



CITY OF LOGAN  
LOGAN, UTAH

## **WASTEWATER DIVISION**

# ***2015 Sanitary Sewer Management Plan (SSMP)***

August 2015

City Of Logan, Utah

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# City of Logan

## Sanitary Sewer Management Plan

### Introduction

The City of Logan (Logan) is an incorporated city established in Utah under the Utah State Code. Logan was established in 1859 and provides sewage collection and/or treatment for itself as well as the surrounding communities of; Smithfield, Hyde Park, North Logan, River Heights, Providence, Nibley and Utah State University. Logan manages and operates the collection system and lift stations within its corporate boundaries, whereas the tributary communities manage their individual systems. However, Logan provides treatment of the wastewater for all of them. This Sewer System Management Plan (SSMP) manual has been established to provide a plan and schedule to properly manage, operate, and maintain all parts of the sewer collection system owned by Logan to reduce and prevent SSOs, as well as minimize impacts of any SSOs that occur. The Management for this entity recognizes the responsibility it has to operate the sewer system in an environmentally and fiscally responsible manner. As such, this manual will cover aspects of the collection system program necessary to provide such an operation. This manual may refer to other programs or ordinances and by reference may incorporate these programs into this manual.

### Definitions

The following definitions are to be used in conjunction with those found in Utah Administrative Code R317. The following terms have the meaning as set forth:

- 1) "BMP" means "best management practice".
- 2) "CCTV" means "closed circuit television.



- 3) "CIP" means a "Capital Improvement Plan".
- 4) "DWQ" means "the Utah Division of Water Quality".
- 5) "FOG" means "fats, oils and grease". This is also referred to as a Grease Oil and Sand Program(GOSI).
- 6) "I/I" means "infiltration and inflow".
- 7) "Permittee" means a federal or state agency, municipality, county, district, and other political subdivision [public entity] of the state that owns or operates a sewer collection system or who is in direct responsible charge for operation and maintenance of the sewer collection system. When two separate federal or state agency, municipality, county, district, and other political subdivision of the state are interconnected, each shall be considered a separate Permittee.
- 8) "SECAP" means "System Evaluation and Capacity Assurance Plan".
- 9) "Sewer Collection System" means a system for the collection and conveyance of wastewaters or sewage from domestic, industrial and commercial sources. The Sewer Collection System does not include sewer laterals under the ownership and control of an owner of real property, private sewer systems owned and operated by an owner of real property, and systems that collect and convey stormwater exclusively.
- 10) "SORP" means "Sewer Overflow Response Plan"
- 11) "SSMP" means "Sewer System Management Plan".
- 12) "SSO" means "sanitary sewer overflow", the escape of wastewater or pollutants from, or beyond the intended or designed containment of a sewer collection system.



- 13) "Class 1 SSO" (Significant SSO) means a SSO or backup that is not caused by a private lateral obstruction or problem that:
  - a. affects more than five private structures;
  - b. affects one or more public, commercial or industrial structure(s);
  - c. may result in a public health risk to the general public;
  - d. has a spill volume that exceeds 5,000 gallons, excluding those in single private structures; or
  - e. discharges to Waters of the State of Utah.
  
- 14) "Class 2 SSO" (Non-Significant SSO) means a SSO or backup that is not caused by a private lateral obstruction or problem that does not meet the Class 1 SSO criteria.
  
- 15) "USMP" means the "Utah Sewer Management Program".

## **General SSO Requirements**

The following general requirements for SSO's are stipulated in R317-801 and are included here as general information.

- 1) *The permittee shall take all feasible steps to eliminate SSOs to include:*
  - a. *Properly managing, operating, and maintaining all parts of the sewer collection system;*
  - b. *training system operators;*
  - c. *allocating adequate resources for the operation, maintenance, and repair of its sewer collection system, by establishing a proper rate structure, accounting mechanisms, and auditing procedures to ensure an adequate*



*measure of revenues and expenditures in accordance with generally acceptable accounting practices; and,*

*d. providing adequate capacity to convey base flows and peak flows, including flows related to normal wet weather events. Capacity shall meet or exceed the design criteria of R317-3.*

*2) SSOs shall be reported in accordance with the requirements below.*

*3) When an SSO occurs, the permittee shall take all feasible steps to:*

*a. control, contain, or limit the volume of untreated or partially treated wastewater discharged;*

*b. terminate the discharge;*

*c. recover as much of the wastewater discharged as possible for proper disposal, including any wash down water; and,*

*d. mitigate the impacts of the SSO.*

## **SSO Reporting Requirements**

R317-801 stipulates when and how SSO's are reported. Following are those reporting requirements as of 04/23/2012.

*1) SSO REPORTING. SSOs shall be reported as follows:*

*a. A Class 1 SSO shall be reported orally within 24 hrs and with a written report submitted to the DWQ within five calendar days. Class 1 SSO's shall be included in the annual USMP report.*

*b. Class 2 SSOs shall be reported on an annual basis in the USMP annual report.*

*2) ANNUAL REPORT. A permittee shall submit to DWQ a USMP annual operating report covering information for the previous calendar year by April 15 of the following year.*



## **Sewer Use Ordinance**

Logan has a sewer use ordinance and regulations that have been adopted by the governing body. Title 13 – Public Services, sub-chapter 13.12 – Sewers and Sewage Disposal, describe in detail the requirements for the sewer system. The City’s Sanitary Sewer Design Standards also govern the construction of sewers. Other Engineering Standards adopted by Logan also pertain to the sewer system. These contain the following items as stipulated by Utah State Code R317-801:

- 1) Prohibition on unauthorized discharges,
- 2) Requirement that sewers be constructed and maintained in accordance with the current version of the Logan City Sanitary Sewer Design Standards which are based on current APWA Standards and Utah R317-3,
- 3) Ensures access or easements for maintenance, inspections and repairs,
- 4) Has the ability to limit debris which obstruct or inhibit the flow in sewers such as foreign objects or grease and oil,
- 5) Requires compliance with pretreatment program,
- 6) Allows for the inspection of industrial users, and
- 7) Provides for enforcement of for ordinance or rules violations.

The following elements are included in this SSMP:

- General Information
- Operations and Maintenance Program
- Sewer Design Standards
- Sanitary Sewer Overflow Response Plan
- Grease, Oil and Sand Interceptor Management Program
- Separate Document (System Evaluation and Capacity Assurance Plan)
- SSMP Monitoring and Measurement Plan



- Sewer System Mapping Program
- Basement Backup Program
- Sewage Backup Program

This program is intended to be a guidance document and is not intended to be part of a regulatory requirement. As such, failure to strictly comply with documentation requirements is, in and of themselves, not a failure of the program's effectiveness.

Documentation failures are intended to be identified during system self-audits and will be addressed as training opportunities. Significant system failures will be followed up with corrective action plans. This corrective action process will be implemented by all individuals involved in the SSMP program. Not all Logan employees will necessarily be involved in the collection system operations. As such, not all employees will receive program training. Finally, although not a part of this SSMP program, Logan is an active participant in the Blue Stakes of Utah Utility Notification system. This system, regulated under title 54-8A of the Utah State Code, stipulates utility notification of all underground operators when excavation takes place. The intent of this regulation is to minimize damage to underground facilities. Logan has a responsibility to mark their underground sewer facilities when notified an excavation is going to take place. Participation in the Blue Stakes program further enhances the protection of the collection system and reduces SSO's.



## City of Logan

### SSMP – General Information

This Sanitary Sewer Management Plan was approved by the City Council on August 25, 2015.

The responsible representative(s), position and phone number for Logan with regard to this SSMP is/are

Public Works Director – Mark Nielsen – 435-716-9153

Waste Water Division Manager – Paul Lindhardt – 435-716-9620

Collections Foreman / Crew Chief - 435-716-9620

Well Technician Crew Chief - 435-716-9620

Pretreatment Program Coordinator - Jim Harps – 435-716-9755

City Engineer – Bill Young – 435-716-9153

GIS Manager – Chuck Shaw – 435-716-9170

#### **Description of Roles and Responsibilities**

The following positions have the described responsibility for implementation and management of the specific measures as described in the SSMP.

#### ***Public Works Director***

This individual is responsible for overall management of the public works facilities owned and operated by the City of Logan. While not involved in day to day operations, he is the Department Head directly responsible to the Mayor and City Council. He works with the Division Manager in determining budgets, making those requests of the Council, and general overview of operations.



### ***Waste Water Division Manager***

This individual is responsible for overall management of the sanitary sewer collection system. Responsibilities include working with the Public Works Director and council to assure sufficient budget is allocated to implement the SSMP, maintenance of the SSMP documentation, development of a capital improvement program and general supervision of all staff. He is also responsible for higher level day to day operations and maintenance. When implemented, he will also be responsible for overseeing the implementation of the SECAP program.

### ***Collections Foreman***

This individual is responsible for daily implementation of the SSMP. This includes maintenance activities, compliance with SORP requirements, and monitoring and measurement reporting requirements. He is also responsible to assure that cleaning, video inspection and other maintenance activities are occurring on schedule, as well as dispatching crews. He is responsible to make sure that all maintenance logs, work orders and correspondence are logged into the GIS based Cityworks maintenance program. When implemented, he will also be responsible for the day to day implementation of the SECAP program.

### ***Well Technician Crew Chief***

This individual is responsible for assuring that the lift stations, SCADA systems and any electrical related operations for the collection system are running correctly. This individual dispatches crews to respond to alarms, diagnose, repair, or otherwise maintain electrical motors, pumps, controls and equipment. He is also responsible to assure that repair orders and maintenance logs are entered into the Cityworks system.

### ***Pretreatment Program Coordinator***

This individual is responsible for implementation of the pretreatment program including the fats oil and grease program. He is also responsible for inspections and enforcement.

**City Engineer**

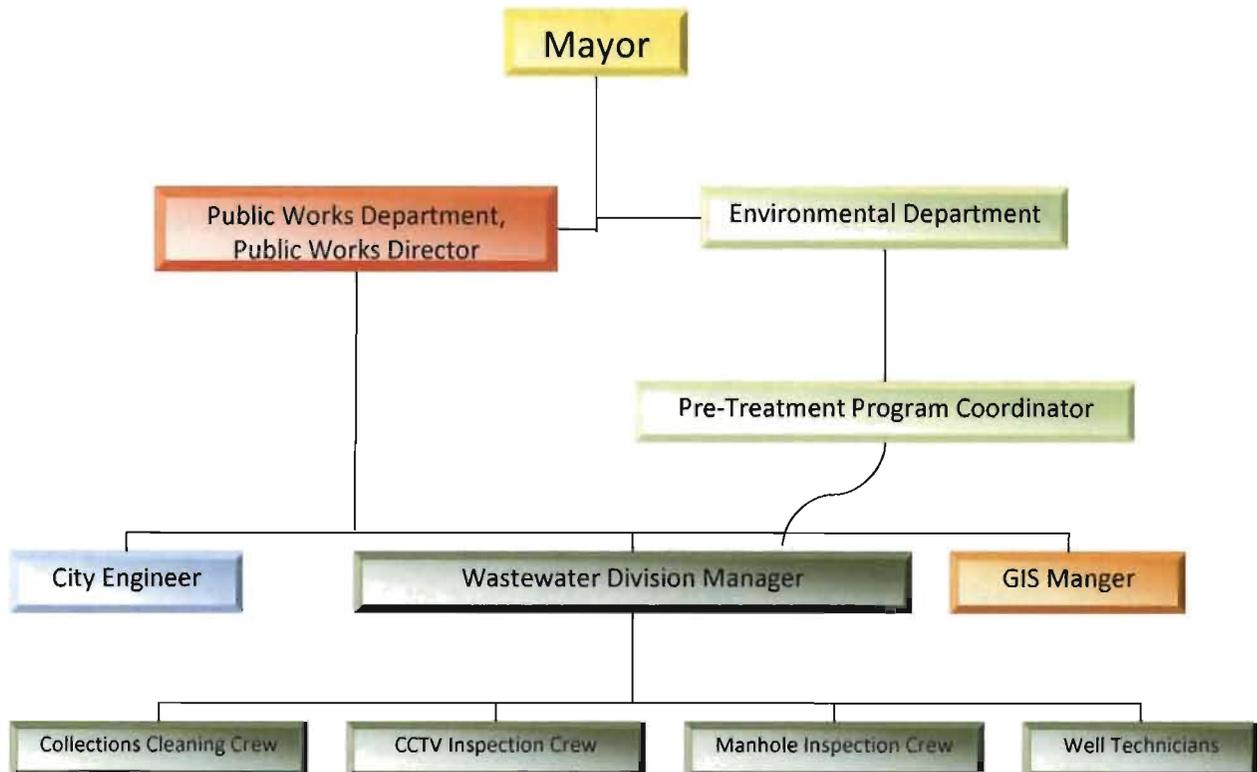
This individual is responsible for the development and maintenance of collection system design standards, and assisting in the development of the CIPs for the department. He oversees design, bidding and construction of collection system improvement projects. When implemented, he will also aid with implementation of the SECAP program.

**GIS Manager**

This individual is responsible for infrastructure mapping. This includes updating maps as needed, and assuring that the Cityworks software is communicating with the City GIS system. When implemented, he will also be able to help with implementation of the SECAP program.

**Organization Chart**

Below is the organization chart associated with the SSMP





## City of Logan

### Operations and Maintenance Program

Logan has established this sanitary sewer system operations and maintenance program to ensure proper system operations, to minimize any basement 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
- Pump Station/Pressure Lines Inspection
- Manhole Inspection
- Defect Reporting
- Damage Assessment

#### **System Mapping**

An up to date map is essential for effective system operations. Logan has assigned the mapping responsibility to the GIS Manager who maintains 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. However, Logan has moved to a mostly GIS based system with very little to no paper mapping. Paper maps are typically kept for archival purposes only. Current mapping is available at the following locations:

- Cityworks GIS based Maintenance Program
- Logan City GIS Department
- Logan City Engineering Archives

Should any employee identify an error in the mapping, they should document the error, report it to the Collection System Foreman, log it into Cityworks, and coordinate needed updates with the GIS Department. A sample of the GIS based City Collection System in Cityworks is included as Figure 1.

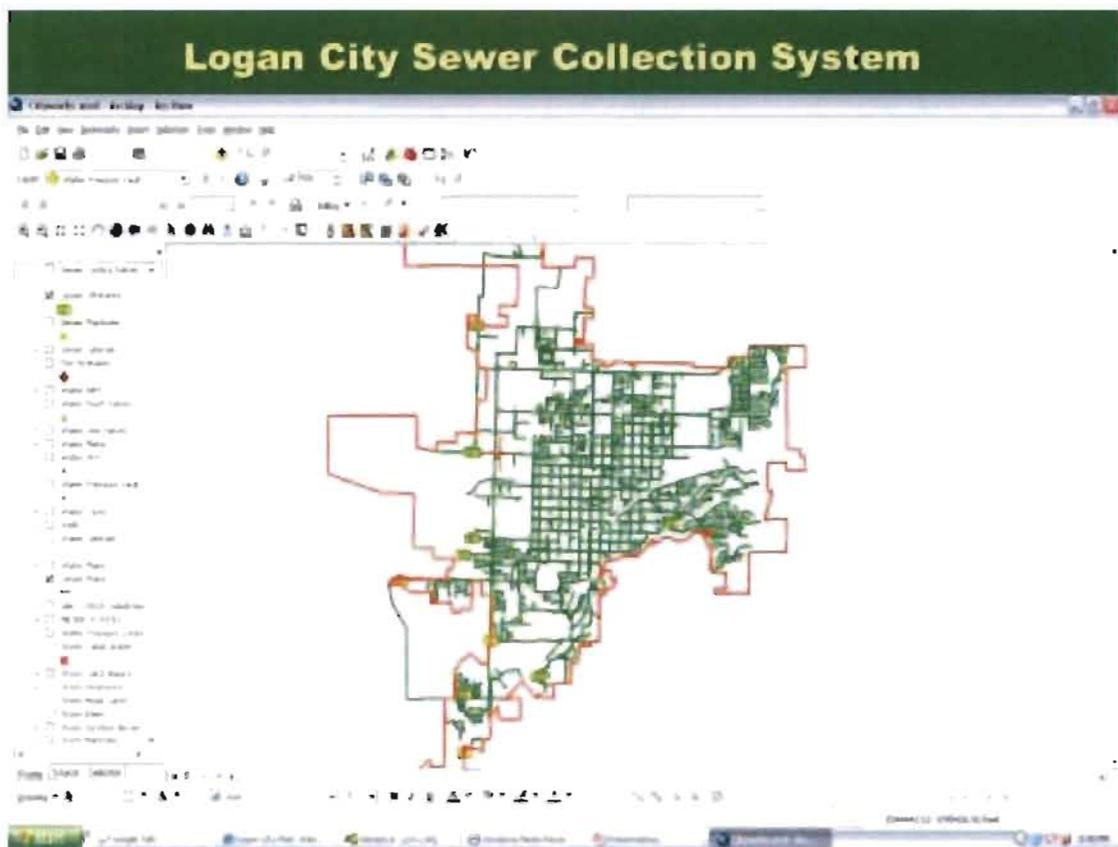


Figure 1. Map of Logan Collection System as Seen in Cityworks GIS

## System Cleaning

Sanitary sewer system cleaning is accomplished through various means and methods. Logan has established a goal to clean the entire system every two years. Figure 2 shows the goals and accomplishments for this over the course of a year.

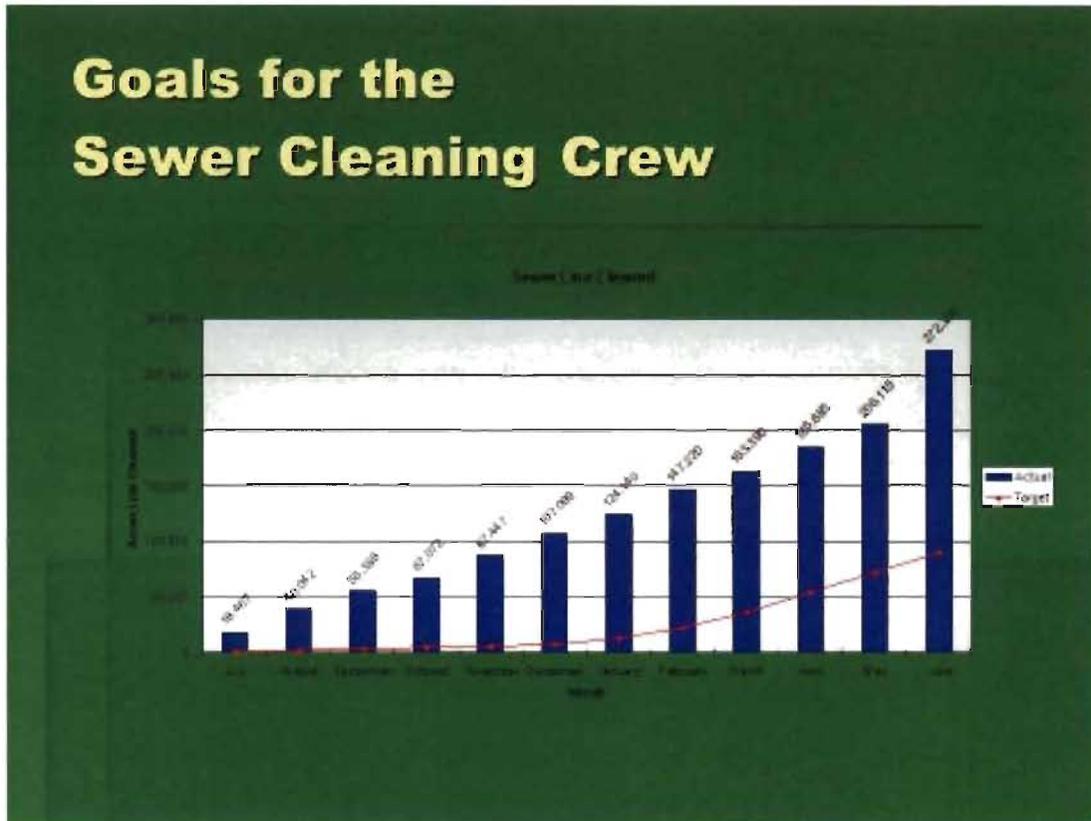


Figure 2. Collection System Cleaning Goals and Results (Metrics)

Based on experience over the past 10 years, this frequency significantly reduces the number of service calls, basement backups, controls grease problems, flushes any bellies, and issues with hot spots in the system. In addition Logan has a listing of identified hot spots which are maintained at a higher frequency. Systems which may have roots are 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, Jetting and Vacuuming
- Chemical Root Control
- Chemical FOG Control

Cleaning records are maintained on the GIS based Cityworks maintenance program. The records are available to any city employee including the Mayor and Council. Contractors working in, or around, City owned collection facilities are required to provide cleaning records associated with their work. Cleaning history is entered into the GIS on a daily basis. Should the cleaning process identify a serious defect, the problem is logged into Cityworks. The defect report should be specific as to location and type of problem. The Collection System Forman then determines needs, schedule and plans for further action. Cityworks automatically generates weekly, monthly and annual maintenance work orders. It also generates them on a priority basis such as hot spots. A sample copy of a Defect Report Form that Logan could use is included at the end of this narrative section. A screen shot of a Cityworks work order is also included as Figure 3.

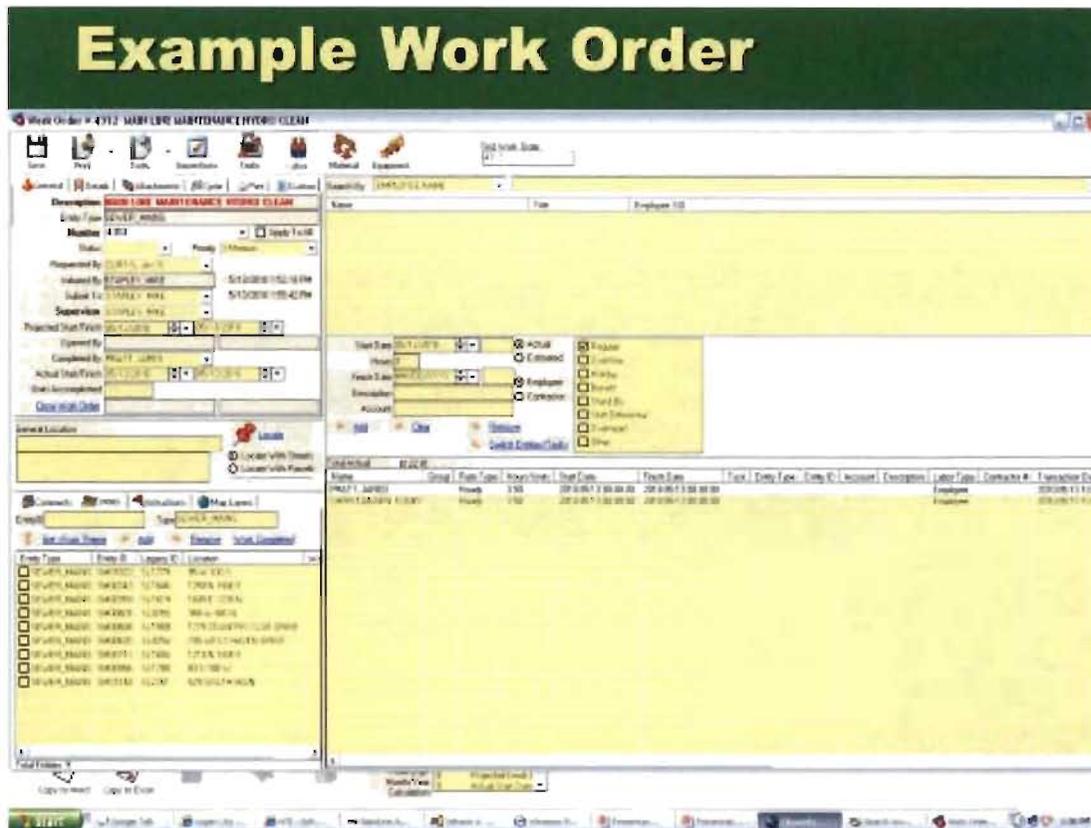


Figure 3. Example Work Order Generated by Cityworks

However, Logan prefers to immediately enter the information into Cityworks. Logan is in process of equipping each crew/vehicle with a laptop that is connected via the city wide wireless network to aid in immediate entry of reports and logs to the Cityworks program which will greatly streamline the reporting process and also result in less loss of information, or failure to properly report. A summary of cleaning activities shall be prepared annually by the Collection System Forman. This summary will normally be presented to the Division Manager, who will present it the Public Works Director and Council as needed.

### 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. Logan employs digital technology, thus the record is stored electronically. The CCTV

process also identifies the piping condition to allow for replacement prior to failure. Logan will conduct CCTV inspection with its own staff and equipment. Inspections of the system will occur every 4 years, with hot spots receiving inspection on a more frequent basis. Figure 4 shows a graphic of the goals for CCTV inspection of the collection system along with goals.

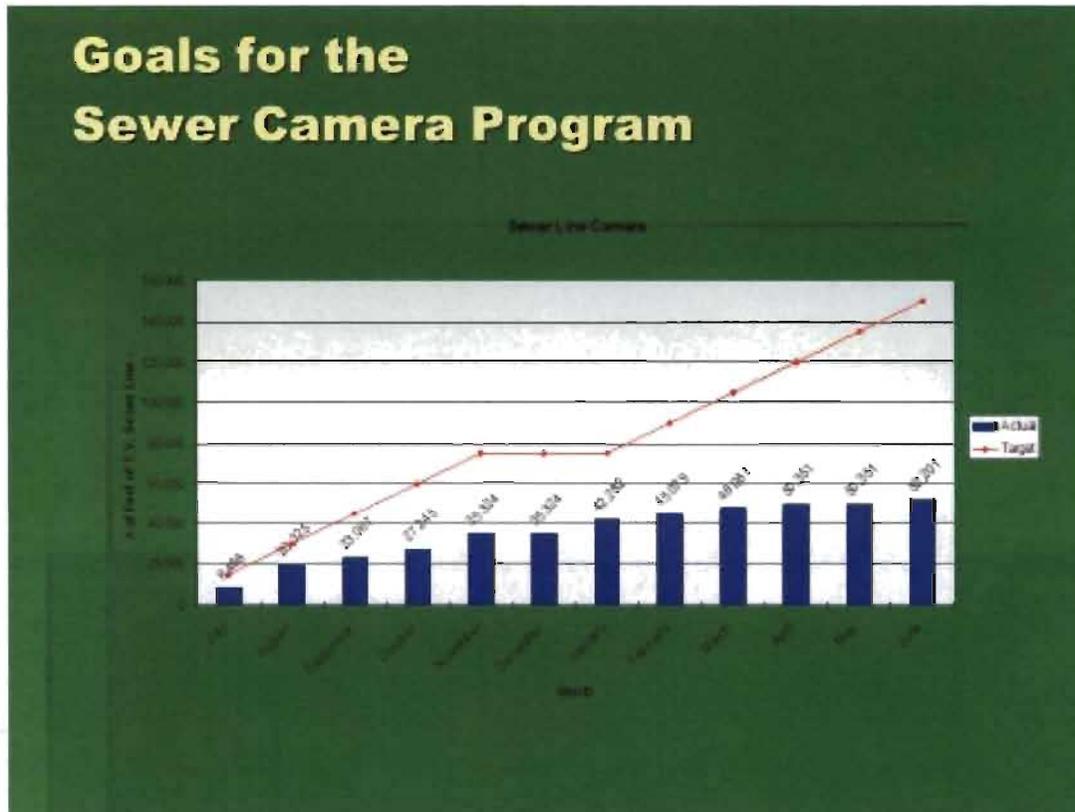


Figure 4. Collection System CCTV Inspection Goals and Results (Metrics)

This inspection frequency is based on a rotation of a certain amount of pipe per year. CCTV is also employed immediately when a systems operation or capacity is questioned or when an SSO occurs. Any defects identified during the CCTV shall be entered into the Cityworks program or should, at a minimum, be reported on a Defect Report Form and the form given to the Collection System Foreman. Repair strategies will then be evaluated. Documentation of CCTV activities will be maintained in the Cityworks system, and on the Logan Network. When contractors are employed to inspect the sanitary sewer system they will be required to submit records for their work. The Collection System Forman will prepare an annual summary of CCTV completed for



that calendar year. This summary will normally be presented to the Division Manager, who will present it the Public Works Director and Council as needed.

### **Pump Station/Pressure Line Inspection**

Staff inspects each pump station daily, and no less than every 3<sup>rd</sup> day (weekend) to assess correct operations. The stations are washed down during these inspections. Visual observation of pressure line alignments are made bi-monthly or more often in order to insure there are no leaks. Pump stations are also monitored via remote monitoring SCADA systems with alarms. Operators inspecting the pump stations complete an inspection report in Cityworks. If a problem is encountered that cannot be easily or immediately corrected, it is also reported in Cityworks which then generate a work order. If the defect has the potential to cause a sanitary sewer overflow, immediate action should be taken to insure no overflow occurs. During the inspection of the pressure sewer alignment, operators should be looking for unusual puddles. If a potential leak is identified it will be reported through the Cityworks program which will generate a work order. An evaluation will be made to determine if there is an actual leak and appropriate action taken. Logan's pressure lines (force mains) have air release valves (vents). In order to assure proper operation, the valves are individually inspected and maintained on an annual basis regardless of visible leaks. If, during the year, a leak is suspected, it is investigated and reported through Cityworks, then appropriate measures are taken to repair the valve (vent). Isolation valves on the force mains are also exercised bi-annually.

### **Manhole Inspection**

Logan schedules inspection of the sanitary sewer manholes (M/H) during cleaning of the mainlines. The M/H inspection involves the items such as; assessment of the manhole condition, identification of foreign objects and surcharging that may be present. Inspections occur on a rotation that is determined by the Cityworks program which then issues the work orders. Also, any hotspot manholes are monitored more frequently. When a potential defect is identified it is logged in Cityworks, then assessed for action. If, during the inspection process, the inspection crew believes a problem is imminent, they should immediately cease inspecting and inform the Collection System Foreman of the problem. A cleaning crew should be dispatched immediately to ensure correct system operations. All inspection records are retained via Cityworks for documentation of work performed.

### **Defect Reporting**

Defect Reports generated through the cleaning, CCTV inspection, pump station inspection or manhole inspection programs will be prioritized for correction by the the Collection System Forman and the Water Division 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 City Engineer, Division Manager and Foreman for repair. Repair methods may include:

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

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 from Cityworks should be used in the Budget process to determine what financial allocation should be made in the next Budget year. The Division 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:

- Collections Maintenance Activities
- CCTV Inspection Activities
- 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 which is logged into Cityworks. Generally, damage identification is an iterative and continuous process.

External activities which identify damages include:

- Contractor Notification of Damage
- Directional Drilling Notification of Damage (as part of Logan's work in the Right of Way permit process, directional drilling companies are required to perform a sub-surface utility inspection and pothole and locate interfering utilities. This information must be provided to the City as well)
- 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 de minimis 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, the defect should be recorded in Cityworks. If such a defect is identified and repaired immediately, it should still be noted in Cityworks. 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 likelihood 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 Division 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 Logan 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. The Logan Safety Department shall also be notified so that proper documentation of the event can take place.

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.

# Sanitary Sewer System Defect Report

Date: \_\_\_\_\_

Time: \_\_\_\_\_

Location of Defect: \_\_\_\_\_

Identified by: \_\_\_\_\_

Description of Defect: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## Urgency of Needed Corrective Action:

Immediate Action Required:

Repair or Correct Soon:

Problem Stable:

No Immediate Action Needed:

Recommended Remedial Action: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



## City of Logan

### Sewer Design Standards

The City of Logan has its own design standards for sewer collection. Their standards are based on, or modified from the APWA standards. These design standards are intended to be used in conjunction with Utah Administrative Code R317-3. Where a conflict exists between these two standards, the Administrative Code shall prevail.

The City of Logan modified standards, as well as the APWA standards are too large to include in this section. The standards, or copies thereof, can be found in hard copy at the Engineering Department, or are available on the City's website by clicking on the following link:

<http://www.loganutah.org/PW/Engineering/index.cfm#tab6>

Under the "Public Works, Engineering, Standards & Specs tab"

The Sanitary Sewer Design Standards can be found at the same location.

Additionally, by not including the standards in hard copy format in this section, it is assured that the reader is referred to the most current copy or version.



## City of Logan

### **Sanitary Sewer Overflow Action Plan (gravity and force main systems)**

Typically the City will receive notification of a backup or overflow via citizen call to the System Operations Control Center (SOCC) 435-716-9090, who will then notify the Wastewater Department. Whenever sanitary sewage leave the confines of the piping system, whether the gravity system or the force main pressure system, immediate action is necessary to prevent environmental, public health or financial damage from occurring. In addition, quick action is normally needed to mitigate damage which may have already occurred. For the purpose of this section, the following are part of the emergency action plan.

1. Basement backups
2. Sanitary sewer overflows
3. Sanitary sewer breaks which remain in the trench
4. Sewer lateral backups

All of the above conditions are likely to cause some damage. Each should be treated as an emergency, and corrective actions taken in accordance with City of Logan directions. All incidents should be reported and logged in Cityworks. Items 1 & 2 above should be reported immediately based on whether they constitute a Class 1 or Class 2 SSO. As stated in the definition section of the SSMP Introduction, a Class 1 SSO is an overflow which affects more than five private structures; affects a public, commercial or industrial structure; results in a significant public health risk; has a spill volume more than 5,000 gallons; or has reached Waters of the State. All other overflows are Class 2 SSO's. All Class 1 SSO's should be reported immediately. Class 2 SSO's should be documented and reported in the annual SSMP report and included in the Municipal Wastewater Planning Program submitted to the State. Item 3 may be reported to the local health department if, in the opinion of the responsible staff member there is potential for a public health issue. An example of where a public health issue may be present is when an excavator breaks both a sewer and a water line in the same trench. In such cases, the local health department representatives should be contacted and the situation explained. If the health representative requests further action on the part of

the City, staff should try and comply. If, in the opinion of the responsible staff member, the health department request is unreasonable, The Manager should be immediately notified. Care should always be taken to error on the side of protecting public health over financial considerations. When a basement backup occurs, the staff member responding should follow the Basement Backup Program procedures. Lateral backups, while the responsibility of the property owner, should also be treated as serious problems. Per City policy, care should be taken to not advise to the property owner in such cases concerning any action(s) they should take. The property owner is ultimately the decision maker about what actions should be taken. However, the staff member can give a copy of, or direct the owner to, the City's document entitled "Sewer Backed up? Here's What to Do". A copy is included at the end of this section, and is also found at the following location on the City's website:

[http://www.loganutah.org/PW/water\\_and\\_waste\\_water/images/1550\\_001.pdf](http://www.loganutah.org/PW/water_and_waste_water/images/1550_001.pdf)

### **Response Activities**

There are specific steps that should be followed once a notification is received that a backup or overflow may be occurring. The following figure outlines actions that could be taken when the City receives notice that a possible backup or overflow has or is occurring.





## General Notification Procedure

If a backup or overflow is or has occurred, the Standard Operating Procedure (SOP) is to immediately clean the main line with the high pressure jet and vacuum truck. This is immediately followed by video inspection of the line in order to determine condition, any defects, or help in determining the cause of the backup. Results of the cleaning and inspection activities shall be logged in the Cityworks system.

### Class 1 SSO

When a Class 1 SSO occurs specific notification requirements are needed. In such cases the following Notification procedure should be followed and documented. Failure to comply with notification requirements is a violation of R317-801.

#### Agency Notification Requirements

Both the State of Utah Division of Water Quality and the local health department should be immediately notified when an overflow is occurring. Others that may require notification include local water suppliers, affected property owners and notification may be required to Utah Division of Emergency Response and Remediation if hazardous materials are involved. The initial notification must be given within 24 hours. However, attempts should be made to notify them as soon as possible so they can observe the problem and the extent of the issue while the problem is happening. A notification form is provided to document notification activities. After an SSO has taken place and the cleanup has been done, a written report of the event should be submitted to the State DEQ within five days (unless waived). This report should be specific and should be inclusive of all work completed. If possible the report should also include a description of follow-up actions such as modeling or problem corrections that has or will take place. The event shall also be reported and logged in Cityworks.

#### Public Notification

When an SSO occurs and the extent of the overflow is significant and the damage cannot be contained, the public may be notified through proper communication channels. Per City policy, Bear River Health will coordinate such notification and determine the level needed. Should Logan need to provide notification it could include press releases to the local news agencies, leaflets



delivered to home owners or citizens, or more likely by social media via the City's public notification system through the website or by a Tweet. Notifications should be sent to those in the area of the SSO. Notification should be sufficient to insure that the public health is protected. When and if Federal laws are passed concerning notification requirements, these legal requirements are incorporated by reference in this document. In general, notification requirements should increase as the extent of the overflow increases. This shall also be logged in Cityworks.

#### Overflow Cleanup

When an overflow happens, care should be taken to clean up the environment to the extent feasible based on technology, good science and financial capabilities. The City has a SOP for overflows which consists of notification of the State and Bear River Health Department. While notification is taking place, crews shall be vacuuming the street, gutter, storm drain, outfalls and affected areas with the vacuum trucks. The storm drain(s) are then hydro cleaned and vacuumed in an effort to remove any contaminated material. Cleanup could also include removal of contaminated water and soil saturated with wastewater and toilet paper, disinfection of standing water with environmentally adequate chemicals or partitioning of the affected area from the public until natural soil microbes reduce the hazard. Cleanup is usually specific to the affected area and may differ from season to season. As such, this guide does not include specific details about cleanup. The responsible staff member in conjunction with the State DEQ, the local health department should direct activities, and coordinate with real property owner(s) in such a manner that they are all satisfied with the overall outcomes. Per City policy, Bear River Health Department is in charge during the event. However, if, during the cleaning process, the responsible staff member believes the State or the County is requesting excessive actions, the Manager should be contacted.

#### Corrective Action

All SSO's should be followed up with an analysis as to cause and possible corrective actions. Cityworks reports should be used in the analysis. An SSO which is the result of grease or root plug may be placed on the preventative maintenance list for more frequent cleaning. Serious or repetitive plugging problems may require the reconstruction of the sewer lines. An overflow that results from inadequate capacity should be followed by additional system



modeling and either flow reduction or capacity increase. If a significant or unusual weather condition caused flooding which was introduced to the sanitary sewer system incorrectly, the corrective action may include working with other agencies to try and rectify the cross connection from the storm sewer to the sanitary sewer or from home drainage systems and sump pumps. Finally, should a problem be such that it is not anticipated to reoccur, no further action may be needed.

### **Class 2 SSO**

When a Class 2 SSO occurs, it should be documented and reported in the annual SSMP report and included in the Municipal Wastewater Planning Program submitted to the State.



## City of Logan

### Log of Contact with Other Agencies/People

Location of SSO: \_\_\_\_\_ Date of SSO: \_\_\_\_\_

Agency	Phone Number	Contact Made Yes/No	Time	Remarks
Utah DWQ	801-536-4300 or 801-231-1769			
Bear River Health Department	435-792-6500			
Utah DERR	801-536-4123			
Logan Police Department	435-716-9300			
Logan Fire Department	435-716-9500			
Logan Street Department	435-716-9642			
US EPA Region VIII	Consult with DWQ			

**Other Contacts:**

Contact Made With	Phone Number	Contact Made Yes/No	Time	Remarks



## City of Logan

### Grease, Oil, Sand and Commercial Management Program

#### **Purpose:**

The purpose of this program is to provide for the control and management of grease, oil, foam, plastics, metal cuttings and sand discharges to the City's collection system. It also includes any discharges that would potentially damage the system such as low pH solutions. This program will provide a means to reduce interference with the collection system operation and pass through at the treatment facility. Within the City of Logan, and to any entity that discharges to the City collection system, this program is known as the "Pre-Treatment" program. The Pre-Treatment program is not administered by the Wastewater Division, but is administered by the Logan City Environmental Department. More information concerning the program can be found by clicking on the following link ([Pre-Treatment](#)) or on their website at:

<http://www.loganutah.org/Environmental/Waste%20Water%20Treatment/>

#### **Regulatory Authority:**

Regulatory authority to implement this program is found in the Code of Federal Regulations in 40 CFR 403, General Pretreatment Regulations. State authority for the program is given in the Utah Administrative Code R317-8-8, Pretreatment. Local Authority is found in Title 13, Chapter 13.12 of the Logan Municipal Code.

#### **Program Implementation:**

The Pre-Treatment program shall be implemented in such a manner as to minimize the impact on businesses which may be affected by this program. In all cases Logan will maintain a uniform decision making process. Logan shall allow for appeals of program requirements in accordance with the appeal process approved by Logan.



Each business or industry is regulated by the pre-treatment program. Those entities are required to provide means of treating their wastewater to an acceptable level before discharging to the City's collection system and treatment facility. Methods range from oil and sand separators as well as metal and plastic cuttings filters, to on-site wastewater treatment to decrease the strength of the wastewater. Each entity is responsible for regular maintenance and inspections, with the caveat that Logan can inspect at any time, as well as request records of third party inspections. Some third parties that are used by the entities are; private pumpers, private cleaners, and health department inspections.

Though Logan Environmental has a protocol and procedures for Pre-Treatment, the following steps detail the procedure that Logan personnel shall also follow in implementing this program.

*Evaluation:*

Logan staff will evaluate a business or an industrial user (IU) discharge to determine if grease, oil, foam, cuttings or sand management is required at the following events:

1. Issuance of a construction or remodeling building permit.
2. When the collection line in front of the business is CCTV inspected as part of the sanitary sewer system preventative maintenance program.
3. When a downstream sanitary sewer pipeline plugs due to oil, grease, sand or other non-residential type item.

No further action will be taken if it is determined that no potential exists for significant enrichment of the wastewater with grease, oil, sand or other substance. Enrichment is defined as a discharge with greater volume or concentration of grease, oil, sand or substance than that discharged from



a typical residential connection. For oil and grease, the typical residential discharge has less than 100 mg/L of oil and grease for any sample taken. Greater concentrations would be enrichment. Also, a significant buildup of oil and grease in the lateral would indicate enrichment. Sand and dirt is not typically discharged from a residential connection. Any potential for sand or dirt discharge would be enrichment. Any discharge would be compared to residential levels or concentrations.

*Implementation:*

Commercial and IU's which are determined to enrich or have the potential to enrich the wastewater with grease, oil, sand or other substances will be required to development a management plan in accordance with the following.

Commercial and Industrial Users are required to install and maintain a grease, oil and/or sand trap on their premises. They are also required to install any additional treatment required to reduce discharge concentrations to acceptable levels as established by the City. Quarterly cleaning reports may be required at the discretion of Logan. Logan shall inspect and test the grease trap and other treatment facilities on a periodic basis. Any fees associated with the inspections, or any fines associated with violations are detailed in Title 13, Chapter 13.12, with some being established by resolution. The reader is referred to the Title and/or fee resolution for the most current information.

Retesting will be done within thirty days if the treatment method such as a grease trap has not been cleaned or repaired and a cleaning/repair report submitted. Another inspection and testing fee will be assessed. Should the test results still not comply with those in the users permit, enforcement will be escalated in



accordance with the Logan's enforcement plan as detailed in each permit.

Testing and monitoring shall be completed for each item specified within the commercial / industrial user's pre-treatment permit.

Should the testing results in excess of permit limits, corrective action shall be implemented. If the violation persists, a fine based shall be assessed.

By following the steps discussed above, Logan hopes to maintain a collection system free from excessive backups and a treatment facility in compliance with UPDES discharge conditions.

**List of Acceptable Entities That Recycle Oil and Grease**

The following list of grease and oil recyclers should be given to all IU's who operate a grease trap. This list may not be all inclusive. Other recyclers may be used if it can be shown that they discharge of the waste appropriately.

<b>Recycler</b>	<b>Phone Number</b>	<b>Address</b>
Renegade Oil	801-973-7912	1141 S. 3200 W, SLC, Utah 84104
Coats and Coats	435-753-8382	813 S 2400 W, Weston, Idaho 83286
Cache Valley By Products	435-563-5807	2860 W 8600 N, Smithfield, UT 84335
Pumpers Plus	801-594-9980	1606 Seneca Dr, Roy, UT 84067



## **City of Logan**

### **System Evaluation and Capacity Assurance Plan**

Logan's System Evaluation and Capacity Assurance Plan (SECAP) is forthcoming and is not included within this document at this time. The City is currently updating their Wastewater Collection System Master Plan. When the update is complete and approved, resulting data will be used in development of a current up to date SECAP.



## City of Logan

### SSMP Monitoring and Measurement Plan

The purpose of this plan is to provide appropriate monitoring and measurement of the effectiveness of the SSMP in its entirety.

#### Records Maintenance

Logan intends to maintain appropriate records on operations and maintenance of the sanitary sewer system to validate compliance with this SSMP. However, failure to meet standards set by State DWQ or other regulatory agency during an inspection does not constitute a violation of the SSMP. Rather, deficiencies identified during inspections should be viewed as an opportunity for improvement. Logan maintains its records through the use of Cityworks.

#### Operations Records

Operations records that should be, and are, maintained include the following:

- Daily cleaning records
- CCTV inspections records
- Manhole inspection records
- Hot spot maintenance list (generated by Cityworks)
- Spot repairs (Cityworks linked to GIS system)
- Major repairs (Cityworks linked to GIS system)
- System capacity information
- SSO or basement backup records including notification documents to appropriate agencies (call logs, etc.) (records kept in Cityworks as well as Safety and Claims Department)
- Capital Improvement Plan (records and data from Cityworks is used extensively in developing the CIP. Logan's Master Plan and system model are also used)

Records will be maintained by the Foreman and Division Manager in a central location, and is also typically in the GIS system. Records may be maintained either on an electronic record or as a paper record but are mostly if not all electronic.



## **Performance Measurement (Internal Audit)**

Periodically, but not less than annually, Logan should assess and audit the effectiveness of the elements of this SSMP. All elements should be reviewed for effectiveness as well as all records should be reviewed for completeness. Logan has departmental metrics that are reviewed on a monthly basis as well, with yearly goals for monitoring and maintenance. Log books are also filled out for afterhours work to ensure that the event and corrective action have been entered into Cityworks. Use of the journal assures that Cityworks has been updated. Additionally, each vehicle is equipped with a wireless computer, so that events and maintenance can be immediately entered into Cityworks. Work Orders are also checked for completion.

An internal audit of operations is conducted monthly to see if the metrics are being met, along with an annual audit of metrics and goal achievement. The audit should include comments on the following:

- Success of the operations and maintenance program
- Success of other SSMP elements
- Adequacy of the SECAP evaluations (after it is developed)
- Discussion of SSO's and the effectiveness of the response to the event including corrective action
- Review of Defect reports and adequacy of response to eliminate such defects
- Opportunities for improvement in the SSMP or in SSO response and remediation

The annual audit report need not be extensive or long. It should, however be sufficient to document compliance with the standards set in the SSMP. The audit reports should be maintained in accordance with Logan's records retention schedule.

## **SSMP Updates**

When a plan deficiency is identified through an audit, inspection or plan review, and the deficiency requires an SSMP update, the plan may be updated at the discretion of the Division Manager, and an appropriate revision record kept.

## **SSO Evaluation and Analysis**

At least annually in the internal audit and more frequently as needed, Logan will evaluate SSO trends based on frequency, location and volume. Trend evaluation will be empirical unless a large number occur sufficient to make a statistical analysis viable. If a trend is identified, a corrective action may be appropriate. Logan's Environmental



Department oversees reporting and compliance with the SSO program. Each year, they fill out and submit a "Municipal Wastewater Planning Program Self-Assessment Report". The report details any SSOs and corrective action taken. Environmental then coordinates with the Wastewater Division and determines what, if any, trends the City may have.

### **Public Communication and Outreach**

Logan will coordinate with and update the Wastewater Board concerning the development, implementation and performance of the SSMP. Other than the Wastewater Board, in the event that there is a concerned individual or entity, Logan will accept comments, either written or verbal and will review such comments for applicability. They also have to opportunity to address the City Council during the open mike portion of the Council meeting.



## **City of Logan**

### **Sanitary Sewer System Mapping**

Logan has been very proactive in its mapping efforts. The City employed Geographical Information System (GIS) in the 1990's. It is very important to the City to have its infrastructure well mapped. The Cityworks maintenance software is coupled to the GIS so that maintenance, repairs and other actions are kept for reporting and tracking purposes. The City also has hard copies of maps in the archives.

Every new subdivision or development is also required to provide electronic mapping of the infrastructure in order to include it in the City's GIS database. The GIS Department is responsible for maintenance and upkeep of the GIS system for all departments within the City.

Each vehicle in the Wastewater Department is being equipped with a computer that is connected to the City's wireless network. Therefore, GIS mapping can be accessed and updated as necessary "on the spot" without delay and without risk of forgetting.



## City of Logan

### Basement Backup Program

Basement backups are a serious impact on a home or business owner. As such, all reasonable efforts should be taken to prevent such backups from occurring. Sewer system backups may result from several system problems. Such problems include any one or a combination of the following:

1. Laterals, including the connection to the main line, serving real properties are owned by the property owner and lateral maintenance is their responsibility. Roots, low points, structural failure, and grease are primary problems lateral owners face.
2. Backups caused by main line plugs are usually caused by roots, grease, low points, foreign objects and contractor negligence.
3. Piping system structural damage may cause basement backups. Such structural problems include age or deterioration damage, installation damage, excavation damage and trenchless technology damage.
4. Excess flow problems may surcharge a piping system and cause backups into homes. Excess flows usually occur when major storm waters inflow into sanitary sewers. Sanitary sewers are not designed for such flow. In addition, some homeowners may illegally connect foundation drains and sump pumps to the sanitary sewer system. Though not an "active" Infiltration and Inflow (I&I) program, Logan is constantly working to reduce groundwater and storm water inflow to their system via repairs to mainlines and repairs to manholes. For example, if a leak is found during routing video inspection, it is assessed and repaired.



### **Basement Backup Response**

When Logan is notified about a basement backup, staff will log the complaint in Cityworks, generate a work order, and dispatch a crew.

All backup complaints are investigated by a wastewater crew. Upstream and downstream manholes are immediately inspected to determine if backup is occurring in the mainline. Then, whether the mainline is backing up or not, the line is cleaned with the hydro jet truck. The mainline is then video inspected to determine the cause and extent of the problem, if any. If the investigation determines that the cause of the backup is only in the lateral, staff will inform the property owner of their findings. However, per City policy, personnel are not allowed to advise individuals or entities on cleanup or repair of their facility(s). The individual should seek out restoration service companies on their own through the Yellow Pages.

When it is determined that the basement backup is the result of a mainline problem, Logan will follow the policy approved by its governing authority. That policy being that the personnel can give no advice concerning the problem. Personnel can give a copy of Logan's document entitled "Sewer Backed Up? Here's What to Do". This can be handed to the owner, found by clicking on "What to Do Flyer", or accessed on the City's website at:

[http://www.loganutah.org/PW/water\\_and\\_waste\\_water/images/1550\\_001.pdf](http://www.loganutah.org/PW/water_and_waste_water/images/1550_001.pdf)

If the owner feels that they need to make a claim against the City, they could file their claim through the City's Legal Department and Safety and Claims Department with Brody Parker.

### **Backup Prevention Design Standard**

Logan promotes system designs which minimize backups and insure proper operations. To this end Logan has a design standard for all system construction. In addition, Logan complies with state design standards contained in R317-3. Finally for laterals, the following policy applies:



## **Policy on the Installation of Backflow Valves**

### **Reference Regulatory Documents:**

The following regulations are referenced in the establishment of this policy:

- Utah Code Title 15A-2-103(c). This code section adopts the 2009 edition of the International Plumbing Code.
- The 2009 International Plumbing Code, section 715 Sewage Backflow.

### **Logan Policy:**

- The State of Utah has adopted the International Plumbing Code (IPC) as its plumbing building standard;
- Logan uses the IPC as their statute for plumbing construction and installation;
- And the IPC requires the installation of a sewage backwater valve "where the overflow rim of the lowest plumbing fixtures are below the next upstream manhole in the public sewer."

Therefore, for new construction, Logan requires the installation of backwater valves as stipulated by the IPC already propagated for all new construction.



## **City of Logan No-Fault Sewage Backup Claims Program**

Logan does not have a formal Sewage Backup Claims Program. Other Cities and service providers may have a program wherein they assist in the cleanup of real and personal property, and/or compensate persons for the loss of real or personal property, destroyed or damaged as the result of a backup of facilities, regardless of fault.

When it is determined that the backup is the result of a mainline problem, Logan will follow the policy approved by its governing authority. That policy being that the personnel can give no advice concerning the problem. Personnel can give a copy of Logan's document entitled "*Sewer Backed Up? Here's What to Do*". This can be handed to the owner, found by clicking on "[What to Do Flyer](#)", or accessed on the City's website at:

[http://www.loganutah.org/PW/water\\_and\\_waste\\_water/images/1550\\_001.pdf](http://www.loganutah.org/PW/water_and_waste_water/images/1550_001.pdf)

If the owner feels that they need to make a claim against the City, they could file their claim through the City's Legal Department and Safety and Claims Department with Brody Parker

### **Claims from Other Governmental Agencies:**

Notwithstanding any other provisions of this Policy, no application shall be accepted from the United States or any of its agencies, the State of Utah or any political subdivision.