrade and GIS-linked indexing system. The funding schedule reflects the final cost sharing agreement with MDE.

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

Program Costs	Staff .....	.....	
	Other .....	.....	
Facility Costs	Maintenance .....	.....	
	Debt Service .....	179	14
<b>Total Costs</b> .....		179	14
Impact on Water or Sewer Rate.....			

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

Date First in Capital Program	FY 07
Date First Approved	FY 07
Initial Cost Estimate	2,279
Cost Estimate Last FY	9,500
Present Cost Estimate	8,380
Approved Request, Last FY	98
Total Expenditures & Encumbrances	1,762
Approval Request FY 13	1,208
Supplemental Approval Request Current FY (12)	

**G. Status Information**

Land Status: No land or R/W required  
 % Project Completion: C-5%  
 Est. Completion Date: September 2012

**H. Map Map Reference Code:**

**MAP NOT AVAILABLE**

**D. DESCRIPTION & JUSTIFICATION (CONT.)**

**Agency Number: S - 96.12**

**Project Name: Piscataway WWTP Enhanced Nutrient Removal**

**COORDINATION**

Prince George's County Government, Maryland Department of the Environment, Maryland Water Management Administration and Prince George's County Department of Environmental Resources.

**NOTE** This project supports 100% Environmental Regulation.

**A. Identification and Coding Information**

2. Date: October 1, 2011      7. Pre PDF Pg.No.:      8. Req. Adeq. Pub. Fac.

1. Project Number	Agency Number	Update Code
	S-96.14	Change

Revised: \_\_\_\_\_

3. Project Name: Piscataway WWTP Facility Upgrades      5. Agency: **WSSC**

4. Program: **Sanitation**      6. Planning Area: Accokeek P.A. 83

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

Program Costs	Staff .....	....
	Other .....	....
Facility Costs	Maintenance .....	....
	Debt Service .....	5870 ....
Total Costs.....		5870 ....
Impact on Water or Sewer Rate.....		13¢ ....

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

	(8) Total	(9) Thru FY '11	(10) Estimate FY '12	(11) Total 6 Years	(12) Year 1 FY '13	(13) Year 2 FY '14	(14) Year 3 FY '15	(15) Year 4 FY '16	(16) Year 5 FY '17	(17) Year 6 FY '18	(18) Beyond 6 Years
Cost Elements											
Planning, Design & Supervision	10,900		500	9,000	500	1,500	1,500	1,000	2,500	2,000	1,400
Land											
Site Improvements & Utilities											
Construction	50,300			40,300				7,000	18,000	15,300	10,000
Other	6,120		50	4,930	50	150	150	800	2,050	1,730	1,140
<b>Total</b>	<b>67,320</b>		<b>550</b>	<b>54,230</b>	<b>550</b>	<b>1,650</b>	<b>1,650</b>	<b>8,800</b>	<b>22,550</b>	<b>19,030</b>	<b>12,540</b>

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

Date First in Capital Program	FY 12
Date First Approved	FY 12
Initial Cost Estimate	66,396
Cost Estimate Last FY	66,396
Present Cost Estimate	67,320
Approved Request, Last FY	3,300
Total Expenditures & Encumbrances	
Approval Request FY 13	550
Supplemental Approval Request Current FY (12)	

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

WSSC Bonds	67,320		550	54,230	550	1,650	1,650	8,800	22,550	19,030	12,540
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**D. Description & Justification**

**DESCRIPTION**

This project provides for a Facility Plan and design and construction of the upgrades required to prevent plant overflows or permit violations which can occur during significant rainfall events. The work will remove bottlenecks within the plant process trains, address the physical capacity of the system, and rehabilitate existing equipment that has reached its expected service life ensuring the ability of the plant to achieve its permit-required level of service

**Service Area** Piscataway Creek Drainage Basin      **Capacity** 30 MGD

**JUSTIFICATION**

**Plans & Studies**  
FY 2012 Piscataway WWTP Asset Management Plan, GHD, Inc. (March 2011).

**Specific Data**  
In the Asset Management Plan the condition assessment process identified several areas of concern within the plant process trains that could potentially result in capacity or level of service failures during significant rainfall events.

**Cost Change**  
Project costs have shifted slightly due to schedule refinement.

**STATUS** Planning (WSSC Contract No. CD5170A11, ).

**OTHER**  
The project scope has remained the same. The schedule and expenditure projections shown in Block B represent an Order of Magnitude estimate with a confidence level rating of +/- 30%. These projections will be refined as the results of the Facility Plan become clear. Consultant selection was initiated in May 2011.

**COORDINATION**  
Prince George's County Government, Maryland Department of the Environment, Prince George's County Department of Environmental Resources and WSSC Projects S-43.02, Broad Creek WWPS Augmentation and S-96.12, Piscataway WWTP Enhanced Nutrient Removal.

**NOTE** This project supports 100% System Improvement.

**G. Status Information**

Land Status: Not Applicable  
% Project Completion: P-10%  
Est. Completion Date: FY 2019

**H. Map      Map Reference Code:**

MAP NOT AVAILABLE



## FINANCIAL SUMMARY

(ALL FIGURES IN THOUSANDS)

**INFORMATION ONLY PROJECTS**

AGENCY NUMBER	PROJECT NAME	EST. TOTAL COST	EXPEND THRU 11	EST. EXPEND 12	TOTAL SIX YEARS	EXPENDITURE SCHEDULE						BUDGET REQUEST 13	PDF PAGE NUM
						YR 1 13	YR 2 14	YR 3 15	YR 4 16	YR 5 17	YR 6 18		
W-1.00	Water Reconstruction Program	707,150	0	65,842	641,308	77,427	94,913	107,569	115,075	121,342	124,982	77,427	7-3
S-1.01	Sewer Reconstruction Program	702,873	0	73,944	628,929	136,412	88,805	96,498	99,393	102,374	105,447	136,412	7-5
A-102.00	Engineering Support Program	97,000	0	13,000	84,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	7-7
 A-103.00	Energy Performance Program	42,065	24,550	768	15,407	1,765	3,025	4,922	4,174	1,325	196	1,765	7-8
 A-103.01	Anaerobic Digestion/Combined Heat & Power (Seneca & Piscataway WWTPs)	79,258	718	440	78,100	3,300	2,200	35,200	35,200	2,200	0	3,300	7-11
A-104.00	Entrepreneurial Projects	4,542	1,360	978	2,204	978	679	299	12	36	200	978	7-14
A-105.00	Water Storage Facility Rehabilitation Program	32,200	0	2,200	30,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	7-15
A-106.00	Asset Management Program	22,911	6,384	1,308	13,714	2,093	2,941	1,793	3,057	1,985	1,845	2,093	7-16
A-107.00	Pressure Reducing Valve Rehabilitation Program	20,117	1,087	1,650	15,840	4,895	3,740	2,585	1,980	1,375	1,265	4,895	7-18
A-109.00	Advanced Metering Infrastructure	86,000	0	0	86,000	2,500	13,100	25,600	25,600	19,200	0	2,500	7-19
S-170.06	Sewer Basin Planning Program	3,774	1,260	1,257	1,257	1,257	0	0	0	0	0	1,257	7-20
<b>TOTAL INFORMATION ONLY PROJECTS</b>		<b>1,797,890</b>	<b>35,359</b>	<b>161,387</b>	<b>1,596,759</b>	<b>249,627</b>	<b>228,403</b>	<b>293,466</b>	<b>303,491</b>	<b>268,837</b>	<b>252,935</b>	<b>249,627</b>	

 Denotes projects which include an environmental component (see page 15 in the opening narrative.)

**Notes for costs beyond six years:**

Includes 1,340 for Project A-103.00, Energy Performance Program

Includes 1,505 for Project A-106.00, Asset Management Program

Includes 1,540 for Project A-107.00, Pressure Reducing Valve Rehabilitation Program

**A. Identification and Coding Information**

1. Project Number: \_\_\_\_\_ Agency Number: \_\_\_\_\_ Update Code: \_\_\_\_\_  
 W-1.00 Change

2. Date: October 1, 2011 Revised: \_\_\_\_\_

3. Project Name: Water Reconstruction Program

4. Program: Sanitation 5. Agency: WSSC

6. Planning Area: Bi-County

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

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

Program Costs	Staff .....	.....	
	Other .....	.....	
Facility Costs	Maintenance .....	.....	
	Debt Service .....	61663	19
Total Costs.....		61663	19
Impact on Water or Sewer Rate.....		122¢	19

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

Cost Elements	(8) Total	(9) Thru FY '11	(10) Estimate FY '12	(11) Total 6 Years	(12) Year 1 FY '13	(13) Year 2 FY '14	(14) Year 3 FY '15	(15) Year 4 FY '16	(16) Year 5 FY '17	(17) Year 6 FY '18	(18) Beyond 6 Years
Planning, Design & Supervision	274,543		26,307	248,236	30,841	36,732	41,363	44,698	46,602	48,000	
Land											
Site Improvements & Utilities											
Construction	291,616		24,257	267,359	29,810	38,990	45,262	48,395	51,676	53,226	
Other	140,991		15,278	125,713	16,776	19,191	20,944	21,982	23,064	23,756	
<b>Total</b>	<b>707,150</b>		<b>65,842</b>	<b>641,308</b>	<b>77,427</b>	<b>94,913</b>	<b>107,569</b>	<b>115,075</b>	<b>121,342</b>	<b>124,982</b>	

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

WSSC Bonds	707,150		65,842	641,308	77,427	94,913	107,569	115,075	121,342	124,982	
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**D. Description & Justification**

**DESCRIPTION**

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

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

**Service Area** Bi-County Area

**JUSTIFICATION**

**Plans & Studies**

Flow studies, water system modeling, and field surveys are routinely conducted. A staff level report: Water Main Condition Assessment, 1915-1998; Analysis and Recommendations by the Water Main Reconstruction Work Group (June, 1999) examined the historical main break data for performance measures to define, characterize, and prioritize the future replacement needs of the distribution system. An early outcome of this project identified the need to increase the frequency of water main replacement. "FY2012 Water Distribution System Asset Management Plan", GHD, Inc. (March 2011).

**Specific Data**

The program's projected work units and expenditure levels for FY'13 (including overhead) are as follows: design of main replacement, 45 miles - \$10.1M; construction of main replacement and associated water house connection renewals, 46 miles - \$61.4M; large water service replacement program - \$5.9M. 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.

**Cost Change**

The program cost increase in FY 2013 primarily reflects an increase in replacement miles.

**STATUS** Under Construction

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

Date First in Capital Program: \_\_\_\_\_ FY --

Date First Approved: \_\_\_\_\_ FY --

Initial Cost Estimate: \_\_\_\_\_

Cost Estimate Last FY: 594,421

Present Cost Estimate: 707,150

Approved Request, Last FY: 65,860

Total Expenditures & Encumbrances: \_\_\_\_\_

Approval Request FY 13: 77,427

Supplemental Approval Request Current FY (12): \_\_\_\_\_

**G. Status Information**

Land Status: Not applicable

% Project Completion: Not Applicable

Est. Completion Date: On-Going

**H. Map Map Reference Code:**

MAP NOT APPLICABLE

45

**D. DESCRIPTION & JUSTIFICATION (CONT.)**

**Agency Number: W - 1.00**

**Project Name: Water Reconstruction Program**

**OTHER**

The project scope has remained the same. The water reconstruction program has been ongoing since 1979. Funding in the six-year program period is subject to Spending Affordability Guideline limits. The following work accomplishments through FY'10 summarize the magnitude of the reconstruction effort: water main cleaning and lining, 1,142 miles completed; water main replacement, 239 miles completed; large water service/meter replacement, 28 large water service/meters replaced. It is anticipated water reconstruction activity will be a perpetual element of future work programs.

**COORDINATION**

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



**A. Identification and Coding Information**

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

2. Date: October 1, 2011

3. Project Name: Sewer Reconstruction Program

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

5. Agency: **WSSC**

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

Revised:

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

Cost Elements	(8) Total	(9) Thru FY '11	(10) Estimate FY '12	(11) Total 6 Years	(12) Year 1 FY '13	(13) Year 2 FY '14	(14) Year 3 FY '15	(15) Year 4 FY '16	(16) Year 5 FY '17	(17) Year 6 FY '18	(18) Beyond 6 Years
Planning, Design & Supervision	137,785		16,700	121,085	26,414	17,237	18,509	19,064	19,636	20,225	
Land											
Site Improvements & Utilities											
Construction	460,591		46,277	414,314	89,661	58,376	63,647	65,557	67,523	69,550	
Other	104,497		10,967	93,530	20,337	13,192	14,342	14,772	15,215	15,672	
<b>Total</b>	<b>702,873</b>		<b>73,944</b>	<b>628,929</b>	<b>136,412</b>	<b>88,805</b>	<b>96,498</b>	<b>99,393</b>	<b>102,374</b>	<b>105,447</b>	

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

	(8) Total	(9) Thru FY '11	(10) Estimate FY '12	(11) Total 6 Years	(12) Year 1 FY '13	(13) Year 2 FY '14	(14) Year 3 FY '15	(15) Year 4 FY '16	(16) Year 5 FY '17	(17) Year 6 FY '18	(18) Beyond 6 Years
WSSC Bonds	702,873		73,944	628,929	136,412	88,805	96,498	99,393	102,374	105,447	

**D. Description & Justification**

**DESCRIPTION**

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

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

**Service Area** Bi-CountyArea

**JUSTIFICATION**

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

**Specific Data**  
 The FY'13 work units and associated costs are based on our historical experience with regards to timing of design and construction work, cost per linear foot, availability of authorized contractors for proprietary rehabilitation techniques, and management's availability to oversee and manage the total number of individual contracts. The program's projected work units and expenditure levels for FY'13 (including overhead) are as follows: 65 miles of residential main and lateral line design - \$8.0 M; 55 miles of residential line construction - \$87.4 M; 10 miles of lateral line construction and associated sewer house connection renewals - \$38.5 M; emergency repairs - \$2.5 M. Note: The specific mix and type of sewer reconstruction may vary in any given year depending on identified system defects.

**Cost Change**  
 The overall program cost increased due to a ramp up of the program to meet the Consent Decree schedule and higher unit costs based upon actual bids received.

**STATUS** Under Construction

**OTHER**  
 The project scope has remained the same. The program schedule and expenditures shown above reflect the terms of the Sanitary Sewer Overflow Consent Decree. The Consent Decree between WSSC, Maryland Department of the Environment (MDE), and the

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

Program Costs	Staff .....	.....	
	Other .....	.....	
Facility Costs	Maintenance .....	.....	
	Debt Service .....	41097	19
Total Costs.....		41097	19
Impact on Water or Sewer Rate.....		81¢	19

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

Date First in Capital Program  FY --

Date First Approved  FY --

Initial Cost Estimate

Cost Estimate Last FY  475,292

Present Cost Estimate  702,873

Approved Request, Last FY  49,560

Total Expenditures & Encumbrances

Approval Request FY 13  136,412

Supplemental Approval Request Current FY (12)

**G. Status Information**

Land Status: Not applicable

% Project Completion: Not Applicable

Est. Completion Date: On-Going

**H. Map      Map Reference Code:**

**MAP NOT APPLICABLE**



**D. DESCRIPTION & JUSTIFICATION (CONT.)**

**Agency Number: S - 1.01**

**Project Name: Sewer Reconstruction Program**

EPA was entered into on December 7, 2005. The sewer reconstruction program was established in 1979. Expenditures for an estimated 4 miles of grouting repairs are included in the operating budget. The rehabilitation work included in the Federal stimulus grant provided under the American Recovery and Reinvestment Act for the reconstruction work in Lower Anacostia was completed in FY 2011.

The following work accomplishments through FY'10 summarize the magnitude of this reconstruction effort: sewer main reconstruction, 252 miles; and sewer house connection renewals, 15,538. It is anticipated that sewer reconstruction activity will be a perpetual element of future work programs.

**COORDINATION**

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

**A. Identification and Coding Information**

2. Date: October 1, 2011      7. Pre PDF Pg.No.: 8. Req. Adeq. Pub. Fac.

1. Project Number	Agency Number	Update Code
	A-103.01	Change

Revised: \_\_\_\_\_

3. Project Name: Anaerobic Digestion/Combined Heat & Power (Seneca & Piscataway WW 5.Agency: **WSSC**)

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

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

Program Costs	Staff .....	.....	
	Other .....	.....	
Facility Costs	Maintenance .....	.....	
	Debt Service .....	3425	18
Total Costs.....		3425	18
Impact on Water or Sewer Rate.....		7¢	18

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

Cost Elements	(8) Total	(9) Thru FY '11	(10) Estimate FY '12	(11) Total 6 Years	(12) Year 1 FY '13	(13) Year 2 FY '14	(14) Year 3 FY '15	(15) Year 4 FY '16	(16) Year 5 FY '17	(17) Year 6 FY '18	(18) Beyond 6 Years
Planning, Design & Supervision	12,118	718	400	11,000	3,000	2,000	3,000	3,000			
Land											
Site Improvements & Utilities											
Construction	60,000			60,000			29,000	29,000	2,000		
Other	7,140		40	7,100	300	200	3,200	3,200	200		
<b>Total</b>	<b>79,258</b>	<b>718</b>	<b>440</b>	<b>78,100</b>	<b>3,300</b>	<b>2,200</b>	<b>35,200</b>	<b>35,200</b>	<b>2,200</b>		

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

WSSC Bonds	39,282	144	88	39,050	1,650	1,100	17,600	17,600	1,100		
Federal Aid	39,976	574	352	39,050	1,650	1,100	17,600	17,600	1,100		

**D. Description & Justification**

**DESCRIPTION**

This project will develop a comprehensive program for the engineering, design, construction, maintenance, and monitoring and verification necessary to add sustainable energy equipment and systems to produce biogas at the Seneca and Piscataway Wastewater Treatment Plants. The program will provide a reduction in energy and energy-related costs (electricity, natural gas, and 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 may include, but is not limited to, the addition of anaerobic digestion equipment, biosolids gasification/drying 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.

In March 2009, the WSSC received a federal Department of Energy grant of \$570,900 for the feasibility study/conceptual design phase. This amount will be supplemented by \$229,124 from WSSC towards the feasibility study. On June 16, 2010, WSSC awarded the study contract to AECOM of Laurel, MD. The study is projected to be completed in September 2011. The WSSC will continue to pursue federal capital funding as the specific requirements of the project develop during the study and upon delivery of the final report and conceptual design. However, with the current Congress, 50% shared funding is anticipated.

**JUSTIFICATION**

**Plans & Studies**

Appel Consultants, Urban Waste Grease Resource Assessment-NREL (November 1998); 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).

**Specific Data**

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

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

Date First in Capital Program	FY 10
Date First Approved	FY 10
Initial Cost Estimate	345
Cost Estimate Last FY	40,471
Present Cost Estimate	79,258
Approved Request, Last FY	1,650
Total Expenditures & Encumbrances	718
Approval Request FY 13	3,300
Supplemental Approval Request Current FY (12)	

**G. Status Information**

Land Status: No land or R/W required  
 % Project Completion: P-60%  
 Est. Completion Date: (See "Specific Data" for details.)

**H. Map      Map Reference Code:**

**MAP NOT APPLICABLE**

**D. DESCRIPTION & JUSTIFICATION (CONT.)**

**Agency Number: A - 103.01**

**Project Name: Anaerobic Digestion/Combined Heat & Power (Seneca & Piscataway WWTPs)**

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.

Based on AECOM's feasibility study work as of May 2011, the capital cost (detail design + construction) estimate for the combined Seneca and Piscataway plant to be located at Piscataway based on a Thermal Hydrolysis/Mesophilic Anaerobic Digestion process supplemented by restaurant grease fuel design is \$60 million, with a 27 month construction period. Environmental benefits (to be verified prior to completion of the Concept Development Phase) are as follows:

1. Recover 1.2 MW of renewable energy from biomass
2. Reduced Greenhouse Gas production by 5,800 tons/yr
3. Reduce biosolids output by more than 25,000 tons/yr
4. Reduce lime demand by 3,200 tons/yr
5. Reduce nutrient load to Chesapeake Bay
6. Reduce 5 million gallons/yr of grease discharge to sewers
7. Mitigate the potential for sanitary sewer overflows

The economic benefits (to be verified prior to completion of the Concept Development Phase) are as follows:

1. Recover more than \$1.1 million of renewable energy costs/yr
2. Reduce biosolids disposal costs by ~ \$1.5 million/yr
3. Reduce chemical costs by ~ \$400,000/yr
4. Hedge against rising costs of power, fuel and chemicals
5. Payback of 15 to 20 years

It may be feasible to split off the Combined Heat & Power portion of the project (estimated capital cost of \$12 million) as an Energy Performance project paid 100% from energy savings of \$1.5 million/year. This would result in an 8 year simple payback, and lower capital cost (\$48 million) necessary for the anaerobic digestion portion of the combined plant.

**Cost Change**

Order of Magnitude cost estimates were increase due to the addition of thermal hydrolysis pretreatment for the digestion phase in order to increase the production of biogas by 40% to 50% and ensure that class A biosolids are produced.

**STATUS** Planning

**OTHER**

The project scope has been modified for the FY 2013 CIP to include the following options:

1. Centralized Option: Western Branch Thermal Hydrolysis/Mesophilic Anaerobic Digestion supplemented with Restaurant Grease Fuel/Incineration with Energy Recovery
2. Two County Solution:
  - a. Prince George's County Facility at Western Branch: Thermal Hydrolysis/Mesophilic Anaerobic Digestion supplemented with Restaurant Grease Fuel/Incineration with Energy Recovery
  - b. Montgomery County Facility at Seneca: Gasification & Continued Lime Stabilization
3. Regional Solution:
  - a. Blue Plains/WSSC and AECOM presented WSSC's AD/CHP conceptual study results to the U.S. Department of Energy's Biomass Project PEER Review. The presentation was given to DOE's panel of experts; results were very favorable and placed WSSC in the forefront of viable commercial projects ready for federal funding in the near future

The feasibility study phase of the project includes analysis and recommended anaerobic process (Mesophilic or Thermophilic); analysis of potential enhancements to optimize gas production; viability of grease trap waste disposal for added energy recovery utilizing WSSC FOG Report recommendations; evaluation of digester and other biomass gasification/drying processes, evaluation of optimum Solids Residence Time (SRT), etc., to produce Class A or Class B biosolids; odor control mitigation; operational impacts (and mitigation methods) to the liquid side to maintain the integrity and reliability of the Enhanced Nutrient Removal (ENR) design of both plants; analysis of potential biosolids problems including fecal regrowth and odor quality; analysis of engine, turbine, and fuel cell power systems and heat recovery options; and development of preliminary capital cost and lifecycle cost estimates.

**D. DESCRIPTION & JUSTIFICATION (CONT.)**

**Agency Number: A - 103.01**

**Project Name: Anaerobic Digestion/Combined Heat & Power (Seneca & Piscataway WWTPs)**

The study consists of three technical Tasks: Task I will provide a technology overview to develop preliminary costs and equipment requirements to allow identification of the three anaerobic digestion and combined heat and power and two biomass options that best support the WSSC's long-term sustainability goals; Task II will further develop the selected best alternatives to provide detailed cost estimates, economic feasibility analysis, conceptual design and equipment requirements, and will provide a "Basis of Design" document to guide subsequent detailed design; and Task III will summarize the recommendations in a technical report to the Commission.

At the completion of the feasibility study, the Commission will have 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 should facilities be proven economically viable using anticipated funding sources. As part of the feasibility study, the digestion, biomass, side stream treatment, gas cleaning, odor control, and all primary processes will be determined, as will the bi-product selection, generation technology, size, and capacity of all major process equipment.

It is envisioned that either the entire project, or only the portion of the project that includes the production of bio-methane, methanol, 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 with the payback period not exceeding 15 years. 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 annual energy and energy-related savings guarantee of the energy performance portion of the project is estimated to be \$3,000,000 for both plants.

**COORDINATION**

Montgomery County Government, Prince George's County Government, Montgomery County Department of Environmental Protection, Maryland Department of the Environment, Prince George's County Department of Environmental Resources and WSSC Projects S-53.21, Seneca WWTP Enhanced Nutrient Removal, S-53.22, Seneca WWTP Expansion, Part 2, S-96.12, Piscataway WWTP Enhanced Nutrient Removal and S-96.14, Piscataway WWTP Facility Upgrades.

**NOTE** This project supports 100% System Improvement.

**A. Identification and Coding Information**

1. Project Number: \_\_\_\_\_ Agency Number: A-106.00 Update Code: Change  
 2. Date: October 1, 2011 Revised: \_\_\_\_\_  
 3. Project Name: Asset Management Program  
 4. Program: Sanitation 5. Agency: WSSC  
 6. Planning Area: Bi-County

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

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

Cost Elements	(8) Total	(9) Thru FY '11	(10) Estimate FY '12	(11) Total 6 Years	(12) Year 1 FY '13	(13) Year 2 FY '14	(14) Year 3 FY '15	(15) Year 4 FY '16	(16) Year 5 FY '17	(17) Year 6 FY '18	(18) Beyond 6 Years
Planning, Design & Supervision	20,754	6,384	1,137	11,924	1,820	2,557	1,559	2,658	1,726	1,604	1,309
Land											
Site Improvements & Utilities											
Construction											
Other	2,157		171	1,790	273	384	234	399	259	241	196
<b>Total</b>	<b>22,911</b>	<b>6,384</b>	<b>1,308</b>	<b>13,714</b>	<b>2,093</b>	<b>2,941</b>	<b>1,793</b>	<b>3,057</b>	<b>1,985</b>	<b>1,845</b>	<b>1,505</b>

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

	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
WSSC Bonds	7,317	4,150	510	2,506	815	825	179	305	199	183	151
Water Operating Funds	7,797	1,117	399	5,604	639	1,058	807	1,376	893	831	677
Sewer Operating Funds	7,797	1,117	399	5,604	639	1,058	807	1,376	893	831	677

**D. Description & Justification**

**DESCRIPTION**

This project provides for establishing an Asset Management Strategy and the development of Asset Management Plans which will identify and examine overall infrastructure needs over 30 years. The Plans will encompass the water and wastewater networks (treatment, transmission, distribution, collection, pumping and storage), buildings and grounds, and information technology assets (SCADA system, security services, telephony, land mobile radio system, data network, paging system, microwave network and antenna support structures). The Plans will examine existing and future capacity needs, regulatory needs and rehabilitation/replacement needs. This effort will build on a number of previous and existing efforts that address particular components of the networks. Phase 1, completed in December 2007, identified high level infrastructure needs. Track 2, Phase 1, completed in April 2008, developed a road map for establishing an asset management structure. Phase 2 completed in March 2011, developed 6 Asset Management Plans, 12 Asset Management processes and 69 Asset Management procedures. Funding in subsequent fiscal years will be used to complete the development of more detailed Asset Management Plans.

**JUSTIFICATION**

**Plans & Studies**  
 WSSC Strategic Sewerage Study (March, 1993); Patuxent WFP Facility Plan (1997); Facility Master Plan Potomac WFP (2000); Facility Master Plan Patuxent WFP (2000); Potomac Facility Plan (2002); WSSC Sanitary Sewer Overflows Consent Decree (December 7, 2005); WSSC Dynamic Sewer System Model (Contract No. CM4269A05); WSSC Strategic Sewerage Study Update (April 2006); WSSC 2007 Annual Action Item No 13; Phase 1 High Level Utility Wide Master Plan Reports (December 2007).

**Specific Data**  
 The initial phase of the project included analysis of the results of the baseline sewer system modeling conducted in FY's 2006 and 2007, review of completed and planned Sewer System Evaluation Surveys (SSES), condition assessments, and trunk sewer inspections.

**Cost Change**  
 Cost estimates were increased for inflation.

**STATUS** Planning (WSSC Contract Nos. BM4626A07, CM4626A07).

**OTHER**  
 The project scope has remained the same. The program includes six phases. Phase 3, estimated to start in the Fall of 2012 will

**E. Annual Operating Budget Impact (000's)**

		FY of Impact
Program Costs	Staff .....	....
	Other .....	....
Facility Costs	Maintenance .....	....
	Debt Service .....	638 ....
Total Costs.....		638 ....
Impact on Water or Sewer Rate.....		1¢ ....

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

Date First in Capital Program	FY 10
Date First Approved	FY 08
Initial Cost Estimate	6,900
Cost Estimate Last FY	22,244
Present Cost Estimate	22,911
Approved Request, Last FY	1,906
Total Expenditures & Encumbrances	6,384
Approval Request FY 13	2,093
Supplemental Approval Request Current FY (12)	

**G. Status Information**

Land Status: Not Applicable  
 % Project Completion: P-33%  
 Est. Completion Date: FY 2020

**H. Map Map Reference Code:**

**MAP NOT APPLICABLE**

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**D. DESCRIPTION & JUSTIFICATION (CONT.)**

**Agency Number: A - 106.00**

**Project Name: Asset Management Program**

develop 7 Asset Management Plans and 55 Asset Management procedures. Future phases will continue development of detailed AMPs for various types of assets. Project % completion is based on completion of the 6 phases.

**COORDINATION**

Montgomery County Government and Prince George's County Government.

**NOTE** This project supports 100% System Improvement.

**A. Identification and Coding Information**

1. Project Number: \_\_\_\_\_ Agency Number: A-109.00 Update Code: Add  
 2. Date: October 1, 2011 Revised: \_\_\_\_\_  
 3. Project Name: Advanced Metering Infrastructure  
 4. Program: Sanitation 5. Agency: WSSC  
 6. Planning Area: \_\_\_\_\_

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

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

Cost Elements	(8) Total	(9) Thru FY '11	(10) Estimate FY '12	(11) Total 6 Years	(12) Year 1 FY '13	(13) Year 2 FY '14	(14) Year 3 FY '15	(15) Year 4 FY '16	(16) Year 5 FY '17	(17) Year 6 FY '18	(18) Beyond 6 Years
Planning, Design & Supervision	4,800			4,800	2,500	600	600	600	500		
Land											
Site Improvements & Utilities											
Construction	81,200			81,200		12,500	25,000	25,000	18,700		
Other											
<b>Total</b>	<b>86,000</b>			<b>86,000</b>	<b>2,500</b>	<b>13,100</b>	<b>25,600</b>	<b>25,600</b>	<b>19,200</b>		

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

WSSC Bonds	86,000			86,000	2,500	13,100	25,600	25,600	19,200		
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**D. Description & Justification**

**DESCRIPTION**

This project provides for the implementation of a system-wide automated meter reading infrastructure system (System). New Meter Interface Units with internal antenna capable of obtaining and/or transmitting the meter register reading will be installed on all meters. The System may be either a mobile system where meters are read by a meter reader driving down the street with a portable radio based meter reading device or a fixed network communications system with data collectors installed on poles and rooftops.

**JUSTIFICATION**

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

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

**Cost Change**  
 Not applicable.

**STATUS** Planning

**OTHER**  
 The project scope was developed for the FY2013 CIP and has an Order of Magnitude project cost estimate of \$86,000,000. 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.

**COORDINATION**  
 Montgomery County Government and Prince George's County Government.

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

Program Costs	Staff	.....	....	
	Other	.....	....	
Facility Costs	Maintenance	.....	....	
	Debt Service	.....	7506	17
<b>Total Costs</b> .....			7506	17
<b>Impact on Water or Sewer Rate</b> .....			15¢	17

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

Date First in Capital Program: \_\_\_\_\_ FY 13

Date First Approved: \_\_\_\_\_ FY 13

Initial Cost Estimate: 86,000

Cost Estimate Last FY: \_\_\_\_\_

Present Cost Estimate: 86,000

Approved Request, Last FY: \_\_\_\_\_

Total Expenditures & Encumbrances: \_\_\_\_\_

Approval Request FY 13: 2,500

Supplemental Approval Request Current FY (12): \_\_\_\_\_

**G. Status Information**

Land Status: Not determined

% Project Completion: P-0%

Est. Completion Date: FY2017

**H. Map Map Reference Code:**

MAP NOT AVAILABLE

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## Advanced Metering Infrastructure Study March 2011

### Executive Summary

The Washington Suburban Sanitary Commission (“WSSC”) engaged R. W. Beck, Inc. (“R. W. Beck”, now an SAIC company) to provide a thorough, unbiased assessment of the costs and benefits of an investment in Advanced Metering Infrastructure (“AMI”). The analysis was done in conjunction with WSSC staff, who participated in group workshops and individual interviews and provided operations and management information. They shared their expertise in WSSC procedures, policies, customer concerns, and organizational priorities.

AMI is rarely a cost-effective investment for a utility that is looking simply to change the technology used to gather cyclical meter readings for billing. While AMI might improve the percentage of bills based on actual meter readings rather than estimates, it is a much more powerful tool than that. The staff and R. W. Beck explored how AMI could enable WSSC to implement procedures and policies that could improve both customer services and operational efficiency. Using the AMI-generated data, coupled with investing in the associated planning, design, and change management needed to implement significant improvements in a complex organization, WSSC can transform many aspects of its operations. The result would 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 (and while they are smaller).
- 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 in the future, such as rates based on individualized water budgets to enhance conservation program effectiveness
- Analysis of consumption patterns to detect under-performing meters, or even meter right-sizing analysis.
- Monitoring of individual consumption to perform precise, targeted conservation enforcement during droughts.
- Opportunities to enhance the detection of leaks to reduce non-revenue water.

R. W. Beck has developed and is delivering to WSSC an economic model of the costs and benefits of an investment in AMI. This report (“Report”) describes the analysis, including summary financial measures such as the Internal Rate of Return (“IRR”) of

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the investment, under different sets of assumptions. WCCS staff will be able to modify the model and investigate alternative assumptions as desired.

WSSC currently reads its meters quarterly, but is interested in reading them monthly. The economic model demonstrates that an investment in AMI technology would yield an IRR of 5 percent relative to current quarterly meter reading operations, and 15.7 percent relative to WSSC's providing monthly reading with current manual meter reading technology.

### Summary of AMI Investment and Related Staffing Changes

	WSSC Staffed for Monthly Reading	WSSC Staffed for Quarterly Reading
Capital Cost	\$86 million	\$86 million
IRR (over 20 years)	15.7%	5.0%
Net Present Value (over 20yrs @2% Discount Rate)	\$85.1 million	\$15.6 million

This rate of return does not include the value of significant additional benefits that cannot be precisely quantified. They include improved customer satisfaction, enhanced analysis of meter wear and accuracy, backflow detection, improved detection of non-revenue water, and support for sophisticated rate structures and conservation strategies. These benefit areas are discussed in this report.

## Background and Introduction

WSSC supplies water to 456,000 customer meters in Montgomery and Prince Georges Counties. All of its customers are metered. WSSC has a variety of meter configurations, with meters installed inside buildings (both with and without remote meter reading devices) and outdoors in meter pits. WSSC also has drive-by automated meter reading ("AMR") equipment installed on approximately 4,000 difficult-to-access meters. WSSC typically gathers actual cyclical meter readings for over 98 percent of its meters, except when field operations are interrupted by severe winter weather.

Because the scale of implementing an AMI system is large, both in terms of its cost and its impact on customer service operations, WSSC engaged R. W. Beck to develop a business case and economic model to evaluate the investment.

This report summarizes the costs and benefits of an AMI investment. It quantifies the capital as well as operating and maintenance costs of AMI systems for WSSC and evaluates the net savings from reducing staffing, vehicles and other expenditures associated with AMI-based meter reading, billing, and customer service. It also includes a discussion of additional, substantial benefits of AMI that cannot be incorporated into a quantitative model.

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## Objectives

The primary objectives for a new metering system would include improving the effectiveness of WSSC's meter reading and customer service operations and enhancing WSSC's service to its customers. It would accomplish these objectives by:

- Getting all the meter readings in every cycle quickly, so they can be billed immediately.
- Enabling WSSC to implement monthly reading and billing, in order to make it easier for customers to pay the bills because they would be smaller, as well as making customers aware of abnormally high consumption (such as that caused by leaks) sooner, before several weeks of consumption have accumulated into a very large bill.
- Raising the percentage of bills that are based on actual readings close to 100 percent, eliminating most estimated bills and their attendant customer service problems.
- Reducing the cost of customer service operations, including regular meter reading, special meter reads, field investigations, etc.
- Reducing the volume of customer calls, since many are related to meter readings, estimates, concerns about high bills, and payment problems.
- Reducing the number of field visits made by WSSC staff, since many are related to reading difficult-to-access meters, verifying meter readings, or investigating other problems related to meters, meter reading and billing.
- Improving the effectiveness of WSSC's customer service representatives in dealing with customers by providing better analytical tools and estimate-free consumption histories for customers. This would be manifested in part by increasing the percentage of customer inquiries that are resolved during the initial call ("first call resolution") as opposed to those needing follow-up research or field investigations.
- Enabling proactive customer service practices. For example, WSSC could detect unusually high consumption that might be due to leaks and notify customers before they get the bill.
- Reducing arrears and bad debts, since timely and accurate bills based on actual meter readings, and smaller bills issued more frequently, tend to improve collections.
- Reducing adjustments, since bills are frequent and based on actual consumption. WSSC has recently reduced adjustments associated with leaks. However, there are still adjustments associated with corrections relative to estimated consumption and in response to cases reviewed by the appeals boards.
- Reducing theft of service by enabling WSSC to observe evidence of possible theft (tamper flags, sudden decrease in consumption between regular billing dates, etc.) and continuously monitor accounts that have been shut off to ensure they stay off.

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- Supporting more flexibility in meter reading cycles. For example, some or all customers might be given the option to be converted to monthly billing, or be given a choice of when they wanted to be billed within the month. This can be very helpful to some businesses and fixed income customers.
  - Helping WSSC better manage its meters. For example, AMI data could be analyzed to detect meters that may be significantly under-registering, or that are the wrong size for a customer's use pattern.
  - Providing better data for improved forecasting, facilities planning, rate setting, etc.

When implementing an AMI system, WSSC would replace some older meters. There are some objectives related to meter replacement in conjunction with the installation of a meter reading system:

- Potentially increase billed-for revenues, since newer meters are more accurate.
- Reduce WSSC's non-revenue water.
- Reduce the extent to which customers with new, accurate meters subsidize customers with older meters that don't register all the water going through them.

Any new meter reading system that WSSC acquires should:]

- Provide a solid return on investment.
- Support flexible operations. For example, while WSSC may desire to move quarterly customers to monthly billing, AMI allows WSSC to offer additional choices. Customers might be offered a choice of billing frequencies, or even a choice of specific days within a monthly cycle (such as immediately after receiving monthly retirement income) that they want be billed.
- Be reliable over its entire service life (15 years or more for the electronics).
- Avoid technological obsolescence during its service life.
- Be non-proprietary to the greatest extent possible, and at the very least allow WSSC to purchase more than one make and model of meter.

In developing the business case, R. W. Beck analyzed WSSC's current meter-related business practices that would be affected by AMI, as well as assumptions about the levels and types of services WSSC might offer with the new technology, and how those assumptions affect WSSC costs. This report presents the analysis and the potential impact on the costs and benefits of an investment in AMI.

## **Monthly Billing**

In the workshops and interviews conducted during this project, WSSC staff stated that monthly meter billing is an essential part of WSSC's plans to improve customer service operations. Projected rate increases are significant, and there is a concern that larger bills will increase arrears. WSSC staff is considering whether converting from quarterly billing to monthly billing requires monthly reading. Alternatives to monthly reading include the following:

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- WSSC might issue estimated consumption bills for two months followed by a bill based on an actual meter reading.
  - WSSC staff could issue a bill based on quarterly reading (as performed today), but presented as three equal monthly payments. While these are not strictly speaking bills based on estimated consumption, they may be perceived by customers as estimates or at least as confusing.

These alternatives to monthly billing based on monthly reading have the advantage that they do not require a large expenditure for additional meter reading staff or meter reading technology such as AMI.

The disadvantages of issuing bills for partial payments or bills based on estimated charges include the following:

- Reconciling estimates with actual readings inevitably leads to customer service calls, field work to investigate, and clerical work to adjust bills. WSSC experienced this process firsthand last winter, when unusually large snowfalls required mass estimating for many accounts that could not be reached for meter reading, and was followed by a sharp increase in customer service interactions. More inquiries and complaints cause additional delays in performing work, and reduce customer satisfaction.
- These bills do not provide the detailed, timely information that AMI provides, and therefore do not support some of the customer service features AMI enables. They do not give WSSC and its customers the more frequent monitoring of its accounts to avoid or reduce large bills caused by leaks, or any of the other opportunities to reduce customer calls, reduce field visits, or improve distribution system management that a fixed AMI system makes possible.

## **Meter Reading Options**

WSSC has several major meter reading options to consider. Understanding their limitations and benefits helps to focus the discussion of WSSC's choices. They are discussed below.

### **Continue Current Operations**

WSSC could decide not to make any changes in meter reading technology. The current methods of reading can be continued indefinitely by visiting each property and keying the register data into portable computers. The decision to read monthly would require effectively tripling the number of staff assigned to cyclical meter reading.

This manual meter reading option is used as the baseline for evaluating an investment in AMI. The economic model scenarios compare manually reading meters monthly to reading meters monthly with AMI equipment, and also compare current quarterly meter reading to using AMI to read meters for quarterly billing, and computes the net return on investment in each case.

Quarterly Billing Summary Results

All Meters:	456,904
Select: Bills/year	4
	<b>Total</b>
<b>Capital Cost</b>	<b>Cost</b>
Meters & Assoc. Misc. Mat'ls.**	15,249,374
Installation Costs Allocable to Meters**	2,343,858
Electronics & Assoc. Mat'ls.	45,638,234
Installation Costs Allocable to Electronics	18,037,724
Administration, Start-up & UTU Costs	4,851,751
<b>Grand Total System Cost</b>	<b>86,120,940</b>
Salvage on Old Meters	629,143
Savings on normal meter turnover	5,687,696
Contribution from wastewater authorities	
<b>Net Total System Cost</b>	<b>79,804,101</b>
<b>Annual System Operating Costs</b>	
Maintenance and Repair	864,193
Operating Costs	516,000
Total Annual O&M Cost	1,380,193
Annuitized battery change-out	
<b>Annual Operating Costs/Savings</b>	
Manpower Savings	8,299,495
Vehicle and Other Savings	390,757
Monthly Billing costs	0
Domestic Leak Detection	(293,050)
Total Annual Savings	8,397,202
Under-Registration Recovery	4,447,219
Total Revenue Plus Savings	12,844,422
Contribution from wastewater authorities	0
<b>Net Annual Savings</b>	<b>11,464,229</b>
Readings per year	1,827,616
Readings in 15 years	27,414,240
Capital System Cost per reading	\$2.91
Net Annual Savings per reading	\$6.27
Net Cost or Savings per billed reading	(\$3.36)

Monthly Billing Summary Results

All Meters:	456,904
Select: Bills/year	12
	<b>Total</b>
<b>Capital Cost</b>	<b>Cost</b>
Meters & Assoc. Misc. Mat'ls.**	15,249,374
Installation Costs Allocable to Meters**	2,343,858
Electronics & Assoc. Mat'ls.	45,638,234
Installation Costs Allocable to Electronics	18,037,724
Administration, Start-up & UTU Costs	4,851,751
<b>Grand Total System Cost</b>	<b>86,120,940</b>
Salvage on Old Meters	629,143
Savings on normal meter turnover	5,687,696
Contribution from wastewater authorities	0
<b>Net Total System Cost</b>	<b>79,804,101</b>
<b>Annual System Operating Costs</b>	
Maintenance and Repair	864,193
Operating Costs	516,000
Total Annual O&M Cost	1,380,193
Annuitized battery change-out	0
<b>Annual Operating Costs/Savings</b>	
Manpower Savings	13,655,860
Vehicle and Other Savings	933,843
Monthly Billing costs	(1,926,639)
Domestic Leak Detection	(293,050)
Total Annual Savings	12,370,013
Under-Registration Recovery	4,447,219
Total Revenue Plus Savings	16,817,232
Contribution from wastewater authorities	0
<b>Net Annual Savings</b>	<b>15,437,040</b>
Readings per year	5,482,848
Readings in 15 years	82,242,720
Capital System Cost per reading	\$0.97
Net Annual Savings per reading	\$2.82
Net Cost or Savings per billed reading	(\$1.85)

# 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 shows only the WSSC project description forms (PDFs) for which the Executive recommends changes to the Commission's request. Those PDFs are 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/file/Finance/Budget/FY13 ProposedCIP rollup.pdf](http://www.wsscwater.com/file/Finance/Budget/FY13%20ProposedCIP_rollup.pdf).

## PROGRAM CONTACTS

Contact Mark Brackett of WSSC's Budget Group at 301.206.8179 or John Greiner of the Office of Management

and Budget at 240.777.2765 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 \$1,249.3 million in six-year expenditures proposed by the WSSC for FY13-18 is \$88.6 million (6.6 percent) less than the FY12-17 approved total of \$1,337.9 million. The decrease in six-year costs is primarily attributable to a number of large projects that are moving through construction and are expected to be wholly or largely completed within the next six years. These include the Potomac Water Filtration Plant (WFP) Improvements Project, the Bi-County Water Tunnel, the Anacostia Storage Facility, the Seneca Waste Water Treatment Plant (WWTP) Expansion Part 2 and Enhanced Nutrient Removal projects, and the Blue Plains WWTP Biosolids Management Part 2, Biological Nutrient Removal, and Enhanced Nutrient Removal projects.

The FY13-18 CIP request includes 48 ongoing and 3 closeout projects (there are no pending closeout projects). There is one new project: the Potomac WFP Main Zone Pipeline.

The following table compares the six-year expenditures and funding approved for FY12-17, requested by WSSC for FY13-18, and recommended by the County Executive for FY13-18.

WSSC CIP COMPARISON: FY13-18 vs. FY12-17					
(\$000)					
(SIX-YEAR DATA)	CURRENT APPROVED FY12-17	AGENCY REQUEST FY13-18	CHANGE FROM APPROVED	CE RECOM- MENDED FY11-16	CHANGE FROM APPROVED
<b>EXPENDITURES</b>					
MONTGOMERY COUNTY SEWERAGE	60,509	37,976	(22,533)	37,976	(22,533)
BI-COUNTY SEWERAGE	927,602	835,781	(91,821)	832,363	(95,299)
MONTGOMERY COUNTY WATER	23,641	26,190	2,549	26,190	2,549
BI-COUNTY WATER	326,157	349,343	23,186	349,343	23,186
<b>TOTAL EXPENDITURES</b>	<b>1,337,909</b>	<b>1,249,290</b>	<b>(88,619)</b>	<b>1,245,812</b>	<b>(92,097)</b>
<b>FUNDING</b>					
WSSC BONDS	976,715	969,118	(7,597)	994,344	17,629
SYSTEMS DEVELOPMENT CHARGE	123,111	84,009	(39,102)	84,009	(39,102)
CONTRIBUTIONS	11,130	12,068	938	12,068	938
ALL OTHER SOURCES	226,953	184,095	(42,858)	155,391	(71,562)
<b>TOTAL FUNDING</b>	<b>1,337,909</b>	<b>1,249,290</b>	<b>(88,619)</b>	<b>1,245,812</b>	<b>(92,097)</b>

### Executive Recommendations

The Executive's recommended FY13-18 CIP is identical to the Commission's proposed CIP except for the six Blue Plains Advanced Wastewater Treatment Plant projects, which have been adjusted to reflect the cost estimates included in the Proposed FY11-20 CIP for the District of Columbia Water and Sewer Authority (WASA, now doing business as DC Water). The revised amounts were not incorporated into WSSC's Proposed FY13-18 CIP because DC Water's Proposed FY11-20 CIP was received after WSSC's CIP was published.

Because of the revised estimates for the Blue Plains projects, the Executive's recommended six-year expenditures for WSSC's CIP total \$1,245.8 million, which is a \$92.1 million (6.9 percent) decrease from the approved FY12-17 CIP of \$1,337.9 million and a \$3.5 million decrease from WSSC's proposed FY13-18 CIP. The decrease in total FY13-18 Blue Plains project costs is largely due to lower cost estimates for the Enhanced Nutrient Removal Project as various sub-projects move into design and become more precisely defined, plus minor changes to sub-projects in the Liquid Train, Biosolids Management, and Biological Nutrient Removal projects. These reductions were partially offset by cost increases for Pipelines and Appurtenances and for Plant Wide Projects due to the addition of new sub-projects.

The following table summarizes the recommended changes for each of the Blue Plains projects.

BLUE PLAINS WWTP PROJECTS - COST COMPARISON							
(S000)							
Projects	TOTAL 6 YR	FY13	FY14	FY15	FY16	FY17	FY18
<b>WSSC REQUEST</b>							
Liquid Train Projects, Part 2	30,080	7,803	4,668	1,619	3,171	7,643	5,176
Biosolids Management, Part 2	162,931	111,339	38,977	4,714	5,141	2,491	469
Biological Nutrient Removal	17,314	11,894	4,497	717	206	0	0
Plant Wide Projects	29,502	7,801	6,230	3,656	2,242	2,518	7,855
Enhanced Nutrient Removal	299,101	84,395	56,537	75,743	60,577	19,778	2,871
Pipelines and Appurtenances	68,769	13,263	12,645	15,353	13,488	9,244	4,776
<b>WSSC REQUEST TOTAL</b>	<b>607,697</b>	<b>236,295</b>	<b>123,554</b>	<b>101,802</b>	<b>84,825</b>	<b>41,674</b>	<b>19,547</b>
<b>CE RECOMMENDED</b>							
Liquid Train Projects, Part 2	30,296	9,458	4,985	1,799	2,524	6,833	4,697
Biosolids Management, Part 2	164,941	110,339	40,225	8,904	3,629	1,613	201
Biological Nutrient Removal	18,989	10,359	5,629	2,490	311	0	0
Plant Wide Projects	32,232	10,166	7,795	3,384	1,813	2,204	6,870
Enhanced Nutrient Removal	285,666	73,377	59,813	46,120	50,593	43,635	12,128
Pipelines and Appurtenances	72,095	12,857	14,873	17,812	13,741	8,683	4,129
<b>CE RECOMMENDED TOTAL</b>	<b>604,219</b>	<b>226,756</b>	<b>133,320</b>	<b>80,509</b>	<b>72,641</b>	<b>62,968</b>	<b>28,025</b>
<b>CE Recommended - WSSC Request</b>	<b>(3,478)</b>	<b>(9,539)</b>	<b>9,766</b>	<b>(21,293)</b>	<b>(12,184)</b>	<b>21,294</b>	<b>8,478</b>

### HIGHLIGHTS

- Continue to enhance wastewater treatment and solids handling facilities at the regional Blue Plains Advanced Wastewater Treatment Plant in order to achieve environmental goals and greater efficiency.
- Continue to improve reliability and reduce treatment costs at the Potomac Water Filtration plant, including the new

Potomac WFP Main Zone Pipeline Project which is needed to provide greater redundancy.

- Move forward with the Bi-County Water Tunnel, which is scheduled for completion in December, 2013.
- Increase the miles of large cast iron and pre-stressed concrete cylinder pipe (PCCP) water mains repaired, replaced, and protected under the Large Diameter Water Pipe Rehabilitation Program, and prepare to extend these efforts to 42- and 36-inch diameter PCCP mains.
- Increase replacement of small water mains from 41 miles in FY12 to 46 miles in FY13 and the rehabilitation of small sewer lines from 22 miles to 55 miles.
- Continue to upgrade the Blue Plains, Seneca, and Damascus wastewater treatment plants for enhanced nutrient removal to meet the environmental goals in the Chesapeake 2000 plan.
- Begin planning for the system-wide implementation of automated meter reading technology by 2017.

### 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 FY13 spending control limits adopted by the Montgomery County Council are shown below with their outyear projections. The Prince George's County Council adopted identical FY13 spending control limits for WSSC. The first year of the Commission's proposed CIP is consistent with the approved FY13 spending control limits shown below, as is the County Executive's recommended CIP for WSSC.

FY13 WSSC SPENDING CONTROL LIMITS ADOPTED BY THE MONTGOMERY COUNTY COUNCIL (AND OUTYEAR PROJECTIONS)						
	FY13	FY14	FY15	FY16	FY17	FY18
New Debt Requirement (\$000)	\$481,764	\$390,331	\$379,274	\$391,085	\$361,941	\$319,495
Total W/S Operating Budget (\$000)	\$628,999	\$681,916	\$730,408	\$786,990	\$843,305	\$894,128
Debt Service (\$000)	\$212,714	\$252,299	\$286,530	\$321,879	\$353,329	\$379,986
Average Rate Increase	8.5%	12.2%	9.1%	9.1%	7.7%	6.2%

Source: Montgomery County Council Resolution 17-285 and WSSC Budget Group.

An estimate of the impact on the water or sewer rate (i.e., the charge to users) is calculated for each project for which the estimated annual debt service and operating and maintenance (O&M) costs would result in at least a one cent increase per 1,000 gallons of total consumption. The WSSC Budget Group estimates the relationship between annual debt service and O&M costs and the water and sewer rates. For water projects, approximately \$506,560 of debt service and/or O&M costs

equates to a one cent increase in the water rate. For sewer projects, approximately \$463,520 of debt service and/or O&M costs equates to a one cent increase in the sewer rate.

WSSC has cautioned that the calculated impact on water and sewer rates represents only a broad indication of the effect that a particular project has on the rate schedule. The impact on water and sewer rates is influenced by a number of factors, including the actual interest rate on the bonds sold to fund the project, the availability of grants for sewer projects, and fluctuations in water usage (which affect sales revenue).

### 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 29.8 percent since FY08, and total water and sewer debt service is up 11.7 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 FY08 and FY11, averaging 31.5 percent.

WSSC BONDED INDEBTEDNESS AND DEBT SERVICE								
(\$ in Millions)	ACTUAL FY05	ACTUAL FY06	ACTUAL FY07	ACTUAL FY08	ACTUAL FY09	ACTUAL FY10	ACTUAL FY11	ESTIMATED FY12
End of Fiscal Year - Total Outstanding Bond Debt (includes Storm Water Drainage Bonds)	\$1,454.1	\$1,425.4	\$1,342.0	\$1,336.4	\$1,346.7	\$1,366.2	\$1,421.8	\$1,785.1
Outstanding Water and Sewer Bond Debt	\$755.4	\$788.3	\$768.8	\$829.4	\$890.5	\$954.0	\$1,076.8	\$1,469.0
Total Debt Service - All Operating Funds	\$196.6	\$214.6	\$218.6	\$212.4	\$214.0	\$217.1	\$239.6	\$235.8
Debt Service as a % of Total Operating Exp.	44.8%	43.9%	45.1%	41.8%	40.3%	40.4%	41.8%	37.7%
Debt Service in Water/Sewer Operating Exp.	\$133.0	\$139.5	\$141.4	\$136.5	\$141.1	\$149.2	\$152.5	\$185.9
Water/Sewer Debt Service as a % of Total Water/Sewer Operating Expenditures	35.6%	33.9%	34.8%	31.7%	30.9%	31.8%	31.9%	32.3%

Source: WSSC Budget Group

The debt service ratio is projected to rise to 33.8% in FY13 and to exceed 40% in FY16 (see below). WSSC has convened a bi-county working group on infrastructure funding that is exploring ways to keep the debt service ratio under 40%.

PROJECTED WSSC DEBT SERVICE RATIO UNDER THE COUNTY'S APPROVED SPENDING CONTROL LIMITS						
	FY13	FY14	FY15	FY16	FY17	FY18
Debt Service as a % of Total Water and Sewer Operating Expenditures	33.8%	37.0%	39.2%	40.9%	41.9%	42.5%

#### 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, 2011, WSSC debt represented 46.3 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 as well which are shown separately in the CIP. These "Information Only" projects may be included for any 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 FY13-18 "Information Only" projects include the Water and Sewer Reconstruction projects, the Anaerobic Digestion/ Combined Heat and Power project, Engineering Support, the Energy Performance Program, Entrepreneurial Projects, the Water Storage Facility Rehabilitation Program, the Asset Management Program, the Pressure Reducing Valve Rehabilitation Program, the Sewer Basin Planning Program, and the Advanced Metering Infrastructure Program (new for the FY13-18 CIP). The latter program provides for system-wide implementation of automated meter reading infrastructure by FY17.

The total FY13-18 budget for the Information Only projects is \$1,596.8 million, a 40.9% increase from the \$1,133.5 million approved for the FY12-17 CIP. The increase is largely due to increased spending on the reconstruction of small water and sewer mains (see below) and the new Advanced Metering Infrastructure Program.

Total proposed FY13-18 spending on the Water and Sewer Reconstruction "Information Only" projects will increase by \$321.8 million (33.9%). This will allow small water main replacement to increase from 41 miles in FY12 to 46 miles in FY13, and small sewer rehabilitation to increase from 22 miles in FY12 to 55 miles in FY13 (see the following table).

SMALL WATER AND SEWER MAIN RECONSTRUCTION INCLUDED IN WSSC'S PROPOSED FY13-18 CIP								
	Approved FY12	Proposed FY13-18						FY13-18 Total
		FY13	FY14	FY15	FY16	FY17	FY18	
Water Main Replacement (mi.)	41	46	51	55	55	55	55	317
Sewer Main Rehabilitation (mi.)	22	55	35	30	30	30	30	210

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 FY13-18 CIP, as recommended by the Executive, is \$994.3 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 \$84.0 million in SDC funds be used to fund growth projects in FY13-18.

### **State Aid**

For sewerage projects such as Blue Plains Wastewater Treatment Plant (WWTP) Enhanced Nutrient Removal, Blue Plains WWTP Biological Nutrient Removal, Seneca WWTP Enhanced Nutrient Removal, and Damascus WWTP Enhanced Nutrient Removal, State funds are recommended to cover \$129.0 million of the costs in FY13-18. 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 Rockville join the Commission in financing the construction of sewerage facilities serving the metropolitan area. These jurisdictions contribute an agreed-upon share of the project cost. A total of \$26.4 million in project expenditures is recommended to be financed by these jurisdictions during FY13-18.

### **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 \$12.1 million for FY13-18.

## **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.

## EXECUTIVE RECOMMENDATION

### Blue Plains WWTP: Biological Nutrient Removal - No. 973817

Category: **WSSC**  
 Agency: **W.S.S.C.**  
 Planning Area: **Bi-County**  
 Relocation Impact: **None**

Date Last Modified: **December 16, 2011**  
 Required Adequate Public Facility: **No**

#### EXPENDITURE SCHEDULE (\$000)

Cost Element	Total	Thru		Rem. 6 Year							Beyond
		FY11	FY12	Total	FY13	FY14	FY15	FY16	FY17	FY18	6 Years
Planning, Design and Supervision	19,045	15,981	1,049	2,015	1,187	554	274	0	0	0	0
Construction	68,772	48,457	3,530	16,785	9,267	5,019	2,191	308	0	0	0
Other	235	0	46	189	105	56	25	3	0	0	0
<b>Total</b>	<b>88,052</b>	<b>64,438</b>	<b>4,625</b>	<b>18,989</b>	<b>10,559</b>	<b>5,629</b>	<b>2,490</b>	<b>311</b>	<b>0</b>	<b>0</b>	<b>0</b>

#### FUNDING SCHEDULE (\$000)

Municipal (WSSC only)	2,417	1,769	127	521	290	154	68	9	0	0	0
State Aid	44,028	32,219	2,313	9,496	5,280	2,815	1,245	156	0	0	0
WSSC Bonds	41,607	30,450	2,185	8,972	4,989	2,660	1,177	146	0	0	0

#### COMPARISON (\$000)

	Total	Thru		Rem. 6 Year							Beyond	Approp.
		FY11	FY12	Total	FY13	FY14	FY15	FY16	FY17	FY18	6 Years	Request
Current Approved	84,265	64,478	8,264	11,523	9,440	1,074	650	359	0	0	0	0
Agency Request	87,744	64,438	5,992	17,314	11,894	4,497	717	206	0	0	0	11,894
Recommended	88,052	64,438	4,625	18,989	10,559	5,629	2,490	311	0	0	0	10,559
<b>CHANGE</b>			<b>TOTAL</b>	<b>%</b>	<b>6-YEAR</b>	<b>%</b>					<b>APPROP.</b>	
Agency Request vs Approved			3,479	4.1%	5,791	50.3%					11,894	0.0%
Recommended vs Approved			3,787	4.5%	7,466	64.8%					10,559	0.0%
Recommended vs Request			308	0.4%	1,675	9.7%					(1,335)	(11.2%)

#### Recommendation

APPROVE WITH MODIFICATIONS.

#### Comments

This project includes funding for WSSC's share of the Blue Plains Advanced Wastewater Treatment Plant "Biological Nutrient Removal" capital project. The Executive recommends changes in project estimates to align with the amounts proposed by the District of Columbia Water and Sewer Authority (now doing business as DC Water) in its Proposed FY2011-2020 CIP. The changes reflect minor adjustments to the cost estimates for some of the sub-projects included in the Biological Nutrient Removal project.

## EXECUTIVE RECOMMENDATION

### Blue Plains WWTP: Biosolids Mgmt PT2 - No. 954812

Category: WSSC  
 Agency: W.S.S.C.  
 Planning Area: Bi-County  
 Relocation Impact: None

Date Last Modified: December 16, 2011  
 Required Adequate Public Facility: No

#### EXPENDITURE SCHEDULE (\$000)

Cost Element	Total	Thru Rem. 6 Year						Beyond			
		FY11	FY12	Total	FY13	FY14	FY15	FY16	FY17	FY18	6 Years
Planning, Design and Supervision	85,955	57,488	11,732	16,735	7,998	6,334	1,533	357	372	141	0
Construction	286,642	84,957	55,111	146,574	101,249	33,493	7,283	3,266	1,225	58	0
Other	2,300	0	668	1,632	1,092	398	88	36	16	2	0
<b>Total</b>	<b>374,897</b>	<b>142,445</b>	<b>67,511</b>	<b>164,941</b>	<b>110,339</b>	<b>40,225</b>	<b>8,904</b>	<b>3,659</b>	<b>1,613</b>	<b>201</b>	<b>0</b>

#### FUNDING SCHEDULE (\$000)

Municipal (WSSC only)	20,580	7,819	3,706	9,055	6,057	2,208	489	201	89	11	0
System Development Charge	0	0	0	0	0	0	0	0	0	0	0
WSSC Bonds	354,317	134,626	63,805	155,886	104,282	38,017	8,415	3,458	1,524	190	0

#### COMPARISON (\$000)

	Total	Thru Rem. 6 Year						Beyond		Approp. Request		
		FY11	FY12	Total	FY13	FY14	FY15	FY16	FY17		FY18	6 Years
Current Approved	340,420	142,707	62,573	135,077	88,830	37,326	5,668	2,861	392	0	63	0
Agency Request	376,062	142,445	70,684	162,931	111,139	38,977	4,714	5,141	2,491	469	2	111,139
Recommended	374,897	142,445	67,511	164,941	110,339	40,225	8,904	3,659	1,613	201	0	110,339
<b>CHANGE</b>												
Agency Request vs Approved			35,642	10.5%	27,854	20.6%	111,139	0.0%				
Recommended vs Approved			34,477	10.1%	29,864	22.1%	110,339	0.0%				
Recommended vs Request			(1,165)	(0.3%)	2,010	1.2%	(800)	(0.7%)				

**Recommendation**

APPROVE WITH MODIFICATIONS.

**Comments**

This project includes funding for WSSC's share of the Blue Plains Advanced Wastewater Treatment Plant "Biosolids Management Part 2" capital project. The Executive recommends changes in project estimates to align with the amounts proposed by the District of Columbia Water and Sewer Authority (now doing business as DC Water) in its Proposed FY2011-2020 CIP. The changes reflect minor adjustments to the cost estimates for some of the sub-projects included in the Biosolids Management project.

## EXECUTIVE RECOMMENDATION

### Blue Plains WWTP: Enhanced Nutrient Removal - No. 083800

Category: **WSSC**  
 Agency: **W.S.S.C.**  
 Planning Area: **Bi-County**  
 Relocation Impact: **None**

Date Last Modified: **December 16, 2011**  
 Required Adequate Public Facility: **No**

#### EXPENDITURE SCHEDULE (\$000)

Cost Element	Total	Thru		Rem. 6 Year						Beyond	
		FY11	FY12	Total	FY13	FY14	FY15	FY16	FY17	FY18	6 Years
Planning, Design and Supervision	100,061	33,850	15,940	47,965	17,780	12,461	7,261	4,256	3,257	2,960	2,306
Construction	291,727	7,967	48,648	234,873	54,871	46,760	38,402	45,836	39,946	9,058	239
Other	3,499	0	646	2,828	726	592	457	501	432	120	25
<b>Total</b>	<b>395,287</b>	<b>41,817</b>	<b>65,234</b>	<b>285,666</b>	<b>73,377</b>	<b>59,813</b>	<b>46,120</b>	<b>50,593</b>	<b>43,635</b>	<b>12,128</b>	<b>2,570</b>

#### FUNDING SCHEDULE (\$000)

Municipal (WSSC only)	11,123	498	1,100	9,387	1,556	1,362	1,198	2,454	2,196	621	138
State Aid	192,638	32,740	45,194	114,664	45,037	35,023	24,295	5,890	3,612	807	40
WSSC Bonds	191,526	8,579	18,940	161,615	26,784	23,428	20,627	42,249	37,827	10,700	2,392

#### COMPARISON (\$000)

	Total	Thru		Rem. 6 Year						Beyond		Approp. Request
		FY11	FY12	Total	FY13	FY14	FY15	FY16	FY17	FY18	6 Years	
Current Approved	405,761	36,896	61,080	302,563	79,145	79,813	42,818	56,664	44,123	0	5,222	0
Agency Request	427,912	36,659	89,325	299,101	84,395	56,537	75,743	60,577	19,778	2,071	2,827	84,395
Recommended	395,287	41,817	65,234	285,666	73,377	59,813	46,120	50,593	43,635	12,128	2,570	73,377
<b>CHANGE</b>				<b>TOTAL</b>	<b>%</b>	<b>6-YEAR</b>	<b>%</b>			<b>APPROP.</b>		
Agency Request vs Approved				22,151	5.5%	(3,462)	(1.1%)			84,395	0.0%	
Recommended vs Approved				(10,474)	(2.6%)	(16,897)	(5.6%)			73,377	0.0%	
Recommended vs Request				(32,625)	(7.6%)	(13,435)	(4.5%)			(11,018)	(13.1%)	

**Recommendation**

APPROVE WITH MODIFICATIONS.

**Comments**

This project includes funding for WSSC's share of the Blue Plains Advanced Wastewater Treatment Plant "Enhanced Nutrient Removal" capital project. The Executive recommends changes in project estimates to align with the amounts proposed by the District of Columbia Water and Sewer Authority (now doing business as DC Water) in its Proposed FY2011-2020 CIP. The changes are due to improved cost estimates as sub-projects move into design and become more precisely defined.

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## EXECUTIVE RECOMMENDATION

### Blue Plains WWTP: Liquid Train PT 2 - No. 954811

Category: **WSSC**  
 Agency: **W.S.S.C.**  
 Planning Area: **Bi-County**  
 Relocation Impact: **None**

Date Last Modified: **December 16, 2011**  
 Required Adequate Public Facility: **No**

#### EXPENDITURE SCHEDULE (\$000)

Cost Element	Total	Thru		Rem. 6 Year			Beyond				
		FY11	FY12	Total	FY13	FY14	FY15	FY16	FY17	FY18	6 Years
Planning, Design and Supervision	52,781	40,769	2,671	8,829	3,388	2,634	741	670	704	692	512
Construction	212,795	181,638	5,785	21,166	5,976	2,302	1,040	1,829	6,061	3,958	4,206
Other	433	0	85	301	94	49	18	25	68	47	47
<b>Total</b>	<b>266,009</b>	<b>222,407</b>	<b>8,541</b>	<b>30,296</b>	<b>9,458</b>	<b>4,985</b>	<b>1,799</b>	<b>2,524</b>	<b>6,833</b>	<b>4,697</b>	<b>4,765</b>

#### FUNDING SCHEDULE (\$000)

Municipal (WSSC only)	14,604	12,209	469	1,664	519	274	99	139	375	258	262
System Development Charge	0	0	0	0	0	0	0	0	0	0	0
WSSC Bonds	251,405	210,198	8,072	28,632	8,939	4,711	1,700	2,385	6,458	4,439	4,503

#### COMPARISON (\$000)

	Total	Thru		Rem. 6 Year			Beyond					Approp. Request
		FY11	FY12	Total	FY13	FY14	FY15	FY16	FY17	FY18	6 Years	
Current Approved	260,854	222,443	9,454	22,162	7,742	4,038	2,006	1,971	6,405	0	6,795	0
Agency Request	265,857	222,407	8,592	30,080	7,803	4,668	1,619	3,171	7,643	5,176	4,778	7,803
Recommended	266,009	222,407	8,541	30,296	9,458	4,985	1,799	2,524	6,833	4,697	4,765	9,458
<b>CHANGE</b>			<b>TOTAL</b>		<b>%</b>	<b>6-YEAR</b>		<b>%</b>		<b>APPROP.</b>		
Agency Request vs Approved			5,003		1.9%	7,918		35.7%		7,803		0.0%
Recommended vs Approved			5,155		2.0%	8,134		36.7%		9,458		0.0%
Recommended vs Request			152		0.1%	216		0.7%		1,655		21.2%

#### Recommendation

APPROVE WITH MODIFICATIONS.

#### Comments

This project includes funding for WSSC's share of the Blue Plains Advanced Wastewater Treatment Plant "Liquid Train Part 2" capital project. The Executive recommends changes in project estimates to align with the amounts proposed by the District of Columbia Water and Sewer Authority (now doing business as DC Water) in its Proposed FY2011-2020 CIP. The changes reflect minor adjustments to the cost estimates for some of the sub-projects included in the Liquid Train Part 2 project.

## EXECUTIVE RECOMMENDATION

### Blue Plains WWTP: Plant Wide Projects - No. 023805

Category: **WSSC**  
 Agency: **W.S.S.C.**  
 Planning Area: **Bi-County**  
 Relocation Impact: **None**

Date Last Modified: **December 16, 2011**  
 Required Adequate Public Facility: **No**

#### EXPENDITURE SCHEDULE (\$000)

Cost Element	Total	Thru 6 Year				Beyond					
		FY11	FY12	Total	FY13	FY14	FY15	FY16	FY17	FY18	6 Years
Planning, Design and Supervision	49,184	42,066	1,233	5,310	1,949	1,346	675	284	629	427	575
Land	0	0	0	0	0	0	0	0	0	0	0
Site Improvements and Utilities	0	0	0	0	0	0	0	0	0	0	0
Construction	154,162	115,758	7,777	26,602	8,116	6,372	2,675	1,511	1,553	6,375	4,025
Other	456	0	90	320	101	77	34	18	22	68	46
<b>Total</b>	<b>203,802</b>	<b>157,824</b>	<b>9,100</b>	<b>32,232</b>	<b>10,166</b>	<b>7,795</b>	<b>3,384</b>	<b>1,813</b>	<b>2,204</b>	<b>6,870</b>	<b>4,646</b>

#### FUNDING SCHEDULE (\$000)

Municipal (WSSC only)	11,189	8,664	500	1,770	558	428	186	100	121	377	255
State Aid	0	0	0	0	0	0	0	0	0	0	0
System Development Charge	0	0	0	0	0	0	0	0	0	0	0
WSSC Bonds	192,613	149,160	8,600	30,462	9,608	7,367	3,198	1,713	2,083	6,493	4,391

#### COMPARISON (\$000)

	Total	Thru 6 Year				Beyond						Approp. Request
		FY11	FY12	Total	FY13	FY14	FY15	FY16	FY17	FY18	6 Years	
Current Approved	198,769	157,934	7,731	22,304	10,117	5,297	3,353	1,920	1,617	0	10,800	0
Agency Request	201,943	157,824	9,894	29,502	7,801	6,230	3,656	2,242	2,518	7,055	4,723	7,801
Recommended	203,802	157,824	9,100	32,232	10,166	7,795	3,384	1,813	2,204	6,870	4,646	10,166
<b>CHANGE</b>			<b>TOTAL</b>	<b>%</b>	<b>6-YEAR</b>	<b>%</b>	<b>APPROP.</b>					
Agency Request vs Approved			3,174	1.6%	7,198	32.3%	7,801 0.0%					
Recommended vs Approved			5,033	2.5%	9,928	44.5%	10,166 0.0%					
Recommended vs Request			1,859	0.9%	2,730	9.3%	2,365 30.3%					

**Recommendation**

APPROVE WITH MODIFICATIONS.

**Comments**

This project includes funding for WSSC's share of the Blue Plains Advanced Wastewater Treatment Plant "Plant Wide Projects" capital project. The Executive recommends changes in project estimates to align with the amounts proposed by the District of Columbia Water and Sewer Authority (now doing business as DC Water) in its Proposed FY2011-2020 CIP. The changes reflect minor adjustments to the cost estimates for some of the sub-projects included under Plant Wide Projects.

## EXECUTIVE RECOMMENDATION

### Blue Plains: Pipelines and Appurtenances - No. 113804

Category: **WSSC**  
 Agency: **W.S.S.C.**  
 Planning Area: **Bi-County**  
 Relocation Impact: **None**

Date Last Modified: **December 16, 2011**  
 Required Adequate Public Facility: **No**

#### EXPENDITURE SCHEDULE (\$000)

Cost Element	Total	Thru Rem. 6 Year						Beyond			
		FY11	FY12	Total	FY13	FY14	FY15	FY16	FY17	FY18	6 Years
Planning, Design and Supervision	33,056	6,847	4,079	17,260	3,813	3,254	2,656	2,469	2,571	2,497	4,870
Construction	83,264	18,321	6,219	54,122	8,917	11,472	14,980	11,136	6,026	1,591	4,602
Other	911	0	103	713	127	147	176	136	86	41	95
<b>Total</b>	<b>117,231</b>	<b>25,168</b>	<b>10,401</b>	<b>72,095</b>	<b>12,857</b>	<b>14,873</b>	<b>17,812</b>	<b>13,741</b>	<b>8,683</b>	<b>4,129</b>	<b>9,567</b>

#### FUNDING SCHEDULE (\$000)

Contributions	0	0	0	0	0	0	0	0	0	0	0
Municipal (WSSC only)	6,436	1,382	571	3,958	706	816	978	754	477	227	525
WSSC Bonds	110,795	23,786	9,830	68,137	12,151	14,057	16,834	12,987	8,206	3,902	9,042

#### COMPARISON (\$000)

	Total	Thru Rem. 6 Year						Beyond		Approp. Request		
		FY11	FY12	Total	FY13	FY14	FY15	FY16	FY17		FY18	6 Years
Current Approved	95,868	25,253	10,139	51,170	12,612	9,297	9,831	9,190	10,240	0	9,306	0
Agency Request	113,466	25,168	10,466	68,769	13,263	12,645	15,353	13,488	9,244	4,776	9,063	13,263
Recommended	117,231	25,168	10,401	72,095	12,857	14,873	17,812	13,741	8,683	4,129	9,567	12,857
<b>CHANGE</b>				<b>TOTAL</b>	<b>%</b>	<b>6-YEAR</b>	<b>%</b>			<b>APPROP.</b>		
Agency Request vs Approved				17,598	18.4%	17,599	34.4%			13,263	0.0%	
Recommended vs Approved				21,363	22.3%	20,925	40.9%			12,857	0.0%	
Recommended vs Request				3,765	3.3%	3,326	4.8%			(406)	(3.1%)	

#### Recommendation

APPROVE WITH MODIFICATIONS.

#### Comments

This project includes funding for WSSC's share of the Blue Plains Advanced Wastewater Treatment Plant "Pipelines and Appurtenances" capital project. The Executive recommends changes in project estimates to align with the amounts proposed by the District of Columbia Water and Sewer Authority (now doing business as DC Water) in its Proposed FY2011-2020 CIP. The changes are due to the inclusion of some new sub-projects in the Pipelines and Appurtenances project.

MEMORANDUM

February 3, 2012

TO: County Council

FROM: *KL* Keith Levchenko, Legislative Analyst

SUBJECT: **Public Hearing/Action:** FY12-17 CIP Amendment to the Washington Suburban Sanitary Commission (WSSC) Capital Improvements Program (CIP)  
S-25.04, Mid-Pike Plaza Sewer Main, Phase I, \$1.488 million  
(Source of Funds: Developer Contribution)

On January 6, 2012, the County Council received a request from Federal Realty Investment Trust (see ©3-4) for an amendment to the FY12-17 WSSC CIP to provide for the design and construction of 1,900 feet of 21-inch diameter sewer main to provide service to the Mid-Pike Plaza redevelopment project located on Rockville Pike in Rockville, Maryland, consistent with the White Flint Sector Plan approved by the Council in March 2010.

A resolution was introduced on January 17, 2011 (see ©1-2). Public hearing and action is scheduled for February 7.

The project will be fully-funded by the developer and therefore no WSSC rate supported debt will be used for this project. WSSC staff assisted the developer with the creation of the project description form (attached on ©4) and are supportive of inclusion of this project in the WSSC CIP.

**Council Staff recommends approval of the attached resolution adding S-25-04, Mid-Pike Plaza Sewer Main, Phase I to the FY12-17 WSSC CIP.**

KML:f:\levchenko\wssc\wssc cip\fy12-17\ph action 2 7 12 mid pike plaza amendment.doc

**LINOWES**  
**AND BLOCHER LLP**  
ATTORNEYS AT LAW

January 6, 2012

Nathan J. Greenbaum  
301.961.5196  
[ngreenbaum@linowes-law.com](mailto:ngreenbaum@linowes-law.com)

Roger Berliner, President  
Montgomery County Council  
100 Maryland Avenue  
Rockville, Maryland 20850

Re: Mid Pike Plaza; WSSC Project No. DA 5238 Z 11; Proposed WSSC 2012 CIP Amendment;  
Project No. S-25.04

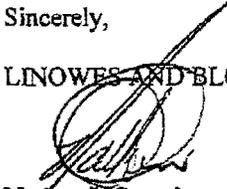
Dear Mr. Berliner:

We represent the Federal Realty Investment Trust. As you know, Federal Realty is currently in the process of redeveloping the Mid Pike Plaza located on Rockville Pike. In connection with this project, we are working with the WSSC to prepare plans for the water and sewer infrastructure necessary to serve this redevelopment. We have been advised by the WSSC that this project will require WSSC Capital Improvement Program ("CIP") improvements to the outfall sewer serving this property. Even though all costs of planning, design and construction must be borne by Federal Realty, an amendment to the current WSSC 2012 CIP is required. We have previously met and discussed this matter with Keith Levchenko, Alan Soukup and David Lake as well as with WSSC Budget and Planning Staff. WSSC Staff has developed the attached Project Description Form ("PDF") for formal consideration and adoption by the County Council and ultimate insertion into the 2012 CIP by the WSSC.

As allowed by State law, we are requesting that the enclosed PDF be introduced for consideration and ultimate adoption by the Montgomery County Council. A public hearing by the County Council will also be required. Because this is solely a Montgomery County project, no public hearing or action is required by Prince George's County. We will be contacting your staff in the near future to set up a short meeting to discuss this matter in detail and respond to any questions or concerns you might have. Thank you very much for your assistance and consideration.

Sincerely,

LINOWES AND BLOCHER LLP

  
Nathan J. Greenbaum

Enclosure

cc: Evan Goldman  
Barbara A. Sears, Esq.  
Keith Levchenko  
Alan Soukup  
David Lake

**A. Identification and Coding Information**

1. Project Number: Agency Number: Update Code: Add  
S-25.04

2. Date: Revised:

3. Project Name: Mid-Pike Plaza Sewer Main, Phase 1

4. Program: Sanitation 6. Planning Area: North Bethesda P.A. 30

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

5. Agency: WSSC

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

Cost Elements	(8) Total	(9) Thru FY '10	(10) Estimate FY '11	(11) Total 8 Years	(12) Year 1 FY '12	(13) Year 2 FY '13	(14) Year 3 FY '14	(15) Year 4 FY '15	(16) Year 5 FY '16	(17) Year 6 FY '17	(18) Beyond 8 Years
Planning, Design & Supervision	216			216	162	54					
Land											
Site Improvements & Utilities											
Construction	1,078			1,078	539	539					
Other	194			194	105	89					
<b>Total</b>	<b>1,488</b>			<b>1,488</b>	<b>806</b>	<b>682</b>					

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

Contribution/Other	1,488			1,488	806	682					
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**D. Description & Justification**

**DESCRIPTION**  
This project provides for the planning, design, and construction of 1,900 feet of 21-inch diameter replacement sewer main to provide service to Mid-Pike Plaza, Phase 1.

Service Area: Cabin John Drainage Basin Capacity: 3.47 mgd Population: 2,007

**JUSTIFICATION**  
Plans & Studies: Mid-Pike Plaza Hydraulic Planning Analysis, (June 2011).

Cost Change: Not applicable.

**STATUS** Planning (WSSC Contract No. DA5238Z11, ).

**OTHER**  
The project scope was developed for the FY 2012 CIP and has an Order of Magnitude cost estimate of \$1,488,000. The expenditures and schedule projections shown in Block B are planning level estimates and may change depending upon site-specific conditions and design constraints. Estimated completion date is developer dependent. No WSSC rate supported debt will be used for this project.

**COORDINATION**  
Montgomery County Government, Montgomery County Department of Environmental Protection and Local Community Civic Associations.

**NOTE** This project supports 100% Growth.

**E. Annual Operating Budget Impact (000's)**

Program Costs	Staff	Other	FY of Impact
Facility Costs	Maintenance		112 15
Total Costs	Debt Service		112 15
Impact on Water or Sewer Rate			

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

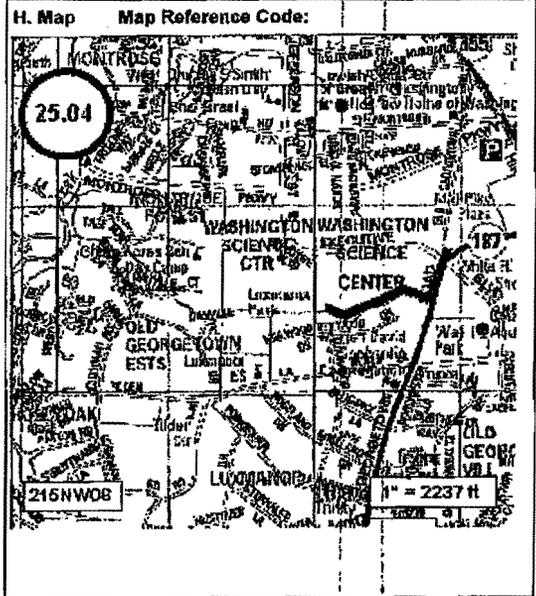
Date First in Capital Program	FY 12
Date First Approved	FY 12
Initial Cost Estimate	1,488
Cost Estimate Last FY	
Present Cost Estimate	1,488
Approved Request, Last FY	
Total Expenditures & Encumbrances	
Approval Request FY 13	806
Supplemental Approval Request Current FY (12)	

**G. Status Information**

Land Status: Right-of-Way may be required

% Project Completion: P-100%

Est. Completion Date: Developer Dependent



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