

# The City of Cedar Hills

## Operations and Maintenance Program

The City of Cedar Hills has established this sanitary sewer system operations and maintenance program to ensure proper system operations, to minimize any sub level backups or SSOs, and to provide for replacement, refurbishment, or repair of damaged or deteriorated piping systems. The combined maintenance program should insure that the environment and health of the public are protected at a reasonable cost for the end users. To this end, the following areas are described and included in this maintenance program:

- System Mapping
- System Cleaning
- System CCTV Inspection
- Manhole Inspection
- Defect Reporting
- Damage Assessment

### System Mapping

An up to date map is essential for effective system operations. The City of Cedar Hills has assigned the mapping responsibility to the Public Works Department and the City Engineer who will prepare and maintain current mapping for the entire sanitary sewer system. Mapping may be maintained on either paper or in a graphical information system (GIS) or a combination of both. Current mapping is available at the following locations:

City of Cedar Hills Public Works Office

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Should any employee identify an error in the mapping, they should document the error on a defect report and give it to the Engineer and/or Public Works Director.

### System Cleaning

Sanitary sewer system cleaning is accomplished through various means and methods. Cedar Hills has established a goal to clean the entire system every three years. Based on experience over the past 20 years, this frequency significantly reduces the number of

basement backups, controls grease problems and flushes any bellies in the system. In addition, Cedar Hills has a listing of identified hot spots which may be maintained at a higher frequency. Systems which may have roots are mechanically rodded or hydraulically cut out and areas where restaurants are close together are hydraulically flushed with a high pressure jet truck. The following methods are employed to provide system cleaning:

Hydraulic Cleaning Timpanogos Special Service District  
CCTV Inspection Timpanogos Special Service District

If Necessary:

Mechanical Rodding.

Chemical Root Control

Chemical FOG Control

Cleaning records are maintained at Cedar Hills Public Works Office. Contractors are required to provide cleaning records associated with their work. Cleaning history may also be entered into the GIS; however, this is not always necessary. Should the cleaning process identify a serious defect, the problem should be reported on a Defect Report Form. The Public Works Department should be given the defect reports for further action. The defect report should be specific as to location and type of problem. A copy of the Defect Report Form is included at the end of this narrative section. A summary of cleaning activities shall be prepared annually by the Public Works Department or designee. This summary will normally be presented to the City of Cedar Hills City Council.

#### System CCTV Inspection

Closed Circuit TV inspections of the sanitary sewer system are used to assess pipe condition and identify problems or possible future failures which need current attention. The CCTV process also identifies the piping condition to allow for replacement prior to failure. Generally, Timpanogos Special Service District will conduct CCTV inspection with their own staff. Inspections of the system will occur every 5 - 10 years. This inspection frequency is based on the pipe aging process. As such, once the system has been inspected completely, change usually occurs gradually. CCTV will also be employed when a systems operation or capacity is questioned or when an SSO occurs. Any defects identified during the CCTV process should be reported on a Defect Report Form and the form should be given to the Public Works Director/Operations Manager for possible repairs. Documentation of CCTV activities will be maintained at the Public

Works office. When contractors are employed to inspect the sanitary sewer system they will be required to submit records for their work. The Public Works Department will prepare an annual summary of CCTV completed for that calendar year.

### Manhole Inspection

The City of Cedar Hills Public Works Department schedules annual inspection of the sanitary sewer manholes (M/H). The M/H inspection involves the identification of foreign objects and surcharging that may be present. Crews inspecting the manholes will be given maps by the Engineer who will monitor the progress and completeness of the inspection process. When a potential defect is identified, the manhole should be flagged. Flagged manholes should be checked by an operator within several days to determine further action. If, during the inspection process, the inspection crew believes a problem is imminent, they should immediately cease inspecting and inform the Public Works Director/Operations Manager of the problem. A cleaning crew should be dispatched immediately to ensure correct system operations. All inspection records should be retained for documentation of work performed.

### Defect Reporting

Defect Reports generated through the cleaning, CCTV inspection or manhole inspection programs will be prioritized for correction by the Public Works Director/Operations Manager. Any defects which have the potential for catastrophic failure and thus create a sanitary sewer overflow should be evaluated immediately and discussed with the Public Works Director and City Engineer for repair. Repair methods may include:

- Spot Excavation Repairs
- Spot Band Repairs
- Segment Excavation Replacements
- Segment Lining
- Manhole Rehabilitation

When a defect is not flagged for immediate repair, it should be considered for placement on the “hot spot” list. This will allow for vigilant maintenance to ensure failure and a subsequent sanitary sewer overflow do not take place. Defect reports should be used in the Budget process to determine what financial allocation should be made in the next Budget year. The Public Works Director/Operations Manager should include outstanding defects in the annual report.

## Collection System Damage

Collection damage may occur as a result of multiple factors, some identified as a result of inspection activities and some identified as a result of damage by third parties such as contractors.

### Damage Identification

The identification of system damage which may result in an SSO or basement backup is important to prevent environmental, public health, or economic harm. Identification of damage may be from either internal activities or external activities.

Internal activities which may result in the identification of damage include the following:

1. Collections Maintenance Activities
2. CCTV Inspection Activities
3. Manhole Inspection Activities

These three activities are discussed in this Maintenance Program and the identification of damage will result in the generation of a Defect Report. Generally, damage identification is an iterative and continuous process.

External activities which identify damages include:

1. Contractor Notification of Damage
2. Directional Drilling Notification of Damage
3. Public Damage Complaints

All three of these notifications generally require immediate response. Staff should respond and evaluate the seriousness of the damage and the effect on the environment. Damages which include a release to the environment should be handled in accordance with the SORP. Damages which cause a basement backup should trigger the Basement Backup program. Damages which remain in the trench should be insignificant and do not require more action than the repair of the damage.

Whatever the cause of collection system damage, the response should be expeditious to prevent environmental or economic harm. City staff should

consider all damages an emergency until it is shown by inspection to be a lower priority.

### Damage Response Actions

When damages occur in the collection system, the following actions help define the path staff should take. These action plans are not inclusive of all options available but are indicative of the types of response that may be taken.

#### **Stable Damage**

Inspection activities may show a system damage which has been there for an extended period of time. Such damage may not require immediate action but may be postponed for a period of time. When stable damage is identified and not acted upon immediately, a defect report should be prepared. If such a defect is identified and repaired immediately, a defect report is not needed. An example of stable damage could be a major crack in a pipeline or a severely misaligned lateral connection where infiltration is occurring.

#### **Unstable Damage**

Unstable damage is damage which has a high likely hood that failure will occur in the near future. Such damage may be a broken pipe with exposed soil or a line which has complete crown corrosion. In these cases, action should be taken as soon as there is a time, a contractor, materials and other necessary resources available. When such unstable damage is identified, if possible, consideration should be given to trenchless repairs which may be able to be completed quicker than standard excavation. Immediately after identification the Manager should be contacted to review and take care of budget considerations.

#### **Immediate Damage**

When a contractor or others damage a collection line such that the line is no longer capable of functioning as a sewer, this immediate damage must be handled expeditiously. Such damage allows untreated wastewater to pool in the excavation site, spill into the environment or possibly backup into a basement. Under such conditions priority should be given to an immediate repair. Since excavation damage may be a result of contractor negligence or it could be a failure of Cedar Hills to adequately protect the

line by appropriately following the Damages to Underground Utilities Statute 54-8A, priority should be given to effecting a repair and not to determining the eventual responsible party.

As can be determined from the above action plans, priority should always be preventing SSO's and attendant environmental damage, to prevent basement backups and financial impacts, and to prevent public health issues.