



Manhole Maintenance and Repair

Oneida County Sewer District Standard Operating Guidelines

Purpose:

To establish a procedure for the regular, proactive maintenance and repair of sanitary sewer manholes to reduce infiltration and inflow to the sanitary sewer system, protect the municipality's infrastructure investment, and minimize the risk of damage to people and property.

Procedure:

Perform maintenance and repair of manholes when required after regular inspection or when concern is raised due to an alert or an incident.

Safety:

Be aware of your surroundings when repairing manholes. Do not repair manholes in the street without taking proper safety precautions regarding traffic. Safely manage the sewage flow in the manhole through bypass pumping when necessary. Contact Dig Safely New York (*811) before repair for stakeout of utilities, if excavation is involved. Protect the public from exposed manholes and the dangers that may emerge from an exposed manhole (vermin, bees, biologic hazards, etc.). Do not enter a manhole without the proper training. Raw sewage poses health risks. Practice proper hygiene during construction operations and take care to minimize contact with sewage.

Documentation:

Attach all relevant additional information to each checklist after completion of inspection. Properly file maintenance logs and repair on a manhole in the right format (hard copy, electronic) and location immediately after repair. In the event of an emergency, contact the following:

Emergency	Name	Contact Info

Manhole Number: _____

Date: _____

Time: _____

Inspector: _____

Manhole Address:

Street: _____ City: _____ State: _____ Zip code: _____

Reason for repair (emergency, routine maintenance, etc):

Record the following:

Manhole Diameter	
Manhole Depth (rim to invert)	
Interceptor	
Manhole Wall Material (concrete/brick)	



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Condition of Manhole (emergency, routine maintenance, etc.):

- Inspect overall condition of the manhole prior to repair (excessive clogging, grease buildup, roots, odor, vermin, infiltration or inflow, and structural problems) and take photos:

Manhole repair procedure:

1. Prior to Construction

- Alert residents to the repair activity.
- Call *811 at least 72 hours prior to excavation for utility stakeout.
- Use only approved materials for repair.
- Acquire all appropriate permits.
- Ensure that all personnel on site have the appropriate training (confined space).
- Designate a staging area if necessary for excavation equipment and section off the area from the public.
- Store materials according to manufacturers' instructions.
- Set up the appropriate traffic safety precautions for workers, pedestrians and drivers.
- Take the proper steps to provide erosion and sedimentation controls.

2. During Construction

- Ensure that the proper safety equipment is available and utilized by all personnel.
- Have equipment on site to monitor working conditions within the manhole (gas detectors), if necessary, and staff an attendee to monitor the environment to alert workers of any changes.
- Do not allow debris to fall into the manhole.
- For repairs to the junction of the manhole and pipe, consider bypass pumping around the manhole to prevent sewer backups and perform the repair in dry conditions.
- Have pumps available to dewater the manhole (if necessary for repair) and a high pressure spray to clean the manhole interior of dirt, grease and debris.
- Contact the appropriate utility company if unmarked or mismarked utilities are encountered during repair.
- Ensure proper application and cure time for repair materials, consistent with manufacturer's recommendations.

Replacing/Adjusting Frame and Cover

- Remove frame and cover. Take precautions to protect frame and cover if still serviceable.
- Remove all the old mortar from both the frame and the manhole structure.
- Reapply mortar and concrete adjusting rings, if necessary, between the cone or chimney and the frame, and set the cover at grade level.

Cementitious Repairs to the Manhole Interior

- Leak repairs and patching can be achieved with hydraulic cement or contractor-applied chemical grout.
- To prepare the manhole surface for patching, the wall surface should be thoroughly cleaned with 5,000 psi water jet at a near 90-degree angle with the manhole wall. Debris and loose material should not be allowed to fall into the manhole channel, and should be cleaned up and removed after cleaning.
- Any visible damage to the invert should be repaired with quick-setting materials. The repaired invert should have a smooth, brushed surface and form a watertight seal with the manhole. Flows in the manhole should be bypass pumped around, or otherwise redirected to allow a dry environment for the repairs to cure for the duration of the manufacturer's recommended cure time.
- Fill in cracks and voids as needed.
- Apply cementitious repair mortar according to manufacturer's instructions.

Epoxy Liner

- Reserved for contractors with the training and equipment required for this type of repair.

Chimney Repair

- Apply manhole chimney sealant, if necessary, to repair leaks.
- Replace damaged or missing bricks in chimneys with concrete adjusting rings and mortar, as necessary, to adjust to grade.

Testing

- Conduct a visual inspection and record field notes.
- Check for proper seal to prevent infiltration, inflow, and exfiltration.



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3. After Construction

- Properly disinfect and clean up impacted area around the manhole.
- Properly dispose of any debris and wastes.
- Report any changes to the manhole structure (new materials, tie-ins) to the county GIS coordinator.
- Complete and file a job completion report, or other means of recording completed maintenance, in the office where sewer maintenance records are kept.

Report excessive infiltration to _____.

Additional Observations:

Any rehabilitated or newly discovered manholes should be reported to the County GIS coordinator, Jeff Quackenbush, in accordance with the “GIS/Mapping Updates” SOG.