

City of Columbia

701 East Broadway, Columbia, Missouri 65201



Agenda Item Number: REP 94-15

Department Source: Public Works

To: City Council

From: City Manager & Staff

Council Meeting Date: 9/21/2015

Re: Report - Requiring Property Owners to Identify Illegal Connections to the Sanitary Sewer System (CM # 4045)

Documents Included With This Agenda Item

Council memo

Supporting documentation includes: None

Executive Summary

At the June 15, 2015 Council meeting, Council requested staff provide a report on the possibility of requiring property owners to be responsible for the identification of illegal connections to the sanitary sewer (downspouts, sump pumps, etc.). Staff recommends consideration of two different programs that would allow for identification and elimination of illegal connections. The first is to include the identification as part of the rental inspection program performed by the Office of Neighborhood Services, and the second is to consider requiring the investigation at the time of sale of a property.

Discussion

Excess water that enters the sanitary sewer collection system is referred to as inflow and infiltration, or more commonly, I&I. Inflow refers to storm water that flows into the sanitary sewer system via direct connections, such as from roof drains, foundation drains, storm drains, sump pumps, holes in manhole covers, etc. Infiltration refers to stormwater and groundwater that enters the sanitary sewer collection system through sewer mains and manholes due to cracks, joint failures, faulty connections, etc. Infiltration generally increases as the sewer system ages and needs replacement.

Sanitary sewer systems are designed to convey wastewater from homes and businesses. I&I adds rainwater and groundwater to the sanitary sewer system which must then be transported and treated like wastewater. During periods of rainfall, the flow due to I&I can increase enough to be the major portion of water in the sanitary sewer system and can increase to the point that all capacity of the sewer system is used. Once the available capacity is used, the sewer system will then backup into buildings or overflow from manholes and be released into the environment. These overflows violate state and federal environmental regulations and can create a public health risk. I&I can also interfere with operations of wastewater treatment facilities resulting in lesser quality water being discharged from the treatment facility.

Columbia's sanitary sewer system has experienced problems for many years due to I&I. There are records of backups into buildings due to I&I as far back as the late 1960's, and records of sanitary

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overflows due to I&I as far back as the 1970's. In the mid-1970's, the City hired a consultant to conduct a Sewer System Evaluation Survey of the city's sewer system. The survey identified extraneous flows due to I&I of over 48 million gallons a day in 1978. These reports recommended rehabilitation of some problems that were determined to be cost effective, at that time. In addition, it was recommended that the city's maintenance program be expanded to include rehabilitation of I&I sources, not considered cost-effective at that time, to prevent additional I&I due to further deterioration. Records do not indicate that the recommended rehabilitation program was ever initiated following these studies.

In 2004, Black & Veatch completed a Wastewater System Facilities Planning Report for the City. This report identified basins in the sanitary sewer system that have excessive I&I. The report recommended that a comprehensive I&I investigation be conducted to identify I&I sources for removal. Following these recommendations, TREKK Design Group was hired in 2008 to conduct a pilot investigation. In 2010, based on the Facilities Planning Report and the pilot investigation, staff prepared a report for Council that outlined a program to reduce the amount of I&I entering the City's sewer system. This program recommended a basin based I&I reduction program consisting of three phases for each basin; a study phase, a construction phase and a confirmation phase. Following this report, Chapter 22 of the City Code was revised in 2011 to establish an abatement financial assistance program, and an I&I reduction program, that allows reimbursement to property owners for removal of certain sources of I&I on their property.

The study phase currently consists of flow monitoring, smoke testing, dye testing, CCTV inspections, manhole inspections and internal and external building inspections to identify sources of I&I on both the public portion of the sewer system and on private properties. The costs of these studies, including the building inspections has been paid by the City. Council requested staff investigate the possibility of making the identification of illegal connections to the sanitary sewer the responsibility of the property owner. This would reduce costs to the City and could result in the removal of private sources in a more timely manner than currently being achieved.

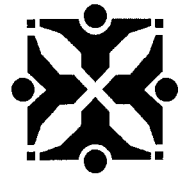
Staff has met to discuss options for requiring these inspections to be performed by the property owners. During the studies performed in the first four sewer basins, 3,665 buildings were inspected and 326 (8.9%) were found to have illegal connections to the sanitary sewer contributing I&I to the system. Due to the low percentage of properties with illegal connections it may not be reasonable to require every property to have an inspection performed at the owner's expense without some other action "triggering" the requirement for performing the inspection; therefore, other options were considered. The following two options are provided for Council's consideration:

Rental Unit Conservation Law

Currently, the Office of Neighborhood Services administers a program that requires all residential rental properties to be inspected every three years (with a provision to be extended to a six year period). These inspections identify violations of existing codes and ordinances. Identified violations are required to be corrected in order to continue use as a rental unit. This program could be

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expanded to include inspection for illegal sewer connections. This possibility has been discussed with the Office of Neighborhood Services and it is believed it would be fairly easy to implement such an expansion of the program. Including inspections for illegal sewer connections would result in all rental properties being inspected within the next six years and would greatly accelerate the rate of removal of the illegal connections. There would be no additional costs to the property owner for this inspection; current cost is a \$60 application fee and a \$26 per unit inspection fee. The property owner would be responsible for the cost of removing the illegal connections. This expansion would require a modification to the code to include inspections for violations of Section 22 in the program.

Point of Sale Program

A program could be initiated that would require a property owner to have a property inspected and correct any illegal sewer connection at the time a property is sold. This type of program would be very similar to the “Point of Sale Sidewalk Program” recently presented to Council. The program could be expanded to also require an inspection of the sewer lateral serving the property and requiring any deficiencies to be repaired prior to the sale. This type of program would also accelerate the rate of removal of illegal connections. In addition, it would provide value to the purchaser of the property since it would ensure the sewer lateral serving the property is in good condition at the time of purchase. There would be additional costs to the property owner for the inspections and any necessary repairs.

Implementation of either or both of these programs would accelerate the removal of sources of I&I into the City’s sanitary sewer system ultimately reducing the frequency and duration of sanitary sewer overflows to the environment, and backups into buildings.

Fiscal Impact

Short-Term Impact: None with this report

Long-Term Impact: None with this report

Vision, Strategic & Comprehensive Plan Impact

Vision Impact: Environment

Strategic Plan Impact: Infrastructure...Connecting the Community

Comprehensive Plan Impact: Environmental Management, Infrastructure

Suggested Council Action

For information only

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Legislative History

9/2/14 (Rep 84-14) Evaluation of Inflow and Infiltration Reduction in Flat Branch Basin D

3/07/11 (Ord 20895) Amending Chapter 22 to establish an abatement financial assistance program and an inflow and infiltration reduction program as it relates to sewers and sewage disposal

8/18/08 (Res 191-08) Authorizing an agreement with TREKK Design Group, Inc. for engineering services relating to an inflow and infiltration study of the sewer collection system.

01/02/07 (Res 262.06) Public hearing to adopt the Sewer Utility Master Plan.



Department Approved



City Manager Approved