

The Price of Environmental Compliance

Lancaster City Council Committee
of the Whole

November 13, 2007



The Issue

- The Lawrence Street Wastewater Treatment Plant Requires an NPDES Permit from the Ohio EPA
- The City of Lancaster owns and operates a combined sewer system
- US EPA has regulations and policies on the operation of combined sewers

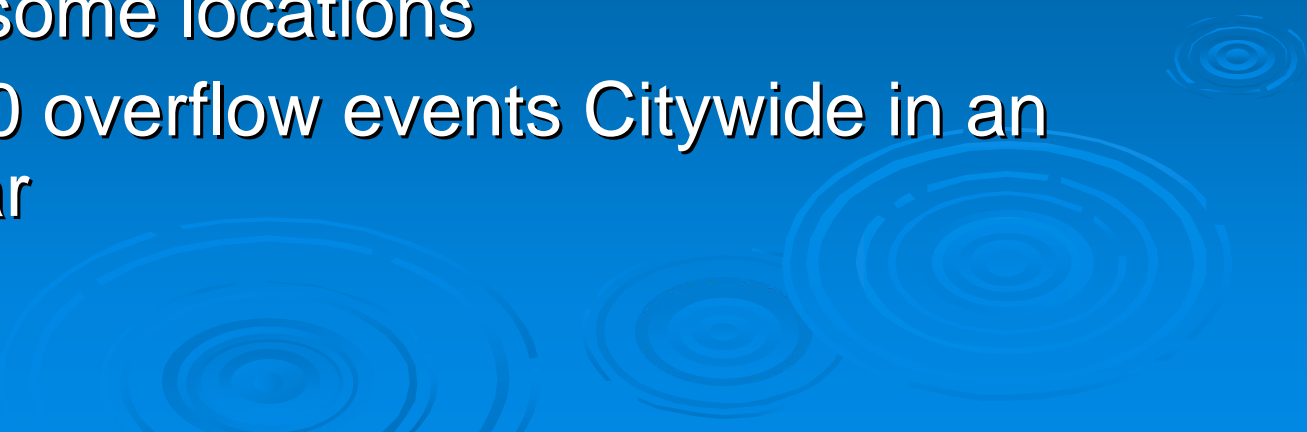
What is an NPDES Permit

- Required under the Clean Water Act to discharge treated wastewater
- Sets limits on pollutants discharged based on State Water Quality Standards
- Establishes monitoring, reporting and operation requirements
- Issued by Ohio EPA every 3-5 years
- First level of enforcement for Ohio EPA

Combined Sewers

- Carry both sewage and stormwater
- Under dry weather conditions sewage goes to Lawrence Street WWTP
- Combined Sewers were constructed in the oldest parts of the City over 50 years ago
- Under wet conditions when the sewers reach capacity they overflow to storm sewers and discharge to streams

Combined Sewer Facts

- 88,000 feet of combined sewers (less than 10% of system)
 - In 1995 there were 32 Combined Sewer Overflows identified
 - All sewers in the City are tributary to the combined sewers
 - As little as 0.10 inches of rain can trigger an overflow at some locations
 - There are 80 overflow events Citywide in an average year
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Work to Date

- In 1994 US EPA established a Combined Sewer Overflow Policy
- In 1995 the City of Lancaster began Wastewater Collection System Evaluation
- 1997 NPDES Permit required submission of a Long Term Control Plan by June 2000

2000 Long Term Control Plan

- Included System Evaluation and Inventory
- Management Plan
- Recommended
 - Close two CSO points
 - Modify two CSO points
 - Sewer Separation for Downtown
 - Sewer Separation for Lake Allen area

Result

➤ In 2002

- Downtown Sewer Separation Completed
- Three CSO Locations Closed
- One CSO Location Modified to decrease overflows
- Design of Lake Allen Sewer Separation Started

2003 NPDES Permit

- Ohio EPA had not reviewed or approved the Long Term Control Plan
- Permit Required Long Term Control Plan Addendum to be submitted by 2005
 - Limit overflows from 4 specific locations to 4-6 events per year
 - Treat increased flows at the WWTP
 - Provide full treatment of wastewater flows from new and separately sewerred areas

2005 Addendum

➤ Recommended

- Lake Allen Sewer Separation
- Construction of Upper Hocking WWTP to treat separated areas in the north and west
- Construction of Broad Street Express Sewer to treat separated areas in the south
- Construction of Baldwin Run Trunk Sewer to treat separated areas in north and east
- Construction of Flow Equalization Basins at Lawrence Street WWTP

2005-2006

- Land Acquisition for Upper Hocking WWTP
- Stream Monitoring and Modeling for Upper Hocking WWTP
- Met with Ohio EPA on CSO and Water Quality Issues. Sent Comment Letter to Ohio EPA
- Design of Upper Hocking WWTP started
- Construction of Lake Allen Maple Sewer Separation Started
- Number of CSO locations reduced to 20

2007 NPDES Permit

- January 2007 Received portions of draft NPDES permit for Lawrence Street WWTP including a compliance schedule for CSO improvements.
- February 2007 Draft Permit issued for public comment. City requested 30 day extension of comment period due to the number of identified issues

- March 2007 Met with Ohio EPA to discuss issues and compliance schedule
 - Monitoring requirements for WWTP
 - Replacement of Signs at outfalls
 - Clarification of Sanitary Sewer Overflow Requirements
 - Clarification of Permitted Overflow Locations
 - Phase II Long Term Control Plan

- April 2007 Submitted written comments on draft permit including compliance schedule
- Contact Senator Schaffer, Representative Stebelton, Director Korleski of issues with CSO compliance schedule
- Chamber of Commerce met with Ohio EPA on CSO compliance issues

“The City’s concerns with respect to inclusion of these improvements and schedule in its draft NPDES permit are threefold: (1) U.S. EPA’s CSO Control Policy contemplates that a permittee implement improvements to its treatment and collection system to address CSOs comprehensively through the approval of its LTCP, not in a piecemeal fashion outlined here, (2) **the schedule of compliance is unduly short and unreasonable under the circumstances, and** (3) the broad language of Paragraph 7 a contains language that exceeds the requirements of U.S. EPA’s CSO Control Policy in contraction of Section 402(q) of the Clean Water Act, which requires that the draft NPDES permit “conform to” the requirements of U.S. EPA’s CSO Control Policy.”

“Neither the City’s LTCP or its LTCP Addendum has been approved by Ohio EPA to date. Nonetheless, Ohio EPA has incorporated proposed improvements set forth in both the LTCP and the LTCP Addendum in the draft NPDES permit with the requirement the City yet again revise and resubmit its LTCP to address remaining overflows after the expenditure of the approximately \$70 million contemplated by these “Phase I” improvements. **The City believes that U.S. EPA’s CSO Control Policy contemplates the approval of a single LTCP as a method of evaluating the cost effectiveness of addressing CSOs in a collection system.** Notwithstanding Ohio EPA’s inability to approve its LTCP, **the City, in the last twenty years, has made over \$20 million dollars in major investments for improvements to the Water Pollution Control Facility and the wastewater collection system.** These investments have resulted in improvements in water quality to the Hocking River that lead your staff conclude that the ‘...sweeping positive changes in the environmental conditions of the Hocking are unparalleled in Ohio.’ The City has implemented aspects of its LTCP and its LTCP Addendum ahead of Ohio EPA requirements. In 2002 we completed separation of the sewers in the downtown area and eliminated two combined sewer overflows. Two additional overflows were modified to decrease overflow volumes and frequencies. In 2003 we initiated design of the Lake Allen Maple Sewer Separation. This project was bid in 2006 and is currently under construction. **While we are proud of the improvement in the Hocking River, we recognize that improvement has come at a cost to our residential, commercial and industrial users.”**

“The ambitious schedule set forth in the draft NPDES permit calls for over \$70 million dollars in improvements over the next ten years. We are concerned that such a schedule will stretch the fiscal resources of the City, its citizens and its businesses at a time when we are losing long time local businesses and struggling to attract new businesses. The recent announcement of the closing of Lancaster Glass will not only result in the loss of 144 jobs, and industrial user sanitary sewer rate payer is also lost resulting in a negative impact on the wastewater revenue fund of more than \$20,000.00 annually. Additional, the future of our largest industrial user in terms of revenue is questionable at this time. If this industrial user would cease operations it would be devastating to the economy of our system and community as a whole. **The impact of the increased sanitary sewer rates on the residential, commercial and industrial users must be considered in imposing the schedule.**”

“According to the HUD 2000 census data, 55.8 percent of all households within the city had low and moderate incomes. Additionally, 18.4 percent of our population is 62 and older and 13.5 percent of households are over 65 years of age”

➤ April 2007 Ohio EPA

- accepted our comments on monitoring, signage, Sanitary Sewer Overflow reporting, and CSO locations
- Modified the Compliance Schedule
- Permit had to be issued by end of June

➤ Accept modified schedule or face legal action by Ohio EPA and US EPA

➤ Permit Issued April 27, 2007

The Issue With Combined Sewers

- Water Quality in the Streams
 - Bacteria limit for recreational use
- During and immediately after storm events, bacteria levels in the streams exceed the Water Quality Standard
- Requires that Combined Sewer Overflows be limited to 4-6 overflows per year

US EPA Affordability Criteria

- US EPA sets affordability criteria as a percentage of median income
 - Low Burden < 1% median income
 - Medium Burden 1-2% median income
 - High Burden > 2% median income
- Low Burden Communities must comply as soon as constructable
- Medium Burden Communities must comply within 10 years
- High Burden Communities must comply within 15 years although up to 20 years can be negotiated

Lancaster Affordability Evaluation


- Lancaster Median Income (adj 2005)
\$37,781
- Low Burden (1%) is \$377.81 per year or
\$31.48 per month
- Medium Burden (2%) is \$755.62 per year
of \$62.97 per month
- 2008 proposed rate is \$37.37 per month
- 2012 proposed rate is \$58.18 per month

***UNDER THE US EPA FINANCIAL
CAPABILITY POLICY THE CITY HAS 10
YEARS TO CONSTRUCT THE PHASE 1
IMPROVEMENTS AND 20 YEARS TO
COMPLETE ALL WORK***

Compliance Schedule Negotiation

Item	Ohio EPA Proposal	City Proposal
Complete Upper Hocking WWTP	December 2012	November 2012
Complete Lake Allen Sewer Separation	December 2008	December 2008
Complete Baldwin Run Express Sewer	January 2012	August 2018
Complete Broad Street Express Sewer	January 2012	August 2018
Complete Flow Equalization Basins	August 2015	August 2018
Flow Monitoring	October 2013	January 2014
Phase II LTCP	December 2013	March 2014
Complete all CSO Projects	January 2025	10 year after Plan approval

Final Compliance Schedule

- Complete Upper Hocking WWTP December 2011
 - Complete Lake Allen Sewer Separation December 2008
 - Complete Baldwin Run Express Sewer November 2014
 - Complete South Broad Street Express Sewer December 2016
 - Complete Flow Equalization October 2017
 - Flow Monitoring March 2014
 - Phase II LTCP March 2014
 - Complete all work December 2025
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Options

- Negotiation had gone as far as possible
- Comply with Permit
 - No Fines
 - No Legal Costs
 - Ability to renegotiate at each permit cycle
- Appeal Permit
 - Law suit
 - Legal Costs
 - Fines and Penalties
 - Court Ordered Schedule
 - Additional Work above permit requirements

City of Delphos

- Population 6,944
- Median Income \$44,385
- 6.8% Below Poverty
- 6 CSO locations
- 2003 Findings and Orders from Ohio EPA
 - Fine \$111,888.00 plus \$100,699 in SEP within 1 year
 - Penalty \$25,000 per day per event
 - Monitoring and sampling requirements
 - Operation and Maintenance Requirements
 - Limits on Industrial Discharges
 - Construction completed by 2006

City of Fostoria

- Population 13,990
- Median Income \$31,166
- 9% below poverty
- 5 CSO locations
- 2006 Federal Consent Agreement
 - Fine \$30,000
 - Penalty Up to \$5000 per day per violation plus \$25,000 per day
 - Continuous Monitoring and Sampling
 - Mandated Operation and Maintenance Requirements
 - Limits on Industrial Discharges
 - Mandatory Rate Increases
 - Construction as determined by the court

City of Newark

- Population 46,279
- Median Income 34,791
- 13% below poverty
- 24 CSO locations
- 2006 NPDES Permit
 - No Fine
 - Penalty \$25,000 per day per event
 - Continuous Monitoring at 8 locations
 - Compliance Schedule construction completed 2014

Our Permit

- No Fine
- Penalty General \$25,000 per day per event
- No Continuous Monitoring
- No mandated Operation and Maintenance
- No limits on industrial discharges except normal pretreatment
- No mandated rate increase
- Construction to be completed by 2025

If You Think They Won't Take Action

- Connection Bans
- I/I Removal
- Additional Required Projects
- Mandated Operation and Maintenance Requirements
- Mandated Rates
- Shortened Schedule
- Monitoring
- Limits on Industrial Discharges
- Fines
- Penalties


How Much Will This Cost

The 2007 estimated costs are for the Long Term Control Plan Addendum is \$72.6 million dollars

Cannot estimate the Long Term Control Plan Phase II costs because projects have not been identified

Of this total \$1.9 Million for Lake Allen and \$14.3 Million for Flow Equalization will be paid by Stormwater

Factors That Affect Rates

- NPDES Permit and Ohio EPA requirements
 - OWDA Loan Requirements
 - 2004 Bond Requirements
 - Energy, Chemical and Materials Costs
 - Labor Costs
 - Other Funds Available for Use
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The Balance


Need to Balance the Impacts on Residents,
Existing Businesses, Economic
Development



Rates

- No group subsidizes another-rates proportional to user class usage
- Increase in surcharge for high strength discharges
- Increase in Capacity Charges-new customers pay for their share of plant and trunk sewer costs


What We Have Done to Lower Costs

- Negotiated Schedule with Ohio EPA
 - Delayed non-CSO related capital projects
 - OWDA Low Interest Loan (\$25 million)
 - OPWC Low Interest Loan/Credit Enhancement (\$300,000)
 - Smart Borrowing to reduce interest charges
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Rates Cover

- Operation and Maintenance
- Existing Debt Service
- Ongoing Preventative Maintenance at Lawrence Street WWTP
- Debt Service of Upper Hocking WWTP, Pump Station, Force Main Construction
- Debt Service of Baldwin Run Express Sewer Design
- Debt Service of Limited Sewer Extensions for Economic Development in US 33 Corridor

We Have Also

- Been in regular contact with Senator Voinovich, Congress Hobson, State Senator Schaffer, State Representative Stebelton
 - Joined with AOMWA and NACWA to lobby for changes in Water Pollution Legislation
 - Closed CSO's to reduce flows for equalization
 - Increased Collections of Delinquent Accounts
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If We Don't

- Default on 2004 Bonds
- Lower Bond Rating
- Enforcement Action for Permit Violations
 - Findings and Orders and Fine
 - State Consent Agreement and Fine
 - Federal Consent Agreement and Fine
- Loss of Low Interest Loans

Conclusion

- We are required to make these improvements to the sewer system under our NPDES permit
- Rates reflect the cost needed over the next five years to start these improvements
- Delaying the rate increase will result in higher rate increases in the future

Questions



The Growth Years

- As the City grew, sanitary sewers were extended and connected to the original combined sewers. By 1964 there were 88,000 feet of combined sewers and 466,000 feet of sanitary sewers
- The wastewater plant was expanded in the 1960s to provide secondary treatment

History of Sewers in Lancaster

- As houses converted to indoor plumbing connections were made to existing drains or sewers were built directly to the streams
- In 1914 downstream property owners filed a complaint against the City and in 1916 the City was ordered to build a treatment plant and sewer system
- In 1938 the citizens finally approved funds for interceptor sewers, treatment works and storm sewer improvements at a cost of \$707,000 along with a grant from the Public Works Administration for \$317,000.

The Clean Water Act Years

- Following the passage of the Clean Water Act in 1972 the City began evaluation of the wastewater system
 - Facilities Plan
 - Industrial Pretreatment Program
 - Removal of Excess Water (infiltration/inflow)
 - Design of Wastewater Plant Upgrade
 - Closing of Sanitary Sewer Overflows

By 1985

- Sewer system had grown to 638,500 feet of sanitary sewers and 88,000 feet of combined sewers (30% increase)
- All communities must be in compliance with NPDES permit limits by July 1, 1987 Clean Water Act Amendments of 1981

“The upper Hocking River was grossly polluted for approximately ten miles downstream from Lancaster as a result of sewer overflows and the WWTP effluent” Ohio EPA Comprehensive Water Quality Report 1985

Round 1-Meeting NPDES Permit

- To meet the July 1, 1987 deadline the Wastewater Plant was expanded to provide advanced secondary treatment at a cost of \$14.8 million including a \$4.9 million grant from the Ohio EPA

Round 2-Maintaining Compliance

- Because of violations of the NPDES permit and the industrial pretreatment program, Ohio EPA and US EPA sued the City. This resulted in a consent agreement, a fine of \$ and a wastewater plant upgrade of \$18.4 million. There was no grant money for this project.

The Result

“ The results of biological sampling conducted in the upper Hocking River 1982 and 1995 reveal some of the most significant improvements of any river in the state.” Ohio EPA 1997



Round 3-Combined Sewer Overflows

- 1994 US EPA develops Combined Sewer Policy
- 1995 began Wastewater Collection System Evaluation
- 1997 NPDES Permit required submission of Long Term Control Plan by 2000
 - Separation of Downtown Sewers
 - Separation of Lake Allen area sewers
 - Close two CSO's and modify two CSO's
- 2002 Downtown Sewer Separation and CSO modifications completed. Design of Lake Allen Sewer Separation started

Round 3 continued

- 2003 NPDES Permit required amendment to be submitted by 2005
 - 4 CSO locations to be limited to 4-6 events per year
 - Increase treatment capacity at WWTP
 - Full treatment of all separate sewer areas
- 2004 Sewer System grows to 859,000 feet of sanitary sewer and 87,784 feet of combined sewer. (30%)

Where we stand today

“By any measure the sweeping positive changes in the environmental conditions of the Hocking River are unparalleled in Ohio” Ohio EPA 2007



The Result

“Historically, the Hocking River between Lancaster and Rush Creek has been one of the most severely degraded river segments in the state...Chemical and biological data from 1990 reflect significant improvement in this segment as a result of pollution control efforts in Lancaster including plant expansion, implementation of a sewer use pretreatment ordinance and the active monitoring by the wastewater plant personnel.” Ohio EPA 1991

Round 3 continued

- 2005 Long Term Control Plan Amendment submitted
 - Separation of Lake Allen area
 - Construction of Upper Hocking WWTP to serve separated areas in north and west
 - Flow Equalization at Lawrence Street WWTP
 - Baldwin Run Express Sewer to provide direct treatment of north and east portion of City
 - Broad Street Express Sewer to provide direct treatment of south portion of City

Round 3 Continued

- April 27, 2007 after six months of negotiation, Ohio EPA issued new NPDES permit with compliance schedule
 - Lake Allen Maple Separation to be completed by October 2008
 - Upper Hocking WWTP construction to start by December 2008 and completed by January 2012
 - Baldwin Run Express Sewer construction to start by November 2012 and completed by November 2014
 - System Flow Monitoring Report by December 2012
 - Long Term Control Plan Phase II Report by March 2014
 - Broad Street Express Sewer construction to start by December 2014 and completed by December 2016
 - Lawrence Street Flow Equalization construction to start by August 2015 and completed by October 2017
 - Complete all improvements identified in Phase II Report by January 2025

Round 3 continued

- 2006 Lake Allen Maple Sewer Separation project begins, design of Upper Hocking WWTP begins. NPDES permit renewal for Lawrence Street WWTP begins. City starts negotiation on requirements, schedule and permit language with Ohio EPA.

Permit Compliance

- Current Permit sets limits for discharges from Lawrence Street Plant
- Prohibits Sanitary Sewer Overflows
- Authorizes Discharges from 20 Combined Sewer Overflow locations
- Sets schedule for compliance with Combined Sewer Overflow Policy