


T&E COMMITTEE #1
February 3, 2014

Worksession

MEMORANDUM

January 31, 2014

TO: Transportation, Energy, Infrastructure & Environment Committee

FROM:  Keith Levchenko, Senior Legislative Analyst

SUBJECT: **Worksession: FY15-20 Capital Improvements Program: Washington Suburban Sanitary Commission (WSSC)**

Council Staff Recommendation Summary:

- **Approve the WSSC FY15-20 CIP as proposed by WSSC**
- **Schedule briefings after the budget on the following issues:**
 - **Power Reliability**
 - **Sewer Extension Costs**

**WSSC to provide a presentation on the Anaerobic Digestion/Combined Heat & Power Project. Council Staff recommends some text changes to this project.*

Attachments to this memorandum include:

- County Executive's Recommendations of January 15, 2014 for the FY15-20 WSSC CIP (©1-5)
- Excerpts from WSSC's Proposed FY15-20 CIP (©6-41)
- Anaerobic Digestion/Combined Heat & Power (AD/CHP) Information:
 - WSSC AD/CHP Feasibility Study Executive Summary Excerpt (©42-45)
 - December 2013 WSSC Presentation to County Staff (©46-62)
 - Additional Information on County Executive's Recommendation (©63)

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

WSSC

Gene Counihan, Commission Chair
Jerry Johnson, General Manager/CEO
Gary Gumm, Chief Engineer
Chris Cullinan, Acting Chief Financial Officer
Leticia Carolina-Powell, Acting Budget Group Leader
Mark Brackett, Budget Unit Coordinator
Rob Taylor, Energy Manager

County Government

Bonnie Kirkland, Assistant Chief Administrative Officer
Dave Lake, Manager, Water and Wastewater Management, Department of Environmental Protection
Mary Beck, Manager, Office of Management and Budget (OMB)
Matt Schaeffer, Management and Budget Specialist, OMB

WSSC FY15-20 CIP Highlights

Fiscal Highlights

- WSSC's FY15-20 CIP is \$1.6 billion (a decrease of \$418.7 million, or 20.5%, from the FY14-19 CIP). This decrease is the result of a large decrease in the Trunk Sewer Reconstruction project as a result of a number of "priority 2" assets to be addressed after the Federal consent decree is completed.
- Montgomery County and Bi-County projects total \$1.2 billion (a decrease of \$402.1 million, or 25%, from the FY14-19 CIP for similar reasons to the overall WSSC CIP noted above).
- Blue Plains projects total \$361.8 million for FY15-20 (a decrease of \$125.7 million or 25.8% from the FY14-19 CIP), primarily as a result of projects moving through construction (especially the ENR and biosolids projects) and out of the six-year period.
- "Information Only" projects (which are presented in the CIP but which are not formally part of the CIP and not in the above CIP totals) continue to represent a large portion of WSSC's infrastructure-related work. However, FY15-20 expenditures are projected to be \$1.3 billion (a decline of \$361.8 million, or 21.5%, from the FY14-19 projected amount of \$1.7 billion. Some of the decline is from a transfer of the Anaerobic Digestion project from the Information Only section to Bi-County Sewer. However, the sewer rehabilitation program costs are also substantially lower for similar reasons to the Trunk Sewer Reconstruction program.

New Projects (see page 8)

- **Anaerobic Digestion/Combined Heat & Power (\$143.98 million). This project was included as an "Information Only" project in the Approved FY14-19 CIP. The FY15-20 Proposed CIP assumes to move the project to the "Bi-County Sewer" section of the CIP. See pages 9-11 for a discussion of this project.**
- Two new Montgomery County sewer projects are requested (see page 9 for discussion):
 - Cabin John Trunk Sewer Relief (\$7.999 million, developer-funded)
 - Shady Grove Station Sewer Augmentation (\$2.25 million, developer-funded)

Selected Major Ongoing Projects

- **Trunk Sewer Reconstruction Program (\$228.2 million over six years, a large decrease). See discussion on page 12.**
- **Large Diameter Water Pipe Rehabilitation Program (\$274.8 million over six years, a large increase). See discussion on page 11.**
- Brink Zone Reliability Improvements (\$4.1 Million). This project had planning dollars included in the FY14-19 CIP. The FY15-20 Proposed CIP includes design and construction of a new water pumping station and pipeline. See discussion on page 13.
- Numerous major projects moving through construction, including:
 - Bi-County Water Tunnel (\$145.8 million project, completion date of July 2015).
 - Seneca WWTP Expansion Part 2 (\$28.98 million total cost, completion in January 2015).
 - Enhanced Nutrient Removal Projects (FY15-20 total not including Blue Plains = \$3.66 million). Six-Year costs are down 18.3 million from FY14-19 as projects move through construction (and out of the CIP period)
 - Blue Plains Projects (Total for FY15-20 is \$361.8 million). Six-Year costs are down \$125.7 million as several large projects (including biosolids part 2 and ENR) move through construction.
- Patuxent Water Filtration Plant Phase II Expansion (\$62.9 million total cost, down about \$1.2 million based on actual bids).

- Potomac Water Filtration Plant Submerged Channel Intake (\$28.4 million total cost, but still in planning. Issue will come back to both Councils before design and construction occur). See discussion on page ©12.
- “Information Only” Projects
 - Water Reconstruction Program (\$688.3 million over six years, 60 miles per year requested; up from 51 miles approved in FY14). See discussion on page 13.
 - Sewer Reconstruction Program (\$376.5 million over six years, big decrease). See discussion on page 14.

Other Issues

- **Growth (SDC) Funding Trends (see pages 7-8).**
- **Power Reliability (see page 15).**
- **Cost to Extend Sewer to Address Failing Septic Systems (see page 15): Under review by the Bi-County Infrastructure Working Group.**

BACKGROUND/TIMELINE

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

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

The FY15-20 WSSC CIP timeline

- October 1, 2013: WSSC transmitted its Proposed FY15-20 CIP (Excerpts on ©6-41)
- October 29, 2013: Council Approval of WSSC’s FY14 Spending Control Limits
- January 15, 2014: County Executive’s recommendations transmitted (©1-5)
- February 3, 2014: T&E Committee review of the WSSC CIP
- March 1, 2014: WSSC transmittal deadline for its Proposed FY14 Budget
- February 5 and 6, 2014: Council’s Public Hearings on the FY15-20 CIP
- April, 2014: T&E Committee review of the WSSC Operating Budget
- Early May: Council review of the WSSC CIP and Operating Budget
- May 8, 2014: Bi-County Meeting between Montgomery County and Prince George’s County on the WSSC CIP and Operating Budget, as well as any other Bi-County budget issues

FISCAL OVERVIEW

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 FY15-20 CIP versus Approved FY14-19 CIP
(\$s in 000s)

	Approved FY14	Six-Year Total	FY15	FY16	FY17	FY18	FY19	FY20
Total Water Projects								
Approved FY14-19	151,430	535,706	116,490	98,348	87,395	45,012	37,031	
Proposed FY15-20		613,407	129,931	124,382	138,573	93,127	64,280	63,114
Difference		77,701	13,441	26,034	51,178	48,115	27,249	
% Change		14.5%	11.5%	26.5%	58.6%	106.9%	73.6%	
Total Sewer Projects								
Approved FY14-19	477,870	1,503,801	424,024	202,957	162,536	136,329	100,085	
Proposed FY15-20		1,007,404	342,105	247,482	157,900	137,017	94,490	28,410
Difference		(496,397)	(81,919)	44,525	(4,636)	688	(5,595)	
% Change		-33.0%	-19.3%	21.9%	-2.9%	0.5%	-5.6%	
Total								
Approved FY14-19	629,300	2,039,507	540,514	301,305	249,931	181,341	137,116	
Proposed FY15-20		1,620,811	472,036	371,864	296,473	230,144	158,770	91,524
Difference		(418,696)	(68,478)	70,559	46,542	48,803	21,654	
% Change		-20.5%	-12.7%	23.4%	18.6%	26.9%	15.8%	

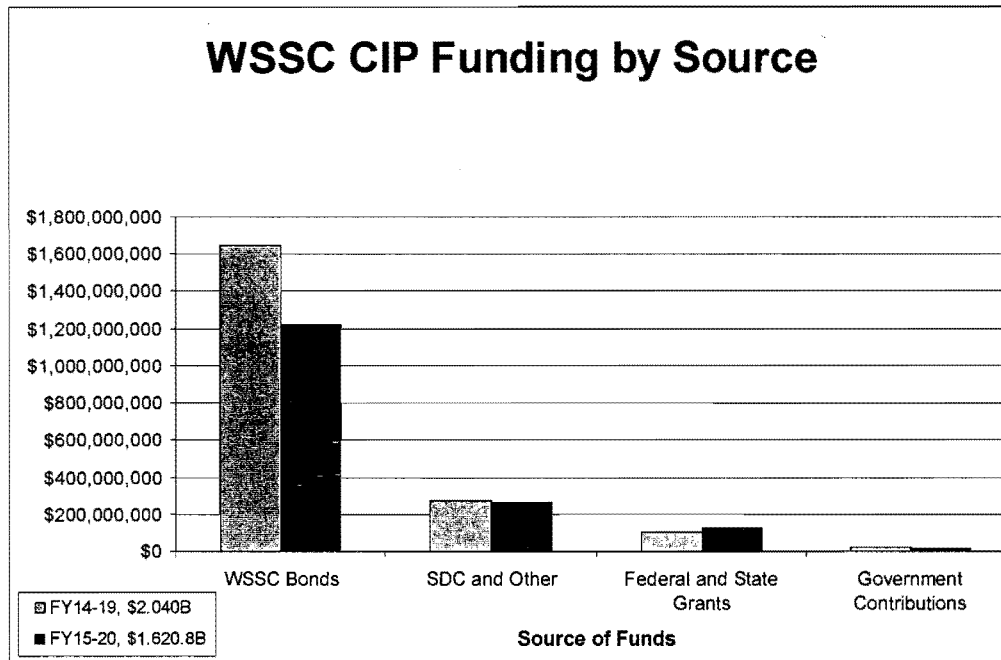
As shown on the chart, WSSC is recommending a significant decrease in expenditures (-20.5 percent, -\$418.7 million). This large decrease is broken down by project later.

NOTE: 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 ©36) which are not included in the above CIP fiscal summary. The six-year cost estimate for the “Information Only” projects is \$1.3 billion.

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

Funding Sources

The following chart compares funding sources between the Approved FY14-19 CIP and the Proposed FY15-20 CIP.



Bond funding, the dominant funding source (75% of revenues) for WSSC's CIP, is down substantially (for reasons noted earlier), while other funding sources are similar to approved levels. SDC and Other (which is primarily made up of developer contributions) is the second largest funding source, making up about 16% of revenues over 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.

Table 2: Total WSSC Expenditures (Montgomery County and Bi-County Only)
Proposed FY15-20 CIP versus Approved FY14-19 CIP
 (\$s in 000s)

	Approved FY14	Six-Year Total	FY15	FY16	FY17	FY18	FY19	FY20
Total Water Projects								
Approved FY14-19	114,294	397,761	76,425	64,103	64,277	41,631	37,031	
Proposed FY15-20		446,211	91,892	82,871	96,712	73,946	49,652	51,138
Difference		48,450	15,467	18,768	32,435	32,315	12,621	
% Change		12.2%	20.2%	29.3%	50.5%	77.6%	34.1%	
Total Sewer Projects								
Approved FY14-19	370,317	1,212,377	336,086	165,251	136,925	113,311	90,487	
Proposed FY15-20		761,805	252,897	164,956	123,001	107,255	85,286	28,410
Difference		(450,572)	(83,189)	(295)	(13,924)	(6,056)	(5,201)	
% Change		-37.2%	-24.8%	-0.2%	-10.2%	-5.3%	-5.7%	
Total								
Approved FY14-19	484,611	1,610,138	412,511	229,354	201,202	154,942	127,518	
Proposed FY15-20		1,208,016	344,789	247,827	219,713	181,201	134,938	79,548
Difference		(402,122)	(67,722)	18,473	18,511	26,259	7,420	
% Change		-25.0%	-16.4%	8.1%	9.2%	16.9%	5.8%	

Montgomery County and Bi-County expenditures are down by 25 percent. Major cost changes in the Montgomery County and Bi-County projects are presented in the following chart:

**Table 3:
FY15-20 Major Changes in 6 Year Costs
(MC and Bi-County Projects Only)**

Cost in (\$000s)	Project	Comment
138,002	Project: Anaerobic Digestion/Combined Heat & Power	New to CIP. Moved into CIP from "Information Only" Section
64,897	Large Diameter Water Pipe Rehabilitation Program	Continued Ramp-Up
7,999	Cabin John Trunk Sewer Relief	New-Developer Funded
3,796	Brink Zone Reliability Improvements	Design & Construction added for water pumping station & pipeline
2,756	Potomac WFP Pre-Filter Chlorination & Air Scour Improvements	Approved Cost Estimate was an order of magnitude cost. Current estimate is a planning level estimate. Project just entered design in January 2014.
2,461	Potomac WFP Corrosion Mitigation	Cost increase due to higher escalation in material and equipment prices than expected and the decision to replace all 18,800 feet of drive chain.
2,254	Shady Grove Station Sewer Augmentation	New-Developer Funded
(1,484)	Seneca WWTP Expansion Part 2	Moving through construction
(1,692)	Project: Anacostia Storage Facility	Moving through construction
(2,826)	Duckett & Brighton Dam Upgrades	Moving through construction
(3,591)	Potomac WFP Stage 2 Disinfection Byproducts Rule Implementation	Cost reduction based on actual bid received
(6,044)	Laytonsville Elevated Tank and Pumping Station	Moving through construction
(13,306)	Bi-County Water Tunnel	Moving through construction
(119,798)	Blue Plains Projects	ENR and Biosolids moving through construction
(456,318)	Trunk Sewer Reconstruction Program	Priority 2 asset work deferred beyond Consent Decree Deadline

On the cost increase side, of particular note, the Anaerobic Digestion/Combined Heat & Power project has moved from the "Information Only" section to the CIP. There is also a large increase in the Large Diameter Water Pipe Rehabilitation program as the miles of inspection and number of pipe section replacements are ramping up.

There are also major cost decreases. The Trunk Sewer Reconstruction Program is down substantially from last year's six-year total as a result of WSSC pushing out priority 2 asset work so that WSSC can focus on completing as much priority 1 work by the Consent Decree deadline. WSSC has indicated that its mandated work will extend beyond the Consent Decree deadline as a result of delays in getting the necessary permits and permissions to work in environmentally sensitive areas.

There are also major decreases in the Blue Plains projects (as a number of large projects move towards completion). The Bi-County Water Tunnel project (funded mostly with SDC) is also nearing completion (July 2015).

Blue Plains Project Cost Estimates

WSSC's Proposed CIP assumes \$361.8 million over the FY15-20 period. This is a \$125.7 million (or 25.8%) decline from the FY14-19 CIP.

Table 4: Blue Plains Projects: Expenditures (in \$000s)

	Approved FY14	Six-Year Total	FY15	FY16	FY17	FY18	FY19	FY20
Total Blue Plains Project Costs								
Approved FY14-19	165,599	487,594	119,453	82,172	63,582	40,893	15,895	
Proposed FY15-20		361,848	118,836	88,465	61,235	49,234	31,675	12,403
Difference		(125,746)	(617)	6,293	(2,347)	8,341	15,780	
% Change		-25.8%	-0.5%	7.7%	-3.7%	20.4%	99.3%	

DC Water's FY14-23 CIP was approved by its Board on December 5, 2013, and the latest expenditure totals were not available at the time the WSSC CIP was transmitted last fall. However, according to WSSC staff, the differences are minor (the net change in WSSC bonds for FY15 was only \$557,000). Project Description Forms for each of the Blue Plains projects are attached on ©26-31.

WSSC and the County Executive concur that an update in Blue Plains project costs at this time is not needed. Council Staff concurs.

COUNTY EXECUTIVE RECOMMENDATIONS **(Excerpt Attached on ©1-5)**

The County Executive recommendation was transmitted on January 15, and the only change recommended for the WSSC CIP is to remove funding from the Anaerobic Digestion/Combined Heat & Power project (\$138 million in the FY15-20 period). As reflected in the table below:

Table 5: CE Recommended Changes to the WSSC FY15-20 CIP

	Six-Year Total	FY15	FY16	FY17	FY18	FY19	FY20
WSSC Proposal	1,620,811	472,036	371,864	296,473	230,144	158,770	91,524
change from Approved FY14-19	(418,696)						
CE Changes	-						
- Remove Funding for Anaerobic Digestion Project	(138,002)	(7,138)	(7,138)	(42,828)	(42,828)	(38,070)	
Total CE Changes	(138,002)	(7,138)	(7,138)	(42,828)	(42,828)	(38,070)	-
CE Recommended Totals	1,482,809	464,898	364,726	253,645	187,316	120,700	91,524
change from Approved FY14-19 CIP	(556,698)						

The FY15 change reflects about a \$7.2 million reduction, of which about \$3.6 million is in WSSC bonds. (The balance is in Federal Aid).

The operating budget impact of the reduction in bonds recommended by the County Executive is approximately \$194,000 in FY15 (\$18.3 million in CIP bonds equals about \$1.0 million in debt service).

The Anaerobic Digestion/Combined Heat & Power project is discussed on pages 9-11.

GROWTH FUNDING

WSSC estimates that approximately \$264.2 million (or 16.0%) of total proposed expenditures in

the six-year period are needed to accommodate growth.¹ This is down slightly from the FY14-19 CIP (\$270.6 million) as several large growth-related projects (such as the Bi-County Water Tunnel) move toward completion.

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 \$159.9 million in revenue over the six-year period. Developer credits and SDC exemptions² reduce the net revenue to about \$144.3 million.

Overall, WSSC estimates a deficit in growth funding versus expenditures over the six-year period of 78.2 million as shown on ©7. This deficit is down substantially from last year's estimated deficit of \$146.3 million, thanks to significant increases in projected SDC revenue.

The SDC Fund has a balance of about \$38 million (as of January 1, 2014), which is sufficient to cover the FY15 projected gap of \$32.7 million. There are also significant annual gaps shown in FY16 and FY17 as well. Three years ago, the Council agreed with WSSC staff that, as an alternative to an increase in the SDC charge, WSSC could use debt (financed with SDC funds) to address any actual gaps that may occur in the next few years and then use future SDC revenues to pay back the debt over time. Both Councils supported this proposed approach.

WSSC's Proposed Operating Budget for FY15 will be transmitted by March 1. The Proposed Operating Budget will include recommended FY15 SDC charges, which both Councils will act on as part of the action on the WSSC Operating Budget. The assumptions noted above presume no increase in SDC rates.³

INDIVIDUAL PROJECT DISCUSSION

Council Staff has provided some discussion, below, of the new projects and some other important capital projects (and groups of projects). "Information Only" projects are discussed later.

¹ Environmental regulations and system improvements (15% and 69% of requested FY15-20 CIP expenditures respectively) are the two other major categories of spending (see ©9). Note: "information only" projects are not included in these totals.

² For purposes of projecting future SDC balances, WSSC assumes Montgomery and Prince George's Counties utilize the full \$1.0 million in exemptions each fiscal year. Any amounts within each County's \$500,000 share not used in a given year carry over to the next fiscal year. As of June 30, 2013, Montgomery County has \$4.6 million in exemption capacity. Prince George's County has \$2.1 million in exemption capacity.

³ For many years, WSSC has increased the maximum allowable charge (as permitted under State law) but has left the actual rate charged unchanged. Given that there are no new major SDC funded projects coming up in the WSSC CIP and that the bond-funding approach above should provide a short-term means to cover the annual projected gaps, WSSC may continue to recommend leaving rates unchanged for FY15.

New Projects

WSSC is requesting three new projects totaling \$148.2 million in the FY15-20 CIP. These projects are discussed below:

Shady Grove Station Sewer Augmentation (PDF on ©15)

This developer-funded project provides for the design and construction of approximately 4,000 feet of 15-inch to 18-inch diameter sewer to replace an existing sewer line near the County Service Park in the Crabbs Branch/Redland Road area. This expansion of capacity is needed to address projected increases in peak flows from new development in the area.

Cabin John Trunk Sewer Relief (PDF on ©16)

This is the same project for which the Council received a request from Federal Realty Investment Trust for an amendment to the FY14-19 CIP to provide for the design and construction of approximately 2,700 feet of 36-inch to 42-inch diameter sewer in two segments in the Cabin John Basin, southwest of River Road and Seven Locks Road.

Federal Realty Investment Trust is in the process of redeveloping the Mid-Pike Plaza. Sewage from that development will ultimately drain into the Cabin John Basin, and the developer is required to make off-site improvements to address future peak flows from the new development. The project will be fully-funded by the developer and therefore no WSSC rate supported debt will be used for this project. The developer has been working with WSSC to finalize the scope of the project. The costs shown for this project are planning level estimates and may change depending on site-specific conditions and/or any project changes agreed upon by the developer and WSSC.

The amendment would allow the developer to move forward with design and construction in FY14 if possible. Since the project is fully developer-funded, if the project schedule slips, there is no fiscal impact on WSSC.

The Council is scheduled to hold a public hearing on February 11 and then act immediately afterward on the amendment.

Anaerobic Digestion/Combined Heat & Power (PDF on ©32-33)

This project provides for the design and construction of systems to produce biogas from biosolids at the Piscataway Wastewater Treatment Plant. The total project cost is estimated at \$144 million. The project is currently included in the "Information Only" section of the FY14-19 CIP publication, but was moved to the Bi-County Sewer section of the FY15-20 Proposed CIP.

Last year, both Councils approved the project, but with language noting that:

"Both Councils will review the results of WSSC's feasibility study and must approve continuing with the project before design and construction may proceed."

That language has been retained in the project as proposed for FY15-20.

The County Executive recommends removing expenditures for this project pending further review of the potential to utilize DCWater's new anaerobic digestion capacity currently under construction at the Blue Plains plant.

On January 31, OMB staff forwarded some additional detail (see ©63) regarding the County Executive's deferral recommendation. Council Staff has forwarded this information to WSSC for its response.

For background on the project, Council Staff has attached an excerpt of the Executive Summary of a feasibility study done by a consultant for WSSC (see ©42-45). Staff has also attached a December 2013 presentation to County Staff (©46-62).

WSSC has been asked to provide a presentation to the T&E Committee on this project and will discuss the pros and cons of the various options reviewed and address the points raised in the OMB correspondence.

For Council Staff, some of the key issues are:

- What are the estimated costs over the next 20 years if WSSC were to maintain its current biosolids operations? The consultant study notes "baseline" costs of approximately \$50 million to maintain and upgrade existing facilities that would presumably be incurred if no new strategy is undertaken.
- For the options WSSC looked at (including the Blue Plains option) what are the resulting costs per ton of biosolids disposal? The December 2013 presentation summarizes the costs of the various options (see ©58). The Blue Plains option is the most expensive option per ton. *Note: The OMB document includes a question about whether the capital cost attributed to the Blue Plains option should be included in this option.*
- The feasibility study raises a number of concerns with the Blue Plains option. WSSC can elaborate on these points during its presentation. WSSC staff have indicated that they have worked with DCWater to understand the potential opportunity and costs associated with sending biosolids to Blue Plains. According to the feasibility study, WSSC feels there are some key points favoring an "in house" solution for WSSC, including cost per ton, uncertainty as to facility capacity at Blue Plains (DCWater has indicated that it needs to establish an operating profile for a couple of years before it could answer this question), and the lack of a payback potential for the Blue Plains option (unlike the other options where WSSC would achieve payback periods ranging from 12 to 18 years).
- WSSC's project as proposed assumes 50 percent funding in federal aid. If this level of federal funding were received, the abovementioned payback periods of 12 to 18 years would be cut in half. According to WSSC, this federal funding is not secured yet, but WSSC is optimistic about getting some federal funding, since the initial study was federally funded. The County generally does not reflect outside funding in projects until a commitment is received or there is at least a strong likelihood of securing the outside funds. However, in this case, WSSC is taking a similar approach here as it took with its ENR projects (showing 100% state aid initially while still in negotiations with the State).

Council Staff believes that WSSC's feasibility study makes a compelling case for the option of building its own AD/CHP facility at Piscataway (especially if federal aid can be obtained). If WSSC were to utilize Blue Plains' anaerobic digestion facilities, there would be no future payback to WSSC (energy savings would accrue to DCWater) but, rather, permanent annual costs in the form of tip fees. While the Blue Plains option may benefit DCWater (by enabling DCWater to maximize the use of its new biosolids facilities) and might preclude WSSC from having to make a large up-front investment in new AD/CHP facilities, Council Staff does not see the long-term benefit to WSSC, given the payback calculations developed in the feasibility study.

Council Staff is supportive of the project scope as proposed. However, given some of the continuing questions by the County Executive, Council Staff suggests that these questions be responded to by WSSC at the T&E Committee worksession. If necessary, this project can be revisited during the T&E Committee's Operating Budget review in April.

Also, given the uncertainty of federal funding at this time, and the large fiscal impact the federal funding decision could have within the six-year period, Council Staff suggests that, if the project goes forward, the PDF language referenced earlier about Council review and approval be modified to say:

"Both Councils will review the results of WSSC's efforts to secure federal funding for this project and must approve continuing with the project before design and construction may proceed."

Major Ongoing Projects

Large Diameter Water Pipe Rehabilitation Program (\$274.8 million over six years, PDF on ©23-24)

This project, added to the CIP four years ago, funds the rehabilitation of transmission mains (pipes greater than 16 inches in diameter) in lengths of 100 feet or greater. WSSC has approximately 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 mains⁴, done immediate repairs where needed, and begun to identify larger replacement projects to be done over time as pipes reach the end of their useful life. In addition to some unexpected large PCCP pipe failures in Montgomery County in 2008 (and a break in Prince George's County in January 2011 and the most recent large break in Chevy Chase in March 2013), the transmission system (like the smaller water distribution lines) is aging, and WSSC is moving to a more systematic inspection, repair, and replacement approach as a result.

⁴ WSSC completed its first round of inspections and installation of acoustic fiber optic monitoring for its 48-inch diameter and larger PCCP pipe in FY13.

The inspection, fiber optic monitoring, and repairs on shorter sections of pipe remain in the Operating Budget, while the large section replacements are done out of this project. The FY15-20 CIP request reflects an increase in miles to be inspected (from 18 to 20) and the increased amount of repair and replacement work due primarily to pipeline aging.

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

Potomac Submerged Channel Intake (PDF on ©19-20)

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 has convened a new Project Review Group consisting of staff from Montgomery and Prince George's Counties, M-NCPPC staff, and representatives from Federal and State agencies to assist with the preparation of a new feasibility study. The study is expected to take 18 months. The project cost estimate has been increased for inflation, but with a completion date still assumed for FY18.

As noted in the PDF, both Councils will be briefed on the project and must concur before design and construction would proceed.

Trunk Sewer Reconstruction Program (\$228.2 million over six years, PDF on ©34-35)

This project was added four 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 will spend an estimated \$1.0 billion across 24 sewer-shed basins with 7,000 assets over a 1,000 square mile area. Rehabilitation work is supposed to be completed within 10 years (2015). Because of delays in acquiring environmental permits, some work is expected to extend beyond the consent decree deadline. However, all basins will have work either completed or underway by the 2015 deadline.

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

For the FY15-20 CIP, WSSC is scaling back what it now believes were overly optimistic implementation assumptions, with the pace of “priority 2” work being slowed from 40 miles per year to 5 miles per year. This slowdown will push most “priority 2” work beyond the six-year period and results in a cost decrease in the project (from \$684.5 million down to \$228.2 million) that is fairly close to last year’s requested increase.

The County Executive recommends approval of the Trunk Sewer Rehabilitation project as proposed. Council Staff concurs.

Brink Zone Reliability Improvements (Montgomery County Water Project, \$3.97 million, PDF on ©13)

This project was new to the CIP last year and included initial planning work to develop alternatives to increase reliability and redundancy to the Montgomery County High Zone water transmission system.

For the FY15-20 CIP, WSSC is proposing the design and construction of a new water pumping station and pipeline.

During a major electricity outage in Montgomery County in June/July of 2012 that affected both the Potomac Water Filtration Plant and the Wheaton Pumping Station, WSSC had problems maintaining water pressure in the High Zone because a water transmission pipe was also out of service at that time for scheduled maintenance. This project is intended to provide WSSC with more flexibility to provide sufficient water to certain areas in the High Zone.

The County Executive recommends approval of the Brink Zone Reliability Improvements project as proposed. Council Staff concurs.

“Information Only” Projects

Advanced Metering Infrastructure (PDF on ©41)

This project (new two years ago) 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 \$89.5 million are included in the six-year total for the project, as the project is still in the early planning stages.

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

A key question is whether the cost savings and customer benefits from the project are sufficient to justify the major upfront costs. A study completed in March 2011 identified about \$11.4 to \$15.4 million in annual savings that could be achieved upon full implementation, which implies a 5 to 8 year payback.

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

Water Reconstruction Program (PDF on ©37-38)

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 \$688.2 million.

Over the past six years, WSSC has ramped up the annual number of miles of pipe to be replaced. Beginning with the Approved FY10-15 CIP, budgeted and actual replacement miles began to increase steadily. The budget level for FY10 was 27 miles per year, but this has been increased each year and is 51 miles for FY14. For FY15, 60 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).

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 has been 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 and WSSC's move from 20 year debt to 30 year debt (with accompanying reinvestment of a portion of the debt service savings back into Paygo contributions) have helped temper this impact. Debt service is expected to remain around 34 percent of the budget in coming years and perhaps even decline somewhat in the outyears.

The Bi-County Infrastructure Funding Working Group is continuing to look at possible infrastructure charges and possible changes in the current rate structure. A consultant hired by WSSC recently completed a rate study which is currently under review by the Working Group.

Sewer Reconstruction Program (PDF on ©39-40)

This "information only" project funds comprehensive sewer system evaluations and rehabilitation programs. The six-year cost is \$376.4 million, which is down substantially from FY14-19 levels (\$583.9 million) as a result of WSSC deferring some "priority 2" asset work as noted earlier. 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 in FY11 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.

Both the water and sewer reconstruction efforts are a major area of concern to Montgomery County, given WSSC's aging infrastructure. However, recent years of significant rate increases and continued rising debt requirements make this effort a major challenge. The rate study noted earlier is needed so that WSSC and both counties can identify how to address WSSC's infrastructure needs over the long term with a sustainable and equitable revenue stream.

OTHER ISSUES

Power Reliability

On September 9, 2013, the Public Safety and T&E Committees held a joint meeting to discuss WSSC Emergency Preparedness issues. At that meeting, WSSC provided an update on its ongoing power reliability study (see PDF attached on ©18). WSSC expects to conclude this study by June 2015.

A major concern of the Council is the impact a large-scale electric power outage could have on the County when combined with a loss of key WSSC infrastructure (most notably the Potomac Water Filtration Plant, but also water pumping stations, sewage treatment facilities, and others) which are heavily reliant on electricity. At the meeting, Councilmember Berliner, citing the Food and Drug Administration's success utilizing a microgrid⁵ at its White Oak headquarters, suggested that WSSC consider the feasibility of creating a "microgrid" for the Potomac Water Filtration Plant.

Council Staff suggests that the T&E Committee schedule a meeting after budget for a comprehensive briefing by WSSC of the results of the Power Reliability Study.

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

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

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.

⁵ A microgrid is an independent power grid which balances energy generation and consumption. Energy generation can involve clean power (such as solar and wind) or brown power such as diesel generators.

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.

More recently, at the request of Councilmember Floreen, the Bi-County Infrastructure Working Group reviewed the extension cost issue and is looking at some strategies for making water and sewer extensions more affordable. A presentation is expected to be provided to WSSC Commissioners within the next couple of months.

Earlier this week, in the context of the Ten Mile Creek Area Limited Amendment to the Clarksburg Master Plan and Hyattstown Special Study Area discussion at T&E, the ongoing cost issues associated with extending sewer to the Clarksburg Historic District were discussed.

Council Staff suggests that the T&E Committee receive an update from its Bi-County Working Group representatives and WSSC on this issue after the budget. Given the length of time this issue has been studied, Council Staff suspects that, ultimately, Montgomery County may need to consider strategies that could be implemented independently of WSSC and Prince George's County.

In the meantime, DPS Well and Septic staff continues 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.

Summary of Council Staff Recommendations

- **Recommend approval of WSSC's Proposed FY15-20 CIP** *(with the PDF language change noted earlier for the Anaerobic Digestion/Combined Heat & Power project).*
- **Schedule briefings after the budget on the following issues:**
 - **Power Reliability**
 - **Sewer Extension Costs**

Attachments

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Washington Suburban Sanitary Commission (WSSC)

AGENCY DESCRIPTION

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

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

PROGRAM DESCRIPTION AND OBJECTIVES

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

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

The section following this narrative 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>.

PROGRAM CONTACTS

Contact Mark Brackett of WSSC's Budget Group at 301.206.8179 or Matt Schaeffer of the Office of Management and Budget at 240.777.2751 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 \$1,208.0 million in six-year expenditures proposed by the WSSC for FY15-20 is \$402.1 million (25 percent) under the FY14-19 approved total of \$1,610.1 million. The decrease in six-year costs is primarily attributable to a decrease in the Trunk Sewer Reconstruction program necessary to comply with Federal requirements and projects that are moving through construction. These include the Enhanced Nutrient Removal projects and the Blue Plains WWTB Digester projects.

The FY15-20 CIP request includes 46 ongoing, five closeout projects, and four pending closeout projects. There are also three new proposed projects: Anaerobic Digestion Combined Heat and Power, Cabin John Trunk Sewer Relief, and Shady Grove Sewer Augmentation.

The following table compares the six-year expenditures and funding approved for FY14-19, requested by WSSC for FY15-20, and recommended by the County Executive for FY15-20.

WSSC CIP COMPARISON: FY15-20 vs. FY14-19 (\$000)					
(SIX-YEAR DATA)	CURRENT APPROVED FY14-19	AGENCY REQUEST FY15-20	CHANGE FROM APPROVED	CE RECOM- MENDED FY15-20	CHANGE FROM APPROVED
EXPENDITURES					
MONTGOMERY COUNTY SEWERAGE	24,730	23,407	(1,323)	23,407	(1,323)
BI-COUNTY SEWERAGE	1,187,647	738,398	(449,249)	600,396	(587,251)
MONTGOMERY COUNTY WATER	27,270	26,669	(601)	26,669	(601)
BI-COUNTY WATER	370,491	419,542	49,051	419,542	49,051
TOTAL EXPENDITURES	1,610,138	1,208,016	(402,122)	1,070,014	(540,124)
FUNDING					
WSSC BONDS	1,458,194	1,036,642	(421,552)	967,641	(490,553)
SYSTEMS DEVELOPMENT CHARGE	28,424	12,052	(16,372)	12,052	(16,372)
CONTRIBUTIONS	21,589	24,140	2,551	24,140	2,551
ALL OTHER SOURCES	101,931	135,182	33,251	66,181	(35,750)
TOTAL FUNDING	1,610,138	1,208,016	(402,122)	1,070,014	(540,124)

Executive Recommendations

The Executive's recommended FY15-20 CIP is identical to the Commission's proposed CIP with the following exception: The County Executive does not recommend inclusion of the Anaerobic Digestion Combined Heat and Power project in the FY15-20 CIP due to the potential cost savings to the CIP program if DC Water's final assessment indicates the digester facilities at Blue Plains can accommodate WSSC biosolids and the uncertainty of Federal Aid projected by WSSC.

The County Executive further recommends that WSSC delay any plans for a WSSC digester project until the possible use of Blue Plains to process WSSC biosolids can be determined.

HIGHLIGHTS

- Continue construction of improvements to wastewater treatment and solids handling facilities at the regional Blue Plains Advanced Wastewater Treatment Plant in order to achieve environmental goals and improve efficiency.
- Continue construction on the Bi-County Water Tunnel, which is scheduled for completion in July 2015.
- Continue the Large Diameter Water Pipe Rehabilitation Program to repair, replace, monitor, and protect large cast iron and pre-stressed concrete cylinder pipe (PCCP) water mains, and extend these efforts to 36-inch diameter PCCP mains.
- Continue the Trunk Sewer Reconstruction Program to inspect, evaluate and repair sewer mains in environmentally sensitive areas.
- Increase replacement of small diameter water mains from 51 miles in FY14 to 60 miles in FY15.
- 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.
- Continue the system-wide implementation of automated meter reading technology.

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 FY15 spending control limits adopted by the Montgomery County Council are shown below with their outyear projections. The Prince George's County Council adopted identical FY15 spending control limits for WSSC. The first year of the Commission's proposed CIP is consistent with the approved FY15 spending control limits shown below, as is the County Executive's recommended CIP for WSSC.

FY15 WSSC SPENDING CONTROL LIMITS ADOPTED BY THE MONTGOMERY COUNTY COUNCIL (AND OUTYEAR PROJECTIONS)						
	FY15	FY16	FY17	FY18	FY19	FY20
New Debt Requirement (\$000)	\$384,622	\$364,894	\$335,620	\$310,226	\$241,952	\$162,876
Total W/S Operating Budget (\$000)	\$678,591	\$721,350	\$778,705	\$839,563	\$901,473	\$955,247
Debt Service (\$000)	\$227,042	\$250,013	\$267,835	\$282,596	\$292,612	\$301,014
Average Rate Increase	6.0%	11.2%	8.8%	8.5%	9.1%	6.3%

Source: Montgomery County Council Resolution 17-917 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 \$493,879 of debt service and/or O&M costs equates to a one cent increase in the water rate. For sewer projects, approximately \$449,414 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 67.5 percent since FY07, and total water and sewer debt service is up 21.1 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 FY07 and FY13, averaging 34.4 percent.

WSSC BONDED INDEBTEDNESS AND DEBT SERVICE								
(\$ in Millions)	ACTUAL FY07	ACTUAL FY08	ACTUAL FY09	ACTUAL FY10	ACTUAL FY11	ACTUAL FY12	ACTUAL FY13	ESTIMATED FY14
End of Fiscal Year - Total Outstanding Bond Debt (includes Storm Water Drainage Bonds)	\$1,342.0	\$1,336.4	\$1,346.7	\$1,366.2	\$1,421.8	\$1,556.8	\$1,878.3	\$2,248.7
Outstanding Water and Sewer Bond Debt	\$768.8	\$829.4	\$890.5	\$954.0	\$1,076.8	\$1,240.1	\$1,595.5	\$1,988.7
Total Debt Service - All Operating Funds	\$218.6	\$212.4	\$214.0	\$217.1	\$239.6	\$223.0	\$227.6	\$264.8
Debt Service as a % of Total Operating Exp.	45.1%	41.8%	40.3%	40.4%	41.8%	39.3%	39.1%	38.9%
Debt Service in Water/Sewer Operating Exp.	\$141.4	\$136.5	\$141.1	\$149.2	\$152.5	\$175.7	\$184.2	\$226.1
Water/Sewer Debt Service as a % of Total Water/Sewer Operating Expenditures	35.6%	33.9%	34.8%	31.7%	31.9%	39.0%	34.2%	35.0%

Source: WSSC Budget Group

The debt service ratio is projected to rise to 33.5 percent in FY15 and is not projected to go over 40 percent during the next six fiscal years. WSSC and the bi-county working group on infrastructure funding is continuing to explore ways to keep the debt service ratio under 40 percent.

PROJECTED WSSC DEBT SERVICE RATIO UNDER THE COUNTY'S APPROVED SPENDING CONTROL LIMITS						
Debt Service as a % of Total Water and Sewer Operating Expenditures	FY15 33.5%	FY16 34.7%	FY17 34.4%	FY18 33.7%	FY19 32.5%	FY20 31.9%

Source: WSSC Budget Group

Debt Capacity

State law provides for the option of a tax levy against all assessable property in the Washington Suburban Sanitary District by Montgomery and Prince George's Counties to pay for the principal and interest on WSSC bonds. This provision, which would be exercised only if requested by the WSSC,

does not constitute a pledge of the full faith and credit of the two counties. However, WSSC bonds are part of the overlapping debt of County agencies. As of June 30, 2013, WSSC debt represented 59.6 percent of Montgomery County's gross overlapping debt. The amount of debt that the WSSC issues is therefore a factor in rating agency assessments of the credit worthiness of Montgomery County. In addition, increasing levels of debt service can lead to increases in the combined water and sewer rate.

"INFORMATION ONLY" PROJECTS

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

The FY15-20 "Information Only" projects include the Water and Sewer Reconstruction projects, Engineering Support, the Energy Performance Program, Entrepreneurial Projects, the Water Storage Facility Rehabilitation Program, the Asset Management Program, the Pressure Reducing Valve Rehabilitation Program, and the Advanced Metering Infrastructure Program.

The total FY15-20 budget for the Information Only projects is \$1,564.5 million, a 18.2 percent decrease from the \$1,913.7 million approved for the FY14-19 CIP. This decrease is largely due to the Anaerobic Digestion Combined Heat and Power project moving from "Information Only" status to a regular WSSC CIP project.

Total proposed FY15-20 spending on the Water and Sewer Reconstruction "Information Only" projects will decrease by \$244.8 million (16.9 percent). The impacts of this reduction can be seen in the number of miles of Sewer Main Reconstruction decreasing from 12 miles in FY14 to 3 miles in FY15 (see the following table).

SMALL WATER AND SEWER MAIN RECONSTRUCTION INCLUDED IN WSSC'S PROPOSED FY15-20 CIP								
	Approved FY14	Proposed FY15-20						FY15-20 Total
	FY15	FY16	FY17	FY18	FY19	FY20		
Water Main Replacement (mi.)	51	60	60	60	60	60	60	360
Sewer Main Rehabilitation (mi.)	12	3	15	15	20	20	20	93

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 FY15-20 CIP, as recommended by the Executive, is \$967.6 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 \$12.1 million in SDC funds be used to fund growth projects in FY15-20.

State Aid

For the Blue Plains Wastewater Treatment Plant (WWTP) Enhanced Nutrient Removal sewer project, State funds are recommended to cover \$52.0 million of the costs in FY15-20. WSSC asserts that all Commission projects receiving State Aid conform to the requirements of local plans, as required by the Maryland Economic Growth, Resource Protection and Planning Act.

Municipal Financing

The WSSC CIP contains projects in which neighboring jurisdictions such as the District of Columbia and the City of Rockville join the Commission in financing the construction of sewerage facilities serving the metropolitan area. These jurisdictions contribute an agreed-upon share of the project cost. A total of \$14.2 million in project expenditures is recommended to be financed by these jurisdictions during FY15-20.

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 \$24.1 million for FY15-20.

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

Anaerobic Digestion Combined Heat and Power (P063808)

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

EXPENDITURE SCHEDULE (\$000s)

	Total	Thru FY13	Est FY14	Total 6 Years	FY 15	FY 16	FY 17	FY 18	FY 19	FY 20	Beyond 6 Yrs
Planning, Design and Supervision	5,750	1,218	4,532	0	0	0	0	0	0	0	0
Land	0	0	0	0	0	0	0	0	0	0	0
Site Improvements and Utilities	0	0	0	0	0	0	0	0	0	0	0
Construction	0	0	0	0	0	0	0	0	0	0	0
Other	228	0	228	0	0	0	0	0	0	0	0
Total	5,978	1,218	4,760	0	0	0	0	0	0	0	0

FUNDING SCHEDULE (\$000s)

Federal Aid	2,951	571	2,380	0	0	0	0	0	0	0	0
WSSC Bonds	3,027	647	2,380	0	0	0	0	0	0	0	0
Total	5,978	1,218	4,760	0	0	0	0	0	0	0	0

COMPARISON (\$000s)

	Total	Thru FY13	Est FY14	6YR Total	FY15	FY16	FY17	FY18	FY19	FY20	Bay 6Yr	Approp.
Current Approved	0	0	0	0	0	0	0	0	0	0	0	0
Agency Request	143,980	1,218	4,760	138,002	7,138	7,138	42,828	42,828	38,070	0	0	0
Recommended	5,978	1,218	4,760	0	0	0	0	0	0	0	0	0

Change

	TOTAL	%	6-YEAR	%	APPROP.	%
Agency Request vs Approved	143,980	0.0%	138,002	0.0%	0	0.0%
Recommended vs Approved	5,978	0.0%	0	0.0%	0	0.0%
Recommended vs Request	(138,002)	(95.8%)	(138,002)	(100.0%)	0	0.0%

Recommendation

DO NOT INCLUDE IN THE CIP

Comments

The County Executive does not recommend inclusion of the Anaerobic Digestion Combined Heat and Power project in the FY15-20 CIP due potential cost savings to the CIP program if DC Water's final assessment indicates the digester facilities at Blue Plains can accommodate WSSC biosolids and the uncertainty of Federal Aid projected by WSSC. The County Executive further recommends that WSSC delay any plans for a WSSC digester project until the possible use of digester facilities at Blue Plains can be determined.

Cost Changes

Project reduced \$138,002,000. This reduction removes all funding for the six-year period.

Funding Growth

The portion of the CIP needed to accommodate growth is approximately \$264 million, which equals 16% of all expenditures in the six-year program. The major funding sources for this part of the program are System Development Charge (SDC) revenues and payments by Applicants. In the event that growth costs are greater than the income generated by growth funding sources, rate-supported water/sewer bonds may be used to close any gap.

The Maryland General Assembly, in 1993, first approved legislation authorizing the Montgomery and Prince George's County Councils to establish, and the WSSC to impose, a System Development Charge. This is a charge on new development to pay for that part of the Commission's Capital Improvements Program needed to accommodate growth in the WSSC's customer base. In accordance with the enabling legislation, the Councils approved, and the Commission began to phase in, this charge beginning in FY'94. The SDC charge was eventually approved at the maximum rate of \$160 per fixture unit by Commission Resolution No. 95-1457, adopted May 24, 1995, and became effective July 1, 1995. In the 1998 legislative session, the General Assembly modified the charge by passage of House Bill 832 setting the fee at \$200 per fixture unit with a provision for annual inflation adjustments. Subsequent resolutions have established a process for approving partial and full exemptions for elderly housing and biotechnology properties, as well as exemptions for properties in designated economic revitalization areas. For FY'14, the Montgomery County and Prince George's Councils increased the maximum allowable charge by the 2.3% increase in the CPI-U, but maintained the current rate of \$203 per fixture unit by Resolution Numbers 17-749 approved May 15, 2013, and, CR-43-2013 approved May 30, 2013, respectively. The Commission adopted the Councils' actions by Resolution Number 2013-2012 dated June 19, 2013. Policies and other information associated with the System Development Charge are included in this document in Appendices A through D.

It is estimated that there will be an overall growth funding gap of \$78.2 million over the six-year program period. The gap between growth funding sources (SDC, developer contributions, and Applicant payments under System Extension Permits) and the estimated growth-related expenditures vary over the six-year period. If growth-related expenditures were to exceed the available SDC account balance, WSSC would issue new SDC supported debt to cover this temporary gap rather than increasing the SDC. The debt will be repaid through future SDC collections, as allowed by State Law. Further, it is anticipated that no significant additional growth projects will evolve in the later years of the six-year period. (A listing of SDC-eligible projects is included in Appendix D.)

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

GROWTH FUNDING GAP
(In Millions)

	<u>FY'15</u>	<u>FY'16</u>	<u>FY'17</u>	<u>FY'18</u>	<u>FY'19</u>	<u>FY'20</u>	<u>6 YEAR TOTAL</u>
CIP GROWTH EXPENDITURES	\$89.4	\$88.5	\$49.7	\$23.3	\$8.0	\$5.3	\$264.2
Expenditures Adjusted for Completion	71.5	88.7	57.5	28.5	11.1	5.8	263.1
FUNDING SOURCES							
Privately Funded Projects	15.6	15.3	8.3	1.4	0.0	0.0	40.6
Estimated SDC Revenue	25.8	26.3	26.8	27.0	27.0	27.0	159.9
Less SDC Developer Credits	(1.6)	(1.6)	(1.6)	(1.6)	(1.6)	(1.6)	(9.6)
Less SDC Exemptions ¹	(1.0)	(1.0)	(1.0)	(1.0)	(1.0)	(1.0)	(6.0)
TOTAL FUNDING SOURCES	\$38.8	\$39.0	\$32.5	\$25.8	\$24.4	\$24.4	\$184.9
FUNDING GAP							
ADJUSTED FOR COMPLETION	\$32.7	\$49.7	\$25.0	\$2.7	(\$13.3)	(\$18.6)	\$78.2

¹ Each County may grant SDC exemptions, as identified in Appendix A, totaling up to \$500,000 per fiscal year as provided for in Maryland State Law (Public Utilities Article, Section 25-403(b)). Unused exemption amounts are available for use in future fiscal years. Cumulative unused SDC exemptions totaled approximately \$4.6 million for Montgomery County and \$2.1 million for Prince George's County through June 30, 2013.

Expenditures

The FYs 2015-2020 Capital Improvements Program includes 87 projects for a grand total of \$3.7 billion dollars. Expenditures for the six-year program period are estimated at \$1.6 billion. FY'15 expenditures are estimated at \$472.0 million, which is \$157.3 million less than the funding level approved for FY'14. Of the \$472.0 million, \$129.9 million is for the Water Program and \$342.1 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 \$40.7 million, with approximately \$19.5 million programmed in FY'15. There are 3 new projects totaling \$154.2 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 2014-2019 CIP to the Proposed FYs 2015-2020 CIP follows:

WSSC CIP - COMPARISON

(In Thousands)

	<u>TOTAL PROGRAM</u>	<u>TOTAL SIX YEARS</u>	<u>BUDGET YEARS COMPARISON</u>
Adopted FYs 2014-2019	\$3,734,781	\$2,039,507	\$629,300
Proposed FYs 2015-2020	3,708,020	1,620,811	472,036
Change	(\$26,761)	(\$418,696)	(\$157,264)

Six-year program expenditures are estimated at approximately \$1.6 billion, \$613.4 million for the Water Program and \$1.0 billion for the Sewerage Program. This is a \$418.7 million decrease from the six-year total in the Adopted FYs 2014-2019 CIP. The primary reasons for the decrease are due to the significant decrease in the Trunk Sewer Reconstruction project due to the reduction in planned priority two work and projected decreases in the Enhanced Nutrient Removal projects and the Blue Plains WWTP Digester projects as they move through construction.

Expenditure Categories

Expenditures are divided into three main categories: projects needed for growth, projects needed to implement environmental regulations, and projects needed for system improvements. The categories are defined as follows:

Growth – any project, or part of a project, that increases the demand for treatment and delivery of potable water and/or increases system requirements to collect and treat more sewage in response to new, first time, service hookups to the WSSC's existing customer base.

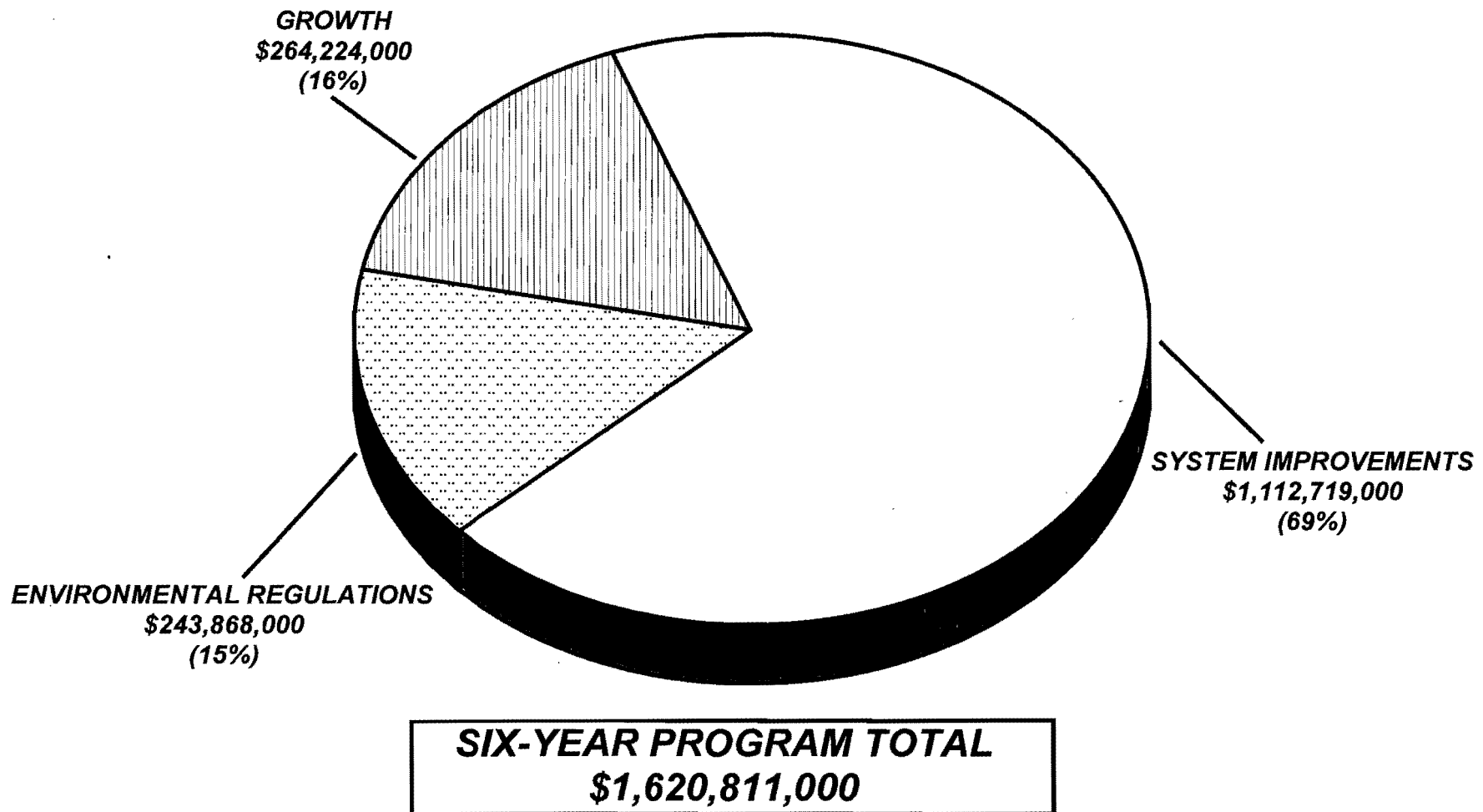
Environmental Regulations – any project which is required to meet changes in federal regulations, such as the Clean Water Act, or in response to more stringent state operating permit requirements, but does not increase system capacity. Any part of this type of a project that provides for additional capacity is for growth.

System Improvements – any project which improves or replaces components of existing water and sewerage systems or provides for mainline relocations required in response to county or state transportation department road projects where the intended purpose is not to increase the capacity of any system components. This category also includes program-sized water main extensions for which the primary function is to provide water supply redundancy to pressure zones or smaller areas in the Sanitary District. Any part of this type of a project not dictated by maintenance or rehabilitation needs and that provides for additional capacity is for growth. (Refer to Figure 3, which displays funding allocations for all three categories.)

FIGURE 3

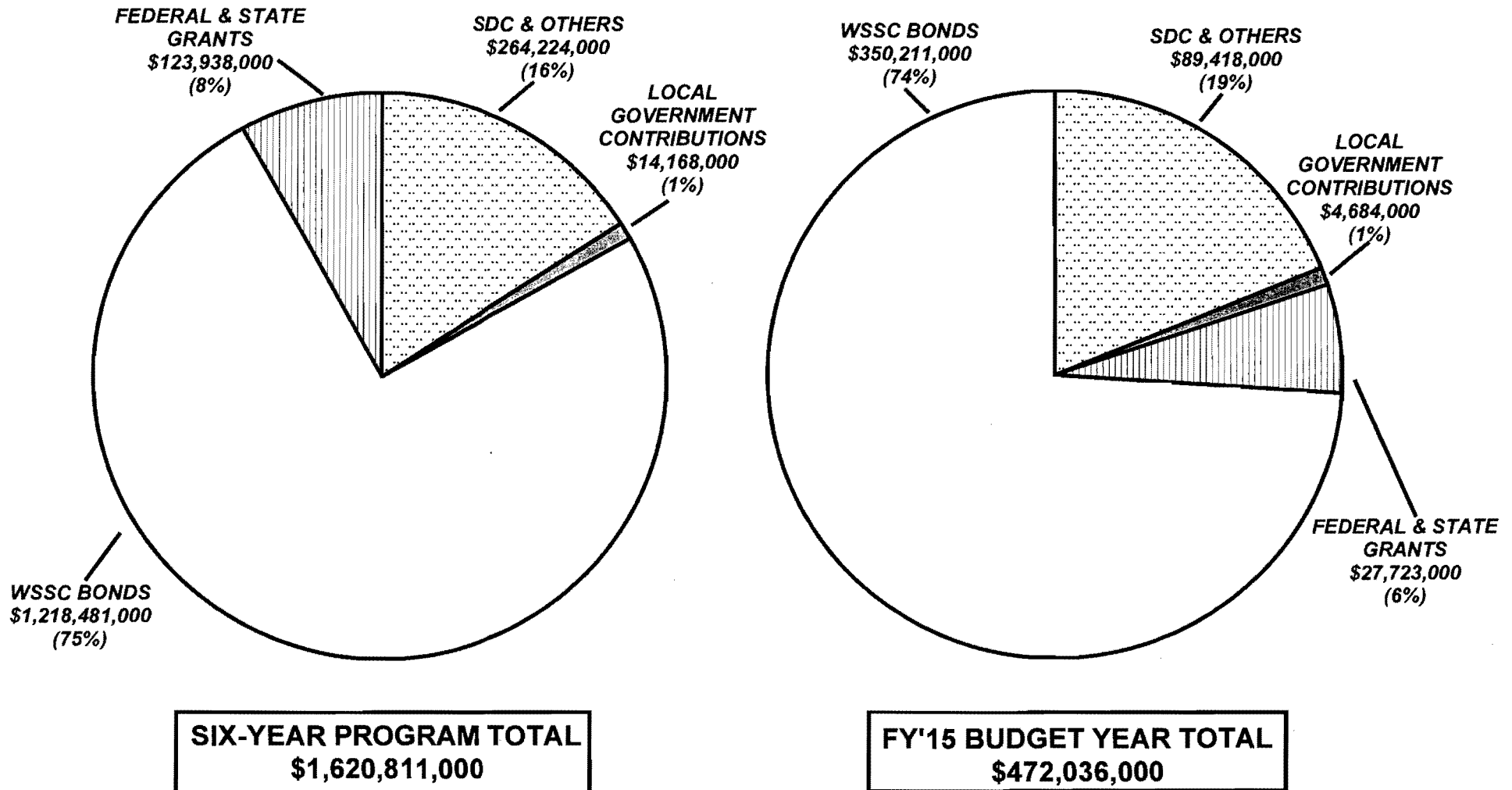
WSSC PROPOSED FYS 2015-20 CIP

SIX-YEAR PROGRAM EXPENDITURES BY MAJOR CATEGORY*



* Totals do not include \$1,292,069,000 in System Improvements project capital expenditures for Information Only projects.

FIGURE 4
WSSC PROPOSED FYS 2015-20 CIP
FUNDING BY SOURCE*



* Totals do not include \$1,292,069,000 and \$153,861,000 in capital expenditures for Information Only projects in the six-year program and budget year, respectively.

FINANCIAL SUMMARY

DATE: October 1, 2013

(ALL FIGURES IN THOUSANDS)

TOTAL WSSC CIP

AGENCY NUMBER	PROJECT NAME	EST. TOTAL COST	EXPEND THRU 13	EST. EXPEND 14	TOTAL SIX YEARS	EXPENDITURE SCHEDULE						BUDGET REQUEST 15	PDF PAGE NUM
						YR 1 15	YR 2 16	YR 3 17	YR 4 18	YR 5 19	YR 6 20		
	Montgomery County Water Projects	42,849	9,656	6,524	26,669	11,190	7,339	6,911	1,229	0	0	11,190	1-1
	Prince George's County Water Projects	219,122	11,403	20,591	167,196	38,039	41,511	41,861	19,181	14,628	11,976	38,039	5-1
	Bi-County Water Projects	828,451	325,057	83,852	419,542	80,702	75,532	89,801	72,717	49,652	51,138	80,702	3-1
	TOTAL WATER PROJECTS	1,090,422	346,116	110,967	613,407	129,931	124,382	138,573	93,127	64,280	63,114	129,931	
	Montgomery County Sewerage Projects	78,348	38,224	16,717	23,407	11,900	7,579	3,823	105	0	0	11,900	2-1
	Prince George's County Sewerage Projects	425,697	99,210	80,888	245,599	89,208	82,526	34,899	29,762	9,204	0	89,208	6-1
	Bi-County Sewerage Projects	2,113,553	980,432	361,679	738,398	240,997	157,377	119,178	107,150	85,286	28,410	240,997	4-1
	TOTAL SEWERAGE PROJECTS	2,617,598	1,117,866	459,284	1,007,404	342,105	247,482	157,900	137,017	94,490	28,410	342,105	
	TOTAL WSSC PROGRAM	3,708,020	1,463,982	570,251	1,620,811	472,036	371,864	296,473	230,144	158,770	91,524	472,036	
	Total Information Only Projects	1,564,508	47,581	166,883	1,321,008	159,048	208,698	228,641	249,363	243,729	231,529	159,048	7-1

Notes for costs beyond six years:

Includes 33,044 for Bi-County Sewer Projects.

Includes 19,932 for Prince George's County Water Projects.

Includes 29,036 for Information Only Projects.

Includes 82,012 for all costs beyond six years.

DATE: October 1, 2013

FINANCIAL SUMMARY

(ALL FIGURES IN THOUSANDS)

MONTGOMERY COUNTY WATER PROJECTS

AGENCY NUMBER	PROJECT NAME	EST. TOTAL COST	EXPEND THRU 13	EST. EXPEND 14	TOTAL SIX YEARS	EXPENDITURE SCHEDULE						BUDGET REQUEST 15	PDF PAGE NUM
						YR 1 15	YR 2 16	YR 3 17	YR 4 18	YR 5 19	YR 6 20		
W-3.02	Olney Standpipe Replacement	6,931	1,206	163	5,562	2,415	1,954	1,193	0	0	0	2,415	1-2
W-46.14	Clarksburg Area Stage 3 Water Main, Parts 1, 2 & 3	5,695	357	2,381	2,957	2,260	607	90	0	0	0	2,260	1-4
W-46.15	Clarksburg Elevated Water Storage Facility	4,592	174	216	4,202	334	490	2,487	891	0	0	334	1-5
W-46.18	Newcut Road Water Main, Part 2	1,593	759	357	477	477	0	0	0	0	0	477	1-6
W-46.24	Clarksburg Area Stage 3 Water Main, Part 4	5,413	1,309	679	3,425	2,111	1,162	152	0	0	0	2,111	1-7
W-90.04	Brink Zone Reliability Improvements	4,141	115	58	3,968	230	1,438	2,300	0	0	0	230	1-8
W-138.02	Shady Grove Standpipe Replacement	8,181	1,332	771	6,078	3,363	1,688	689	338	0	0	3,363	1-9
	Projects Pending Close-Out	6,303	4,404	1,899	0	0	0	0	0	0	0	0	1-10
TOTAL MONTGOMERY COUNTY WATER PROJECTS		42,849	9,656	6,524	26,669	11,190	7,339	6,911	1,229	0	0	11,190	

A. Identification and Coding Information

1. Project Number	Agency Number	Update Code
143800	W-90.04	Change

2. Date: October 1, 2013

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

Revised:

3. Project Name: Brink Zone Reliability Improvements

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

Cost Elements	(8) Total	(9) Thru FY '13	(10) Estimate FY '14	(11) Total 6 Years	(12) Year 1 FY '15	(13) Year 2 FY '16	(14) Year 3 FY '17	(15) Year 4 FY '18	(16) Year 5 FY '19	(17) Year 6 FY '20	(18) Beyond 6 Years
Planning, Design & Supervision	415	115	50	250	200	50					
Land											
Site Improvements & Utilities											
Construction	3,200			3,200		1,200	2,000				
Other	526		8	518	30	188	300				
Total	4,141	115	58	3,968	230	1,438	2,300				

C. Funding Schedule (000's)

WSSC Bonds	4,141	115	58	3,968	230	1,438	2,300				
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D. Description & Justification**DESCRIPTION**

This project provides for the planning, design, and construction of a new water pumping station and pipeline to increase reliability and redundancy to the Montgomery County High Zone water transmission system, specifically the HG760, HG836, and HG960, and dependant pressure zones.

Service Area Brink Pressure Zone HG760A, Woodfield Pressure Zone HG740A, Clarksburg Pressure Zone HG740B, Clarksburg Pressure Zone HG760B, Sweepstakes Pressure Zone HG835A, Seneca Springs Pressure Zone HG835B, Cedar Heights Pressure Zone HG836A, Kings Bridge Pressure Zone HG836B, Kingstead Knolls Pressure Zone HG842A, Tralee Pressure Zone HG850A, Damascus Pressure Zone HG960A

JUSTIFICATION**Plans & Studies**

Business Case Evaluation: Brink Reliability Assessment, Black & Veatch, (June 2013)

Specific Data

The Neelsville Water Pumping Station is the sole delivery of water from the Montgomery County High Zone (HG660) through a single 24-inch diameter PCCP Water Transmission Main that crosses 2 miles to the Brink Elevated Tank (HG760). The selected alternative will effectively deliver water to the Brink Elevated Tank and, in turn, the Cedar Heights (HG836), Damascus (HG960), and dependent pressure zones.

Cost Change

Initial cost estimates were updated to include order of magnitude estimates for design and construction.

STATUS Planning**OTHER**

The project scope has evolved beyond exploring alternatives to address reliability and redundancy issues, to provide for the planning, design, and construction of a new water pumping station and pipeline. Expenditure and schedule estimates for design and construction were developed through an engineering and business case analysis. FY'13 expenditures are those related to the business case analysis.

COORDINATION

Montgomery County Government and Montgomery County Department of Environmental Protection.

NOTE This project supports 100% System Improvement.

E. Annual Operating Budget Impact (000's)

FY of Impact

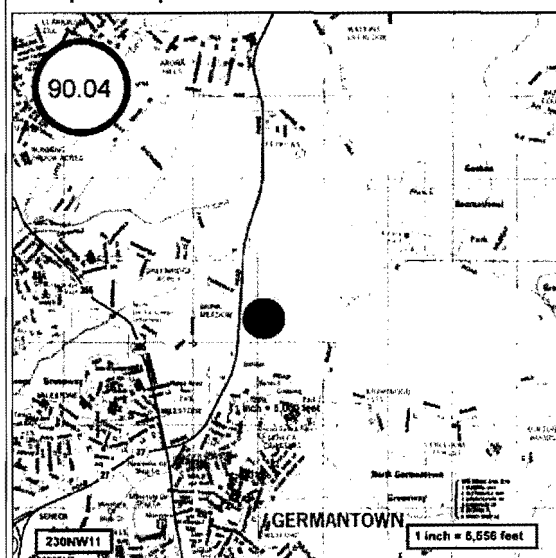
Program Costs	Staff		
	Other		
Facility Costs	Maintenance		
	Debt Service	285	18
Total Costs		285	18
Impact on Water or Sewer Rate			

F. Approval and Expenditure Data (000's)

Date First in Capital Program	FY 14
Date First Approved	FY 14
Initial Cost Estimate	345
Cost Estimate Last FY	345
Present Cost Estimate	4,141
Approved Request, Last FY	345
Total Expenditures & Encumbrances	115
Approval Request FY 15	230
Supplemental Approval Request Current FY (14)	

G. Status Information

Land Status:	Not Applicable
% Project Completion:	P-90%
Est. Completion Date:	FY 2017



H. Map Map Reference Code:

DATE: October 1, 2013

FINANCIAL SUMMARY

(ALL FIGURES IN THOUSANDS)

MONTGOMERY COUNTY SEWER PROJECTS

AGENCY NUMBER	PROJECT NAME	EST. TOTAL COST	EXPEND THRU 13	EST. EXPEND 14	TOTAL SIX YEARS	EXPENDITURE SCHEDULE						BUDGET REQUEST 15	PDF PAGE NUM
						YR 1 15	YR 2 16	YR 3 17	YR 4 18	YR 5 19	YR 6 20		
S-25.03	Twinbrook Commons Sewer	1,009	572	59	378	125	109	108	36	0	0	125	2-3
S-25.04	Mid-Pike Plaza Sewer Main, Phase 1	1,559	369	748	442	442	0	0	0	0	0	442	2-4
S-25.05	Mid-Pike Plaza Sewer Main, Phase 2	6,094	119	1,434	4,541	3,107	1,434	0	0	0	0	3,107	2-5
S-38.01	Preserve at Rock Creek Wastewater Pumping Station	1,967	10	886	1,071	683	388	0	0	0	0	683	2-6
S-38.02	Preserve at Rock Creek WWPS Force Main	391	18	122	251	135	116	0	0	0	0	135	2-7
 S-53.21	Seneca WWTP Enhanced Nutrient Removal	13,618	9,506	3,394	718	718	0	0	0	0	0	718	2-9
S-53.22	Seneca WWTP Expansion, Part 2	28,984	19,258	7,756	1,970	1,970	0	0	0	0	0	1,970	2-11
S-84.47	Clarksburg Triangle Outfall Sewer, Part 2	2,539	423	1,620	496	445	51	0	0	0	0	445	2-13
S-84.60	Cabin Branch Wastewater Pumping Station	2,342	12	13	2,317	449	1,566	302	0	0	0	449	2-14
S-84.61	Cabin Branch WWPS Force Main	424	0	17	407	143	240	24	0	0	0	143	2-15
S-84.65	Tapestry Wastewater Pumping Station	683	7	231	445	223	222	0	0	0	0	223	2-16
S-84.66	Tapestry WWPS Force Main	134	8	45	81	46	35	0	0	0	0	46	2-17
S-85.21	Shady Grove Station Sewer Augmentation	2,254	0	0	2,254	723	740	722	69	0	0	723	2-18
 S-94.12	Damascus WWTP Enhanced Nutrient Removal	7,536	7,206	317	13	13	0	0	0	0	0	13	2-19
S-103.16	Cabin John Trunk Sewer Relief	7,999	0	0	7,999	2,666	2,666	2,667	0	0	0	2,666	2-21
S-201.00	Land & Rights-of-Way Acquisition - Montgomery County	24	0	0	24	12	12	0	0	0	0	12	2-22
	Projects Pending Close-Out	791	716	75	0	0	0	0	0	0	0	0	2-23
	TOTAL MONTGOMERY COUNTY SEWER PROJECTS	78,348	38,224	16,717	23,407	11,900	7,579	3,823	105	0	0	11,900	



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

A. Identification and Coding Information

1. Project Number	Agency Number	Update Code
153800	S-85.21	Add

2. Date: October 1, 2013

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

Revised:

3. Project Name: Shady Grove Station Sewer Augmentation

5. Agency: **WSSC**4. Program: **Sanitation** 6. Planning Area: Gaithersburg & Vicinity P.A. 20**B. Expenditure Schedule (000's)**

Cost Elements	(8) Total	(9) Thru FY '13	(10) Estimate FY '14	(11) Total 6 Years	(12) Year 1 FY '15	(13) Year 2 FY '16	(14) Year 3 FY '17	(15) Year 4 FY '18	(16) Year 5 FY '19	(17) Year 6 FY '20	(18) Beyond 6 Years
Planning, Design & Supervision	41			41	21	10	10				
Land											
Site Improvements & Utilities											
Construction	1,919			1,919	608	634	618	59			
Other	294			294	94	96	94	10			
Total	2,254			2,254	723	740	722	69			

C. Funding Schedule (000's)

Contribution/Other	(8) Total	(9) Thru FY '13	(10) Estimate FY '14	(11) Total 6 Years	(12) Year 1 FY '15	(13) Year 2 FY '16	(14) Year 3 FY '17	(15) Year 4 FY '18	(16) Year 5 FY '19	(17) Year 6 FY '20	(18) Beyond 6 Years
	2,254			2,254	723	740	722	69			

D. Description & Justification**DESCRIPTION**

This project provides for the planning, design and construction of approximately 4,000 feet of 15-inch to 18-inch diameter sewers. These sewers will replace existing an 10-inch diameter sewer main near Crabbs Branch Creek and CSX Railroad and terminate at a manhole approximately 300 feet southeast of Redland Road.

Service Area Rock Creek Drainage Basin**Capacity** 1.0 - 2.7 mgd**Population** 5,500**JUSTIFICATION****Plans & Studies**

Due to development density proposed in DA5409Z12, the projected peak wastewater flow exceeds the capacity of existing sewers.

Specific Data

The new 15-inch and 18-inch diameter sewers will serve the area encompassed by Shady Grove Road, I-370 and CSX Railroad.

Cost Change

Not applicable.

STATUS Planning (WSSC Contract No. DA5409Z12,).**OTHER**

The project scope was developed for the FY 2015 CIP and has a total estimated cost of \$2,254,000. The expenditures and schedule projections shown in Block B are planning level estimates and may change based on 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 Department of Public Works and Transportation and Montgomery County Government.

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

FY of Impact

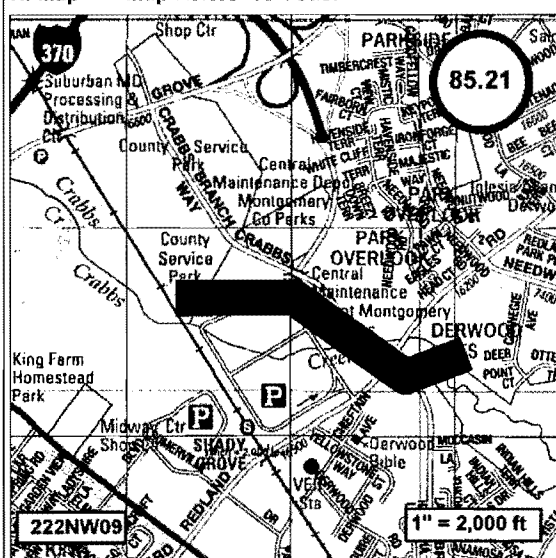
Program Costs	Staff .....	.....
	Other .....	.....
Facility Costs	Maintenance	74	19
	Debt Service .....	.....
Total Costs.....		74	19
Impact on Water or Sewer Rate.....		.....

F. Approval and Expenditure Data (000's)

Date First in Capital Program	FY 15
Date First Approved	FY 15
Initial Cost Estimate	2,254
Cost Estimate Last FY	
Present Cost Estimate	2,254
Approved Request, Last FY	
Total Expenditures & Encumbrances	
Approval Request FY 15	723
Supplemental Approval Request Current FY (14)	

G. Status Information

Land Status:	Right-of-Way may be required
% Project Completion:	P-10%
Est. Completion Date:	Developer Dependent

H. Map Map Reference Code:

A. Identification and Coding Information

1. Project Number	Agency Number	Update Code
153801	S-103.16	Add

2. Date: October 1, 2013

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

Revised:

3. Project Name: Cabin John Trunk Sewer Relief

5. Agency: **WSSC**4. Program: **Sanitation** 6. Planning Area: Bethesda-Chevy Chase & Vicinity P.A. 35**B. Expenditure Schedule (000's)**

Cost Elements	(8) Total	(9) Thru FY '13	(10) Estimate FY '14	(11) Total 6 Years	(12) Year 1 FY '15	(13) Year 2 FY '16	(14) Year 3 FY '17	(15) Year 4 FY '18	(16) Year 5 FY '19	(17) Year 6 FY '20	(18) Beyond 6 Years
Planning, Design & Supervision	1,159			1,159	386	386	387				
Land											
Site Improvements & Utilities											
Construction	5,796			5,796	1,932	1,932	1,932				
Other	1,044			1,044	348	348	348				
Total	7,999			7,999	2,666	2,666	2,667				

C. Funding Schedule (000's)

Contribution/Other	(8) Total	(9) Thru FY '13	(10) Estimate FY '14	(11) Total 6 Years	(12) Year 1 FY '15	(13) Year 2 FY '16	(14) Year 3 FY '17	(15) Year 4 FY '18	(16) Year 5 FY '19	(17) Year 6 FY '20	(18) Beyond 6 Years
	7,999			7,999	2,666	2,666	2,667				

D. Description & Justification**DESCRIPTION**

Approximately 2,700 feet of 36-inch to 42-inch diameter sewer in two segments in the Cabin John Basin, southwest of River Road and Seven Locks Road.

Service Area Cabin John Drainage Basin

Capacity 29.37 to 36.74 MGD

JUSTIFICATION**Plans & Studies**

DA5238Z11 Mid-Pike Plaza Hydraulic Planning Analysis.

Cost Change

Not applicable.

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

The project scope was developed for the FY 2015 CIP and has an estimated total cost of \$7,999,000. 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

Maryland-National Capital Park & Planning Commission, Montgomery County Department of Environmental Protection, Maryland Department of the Environment, Maryland Department of Natural Resources and WSSC Projects S-25.04, Mid-Pike Plaza Sewer Main, Phase 1 and S-25.05, Mid-Pike Plaza Sewer Main, Phase 2.

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

FY of Impact

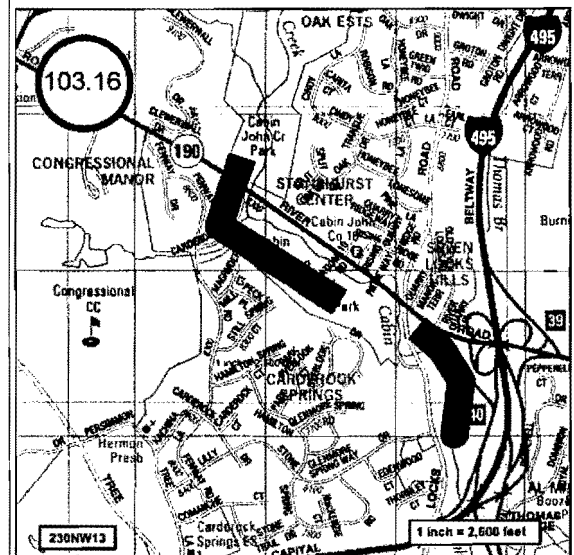
Program Costs	Staff .....	.....
	Other .....	.....
Facility Costs	Maintenance	50	18
	Debt Service .....	.....
Total Costs.....		50	18
Impact on Water or Sewer Rate.....			

F. Approval and Expenditure Data (000's)

Date First in Capital Program	FY 15
Date First Approved	FY 15
Initial Cost Estimate	7,999
Cost Estimate Last FY	
Present Cost Estimate	7,999
Approved Request, Last FY	
Total Expenditures & Encumbrances	
Approval Request FY 15	2,666
Supplemental Approval Request Current FY (14)	

G. Status Information

Land Status: Land & R/W to be acquired
 % Project Completion: P-50%
 Est. Completion Date: FY 2017



H. Map Map Reference Code:

DATE: October 1, 2013

FINANCIAL SUMMARY

(ALL FIGURES IN THOUSANDS)

BI-COUNTY WATER PROJECTS

AGENCY NUMBER	PROJECT NAME	EST. TOTAL COST	EXPEND THRU 13	EST. EXPEND 14	TOTAL SIX YEARS	EXPENDITURE SCHEDULE						BUDGET REQUEST 15	PDF PAGE NUM
						YR 1 15	YR 2 16	YR 3 17	YR 4 18	YR 5 19	YR 6 20		
W-73.18	Power Reliability and Arc Flash Implementation	4,813	3,845	853	115	115	0	0	0	0	0	115	3-2
W-73.19	Potomac WFP Outdoor Substation No. 2 Replacement	15,572	1,268	59	14,245	4,785	5,885	3,575	0	0	0	4,785	3-4
 W-73.20	Potomac WFP Stage 2 Disinfection Byproducts Rule Implementation	10,480	4,071	6,172	237	237	0	0	0	0	0	237	3-5
W-73.21	Potomac WFP Corrosion Mitigation	18,164	439	10,016	7,709	7,590	119	0	0	0	0	7,590	3-6
W-73.22	Potomac WFP Pre-Filter Chlorination & Air Scour Improvements	7,935	57	511	7,367	767	447	3,761	2,392	0	0	767	3-7
W-73.30	Potomac WFP Submerged Channel Intake	28,433	2,308	1,263	24,862	1,076	3,649	15,918	4,219	0	0	1,076	3-8
W-73.32	Potomac WFP Main Zone Pipeline	1,125	100	335	690	690	0	0	0	0	0	690	3-10
W-127.01	Bi-County Water Tunnel	146,489	118,846	25,242	2,401	2,401	0	0	0	0	0	2,401	3-11
W-139.02	Duckett & Brighton Dam Upgrades	15,167	6,233	2,983	5,951	3,689	2,262	0	0	0	0	3,689	3-14
W-161.01	Large Diameter Water Pipe Rehabilitation Program	345,476	38,788	31,915	274,773	38,275	40,748	46,789	48,194	49,639	51,128	38,275	3-15
 W-172.05	Patuxent WFP Phase II Expansion	62,904	6,106	2,100	54,698	11,130	15,383	15,383	12,802	0	0	11,130	3-18
W-172.07	Patuxent Raw Water Pipeline	22,973	8,451	605	13,917	3,095	1,372	4,355	5,095	0	0	3,095	3-20
W-172.08	Rocky Gorge Pump Station Upgrade	17,685	4,132	1,139	12,414	6,772	5,642	0	0	0	0	6,772	3-21
W-202.00	Land & Rights-of-Way Acquisition - Bi-County	368	0	205	163	80	25	20	15	13	10	80	3-22
	Projects Pending Close-Out	130,867	130,413	454	0	0	0	0	0	0	0	0	3-23
TOTAL BI-COUNTY WATER PROJECTS		828,451	325,057	83,852	419,542	80,702	75,532	89,801	72,717	49,652	51,138	80,702	



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

A. Identification and Coding Information

1. Project Number	Agency Number	Update Code
033805	W-73.18	Change

2. Date: October 1, 2013

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

Revised:

5. Agency: **WSSC**

3. Project Name: Power Reliability and Arc Flash Implementation

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

	(8) Total	(9) Thru FY '13	(10) Estimate FY '14	(11) Total 6 Years	(12) Year 1 FY '15	(13) Year 2 FY '16	(14) Year 3 FY '17	(15) Year 4 FY '18	(16) Year 5 FY '19	(17) Year 6 FY '20	(18) Beyond 6 Years
Cost Elements											
Planning, Design & Supervision	4,687	3,845	742	100	100						
Land											
Site Improvements & Utilities											
Construction											
Other	126		111	15	15						
Total	4,813	3,845	853	115	115						

C. Funding Schedule (000's)

WSSC Bonds	4,813	3,845	853	115	115						
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D. Description & Justification**DESCRIPTION**

This project provides for a comprehensive analysis of WSSC's emergency power capabilities, reliability and requirements for both the water treatment & distribution system and wastewater treatment & collection system. Requirements identified will be prioritized. This project also provides for an arc flash and shock hazard study for all facilities.

Service Area Bi-County Area

JUSTIFICATION**Plans & Studies**

"Draft Chapter III - Needs Assessment Chapter IV - Alternatives Development", O'Brien & Gere Engineers Inc. (November 2001); In-house Study (April 2002); WSSC Memorandum from Chuck Attick to Kathy McGinnis (May 2008); "Accelerated Potomac Power Reliability Analysis - Part 2 - Electrical Analysis for Design and Construction Phase", Greeley & Hansen (June 2012).

Cost Change

Planning and Design costs for future projects have been removed.

STATUS Planning (WSSC Contract No. BM4620A07,).**OTHER**

The project scope remains the same. Any additional CIP-sized projects identified through the modeling and analysis processes will be split out into new, separate projects in the appropriate counties.

COORDINATION

Montgomery County Government, Prince George's County Government, Montgomery County Department of Environmental Protection, Potomac Electric Power Company, Washington Gas Light Company, Maryland Department of the Environment, Prince George's County Department of Environmental Resources, Utilities Inc. of Maryland and Baltimore Gas & Electric.

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	331	15
Total Costs		331	15
Impact on Water or Sewer Rate.....			

F. Approval and Expenditure Data (000's)

Date First in Capital Program	FY 04
Date First Approved	FY 03
Initial Cost Estimate	11,991
Cost Estimate Last FY	7,032
Present Cost Estimate	4,813
Approved Request, Last FY	897
Total Expenditures & Encumbrances	3,845
Approval Request FY 15	115
Supplemental Approval Request Current FY (14)	

G. Status Information

Land Status: No land or R/W required
 % Project Completion: P-95%
 Est. Completion Date: June 2015

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

A. Identification and Coding Information

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

2. Date: October 1, 2013

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

Revised:

3. Project Name: Potomac WFP Submerged Channel Intake

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

Cost Elements	(8) Total	(9) Thru FY '13	(10) Estimate FY '14	(11) Total 6 Years	(12) Year 1 FY '15	(13) Year 2 FY '16	(14) Year 3 FY '17	(15) Year 4 FY '18	(16) Year 5 FY '19	(17) Year 6 FY '20	(18) Beyond 6 Years
Planning, Design & Supervision	5,942	2,308	1,148	2,486	978	742	566	200			
Land											
Site Improvements & Utilities											
Construction	20,115			20,115		2,575	13,905	3,635			
Other	2,376		115	2,261	98	332	1,447	384			
Total	28,433	2,308	1,263	24,862	1,076	3,649	15,918	4,219			

C. Funding Schedule (000's)

WSSC Bonds	28,433	2,308	1,263	24,862	1,076	3,649	15,918	4,219			
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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 Potomac WFP Pressure Zone HGPOWF

JUSTIFICATION**Plans & Studies**

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

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 Nos. BF2028F97, BF2028I97).

OTHER

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

E. Annual Operating Budget Impact (000's)

FY of Impact

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

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	27,818
Present Cost Estimate	28,433
Approved Request, Last FY	1,227
Total Expenditures & Encumbrances	2,308
Approval Request FY 15	1,076
Supplemental Approval Request Current FY (14)	

G. Status Information

Land Status:	Right-of-Way may be required
% Project Completion:	P-60%
Est. Completion Date:	FY 2018

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

D. DESCRIPTION & JUSTIFICATION (CONT.)

Agency Number: W - 73.30

Project Name: Potomac WFP Submerged Channel Intake

COORDINATION

Montgomery County Government, Prince George's County Government, National Park Service, Montgomery County Department of Environmental Protection, Maryland Department of the Environment, Maryland Department of Natural Resources, Prince George's County Department of Environmental Resources and U.S. Army Corps of Engineers.

NOTE This project supports 100% System Improvement.

A. Identification and Coding Information

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

2. Date: October 1, 2013

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

Revised:

3. Project Name: Bi-County Water Tunnel

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

	(8) Total	(9) Thru FY '13	(10) Estimate FY '14	(11) Total 6 Years	(12) Year 1 FY '15	(13) Year 2 FY '16	(14) Year 3 FY '17	(15) Year 4 FY '18	(16) Year 5 FY '19	(17) Year 6 FY '20	(18) Beyond 6 Years
Cost Elements											
Planning, Design & Supervision	26,239	23,056	2,000	1,183	1,183						
Land											
Site Improvements & Utilities											
Construction	117,737	95,790	20,947	1,000	1,000						
Other	2,513		2,295	218	218						
Total	146,489	118,846	25,242	2,401	2,401						

C. Funding Schedule (000's)

WSSC Bonds	700	690	10								
SDC	145,789	118,156	25,232	2,401	2,401						

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 Prince George's High Pressure Zone HG450A, Montgomery Main Pressure Zone HG495A

JUSTIFICATION**Plans & Studies**

Montgomery and Prince George's Main Zone Facility Plan, Black and Veatch, Inc. (October, 1990); Technical Memoranda #s1, 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 June 2014. Funding shown in FY'15 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 separately. The relining of 450 feet of existing 96-inch diameter PCCP, at a cost of \$700,000, is not subject to SDC funding.

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

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

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	150,975
Present Cost Estimate	146,489
Approved Request, Last FY	14,442
Total Expenditures & Encumbrances	118,846
Approval Request FY 15	2,401
Supplemental Approval Request Current FY (14)	

G. Status Information

Land Status:	Site selected
% Project Completion:	C-80%
Est. Completion Date:	July 2015

H. Map Map Reference Code:**SEE ATTACHED MAP**

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.

A. Identification and Coding Information			2. Date: October 1, 2013	7. Pre PDF Pg.No.:	8. Req. Adeq. Pub. Fac.
1. Project Number	Agency Number	Update Code	Revised:		
113803	W-161.01	Change			
3. Project Name: Large Diameter Water Pipe Rehabilitation Program			5. Agency: WSSC		
4. Program: Sanitation			6. Planning Area: Bi-County		

B. Expenditure Schedule (000's)											
	(8) Total	(9) Thru FY '13	(10) Estimate FY '14	(11) Total 6 Years	(12) Year 1 FY '15	(13) Year 2 FY '16	(14) Year 3 FY '17	(15) Year 4 FY '18	(16) Year 5 FY '19	(17) Year 6 FY '20	(18) Beyond 6 Years
Cost Elements											
Planning, Design & Supervision	25,859	3,103	2,680	20,076	2,503	3,310	3,409	3,512	3,617	3,725	
Land											
Site Improvements & Utilities											
Construction	305,012	35,685	27,715	241,612	33,949	35,498	41,152	42,387	43,658	44,968	
Other	14,605		1,520	13,085	1,823	1,940	2,228	2,295	2,364	2,435	
Total	345,476	38,788	31,915	274,773	38,275	40,748	46,789	48,194	49,639	51,128	

C. Funding Schedule (000's)											
WSSC Bonds	345,476	38,788	31,915	274,773	38,275	40,748	46,789	48,194	49,639	51,128	

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 segments that require repair or replacement to assure the continued safe and reliable operation of the pipeline. The Program also identifies extended lengths of pipe that require the replacement of an increased number of pipe segments in varying stages of deterioration that are most cost effectively accomplished by the replacement or rehabilitation of long segments of the pipeline or the entire pipeline. Rehabilitation or replacement of these mains provides value to the customer by minimizing the risk of catastrophic failure and ensuring a safe and reliable water supply. The Program includes installation of Acoustic Fiber Optic Monitoring equipment in order to accomplish these goals in PCCP mains.

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

JUSTIFICATION

Plans & Studies

Utility Wide Master Plan, (December 2007); 30 Year Infrastructure Plan (2007); 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 PCCP pipelines 36-inch and larger in diameter. Of the 350 miles of PCCP, 145 miles are 36-inch diameter and larger, and 59 miles are 54-inch diameter or larger. The inspection program includes internal visual and sounding, sonic/ultrasonic testing, and electromagnetic testing to establish the condition of each pipe section and determine if maintenance repairs, rehabilitation, or replacement are needed.

Cost Change

The cost increase is due to the continued ramp-up in the number of miles of PCCP pipeline inspections from 18 miles to 20 miles and the number of miles of cast iron pipe being replaced and receiving cathodic protection. Also, as we move into the smaller 42-inch and 36-inch diameter PCCP pipelines, where carbon-fiber repairs are not always possible, there is an increase in the number of PCCP pipe segments that require replacement.

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

F. Approval and Expenditure Data (000's)

Date First in Capital Program	FY 11
Date First Approved	FY 11
Initial Cost Estimate	60,000
Cost Estimate Last FY	248,178
Present Cost Estimate	345,476
Approved Request, Last FY	37,028
Total Expenditures & Encumbrances	38,788
Approval Request FY 15	38,275
Supplemental Approval Request Current FY (14)	

G. Status Information

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

H. Map Map Reference Code:

MAP NOT AVAILABLE

D. DESCRIPTION & JUSTIFICATION (CONT.)

Agency Number: W - 161.01

Project Name: Large Diameter Water Pipe Rehabilitation Program

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

OTHER

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

COORDINATION

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




NOTE This project supports 100% System Improvement.

DATE: October 1, 2013

FINANCIAL SUMMARY

(ALL FIGURES IN THOUSANDS)

BI-COUNTY SEWER PROJECTS

AGENCY NUMBER	PROJECT NAME	EST. TOTAL COST	EXPEND THRU 13	EST. EXPEND 14	TOTAL SIX YEARS	EXPENDITURE SCHEDULE						BUDGET REQUEST 15	PDF PAGE NUM
						YR 1 15	YR 2 16	YR 3 17	YR 4 18	YR 5 19	YR 6 20		
S-22.06	Blue Plains WWTP: Liquid Train Projects, Part 2	280,210	230,587	11,158	38,243	9,932	7,730	7,361	7,001	5,343	876	9,932	4-4
S-22.07	Blue Plains WWTP: Biosolids Management, Part 2	387,209	252,008	92,399	42,802	27,969	8,900	5,011	912	10	0	27,969	4-5
S-22.09	Blue Plains WWTP: Plant-wide Projects	212,336	170,371	11,252	29,000	8,109	3,633	3,721	7,635	4,096	1,806	8,109	4-6
 S-22.10	Blue Plains WWTP: Enhanced Nutrient Removal	366,743	144,264	48,214	160,758	49,031	50,314	35,457	23,202	1,527	1,227	49,031	4-7
 S-22.11	Blue Plains: Pipelines & Appurtenances	161,952	37,301	16,004	91,045	23,795	17,888	9,685	10,484	20,699	8,494	23,795	4-8
 S-89.22	Anacostia Storage Facility	21,689	18,411	2,739	539	539	0	0	0	0	0	539	4-9
S-103.02	Anaerobic Digestion/Combined Heat & Power	143,980	1,218	4,760	138,002	7,138	7,138	42,828	42,828	38,070	0	7,138	4-11
S-170.08	Septage Discharge Facility Planning & Implementation	11,136	796	495	9,845	165	2,420	7,260	0	0	0	165	4-13
S-170.09	Trunk Sewer Reconstruction Program	453,402	50,580	174,658	228,164	114,319	59,354	7,855	15,088	15,541	16,007	114,319	4-15
	Projects Pending Close-Out	74,896	74,896	0	0	0	0	0	0	0	0	0	4-17
TOTAL BI-COUNTY SEWER PROJECTS		2,113,553	980,432	361,679	738,398	240,997	157,377	119,178	107,150	85,286	28,410	240,997	



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

Notes for costs beyond six years:

Includes 222 for Project S-22.06, Blue Plains WWTP: Liquid Train Projects, Part 2

Includes 1,713 for Project S-22.09, Blue Plains WWTP: Plant-wide Projects

Includes 13,507 for Project S-22.10, Blue Plains WWTP: Enhanced Nutrient Removal

Includes 17,602 for Project S-22.11, Blue Plains: Pipelines & Appurtenances

BLUE PLAINS WASTEWATER TREATMENT PLANT PROJECTS
(costs in thousands)

PROJECT NUMBER	PROJECT NAME	ADOPTED FY'14 TOTAL COST	PROPOSED FY'15 TOTAL COST	CHANGE \$	CHANGE %	SIX-YEAR COST	COMPLETION DATE (est)
S-22.06	Blue Plains WWTP: Liquid Train Projects, Part 2	\$274,457	\$280,210	\$5,753	2.1%	\$38,243	On-Going
S-22.07	Blue Plains WWTP: Biosolids Management, Part 2	387,315	387,209	(106)	0.0%	42,802	On-Going
S-22.09	Blue Plains WWTP: Plant-wide Projects	214,599	212,336	(2,263)	-1.1%	29,000	On-Going
S-22.10	Blue Plains WWTP: Enhanced Nutrient Removal	404,053	366,743	(37,310)	-9.2%	160,758	On-Going
S-22.11	Blue Plains: Pipelines & Appurtenances	124,720	161,952	37,232	29.9%	91,045	On-Going
	TOTALS	\$1,405,144	\$1,408,450	\$3,306	0.2%	\$361,848	

Summary: These five projects, with an estimated total cost of \$1.4 billion, provide funding for the upgrade, expansion, and enhancement of wastewater treatment and solids handling facilities at the Regional Blue Plains Wastewater Treatment Plant, located in the District of Columbia. Whereas typical WSSC projects encompass planning, design, construction, and start-up for a single project, with defined starting and ending dates, the Blue Plains projects are comprised of many sub-projects and are "open-ended." As the Blue Plains Facility Plans move forward and new sub-projects are approved, the costs of these new sub-projects are added to the appropriate existing Blue Plains project. The expenditures displayed represent the WSSC's calculated share. There are four main funding divisions: liquid treatment train (S-22.06); biosolids management (S-22.07); plant-wide projects (S-22.09); and, pipelines & appurtenances (S-22.11). Project S-22.10 Enhanced Nutrient Removal (ENR) will achieve nutrient removal levels surpassing BNR as determined in the Tributary Strategy process of 2005 in order to meet Chesapeake Bay water quality targets. Project S-22.08 Biological Nutrient Removal (BNR) was completed and included on the close out list.

Cost Impact: These five Blue Plains projects, the largest group of expenditures in the CIP, represent 38% of the total program. The figures shown above are derived from the latest available spending projections provided by the District of Columbia Water and Sewer Authority (DCWASA). Officials at the DCWASA have indicated that they have the fiscal capacity as well as the engineering capability to implement these projects. Spending at the DCWASA staff-proposed rate in future years may challenge the WSSC's ability to stay within County-established spending affordability limits. It is, therefore, recommended that the coordination of development and approval of the DCWASA's and WSSC's CIPs be sustained in order that the economic development and environmental objectives of the region be met, without causing a rapid increase in WSSC customers' bills. An explanation of the cost changes for each project is included on the individual project description forms that immediately follow this summary page.

A. Identification and Coding Information

1. Project Number	Agency Number	Update Code
954811	S-22.06	Change

2. Date: October 1, 2013

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

Revised:

3. Project Name: Blue Plains WWTP: Liquid Train Projects, Part 2

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

	(8) Total	(9) Thru FY '13	(10) Estimate FY '14	(11) Total 6 Years	(12) Year 1 FY '15	(13) Year 2 FY '16	(14) Year 3 FY '17	(15) Year 4 FY '18	(16) Year 5 FY '19	(17) Year 6 FY '20	(18) Beyond 6 Years
Cost Elements											
Planning, Design & Supervision	89,738	74,210	3,614	11,695	4,724	2,089	2,085	1,489	851	457	219
Land											
Site Improvements & Utilities											
Construction	189,980	156,377	7,433	26,169	5,110	5,564	5,203	5,443	4,439	410	1
Other	492		111	379	98	77	73	69	53	9	2
Total	280,210	230,587	11,158	38,243	9,932	7,730	7,361	7,001	5,343	876	222

C. Funding Schedule (000's)

WSSC Bonds	264,829	217,929	10,545	36,145	9,387	7,306	6,957	6,617	5,050	828	210
City of Rockville	15,381	12,658	613	2,098	545	424	404	384	293	48	12

D. Description & Justification**DESCRIPTION**

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

Service Area Bi-County Area

Capacity 370 MGD

JUSTIFICATION**Plans & Studies**

The Blue Plains Intermunicipal Agreement of 2012; the DCWASA Master Plan (1998); and the DCWASA Approved FY 2013 Capital Improvements Program.

Specific Data

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

Cost Change

Cost increase is primarily due to further revised higher estimates for the Dual Purpose Sedimentation Basins Rehab, Filtration/Disinfection Facilities Rehab Phase II, Liquid Processing Program Management, and Raw Water Pumping Station No. 2.

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

FY of Impact

Program Costs	Staff .....	.....
	Other .....	.....
Facility Costs	Maintenance .....	.....
	Debt Service	18220
Total Costs.....		18220
Impact on Water or Sewer Rate.....		40¢

F. Approval and Expenditure Data (000's)

Date First in Capital Program	FY 95
Date First Approved	FY 95
Initial Cost Estimate	69,745
Cost Estimate Last FY	274,457
Present Cost Estimate	280,210
Approved Request, Last FY	5,308
Total Expenditures & Encumbrances	230,587
Approval Request FY 15	9,932
Supplemental Approval Request Current FY (14)	

G. Status Information

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

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

A. Identification and Coding Information

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

2. Date: October 1, 2013

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

Revised:

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

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

	(8) Total	(9) Thru FY '13	(10) Estimate FY '14	(11) Total 6 Years	(12) Year 1 FY '15	(13) Year 2 FY '16	(14) Year 3 FY '17	(15) Year 4 FY '18	(16) Year 5 FY '19	(17) Year 6 FY '20	(18) Beyond 6 Years
Cost Elements											
Planning, Design & Supervision	98,786	80,455	8,733	9,598	5,913	1,508	1,372	805			
Land											
Site Improvements & Utilities											
Construction	287,084	171,553	82,751	32,780	21,779	7,304	3,589	98	10		
Other	1,339		915	424	277	88	50	9			
Total	387,209	252,008	92,399	42,802	27,969	8,900	5,011	912	10		

C. Funding Schedule (000's)

WSSC Bonds	365,953	238,174	87,327	40,452	26,434	8,411	4,736	862	9		
City of Rockville	21,256	13,834	5,072	2,350	1,535	489	275	50	1		

D. Description & Justification**DESCRIPTION**

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

Service Area Bi-County Area

Capacity 370 MGD

JUSTIFICATION**Plans & Studies**

The Blue Plains Intermunicipal Agreement of 2012; the DCWASA Master Plan (1998); EPMC IV Facility Plan (CH2MHILL, 2001); the Biosolids Management at DCWASA Blue Plains Wastewater Treatment Plant Phase II - Design and Cost Considerations for Treatment Alternatives Report (December 2007); and the DCWASA Approved FY 2013 Capital Improvement Program.

Specific Data

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

Cost Change

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

COORDINATION

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

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

FY of Impact

Program Costs	Staff .....	.....
	Other .....	.....
Facility Costs	Maintenance .....	.....
	Debt Service	25178	20
Total Costs.....		25178	20
Impact on Water or Sewer Rate.....		55¢	20

F. Approval and Expenditure Data (000's)

Date First in Capital Program	FY 95
Date First Approved	FY 95
Initial Cost Estimate	77,296
Cost Estimate Last FY	387,315
Present Cost Estimate	387,209
Approved Request, Last FY	72,504
Total Expenditures & Encumbrances	252,008
Approval Request FY 15	27,969
Supplemental Approval Request Current FY (14)	

G. Status Information

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

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

A. Identification and Coding Information

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

2. Date: October 1, 2013

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

Revised:

5.Agency: **WSSC**

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

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

Cost Elements	(8) Total	(9) Thru FY '13	(10) Estimate FY '14	(11) Total 6 Years	(12) Year 1 FY '15	(13) Year 2 FY '16	(14) Year 3 FY '17	(15) Year 4 FY '18	(16) Year 5 FY '19	(17) Year 6 FY '20	(18) Beyond 6 Years
Planning, Design & Supervision	69,205	56,499	2,711	9,251	2,036	1,384	1,964	1,607	1,095	1,165	744
Land											
Site Improvements & Utilities											
Construction	142,715	113,872	8,430	19,461	5,993	2,213	1,720	5,952	2,960	623	952
Other	416		111	288	80	36	37	76	41	18	17
Total	212,336	170,371	11,252	29,000	8,109	3,633	3,721	7,635	4,096	1,806	1,713

C. Funding Schedule (000's)

WSSC Bonds	200,681	161,019	10,634	27,409	7,664	3,434	3,517	7,216	3,871	1,707	1,619
City of Rockville	11,655	9,352	618	1,591	445	199	204	419	225	99	94

D. Description & Justification**DESCRIPTION**

This project provides funding for WSSC's share of Blue Plains plant-wide projects for which construction began after June 30, 1993. Major projects include: Plantwide Program Management; comprehensive Management Program; Electrical Power Systems - Switch Gear; Instrumentation, Control, and Electric Engineering Project Management Consultant; New Warehouse Facility; and Central Office Facility (COF) Renovations and Additions.

Service Area Bi-County Area

Capacity 370 MGD

JUSTIFICATION**Plans & Studies**

The Blue Plains Intermunicipal Agreement of 2012; the WASA Master Plan (1998); and the DCWASA Approved FY 2013 Capital Improvement Program.

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
Total Costs.....		16643
Impact on Water or Sewer Rate.....		37¢

F. Approval and Expenditure Data (000's)

Date First in Capital Program	FY 95
Date First Approved	FY 02
Initial Cost Estimate	84,650
Cost Estimate Last FY	214,599
Present Cost Estimate	212,336
Approved Request, Last FY	8,391
Total Expenditures & Encumbrances	170,371
Approval Request FY 15	8,109
Supplemental Approval Request Current FY (14)	

G. Status Information

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

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

29

A. Identification and Coding Information

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

2. Date: October 1, 2013

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

Revised:

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

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

	(8) Total	(9) Thru FY '13	(10) Estimate FY '14	(11) Total 6 Years	(12) Year 1 FY '15	(13) Year 2 FY '16	(14) Year 3 FY '17	(15) Year 4 FY '18	(16) Year 5 FY '19	(17) Year 6 FY '20	(18) Beyond 6 Years
Cost Elements											
Planning, Design & Supervision	69,039	27,463	11,657	28,515	10,717	6,588	4,957	4,045	1,006	1,202	1,404
Land											
Site Improvements & Utilities											
Construction	295,502	116,801	36,080	130,652	37,829	43,228	30,149	18,927	506	13	11,969
Other	2,202		477	1,591	485	498	351	230	15	12	134
Total	366,743	144,264	48,214	160,758	49,031	50,314	35,457	23,202	1,527	1,227	13,507

C. Funding Schedule (000's)

WSSC Bonds	152,437	13,457	23,684	102,776	26,275	32,364	24,596	18,067	697	777	12,520
State Aid	205,452	130,025	23,154	52,013	21,230	16,070	9,432	4,086	790	405	260
City of Rockville	8,854	782	1,376	5,969	1,526	1,880	1,429	1,049	40	45	727

D. Description & Justification**DESCRIPTION**

This project provides funding for WSSC's share of the Blue Plains Enhanced Nutrient Removal projects required to achieve nutrient removal to levels below BNR levels to meet the Chesapeake Bay water quality targets determined in the 2005 Tributary Strategy process. Sub-projects include: Nitrogen Removal Facilities, Centrate Treatment, Enhanced Clarification Facility, and Blue Plains Tunnel and Dewatering Pumping Station; and Program Management.

Service Area Bi-County Area

Capacity 370 MGD

JUSTIFICATION**Plans & Studies**

Chesapeake Bay Program Tributary Strategies Process (2005); Blue Plains Strategic Process Study, Metcalf & Eddy (2005); Selection of the Enhanced Nitrogen Removal Process Alternative for the Blue Plains Advanced Wastewater Treatment Facility, Metcalf & Eddy (2009); DCWASA Approved FY 2013 Capital Improvement Program, and the Blue Plains Intermunicipal Agreement of 2012.

Specific Data

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

Cost Change

Total project cost decrease is based on revised construction cost estimates from DCWASA. Projects extending beyond those supported by State Aid include rehabilitation and upgrades to older projects.

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

The project scope has remained the same. Project costs are derived from the DCWASA Capital & Operating Budget 10-year forecast and latest project management data, and reflect DCWASA's current expenditure estimates and schedules.

COORDINATION

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

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

FY of Impact

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

F. Approval and Expenditure Data (000's)

Date First in Capital Program	FY 08
Date First Approved	FY 07
Initial Cost Estimate	648
Cost Estimate Last FY	404,053
Present Cost Estimate	366,743
Approved Request, Last FY	60,966
Total Expenditures & Encumbrances	144,264
Approval Request FY 15	49,031
Supplemental Approval Request Current FY (14)	

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: 113804 Agency Number: S-22.11 Update Code: Change

2. Date: October 1, 2013 7. Pre PDF Pg.No.: 8. Req. Adeq. Pub. Fac.:

3. Project Name: Blue Plains: Pipelines & Appurtenances 5. Agency: **WSSC**

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

Revised: _____

B. Expenditure Schedule (000's)

Cost Elements	(8) Total	(9) Thru FY '13	(10) Estimate FY '14	(11) Total 6 Years	(12) Year 1 FY '15	(13) Year 2 FY '16	(14) Year 3 FY '17	(15) Year 4 FY '18	(16) Year 5 FY '19	(17) Year 6 FY '20	(18) Beyond 6 Years
Planning, Design & Supervision	35,836	9,083	3,834	18,222	2,714	2,878	2,905	4,058	2,982	2,685	4,697
Land											
Site Improvements & Utilities											
Construction	124,882	28,218	12,012	71,921	20,845	14,833	6,684	6,322	17,512	5,725	12,731
Other	1,234		158	902	236	177	96	104	205	84	174
Total	161,952	37,301	16,004	91,045	23,795	17,888	9,685	10,484	20,699	8,494	17,602

C. Funding Schedule (000's)

WSSC Bonds	156,988	35,716	15,629	88,885	23,162	17,426	9,581	10,309	20,138	8,269	16,758
City of Rockville	4,964	1,585	375	2,160	633	462	104	175	561	225	844

D. Description & Justification

DESCRIPTION

This project provides funding for WSSC's share of Blue Plains-associated projects which are "outside the fence" of the treatment plant. Major projects include: Potomac Interceptor Rehabilitation; Upper Potomac Interceptor; Potomac Sewage Pumping Station Rehabilitation; Influent Sewers Rehabilitation; and projects associated with the Combined Sewer Overflow (CSO) Long Term Control Plan (e.g. Anacostia Tunnel).

Service Area Bi-County Area **Capacity** Various

JUSTIFICATION

Plans & Studies

The Blue Plains Intermunicipal Agreement of 2012; the WASA Master Plan (1998); Technical Memorandum No. 1, Multi-Jurisdictional Use Facilities Capital Cost Allocation, (June 2013); and the DCWASA Approved FY 2013 Capital Improvement Program.

Specific Data

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

Cost Change

Cost increase is due to revised estimates for projects to rehabilitate DCWASA interceptor sewers and pumping stations that carry WSSC wastewater from their points of connection at the MD/DC boundary to the Blue Plains WWTP; including: the Upper RockCreek Interceptor and Anacostia Long Term Control Plan.

STATUS Not Applicable

OTHER

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

COORDINATION

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

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

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

Program Costs	Staff .....	....
	Other .....	....
Facility Costs	Maintenance .....	....
	Debt Service	10801
Total Costs.....		10801
Impact on Water or Sewer Rate.....		24¢

F. Approval and Expenditure Data (000's)

Date First in Capital Program	FY 11
Date First Approved	FY 02
Initial Cost Estimate	102,833
Cost Estimate Last FY	124,720
Present Cost Estimate	161,952
Approved Request, Last FY	14,454
Total Expenditures & Encumbrances	37,301
Approval Request FY 15	23,795
Supplemental Approval Request Current FY (14)	

G. Status Information

Land Status: Not Applicable

% Project Completion: On-Going

Est. Completion Date: On-Going

H. Map Map Reference Code:

MAP NOT AVAILABLE

A. Identification and Coding Information			2. Date: October 1, 2013	7. Pre PDF Pg.No.: 8. Req. Adeq. Pub. Fac.
1. Project Number	Agency Number	Update Code	Revised:	
153802	S-103.02	Add		
3. Project Name: Anaerobic Digestion/Combined Heat & Power			5. Agency: WSSC	
4. Program: Sanitation			6. Planning Area: Bi-County	

B. Expenditure Schedule (000's)											
Cost Elements	(8) Total	(9) Thru FY '13	(10) Estimate FY '14	(11) Total 6 Years	(12) Year 1 FY '15	(13) Year 2 FY '16	(14) Year 3 FY '17	(15) Year 4 FY '18	(16) Year 5 FY '19	(17) Year 6 FY '20	(18) Beyond 6 Years
Planning, Design & Supervision	23,878	1,218	4,532	18,128	6,798	618	3,708	3,708	3,296		
Land											
Site Improvements & Utilities											
Construction	113,300			113,300		6,180	37,080	37,080	32,960		
Other	6,802		228	6,574	340	340	2,040	2,040	1,814		
Total	143,980	1,218	4,760	138,002	7,138	7,138	42,828	42,828	38,070		

C. Funding Schedule (000's)											
WSSC Bonds	72,028	647	2,380	69,001	3,569	3,569	21,414	21,414	19,035		
Federal Aid	71,952	571	2,380	69,001	3,569	3,569	21,414	21,414	19,035		

D. Description & Justification

DESCRIPTION

This project will develop a comprehensive program for the engineering, design, construction, maintenance, and monitoring and verification necessary to add sustainable energy equipment and systems to produce biogas at a location(s) to be determined. The program will provide a reduction in energy and energy-related costs (electricity, natural gas, transportation, and disposal of biosolids) which may in part be guaranteed by the contractor. The potential guaranteed reduction component includes annual avoided energy costs as well as operations and maintenance, chemicals, and biosolids transportation and disposal costs. The program will enhance existing operating conditions and reliability while continuing to meet all permit requirements, and ensure a continued commitment to environmental stewardship at WSSC sites. The scope of work will include, but is not limited to, the addition of anaerobic digestion equipment, thermal hydrolysis pretreatment equipment, gas cleaning systems, hydrogen sulfide and siloxane removal, tanks, piping, valves, pumps, sludge dewatering/thickening equipment, grit removal, effluent disinfection systems, instrumentation, flow metering, power measurement, and combined heat and power generation systems.

In March 2009, the WSSC received approval for a federal Department of Energy grant of \$570,900 for the feasibility study/conceptual design phase. On June 16, 2010, the WSSC awarded the study contract to AECOM Technical Services, Inc., of Laurel, Maryland. The study was completed in December 2011, and the Thermal Hydrolysis/Mesophilic Anaerobic Digestion/Combined Heat & Power facility was recommended to be constructed and was presented to the Commission in April 2012. The WSSC will continue to pursue federal capital funding as a source of cost sharing as the project develops.

JUSTIFICATION

Plans & Studies

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

E. Annual Operating Budget Impact (000's)				FY of Impact
Program Costs	Staff	.....	....
	Other	.....	....
Facility Costs	Maintenance	.....	....
	Debt Service	.....	3425	20
Total Costs		.....	3425	20
Impact on Water or Sewer Rate		.....	8¢	20

F. Approval and Expenditure Data (000's)

Date First in Capital Program	FY 15
Date First Approved	FY 10
Initial Cost Estimate	345
Cost Estimate Last FY	146,399
Present Cost Estimate	143,980
Approved Request, Last FY	4,840
Total Expenditures & Encumbrances	1,218
Approval Request FY 15	7,138
Supplemental Approval Request Current FY (14)	

G. Status Information

Land Status:	No land or R/W required
% Project Completion:	P-99%
Est. Completion Date:	(See "Specific Data" for details)

H. Map Map Reference Code:

MAP NOT AVAILABLE

D. DESCRIPTION & JUSTIFICATION (CONT.)

Agency Number: S - 103.02

Project Name: Anaerobic Digestion/Combined Heat & Power

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 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 a regional/centralized plant at a location to be determined based on a Thermal Hydrolysis/Mesophillic Anaerobic Digestion/Combined Heat & Power (TH/MAD/CHP) process supplemented by restaurant grease fuel design is \$110 million, with a 36 month construction period. The environmental benefits and expected outcomes determined from the feasibility study are estimated as follows:

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

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

1. Recover more than \$1.5 million of renewable energy costs/year
2. Reduce biosolids disposal costs by ~ \$1.7 million/year
3. Reduce chemical costs by ~ \$400,000/year
4. Hedge against rising costs of power, fuel, and chemicals
5. Net Payback of 15 to 18 years (net based on capital cost of TH/MAD/CHP minus capital cost of lime stabilization upgrade of WSSC WWTP facilities through 2030) (Any Federal Aid received would shorten the payback period.)

Cost Change

Order of Magnitude cost estimates were adjusted for inflation and to reflect the reduction in the "Other" calculated cost percentage from 10% to 5%.

STATUS Planning

OTHER

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

Both Councils will review the results of WSSC's feasibility study and must approve continuing with the project before design and construction may proceed.

It is envisioned that either the entire project, or only portions of the project that include the thermal hydrolysis, anaerobic digestion or combined heat and power, include a guarantee by the contractor that the capital cost will be paid back 100% from energy and energy-related cost savings 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. Any Federal Aid received would shorten the payback period. Previous expenditures reflect the planning phase of this project which was completed under the Information Only project A-103.01, Anaerobic Digestion/Combined Heat & Power.

COORDINATION

Montgomery County Government, Prince George's County Government, Maryland-National Capital Park & Planning Commission (Mandatory Referral Process), Montgomery County Department of Environmental Protection, Maryland Department of the Environment and WSSC Project S-96.14, Piscataway WWTP Facility Upgrades.

NOTE This project supports 100% System Improvement.

A. Identification and Coding Information

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

2. Date: October 1, 2013

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

Revised:

5. Agency: **WSSC**

3. Project Name: Trunk Sewer Reconstruction Program

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

	(8) Total	(9) Thru FY '13	(10) Estimate FY '14	(11) Total 6 Years	(12) Year 1 FY '15	(13) Year 2 FY '16	(14) Year 3 FY '17	(15) Year 4 FY '18	(16) Year 5 FY '19	(17) Year 6 FY '20	(18) Beyond 6 Years
Cost Elements											
Planning, Design & Supervision	168,362	49,000	73,059	46,303	19,483	8,903	3,507	4,662	4,802	4,946	
Land											
Site Improvements & Utilities											
Construction	224,617	1,580	75,400	147,637	77,688	41,548	3,170	8,163	8,408	8,660	
Other	60,423		26,199	34,224	17,148	8,903	1,178	2,263	2,331	2,401	
Total	453,402	50,580	174,658	228,164	114,319	59,354	7,855	15,088	15,541	16,007	

C. Funding Schedule (000's)

WSSC Bonds	453,402	50,580	174,658	228,164	114,319	59,354	7,855	15,088	15,541	16,007	
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D. Description & Justification**DESCRIPTION**

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

JUSTIFICATION**Plans & Studies**

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

Specific Data

Under the terms of the Consent Decree the WSSC Trunk Sewer Inspection Program inspected all required sewers in 21 basins by December 2010 and Sewer System Evaluation Surveys (SSES) were completed for 9 basins. WSSC shall conduct rainfall, groundwater and flow monitoring to determine I/I rates and identify areas of limited capacity through collection system modeling. Where appropriate, WSSC shall use additional means to identify sources of I/I, including CCTV, smoke and/or dye testing.

All the Trunk Sewer Inspections, SSES work and other related collection system evaluations are now complete. As required by Article 6 of the Consent Decree, a Sewer Basin Repair, Replacement, Rehabilitation Plan (SR3 Plan) for each basin was completed and submitted to the EPA and MDE by March 2013. Eighteen of the SR3 Plans have been approved by EPA and MDE as of May 2013.

* At the current rate of acquiring environmental permits, the required trunk sewer reconstruction work is expected to extend beyond the Consent Decree's December 2015 deadline. In addition to limited contractor availability, WSSC is experiencing significant delays in acquiring both permission and required permits to work in environmentally sensitive areas. WSSC worked with the MDE and the USACE and identified a way to expedite environmental permit approvals. An umbrella permit was issued by the USACE on May 8, 2012. Based upon an estimated table of impacts, MDE and the USACE agreed to permit the entire Consent Decree with special conditions under an umbrella type permit. As basins move toward a 30% design stage, an updated permit application for the basin will be submitted, with final Joint Permit approval issued as an addendum to the umbrella permit with special conditions to address minimization and avoidance of impacts.

Cost Change

The cost has decreased due to a reduction of priority 2 assets to be designed after Consent Decree is completed. Workplan will follow a design by basin approach.

E. Annual Operating Budget Impact (000's)

FY of Impact

Program Costs	Staff .....	.....
	Other .....	.....
Facility Costs	Maintenance .....	.....
	Debt Service	31194	21
Total Costs		31194	21
Impact on Water or Sewer Rate	69¢	.....	21

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	758,992
Present Cost Estimate	453,402
Approved Request, Last FY	186,246
Total Expenditures & Encumbrances	50,580
Approval Request FY 15	114,319
Supplemental Approval Request Current FY (14)	

G. Status Information

Land Status:	Right-of-Way may be required
% Project Completion:	D-80%
Est. Completion Date:	See Block D

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

D. DESCRIPTION & JUSTIFICATION (CONT.)**Agency Number:** S - 170.09**Project Name:** Trunk Sewer Reconstruction Program**STATUS** Final Design**OTHER**

The project scope remains the same. Reconstruction work will include: reduction of inflow and infiltration (I/I); replacement of substandard sewer segments; in situ lining of sewer segments; pipeline and manhole protection; rebuilding of manholes; and correction of structural defects and poor alignment. The reconstruction that will be performed in each sewer basin will be prioritized to most effectively prevent SSOs and backups. The Consent Decree requires that all rehabilitation work be substantially complete by December 5, 2015.

The design work for the SR3 Plans pertaining to Trunk Sewer reconstruction began in FY 2010. 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. Construction will begin in each basin as the individual designs are completed.

Work is underway in 24 basins in FY2014. For FY2015, work will continue in environmentally sensitive areas, encompassing mainline reconstruction, and providing exposed pipeline and manhole protection from high stream flows and stream bank erosion where required. Maryland DNR will not approve Forest Conservation Plans until WSSC resolves the long term conservation easements. This affects work in all basins.

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.

DATE: October 1, 2013

FINANCIAL SUMMARY

(ALL FIGURES IN THOUSANDS)

INFORMATION ONLY PROJECTS

AGENCY NUMBER	PROJECT NAME	EST. TOTAL COST	EXPEND THRU 13	EST. EXPEND 14	TOTAL SIX YEARS	EXPENDITURE SCHEDULE						BUDGET REQUEST 15	PDF PAGE NUM
						YR 1 15	YR 2 16	YR 3 17	YR 4 18	YR 5 19	YR 6 20		
W-1.00	Water Reconstruction Program	775,766	0	87,491	688,275	104,509	110,024	113,304	116,681	120,078	123,679	104,509	7-2
S-1.01	Sewer Reconstruction Program	428,819	0	52,346	376,473	16,419	54,574	62,116	78,736	81,097	83,531	16,419	7-4
A-102.00	Engineering Support Program	106,000	0	14,000	92,000	17,000	18,000	15,000	14,000	14,000	14,000	17,000	7-6
 A-103.00	Energy Performance Program	41,655	31,875	545	8,905	435	610	2,370	4,030	1,280	180	435	7-7
A-104.00	Entrepreneurial Projects	41,905	1,573	866	10,760	5,785	699	107	6	6	4,157	5,785	7-10
A-105.00	Water Storage Facility Rehabilitation Program	35,000	0	5,000	30,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	7-11
A-106.00	Asset Management Program	19,724	9,810	2,935	6,979	1,320	1,472	633	1,777	1,777	0	1,320	7-12
A-107.00	Specialty Valve Vault Rehabilitation Program	25,290	3,364	930	20,996	7,359	4,576	3,751	2,773	1,555	982	7,359	7-13
A-109.00	Advanced Metering Infrastructure	89,500	875	2,525	86,100	960	13,484	26,360	26,360	18,936	0	960	7-14
S-300.01	D'Arcy Park North Relief Sewer	849	84	245	520	261	259	0	0	0	0	261	7-15
TOTAL INFORMATION ONLY PROJECTS		1,564,508	47,581	166,883	1,321,008	159,048	208,698	228,641	249,363	243,729	231,529	159,048	



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

Notes for costs beyond six years:

Includes 330 for Project A-103.00, Energy Performance Program

Includes 28,706 for Project A-104.00, Entrepreneurial Projects

A. Identification and Coding Information

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

2. Date: October 1, 2013

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

Revised:

3. Project Name: Water Reconstruction Program

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

	(8) Total	(9) Thru FY '13	(10) Estimate FY '14	(11) Total 6 Years	(12) Year 1 FY '15	(13) Year 2 FY '16	(14) Year 3 FY '17	(15) Year 4 FY '18	(16) Year 5 FY '19	(17) Year 6 FY '20	(18) Beyond 6 Years
Cost Elements											
Planning, Design & Supervision	281,095		32,669	248,426	37,748	39,736	40,903	42,100	43,305	44,634	
Land											
Site Improvements & Utilities											
Construction	370,987		39,900	331,087	50,106	52,940	54,532	56,172	57,817	59,520	
Other	123,684		14,922	108,762	16,655	17,348	17,869	18,409	18,956	19,525	
Total	775,766		87,491	688,275	104,509	110,024	113,304	116,681	120,078	123,679	

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

WSSC Bonds	775,766		87,491	688,275	104,509	110,024	113,304	116,681	120,078	123,679	
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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-CountyArea

JUSTIFICATION**Plans & Studies**

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

Specific Data

The program's projected work units and expenditure levels for FY'15 (including overhead) are as follows: design and construction of main replacement and associated water house connection renewals, 60 miles - \$95M; cathodic protection - \$3M; design and construction of large water service replacements - \$6.5M. Note: The specific mix and type of water main reconstruction may vary in any given year depending on the nature and priority of the work to be addressed. Program level may be adjusted in future years based upon the results of the Asset Management Plan. WSSC pilot tested one mile of cleaning and lining using new methods intended to add structural integrity to the lined main.

Cost Change

The program cost increase in FY 2015 primarily reflects an increase in replacement miles.

E. Annual Operating Budget Impact (000's)

FY of Impact

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

F. Approval and Expenditure Data (000's)

Date First in Capital Program	FY --
Date First Approved	FY --
Initial Cost Estimate	
Cost Estimate Last FY	793,935
Present Cost Estimate	775,766
Approved Request, Last FY	96,774
Total Expenditures & Encumbrances	
Approval Request FY 15	104,509
Supplemental Approval Request Current FY (14)	

G. Status Information

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

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

D. DESCRIPTION & JUSTIFICATION (CONT.)**Agency Number:** W - 1.00**Project Name:** Water Reconstruction Program**STATUS** Under Construction**OTHER**

The project scope has remained the same. The water reconstruction program has been ongoing since 1979. Funding in the six-year program period is subject to Spending Affordability Guideline limits. The following work accomplishments through FY'13 summarize the magnitude of the reconstruction effort: water main cleaning and lining, 1,142 miles completed; water main replacement, 403 miles completed; large water service/meter replacement, 77 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			2. Date: October 1, 2013	7. Pre PDF Pg.No.:	8. Req. Adeq. Pub. Fac.
1. Project Number	Agency Number	Update Code	Revised:		
	S-1.01	Change			
3. Project Name: Sewer Reconstruction Program			5. Agency: WSSC		
4. Program: Sanitation			6. Planning Area: Bi-County		

B. Expenditure Schedule (000's)											
Cost Elements	(8) Total	(9) Thru FY '13	(10) Estimate FY '14	(11) Total 6 Years	(12) Year 1 FY '15	(13) Year 2 FY '16	(14) Year 3 FY '17	(15) Year 4 FY '18	(16) Year 5 FY '19	(17) Year 6 FY '20	(18) Beyond 6 Years
Planning, Design & Supervision	100,223		11,181	89,042	5,492	13,284	13,204	18,461	19,015	19,586	
Land											
Site Improvements & Utilities											
Construction	285,713		35,930	249,783	9,285	35,833	42,700	52,401	53,972	55,592	
Other	42,883		5,235	37,648	1,642	5,457	6,212	7,874	8,110	8,353	
Total	428,819		52,346	376,473	16,419	54,574	62,116	78,736	81,097	83,531	

C. Funding Schedule (000's)											
WSSC Bonds	428,819		52,346	376,473	16,419	54,574	62,116	78,736	81,097	83,531	

D. Description & Justification

DESCRIPTION

This program funds a comprehensive sewer system rehabilitation program in residential areas. The main component of this program is the rehabilitation and/or repair of sewer mains less than 15" in diameter and 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'15 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'15 (including overhead) are as follows: 3 miles of residential line construction - \$7.9M; 1 mile of lateral line construction and associated sewer house connection renewals - \$6.5M; emergency repairs - \$2M. Note: The specific mix and type of sewer reconstruction may vary in any given year depending on identified system defects.

Cost Change

The overall program cost decreased due to a continued focus on the Trunk Sewer Reconstruction Program (S-170.09) and a reduction of priority 2 work to be performed post Consent Decree.

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	57153	.....	20
Total Costs.....		57153	.....	20
Impact on Water or Sewer Rate.....		114¢	.....	20

F. Approval and Expenditure Data (000's)

Date First in Capital Program	FY --
Date First Approved	FY --
Initial Cost Estimate	
Cost Estimate Last FY	655,424
Present Cost Estimate	428,819
Approved Request, Last FY	49,902
Total Expenditures & Encumbrances	
Approval Request FY 15	16,419
Supplemental Approval Request Current FY (14)	

G. Status Information

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

H. Map Map Reference Code:

MAP NOT APPLICABLE

D. DESCRIPTION & JUSTIFICATION (CONT.)

Agency Number: 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 grouting repairs are included in the operating budget.

The following work accomplishments through FY'13 summarize the magnitude of this reconstruction effort: sewer main reconstruction, 346 miles; and sewer house connection renewals, 17,571. It is anticipated that sewer reconstruction activity will be a perpetual element of future work programs.

COORDINATION

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

A. Identification and Coding Information

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

2. Date: October 1, 2013

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

Revised:

5. Agency: **WSSC**

3. Project Name: Advanced Metering Infrastructure

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

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

C. Funding Schedule (000's)

WSSC Bonds	89,500	875	2,525	86,100	960	13,484	26,360	26,360	18,936		
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D. Description & Justification**DESCRIPTION**

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

JUSTIFICATION**Plans & Studies**

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

Specific Data

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

Cost Change

Not applicable.

STATUS Planning**OTHER**

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

COORDINATION

Montgomery County Government and Prince George's County Government.

E. Annual Operating Budget Impact (000's)

FY of Impact

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

F. Approval and Expenditure Data (000's)

Date First in Capital Program	FY 13
Date First Approved	FY 13
Initial Cost Estimate	86,000
Cost Estimate Last FY	86,000
Present Cost Estimate	89,500
Approved Request, Last FY	2,500
Total Expenditures & Encumbrances	875
Approval Request FY 15	960
Supplemental Approval Request Current FY (14)	

G. Status Information

Land Status:	Not determined
% Project Completion:	P-15%
Est. Completion Date:	FY 2019

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

**Anaerobic Digestion/Combined Heat and
Power Feasibility Study
Overall Executive Summary**

Anaerobic Digestion and Combined Heat & Power Study

Overall Executive Summary

Background

The Washington Suburban Sanitary Commission (WSSC) is the 8th largest water and wastewater utility in the United States, managing the stabilization and land application/disposal of over 55 dry tons of biosolids each day. As part of its leadership role within the water and wastewater industry, WSSC is at the forefront of tracking potential national and local issues that may impact the efficacy or efficiency of its biosolids management strategy or may impose an increased cost burden on its stakeholders. The biosolids industry has been the subject of increasing debate in recent years as energy, chemical and transportation costs escalate; community concerns about traditional and emerging contaminants in land applied biosolids have become more prevalent; awareness of carbon footprint, greenhouse gas and other air emissions is the subject of pending regulation especially from incinerators; and technology alternatives have advanced dramatically so as to elevate awareness of the real and perceived benefits of recovery and reuse of biosolids in multiple valuable end forms including the production of electricity and fertilizer materials.

Throughout these ongoing debates, WSSC has remained engaged in the discussions to assess potential risk and cost impacts to their biosolids management strategy. The majority of the biosolids from the Seneca, Damascus, Piscataway and Parkway Wastewater Treatment Plants (WWTPs) are lime stabilized and beneficially reused via local land application in the states of Maryland and Virginia. The Western Branch WWTP is the only plant that incinerates the majority of its biosolids using two multiple hearth furnaces (MHFs) that were originally constructed in the 1970s and have recently undergone some refurbishment.

While WSSC's facilities are well maintained and in good operating condition, they will require increasing capital and O&M investment in the coming years to meet existing performance requirements but more importantly to address new or pending regulatory requirements, most immediately the air emissions from the MHFs to meet the new Maximum Achievable Control Technology (MACT) regulations.

Given the many regulatory, market and technological changes taking place in the biosolids industry, coupled with elevated community concerns and participation in local policy development, WSSC has undertaken this project to comprehensively assess its current practices and management plan and to evaluate alternative biosolids management strategies that may offer some advantages to the commission and its stakeholders in the coming years.

One of the underlying objectives of this study is to recover the untapped energy in wastewater biomass. Some national statistics worth considering include:

- 3% of the electrical energy demand in the US is used to treat municipal wastewater
- This carbon rich wastewater is an untapped energy resource

Anaerobic Digestion/Combined Heat and Power Feasibility Study Overall Executive Summary

- Only 10% of wastewater treatment plants (>5mgd) recover energy
- Wastewater treatment plants have the potential to produce > 575 MW of energy nationwide
- Wastewater treatment plants have the potential to capture an additional 175 MW of energy from waste Fats, Oils & Grease

The WSSC conducted this study to determine the feasibility of utilizing anaerobic digestion and combined heat and power (AD/CHP) to produce and utilize renewable digester biogas and/or biosolids gasification and drying facilities. Digester gas is considered a renewable energy source and can be used in place of fossil fuels to reduce greenhouse gas emissions. The project focus includes:

- Converting wastewater Biomass to Electricity
- Using innovative technologies to Maximize Energy Recovery
- Enhancing the Environment by reducing nutrient load to waterways (Chesapeake Bay), Sanitary Sewer Overflows (by reducing FOG in sewers) and Greenhouse Gas Emissions

Recommended Solution

The recommended solution, Regional Piscataway Biosolids Facility (treating solids from Seneca, Damascus, Parkway, Piscataway) + Western Branch as a stand-alone facility, provides WSSC with the flexibility to continue operation of the Western Branch MHFs as long as practical. The Regional Piscataway Biosolids Facility is sized to accommodate excess Western Branch solids beyond the capacity of the MHFs to avoid landfill disposal. The Regional Piscataway Facility that can be later expanded to a Centralized Piscataway Facility provides flexibility to WSSC for moving into the future while also being more cost effective than the individual plant solutions. By moving forward with a regional approach that continues to utilize the existing assets and infrastructure at Western Branch, WSSC can continue to maximize the useful life out of the existing MHFs. The Regional Piscataway Biosolids Facility was compared to the Blue Plains alternative (hauling dewatered biosolids from each WSSC WWTP to Blue Plains for treatment) and resulted in the following economic and non-economic advantages:

- Unit cost savings of \$89/DT - \$108/DT for the Regional Piscataway alternative compared to the Blue Plains alternative based on initial average tipping fee
- Capacity of Blue Plains Phase 1 TH/MAD process to accommodate WSSC solids would not be determined until 2017. Blue Plains' solids production estimates indicate peak loading (excluding hauled biosolids) would exceed Phase 1 processing capacity requiring lime stabilization. DC Water indicated that a surcharge would apply to hauled solids when processing at Blue Plains exceeds capacity of TH/MAD facility and would require operation of the lime stabilization system.
- The need for expansion of Blue Plains Phase 1 facilities would be determined in 2017 and a Phase 2 expansion involving a 5th TH/MAD train is estimated by DC Water to be available for operation in 2021. A WSSC Regional Piscataway Biosolids Facility could be operational in 2017.

Anaerobic Digestion/Combined Heat and Power Feasibility Study Overall Executive Summary

- Green power production of net 1.7 MW (with 2 MW CHP system operating at capacity with supplemental natural gas less parasitic loads) and the associated utility power offset with a Regional Piscataway Biosolids Facility would be realized by WSSC vs. DC Water with the Blue Plains alternative.
- Carbon credits from a Regional Piscataway Biosolids Facility would remain with WSSC instead of transferred to DC Water with the Blue Plains alternative.
- GHG emissions reduction in excess of 4,000 tons CO₂/year from a Regional Piscataway Biosolids Facility would be realized by WSSC instead of DC Water with the Blue Plains alternative.

The estimated capital cost of the recommended Piscataway solution is \$107 - \$117 million, depending on whether the Exelys or Cambi thermal hydrolysis (TH) pretreatment process is utilized. Estimated annual savings (reduction in biosolids hauling and electricity production) is \$3.65 - \$3.72 million depending on whether the Exelys or Cambi TH pretreatment process is utilized. Deducting the anticipated \$50 million capital cost of the baseline during the next 20 years (upgrades necessary to Western Branch incinerators, Seneca, Piscataway, Parkway, and Damascus dewatering facilities) from the capital cost estimate of the recommended solution, the net AD/CHP cost estimate is **\$57 - \$67 million**, depending on whether the Exelys or Cambi TH process is implemented.

A separate Septage Discharge Facility Study (Contract no. CM4363A06) was completed by Johnson Mirmiran & Thompson with Final Reports (one for each county) dated July, 2012 that recommend FOG and septage receiving facilities in each county. Considering the value that FOG has in the anaerobic digestion process and enhancing digester gas production, the AD/CHP study recommends co-locating a FOG receiving facility at the Piscataway plant adjacent to the anaerobic digestion process. Understanding that FOG and septage receiving facilities are necessary in each county to accommodate haulers, it is recommended to design and construct septage and FOG receiving facilities at the abandoned Rock Creek WWTP in Montgomery County, septage and FOG receiving facilities at Piscataway as part of the WSSC Regional Piscataway Biosolids Facility and a septage receiving facility at the Anacostia WWPS in Prince George's County.

Benefits of the Recommended Solution

Environmental Benefits

- Recover net 1.7 MW of renewable energy from biomass if a 2 MW CHP system implemented (with potential to recover 2.6 MW if 3 MW CHP system implemented)
- Reduce Greenhouse Gas production by 11,800 tons/yr (15%)
- Reduce biosolids output by more than 50,500 wet tons/yr (66%)
- Reduce lime demand by 4,100 tons/yr (100% used in wastewater treatment)
- Reduce nutrient load to Chesapeake Bay
- Reduce 5 MG/yr Grease discharge to sewers
- Produce Class A Biosolids

Anaerobic Digestion/Combined Heat and Power Feasibility Study

Overall Executive Summary

Economic Benefits

- Recover > \$1.5 Million/yr of renewable energy costs
- Reduce biosolids disposal costs by \$1.7 Million/yr
- Reduce chemical (lime) cost by \$0.5 Million/yr
- Payback of 15 - 18 years (compared to baseline)

Project Delivery Method

Several project delivery methods could be considered for the Recommended Solution at Piscataway from traditional design/bid/build to design/build for the entire project, or breaking distinct pieces into performance based contracts. For example, the TH process vendor could furnish and install their system - \$12.8 million for Exelys and \$22.8 million for Cambi- at no capital cost to WSSC and be paid back by the additional gas produced beyond that of conventional MAD (typically 30% increase in gas production).

Energy performance contracting could be used to separate the CHP system - \$11.2 million - from the remainder of the TH/AD facility. In this manner, a third party would design, construct and operate the CHP system and sell energy produced back to WSSC at a fixed (reduced) rate over a fixed period of time. This method would reduce the overall capital cost of the project and also eliminate the associated O&M costs that would all be rolled into the cost of energy buy back from the CHP facility. A version of this method was used by the City of Baltimore at the Back River WWTP for their CHP facility.

Study Approach

The AD/CHP study was comprised of three main tasks:

- Task I included evaluations of the existing and future conditions of the plants and analyzing various alternative technologies to determine the most viable and cost effective technical approaches by which to recover and reuse energy from biosolids while reducing disposal volume.
- Task II included evaluations of short listed alternatives for more detailed economic and noneconomic analyses.
- Task III included development of Preliminary Engineering Reports for Seneca (Volume I), Piscataway (Volume II), and the Additional Alternatives, as well as a concept design for the recommended alternative (Volume III).

Task I Summary

The evaluation conducted under Task 1 resulted in the following Final Technical Memoranda briefly summarized below and contained in **Volume IV**:

TM 1B: Documenting Existing Treatment Plant Conditions

TM 1B focused on the Seneca and Piscataway WWTPs as per the original scope. This TM included development of baseline assumptions, flows and loads and evaluations of existing treatment plant conditions used for subsequent analyses. The flows and loads are summarized together with those of the other three WWTPs in the summary of TM A1.

Anaerobic Digestion and Combined Heat and Power

Briefing to Montgomery County

December 2013

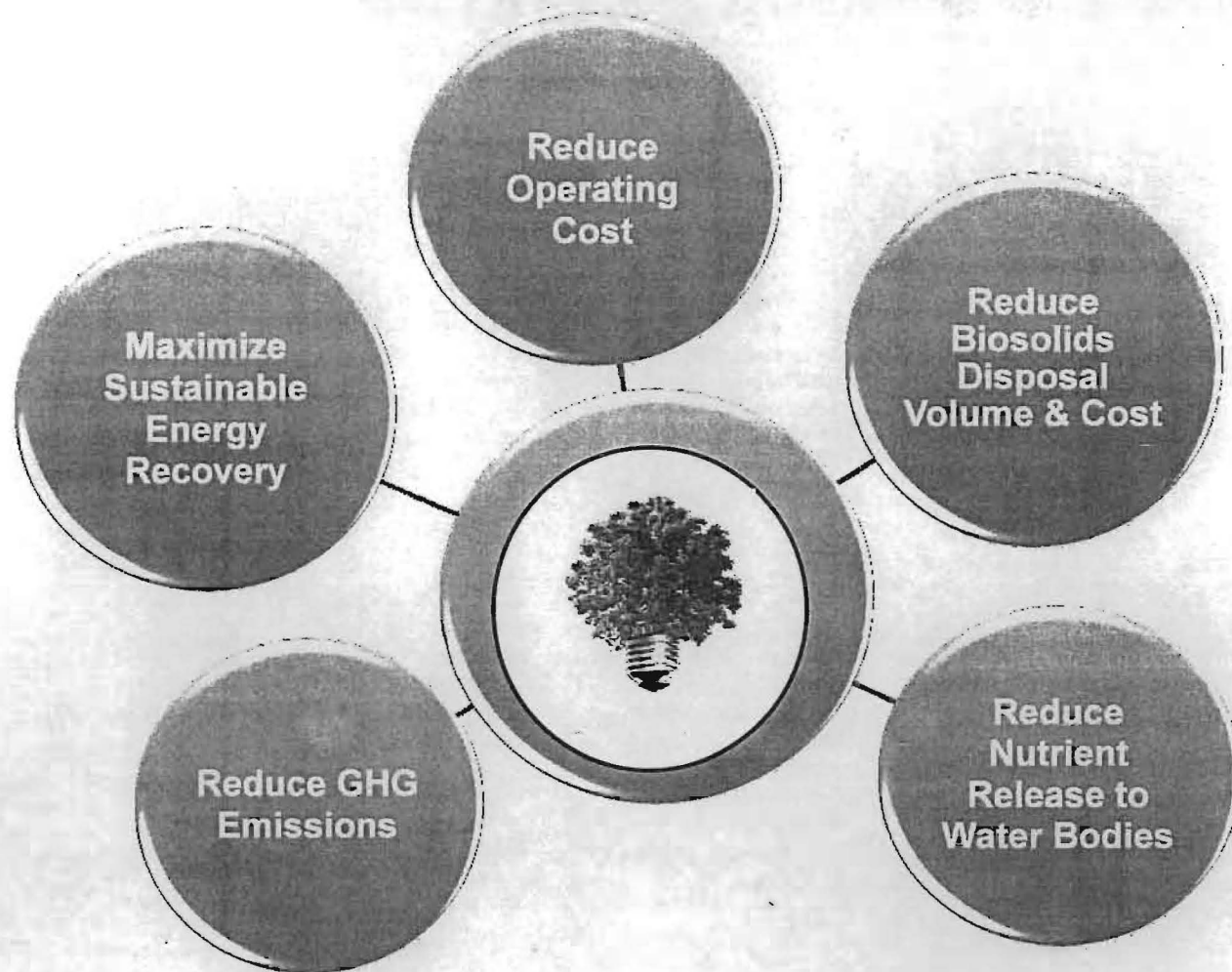


Agenda

- Project Scope and Objectives
- Technical Approaches studied
- Recommendations & Benefits
- Post Study Timeline
- Next Steps

Projects Scope & Objectives

- Assess the ***technical & economical feasibility*** of implementing an alternative biosolids management approach to ***reduce fossil fuel derived energy and biosolids disposal***
- Supported by a \$570,900 Grant from the Department of Energy Biomass program



Technologies Studied

- 8 Anaerobic Digestion Processes

- Conventional Mesophilic
- Thermophilic
- Temperature Phased Anaerobic Digestion (TPAD)
- Staged Thermophilic Anaerobic Digestion (STAD)
- Acid Gas Anaerobic Digestion.
- Autothermal Thermophilic Aerobic Digestion – Temperature Phased Anaerobic Digestion (ATAD-TPAD)
- Extended Solids Retention (ESR)
- Pre-Digestion Pasteurization

- 8 Pre-Treatment Processes

- Extended Solids Retention (ESR)
- Pre-Digestion Pasteurization
- OpenCEL® Pulsed Power
- Siemens Crown Disintegration ®
- Sludge Squeezer ®
- Micro Sludge ®
- Westfalia Separator's Biogas Plus ®
- Sonolyzer® Ultrasonic Treatment
- BioCrack®
- Thermal Hydrolysis (Cambi ® or Exelys ®)

- 6 Sidestream Treatment Processes

- Biological:

- Nitrification / Denitrification & Bio-augmentation
- Nitrification / Denitrification
- Deammonification

- Physical-Chemical:

- Ammonia Stripping
- Ion Exchange
- Struvite Precipitation

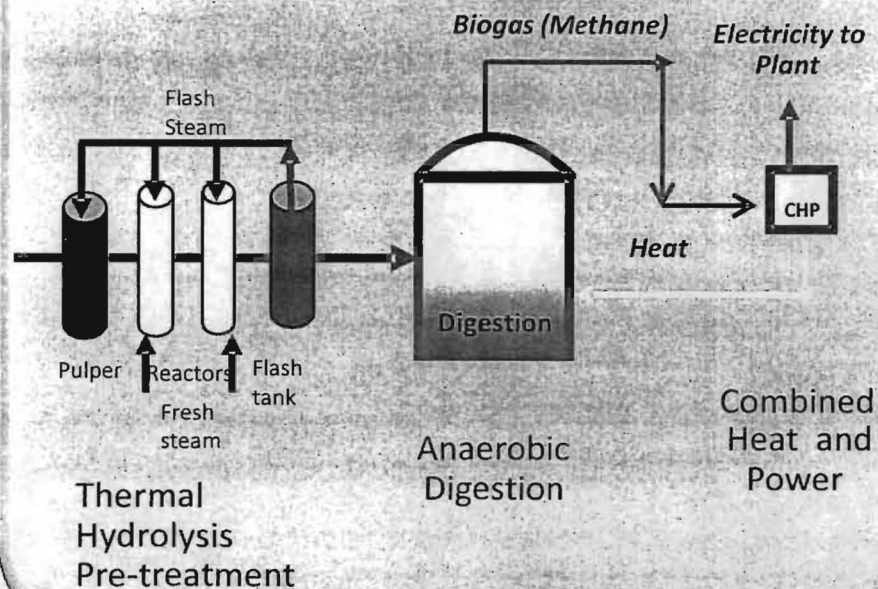
- 2 Gasification Processes

- Kruger Drying and Energy Recovery System
- MaxWest Drying and Gasification System

Two Shortlisted Technical Approaches

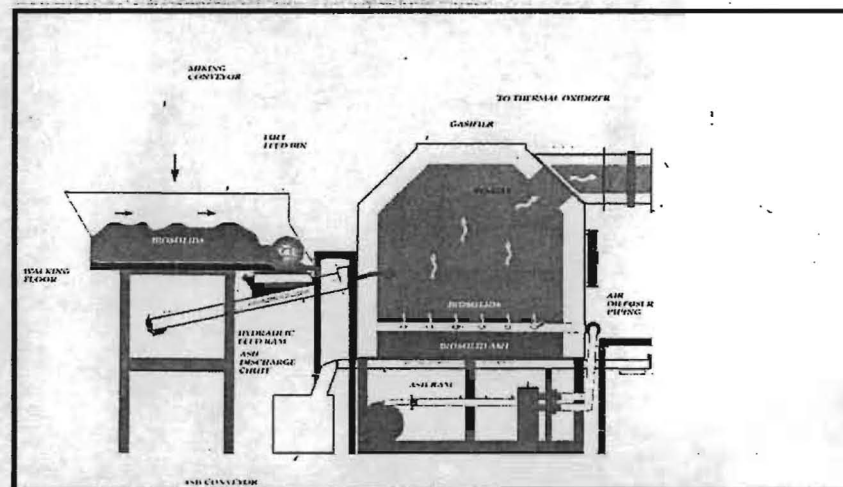
Thermal Hydrolysis / Anaerobic Digestion / CHP

Maximizes Energy Recovery
Reduces Disposal Volume



Drying / Gasification

Minimizes Disposal Volume



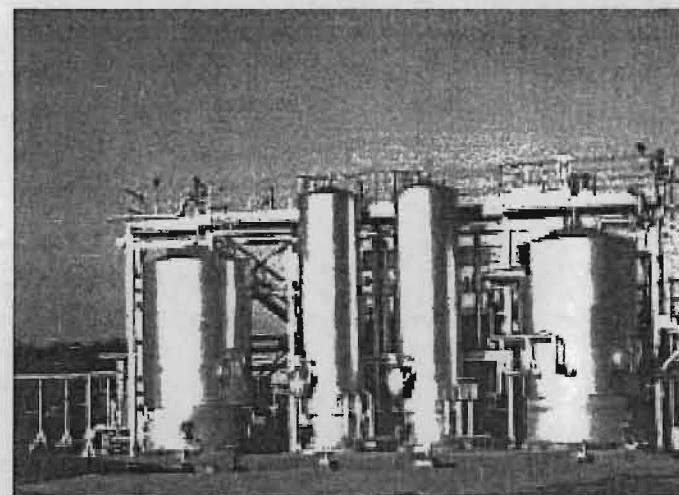
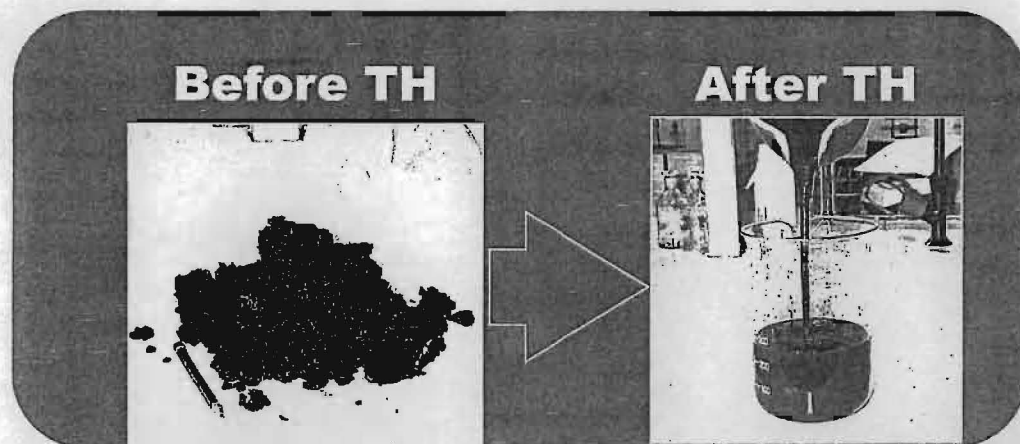
Thermal Hydrolysis (Pre-treatment) Optimizes Anaerobic Digestion

Benefits

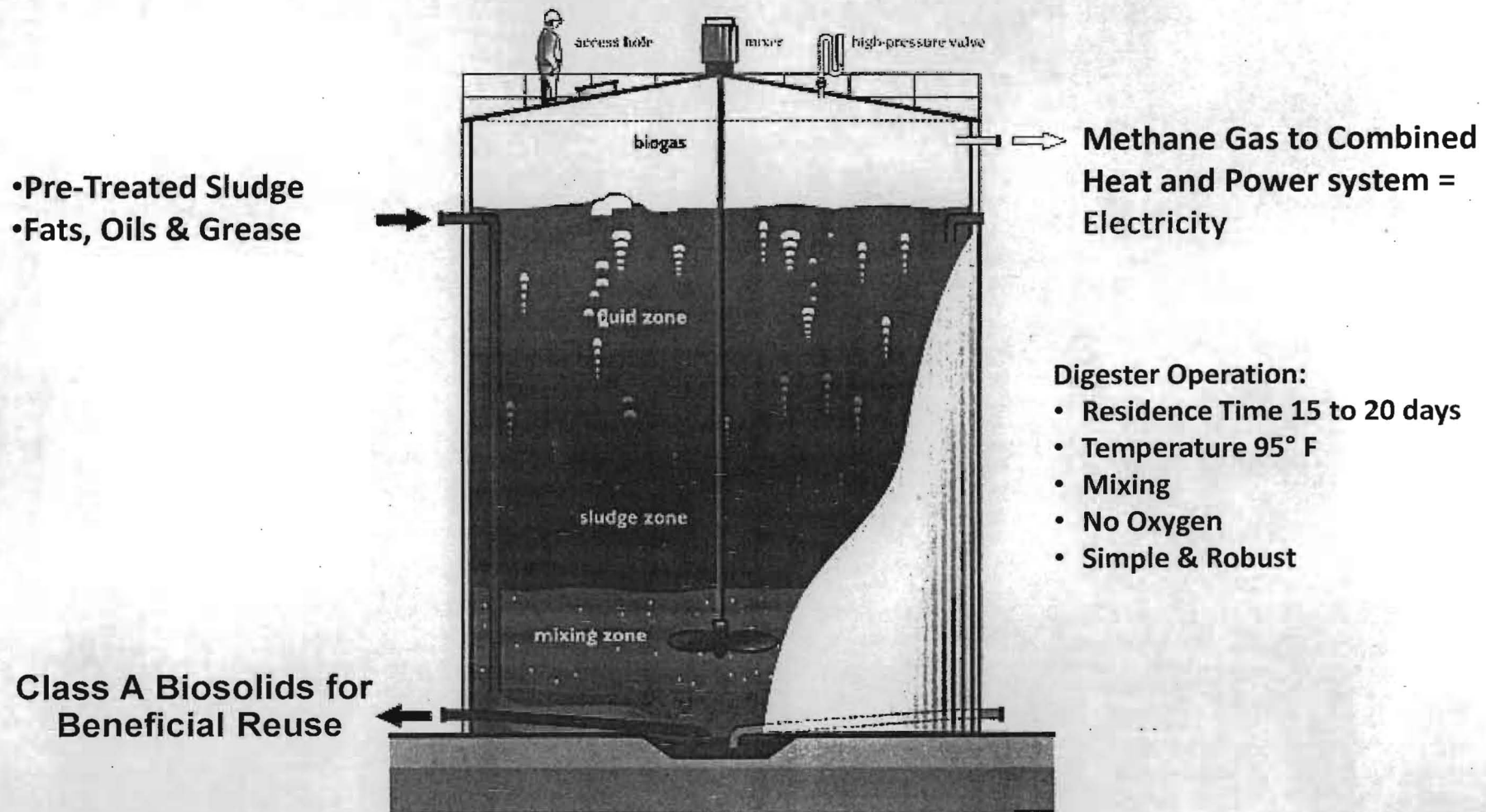
- Proven technology
- Improves digested volume reduction
- Sterilizes Sludge (Class A)
- Improves anaerobic digestion
 - Increases Energy Recovery
 - Reduces Volume for Hauling
 - Reduces Odor in Biosolids

Process

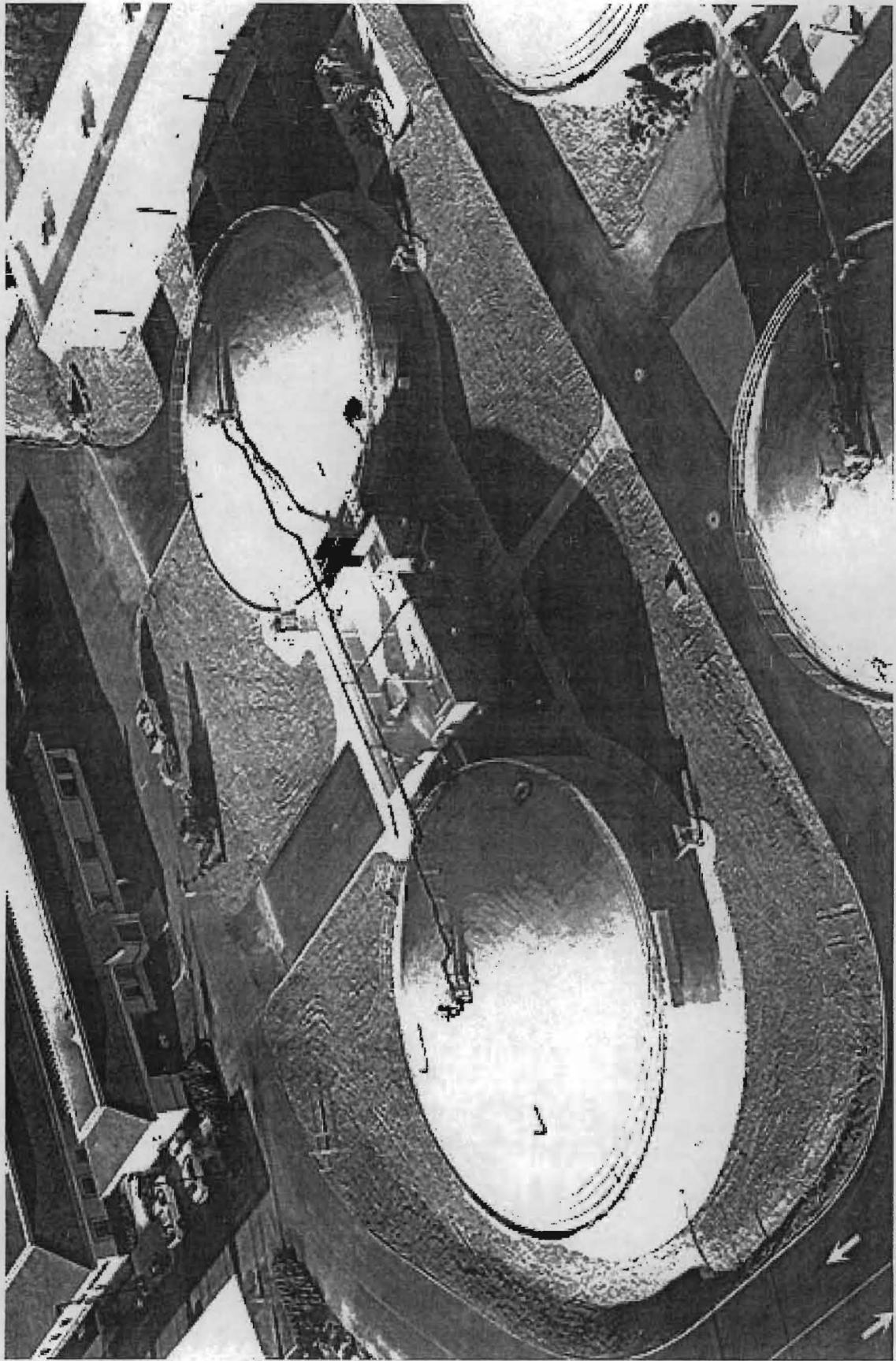
- Treat dewatered sludge prior to anaerobic digestion, at high temperature (320°F) and high pressure (90psi)



How an Anaerobic Digester Works

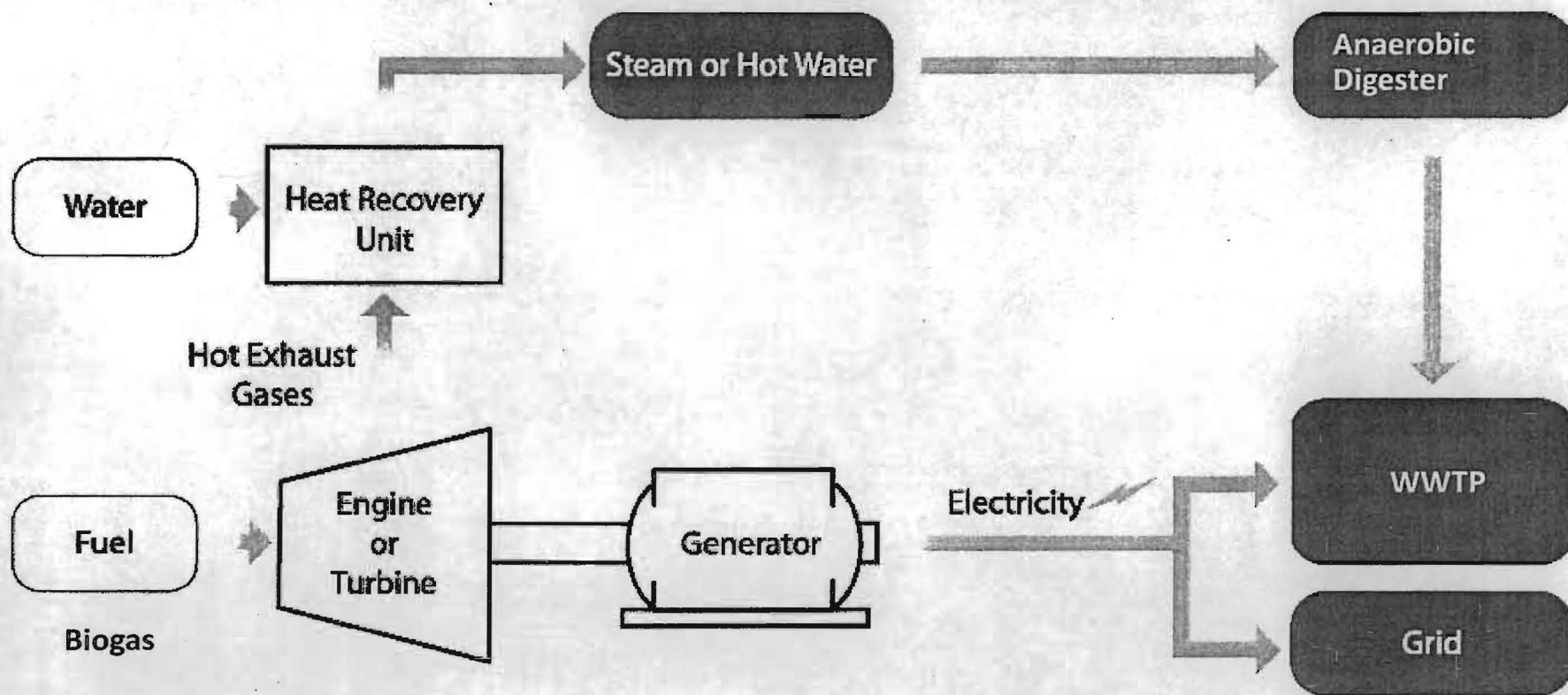


Anaerobic Digesters

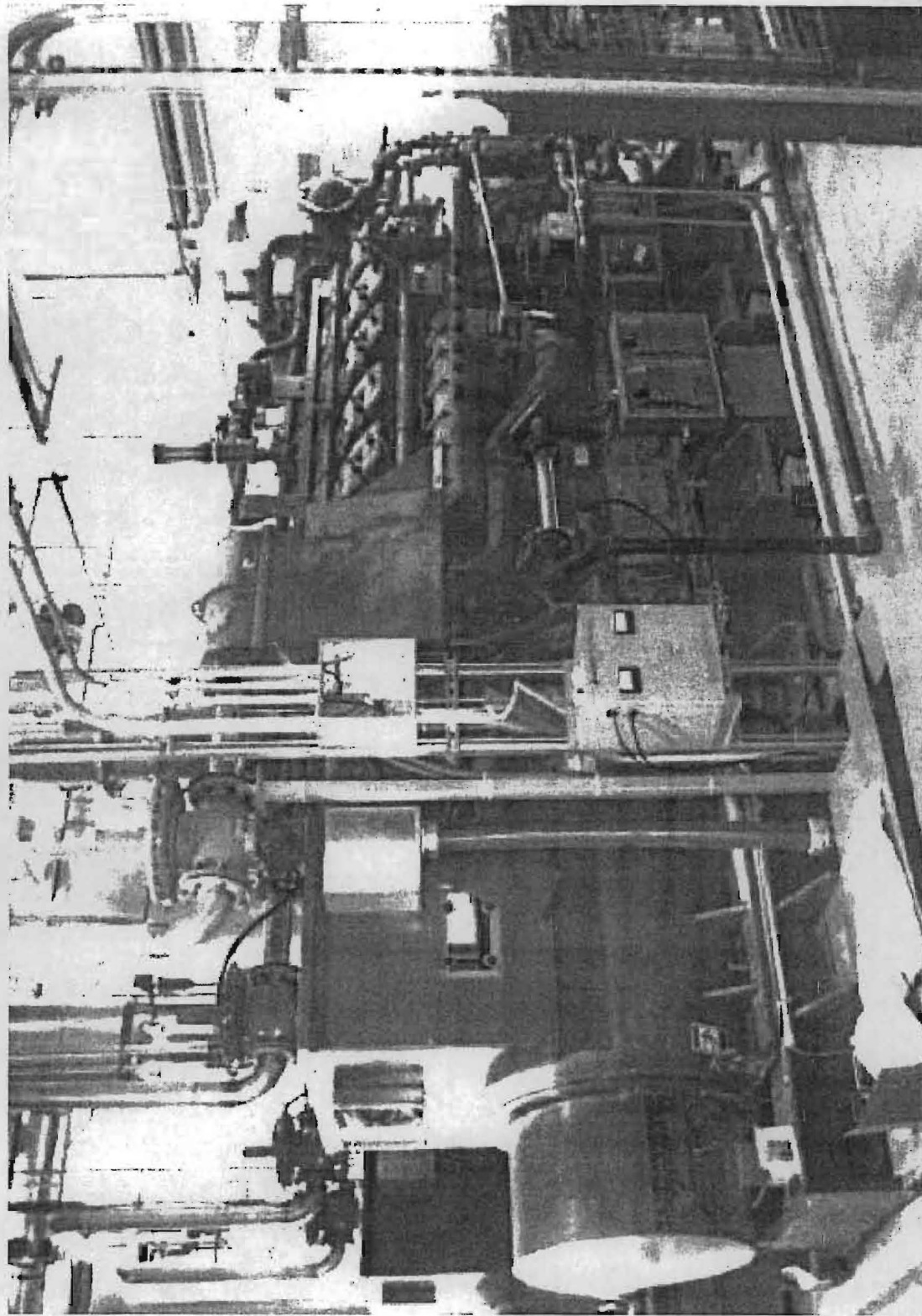


What is Combined Heat and Power?

- Sequential or simultaneous generation of multiple forms of useful energy (usually mechanical and thermal) in a single, integrated system



Combined Heat & Power (CHP)



Class B vs Class A Biosolids

Currently produce Class B Biosolids

- **Class B:**
 - Reduces pathogens but doesn't eliminate them. Stringent restrictions on application to protect public health and safety
 - Process for Significant Pathogen Reduction (PSRP)
 - Some Approved PSRPs: Anaerobic Digestion, Aerobic Digestion, Lime Stabilization & Air Drying

Class A Biosolids have fewer restrictions

- **Class A:**
 - Further reduction of pathogens than Class B. Less restrictions on distribution and application. Potential to market.
 - Process for Further Pathogen Reduction (PFRP)
 - Some approved PFRPs: Heat Drying, Pasteurization, Gamma Irradiation.

Recent Regulatory Impacts on Land Application

- Maryland:
 - Land application is now banned starting in 2016 in winter and severely restricted in fall.
 - Regulatory actions underway that will limit land application of biosolids based on Phosphorus Management Tool.
 - This will result in 30% -50% reduction in land for biosolids application.
- Pennsylvania, Virginia, and other nearby States:
 - Could harden its land application regulations due to large influx of biosolids from Maryland due to Maryland regulations restrictions.
- **Long Term outlook: Land application will become more expensive due to longer hauling distances and possible winter storage costs.**

Short-Listed TH/AD/CHP Alternatives

Centralized Option 1:

1. Seneca
2. Damascus
3. Parkway
4. Piscataway
5. West Branch

Piscataway Facility

\$452/DT average
 Net Capital Cost = \$45M
 O&M Savings/yr = \$3.6M
 Payback = 12.5 yrs

Centralized Option 2:

1. Seneca
2. Damascus
3. Parkway
4. Piscataway
5. West Branch

Blue Plains Facility

\$502/DT (revised min tipping fee)
 Capital Cost 46% Share = \$36M
 O&M Savings/yr = (\$0.5M)
 Payback = N/A

Regional Option 3:

1. Seneca
2. Damascus

Seneca Facility

3. Parkway
4. Piscataway
5. West Branch

Piscataway Facility

\$496/DT
 Net Capital Cost = \$70M
 O&M Savings/yr = \$3.8M
 Payback = 18.3 yrs

Regional/Centralized Option 4:

1. Seneca
2. Damascus
3. Parkway
4. Piscataway

Piscataway Facility

West Branch Facility (existing)

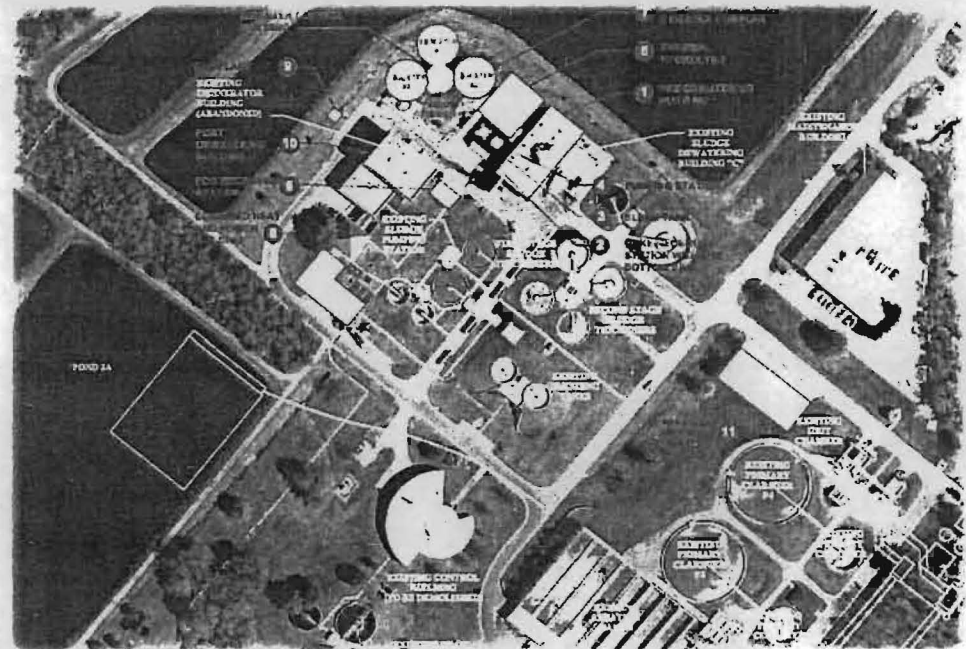
\$485/DT average
 Net Capital Cost = \$60M
 O&M Savings/yr = \$3.7M
 Payback = 16.5 yrs

Recommendation – Regional Piscataway Facility

Regional Piscataway
TH/AD/CHP

+ Western Branch
Incineration

- Sized to receive sludge from all WWTPs (without Western Branch) with option to receive Western Branch emergency sludge
- Cost based on 2 MW CHP



Recommended Plan Will Deliver The Following Benefits- Starting 2020

Environmental Benefits

- Recover **1.7 MW** of renewable energy from biomass
- Reduce Greenhouse Gas production by **11,800 tons/yr**
 - Reduce biosolids output by more than **50,500 tons/yr**
 - Reduce lime demand by **4,100 tons/yr**
- Reduce nutrient load to Chesapeake Bay
- Reduce **5 MG/yr** Grease discharge to sewers
- Produce Class A Biosolids

Economic Benefits

- Recover > **\$1.5 Million/yr** of renewable energy costs
- Reduce biosolids disposal costs by **\$1.7 Million/yr**
- Payback of 15 - 18 years

Community Benefits

- Job creation – construction
- Mitigate increase of WSSC Customer Rates

AD/CHP Project – Post Study Timeline

- Briefed Commission on 4/18/12 and 7/18/12.
- Held Joint Briefing on 4/23/12 with Montgomery County DEP and Prince George's County DER.
- Ruled out City of Baltimore as an option.
- Met with Blue Plains Staff on 5/22/12 to rule out Blue Plains option.
- Met with Prince George's County Recycling Group and GBB Consultants on 8/7/12 to discuss County's Food Waste Program.
- Met with Prince George's County DER and Montgomery County DEP on 10/11/12 to present study recommendations.
- Met with DC Water on 1/10/13 to re-verify pricing structure and study assumptions of DC Water option.
- Presented project recommendations to Prince George's DER and County Executive Staff on 5/2/13.
- Approached by MEA and MDE on 9/20/13 to pursue MEA grant funding.

AD/CHP Project Next Steps

- Obtain Counties approval for the Design and Construction of an AD/CHP facility at Piscataway
- Plan Acquisition Strategies: FY14
- Bring Program Manager on-board: FY15
- Begin Construction: FY17
- Begin operation of AD/CHP facility: FY20

WSSC
Anaerobic Digestion/Combined Heat and Power Project
Additional Information on County Executive's Recommendation

- The County Executive supports the Anaerobic Digestion technology that is the basis for this project and further feels this technology is the next step in biosolids management.
- Due to the following fiscal considerations, the County Executive recommends waiting until a final assessment can be made by DC Water as to the feasibility of using the Blue Plains digester to process WSSC biosolids:
 - 1) WSSC is already contributing to a digester facility at Blue Plains. If it is determined that these facilities can accommodate WSSC's biosolids, the decision to proceed with the Anaerobic Digester project should be weighed against WSSC's current investment at Blue Plains.
 - 2) There is also a possibility for the need for an additional train in the facilities at Blue Plains and WSSC would have to invest in this additional capital item, estimated at \$36 million, regardless of whether the Anaerobic Digester project proceeds.
 - 3) The Federal Aid assumed in the project funding and expenditure schedule, at this point, is only an estimate and remains speculative. The estimate is also on the high end of the possible aid amounts. Therefore, the project should be evaluated based on its total cost of \$144 million.
 - 4) Executive Staff have not received an itemized accounting of the total capital costs of the project. WSSC has indicated the net cost of the project is \$60 million. A clear, itemized accounting detailing how the cost of the project was reduced from \$144 million to \$60 million through various capital cost credits has not been provided by WSSC.
 - 5) Taking into account the points raised above, the County Executive concluded it would not be fiscally sound to proceed with a CIP project that is this large without waiting until a final assessment on the Blue Plains option is available.

To illustrate this point, on a percentage basis, funds assumed in the Anaerobic Digestion/ Combined Heat and Power project could provide for the following WSSC CIP projects:

 - 19% of the total Water Reconstruction program; or
 - 34% of the total Sewer Reconstruction program; or
 - 99% of the total budget for the Bi-County water tunnel; or
 - The entirety of the Specialty Valve replacement program.