



DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY
BIANNUAL REPORT APRIL 2012

COMBINED SEWER OVERFLOW (CSO) CONTROL ACTIVITIES

CLEAN RIVERS PROJECT NEWS



How Do We Love Green? Let Us Count the Ways

DC Water Appeals to U.S. EPA to Open Consent Decree and Pilot Green Infrastructure Program

Greening the District has a number of important benefits. It creates and sustains green jobs, increases property values, creates more shade and helps capture and reuse stormwater before it enters the sewer system. In the end, this improves river quality and may aid in keeping water and sewer bill increases below current projections.

DC Water is under a 2005 federal mandate to nearly eliminate combined sewer overflows (CSOs) to the Anacostia and Potomac Rivers and Rock Creek (see page 3 for more information on CSOs). The solution for the Anacostia River is a massive underground tunnel to hold and convey combined sewage from heavy rain events, and treat it at the Blue Plains Advanced Wastewater Treatment Plant.

Right now, the solution for the Rock Creek and Potomac area is a similar tunnel, but DC Water is exploring the potential for green infrastructure for these sewersheds. The goal is to create more

green areas that will keep at least some stormwater out of the sewer system, possibly reducing the size of tunnels and shafts needed. A tunnel might even be eliminated if enough green infrastructure is built and maintained.

Greening the District would mean taking up hard, impervious surfaces and replacing them with grass and vegetation, through planting trees, making green roofs, and creating bioswales and rain gardens and other forms of low impact development.

Right now DC Water is constrained to the tunnel solution by the 2005 federal consent decree. DC Water is appealing to the US Environmental Protection Agency to reopen the consent decree and extend the timeline to allow for a pilot green program that would measure the feasibility of this concept. This would be of a scale not seen before, covering 50 acres of the Potomac and Rock

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Tunnel Project Begins!

DC Water broke ground in October on its largest construction project ever—the Clean Rivers Project. Senator Benjamin Cardin, Congresswoman Eleanor Holmes Norton, Mayor Vincent Gray, and dignitaries from the Maryland Department of the Environment, District Department of the Environment and Joint Base Anacostia Bolling joined the celebration to kick off the largest construction project in the District since Metro was built.

The Anacostia River Tunnel will reduce combined sewer overflows into the Anacostia River by 98 percent. The tunnel also plays an important part of the nitrogen reduction treatment strategy for the Potomac River and Chesapeake Bay and will reduce flooding in Northeast DC.

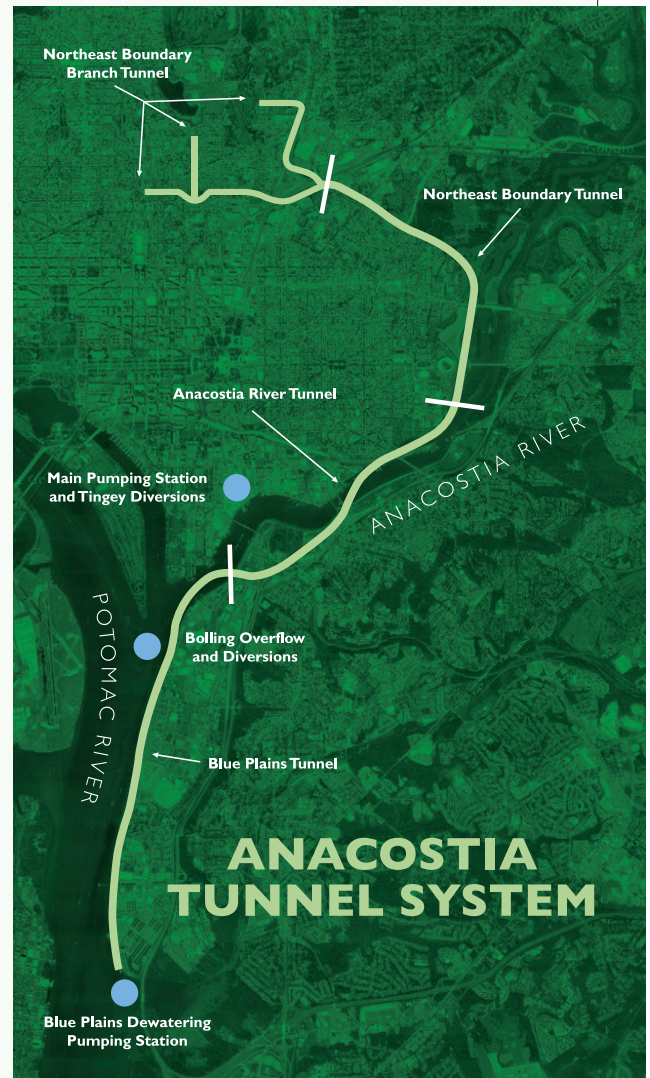
Right now, the work is focused on the Anacostia River Tunnel that will snake 1.3 miles up, and under, the Anacostia River at depths up to 120 feet. The first part of that system, named the Blue Plains Tunnel, is 23 feet in diameter and extends from Blue Plains in Southwest DC, roughly along the east bank of the Potomac, crossing under the Anacostia and extending along the west bank to about RFK Stadium.

From there, it extends north and west to form a segment known as the Northeast Boundary Tunnel. The tunnel segments south of RFK Stadium, together with their surface hydraulic facilities and a tunnel dewatering pump station, are scheduled to be put into operation by March 2018, providing relief to the Anacostia first.

Work has begun at the Blue Plains site to build the shaft through which the giant tunnel boring machine will be lowered and assembled. This machine along with its trailing support equipment is the length of a football field and will mine the tunnel like an oversized caterpillar moving underground. The dirt and rock will be removed, lifted to the surface and hauled away by the truckload. Additional shafts will be constructed along this section. Activity is underway and equipment is staged at some of these locations.

DC Water is building similar shafts and diversion facilities in the District at Division C (south of RFK Stadium) and Division E (Navy Yard). Contractor crews began work on the Division C contract last September. The Division E contract has been awarded and DC Water is currently finalizing agreements for relocation of utilities.

The tunnel boring machine is expected to be placed into operation in early 2013.



The Anacostia Tunnel System is 1.3 miles long and will be built in three distinct stages.



The first portion is called the Blue Plains Tunnel. Here construction begins at Blue Plains to build the shaft nearly 16 stories deep where the tunneling will begin.

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Creek sewersheds at a cost of between \$10 and \$30 million. The results of the pilot program could potentially shift the solution for these two waterways to a green rather than gray one. This approach is in line with recent EPA direction.

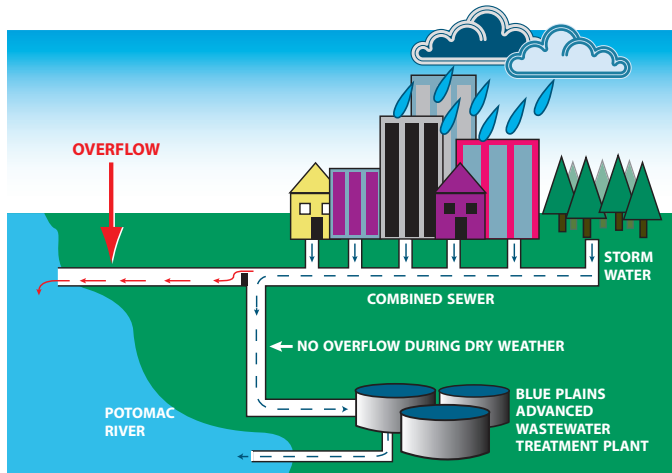
DC Water and EPA reconvened in late February of this year to receive EPA feedback. EPA was supportive of the concept but

believes achieving the set water quality objectives through green infrastructure in the Georgetown area will be challenging. EPA is more encouraged by the prospect in the Rock Creek area. You can voice your support of allowing DC Water to develop and implement the green infrastructure pilot program by signing DC Water's petition at dcwater.com/lid

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.

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Ways to Green Your Neighborhood

You can employ plenty of sustainable practices to keep runoff from entering the sewer system and make your neighborhood more attractive at the same time.

- Rain barrels catch runoff from rooftops and store the water for gardening, washing cars and for other gray water uses.
- When selecting garden plants, look for varieties native to the region. These should soak up normal rains and not require too much extra watering. Their root structure does a better job soaking up water than turf grass. (In this region, this practice is called "BayScaping.")
- Plant a tree, shrubs or other plants to soak up rainfall.
- Replace impervious surfaces like driveways with grass or stone that allows water to infiltrate the ground, or use porous pavers.
- Create a neighborhood rain garden that redirects runoff from streets or walkways to water the garden.

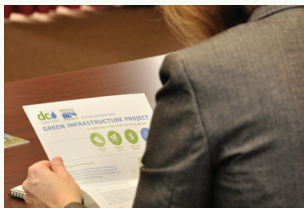


This porous pavement allows water to infiltrate the ground instead of running into the sewer system.

Photo Credit: National Ready Mix Concrete Association

For more information on how to green your home, DDOE has detailed information at: ddoe.dc.gov/riversmarthomes

GM Hawkins Shares Vision for Greener DC at Green Project Summit 2012



DC Water hosted an informational low impact development (LID) meeting at its Blue Plains campus on February 29. Called the "Green Project 2012," this was a follow up to last year's Low Impact Development Summit at George Washington

University. DC Water General Manager George Hawkins summarized progress since the 2011 meeting and introduced the Authority's proposal to reopen the federal consent decree and pilot a large-scale green project in the Rock Creek and Potomac sewersheds.

In attendance were District agencies including District Department of Transportation, District Department of the Environment, and the Office of Planning, all of whom would play an integral part in a green infrastructure solution; environmental groups like Casey Trees, Natural Resources Defense Council and the Anacostia Watershed Society; and other interested parties such as George Washington University's Office of Sustainability and the National Park Service, in addition to a dozen other groups. Mr. Hawkins shared his passion for the potential of a much greener DC and asked for support of the pilot program and re-opening the federal consent decree.



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