If You Build It, It Will Rain
City of North Olmstead
Phase 1 & 2 Collection System Improvements

Presented by
Scott Ankrom
August 28, 2014
City of North Olmsted Phase 1 & 2 Collection System Improvements

- Background
- Project Overview
- Phase 1 (LeBern & Dover)
- Phase 2 (Dover)
- Cost Savings
- Post Construction Operation
- Questions
Background

• Standard Operation
  – Portable Pumping of Sanitary Sewer to Storm Sewer During Rain Events
    • Portable Pumps Located in 2 Sewer Sheds
      – LeBern, 5 - 4 inch pumps
      – Dover, 3 - 4 inch pumps
    • Bypass Pumps Also Located at Both Pump Stations
  – Alleviated Basement Flooding
Background (Continued)

- 2006 - ATS Engineering, Inc.
- 2007 - Initiation of rate increases to fund project(s)
- 2008 - Initiation of City Council to implement improvements
- 2009 - Ohio EPA NPDES permit renewal required elimination of collection system overflows by November 1, 2013
- 2009 - Hazen and Sawyer retained to evaluate collection system alternatives
Background (Continued)

• Collection System Sewershed Modeling for:
  – Lebern
  – Dover
• Combination of Collection System Solutions
  – Pump Station Upgrades
  – New Parallel Sewers
  – Sewer Replacements and
  – New Collection System Storage Basins
• Treatment Facility Improvements
Project Overview

- **Phase 1 Collection System Improvements**
  - Design 2010 to 2011
  - Construction NTP - 2/2012
  - Construction Substantial Completion - 12/2012

- **Phase 2 Collection System Improvements**
  - Design 2011-2012
  - Construction NTP 1/2013
  - Substantial Completion 10/2013
Overview of Project Areas

Phase 1 – PS Upgrades
Phase 2 - EQ

Legend
- Relief Sewer
- Pump Station and Equalization Upgrades

HAZEN AND SAWYER
Environmental Engineers & Scientists
Phase 1 – Lebern Overview

6 MGD EQ Pump Station

1.25 MG Storage Basin
Phase 1 – Lebern Pump Station and Collection System Improvements

• Additional 1.25 MG Storage Basin
  – Existing storage 0.217 MG

• Increase in Clague Park (Storage Basin) Pump Station to 6.0 MGD
  – Including backup generator, new HVAC system, and electrical system improvements

• Upgrade of Lebern Pump Station

• 6,250 feet of 12 inch to 24 inch Parallel Relief Sewer
  – Including 24 inch 198’ bore “pipe eating”
Phase 1 – Collection System Bore/Pipe Eating
Phase 1 – Collection System Bore/Pipe Eating
Phase 1 – Lebern (Clague Park) Storage Basin
Phase 1 – Lebern (Clague Park) Storage Basin Construction
Phase 1 – Lebern Pump Station Improvements

- New Dry Pit Submersible Pumps
- New valving and piping
- Installation of channel monster
- Electrical and SCADA Improvements
- Elimination of pump station overflow
- New backup generator
- New HVAC system
- New flow meter
Phase 1 – Lebern Pump Station System Improvements
Phase 1 – Dover Pump Station Improvements

- New Dry Pit Submersible Pumps
- Influent Channel Grinder
- New Piping and Valving
- New Backup Generator
- New HVAC System
- Electrical System and SCADA Improvements
Phase 1 – Dover Pump Station Improvements
Phase 2 – Dover Storage Basin and Collection System Improvements

• New 0.665 MG Storage Basin
  – Demolition of existing residential home
  – Emotional Ties….

• Tie-in to pump station and elimination of pump station overflow (Phase 1)

• New Parallel Relief Sewer
  – 1,500’ of 15” sewer

• 150’ bore “pipe eating” between 2 residential homes
Phase 2 - Dover (Chapel Hill) Relief Sewer
Phase 2 – Dover Storage Basin
Phase 2 – Dover Storage Basin
Project Cost

• Phase 1 Contract A
  • Engineer Estimate $3,890,000
  • Actual Cost - $5,177,680

• Phase 1 Contract B
  • Engineer Estimate - $3,720,000
  • Actual Cost - $2,820,475

• **Phase 1 Total Cost**
  – Engineer Estimate $7,610,000
  – Actual Cost $7,998,155
Project Cost/Cost Saving

• Phase 2 – Contract B
  – Engineer Estimate $2,585,000
  – Actual Cost $2,393,242

• Phase 1 & 2 Total Cost
  – Engineer Estimate $10,203,242
  – Actual Cost $10,391,397

• Cost Savings
  • Phase 1, Pre-engineered concrete storage basin– ECS
    – $101,500 credit
  • Phase 2, Pre-engineered concrete storage basin– ECS
    – $225,000 credit
# Post Construction Wet Weather Operation

## CITY OF NORTH OLMSTED COLLECTION SYSTEM STORAGE BASIN OPERATION

<table>
<thead>
<tr>
<th>Date</th>
<th>Total Rainfall in inches</th>
<th>% Storage Basin Filled</th>
<th>Bypass Pumping in System</th>
<th>Bypass Pumping at PS</th>
<th>Basement Backups</th>
<th>Flooding</th>
<th>% Storage Basin Filled</th>
<th>Bypass Pumping in System</th>
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Thank You for Attending

Questions?

For more information, I can be reached at sankrom@hazenandsawyer.com or (330) 835-9585