Confined Space Entry

Oneida County Sewer District Standard Operating Guidelines

Purpose:
The purpose of this guideline is to properly inform all workers of the dangers of confined space entry and the necessary steps to be taken to ensure that only trained workers with the proper safety precautions and equipment enter a confined space to perform necessary work.

Definitions:

A ***confined space*** has the following characteristics:

- Is large enough for an employee to enter to perform work;
- Is not intended for continuous occupancy by an employee;
- Has a limited or restricted means of entry or exit.

A ***permit-required*** confined space has one or more of the following characteristics:

- Contains or has the potential to contain a hazardous atmosphere
- Contains a material with the potential to engulf someone who enters the space
- Has an internal configuration that might cause an entrant to be trapped or asphyxiated by inwardly converging walls, or by a floor that slopes downward and tapers to a smaller cross section
- Contains any other recognized serious safety or health hazards

(Source: OSHA)

Safety:

Only workers with the appropriate and up-to-date OSHA confined Space Training, as well as any municipal training necessary, may enter permit-required confined spaces. Do not enter any confined space (permit required or no-permit required) without permission from a supervisor. Do not attempt to enter a confined space without an attendee. Do not attempt to enter a confined space if you are physically compromised. Do not enter a confined space without taking the proper preparatory steps, as outlined below!

Procedure:

The following steps should be taken before, during and after a confined space entry.

1. Ensure that all permit-required confined spaces be labeled to eliminate accidental entry. Report any newly identified hazardous confined spaces to _____.
2. Inform your supervisor before entering any permit or non-permit required confined space. Document your intention to enter a confined space (permitted or not permitted), the location of the confined space, and the reasons for your entry (repair work, inspection, etc.).
3. Before allowing entry, the supervisor must gather any relevant information about the conditions of the confined space, any hazards to be aware of, and any tests that must be done (particular attention should be placed on the type of atmosphere within the confined space).
4. After consideration for the reasons for confined space entry, and the hazards associated with the confined space entry, the request for entry will either be approved with an entry permit or denied.
5. The entry permit should be made available before any employee enters the confined space and should be posted on the entry point. The entry permit should outline the reason for the entry, the hazards identified, and the steps and equipment to have ready before entry. The permit should also specify the acceptable entry conditions and have emergency contact information.
6. Upon approval to perform the task requiring confined space entry, the proper equipment to handle all identified hazards must be furnished, at no cost, for all employees attempting to enter the confined space.
7. Only enter a hazardous confined space when the hazards have been identified and the proper protective wear and equipment have been furnished for each individual attempting entry.
8. Proper signage and barriers should be set up at the confined space entry point to prevent injury to bystanders.
9. Employees entering a confined space must have an attendee to monitor the employee's progress, and watch for changes in the condition of the confined space and make changes accordingly. Employees entering a confined space should have a means of communication with the attendee on site. Employees should follow the attendee's orders to exit without hesitation.
10. It is the attendee's job to summon immediate medical and emergency aid if the employee in the confined space is in danger.
11. Any flashlights and other equipment brought into a hazardous atmosphere shall be explosion proof.
12. In confined space areas with restricted entry or exit, the proper extraction equipment (e.g., harness and rope) should be utilized and set up on site.
13. Equipment should be on site to monitor any changes in the hazardous conditions of the confined space. Any significant travel within a confined space shall be preceded by a condition assessment and atmospheric testing before the employee can continue further.
14. Execute an immediate and efficient extraction of all employees within the confined space, if the conditions in the confined space change.
15. After your successful completion of the assignment and safe exit from the confined space notify your supervisor.
16. Safely secure the entry point to the confined space with a lid or lock, and take the proper steps to prevent accidental entry and provide proper labeling.
17. Remove any equipment from the site and return it to its proper location.
18. Remove and properly dispose of any trash or debris resulting from the confined space entry.

Manhole Inspections

Oneida County Sewer District Standard Operating Guidelines

Purpose:
To establish a consistent procedure for regular inspection of manholes to minimize the risk of damage to people and property due to failure of manholes.

Procedure:

Perform inspections of manholes at least every 36 months or when concern is raised due to an alert or an incident. Proper maintenance and repair of manholes ensures reliability and safety of sanitary flow.

Safety:

Be aware of your surroundings when inspecting manholes. Do not inspect manholes in the street without taking proper safety precautions regarding traffic. Protect the public from exposed manholes and the dangers that may emerge from an exposed manhole (vermin, bees, etc.). Do not enter a manhole without the proper training.

Documentation:

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

Emergency	Name	Contact Info

Manhole Address:

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

Reason for inspection (emergency, routine maintenance, etc.)**:**

_____

_____

_____

Record the following:

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

Inspect Manhole Cover:

- Note condition of the cover, (corrosion, general condition and fit)

_____

_____

_____

Inspect Manhole Frame:

- Note the condition of the frame. Does it need to be replaced, raised, reset, etc.?

_____

_____

_____

Manhole Inspections

Oneida County Sewer District Standard Operating Guidelines

Inspect Manhole Chimney:

- Check for leaks in the chimney, (areas that need mortar repaired; note any offsets)

_____

_____

_____

_____

Inspect the Manhole Wall:

- Check for corrosion and leaks

_____

_____

_____

_____

Condition of Manhole:

- Check overall condition of the manhole (excessive clogging, grease buildup, roots, odor, vermin, infiltration, inflow, structural problems)

_____

_____

_____

_____

Any emergencies noticed during the inspection (immediate rehabilitation due to structural failure or blockage) **should be reported to** _____**. Report excessive infiltration to** _____**.**

Additional Observations:

_____

_____

_____

_____

Based on the conditions observed during the site visit, it is recommended that a follow-up inspection be performed within:

1 month	_____	**12 months**	_____	**24 months**	_____
6 months	_____	**18 months**	_____	**36 months**	_____

Any rehabilitated or newly discovered manholes shall be reported to the County GIS coordinator, Jeff Quackenbush.

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)	

Manhole Maintenance and Repair

Oneida County Sewer District Standard Operating Guidelines

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.

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:

_____

_____

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_____

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

Pump Station Checks/Inspection

Oneida County Sewer District Standard Operating Guidelines

Purpose:
To establish a consistent practice for inspection and documentation of wastewater pumping stations to minimize the risk of failure and illegal SSOs.

Procedure:

Perform weekly, monthly and annual inspections of the pump station to promote safe working conditions, easy access, and sustained performance. Routine maintenance through the execution of the checklists outlined below increases the reliability of the pump station.

Safety:

Be aware of your surroundings while performing pump station checks. Be mindful to avoid slips and falls, protruding objects, overhead objects, condition of access equipment (ladders, stairs, lighting). Do not perform inspections if not physically able to do so. Do not operate the tests in poor lighting. Do not perform checks in unsafe conditions.

Documentation:

Attach all relevant additional information to each checklist after completion of inspection. Properly file checklists in the proper format (hard copy, electronic) and location immediately after inspection. In the event of an emergency, contact the following:

Emergency	Name	Contact Info

Daily Inspection:

Date: _____

Time: _____

Inspector: _____

-General Inspection-

- ☐ Inspect asphalt; check slope for proper drainage
- ☐ Inspect grounds
- ☐ Inspect fencing and gate; ensure correct operation of gate
- ☐ Ensure all debris is removed from site
- ☐ Ensure all proper signage is in place
- ☐ Inspect ladders, grating platforms and supports
- ☐ Inspect and run the sump pump
- ☐ Inspect the ventilation in the building
- ☐ Listen for unusual sounds, vibrations

Record meter readings from pumps:

Meter Readings				
	Pump 1	Pump 2	Pump 3	Pump 4
Hour Meter				
Flow Meter				
General Appearance				

Document any maintenance done during this inspection (i.e., removal of trash and debris, replacement of parts, changing of light bulbs, etc.)**:**

_____

_____

_____

Pump Station Checks/Inspection

Oneida County Sewer District Standard Operating Guidelines

Inspect alarm system:

_____

_____

_____

Record any pump calibrations:

_____

_____

_____

Record pump power usage*:

Power Readings			
Pump 1	**Pump 2**	**Pump 3**	**Pump 4**

*** Amp meter used by qualified personnel only.**

Monthly Inspection:

Date: _____

Time: _____

Inspector: _____

-Inspect the Pump(s) and Piping-

- ☐ Inspect alignment of discharge piping
- ☐ Inspect paint on piping and pump
- ☐ Check for unusual noises and vibration
- ☐ Verify pressure gauges on pumps
- ☐ Inspect pump impeller for debris, wear, cavitation
- ☐ Inspect pump seals
- ☐ Cleaning of floats; remove grease and debris (4 times a year)
- ☐ Check for grease and soap scum on wet well

_____

_____

_____

-Check Valves-

- ☐ Inspect the check valves to ensure proper backflow prevention
- ☐ Look for signs of wear or leaking on valves
- ☐ Exercise valves

_____

_____

_____

_____

Document any equipment failures:

_____

_____

_____

Pump Station Checks/Inspection

Oneida County Sewer District Standard Operating Guidelines

Record alarm history:

Record any operational problems:

Recommended work items:

Yearly Inspection:

Date:

Time:

Inspector:

-Inspect the Wet Well-

- ☐ Pressure wash and vacuum out the wet well to prevent solids and grease buildup that can cause odors and damage the pump(s)
- ☐ Inspect the interior coating
- ☐ Inspect concrete penetrations (discharge piping, conduits, etc.)
- ☐ Ensure proper signage (confined space entry, OSHA)

-Inspect Pump Motor-

- ☐ Check for worn equipment and wires
- ☐ Lubricate

-Check Generator-

- ☐ Backup generator should be inspected for fuel and battery level, as well as general condition. It should also be operated to ensure performance.
- ☐ Trip the power and observe the transfer of power to the backup generator. Let run for at least 10 minutes.
- ☐ Return the power and observe the transfer of power from the generator.

Traffic Safety

Oneida County Sewer District Standard Operating Guidelines

Purpose:
To provide guidance for the design of traffic safety plans.

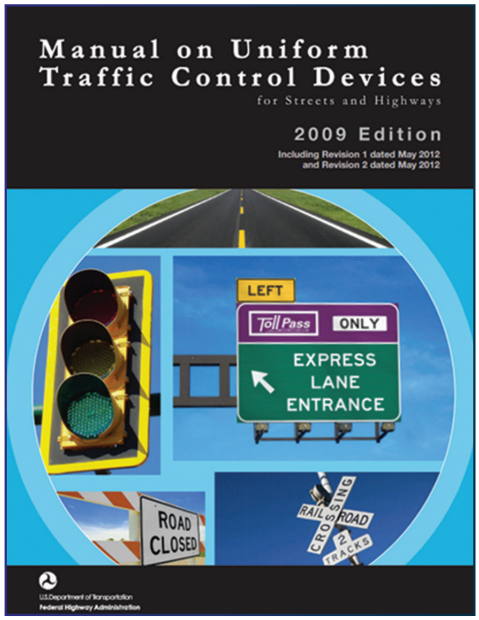
Procedure:

When preparing for traffic safety at a construction site, the following guiding principles from the Manual of Uniform Traffic Control Devices (MUTCD) should be taken into consideration. For information on traffic safety plans for specific circumstances, and minimum requirements for work zones on state highways, see the attached NYSDOT guidance document, "Work Zone Traffic Control."

Pedestrian Safety:

- Pedestrians should not be led into direct conflicts with work site vehicles, equipment, or operations.
- Pedestrians should not be led into direct conflicts with mainline traffic moving through or around the work site.
- Pedestrians should be provided with a safe, convenient travel path that replicates as nearly as possible the most desirable characteristics of sidewalks or footpaths.

  (Source: MUTCD)



1. Traffic safety for pedestrians should be designed in such a way as to be interpretable by all pedestrians, including those who are blind, deaf, or those with walking handicaps.
2. The use of standardized and uniform signage to bring attention to pedestrians, as well as to direct pedestrians, is essential. Standards for the size and color of signs can be found in the attached Work Zone Traffic Control Manual.
3. When possible, reroute pedestrian traffic through the use of signs and barriers well in advance of the construction or traffic zone.
4. When possible, try to route pedestrian traffic away from the immediate danger of traffic and construction equipment/debris.
5. All pedestrian paths should be well maintained without significant changes in grade.
6. Construction equipment and traffic should be kept off pedestrian walkways/paths.
7. While equipment is in operation that may impact pedestrian walkways, the use of flaggers should be employed to direct traffic and maintain safety.
8. Depending on the proximity of the pedestrians to traffic and construction, consider the use of special warning and control devices, such as rumble strips, changeable message signs, hazard identification beacons, flags, and warning lights.
9. If pedestrian walkways are in close proximity to oncoming traffic and pedestrians are considered at high risk of being struck, rerouting pedestrians further around the construction site should be considered. However, in urban areas this may not be an option, therefore a longitudinal barrier system should be put in place. These barriers should be of sufficient strength to keep traffic out of the pedestrian travel route.
10. If the possibility of being struck by traffic is low, close/ block off the construction site from pedestrians with a fence.
11. Be aware that any barriers or devices used to delineate traffic, pedestrian flow, or to block off areas, should not splinter on impact or in any way cause harm to pedestrians and workers upon impact.
12. When the risk of falling debris is a concern, walkways should be constructed with overhead canopies. These walkways should be sturdy and well lit for use at night.

Worker Safety:

1. Workers should receive training on how to protect themselves when working near oncoming traffic.
2. Workers trained on how to direct traffic and use appropriate techniques and equipment should be on all construction sites.
3. Construction workers should wear bright colored reflective vests to alert drivers.
4. In particularly dangerous traffic conditions, temporary speed reductions should be considered.
5. For night-time construction, proper lighting ensures better working conditions on the site, as well as increased visibility for passing vehicles.
6. A police presence on site can reduce the speed of traffic and raise driver awareness.
7. Well maintained public relations can help smooth tensions with the impacted community and speed along construction. Furthermore, good relations can help with proposed road closures when construction conditions get particularly dangerous.
8. Road closures are another way to protect workers in particularly risky construction conditions. The duration of the road closure/ time, the traffic volume of the road under construction, and alternate routes around the road should all be considered and thoroughly communicated to police and fire officials, schools, and other municipal officials prior to closing a road.

Plan Review Procedures

Oneida County Sewer District Minimum Requirements

Purpose:
This document outlines the minimal requirements of review and inspection expected for each new lateral and extension connection.

Sewer Lateral Connections:

1. A permit system must be in place. Prior to the issuance of a permit, connection details will be reviewed by:
   - The person in charge of the sewer system
   - Codes enforcement officer
2. Each application should include the following:
   - A site sketch showing site features and planned connection location
   - Provisions for bonding requirements, consistent with municipal street opening permits
   - For Sauquoit Creek Pump Station Basin communities, offset credits must be obtained prior to issuance of permit
3. A fee schedule for permit issuance should be in place. This can be in the form of separate fees for residential and commercial.
   - Fees should cover the cost of issuing permit and inspecting work
   - Fees collected should be deposited into the sewer fund that pays for inspection work
   - Fees can be collected by sewer, DPW, or municipal clerk consistent with the municipal policy
4. Work should be inspected in every case. An inspector should record the following information:
   - Distance to nearest upstream or downstream manhole
   - Fittings used for connection and their approximate location
   - Approximate depth to lateral
   - Photographs of the work
5. Close the permit process by filing a copy of the completed permit (including sketch, photos, and dimensions) with the appropriate municipal official.
6. File a copy of the closed permit with Oneida County Sewer District.

Sewer Extensions:

1. Sewer extensions are normally done in conjunction with a project requiring subdivision or site plan review. As such, these types of projects must receive planning board review and approval. In addition, the following should be involved in review of plans:
   - Sewer/DPW staff (for easements)
   - Codes enforcement officer
   - Municipal engineer
   - NYSDEC
   - Oneida County Sewer District (for flow credits)
2. Consider charging developer fees to cover the cost of review and inspection.
3. Infrastructure must be inspected during construction. This can be done by sewer/DPW staff, or by a municipal engineer.
4. Record changes from design plans. Keep record drawings (the contractor should provide this information).
5. Take photos of work as it progresses.
6. Record locations (to within a foot) of all lateral connections and fittings.
7. Forward record drawings to Oneida County for GPS location and inclusion in County GIS.

Plan Review Procedures Matrix

Oneida County Sewer District Minimum Requirements

Matrix Diagram:
Use this matrix to help guide the Plan Review Procedures process.