



PROJECT GROUNDWORK
your pipeline to clean water

Bridge Projects between Phase 1 and 2

In April 2018, the U.S. EPA approved the design and/or construction of 26 Consent Decree wet weather projects between 2018-2020. Known as the “bridge,” these projects will bridge the gap between Phase 1 and 2 of Project Groundwork, MSD’s program to reduce sewer overflows into local creeks and rivers.

What’s the Bridge?

On April 3, 2018, the U.S. EPA approved a series of sewer infrastructure projects to be completed between Phase 1 and Phase 2 of Project Groundwork, MSD’s Consent Decree-mandated program to reduce sewer overflows into local creeks and rivers.

Phase 1 of Project Groundwork began in 2009 and ends on December 31, 2018. Phase 2, which is expected to start in 2020, will be implemented in phases over multiple years, starting with Phase 2A.

As Phase 1 comes to a close at the end of 2018 and Phase 2A will not start up for several years, these projects will “bridge” the gap between the two phases and allow more time to develop the Phase 2A program.

The bridge includes 26 projects totaling about \$61 million (in 2006 dollars). MSD will design and/or construct the projects in 2018-2020.

How were the Bridge Projects Selected?

All the bridge projects are on the original list of Consent Decree projects to be conducted during Phase 2, as identified by the U.S. EPA. The final selection of 26 projects was a result of negotiations between MSD, the City of Cincinnati, Hamilton County, ORSANCO, and the U.S. EPA. The projects were ultimately selected based on benefits to be achieved, risk reduction, urgency, and readiness.



Some of the bridge projects will be designed but not constructed during this period, while others will be designed and constructed.

Phase 1 Status

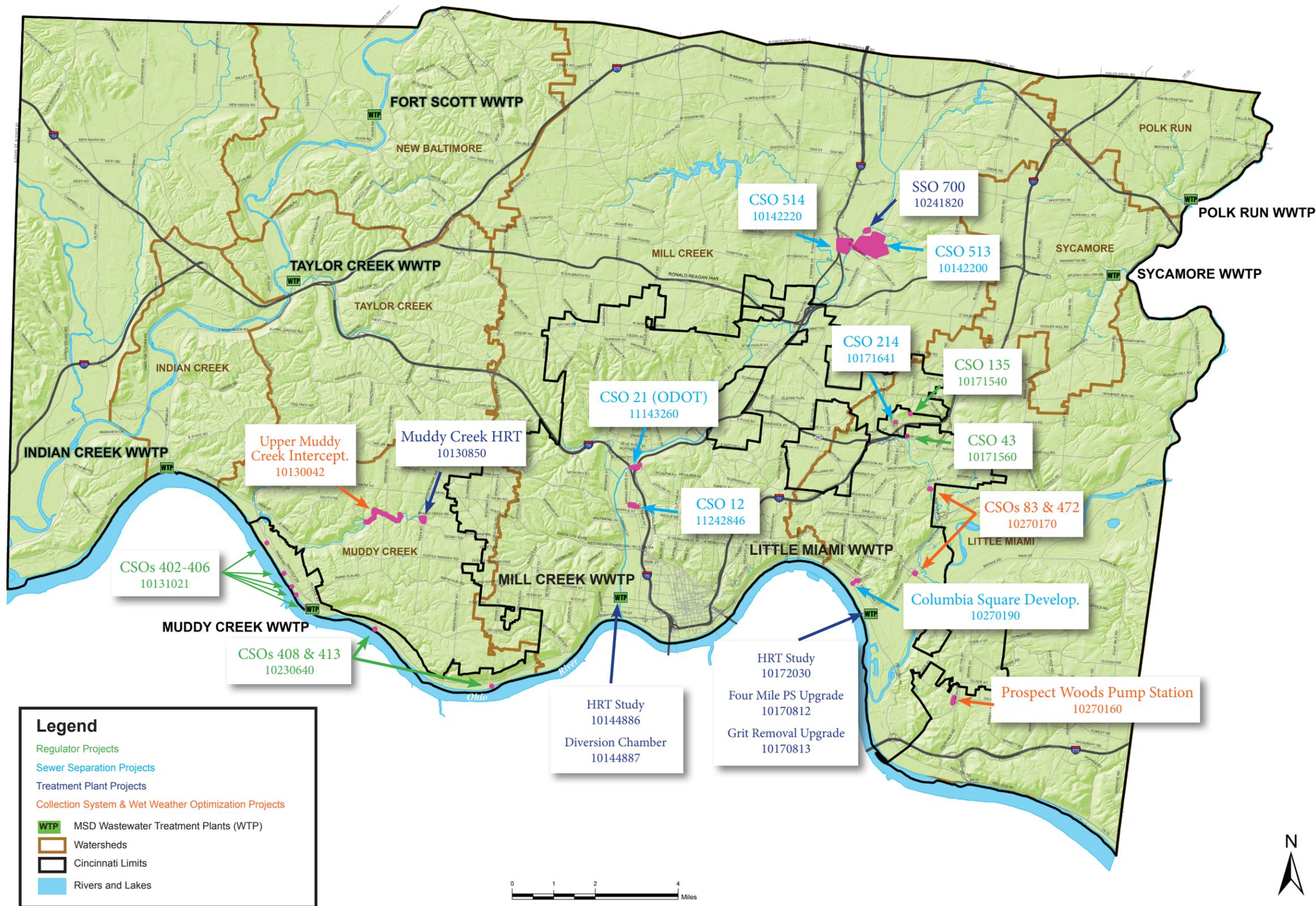
MSD is working to complete Phase 1 (2009-2018) of Project Groundwork. Accomplishments to date include:

- Reduced CSO overflow volume by 6 billion gallons a year during a typical year of rain (41 inches).
- Completed 84% of the projects required under Phase 1, or 112 of the 133 total projects.
- Eliminated or significantly reduced 51 Combined Sewer Overflows (CSOs). A total of about 146 CSOs have been controlled over the years, with 201 remaining.
- Eliminated 44 Sanitary Sewer Overflows (SSOs), including the 17 most highly active. A total of about 154 SSOs have been eliminated over the years, with 51 remaining.
- Eliminated or upgraded 24 pump stations to prevent Pump Station Overflows (PSOs). A total of about 67 PSOs have been eliminated over the years, with 22 remaining.
- Reduced overflow activations at SSO 700 (MSD’s largest SSO) from 47 a year to about 8 during a typical year of rain.
- Improved water quality in local streams, with significant progress in the Mill Creek.
- Kept Phase 1 under budget. Phase 1 costs are currently trending at about \$1.011 billion (in 2006 dollars) as compared to the original estimate of \$1.14 billion. The Lick Run Project alone saved MSD customers more than \$150 million as compared to the original underground tunnel solution.

Phase 2 Status

MSD will submit its proposed Phase 2A schedule to the U.S. EPA by June 30, 2018. Negotiations with the U.S. EPA are anticipated prior to final approval. The Phase 2A scope and schedule will establish the next phase of projects to begin in 2020.

Bridge Projects (2018-2020)



New storm sewers



SSO 700 HRT facility

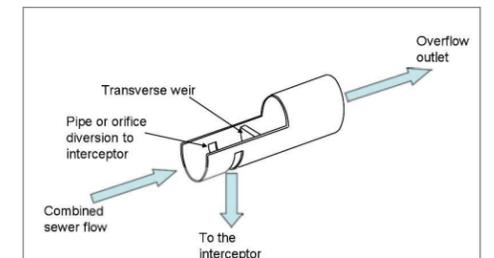


Diagram of a regulator (e.g., weir)



Open cut construction



Grit removed from wastewater

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Project Details

Overview of the Bridge Projects

The following is a summary of the 26 bridge projects:

- **Sewer Separation projects (6):** These projects involve the construction of new storm sewers or aboveground conveyance systems to keep rainwater out of the combined sewer system and send it directly to a local stream or river.

Four of the projects are in the Little Miami watershed and will be designed and constructed. Two of the projects are in the Mill Creek watershed. One, CSO 12, is property acquisition only. The other, CSO 21, will be designed by MSD but constructed by the Ohio Department of Transportation.

- **Regulator projects (9):** These projects will help prevent the excessive intrusion of river water into interceptor sewers. Regulators are chambers inside the sewer system that control the flow of wastewater - using weirs, gates, or dams. They can also be used to prevent the backflow of water into the sewers from a stream or river.

Seven of the projects are along the Ohio River in the Muddy Creek watershed and two of the projects are along the Little Miami River in the Little Miami watershed. MSD will design all nine Regulator projects and construct four at CSOs 43, 135, 408 and 413.

- **Collection System & Optimization projects (4):**

- Upper Muddy Creek Interceptor project: This project will replace a portion of the interceptor that was originally installed between 1929-1935. This section is aging and deteriorated, allows excessive backflow of river water into the system, and is among the sewer segments at the highest risk for failure.

- Dynamic Underflow Control (DUC) projects (2): This project includes modifications to the CSO 83 and 472 outfalls into the Little Miami River to reduce sewer overflows. It involves enlarging the size of the current underflow pipe to the interceptor, replacing the regulator chamber, and adding level sensors and telemetry equipment for automated control of wastewater flow via MSD's Smart Sewer system.

- Prospect Woods Pump Station: This project in the Little Miami watershed involves upgrading a pump station in Anderson Township that is at risk of failure due to its age and condition.

- **Treatment Plant projects (7):** These projects include the following:
 - Improvements to the Muddy Creek & Westbourne High Rate Treatment (HRT) facility in Green Township. This includes modifications to the existing diversion chamber to reduce localized sewer backups, new fine screens, odor control, etc.
 - Improvements to the existing SSO 700 HRT facility in Reading in the Mill Creek watershed. This includes a new 1.2 million gallon storage tank, pump station, hydraulics and actuators, disinfection improvements, polymer system, and coordinated control between SSO 700 and two downstream Real-Time Control (RTC) facilities as part of MSD's Smart Sewer system.
 - Improvements at the Little Miami Wastewater Treatment Plant, including 1) planning study to evaluate the feasibility of a HRT facility; 2) upgrades to the medium screens and grit removal system (part of preliminary treatment); and 3) replacement of the aging electrical equipment feeding the Four Mile Pump Station.
 - Improvements at the Mill Creek Wastewater Treatment Plant, including 1) a study to evaluate the feasibility of a HRT facility; 2) construction of a diversion chamber to facilitate treatment of flows at a future influent pump station and potential future HRT facility.



For more information:

www.projectgroundwork.org

Contact MSD Engineering Customer Service at (513) 557-3594 or MSD.Communications@cincinnati-oh.gov