

UB00
Maryland Environmental Service

Capital Budget Summary

Summary of State-owned Projects Funded in Governor's Request
(\$ in Millions)

<i>Project Title</i>	<i>Prior Approp.</i>	<i>FY 2014 Request</i>	<i>Future Estimated</i>	<i>Estimated Total</i>	<i>DLS FY 2014 Recommd.</i>
Rocky Gap State Park – Wastewater Treatment Plant Improvements	\$0.341	\$2.000	\$2.173	\$4.514	\$2.000
Charlotte Hall Veterans Home – Wastewater Treatment Plant Improvements	0.210	1.700	1.757	3.667	1.700
Southern Maryland Pre-Release Unit – Wastewater Treatment Plant Improvements	0.198	1.500	1.500	3.198	1.500
Total	\$0.749	\$5.200	\$5.430	\$11.379	\$5.200

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Summary of Updates

Project Updates: The Maryland Environmental Service (MES) has a number of projects in various states of completion. Projects include the Eastern Correctional Institution – Wastewater Treatment Plant (WWTP) Improvements, Dorsey Run Advanced WWTP Improvements, and the Freedom District WWTP Upgrade. In addition, North Bay LLC is considering the option of expanding their facilities at the beach, which could impact Elk Neck State Park’s WWTP.

Communication with the Maryland Department of the Environment: There has been some concern that MES has been in a reactive role when it comes to new permits for drinking water and wastewater treatment plants that it runs for the State. MES indicates that it recently met with the Director of the Water Management Administration at the Maryland Department of the Environment (MDE) and the manager of the Wastewater Permits Program to discuss ways to improve its planning efforts. At the meeting, the suggestion was made to meet with MDE’s Science Services Administration as well since the Science Services Administration assesses entire watersheds and develops more global needs and pollution limits. MES plans to schedule a meeting with the Science Services Administration in the near future in order to coincide with its Water and Wastewater Master Plan update.

Master Plan Update: MES completed a revision of its Water and Wastewater Master Plan in September 2011. Staff is beginning to review and update the plan with planned distribution in January 2014. MES does not anticipate making any major changes to the format of the plan.

Summary of Recommended Bond Actions

1. Rocky Gap State Park – Wastewater Treatment Plant Improvements

Approve the \$2,000,000 general obligation bond authorization for the Rocky Gap State Park – Wastewater Treatment Plant Improvements.

2. Charlotte Hall Veterans Home Wastewater Treatment Plant Improvements

Approve the \$1,700,000 general obligation bond authorization for the Charlotte Hall Veterans Home – Wastewater Treatment Plant Improvements.

3. Southern Pre-Release Unit – Wastewater Treatment Plant Improvements

Approve the \$1,500,000 general obligation bond authorization for the Southern Maryland Pre-Release Unit – Wastewater Treatment Plant Improvements.

4. Section 12 – MES – Infrastructure Improvement Fund

Approve the \$5,430,000 fiscal 2015 general obligation bond pre-authorization for the Rocky Gap State Park – Wastewater Treatment Plant Improvements (\$2,173,000), Charlotte Hall Veterans Home – Wastewater Treatment Plant Improvements (\$1,757,000), and Southern Maryland Pre-Release Unit – Wastewater Treatment Plant Improvements (\$1,500,000).

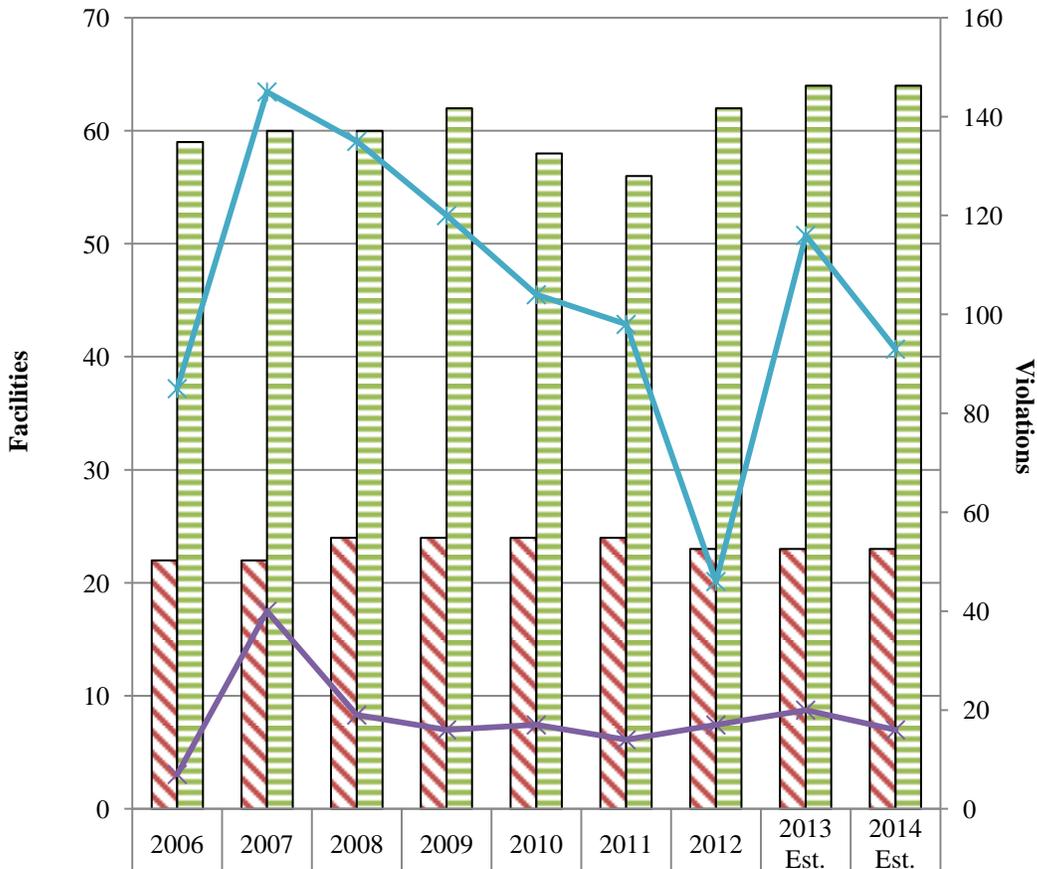
Agency Performance Measures and Outputs/Population Data

The Maryland Environmental Service (MES) was created by statute (Chapter 240 of 1970) as an independent agency. Executive Order 01.01.1971.11 stipulated that MES has responsibility for the operation and maintenance of all State-owned sewage treatment and solid waste disposal facilities. MES then became incorporated into the Department of Natural Resources (DNR) in 1972. During the 1993 session, the General Assembly adopted legislation (Chapter 196 of 1993) that created MES as an instrumentality of the State and a public corporation independent of DNR. MES provides technical services including engineering, design, financing, construction, and operation of water supply and wastewater treatment facilities, among other activities.

The State Water and Sewer Infrastructure Improvement Fund was established to provide for capital improvements of State-owned and operated water treatment and wastewater treatment plants (WWTP); water distribution and sewer collection systems; and water towers. Since fiscal 1999, funding for capital maintenance projects relating to water and WWTP has been budgeted under MES. Prior to this, the State budgeted capital maintenance funds for these projects in the Department of General Services' Facilities Renewal Program. Facilities renewal funds pay for major rehabilitation activities at State-owned facilities. This change was made in order to display more clearly the capital cost of MES-operated State facilities. According to the Department of Budget and Management, MES operates 215 water and WWTPs in Maryland – 65 are State-owned, and 150 are operated by MES for a local government or corporate owner.

MES's performance measures relate to three goals, one of which is to improve the environment through MES's activities. One output for this goal is a reduction in the number of local/corporate and State National Pollutant Discharge Elimination System violations. **Exhibit 1** shows that MES has a greater number of local/corporate clients than State clients and that violations are proportionate to the number of clients of each type. Between fiscal 2007 and 2012, violations declined for both local/corporate clients and State clients, but they are estimated to increase between fiscal 2012 and 2013. The increase in the number of estimated violations between fiscal 2012 and 2013 for local/corporate clients appears to correlate with the increase in the number of local/corporate facilities.

**Exhibit 1
Local/Corporate and State NPDES Violations
Fiscal 2006-2014**



	2006	2007	2008	2009	2010	2011	2012	2013 Est.	2014 Est.
State Facilities	22	22	24	24	24	24	23	23	23
Local/Corporate Facilities	59	60	60	62	58	56	62	64	64
NPDES Violations for State Facilities	7	40	19	16	17	14	17	20	16
NPDES Violations for Local/Corporate Facilities	85	145	135	120	104	98	46	116	93
Compliance Level					99.8%	99.8%	99.9%	99.8%	99.9%

NPDES: National Pollutant Discharge Elimination System

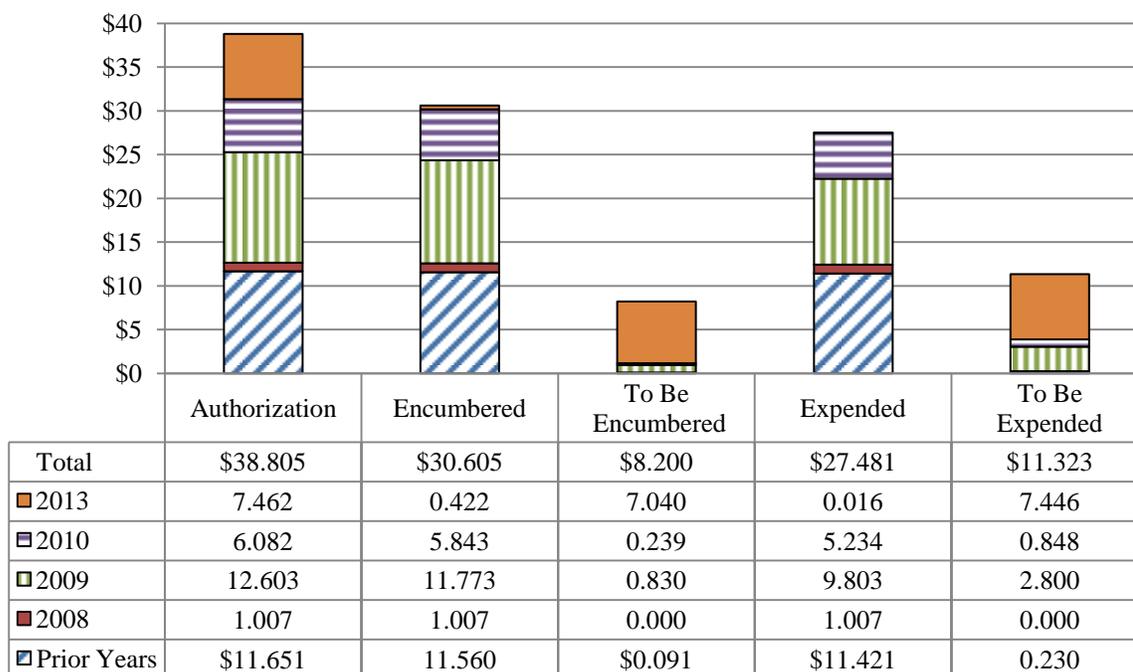
Source: Governor’s Budget Books, Fiscal 2007-2014

Between fiscal 2006 and the 2014 estimate, State facilities have averaged 15% of the total violations while accounting for 28% of the facilities handled by MES. MES indicates the reason for this low percentage of violations at State facilities is MES’s ability to use State funding to make improvements at State treatment facilities. In contrast, MES is dependent upon its corporate clients, including small municipalities, to fund improvements, which they may not always have the resources to do.

Encumbrances and Expenditures

MES’s encumbrance and expenditure history for the State Water and Sewer Infrastructure Improvement Fund is shown in **Exhibit 2**. Overall, \$38.8 million in general obligation bonds have been authorized. Of this amount, MES has encumbered \$30.6 million; \$8.2 million remains to be encumbered. The majority of the funding remaining to be encumbered was authorized in fiscal 2013.

Exhibit 2
Infrastructure Improvement Fund Encumbrances and Expenditures
Program Inception through February 2013
(\$ in Millions)



Note: No funding was provided in either fiscal 2011 or 2012.

Source: Maryland Environmental Service

Capital Improvement Program

State-owned Capital Improvement Program (\$ in Millions)

<i>Projects</i>	<i>2014 Request</i>	<i>2015 Est.</i>	<i>2016 Est.</i>	<i>2017 Est.</i>	<i>2018 Est.</i>
2013 CIP	\$5.200	\$13.900	\$13.350	\$13.450	\$13.300
2012 CIP	14.550	11.200	9.950	13.350	0.000
Difference	-\$9.350	\$2.700	\$3.400	\$0.100	\$13.300

CIP: *Capital Improvement Program*

Note: The State Water and Sewer Infrastructure Improvement Fund is funded by general obligation bonds. No funding is reflected beyond the CIP because that is the five-year planning period used by the Administration. Estimates for programmed funding for fiscal 2018 for the 2012 CIP are outside the five-year planning period.

The *Capital Improvement Program* (CIP) has changed between the 2012 and 2013 editions. The 2012 CIP amount programmed for fiscal 2014 was \$14.6 million, which has been reduced to \$5.2 million in the 2013 CIP. MES indicates that the decision to reduce the funding level for fiscal 2014 was based on updated schedules and estimated dates for when the construction documents for projects would be ready for bid. The projects deferred due to the change in the CIP include Victor Cullen Youth Center WWTP upgrades, Maryland Correctional Institution – Hagerstown WWTP Upgrades, and Cunningham Falls Wastewater Collection and Water Distribution System Improvements. Funding for these projects will be requested in the fiscal 2015 budget, which is programmed for \$13.9 million in the 2013 CIP.

Budget Overview

MES’s fiscal 2014 authorization includes \$5.2 million in general obligation bond authorization for three projects. In addition, there is a pre-authorization of funding for fiscal 2015.

Projects

Fiscal 2014 funding reflects the second year of funding after the two-year period – fiscal 2011 and 2012 – in which MES received no funding. The three projects included in the fiscal 2014 allowance are shown in **Exhibit 3**.

Exhibit 3 Fiscal 2014 Project Funding

<u>State Unit(s)</u>	<u>Project</u>	<u>Jurisdiction</u>	<u>2014 Allowance</u>
Rocky Gap State Park	WWTP Improvements	Allegany County	\$2,000,000
Charlotte Hall Veterans Home	WWTP Improvements	St. Mary’s County	1,700,000
Southern Maryland Pre-Release Unit	WWTP Improvements	St. Mary’s County	1,500,000
Total			\$5,200,000

MCI: Maryland Correctional Institution
 WWTP: wastewater treatment plant

Source: Department of Budget and Management Capital Budget Worksheets

Rocky Gap State Park – WWTP Improvements

The Rocky Gap State Park is a DNR park located in Allegany County. Water and wastewater treatment needs are expected to rise with the awarding of a contract to install video lottery terminals at Rocky Gap State Park. The WWTP was built in 1973 and is in need of both capacity expansion and general improvements.

The WWTP improvements project is budgeted for \$2,000,000 in construction funding in fiscal 2014. Previously, \$341,000 in planning funding was authorized in fiscal 2013. Future funding of \$2,173,000 is pre-authorized for fiscal 2015 to complete construction for an estimated total project cost of \$4,514,000. Proposed fiscal 2014 project components are shown in **Exhibit 4**.

Exhibit 4
Rocky Gap State Park – WWTP Improvements
Fiscal 2014

<u>Problem</u>	<u>Description</u>	<u>Solution</u>
Flow Equalization Tank/Capacity	Peak hourly flows of 300,000 gallons per day exceed the 240,000 gallons per day peak capacity. The addition of video lottery terminals to Rocky Gap State Park will raise the average daily flow beyond the 120,000 gallons per day current capacity; 150,000 gallons per day capacity is needed.	Construct a new flow equalization tank.
Headworks	The headworks system for removing large debris at the head of the plant is in need of replacement: the mechanical bar screen is 16 years old and in need of frequent maintenance.	Construct a new headworks system.
Piping and Valves; Clarifiers	Pipes are failing at the joints and fittings, which eventually could compromise the supply of microorganisms being returned in sludge for organic breakdown of nutrients. Clarifier drives are failing.	Construct a new treatment process.
Filters	Undersized filters and frequent maintenance needs mean that wastewater flow is restricted.	Upgrade to new filters or possibly membranes.
Structure	The office does not meet building and electrical codes and Occupational Safety and Health Administration handrail requirements. In addition, the office is too small.	Construct improvements to the existing office building.
Infrastructure	The 40-year-old distribution system is undersized to meet projected demands; pump stations are outdated and need to be upgraded.	Construct infrastructure upgrades.

Source: Department of Budget and Management, Capital Budget Worksheets

The current plan is to complete the design in August 2013 and begin construction in December 2013. This will allow for only four months for bidding the construction, which is comparable to expectations for MES’s other projects but is still a compressed time period. The regional construction factor is set at 95%, which reduces the construction cost. In addition, the architectural and basic services percentage is a little high, but still reasonable, at 8.6%. **The Department of Legislative Services (DLS) recommends that MES comment on whether it will meet the current design and construction schedule.**

Charlotte Hall Veterans Home – WWTP Improvements

The Charlotte Hall Veterans Home is an assisted living and skilled nursing long-term facility operated by the Maryland Department of Veterans Affairs in St. Mary's County. The WWTP was originally completed in 1984 and rated at 55,000 gallons per day. Subsequently, the Charlotte Hall Veterans Home was expanded from a 250-bed facility to a 504-bed facility with attendant improvements to the WWTP. The new permit allowed for the total discharge of 67,000 gallons per day, disposed of via rapid infiltration basins. The spray irrigation fields are designed for 20,000 gallons per day.

The WWTP was last upgraded in 1993 and is in need of both expanded treatment capacity and modifications to allow it to meet the nitrogen limits. Currently, there are 384 patients and 320 staff. The new groundwater discharge permit issued on September 1, 2012, requires wells proximate to the rapid infiltration basins to have a total nitrogen limit of 10 milligrams per liter.

The WWTP improvements project is budgeted for \$1,700,000 in construction funding in fiscal 2014. Future funding of \$1,757,000 for completion of construction is pre-authorized for fiscal 2015. In conjunction with \$210,000 in prior year planning funding, the total project cost is \$3,667,000. Proposed fiscal 2014 project components are shown in **Exhibit 5**.

Design was originally anticipated to be completed by June 2012. However, the project is now at the 90% design documents stage and is anticipated to be completed at the end of March 2013. If MES advertises for bids in May 2013, then it indicates it will be able to start construction as planned in October 2013, once the four-month bidding process is completed. The regional construction factor is set at 95%, which reduces the construction cost. In addition, the architectural and basic services percentage is reasonable, at 6.4%. **DLS recommends that MES comment on why the design schedule has been pushed back.**

Exhibit 5
Charlotte Hall Veterans Home – WWTP Improvements
Fiscal 2014

<u>Problem</u>	<u>Description</u>	<u>Solution</u>
Pump Stations	Three pump stations need upgrades. Pump Station #1 frequently clogs due to the high grease content of wastewater and is configured poorly for maintenance. Pump Station #2's electrical junction box is located inside the wet well, which is a safety hazard. The Effluent Pump Station's discharge piping shows signs of corrosion.	Install a grease trap, provide an influent channel with bar screen, construct separate valve vaults, and install an alarm system for Pump Station #1; relocate the electrical box for Pump Station #2 above ground; and install an alarm system and replace the pipes and valves at the Effluent Pump Station.
Treatment System	The existing Biolac Treatment System uses three blowers 24 hours a day without a backup, and there is no equalization tank to regulate flows into the system.	Install a new membrane treatment system to replace the existing Biolac System.
Wastewater Treatment and Storage Pond	The wastewater treatment and storage pond was constructed in 1984 and has begun to fail: the pond liner is torn in several sections, the two aerators/mixers are no longer operational, the pond gates are inoperable, and the floating boom has deteriorated.	Replace the pond's liner, replace the floating boom, add floating booms, install four aerators/mixers, and repair concrete pier and outlet gates.
Spray Irrigation Field	The irrigation pipe network has failed, so the WWTP has been relying on the Rapid Infiltration Basins (RIB).	Replace the existing header and lateral pipes, repair or replace valves for spray irrigation fields, install nozzles, and install a sodium hypochlorite feed system for disinfection.
RIB	Two of the three RIBs, which allow treated wastewater to percolate into the soil, are operational. The RIB beds are partially clogged with sediment.	Refurbish the three basins with new piping, and repair the bed of each RIB to allow higher infiltration rates of effluent into the ground.
Monitoring Well	The monitoring well is located in the middle of the infiltration basin and, therefore, does not give a good indication of off-site migration because it is susceptible to contamination.	Install a new monitoring well in an appropriate location.

Source: Department of Budget and Management Capital Budget Worksheets

Southern Maryland Pre-Release Unit – WWTP Improvements

The Southern Maryland Pre-Release Unit is a Department of Public Safety and Correctional Services facility located in Charles County. The WWTP was built in 1979 and last upgraded in 1990. It is in need of both improvements to meet new permit requirements and to maintain the overall condition of the plant.

The WWTP improvements project is budgeted for \$1,500,000 in construction funding in fiscal 2014. Future funding of \$1,500,000 for completion of construction is pre-authorized for fiscal 2015. In conjunction with \$198,000 in prior year planning funding, the total project cost is \$3,198,000. Proposed fiscal 2014 project components are shown in **Exhibit 6**.

Exhibit 6 Southern Maryland Pre-Release Unit – WWTP Improvements Fiscal 2014

<u>Problem</u>	<u>Description</u>	<u>Solution</u>
Biological Treatment	The new permit includes nitrogen discharge limits, which the current extended aeration system will not be able to meet consistently.	Replace the existing system with membranes, aeration blowers, and pumps.
Wastewater Storage	The storage pond rated for eight days has accumulated vegetation and sludge, which decreases storage capacity.	Dredge the pond and repair the pond liner.
Treated Wastewater Disposal	Only one of the two spray irrigation pumping facilities is operational, and the transmission piping to the spray field has ruptured several times due to age and cold weather.	Replace the pumping equipment and associated piping, spray field piping, and spray heads.

Source: Department of Budget and Management, Capital Budget Worksheets

The design completion date was December 2012, but MES indicates the documents are now at the 85% design documents stage. The new completion date is April 2013. MES indicates the construction commencement date of October 2013 is still feasible because bidding takes about four months. The regional construction factor is set at 95%, which reduces the construction cost. In addition, the architectural and basic services percentage is reasonable, at 7%.

Updates

1. Project Updates

MES has a number of projects in various states of completion. **Exhibit 7** shows the current status of some key projects.

Exhibit 7 Project Updates

<u>Project Name</u>	<u>Status</u>
Eastern Correctional Institution – Wastewater Treatment Plant (WWTP) Improvements	Construction of the headworks is in progress and expected to be completed in spring 2013, at \$5,198,160 for design and construction. Expansion and upgrade of the WWTP is in the design phase, using fiscal 2013 funding. The design development report was completed recently. The Maryland Environmental Service (MES) has begun the process of procuring architectural and engineering services for the design and preparation of the construction documents. Construction funds will be requested in fiscal 2016 and 2017.
Dorsey Run Advanced WWTP Improvements	The original improvements project will be completed in March 2013. The Maryland Department of the Environment has asked MES to evaluate the facility to determine if additional improvements are needed to ensure reliability of the enhanced nutrient removal process. The evaluation is underway using Bay Restoration Fund grant funds.
Freedom District WWTP Upgrade	Biological Nutrient Removal and Enhanced Nutrient Removal grant eligibility remains unchanged. The Biological Nutrient Removal grant eligibility is 27.03%, and the Enhanced Nutrient Removal grant eligibility is 32.02%, which represents the State's share from the Bay Restoration Fund. All the non-grant eligible costs are split between Carroll County at 74.3% and the State at 25.7%.
Elk Neck State Park WWTP Upgrade	MES recently heard from the Department of Natural Resources that North Bay LLC is considering the option of expanding their facilities at the beach. Nothing is definite at this time. The WWTP is currently meeting all permit requirements.

Source: Maryland Environmental Service

2. Communication with MDE

There has been some concern that MES has been in a reactive role when it comes to new permits for drinking water and wastewater treatment plants it runs for the State. MES indicates that it recently met with the Director of the Water Management Administration at MDE and the manager of the Wastewater Permits Program to discuss ways to improve its planning efforts. At the meeting, the suggestion was made to meet with MDE’s Science Services Administration as well since the Science Services Administration assesses entire watersheds and develops more global needs and pollution limits. MES plans to schedule a meeting with the Science Services Administration in the near future in order to coincide with this Water and Wastewater Master Plan update.

3. Master Plan Update

MES completed a revision of its Water and Wastewater Master Plan in September 2011. Staff is beginning to review and update the plan with planned distribution in January 2014. MES does not anticipate making any major changes to the format of the plan.

Pre-authorizations and De-authorizations

The fiscal 2014 capital budget bill includes the pre-authorization of \$5,430,000 for fiscal 2015 as reflected in **Exhibit 8**. MES indicates the three projects will be constructed over two fiscal years. **DLS recommends that the pre-authorization of \$5,430,000 in fiscal 2015 for the proposed projects be approved.**

Exhibit 8
Pre-authorizations
Fiscal 2015-2017
(\$ in Millions)

<u>Project</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>Reason</u>
Rocky Gap State Park – Wastewater Treatment Plant Improvements	\$2.173	\$0.000	\$0.000	Complete construction
Charlotte Hall Veterans Home – Wastewater Treatment Plant Improvements	1.757	0.000	0.000	Complete construction
Southern Maryland Pre-Release Unit – Wastewater Treatment Plant Improvements	1.500	0.000	0.000	Complete construction
Total	\$5.430	\$0.000	\$0.000	

Source: Department of Budget and Management, Fiscal 2014 *Capital Improvement Program*

GO Bond Recommended Actions

1. Approve the \$2,000,000 general obligation bond authorization for the Rocky Gap State Park – Wastewater Treatment Plant Improvements.
2. Approve the \$1,700,000 general obligation bond authorization for the Charlotte Hall Veterans Home – Wastewater Treatment Plant Improvements.
3. Approve the \$1,500,000 general obligation bond authorization for the Southern Maryland Pre-Release Unit – Wastewater Treatment Plant Improvements.
4. Approve the \$5,430,000 fiscal 2015 general obligation bond pre-authorization for the Rocky Gap State Park – Wastewater Treatment Plant Improvements (\$2,173,000), Charlotte Hall Veterans Home – Wastewater Treatment Plant Improvements (\$1,757,000), and Southern Maryland Pre-Release Unit – Wastewater Treatment Plant Improvements (\$1,500,000).

Fiscal 2014 Proposed Projects

<u>Subdivision</u>	<u>Project Title</u>	<u>Estimated Cost</u>	<u>Prior Auth.</u>	<u>FY 2014 Amount</u>	<u>Future Request</u>	<u>Total State Share (%)</u>
Allegany	Rocky Gap State Park – Wastewater Treatment Plant Improvements	\$4,514,000	\$341,000	\$2,000,000	\$2,173,000	100.0%
St. Mary’s	Charlotte Hall Veterans Home – Wastewater Treatment Plant Improvements	3,667,000	210,000	1,700,000	1,757,000	100.0%
St. Mary’s	Southern Maryland Pre-Release Unit – Wastewater Treatment Plant Improvements	3,198,000	198,000	1,500,000	1,500,000	100.0%
Total		\$11,379,000	\$749,000	\$5,200,000	\$5,430,000	

Proposed Use of Available Funds

<u>Subdivision</u>	<u>Project Title</u>	<u>Estimated Cost</u>	<u>Prior Auth.</u>	<u>FY 2013 Amount</u>	<u>Future Request</u>	<u>Total State Share (%)</u>
Allegany	Rocky Gap State Park – New Water Treatment Plant	\$4,373,000	\$283,225	\$4,089,775		100.0%
Allegany	Rocky Gap State Park – WWTP Improvements	4,514,000		341,000	\$4,173,000	100.0%
Anne Arundel	Dorsey Run – WWTP Improvements	6,299,272	6,013,630	285,642		100.0%
Carroll	Freedom WWTP Improvements	18,372,000		259,000	2,155,000	13.1%

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<u>Subdivision</u>	<u>Project Title</u>	<u>Estimated Cost</u>	<u>Prior Auth.</u>	<u>FY 2013 Amount</u>	<u>Future Request</u>	<u>Total State Share (%)</u>
Frederick	Cunningham Falls State Park – Wastewater Collection and Water Distribution System Improvements	1,238,000		200,000	1,038,000	100.0%
Somerset	Eastern Correctional Institution – WWTP Improvements	3,417,475	3,334,431	83,044		100.0%
Somerset	Eastern Correctional Institution – WWTP Improvements	26,894,000	6,961,000	1,947,000	17,986,000	100.0%
St. Mary's	Charlotte Hall Veterans Home – WWTP Improvements	3,667,000	198,257	11,743	3,457,000	100.0%
St. Mary's	Southern Maryland Pre-Release Unit – WWTP Improvements	3,198,000	186,430	11,570	3,000,000	100.0%
Washington	MCI-H WWTP Upgrade	5,488,501	365,976	72,024	5,050,501	100.0%
Statewide	State Water Tower Improvements	1,504,000		1,504,000		100.0%
Total		\$78,965,248	\$17,342,949	\$8,804,798	\$36,859,501	

WWTP: wastewater treatment plant