

UB00
Maryland Environmental Service – Capital

Capital Budget Summary

Grant and Loan *Capital Improvement Program*
(\$ in Millions)

Program	2022 Approp.	2023 Request	2024 Est.	2025 Est.	2026 Est.	2027 Est.
State Water and Sewer Infrastructure Improvement Fund	\$16.752	\$25.992	\$28.586	\$18.864	\$26.940	\$23.300
Conowingo Dam Dredging	0.000	6.000	0.000	0.000	0.000	0.000
Total	\$16.752	\$31.992	\$28.586	\$18.864	\$29.940	\$23.300

Fund Source	2022 Approp.	2023 Request	2024 Est.	2025 Est.	2026 Est.	2027 Est.
GO Bonds	\$7.881	\$23.344	\$14.566	\$10.014	\$11.900	\$8.500
PAYGO SF	8.871	8.648	14.020	8.850	15.040	14.800
Total	\$16.752	\$31.992	\$28.586	\$18.864	\$29.940	\$23.300

GO: general obligation
PAYGO: pay-as-you-go
SF: special funds

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

Budget Overview of Grant and Loan Programs

The fiscal 2023 capital budget provides \$17,344,000 in general obligation (GO) bonds, and \$8,648,000 in special funds. Of this amount, \$17,344,000 is provided for projects at State facilities and \$8,648,000 is provided for water and wastewater projects at Department of Natural Resources (DNR) facilities. The DNR facility projects have been budgeted with transfer tax special funds from the DNR Natural Resources Development Fund and reflected as nonbudgeted funds in recent years. In total, the funds support 14 projects in 10 jurisdictions. The capital budget bill also includes language preauthorizing \$13,476,000 of GO bond funds for fiscal 2024 for projects with construction extending beyond fiscal 2023. 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 2023.

The Maryland Environmental Service’s (MES) fiscal 2023 budget plan includes:

- ***Eastern Correctional Institution (ECI) Cogeneration Plant Fuel Conversion:*** a fiscal 2022 general fund deficiency of \$7.3 million budgeted in the Department of General Services (DGS) funds a budget shortfall for the fuel conversion project;
- ***State Water and Sewer Infrastructure Improvement Fund:*** \$17.3 million in GO bonds and \$8.6 million in nonbudgeted funds from DNR’s Natural Resources Development Fund for fiscal 2023 State Water and Sewer Infrastructure Improvement Fund projects. The budget also includes a \$13.4 million GO bond preauthorization for fiscal 2024; and
- ***Conowingo Dam Dredging:*** \$6.0 million in GO bonds supports a Conowingo Dam dredging project.

Fiscal 2022 Deficiency Funding

There is \$7,284,815 in general funds budgeted as a fiscal 2022 deficiency in DGS to fund a fuel conversion project at the ECI cogeneration plant. The proposed deficiency would supplement prior authorized State funds for the project.

The original plan entailed making improvements to the cogeneration facility in order to prepare it for fuel conversion from wood burning to natural gas burning, for which MES received \$1,193,000 in fiscal 2020 and \$273,000 in fiscal 2021. Of this funding, approximately \$235,000 was used in fiscal 2020, leaving a project balance of approximately \$1,231,000. This initial project, referred to as the ECI Cogeneration Improvements project, included proposed upgrades to various components of the cogeneration plant prior to plans for fuel conversion. Tasks independent of the type of fuel have been completed, and items impacted by fuel conversion plans have been delayed until completion of fuel conversion efforts, as they may require a revised scope of work.

The fiscal 2022 deficiency would fund cost increases for the ECI Cogeneration Plant – Fuel Conversion to Natural Gas project. The funds reflect a combination of operating and capital funds

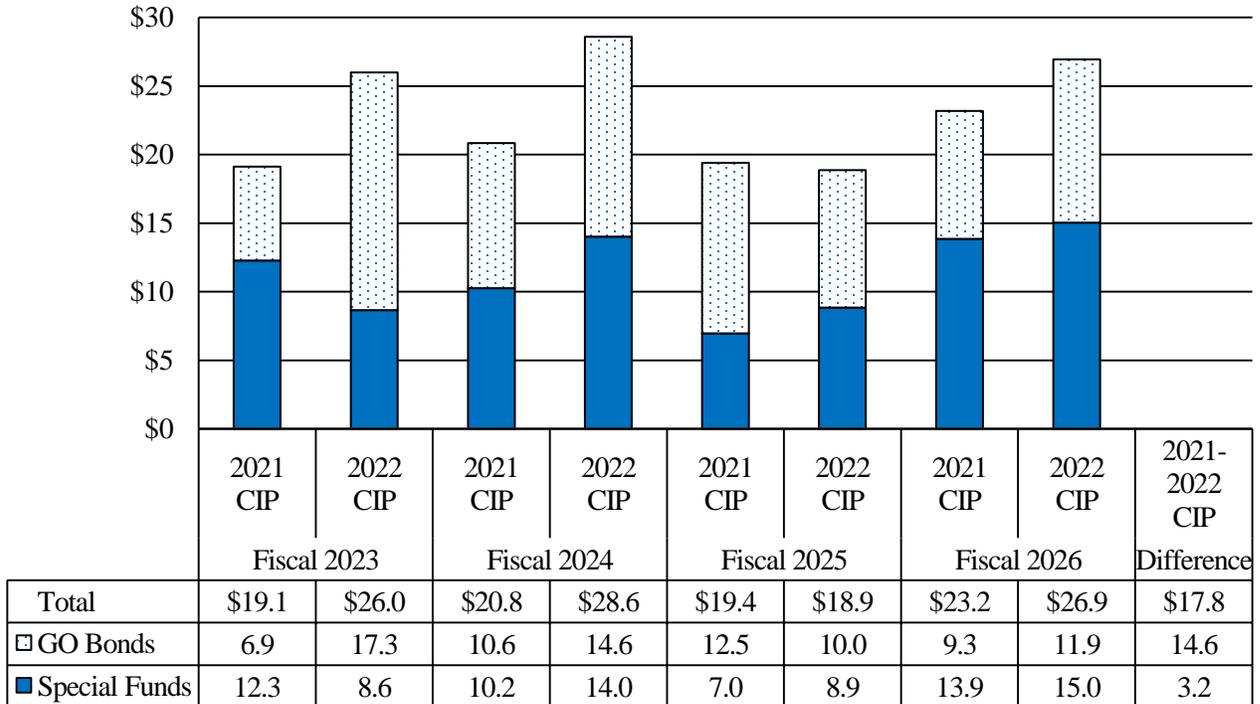
needed to complete fuel conversion efforts at ECI so that it can burn natural gas. The funds are budgeted in DGS budget because MES cannot directly receive an operating budget appropriation as a nonbudgeted agency. The funding is needed because of the labor and cost increases associated with the COVID-19 pandemic and technical issues associated with converting the 30-year-old cogeneration facility from burning wood to burning natural gas. The natural gas pipeline associated with this project was completed in fall 2021 and comes off a trunk line aligned along the Eastern Shore, which also feeds the University of Maryland Eastern Shore.

The original appropriation for this project was \$4,226,000, which has now increased to \$16,072,018 based on recently received bid prices and the value of other contracts awarded to date. The \$4,226,000 is comprised of \$3,589,000 that MES received in fiscal 2021 and \$637,000 in fiscal 2022. In addition to this direct funding, MES has received permission from the Department of Budget and Management (DBM) to retain \$1,659,203 of its fiscal 2021 State reimbursable project funding to help fund the project. **The Department of Legislative Services (DLS) recommends that MES describe in detail how the project cost has increased from \$4,226,000 to \$16,072,018. DLS also recommends approval of the fiscal 2022 \$7,284,815 general fund deficiency appropriation in the DGS program H00H01.02 Statewide Capital Appropriation to fund a fuel conversion project at the ECI cogeneration plant.**

Fiscal 2023 State Water and Sewer Infrastructure Improvement Fund

As shown in **Exhibit 1**, MES's State Water and Sewer Infrastructure Improvement Fund projects are funded through a combination of GO bond funds and special funds, shown as nonbudgeted funds, through an allocation of transfer tax revenue. The use of transfer tax revenues first started in fiscal 2020 and is determined by the number of wastewater and drinking water projects that MES annually undertakes at DNR facilities. For fiscal 2023, there is an overall increased level of funding of \$6.9 million from what was programmed in the 2021 *Capital Improvement Program (CIP)*. Over the time period shown, there is an increase of \$17.8 million between the 2021 and 2022 CIPs comprised of \$14.6 million in GO bonds and \$3.2 million in special funds.

**Exhibit 1
2021 and 2022 CIP Comparison
(\$ in Millions)**



CIP: *Capital Improvement Program*
GO: *general obligation*

Source: 2021 and 2022 *Capital Improvement Program*

The largest change between the 2021 and 2022 CIPs for State projects funded in fiscal 2023 with GO bonds is an increase of \$7.7 million for the Camp Fretterd – Water and Wastewater System Upgrades project. This project is moved up in the 2022 CIP to support ongoing operations and the construction of a new Marine Corps Readiness Center scheduled to be completed in fiscal 2024. Other large changes for State projects include increases of \$3,233,000 for the Cheltenham – Wastewater Treatment Plant (WWTP) Upgrade project, which received \$3,000,000 less in fiscal 2018 so that it could be reprogrammed for the ECI WWTP upgrade project, and an increase of \$1,260,000 for the Cheltenham Youth Center – Water Treatment Plant (WTP) Upgrade, which was not programmed to received funding in fiscal 2023 but received a notice to proceed in July 2021. Finally, there is a decrease of \$1,976,000 for the Victor Cullen – WWTP Upgrade project, which does not receive funding in fiscal 2023 because MES received a grant from the Maryland Department of the Environment (MDE) that will cover a portion of the costs.

The largest changes for the DNR projects are a decrease of \$3.0 million for the Point Lookout State Park WWTP Enhanced Nutrient Removal Upgrade project, which does not receive fiscal 2023 funding because construction has been pushed back to fiscal 2024, and a decrease of \$1.0 million for the Elk Neck State Park WWTP project, which has also been delayed.

State Projects

- ***Dorsey Run WWTP – Sludge Processing Facility Upgrade (Anne Arundel County):*** There is \$523,000 to begin design of biosolids facility upgrades at Dorsey Run WWTP in Anne Arundel County. The project replaces the belt filter presses with centrifuges (one duty and one standby) and the lime stabilization system with a Class A Biosolids Treatment system. The project was not included in MES’s five-year CIP last year but is now programmed to receive \$1,456,000 in fiscal 2024 and \$6,014,000 in fiscal 2025 for construction for a total project cost of \$7,993,000.
- ***Camp Fretterd – Water and Wastewater System Upgrades (Baltimore County):*** There is \$7,700,000 for new planning and construction funding for improvements to the obsolete water and wastewater systems at the Camp Fretterd Military Reservation. The project is needed to support ongoing operations and an expansion to include a new Marine Corps Readiness Center that is anticipated to be completed in fiscal 2024. The Part I/II project scope and justification have not been approved yet, but MES notes that they have been prioritized for review by DBM. MES has received \$800,000 in federal funds from the Military Department for design of the improvements to WWTP and the booster pump station upgrade, but this does not include the design funding for the new well and water main replacement. The current schedule reflects design being completed in December 2022 with a construction start in April 2023. There is a preauthorization of \$3,500,000 for fiscal 2024 for a current estimated total project cost of \$12,000,000. However, the cost estimate has increased since the five-year CIP was developed, and it is anticipated that there will be an additional \$804,000 needed to fully fund the project.
- ***Horn Point Laboratory Sewer Collection System Upgrade (Dorchester County):*** There is \$188,000 for planning and construction for the whole project cost. The project will construct upgrades to the grinder pump stations and low pressure force main and gravity sewer lines at Horn Point Laboratory in order to improve the sewer collection system.
- ***Cheltenham Youth Center – WWTP Upgrade (Prince George’s County):*** There is \$6,733,000 to continue construction of the upgrades to WWTP at the Cheltenham Youth Center, a Department of Juvenile Services facility in Prince George’s County, to address aging facility conditions. The prior funding is \$2,105,000 for design and construction and there is a fiscal 2024 preauthorization of \$3,000,000 for a total project cost of \$11,838,000. The estimated project cost increased by \$4,788,000 based on a program modification request submitted in July 2020 to support expansion of the Cheltenham Youth Center and the connection of the Cheltenham Veterans Cemetery to the wastewater collection system. The modification request was approved in September 2021. The project was originally programmed to receive \$4,400,000 in fiscal 2018, but authorization was reduced to \$1,400,000 in order to transfer funds to the ECI

WWTP upgrade project. Therefore, the fiscal 2023 funding in effect replaces the \$3,000,000 transferred in fiscal 2018.

- **Cheltenham Youth Center – WTP Upgrade (Prince George’s County):** There is \$1,260,000 to complete design and begin construction of upgrades to the water supply, treatment and storage, and distribution systems to accommodate the expansion of the Cheltenham Youth Center because the treatment buildings need to be reconditioned and one of the wells needs to be replaced. In fiscal 2023, MES plans to initiate and complete design as well as construct the well and auxiliary equipment components. The prior funding of \$230,000 was used for design, and there is a fiscal 2024 preauthorization of \$2,500,000 for a total project cost of \$3,990,000.
- **ECI – WWTP and Reverse Osmosis Reject Treatment Systems Upgrade (Somerset County):** There is \$450,000 to construct phase four of the project for improvements to the biosolids handling facilities at the ECI WWTP. The prior funding was \$36,317,000 for planning and construction of the other three phases of the project for a total project cost of \$36,767,000. The facility is now in full compliance with the consent order issued by MDE.
- **Charlotte Hall WTP and Storage System Upgrade (St. Mary’s County):** There is \$490,000 to design improvements to WTP at the Charlotte Hall Veterans Home due to aging and deteriorating infrastructure including construction of a new advanced WTP, upgrades to the water tank, upgrades to the electrical system and controls, upgrades to the distribution system, and control measures against *Legionella* outbreak. There is \$3,500,000 programmed to begin construction in fiscal 2024 and \$4,000,000 to complete construction in fiscal 2025 for a total project cost of \$7,990,000.

DNR Projects

- **Sandy Point State Park – Water Tower and WTP Upgrade (Anne Arundel County):** There is \$382,000 to begin design for construction of a new water storage tower and upgrade of WTP and water distribution system at Sandy Point State Park in Anne Arundel County. The original project only included upgrades to WTP. There is \$2,500,000 to begin construction in fiscal 2024 and \$2,500,000 to complete construction in fiscal 2025 for a total project cost of \$5,382,000.
- **State Water Towers – Martinak State Park (Caroline County):** There is \$275,000 to design and construct the reconditioning of the water storage tank at Martinak State Park in Caroline County. The next State water tower project is programmed for \$225,000 in fiscal 2024 at Tuckahoe State Park.
- **Elk Neck State Park – WWTP Upgrade:** There is \$1,943,000 to begin construction of an enhanced nutrient removal upgrade at WWTP at Elk Neck State Park in Cecil County to address discharges to areas with aquatic life and recreational boating and swimming. The prior funding was \$584,000 for design and construction, including \$80,000 in MDE Preliminary Engineering Report funding, and there is a fiscal 2024 preauthorization of \$3,394,000 for a total project cost

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of \$5,921,000. A project delay last year allowed for the funding of the Point Lookout State Park – Water Distribution and Sewer Collection System Upgrade project.

- ***Cunningham Falls State Park – Route 77 Sewer Line Upgrade (Frederick County):*** There is \$1,500,000 to begin construction of the upgrades to the sewer collection system along Route 77, which transports wastewater generated in the Cunningham Falls State Park and Catoctin National Park to the Town of Thurmont for treatment. The project reduces inflow/infiltration. The prior funding was \$552,000 for design and construction, and \$1,402,000 is programmed for fiscal 2024 for a total project cost of \$3,454,000.
- ***New Germany State Park – WTP and WWTPs and Water Collection System Upgrades (Garrett County):*** There is \$1,386,000 to complete construction of improvements to the water supply, treatment, storage and distribution systems and the wastewater collection and treatment facilities at New Germany State Park in Garrett County due to aging infrastructure. The prior funding was \$2,759,000 for design and construction for a total project cost of \$4,145,000.
- ***Swallow Falls State Park – Water and WWTP Upgrade (Garrett County):*** There is \$2,850,000 to construct improvements to the water and wastewater facilities at Swallow Falls State Park in Garrett County due to leaks and safety and maintenance issues as a result of aging infrastructure. The option of constructing a force main and interceptor sewer to discharge sewage to the nearby Garrett County WWTP, allowing for decommissioning of the existing WWTP and lagoon, was considered but ultimately rejected due to permitting and other concerns. Instead, MES plans to construct a package treatment system that will connect to the lagoon, which will be dredged and lined, since the facility is not permitted to discharge to surface waters during the summer months. The prior funding was \$4,161,000 for planning and construction, and there is a preauthorization of \$1,082,000 for fiscal 2024 for a total project cost of \$8,093,000.
- ***Point Lookout State Park – Water Distribution and Sewer Collection System Upgrade (St. Mary’s County):*** There is \$312,000 to complete construction of improvements to the water distribution system and wastewater collection system at Point Lookout State Park to address deterioration. The project repairs and replaces components of the entire potable water distribution system and includes upgrades to two existing pump stations incorporated into the wastewater piping system. The prior funding was \$9,124,000 for design and construction for a total project cost of \$9,436,000.

Conowingo Dam Dredging

There is \$6,000,000 in GO bonds authorized for fiscal 2023 for a large-scale dredging and beneficial reuse project at the Conowingo Dam to reduce nutrients and ensure clean and safe drinking water. The project builds on MES's Sediment Characterization and Innovative and Beneficial Reuse pilot project, which was recently completed.

Project components include the purchase or lease of a staging area and site facilities; preparation of the site; permitting, design, and coordination with Exelon and the Federal Energy Regulatory Commission; and project management and construction support. The fiscal 2023 funding provides \$2,000,000 for planning and \$4,000,000 for construction to dredge Conowingo Dam. There is no funding planned beyond fiscal 2023 in the 2022 CIP because of the expectations that other states will provide funding to address water quality concerns associated with the dam and that there would be federal Infrastructure Investment and Jobs Act funding available for this purpose at the time the 2022 CIP was developed.

Overall, the Sediment Characterization Study and Pilot Dredging Project and related projects have received approximately \$4.1 million. The main idea behind the project was to characterize the sediment behind the Conowingo Dam to determine whether it can be used and thus generate revenue to either offset or pay for sediment dredging behind the dam. Exelon filed an application with the Federal Energy Regulatory Commission requesting approval to authorize MES to implement a dredging project approximately five miles upstream from the Conowingo Dam. The notice was published in the Federal Register on July 14, 2020. The project called for mechanically dredging up to 1,000 cubic yards of sediment. On November 12, 2020, MES announced that it had been authorized for right of entry in order to begin the sediment characterization portion of the pilot project, which began in December 2020. Subsequently, the soil sample collection was completed in October 2021. The sediment characterization and reuse evaluation of dredged material is ongoing. It is anticipated that a report reflecting the findings of the demonstration projects – dredging and innovative reuse – will be published by summer 2022.

In terms of historical information, the March 2016 *Lower Susquehanna River Watershed Assessment, Maryland and Pennsylvania* report informs the current Conowingo Dam dredging project. This report noted (1) nutrients, not sediments, have the greatest impact on Chesapeake Bay aquatic life; (2) the watershed is the principal source of sediment; and (3) sediment management strategies were considered to reduce sediment from future storm, or scour, events. The report addressed a number of beneficial reuses of the dredged material and, in terms of costs, the report noted that dredging could cost on the order of \$48 to \$267 million annually to remove 3 million cubic yards (an estimated 2.4 million tons) of sediment.

MES notes that the Sediment Characterization Study and Pilot Dredging Project has determined additional costs for dredging. For instance, there is a very limited period to complete dredging because of both environmental and recreational time of year restrictions. In addition, there are additional project requirements from Exelon and the Federal Energy Regulatory Commission. The final report from the Sediment Characterization Study and Pilot Dredging Project will provide an economic analysis regarding the cost effectiveness of dredging and beneficial reuse.

DLS recommends that MES comment on whether the Conowingo Dam dredging project is ready for funding if the Sediment Characterization Study and Pilot Dredging Project final report will not be completed until summer 2022 and whether any other states have made a funding commitment to Conowingo Dam dredging. DLS also recommends deletion of the \$6,000,000 GO bond authorization for the Conowingo Dam dredging project since the funding does not appear to be necessary at this time.

Encumbrances and Expenditures

The MES encumbrance and expenditure history for the State Water and Sewer Infrastructure Improvement Fund is shown in **Exhibit 2**. Overall, \$169.4 million in GO bonds and special funds have been authorized. Of this amount, MES has encumbered \$143.8 million, and \$25.6 million remains to be encumbered. MES notes that it was able to encumber \$31.7 million in fiscal 2019 primarily because \$24.0 million was encumbered for the upgrade of the ECI WWTP and \$6.1 million was encumbered for the Eastern Pre-Release Unit WWTP upgrade.

Exhibit 2
Infrastructure Improvement Fund Encumbrances and Expenditures
Program Inception through February 2022
(\$ in Millions)

<u>Fiscal Year</u>	<u>Funds</u>			<u>Balances</u>	
	<u>Authorization</u>	<u>Encumbered</u>	<u>Expended</u>	<u>To Be Encumbered</u>	<u>To Be Expended</u>
Prior Years	\$94.244	\$94.029	\$93.585	\$0.215	\$0.659
2018	19.732	18.374	17.642	1.358	2.090
2019	9.590	9.526	9.114	0.064	0.476
2020	12.769	8.329	6.322	4.440	6.447
2021	16.287	10.666	2.143	5.621	14.144
2022	16.752	2.833	0.090	13.919	16.662
Total	\$169.374	\$143.757	\$128.896	\$25.617	\$40.478

Note: The fiscal 2020 authorization of \$12.8 million, the fiscal 2021 authorization of \$16.3 million, and the fiscal 2022 authorization of \$16.8 million include \$3,479,000, \$4,711,000, and \$8,871,000 in transfer tax special funds from the Department of Natural Resources, respectively.

Source: Department of Budget and Management; Maryland Environmental Service

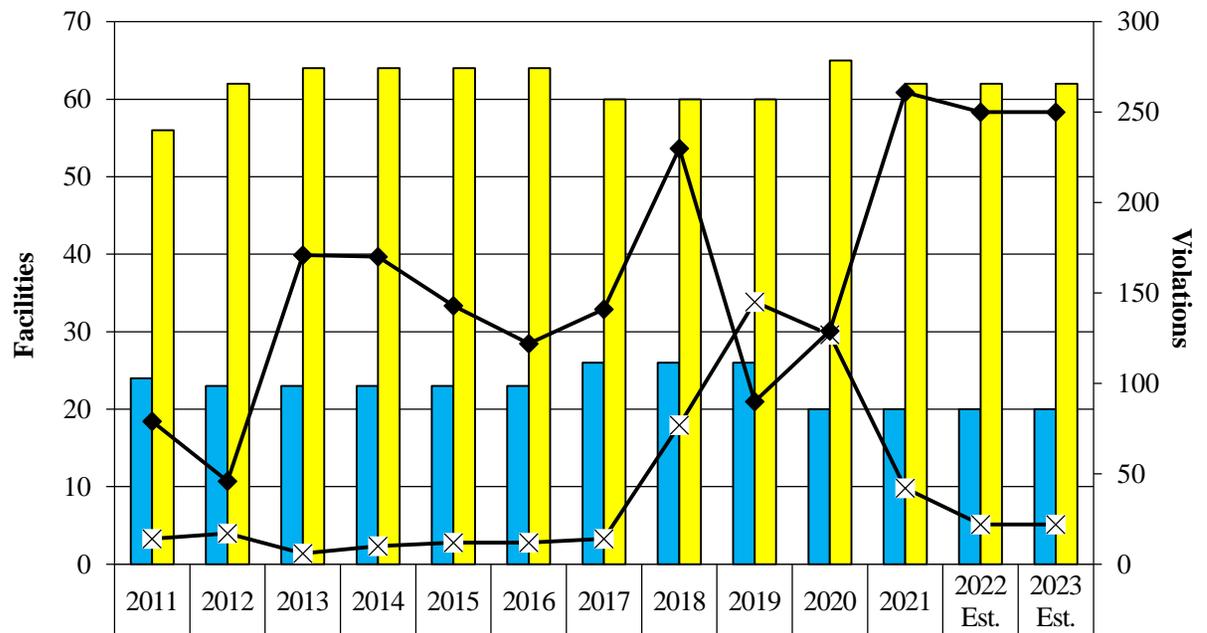
Performance Measures and Outputs

One objective is to manage and reduce nutrient discharge into the Chesapeake Bay. One of the measures for this objective is the number of corporate and State National Pollutant Discharge Elimination System (NPDES) discharge permit violations. MES's annual capital budget planning prioritizes projects that reduce the incidence of discharge violations at MES-operated facilities.

State NPDES

Exhibit 3 shows that MES has a greater number of local and corporate clients than State clients and that in fiscal 2021, the incidence of local and corporate discharge permit violations was greater as a percentage of total overall violations. The increase in the number of local and corporate discharge permit violations between fiscal 2020 (129) and 2021 (261) is due to several facilities new to MES as well as an existing facility that has violations when the seasons change. The number of parameters tested increased from 76,846 in fiscal 2020 to 83,230 in fiscal 2021 due to the addition of Garrett County facilities, which is offset partially by the termination of services for several facilities.

Exhibit 3
Local, Corporate, and State Discharge Permit Violations
Fiscal 2011-2023 Est.



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022 Est.	2023 Est.
■ State Facilities	24	23	23	23	23	23	26	26	26	20	20	20	20
■ Local and Corporate Facilities	56	62	64	64	64	64	60	60	60	65	62	62	62
—x— Discharge Permit Violations for State Facilities	14	17	6	10	12	12	14	77	145	127	42	22	22
—◆— Discharge Permit Violations for Local and Corporate Facilities	79	46	171	170	143	122	141	230	90	129	261	250	250

Source: Department of Budget and Management; Governor’s Fiscal 2008-2023 Budget Books; Maryland Environmental Service

Program Description

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 was then incorporated into 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 WTPs, WWTPs, water distribution and sewer collection systems, and water towers. Since fiscal 1992, funding for capital maintenance projects relating to WTPs and WWTPs has been budgeted under MES. Prior to this, the State budgeted capital maintenance funds for these projects in the DGS 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 270 water and wastewater facilities in Maryland, of which 95 are State-owned. The remaining facilities are operated by MES under contract with a local government or corporate owner.