



DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY  
BIANNUAL REPORT OCTOBER 2022

## COMBINED SEWER OVERFLOW (CSO) CONTROL ACTIVITIES

# CLEAN RIVERS PROJECT NEWS

## Anacostia River Tunnel mining complete, finishing touches remain

The last leg of the Anacostia River Tunnel System is nearly complete. Last year, **Chris** the Tunnel Boring Machine (TBM) finished his work excavating almost 27,000 linear feet of earth and installing 4,442 concrete pieces to line the inside of the Northeast Boundary Tunnel (NEBT). This five-mile portion began south of RFK Stadium and finished at the intersection of R and 6th Streets, NW. It is the largest and final segment of the 13.1-mile-long tunnel serving the Anacostia River.

Before it can be placed in operation, this tunnel must be connected to the First Street and the Anacostia River Tunnels. DC Water and the District accelerated the design and construction of the First Street Tunnel to bring flood relief to the area neighborhoods. It currently serves as a large underground storage tank and the captured overflow is slowly pumped back into the existing sewer system.

Next, the team will build structures to divert that combined sewage from the existing sewer to the tunnel. Each of these structures is strategically placed to best address the chronic flooding in the Bloomingdale and LeDroit Park neighborhoods, the Rhode Island Metro Station, and on Mount Olivet Road, NE. The NEBT will dramatically reduce the chance of flooding in these areas from approximately 50 percent to 7 percent in any given year.

DC Water is also building a drainage system of inlets and catch basins to capture additional street runoff when it rains. These inlets are larger than the typical street drains throughout the District. In addition, new bioretention areas (rain gardens) will absorb rainwater.



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A mockingbird drinks from the Anacostia River in Washington DC. A healthier Anacostia invites more wildlife to the river.

The southern portion of the tunnel system was completed in 2018 and put into operation that year. It terminates at Blue Plains where the flow is treated before being released to the Potomac River. It has captured more than 13.4 billion gallons of combined sewage, and 8,300 tons of trash, debris, and other solids. Its first year in operation was the wettest year on record for the District of Columbia.

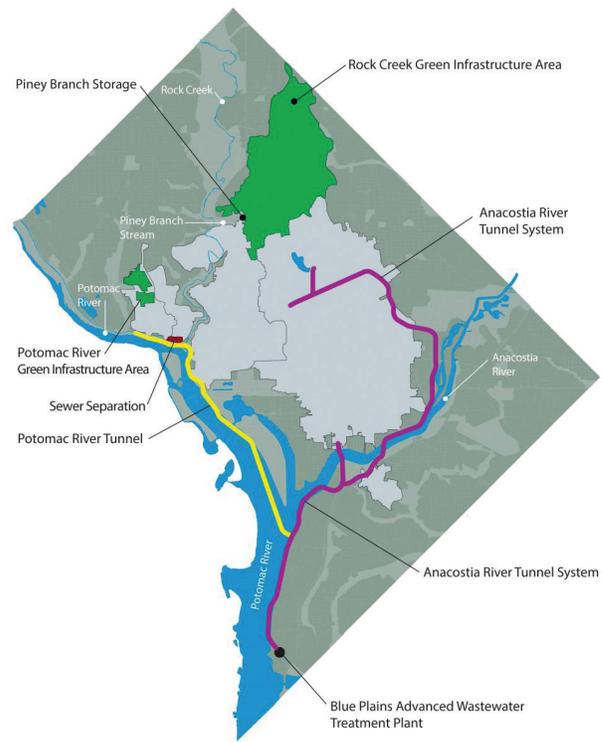
When the northern portion connects to it and begins operating in mid-2023, this full tunnel system will be well ahead of the federal consent decree deadline which is March 23, 2025.

# Rock Creek clean-up begins with Piney Branch stream

While constructing a tunnel to help restore the health of the Anacostia River, DC Water is also initiating a project to protect Piney Branch Park. This project will address combined sewer overflows (CSOs) into Piney Branch stream, a tributary to Rock Creek.

This first project is a large storage facility that will capture combined sewage otherwise discharged to Piney Branch during intense rainstorms. The captured flow will be re-released in a controlled manner to the existing sewer when the rainfall subsides, and the sewer system has room for it. Its ultimate destination is the Blue Plains Advanced Wastewater Treatment Plant, where it is treated and put back into the Potomac River cleaner than the river itself.

The 4.2-million-gallon storage facility will reduce the current number of overflow events at Piney Branch from 25 per year to one per average rainfall year and reduce the overflow volume from about 40 million gallons to 1.4 million gallons – a reduction of 96 percent.



DC Water, in collaboration with the National Park Service, is currently developing an environmental assessment (EA) to be completed by the end of 2023. The purpose of the EA is to evaluate alternatives for CSO storage while minimizing impacts on parkland and the community. For more information visit [dcwater.com/projects/piney-branch-storage](https://dcwater.com/projects/piney-branch-storage).

## DC Water greens neighborhoods to clean Rock Creek

In addition to the large civil engineering (or “gray”) facility planned for this area, DC Water is incorporating “green” solutions such as bioretention planters—or rain gardens—and alleys made of permeable pavement to address combined sewer overflows into Rock Creek.

DC Water completed the first series of these Rock Creek green projects in fall of 2018. We are now embarking on the second group, called Rock Creek B, composed of 19 planter bioretentions and 48 alleys with permeable pavement, all located within the public right of way. Four of the alleys are already constructed and making a difference.

### Green Infrastructure to Be Constructed

#### BIORETENTION

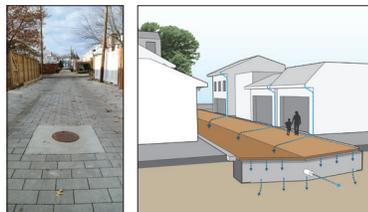
Also known as a rain garden, bioretention captures and cleans stormwater runoff allowing it to infiltrate into the ground and slowly releases any excess runoff into the combined sewer system.



Planter Bioretention

#### PERMEABLE PAVEMENT

Permeable pavement also allows stormwater runoff to infiltrate through the pavement and into the ground and slowly releases any excess runoff into the combined sewer system.



Alley Permeable Pavement (aka Green Alley)

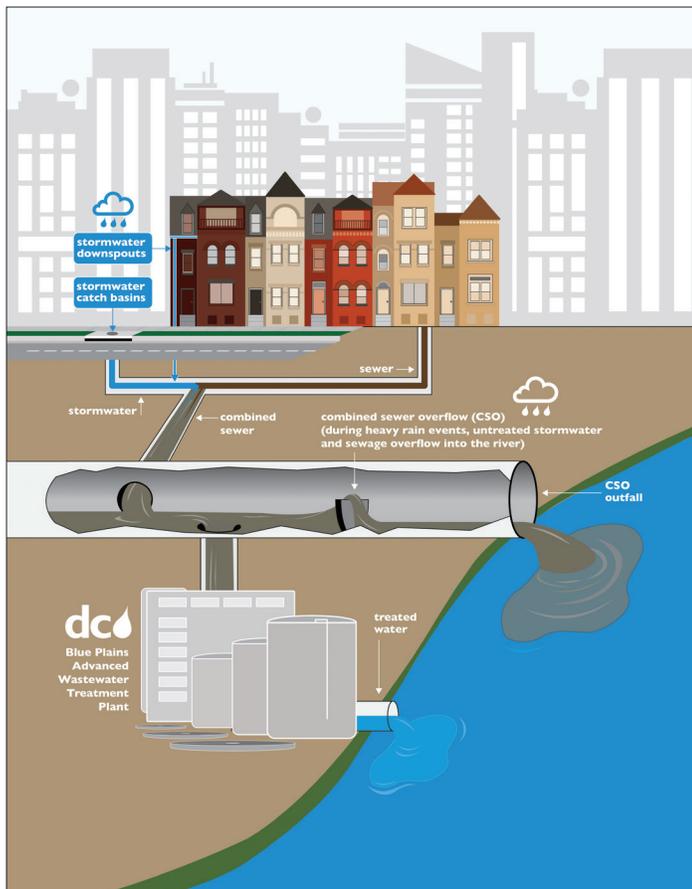
Specifics about this project, the green infrastructure (GI) practices, and their locations can be found on the DC Water website: [dcwater.com/projects/rock-creek-green-infrastructure-project-b](https://dcwater.com/projects/rock-creek-green-infrastructure-project-b). Residents are encouraged to visit the interactive map found on the page, where they can enter their street address to see if GI is coming to their area.

Once installed, they are tested, and then monthly maintenance activities ensure they are meeting the infiltration goals.

## 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?

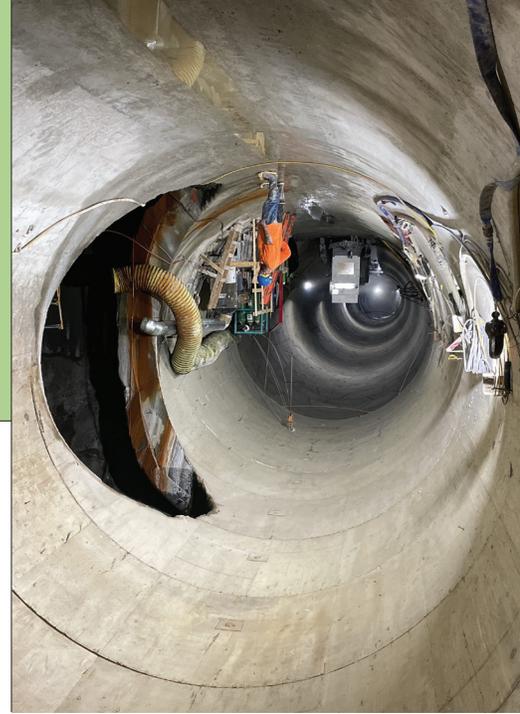
You can learn more by visiting DC Water's website at [dcwater.com/cleanrivers](http://dcwater.com/cleanrivers). You may also contact DC Water's Office of Marketing and Communications at (202) 787-2200.

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](http://dcwater.com/FinalLTCP).

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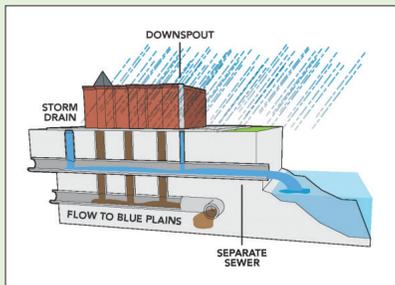
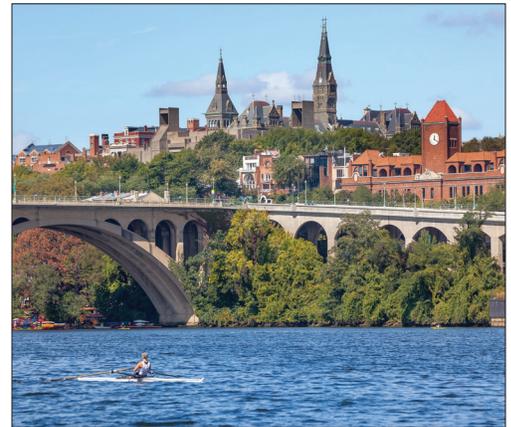
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## DC Water starts Potomac River revitalization

DC Water plans to capture combined sewage flows before they can overflow into the Potomac River by building an underground tunnel system. The facility will capture and store those flows during intense rains and then gradually releases them into the sewer system where they will flow by gravity to the Blue Plains Advanced Wastewater Treatment Plant for treatment. Existing outfalls can be eliminated in this way, helping improve the water quality in the river.

The first phase of construction, advanced utility construction, provides underground electrical duct banks and manholes along the tunnel alignment. This will provide electricity to make possible the tunnel construction and eventual operation. The Potomac River Tunnel System Construction phase is anticipated to begin in late 2023 and be completed by 2030. More info at [dcwater.com/prt](https://dcwater.com/prt).



## Separating sewer lines reduces overflows

Since sewage overflows are caused by pipes where both storm runoff and sewage are combined, one way to solve the problem is to install another pipe so that they are carried in separate lines. This prevents the storm runoff from filling up the sewer pipe to cause an overflow, and the sanitary flow can head straight to Blue Plains for treatment.

Stormwater runoff will be captured by inlets and conveyed to the Potomac River by separate stormwater lines. The current project is in Georgetown, south of the C&O Canal, and will collect flow from the area bounded by Cecil Pl. NW, Wisconsin Ave NW, 31st St. NW, and Thomas Jefferson St. NW. DC Water graciously thanks the residents and businesses for their patience and support during the construction. This project creates a cleaner Potomac River for the use and enjoyment of all. More info at [dcwater.com/projects/cso-025-026-sewer-separation-project](https://dcwater.com/projects/cso-025-026-sewer-separation-project).



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