PREVENTIVE MAINTENANCE FOR SANITARY SEWERS

4.1 FATS, OILS AND GREASE (FOG)

Fats, Oils and Grease, otherwise known as “FOG”, can be a significant cause of sewer blockages that lead to SSOs. Specific areas in the collection system with FOG issues are to be identified for more frequent cleaning as required. Identification of FOG “trouble spots” and their causes is usually based on blockage history, line investigation, and inspection of FOG dischargers such as restaurants and food processing facilities. Once identified, FOG trouble spots can be addressed through targeted outreach, priority cleanings, and additional regulation. The wastewater collection system FOG program includes the following elements:

Performed by City of Lincoln Collection System Staff

- Identification – Identify areas or line segments of your wastewater collection system subject to FOG stoppages.
- Sewer Cleaning - Establish a prioritized preventive cleaning schedule for each area (and all sources of grease) or line segment with FOG problems. An interim high-frequency cleaning program can be the first step in addressing the problem.
- Outreach – Establish an outreach program to educate and inform businesses, industries, and citizens about how to reduce FOG discharges and the costs and impacts of FOG in the wastewater collection system.

Performed by the City of Lincoln Health Department

- Source Control – Develop and implement source control measures for each area of the wastewater collection system identified with FOG problems.
- Facility Inspection – Inspect grease-producing facilities, with priority given to previously identified problem areas.

The following are allowed under Title 17 of the Municipal Code

- Legal Authority – The City has the legal authority to prohibit discharges of excessive grease to the collection system.
- Enforcement – The City has the legal authority to inspect and enforce the sewer use ordinance.

4.2 ROOT CONTROL

Roots can be a significant cause of sewer blockages in some areas of the sanitary sewer system, potentially leading to SSOs and other problems. Problem areas with root intrusion are identified and maintained as needed. Roots often occur at pipe joints, where the pipe is cracked, or where service connections enter the pipe.

The City of Lincoln uses both mechanical methods and chemicals to control roots in the wastewater collection system. When a crew encounters roots during routine cleaning, a hydraulic saw is attached to the jetter and used to cut and remove the roots. The severity of the problem is recorded on the daily log, and if necessary, the pipe section is placed on the list for priority cleaning. Cutting a tree's roots is like pruning the tree, and stimulates root growth into the system. Consequently, mechanical treatment must be repeated every year or two, which is factored into the cleaning schedules.

When areas with re-occurring root problems are identified, the City will apply root killing foam to the pipe segment. Vaporooter is the current foam being used by the City of Lincoln to control roots in the sewer system. Vaporooter is comprised of two active ingredients, metam sodium, which penetrates root cells destroying the root on contact without harming the plants and trees above ground, and Dichlobenil, which bonds to pipe walls, joints and cracks to inhibit new root growth.

The foam is applied in the pipes using root foam application equipment. This foam application equipment is attached to the City's cleaning equipment. When attached to the cleaning equipment, the foaming system automatically mixes the two ingredients, a foaming agent, water, and air to deliver the chemical in a dense foam form that fills the pipe and coats the roots.