



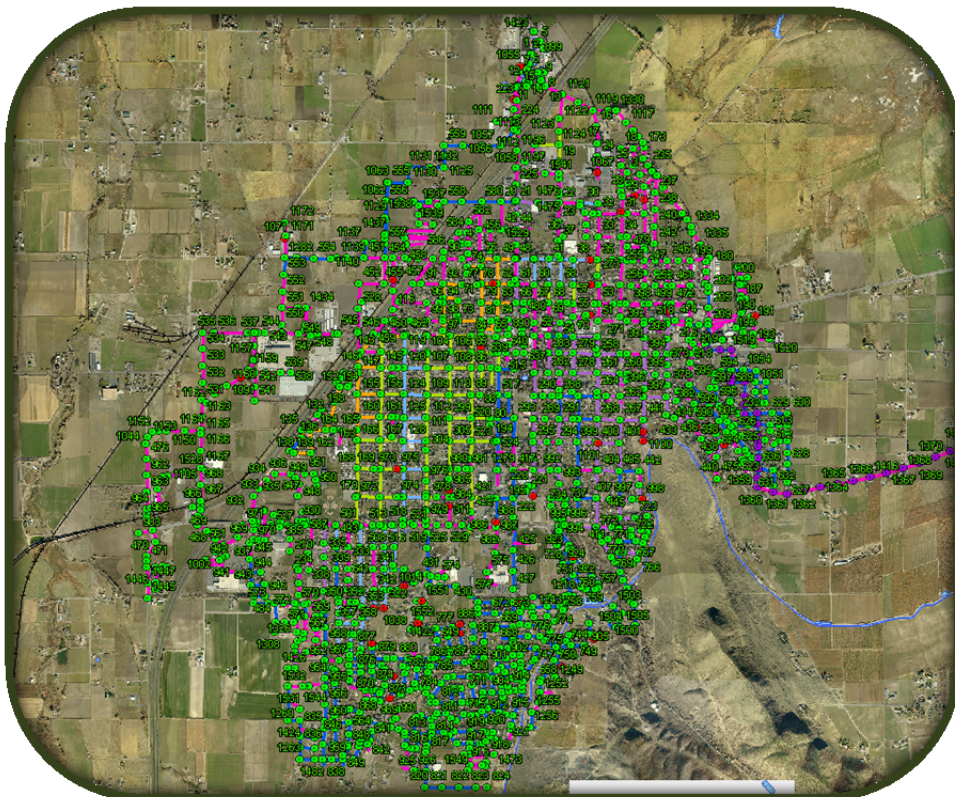
**Payson City Corporation**

**Collection System**

**Sanitary Sewer Management**

**Plan**

**(SSMP)**



**2014**

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## **Introduction**

Payson City is a municipality established in Utah under the Utah State Code. The City was established in 1853 and provides sewage collection and/or treatment to approximately twenty thousand (20,000) residents in Payson City, Elk Ridge and Woodland Hills. This Sanitary Sewer 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 SSO's, as well as minimize impacts of any SSO's 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) or FOG (Fats Oils and Grease) Program.
- 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 "Sanitary Sewer 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 (5) 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 SSO's 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) SSO's 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.

SSO REPORTING. SSO's shall be reported as follows:

- 1) A Class 1 SSO shall be reported orally within twenty-four (24) hours 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 SSO's shall be reported on an annual basis in the USMP annual report.
  - a) 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

Payson City has a sewer use ordinance that has been adopted by the governing body. This ordinance contains 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 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 or Fats, Oils and Grease Program
- System Evaluation and Capacity Assurance Plan
- SSMP Monitoring and Measurement Plan
- Sewer System Mapping Program
- Basement Backup Program
- No Fault Sewage Backup Claims 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 of Payson City 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, Payson 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. Payson City 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.

## General Information

This Sanitary Sewer Management Plan was adopted by Payson City Council on

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

Public Works Director:	Travis Jockumsen	801.465.5235
Wastewater Treatment Plant Superintendent:	Jeff Hiatt	801.404.6455
Pretreatment Coordinator	Sarah Leavitt	801.404.6476
Operator	Gary Jacobson	801.404.1727
Operator	Tyler Lowe	801.404.9992

### **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 overseeing the actions of the Wastewater Treatment Plant Superintendent.

#### **Wastewater Treatment Plant Superintendent**

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.

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

This individual is responsible for the maintenance of the collection system, maintenance of collection system mapping and maintenance of the SECAP Program.

The above responsibilities can be disturbed to the staff at the Wastewater Treatment Plant and Sanitary Sewer Collection System.

## **General Information**

### **Pretreatment Program Coordinator**

This individual is responsible for implementation of the pretreatment program including the Fats, Oils, Grease and Sand (FOGS) Program.

### **Operator**

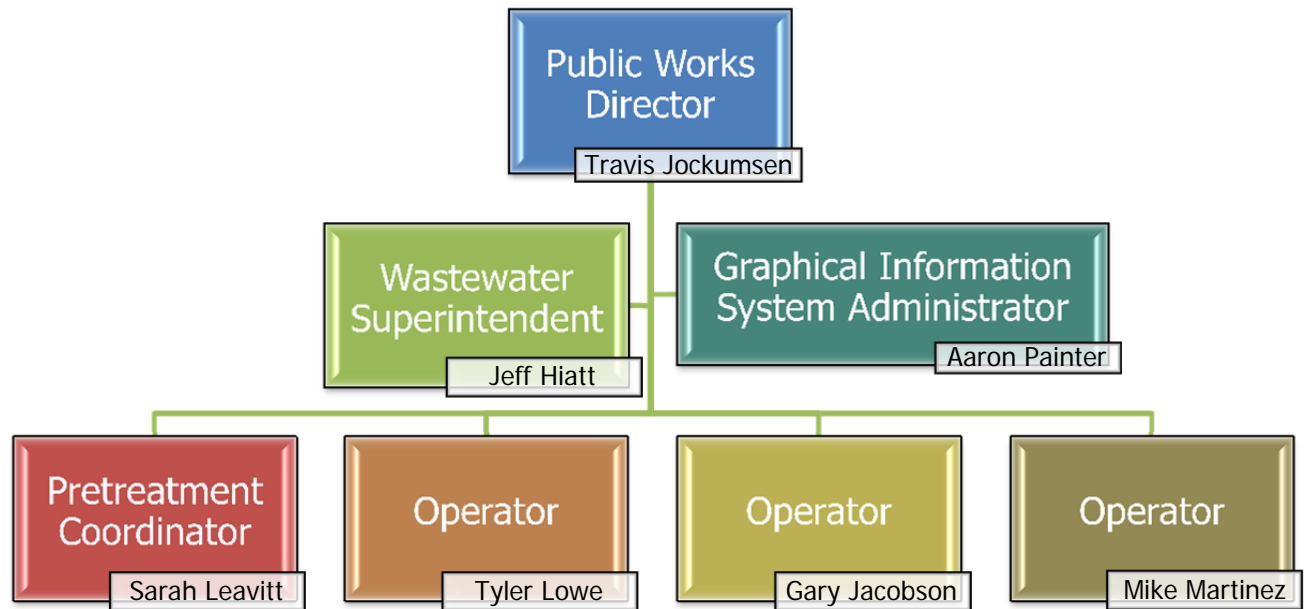
This individual is responsible for tracking the sewer collection line cleanings, defects, mapping issues and data entering the sewer collection line cleanings into the GIS, spreadsheets and other databases.

This individual is responsible for tracking the CCTV Inspections and submits an annual report to the Wastewater Superintendent.

## General Information

### Organization Chart

Below is the organization chart associated with the SSMP:



## Operations and Maintenance Program

Payson 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:

- System Mapping
- System Cleaning
- System Closed Circuit TV (CCTV) Inspection
- Manhole Inspection
- Defect Reporting
- Damage Assessment

### System Mapping

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

Payson City WWTP  
Payson City Planning & Zoning Department  
Payson City website ([www.paysoncity.org](http://www.paysoncity.org))

Should any employee identify an error in the mapping, they should document the error and report it to the Graphical Information System Administrator.

### System Cleaning

Sanitary sewer system cleaning is accomplished through various means and methods. Payson City has established a goal to clean the entire system every five (5) years. Based on experience over the past twenty (20) years, this frequency significantly reduces the number of basement backups, controls grease problems and flushes any bellies in the system. In addition Payson City 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

## Operations and Maintenance Program

high pressure jet truck. The following methods are employed to provide system cleaning:

Payson City Hydraulic Cleaning with Jet Truck  
Chemical Root Control

Cleaning records are maintained at the Wastewater Treatment Plant. Cleaning history may also be entered into the GIS; however, this is not always necessary. Should the cleaning process identify a serious defect, the problem should be reported on the Sewer Main Cleaning Sheet. The Wastewater Superintendent should be given the cleaning sheet for further action. The cleaning sheet should be specific as to location and type of problem. A summary of cleaning activities shall be prepared annually by the pretreatment operator or designee. This summary will normally be presented to Wastewater Superintendent and Public Works Director for further action.

### **System Closed Circuit TV (CCTV) Inspection**

Closed Circuit TV (CCTV) 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 Payson City will conduct CCTV inspection with its own staff. Inspections of the system will occur every five (5) years. This inspection frequency is based on the pipe aging process. As such, once the system has been inspected completely, change usually occurs gradually. CCTV will also be employed when a systems operation or capacity is questioned or when an SSO occurs. Any defects identified during the CCTV process should be reported on an Inspection Report and the form should be given to the Wastewater Treatment Plant Superintendent for possible repairs. Documentation of CCTV activities will be maintained at the Wastewater Treatment Plant. When contractors are employed to inspect the sanitary sewer system they will be required to submit records of their work. The Pretreatment Coordinator will prepare an annual summary of CCTV completed for that calendar year.

### **Manhole Inspection**

Payson City schedules annual inspection of the sanitary sewer manholes. The manhole inspection involves the identification of foreign objects and surcharging that may be present. Crews inspecting the manholes will be given maps by the Wastewater Superintendent who will monitor the progress and completeness of the inspection process. When a potential defect is identified the manhole should be flagged. Flagged

## Operations and Maintenance Program

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 Wastewater Superintendent 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

Defects located through the cleaning, CCTV Inspection, or manhole inspection programs will be prioritized for correction by the Wastewater Superintendent. Any defects which have the potential for catastrophic failure and thus create a sanitary sewer overflow should be evaluated immediately and discussed with the Public Works Director for repair. Repair methods may include:

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

When a defect is not flagged for immediate repair, it should be considered for placement on the “hot spot” list. This will allow for vigilant maintenance to ensure failure and a subsequent sanitary sewer overflow do not take place. Sewer main defects should be used in the Budget process to determine what financial allocation should be made in the next Budget year. The Wastewater Superintendent 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



# Operations and Maintenance Program

activities.

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

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

These three (3) activities are discussed in this Maintenance Program and the identification of damage will result in the generation of a defect list. 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 (3) 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. District 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.

## **Operations and Maintenance Program**

### **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 report should be prepared. If such a defect is identified and repaired immediately, a report is not needed. An example of stable damage could be a major crack in a pipeline or a severely misaligned lateral connection where infiltration is occurring.

### **Unstable Damage**

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

## Sewer Design Standards

The sanitary sewer design standards for Payson City are provided in Section 2 of the *Payson City Corporation Standard Specifications and Standards Plans*. 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.

## Sanitary Sewer Overflow Action Plan

Whenever sanitary sewage leave 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 Payson 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 should be reported immediately.

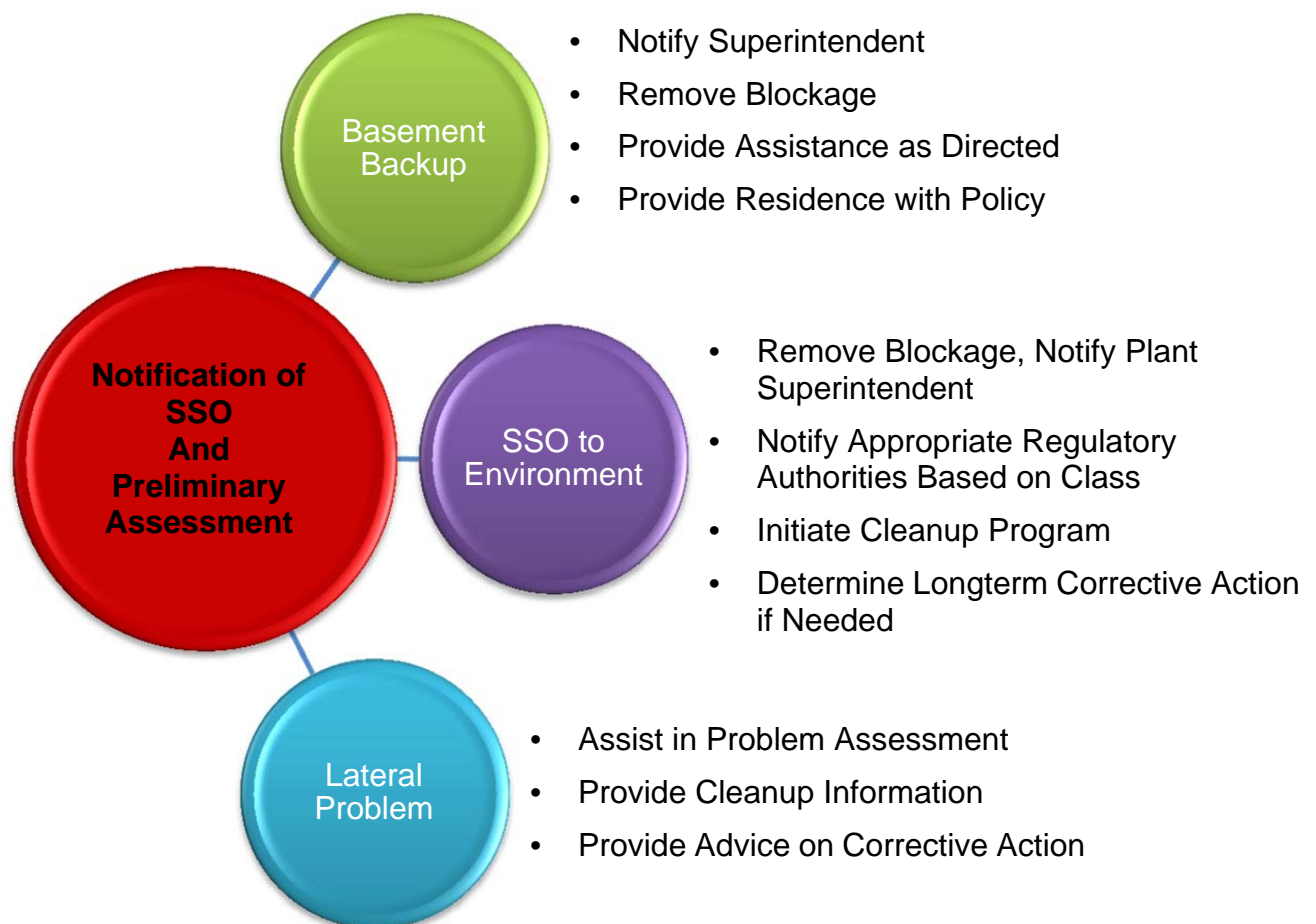
Class 2 SSO's should be documented and reported in the annual SSMP report and included in the Municipal Wastewater Planning Program submitted to the State. Item 3 may be reported to the local health department if, in the opinion of the responsible staff member there is potential for a public health issue. 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 Payson 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.

## Sanitary Sewer Overflow Action Plan

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. A list of clean up companies should be given 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 Payson City receives notice that a possible overflow has or is occurring.



# Sanitary Sewer Overflow Action Plan

## General Notification Procedure

When a Class 1 SSO occurs specific notification requirement 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.

### 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 Payson

## **Sanitary Sewer Overflow Action Plan**

City need to provide notification it could include press releases to the local news agencies, publication in an area paper, and leaflets delivered to home owners or citizens 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.

### **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. 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 staff member 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 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. 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



## **Sanitary Sewer Overflow Action Plan**

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.

## 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 are the result of several system problems. Such problems include any one or a combination of the following:

1. Laterals 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.

### Basement Backup Response

When the Payson City is notified about a basement backup, staff will log the complaint in a complaint log. The person receiving the call may log the backup complaint or may ask administrative staff to document the complaint.

All backup complaints shall be investigated by staff. If the investigation determines that the case of the backup is only in the lateral, staff may offer technical information but should not take responsibility for cleanup or subsequent restoration.

When it is determined that the basement backup is the result of a mainline problem, Payson City will follow the policy approved by its governing authority. A copy of this policy should be given to the home owner. It should be noted that all action Payson City takes are

## **Basement Backup Program**

on a no-fault basis. Payson City does not accept liability nor does it waive its governmental immunity.

### *Backup Prevention Design Standard*

Payson City promotes system designs which minimize backups and insure proper operations. To this end Payson City has a design standard for all system construction. In addition, Payson City 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.

### Payson City Policy:

- The State of Utah has adopted the International Plumbing Code(IPC) as its plumbing building standard;
- Payson City 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, Payson City requires the installation of backwater valves as stipulated by the IPC already propagated for all new construction.

## **No-Fault Sewage Backup Claims Program**

The purpose of this program is to 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 Payson City facilities, regardless of fault, within the restrictions, limitations and other provisions of this policy.

### **Cleanup of Real and Personal Property:**

- (A) The Wastewater Superintendent may, in accordance with the Payson City's standard procurement procedures, engage the services of one or more cleanup contractors to perform cleanup services at the direction of the Wastewater Superintendent on an as-needed basis.
- (B) Upon discovering backup described in this Policy, a property owner should immediately notify the Wastewater Superintendent of such event.
- (C) Upon notification of the occurrence of the event, the Wastewater Superintendent may contact a cleanup contractor under contract with the Payson City pursuant to subsection (A) above, and direct the cleanup contractor to perform all cleanup work at the premises, in accordance with established cleanup criteria.
- (D) In the event the property owner engages the services of a cleanup contractor prior to notifying the Wastewater Superintendent of the event, the Payson City may reimburse the property owner for actual expenses incurred by the property owner, but only up to the amount the Payson City would have paid its own cleanup contractor under subsection (C) above.
- (E) In the event any real or personal property cannot, in the reasonable judgment of the Wastewater Superintendent, be restored to its pre-event condition, in accordance with the cleanup criteria, the Payson City may pay to the property owner the estimated fair market value (not the replacement value) at the time of the event, of such real or personal property, with the exception that carpet and major appliances will be replaced with new like-kind items.
- (F) In no event will the Payson City pay, or reimburse the property owner for the payment of special or consequential damages.

# No-Fault Sewage Backup Claims Program

## **Establishment of Cleanup Criteria:**

The Wastewater Superintendent may, from time to time, establish cleanup criteria which will govern the Payson City's cleanup and payment responsibilities under this Policy. In establishing such cleanup criteria, the Wastewater Superintendent may give due consideration to generally available health guidelines, recommendations from governmental and academic experts, and other sources of guidance reasonably deemed by the Wastewater Superintendent to be balanced, unbiased, and protective of health and safety.

## **Application - Time Limitations:**

Any request for reimbursement of cleanup expenses under this policy, or payment of fair market value, may be made by filing a written application in such form as prescribed by the Wastewater Superintendent. Such application must be submitted to the Payson City Wastewater Superintendent within thirty (30) days after the occurrence of the event.

## **Qualification for Assistance:**

An application or request for assistance or payment under this Policy may qualify only if the Wastewater Superintendent, after due inquiry or investigation, makes an affirmative determination that the event was the result of a backup of Payson City facilities, and that none of the following circumstances apply:

- A. The loss was the result of a force majeure including but not limited to acts of God, acts of public enemies, insurrections, riots, war, landslides, lightning, earthquakes, fires, storms, floods, washouts, droughts, civil disturbances, explosions, acts of terrorism, sabotage, or any other similar cause or event not reasonably within the Payson City's control;
- B. The loss was caused by either an act or omission of the property owner, the property owner's agent, or a member of the property owner's family or business;

## **No-Fault Sewage Backup Claims Program**

- C. The property owner failed to file a claim hereunder in a timely manner, or failed to comply with any other procedural requirements of this Policy;
- D. The loss is the result of intentional or negligent acts of third parties; or
- E. The loss is wholly covered by private insurance.

### **Reduction in Assistance:**

The Payson City may limit any assistance, or reduce any payment, under this Policy based upon any of the following:

- A. The property owner did not act responsibly to prevent, avoid or minimize the loss;
- B. The property owner is unable to fully substantiate or document the extent of the loss;

The loss is partially covered by private insurance.

### **Payment Does Not Imply Liability:**

Any assistance or payment made under this Policy shall not be construed as, and does not imply, an admission of negligence or responsibility on the part of the Payson City for any damage or loss. Any assistance or payment made under this Policy is strictly voluntary on the part of the Payson City. This Policy shall not in any way supersede, change or abrogate the state government immunity act, Utah Code Annotated, section 63-30-1 et seq., as amended, or its successor, and its application to the Payson City, or establish in any person a right to sue the Payson City under this Policy. Any assistance or payment made under this Policy and accepted shall constitute a full and complete release of any and all claims against the Payson City, its officers, employees and agents arising from the incident.

### **Budget Expenditures:**

The Payson City authorizes a fund from which amounts may be drawn to make the foregoing assistance or payments. Such fund may be established from the ordinary rate structure of the Payson City.

## **No-Fault Sewage Backup Claims Program**

### **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.



## System Evaluation and Capacity Assurance Plan

Payson City believes 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 Payson City SECAP program.

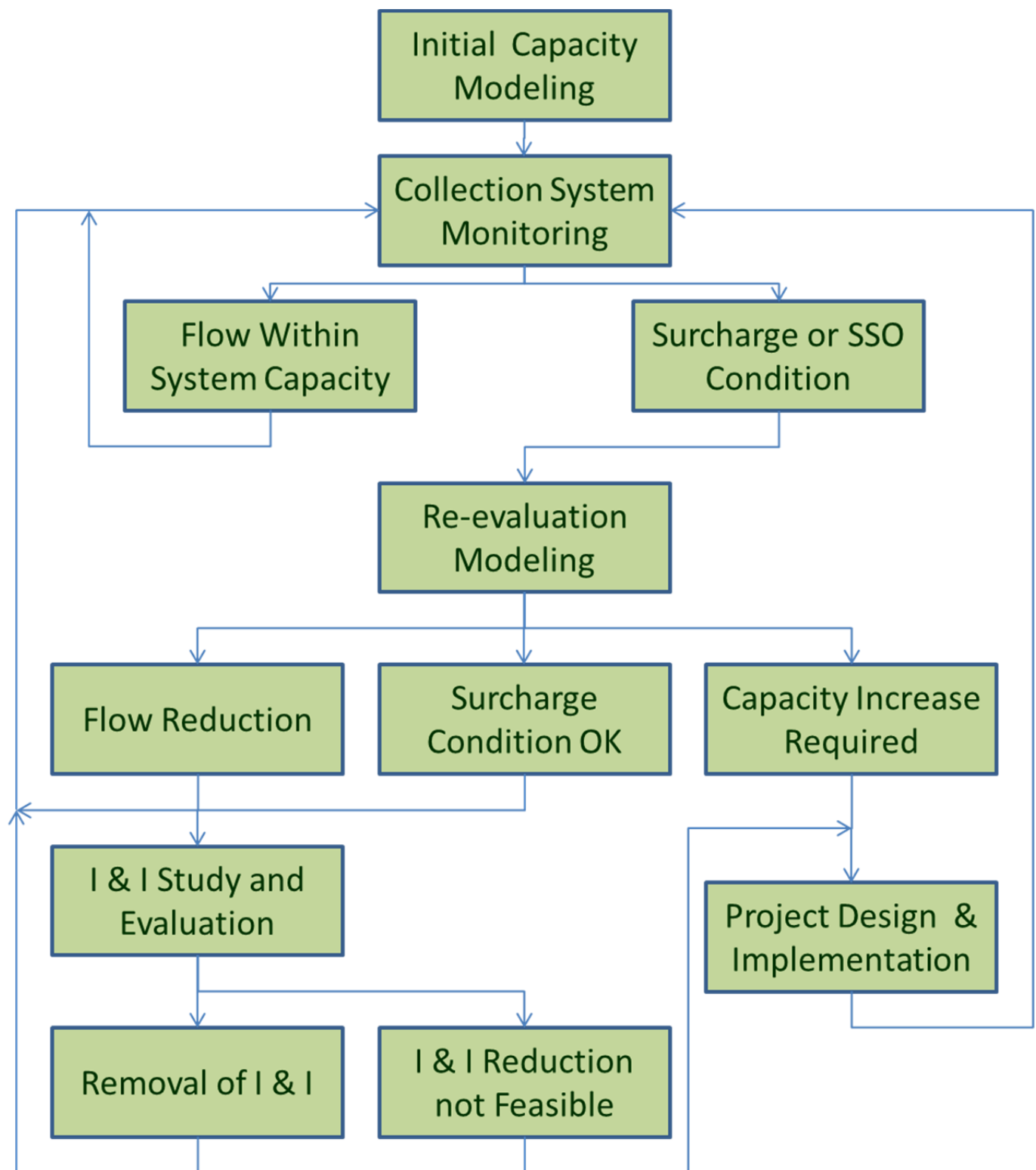
1. Initial Capacity Modeling and Master Planning
2. Flow Monitoring
3. Surcharge Flow Analysis
4. Re-evaluation Modeling and Analysis
5. Flow Reduction Evaluation and Implementation
6. Capacity Increase Evaluation and Implementation

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

Payson City has performed an analysis and modeling of each critical subsystem contained within its collection system. Subsystems are segregated based on the branching of the collection system. Trunk lines and collector lines are evaluated until the system reaches a point where less than 400 residential dwelling unit equivalents (RE) are upstream of that point in the system. The 400 RE point was chosen based on the minimum slope requirements of the State of Utah. An 8-inch pipe constructed on minimum slope will carry the flow from 400 RE based on 3.2 persons per dwelling unit, 75 gpcd and a peaking factor of 4. The RE equivalent is based typical Utah information and assumes the peaking factor will account for a reasonable amount of inflow and infiltration. If an area is known to have, or flow metering identifies, a significant amount of inflow and infiltration, additional evaluation will be needed. In these areas the capacity of an 8-inch pipe system may be significantly reduced below 400 RE.

## System Evaluation and Capacity Assurance Plan



# System Evaluation and Capacity Assurance Plan

## SECAP Flow Chart

In addition to developing an equivalent flow for a residential unit, consideration should also be given to time of concentration in the collection system. Based on typical diurnal flow patterns, if the transit time in the branch system is less than 2 hours, time of concentration can be ignored.

### Flow Monitoring

Flow monitoring is done at the influent of the headworks of the WWTP it is also monitoring flow at the discharge of the effluent wastewater at the WWTP.

### 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 Wastewater Superintendent 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

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

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, 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.

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

### **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. Payson City staff using commercially available software
2. Payson City staff using spreadsheet models
3. Engineering firms using available software or spreadsheets.

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

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

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.

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

### **Capital Improvement Plan**

The CIP is part of the Payson 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.

# 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

Payson 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:

- Daily cleaning records
- CCTV inspections records
- Manhole inspection records
- Hot spot maintenance list
- Spot repairs
- Major repairs
- System capacity information
- SSO or basement backup records including notification documents to appropriate agencies (call logs, etc.)
- Capital Improvement Plan

Records will be maintained by the Wastewater Superintendent in a central location.

Records may be maintained either on an electronic record or as a paper record. The extent of the record should be sufficient to demonstrate the activity recorded was completed appropriately.



# **SSMP Monitoring and Measurement Plan**

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

Periodically, but not less than annually, Payson City 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:

- Success of the operations and maintenance program
- Success of other SSMP elements
- Adequacy of the SECAP evaluations
- Discussion of SSO's and the effectiveness of the response to the event including corrective action
- Review of Sewer Main Cleanings, CCTV and Manhole Inspection 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 the Payson City'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 Wastewater Superintendent. SSMP updates should be recorded in a revision index maintained by Wastewater Superintendent.

# **SSMP Monitoring and Measurement Plan**

## **SSO Evaluation and Analysis**

At least annually in the internal audit and more frequently as needed, Payson City 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**

Payson 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:

- Public hearings
- Public meetings
- Newsletters
- Direct mailing
- Leaflets
- Plant tours
- Other effective methods

Payson City will accept comments, either written or verbal and will review such comments for applicability. Public interest may be difficult to generate, but should be sought, non-the-less.

## **Sanitary Sewer System Mapping**

Payson City maintains sewer line location records with an ESRI ArcMap Geographic Information System (GIS). The computer based GIS is updated with new or located sewer lines by Payson City's GIS Administrator. This map is available to employees and the public in a pdf format at [www.paysoncity.org](http://www.paysoncity.org). Printed maps are available at Payson City Wastewater Treatment Plant. This map is also updated with cleaning activities by employees from the Wastewater Department.

## Payson City 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 801.536.4200			
Local Health Department	801.851.7000			
Utah DERR	801.536.4123			
Local Police Department	801.465.5220			
Local Fire Agency	801.465.5252			
US EPA Region VIII	800.227.8917			

### Other Contacts:

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

## **Fats, Oils, Grease and Sand (FOGS) Program**

### **Purpose:**

The purpose of this program is to provide for the control and management of grease, oil and sand discharges to the City 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 the Pretreatment Ordinance and Program.

### **Program Implementation:**

The Fats, Oils, Grease and Sand (FOGS) Program will be implemented with the Pretreatment Ordinance and Program.