



DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY
BIANNUAL REPORT OCTOBER 2018

COMBINED SEWER OVERFLOW (CSO) CONTROL ACTIVITIES

CLEAN RIVERS PROJECT NEWS

New TBM, "Chris," Embarks on Final Anacostia Tunnel Segment

DC Water's new tunnel boring machine (TBM), Chris, was recently lowered underground and is set to begin its five-mile course. The TBM is mining the Northeast Boundary Tunnel (NEBT), the key component and final segment of the Anacostia River Tunnel System.

The machine is more than a football field long and is basically an underground factory that both mines the earth and constructs the tunnel. First, the head of the boring machine cuts into the ground in front of it, then the machine lays a 6-foot-wide ring of pre-cast concrete. It repeats this process, constructing a miles-long tunnel with an inside diameter of 23-feet—as large as a Metro tunnel—that is between 60 and 140 feet below ground.

DC Water formally commissioned "Chris" on June 28, 2018. Numerous dignitaries joined in the ceremony, including: District of Columbia Ward 3 Councilmember Mary Cheh, National Park Service Superintendent Tara Morrison, US EPA Regional Administrator Cecil Rodrigues, DOEE Director and DC Water Board Chair Tommy Wells, and DC Water CEO and General Manager David Gadis. A blessing was offered by the Reverend Bobby Livingston of Mount Bethel Baptist Church.

This newest TBM was named after DC Water's own Christopher Allen, the Assistant Director for the Clean Rivers Project who passed away last year. Chris had 47 years of experience in construction management, consulting field supervision and program management of large buildings, mass transit, heavy construction projects and aviation programs. His experience contributed greatly to the DC Clean Rivers Project. Mr. Allen's family attended the ceremony and his son, Brian, offered remarks expressing the family's appreciation of the honor.

Once complete in 2023, the entire Anacostia River Tunnel system will be 13.1 miles long and will prevent 98 percent of sewage overflows to the Anacostia River in an average year. It will also provide flooding relief for residents in the Bloomingdale and LeDroit Park neighborhoods, who for decades were served by undersized sewers.



Top - The family of Christopher Allen celebrates the tribute to him. **Bottom** - DC Water CEO David Gadis and Director of the DC Clean Rivers Project Carlton Ray.

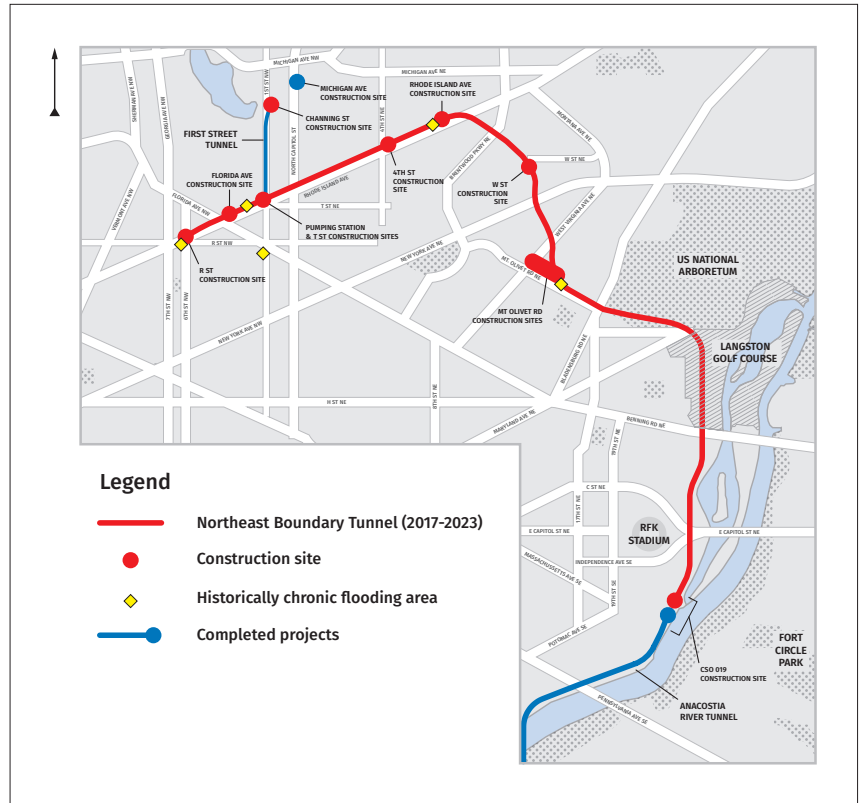
Northeast Boundary Tunnel Project – Helping to solve flooding in Northeast DC

For decades during heavy rainfalls, the neighborhoods of LeDroit Park and Bloomingdale, the Rhode Island Metro Station area, other neighborhoods near Rhode Island Avenue, and Mount Olivet Road, NE experienced chronic flooding. The last leg of the Anacostia River Tunnel System, being mined by the TBM Chris, is the solution to this problem.

Construction of the 13-mile-long Anacostia River Tunnel System began in 2011 and is part of the larger DC Clean Rivers Project, a \$2.7 billion-dollar program to address combined sewer overflows in all three of the District’s waterways. Completion of this last portion of the Anacostia River Tunnel is scheduled for 2023, almost two years ahead of the schedule originally set in the 2005 Consent Decree between DC Water, the District of Columbia, the U.S. Environmental Protection Agency, and the U.S. Department of Justice. Salini-Impregilo/Healy Joint Venture (SIH) is the design-builder selected for the work.

The large tunnel system works by diverting combined sewage into facilities that ultimately direct it into the newly constructed tunnel system, where this sewage is conveyed to the Blue Plains Advanced Wastewater Treatment Plant to be treated before being released to the Potomac River.

A typical diversion facility includes a diversion chamber, approach channel, drop shaft, and adit. The diversion chamber will direct flow from the existing combined sewer to the approach channel, which will then drop the flow down a shaft approximately 100 feet to be delivered to the NEBT via a short connecting tunnel or “adit.” These facilities will be constructed along the existing trunk sewers and near flood-prone areas to provide a permanent solution to chronic flooding.



Active Clean Rivers Project construction sites include:

Mount Olivet Rd. between Trinidad Ave., NE & Capitol Ave., NE

Work along Mount Olivet Rd. will be performed in two separate areas and should be completed in 2022:

- Department of Public Works (DPW) parking lot on Mount Olivet Rd.
- The intersection of Mount Olivet Rd. and Capitol Ave., NE

W St., NE on the Department of Public Works Lot (and Brentwood Rd., NE)

The construction site is located on the DPW property south of W St., NE and should be complete in 2022.

4th St., NE at Rhode Island Ave., NE

At this site, construction will occur on 4th St., NE north of the Rhode Island Ave., NE intersection and should be complete by 2022.

Rhode Island Ave. at 8th Pl., NE

Work is scheduled to begin in November 2018 and is expected to be completed by summer 2022. Construction will be on Rhode Island Ave., NE near the 8th Pl. intersection.

We appreciate everyone’s patience as we construct the last phase of the Anacostia River Tunnel System.

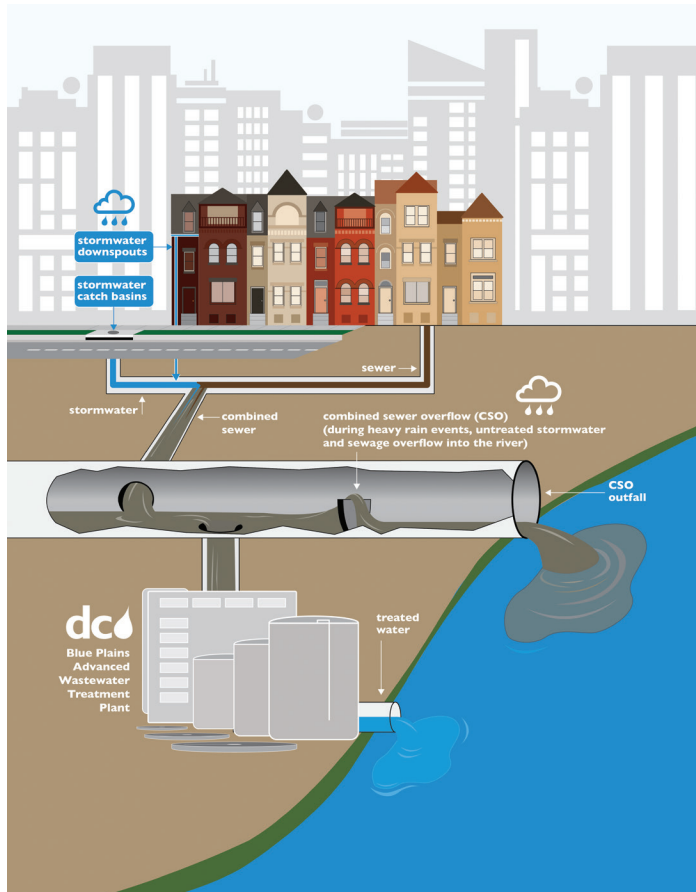


Please remember to watch for our workers and your neighbors as you drive in these construction areas. To learn more, please go to dcwater.com/nebp#

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.

CLEAN RIVERS PROJECT NEWS

CONTROL ACTIVITIES
COMBINED SEWER OVERFLOW (CSO)

BIANNUAL REPORT OCTOBER 2018

DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY



DC Water breaks ground on first green project for the Potomac River sewershed



The Glover Park and Burleith neighborhoods will soon be going greener. DC Water is set to install green infrastructure to protect the Potomac River by reducing pollution

from the combined sewer system during heavy rain and snow events.

These green practices include bioretention (rain gardens) in planter strips, permeable pavement (that water can penetrate) in parking lanes and alleys, and downspout disconnection that routes rooftop runoff into rain barrels.

They manage stormwater by taking advantage of the earth's natural processes, such as allowing water to infiltrate into the soil and evaporate into the air, or for plants to uptake and use. Green infrastructure also beautifies the streetscape for pedestrians, bicyclists and drivers. Other community benefits include creating local green jobs and providing educational opportunities.

These will be built in the Glover Park and Burleith neighborhoods in the northwest portion of the District. Construction has already begun and is scheduled for completion in 2019. We aim to minimize traffic and other impacts to the community. After completion, the green practices will be measured to evaluate performance. More information can be found at: dcwater.com/potomacrivergreen

Exciting News! Anacostia River Tunnel Phase 1 is cleaning up the Anacostia River!

The record-breaking rain this spring and summer put the Anacostia River Tunnel System Phase 1 to the test in its first five months of service. This 7-mile portion of the tunnel that opened in March captured more than 2.4 billion gallons of sewage by the end of August! This portion of the tunnel system can store up to 100 million gallons of combined sewage.

This captured combined sewage flows by gravity to Blue Plains, where a new treatment facility treats an additional 225 million gallons per day delivered by the tunnel during rain events. The additional facilities also removed more than 146 tons of trash and debris that would have gone into the Anacostia River. For more information on the DC Clean Rivers Project, please visit dcwater.com/cleanrivers.

Date	Rainfall, Average of 4 Gages (in)	Sewage Volume Captured by Tunnel (mg)	Measured Overflow (mg)	Percentage Captured
March 20-31, 2018	0.59	20	0	100%
April 2018	3.21	249	10	96%
May 2018	7.65	865	13	99%
June 2018	2.41	271	49	85%
July 2018	8.19	678	236	74%
August 2018	3.60	334	15	96%
Total	25.65	2,417	323	88%



RECYCLED
Paper made from recycled material
FSC® C021348



District of Columbia Water and Sewer Authority
5000 Overlook Avenue, SW | Washington, DC 20032

DCWATER.COM