



Lower Mill Creek Partial Remedy

The Metropolitan Sewer District of Greater Cincinnati's (MSD) Lower Mill Creek solution is a nationally recognized sustainable remedy for eliminating 1.78 billion gallons of combined sewer overflows (CSOs) annually into the Mill Creek. The solution includes a mix of green and gray projects in four sub-watersheds of the Lower Mill Creek: Lick Run, Bloody Run, Kings Run, and West Fork. The projects were identified and refined using an integrated watershed planning approach to provide cost-effective solutions with community benefits including improved water quality, new jobs and opportunities for neighborhood revitalization.

Challenge in Lower Mill Creek

During rains, our combined sewer system can overflow, into streams and rivers, making Cincinnati among the top five locations in the U.S. for combined sewer overflows (CSOs).

MSD is under a federal Consent Decree to reduce the overflows and has implemented a major public works initiative called "Project Groundwork" to achieve compliance and bring value to the community through this significant investment.

More than half of our 11 billion gallons in annual overflows occur in the Lower Mill Creek watershed, which covers 40,000 acres in the heart of Cincinnati.

As a result, MSD is implementing a near-term solution called the "Lower Mill Creek Partial Remedy (LMCPR)" that seeks to significantly reduce the overflows by 2018. Additional solutions will be implemented after 2018.



Example of green infrastructure project at Ault Park.

Lower Mill Creek Solution

MSD's Lower Mill Creek solution — which was officially approved by the U.S. EPA in May 2013 — will eliminate 1.78 billion gallons of CSOs annually into the Mill Creek.

This sustainable remedy will be implemented in place of a deep, underground storage tunnel. Project costs are estimated at \$244 million (in 2006 dollars), which is more than \$200 million less expensive for ratepayers than the deep tunnel making this mandated fix more affordable for MSD's ratepayers.

A Sustainable Approach with Community Benefits

The Lower Mill Creek solution seeks to reduce CSOs by primarily focusing on reducing the amount of stormwater entering combined sewers during heavy rains.

This approach integrates green infrastructure (e.g., stream restoration, bioswales and stormwater detention basins) with gray infrastructure (e.g., new storm sewers) to provide cost-effective solutions with community benefits.

Benefits include:

- Reduction in CSOs
- Improved water quality
- Creation of new jobs
- Opportunities for neighborhood revitalization.

The remedy includes projects in the Lick Run, Kings Run, Bloody Run, and West Fork watersheds. The projects were identified and refined using an integrated watershed evaluation process that looks at the big picture needs (e.g., environmental, economic and social) of a watershed.

Jobs Created by the Lower Mill Creek Partial Remedy

Lick Run

**701 Construction/
Trade Jobs**

Kings Run

**128 Construction/
Trade Jobs**

West Fork

**54 Construction/
Trade Jobs**

Nearly 1,000 full-time equivalent construction jobs will be created by the Lower Mill Creek solution, as predicted by the Lower Mill Creek study.

Lick Run Watershed

The Lick Run Project will eliminate about 379 million gallons of CSOs into the Mill Creek each year from CSO #5, the largest CSO in MSD's system.

The project includes 12 individual projects that will be constructed between 2012-2018. The central element is a Valley Conveyance System (VCS) in the heart of South Fairmount that will carry or convey stormwater and natural drainage to the Mill Creek. The other 11 projects will convey stormwater and natural drainage to the VCS.

The VCS will be located from old Queen City Avenue to the Mill Creek between Queen City and Westwood avenues. The VCS will include a mile-long urban waterway (bioengineered stream) with a meandering channel, natural stone, runs, pools and riffles and a riparian edge planted with native plants and trees. An underground box conduit system will be constructed beneath the waterway to help prevent flooding. The VCS will also include a multi-use path for walking/biking opportunities along the waterway, among other features.



Conceptual rendering of the urban waterway at 60% Design

Bloody Run Watershed

The Bloody Run Project includes the installation of a real-time control facility near CSO 181, which discharges through a channel into the Mill Creek. Real-time controls allow sewer lines to act as temporary storage for excess flows during heavy rains.

This project will eliminate an estimated 93 million gallons of CSOs into the Mill Creek each year.

Kings Run Watershed

The Kings Run Project will eliminate about 156 million gallons of CSOs into the Mill Creek each year by reducing overflows at CSO 217 and 438. The project includes four phases that will be constructed between 2016-2018. They include:

- Phase A-1: Four stormwater detention basins
- Phase A-2: Sewer separation along Kings Run Drive and Winton Ridge Lane.
- Phase B: -1.5 million gallon storage tank at CSO 217 and stream stabilization along the Kings Run stream
- Phase C: Sewer separation along Winton Road and a small bioinfiltration basin (rain garden) at the Greater Cincinnati Water Works reservoir in College Hill.

West Fork Watershed

The West Fork Project will eliminate about 173 million gallons of CSOs into the West Fork Channel each year by reducing overflows at CSOs 125, 127 and 128.

The projects will be constructed between 2015-2017. They include:

- CSO 125 Stream Separation Project (also known as Martha and North Basin) - collection of stormwater in two stormwater detention basins with discharge directly to the West Fork Channel. Anticipated construction: 2015
- CSO 127 and 128 Stream Separation Project - collection of stormwater from Mt. Airy Forest with discharge directly to the West Fork Channel. Anticipated Construction: 2016-2017

Need More Information?

For more information contact: **MSD Engineering Customer Service** at **(513) 557-3594** or **MSD.Communications@cincinnati-oh.gov**. Visit the project websites at:

Lower Mill Creek: www.projectgroundwork.org/lowermillcreek

Lick Run: www.projectgroundwork.org/lickrun

Bloody Run: www.projectgroundwork.org/bloodyrun

Kings Run: www.projectgroundwork.org/kingsrun

West Fork: www.projectgroundwork.org/westfork