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TIPS**

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## Manhole Rehabilitation: When and Why to Do It?

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Manhole rehabilitation is an essential part of maintaining a reliable sewer system, yet it is often overlooked because most rehabilitation programs focus on the sewer pipes themselves. Manholes receive less routine inspection and are frequently excluded from pipe-centric planning, even though they are common sources of infiltration, structural deterioration, and operational problems. If left unaddressed, these issues can reduce the effectiveness of pipe rehabilitation, increase long-term maintenance needs, and may become a safety issue if left unaddressed. Incorporating manhole rehabilitation into broader sewer improvement efforts helps protect surrounding infrastructure, extend asset life, and improve overall system performance.

### Why Manhole Rehab Matters

Manholes serve as access points, flow transition structures, and connection hubs within the sewer network. These sewers may be located in easily accessible suburban streets or in high traffic urban corridors, as well as wetlands, farm fields, or other remote access areas. Because they are vertical structures exposed to groundwater, soil movement, traffic loading, and corrosive gases, they tend to deteriorate differently—and sometimes more aggressively—than the pipes they connect to. When manholes leak, groundwater enters the system, increasing treatment costs and reducing available capacity. When they deteriorate structurally, they pose safety risks and can compromise the integrity of adjacent pipes. Rehabilitating manholes at the right time ensures the entire system functions as intended and that investments in pipe rehab are fully protected.

**Deferring manhole rehabilitation can lead to avoidable O&M issues for the municipal asset owner.**

## Situations When Manhole Rehab Should Be Performed

### 1. Evidence of Infiltration or Inflow

One of the most common reasons to rehab a manhole is the presence of infiltration. Signs include active leaks, mineral deposits, staining, or damp walls. Groundwater often enters through joints, chimney sections, lift holes, abandoned pipe connections, or cracks in the wall. If a community is targeting infiltration and inflow (I/I) reduction, manhole rehab becomes essential. Even if the pipes are in good condition, leaking manholes can contribute significant unwanted flow during wet weather.

### 2. Structural Deterioration

Manholes built from brick, block, or aging concrete often show structural distress long before they fail. Cracked walls, missing mortar, spalling concrete, and corrosion from sewer gases or environmental exposure are all indicators that the structure is weakening. Chimney or cone separation is another red flag, especially in areas with heavy traffic loading. Addressing these issues early prevents more costly repairs later and reduces the risk of collapse or emergency response situations.

### 3. Coordination With Pipe Rehabilitation

When a sewer pipe is slated for rehabilitation, evaluation of the manholes for rehabilitation must be done. Coordinated work prevents mismatched connections, ensures proper CIPP or sliplining tie-ins, and may reduce associated costs such as permitting, bypass pumping, mobilization, etc. Rebuilding benches and inverts during pipe work also improves flow and lowers future maintenance needs.

It may be that performing the MH rehabilitation as part of the same project as the sewer rehabilitation makes sense. Rehabilitation of large manhole rehabilitation. This, as well as budgetary constraints may mean that an owner rehabilitates sewers one year and manholes the next, alternating each year.

### 4. Hydraulic or Operational Problems

Manholes with flat, broken, or poorly shaped inverts can cause debris accumulation, turbulence, or surcharge conditions. These issues often lead to repeated cleaning or localized backups. Rehabilitating the invert and bench restores smooth flow transitions and reduces the frequency of maintenance. In systems with known bottlenecks, manhole rehab can be a simple and effective way to improve hydraulic performance.

### 5. Long-Term Asset Management Goals

Communities focused on extending the life of their sewer systems benefit from addressing manholes proactively. Protective coatings, structural liners, and chimney seals all contribute to longer manhole, and system, service life and reduced lifecycle costs. For this reason it is critical that owners incorporate the evaluation and rehabilitation of manholes into that often pipe-centric sewer system maintenance.

## Examples of When Manhole Rehab Makes Sense

### Example 1: High I/I Basin

A basin shows elevated wet-weather flows, but CCTV reveals that the pipes are in good shape. Field inspections identify multiple manholes with active leaks and deteriorated joints. Rehabbing the manholes provides the greatest reduction in I/I and avoids unnecessary pipe work.

### Example 2: CIPP Lining Project

A city plans to line 2,000 feet of sewer. The manholes at each end have corroded walls and failing inverts. Rebuilding the inverts and applying a protective coating ensures a proper tie into the new liner and protects the investment.

### Example 3: Structural Distress in a Brick Manhole

A brick manhole shows missing mortar, shifting rings, and corrosion. Even though the connecting pipe is sound, the manhole requires structural lining to prevent further deterioration and reduce safety risks. Example 4: Chronic Maintenance Issues A manhole repeatedly collects debris due to a broken bench and poor flow channel. Rebuilding the invert eliminates the problem and reduces cleaning frequency.

**To learn more about manhole rehabilitation and inspection, please visit [NASSCO.org](https://www.nassco.org)**

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