Phase 1 accomplishments

In 2019, the Metropolitan Sewer District of Greater Cincinnati (MSD) will complete its first phase of Consent Decree work (“Phase 1”) totaling $1 billion through construction of 133 discrete projects, collection system allowances, Sewer Backup (SBU) Response program, engineering evaluations, and planning/design for the next round of projects.

THE CONSENT DEGREE IS A JUDICIALLY ENFORCEABLE CONTRACT BETWEEN U.S. EPA, HAMILTON COUNTY AND THE CITY OF CINCINNATI TO CONSTRUCT $3 BILLION IN INFRASTRUCTURE IMPROVEMENTS TO REDUCE AND/OR ELIMINATE SEWER OVERFLOWS.

6 Billion Gallons of overflow reduction achieved through multiple concurrent approaches during Phase 1, involving:

- Construction of new sanitary and storm sewers,
- Improvements to existing wastewater treatment plants,
- Installation of new wet weather treatment facilities,
- Elimination of outdated pump stations,
- Offloading stormwater from the combined sewer system, &
- Redirecting wet weather to sewers having available capacity (“smart sewers”).

MSD will continue to evaluate more affordable and effective approaches for eliminating remaining sewer overflows.

Improved Water Quality

Water quality in our local streams, including the Mill Creek, is steadily improving! MSD is partnering with the Midwest Biodiversity Institute to monitor water quality and aquatic habits in the Mill Creek, Little Miami, and Ohio rivers. In 2016, the vast majority of reaches in the Mill Creek achieved full or partial attainment with water quality criteria. Eighteen fish species can now be found in the Mill Creek, with 9 new species including smallmouth bass for the first time.
Better Infrastructure & Technology

The Phase 1 program upgraded several components of the sewer system to increase its useful life, thereby improving reliability and significantly reducing overflows.

**Collection System Improvements**
- Constructed 87 miles of sewers & lined 72 miles of sewers
- Developed industry-leading, risk-based prioritization tool for capital needs
- Evaluated more than 41,000 building sewers with Duke Energy

**Treatment Plant & Pump Station Improvements**
- 145 projects constructed to improve all 7 major treatment plants
- 48 Pump Stations eliminated or upgraded
- More wet weather flows received at treatment plants

**Watershed Management Improvements**
- New wet weather facilities constructed (i.e., Werk & Westbourne EHRT)
- “Smart Sewers” initiated with over 600 sensors installed
- Green Infrastructure opportunities explored & under review

**Neighborhood Improvements**
- Constructed 75 assessment projects to eliminate 703 septic systems
- Lick Run Greenway cornerstone project for overflow mitigation

**Sewer Backup Prevention Program**
- Approx. 916 properties have been protected by MSD’s SBUPP Program
- MSD has spent $100,217,900 on cleaning, damage claims and prevention
- Starting in 2012, MSD began a proactive program to identify and inspect building laterals in the public ROW, installing 7000 cleanouts.

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**Overflows Reduced**

Since 2004, approximately:
- 44 sanitary sewer overflows (SSOs) eliminated or controlled (including 17 of the most active), with 51 remaining
- 40 pump station overflows (PSOs) eliminated (22) or upgraded (18), with 22 remaining
- 146 combined sewer overflows (CSOs) controlled, with 201 remaining

In total, 158 SSOs and 69 PSOs that have been eliminated/controlled over the past several decades.

Phase 1 has reduced sewer overflows by 6 billion gallons per year

<table>
<thead>
<tr>
<th>Watershed</th>
<th>Wet Weather Inflow (MG/year)</th>
<th>Overflow (MG/year)</th>
<th>Underflow (MG/year)</th>
<th>Percent Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Little Miami River</td>
<td>3,684</td>
<td>1,469</td>
<td>2,216</td>
<td>60%</td>
</tr>
<tr>
<td>Mill Creek</td>
<td>12,470</td>
<td>5,370</td>
<td>7,170</td>
<td>57%</td>
</tr>
<tr>
<td>Muddy Creek</td>
<td>2,580</td>
<td>1,525</td>
<td>1,055</td>
<td>41%</td>
</tr>
<tr>
<td><strong>Total 2017</strong></td>
<td><strong>18,734</strong></td>
<td><strong>8,364</strong></td>
<td><strong>10,440</strong></td>
<td><strong>55%</strong></td>
</tr>
</tbody>
</table>

| Total 2006       | 24,831                       | 14,412             | 10,644              | 42%             |