



DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY
BIANNUAL REPORT OCTOBER 2026

**COMBINED SEWER OVERFLOW (CSO)
CONTROL ACTIVITIES**

CLEAN RIVERS PROJECT NEWS

TBM Emily is Prepared to Work

Big things are happening at the Potomac River Tunnel Project. Emily, DC Water's second tunnel boring machine (TBM), arrived on-site on May 27, 2026, after traveling from Germany, where she was manufactured by Herrenknecht. The giant machine is named for Emily Edmonson, who bravely pursued freedom with her sister, Mary, and 75 other enslaved people aboard the Pearl in 1848, and is being prepared to go underground where it will soon begin work.



Emily is one of two tunnel boring machines that will construct the Potomac River Tunnel, a key component of DC Water's Clean

Rivers Project. While

TBM Mary is excavating north toward Georgetown, Emily will excavate the southern section of the tunnel toward Joint Base Anacostia-Bolling, where the Potomac River Tunnel will connect with the existing Anacostia River Tunnel system.

Since she arrived at the West Potomac Park construction site, crews have been preparing Emily's components for lowering 100 feet into the launch



shaft. The first major components, including the tail shield, front shield, and cutterhead, are scheduled to be lowered into the shaft beginning in late September 2026. Once underground, crews will assemble the machine piece by piece and conduct extensive testing and commissioning to ensure all systems operate safely and efficiently to begin excavation in December.

When fully assembled, Emily's 705-foot length and 1,000-ton weight will include 16 gantries that support tunneling operations. The gantries form a train-length underground factory for the TBM, delivering power, ventilation, construction materials, and worker access deep underground. At the front, the cutterhead, measuring 21 feet in diameter, excavates rock and soil while the machine simultaneously installs the concrete tunnel lining behind it. The machine's

maximum power demand is 3,520 kilowatts, enough electricity to power more than two thousand homes, providing the energy needed to operate its massive excavation, transportation, and support systems as it builds the tunnel beneath the District.

Emily will construct approximately 3.1 miles of the southern section of the Potomac River Tunnel. Once complete, the 5.5-mile tunnel system will help capture and transport combined sewer overflows during heavy rain events to the Blue Plains Resource Recovery Facility, significantly reducing pollution entering the Potomac River.

Mary and Emily sought freedom by sailing on the Potomac River nearly 180 years ago. Today, the tunnel boring machines bearing their names will help build critical infrastructure that protects that same river for generations.

Mary is Movin' and Groovin' Underground



In April 2026, DC Water officially launched tunnel boring machine (TBM) “Mary,” marking the start of excavation for the northern leg of the Potomac River Tunnel. Mary is currently working her way underground and is expected to reach the Rock Creek Trail construction site in Spring 2027.

Extensive preparations went into the launch, including constructing a 100-foot-deep mining shaft and excavating a starter tunnel to launch the machine. The front portion of Mary was then lowered and assembled inside the shaft and starter tunnel. At the very front is the cutterhead—a massive, drill-like tool for excavation. Right behind that sit the front, middle and tail shields - huge, heavy-duty steel cylinders for the crew and equipment. Trailing behind are the initial gantries, specialized rolling modular platforms, that support the machine’s underground operation.



After Mary began advancing through the tunnel, gantries were attached one by one until fully assembled. The gantries—supporting systems for power, ventilation,

material transport, and worker access—were progressively lowered and connected, forming a continuous underground operation. Now fully assembled, Mary is a 21-foot diameter, 1,200-ton, 700-foot-long behemoth of a tunneling machine.

Mary is currently working her way towards the Lincoln Memorial. After she completes the initial 995-foot journey, she will be “parked” approximately 100 feet underground for 3 months to transition mining modes. The soil conditions during the initial drive required Mary to operate in “slurry mode” which is used while the machine is mining mostly through soil. During the planned transition period, crews will remove the slurry piping network, since it is not needed for the next section of mining. This conversion is necessary because the ground conditions change significantly beyond this point. From here through most of the drive toward Georgetown, the machine will be tunneling through solid rock rather than soil. Rock does not require slurry to



support the tunnel face, so Mary will be converted into an “open mode” machine. As part of this conversion, crews will install a conveyor belt system inside the tunnel. Once mining resumes, rock fragments produced by the cutting process will be loaded directly onto this conveyor, which will carry the material all the way back to the surface for hauling and disposal. This transition is a normal and expected part of tunneling through varied geology, and the planned stoppage allows crews to safely reconfigure the machine for the rock conditions ahead.

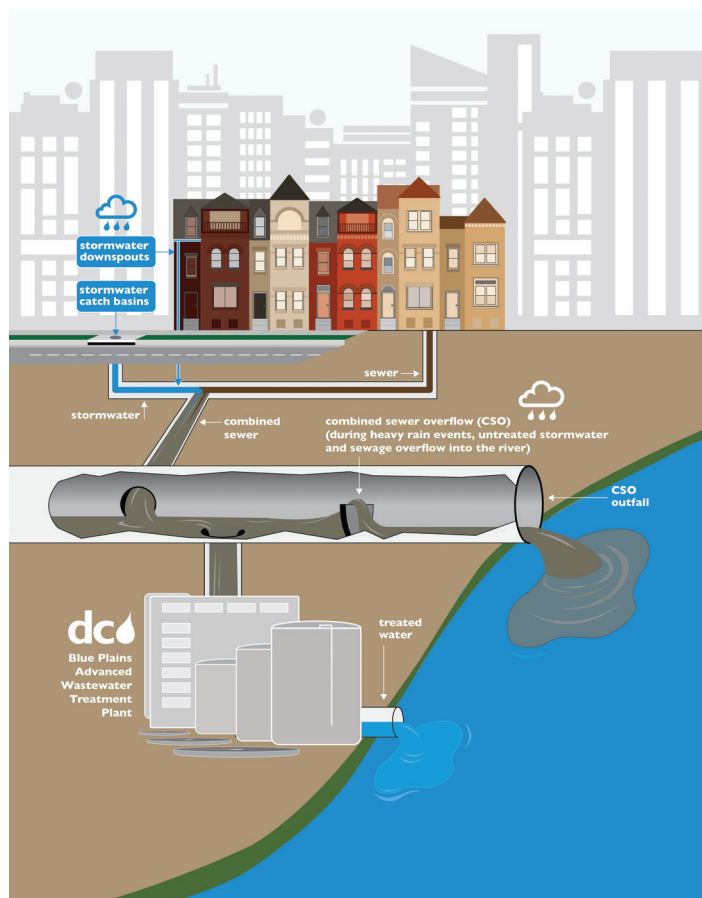
Mary is named after abolitionist Mary Edmonson, who—along with her sister Emily—attempted a daring escape from slavery via the Potomac River in 1848. Emily, DC Water’s second TBM for the Potomac River Tunnel Project, arrived in May at the West Potomac Park construction site. Once assembled and launched in late 2026, she will excavate the tunnel’s southern section. Together, Mary and Emily will construct the 5.5-mile Potomac River Tunnel, which will reduce combined sewage and stormwater overflows to the Potomac River by 93% in an average year of rainfall.



FAQs About the Combined Sewer System

What is a Combined Sewer?

A combined sewer is a single pipe that carries both sanitary wastewater and stormwater runoff. Many older cities in the United States are served by combined sewers. In the District, the combined sewer system was designed and built by the U.S. Army Corps of Engineers. Modern practice is to build two pipes in the street—one for stormwater runoff, and one for wastewater from homes and businesses.



What is a CSO and why does it occur?

A CSO is a combined sewer overflow. During dry weather, sewage from homes and businesses is conveyed to the District's wastewater treatment plant at Blue Plains, where the wastewater is treated to remove pollutants before being discharged to the Potomac River. During certain rainfall conditions, the capacity of a combined sewer may be exceeded. When this occurs, the excess flow, a dilute mixture of wastewater and stormwater runoff, is discharged to the Anacostia River, Potomac River, Rock Creek and tributary waters. The Federal Clean Water Act allows CSOs, but the Environmental Protection Agency (EPA) requires communities to develop a plan to address overflows. There are 48 potentially active CSO outfalls listed in DC Water's existing discharge permit from the EPA.

When do CSOs occur?

CSOs occur during wet weather and are more frequent in wet years than dry years. During years with average rainfall, DC Water estimates that combined sewers overflow into the Anacostia River about 20 times annually and the Potomac River about 77 times annually, spilling approximately 391 million gallons into the Anacostia and 677 million gallons into the Potomac. Rock Creek averages 32 CSO events and 35 million gallons of overflow a year.

Where are CSO Outfalls?

There are 10 CSO outfall locations on the Potomac River, 15 on the Anacostia River and 23 along Rock Creek and its tributaries. DC Water has posted signs for each outfall location.

What are the possible public health impacts of CSOs?

CSOs may pose a danger to the public because of the rapid flow of water exiting the outfalls and the potentially harmful substances it may contain. The public is advised to stay away from any sewer pipe discharge. CSOs could affect the receiving waters for up to 24 hours during small rainstorms and for up to three days when it rains one inch or more.

What are the environmental impacts of CSOs?

CSOs can adversely affect the quality of rivers and streams by contributing to high bacterial levels and low dissolved oxygen levels, which are harmful to fish and other aquatic life.

What is a Dry Weather Overflow (DWO)?

In dry weather, sanitary wastewater normally flows to the Blue Plains Advanced Wastewater Treatment Plant through pipes with regulators. During wet weather, regulators are designed to let the excess flow discharge directly to a river or creek. If regulators become blocked by debris or trash, wastewater can also overflow during dry weather. This is called a dry weather overflow (DWO). DC Water has an intensive maintenance and inspection program to prevent DWOs from occurring. If you see a CSO outfall discharging during dry weather, call DC Water at **(202) 612-3400**.

Where can you get more information?

You can learn more by visiting DC Water's website at **dcwater.com/cleanrivers**. You may also contact DC Water's Office of Marketing and Communications at **(202) 787-2200**.

The complete text of the Long Term Control Plan for Combined Sewer Overflows can also be found on DC Water's website at **dcwater.com/FinalLTCP**.

CLEAN RIVERS PROJECT NEWS

BIANNUAL REPORT OCTOBER 2026
DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY
COMBINED SEWER OVERFLOW (CSO)
CONTROL ACTIVITIES



Green Infrastructure Rock Creek-C Project Approaching Completion



In 2017, the DC Clean Rivers Project began installing green infrastructure (GI) in targeted areas of the Rock Creek sewershed to capture stormwater and reduce combined sewer overflows downstream. GI includes practices that capture stormwater runoff such as bioretention, permeable pavement, and rain barrels.

The third phase of the GI program, Rock Creek – Project C (RC-C), is exclusively permeable pavement alleys construction. In addition to managing stormwater and reducing combined sewer overflows downstream, permeable pavement green infrastructure contributes to beautifying alleys and reducing drainage issues.

Since the Spring of 2025, RC-C has constructed 34 permeable pavement alleys managing about 20 acres of impervious surface to date. The project is 79% complete and ahead of schedule for meeting its scheduled completion in 2027. Upon completion, green infrastructure construction in the Rock Creek sewershed will manage 92 impervious acres of untreated stormwater, holding it back from entering the combined sewer system during rain events and reducing overflows into the District's waterways, improving water quality for District residents and wildlife.

Summer Groundbreaking at Piney Branch

In July, DC Water and the community celebrated the groundbreaking for the Piney Branch Tunnel project. The project includes a roughly half-mile long, 22-foot wide tunnel deep underground, along with other features needed to hold the combined stormwater and wastewater during heavy rain.

When completed, the Piney Branch Tunnel will hold at least 4.2 million gal-

lons of rainwater and wastewater during storms. Instead of overflowing into Piney Branch, that water will go to the Blue Plains Resource Recovery Facility, where it will be treated. The tunnel will reduce overflow events in Piney Branch from about 25 times per year to about once a year, reducing overflows by 96%.

Since groundbreaking, our crews have been working to prepare the site before tunneling starts. In the fall, we expect crews to begin digging through rock, which will include planned blasting.



The Piney Branch Tunnel is scheduled to be finished by the end of 2029. Along with the Potomac River Tunnel, this project will complete the Clean Rivers Project and help us protect DC's waterways for years to come.