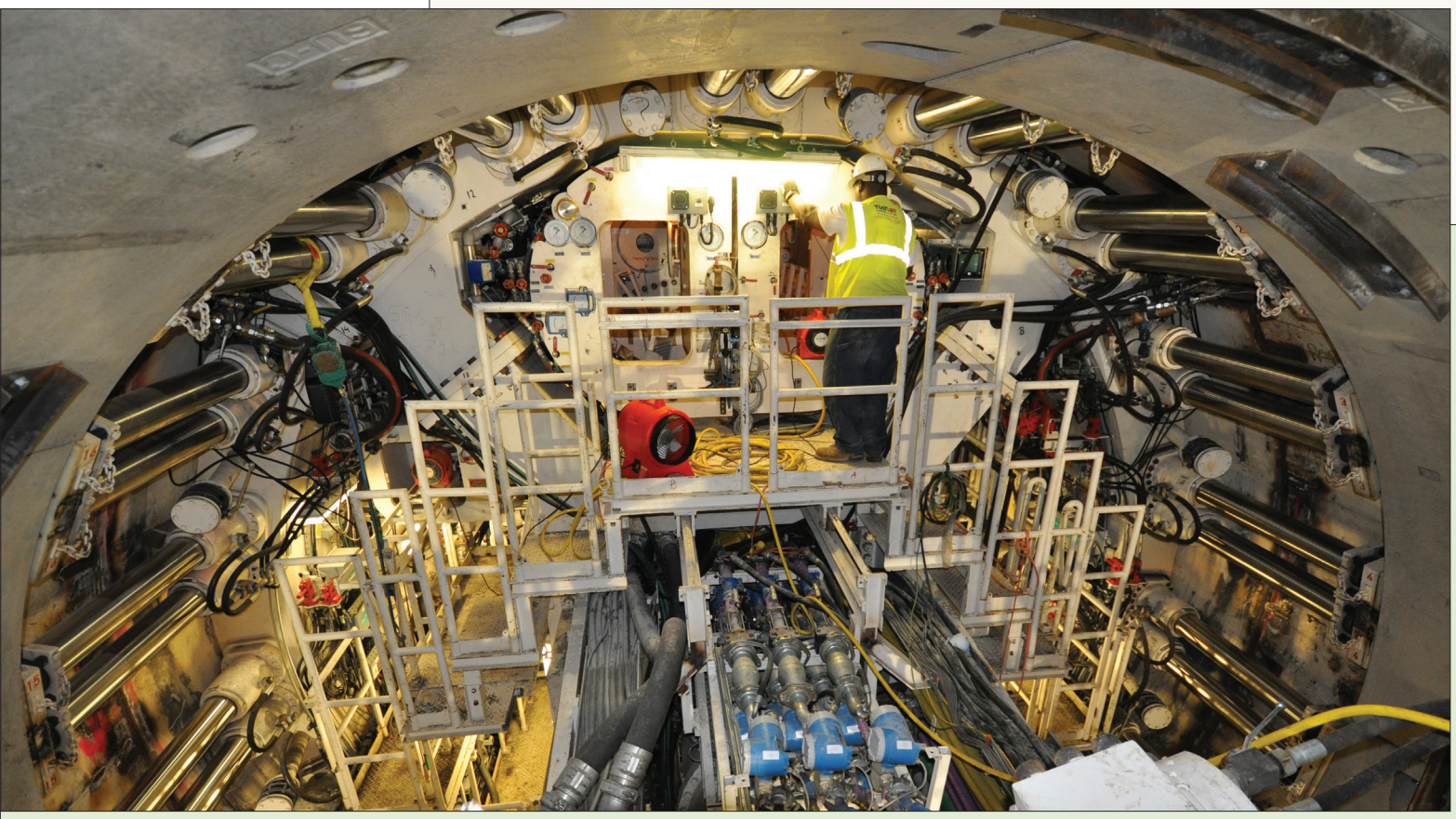
dc clean RIVERS PROJECT
RESTORING OUR RIVERS
PROTECTING OUR DISTRICT

DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY
BIANNUAL REPORT OCTOBER 2013

COMBINED SEWER OVERFLOW (CSO) CONTROL ACTIVITIES

CLEAN RIVERS PROJECT NEWS



The front shield of the tunnel boring machine shows the chamber where workers must acclimate to pressure before working on the cutterhead

Lady Bird's Journey Begins

On July 29, "Lady Bird" began chewing her way up the Potomac River towards the Anacostia. Lady Bird is the tunnel boring machine (TBM) that was designed and built specifically for this first leg of the underground journey. She will travel more than 24,000 linear feet, digging the earth with a front rotating blade while also putting in place concrete rings that form the 23-foot-wide tunnel structure. This tunnel and TBM work is being performed by joint venture partners Traylor, Skanska, and Jay-Dee.

A contract for the next segment of this same 13-mile tunnel system was awarded this summer to another joint venture, Impregilo, Healy, and Parsons. This leg of the tunnel system is named the Anacostia River Tunnel, and it will be 23 feet in diameter, extending 12,500 linear feet and crossing under the Anacostia River. It begins at Poplar Point and ends near RFK Stadium. For this project, a different TBM will start at the north and work south, connecting to Lady Bird's Blue Plains Tunnel in 2017. This $253 million design-build contract includes six shafts and three diversion structures. When completed, the tunnel system will capture and re-direct sewage that currently flows into the Anacostia during heavy rains.

First Street Tunnel Project to Provide Flood Relief

DC Water is taking action to eliminate recurrent flooding problems in Bloomingdale and LeDroit Park. Scheduled to be complete in 2016, the First Street Tunnel Project will be awarded to a construction team in October. The tunnel will store roughly eight million gallons of water during severe storms and prevent or significantly reduce flooding. The 19-foot-wide tunnel will extend 2,800 feet from Rhode Island and First Street to the Channing Street intersection. The project will include a temporary pump station and four facilities designed to direct excess runoff to the tunnel.

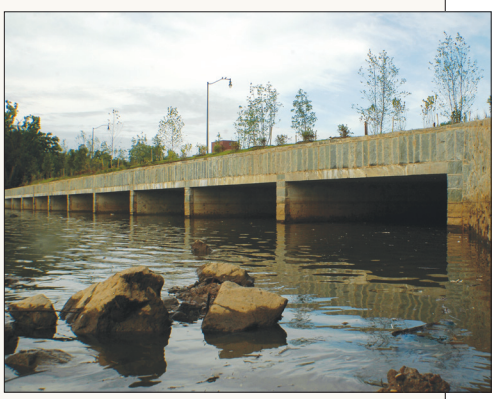
The First Street Tunnel will eventually be connected to the larger Northeast Boundary tunnel system, which is part of DC Water's Long Term Control Plan for combined sewer overflows. As recommended in the Mayor's Task Force Report on the prevention of flooding in Bloomingdale and LeDroit Park, the 2025 project completion date has been accelerated to 2016 in order to provide faster relief to the affected areas. The completion date of the Northeast Boundary Tunnel has also been moved forward from 2025 to 2022. When the tunnel system is complete, the First Street Tunnel pump station will no longer be necessary, and the potential for flooding will be greatly reduced. The DC Water project team worked hard to finalize the design, permitting, and overall construction plan to meet the new project schedule. The project team also worked closely with elected officials and residents from Bloomingdale and LeDroit Park to minimize impacts on these communities during the scheduled construction.

Flood relief work under North Capitol Street

Overflow Structure Comes On Line

Until recently, the major Clean Rivers Project milestones included 1.) a construction project to redirect sewer overflows near the 11th Street Bridge to the future Anacostia River Tunnel and 2.) the Blue Plains demolition project that cleared the space for the Blue Plains Tunnel mining shaft and the future tunnel pump station. In September, the overflow structure near RFK stadium became the largest completed portion of the Clean Rivers Project to date. Following more than four years of design and construction, this $26 million project marks the completion of overflow structures to provide flood relief and convey combined sewer overflows to the future Anacostia River Tunnel.

The tunnel system for the Anacostia includes two overflows. One of these structures is located near RFK Stadium, while the second is constructed on the Joint Base Anacostia Bolling military facility. The two structures will manage sewer and stormwater flows during high-volume rain events that exceed the Anacostia River Tunnel capacity. Models predict that the new tunnel system will experience an average of two overflow events each year, a huge improvement from the current average of 80 per year. This high level of control exceeds all regulatory requirements and reflects DC Water's successful collaboration with the National Park Service, National Capital Planning Commission, District Department of Transportation, DC Sports and Entertainment, Commission of Fine Arts, the U.S. Army Corps of Engineers, and the Office of the Deputy Mayor for Planning and Economic Development.

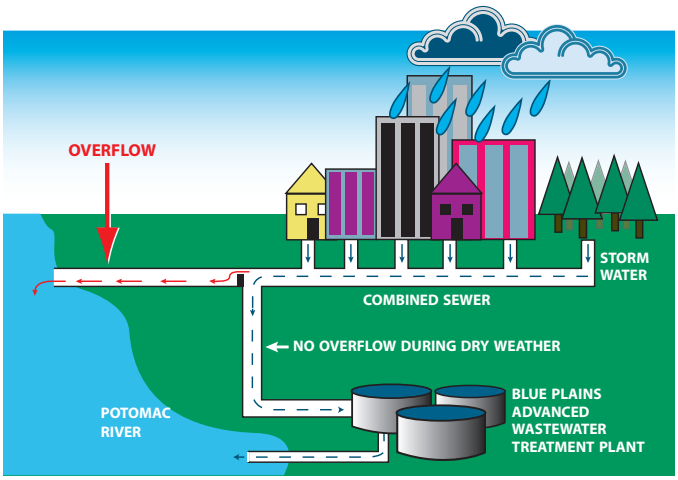


Completed overflow and diversion structures

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 53 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 75 times annually, spilling nearly 1.5 billion gallons into the Anacostia and 850 million gallons into the Potomac. Rock Creek averages 30 CSO events and 52 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 28 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 is 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 External Affairs at (202) 787-2200.

The complete text of the Long Term Control Plan for Combined Sewer Overflows can also be found at the following public libraries: Capitol View, Mount Pleasant, Northeast, Woodridge, Southeast, Shepherd Park, Tenley-Friendship and Washington Highlands.

Barrels for Flood Management

In a natural environment, rainwater soaks into the ground. In DC's urban environment, the rainfall flows from rooftops and roads to the closest storm drain or waterway. Street flooding and basement backups occur when the city's combined sewer system is overwhelmed during intense rainfall. Although DC Water is working to reduce flooding and system overflows, District homeowners can also do their part by reducing stormwater runoff from their properties. One easy way to do this is by installing a rain barrel to collect water that drains off the roof. Rain barrels prevent water from running into the sewer system by storing it for later use. Using this stored water for landscaping, watering indoor plants or washing cars can lower monthly water bills.

Several incentive programs exist to promote the installation of rain barrels in the District. Through the District Department of Environment's (DDOE) RiverSmart Homes program, homeowners can apply to receive up to two rain barrels along with installation, for a co-payment of $45 each. DDOE also offers $50 to $100 rebates to homeowners who independently purchase and install their own rain barrels. Learn more at *http://ddoe.dc.gov/riversmarthomes*.

There is a special program to target the extremely flood-prone neighborhoods of LeDroit Park and Bloomingdale. DC Water and DDOE are partnering to offer free rain barrels to residents in these neighborhoods through the Rain Barrel/Cistern Program. The offer includes a stormwater audit and the installation of a rain barrel or cistern. Visit *www.dcwater.com/bloomingdale* for more information. To find out which rain barrel program you are eligible for, send an email to *wpd.intern@dc.gov* or call (202) 671-3043.

Photo Credit: United States Environmental Protection Agency

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

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