



DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY  
**BIANNUAL REPORT OCTOBER 2016**

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

# **CLEAN RIVERS PROJECT NEWS**



### **First Street Tunnel Project wrapping up**

Following two and a half years of construction, DC Water is slated to complete the First Street Tunnel in the fall of 2016. DC Water wishes to recognize the citizens of Bloomingdale and LeDroit Park, including the Tunnel Forum members, ANC Commissioners, Councilmember Kenyan McDuffie and those located right next to the project, since without their understanding and cooperation this important flood mitigation project could not have been built. DC Water would also like to thank Mayor Bowser, former Mayor Gray and the many District agencies who have helped implement this historic project on an unprecedented short timeline and made it an overall success.

The First Street Tunnel project is a major component of the DC Clean Rivers Project, designed to mitigate sewer flooding and basement backups in the District's historic and densely populated Bloomingdale neighborhood. Bloomingdale and its surrounding neighborhoods have been historically affected by sewer flooding and were severely impacted by four storms in the summer of 2012 that caused significant damage to homes, the environment and public property. As a result, DC Water and the District accelerated the design

and construction of the First Street Tunnel to lessen the effect that storms have on the undersized sewers serving the neighborhood.

The infrastructure designed to mitigate flooding, including the tunnel, are located within the highly urbanized neighborhood. Some of these structures were less than ten feet from residents' front door steps. The success of this extraordinary public works project in its unique location can be attributed to a well informed and supportive public. Early on, the task group identified ways the community members could minimize flooding, and DC Water worked with stakeholders to provide timely and accurate information while developing a culture of problem solving and collaboration with the community.

When the First Street Tunnel is placed into operation, it will act as a large underground storage tank and in conjunction with the other flood relief facilities constructed in Bloomingdale, the probability of flooding in any given year will be reduced from 50 percent to 15 percent and eventually to 7 percent when it connects to the upcoming Northeast Boundary Tunnel in 2023.





## Anacostia River Tunnel segment less than a mile from completion

The second phase of the Anacostia River Tunnel system to control combined sewer overflows to the Anacostia River is nearing completion. Using a tunnel boring machine (TBM) named Nannie, after the famous District educator, Nannie Helen Burroughs, DC Water's contractors have diligently mined 1.7 miles of tunnel under the District and have less than a mile to go.

Nannie's tunnel segment is called the Anacostia River Tunnel, and it will connect to the first phase, a 4.5-mile tunnel segment already mined by former powerhouse TBM Lady Bird. The tunnel segments will join at Poplar Point, adjacent to the Frederick Douglass Bridge.

In addition to Nannie's tunnel construction, DC Water has also been

building surface facilities to divert the combined sewage into the tunnel at various sites along the I-295 corridor, M Street SE and the Southeast Freeway. These facilities include deep shafts that range from 20 to 60 feet wide and large concrete structures to divert sewage from entering the Anacostia River. Not since the construction of the original sewer system in the early 1900's and the Metro has the District seen construction of this magnitude.

The current schedule has the Blue Plains and Anacostia River Tunnels in service in March 2018, at which time the combined sewer overflows to the Anacostia River will be reduced by 81 percent. DC Water will have met a key consent decree milestone in the DC Clean Rivers Project.

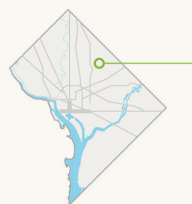
## DC Water greens the District while controlling combined sewer overflows

In addition to the tunnels that will greatly reduce combined sewer overflows to the Anacostia River, DC Water is also constructing green infrastructure to reduce combined sewer overflows to Rock Creek. For the Potomac River, DC Water will be constructing both, referred to as gray and green infrastructure.

The first of these green projects is being constructed to control overflows to Rock Creek in accordance with DC Water's amended consent decree milestones. The first Rock Creek Project (designated by the letter "A") will create innovative green infrastructure technologies that include rain gardens, permeable (allows water to

run through it) pavement on streets and alleys and downspout disconnection to direct water from rooftops into rain barrels. These practices will manage stormwater by taking advantage of the earth's natural processes. These include allowing water to infiltrate into the soil; evaporate into the air, or for plants to use the water and expire it as vapor. These practices can slow down, clean, and in some cases reduce, stormwater runoff prior to it entering the combined sewer system.

Rock Creek Project A area extends from Oglethorpe Street NW to Gallatin Street NW and 3rd Place NW to First Street NE,

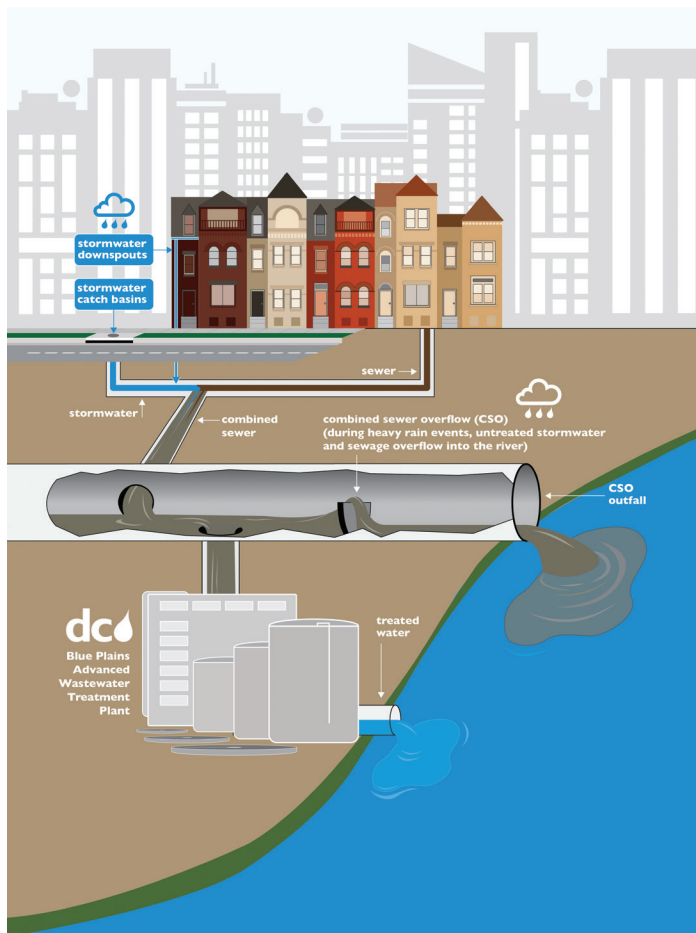


(see inset). Construction activities for Rock Creek Project A are expected to begin in spring 2017 and to be completed in 2019. Construction work will be phased throughout the project area to minimize traffic and

## 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 and Potomac rivers about 77 times annually, spilling nearly 1.3 billion 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 External Affairs at (202) 787-2200.

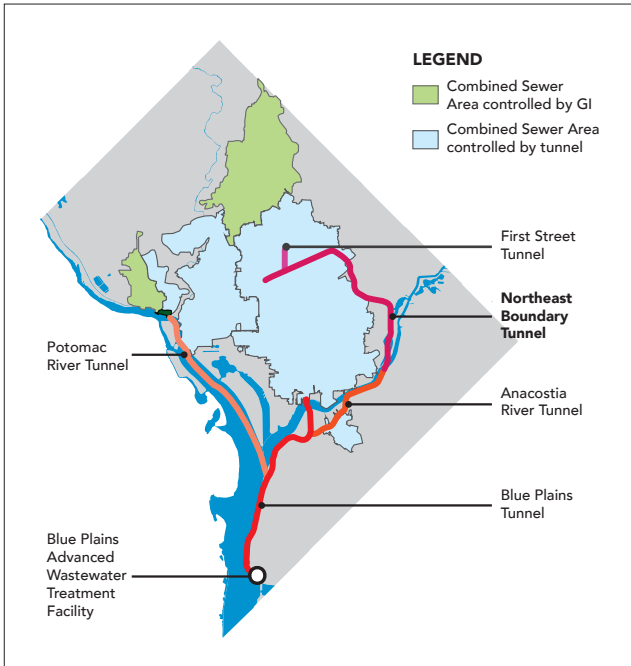
The complete text of the Long Term Control Plan for Combined Sewer Overflows can also be found on DC Water's web site at [dcwater.com/FinalTCP](http://dcwater.com/FinalTCP).



# CLEAN RIVERS PROJECT NEWS

## CONTROL ACTIVITIES COMBINED SEWER OVERFLOW (CSO)

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### Northeast Boundary Tunnel design complete, relocating utilities

DC Water has recently completed the design of the largest tunnel yet—the five-mile-long Northeast Boundary Tunnel. In advance of construction, DC Water is relocating utilities to make way for the structures that will ultimately divert sewer flow into the tunnel. The relocation work started in June 2016 and is anticipated to be complete by September 2017.

The Northeast Boundary Tunnel should be complete in 2023 and will fulfill construction of new facilities required by DC Water’s consent decree two years ahead of the original consent decree schedule. Once the Northeast Boundary Tunnel is connected to the Blue Plains and Anacostia River tunnels, combined sewer overflows to the Anacostia River will be reduced by 98 percent. In addition to controlling combined sewer overflows, the construction of the Northeast Boundary Tunnel will reduce the chance of flooding in its area from approximately 50 percent to seven percent in any given year.

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other construction impacts to the community. From 2019 to 2020, the green infrastructure practices will be monitored and measured to evaluate performance.

You can help decrease the amount of stormwater entering the District’s combined sewer system. Rock Creek Project A includes a voluntary free downspout disconnection program with rain barrels on eligible private properties within the project area. To learn more about the Downspout Disconnection Program, please visit [dcwater.com/draintherain](http://dcwater.com/draintherain).

To learn more about Rock Creek Project A, visit [dcwater.com/RockCreekGreen](http://dcwater.com/RockCreekGreen)



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