



2023
**ANNUAL
REPORT**

**ENVIRONMENTAL SOLUTIONS
FOR A BETTER TOMORROW**

A MESSAGE FROM DR. GLASS



As I reflect on the past year, I can summarize FY23 as a period of remarkable growth and success after success for the Maryland Environmental Service (MES). The Agency remains committed to our three pillars: Safety, Level of Service, and Education and Training; and to our 5-year strategic plan, containing clear and measurable key performance indicators that are being tracked by the MES leadership team. We worked hard this year to improve the employee experience, ensuring both fairness and consistency by reviewing and updating policies and procedures, creating career pathways that encourage professional growth, and an official compensation guidelines administration document that details all the great benefits of being part of the MES team. I am proud of our commitment to doing our best work for our customers and clients, the investments made in our employees, and the establishment of a well-defined trajectory for the future.

For over 50 years, MES has provided essential services for Maryland's citizens and responded to emergencies when needed with a team of professional environmental experts, who take on any challenge, do not give up until the work is done, and are the definition of stewards to the environment. Our operating groups – Dredging and Restoration, Environmental Operations, Technical and Environmental Services, and Water and Wastewater Services – have provided project updates for the fiscal year, which you can read more about in the remainder of this report.

The MES teams in administration, finance, procurement, human resources, and information technology also continue to advance our processes, including notably dropping our vacancy rate from 11% to below 5%, in the first quarter of FY23. The recruitment efforts and strategies developed by the collaboration of these teams, working with our operating groups, directly resulted in meeting this aggressive goal quickly and with much success.

As we move into FY24, MES will continue to play an important role in furthering the State of Maryland's dedication to environmental protection and supporting the goal to become the greenest state in the country, while investing in community resiliency and sustainability, and remaining at the forefront of advancements in environmental science.

WELCOME



ABOUT US

MISSION

To provide operational and technical services to protect and enhance the environment for the benefit of the people of Maryland.

VISION

Maryland Environmental Service is an innovative and leading-edge solver of environmental problems; a responsible and successful manager of environmental operations; and a great place to work.

MES was established by the General Assembly in 1970 to assist with the preservation, improvement, and management of the quality of air, land, water, and natural resources, and to promote the health and welfare of the citizens of the State. Today, MES employs over 800 teammates and operates more than 1,000 environmental projects across Maryland and the Mid-Atlantic region. As a not-for-profit business unit of the State of Maryland, MES provides multi-disciplinary environmental compliance services to enhance and protect the environment through innovative solutions to the region's most complex environmental challenges.

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**MES CONTINUES TO RISE TO
CHALLENGES AND PROVIDE SUPPORT
TO ENVIRONMENTAL PROJECTS FOR
OUR MANY CLIENTS AND PARTNERS
THROUGHOUT THE STATE.**





COMPANY FACTS



\$82,120
PROVIDED IN TUITION
REIMBURSEMENT



\$64,550
AWARDED THROUGH
INSPIRE PROGRAMS



50
SAFETY & ENVIRONMENTAL
COMPLIANCE TRAINING
CLASSES CONDUCTED



78
TEAMMATES HONORED
FOR YEARS OF SERVICE

ENVIRONMENTAL DREDGING & RESTORATION

The MES Environmental Dredging and Restoration Group (EDR) provides operational and technical services on behalf of our clients in the areas of dredged material management, habitat restoration, hazardous materials management, environmental management systems and compliance, permitting, surveying and Unmanned Aircraft Systems (UAS) imagery, forest, wetland and various mitigation services, and outreach and engagement related to dredged material management. In fiscal year (FY) 2023, EDR provided continued operations of dredged material containment facilities (DMCFs), maintenance and monitoring at Hawkins Point Landfill and the Baltimore Inner Harbor Project, materials management and permit compliance at Dundalk Marine Terminal, and support of innovative reuse endeavors on behalf of the Maryland Port Administration (MPA). The following are some additional highlights of FY23.

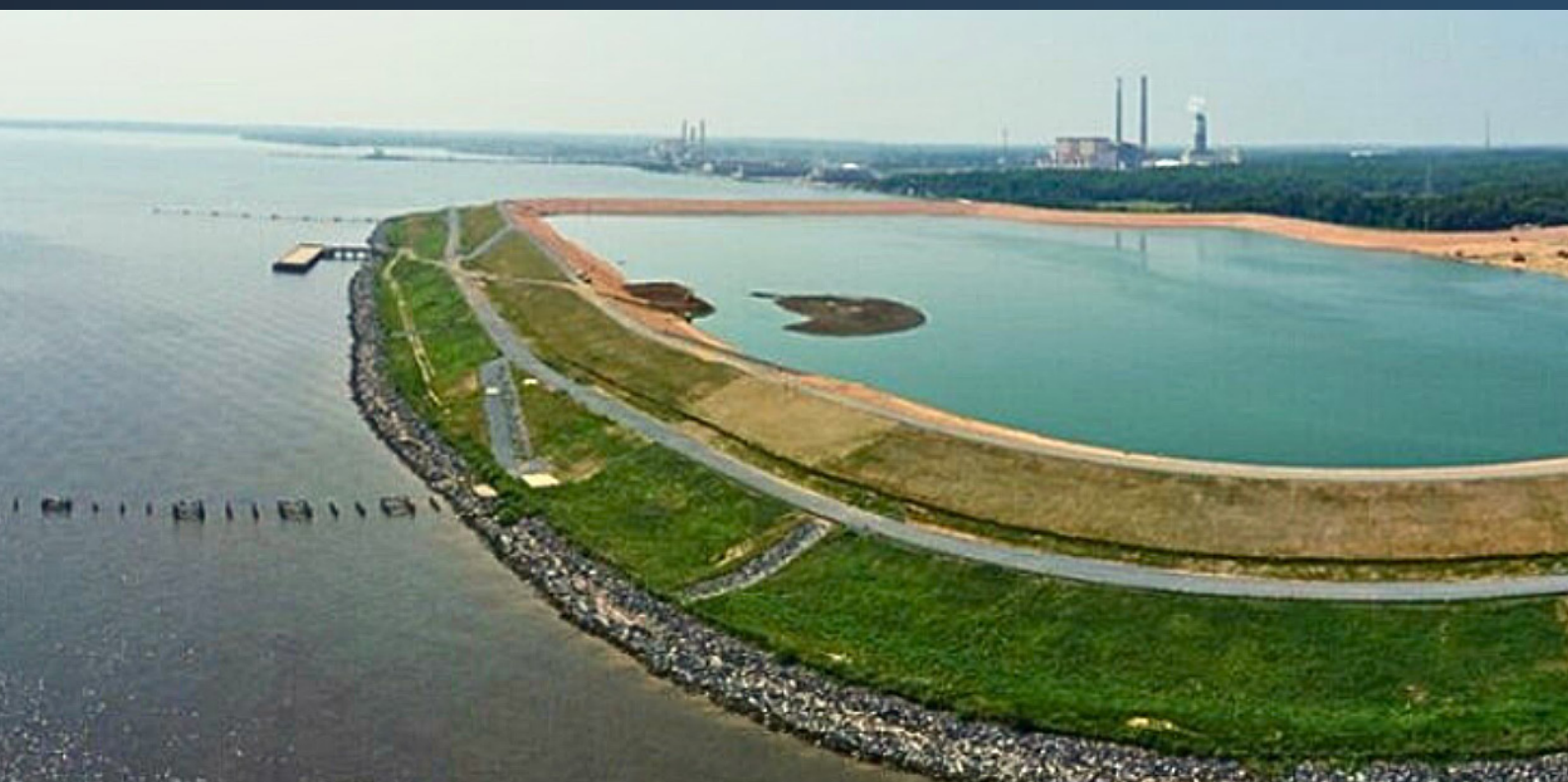
PORT OF BALTIMORE SUSTAINABILITY

EDR supported MPA's Environmental Management System by providing a variety of technical, operational, and subcontracted services to support safety, environment, and

risk management sustainability strategy. This included assisting with the International Organization for Standardization 14001:2015 Environmental Management System recertification audit in FY23 for the fourth time since the original certification in 2011. Throughout FY23, EDR remained committed to assisting MPA with their environmental initiatives, supporting activities such as establishing a pollinator garden, overseeing the upkeep of over 30 best management practices for stormwater, and contributing to the reduction of air emissions at the Port of Baltimore through the administration of the Port of Baltimore Diesel Equipment Upgrade Program.

COX CREEK DMCF EXPANSION

EDR continued management of the Cox Creek Expansion and Dike Raising to +60 throughout FY23 on behalf of our client, MPA. During the early part of FY23, dike raising was completed and stabilized to elevation +60 of the waterside DMCF. Maryland Department of the Environment (MDE) Dam Safety granted permission to increase the permitted water surface elevation (WSE) from +36 to +39 in the fall of 2022 to increase capacity to allow



for the federal fiscal year 2023 U.S. Army Corps of Engineers (USACE) inflow. WSE was limited to +39 due to a North South Cross Dike (NSCD) that separates the waterside portion of the DMCF from the upland section. Additionally, 5,300 linear feet of slurry wall was installed along the footprint of the upland dikes from November through March 2023, and the contractor placed approximately 325,000 compacted cubic yards of material to raise the upland dikes to an elevation of +60, for a total of approximately 1.5 million cubic yards of material placed for the entire project. During the last part of FY23, the contractor began performing final construction items such as milling and paving the end of Kembo Road



Masonville DMCF – Base Dike Widening Project

and converting sediment basins into permanent storm water management ponds.

EDR started design and permit modifications in FY23 to increase the height of the NSCD to allow for an increased WSE, which will expand capacity in the waterside of the DMCF and delay the need to utilize the upland portion of the DMCF for dredged material inflow. This is necessary to allow for a design and permit modification to further excavate surplus material within the upland cell to increase capacity overall at Cox Creek. This design was also initiated in FY23.

MASONVILLE DMCF EXPANSION

EDR completed construction of the Base Dike Widening Project which started in January 2022. The project consisted of placing over 300,000 cubic yards of fill material, including 177,000 placed along the interior of the dike in FY23, decommissioning and demolition of the two existing spillway weir structures, and placement of 125,000 square yards of high strength geotextile material. The base dike widening was necessary to lay the foundation for the next phase

of dike raising. The project was completed in June 2023.

EDR completed the design and received the necessary Dam Safety and Erosion and Sediment Control Permits for the Masonville DMCF Dike Raising to Elevation +30. This design included improvements to the adjacent Masonville Marine Terminal Upper Lot to prevent seepage from two sand filters and associated swales from impacting the future DMCF dikes, and the relocation of a storm drain. The project was advertised in June 2023, with construction expected to start in FY24.

MID-BAY ISLAND (BARREN AND JAMES ISLANDS)

EDR provides project management, planning, engineering and design, geotechnical, construction management, outreach, and adaptive management and environmental support services to MPA and USACE for the Mid-Bay Island Ecosystem Restoration Project (Mid-Bay). Mid-Bay will accommodate an estimated 90-95 million cubic yards of dredged material, providing a minimum of 30 years of capacity. Barren Island restoration construction started in March 2023, and will provide a minimum 72 acres of



Cox Creek DMCF - Expansion

**WE WORK WITH PASSION
& INTEGRITY TO SUPPORT
OUR CLIENTS & PROJECTS**

EDR CONTINUED

remote island habitat. James Island restoration will restore approximately 2,072 acres of remote island habitat, with construction planned to begin in 2025/2026.

Design, environmental, and geotechnical field work continued for both James and Barren Islands. EDR supported the Mid-Bay Project Development Team by coordinating the issuance of the Barren Island Tidal Wetlands License during the first quarter of FY23, which enabled Phase I Barren Island construction and associated permit-required monitoring to commence. MES continued to support the team in the design of James Island, including coordinating with agency stakeholders. Efforts to ensure continued community and stakeholder engagement included Mid-Bay Workgroup meetings, seasonal newsletters, the annual public meeting, and numerous one-on-one meetings, as needed, to keep the agencies and the public involved and up to date with the project.

POPLAR ISLAND

EDR continues to manage the Paul S. Sarbanes Ecosystem Restoration Project at Poplar Island (Poplar Island) on behalf of the project partners, USACE and MPA. EDR oversees daily operations of the site, including construction, environmental monitoring, and surveying. Poplar Island has received over 40 million cubic yards of dredged material through FY23.

In FY23, EDR continued efforts to prepare for future development by reclaiming approximately 160,000 cubic yards of construction sand material to increase capacity during dredged material inflow and to begin the early stages of upland dike raising.

EDR worked with a small group of agency representatives to investigate how changing the project's restored wetland high-marsh to low-marsh ratio would impact the response to sea-level rise. Lessons learned from both the Cell 5CD, and marsh ratio investigations will help develop more resilient wetlands across the rest of Poplar Island, as well as future wetland restoration at Mid-Bay.

COX CREEK SEDIMENT TECHNOLOGY AND REUSE (STAR) FACILITY

In December 2022, MPA purchased the former Tronox Hawkins Point facility. An Administrative Consent Order has been established for the site. This year, EDR and our subcontractors provided support for remediation planning. In coordination with remediation activities, the site will be developed as the future hub for processing dredged material from the Cox Creek DMCF for innovative and beneficial reuse.

MPA Youth Birding Week Program



DEEP CREEK LAKE

MES manages the Deep Creek Lake Arrowhead Cove Dredging Project on behalf of Garrett County. Past and current work includes planning, permitting, and design, with construction beginning in fall 2023. The project will involve mechanical removal of approximately 11,000 cubic yards of sediment from Arrowhead Cove in Deep Creek Lake. The dredging will be complete in the first quarter of 2024, with site restoration to occur in spring/summer 2024.

OUTREACH AND EDUCATION

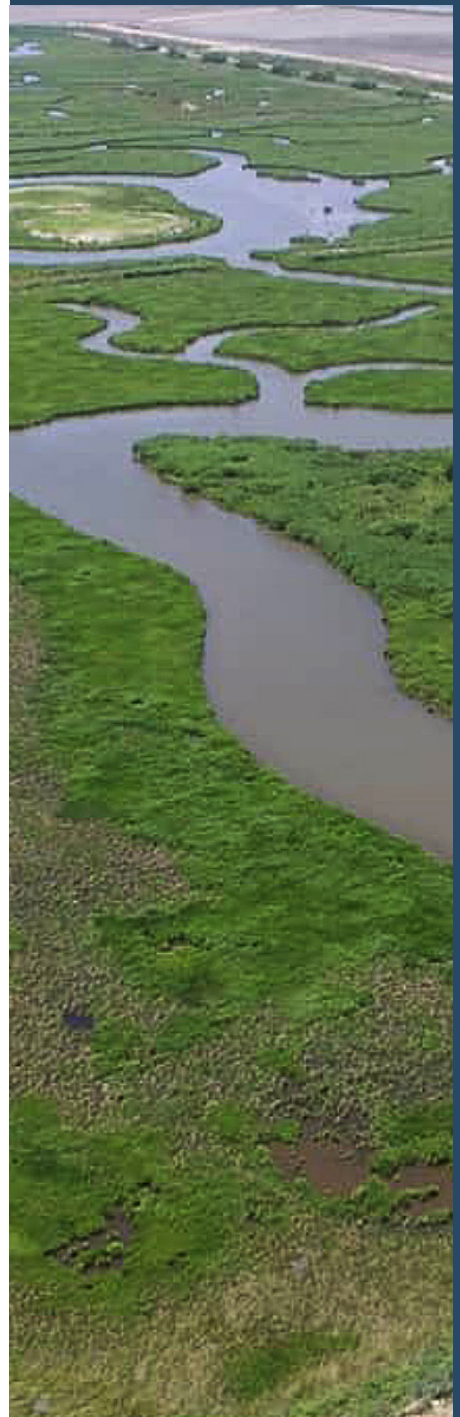
During the COVID-19 pandemic when in-person outreach proved to be difficult, the MES Environmental Education Team developed the Environmental Education E-Learning (E3) Portal (www.portofbaltimoreeducation.org) for the Port of Baltimore as a platform to make lessons, programs, and activities more accessible to educators, students, parents, and the general public. In FY23, the E3 Portal received national recognition from the American Association of Port Authorities, which accorded it the Award of Overall Communications Excellence, the highest award in its category.

In July 2022, EDR staff assisted MPA in planning and implementing the first MPA Youth Birding Week program for ten students. The program was jointly funded by a Chesapeake Bay Trust grant awarded to MES for the weeklong program. Students explored Masonville, Hart-Miller Island, Poplar Island, and Cox Creek while learning birding basics and citizen science from an experienced youth birding instructor. Highlights from the week included touching an osprey, participating in bird banding and learning its importance, seining for fish to learn about food chains, enjoying habitats restored by MPA through beneficial use of dredged material, and seeing firsthand how these habitats are helping birds and other wildlife.

TERP PROGRAM

The Port of Baltimore Terrapin Education and Research Partnership (TERP) celebrated the 18th anniversary of the program this year. MES created the TERP Program in partnership with MPA and the Arlington Echo Outdoor Education Center, which is part of the Anne Arundel County Public School system. Other program partners include the National Aquarium, CHESPAX, and the William S. Schmidt Center. Juvenile turtles from Poplar Island live in Maryland classrooms for a school year (fall to spring). Students collect growth data, observe behavior, learn husbandry protocols, and research the natural history of the species. After caring for the hatchlings, students release the terrapins into the Chesapeake Bay at Poplar Island. To date, over 3,100 terrapin hatchlings from Poplar Island have been head-started by students from more than 850 classes in schools around the State.

Poplar Island Wetland Creation



TECHNICAL & ENVIRONMENTAL SERVICES

The Technical and Environmental Services (TES) group provides expertise in diverse areas of environmental services and project management supporting the needs of State agencies, counties, municipalities, private industries, and universities. FY23 saw continued service in the areas of environmental monitoring, reporting, laboratory services, National Environmental Policy Act (NEPA) review assistance for Maryland Department of Natural Resources (DNR) and Maryland Department of Transportation (MDOT), geospatial digital mapping, application development and programming, as well as stormwater engineering, inspection, and technical services. New in FY23, TES significantly expanded our role in a broad range of projects and initiatives on behalf of the Maryland Energy Administration (MEA) and

the Maryland Military Department (MMD).

In FY23, TES continued to support stormwater compliance projects regulated under the National Pollutant Discharge Elimination System (NPDES) and Municipal Separate Storm Sewer Systems (MS4) across the State, including services to Bowie State University, University of Maryland College Park, Universities at Shady Grove, Maryland School for the Deaf, and St. Mary's County. Notable projects for TES in FY23 included the kickoff of the Mesonet Project with the Maryland Department of Emergency Management (MDEM). TES is providing management and technical services in support of the creation and maintenance of a statewide monitoring system that measures the size and duration of mesoscale weather events.



Working with the Maryland DNR, TES also completed the first stage of a project to evaluate and implement a lead abatement and remediation project at Seneca State Park where lead shot has been found to be contaminating the ground.

The highly specialized archaeology staff in TES worked with the State Highway Administration (SHA) on the research, excavation, curating, and public outreach events related to artifacts found at Harriet Tubman's birthplace historic site, and staff also continue to support the MDOT Roadside Historical Markers program. For this program, TES staff assist in application review, historical research for marker accuracy, and coordination for new marker unveiling events.

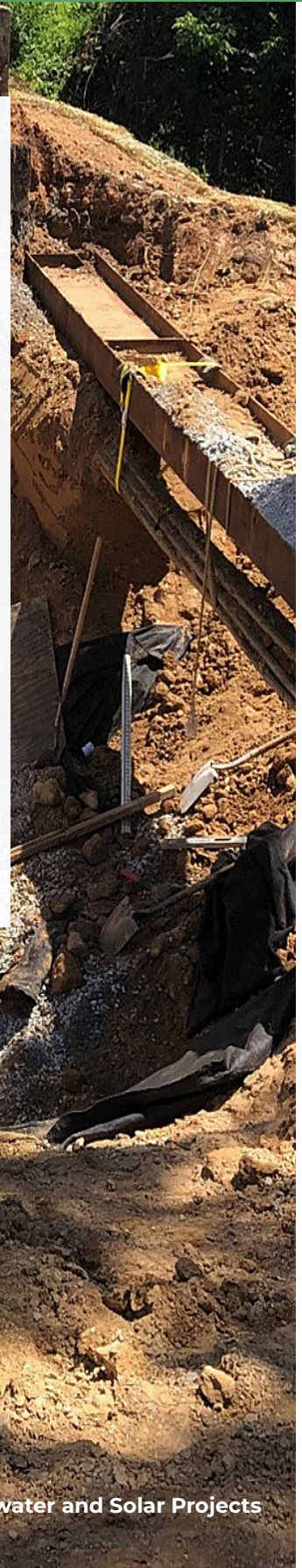
TES also kicked off its participation in Maryland's Five Million Trees Initiative, which is a multi-

agency effort to commit to growing five million native trees by 2031. TES staff developed the online site for information on the program and tree tracking.

Although the Baltimore/Washington International (BWI) Thurgood Marshall Airport experienced an unseasonably warm winter with minimal snowfall or freezing temperatures last winter, decreasing the need for deicing fluid collection management, TES nevertheless continued to provide environmental compliance and environmental systems maintenance support to the Maryland Aviation Administration (MAA) and private vendors operating BWI. The TES staff at BWI maintained environmentally responsible operations in all weather conditions and handled an unusual number of emergency spill responses in FY23, in addition to providing on-call emergency maintenance, and repair service to the airport's stormwater infrastructure systems.

TES also ramped up support in FY23 to the MMD on underground storage tank inspection, removals,

WORKING TOGETHER TOWARDS A MORE RESILIENT & SUSTAINABLE MARYLAND



Stormwater and Solar Projects

TES CONTINUED

and remediation, as well as spill prevention control and countermeasure plans and other stormwater inspection and maintenance.

As in years past, TES continued to serve the MDOT modal administrations in environmental compliance and operational tasks. TES continued to grow our partnership with SHA with the execution of a new MOU for \$60 million over a five-year term, providing technical expertise and supporting SHA within the Metropolitan Districts (Districts 3, 4, 5 and 7) in the areas of drainage system inspection, operation and maintenance of stormwater facilities, control of vegetation, investigations and assessments related to drainage structures, and remediation related to drainage structures requiring response within 72 hours. There were approximately 20 locations assigned to MES in FY23 requiring either immediate drainage remediation response or stormwater planning and construction. TES also continued in FY23 to provide staffing support to SHA Office of Materials Technology, adding four full-time employees onsite for field exploration, and continuing expert support for the Engineering Geology Division in the inventory and assessment of 125 rock slopes. TES continued our long-standing relationship with the Office of Environmental Design, providing compliance support in the areas of industrial wastewater management, waste management services, and drinking water sampling.



ENERGY ACTIVITIES

During FY23, the TES team added four full-time staff to meet the needs of the new work associated with support to MEA. MES, on behalf of MEA, worked this year on efforts related to the Clean Energy Rebate Program (CERP) for both residential and commercial applications, as well as the Electric Vehicle Supply Equipment (EVSE) program. TES also regularly participates in the work associated with MEA's Geothermal Study task force, the Solar Taskforce, and a landfill solar study (to place solar panels on closed landfills). In partnership with DNR, MES will oversee the installation of solar systems on the buildings at five Maryland parks in FY24.





Harriet Tubman Birthplace Excavation

ENVIRONMENTAL OPERATIONS

The MES Environmental Operations (EO) Group serves counties, large municipalities, and rural communities, offering solutions for solid waste challenges and recycling services. The Group operates award-winning landfills and dual- and single-stream recycling centers which serve millions of Marylanders. Additionally, we manage composting facilities that transform yard, leaf, and food waste into the highly sought-after products Leafgro® and Leafgro Gold®.

The Group also works with the Maryland Department of Public Safety and Correctional Services operating a cogeneration facility that

supplies steam and electricity to the Eastern Correctional Institution (ECI), and steam for heating, laundry, and cooking at three other Maryland Correctional Facilities. EO collaborates with various government agencies in Maryland to provide essential services, including the MDE to support used oil and antifreeze collection and operate a mobile chlorofluorocarbon recovery unit. Additionally, EO partners with the Maryland Department of Aging (MDoA) to manage a Durable Medical Equipment program. This program receives discarded durable medical equipment so it can be refurbished, recycled, and commissioned for reuse.



Montgomery County
Composting Facility

INTEGRATED SOLID WASTE MANAGEMENT OPERATIONS

MES is a leader in integrated solid waste management operations in the State of Maryland. The Agency's solid waste operations focus on source reduction, reusing and recycling, and composting to reduce the volume of materials being sent to landfills or for incineration. We offer engineering, construction, and operations for large-scale, diversified, innovative, and integrated solid waste management.

STATE-OF-THE-ART COMPOSTING

Composting is an integral component in Waste Diversion Strategies worldwide. Diverting organic waste from landfills extends their useful life and reduces the amount of produced methane, a very harmful greenhouse gas produced at landfills. MES is proud to operate two of the largest, longstanding, and successful composting programs in the United States.

MES manages the leaf- and yard-waste composting operations for Prince George's, Harford, and Montgomery Counties. In 2023, the team processed over 155,000 tons of organic material, producing high-quality compost and wood mulch which is sold commercially (and typically sells out) throughout the Mid-Atlantic region. The Prince George's and Montgomery County Facilities produce Leafgro® compost, while Prince George's County also produces food-scrap derived Leafgro Gold® compost.

In addition to composting yard waste, MES operates the Prince George's County's 12-bunker food-waste compost system to produce Leafgro Gold®. In FY23, the team processed over 33 million pounds of food waste, thereby diverting material that would have otherwise been landfilled. In FY23, MES celebrated 10 years of composting food scraps in Prince George's County. The facility hosts many tours each year for residents, school groups, and local, State, national, and international representatives interested in food scrap composting. This year such tours included the Department of State, colleagues from the White House's Council on Environmental Quality, the National Oceanic and

Prince George's County Materials Recycling Facility



Atmospheric Administration, the Office of Waste Diversion for Baltimore City, MDE, the U.S. Environmental Protection Agency, and the U.S. Composting Council. Frank Franciosi, the Executive Director of the U.S. Composting Council had this to say about the tour: "I wanted to take a moment to thank you all for your time and hospitality. The tour was a real eye opener for many of the attendees."

In FY23, MES continued working with BWI Airport and its food vendors to operate a food-scrap collection program. This program continues to expand, and now involves work with over 40 vendors within the airport, resulting in the collection of over 188,000 pounds of food scraps for recycling that would have otherwise been landfilled.

Over the past two years, MES helped our long-time partner Montgomery County with a Commercial Food Scraps Recycling Partnership Program. This program has been extremely successful, with the County recently celebrating the recycling of over 1,225,000 pounds of food scraps. Those food scraps are then sent to the MES-operated Prince George's County Organics Composting Facility and the Maryland Bioenergy Center located in Howard County and owned by Bioenergy Devco.

INNOVATIVE RECYCLING OPERATIONS

The Prince George's County Materials Recycling Facility opened in 1993 and was converted to a single-stream facility in 2007. The conversion allowed the facility to produce the traditional single-stream materials but limited the production of mixed 1-7 plastic bales and separate rigid plastics. The facility was upgraded

in 2021 with the addition of three new optical sorters, a new plastics sorting line, a new fiber screen, and new bunkers.

In addition to producing fiber, glass, and metal recyclables, the facility now generates five plastic commodities, including polyethylene terephthalate (No. 1 PET), naturally high-density polyethylene (No. 2 HDPE), colored high-density polyethylene (No. 2 HDPE), polypropylene (No. 5 PP), and bulk mixed rigid, significantly expanding the marketability of the plastic bales and increasing the recovery of recyclable plastics that would have been routed to the landfill. The replacement of a traditional fiber screen with a new, non-wrapping screen also contributed to a significant reduction in contamination in the paper bales.

The Prince George's County Materials Recycling Facility, now equipped with the newest technology in optical sorting, is well-positioned to continue serving the residents of Prince George's County for many years into the future. In 2023, the facility processed and marketed over 29,000 tons of recyclables with a market value of \$3,460,804. This facility also hosts many tours, educating all types of groups about recycling. This year, tour highlights included the Solid Waste Association of North America, the World Bank, the Association of Energy Engineers, and a group from the United States Agency for International Development.

In Montgomery County, EO has operated a dual-stream recycling facility along with a separate fiber recovery line for 30 years. In 2023, MES and Montgomery County processed over 41,535 tons of recyclables. In addition, MES continued to work with the County on the design of needed upgrades at the Materials Recycling Facility. These upgrades will include the latest technologies, provide more automation, and increase throughput.

EO CONTINUED

ENERGY ACTIVITIES

RECYCLING DURABLE MEDICAL EQUIPMENT

MES operates the State of Maryland's only Durable Medical Equipment (DME) Recycling Facility in partnership with the MDoA. MES staff collects DME from Statewide donation centers and brings the items to the refurbishment facility in Prince George's County. At the facility, MES staff inspects, cleans, and repairs the equipment, readying it for distribution at MDoA partner facilities throughout Maryland. This program – brainchild of former MDoA Secretary Rona Kramer – improves the quality of life for many Maryland residents, regardless of age, income, or location, with priority given to the needy and elderly populations. The program aligns perfectly with the MES mission and is one we are proud to support. In less than three years of operations, this program has recycled more than 26,465 individual items, including 2,847 wheelchairs, 1,330 hospital beds, 655 power wheelchairs, and 394 patient lifts.

ENERGY PLANT OPERATIONS

MES operates a four-megawatt, combined heat and power facility for the Maryland Department of Public Safety and Correctional Services at the ECI Complex in Somerset County. The correctional complex has its own dedicated cogeneration power plant, which is designed to produce the thermal and electrical needs of the institution. It provides electrical power, high-temperature hot water for heating and cleaning services, and steam for laundry operations to the correctional complex. The facility currently burns on-spec wood chips for fuel; however, in FY23, MES began a long-awaited conversion that will allow the plant to utilize natural gas as a fuel. This conversion to natural gas is an important transition to a more environmentally sustainable and efficient method of operation. The Gas Conversion Project is the final step in an initiative to bring natural gas service to Somerset County. The project kicked off in FY21 with a request for proposals by MES for the supply of natural gas to ECI and the University of Maryland Eastern Shore. Chesapeake Utilities was the successful offeror, which led to the installation of a gas pipeline that extended an existing natural gas pipeline into Somerset County. The project made natural gas service available in Somerset County for the first time, an investment that will allow Somerset County to thrive by retaining existing and attracting new businesses.

In addition to ECI, MES also operates steam boiler plants for the Jessup Correctional Facility, the Central Maryland Correctional Institution, and the Maryland Correctional Institution in Hagerstown. These plants produce steam for heat, cooking, and laundry at each of the three prisons .

Montgomery County Leafgro Bagging Operations



REGIONAL SOLID WASTE MANAGEMENT

In 1988, MES and Queen Anne's, Talbot, and Caroline Counties of Maryland's Eastern Shore worked out a regional agreement to meet the municipal solid waste needs of the area for 80 years. Kent County later joined the partnership in 1992. The agreement – the only regional solid waste management agreement in Maryland – consists of four planned facilities. To date, two of the four landfills have been financed and constructed by MES. The Agency also acts as the landfills' owner and operator. In addition to landfill operations, MES manages the recycling program for the four counties, including collection and sale of recyclables.

ENVIRONMENTAL ENGINEERING AND MONITORING

EO also provides up-to-date landfill monitoring support services for both open and closed facilities, including sampling, analysis, statistical interpretation, and reporting results of the analysis of groundwater, surface water, and landfill gas at 27 landfills located throughout the State of Maryland.

EO provides solid waste engineering and construction management services for clients throughout Maryland, such as construction management and engineering services to the Prince George's County Department of the Environment, Resource Recovery Division. Through this unique five-year agreement, MES manages consulting and service contracts related to capital improvement projects and regulatory compliance at multiple facilities, including the Brown Station Road Sanitary Landfill, Sandy Hill Landfill, the Prince George's County Materials Recycling Facility, the Prince George's County Organics Composting Facility, and the residential convenience centers.

Additionally, MES provides consulting services to several Maryland Counties for services such as updating their ten-year solid waste management plans, evaluating solid waste disposal alternatives, developing strategies for sustainable resource management, and zero-waste management planning.

ON THE WORLD STAGE

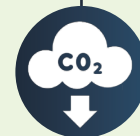
This year EO was proud to host two members of the Young Southeast Asian Leaders Initiative (YSEALI), an exchange program that places international professionals with organizations in the United States working on various topics, including sustainability and the environment. The program is a partnership between the International City/County Management Association and the American Council of International Education. It offers opportunities for educational exchanges between U.S. and young Southeast Asian leaders, along with a competitive reciprocal exchange component. As part of the program, a Division Chief from MES traveled to Indonesia to learn about the country's solid waste management systems.



33,794
LBS OF FOOD
WASTE COMPOSTED



440,662
GALLONS OF
USED OIL RECYCLED



15,250
METRIC TONNES
OF CARBON OFFSETS
BY LANDFILL GAS
MANAGEMENT



11,181
MEGAWATT-HOURS
OF ELECTRICITY
GENERATED FROM
BIOMASS



22,968
GALLONS OF
ANTIFREEZE RECYCLED



155,322
TONS OF ORGANICS
PROCESSED FOR
COMPOST AND MULCH

WATER & WASTEWATER SERVICES

The MES Water and Wastewater Group (W/WW) supports the design and construction, operations and maintenance, and management of biosolids and residuals for water and wastewater treatment plants across the State of Maryland. These include many municipal, county, and privately-owned facilities, as well as State-owned plants at correctional and health facilities, rest areas, and State parks.

The engineering staff plan and manage capital improvement and other public works projects, helping clients determine their water and wastewater needs, assisting in selecting the right size facility, technology, and equipment, preparing specifications, and overseeing upgrades of older plants and construction of new ones. In many cases, MES operations and maintenance staff remains on these sites, handling the day-to-day tasks that keep plants running smoothly and meeting permit requirements, along with help from the biosolids staff which work to ensure environmentally acceptable, reliable, and cost-effective methods are used to manage the solid material generated by each wastewater treatment plant (WWTP).

W/WW engineering staff maintain the State Water and Wastewater Utility Master Plan, which reflects changes in regulations, population, or level of usage changes at State facilities. Based on the master plan, coordination efforts, and interface with operations, the staff then develop a multi-year capital improvements plan and share it with the Capital Budget Analyst from the Maryland Department of Budget and Management, as well as each agency. This prioritized list then becomes the MES Five-Year Plan in the annual Capital Budget Request. In FY23, MES received a total appropriation of \$25,992,000 for 13 projects.

The water and wastewater facilities operated by MES generated approximately 27,573 wet tons (3,009 dry tons) of sludge in FY23. Approximately 53% of the material generated in FY23 was beneficially reused, primarily by recycling the tonnage for its nutrient and soil conditioning properties onto agricultural land.

DC Water's Blue Plains Advanced WWTP and five of Washington Suburban Sanitary Commission's WWTPs produce a treated biosolids material that is land-applied by



contractors to various agricultural, forestry, and reclamation sites. MES employs a staff of four Virginia-certified field inspectors, who execute a customized, third-party independent field monitoring program at these land application sites.

UPGRADING WATER AND WASTEWATER FACILITIES

The W/WW Engineering Division provides water and wastewater utility support services to the Maryland Departments of Natural Resources, Public Safety and Correctional Services, Juvenile Services, Health, Veterans Affairs, and Maryland Military, and internally to MES W/WW Operations. The Division coordinates with these agencies to ensure the facilities meet the needs of their water and



Dorsey WWTP

wastewater systems and are compliant with environmental regulations. The Division also coordinates upgrades and expansions as needed.

The following projects were completed or in progress in FY23:

The Woodstock Job Corps Center WWTP was upgraded to a membrane bioreactor (MBR) facility with a capacity of 50,000 gallons a day in December 2022 and began to meet the enhanced nutrient removal (ENR) requirements in January 2023. The center, located in Woodstock, MD, is run by the Department of Labor.

Victor Cullen WWTP, located in Sabillasville, MD, is owned by the Department of Juvenile Services and serves the Victor Cullen Center. The aged trickling filter plant has been upgraded to a 50,000-gallon-a-day sequencing batch reactor facility capable of meeting ENR-level treatment. The upgraded plant is in service, and a final inspection has been conducted.

The MMD is expanding **Camp Fretterd**, located in Reisterstown, MD, with the construction of a new Marine Corps Reserve Center; the water and wastewater requirements will exceed current

capacities. MES designed a new booster pump station and a WWTP expansion plan for the facility. Both facilities are expected to be online by January 2025, coinciding with the completion of the facility expansion.

The Cheltenham Youth Detention Center in Prince George's County is operated by the Maryland Department of Juvenile Services for male youth who are waiting to go to court or be placed in a treatment facility. The current WWTP serving the center opened in 1990 and is obsolete. A new design capable of meeting ENR limits was completed in FY23. Construction will begin in FY24.

Phase II of the **Rocky Gap State Park** sewer collection system upgrade is almost completed. This project includes the installation of new RV dump stations and a new force main so utility access points across the golf course could be abandoned. Additionally, three pump stations were upgraded and a new emergency generator was installed. This project's biggest hurdle was getting the RV dump station installed and operational by the 2023 Memorial Day weekend. MES met this goal and DNR and their holiday campers were not disappointed.



Freedom District WWTP

**MES STRIVES TO DELIVER
EXCEPTIONAL SERVICE
TO OUR CLIENTS AND
PARTNERS**

W/WW CONTINUED

Cambridge WWTP



W/WW staff worked to evaluate the entire electrical system at **Elk Neck State Park**. This study will be the basis for the design of an upgrade of the entire system, which will eliminate all non-code-compliance issues and ensure it meets DNR's future needs.

Designs for improvement to the water treatment plant and water tower at **Sandy Point State Park** are about 50 percent complete. Permit applications have been submitted and meetings with the Critical Areas Commission have been held. The designs are expected to be completed by the end of the calendar year, and the project should be underway before the end of FY24.

Upgrades to **Point Lookout State Park** include replacement of the entire water distribution system and wastewater collection system, comprised of distribution lines, gravity sewer, force mains, sewage pump stations, and a hydropneumatics potable water tank. This has been a complicated project that traverses many wetland areas and crosses through a Confederate cemetery. During FY23, W/WW staff also worked on developing a preliminary engineering report (PER) for the upgrade of the electric power distribution system throughout Point Lookout State Park. The report summarized the findings and recommended improvements. DNR reviewed and approved the PER to move to the design phase.

In FY23, MES contracted WATEK Engineering Corporation to design and replace the gravity-force main that runs from Catoctin Hollow Road, down Route 77, to the Town of Thurmont's sanitary sewer collection system. The sewer line is original to when the park was built and carries sewer flows from both **Cunningham Falls State Park** and **Catoctin Mountain National Park**.

The sewer line crosses Hunting Creek in multiple spots, both below the stream bed and above it in a bridge decking. This will be a unique sewer line replacement, incorporating several different technologies to avoid disturbing the least number of historical structures, creeks, and wildlands. The design – which incorporates directional drilling, pipe bursting, and open cut excavation – is complete.

A PER highlighting improvement needs to the **Janes Island State Park** water, electric, and fire suppression systems was completed during FY23, and includes extension of the water main, improvements to the power distribution system, and installation of fire suppression systems in cabins, conference room, and other structures. DNR reviewed and approved the PER to move to the design phase. The findings from this study will provide the basis for the design of an upgrade of the entire system, which will eliminate all non-code-compliance issues identified and ensure it meets DNR's future needs. Funds for the design of recommended improvements were provided in early FY24 and the design is currently underway.

WATER AND WASTEWATER PLANT OPERATIONS ACROSS MARYLAND

Throughout the State of Maryland, MES operates and maintains 145 water treatment facilities, 93 WWTPs, and 32 pump stations for the State of Maryland and municipal clients. During FY23, MES treated 1.84 billion gallons of drinking water and 6.27 billion gallons of wastewater. Our primary goal for our clients is compliance with all applicable standards. To that end, MES tracked 85,596 permit parameters and achieved a compliance rate of 99.7 percent.

EMERGENCY RESPONSE

In January 2023, the Midland-Lonaconing Water System was placed under a boil water advisory by the MDE, leaving the town of Lonaconing without potable water. MDE directed the town to reach out to MES for assistance with their failed treatment facilities. The MES Western Region's staff immediately assessed the three treatment facilities and reviewed the distribution system to determine an action plan to feed the town potable water from the Town of Frostburg. MES coordinated the effort between the two towns, and MDE put the plan into action. After two weeks of extensive work flushing the lines and conducting sampling, MES was able to restore potable service to most of the residents. Newly elected Governor Wes Moore visited the town and recognized MDE, the Maryland Department of Health, the Maryland Department of Emergency Management, and

145
WATER TREATMENT
FACILITIES
OPERATED BY MES

93
WASTEWATER
TREATMENT
FACILITIES
OPERATED BY MES

1.84
BILLION GALLONS
OF DRINKING
WATER TREATED

6.27
BILLION GALLONS
OF WASTEWATER
TREATED

32
PUMP STATIONS
OPERATED BY MES

99.7
PERCENT
COMPLIANCE WITH
SAFETY STANDARDS

Freedom District WWTP



MES for working in partnership with the Town of Lonaconing and the City of Frostburg to restore a safe and sustainable supply of drinking water to the town.

MES also successfully assisted the City of Baltimore in meeting their permit parameters for four months, fulfilling an emergency directive from MDE. The operations and maintenance staff left the facility in December 2022. The city requested MES remain to finish the projects started on the high rate digestors (HRD) and the primary settling tanks (PST). Rehabilitating PST 7 was completed, and the tank was put in service in December 2022. The repairs to PST 2 and HRD 4 should be complete by the end of October 2023.

FY24 OPERATION AND MAINTENANCE GRANTS

Five MES-operated facilities achieved compliance with ENR goals and were awarded \$354,321 in Operating and Maintenance Grants from MDE. Those five facilities are Dorsey Run Advanced WWTP, Freedom District WWTP, Rocky Gap State Park WWTP, and the Maryland Correctional Institution (Hagerstown) and ECI WWTPs.

TRAINING AND LICENSING

MES was issued a permit that required training in drainfield management. After investigating the availability of classes for the training and finding none, Northern Region Environmental Systems Regional Supervisor Todd Boulden developed a drainfield training class and had it approved by MDE for training credits toward license recertification. The four-hour course covered topics including key parts of drainfield systems, drainfield monitoring, operation, and maintenance (best practices), and drainfield troubleshooting. The first class is expected to be held in August 2023.

Operators in the Water/Wastewater group must pass certification exams to obtain the required licenses to operate water and wastewater systems in Maryland. The average passing percentage for all exams statewide is only 33 percent. MES sends candidates to sit for an exam only after they have proven their proficiency by passing an in-house pre-exam. The overall passing percentage for MES employees is currently 51 percent, 18 percent higher than the State average! Thanks to the rigorous operator in training program and the mentors involved, MES produces some of the best-trained operators in Maryland!

After a three-year absence, MES once again assembled a team for the annual Operations Challenge competition in Ocean City. The team is coached by Todd Boulden and staffed by Jerome Lucky, Chris Dallas, Dwayne Biles, and Ryan Zacherl. The team is training diligently and looks forward to demonstrating their skills at the Tri-Association Conference in August!



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