

COMBINED SEWERS

Questions and Answers About the Combined Sewer System

WHAT ARE COMBINED SEWERS?

Combined sewers are pipes that carry both sanitary sewage and stormwater. In some cases, a storm sewer existed to drain an area and sanitary connections were made when homes started installing indoor plumbing. In other cases, a sanitary sewer was built to serve an area and stormwater was tied into the sewer because no other outlet existed.

HOW MANY COMBINED SEWERS DO WE HAVE?

Our current inventory shows 52,631 feet of combined sewer. This is less than 10% of our total sanitary collection system. Unfortunately, the combined sewer system includes the main sewers to the Lawrence Street Water Pollution Control Facility, so all those flows pass through the combined sewer system. The Upper Hocking Water Pollution Control Facility was constructed to divert the separate flows in the north and west part of the City away from the combined sewer system.

WHERE ARE THESE COMBINED SEWERS?

As you can guess, the oldest part of the City has the combined sewers. This includes the area roughly bounded by Pierce Avenue on the north, the Hocking River on the west and south, and Ewing Street on the east. But all the major sewers that carry sewage from the newer sections of the city also are tributary to the system.

WHY ARE COMBINED SEWERS A PROBLEM?

When storm events occur, flow increases in the sewer until the sewers can no longer carry all the water. At certain locations, a relief point then allows the sewer to overflow sewage diluted with rainwater to either a storm sewer or a stream. The overflow may be triggered by a storm sewer or a sanitary sewer.

HOW DO OVERFLOWS OCCUR?

A special manhole is built to divert the water when it reaches a certain level. All the overflows in the City of Lancaster are wet weather overflows, directly related to rainfall events. Some overflows activate only under extreme storms, some overflows activate in nearly every rain event. We have no dry weather overflows.

DOES AN OVERFLOW CAUSE A PROBLEM?

During an overflow, we are discharging diluted sewage to the streams. Most people would probably not even notice the discharge. While we are not seeing long term impacts on the streams, Ohio EPA has determined that we are violating water quality standards for bacteria during overflow events.

CAN'T WE JUST CLOSE OFF THE OVERFLOWS?

The overflows provide an important safety relief for the sewer system. During storm events flows in the sewers can increase dramatically. Monitoring in the Lake Allen area found flows increased 100 times the dry weather flow during rain events. Without the overflows, we would have street flooding, sewage backups, and property damage. Even the wastewater treatment plant would flood, preventing treatment of any sewage at all. The City continually evaluated the combined system and has closed overflows where possible. Since 1995 we have closed 24 of the 32 overflows.



CITY OF LANCASTER

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Long Term Control Plan

How we got here

Prior to 1995, the primary focus of wastewater in the City of Lancaster was providing service to growth areas and upgrading the existing wastewater treatment plant to meet discharge limits. In 1995, the City began a Wastewater Collections System Evaluation to address basement flooding, evaluate system capacity and begin work to comply with anticipated Ohio EPA regulations. Highlights of the last twenty years include

- 1997 Ohio EPA Mandates Long Term Control Plan to be submitted June 1, 2000
- 2000 Long Term Control Plan Submitted
- 2002 Downtown Sewer Separation Project and South Broad Storm Sewer
- 2003 Ohio EPA Mandates Long Term Control Plan Addendum to address 4 Overflows
- 2004-2008 Lake Allen Sewer Separation Project
- 2005 Long Term Control Plan Addendum Submitted
- 2008 Ohio EPA Mandates Compliance Schedule based on Addendum
- 2008-2011 Upper Hocking Water Pollution Control Facility Project
- 2012 Ohio EPA Revises Compliance Schedule
- 2012-2013 System Flow Monitoring
- 2013 Union Forest Rose Sewer Separation
- 2013 Whiley Walnut Sanitary Sewer Separation
- 2013 Mary Burnham Park Relief Sewer
- 2014 Long Term Control Plan Phase 2 Submitted
- 2014 South Broad Street Express Sewer

Between 2002 and 2014 the City has closed 24 of the original 33 Combined Sewer Overflows by separating sewers, constructing storm sewers, constructing sanitary sewers and relocating catch basins.

The cost of Long Term Control Plan activities over the last 20 years have exceeded \$67 million dollars in wastewater and stormwater rate payer funds.



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Long Term Control Plan Where We Are Now

On April 27, 2007, the Ohio EPA issued the final NPDES permit for the Lawrence Street Wastewater Treatment Plant. This permit included a schedule for implementing the Combined Sewer System Long Term Control Plan (LTCP) as follows

- Complete construction for the Lake Allen Maple sewer separation project by 2009
- Complete construction of the proposed Upper Hocking Wastewater Treatment Plant by 2012
- Complete Construction of the Baldwin Run Express Sewer by 2014
- Complete Construction of the South Broad Street Express Sewer by 2016
- Complete Construction of the Lawrence Street Flow Equalization Basins by 2017
- Submit a Phase II Long Term Control Plan by 2014
- Complete all improvements necessary to reduce Combine Sewer Overflows by 2025

The Lake Allen Maple sewer separation and Upper Hocking Water Pollution Control Facility were completed ahead of schedule and the Baldwin Run Express Sewer was eliminated with the closure of CSO 1034.

The June 27, 2012 NPDES permit modified the schedule as follows

- Complete Closure of CSO 1011 2013
- Complete Closure of CSO 1016 2013
- Submit a Phase II Long Term Control Plan by 2014
- Complete Construction of the South Broad Street Express Sewer by 2016
- Complete Construction of the CSO 1014 Closure by 2015
- Complete Construction of the CSO 1033 Closure by 2017
- Complete Construction of the Lawrence Street Flow Equalization Basins by 2024
- Complete all improvements necessary to reduce Combined Sewer Overflow by 2025

The City is currently on schedule. Both 2013 projects were completed ahead of schedule. The South Broad Street project is expected to bid in the fall of 2014 and design has started for the CSO 1014 project.



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Long Term Control Plan Plan Recommendations

Following the completion of the Long Term Control Plan Addendum the City began an aggressive program to examine the combined sewer system and the factors that trigger overflows at each structure. As a result, the City was able to modify structures and remove stormwater sources to close 24 overflow locations and reduce events at the remaining nine locations. System modeling completed in 2014 allowed the City to evaluate alternatives at each overflow location to meet Ohio EPA requirements. The selected solution for each location are

- CSO 1004 Sewer Extensions, Sewer Separation and Flow Equalization
- CSO 1008 Structure Modifications and Sewer Separation
- CSO 1009 Sewer Separation
- CSO1012 Sewer Separation
- CSO 1013 Sewer Separation
- CSO 1014 Sewer Extension and Sewer Separation
- CSO 1019 Structure Modification, Sewer Extension and Sewer Separation
- CSO 1029 Structure Modification and Sewer Separation
- CSO 1033 Sewer Extension and Sewer Separation

The cost for these projects is \$23 Million.

Funding for compliance is an unfunded mandate that falls on the City of Lancaster Wastewater and Stormwater rate payers. Using U.S. EPA affordability criteria the cost of the projects exceed 2% of the Median Household Income and is a high burden on the community.

Wastewater Rates are expected to rise annually while Stormwater Rates are expected to remain stable. To fund the projects the City is cutting non-critical system maintenance, non-CSO capital improvement projects, and personnel. There will be limited funds to extend services for economic development projects. Water Rates needed for maintenance and capital improvements will also be limited to control the total utility bill costs for residents and businesses.

Based on past actions, pro-active scheduling and financial impacts, the City hopes to negotiate an extended compliance schedule until 2035 for the Combined Sewer Program



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