October 18, 2018

CITY OF ABERDEEN

Department of Public Works
Sanitary Sewer Maintenance Policy

Purpose

This policy defines the Department of Public Works procedures in maintaining the components of the public sanitary sewer system including mains, manholes, and lift stations within the City's Collection system. This policy supplements City Code to provide clarity in the definition of the City's responsibilities at the point of intersection between a private system or lateral and the public sanitary system. This policy and procedures replaces and supersedes the prior policy and procedures on this subject matter dated May 5, 2016.

Background

The Department of Public Works (DPW) provides an effective and efficient maintenance program for its sanitary sewer system and must comply with all applicable state and federal regulatory requirements as it relates to the collection and processing of waste water. The Department is responsible for over 75.2 miles of public sanitary sewer mains, 1,762 manholes, and 13 lift/pump stations within its sanitary collection system. The Department conducts routine maintenance services to ensure the system operates as designed.

Private connections, whether commercial (business or industrial) or residential (apartments, townhomes, condos, multi-family and single-family homes), include over 5,000 points where blocks can form. Whether manmade, naturally occurring (tree roots, shift in the ground) or structural breaks, these blockages can affect either a single customer or multiple customers depending on the situation.

The Department's policy will help assist in resolving disputes on maintenance and repair responsibilities by clarifying private/public intersection responsibilities when a blockage occurs between the customer and public system.

Department of Public Works Maintenance Responsibilities

1) Sanitary Sewer Mains: Inspection and Maintenance goals are listed below. All maintenance activity will be documented under the Beehive Work Order Management System.

    a) All sewer mains will be cleaned a minimum of once every five years by a jet machine or other necessary equipment. Qualified staff will determine the type of equipment needed for effectiveness.

b) Problematic areas in sewer mains will be cleaned, at minimum, twice in the first year. If there are no further problems detected, it will be cleaned once in the second year and then revert to a regular schedule the third year.

2) Inspection: The Department will provide a video inspection of the city's sanitary sewer mains at least once every 10 years.

a) Contractors must provide a video inspection to document the conditions of any new sanitary sewer main prior to the City accepting responsibility for public ownership and maintenance. The City may require any main near a construction site to be video inspected before and after the construction (i.e., near blasting, digging, other activities that might disrupt the main, etc.).

b) Video inspection may also be used to identify possible problems in the City's system.

i) Problem Areas: Sanitary sewer mains and facilities identified as a re-occurring problem will be documented. Scheduled maintenance will be adjusted accordingly until the section is repaired or the problem is resolved. Note: A problematic area is a main or facility that receives a report of a backup, sanitary sewer overflow, or other issues at least twice per year.

ii) Line Blockage Analysis: Within 45 days of a sanitary sewer back-up in the mainline, the section where the back-up occurred will be video inspected to assist in determining the cause. The department will conduct a cleaning of the section of the sewer line if the fault lies in a lack of preventative maintenance. The line will be monitored over the next six (6) to twelve (12) months and evaluated to determine if the line is a problem area.

3) Repairs: The department will schedule repairs as soon as practical to alleviate the cause of any blockage. Emergency repairs with a total blockage will be handled immediately to restore service. Repairs where there is reduced flow will be prioritized according to needs within the City. All actions taken by staff and findings will be documented in the Beehive Work Order Management System.

Private Sewer Service Lateral Responsibilities

The private sewer service lateral (also known as a private lateral) is a pipe that takes individual (residential, business or industrial) wastewater to the City's public sewer main.

1) Sanitary Sewer Lateral Maintenance: The property owner(s) is responsible for the maintenance of the sewer lateral up to and including the connection to the main. This maintenance includes cleaning, inspecting and clearing any blockages.

2) Sanitary Sewer Cleanouts: The property owner(s) is responsible for installing a proper cleanout (if one does not exist) to allow access. The cleanout shall be placed six (6) feet behind the curb or one (1) foot behind the sidewalk and remain the property of the owner.

This clean-out serves a dual benefit to the owner in that a) it allows a plumber to access the lateral to identify and clear a blockage in the lateral, and b) allows city staff to inspect the lateral between the clean out and the main.

3) Secondary Sewer Cleanouts: On some properties, a second cleanout is installed adjacent to the building (resident, business, industrial) as a convenience to the owner. This location is outside of the City's responsibility and any assistance to the owner will be a courtesy only. DPW staff will not jet the lateral at this location due to the potential of damaging private property due to the industrial size equipment used by the City in cleaning the sewer mains.

4) Improperly Installed Cleanouts: An owner who installs a cleanout greater than six (6) feet behind the curb or greater than one (1) foot behind the sidewalk does so at their own risk. This location is outside of the City's responsibility as specified in Para 2 and any assistance to the property owner(s) will be a courtesy only. Depending on the location, in reference to the sanitary main, DPW staff may, with permission of the owner and at the discretion of staff, provide a courtesy jetting. However, the technician may decline due to the potential of damaging private property due to the industrial size equipment used by the City in cleaning the sewer mains.

5) Sewer Lateral Blocks

   a) Any property owner(s) may contact the Department if they believe a blockage is caused by a sanitary sewer main that is affecting their service lateral.

   b) DPW staff will respond and evaluate the sanitary sewer main by inspecting the upstream and downstream manhole and the sewer main whether visually or by camera for signs of blockages. If a clean-out exists, staff may use this to access if the blockage is at the intersection of the lateral and the main.

   c) If DPW staff determine the sanitary sewer main is clear of blockage, the property owner(s) will be responsible to secure a plumber to identify the blockage in the lateral. The property owner(s) must provide evidence in the form of video inspection footage (certified plumber) prior to the Department taking further action.

      i) Clean-out Present: DPW staff may make a visual assessment with a camera to identify if the blockage occurs between the cleanout and the main (Para 2). DPW may provide a courtesy cleaning of the lateral section if it is in the best interest of the City and may prevent further complications with the sanitary sewer main.

      ii) Lack of Clean-out: DPW staff will be unable to provide any further assistance beyond determining if the sewer main is clear. It will be up to the property owner(s) to provide visual evidence (sink holes, or visible signs of overflow) or video inspection footage (certified plumber) prior to the Department expending any further effort to investigate or repair.

Inflow and Infiltration (I&I)

Inflow refers to clear water from rain and snowmelt that improperly drains into the sanitary sewer system. *Infiltration* refers to ground water that leaks into the sanitary sewer system through cracked or faulty sewer pipes. Both sources of water are basically clean. During heavy rainstorms, I & I may cause the *sanitary sewers* to quickly fill with clear rain water that should have been directed to the *storm drain system*. When too much of this clear water mixes with untreated sewage, the volume flowing through the sewer pipes may exceed the capacity of the sanitary sewer system pipes. The result is that water cannot reach the treatment plant to be cleaned because the system surcharges and could back up into basements or overflow onto streets.

1) The City will inspect the sanitary sewer system for inflow and infiltration and take actions to reduce and eliminate it.

    a) The Department will replace/repair sanitary sewer mains to reduce or eliminate this I & I. One low cost and popular method is to line a pipe to prevent the infiltration of water into the mains.

    b) The Department also installs pan liners over sanitary sewer manholes and repairs the manholes with bonding agents that will eliminate infiltration into the sanitary sewer system.

2) Property Owner(s) are prohibited from connecting sump pumps to sanitary sewer systems. The connection of sump pumps to the sewer system represents a detrimental impact to our system. During rain events, sump pumps connected to the system overload the system due to rainwater or ground water from roofs/foundation drains being injected into a system that is not designed to handle the flows.

    a) A typical sump pump system, consisting of a 0.5 HP pump, if connected to the sanitary sewer system, could discharge approximately 3,000 gallons per hour or 50 gallons per minute (GPM). A single sump pump operating at capacity over a 24-hour period could discharge over 72,000 gallons of water into the system.

    b) Under dry weather conditions, the City's sanitary sewer treatment facility processes on average 1,602,000 gallons per day (~1,100 GPM). During wet weather conditions this past summer, flows were measured entering the Waste Water Treatment Plant at 14,000,000 gallons per day (~10,000 GPM). All of which must be treated before being released.

The reduction and control of inflow and infiltration in sanitary sewer systems is paramount to the Department's priorities. DPW will act through a disciplined, long-term monitoring and maintenance program to inspect sources of inflow and infiltration. DPW will take actions to reduce and eliminate those sources that include remedial actions with private owner(s) that illegally connect sump pumps to the sanitary system.

To eliminate these illicit connections, the flow from the pipe should be directed to discharge at the surface or interconnected to the existing closed storm drainage system. If connecting to the City's storm drainage system, the City's Department of Public Works must be notified prior to the connection being made. The property owner is responsible for any costs associated with this

connection and any corrective actions if the flows create an unsafe condition due to icing or other associated drainage conditions. If the flow of water results in possible harm to the adjoining property, it could be subject to legal action by the adjoining property owner.

Documentation

City employees will document all inspection and maintenance activities and emergency responses for the sanitary sewer system. City employees will also document circumstances that limit their ability to comply with this policy. These records will be kept in accordance with the city's records retention schedule.

Kyle Torster

Kyle E. Torster, P.E.
Director of Public Works