History of Flooding

- Flooding from Ohio River backwater:
  1913, 1937, 1945

- Flooding from storms and flash floods:
1970 – Project was authorized.

1975 – A LCA was executed with the Millcreek Valley Conservancy District (MVCD) to construct the authorized project.

1975 – The GDM was completed.

1981 – Construction began.

1991 – All design efforts and future construction were suspended at the direction of the Assistant Secretary of the Army (Civil Works).

1998 – Contributed Funds agreement on GRR and Cooperative agreement with MVCD re O&M of completed sections.
Construction Started 1981

1983 - 91

Legend – Status of Work
- Red: Work Completed
- Yellow: Work Required to Complete Original Project

MILL CREEK, OHIO
Flood Damage Reduction Project
Bridging Document
Original Authorized Plan
Constraints

- Hazardous Waste
- Railroads
- Industry adjacent to creek
- Combined Sewer Overflows (CSOs)
- Utilities
WARNING

COMBINED SEWER OVERFLOW (CSO)

The water flowing from this pipe may be polluted during or after rainstorms. For more information about this CSO and effects on the water quality of our streams and rivers, call Metropolitan Sewer District (MSD) (513) 352-4900

CSO No. 019

Please call MSD and report if water is flowing in dry weather.
Local Stakeholders

- Millcreek Valley Conservancy District (MVCD) – Local Sponsor
- Metropolitan Sewer District of Greater Cincinnati (MSD)
- Mill Creek Watershed Council (MCWC)
- Mill Creek Restoration Project (MCRP)
- Ohio, Kentucky, Indiana Regional Council of Governments (OKI)
- City of Cincinnati
- Cities of Sharonville, Evendale, and Reading
- Ohio EPA
Goals of Various Stakeholders

- Flood Control
- Water quality – reduction of CSO’s
- Economic viability of industrialized area – no loss of tax base
- Environmental restoration
- Greenway along creek with hike/bike paths
ALTERNATIVES
With-Project Alternatives

- Total Relocation
- Non-Structural
- Non-Structural 2A
- Non-Structural 3
- Channel Modification
- Channel Modification 2
- Floodwall & Levee
- Deep Tunnel
- Deep Tunnel 2
With-Project Alternatives

- Total Relocation
- Non-Structural
- Non-Structural 2A
- Non-Structural 3
- Channel Modification
- Channel Modification 2
- Floodwall & Levee
- Deep Tunnel
- Deep Tunnel 2
Channel Modification 2 (CM-2)

- Completes the 1970 Authorized Project
- Provides protection to most structures within the 1% chance (100-yr) flood plain
- Utilizes environmentally sustainable design features

- Major Features
  - 52 residential structures demolished
  - 69 commercial structures demolished
  - Extensive channel modifications in Sections 6 and 7
  - Floodwalls and levees constructed in Sections 4B and 5
  - 19 road and railroad bridge replacements
Major Features

52 residential structures demolished

69 commercial structures demolished

37,250 lf of channel modification

10,150 lf of floodwall
CM-2 PLAN
(typical layout)

Figure 6 provides an example plan view (approximate stations 1875+00 - 1900+00) of the channel improvements that are being proposed as part of the CM2 plan.
Deep Tunnel (TU)

- Consists of constructing a deep tunnel along the length of Mill Creek
- Provides flood protection from the 1% chance (100 -year) flood event
- Provides capacity to store CSOs for up to a 50% chance (2-year) storm event
- Locally preferred plan
- Major Features:
  - 300+ feet below ground
  - 31 foot diameter
  - 15.8 miles long
  - 7 flood water drop shafts / 16 CSO drop shafts
Major Features

200-300 feet below ground
31 foot diameter
15.8 miles long
7 floodwater drop shafts
16 CSO drop shafts
Plan NS-2a

- Construct 3 sections of floodwalls and levees to protect 28 high value / high damage facilities against the 1% chance (100-yr) flood

- No relocations of non-protected structures

- Major Features:
  - 30,700 LF of floodwalls or levee constructed
  - 10 automated gate closure structures (road and railroad)
  - 6 pump stations
  - 7,580 LF of channel modifications (Section 7 only)
**Major Features**

- 30,700 lf of floodwalls and levees
- 2 road closures
- 8 railroad closures
- 6 pump stations
- 7,580 lf of channel widening
# PLAN COMPARISON

<table>
<thead>
<tr>
<th>Plan</th>
<th>Initial Cost (2004 price-levels)</th>
<th>% of Flood Damages Reduced</th>
<th>Net Annual Benefits (2004 price levels)</th>
<th>Benefit-Cost Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>NS-2a</td>
<td>$99,235,000</td>
<td>31%</td>
<td>$10,358,000</td>
<td>2.5</td>
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<tr>
<td>CM-2</td>
<td>$562,896,000</td>
<td>98%</td>
<td>$14,207,000</td>
<td>1.4</td>
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<tr>
<td>TU</td>
<td>$1,563,505,000</td>
<td>98%</td>
<td>($26,379,000)</td>
<td>0.7</td>
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</tbody>
</table>
Plan CM-2 is the Federally Supportable Plan especially since it is the National Economic Development (NED) plan. Plan CM-2 reduces approximately 98% of flood damages along Mill Creek, at an initial cost of $562,896,000.
RECOMMENDATION

- Recommend that further Federal efforts on this project be DEFERRED until such time as the local sponsor (MVCD) or another local non-Federal interest, can provide the necessary assurances of local financial capability and willingness to support project implementation.

- If assurances of financial capability are provided, recommend that plan CM-2 be carried on to final design with the ultimate goal of project construction.
THE END
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