

**UB00**  
**Maryland Environmental Service – Capital**

***Capital Budget Summary***

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

<b>Description</b>	<b>2018 Approp.</b>	<b>2019 Approp.</b>	<b>2020 Request</b>	<b>2021 Est.</b>	<b>2022 Est.</b>	<b>2023 Est.</b>	<b>2024 Est.</b>
State Water and Sewer Infrastructure Improvement Fund	\$19.732	\$9.590	\$15.342	\$21.316	\$21.839	\$17.411	\$16.079
<b>Total</b>	<b>\$19.732</b>	<b>\$9.590</b>	<b>\$15.342</b>	<b>\$21.316</b>	<b>\$21.839</b>	<b>\$17.411</b>	<b>\$16.079</b>

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GO Bonds	19.732	9.590	9.290	10.000	10.000	7.994	6.500
Nonbudgeted	\$0.000	\$0.000	\$6.052	\$11.316	\$11.839	\$9.417	\$9.579
<b>Total</b>	<b>\$19.732</b>	<b>\$9.590</b>	<b>\$15.342</b>	<b>\$21.316</b>	<b>\$21.839</b>	<b>\$17.411</b>	<b>\$16.079</b>

GO: general obligation

Note: The nonbudgeted funds reflect transfer tax special funds from the Department of Natural Resources' Natural Resource Development Fund for Department of Natural Resources projects.

Note: Numbers may not sum to total due to rounding.

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## ***Key Observations***

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- ***National Pollutant Discharge Elimination System (NPDES) Violations Increase:*** The number of NPDES violations increased between fiscal 2017 and 2018. State violations increased from 14 to 77 due to a new discharge permit requirement for the Eastern Correctional Institution (ECI) wastewater treatment plant (WWTP) that took effect January 1, 2018, and violations that occurred during the construction of upgrades at the Freedom WWTP, which is now completed. The corporate violations increased from 143 to 232 due to mechanical issues at a private facility operated by the Maryland Environmental Science (MES), which MES stopped operating at the beginning of fiscal 2019.

## ***Summary of Recommended Bond Actions***

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1. Maryland Environmental Service

Approve the \$9,290,000 general obligation bond authorization for the Maryland Environmental Service’s Infrastructure Improvement Fund.

## ***Program Description***

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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 was incorporated into the Department of Natural Resources (DNR) in 1972. During the 1993 session, the General Assembly adopted legislation (Chapter 196) 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 WWTPs, water distribution and sewer collection systems, and water towers. Since fiscal 1992, funding for capital maintenance projects relating to water and WWTPs 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 more clearly display the capital cost of MES-operated State facilities. MES operates 234 water and wastewater facilities in Maryland of which 96 are State-owned. The remaining 138 are operated by MES under contract with a local government or corporate owner.

## ***Performance Measures and Outputs***

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MES's first goal is to improve the environment through MES activities. Under this goal is the objective to manage liquid waste products to reduce the nutrient problems in the Chesapeake Bay. One of the measures for this objective is the number of corporate and State NPDES discharge permit violations. MES's annual capital budget planning process prioritizes projects that reduce the incidence of discharge violations at MES operated facilities.

### **State National Pollutant Discharge Elimination System Violations**

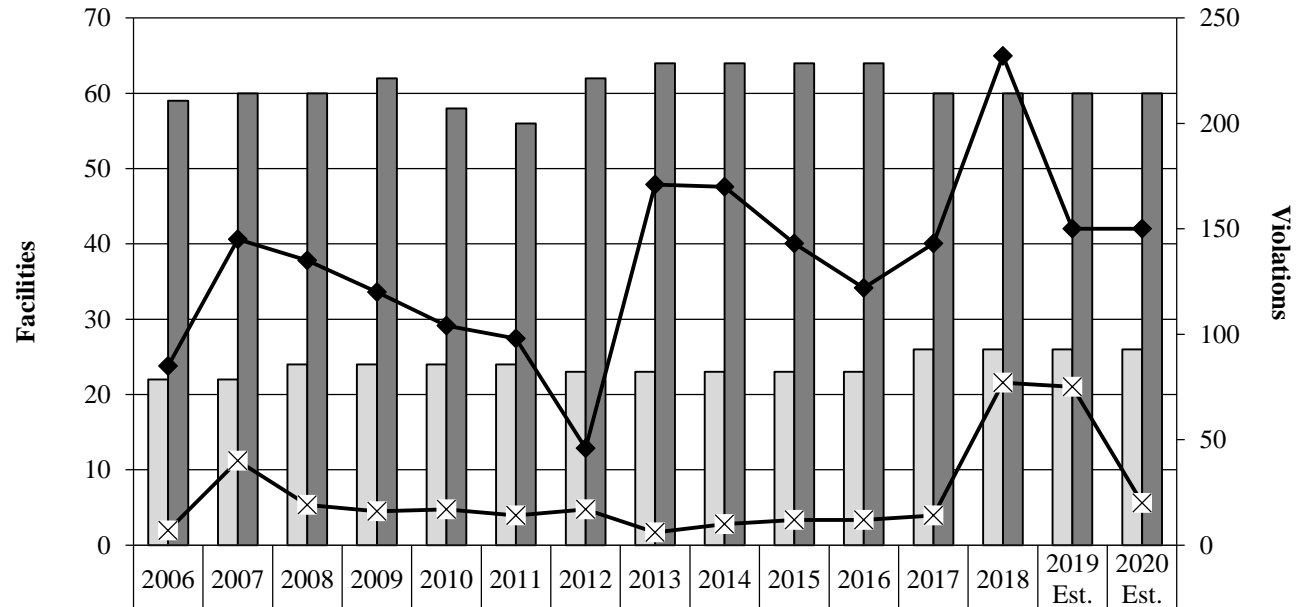
**Exhibit 1** shows that MES has a greater number of local/corporate clients than State clients and that the incidence of local/corporate discharge permit violations is greater as a percentage of total overall violations. The number of local/corporate facility violations increased substantially from fiscal 2012 (46) to 2013 (171) after having declined in each of the previous five years. The increase in the number of local/corporate facility violations is attributable to two facilities that were issued multiple violations for several years. After operating essentially in continued violation for a couple of years, the client completed upgrades at one facility, and the other was closed. As a result, the incidence of discharge violations began to decline in fiscal 2015 (143) and again in fiscal 2016 (122). However, overall violations increased in fiscal 2017 (157) and increased again in fiscal 2018 (309). MES notes that the increase in violations between fiscal 2017 and 2018 is attributable to the following:

- **State Violations:** increased from 14 to 77 due to a new discharge permit requirement for ECI WWTP that took effect January 1, 2018, and violations that occurred during the construction of upgrades at the Freedom wastewater treatment plant, which is now completed; and
- **Corporate Violations:** increased from 143 to 232 due to mechanical issues at a private facility operated by MES, which MES stopped operating at the beginning of fiscal 2019.

Of note, the compliance level is directly related to the large number of potential violations or permits and does not necessarily reflect the severity of any one violation.

Between fiscal 2006 and 2018, State facilities have averaged 12.8% of the total violations while accounting for 27.9% of the facilities handled by MES. MES has indicated in the past that the reason for this low percentage of violations at State facilities is MES' 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 at other facilities, which they may not always have the resources to do.

**Exhibit 1**  
**Local/Corporate and State Discharge Permit Violations**  
**Fiscal 2006-2020 Est.**



State Facilities	22	22	24	24	24	24	23	23	23	23	23	26	26	26	26
Local/Corporate Facilities	59	60	60	62	58	56	62	64	64	64	64	60	60	60	60
Discharge Permit Violations for State Facilities	7	40	19	16	17	14	17	6	10	12	12	14	77	75	20
Discharge Permit Violations for Local/Corporate Facilities	85	145	135	120	104	98	46	171	170	143	122	143	232	150	150

Source: Department of Budget and Management; Maryland Environmental Service; Governor’s Budget Books, Fiscal 2007-2020

## Budget Overview

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The 2019 *Capital Improvement Program* (CIP) reflects the change in how the State will fund MES projects that were first shown in the 2018 CIP. As shown in **Exhibit 2**, MES receives special funds, shown as nonbudgeted funds in the capital budget summary, through an allocation of transfer tax revenue in fiscal 2020, partially replacing general obligation (GO) bond funds. MES annually undertakes wastewater and drinking water projects at DNR facilities, and the change in funding patterns is intended to reflect and account for MES’ role in the maintenance of State Park facilities. An advantage of the revised funding plan is that it reduces MES’ reliance on GO bond funds, which can be used for other State capital priorities. Alternatively, while there is a clear nexus in MES’ use of transfer tax funds for water and wastewater projects at State parks, it diverts resources from other DNR State Park facility needs that would otherwise be undertaken were the funds distributed through the Program Open Space (POS) formula. In addition, the diversion is somewhat inconsistent with the legislatively established POS repayment plan, as set forth in Chapter 10 of 2016, which mandates increased annual funding for DNR critical maintenance and natural resources development projects.

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**Exhibit 2**  
**2018 and 2019 CIP Comparison**  
(\$ in Millions)

	<u>2020</u> <u>Request</u>	<u>2021</u> <u>Est.</u>	<u>2022</u> <u>Est.</u>	<u>2023</u> <u>Est.</u>	<u>2024</u> <u>Est.</u>
<b>2019 CIP</b>					
Special Funds	\$6.052	\$11.316	\$11.839	\$9.417	\$9.579
GO Bonds	9.290	10.000	10.000	7.994	6.500
<b>Total</b>	<b>\$15.342</b>	<b>\$21.316</b>	<b>\$21.839</b>	<b>\$17.411</b>	<b>\$16.079</b>
<b>2018 CIP</b>					
Special Funds	\$3.441	\$12.454	\$11.350	\$11.950	
GO Bonds	16.512	2.913	8.821	5.894	
<b>Total</b>	<b>\$19.953</b>	<b>\$15.367</b>	<b>\$20.171</b>	<b>\$17.844</b>	<b>\$0.000</b>
<b>Difference</b>					
Special Funds	\$2.611	-\$1.138	\$0.489	-\$2.533	\$9.579
GO Bonds	-7.222	7.087	1.179	2.100	6.500
<b>Total</b>	<b>-\$4.611</b>	<b>\$5.949</b>	<b>\$1.668</b>	<b>-\$0.433</b>	<b>\$16.079</b>

CIP: *Capital Improvement Program*

GO: general obligation

Note: The State Water and Sewer Infrastructure Improvement Fund is funded by GO bonds and special funds from the Department of Natural Resources’ Natural Resources Development Fund. 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 2024 for the 2018 CIP are outside the five-year planning period.

Source: *Capital Improvement Program*, 2018 and 2019

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Also illustrated in Exhibit 2 is the reduced level of funding in fiscal 2020 from what was programmed in the 2018 CIP, a \$4.6 million decrease. As shown in **Exhibit 3**, this primarily reflects the following:

- **Funding Decreases:** Victor Cullen – WWTP (\$4,352,000) is deferred, Cheltenham – WWTP (\$3,005,000) is deferred to fiscal 2022 with sewer repairs done first, and Woodstock – WWTP Upgrades (\$2,000,000) funding is spread out over several years; and
- **Funding Increases:** Rocky Gap State Park – Collection System (\$1,525,000) to address inflow and infiltration, Swallow Falls State Park – WWTP and Water Treatment Plant (WTP) (\$1,082,000), and funding for the new Maryland Correctional Institution – Hagerstown Boiler Plant Improvements project (\$1,385,000) and for the new Jessup Correctional Institution (JCI) Boiler Plant Improvements project (\$900,000).

**Exhibit 3**  
**Fiscal 2020 Funding Comparison**  
**2018 Session and 2019 Session**

<u>Facility/Project</u>	<u>2018 Session</u>	<u>2019 Session</u>	<u>Difference</u>	<u>Explanation</u>
<b>GO Bonds</b>				
Eastern Correctional Institution – Cogeneration Plant	\$1,193,000	\$1,193,000	\$0	
Eastern Pre-Release – WWTP	881,000	881,000	0	
State Water Towers	350,000	0	-350,000	Moved to special funds.
State Well Upgrades	280,000	415,000	135,000	Adjusted project cost.
Woodstock – WWTP Upgrades	5,004,000	3,004,000	-2,000,000	Project cashflowed over fiscal 2020 and 2021.
St. Mary’s College of Maryland – WDS and WTP	1,447,000	1,447,000	0	
Central Correctional Facility Pump Station	0	65,000	65,000	New project.
Jessup Correctional Institution Boiler Plant Improvements	0	900,000	900,000	New project.
Maryland Correctional Institution – Hagerstown Boiler Plant Improvements	0	1,385,000	1,385,000	New project.

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<u>Facility/Project</u>	<u>2018 Session</u>	<u>2019 Session</u>	<u>Difference</u>	<u>Explanation</u>
Cheltenham – WWTP	3,005,000	0	-3,005,000	Deferred to fiscal 2022; sewer repairs will be done first.
Victor Cullen – WWTP	4,352,000	0	-4,352,000	Deferred.
<b>Subtotal</b>	<b>\$16,512,000</b>	<b>\$9,290,000</b>	<b>-\$7,222,000</b>	
<b>Special Funds</b>				
Fair Hill Natural Resources Management Area – WTP and WD	\$154,000	\$154,000	\$0	
State Water Towers – Elk Neck	0	300,000	300,000	Moved from GO bond list.
Swallow Falls State Park – WWTP and WTP	2,291,000	3,373,000	1,082,000	Adjusted project cost.
Elk Neck – WWTP	400,000		-400,000	Deferred pending completion of preliminary engineering report.
Albert Powell – New Equalization Tank	150,000	0	-150,000	Moved to GO bond list – not a park – and deferred.
Point Lookout State Park WWTP	600,000		-600,000	Deferred.
New Germany State Park – WWTP and WWCS		700,000	700,000	Moved up per DNR request.
Rocky Gap State Park – Collection System		1,525,000	1,525,000	Inflow and infiltration affecting plant operations.
Cash Flow Adjustment (for Fair Hill)	-154,000	0	154,000	
<b>Subtotal</b>	<b>\$3,441,000</b>	<b>\$6,052,000</b>	<b>\$2,611,000</b>	
<b>Total</b>	<b>\$19,953,000</b>	<b>\$15,342,000</b>	<b>-\$4,611,000</b>	

DNR: Department of Natural Resources  
GO: general obligation  
WD: water distribution  
WDS: water distribution system

WTP: water treatment plant  
WWCS: wastewater collection system  
WWTP: wastewater treatment plant

Source: Maryland Environmental Service

## **Fiscal 2020 Funding and Projects**

The fiscal 2020 capital budget provides \$9,590,000 in GO bonds and \$6,052,000 in nonbudgeted funds. The nonbudgeted funds reflect MES’s use of transfer tax special funds budgeted under the DNR Natural Resources Development Fund, which will be used by MES for projects at DNR State parks and will be transferred to MES once a contract for each project is approved. In total, the funds support 13 projects in 10 jurisdictions. The capital budget bill also includes language preauthorizing GO bond funds for fiscal 2021 and 2022 for projects with construction that span beyond fiscal 2020. This provides the funding authority for the Board of Public Works to approve construction contracts without the authorization of the full construction costs in fiscal 2020. The projects are shown in **Exhibit 4**.



**Exhibit 4  
Fiscal 2020 Project Funding**

<u>Jurisdiction</u>	<u>Project Title</u>	<u>Est. Cost</u>	<u>Prior Author.</u>	<u>2020 GO Bond Request</u>	<u>2020 Transfer Tax Amount</u>	<u>Type</u>	<u>Future Request</u>	<u>Design/ Construction Status</u>
Allegany	Rocky Gap State Park – Collection System	\$6,739,000	\$5,214,000	\$0	\$1,525,000	Construction	\$0	In progress as scheduled.
Anne Arundel	Jessup Correctional Institution – Boiler Plant Improvements	900,000	0	900,000		Planning and Construction	0	In progress as scheduled.
Baltimore County	Woodstock – Wastewater Treatment Plant Upgrades	5,576,000	572,000	3,004,000		Construction	2,000,000	Design in progress; equipment pre-selected.
Carroll	Central Correctional Facility – Sewer System Improvement	435,000	0	65,000		Planning	370,000	In progress as scheduled.
Cecil	Fair Hill Natural Resources Management Area – Water Treatment Plant and Distribution System Upgrade	4,198,000	4,044,000	0	154,000	Construction	0	Construction in procurement;

<u>Jurisdiction</u>	<u>Project Title</u>	<u>Est. Cost</u>	<u>Prior Author.</u>	<u>2020 GO Bond Request</u>	<u>2020 Transfer Tax Amount</u>	<u>Type</u>	<u>Future Request</u>	<u>Design/ Construction Status</u>
Cecil	State Water Towers – Elk Neck State Park	1,770,000	0	0	300,000	Construction	1,470,000	In progress as scheduled.
Garrett	New Germany State Park – Water and Wastewater Treatment Plants and Water Collection System Upgrades	4,070,000	0	0	700,000	Planning	3,370,000	Phased design and construction as scheduled.
Garrett	State Well Upgrades – Meadow Mountain Youth Center	1,259,139	374,139	415,000		Construction	470,000	Phase 1 design underway.
Garrett	Swallow Falls State Park – Water and Wastewater Treatment Plant Improvements	7,701,000	955,000	0	3,373,000	Construction	3,373,000	Complete design September 2019.
Queen Anne's	Eastern Pre-Release Wastewater Treatment Plant	5,463,000	4,582,000	881,000		Construction	0	Start construction March 2019.
Somerset	Eastern Correctional Institution – Co-Generation Plant Upgrades	5,144,000	3,678,000	1,193,000		Construction	273,000	In progress as scheduled.

<u>Jurisdiction</u>	<u>Project Title</u>	<u>Est. Cost</u>	<u>Prior Author.</u>	<u>2020 GO Bond Request</u>	<u>2020 Transfer Tax Amount</u>	<u>Type</u>	<u>Future Request</u>	<u>Design/ Construction Status</u>
St. Mary's	St. Mary's College – Water Distribution and Treatment Facilities Improvements	1,547,000	100,000	1,447,000		Construction	0	In progress as scheduled.
Washington	Maryland Correctional Institution – Boiler Plant Improvements	1,385,000	0	1,385,000		Planning and Construction	0	In progress as scheduled.
<b>Total</b>		<b>\$46,187,139</b>	<b>\$19,519,139</b>	<b>\$9,290,000</b>	<b>\$6,052,000</b>		<b>\$11,326,000</b>	

GO: general obligation

Source: Department of Budget and Management; Maryland Environmental Service

## **Projects**

### **Rocky Gap State Park – Collection System**

The Rocky Gap State Park – Collection project is budgeted \$1,525,000 in transfer tax construction funding in fiscal 2020. The project consists of constructing improvements to the wastewater collection system at Rocky Gap State Park. The system consists of three pump stations, a gravity sewer, and a force main network. Due to deterioration, the system experiences substantial inflow and infiltration that increases the flows to the wastewater treatment plant, thus causing capacity and treatment issues.

### **JCI – Boiler Plant Improvements**

The JCI – Boiler Plant Improvements project is budgeted a total of \$900,000 in GO bonds comprised of \$65,000 for planning and \$835,000 for construction. The project consists of designing and constructing multiple improvements to boiler building systems, including the fire suppression system, steam distribution pipe insulation systems, and boiler water treatment and boiler control systems. Other improvements include repair of blowdown piping trenches; installation of secondary containment systems, curb walls, and safety bollards; and repairs to the building roof.

### **Woodstock – WWTP Upgrades**

The Woodstock WWTP Upgrades project is budgeted \$3,004,000 in GO bonds to begin construction. The plant serves the Woodstock Job Corps Training Center. The current plant is in need of replacement due to age: the steel tanks are corroding; and the sewage treatment process is outdated, occasionally causing discharge permit violations. The proposal replaces the existing plant with a new compact treatment facility that will fit within the limited available space and meet more stringent permit discharge requirements assumed to be in place when the current permit expires in September 2019. Project components include a screening and grit removal system, an equalization basin, a biological treatment system with clarification, and sludge management facilities. Other components include improvements to the cascade aerator and the disinfection system and the installation of a security fence to prevent vandalism. MES submitted an application to the Maryland Department of the Environment (MDE) for enhanced nutrient removal grant funding, but the request was not approved. There is a preauthorization of \$2,000,000 for fiscal 2021 to complete construction.

### **Central Correctional Facility – Sewer System Improvement**

The Central Correctional Facility – Sewer System Improvement project is budgeted \$65,000 in GO bonds for planning. The project entails the construction of upgrades to the sewer system at the Central Correctional Facility, formally the Central Laundry Facility, in Sykesville. Project components include a gravity sewer and metering vault that will eliminate a sewage pump station at the laundry that fails frequently and forces staff and inmates to handle trash and equipment contaminated with raw sewage.

### **Fair Hill Natural Resources Management Area – WTP and Distribution System Upgrade**

The Fair Hill Natural Resources Management Area – WTP and Distribution System Upgrade project is budgeted \$154,000 in transfer tax funding to complete construction of the project. The water treatment system has deficiencies as follows: the WTP lacks a heating and ventilation system, the water storage tank is corroded and must be drained every year or it will freeze, and the water distribution system is in poor condition and does not have an adequate amount of control/isolation valves or fire hydrants. The project scope includes the following: a new water treatment building with a laboratory area, a heating and ventilation system, and room for chemical storage; new water lines throughout the complex and fire hydrants for water distribution; and an elevated water storage tank. MES notes that it is coordinating with DNR and the Maryland Stadium Authority on the planned equestrian events for the facility and is on schedule to have the water system completed first with construction starting on the water system improvements this summer and taking approximately one year to complete. Of note, the water system will provide 60,000 gallons per day and will have a 150,000-gallon elevated storage tank, which may not be enough to handle the 80,000 visitors anticipated two to three times a year, so water may need to be brought in during the large events.

### **State Water Towers – Elk Neck State Park**

The State Water Towers – Elk Neck State Park project is budgeted \$300,000 in transfer tax funds to start construction. The project entails reconditioning the 60,000 gallon water storage tank. In particular, the project will recoat the surface of the steel, provide a new protective coating to the water storage tank, and provide for the following safety features: an Occupational Safety and Health Administration-compliant access hatch, exterior balcony handrail, and flexible cable units.

### **New Germany State Park – WTP, WWTP, and Water Collection System Upgrades**

The New Germany State Park – Water and Wastewater Treatment Plants and Water Collection System Upgrades project is budgeted \$700,000 in transfer tax funds for planning. The project entails the complete replacement of the water and wastewater infrastructure by construction of improvements to the water supply, treatment, storage, and distribution systems and wastewater collection and treatment facilities. The current discharge permit expired at the end of calendar 2018, and a new permit may have more stringent effluent limitations due to the sensitivity of nearby surface water uses. MES indicates that a new permit has not been issued, but that planning limits have been received, so the project can proceed to design. In addition, New Germany State Park is in the planning stages of an expansion of its visitor facilities including a new kitchen and bathroom facilities for the Recreation Hall and upgrades to the Pavilions and Comfort Station. As a result, septic tanks will be removed and sewage diverted to a new WWTP. As a result of these changes and the expectation of increased visitors, water demand is anticipated to increase. There are preauthorizations of \$2,359,000 for fiscal 2021 and \$1,011,000 for fiscal 2022 to complete construction.

### **State Wells Upgrade – Meadow Mountain Youth Center**

The State Well Upgrade – Meadow Mountain Youth Center project is budgeted \$415,000 in GO bonds to construct a new well at Meadow Mountain Youth Center. The current wells are either

inadequate or inoperable relative to the goal of meeting the demand for potable water. The project includes the review of hydrogeological data, performance of hydrogeological surveys, implementation of test borings and possible surface geophysical methods to find water-bearing fracture zones, and construction of one potable water well. MES notes that it has experienced higher construction costs due to the distance between the wellhead and the center and a lack of bidders. In order to manage project costs, MES has separated construction into two phases: (1) well drilling; and (2) well development and pipeline installation.

### **Swallow Falls State Park – Water and WWTP Improvements**

The Swallow Falls State Park – Water and WWTP Improvement project is budgeted \$3,373,000 in transfer tax funds to construct improvements to the water distribution system and improvements to the WTP. In general, the project entails improvements to the water distribution system and WTP, which were last upgraded in the late 1980s/early 1990s. In particular, the project scope includes the following upgrades: replacement of distribution system water lines; upgrade of the water treatment filtration system, including controls and metering; upgrade of water treatment buildings; demolition of unsafe structures; installation of tankage for fire suppression; inspection and upgrades to the wastewater collection system; upgrade to the wastewater screening and influent flow monitoring; dredging and rehabilitation of the wastewater lagoon; and installation of a new wastewater treatment train, disinfection equipment, and other improvements. There is a preauthorization of \$3,373,000 programmed for fiscal 2021 to complete construction.

### **Eastern Pre-Release Unit – WWTP**

The Eastern Pre-Release Unit – WWTP project is budgeted \$881,000 in GO bonds to complete construction of the decommissioning of the lagoon. The Eastern Pre-Release Unit WWTP is not capable of meeting its discharge permit limits, issued in November 2013. Overall project construction components include decommissioning the existing lagoon and adding a new facility consisting of an equalization tank, wastewater screens, a new treatment process, and a new ultraviolet disinfection system. MES was required to submit a Wastewater Capacity Management Plan to MDE because flow at the WWTP has exceeded 80% of its capacity for more than three years. Subsequently, MDE required the proposed expansion of the plant to be included in the Queen Anne’s County Water and Sewer Master Plan. The upgrade of the capacity was approved by the county commissioners on November 22, 2016, and the county submitted its amended Water and Sewer Master Plan to MDE in December 2016. The plan was approved in March 2017. Fiscal 2019 funding is being used to construct the paved access road to the facility.

### **ECI – Co-Generation Plant Upgrades**

ECI – Co-Generation Plant Upgrades project is budgeted \$1,193,000 in GO bonds to construct upgrades to the cogeneration plant. The fiscal 2020 and 2021 construction items include the upgrade of the boiler insulation, condensate tank, pressure-reducing valve control stations, combustion air control and air flow distribution, fire suppression and lifting systems, truck scale, stormwater control facilities, valve work, and retubing of the dump condenser. The upgrade to the cogeneration plant is necessitated by the wear and tear that it has experienced and the frequent power lapses because the plant is only able

to generate 78% of the ECI's electricity needs. The project's four-task cost was reduced from \$21,345,000 to \$4,321,000 in the fiscal 2018 budget submission due to the elimination of a third boiler, three of the four planned boiler feed pump replacements, and other components. The overall cost increased to \$5,144,000 in the fiscal 2019 budget submission – where it still stands – that includes utility yard work and replacement of the substation to provide a more stable and redundant energy source for ECI. MES notes that the utility yard work was delayed due to the need to update the control system first. This task has been completed, and the substation upgrade is anticipated to be completed in June 2019. There is a preauthorization of \$273,000 in fiscal 2022 in order to complete construction.

MES notes that it is investigating the possibility of powering the ECI Co-Generation Facility with natural gas instead of wood chips – the current practice – or number two fuel oil, which presumably might reduce costs in the long run. The Request for Proposals (RFP) for natural gas extension to ECI generated one response, which has met the technical requirements of the RFP but is still under evaluation for price. The switch to natural gas would require modifications and/or removal of existing equipment and possible procurement of new equipment but is not anticipated to impact current plans substantively.

### **St. Mary's College of Maryland – Water Distribution and Treatment Facilities Improvements**

The St. Mary's College of Maryland (SMCM) – Water Distribution and Treatment Facilities Improvements project is budgeted \$1,447,000 in GO bonds to begin constructing improvements to the water distribution and treatment facilities. The project will address ongoing concerns about the capacity and reliability of the system. These concerns were first identified in a July 2000 assessment by Entech Engineering. Funding for improvements to the sewer collection system and portions of the water distribution system was provided in fiscal 2005 to address the concerns in the assessment, including the construction of looped areas of the distribution system to increase system reliability. MES subsequently completed 80% of the design to handle the increased demand that had occurred on the campus but, the project was put on hold while SMCM finished design documents to allow for electrical work and the siting of new buildings. In September 2017, MES met with SMCM about addressing the demand projections for the new construction proposed on the campus. The project will construct new water mains to connect to the existing pipe network to create a closed loop system, install a telemetry control system on well number five, and replace the existing chlorine gas-based disinfection systems on well numbers one and five with hypochlorite-based disinfection systems.

### **Maryland Correctional Institution – Boiler Plant Improvements**

The Maryland Correctional Institution – Boiler Plant Improvements project is budgeted \$1,385,000 in GO bonds to plan (\$122,000) and construct (\$1,263,000) upgrades to the boiler plant. The project entails upgrading the control system, replacing the automatic transfer switch, upgrading the fire suppression system, replacing insulation, and installing a turbine drive for one boiler feed pump. The improvements are needed because the plant was constructed in 1963, and the control system and motor control center are obsolete.

## ***Preauthorizations and Deauthorizations***

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As shown in **Exhibit 5**, the fiscal 2020 capital Budget Bill includes preauthorizations of \$7,732,000 in fiscal 2021 and \$1,284,000 in fiscal 2022 in order to complete construction of projects.

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### **Exhibit 5 Preauthorizations Fiscal 2021-2022**

<b><u>Project</u></b>	<b><u>2021</u></b>	<b><u>2022</u></b>	<b><u>Reason</u></b>
New Germany State Park – Water and Wastewater Treatment Plants and Water Collection System Upgrades	\$2,359,000	\$1,011,000	Complete construction.
Swallow Falls State Park – Water and Wastewater Treatment Plant Improvements	3,373,000		Complete construction.
Woodstock – Wastewater Treatment Plant Upgrades	2,000,000		Complete construction.
Eastern Correctional Institution – Co-Generation Plant Upgrades		273,000	Complete construction.

Source: Department of Budget and Management, 2019 *Capital Improvement Program*

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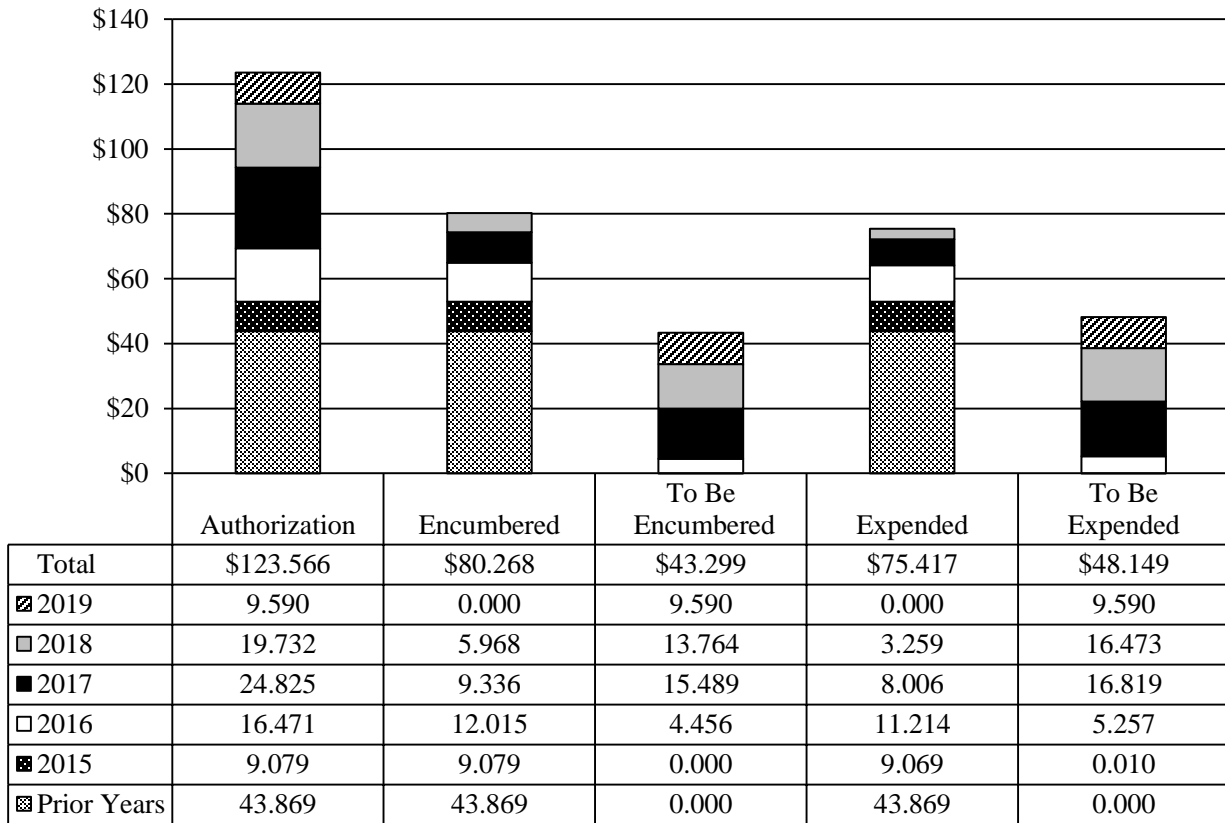
## ***Encumbrances and Expenditures***

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The MES encumbrance and expenditure history for the State Water and Sewer Infrastructure Improvement Fund is shown in **Exhibit 6**. Overall, \$123.6 million in GO bonds have been authorized. Of this amount, MES has encumbered \$80.3 million; \$43.3 million remains to be encumbered. The majority of the funding remaining to be encumbered was authorized in fiscal 2017 and 2018.



**Exhibit 6**  
**Infrastructure Improvement Fund Encumbrances and Expenditures**  
**Program Inception through February 2019**  
 (\$ in Millions)



Source: Maryland Environmental Service

**Fiscal 2019 Project Status**

MES’s plan is to encumber \$42,339,530 in fiscal 2019, which is substantially more than the maximum of \$13,572,369 encumbered over the last five fiscal years. The current encumbrance status of fiscal 2019 funding is shown in **Exhibit 7**. The ability to encumber this amount of funding relies on its estimates on the progress for several large projects, of which the largest is the ECI WWTP upgrade, which appears to reflect that the funding for these large projects will be mostly encumbered in fiscal 2019.

**Exhibit 7**  
**Status of Encumbering Project Funding**  
**Fiscal 2019**

<u>Jurisdiction</u>	<u>Project Title</u>	<u>Estimated Cost</u>	<u>2019 Amount</u>	<u>Current Activity</u>	<u>Project Status</u>
Allegany	Rocky Gap WWTP Upgrade	\$5,214,000	\$138,624	Construction	Construction completed.
Baltimore County	Woodstock – WWTP Upgrade	5,576,000	216,000	Planning	Design in progress.
Carroll	Freedom ENR	3,545,000	216,501	Construction	Construction completed.
Carroll	New Department of Juvenile Services Female Detention Center – Water and Sewer Utilities	2,948,000	2,467,591	Construction	Awaiting final easements.
Cecil	Fair Hill Natural Resources Management Area – WTP and Distribution System Upgrade	4,198,000	3,836,000	Construction	Construction in procurement.
Charles	Southern Maryland Pre-Release Unit WWTP Upgrade	4,198,000	239,000	Construction	Construction completed.
Frederick	Cunningham Falls Collection and Distribution	1,238,000	210,369	Construction	Construction completed.
Frederick	Victor Cullen WWTP Upgrade	4,725,000	175,727	Construction	Design underway after ENR grant approval by MDE.
Garrett	State Well Upgrades – Backbone and Savage Mt Youth Centers	1,411,000	594,000	Planning and Construction	Savage under construction; Backbone and Meadow in design.
Garrett	Swallow Falls State Park – WTP and WWTP Improvements	7,700,000	955,000	Planning and Construction	Design in progress.

<u>Jurisdiction</u>	<u>Project Title</u>	<u>Estimated Cost</u>	<u>2019 Amount</u>	<u>Current Activity</u>	<u>Project Status</u>
Prince George's	Cheltenham WWTP Upgrade	8,110,000	4,597,000	Planning and Construction	Design on hold/awaiting MDE ENR funding determination; design of sewer rehab underway.
Queen Anne's	Eastern Pre-Release WWTP	5,463,000	4,332,000	Construction	Construction awaiting Board of Public Works approval (February 20, 2019).
Somerset	Eastern Correctional Institution – Co-Generation Plant Upgrades	5,144,000	440,000	Planning and Construction	Construction of various project elements underway.
Somerset	Eastern Correctional Institution – WWTP Upgrade	37,732,000	22,139,718	Construction	Construction manager at-risk submitted; under review by MES and A/E.
Somerset	Eastern Correctional Institution – Elevated Water Storage Tank	320,000	320,000	Construction	In procurement.
St. Mary's	Charlotte Hall WWTP/Pump Station Upgrade	4,100,000	820,000	Construction	Construction of WWTP, spray field and rapid infiltration basin piping completed. Replacement of rapid infiltration basin media and demonstration of Biolac water treatment system in procurement.
St. Mary's	St. Mary's College of Maryland – Water Distribution and Treatment Facilities Improvements	1,547,000	100,000	Planning	Design in progress.
Washington	Maryland Correctional Institution WWTP ENR Upgrade	16,804,000	542,000	Construction	Construction completed.
<b>Total</b>		<b>\$119,973,000</b>	<b>\$42,339,530</b>		

A/E: architectural and engineering

ENR: enhanced nutrient removal

MDE: Maryland Department of the Environment

MES: Maryland Environmental Service

WTP: water treatment plant

WWTP: wastewater treatment plant

Source: Department of Budget and Management; Maryland Environmental Service

## ***GO Bond Recommended Actions***

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1. Approve the \$9,290,000 general obligation bond authorization for the Maryland Environmental Service's Infrastructure Improvement Fund to design, construct, and equip water and wastewater facility improvements for State institutions.