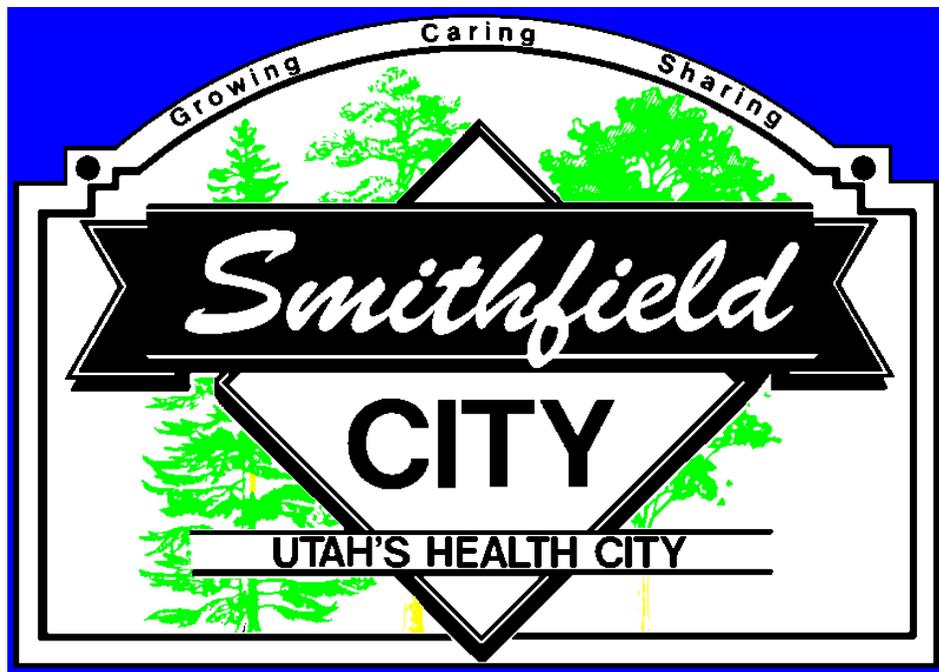


SMITHFIELD CITY

Sanitary Sewer Management Plan



Adopted May 28, 2014

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Smithfield City

Sanitary Sewer Management Plan

Introduction

Smithfield City was founded in 1859 and incorporated as a city on February 6, 1868 under the laws of the Territory of Utah. From its beginning, Smithfield had been served by variety of outhouses, privies, and septic systems until 1989 at which time the city embarked on its largest public works project which brought the construction of a sewage collection system to the residents of Smithfield. The project, designed by Forsgren-Perkins Engineering and constructed by Whitaker Construction of Brigham City, Utah was completed in the summer of 1991 and served a population of 5,556 residents. Once operational, the system was credited with ushering in the most significant population growth in the history of the city. Despite a near doubling of the city's population (10,873 January 2014 est.) the original construction drawings remain a valuable resource for the city and are still used for locating the various public utility lines that were encountered during the initial construction project.

The original project used reinforced concrete pipe exclusively in the construction of the collection system and the transmission line to the Logan City lagoons where it was treated. As the city has grown over the years and subdivisions have been added, the system has expanded with all collection and service lines being constructed of PVC pipe.

Smithfield was fortunate to be able to gravity flow all of the collection system. The transmission line was also constructed for gravity flow with the exception of a single pump station located just north of the Logan lagoons. In addition to Smithfield, the transmission line and the pump station are both used by Hyde Park City and parts of Logan City. After more than 20 years of service, the transmission line remains in excellent condition while the pump station has suffered through ongoing maintenance challenges and component failure as it approached its life expectancy. Beginning in 2013 a project was undertaken to replace the pump station which addressed the shortcomings experienced in the original design and provided needed capacity for the three cities. Operation and maintenance of the new pump station is the sole responsibility of Logan City.

Construction of the initial sanitary sewer collection system carried with it another benefit to the citizens of Smithfield and the surrounding area. As trenches were excavated and asphalt was cut, the Smithfield Irrigation Company was able to sister a pressurized irrigation system pipe alongside the sewer pipe, making it more economically feasible for the pressurized irrigation system to be installed. Working with the Board of Water Resources on the design and finance package, the irrigation company Board of Directors was able to secure the support of shareholders and construct the system in roughly 60% of the city at that time.

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 to reduce and prevent SSOs, as well as minimize impacts of any SSOs that occur. Smithfield City 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 reference them 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 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.

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.

SSO REPORTING. SSOs shall be reported as follows:

(1) 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.

(2) Class 2 SSOs shall be reported on an annual basis in the USMP annual report.

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

Smithfield City has a sewer use ordinance 13.16 that has been adopted by the city council. This ordinance contains the following items as stipulated by Utah State Code R317-801:

1. Prohibition on unauthorized discharges, 13.16.300, 13.16.250
2. Requirement that sewers be constructed and maintained in accordance with R317-3,
3. Ensures access or easements for maintenance, inspections and repairs, 13.16.240
4. Has the ability to limit debris which obstruct or inhibit the flow in sewers such as foreign objects or grease and oil,
5. Allows for the inspection of industrial users 13.16.360
6. Provides for the enforcement of ordinance or rules violations.

Plan Overview

The following elements are included in this Sanitary Sewer Management Plan (SSMP):

1. General Information
2. Operations and Maintenance Program
3. Sewer Design Standards
4. Sanitary Sewer Overflow Response Plan
5. Grease, Oil and Sand Interceptor Management Program
6. System Evaluation and Capacity Assurance Plan
7. SSMP Monitoring and Measurement Plan
8. Sewer System Mapping 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. The sewer collection system will be under the duties of the water and sewer crew. Smithfield City is still small enough that it relies

on streets and parks departments to help on occasion, some cross training will occur, however only the employees needed to maintain the system on a daily basis will receive specialized training and only these trained employees will be expected to repair or come in contact with sewer problems that require use of said specialized or hazardous training.

Smithfield City 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. [Public entity] 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.

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General Information

This Sanitary Sewer Management Plan was adopted by Smithfield City mayor and council on May 28, 2014 at a regular scheduled public meeting.

The responsible representative(s), position and phone number for Smithfield City with regard to this SSMP are:

Craig Giles	City Manager	cgiles@smithfieldcity.org	435-792-7997
Doug Peterson	Work Coordinator	dpetersen@smithfieldcity.org	435-757-9962
Clay Bodily	City Engineer	cbodily@smithfieldcity.org	435-994-1233
Jim Harps	Pretreatment	jim.harps@loganutah.org	435-363-5823

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.

Jim Gass (City Manager)

This individual is responsible for overall management of the sanitary sewer collection system. Responsibilities include working with governance 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.

Doug Petersen (Public Works Coordinator)

This individual is responsible for daily implementation of the SSMP. This includes maintenance activities, compliance with SORP requirements, and monitoring and measurement reporting requirements.

Kyle Baird (Pretreatment Program Coordinator)

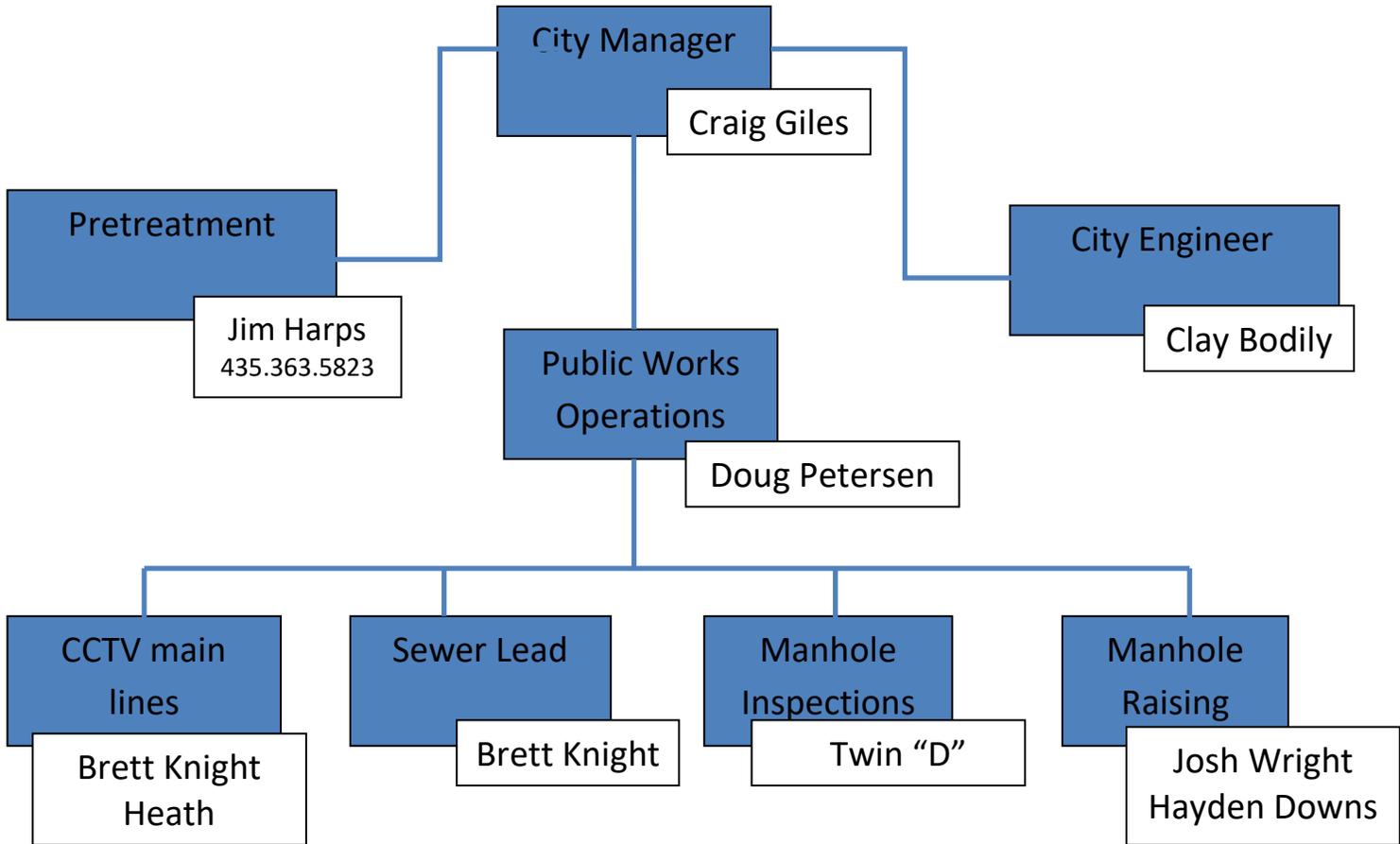
This individual is responsible for implementation of the pretreatment program including the fats oil and grease program.

Clay Bodily (Assistant Engineer)

This individual is responsible for the development and maintenance of collection system design standards, maintenance of collection system mapping and maintenance of the SECAP program.

Organization Chart

Below is the organization chart associated with the SSMP.



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Operations and Maintenance Program

Smithfield City 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:

1. System Mapping
2. System Cleaning
3. System CCTV Inspection
4. Manhole Inspection
5. Defect Reporting
6. Damage Assessment

System Mapping

An up to date map is essential for effective system operations. Smithfield City has assigned the mapping responsibility to the Engineering Department who prepares and 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. Current mapping is available at the following locations:

1. The Engineering Dept. office located at 96 South Main St,
2. The sewer operations trucks.
3. The sewer cleaning truck.
4. The city office reception's desk for a fee as prescribed in the prevailing fee schedule. Advanced notice is required.

Should any employee identify an error in the mapping, they should document the error on a defect report and give it to the engineering department for correction.

System Cleaning

Sanitary sewer system cleaning is accomplished through various means and methods. Smithfield City has established a goal to clean the high priority lines every two years and the entire main line system every five to seven 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 Smithfield City has a listing of identified hot spots which are 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:

1. Sewer cleaning truck hydraulic cleaning

2. Roto-Rooter mechanical rodding

Cleaning records are maintained at the Engineering Department office. Smithfield City sewer cleaning employees are required to provide cleaning records associated with their work. Cleaning history may also be entered into the GIS. Should the cleaning process identify a serious defect, the problem should be reported to the public works coordinator. The sewer lead employee should be notified of defects 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 coordinator or designee. This summary will normally be presented to the City Manager for review.

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, Smithfield City will contract for this service and conduct the CCTV inspection with city employees. Inspections of the system will occur as the system is cleaned and jetted with the frequency being based on the age of the pipe and prior history. When contractors are employed to inspect the sanitary sewer system using CCTV they will be required to submit records for their work. 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 coordinator or engineer if the site is not localized for repairs. Documentation of CCTV activities will be maintained at the city maintenance office. The public works coordinator will prepare an annual summary of CCTV completed for that calendar year.

Manhole Inspection

Smithfield City schedules inspection of the sanitary sewer manholes (M/H) every year. The M/H inspection involves the identification of foreign objects and surcharging that may be present, as well as the overall condition of the manhole. Crews inspecting the manholes will be given maps by the Engineering Department 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 coordinator 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 Engineering Department. 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 and public works coordinator for repair. Repair methods may include:

1. Spot Excavation Repairs
2. Spot Band Repairs
3. Segment Excavation Replacements
4. Segment Lining
5. 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 does 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 sewer lead should include outstanding defects in the annual report.

Collection System Damage

Collection system 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. Collection system 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 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 employees 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 that city employees 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 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 City 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 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.

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: _____

SMITHFIELD CITY

Sewer Design Standards

Referenced in this section are the sanitary sewer design standards for Smithfield City. 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.

Smithfield City uses the Sanitary Sewerage design standards as prescribed in the 2012 (or most current version) of the APWA Manual of Standard Specifications and the Manual of Standard Plans (Utah Chapter). These manuals are available from Utah State University in the LTAP center office. If these drawings or specifications are in questioned, found lacking, or in conflict. The most restrictive of the following three shall be used: the interpretation of the manual, Utah Administrative Code R317-3, or the City Engineers explanation.

In addition to the APWA Standards and the requirements of the Utah Administrative Code R317-3, all sewer main lines must be pressurized to five pounds per square inch, be cleaned, and be CCTV inspected.

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Sanitary Sewer Overflow Action Plan

Whenever sanitary sewage leaves the confines of the piping 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

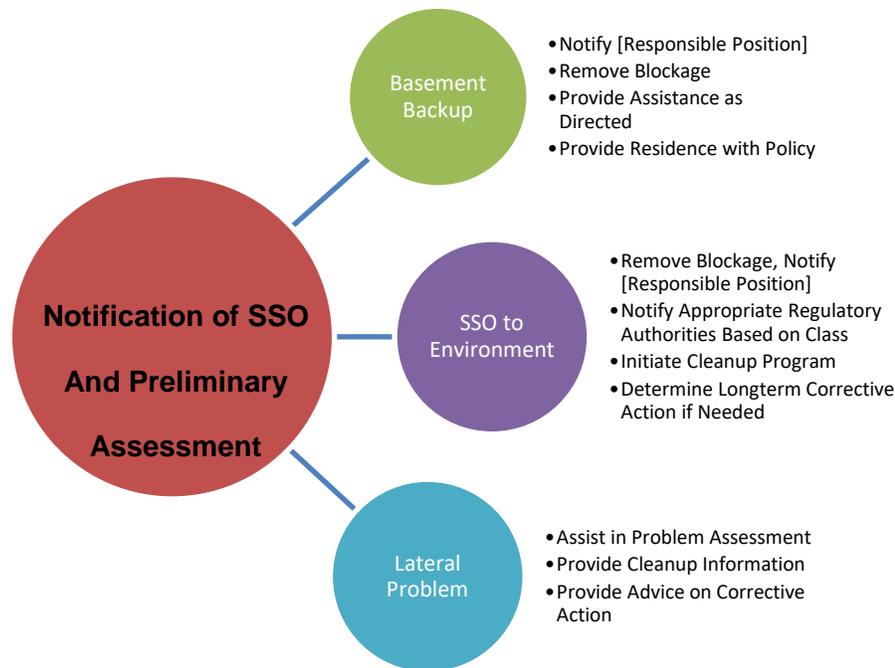
All of the above conditions are likely to cause some damage. Each should be treated as an emergency, and corrective actions taken in accordance with Smithfield City directions. Items 1 & 2 above should be reported immediately based on whether they constitute a Class 1 or Class 2 SSO. As stated in the 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 are to be reported to the Division of Water Quality in accordance with the agency notification procedures outlined in this Plan. Class 2 SSO's are to be documented and reported on an annual basis in the annual Sanitary Sewer Management Program report to the Division of Water Quality.

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 Bear River Health Department representatives should be contacted and the situation explained. If the health department representative requests further action on the part of Smithfield City, city employees should try and comply. If, in the opinion of the responsible staff member, the health department request is unreasonable, the City Manager and Mayor 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 responding city employee should have the resident immediately contact their insurance company for guidance related to proper procedures for managing basement backups. Lateral backups, while the responsibility of the property owner, should also be treated as serious problems. Care should be taken to provide advice to the property owner in such cases, but the property owner is ultimately the decision maker about what actions should be taken.

Response Activities

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



General Notification Procedure

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.

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. Normally the local health department will coordinate such notification. Should Smithfield City need to provide notification it could include press releases to the local radio and television agencies. In addition, The Herald Journal, posting on the city's website, and leaflets delivered to home owners or citizens in the area of the SSO should be considered. Use of the city's public e-mail and text messaging system should also be used when appropriate. 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.

Overflow Cleanup

When an overflow occurs, care should be taken to contain the overflow and clean up the environment to the extent feasible. The cleanup may be based on the technology, good science and the financial capabilities of the city. Cleanup could 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 city personnel in conjunction with the State DEQ, the local health department and the owner of real property should direct activities in such a manner that they are all satisfied with the overall outcomes. If, during the cleaning process, the city personnel responsible for the clean-up 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. 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.

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Log of Contact with Other Agencies/People

Location of SSO: _____

Date of SSO: _____

Agency	Phone Number	Contact Made Yes/No	Time (MST)	Remarks
Utah DWQ	1(801)536-4300 or (801)231-1769			
Bear River Health Department	(435)716.8771 (435)792.6570			
Utah DERR	1(801)536-4123			
Smithfield Police Department	(435)563.8502			
Smithfield Fire Department	(435)563.3056 (435)757.1579			
Applicable Water Agency	(435)563.6226x0			
US EPA Region VIII	Consult with DWQ			

Other Contacts:

Contact Made With	Phone Number	Contact Made Yes/No	Time (MST)	Remarks
Mayor Darrel Simmons	(435)757.5688			
Manager Jim Gass	(435)757.2224			
KSL-5	1(801)575.5555			
KVNU 610 AM	(435)752.5141			
The Herald Journal	(435)752.2121			
Salt Lake City Tribune	1(800)662.9186			
KSTU-13	1(801)832.1300			
Logan City (ESAU)	(435)716.9752			

SMITHFIELD CITY

Grease, Oil and Sand Management Program

Purpose:

The purpose of this program is to provide for the control and management of grease, oil and sand discharges to the Smithfield City sanitary sewer collection system. This program will provide a means to reduce interference with the collection system operation and pass through at the treatment plant.

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 section 13.16.300 through 13.16.450 of the Smithfield City code.

Program Implementation:

This 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, Smithfield City, in conjunction with the sewage treatment plant operator, will maintain a uniform decision making process. Smithfield City shall allow for appeals of program requirements in accordance with the appeal process approved by the city council. The following steps detail the procedure that Smithfield City personnel shall follow in implementing this program.

Evaluation:

Smithfield City Engineering Department and the sewage treatment plant operator (STPO) will evaluate an industrial user (IU) discharge to determine if grease, oil 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 or sand.

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

Implementation:

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

TRACK 1

This track is available for IU's which exist at the time of program implementation. However, not all existing IU's may be permitted to use it. Determination will be made on a case by case basis. IU's on this track will be permitted to either pay a contractor or Smithfield City to clean the main sewer line from their place of business to the nearest trunk line. A trunk line is any sewer line which has an inside diameter of eighteen inches or larger or has been classified as a trunk line by Smithfield City. Cleaning frequency will be determined by inspections performed by Smithfield City.

TRACK 2

This track requires the IU to install and maintain a grease, oil and/or sand trap on their premises. Cleaning reports may be required at the discretion of the sewage treatment plant operator. The sewage treatment plant operator shall inspect and test the grease trap on a periodic basis. The following fees shall apply:

Inspection Fee	\$ determined by (STPO)
Testing Fee	\$ determined by (STPO)

Should the testing reveal grease and oil in excess of 100 mg/L, a fine for each pound of oil and grease discharged for the past reporting period shall be assessed. The pounds of grease and oil shall be determined by using the following equation:

$$(\text{Total Reporting Period water use in MG})(\text{mg/L O\&G} - 100)(8.34)$$

The IU will also be ordered to return to compliance immediately. Retesting will be done within thirty days if the trap has not been cleaned and a cleaning report submitted. Another inspection and testing fee will be assessed. Should the test results still not comply with the 100 mg/L oil and grease limit, enforcement will be escalated in accordance with the STPO's Enforcement Response Plan. In addition, an entity which is frequently violating the 100 mg/L limit may be issued a pretreatment permit in order to further regulate the IU

Should the testing reveal TSS in excess of 250 mg/L, a fine for each pound of TSS discharged for the past reporting period shall be assessed. The pounds of TSS shall be determined by using the following equation:

(Total Reporting Period water use in MG)(mg/L TSS - 250)(8.34)

The IU will also be ordered to return to compliance immediately. Retesting will be done within thirty days if the trap has not been cleaned and a cleaning report submitted. Another inspection and testing fee will be assessed. Should the test results still not comply with the 250 mg/L TSS surcharge limit, the IU will be placed on a continuous inspection, testing and the surcharge schedule for TSS.

By following the steps discussed above, Smithfield City hopes to maintain a collection system free from excessive backups and a treatment plant 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.

Recycler	Phone Number	Address
Logan Landfill	435-716-9791	200 North 1400 West, Logan, UT
Renegrade Oil	801-973-7912	1141 S. 3200 W., Salt Lake City, UT
N. Logan City Shop	435-753-5226	1650 North 1143 East, N. Logan, UT

SMITHFIELD CITY

System Evaluation and Capacity Assurance Plan

Smithfield City public works practices the belief that one of the keys to preventing sanitary sewer overflows is to evaluate system capacity and to monitor flows throughout the system in order to ensure that capacities are not exceeded. Should a collection sub-system exceed the capacity of the pipes, the system will be immediately re-evaluated and corrective action taken. The following elements are all part of Smithfield's SECAP program.

1. Initial Capacity Modeling and Master Planning
2. Flow Monitoring
3. Surcharge Flow Analysis
4. Re-evaluation Modeling and Analysis
5. Flow Reduction Evaluation and Implementation
6. Capacity Increase Evaluation and Implementation

The actual implementation process associated with each of the elements above is shown in figure on the next page. This flow chart process forms the backbone of the SECAP.

Initial Capacity Evaluation

When the original collection system was built between 1989 and 1991 it was designed based on an average flow of 100 gallons per capital per day with consideration given to the current and projected land uses. Average flow during the years since the system became operational has held consistently at 70 to 75 gallons per capital per day.

In 2012, with the city in the midst of its largest growth period in its history, Smithfield City arranged for an analysis and modeling of each critical subsystem contained within the collection system. Subsystems are segregated based on the branching of the collection system. The analysis validated the current observation that the system was operating within its capacity in all areas due in part to the average flow being less than that used for the original design. However as the city grows, there is an increased probability that industrial and commercial users could adversely affect this average. In addition, concentration of high density housing could increase flows in areas originally meant for single family residential or other lower flow users which could also have a negative impact. Therefore, it's important for the city to remain vigilant in all areas of the collection system.

Flow Monitoring

Logan City collects monthly flow records from the flume located on the Logan/Cache Airport just north of Airport Road (2500 North Street) as part of the treatment billing process. Smithfield City employees also collect monthly flow records from the Palmer-Bowlus flume located on Hyde Park Lane upstream from the airport flume. By comparing the flow readings taken at the two locations, Smithfield is able to monitor any flow inconsistencies or irregularities. Also, the recent system analysis identified areas

that are likely to experience flow capacity issues in the coming years. Periodic monitoring of these areas will assist in establishing trends to better identify when action may be necessary.

Surcharge Flow Analysis

If any collection subsystem is identified as having any of the following problems the system will be evaluated to determine future action. These problems are:

1. Sanitary Sewer Overflow to the Environment
2. Sanitary Sewer Break Remaining in the Trench
3. Basement Backup
4. Observed Subsystem Surcharging.

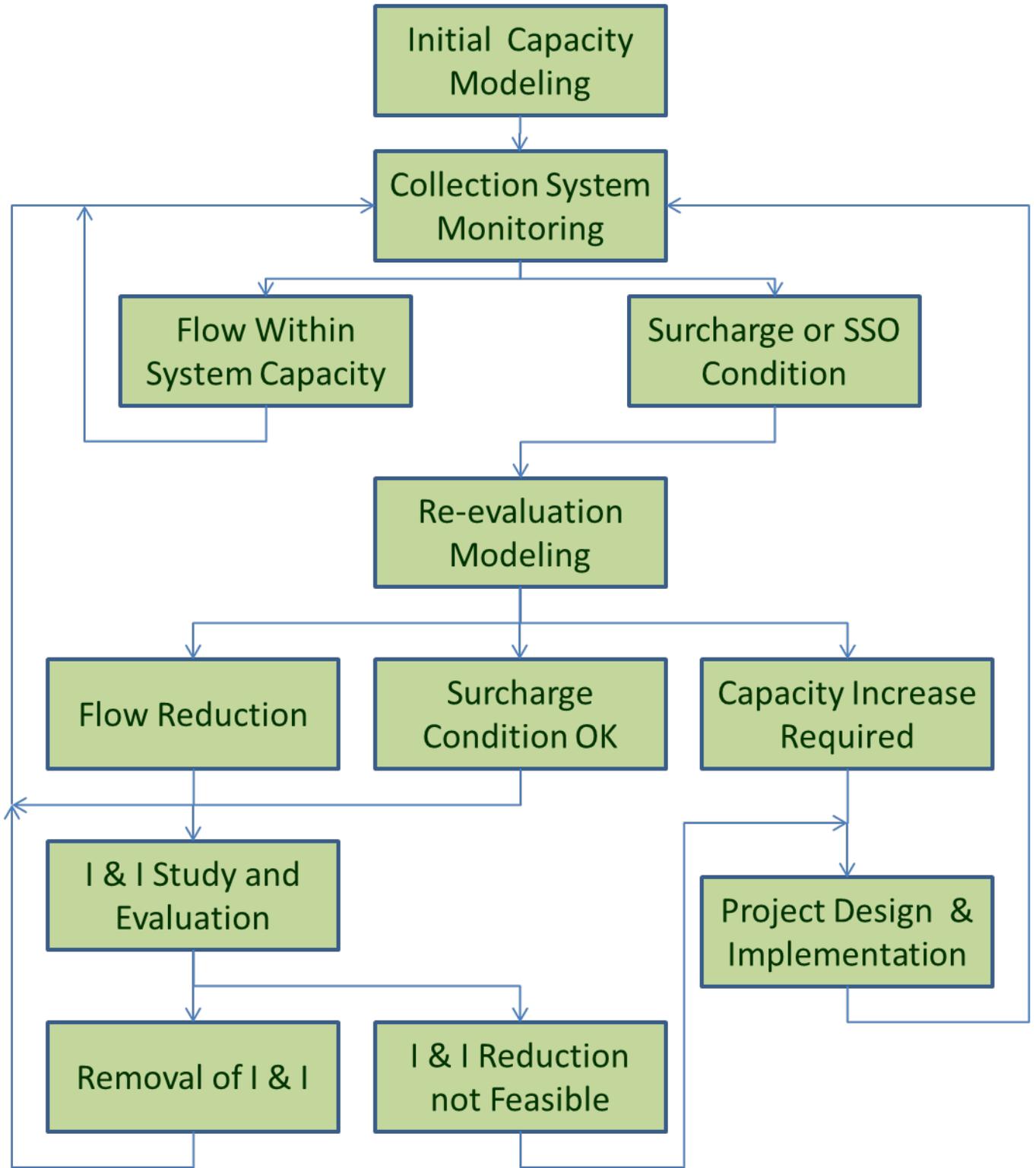
The flow evaluation may result in multiple conclusions, some of which may require further action. Possible conclusions and their further action are listed below. This list is not inclusive nor does it require the specific action detailed. These are given as possible examples and will be used by the city engineer to determine correct future action.

Flow Reduction Evaluation

Should excessive flows be identified during the surcharge analysis, the solution may be to proceed with an inflow and infiltration study with the ultimate goal of reducing flows. These flow reductions may be achieved by reconstruction of specific areas, internal spot repairs, removing illegal storm water or sump pump connections from homes or storm water systems, and system grouting. Tools used in flow reduction may include extensive in line camera inspection, smoke testing, dye testing, and increased inspection or flow monitoring.

Foreign Objects or Obstructions

There are multiple foreign objects which may be found in sewers. These may include objects knocked into sewers during construction, illegally placed in sewer manholes, roots, grease and soaps, bellies in piping systems, etc. Each of these problems should be found during the backup investigation and a plan developed to insure the problem does not reoccur. Types of action may include increased cleaning frequency, spot repairs, greater pretreatment activity, lining of pipes,



SECAP Flow Chart

and other corrective actions which resolve the problem.

Allowable Surcharging

Some piping systems may be able to accept surcharges without creating problems. Such systems may be deep and surcharging occurs below the level of basements or manhole rims, or they may be in areas where there are no connections. In such cases the resolution of the observed surcharge may just be additional monitoring.

Revised System Modeling

Where piping system problems cannot be resolved in a less expensive way, the system may be further modeled to determine upgrade needs. Modeling should include known flow information and future projections. Since the system has been shown to have problems, further modeling should be more conservative in flow projections. Revised modeling should follow the guides given next.

Re-evaluation Modeling and Analysis

When a subsystem needs demonstrate unresolvable problems by less costly means, the subsystem should be re-modeled and required action determined. Revised modeling may show that flow reduction may still be viable or it may show that the system can allow current surcharge conditions. Most likely, however, the modeling will normally form the basis for construction to enlarge the subsystem capacity. Modeling should be done either by:

1. Qualified consulting engineer using commercially available software
2. Smithfield City Engineer using spreadsheet models

It is important to insure the modeling is comprehensive and includes all the potential flow sources. While the current area zoning and land use planning should be used in the model development, care should be taken to discuss possible changes with appropriate officials. Where possible zoning changes appear likely, the model should be re-run with the revised zoning alternatives. Once a resolution has been selected, the resulting project should be placed on the capital improvement plan (CIP).

Capacity Increase Evaluation and Implementation

The capacity evaluation should be expedited based on the impact of the problem on the environment and the possible repeat of the overflow/backup/surcharging. Details on prioritization are given in the next section.

Systems requiring additional capacity should be engineered for expansion by qualified staff or engineering consultants. Project design should be based on acceptable engineering standards and should comply with State of Utah regulations found in R317-3. Easements should be obtained, where needed, and the design should include an analysis of other utilities in the vicinity. Design review should be done by the applicable regulatory agency, as appropriate. A design report should be prepared for each project. Where appropriate, the subsystem modeling may be substituted for the design report.

Finalized projects should be placed on the CIP.

System Improvement Prioritization

The priority for improvement should follow the following general guidelines:

High Priority Projects

When there is significant potential for sanitary sewer overflows, or frequent basement backups, the improvement should be considered a high priority and any available budget should be allocated to the project.

Medium Priority Projects

Where the problem is infrequent and the possibility exists that it may not repeat in the near future, the priority for correction is medium. Medium priority projects may be delayed until appropriate budget is available or the priority is adjusted to high priority. Should an SSO or basement backup repeat in the same area, the priority should be immediately revised.

Low Priority Projects

If the observed problem is infrequent, there is possibility that it may not repeat in the near future and the possibility that increased flow in the subsystem is low, the correct priority is low. Low priority projects will be placed in the budget process and evaluated against other needs. These projects will eventually be completed, but the work is not prioritized above plant and equipment needs.

Capital Improvement Plan

The CIP is part of Smithfield City's budgeting process to insure sufficient revenue to address identified weaknesses in the sanitary sewer system. Items which have been identified as needing a structural fix are placed on the CIP list and the cost for each estimated. Sources of funding should be identified for all high priority projects so that SSO's or other failures do not re-occur. Forecasts of available funding for medium and low priority projects should be made to facilitate future revenue needs.

SMITHFIELD CITY

SSMP Monitoring and Measurement Plan

Purpose

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

Records Maintenance

Smithfield City 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.

Operations Records

Operations records that should be maintained include the following:

1. Daily cleaning records
2. CCTV inspections records
3. Manhole inspection records
4. Hot spot maintenance list
5. Spot repairs
6. Major repairs
7. SSO or basement backup records including notification documents to appropriate agencies (call logs, etc.)
8. Capital Improvement Plan

Records will be maintained by the Public Works Sewer Department if in hard copy or the engineering department if in GIS. Hard copy records should be done on the appropriate forms previously created by the city manager.

Performance Measurement (Internal Audit)

Periodically, staff 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. An internal audit report should be prepared preferably annually but no less than once every five years which comments on the following:

1. Success of the operations and maintenance program
2. Success of other SSMP elements
3. Adequacy of the SECAP evaluations
4. Discussion of SSO's and the effectiveness of the response to the event including corrective action

5. Review of Defect reports and adequacy of response to eliminate such defects
6. Opportunities for improvement in the SSMP or in SSO response and remediation

The annual audit report shall be in the form mandated by the state Division of Water Quality. It should be sufficient to document compliance with the standards set in the SSMP. The audit reports should be maintained in for a period of five years.

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 city engineer. SSMP updates should be recorded in a revision index maintained by said engineer.

SSO Evaluation and Analysis

At least annually in the internal audit and more frequently as needed, Smithfield's sewer department 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.

Public Communication and Outreach

Smithfield City will reach out to the public about the development, implementation and performance of the SSMP. This communication may be accomplished by any of the following methods:

1. Public hearings
2. Public meetings
3. Newsletters
4. Direct mailing
5. City's mass messaging system
6. Public Media (Facebook, Twitter)

Smithfield City will accept comments, either written or verbal and will review such comments for applicability

