

SANITARY SEWER MANAGEMENT PLAN



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CHAPTER 1

SANITARY SEWER MANAGEMENT PLAN

INTRODUCTION

The City of Saratoga Springs (City) is a public entity established in Utah under the Utah State Code (R317-010). The City became incorporated in 1997. As of September 2024, the City provides sewage collection to over 64,000 people within its corporate boundaries, which qualifies it to be a class IV collection system. The total length of the sewer collection system includes approximately 190 miles of gravity sewer pipe, and nearly 6 miles of force main, all ranging between 4 to 54 inches in diameter. The collection system includes 11 pump stations with approximate maximum design flows ranging from 110 gpm to 3650 gpm and over 5300 manholes. Timpanogos Special Service District (or TSSD), located in Utah County along the northern shore of Utah Lake, provides sewage treatment for the City of Saratoga Springs.

This Sanitary Sewer Management Plan (SSMP or Plan) 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 sanitary sewer overflows (SSOs), as well as minimize impacts of any SSOs that occur. The management for this entity recognizes the responsibility it has to operate the sewer system in an environmentally and fiscally responsible manner. As such, this SSMP covers aspects of the collection system program necessary to provide such an operation. This SSMP may refer to other programs or ordinances and by reference may incorporate these programs into this Plan.

DEFINITIONS

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

- (1) *"BMP" means "best management practice".*
- (2) *"CCTV" means "closed circuit television".*
- (3) *"CIP" means a "Capital Improvement Plan".*
- (4) *"DRC" or "Direct Responsible Charge" means active on-site charge and performance of operation duties. The person in direct responsible charge is generally a supervisor over wastewater treatment or collection who independently makes decisions affecting all treatment or system processes during normal operation which may affect the quality, safety, and adequacy of treatment of wastewater discharged from the plant. In cases where only one operator is employed, this operator shall be considered to be in direct responsible charge.*
- (5) *"DWQ" means "the State of Utah Department of Environmental Quality, Division of Water Quality".*
- (6) *"FOG" means "fats, oils, and grease". This is also referred to as a Grease Oil and Sand Interceptor Program (GOSI).*
- (7) *"I/I" means "infiltration and inflow".*

- (8) *"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.*
- (9) *"SECAP" means "System Evaluation and Capacity Assurance Plan".*
- (10) *"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 storm water exclusively.*
- (11) *"SORP" means "Sewer Overflow Response Plan".*
- (12) *"SSMP" means "Sewer System Management Plan".*
- (13) *"SSO" means "sanitary sewer overflow", the escape of wastewater or pollutants from, or beyond the intended or designed containment of a sewer collection system.*
- (14) *"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.*
- (15) *"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.*
- (16) *"USMP" means the "Utah Sewer Management Program".*
- (17) *"MWPP" means the "Municipal Wastewater Planning Program".*
- (18) *"Waters of the state" means all streams, lakes, ponds, marshes, water-courses, waterways, wells, springs, irrigation systems, drainage systems, and all other bodies or accumulations of water, surface and underground, natural or artificial, public or private, which are contained within, flow through, or border upon this state or any portion thereof, except that bodies of water confined to and retained within the limits of private property, and which do not develop into or constitute a nuisance, or a public health hazard, or a menace to fish and wildlife, shall not be considered to be "waters of the state" under this definition (Section 19-5-102).*

GENERAL SSO REQUIREMENTS

The following general requirements for SSO's are stipulated in UAC 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 UAC 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.*

SAFETY AND WORKING AROUND RAW SEWAGE

Raw sewage usually contains viruses, bacteria and other microorganisms that can cause serious illness. People with compromised immune systems such as the elderly and children can be at higher risk of illness if exposed to sewage. Wastewater, including sewage, that remains in textiles and dry wall can grow mold creating other health risks. People experiencing an SSO must decide for themselves how to address the situation in the safest manner. Here are some general safety tips to consider if an SSO occurs.

1. Keep children, pets, and others away from the sewage.
2. Shut off the power before entering the wet environment.
3. Avoid exposing cuts and other wounds to sewage.
4. Wear waterproof boots, gloves and other apparel.
5. Thoroughly wash your hands and other body parts exposed to the sewage and change your clothes following exposure.
6. Consider using the services of experienced clean-up professionals.
7. Consult a medical professional with any related concerns.

SSO REPORTING REQUIREMENTS

UAC R317-801 stipulates when and how SSO's are reported. Following are those reporting requirements as of June 21, 2012.

SSO REPORTING. SSOs shall be reported as follows:

- (1) A Class 1 SSO shall be reported orally within 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 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

The City has a sewer use ordinance found in the Saratoga Springs City Municipal Code, Title 8, Chapter 2 that has been adopted by the governing body. This code contains the following items as stipulated by UAC R317-801:

1. Prohibition of unauthorized discharges,
2. Requirement that sewers be constructed and maintained in accordance with UAC 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 FOG,
5. Requires compliance with a pretreatment program,
6. Allows for the inspection of industrial users, and
7. Provides for enforcement of 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
- 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 SSMP 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 itself, not a failure of the program's effectiveness.

Documentation failures are intended to be identified during system self-audits and are addressed as training opportunities. Significant system failures are followed up with corrective action plans. This corrective action process are implemented by all individuals involved in the SSMP program. Not all City employees are necessarily involved in the collection system operations. As such, not all employees receive program training.

Finally, although not a part of this SSMP program, the City is an active participant in the Blue Stakes of Utah Utility Notification system. This system, regulated under UAC 54-8A, stipulates utility notification of all underground operators when excavation takes place. The intent of this regulation is to minimize damage to underground facilities and worker safety. The 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 SSOs.

CHAPTER 2

SSMP – GENERAL INFORMATION

This Sanitary Sewer Management Plan was adopted by the City Council. The responsible positions and phone numbers for City of Saratoga Springs with regard to this SSMP are:

Public Works Director, (801) 766-9793 ex. 171

Assistant Public Works Director, Utilities (801) 766-9793 ex. 205

Sewer Supervisor, (801) 766-9793 ex. 214

GIS Administrator, (801) 766-9793 ex. 129

Description of Roles and Responsibilities

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

Public Works Director

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. Other responsibilities include development and maintenance of collection system design standards.

Assistant Public Works Director (Utilities)

This individual is responsible for coordinating efforts across all roles described in this document as well as assisting the Public Works Director in their efforts to provide general oversight of all staff. Additionally, the Assistant Public Works Director (Utilities) supports record maintenance and oversees the Public Work Department's documentation and reporting processes. The Assistant Public Works Director (Utilities) also covers various roles beyond their typical responsibilities as needed.

Sewer Supervisor

This individual is responsible for daily implementation of the SSMP. This includes maintenance activities, compliance with SORP requirements, and monitoring and measurement reporting requirements. The Sewer Supervisor directly oversees the sewer operating staff (Sewer System Crew).

Sewer System Crew

The Sewer System Crew's primary responsibility is the inspection, operation, maintenance, and repair of the extensive network of underground sewer pipes, manholes, and lift stations that make up the sewer collection system.

GIS Administrator

This individual is responsible for the preparation and maintenance of current mapping for the entire sanitary sewer system.

Organization Chart

Below is the organization chart associated with the SSMP.



CHAPTER 3

OPERATIONS AND MAINTENANCE PROGRAM

The City has established this sanitary sewer system operations and maintenance program to ensure proper system operations, minimize any basement backups or SSOs, and provide for replacement, refurbishment, or repair of damaged or deteriorated piping systems. The combined operations and maintenance program ensures 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 operations and maintenance program:

- Staff Training
- System Mapping
- System Cleaning
- System CCTV Inspection
- Pump Station/Pressure Lines Inspection
- Manhole Inspection
- Defect Reporting
- Damage Assessment

STAFF TRAINING

The Sewer Supervisor is responsible for the training of the City wastewater operation and maintenance staff. All operators in Direct Responsible Charge (DRC) receive a Wastewater Collections Grade IV Certificate (R317-010). Operators with a Collections Grade IV Certificate comply with requirements to keep certification up to date. Training is provided to the staff on a weekly basis covering topics of safety, system cleaning, inspection, and other operation and maintenance procedures. Collection facilities always have an operator certified at the facility level on duty or on call.

SYSTEM MAPPING

Mapping is the direct responsibility of the GIS Administrator. An up-to-date map is essential for effective system operations and maintenance. The GIS Administrator is responsible for preparing and maintaining current mapping for the entire sanitary sewer system. Mapping is maintained on a graphical information system (GIS) interface. Current mapping is available at:

<https://ssgis.maps.arcgis.com/apps/webappviewer/index.html?id=857face425d648e5b373aee130b61005>

Should any employee identify an error in the mapping, they document the error in the City's GIS software and notify the GIS Administrator.

SYSTEM CLEANING

Sanitary sewer system cleaning is accomplished through various means and methods. The City cleans the sanitary sewer system annually. In addition, the City does acoustic analysis using the Sewer Line Rapid Assessment Tool (SL-RAT), of its sewer system as necessary to monitor pipes which need additional cleaning and prevent SSOs. Pipes in need of cleaning and/or maintenance are then flagged in the City's GIS software and added to the schedule to be cleaned. The City typically uses hydraulic cleaning to perform this maintenance. Based on experience over the past several years, this program and corresponding cleaning schedule significantly reduces the number of basement backups, controls FOG problems and flushes any low points in the system. In addition, the City has a listing of identified target locations which receive injections of bioaugmentation liquid enzyme solution to help manage FOG buildup. A list of these locations can be found in Chapter 6. Lift stations are cleaned once a month, or as needed.

City currently uses a work order system called City Works. Cleaning records are maintained on the CityWorks database. Contractors are required to provide cleaning records associated with their completed work. Timpanogos Special Service District (TSSD) performs two to three days per month of cleaning and also provides records associated with their work. Should the cleaning process of either the City, Contractors, or TSSD identify a serious defect, the problem is reported in CityWorks as a Work Order. The Work Order is specific as to location and type of problem. A copy of the Work Order is included in Appendix A-1.

SYSTEM 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. The City does not have any staff or equipment dedicated to CCTV inspection, but does have an agreement with TSSD to perform regular CCTV inspections throughout its system. Inspections of the system occur approximately every five years, or as necessary to prevent SSOs. The exact inspection frequency is based on the pipe aging process. CCTV is employed when a pipeline's operation or capacity is questioned, or when an SSO occurs. Any defects identified during the CCTV process by TSSD is reported to the Sewer Supervisor. The Sewer Supervisor then works with the Assistant Public Works Director (Utilities) to identify possible repairs. Documentation of CCTV activities is maintained by TSSD. If independent contractors are employed to inspect the sanitary sewer system, they are required to follow the same process for their work.

PUMP STATION/PRESSURE LINE INSPECTION

The Sewer System Crew inspects lift stations once or more weekly. The Sewer System Crew inspecting the lift stations complete the Lift Station Maintenance Form on City Works as shown in Appendix A-2. Should a problem be encountered, that cannot be corrected during the inspection, a Work Order, included in Appendix A-1, is completed on CityWorks and the Sewer Supervisor is notified. If the defect has the potential to cause a sanitary sewer overflow, or leak, immediate action is taken to ensure no overflow, or leak, occurs.

MANHOLE INSPECTION

The City schedules annual inspection of the sanitary sewer manholes (MHs). The MH inspection involves the identification of foreign objects and surcharging that may be present. Sewer System Crews inspecting the MHs utilize City Works under the guidance of the Sewer Supervisor, who monitors the progress and completeness of the inspection process. When a potential defect is identified a Work Order is created in City Works. If, during the inspection process, the Sewer System Crew believes a problem is imminent, they immediately cease inspecting and inform the Sewer Supervisor of the problem. A Sewer System Crew is then dispatched immediately to ensure correct system operations. All inspection records are retained for documentation of work performed. The Manhole Inspection form is found in Appendix A-3.

DEFECT REPORTING

Work Orders created as a result of lift station inspections, CCTV inspections, pump station, or MH inspections are tracked in City Works and prioritized for correction by the Sewer Supervisor. Any defects which have the potential for catastrophic failure and thus create an SSO are prioritized for immediate evaluation and discussed with the Sewer Supervisor for repair. Repair methods may include:

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

The public works director compiles all relevant information from City Works in the preparation in annual budget requests and preparing the MWPP as required by the permit.

COLLECTION SYSTEM DAMAGE

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

Damage Identification

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

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

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

These three activities are discussed in this SSMP and the identification of damage results in the generation of a Work Order. 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. Upon notification, staff responds and evaluates the seriousness of the damage and the effect on the environment. Damages, which include a release to the environment, are handled in accordance with the SORP. Damages, which cause a basement backup, trigger the Basement Backup Program. Damages that remain in the trench are considered minimal and do not require more action besides the repair of the damage.

Whatever the cause of collection system damage, the response is expeditious to prevent environmental or economic harm. City staff consider all damages an emergency until it is shown by inspection to be a lower priority.

Damage Response Actions

When damage occurs in the collection system, the following actions define the path that staff may 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 system damage which has existed for an extended period. 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 Work Order is prepared. If such a defect is identified and repaired immediately, a Work Order is not needed. An example of stable damage could include a major crack in a pipeline, or a severely misaligned lateral connection where infiltration is occurring.

Unstable Damage. Unstable damage is damage that has a high likelihood that failure occurs in the near future. Such damage could include a broken pipe with exposed soil, or a line with complete crown corrosion. In these cases, action is taken as soon as there is time, a contractor, materials, and other necessary resources available. When such unstable damage is identified, if possible, consideration is given to trenchless repairs, which may be able to be completed quicker than standard excavation. Immediately after identification, the Public Works Director is contacted to review and address 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 is given to an immediate repair. Since excavation damage may either be a result of contractor negligence or failure of the City to adequately protect the line by appropriately following the Damages to Underground Utilities Statute, UAC54-8A, priority is given to the repair rather than determining the eventual responsible party.

As can be determined from the above action plans, priority is always given to preventing SSOs and environmental damage, to prevent basement backups and financial impacts, and to prevent public health issues.

EQUIPMENT AND REPLACEMENT PART INVENTORIES

On occasion, repairs to the sewer collection system require immediate attention. During these emergencies, the City needs to acquire materials and have access to equipment to perform repairs to the sewer system immediately. In some situations, it may be necessary to hire a contractor to perform the work. Table 3-1 below includes a list of vendors where equipment and/or replacement parts can be purchased.

Table. 3-1, List of Vendors

| <i>Name</i> | <i>Contact Information</i> |
|-------------------------------------|----------------------------|
| <i>Mountainland Supply</i> | (801) 224-6050 |
| <i>Ferguson</i> | (801) 956-3600 |
| <i>Oldcastle Precast</i> | (801) 399-1171 |
| <i>Broadfork Aquatic Consulting</i> | (432) 940-0187 |
| <i>Waterford Services</i> | (801) 633-0036 |
| <i>Rhino Pumps</i> | (801) 592-8847 |

CHAPTER 4

SEWER DESIGN STANDARDS

The City of Saratoga Springs sanitary sewer design standards are made available to ensure sewers and connections are properly designed and constructed. The standards are found online at <https://www.saratogasprings-ut.gov/DocumentCenter/View/13976/2024-Standard-Technical-Specifications-And-Drawings>. These standards are intended to be used in conjunction with UAC R317-3. Where a conflict exists between these two standards, the UAC shall prevail.

CHAPTER 5

SANITARY SEWER OVERFLOW ACTION PLAN

Whenever sanitary sewage leaves the confines of the sanitary sewer 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 SSO action plan.

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

All of the above conditions are likely to cause damage. Each are treated as an emergency and corrective actions are taken in accordance with the City's directions. Items 1 & 2 above are reported immediately, including a designation of 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 of more than 5,000 gallons; or has reached Waters of the State. All other overflows are Class 2 SSOs.

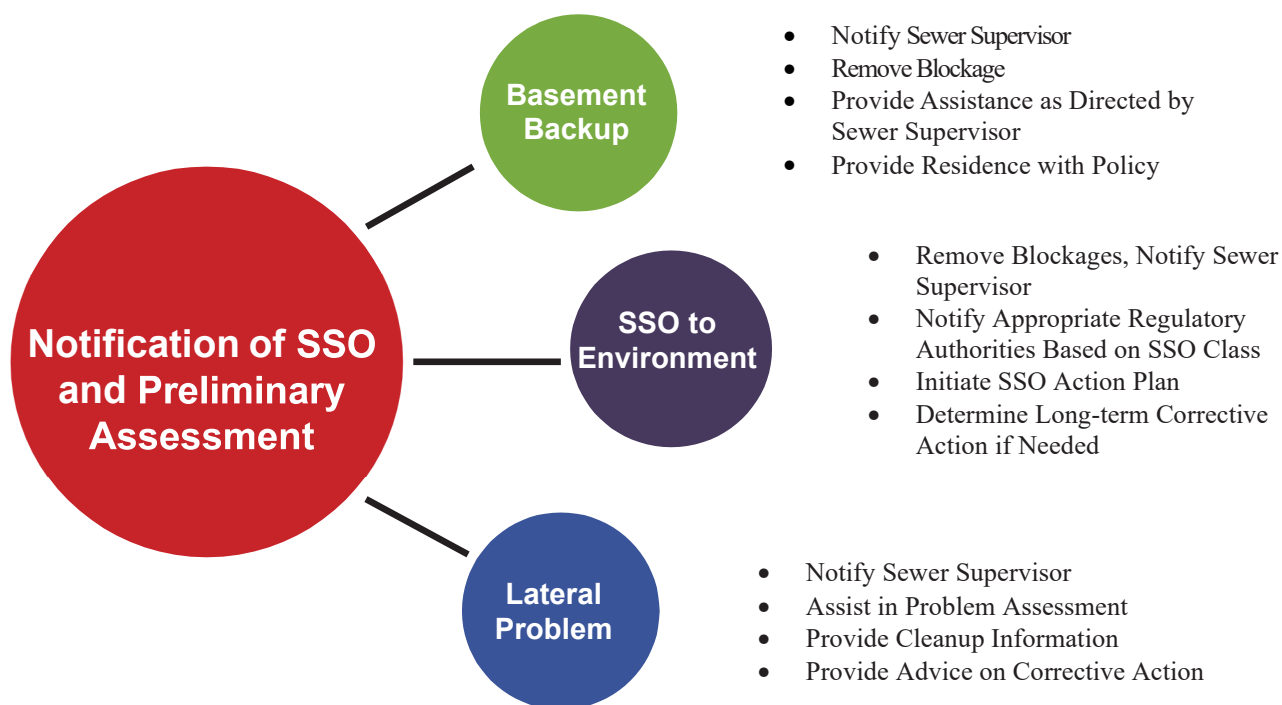
All Class 1 SSO's are reported immediately. Class 2 SSOs are documented and reported in the annual SSMP report and included in the Municipal Wastewater Planning Program submitted to the DWQ. Item 3 is reported to the Utah County Health Department (UCHD) if, in the opinion of the responsible staff member, there is potential for a public health issue.

A public health issue may be present, for example, when an excavator breaks both a sewer and a water line in the same trench. In such cases, the UCHD is contacted and the situation explained. If the UCHD requests further action on the part of the City, staff try to comply. If, in the opinion of the responsible staff member, the UCHD request is unreasonable, the Sewer Supervisor is immediately notified. Care is always taken to error on the side of protecting public health over financial considerations.

When a basement backup occurs, the staff member responding follows the Basement Backup Program procedures outlined in Chapter 10. A lateral backup, while the responsibility of the property owner, is treated as a serious problem. Care is taken to provide advice to the property owner in such cases, but the property owner is ultimately the decision maker about what actions are taken.

RESPONSE ACTIVITIES

There are the specific steps that are followed once a notification is received regarding a possible overflow. The following figure outlines actions that could be taken when the City 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 is followed and documented. Failure to comply with notification requirements is a violation of UAC R317-801.

AGENCY NOTIFICATION REQUIREMENTS

Both DWQ and the UCHD are immediately notified when an overflow is occurring. Others that may require notification include local water suppliers, affected property owners, and, if hazardous materials are involved, the Utah Division of Emergency Response (UDER). The initial notification must be provided to UDER within 24 hours. However, attempts are 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.

After an SSO has taken place and the cleanup has been completed, a written report of the event is submitted to the DWQ within five days (unless waived by the DWQ). This report is specific and is inclusive of all work completed. If possible, the report includes a description of follow-up actions such as modeling or problem corrections that take place. An agency contact log is provided in Appendix A-4.

PUBLIC NOTIFICATION

When an SSO occurs and the extent of the overflow is significant such that the damage cannot be contained, the public are notified through proper communication channels. Typically, the UCHD coordinates such notification. Should the City need to provide notification, it could include press releases to the local news agencies, publication in an area paper, and leaflets delivered to homeowners or citizens in the area of the SSO. Notification is sufficient to ensure that the public health is protected. When and if federal laws are passed concerning notification requirements, these legal requirements are incorporated by reference into this SSMP. In general, notification requirements increase as the extent of an overflow increases.

OVERFLOW CLEANUP

When an overflow happens, care is 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, 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 SSMP does not include specific details about cleanup. The responsible staff member, in conjunction with the DWQ, the UCHD, and the owner of real property, should direct activities in such a manner that all are satisfied with the overall outcomes. If, during the cleaning process, the responsible staff member believes the DWQ or the UCHD is requesting excessive actions, the Sewer Supervisor is contacted.

CORRECTIVE ACTION

All SSOs are followed up with an analysis as to cause and possible corrective actions. An SSO location, which is the result of FOG or root plugging, may be placed on the preventative maintenance list for more frequent cleaning. Serious or repetitive plugging problems may require reconstruction or modification of the sewer lines. An overflow that results from inadequate capacity is 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 inadvertently, 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.

CHAPTER 6

GREASE, OIL, AND SAND MANAGEMENT PROGRAM

The purpose of this program is to provide for the control and management of grease, oil, and sand discharges to the City of Saratoga Springs and TSSD collection systems. This program provides 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 UAC R317-8-8, Pretreatment. Local Authority is found in the regulations and requirements of TSSD.

PROGRAM IMPLEMENTATION

TSSD provides sewage treatment for Saratoga Springs. As such, TSSD has jurisdiction over the Grease, Oil, and Sand Management Program and issues the Industrial Discharge Permit. TSSD performs all inspections, determines rules and regulations, implements specifications, etc. For a full description of the program implementation, see TSSD's Sanitary Sewer Management Plan.

The City assists TSSD with their program by performing the following tasks:

- Overseeing compliance of TSSD standards for new and redevelopment in Saratoga Springs
- Installing grease traps at new and redevelopment locations in Saratoga Springs
- Injecting bioaugmentation solution into identified target sewer locations to enhance degradation of FOG and other pollutants. Current injection locations are shown in Table 1 below but may be modified as needed.

Table. 6-1, Bioaugmentation Solution Target Injection Locations

| <i>No.</i> | <i>Location</i> |
|------------|---------------------------|
| 1 | 249 W. Casi Way |
| 2 | 4112 S. Pelican Ln. |
| 3 | 3882 S. Spinnaker Bay Dr. |
| 4 | 3322 S. Tytus Ln. |
| 5 | 2051 S. Centennial Blvd. |
| 6 | 1333 S. Wild Horse PT. |
| 7 | 401 N. High Ridge Rd. |
| 8 | 498 W. Autumn Sky Dr. |

CHAPTER 7

SARATOGA SPRINGS CITY SYSTEM EVALUATION AND CAPACITY ASSURANCE PLAN

The City of Saratoga Springs believes that one of the keys to preventing sanitary sewer overflows is to evaluate system capacity and to monitor flows throughout the system to ensure that capacities are not exceeded. The City System Evaluation and Capacity Assurance Plan (SECAP) is found in the City's current Sewer Master Plan, available at the City's website: <https://www.saratogasprings-ut.gov/298/Capital-Facilities-Plans-Impact-Fees>.

CHAPTER 8

SSMP MONITORING AND MEASUREMENT PLAN

The purpose of this Sanitary Sewer Master Plan is to provide appropriate monitoring and measurement of the effectiveness of the SSMP in its entirety.

RECORDS MAINTENANCE

The City maintains appropriate records on operations and maintenance of the sanitary sewer system to validate compliance with this SSMP. However, failure to meet standards set by DWQ or other regulatory agency during an inspection does not constitute a violation of the SSMP. Rather, deficiencies identified during inspections are viewed as an opportunity for improvement.

OPERATIONS RECORDS

Operations records that are maintained include the following:

- Daily jetting records
- CCTV inspections records
- Manhole inspection records
- Target maintenance list
- Drive inspections
- 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 are maintained by the Sewer Supervisor in a central location. Records are maintained in City Works. The extent of the record are sufficient to demonstrate the activity recorded was completed appropriately.

PERFORMANCE MEASUREMENT (INTERNAL AUDIT)

Periodically, but not less than annually, the City assesses and audits the effectiveness of the elements of this SSMP. All elements are reviewed for effectiveness as well as all records are reviewed for completeness. An internal audit report is prepared preferably annually, but not less than once every five years, which shall include comments on the following:

- Success of the SSMP operations and maintenance program
- Success of other SSMP elements
- Adequacy of the SECAP evaluations
- Discussion of SSOs and the effectiveness of the response to the event, including corrective action
- Review of defects identified in Work Orders 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 is, however, be sufficient to document compliance with the standards established in the SSMP. The audit reports are maintained in accordance with the 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 Public Works Director. SSMP updates are recorded in the revision index provided in Appendix A-5.

SSO EVALUATION AND ANALYSIS

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

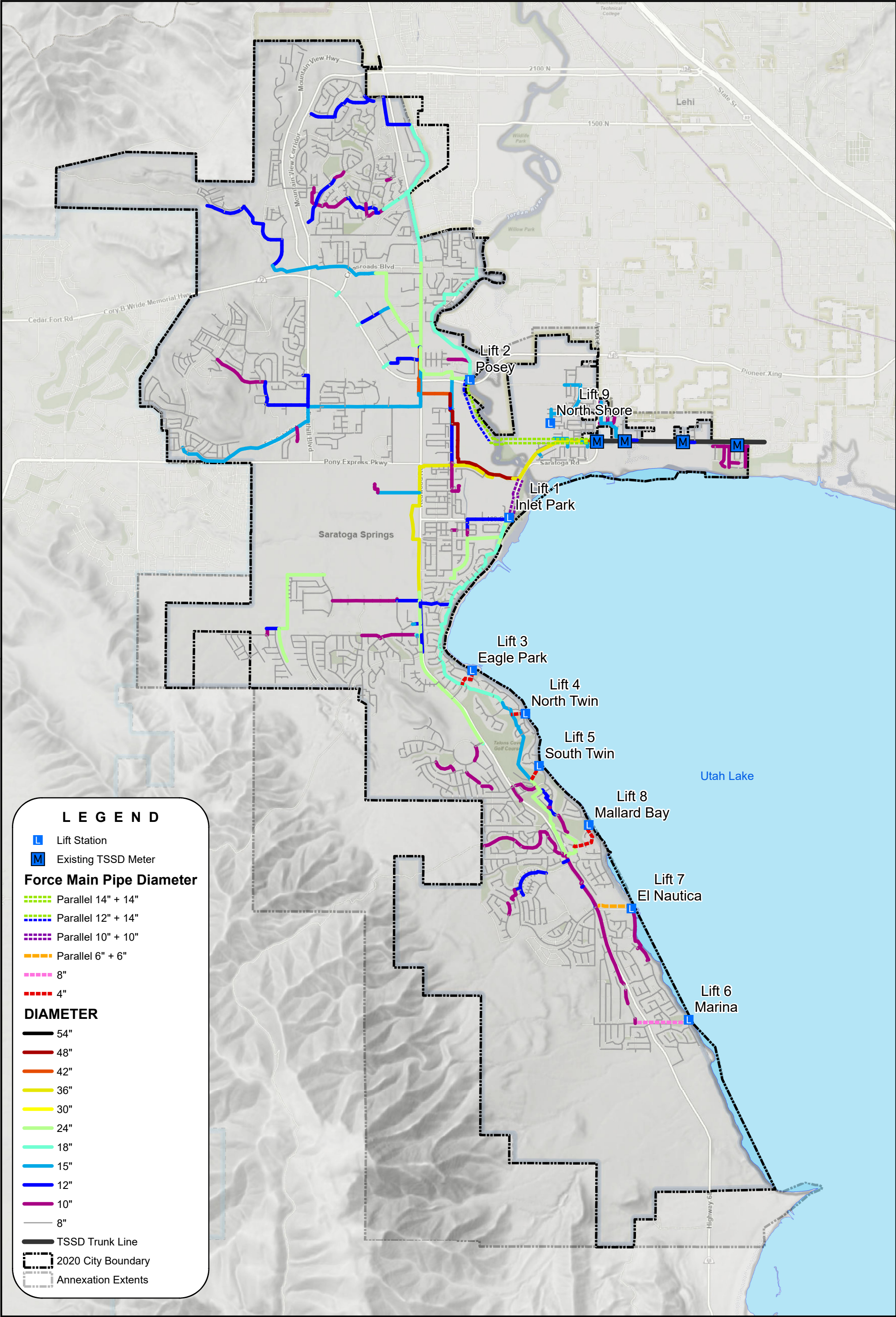
PUBLIC COMMUNICATION AND OUTREACH

The City reaches out to the public about the development, implementation, and performance of the SSMP. This communication is accomplished by posting information on the City's website. Any written comments received are reviewed for applicability.

CHAPTER 9

SANITARY SEWER SYSTEM MAPPING

The City maintains records on the location of sanitary sewer system piping using the Geographic Information System (GIS). Figure 9-1 is a current map of the City sanitary sewer collection system as of July 2024. The GIS Department updates information in the GIS as records are provided from city staff during inspection, cleaning, and new construction. The entire City maintenance staff has access to the GIS database, and all contribute to collecting data by updating the GIS during operation.



CHAPTER 10

BASEMENT BACKUP PROGRAM

Basement backups have a serious impact to a home or business owner. As such, all reasonable efforts are taken to prevent such backups from occurring. Sanitary sewer overflows (SSOs) into basements 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 failures, and plugging from items such as “flushable” wipes and FOG are primary problems that lateral owners face.
2. Backups caused by main line plugs are usually caused by roots, FOG, low points, foreign objects, including “flushable” wipes, 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 sanitary flow problems may surcharge a piping system and cause backups into basements. Excess flows usually occur when major storm waters inflow into sanitary sewers. Sanitary sewers are not designed for such flow. In addition, some homeowners or businesses may illegally connect foundation drains and sump pumps to the sanitary sewer system.

BASEMENT BACKUP RESPONSE

The Sewer Supervisor is contacted as soon as possible if a Sanitary Sewer Overflow occurs in a private residence or business. When the City is notified about a SSO, staff log the service request in CityWorks. The person receiving the call may enter a work order, a backup complaint, or may ask administrative staff to document the service request.

As appropriate, staff investigate an SSO. If the investigation determines that the cause of the backup is only in the lateral, staff may offer technical information, but do not assist the owner with the removal of the blockage, the cleanup, or subsequent restoration.

If it is determined that the basement backup is the result of a mainline problem, the City follows the policy outlined in Chapter 11. It is noted that all actions the City takes are on a no-fault basis. The City does not accept liability, nor does it waive its governmental immunity.

BACKUP PREVENTION DESIGN STANDARD

The City promotes system designs, which minimize backups and encourage proper operations. To this end, all system construction and modifications must meet the requirements in the City's Sewer Design Standards and Saratoga Springs Municipal Code, as outlined in Chapter 4. In addition, the City complies with State design standards contained in UAC R317-3.

POLICY ON THE INSTALLATION OF BACKFLOW VALVES

Reference Regulatory Documents:

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

- UAC 15A-2-103(c). This code section adopts the 2009 edition of the International Plumbing Code.
- The 2021 International Plumbing Code, section 714.1 Backwater Valve.
- Saratoga Springs Municipal Code.

Saratoga Springs Policy:

- The State of Utah has adopted the International Plumbing Code (IPC) as its plumbing building standard;
- Saratoga Springs uses the IPC as their Municipal Code 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, Saratoga Springs requires the installation of backwater valves as stipulated by the IPC for all new construction.

CHAPTER 11

NO-FAULT SEWAGE BACKUP CLAIMS POLICY

The City operates its sewer system with insurance coverage provided through its association with the Utah Local Governments Trust. In the event of a sewage backup, residents or businesses wishing to file a no-fault claim should promptly contact the Public Works Director. The Public Works Director will provide information on how to submit a claim and assist with the process in coordination with the local government trust. This program aims to address claims efficiently and mitigate the impact of sewage backups on the community.

APPENDIX A-1 WORK ORDER FORM

Cityworks | [Inbox](#) | [Service Requests](#) | [Work Orders](#) | [Inspections](#) | [Recent](#) | [Reports](#) | [Assets](#) | [Permits & Cases](#) | [Designer](#) | [PLL Admin](#)

[Work Order](#) | [Email](#) | [Print](#) | [Save](#) | [Close](#) | [Delete](#)

Work Order

Description: **Jet**

Number: **25044**

Entity Type: **SSGRAVITYMAIN** [Change](#)

Category:

Initiated By: **Leatham, George** Date: **09/13/2017 3:23 PM**

Status: **Open** Priority:

Requested By: Supervisor:

Submit To: Date:

Projected Start: **09/13/2017 3:23 PM** Projected Finish: **09/13/2017 3:23 PM**

Opened By: Date:

Closed By: Date:

Completed By:

Actual Start: Actual Finish:

Stage: **Actual** Expense Type: **Maintenance**

Comments: [Add Comment](#) [Sort](#)

Instructions:

Resolution: Reactive? ☐

Location Information

WO Address:

Location Details:

Shop: Map Page:

Title Number: District:

X Location: Y Location:

Assets

Total Entities: 1

| <input type="checkbox"/> | Asset | Asset Id | Asset Uid | Location | Warranty Date | Wc |
|--------------------------|---------------|----------|-----------|----------|---------------|----|
| <input type="checkbox"/> | SSGRAVITYMAIN | 0 | 0 | | | |

- Pink rows indicate inventory still under warranty.

Map Layer Fields

[Reset](#)

Work Cycle

Repeat: **Never**

Interval: **6 Months**

From: **Actual Finish Date**

Date Printed: Next Print Date: **9/11/2017**

Related Work Activities

Service Requests

Add Request:

Inspections

Add Inspection:

Work Orders

Parent:

[Create Child Work Order](#)

Permits

ACCESSBLD: ACCESSORY PERMIT - B [Create](#)

Attachments

[+ Add attachments...](#) [Remove all attachments](#)

Drag and drop files here to attach them.

Details

Project: Account:

[Project Tree](#)

Contract: Contractor:

Legal Billable: ☐ Contractor Billable: ☐

Update Map: ☒ Cancel Work Order: ☐

Cancelled By: Date:

Cancel Reason:

Units Accom.: **0** Description:

Lock Units Desc.: ☐

Labor Cost: **\$0.00** Material Cost: **\$0.00**

Equipment Cost: **\$0.00** Permit Cost: **\$0.00**

Total WO Cost: **\$0.00**

APPENDIX A-2 LIFT STATION MAINTENANCE FORM

Cityworks®

Inbox Service Requests ▾ Work Orders ▾ Inspections ▾

☑ Inspection ▾ ✉ Email 🖨 Print 💾 Save ☑ Close 🗑

Inspection

Details

Id: 32828 ▾

Location:

Status: ▾

Resolution: ▾

Insp. Date:

Inspected By: ▾

Observations ▴

| | | |
|----------------------------------|--------------------------|---|
| Check Wet Wells for build up | <input type="checkbox"/> | ✎ |
| Check floats | <input type="checkbox"/> | ✎ |
| Check Generator control panel | <input type="checkbox"/> | ✎ |
| Check Generator fuel level | <input type="checkbox"/> | ✎ |
| Check surge protection device | <input type="checkbox"/> | ✎ |
| Check Bioxide outfall | <input type="checkbox"/> | ✎ |
| Check Bioxide pumps and lines | <input type="checkbox"/> | ✎ |
| Check fence for any broken welds | <input type="checkbox"/> | ✎ |
| Check landscaping | <input type="checkbox"/> | ✎ |
| Check for any exfiltration | <input type="checkbox"/> | ✎ |
| Check pump control panel | <input type="checkbox"/> | ✎ |

Comments

Observation:

Repairs:

Recommendation:

Cond. Score: 0

APPENDIX A-3 MANHOLE INSPECTION FORM

| Inspection | Details |
|--|--|
| Type: Manhole Inspection Report | |
| Submit To: Geddes, Jay | Date: 09/26/2024 9:49 AM |
| Priority: | |
| Initiated By: Logan, Lance | Initiated Date: 09/26/2024 9:49 AM |
| Projected Start: 09/26/2024 9:49 AM | Projected Finish: |
| Actual Finish: | |
| Closed By: | Date Closed: |
| Cancel Insp? <input type="checkbox"/> | Cancel Date: |
| Cancel Reason: | |
| Canceled By: | |
| Location | |
| District: | Shop: |
| Map Page: | Title No: |
| Facility Id: | Level Id: |
| Update Map: <input type="checkbox"/> | |
| Map Layer Fields | |
| Reset | |
| Entity | |
| Highlight Get from Map History Remove Asset Costs | |
| Update Inspection XY when adding/removing asset? <input checked="" type="checkbox"/> | |
| Editable Fields: <input checked="" type="radio"/> All Fields: <input type="radio"/> | |
| <div style="border: 1px solid black; padding: 2px; display: flex; align-items: center;"> \$\$MANHOLE <div style="flex-grow: 1; border-bottom: 1px solid black;"></div> </div> | |
| <div style="border: 1px solid black; padding: 2px; display: flex; align-items: center;"> Id 0 <div style="flex-grow: 1; border-bottom: 1px solid black;"></div> </div> | |
| Work Cycle | |
| Repeat: Every | |
| Interval: 1 Years | |
| From: Projected Start Date | |
| Related Work Activities | |
| Link Request: | |
| Link Work Order: | |
| Create Work Order: | |
| Create | |
| Inspections: | |
| Link Inspection: | |
| Create Child Inspection | |
| Attachments | |
| + Add attachment... Remove all attachments | |
| Drag and drop files here to attach them. | |

| Inspection | Details |
|--|--|
| Id: 32831 | |
| Location: | |
| Status: | Resolution: |
| Insp. Date: | Inspected By: |
| Observations | |
| Cleanliness ✎ <div style="border: 1px solid black; height: 20px; width: 100%;"></div> | |
| Defects: (Cover, frame, grout, steps, shelf, pipes, or channels) ✎ <div style="border: 1px solid black; height: 20px; width: 100%;"></div> | |
| Reset | |
| Comments | |
| Observation: | <div style="border: 1px solid black; height: 40px;"></div> |
| Repairs: | <div style="border: 1px solid black; height: 40px;"></div> |
| Recommendation: | <div style="border: 1px solid black; height: 40px;"></div> |
| Cond. Score: 0 | |

APPENDIX A-4 **LOG OF CONTACT WITH** **OTHER** **AGENCIES/PEOPLE**

Location of SSO:

Date of SSO:

| Agency | Phone Number | Contact Made Yes/No | Time | Remarks |
|-------------------------------------|------------------------------------|----------------------------|-------------|----------------|
| | | | | |
| Utah DWQ | 801-536-4300 or 801-231-1769 | | | |
| Utah County Health Department | 801-851-7331 | | | |
| Utah DERR | 801-536-4123 | | | |
| Local Police Department | 801-798-5600 | | | |
| Local Fire Agency | 801-766-6505 | | | |
| Timpanogos Special Service District | 801-756-5231 | | | |
| US EPA Region VIII | Consult with DWQ | | | |

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

APPENDIX A-5

SSMP REVISION INDEX

[illegible]