



PROJECT GROUNDWORK
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Community “Town Hall” Meeting on the Lower Mill Creek Partial Remedy MSD Administration Building - August 16, 2012

Agenda

6:00 p.m. — 8:00 p.m.

Presentation on the Lower Mill Creek Partial Remedy
MSD Administration Building, Room 104

Moderator

Dan Hurley, Director of Leadership Cincinnati for Cincinnati USA Regional Chamber and Host of WKRC Channel 12 “Newsmakers”

PowerPoint Presentation

Tony Parrott, MSD Executive Director

MaryLynn Lodor, MSD Environmental Program Manager

Public Feedback Session

Facilitated by Dan Hurley

If you are interested in giving verbal comments at the meeting, we will be facilitating a public feedback session following the presentation.

You will have **2 minutes** to give your comment at the fixed microphone in the center aisle of the room. A stenographer will be present to record your comments. You will need to fill out a card with your name, organization (if applicable) and contact information for the stenographer. You can return to the mic with additional comments once the first round of comments is completed and if there is time remaining.

You may also submit comments in the following ways through September 3, 2012:

- By written comment card at the Town Hall meetings
- By email at MSD.Communications@cincinnati-oh.gov
- By phone at MSD’s Engineering Customer Service Line, (513) 557-3594.

All comments will be submitted to the co-defendants Cincinnati City Council and the Hamilton County Board of County Commissioners. Once a solution is selected by City Council and the Commissioners, the preferred solution will be submitted to federal and state regulators by December 2012.

For more information and to review the Lower Mill Creek Partial Remedy report, visit www.projectgroundwork.org/lowermillcreek. You can also contact us at MSD.Communications@cincinnati-oh.gov or (513) 557-3594.

Lower Mill Creek Partial Remedy Alternatives Evaluation Preliminary Findings Report

OVERVIEW



In its negotiations with Regulators to meet requirements of a federal Consent Decree (see box), MSD sought the opportunity to study a sustainable solution as an alternative to a tunnel originally proposed as the default solution. MSD negotiated time to refine the tunnel design and develop updated cost estimates; and to develop a source control alternative approach that achieves equal or greater control of CSO annual volume as the default and can be completed by the end of Phase 1. For more than 2 years, MSD has extensively evaluated both options under consideration for the Lower Mill Creek Partial Remedy (LMCPR). The Alternatives Evaluation Preliminary Findings Report provides the technical, economic, and feasibility analysis of the options including findings related to alternative analysis, costing, water quantity, and water quality. Findings must be submitted to the Regulators by December 31, 2012, and MSD is actively seeking community input on the alternative that is preferred for recommendation to the federal agencies.

Under Phase 1, the original default tunnel concept had to be revised to overcome constructability and safety concerns. MSD has taken the tunnel concept a step further and identified the cost-effective grey project that would be built today. At the same time, MSD has advanced a detailed planning and design for source control approach that is conducive to integrated watershed planning. Phase 1 alternatives were developed by selecting suites of projects from each concept that would meet the 2.0 billion gallon CSO volume reduction goal for the least life cycle cost.

Phase 1 - Grey Alternative

Both Phase 1 alternatives include the four existing real-time control (RTC) facilities and recently completed West Fork Channel grate modifications. The Phase 1 Grey Alternative is comprised of a 25-foot diameter deep tunnel extending to CSO 14 (Station Avenue, just south of the confluence of West Fork Channel and Mill Creek); an 84 million gallon per day (mgd) deep tunnel pump station; and an 84 mgd enhanced high rate treatment (EHRT) at the Mill Creek Wastewater Treatment Plant.

Phase 1 – Sustainable/Hybrid Alternative

MSD has focused on leading with source control and removal of stormwater from the combined sewer system cost effectively and strategically to advance CSO reduction and community goals. By strategically separating sewers, MSD can prioritize significant opportunities to remove stormwater from the combined sewer system. Using best management practices, stormwater can be returned to the natural environment, peak flows and volumes can be managed, and water quality can be improved. USEPA has been actively engaging MSD during the analysis, and has acknowledged that the source control approach aligns with USEPA's integrated watershed planning approach. USEPA has indicated that the primary means of determining if green control measures are equivalent to a planned grey infrastructure control measure will be model runs.

What is the CONSENT DECREE?

In the late 1990s, increased scrutiny from the U.S. Department of Justice and U.S. Environmental Protection Agency brought the issue of combined sewer overflows (CSOs) to the forefront, and enforcement action was leveled against large cities out of compliance with the Clean Water Act, including MSD. In 1999, MSD, which had already begun addressing the elimination of its SSOs and reducing CSOs, entered into negotiations with the agencies to establish a formal remediation program that would be recognized and supported by the government, but also was affordable for local ratepayers. The resulting agreement is called the Consent Decree. It mandates that MSD capture, treat or remove 85% of the 14 billion gallons of CSOs and eliminate all sanitary sewer overflows (SSOs), about 100 million gallons. More about the Consent Decree is at http://msdgc.org/consent_decree/

View the full Alternatives Evaluation Preliminary Findings Report at
www.projectgroundwork.org/projects/lowermillcreek/community.htm




The Phase 1 Sustainable/Hybrid Alternative consists of sustainable infrastructure projects in Lick Run, West Fork Channel and Kings Run, including large-scale sewer separations, stormwater detention basins, naturalized and new channels, stream restoration and combined storage; a RTC facility in Bloody Run; and a 2.0 million gallon combined storage facility for CSO 488. The Phase 1 Sustainable/Hybrid Alternative is very flexible, as it enables the selection of a sustainable option or a hybrid option for Phase 2.

Phase 1 Benefit	Grey Alternative	Sustainable/Hybrid Alternative
Phase 1 achieves > 2 billion gallons CSO reduction	✓	✓
Fewer assumptions in modeled results	✓	
Higher volume flow treated at WWTP or EHRT	✓	
More operational flexibility for interceptor maintenance	✓	
Accommodates multiple solutions for Carthage & SSO 700	✓	
Surface improvements and increased public acceptance		✓
Opportunity to leverage private/public funding		✓
Construction jobs available for local workforce & SBEs		✓
Less purchased energy		✓
Flexibility for future long-term decision making		✓
Water quality improvements	✓	✓
Brownfield remediation		✓
Repurposing of land		✓
Reduction in wet weather volume to WWTP		✓
Right-size Phase 2 infrastructure		✓

Phase 1 Risk	Grey Alternative	Sustainable/Hybrid Alternative
Long-term solution not adaptable	X	
Complex construction methods	X	
Limited local construction participation	X	
Higher energy demand & cost	X	
Larger carbon footprint	X	
Additional assumptions for modeling		X
Potential future stormwater regulations	X	X
Future NPDES regulations	X	X
Potential large variance with cost for tunnel construction	X	


Phase 2

For the formal LMC Study submittal to USEPA, a detailed Phase 2 plan is not required. However, any alternative submitted must be able to reasonably fit into a long-term concept. MSD developed LMC Final Remedy concepts for each alternative considered for comparison purposes. The specific projects to be proposed in Phase 2 must be submitted to USEPA by December 31, 2017. Highlights of Phase 2 include a tunnel from CSO 14 to Mitchell Avenue (CSO 482), 20 million gallon combined storage in Bloody Run, 67 mgd EHRT for Wooden Shoe (CSO 217), and upper watershed storage and partial separations.




Grey Alternative

- Highest Phase 1 cost
- Lowest cost to achieve 85% at every CSO
- Least adaptive
- Least deviation from existing approved WWIP
- Provides more alternatives for Carthage and SSO 700 solutions



Sustainable Option

- Lowest Phase 1 Cost
- Lowest Total Capital Cost
- Lowest WWTP O&M Cost
- Community Based
- Lowest overall CSO control



Hybrid Option

- Lowest Phase 1 Cost
- Highest Overall Capital Cost
- Provides more alternatives for the Carthage and SSO 700 Solutions
- Achieves 85% control at every CSO

PHASE 1	Grey Alternative	Sustainable/Hybrid Alternative
Lick Run Watershed	\$ -	\$ 195,449,000
West Fork Watershed	\$ -	\$ 73,503,000
Bloody Run Watershed	\$ -	\$ 3,421,000
Kings Run Watershed	\$ -	\$ 34,423,000
CSO 488 Storage	\$ -	\$ 10,651,000
Tunnel	\$ 312,671,000	\$ -
Consolidation Sewers	\$ 88,927,000	\$ -
Tunnel Pump Station & EHRT	\$ 135,811,000	\$ -
Total	\$ 537,409,000	\$ 317,447,000

Your Input is Encouraged!

MSD encourages you to view the full Lower Mill Creek Alternatives Evaluation Preliminary Findings Report at www.projectgroundwork.org/projects/lowermillcreek/community.htm. You may submit feedback by contacting MSD Engineering Customer Service at (513) 557-3594 or MSD.Communications@cincinnati-oh.gov.

PHASE 2	Grey Alternative	Sustainable Option	Hybrid Option
Denham Watershed	\$ -	\$ 58,181,000	\$ -
Ludlow Run Watershed	\$ -	\$ 33,727,000	\$ -
Bloody Run Watershed	\$ -	\$ 83,526,000	\$ 58,305,000
Upper Watersheds Part Seps	\$ 74,768,000	\$ 29,345,000	\$ 45,104,000
EHRT & Storage Facilities	\$ 186,568,000	\$ 25,813,000	\$ 25,813,000
Carthage EHRT	\$ 65,979,000	\$ 65,979,000	\$ 65,979,000
Regulator Improvements	\$ 15,918,000	\$ 15,918,000	\$ 15,918,000
Tunnel Pump Station & EHRT	\$ -	\$ -	\$ 135,811,000
Tunnel	\$ 218,130,000	\$ -	\$ 414,584,000
Consolidation Sewers	\$ 83,123,000	\$ -	\$ 165,718,000
Total	\$ 644,486,000	\$ 312,489,000	\$ 927,232,000
TOTAL LMCFR	\$ 1,181,895,000	\$ 629,936,000	\$ 1,244,679,000



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Lower Mill Creek Watershed Fact Sheet

As part of Project Groundwork, the Metropolitan Sewer District of Greater Cincinnati (MSD) is currently evaluating sewer improvements in the Lower Mill Creek watershed. These improvements - known as the Lower Mill Creek Partial Remedy - seek to eliminate up to 2 billion gallons of combined sewer overflows (CSOs) into the Mill Creek by 2018. MSD is seeking feedback on potential solutions and will be taking public comments through September 3, 2012.

What's the Challenge?

When it rains, raw sewage — mixed with stormwater — overflows from our sewers into local rivers and streams and can also back up into basements.

The vast majority of overflows occur from combined sewers, which carry both sewage and stormwater in the same pipe. Combined sewers are typically located in the older areas of Cincinnati and Hamilton County.

When large amounts of stormwater enter combined sewers, these pipes — many built more than 100 years ago — are often filled beyond their capacity. To relieve pressure on the sewer line and prevent widespread flooding and sewage backups, combined sewers were designed to overflow directly into local waterways through outfalls known as combined sewer overflows or CSOs.

Hamilton County is among the top five locations in the nation for urban CSOs. Overflows occur as many as 105 times a year at some locations.



Lower Mill Creek, photo taken by Bruce Koehler, OKI

What's the Solution?

To resolve this public health and environmental issue, MSD has embarked on the largest public works project in the history of our community to rebuild and improve our sewer system.

Called **Project Groundwork**, this multi-year and multi-billion dollar initiative includes hundreds of sewer improvements and stormwater control projects.

Federal and state regulators, including the U.S. EPA, Ohio EPA and the Ohio River Valley Water Sanitation Commission (ORSANCO), have mandated that MSD capture, treat or remove at least 85% of the billion of gallons of annual overflows from combined sewers and eliminate all overflows from dedicated sanitary sewers.

A Three-Pronged Approach

To reduce or eliminate sewer overflows throughout Hamilton County, MSD is focusing on three different strategies:

- Construction of larger sewers to transport wastewater to treatment plants or large underground storage tunnels to capture sewer overflows before they discharge into local waterways.
- Upgrading of existing treatment plants to handle more wastewater or construction of enhanced high-rate treatment facilities to treat sewer overflows prior to discharge back into local waterways.
- Sustainable stormwater management strategies that prevent overflows by reducing the amount of stormwater entering combined sewers during heavy rains. These solutions eliminate the need to convey and treat essentially "clean" water. Examples include stormwater detention or retention basins, construction of dedicated stormwater sewers or restoration of streams.

Focus on Lower Mill Creek Watershed

The Lower Mill Creek watershed, which drains into the Mill Creek, contributes more than half of the total overflows that occur annually from combined sewers in Hamilton County.

Under Project Groundwork, MSD must eliminate up to 2 billion gallons of CSOs from this watershed by 2018 (during Phase 1 of MSD's Consent Decree). These improvements are known as the Lower Mill Creek Partial Remedy.

Potential Solutions for Lower Mill Creek

To achieve this specific goal, MSD is evaluating different solutions to eliminate the overflows:

- One solution is a traditional "grey" approach that includes a deep underground storage tunnel and enhanced high-rate treatment facility to capture and treat overflows.
- Another solution is a sustainable/hybrid approach that primarily seeks to control overflows by reducing the amount of stormwater entering combined sewers during heavy rains. Examples include constructing new storm sewers, installing stormwater detention or retention basins and restoring streams. MSD is currently exploring this approach in the Bloody Run, Kings Run, Lick Run and West Fork watersheds.

The solutions are detailed and compared in the Lower Mill Creek Partial Remedy "Alternatives Evaluation Preliminary Findings Report," which is available for public review and feedback at www.projectgroundwork.org/lowermillcreek.

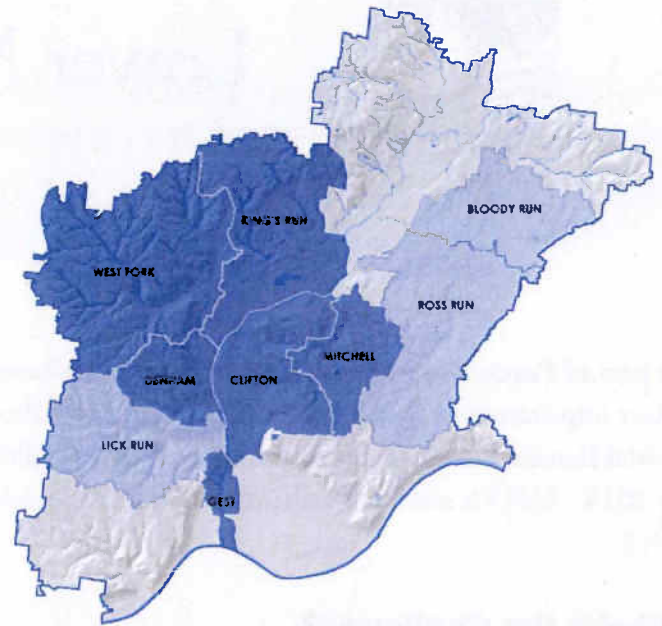
MSD - with guidance from Cincinnati City Council and the Hamilton County Commissioners - must submit its preferred solution to federal and state regulators by December 2012.

The Lower Mill Creek Watershed

The Lower Mill Creek watershed includes numerous smaller watersheds that drain into the Mill Creek, eight of which significantly contribute to the volume of CSOs in Hamilton County.

The watershed covers approximately 40,000 acres (62.5 square miles) in the heart of Hamilton County.

Billions of gallons of stormwater runoff each year are generated from this watershed. A large percentage the watershed's stormwater enters combined sewers and is a primary source of the overflow problem.



The Lower Mill Creek watershed includes numerous smaller watersheds such as Bloody Run, Denham, Kings Run, Lick Run and West Fork.

Public Feedback

MSD is seeking feedback on the Lower Mill Creek Partial Remedy and will be taking public comments on the potential solutions through September 3, 2012.

There are numerous opportunities for you to participate and provide feedback:

- Attend a Community "Town Hall" Meeting:
 - 6-8 p.m., August 16, 2012 at the MSD Administration Building, 1081 Woodrow Street in Lower Price Hill
 - 7-9 p.m. August 23, 2012 at the MSD Wastewater Collection facility, 225 W. Galbraith in Hartwell
- Review the Lower Mill Creek Partial Remedy Report, available at www.projectgroundwork.org/lowermillcreek.

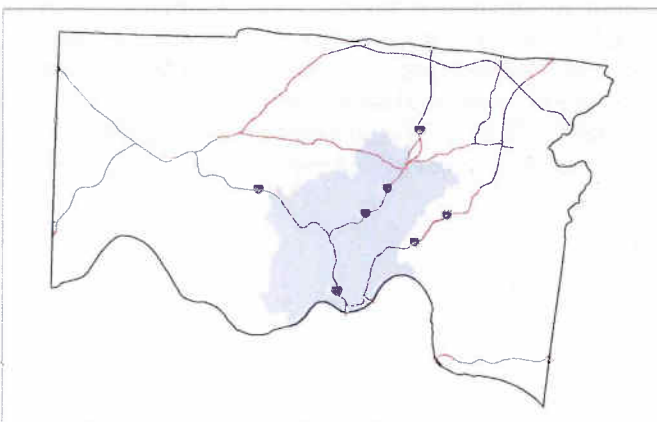
Comments can be submitted in the following ways:

- At the Community Town Hall meetings - either verbally or by comment card
- By email at MSD.Communications@cincinnati-oh.gov
- By phone at MSD's Engineering Customer Service Line, (513) 557-3594.

All comments will be submitted to Cincinnati City Council and the Hamilton County Commissioners.

Need More Information?

- Visit www.projectgroundwork.org/lowermillcreek
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Frequently Asked Questions:

Have the project costs for the Lick Run Alternative doubled?

No. In August 2010, the construction cost developed for the Lick Run Alternative was estimated to be approximately \$130 million. In order to make an apples-to-apples comparison to the default solution (the tunnel), capital costs were added to the \$130 million construction cost for a total estimated cost of \$195 million (referenced in the study for Lick Run). Capital costs include construction costs plus the costs for engineering, inspection, financing, right-of-way acquisition, and other capital related expenses.

To say that the cost has doubled for the sustainable alternative project proposed for Lick Run is not accurate. The \$317 million project estimate not only includes the Lick Run Alternative but also includes projects in the West Fork and Kings Run watersheds, as well as the real-time control facility in the Bloody Run watershed.

Why has the cost estimate for the tunnel changed from the original estimate?

At the direction of the USEPA, the default tunnel solution was conceptualized in the final Wet Weather Improvement Plan (WWIP) as a default planning level conceptual solution. All parties (the Regulators, Hamilton County, City of Cincinnati and MSD) knew the default tunnel solution cost was a conceptual planning estimate, and that it was developed without any field engineering or analysis undertaken to inform the conceptual cost. This approach is standard practice on capital improvement projects of this magnitude as it reduces the cost for ratepayers of an initial detailed analysis that may not be relevant as the project advances and the concepts are revised.

What if the original project cost exceeds community affordability?

Because of the concern about potential costs, the Regulators, City of Cincinnati and Hamilton County negotiated "triggers" within the Consent Decree that could provide more time or other modifications should the costs exceed the original estimate.

As part of the Lower Mill Creek study outlined in the final WWIP, the Consent Decree allows for an examination of alternatives to the default tunnel through a three-year study which include refinements to the planning level costs. As part of this study, an updated default "grey" solution was developed and designed to nearly 60% level of detail based on detailed field engineering that provided a more accurate assessment of the project realities. The design was developed to achieve a significant volume reduction of the combined sewer overflows (CSOs) within the Lower Mill Creek in order to achieve the goals of the final WWIP. All of these changes resulted in the updated cost estimate.

