



SEWER LIABILITY

Sewer Backups:

Most of us take the use of our wastewater and sewer systems for granted, while municipalities must be vigilant to ensure that citizens of the municipalities may truly forget. Unfortunately, on occasion, sewer backups occur to both residences and businesses/industries. These backups may cost the municipality, residents, local businesses and insurance companies thousands of dollars to clean up and litigate. Additionally, stormwater can be another obstacle for the municipal infrastructure that can also heighten the possibility for backups. This article discusses understanding the system, ways to minimize backups and prepare to mitigate municipal losses if backups should occur.

City officials need to be aware of three main reasons for maintaining and fixing their sewer systems:

1. Overflows may result in Clean Water Act violations and fines that could reach \$25,000 per day,
2. Overflows may cause sewer lines to collapse or even flood, and
3. Technology exists to fix the problems.

Why Backups Occur:

- Blockages may occur in the lateral lines that run from the residence or business to the municipality's main line.
- Blockages may occur in the municipality's larger main lines.

The system is designed with a specific maximum capacity. When that capacity is surpassed, overflows and backups may occur. System failure may be due the failure of system components, such as a lift station. Lift stations are pumps designed to assist in the movement of the sewage through the system to the treatment plant. When they fail to pump, backups may result.

Blockages may be caused by the homeowner disposing of inappropriate items in the sewer line, such as diapers. Businesses may also fail to use grease traps and thereby deposit excessive amounts of grease in the system. As systems age or if they become damaged, tree roots may infiltrate the system causing blockages.

Capacity issues can occur with increased demand on an aging system, damaged lines, inflow and infiltration problems due to illegal taps into the system. Wet weather and insufficient preventive maintenance can also add to the collective problems of systems that may include basement backups and odors.

Here is an example from one major North Carolina municipality that shows the causes of 43 sanitary sewer overflows (SSO's) for the period from 7/1/03 to 6/30/04:

- 32% = Structural Damage
- 26% = Grease
- 26% = Debris
- 9% = Heavy Rains
- 7% = Roots

System Operation:

Two systems must be understood in order to better manage backups. 1) The sanitary sewer system, which removes waste from residents' homes and businesses to the municipality's wastewater treatment plant and, 2) the storm water system, which allows for rain fall, melting snow, and flooding to be safely drained and removed from the municipality.

These systems may be totally separated, which is the ideal way to minimize sewer liability, or they may be totally or partially combined. Many older communities were designed with a combined system. Newer systems are designed to be separated and the upgrades of the older systems are working to minimize the combined status of the system. Each system is designed with a system capacity. Having a separated system addresses many of the backup issues associated with capacity problems, especially when there is excessive rainfall.

Some communities are addressing the issue of combined system with the use of combined system overflows (CSO's). A CSO is designed to address and drain a temporary increase in inflow into the system. When or where the system simply cannot accommodate the inflow, it is temporarily drained in a particular area. Sometimes the overflow is kept in a contained area where it can be brought into the system for later treatment; other times it is released into the environment. EPA, Department of Environmental Quality or other state regulatory bodies (such as the Division of Water Quality in North Carolina) are increasingly overseeing and regulating how overflows are handled.

Management Systems:

EPA has had a program in the works for several years – the sanitary sewer overflows (SSOs) control program. This program will require wastewater systems with National Pollutant Discharge Elimination Systems (NPDES) permits and satellite collections systems that experience sewer system overflows to implement a program that establishes a comprehensive capacity management operations and maintenance strategy.

Peak flows caused by storms are one of the main causes of overflows resulting in potential untreated overflows and bypasses, and leading to environmental problems, potential health problems and enforcement fines. One way to reduce untreated discharges is by storing peak wet

weather flows. This can be cost-effective without requiring additional treatment or conveyance capacity. In addition, storage equalizes the flows through the wastewater treatment plant, thus allowing operators to improve the effectiveness of the treatment and streamlining of operations.

Being Proactive:

Courts have determined that local governments which own, operate and maintain sanitary sewer systems can be held responsible for contaminated soil and groundwater caused by the release of hazardous materials even if the governments did not discharge the materials into the sewer system. Although proper maintenance of sewer infrastructure always had been important, the threat of litigation has the potential to make sewer maintenance even more critical.

Being proactive means having an aggressive identification and maintenance program. A regularly scheduled and documented maintenance program, which is directed by a sanitary sewer maintenance policy, is the most defensible course of action. Not only will this minimize the potential for backups and assist in the mitigation of backups should they occur, it will also position the public entity in the best possible defensive posture if litigation occurs.

The maintenance program typically focuses on prevention, improvement of the infrastructure and emergencies. The maintenance will address the components of the system to include:

The Lines

- Lines must be visually inspected. Accomplished by checking manholes and the use of video cameras.
- Clean and flush lines on a routine and as-needed basis.
- Repair and replace lines as needed based on condition and capacity need.

Lift Stations

- Electrician should ensure proper functioning.
- Regularly inspect flow meters.
- Regularly inspect alarm systems (intrusion & high water)
- Backup generators should be available or already installed.
- Lightning protection in place.

Inflow & Infiltration (I/I)

- Ensure that the system does not have an I/I problem through appropriate inspection and testing.
- Conduct an engineering study.
- Educate the public about improper hookups.
- Perform smoke testing.
- Inspect with video – especially during and after rain.

Documentation: A Crucial Program Element

- Document actions on complaints, inspections, and maintenance.
- Educate employees on the importance of documentation.
- Make it easy for employees to document.
- Keep daily logs of employees' work activities.

Problem Areas

- Track and address problem areas more frequently.
- Develop long-term solutions to problem areas rather than quick fixes.

Emergency Response

- Develop a 24-hour response procedure.
- If response includes the police department, provide appropriate training on how this group needs to respond.
- Develop a contingency plan for various sewer emergencies.
- Make it easy for the public to inform the entity.

For home inspections, many public entities employ building inspectors who inspect buildings during construction or prior to the sale of a home. This is an excellent time to ensure there are no illegal taps or hookups to the system and to mandate that those be corrected prior to new occupancy.

Complaint System:

A complaint system should be developed in which a complaint can be registered 24 hours a day. The public entity should have a system whereby a 24-hour response can also occur for emergencies. The complaint should be reduced to writing using a form, ideally some type of logging system on the computer that can be easily found later for further analysis (which can help the maintenance department know where problems are occurring and lead to infrastructure changes and/or increased maintenance efforts). The complaint system should have supervisor oversight and signoff to ensure that the problem has been investigated and resolved.

Immunities:

Immunities within your local entity may exist. Each public entity should be familiar with these immunities. Your municipality may have discretionary policy immunity. Protect that immunity by documenting the infrastructure issues, prioritizing activities and developing a written plan of action. However, prevention is generally far less costly from a financial standpoint as well as political implications and good public relations. Hence, adopting the philosophy of considering immunities as a last resort is advisable.

Enacting a “Sewer Use Policy” can address items such as grease traps for businesses, backflow valves, etc. The policy may also address the public entity’s response to backups. The response may be:

1. No responsibility/No help;
2. No responsibility, but will assist with cleanup;
3. No responsibility, but will assist with backflow valve installation;
4. Responsibility determined and help may be available.

When assistance is provided, a waiver is used to protect the municipality.

Owner's Responsibility:

Talking to the property owner or providing them with printed materials before backups occur can help the public entity. You can enlist their assistance to help avoid backups. Providing owners with the knowledge that the lateral lines from their homes and businesses are their responsibility allows them the opportunity to maintain those lines. Customer lateral lines and service taps can experience backups due to unforeseen blockages.

Structures located in susceptible areas include structures with a plumbing fixture (floor drain, toilet, shower drain or washing machine drain) located lower than the lowest manhole lid at or around the structure's location. Backflow valves can be installed in these structures for added protection against backups. Some buildings are equipped with a sewer cleanout. Educating owners about keeping these accessible will help plumbers who may need to access them. Many insurance policies do not cover or include damages, both real and personal property, should a backup occur. Some insurance companies can provide this extra coverage for sewer backups that would make it possible for a homeowner or business to protect against this risk. Also, informing owners of programs that the municipality has to identify and remove illegal taps will encourage them to remove these items voluntarily.

Local Government Strategies:

Challenges to the efficiency of a collection system include age, damage and chronic maintenance, limited capacity and problem discharges. However, the biggest challenge may be planning and financing sewer rehabilitation. This can be a major capital expenditure for many government agencies and communities. Matthews and Miles suggest that new technologies, such as trenchless technologies, are cost-effective, minimize impact to property and reduce disruptions to the communities. They conclude that addressing the structural condition and maintenance of sewers now will provide significant long-term benefits and capital cost savings.

Risk Management Services Suggestions:

Here are some reference resources available to North Carolina public entities that may be beneficial to the water quality issues affecting municipalities.

NC Division of Water Quality: <http://h2o.enr.state.nc.us/>

NC Division of Water Resources: <http://www.ncwater.org/>

Some informational publications that other municipalities have developed are a valuable resource to assist entities in educating the general public about sewer backups. Here is just one example from the City of Raleigh, titled "What You Need to Know About Sewer Overflows" that can be viewed at the following website:

<http://www.raleigh-nc.org/putilities/sewerovf.htm>

Additional general information is also available on this site. These include:

Wastewater Collection System
Sanitary Sewer Overflows (SSOs)

Customer Responsibilities
Reporting of Sanitary Sewer Overflows and Water Main Breaks
SSO Reporting Reward Program

Risk Management Services also provides an on-site training program for your public utilities staff that are directly involved in sanitary sewer overflow situations. This program also offers general guidelines as to how to set up your own sewer backup response program and includes suggested letters and sample waivers for this purpose.

Here is a checklist that may be useful for responding to sewer overflows.

1. Immediately respond to location to assess damages.
 - Always be calm and professional
 - ***Never admit or deny liability***
2. Determine the cause of the backup
 - Take photos or detailed notes
3. If it is in the **MAIN LINES**:
 - Quickly arrange for repairs
 - Call Risk Management Services: Report the incident immediately
1-800-768-8600
 - Quickly arrange for removal of sludge inside the house or business. Have the property owner sign the permission to enter private property form
 - Direct the owner to city hall to file a report/claim
4. If it is in **LATERAL LINES**: (on private property)
 - Advise occupants that they need to arrange for cleanup.
 - Provide a list of cleanup services, plumbers, etc., or refer them to the Yellow Pages
 - Clearly explain that the fault is not with the city and explain what they need to do. Be courteous.
 - **DO NOT** discuss liability.
 - If there is a question of fault (liability), or if the homeowner is clearly distraught, the city should arrange for removal of the sludge. RMS will reimburse the city for these costs. RMS Property/Liability Claims personnel will investigate and make final decisions regarding responsibility based on the facts.
5. Guidelines to protect people and property:
 - Treat overflow as if it were TOXIC
 - Move uncontaminated property away from the overflow area
 - Keep pets, children, and others out of the overflow
 - Do not allow contact with the bare skin. Wash with clean water immediately.

Remember: *You are the good guys. Be nice.*

Complete your local report of incident or other documentation, and retain in case of RMS Claims Department request. Contact the NC Division of Water Quality, as required. The report should include the following items:

- Date and time of response

- Response team members
- Location of overflow (basement, bathroom, laundry room, etc.) and approximate size of overflow (in gallons)
- List items that have been affected by the overflow
- Immediate health or safety issues
- Were actions taken by occupant to protect property
- Has a cleaning contractor been called by the occupant
- Initial actions taken: (Sign posted, barricades, sample taken, etc.)
- Will overflow affect fish/wildlife
- Reason for overflow
- Copies of any waivers or other documents provided to owner
- Signature of Supervisor in charge

For additional information contact risk management services at **1- 800-228-0986** and select “**safety and risk control**” from the available options.

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