2013 WATER SUCCESS STORY

Bureau of Water Quality

New rules aim at preventing sanitary sewer overflows (SSOs)

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Revisions to administrative rules effective August 1, 2013, emphasize long-term preventive maintenance and management of sewage collection systems. The new rules require all collection system owners, primarily municipalities, to develop a capacity, management, operation and maintenance (CMOM) program. CMOM programs help reduce or eliminate sanitary sewer overflows (SSOs) of untreated sewage and associated human health and environmental risks.

Sanitary sewers collect wastewater from homes, commercial establishments and industry and transport the wastewater to treatment facilities. The sewers are normally built below ground, making them susceptible to the intrusion of rainwater and groundwater through cracks, joints or structural weak points. The entry of relatively clean water, usually called infiltration/inflow (I/I), into sewers may cause the flow in the collection system to substantially increase.

When a sewage collection system has insufficient capacity to transport the sewage and I/I entering the sewers, excess flow in the system may be released in several ways. Sewage may back up from the sanitary sewer pipe under the street into a building sewer pipe to the home's basement. Basement backups of sewage can cause extensive property damage and pose a public health threat.

Sewage may also be released to the land surface, surface waters, storm sewers or other drainage ways as an SSO. These releases may occur from collection system structures such as manholes, gravity overflow structures, pipes or via portable or permanently installed pumps. If excess flow reaches the sewage treatment facility, some treatment units may become flooded and an overflow or "bypass" may occur.

The sanitary sewer pipe under the street cannot transport the flow of sewage, groundwater and floodwater entering the system at a variety of points. Excess flow is discharged out of a manhole cover. This release of untreated wastewater is called a sanitary sewer overflow—SSO.

Sewers may become plugged or blocked with debris, grease from food preparation, tree roots or other material. In many instances, these types of blockages create sewage backups into buildings. Regular cleaning of the sewer helps prevent basement backups.

Collapsed sewers may also create an overflow or backup situation. SSOs can occur at wastewater pumping stations when equipment fails, because wastewater cannot be pumped downstream in the system. SSOs caused by these types of system failures may be preventable with proper operation and maintenance of the system components such as routine sewer line repair and pump replacement or repair.

New SSO Rules Success Story Continued

The discharge of untreated sanitary sewage directly to surface waters degrades water quality and poses a risk to human health, fish and other aquatic life. Sewage contains various solid materials that are aesthetically unpleasing. Pollutants include solids, oxygen-demanding materials, toxic substances and nutrients. SSO discharges can also introduce pollutants to surface waters that deplete dissolved oxygen and add nutrients that cause increased algae and plant growth.

Bacteria, viruses and other infectious microorganisms in sewage may transmit disease to people who ingest or are otherwise exposed to waters that contain large quantities of these organisms. Untreated sewage can make waters unsafe for swimming and other recreational uses, and it can contaminate drinking water when supplies are drawn from a nearby surface water.

The rule revisions to Chapters NR 110, NR 205, NR 208 and NR 210, Wis. Adm. Code, establish clear and detailed regulatory requirements associated with bypasses and discharges of untreated or partially treated sewage. Requirements to develop CMOM programs assure sewage collection system owners proactively maintain this important community infrastructure. A CMOM program achieves these primary objectives:

- Ensures that communities have adequate wastewater collection capacity.
- Improves the operation and performance of the municipal sanitary sewer collection system.
- Evaluates areas of excessive inflow of precipitation or groundwater into the system.
- Conducts maintenance and repairs needed to prevent problems.
- Reduces the frequency and occurrence of sewer overflows and basement backups.
- Provides more effective public notification when overflows do occur.

Sewage collection systems are an essential and expensive municipal asset. It is important these systems be operated and maintained to assure that the infrastructure does not deteriorate.

Municipal staff prepare equipment to measure flow in sanitary sewers during dry weather to detect groundwater infiltration/inflow. Excess flow indicates cracks in sewers or leaky joints. Courtesy Kiel, WI.

The Bureau of Water Quality developed the "Wisconsin CMOM Booklet" to help collection system owners identify key components needed for an effective CMOM program. For more information on CMOM programs, see http://dnr.wi.gov/topic/wastewater/cmom.html.