DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY
BIANNUAL REPORT SEPTEMBER 2023

COMBINED SEWER OVERFLOW (CSO) CONTROL ACTIVITIES

CLEAN RIVERS PROJECT NEWS

13.1 mile tunnel for a healthier Anacostia River completed

Northeast Boundary Tunnel —the final segment—ready for action!

By the time you read this, we may have already reached the finish line for putting the Northeast Boundary Tunnel (NEBT) into operation. DC Water and contractors have been completing the final touches, including testing the facilities and removing temporary bulkheads between the new tunnel and the existing Anacostia River Tunnel (ART) and First Street Tunnel, which have been in service since 2018.

The existing tunnels have captured over 15 billion gallons of combined sewage and more than 9,600 tons of trash since 2018. Without the tunnels, this overflow would have been released untreated to the Anacostia River.

This final tunnel segment, the NEBT, plays an important role in reducing recurrent flooding in specific NW neighborhoods, by diverting large volumes of combined sewage into the tunnel system. The combined sewage is stored, then sent to the plant for treatment rather than backing up into basements and streets.

View from the bottom of the 38-foot diameter drop shaft at R Street NW. The large hole on the right is the entrance to the Northeast Boundary Tunnel.

The NEBT will go a long way in flood prevention and the entire 13.1-mile tunnel system, is keeping the Anacostia River cleaner and healthier!

Green projects protect people, property and the environment

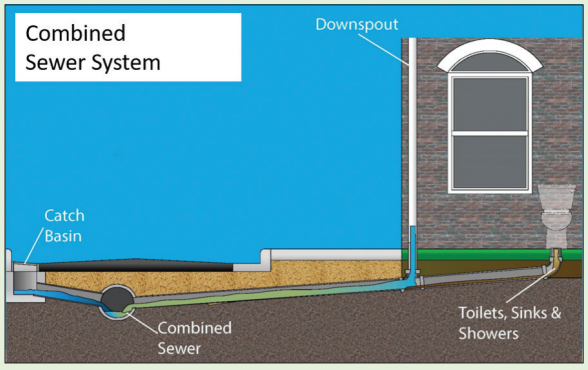
by **Khadija Elmewafy**
Summer Intern, Marketing and Communications

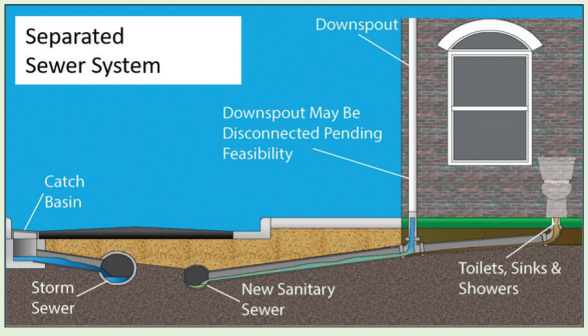
Rock Creek is getting healthier and beautified all at the same time. DC Water's latest green infrastructure project, called Rock Creek Project B, is nearly complete. Construction of bioretention sites and permeable pavement started in 2022 and will be completed in six areas before spring 2024, managing 22 acres of impervious surface.

By incorporating permeable pavements (pavement that absorbs water), bioretention sites (such as rain gardens), and downspout disconnection, DC Water aims to capture stormwater runoff and reduce combined sewer overflows (CSOs) by imitating natural water processes. The green infrastructure measures slow down runoff, reducing peak flows and allowing the rain to infiltrate the ground where possible. These processes reduce the load on the sewer system, preventing it from reaching capacity and overflowing to the nearest waterway. This significantly reduces pollution, including both bacteria and floatable debris.

This innovative project design yields many benefits to the community, including environmental, social, and economic advantages. The green infrastructure allows the community to have access to improved water and air quality while addressing environmental challenges through the enhancement of natural habitats, reduction of summer temperatures, and offsetting climate change effects. The construction of green spaces enhances the aesthetics of neighborhoods and public spaces. Additionally, it provides new green job opportunities and necessitates training programs, all of which contribute to the improvement of a community's quality of life.

Additional green infrastructure projects are already in the design stages, with Rock Creek Project C's design plan scheduled for completion by 2025. To learn more about DC Water's current and upcoming green initiatives, visit **dcwater.com/green**.





New pipes share the load

Sewer separation is another method to control CSOs

Another way to tackle combined sewer overflows is to separate the two sewer systems. Sanitary sewage describes used water from sinks, toilets, showers, washing machines, etc. that is carried away in pipes designated as sanitary sewers. Meanwhile, the stormwater system carries rain from rooftops, sidewalk and streets.

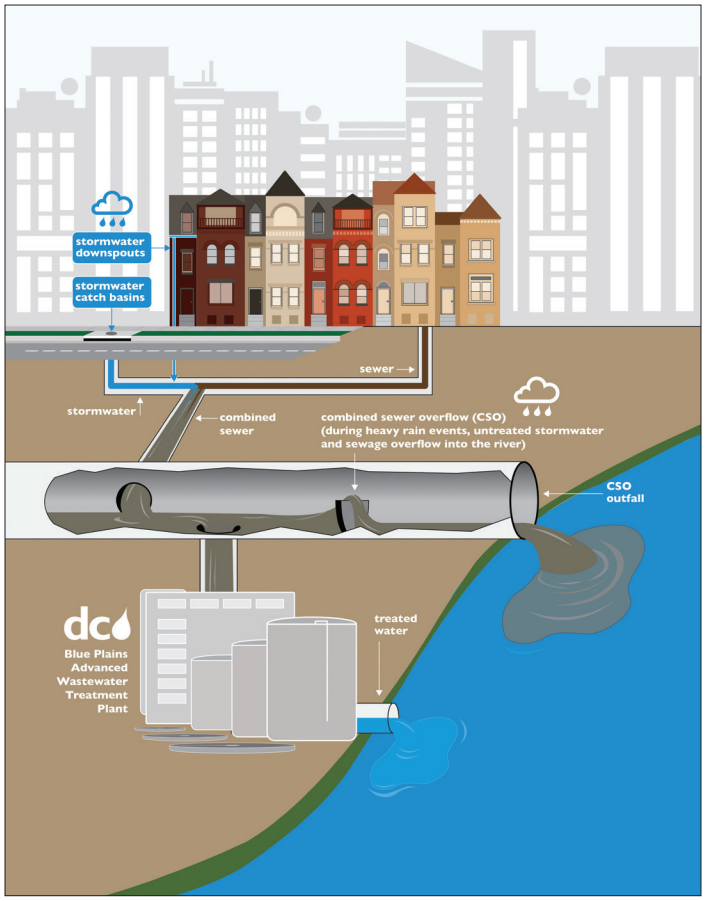
In a combined sewer system, there is one pipe in the streets that collects both sanitary sewage and storm water runoff from rainfall. In dry weather, the combined sewer conveys flow to the Blue Plains Wastewater Treatment Plant. During heavy rain events, the capacity of the system is exceeded, and a mixture of sanitary sewage and stormwater is released by the Combined Sewer Outfalls into local waterways to prevent flooding upstream homes and businesses. This was the typical design in the late 1800s and early 1900s.

continued on back

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 47 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, 14 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 web site at **dcwater.com/FinalLTCP**.

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David L. Gadis, Chief Executive Officer

Planning underway for the Piney Branch storage project

An underground storage tunnel will aid in CSO reduction—and improved health—for Piney Branch and Rock Creek. DC Water is planning to build a 4.2-million-gallon facility to temporarily store combined sewage that would otherwise overflow into Piney Branch. The captured flow would be redirected into the existing sewer system for treatment at the Blue Plains Wastewater Treatment Plant.

This project should reduce CSOs from 25 overflows per average year to one, and reduce the overflow volume in an average year from 39.7 million gallons to 1.4 million gallons – a reduction of 96 percent. This will improve water quality not only in Piney Branch and Rock Creek, but ultimately the Potomac River and Chesapeake Bay, as well. Construction is anticipated to begin in 2025.

Public Input – DC Water and the National Park Service (NPS) are preparing an Environmental Assessment (EA) to analyze potential environmental impacts. The EA will be released for public comment in the near future, and the project will be explained through public meetings. An initial public scoping period was completed in February 2023. To learn more, visit **dcwater.com/pbs**.

New pipes share the load continued

Sewer separation involves constructing new sanitary sewers to carry wastewater from homes and businesses. The existing combined sewer is converted to a storm sewer, and the CSO outfall is eliminated. The pipes from individual residences are reconnected to the appropriate storm/sanitary sewer. By separating this portion of the sewer system, sanitary flow is now routed to new sewers that will exclusively carry sanitary sewae to Blue Plains Wastewater Treatment Plant for treatment.

In June, DC Water completed sewer separation and eliminated two CSO outfalls along the Georgetown waterfront, improving water quality of the Potomac River and the Chesapeake Bay downstream.

The Potomac River Tunnel, slated for completion in 2030, will further improve the health of the Potomac River. DC Water's Clean Rivers Project will reduce the overflow volume to the Potomac River by 93% and reduce the overflow frequency from 74 events per average year to four events per average year.

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