

**Sewer Cleaning
Control Assessment**

**City of Tulsa
Internal Auditing
September 2007**



Control Assessment Report

September 2007

Subject: Sewer Cleaning Control Assessment

Responsible Officers: Clayton Edwards, Public Works Deputy Director of Environmental Operations
Mark Rogers, Public Works Collection Systems Manager

Auditors: Steve Jackson, Audit Manager
Nathan Pickard, Auditor-In-Charge
Kelly Brader, Staff Auditor

Scope: Evaluate the internal control framework of the sewer cleaning process in the Underground Collection Systems section of the Public Works Department.

Objectives: Review and evaluate each component of the internal control framework and provide improvement suggestions, as appropriate.

Overall Risk Exposure: (Low, Moderate or High)
Moderate

Conclusion: (Satisfactory, Satisfactory-needs improvement or Unsatisfactory)
Satisfactory-needs improvement

Significant Results:

- Underground Collection Systems has thorough policies and procedures in place which are understood and applied throughout the sewer cleaning process.
- Management promotes consistency in all areas of sewer cleaning and has an open door policy that is practiced by all levels of management and utilized by staff throughout the sewer cleaning section.
- An increase in private trouble calls causes a decrease in preventive maintenance of sewer lines.
- The lack of access to reliable information decreases effectiveness of sewer cleaning operations.
- The high turnover in clerical support positions is decreasing efficiency of sewer cleaning operations.
- Harsh working conditions and lack of advancement opportunities are obstacles to retaining labor/trade employees.

Management Response: (Accepts recommendations, Accepts recommendations with modifications or Disagrees)

Accepts recommendations with modifications



Ron Maxwell, CIA, CFE
Chief Internal Auditor



Phil Wood, CIA, CFA
City Auditor

Observations, Recommendations and Management Responses

OBSERVATION 1:

INCREASE IN PRIVATE TROUBLE CALLS CAUSES A DECREASE IN PREVENTIVE MAINTENANCE OF SEWER LINES

SUMMARY:

Citizens telephone Underground Collection Systems when a sewage backup or overflow occurs. Underground Collection Systems considers these calls emergencies and dispatches a crew to the site within two hours of the call. From July 2006 to April 2007, 78 percent of these emergency calls proved to be the result of problems in private sewer lines. When the emergency is caused by private sewer lines, the crew cleans the City's portion of the line to ensure the diagnosis is correct and to prove to the citizen the City line is not cause of the backup or overflow.

The percentage of private sewer line emergency calls is increasing each year due to aging infrastructure of private lines. As private sewer line emergency calls continue to increase, preventive maintenance of City sewer lines will continue to decrease. Crews will spend the majority of their time responding to private trouble calls while preventive maintenance areas are neglected.

RECOMMENDATIONS:

Management should consider one or more of the following:

a. Improve Call Screening

When emergency call is received, gather information to determine whether problem is on the private side or City side of sewer line. If call is due to private line troubles, advise customer to contact a plumber, or charge fee to have City respond.

b. Establish a response fee

Charge a fee for emergency calls where the City was not at fault, or set up a fee structure for repeat callers.

c. Increase preventive maintenance resources

Hire additional crew(s) for preventive maintenance and/or increase contract funds for preventive maintenance.

RESPONSE:

Public works management agrees with observation 1. Policy discussions will consider all of the recommendations. Request for additional crew(s) will be included in the 2008-2009 budget. Policy discussions and implementation schedule should be completed by end of year 2007.

OBSERVATION 2:

LACK OF ACCESS TO RELIABLE INFORMATION DECREASES EFFECTIVENESS OF SEWER CLEANING OPERATIONS

SUMMARY:

Access and Functionality Issues:

Management needs information delivered in a reliable and timely manner in order to effectively complete job functions. Between February and April 2007, Underground Collection Systems reported approximately 14 access related issues and approximately 16 functionality issues with software programs. Underground Collection Systems computer support personnel create custom programs to suit Underground Collection Systems needs. The development of these programs should be performed in such a way as to ensure appropriate access by users as well as to ensure functionality.

Backup Issues:

The Frequent Cleaning Database keeps historical records of sewer backups, overflows, and cleanings. These areas are targeted for preventive cleaning to reduce the number of problems which may occur. The Frequent Cleaning List was lost due to the computer system "crashing." Limited backup of the information was recovered after the information system crashed. Without this information Underground Collection Systems did not know when sewer lines were last cleaned and could not make informed operating decisions.

RECOMMENDATIONS:

Access and Functionality Issues:

- Management should ensure the Information Technology Department determines all custom made programs for Underground Collection Systems are fully functional before implementation. City standards should be followed for user access needs.

Backup Issues:

- Management should designate more than one individual to perform regular backups on the computer system.
- Management should ensure a monthly print out of the Frequent Cleaning List is secured at an offsite location or safe room within Underground Collection Systems.

RESPONSE:

Public Works management agrees with these recommendations. The custom programs used will be phased out. We will be purchasing a new software package and moving data to that format. This budget request will be included in the FY2008-2009 budget. Purchase, transition, and implementation should be completed by June 2009. Backup procedures have already been changed. IT personnel are completing weekly backups. Monthly a paper copy of the frequent cleaning list is put in storage for safekeeping.

OBSERVATION 3:**HIGH TURNOVER IS DECREASING EFFICIENCY OF SEWER CLEANING OPERATIONS****SUMMARY:**

Underground Collection Systems must have clerical support to answer phones and perform many other clerical duties 7 days a week, 24 hours a day. The job descriptions require the clerical support personnel to work overtime and be on standby on a rotational basis. Clerical positions have a high turnover rate because employees look for other positions that do not require standby, overtime, evenings, and graveyard shifts. The shift differential pay has not increased in 23 years.

Management provides extensive, three months of training to clerical staff positions. Many of the clerical support personnel receive the training and once eligible they will transfer to other areas within the City. Dayshift clerical positions are not difficult to find within the City where the pay is equal to Underground Collection Systems clerical positions. It is costly to operations to continually train new employees and time consuming for management.

RECOMMENDATION:

- Management should consider increasing shift differential pay rates to encourage retention of trained employees in the customer service area.

RESPONSE:

Agreed. Discussions with PW human resources have been initiated. We will be proposing a special clerical progression family classification for Water Distribution and UCS personnel.

OBSERVATION 4:

HARSH WORKING CONDITIONS AND LACK OF ADVANCEMENT OPPORTUNITIES ARE OBSTACLES TO RETAINING LABOR/TRADE EMPLOYEES

SUMMARY:

Underground Collection Systems must have sufficient crews and staff available 24 hours a day, seven days a week, 365 days a year in order to respond immediately to sewage backups. To meet availability requirements, crew members must be willing to be on a 24 hour standby and work overtime when necessary. The effects these schedules have on crew workers personal lives can cause them to look for employment elsewhere.

Crews responding to emergency calls attempt to detect the problem(s) and resolve. This may include shoveling the sewage that the vacuum truck is unable to reach. The crew workers and crew leaders are only paid 5 percent more to work with sewage than crew workers in the water division. This is approximately 55 cents more per hour. The crew workers' job description states the working environment may include flammable liquids; radiation; cutting, chipping, and grinding; hazardous/toxic atmosphere; sewage; toxic fumes, vapors, and odors; and compressed gases.

Progression for crew workers is a lengthy process. The crew workers must gain four years of experience to promote. During this time many crew workers leave for other jobs outside the City or jobs in other departments within the City. Underground Collection Systems has found that many of the crew workers have the necessary skills to promote to crew leaders immediately, but must wait until they meet the four year experience requirement according to Human Resources policy. It is costly to continually train new employees and time consuming for management.

RECOMMENDATIONS:

Management should consider one or more of the following:

- Consider creating a Crew Worker III position so that a Crew Worker II has goals to work toward while gaining the additional three years of experience required to promote from Crew Worker II to Crew Leader.
- Consider increasing overall compensation paid to crew workers and crew leaders for working in hazardous working environments.
- Consider increasing crews to lessen the strain on personal life of standby requirements.

RESPONSE:

Management agrees that this needs investigation. We have proposed that the Crew Leader II position requirement be changed from four years to three years of experience.

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