

Sewer System Management Plan



City of Shasta Lake, California

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Acronyms and Abbreviations

ADWF	Average Dry Weather Flow
BMP	Best Management Practices
CCTV	Closed-Circuit Television
CDFA	California Department of Food and Agriculture
CIP	Capital Improvement Program
City	City of Shasta Lake
CIWQS	California Integrated Water Quality System
COSLCS	City of Shasta Lake Construction Standards
COSLMC	City of Shasta Lake Municipal Code
CVRWQCB	Central Valley (Region 5) Regional Water Quality Control Board
d/D	Flow Depth / Pipe Inside Diameter
DPW	City of Shasta Lake Department of Public Works
FOG	Fats, Oils, and Grease
FSE	Food Service Establishment
GIS	Geographic Information System
HE	Household Equivalent
HGL	Hydraulic Grade Line
JPEG	Joint Photographic Experts Group
LIDAR	Light Detection and Ranging
LRO	Legally Responsible Official
MACP	Manhole Assessment and Certification Program
NASSCO	National Association of Sewer Service Companies
O&M	Operations and Maintenance
OES	Office of Emergency Services
OSHA	Occupational Safety and Health Administration
PACP	Pipeline Assessment and Certification Program
PDWF	Peak Dry Weather Flow
PVC	Polyvinyl Chloride
PWWF	Peak Wet Weather Flow
RFP	Request for Proposal
SDAPUD	Shasta Dam Area Public Utilities District
SERP	Spill Emergency Response Plan
SSMP	Sewer System Management Plan
SWRCB	State Water Resources Control Board
USGS	United States Geological Survey
VCP	Vitrified Clay Pipe
VFD	Variable Frequency Drive
WDR	Waste Discharge Requirements
WQMP	Water Quality Monitoring Program
WWMP	Wastewater Master Plan
WWTP	Wastewater Treatment Plant

Section 1: Sewer System Management Plan Goals and Introduction

This Sewer System Management Plan (SSMP) has been prepared by the City of Shasta Lake (City) in order to assist the City in providing a plan and schedule to properly manage, operate, and maintain all parts of the City's sanitary sewer collection system, reduce and prevent spills, and contain and mitigate spills that do occur. The City is a continuing enrollee in the SSMP program.

1.1 Regulatory Context

The preparation of this SSMP was mandated by State Water Resources Control Board (SWRCB) Order Number 2006-0003-DWQ, as superseded by Order WQ 2022-0103-DWQ (WDR).

1.2 SSMP Update Schedule

This SSMP is designed to be a living document, and updates will be implemented as needed when significant changes are made, audits are completed, or deficiencies are identified. At a minimum, the SSMP will be audited and updated on the following schedule:

Internal Audits: The SSMP will be audited by internal City staff at a minimum frequency of once every three (3) years. Within six (6) months after the end of the required 3-year audit period, the Legally Responsible Official (LRO) shall submit the finalized audit report into the online CIWQS database. Internal audits shall comply with the audit reporting requirements outlined in Appendix C – SSMP Audits.

The next internal audit for the time period between May 1, 2025 and May 1, 2028 shall be completed within six months of the conclusion of the time period, and the Audit Report shall be uploaded to the CIWQS database no later than November 1, 2028.

SSMP Updates: The SSMP shall be updated every six (6) years. Updates shall include a summary of revisions included in the SSMP update based upon internal audit findings and any other related changes.

Based upon the implementation date of this SSMP, the next SSMP Update is due no later than January 1, 2032.

1.3 Sewer System Asset Overview

The City owns, operates, and maintains its sewer collection system infrastructure, which was originally completed in 1976 under the Shasta Dam Area Public Utilities District (SDAPUD). When the City incorporated in 1993, it assumed ownership of the sewer collection system and the wastewater treatment plant from SDAPUD.

The collection system currently serves most residents within the City Limits EXCEPT for a developed area on the west side of the City known as Summit City. This area did not participate in the construction of the original collection system and is currently served via private septic systems under the jurisdiction of Shasta County Environmental Health.

As of December 2025, the collection system infrastructure consists of approximately 56 miles of gravity sewer pipe, 5 miles of sewer force mains, 6 lift stations, 877 manholes, and 311 access rodholes. The sewer collection system currently provides approximately 3,519 sewer connections. The total population of the City was 10,371 based on the 2020 census, with an estimated collection system service population of approximately 9,315.

Approximately 80% of the City's current gravity sewer pipe consists of the original VCP system, and the remaining 20% is PVC that has been installed as the collection system has expanded to serve additional or developing areas of the City. All of the City's current pressure sewer pipe system is PVC.

An up-to-date map of the sanitary sewer collection system is maintained by the City's in-house GIS (Geographic Information System) department and is available for viewing on the GIS department page on the City's website at www.cityofshastalake.gov.

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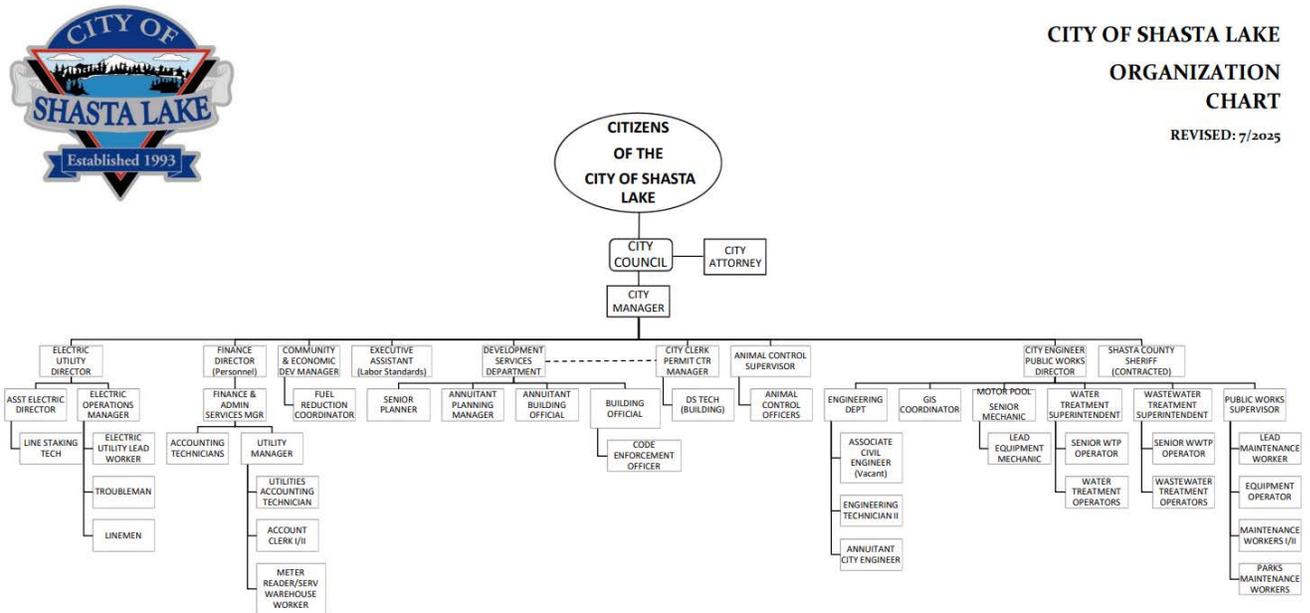
Section 2: Organization

The sanitary sewer collection system is operated and maintained by the City of Shasta Lake Department of Public Works (DPW). DPW is supported in this work by City Management and the Departments of Finance and Development Services. The organization chart for the City of Shasta Lake is shown in Figure 2-A below.

DPW is managed by the Public Works Director / City Engineer, under the direction of the City Manager. The Public Works Supervisor oversees the maintenance work performed by Public Works Lead Worker and Public Works Maintenance Workers, who are responsible for operation and maintenance of the City's publicly owned infrastructure (with the exception of the City's water and wastewater treatment plants, which are managed by the Water Treatment Superintendent and Wastewater Superintendent, respectively).

DPW operates and maintains a wide variety of public infrastructure, including the water distribution and wastewater collection systems, wastewater lift stations, City parks and facilities, and streets.

Figure 2-A: Organizational Chart



2.1 Authorized Representatives

The City's Legally Responsible Official(s) (LRO) for wastewater collection system matters are identified below along with their roles and responsibilities for the collection system operations. They are the City's legally responsible officials who are authorized to certify electronic spill reports and other required submittals to the SWRCB, the Office of Emergency Services (OES) and/or the CIWQS System. All Public Works staff are part of a multi-utility force, in that they perform work on not only the wastewater collection system but also water transmission and distribution and storm drain collection and retention systems, as well as streets and City buildings.

City Engineer/Public Works Director - LRO

Administers all phases of a comprehensive public works and engineering program through subordinate management and supervisory personnel; provides expert professional assistance to City management staff in areas of responsibility; performs related work as required; reports to the City Manager.

Public Works Supervisor – LRO

Manages the City's wastewater collection system utility operations; oversees the overall operation of the collection system, including regulatory compliance, supervising operations and maintenance, emergency planning and response, staff training, recommending capital improvements and utility asset management to

ensure reliable sustainable wastewater systems; performs a central customer service role for both internal and external collection system operations and maintenance activities; reports to the City Engineer/Public Works Director.

Public Works Lead Worker – Data Submitter

Provides day-to-day assignment of work duties on collection system components to Public Works crews; performs a variety of skilled wastewater collection system maintenance and operation work; responds to collection system emergencies and customer complaints; reports to the Public Works Supervisor.

Public Works Equipment Operator

Performs a variety of skilled wastewater collection system maintenance and operation work using heavy equipment; responds to collection system emergencies; reports to the Public Works Supervisor.

Public Works Maintenance Worker I/II

Performs a variety of skilled wastewater collection system maintenance and operation work; responds to collection system emergencies; reports to the Public Works Supervisor.

Wastewater Treatment Superintendent

Manages the City's wastewater treatment facility; oversees the operations of the treatment facility including regulatory compliance, supervising operations and maintenance, emergency planning and response, staff training, FOG program monitoring, reporting, and enforcement, recommending capital improvements and utility asset management to ensure reliable sustainable wastewater systems; reports to the City Engineer/Public Works Director.

Wastewater Treatment Operator

Performs a variety of skilled wastewater treatment facility maintenance and operation work; responds to treatment facility emergencies; reports to the Wastewater Treatment Superintendent.

GIS Coordinator

Performs mapping and data tracking and analysis related to the wastewater collection system; reports to the City Engineer/Public Works Director.

Assistant City Engineer

Performs a variety of professional civil engineering work related to the wastewater collection system and treatment facility; reports to the City Engineer/Public Works Director.

Associate Civil Engineer

Performs a variety of professional civil engineering work related to the wastewater collection system and treatment facility; reports to the City Engineer/Public Works Director.

Assistant Engineer

Performs a variety of semi-professional civil engineering work related to the wastewater collection system and treatment facility; reports to the City Engineer/Public Works Director.

Engineering Technician I/II

Provides construction field inspection of new wastewater collection system components and appurtenances to assure conformance with plans, specifications, and standards; performs mapping and data tracking and analysis related to the wastewater collection system; reports to the City Engineer/Public Works Director.

Finance Director

Provides financial tracking, monitoring and reporting for the Wastewater Utility; responsible for the financial structuring, monitoring and reporting on the Capital Improvements Program (CIP); reports to the City Manager.

Development Services Director

Administers the Planning and Building Departments through subordinate management and supervisory personnel; performs related work as required; reports to the City Manager.

Building Official

Manages the activities of the Building Division including building inspection and code enforcement programs; inspects the installation of privately-owned service laterals and grease related requirements; reports to the Development Services Director.

Code Enforcement Officer

Responsible for enforcement of various sections of the City of Shasta Lake Municipal Code (COSLMC), ordinances and resolutions in various areas. Reports to the Building Official.

2.2 Responsibility for SSMP Implementation and Maintenance

The City Engineer/Public Works Director shall have the overall responsibility for implementing, periodically auditing, and maintaining the City’s SSMP. He/she may delegate these responsibilities to his/her staff.

Other City Staff responsible for developing, implementing, and maintaining specific elements of the City’s SSMP, along with their job titles and contact information, are shown in Table 2-A below.

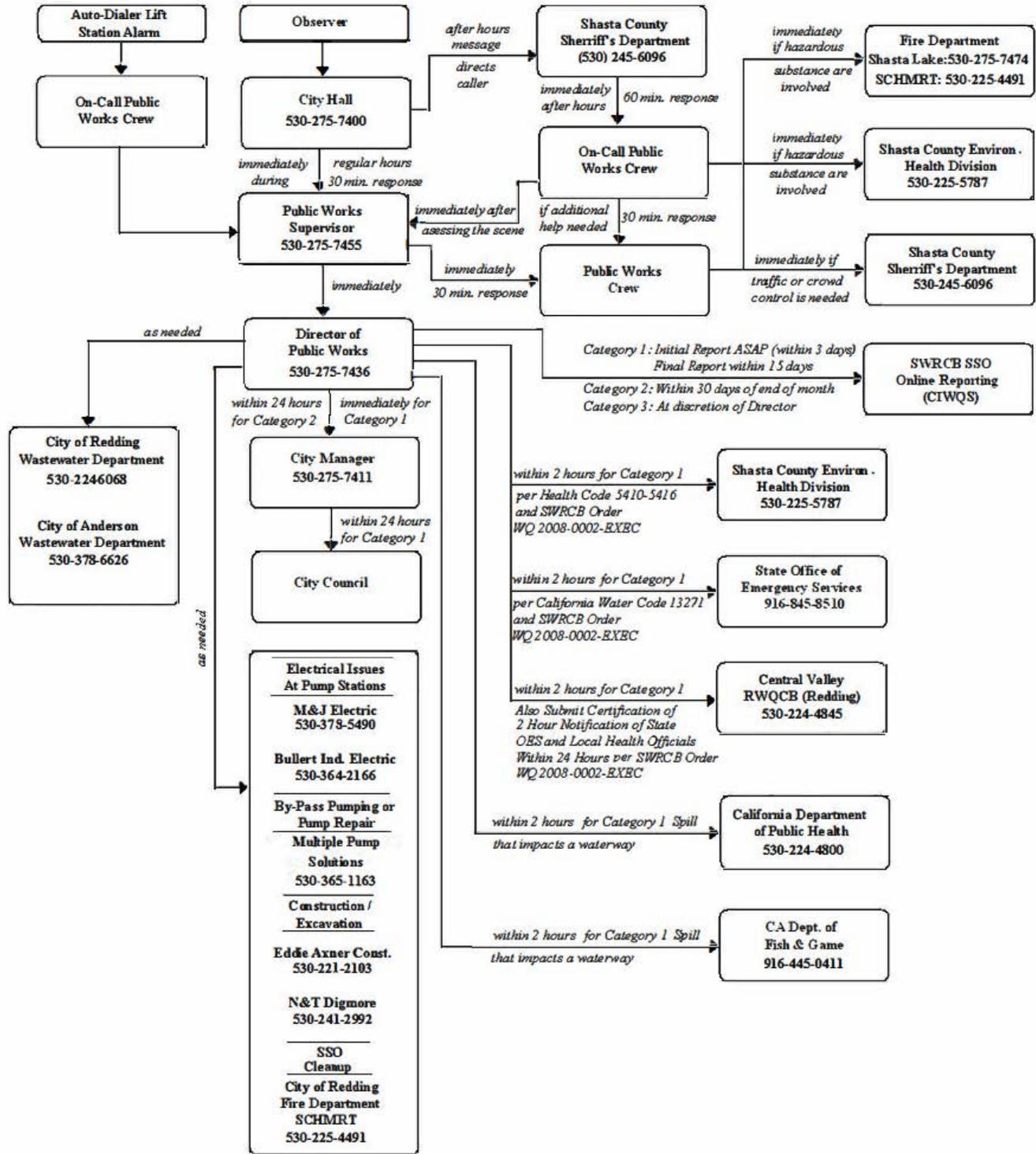
Table 2-A: Responsible Officials for SSMP Implementation and Maintenance

<u>Section</u>	<u>Section Name</u>	<u>Responsible City Official</u>	<u>Phone</u>	<u>Email</u>
1	Sewer System Management Plan Goals and Introduction	Public Works Director/City Engineer	530.275.7436	wbond@cityofshastalake.org
2	Organization	Public Works Director/City Engineer	530.275.7436	wbond@cityofshastalake.org
3	Legal Authority	City Manager	530.275.7464	jlugo@cityofshastalake.org
4	Operation and Maintenance Program	Public Works Director/City Engineer	530.275.7436	wbond@cityofshastalake.org
5	Design and Performance Provisions	Public Works Director/City Engineer	530.275.7436	wbond@cityofshastalake.org
6	Emergency Spill Response	Public Works Supervisor	530.275.7455	bquintana@cityofshastalake.org
7	Sewer Pipe Blockage Control Program	Public Works Director/City Engineer	530.275.7436	wbond@cityofshastalake.org
8	System Evaluation, Capacity Assurance, and Capital Improvements	Public Works Director/City Engineer	530.275.7436	wbond@cityofshastalake.org
9	Monitoring, Measurement, and Program Modifications	Public Works Director/City Engineer	530.275.7436	wbond@cityofshastalake.org
10	Internal Audits	Public Works Director/City Engineer	530.275.7436	wbond@cityofshastalake.org
11	Communication Program	Public Works Supervisor	530.275.7455	bquintana@cityofshastalake.org
App. A	City Council Authorizing Resolutions	Public Works Director/City Engineer	530.275.7436	wbond@cityofshastalake.org
App. B	SSMP Audit Reports	Public Works Director/City Engineer	530.275.7436	wbond@cityofshastalake.org
App. C	SSMP Audit Checklist	Public Works Director/City Engineer	530.275.7436	wbond@cityofshastalake.org
App. D	Spill Emergency Response Plan	Public Works Director/City Engineer	530.275.7436	wbond@cityofshastalake.org
App. E	Fats, Oils, and Grease (FOG) Control Program	Wastewater Treatment Plant Superintendent	530.275-7448	srickel@cityofshastalake.org
App. F	Water Quality Monitoring Program	Public Works Supervisor	530.275.7455	bquintana@cityofshastalake.org
App. G	FY 2025 – 2030 Capital Projects Budget	Public Works Director/City Engineer	530.275.7436	wbond@cityofshastalake.org
App. H	SSMP Change Log	Public Works Director/City Engineer	530.275.7436	wbond@cityofshastalake.org

2.3 Spill Reporting Chain of Communication

The spill reporting chain of communication are described in Figure 2-B below, in Section 6 – Emergency Spill Response, and in the Spill Emergency Response Plan (SERP) included in Appendix D.

Figure 2-B: Spill Reporting Chain of Communication Summary



Section 3: Legal Authority

The City derives the legal authority to construct, maintain and operate its sanitary sewer system from both the laws of the State of California and the COSLMC Title 13 – Public Services. A discussion of the sections pertinent to SSMP implementation follows, and the entire Code can be found at:

https://library.municode.com/ca/shasta_lake/codes/code_of_ordinances

Summaries of the individual code sections are listed below; see the COSLMC for the full section text.

3.1 Prevention of Illicit Discharges into the Sanitary Sewer System

The following sections of the COSLMC are intended to aid the City in the prevention of illicit discharges:

- All buildings and facilities are required to connect to the City's collection system within the boundaries of the collection system (13.16.300).
- System extensions are required for new development, including those that are minor in nature but are within 100' of an existing collection system main (13.16.310).
- Permits are required for all sewage infrastructure related to development, including residential, commercial, and industrial (13.16.320 to 13.16.360).
- Penalties exist for failure to obtain permits, as well as discharging or causing the discharge of prohibited wastewater causing damage to City facilities (13.16.370 to 13.16.380).
- Prohibited discharge standards list general and specific discharges that are prohibited (13.16.570).
- Control of fats, oils, and grease (FOG, 13.16.670 to 13.16.880)
- Notification is required by food service establishments (FSEs) when potential discharges may occur due to breakdown of equipment, accidents, or human error (13.16.870).

3.2 Coordination with Storm Sewer Agencies

Coordination between the City's sewer collection and storm drain staff is organizational. As noted earlier, all Public Works staff are part of a multi-utility force, in that they perform work on not only the wastewater collection system but also water transmission and distribution and storm drain collection and retention systems. The same GIS mapping system that houses the sanitary sewer collection system data also houses the storm drain system data. As a result, the coordination between the wastewater utility and storm drain utility is seamless.

3.3 Sewer System Component and Connection Design Standards

The following sections of the COSLMC require compliance with the City's design and construction standards:

- All utility service design and construction work shall conform to the City's design and construction standards (13.04.070, 13.16.390)).
- Plans are required to be submitted to the City for all public sewer construction (13.16.400)
- City inspection is required for all collection system improvements (13.16.500)
- Testing of the completed system shall be completed in accordance with the City's construction standards (13.16.450).
- Record drawings of improvement plans shall be filed with the City (13.16.390).

3.4 Ensure Access for Maintenance, Inspection, and Repairs

The following sections of the COSLMC ensure access to collection system facilities for maintenance, inspection, and repairs:

- The City shall have access to customer's premises for the purpose of repairing all equipment belonging to the City (13.04.080).
- Trespassing on City utility properties and facilities is prohibited (13.04.510, 13.04.520).
- Building sewers shall be maintained by the property owner to the point of connection with the sewer main (13.16.470)

- Applicants shall procure easements and/or right-of-way for the installation and maintenance of improvements (13.16.480, 13.16.490).

3.5 Enforcement of Violations of Sewer Ordinances, Service Agreements, or other Binding Procedures

The following sections of the COSLMC are related to the enforcement of sewer ordinances, service agreements, and other procedures:

- Discharge of prohibited wastewaters shall be liable for any damages caused (13.16.380)
- Customer non-payment of bills may result in the City terminating service (13.04.470).
- Violators of provisions of the Public Services chapter are subject to fines (13.16.630).
- Violators of provisions of the Public Services chapter shall immediately cease said violation and abate the condition (13.16.640, 13.16.650).
- Violators of the provisions of the FOG control program are subject to fines (13.16.880)

3.6 Easement Accessibility Agreements

The City's collection system largely consists of facilities in the public right-of-way, but facilities within easements do exist. Utility easements held by the City typically grant the City the legal right to access and use the property for the intended purpose (i.e. operation and maintenance of the utility) and restrict the property owner from obstructing the easement or utility. These conditions are governed by State of California land use law, not specific sections of the COSLMC.

Section 4: Operation and Maintenance Program

4.1 Updated Map of Sanitary Sewer System

The City has developed online GIS mapping for all City infrastructure, including the wastewater collection and storm drain systems. This mapping was developed from a review of record drawings, mapping, and field reconnaissance, and is continuously updated. This information is used in various City planning efforts, including sewer collection system and storm drain studies and Wastewater Master Plan preparation.

Data included on the City's GIS maps includes:

- Sewer collection system (gravity mains, force mains, valves, manholes, lift stations)
- Water distribution system (water mains, hydrants, valves, storage tanks, wells)
- Storm drain system (culverts, manholes, pipes, inlets, catch basins)
- Boundaries (general plan land use designations, parcels, zoning)
- Physical features (roadways, railways, creeks, lakes)
- Topographic features (USGS topography, LIDAR data)
- Aerial photography

As noted, the GIS mapping is available online 24/7/365. Maintenance workers are able to access mapping via a customized GIS app on smartphones and tablets, allowing them to not only view existing infrastructure with background aerial photos but generate digital mapping update requests when mapped assets need to be adjusted, added, or changed.

Up-to-date GIS mapping of the City's utilities, including wastewater and storm drain layers, is available for viewing on the GIS department page on the City's website at www.cityofshastalake.gov.

4.2 Preventative Operations and Maintenance (O&M) Activities

The elements of the City's sewer system O&M program include:

- Proactive and scheduled preventative maintenance flushing and CCTV condition assessment of gravity sewers (4.2.1)
- Daily inspection and preventive maintenance for the lift stations (4.2.2)
- Preventive maintenance for force mains (4.2.3)
- Repair and rehabilitation (4.2.4)

DPW is responsible for the normal maintenance and operations of the sanitary sewer collection system (with the exception of sanitary sewer laterals, which are privately owned and maintained between the property connection and the main) and the proper planning and capital improvement programming of these systems.

4.2.1 Proactive and scheduled preventative maintenance flushing and CCTV condition assessment of gravity sewers

The City's gravity sewer collection system consists mainly of pipelines located in street areas and does not include individual laterals, which are owned and maintained by the property owner who uses the lateral. Additional pipeline assets are located in creek drainages and other low spots that are not easily accessible. Pipelines are flushed to remove obstructions, maintain flow capacity, and prevent blockages. The work requires specialized equipment to flush the line back to a manhole and then vacuum the debris out.

The City proactively cleans and flushes portions of its gravity sewer collection system on an annual and biennial basis. These cleaning operations are focused on gravity sewers with a history of debris or FOG buildup (known internally as 'Hot Lines' and 'Hot-Hot Lines') to minimize operational problems from these impacted lines. Hot Line cleaning typically kicks off in September, is completed by the end of November, and encompasses approximately 6.4 miles of the collection system. Hot-Hot Line cleaning is typically accomplished in conjunction with Hot Line cleaning, is repeated roughly every four months during the year, and encompasses approximately 0.62 miles of the collection system. Up-to-date listings of both sets of high-priority pipelines are maintained in the DPW offices.

The high priority lines listed above, as well as the remainder of the gravity sewer collection system, are flushed every 10 years across two project groupings by a contractor hired by the City – see 4.2.1.2 below. The last complete flushing project (including Closed-Circuit Television (CCTV) inspection) was completed in 2024-2025, and the City anticipates the next project to begin in 2034.

In addition to these scheduled cleaning operations, the City conducts additional flushing operations on an as-needed basis. As-needed flushing operations are typically accompanied by CCTV condition assessment, and are triggered by construction needs, customer service complaints, private contractor findings, and the like.

4.2.1.1 Gravity Sewer Maintenance Flushing Records

Flushing records for Hot Lines and Hot-Hot Lines are maintained in a hard copy binder with a record sheet for each gravity sewer pipeline run. The records include a location description of the pipeline including manholes and the map atlas page number, and fields for date, length of pipeline cleaned, operator initials, and notes.

If any City-owned pipeline experiences a blockage or spill that is not caused by a one-time event (i.e. pipeline structural failure, roots cut from upstream plugging main, etc.), that line is automatically placed on the Hot Line list. Pipelines may be moved from their currently assigned frequency flushing route to the route with the next lowest frequency (for example, from the Hot Line list to the General Maintenance list) if three consecutive flushings are completed and the results of the cleaning process no longer recommend increased frequency flushing. Pipelines that accumulate grease may only be removed from the increased frequency lists if there is specific knowledge regarding improvements in upstream source control.

4.2.1.2 Gravity Sewer CCTV Condition Assessment

The City's gravity sewer CCTV condition assessment program is conducted on a baseline and as-needed basis using the National Association of Sewer Service Companies (NASSCO) standard rating systems for pipelines.

The entire gravity sewer collection system is assessed via CCTV every 10 years across two project groupings by a contractor hired by the City. The last complete CCTV assessment project (including flushing) was completed in 2024-2025, and the City anticipates the next project to begin in 2034. These operations have resulted in the following data being collected in digital format:

- PACP report summary.
- PACP sanitary sewer inspection log with pipe-run graph and related digital images.
- Video imagery with audio track containing simultaneously recorded narrative commentary describing in detail the condition of the pipeline interior.

The information collected during the Citywide baseline assessment projects has proven to be very useful, as data collected on an as-needed basis can be compared to the baseline data to determine if any condition changes have occurred. All data is collected utilizing GIS asset identification for integration into the GIS database as needed.

In addition to the scheduled condition assessment work conducted every 10 years, the City conducts additional CCTV operations on an as-needed basis. As-needed CCTV condition assessment operations are typically accompanied by flushing operations, and are triggered by construction needs, customer service complaints, private contractor findings, and the like.

4.2.1.3 Manhole Condition Assessment

Manholes are inspected approximately every 10 years in conjunction with CCTV condition assessment program using the NASSCO standard rating system for manholes. These operations have resulted in the following data being collected in digital format:

- MACP report summary.
- Digital still photos of all defects in JPEG format (.jpg).

Minor structural deficiencies may be repaired by Public Works staff, and large problems are addressed as capital improvement projects. All data is collected utilizing GIS asset identification for integration into the GIS database as needed.

4.2.2 Daily inspection and preventive maintenance for lift stations

The City owns and operates 6 sewer lift stations. All sewer lift stations are served by auto-dialer systems, which detect high level, pump failure, and power failure and calls out standby staff to address the problem. All lift stations with onsite backup generators have automatic transfer switches in the case of power failures. General data for the lift stations is provided Table 4-A.

Table 4-A: Lift Station Data

<u>Name</u>	<u>Type</u>	<u>No. of Pumps or Compressors</u>	<u>Firm Capacity</u>	<u>Backup Power</u>
Lift Station 1	Dry Pit, Single Speed	2 – 7.5 HP	0.5 MGD	Portable Generator
Lift Station 2	Ejector Pot	2 (compressor)	0.06 MGD	Portable Generator
Lift Station 3	Dry Pit, VFD	3 - 60 HP	2.4 MGD	Onsite Generator
Lift Station 4	Dry Pit, Single Speed	2 – 34 HP	1.44 MGD	Onsite Generator
Lift Station 5	Submersible, VFD	2 – 170 HP	2.9 MGD	Onsite Generator
Industrial Park	Single Speed	2 – 10 HP	0.31 MGD	Portable Generator

Each lift station is checked daily by Public Works staff. Daily walk-through inspections include the following activities:

- Manually start pumps and check for unusual conditions
- Change the lead/lag pump
- Record air compressor run hours, pot counts, electric meter readings, pump run hours, and generator hours as appropriate for each lift station, and compute net hours versus previous day recordings and note irregularities.
- Check motors for oil leakage

Daily pump station logs are used to record equipment running hours. A hard copy binder is used to file completed daily logs at each lift station. Wet wells are washed down and cleaned to remove solids and grease weekly. A wet well cleaning log is kept on-site to help Public Works staff track completion. All required routine lift station mechanical maintenance activities are listed in a maintenance log that is kept on-site at each lift station. The required maintenance frequency for each activity is listed and space is provided to record and track completion dates.

Lift station logs are normally filled after several years of maintenance work. A new lift station log is produced when the previous log is filled and filed in a binder kept for each lift station. The lift station logs are reviewed by the Public Works Supervisor annually to ensure that all critical maintenance is being completed in a timely manner.

Maintenance staff use lift station troubleshooting guides that list typical mechanical and electrical issues encountered at the City’s lift stations and solutions for addressing those issues. The trouble shooting guides are designed to allow maintenance staff to document issues encountered, and what actions were taken to correct the problems. Maintenance staff is required to report all unusual problems to the Public Works Supervisor.

In an effort to streamline its lift station operations, in 2011 the City (via City Council action) standardized on a single manufacturer for pump selection by selecting ITT Flygt / Xylem as the City’s submersible pump supplier. This decision was made to reduce the training costs and the required spare and critical replacement parts inventory for by Public Works, and considered factors such as cost, reputation, pump efficiency, manufacturer support, location of factory-authorized service facility, and emergency and non-

emergency response time. An exception was included in the Resolution to authorize the City Engineer to competitively bid pumping equipment and spare parts to accommodate specific pumping configurations or situations, should the need arise in the future. When they were refit with new equipment, both Lift Station 1 and Lift Station 4 were fitted with Flygt pump equipment. Refer to Appendix A for City Council Resolution CC 11-04.

The City has contracted directly with ITT Flygt / Xylem to provide onsite maintenance training at Lift Station 1 and Lift Station 4 and intends to continue doing so in the future on a regular basis.

4.2.3 Preventive maintenance for force mains

Wastewater flow is conveyed to the City's wastewater treatment plant by four force mains originating at Lift Stations 3, 4, 5, and Industrial Park. The force mains from Lift Stations 4 and Industrial Park are located immediately adjacent to the wastewater treatment plant with known alignments; the force mains from Lift Stations 3 and 5 travel through subdivisions and overland through undeveloped areas in a meandering manner to reach the plant. Additionally, Lift Stations 1 and 2 both convey flow into higher elevation portions of the collection system via short force mains (less than 500' long).

The City does not have a comprehensive force main maintenance program in place. Inspection and maintenance work is performed on an as-needed basis at the various combination air release / vacuum valve and odor scrubber stations. Because they are always under pressure, grease and debris buildup in force mains is not typically a concern, and because all of the City's force mains are plastic, corrosion is not a concern.

Over the past 15 years, the City has suffered several force main-related spills related to either thrust or structural pipe failure. After seeing two structural pipe breaks approximately a year apart on the Lift Station 5 force main (which had been in service for approximately 21 years at that point), in 2017 the City elected to replace, realign, and upsize approximately 2700+/- linear feet of the force main from the Lift Station westerly. This eliminated all segments of the force main that the City had experienced breaks on since installation, and moved the pipeline into the Pine Grove Avenue right-of-way. In 2019, the City finished design work on a project to complete the replacement of the Lift Station 5 force main to the plant, as well as completely replace and realign the Lift Station 3 force main. Construction work on the project is scheduled to begin as soon as funding is available.

4.2.4 Repair and Rehabilitation

When issues are found with gravity mains, lift stations, or force mains, repair and rehabilitation work is typically accomplished in one of several ways. Pipelines that are found to be accumulating debris, roots, or FOG can be moved onto the 'hot line' or 'hot-hot line' lists for additional cleaning on regular intervals. Singular issues such as an offset or leaking pipeline joint or cracked pipe bell are typically handled by DPW on an individual basis, sometimes with the assistance of local contractors. Lift stations repairs are typically handled by DPW staff with assistance from outside contractors such as electricians. Repair and rehabilitation of larger sections of pipeline that would cause the work to exceed the Public Works Limit (as defined by the Public Contract Code) is typically designed and put out to public bid for contractor repair or replacement.

4.3 Training

The City uses a combination of in-house classes and field exercises to train staff, including on the job training, conferences, seminars, OSHA classes and other training opportunities that are provided in the Northern California area. The City also encourages its wastewater collection system employees to be certified in Collection System Maintenance by the California Water Environment Association. Training objectives are provided Table 4-B below.

The City conducts department training sessions for its collection system employees on both the SSMP and SERP annually, and the Public Works Supervisor and Lead Maintenance Worker have attended training courses on various SERP topics, including spill volume estimation and spill start time determination, and the water quality sampling plan. In addition, the City conducts annual confined space entry and certification for all employees who might be required to enter confined spaces anywhere in the City.

The City keeps an annual training documentation binder to document completed training sessions for each year. At the end of each year, the training binder, including a hard copy of the training tracking matrix is filed for documentation, and a new training binder is started for the next year.

4.3.1 Contractor Training

To ensure consistent high-quality work results, the City requires that contractors who perform work on the system must be adequately trained. This applies to contractors who perform routine maintenance, rehabilitate or replace portions of the system, or construct new facilities or assets. Per COSLMC Section 13.16.340, contractors are required to hold a professional contractor’s license issued by the State of California. Training requirements for contractors are specifically defined within the standard City contract documents for public works projects.

The City acknowledges that it is responsible for all work on the sewer collection system and spills that may occur. The City provides an inspector for all construction projects, and Contractors that work on the City’s collection system are provided a copy of the City’s SERP, directed to comply with the SERP, and instructed to notify the City IMMEDIATELY if any spill occurs. Once DPW staff arrive onsite at a spill, the City takes over the site and directs all spill mitigation and cleanup operations.

Documentation of all aspects of a given project, including photos, are recorded daily in the City’s Virtual Project Manager project management software.

Table 4-B: DPW Training Objectives

<u>Training Topics</u>	<u>Frequency</u>	<u>Training Topics</u>	<u>Frequency</u>
AWWA Safety Talks	Periodic	Injury and Illness Prevention Program	Annual
City Operating Procedures and Call-Outs	Annual	Ladders	Periodic / OTJ
Confined Space Rescue	Annual	Lockout / Tagout Procedures	New Hire / Periodic
Confined Space / Enclosed Areas	Annual	Misc. Safety Films	Periodic
CPR Training	Annual	Personnel Policy	New Hire
Driver Training	Periodic	Personal Protective Devices	Annual
Emergency Action Plan	Annual	Power Operated / Hand Tools	Periodic / As-Needed
Emergency Medical Services / First Aid	Annual	Respiratory Protection	Periodic / OTJ
Excavators, Trenching & Shoring	Periodic / As-Needed	Slings, Rope, Chains, Rigging	Periodic / As-Needed
Employee Alarm Systems	Annual	Spill Response	Annual
Fall Protection	Annual	Traffic Control / Flagging	New Hire
Fire Prevention Plan	Annual	VacCon Truck Training	Periodic / OTJ
Forklift Operations	Annual	Vehicle Equipment Training	Annual
Hearing Protection / Noise Controls	Periodic / OTJ	Work Zone Safety	New Hire

4.4 Vehicles, Equipment, and Replacement Parts

The City has developed Critical Vehicle, Equipment, and Replacement Part Inventories, included in Tables 4-C, 4-D, and 4-E below. The spares inventory for lift stations includes onsite standby pumps for Lift Stations 3, 4, 5, and Industrial Park. This ensures that pump failures, although uncommon, can be rectified in a matter of hours instead of waiting many months for replacement pumps to arrive.

Table 4-C: Vehicle and Equipment Inventory (last update: 12/31/2025)

<u>Vehicle No.</u>	<u>Year</u>	<u>Description</u>
15	2020	Ford F-350 Service Truck
20	2022	Ford F-350 Service Truck
23	2024	Ford F-350 Service Truck
27	1986	GMC C-60 Hydro Cleaner/Jetter
28	2024	Vactor Vacuum Excavator Truck
32	1999	Ford E-350 CCTV Van
34	2009	Traveler Utility Trailer
49	2009	International VacCon
52	1994	Gorman Rupp 4" Trash Pump
66	2022	Ford F-350 Service Truck
67	2011	Ford F-350 Service Truck
72	EA	Multiquip 60 kW Portable Generator
N/A	N/A	Spill Emergency Trailer

Table 4-D: Critical Replacement Parts Inventory – Collection System (last update: 12/31/2025)

<u>No. in stock</u>	<u>Unit</u>	<u>Description</u>
15	EA	4" VCP Starter Stub
1	EA	6" VCP Starter Stub
2	EA	6" x 6" x 4" PVC Wye
1	EA	6" x 6" x 4" PVC Tee
1	EA	4" ABS Backwater Valve
6	EA	4" ABS Coupler
2	EA	4" ABS 45° Elbow
1	EA	4" ABS 22.5° Elbow
1	EA	4" ABS Threaded End Cap
2	EA	2" ABS 45° Elbow
20	LF	4" SDR-26 Pipe
40	LF	8" C-900 Pipe
20	LF	8" SDR-35 Pipe
4	EA	6" Plug
9	EA	4" Plug
2	EA	4" Pressure Relief Check Valve
7	EA	4" PVC SDR Coupler

<u>No. in stock</u>	<u>Unit</u>	<u>Description</u>
7	EA	4" PVC SDR 45° Elbow
1	EA	4" PVC SDR 22.5° Elbow
2	EA	4" PVC SDR Tee
1	EA	4" PVC SDR Threaded End Cap
4	EA	6" PVC SDR 22.5° Elbow
6	EA	6" PVC SDR 45° Elbow
1	EA	6" PVC SDR Tee
2	EA	4" VCP to SDR Fernco Coupler
3	EA	4" SDR Sewer Tap Saddle
7	EA	6" VCP to SDR Fernco Coupler
1	EA	6" Conc to SDR Fernco Coupler
2	EA	6" x 4" VCP to SDR Fernco Coupler
4	EA	8" Conc to SDR Fernco Coupler
2	EA	10" Conc to SDR Fernco Coupler

Table 4-E: Critical Replacement Parts Inventory – Lift Stations (last update: 12/31/2025)

<u>Facility</u>	<u>No. in Stock</u>	<u>Unit</u>	<u>Description</u>
Lift Station #1	1	Set	O-Ring Kit
	2	Set	Bearing
	2	EA	Face Seal
	1	EA	Flygt Mini-CAS
	1	EA	Pressure Sensor
	1	EA	Flygt Pump (spare)
Lift Station #2	2	EA	Compressor Belt
	1	EA	Pressure Gauge
	1	EA	Air Filter
	1	EA	Head Gasket
	1	EA	Diaphragm Gasket
	1	EA	Unloader Assembly
	1	EA	Flange Gaskets
Lift Station #3	1	Set	Pump Gaskets
	1	EA	Relay Switch
	1	Set	Generator Fuses
	1	Set	O-Ring Kit
	1	EA	Fuse Kit
	1	EA	Multifunction Timer
	Mult		Fittings and Bolts
	1	EA	Generator Air Filter
	2	EA	Lovejoy Motor
	2	EA	Lovejoy Drive Flange
	1	Set	Oil Seal
	1	EA	Cornell Pump (spare)

<u>Facility</u>	<u>No. in Stock</u>	<u>Unit</u>	<u>Description</u>
Lift Station #4	1	EA	O-Ring Kit
	2	EA	Multifunction Timer
	1	EA	Buss Fuse
	1	EA	Relay Switch
	1	Set	Flange Gasket
	1	Set	Basic Repair Kit (Flygt)
	1	Set	Generator Filter
	1	EA	Flygt Mini-CAS
	1	EA	CAT Voltmeter
	1	EA	Flygt Pump (spare)
	1	EA	Level Transmitter
Lift Station #5	1	EA	Semiconductor Fuse
	Mult		Control Panel Fuses
	1	EA	Bridge Rectifier Kit
	1	EA	Control PCB
	4	EA	Buss Capacitor
	2	EA	AC Axial Fan
	1	EA	Flygt Pump (spare)
Lift Station #6	1	EA	O-Ring Kit
	1	EA	Relay Switch
	1	EA	Float Switch
	1	EA	Timer Module
	2	EA	Warrick Controller
	1	EA	Flygt Pump (spare)

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Section 5: Design and Performance Provisions

5.1 Updated Design Criteria and Construction Standards and Specifications

The City has established design and construction standards for both new construction and renewal and replacement work associated with collection system infrastructure. Collectively known as the City of Shasta Lake Construction Standards (COSLCS), the standards related to sanitary sewer design and construction standards are located in Section 300 (with references to other sections as needed). Refer to Appendix A for Resolution CC-2023-63 that rescinded the previous standards and adopted the COSLCS. The COSLCS are located here: <https://www.cityofshastalake.gov/1258/Construction-Standards>

The COSLCS include details and standards for pipes, manholes, private laterals, and other miscellaneous appurtenances. These standards are regularly reviewed and modified as new and innovative construction techniques and materials are approved for use in the City. Additional technical design criteria (such as maximum allowable d/D for collection system pipelines and truck sewers, HGL targets in manholes, and PDWF peaking factor) are contained in the City's Wastewater Master Plan.

Generally, wastewater design criteria are administered by the City's Public Works Engineering Division. Requests for modification or relief from the City's design standards or the COSLCS can only be considered and approved by the City Engineer.

The City requires that all new or rehabilitated lift stations be designed by a registered engineer and approved by the City Engineer before construction and acceptance by the City Council for operation and maintenance. Construction standards and acceptance provisions are established through the design process and are part of the approval of the plans and specifications for the new or rehabilitated lift station.

All sewer laterals within the City are owned and maintained by the private residents. Portions of the sewer lateral located within the City's street right-of-way must be constructed based on the City's construction standards. Portions of the lateral located on private property are subject to the jurisdiction of the City's Building Department.

5.2 Procedures and Standards

With regard to inspection and testing of sanitary sewer infrastructure, the City has the following standards and practices in place:

- COSLMC section 13.16.450, "Before any acceptance of the sewer line by the City and prior to the admission of sewage into the system, the sewer line shall be tested and shall be complete, in full compliance with all requirements of the standard city specifications, and to the satisfaction of the City Engineer."
- The COSLCS (Pages 300.03 and 300.04) contain acceptance testing criteria for pipelines and manholes.
- The City ensures that a City construction inspector, or contracted Construction Inspector / Resident Engineer, is available for every sewer system improvement project. The construction inspector is consulted prior to project acceptance and final retention release to ensure that the project a) is complete, and b) was completed per the Plans and Specifications.

Additionally, for City projects the City's General Contract Provisions contain the following relevant sections:

Section 5.19 - Inspection

"Any work, materials or equipment not meeting the requirements and intent of the Contract Documents may be rejected, and unsuitable work or materials shall be made good, notwithstanding the fact that such work or materials may previously have been inspected and / or payment therefore been made."

Section 5.21 – Samples and Testing

"The Engineer reserves the right to require the Contractor to provide samples, and to perform tests on any materials, articles, equipment, installations, or construction performed by the Contractor in addition to those specified in the Contract Documents. Unless otherwise specified in the Contract Documents, the Engineer will assume the cost of testing materials. All tests shall be performed under the supervision of the testing

laboratory or consultant employed by the City and at such times as are convenient to the Engineer.”

Section 5.22 – Rejection of Equipment, Materials, and Workmanship

“The Engineer shall have the right to reject equipment, materials, and workmanship which are determined by the Engineer to be defective or fail to comply with the Contract Documents, whether observed before or after final completion and whether or not fabricated, installed or completed. Rejected equipment and materials shall be removed from the premises and replaced, and rejected workmanship shall be promptly corrected to the satisfaction of the Engineer.”

Section 5.23 – Correction of Work

“If within one (1) year after the Date of Completion and acceptance of the Work or within such longer period of time as may be prescribed by law or by the terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be defective or not in accordance with the Contract Documents, the Contractor shall correct any or all such work, together with any other work which may be displaced in so doing, without expense to the City, promptly after receipt of a written notice from the Engineer unless the Engineer has previously given the Contractor a written acceptance of such defective or non-compliant condition.”

Section 6: Emergency Spill Response

6.1 Purpose

The purpose of the City's SERP is to support an orderly and effective response to sanitary sewer spills, reduce spill volumes, and collect information for the prevention of future spills. A "spill" in the SERP is defined as a discharge of sewage from any portion of the sanitary sewer system due to a sanitary sewer system overflow, operational failure, and/or infrastructure failure.

The SERP provides guidelines for City personnel to follow in responding to, cleaning up, and reporting and properly documenting spills that may occur within the City's service area. The City's SERP satisfies the SWRCB Order No. WQ 2022-0103-DWQ, which requires wastewater collection agencies to have a SERP.

Additionally, the SERP outlines procedures for responding to sanitary sewer spill backups into structures causing property damage resulting from exposure and contact with untreated or partially treated sewage as required by the City's insurer.

6.2 Policy

The City's employees are required to report all spills from City-owned sewer mains and publicly owned laterals found and to take the appropriate action to secure the spill area, properly report to the appropriate regulatory agencies, relieve the cause of the spill, and ensure that the affected area is cleaned as soon as possible to minimize health hazards to the public and protect the environment. The City's goal is to respond to spills as soon as possible following notification. The City will follow reporting procedures regarding sewer spills as set forth by the Central Valley (Region 5) Regional Water Quality Control Board (CVRWQCB) and SWRCB Order No. WQ 2022-0103-DWQ.

6.3 Objectives

The SERP includes measures to protect public health and the environment. The City will respond to spills from its system in a timely manner that minimizes water quality impacts and nuisance by:

- Immediately stopping the spill and preventing/minimizing a discharge to waters of the State.
- Intercepting sewage flows to prevent/minimize spill volume discharge into waters of the State
- Thoroughly recovering, cleaning up, and disposing of sewage and washdown water
- Cleaning publicly accessible areas while preventing discharges to the waters of the State.

Additionally, City staff will:

- Work safely
- Properly document each spill event in a separate file including photos and/or video where applicable
- Collect information for prevention of future spills
- Minimize public contact with spilled wastewater
- Mitigate the impact of the spill
- Meet the regulatory reporting requirements
- Evaluate the causes of failure related to spills
- Perform post-spill response evaluation for adherence to procedures and effectiveness of response
- Revise response procedures, modify maintenance practices, or provide additional training based on the results of the debrief and failure analysis of spills, as needed

6.4 SERP Documentation

A copy of the City's current SERP, last revised on September 23, 2023, can be found in Appendix D. All spill sampling and testing shall be conducted per the Water Quality Monitoring Plan (WQMP) contained in Appendix F. Periodic updates to the SERP are made as necessary to reflect changing procedures and contact information. Each update results in new SERP documents being produced and distributed to DPW staff.

For projects involving the wastewater collection system that involve outside forces, the City will typically hire a

Contractor to complete the work. For those types of projects, the City provides an inspector to observe all construction operations, and the Contractor is provided with a copy of the City's SERP, directed to comply with the SERP, and instructed to notify the City IMMEDIATELY if any spill occurs. Once DPW staff arrive onsite at a spill, the City takes over the site and directs all spill mitigation and cleanup operations.

Section 7: Sewer Pipe Blockage Control Program

7.1 Purpose

The City of Shasta Lake has evaluated its sewer collection system, determined that a FOG Control Program is necessary to adequately protect the system from blockages that may result in spills, and has established a program under the direction of the Wastewater Treatment Plant Superintendent, who acts as the “FOG Control Program Manager”.

7.2 Policy and Implementation

The City has established a FOG Control ordinance, located in Chapter 13.16, Sewer Service System, Article VII in the COSLMC. A copy of this ordinance can be found in Appendix E.

The City does not experience significant FOG buildup in the collection system. This is due to a) the few number of FSEs that operate in the City (approximately eight), b) the installation of oil and grease interceptors at several of the FSEs that remove FOG components before they reach the collection system, and c) the FOG control that results from the cleaning operations discussed in Section 4. The City has not experienced any spills caused by FOG buildup. Nonetheless, the City’s FOG program remains important to the continued wellbeing and operation of the collection system.

7.2.1 Implementation Plan and Schedule

Public outreach regarding the proper disposal of FOG wastes is conducted for commercial and residential users to inform them about the effects of discharging FOG wastes to the sewer collection system, City requirements regarding FOG disposal, and best management practices (BMPs) that may be employed to help reduce FOG discharges to the system.

Residential FOG Disposal Public Outreach: The City utilizes informational flyers to educate City residents about the importance of proper disposal of FOG. The residential public outreach flyer is provided in Appendix E.

Commercial FOG Disposal Public Outreach: Per the City’s FOG Control Ordinance, COSLMC Section 13.16.690, all new and existing FSEs shall be issued a FOG program notice by the FOG control program manager. The notice contains the current FOG control program rules and regulations. The FSE is required to comply with all of the applicable rules and regulations.

7.2.2 Plan and Schedule for FOG Disposal

Per the City’s FOG Control Ordinance (COSLMC Section 13.16.810), businesses operating grease interceptors and grease traps must have waste removed by grease haulers licensed by the California Department of Food and Agriculture (CDFA) in accordance with the California Food and Agricultural Code, or another qualified individual as determined by the FOG control program manager.

The FOG control program manager, Shasta County Department of Environmental Health, or their designees can verify that businesses use properly licensed grease haulers to remove all accumulated FOG by checking the records required to be kept (COSLMC Section 13.16.840).

7.2.3 Legal Authority

The COSLMC provides the legal basis and authority for the City’s FOG Control Program. See Section 3 of the SSMP.

7.2.4 Design Standards and Reporting Requirements

Various sections of the City’s FOG Control Ordinance (COSLMC Sections 13.16.740-.840) address design standards for new and existing FOG-generating businesses, operation and maintenance requirements, best management practices (BMPs), employee training, and record keeping and reporting requirements.

7.2.5 Authority to Inspect and Enforcement Authority

The City's FOG Control Ordinance (COSLMC Sections 13.16.850/.860) addresses the authority of the City to conduct periodic inspections (announced and unannounced) of FSEs for compliance with the Ordinance and to require FSEs to periodically submit reports on the status of implementation of kitchen BMPs. The Ordinance (COSLMC Section 13.16.870) requires that an FSE immediately contact the City's FOG Control Program Manager in the event an FSE is unable to comply with the FOG Control Ordinance due to a breakdown of equipment, accidents, or human error. The Ordinance (COSLMC Section 13.16.680) addresses the City's staffing for inspection and enforcement activities.

Enforcement authority is addressed in Section 3 of the SSMP.

7.2.6 Identification of FOG Problem Areas

As described in SSMP Section 4.2, the City maintains a list of pipelines that are subject to the accumulation of debris and FOG and schedules cleaning of those pipelines at regular intervals. The intervals are selected based on the severity of the problem according to crew observations during regular operation and maintenance work and as documented during flushing operations.

Pipelines subject to FOG accumulation are identified through the following activities:

- Regularly scheduled flushing analysis
- Regularly scheduled CCTV inspections
- Spills and follow-up cause investigations
- Sewer system blockages and follow-up cause investigations

7.2.7 Source Control Measures

The City uses its residential public outreach program and FSE FOG Control inspections to control the major sources of FOG in the City's sewer collection system. The City Wastewater Treatment Plant Superintendent, Wastewater Treatment Plant Operators, and Public Works Crews communicate as needed to compare the City's list of pipe segments impaired by FOG blockages, recent spills, and list of permitted FSE locations to determine if additional source control activities could relieve some of the FOG accumulation problems noted in the collection system.

Typically, if it is determined that FOG accumulation is occurring in the sewer collection system and FSEs upstream are suspected of contributing to the problem, additional unannounced FOG Control inspections or effluent monitoring may be conducted to identify the source. If violations are noted during those investigations, corrections are required to eliminate the illicit FOG discharges. If FSEs are not determined to be the source of excessive FOG observed in the system, additional targeted residential public outreach may be conducted to help reduce FOG discharges.

Section 8: System Evaluation, Capacity Assurance, and Capital Improvements

8.1 System Evaluation and Condition Assessment

The City's primary tools for conducting wastewater system evaluation and condition assessment are the Wastewater Master Plan, which is completed by a consulting firm selected through an RFP process, and the scheduled preventative maintenance flushing and CCTV condition assessment of gravity sewers discussed in Section 4. Both operations are scheduled on a coordinated rolling 10-year cycle that the City has right-sized due to the slow growth rate that the City experiences (1% per year or less) and the size of and small number of ongoing issues in the collection system.

8.1.1 System Evaluation

The City's primary tool for evaluating the wastewater collection system is the Wastewater Master Plan. As of December 31, 2025, the City is utilizing the 2016-2026 Wastewater Master Plan (WWMP) prepared by Akel Engineering Group, Inc.. This WWMP was prepared by utilizing previous Master Plans, hydraulic models, and the completed Citywide CCTV inspection data, and is intended to serve as the primary evaluation, planning, and development document to inform construction of system infrastructure improvements as the City continues towards buildout. The current Master Plan can be reviewed on the City's website at www.cityofshastalake.gov.

The WWMP has the following primary objectives:

- Confirm sewer system design and planning criteria
- Model, evaluate, and summarize the capacity and deficiencies of the existing sewer collection system
- Prepare a Capital Improvement Program that includes both improvements necessary to enhance existing system capacity and reliability and improvements needed to allow for future development and system growth

The WWMP also utilizes and documents the following items:

- Capacity Evaluation of 100% of the collection system
- Existing collection system infrastructure and facilities
- Minimum and recommended hydraulic performance criteria
- Projected wastewater flows (ADWF and PWWF) and peaking factors
- Development and calibration of the City's GIS-based hydraulic sewer model
- Capacity evaluation of the existing sewer system with improvements to mitigate existing deficiencies and to accommodate future growth
- Capital improvement program (CIP) with an opinion of probable construction costs and suggestions for cost allocations.

As noted, the WWMP is updated on a rolling 10-year cycle that coordinates with the Citywide preventative maintenance flushing and CCTV condition assessment. Due to the size of the City's collection system and the small number of known ongoing issues, as well as the fact that it typically takes more than a year to perform an update to the WWMP, the City is satisfied that the 10-year cycle meets the needs of the City.

In 2025, the City issued an RFP for the 2026-2036 Wastewater Master Plan – the new plan is anticipated to replace the previous Plan in mid-2026.

It has been found that the City's wastewater collection system is largely resilient to the effects of climate change. Although wildfires are a seasonal threat across California, the City's underground sewer lines and lift stations constructed from fire resistant building materials with defensible space maintained pose little concern in a fire emergency. Three of the City's lift stations are equipped with onsite backup power generators to offset the consequences of utility power loss, and the remaining three stations can be powered by a trailer mounted backup generator owned by the City. The most significant concern of climate change would be the increased frequency of high magnitude rain events in which pipes susceptible to inflow would have diminished capacity. This concern is factored into capacity assessment processes during Plan preparation (see 8.2 below).

8.1.2 Condition Assessment

Condition assessment work is completed both on a continual basis utilizing proactive maintenance flushing and CCTV (as needed) and a scheduled basis utilizing preventative maintenance flushing and CCTV condition assessment of the entire collection system as described in Section 4 of the SSMP. The information collected during both the preventative maintenance portion and the full system portion of the flushing and CCTV program is utilized during the WWMP update to inform the evaluation of the collection system.

8.2 Capacity Assessment and Design Criteria

A primary component of WWMP development is the hydraulic modeling of the collection system, which allows for capacity assessment under a variety of flow conditions and the evaluation of existing design criteria to see if changes are warranted.

Preparation of the hydraulic model typically includes the following items:

- Review of existing digital data from previous Master Plans and the Citywide GIS
- Review of written and digital inspection records from both the ongoing proactive maintenance flushing and CCTV work and the scheduled preventative maintenance flushing and CCTV
- Integration of updated GIS wastewater shape files into the data set
- Design criteria and assumption development
- Integration of flow measurement data, collected during rain events either at the time of WWMP preparation or during similar projects completed recently (such as the 2022 Infiltration and Inflow Monitoring project)
- Evaluation of flow measurement data to determine if certain design criteria (i.e. I&I peaking factor, dry weather peaking factor, flow criteria, etc.) need to be discretely analyzed for some or all of the collection system basins or sub-basins, rather than on a Citywide basis.
- Review and capacity analysis of lift stations
- Review and analysis of CIWQS spill reports over the past 10 years to determine if trends exist or specific locations need additional review
- Modeling of collection system and lift stations in modeling software such as Autodesk InfoWorks

In addition, existing design criteria (determined in previous Master Plans and the COSLCS as described in Section 5) are evaluated and compared to real-world flow measurements and observations taken in the City's collection system and at the various lift stations and the wastewater treatment plant to see if adjustment is needed. For example, during the 2016 WWMP modeling effort, it was determined that reduced water usage caused by the ongoing California drought was causing a citywide drop in indoor water usage and a correlating drop in household wastewater flows. Subsequently, this analysis resulted in adjustments to several then-current design standards, including ADWF HE Criteria (revised to 170 gpd) and ADWF Peaking Factor (adjusted to 1.7 x ADWF).

8.3 Prioritization of Corrective Action

Following WWMP model calibration work, the finalized collection system model is run for both dry-weather and wet-weather conditions under a variety of growth scenarios (i.e. current year, 10-year future capacity, 20-year future capacity). The results of these model runs are then used to produce a list of capacity improvements that will be needed to keep the collection system functioning as intended.

Capacity improvements are prioritized utilizing the following screening criteria:

- Current deficiencies, including the severity of potential spills at critical locations (i.e. near streams and creeks)
- Current service area deficiencies, including near-term development projects within the service area
- Near-term future capacity improvements
- Long-term future capacity improvements

8.4 Capital Improvement Plan

As a part of the development of the WWMP, a Capital Improvement Plan is prepared to prioritize improvement projects to address wastewater collection system capacity issues. The CIP is approved at a public meeting of the City Council as a part of the overall WWMP.

Following WWMP adoption, individual projects are selected for design and construction by the Engineering Department and placed into both the City's biennial budget and wastewater rate study for approval by the City Council. Once a project is funded, design and construction take place with full coordination between design engineers and maintenance staff.

This funding process has some caveats:

- Between 2008 and early 2020, the City's wastewater priority had been upgrading the City's WWTP to allow for unconstrained discharge to Churn Creek. During this time, collection system work was limited to maintenance activities. The WWTP project wrapped up in early 2020, and focus has shifted back to the collection system.
- The CIP typically includes far more projects in terms of dollars than are available through the City's biennial budget, the 5-year wastewater rate study, and the very limited available external funding. As a result, the approved project list is constantly being adjusted and changed.

The City's Wastewater Capital Projects budget contained in the 2025 Wastewater Rate Study for the period between FY 2025 and FY 2030 is included in Appendix G. Additional capacity enhancement projects related to ongoing private development projects are considered on an ongoing basis and are dependent upon the actual development and construction of those private projects.

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Section 9: Monitoring, Measurement, and Program Modifications

9.1 Performance Metrics

The indicators that the City will use to measure the performance of its wastewater collection system and the effectiveness of its SSMP are:

- Total number of spills
- Number of spills for each cause (roots, grease debris, pipe failure, capacity, lift station failures, and other)
- Portion of sewage recovered compared to total volume spilled
- Volume of spilled sewage discharged to waters of the State.

Since 2010, the number of spills in a given year have never exceeded five, and over time the number of spills per year has, in general, been declining. This is likely due to the implementation of the proactive and scheduled preventative maintenance flushing and CCTV condition assessment of gravity sewers described in Section 4.

9.2 Baseline Performance

The City has performance measures in place, and it has previously evaluated its performance biannually at the end of odd numbered calendar years as a part of the biennial SSMP Performance Review. The historical performance is shown separately for gravity mains, lift stations, and force mains.

In accordance with Order WQ 2022-0103-DWQ, internal audits of the SSMP will be modified going forward to occur at a minimum frequency of once every three (3) years, as discussed in Section 1 of the SSMP. Note that internal audits may occur more frequently as needed when performance indicators reflect a need to adjust O&M procedures.

9.3 Gravity Mains, Lift Stations, and Force Mains

The baseline performance and spill trends for gravity mains, lift stations, and force mains is shown on the following tables and figures.

Table 9-A: Gravity Sewer, Lift Station, and Force Main Spills by Year

<u>Year</u>	<u>Gravity Sewer Spills</u>	<u>Lift Station Spills</u>	<u>Force Main Spills</u>
2010	0	0	0
2011	0	0	0
2012	0	0	0
2013	5	0	0
2014	1	0	0
2015	0	0	0
2016	0	0	1
2017	3	0	1
2018	0	0	0
2019	3	0	0
2020	3	0	0
2021	2	0	0
2022	1	0	0
2023	0	0	0
2024	0	0	0
2025	0	0	0

Figure 9-A: Trend in Gravity Sewer, Lift Station, and Force Main Spills

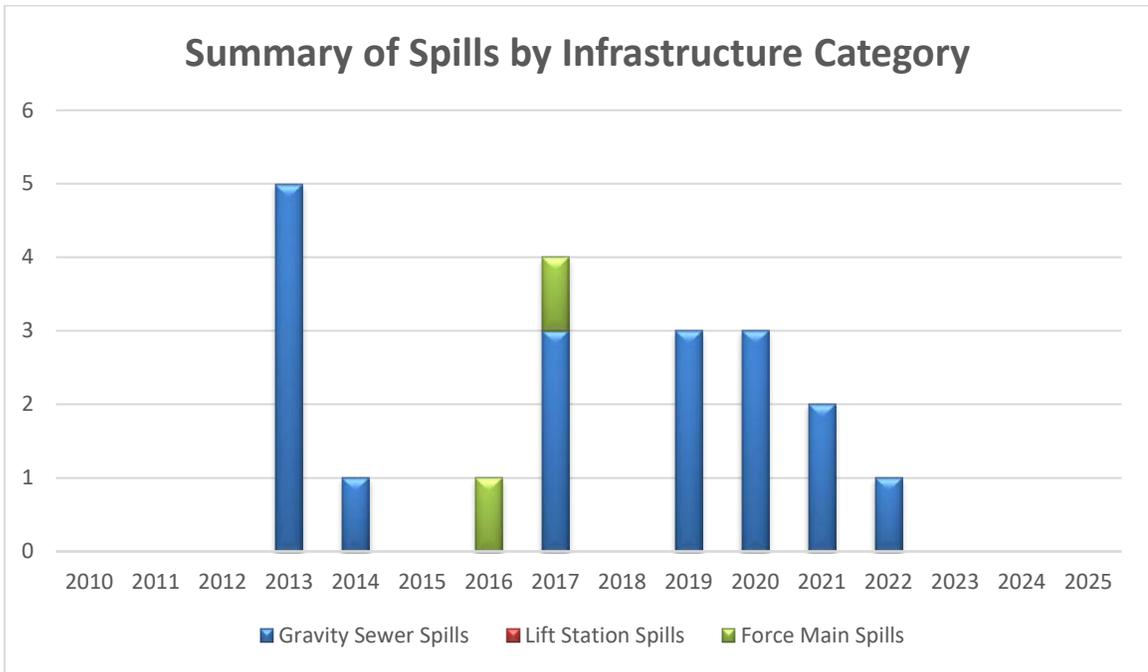


Figure 9-B: Trend in Spills per Year

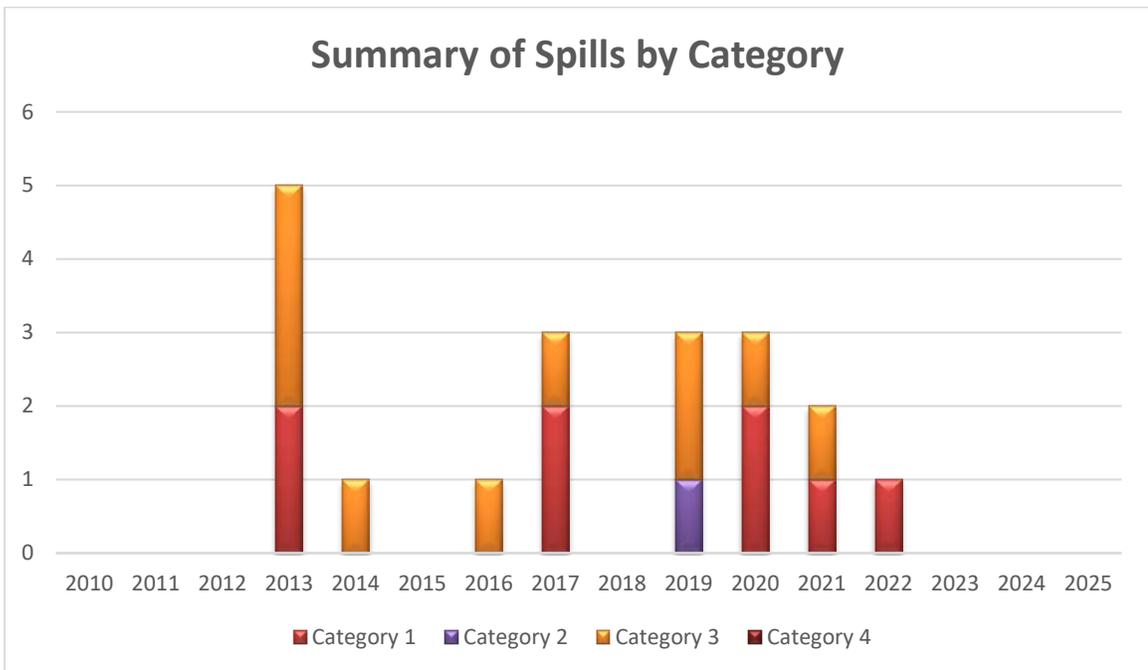


Table 9-B: Spills by Cause

Year	Debris / Roots	FOG	Structural	Vandalism	Other
2010	0	0	0	0	0
2011	0	0	0	0	0
2012	0	0	0	0	0
2013	3	2	0	0	0
2014	1	0	0	0	0
2015	0	0	0	0	0
2016	0	0	1	0	0
2017	1	2	1	0	0
2018	0	0	0	0	0
2019	1	0	1	1	0
2020	3	0	0	0	0
2021	1	0	0	0	1
2022	1	0	0	0	0
2023	0	0	0	0	0
2024	0	0	0	0	0
2025	0	0	0	0	0

Figure 9-C: Trend in Spills by Cause

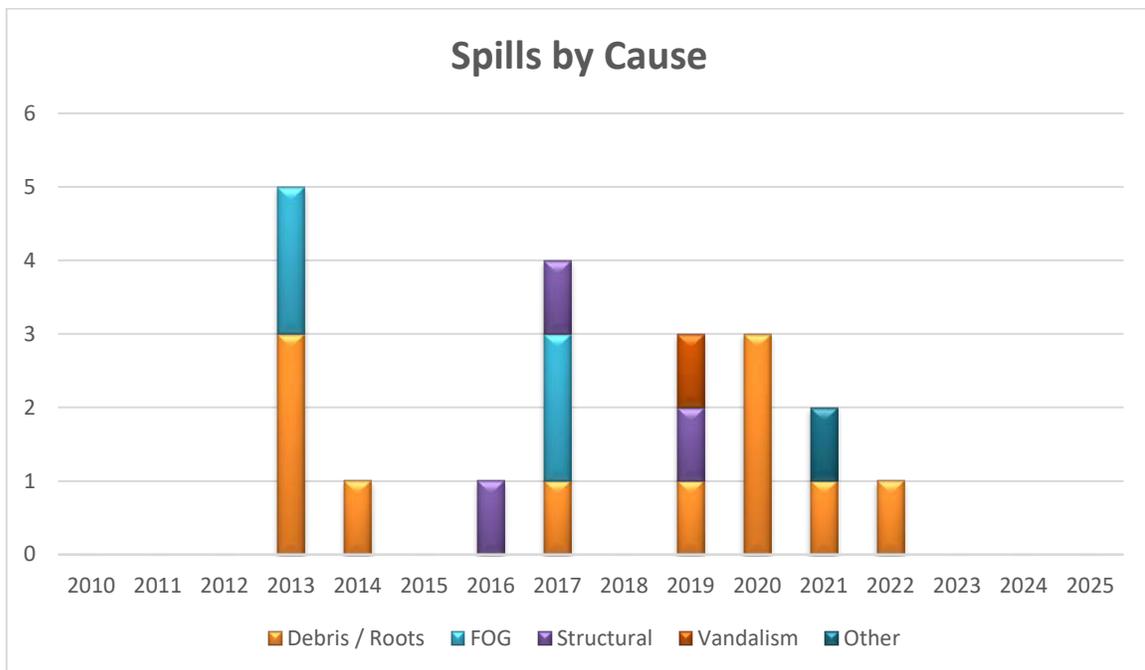
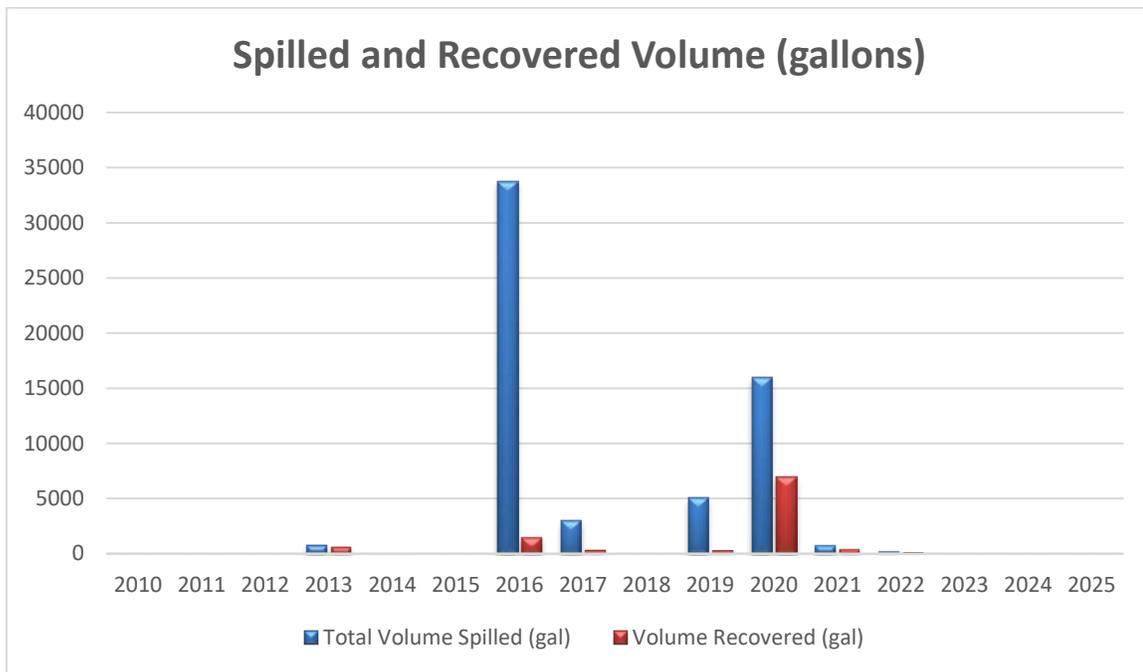


Table 9-C: Spilled / Recovered Volume Totals

Year	Total Volume Spilled (gal)	Volume Recovered (gal)	Volume Recovered (%)	Volume Reaching Surface Water (%)
2010	0	0	100%	0%
2011	0	0	100%	0%
2012	0	0	100%	0%
2013	775	600	77%	0%
2014	25	22	88%	0%
2015	0	0	100%	0%
2016	33776	1500	4%	96%
2017	3005	310	10%	87%
2018	0	0	100%	0%
2019	5080	252	5%	0%
2020	15997	7025	44%	0%
2021	750	400	53%	0%
2022	180	100	56%	100%
2023	0	0	100%	0%
2024	0	0	100%	0%
2025	0	0	100%	0%

Figure 9-D: Spilled / Recovered Volume Totals



9.4 Performance Monitoring and Program Changes

The City will evaluate the performance of its wastewater collection system at least triennially in coordination with its internal SSMP audits using the performance measures identified in this Section. The City will update the data and analysis at the time of the evaluation and will place the latest certified audit report in Appendix B.

The City may use other performance measures in its evaluation and will prioritize its actions and initiate changes to this SSMP, its operations and maintenance practices, and any related programs based on the results of the evaluation. This will be done as part of the internal SSMP audit (see Section 10).

9.5 Data References

The data used in this section was taken from CIWQS spill data through October 31, 2025, as well as from previous internal SSMP audit reports prepared by the City located in Appendix B.

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Section 10: Internal Audits

Prior to 2025, the City audited its implementation and compliance with the provisions of the SSMP biannually as required by the WDR. Internal audits were conducted every two years by the Public Works Director, and external audits by a qualified consulting firm were conducted every five years. Completed SSMP audits from prior years are filed as listed in Appendix B. SSMP updates were typically completed every five years to address issues found by either the internal or external audits.

Starting with the 2026 SSMP Update, the City's audit schedule will change from what has been completed in the past to a new schedule as described in Section 1. External audits are no longer required by the General Order.

SSMP internal audits will include the following items as outlined in the SSMP Internal Audit Checklist included in Appendix C.2:

- Evaluate the implementation and effectiveness of the City's SSMP in preventing spills
- Evaluate the City's compliance with the General Order
- Identify SSMP deficiencies in addressing ongoing spills and discharges to waters of the State
- Identify necessary modifications to the SSMP to correct deficiencies.

Following the completion of the internal audit, the City shall prepare an audit report that includes:

- Audit findings and recommended corrective actions
- A statement that sewer system operators' input on the audit findings has been considered
- A proposed schedule for the City to address identified deficiencies (if any)

The completed audit report will be approved at a public meeting by the City Council.

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Section 11: Communication Program

11.1 Public Communication During SSMP Development and Implementation

City staff communicates with the City Council regularly at public meetings that are held twice a month that allow for input from the public regarding the implementation and results of all City activities, including the operation of the wastewater collection system. The Public Works Director is responsible for development of the SSMP, coordinating all communications activities, and the placement of documents on the City's Public Works webpage including the posting of the City Council-adopted SSMP.

All SSMP adoptions (initial adoption in 2009, 2015 revisions adoption, 2020 revisions adoption, and 2025 revisions adoption) have occurred at regularly scheduled public City Council meetings. Full copies of the 2015, 2020, and 2025 Revised SSMP documents were placed on the City's website for review prior to the meeting, and the public was invited to comment on them during the meeting. Minutes of the meeting are available from the City Clerk, with the 2025 meeting minutes being available on the City's website.

The City's FOG ordinance (see Section 7) was adopted and inserted into the SSMP in August 2012. The same procedures listed for adopting the SSMP were applied to the adoption of the FOG ordinance.

The City's contact information is available on the website. While the SSMP is available at all times, additional information can be provided to any interested party upon request.

11.2 Public Communication During Spills or Discharges

City staff communicates with the Public during spills and discharges as outlined in Section 6 of the SSMP and in accordance with the SERP (see Section 8.4, "Public Notification" and Section 10, "Notification, Reporting, Monitoring, and Recordkeeping Requirements").

11.3 Communication with Tributary or Satellite Systems

The City has one satellite system that discharges into the City's collection system. This completely private system consists of a small collection system, lift station, and force main that serves the Twin Lakes Mobile Home Park located at 3304 Shasta Dam Boulevard, Shasta Lake, CA. The park contains approximately 182 single-family mobile homes. Sewage from the park is pumped into the City's collection system via a private lift station and force main, with the actual connection to the City's system occurring at Manhole K31A at the intersection of Rouge Road and Altus Street.

City staff has contact information for the park's management team, and communication with this group occurs on an as-needed basis.

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Sewer System Management Plan

2025 Revision

APPENDIX

Appendix A: City Council Authorizing Resolutions

Appendix B: SSMP Audit Reports

Appendix C: SSMP Audits

- C.1 Internal Audit Procedures
- C.2 SSMP Evaluation Checklist
- C.3 Performance Indicators

Appendix D: Spill Emergency Response Plan

Appendix E: Fats, Oils, and Grease Control Program

- E.1 FOG Control Ordinance
- E.2 Residential Public Outreach Flyer
- E.3 FSE FOG Control Ordinance Notification Letter

Appendix F: Water Quality Monitoring Program

Appendix G: FY 2025 – 2030 Capital Projects Budget

Appendix H: SSMP Change Log

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Appendix A
City Council Authorizing Resolutions

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RESOLUTION CC 09-82

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF SHASTA LAKE ADOPTING THE
SANITARY SEWER MANAGEMENT PLAN AS REQUIRE BY THE STATE REGIONAL
WATER QUALITY CONTROL BOARD**

WHEREAS, the City of Shasta Lake has a desire to comply with the State Water Quality Control Board's Order No. 2006-0003 for the Sanitary Sewer Management Plan; and

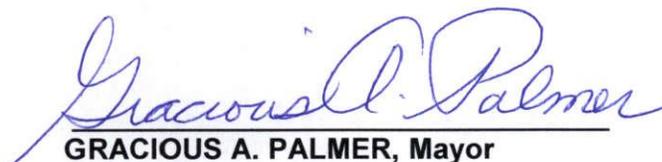
WHEREAS, the City has developed a complete Sewer System Management Plan; and

WHEREAS, there is no fiscal impact at this time to adopt the Sewer System Management Plan.

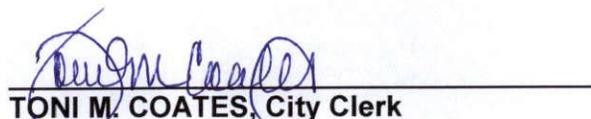
NOW THEREFORE, BE IT RESOLVED that the City Council of the City of Shasta Lake hereby adopts the Sanitary Sewer Management Plan as required by the State regional Water Quality Control Board.

PASSED, APPROVED, AND ADOPTED this 18th day of August, 2009 by the following vote:

AYES: FARR, HURLHEY, PALMER
NOES: NONE
ABSENT: LINDSAY, WATKINS


GRACIOUS A. PALMER, Mayor

ATTEST:


TONI M. COATES, City Clerk

RESOLUTION CC 11-04

A RESOLUTION OF THE CITY OF SHASTA LAKE CITY COUNCIL TO APPROVE A MODIFICATION TO THE SANITARY SEWER MANAGEMENT PLAN TO STANDARDIZE ON FLYGT PUMPS FOR USE AT CITY COLLECTION SYSTEM PUMP STATIONS AND DIRECT THE CITY ENGINEER TO MODIFY THE SSMP TO MAKE THIS CHANGE

WHEREAS, the City desires to standardize the manufacturer of pumps being installed in City collection system pump stations; and

WHEREAS, the City has taken many factors into account in making this standardization determination, including staff training costs, spare parts availability, cost, reputation, pump efficiency, manufacturer support, location of factory-authorized service facility, and emergency and non-emergency response time.

NOW, THEREFORE BE IT RESOLVED THAT the City of Shasta Lake City Council approves a modification to the Sanitary Sewer Management Plan to standardize on Flygt pumps for use at City collection system pump stations, with an exception to allow alternate equipment to accommodate specialized pumping configurations or situations as determined by the City Engineer, and directs the City Engineer to modify the SSMP to make this change.

PASSED, APPROVED, AND ADOPTED this 1st day of February, 2011, by the following vote:

AYES: FARR, WATKINS, LINDSAY
NOES: LUCERO
ABSENT: DIXON


ROD LINDSAY, Mayor

ATTEST:


TONI M. COATES, CMC, City Clerk

RESOLUTION CC-15-35

**A RESOLUTION OF THE CITY OF SHASTA LAKE CITY COUNCIL TO ADOPT THE 2015
UPDATE TO THE CITY'S SEWER SYSTEM MANAGEMENT PLAN**

WHEREAS, the City adopted a Sewer System Management Plan (SSMP) on August 18th, 2009, via Resolution 09-82, in compliance with State Water Resources Control Board Order No. 2006-0003-DWQ; and

WHEREAS, the City has completed two internal and one external audits of the SSMP over the past 5 years; and

WHEREAS, the City has modified the adopted SSMP to reflect the audit findings and current best management practices.

NOW, THEREFORE, BE IT RESOLVED THAT the City of Shasta Lake City Council hereby adopts the 2015 Update to the City's Sewer System Management Plan.

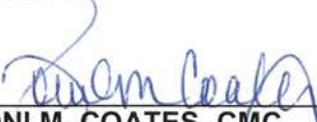
PASSED, APPROVED, AND ADOPTED this 19th day of May, 2015, by the following vote:

AYES: CHAPMAN-SIFERS, FARR, KERN, MORGAN, WATKINS
NOES: NONE
ABSENT: NONE



GREG WATKINS, Mayor

ATTEST:



TONI M. COATES, CMC
City Clerk

RESOLUTION CC-20-64

**A RESOLUTION OF THE CITY OF SHASTA LAKE CITY COUNCIL TO ADOPT THE 2020
REVISION TO THE CITY'S SEWER SYSTEM MANAGEMENT PLAN**

WHEREAS, the City adopted a Sewer System Management Plan (SSMP) in 2009 via Resolution 09-82, in compliance with State Water Resources Control Board Order No. 2006-0003-DWQ; and

WHEREAS, the City completed two internal audits and one external audit of the SSMP between 2009 and 2014; and

WHEREAS, the City adopted a SSMP Update in 2015 via Resolution 15-35 to reflect the completed audit findings; and

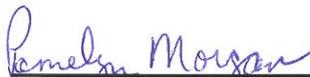
WHEREAS, the City completed a further three internal audits and one external audit of the SSMP between 2015 and 2019, for a total of five internal audits two external audits over a 10-year period;

WHEREAS, as a result of the latest audit findings, the City has heavily modified the 2015 SSMP to reflect the findings and the current operation and maintenance practices for the wastewater collection system by the City's Public Works Department.

NOW, THEREFORE, BE IT RESOLVED THAT the City of Shasta Lake City Council hereby adopts the 2020 Revision to the City's Sewer System Management Plan.

PASSED, APPROVED, AND ADOPTED this 4th day of August, 2020, by the following vote:

AYES: FARR, KERN, MORGAN, WATKINS
NOES: NONE
ABSENT: POWELL



PAMELYN MORGAN, Vice Mayor

ATTEST:



TONI M. COATES, CMC
City Clerk

RESOLUTION CC-2023-63

A RESOLUTION OF THE CITY OF SHASTA LAKE CITY COUNCIL TO RESCIND THE USE OF THE CITY OF REDDING CONSTRUCTION STANDARDS AND CONSTRUCTION STANDARD EXCEPTIONS AND ADOPT THE UPDATED CITY OF SHASTA LAKE CONSTRUCTION STANDARDS

WHEREAS, since 2007 the City has used the City of Redding Construction Standards (CORCS) and Construction Standard Exceptions for the construction of public improvements; and

WHEREAS, City staff has completed the task of reviewing, modernizing, and updating a newly revised set of City of Shasta Lake-specific construction standards; and

WHEREAS, these updated standards are now ready for public release.

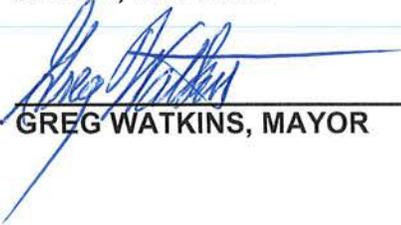
NOW, THEREFORE, BE IT RESOLVED THAT the City of Shasta Lake City Council hereby rescinds the use of the City of Redding Construction Standards and Construction Standard Exceptions and adopts the updated City of Shasta Lake Construction Standards.

PASSED, APPROVED, AND ADOPTED this 19th day of September 2023, by the following vote:

AYES: EISENBEISZ, JONES, MORGAN, POWELL, WATKINS

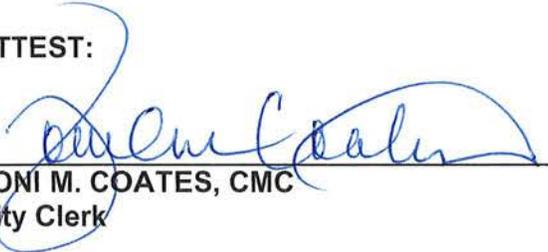
NOES: NONE

ABSENT: NONE



GREG WATKINS, MAYOR

ATTEST:



TONI M. COATES, CMC
City Clerk

RESOLUTION CC-2025-80

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF SHASTA LAKE TO
ADOPT THE 2025 REVISION TO THE CITY'S SEWER SYSTEM MANAGEMENT
PLAN**

WHEREAS, the City adopted a Sewer System Management Plan (SSMP) in 2009 via Resolution 09-82, in compliance with State Water Resources Control Board Order No. 2006-0003-DWQ; and

WHEREAS, the City has previously completed seven internal audits and two external audits of the SSMP between 2009 and 2025, as well as two SSMP updates in 2015 and 2020; and

WHEREAS, as a result of the adoption of a new General Order for Sanitary Sewer Systems (Order WQ 2022-0103-DWQ) by the State Water Resources Control Board in 2023, an update to the SSMP was required to address various changes enacted by the General Order.

NOW, THEREFORE, BE IT RESOLVED THAT the City of Shasta Lake City Council hereby adopts the 2025 Update to the City's Sewer System Management Plan.

PASSED, APPROVED, AND ADOPTED this 16th day of December, 2025, by the following vote:

AYES: Coates, Jones, Morgan, Ringwelski, Watkins

NOES: None

ABSENT: None



JUSTIN JONES, Mayor

ATTEST:



CHARITY TATLOW, CMC
City Clerk

Appendix B
SSMP Audit Reports

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Appendix B SSMP Audit Reports

Appendix B contains the following documents:

1. SSMP Audit Reports - The most recent certified audit report is filed in Appendix B. Past certified audit reports (2011 to present) are on file with the City and are available upon request.
2. CIWQS Annual Reports – The most recent CIWQS annual report is filed in Appendix B. Past CIWQS annual reports (2023 to present) are on file with the City and are available upon request.

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City of Shasta Lake – Public Works Department
4477 Main Street, Shasta Lake, CA 96019
(530) 275-7400

MEMORANDUM

To: Jessaca Lugo, City Manager
cc: City of Shasta Lake – City Council
Jeff Breedlove, Public Works Supervisor; Steve Rickel, Wastewater Treatment Superintendent
From: Will Bond, City Engineer/Public Works Director
Date: July 15, 2025
Subject: 2022-2024 SSMP Performance Review/ Audit

This memorandum summarizes the performance of the City of Shasta Lake’s Sanitary Sewer Management Plan (SSMP) for the time period between January 1, 2022 and December 31, 2024. Per the new State Water Resource Control Board’s (SWRCB) General Order for Sanitary Sewer Systems (Order WQ 2022-0103-DWQ), The SSMP requires an external audit every 6 years, which last occurred in 2020, and internal audits every 3 years, which last occurred in 2022. The purpose of the SSMP is to provide a written framework for the management, operation, and maintenance programs executed by the City, with the ultimate goal of maintaining the level of service of the sewer collection system while minimizing sanitary sewer overflows (SSOs). This review is completed as part of the required bi-annual audit process described in Section X of the City’s SSMP. This process helps the SSMP document to evolve over time to address identified deficiencies in the management, operation and maintenance of the sewer collection system. This memorandum summarizes and or/provides the following information:

1. SSO history, describing the number and nature of SSOs over the past three years (see attachment 2).
2. Summary of progress made implementing SSMP elements which have a plan and schedule for full implementation.
3. Summary of the effectiveness of the implemented SSMP elements based on SSMP tri-annual audit checklist.
4. Summary of proposed SSMP modifications (i.e. new programs, new performance indicators, etc.) not tied to poor performance, but tied to a desire to change or increase the scope of management, operations, and maintenance activities.

1. SSO History

SSOs are categorized by the State of California as follows:

SSO Category 1 – Spills that reach a surface water.

SSO Category 2 – Spills that do not reach a surface water and are greater than or equal to 1,000 gallons.

SSO Category 3 – Spills that do not reach a surface water and are greater than 50 gallons, but less than 1,000 gallons.

SSO Category 4 - Spills that do not reach a surface water and less than 50 gallons.

The City experienced One (1) SSO in the collection system during the period between January 1, 2022 and December 31, 2024. A summary follows; Detailed spill reports are included in Attachment 2.

2. SSMP Element Implementation Progress

The following SSMP Audit Checklist is a summary of the progress made in implementing SSMP elements and what changes need to be made.

SSMP Audit Checklist

The purpose of the SSMP Audit is to evaluate the effectiveness of the City of Shasta Lake's SSMP and to identify any needed for improvement.

Directions: Please check YES or NO for each question. If NO is answered for any question, describe the updates/changes needed and the timeline to complete those changes.

Element 1: Goals		Yes	No
A.	Are the goals stated in the SSMP still appropriate and accurate?	X	
Discussion:			

Element 2: Organization		Yes	No
A.	Is the City Organization Chart current? (Figure II-A)		X
B.	Is the Authorized Representative list current, and are the position descriptions accurate? (Section II-B)	X	
C.	Is the list of City staff responsible for SSMP Implementation and Maintenance current? (Table II-A)		X
D.	Is the SSO Reporting Chain of Communication accurate and up-to-date? (Figure II-B)		X
Discussion: Due to staffing changes the figures and sections have been updated to reflect current staff responsibilities.			

Element III: Legal Authority		Yes	No
Does the SSMP contain current references to the City of Shasta Lake's Municipal Code documenting the City's legal authority to:			
A.	Prevent illicit discharges into the wastewater collection system?	X	
B.	Properly design and construct sewer appurtenances?	X	
C.	Ensure access?	X	
D.	Fats, oils, and grease (FOG) control?	X	
E.	Enforce any violation of City sewer ordinances?	X	
F.	Were any changes or modifications made to City Sewer Ordinances, Regulations or standards since the last audit?	X	
Discussion: No updates needed.			

Element IV: Operations and Maintenance Program		Yes	No
A.	Does the SSMP reference the current process and procedures for maintaining the City's wastewater collection system maps? (Section IV-A)	X	
B.	Are the City's wastewater collection system maps complete, current, and sufficiently detailed? (Section IV-A)	X	
C.	Are storm drainage facilities identified on the collection system maps? (Section IV-A) If not, are SSO responders able to determine locations of storm drainage inlets and pipes for possible discharge to waters of the state?	X	
D.	Does the SSMP describe current preventive operations and maintenance activities and the system for prioritizing the cleaning of sewers? (Section IV-B)	X	
E.	Based upon information in the Biannual SSO Report, are the City's preventive maintenance activities sufficient and effective in minimizing SSOs and blockages? (Section IV-B)	X	
F.	Are the current components of the Capital Improvement Program outlined in the Wastewater Master Plan documented in the SSMP and/or biannual audit? (Section IV-C)	X	
G.	Does the SSMP accurately reflect the current training objectives and programs? (Table IV-B)	X	
H.	Does the SSMP list the major vehicles and equipment currently used in the operation and maintenance of the collection system? (Table IV-C)	X	
I.	Are contingency and replacement parts sufficient to respond to emergencies and properly conduct regular maintenance? (Tables IV-D and IV-E)	X	
Discussion: No updates needed.			

Element V: Design and Performance Provisions		Yes	No
A.	Does the SSMP reference current design and construction standards for the installation for new sanitary sewer systems, lift stations and other appurtenances and for the rehabilitation and repair of existing sanitary sewer systems? (Section V-A)	X	
B.	Does the SSMP document current procedures and standards for inspecting and testing the installation of new sewers, pumps, and other appurtenances and the rehabilitation and repair of existing sewer lines? (Section V-B)	X	
Discussion: No updates needed.			

Element VI: Overflow Emergency Response Plan		Yes	No
X	Does the City's Sanitary Sewer Overflow Emergency Response Plan establish procedures for the emergency response, notification, and reporting of SSOs? (Sections VI-A, VI-B, and VI-C)	X	
B.	Is City staff appropriately trained on the procedures of the Sanitary Sewer Overflow Emergency Response Plan? (Section IV-C)	X	
C.	Considering SSO performance data, is the Sanitary Sewer Overflow Emergency Response Plan effective in handling S SOs in order to safeguard public health and the environment? (Section IV-C)	X	
D.	Was required training on SSMP and OERP completed and documented? Were field exercises with field staff on SSO volume estimation conducted and documented? (Section VI-C)	X	
E.	Are all SSO and claims reporting forms current or do they require revisions or additions? (Appendix D)	X	
F.	Does all SSO event recordkeeping meet the SSS GWDR requirements? Are all SSO event files complete and certified in the CIWQS system? (Appendix D)	X	
G.	Is all information in the CIWQS system current and correct? Have periodic reviews of the data been made during the year to assure compliance with SSS GWDR? Have all Technical Report and Water Quality Sampling requirements been met and uploaded to the CIWQS data management system? (Online)	X	
H.	Were all Contractors working on wastewater projects provided a copy of the OREP? Were SSO procedures covered during the preconstruction meeting? (Section VI-D)	X	
Discussion: No updates needed.			

Element VII: FOG Control Program		Yes	No
A.	Does the FOG Control Program include efforts to educate the public on proper handling and disposal of FOG? (Section VII-B)	X	
B.	Are requirements for grease removal devices, best management practices (BMP), record keeping, and reporting established in the City's FOG Control Program? (Section VII-B.4)	X	
C.	Does the City have sufficient legal authority to implement and enforce the FOG Control Program? (Section VII-B.5)	X	
D.	Does the FOG Control Program identify sections of the collection system subject to FOG blockages, establish a cleaning schedule, and address source control measures to minimize these blockages? (Section VII-B.6)	X	
E.	Is the current FOG program effective in minimizing blockages of sewer lines resulting from discharges of FOG to the system? (Section VII-B.6)	X	
Discussion: No updates needed.			

Element VIII: System Evaluation and Capacity Assurance Plan		Yes	No
A.	Does the Wastewater Master Plan evaluate hydraulic deficiencies in the system, establish sufficient design criteria, and recommend both short and long-term capacity enhancement and improvement projects? (Sections VIII-A, VIII-B, and VIII-C)	X	
B.	Does the City's Capital Improvement Plan (CIP) establish a schedule of approximate completion dates for both short and long-term capacity improvements and is the schedule reviewed and updated to reflect current budgetary capabilities and activity accomplishment? (Section VIII-D)	X	
Discussion: No updates needed.			

Element IX: Monitoring, Measurement, and Program Modifications		Yes	No
A.	Does the SSMP accurately portray the methods of tracking and reporting selected performance indicators? (Sections IX-A, IX-B, and IX-C)	X	
B.	Is the City able to sufficiently evaluate the effectiveness of the SSMP elements based on relevant information? (Section IX-D)	X	
Discussion: No updates needed.			

Element X: SSMP Program Audits		Yes	No
A.	Will the SSMP Biannual Audit be completed, reviewed and approved by the City Council, and filed in Appendix B? Will the Biannual Audit be uploaded on the City's website? (Section X-A)	X	
B.	Will the SSMP be recertified a minimum of every 5 years? (Section X-B)		X
Discussion: . Per the new State Water Resource Control Board's (SWRCB) General Order for Sanitary Sewer Systems (Order WQ 2022-0103-DWQ), The SSMP requires an external audit every 6 years, which last occurred in 2020, and internal audits every 3 years, which last occurred in 2022. Recertification is due by May, 2026.			

Element XI: Communication Program		Yes	No
A.	Does the City effectively communicate with the public and other agencies about the implementation of the SSMP and continue to address any feedback?	X	
Discussion: No updates needed.			

Change Log (Appendix G)		Yes	No
A.	Is the SSMP Change Log current and up to date?	X	
Discussion: Updated with changes per this checklist			

Audit prepared by: Will Bond, P.E., City Engineer

Date: July 15, 2025

Audit reviewed and approved by Shasta Lake City Council

Date: August 19, 2025

3. Proposed SSMP Modifications

Based upon the results of this internal SSMP audit, only modifications of Element II (Organization) within the SSMP are required at this time.

However, the SSMP is required to undergo an external overview audit every six years. In 2019, this external overview audit was completed by Causey Consulting (associated with the City's insurance group (SCORE) and several modifications were recommended. These changes were made and adopted in August of 2020. The next external overview audit will be completed in 2026.

Conclusion

The City of Shasta Lake is currently in compliance with all of the SSMP requirements as described in subsection D.13 of the GWDR.

Attachments:

1. Updated SSMP Element II
2. SSO Spill Reports

Element II: Organization

The SSMP must identify:

- (a) The name of the responsible or **authorized representative** as described in Section J of this Order.
- (b) The names and telephone numbers for management, administrative, and maintenance positions responsible for implementing specific measures in the SSMP program. The SSMP must identify lines of authority through an **organization chart** or similar document with a narrative explanation; and
- (c) The **chain of communication** for reporting SSOs, from receipt of a complaint or other information, including the **person responsible** for reporting SSOs to the State and Regional Water Board and other agencies if applicable (such as County Health Officer, County Environmental Health Agency, Regional Water Board, and/or State Office of Emergency Services (OES)).

II-A. Organizational Structure

The sanitary sewer collection system is operated and maintained by the Department of Public Works. DPW is supported in this work by City Management and the Departments of Finance and Development Services. The organization chart for the City of Shasta Lake, including management, operation, and maintenance of the City's wastewater collection system, is shown in Figure II-A on the following page.

II-B. Authorized Representatives

The City's Legally Responsible Official(s) (LRO) for wastewater collection system matters are identified below along with their roles and responsibilities for the collection system operations. They are the City's legally responsible officials who are authorized to certify electronic spill reports and other required submittals to the SWRCB, the Office of Emergency Services (OES) and/or the CIWQS System. All Public Works staff are part of a multi-utility force, in that they perform work on not only the wastewater collection system but also water transmission and distribution and storm drain collection and retention systems, as well as streets and City buildings.

City Engineer/Public Works Director - Legally Responsible Official (LRO)

Administers all phases of a comprehensive public works and engineering program through subordinate management and supervisory personnel; provides expert professional assistance to City management staff in areas of responsibility; performs related work as required; reports to the City Manager.

Public Works Supervisor – Legally Responsible Official (LRO)

Manages the City's wastewater collection system utility operations; oversees the overall operation of the collection system, including regulatory compliance, supervising operations and maintenance, emergency planning and response, staff training, recommending capital improvements and utility asset management to ensure reliable sustainable wastewater systems; performs a central customer service role for both internal and external collection system operations and maintenance activities; reports to the City Engineer/Public Works Director.

Public Works Lead Worker – Data Submitter

Provides day-to-day assignment of work duties on collection system components to Public Works crews; performs a variety of skilled wastewater collection system maintenance and operation work; responds to collection system emergencies and customer complaints; reports to the Public Works Supervisor.

Public Works Equipment Operator

Performs a variety of skilled wastewater collection system maintenance and operation work using heavy equipment; responds to collection system emergencies; reports to the Public Works Supervisor.

Public Works Maintenance Worker I/II

Performs a variety of skilled wastewater collection system maintenance and operation work; responds to collection system emergencies; reports to the Public Works Supervisor.

Wastewater Treatment Superintendent

Manages the City's wastewater treatment facility; oversees the operations of the treatment facility including regulatory compliance, supervising operations and maintenance, emergency planning and response, staff training, FOG program monitoring, reporting, and enforcement, recommending capital improvements and utility asset management to ensure reliable sustainable wastewater systems; reports to the City Engineer/Public Works Director.

Wastewater Treatment Operators

Performs a variety of skilled wastewater treatment facility maintenance and operation work; responds to treatment facility emergencies; reports to the Wastewater Treatment Superintendent.

GIS Coordinator

Performs mapping and data tracking and analysis related to the wastewater collection system; reports to the City Engineer/Public Works Director.

Associate Civil Engineer

Performs a variety of professional civil engineering work related to the wastewater collection system and treatment facility; reports to the City Engineer/Public Works Director.

Engineering Technician I/II

Provides construction field inspection of new wastewater collection system components and appurtenances to assure conformance with plans, specifications, and standards; performs mapping and data tracking and analysis related to the wastewater collection system; reports to the Assistant City Engineer.

Finance Director

Provides financial tracking, monitoring and reporting for the Wastewater Utility; responsible for the financial structuring, monitoring and reporting on the Capital Improvements Program (CIP); reports to the City Manager.

Development Services Director

Administers the Planning and Building Departments through subordinate management and supervisory personnel; performs related work as required; reports to the City Manager.

Building Official

Manages the activities of the Building Division including building inspection and code enforcement programs; inspects the installation of privately-owned service laterals and grease related requirements; reports to the Development Services Director.

Code Enforcement Officer

Responsible for enforcement of various sections of the municipal code, ordinances and resolutions in areas such as community nuisance, property maintenance and related areas. Reports to the Building Official.

II-C. Responsibility for SSMP Implementation and Maintenance

The City Engineer/Public Works Director shall have the overall responsibility for, implementing, periodically auditing, and maintaining the City's SSMP. He/she may delegate these responsibilities to his/her staff.

Other City Staff responsible for developing, implementing, and maintaining specific elements of the City's SSMP, along with their job titles and contact information, are shown in Table II-A below.

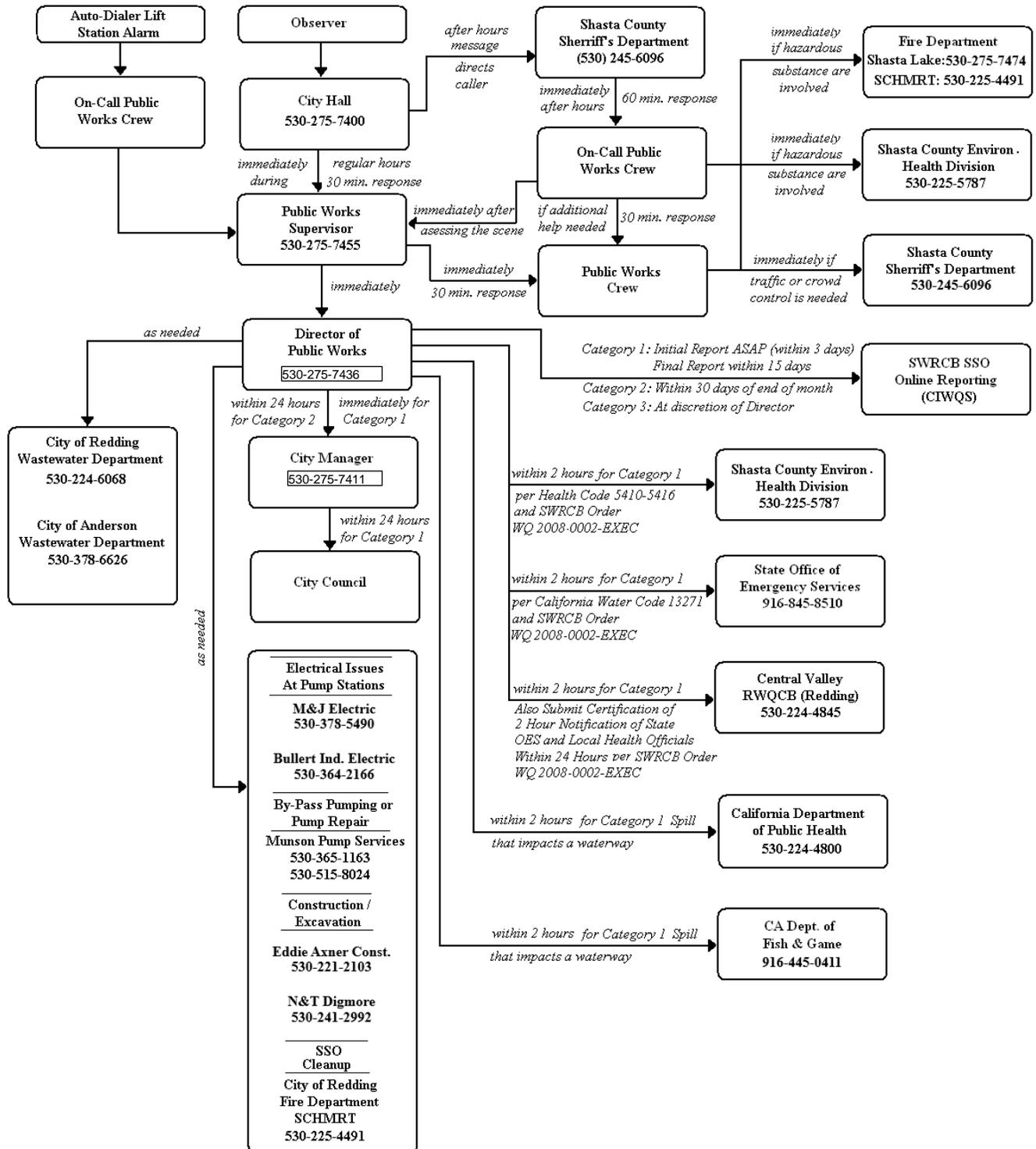
**Table II-A: Responsible Officials for SSMP Implementation and Maintenance
UPDATED FOR 2025 INTERAL AUDIT**

<u>Element</u>	<u>Element Name</u>	<u>Responsible City Official</u>	<u>Phone</u>	<u>Email</u>
	Introduction	Public Works Director/City Engineer	530.275.7436	wbond@cityofshastalake.org
I	Goals	Public Works Director/City Engineer	530.275.7436	wbond@cityofshastalake.org
II	Organization	Public Works Director/City Engineer	530.275.7436	wbond@cityofshastalake.org
III	Legal Authority	City Manager	530.275.7411	jlugo@cityofshastalake.org
IV	Operations and Maintenance Program	Public Works Director/City Engineer	530.275.7436	wbond@cityofshastalake.org
V	Design and Performance Provisions	Public Works Director/City Engineer	530.275.7436	wbond@cityofshastalake.org
VI	Overflow Emergency Response Plan	Public Works Supervisor	530.275.7455	jbreedlove@cityofshastalake.org
VII	Fats, Oils, and Grease (FOG) Control Program	Wastewater Treatment Superintendent	530.275.7448	srickel@cityofshastalake.org
VIII	System Evaluation and Capacity Assurance	Public Works Director/City Engineer	530.275.7436	wbond@cityofshastalake.org
IX	Monitoring, Measurement, and Program Modifications	Public Works Director/City Engineer	530.275.7436	wbond@cityofshastalake.org
X	SSMP Audits	Public Works Director/City Engineer	530.275.7436	wbond@cityofshastalake.org
XI	Communication Program	Public Works Supervisor	530.275.7455	jbreedlove@cityofshastalake.org
App. A	City Council Authorizing Resolutions	Public Works Director/City Engineer	530.275.7436	wbond@cityofshastalake.org
App. B	SSMP Audit Reports	Public Works Director/City Engineer	530.275.7436	wbond@cityofshastalake.org
App. C	SSMP Audit Checklist	Public Works Director/City Engineer	530.275.7436	wbond@cityofshastalake.org
App. D	Overflow Emergency Response Plan	Public Works Director/City Engineer	530.275.7436	wbond@cityofshastalake.org
App. E	Water Quality Monitoring Program	Public Works Supervisor	530.275.7455	jbreedlove@cityofshastalake.org
App. F	FY 2020 – 2022 Capital Projects Budget	Public Works Director/City Engineer	530.275.7436	wbond@cityofshastalake.org
App. G	SSMP Change Log	Public Works Director/City Engineer	530.275.7436	wbond@cityofshastalake.org

II-D. SSO Reporting Chain of Communication

The SSO Reporting Chain of Communication follows the Organization Chart shown above in Figure II-A. The SSO Reporting process and responsibilities are described in Figure II-B below and in the Overflow Emergency Response Plan included in Element VI and in the full OERP in Appendix D.

Figure II-B: SSO Reporting Chain of Communication Summary



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[Menu](#) | [Help](#) | [Log out](#)

Navigate to:

Attachment 2

You are logged-in as: ws_bond . If this account does not belong to you, please log out.

Sanitary Sewer Systems General Order – Spill Search

[Back to Sanitary Sewer Systems Main Menu](#)

Sanitary Sewer System: Shasta Lake CS
Regional Board: Region 5R - Redding

Agency: Shasta Lake City
WDID: 5SSO10851

Enter any search criteria and click "Search".

Agency:

Sanitary Sewer System:

WDID:

Spill ID:

Location Name:

Street (Number+Name):

City: **Zip:** **County:**

Regional Water Board:

Latitude: deg. min. sec. **OR** decimal degrees

Longitude: deg. min. sec. **OR** decimal degrees

Spill Date Range: to

Highlight auto upload in green

SSO Certification Step:

Note: The search result includes all versions of a spill if it has been amended.

1 (1 of 1) Display 20 per page

Spill Id	Status	Version	Region	Type	Category	Spill Volume	Collection System	WDID	Spill Start	Location Name	Address
881153	Certified	1.3	5	SSS	Category 1	180	Shasta Lake CS	5SSO10851	2022-05-11 07:00:00	Akrich & Virginia manhole	CA

1 (1 of 1) Display 20 per page



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Navigate to:

You are logged-in as: ws_bond. If this account does not belong to you, please log out.

Spill - General Information [?](#)

[SSO Menu](#)

Spill Event ID:	881153	Regional Water Board:	Region 5R - Redding
Spill Location Name:	Akrich & Virginia manhole	Agency:	Shasta Lake City
WDID:	5SSO10851	Sanitary Sewer System:	Shasta Lake CS

[General Info](#) [Spill Related Parties](#) [Attachments](#)

Spill - General Information, Screen 2

Certified by William S Bond (Public Works Director) on 05/11/2022 (Originally Certified on 05/11/2022) at 15:49
(Certification ID 410181)

[Amend](#) The spill is older than 120 days. If you want to amend the spill, click [here](#) to send email to SSO coordinator to explain why you need to amend the spill.

You have minutes to save your report before your session expires.

Note: Questions with "*" are required to be answered for 'Save Work in Progress'.

Questions with "*" are required to be answered for 'Submit Draft'.

Questions with "*" are required to be answered for 'Ready to Certify'.

Initial Draft Submitted On: 05/11/2022
 Original Certified On: 05/11/2022
 Last Updated By: [William Stuart Bond](#)

1 - Spill Type: Category 1
Version: 1.3

*** 2 - Estimate Spill Volumes**

- a) Estimated spill volume that reached a separate storm drain that flows to a surface water body? gallons
- b) Estimated spill volume recovered from the separate storm drain that flows to a surface water body? (Do not include water used for clean-up) gallons
- c) Estimated spill volume that directly reached a drainage channel that flows to a surface water body? gallons
- d) Estimated spill volume recovered from a drainage channel that flows to a surface water body? gallons
- e) Estimated spill volume discharged directly to a surface water body? gallons
- f) Estimated spill volume recovered from surface water body? gallons
- g) Estimated spill volume discharged to land? (Includes discharges directly to land, and discharges to a storm drain system or drainage channel that flows to a storm water infiltration/retention structure, field, or other non-surface water location. Also, includes backups to building structures) gallons
- h) Estimated spill volume recovered from the discharge to land? (Do not include water used for clean-up) gallons

Estimated Total spill volume to Reach Surface Water (a-b+c+e)	Estimated Total spill volume to Reach Land (g)	Estimated Total spill volume Recovered (b+d+f+h)	Estimated Total spill volume (a+c+e+g)
<input type="text" value="180.0"/>	<input type="text" value="0.0"/>	<input type="text" value="100.0"/>	<input type="text" value="180.0"/>

Responses to questions 3, 4, and 5 are automatically generated based on the volumes inputted in question 2.

* 3 - Did the spill discharge to a drainage channel and/or surface water?

* 4 - Did the spill reach a storm drainpipe that is not part of a combined sewer system?

* 5 - If spill reached a separate storm drainpipe, was all of the wastewater fully captured from the separate storm drain and returned to the sanitary sewer system?

Physical Location Details

* 6 - Spill location name: Akrich & Virginia manhole

* 7 - Latitude of spill location: [] deg. [] min. [] sec. OR 40.66513 decimal degrees

[Map]

* 8 - Longitude of spill location: [] deg. [] min. [] sec. OR -122.35385 decimal degrees

[Map]

* 9 - County: Shasta

* 10 - Regional Water Quality Control Board: Region 5R - Redding

11 - Spill location description: Sanitary Sewer manhole L7 in un-name seasonal waterway

Spill Details

* 12 - Number Of appearance points: 1

* 13 - Spill appearance point: Backflow Prevention Device, Combined Sewer D.I. (Combined CS Only), Force Main, Gravity Mainline, Inside Building or Structure, Lateral Clean Out (Private), Lateral Clean Out (Public), Lower Lateral (Private), Lower Lateral (Public), Manhole, Other sewer system structure, Pump station, Upper Lateral (Private), Upper Lateral (Public)

* 14 - Spill appearance point explanation: (Required if spill appearance point is "Other sewer system structure" and/or multiple appearance points are selected)

** 15 - Final spill destination: Beach, Building or Structure, Combined Storm Drain (Combined CS only), Drainage Channel, Other (specify below), Paved Surface, Separate Storm Drain, Street/Curb and Gutter, Surface Water, Unpaved surface

16 - Explanation of final spill destination: Manhole L7 is within a un-named seasonal waterway that at the time of the spill contained surface water that was flowing very minimally.

* 17 - Estimated spill start date/time: 05/11/2022 07:00 Date Format: MM/DD/YYYY

* 18 - Date and time sanitary sewer system agency was notified of or discovered spill: 05/11/2022 13:30 Date Format: MM/DD/YYYY

* 19 - Estimated Operator arrival date/time: 05/11/2022 14:00 Date Format: MM/DD/YYYY

** 20 - Estimated spill end date/time: 05/11/2022 15:00 Date Format: MM/DD/YYYY

** 21 - Spill cause: Debris-General

22 - Spill cause explanation: roots clogged the mainline.

** 23 - Where did failure occur? Gravity Mainline

24 - Explanation of Where Failure Occurred: (Required if Where Failure Occurred is "Other")

** 25 - Was this spill associated with a storm event? No

26 - Diameter of sewer pipe at the point of blockage or failure: 6 inches

27 - Material of sewer pipe at the point of blockage or failure: VCP

28 - Estimated age of sewer asset at the point of blockage or failure: (Years)

** 29 - Spill response activities: (Hold Ctrl key to Select Multiple answers from the list)
Cleans-Up
Mitigated Effects of Spill
Contained all or portion of spill
Other (specify below)
Restored flow
Returned All Spill to Sanitary Sewer System
Returned Portion of Spill to Sanitary Sewer System
Property Owner Notified
Other Enforcement Agency Notified

30 - Explanation of spill response activities: (Required if spill response activities is "Other", use attachment if the text is more than 1700 characters)

** 31 - Spill response completion date: 05/11/2022 16:00 Date Format: MM/DD/YYYY

** 32 - Spill corrective action taken: (Hold Ctrl key to Select Multiple answers from the list)
Added sewer to preventive maintenance program
Adjusted schedule/method of preventive maintenance
Enforcement action against FOG source
Inspected Sewer Using CCTV to Determine Cause
Other (specify below)
Plan rehabilitation or replacement of sewer
Repaired Facilities or Replaced Defect

33 - Explanation of spill corrective action taken: (Required if spill corrective action is "Other")

** 34a - Is there an ongoing investigation? No

34b - Reason for ongoing investigation?

35 - Visual inspection results from impacted receiving water:

** 36 - Health warnings posted? No

** 37 - Did the spill result in a beach closure (If YES, answer questions 38)? No

** 38 - Name of impacted beach(es) (enter NA if None): N/A

** 39 - Name of impacted surface water(s) (enter Un-named Tributary to XXXXX where XXXXX is the name of first named downstream tributary if receiving surface water body is un-named): Un-named tributary to Salt Creek

** 40 - Water quality samples analyzed for: (Hold Ctrl key to Select Multiple answers from the list)
Dissolved oxygen
Other chemical indicator(s) - specify below
Biological indicator(s) - specify below
No water quality samples taken
Not applicable to this spill
Other (specify below)

41 - Explanation of water quality samples analyzed for: (Required if water quality samples analyzed for is "Other chemical indicator(s)", "Biological indicator(s)", or "Other")

** 42 - Water quality sample results reported to: (Hold Ctrl key to Select Multiple answers)
County Health Agency
Regional Water Quality Control Board
Other (specify below)
No water quality samples taken
Not applicable to this spill

43 - Explanation of water quality sample results reported to: (Required if water quality sample results reported to is "Other")

** 44 - Explanation of volume estimation methods used: (Describe how you developed spill volume estimates for this spill. If more than 1,000 characters are needed, please attach the description.)
Based on minimal flow of 1/2 gallons per minute leaving top of manhole. We estimated approximately 6 hours of overflow.

Notification Details

45 - Cal OES Control Number (Required for Category 1 greater or equal to 1,000 gallons - see SSO Monitoring and Reporting Program Requirements):

46 - Cal OES Called Date/Time (Required for Category 1 greater or equal to 1,000 gallons - see SSO Monitoring and Reporting Program Requirements):

* 47(a) - Name and Title (Contact person who can answer specific questions about this SSO)

Will Bond - City Engineer

* 47(b) - Contact Person Phone Number

5302757436

The spill is older than 120 days. If you want to amend the spill, click [here](#) to send email to SSO coordinator to explain why you need to amend the spill.





Sanitary Sewer Systems – Annual Report Data

[Back to Sanitary Sewer Systems Main Menu](#)

Sanitary Sewer System: Shasta Lake CS **Agency:** Shasta Lake City
Regional Board: Region 5R - Redding **WDID:** 5SSO10851
Report ID details: 1817-C, Year: 2024, Version:1.0 **Report Status:** Certified 2025-03-10 10:43:31.0

Annual Report General Info **Attachments** **Certification**

Annual Report

**Continuing Enrollee Annual Report covering the previous calendar year is due by April 1, of each year.
 Note: All questions are required to be answered. Enter NA or 0 for questions that do not apply.**

Save Work in Progress

Ready to Certify

*1. Sanitary Sewer System Category:	<input type="text" value="Municipal(Public)"/>																		
*2. What is the population served by your agency's sanitary sewer system?	<input type="text" value="9315"/>																		
3. Please identify the total number of employees (technical and mechanical) for your agency's sanitary sewer system (including pump station operations) working within the different classifications listed below:																			
*3.a. Entry Level (Less than 2 years experience):	<input type="text" value="2"/>																		
*3.b. Journey Level (Greater than or equal to 2 years experience):	<input type="text" value="9"/>																		
*3.c. Supervisory Level:	<input type="text" value="2"/>																		
*3.d. Managerial Level:	<input type="text" value="1"/>																		
4. Please identify the total number of employees who hold CWEA Certification for Collection System Maintenance and/or Plant Maintenance-Includes Mechanical Technologist and Electrical/Instrumentation for your agency's sanitary sewer system (including pump station operations) for the various Certificates and Grade levels listed below:																			
*4.a. Grade I:	<input type="text" value="1"/>																		
*4.b. Grade II:	<input type="text" value="1"/>																		
*4.c. Grade III:	<input type="text" value="0"/>																		
*4.d. Grade IV:	<input type="text" value="0"/>																		
*4.e. Grade V:	<input type="text" value="0"/>																		
*4.f. Certified through the Office of Water Programs at California State University, Sacramento's Certificate Program:	<input type="text" value="0"/>																		
*4.g. If other, specify:	<input type="text" value="N/A"/> 997 characters remaining. <small>(Attach document if description is greater than 1000 characters, enter "See Attachment" into the box)</small>																		
5. Systems Information																			
*5.a. How many miles of forced mains?	<input type="text" value="5.00"/>																		
*5.b. How many miles of gravity sewers?	<input type="text" value="56.00"/>																		
*5.c. Estimated size distributions of assets (note: total % must sum to 100%)?	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">*Diameter of sewer pipe</th> <th style="width: 35%;">*Gravity Mainlines (%)</th> <th style="width: 35%;">*Force Mains (%)</th> </tr> </thead> <tbody> <tr> <td>6 inches or less</td> <td><input type="text" value="67"/></td> <td><input type="text" value="24"/></td> </tr> <tr> <td>8 inches</td> <td><input type="text" value="24"/></td> <td><input type="text" value="12"/></td> </tr> <tr> <td>9 - 18 inches</td> <td><input type="text" value="8"/></td> <td><input type="text" value="64"/></td> </tr> <tr> <td>19 - 36 inches</td> <td><input type="text" value="1"/></td> <td><input type="text" value="0"/></td> </tr> <tr> <td>> 36 inches</td> <td><input type="text" value="0"/></td> <td><input type="text" value="0"/></td> </tr> </tbody> </table>	*Diameter of sewer pipe	*Gravity Mainlines (%)	*Force Mains (%)	6 inches or less	<input type="text" value="67"/>	<input type="text" value="24"/>	8 inches	<input type="text" value="24"/>	<input type="text" value="12"/>	9 - 18 inches	<input type="text" value="8"/>	<input type="text" value="64"/>	19 - 36 inches	<input type="text" value="1"/>	<input type="text" value="0"/>	> 36 inches	<input type="text" value="0"/>	<input type="text" value="0"/>
*Diameter of sewer pipe	*Gravity Mainlines (%)	*Force Mains (%)																	
6 inches or less	<input type="text" value="67"/>	<input type="text" value="24"/>																	
8 inches	<input type="text" value="24"/>	<input type="text" value="12"/>																	
9 - 18 inches	<input type="text" value="8"/>	<input type="text" value="64"/>																	
19 - 36 inches	<input type="text" value="1"/>	<input type="text" value="0"/>																	
> 36 inches	<input type="text" value="0"/>	<input type="text" value="0"/>																	

	Unknown Diameter	0	0	
	Totals	100	100	
*5.d. Number of upper and lower service laterals connected to the system:	<input type="text" value="3519"/>			
*5.e. Estimated number of upper and lower service laterals owned and/or operated by the Enrollee:	<input type="text" value="14"/>			
*5.f. Which portion of laterals is your agency responsible for? (If the answer to question 5.e. is 0 (zero), answer 'None' for question 5.f.1.)	<input type="text" value="Upper and Lower"/>			
*5.f.1 Estimated total miles of laterals your agency is responsible for?	<input type="text" value="1.00"/>			
5.g. Approximately, what percentage of your sewer system piping and number of pump stations were constructed between the years of: (note: Gravity Mainlines and Force Mains % Totals must sum to 100%)	() "Age" is the year that the asset was originally constructed. For pump stations, flow categories are the maximum flow rate occurring over a 24-hr period based on annual operating data (i.e., flow measurement) or calculated peak flow.			
	*Age	*Gravity Mainlines Force Mains (%)	*Pump Stations (!) 75,000 Gal/day or Over (number of stations)	*Pump Stations (!) Under 75,000 Gal/day (number of stations)
	2020 - Present	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
	2000 - 2019	<input type="text" value="10"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
	1980 - 1999	<input type="text" value="13"/>	<input type="text" value="1"/>	<input type="text" value="1"/>
	1960 - 1979	<input type="text" value="70"/>	<input type="text" value="3"/>	<input type="text" value="1"/>
	1940 - 1959	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
	1920 - 1939	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
	1900 - 1919	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
	Before 1900	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
	Unknown Age	<input type="text" value="6"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
Totals	<input type="text" value="100"/>	<input type="text" value="4"/>	<input type="text" value="2"/>	
*5.h. Estimated total miles of your sewer system not accessible for maintenance:	<input type="text" value="0.00"/>			
*6. How many miles of sewer system did you clean last year?:	<input type="text" value="25.00"/>			
*7. How many miles of sewer system were inspected last year? (i.e., video closed-circuit television (CCTV) or alternative inspection methods)?:	<input type="text" value="25.00"/>			
*8. Name and location of the treatment plant(s) receiving the sanitary sewer system's waste (directly or indirectly):	*Treatment Plant WDID	Name and Address	*Select the appropriate relationship:	
	<input type="text" value="5SSO10851"/>	<input type="text" value="COSL WWTP 3700 Tibbits Road, Shasta Lake, CA"/>	<input type="text" value="WWTP same agency"/>	
	<input type="text"/>	<input type="text"/>	<input type="text"/>	
	<input type="text"/>	<input type="text"/>	<input type="text"/>	
*9. Are there any satellite tributary sanitary sewer systems?:	<input type="text" value="No"/>			
*9.a. If yes, please list them below:	*Tributary system owned by your agency?	*Tributary Collection System Name	*Tributary Collection System WDID	
	<input type="text" value="Select"/>	<input type="text"/>	<input type="text"/>	

	Select <input type="text"/>	<input type="text"/>	<input type="text"/>
	Select <input type="text"/>	<input type="text"/>	<input type="text"/>
	Select <input type="text"/>	<input type="text"/>	<input type="text"/>
	Select <input type="text"/>	<input type="text"/>	<input type="text"/>

*9.b. If you have more than five tributary systems, use this field to enter info of the sixth, seventh, ...:

1000 characters remaining.
(Attach document if description is greater than 1000 characters, enter "See Attachment" into the box)

*10. How many gravity mainline aerial or under ground crossings of water bodies (i.e. gravity sewer lines crossing over or under water bodies) are located throughout the sewer system:

*11. How many force main (pressurized pipe) aerial or under ground crossings of water bodies (e.g. pressurized sewer lines crossing over or under water bodies) are located throughout the sewer system?:

*12. How many siphons used to convey sewage are located throughout the sewer system?:

*13. Did you attach System Performance Evaluation as specified in section 5.11 (System Performance Analysis) of this General Order?:

Yes

*14. Is the system's Spill Emergency Response Plan up to date?:

Yes

*15. Major spill causes (for example, root intrusion, grease deposition):

*15.a. If other, describe::

942 characters remaining.
(Attach document if description is greater than 1000 characters, enter "See Attachment" into the box)

*16. System infrastructure failure points (for example, main, pump station, lateral, etc.):

*16.a. If other, describe::

942 characters remaining.
(Attach document if description is greater than 1000 characters, enter "See Attachment" into the box)

*17. Ongoing spill investigations:

997 characters remaining.
(Attach document if description is greater than 1000 characters, enter "See Attachment" into the box)

*18. Actions taken to address system deficiencies:

997 characters remaining.
(Attach document if description is greater than 1000 characters, enter "See Attachment" into the box)

Note: Questions with "*" are required to be answered.

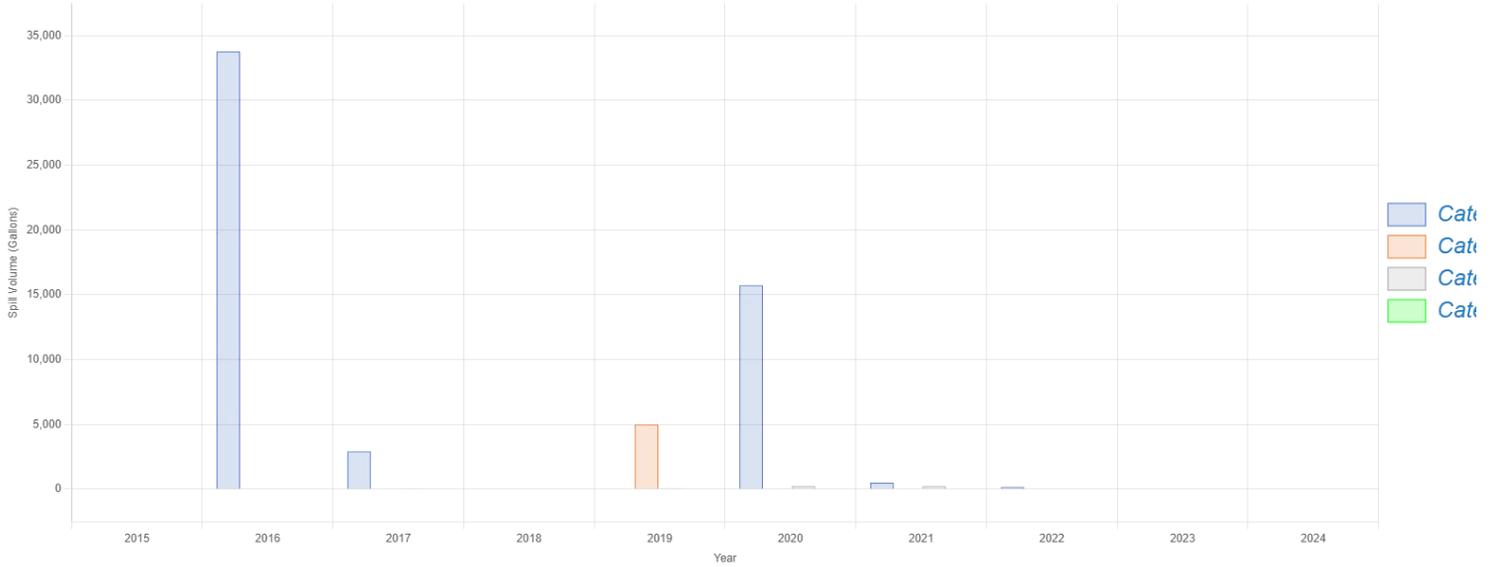


System Performance Analysis Graphs (WDID = 5SSO10851)

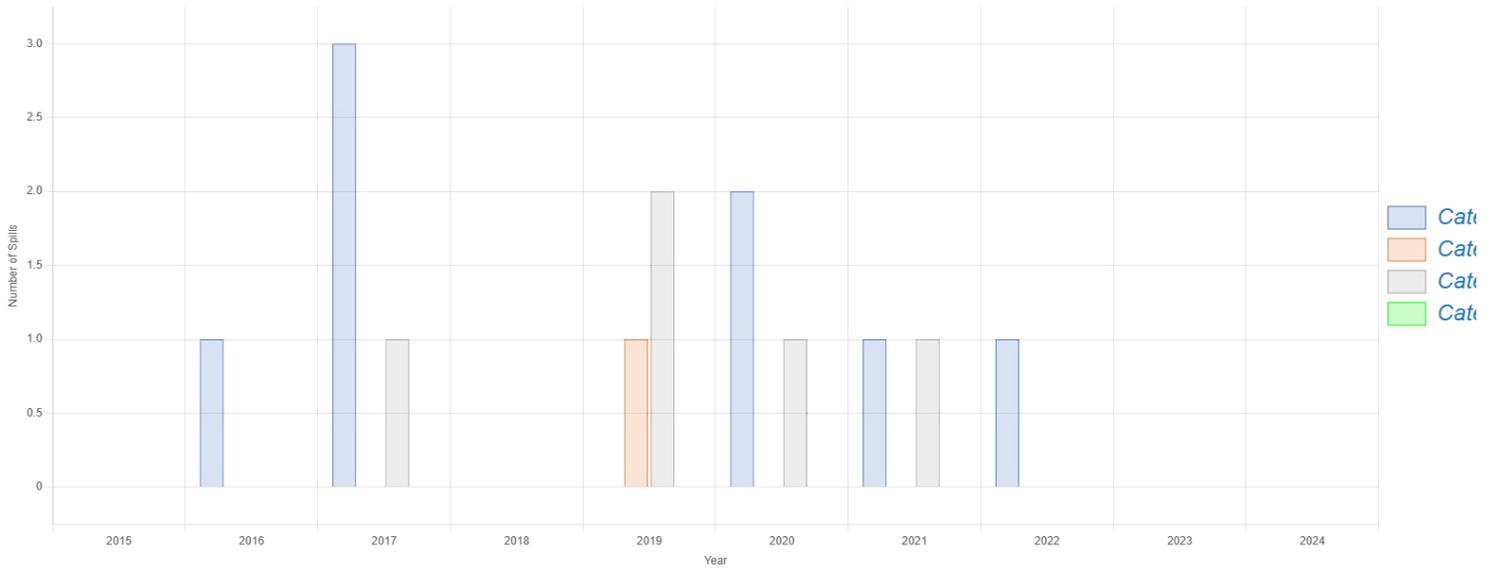
The following System Performance Analysis Graphs represent the enrolled system's Category 1, 2, 3, and 4 total spill volume and total number of spills on a running 10-year basis. The Enrollee shall include these graphs in its Annual Report per section 5.11 of the General Order.

[Click to Print This Page \(Select Printer as Adobe PDF and Orientation as Landscape\)](#)

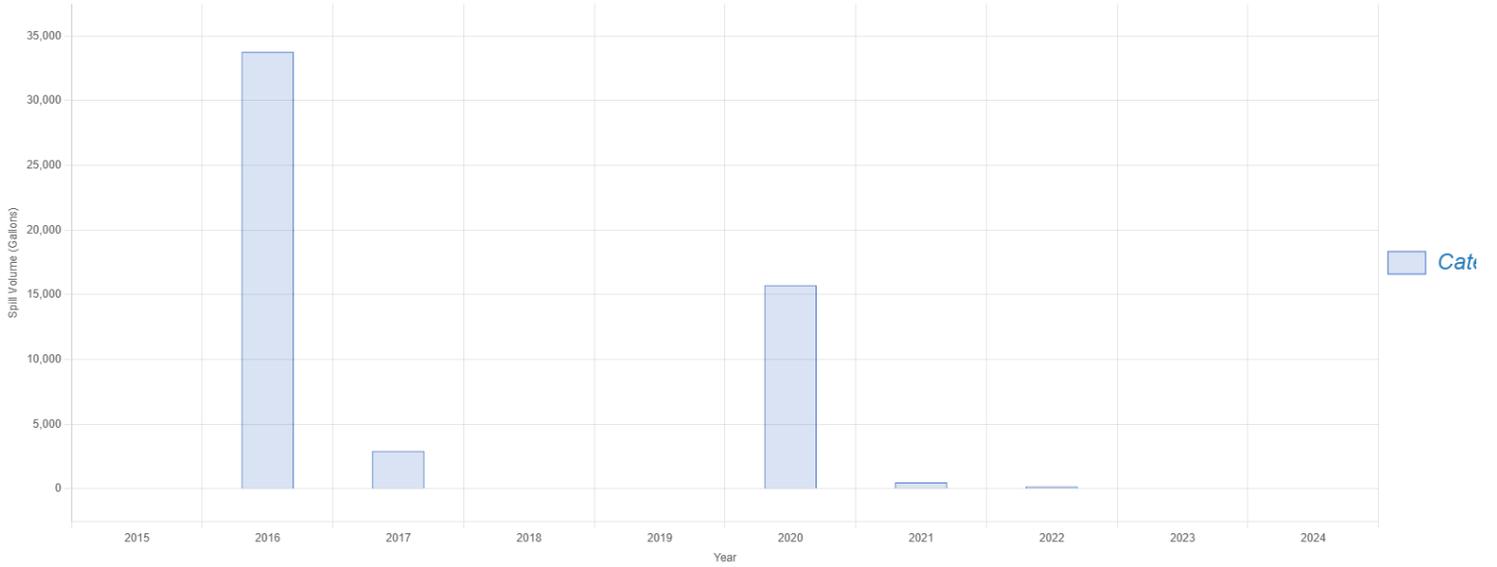
Graph 1 - Total Spill Volume Per Year Per Category



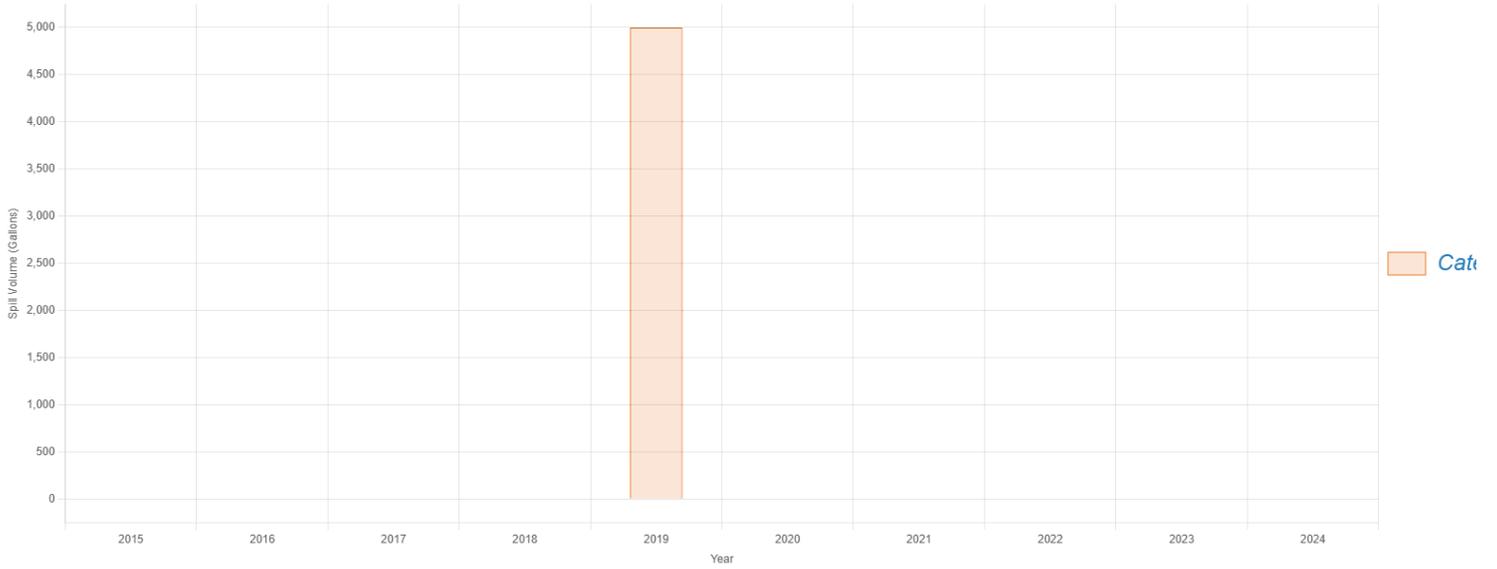
Graph 2 - Total Number Of Spills Per Year Per Category



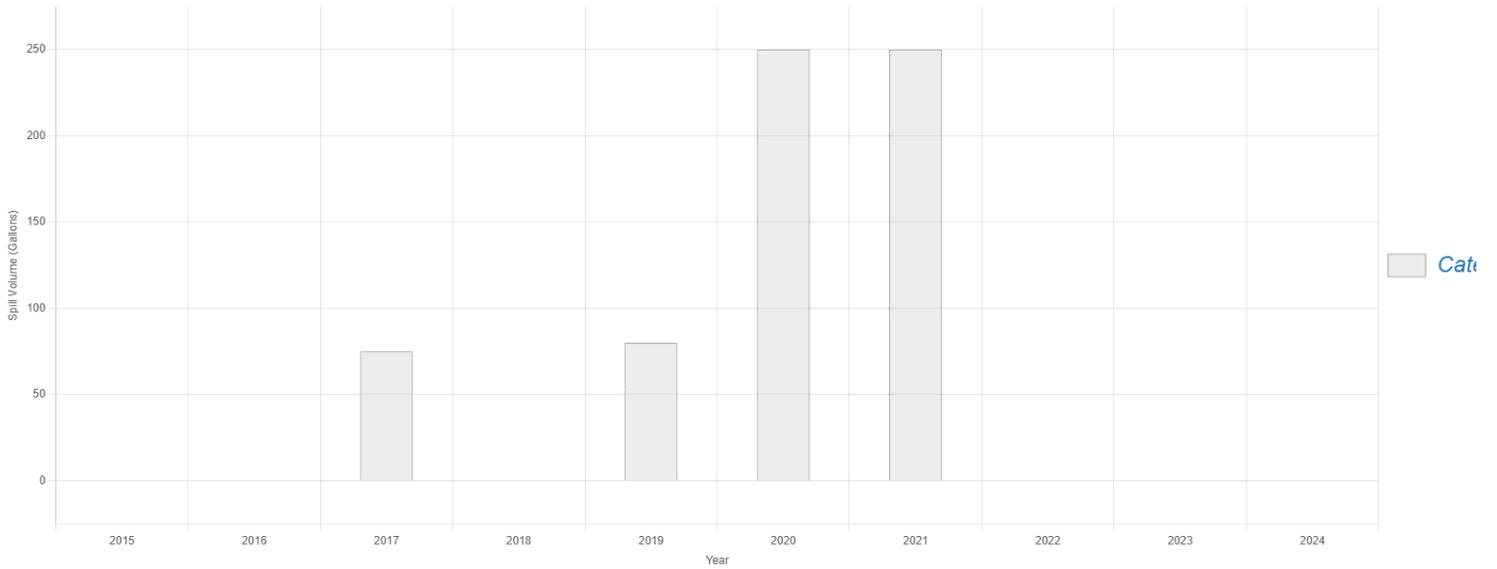
Category 1 - Total Spill Volume per Year



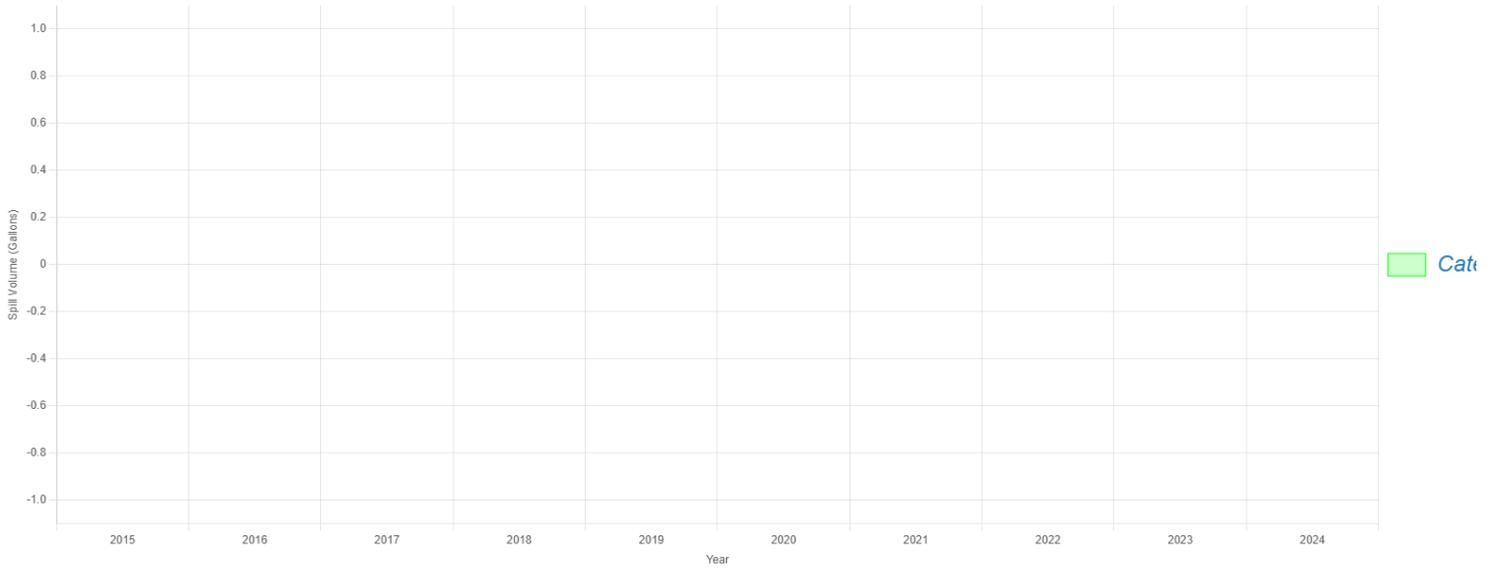
Category 2 - Total Spill Volume per Year



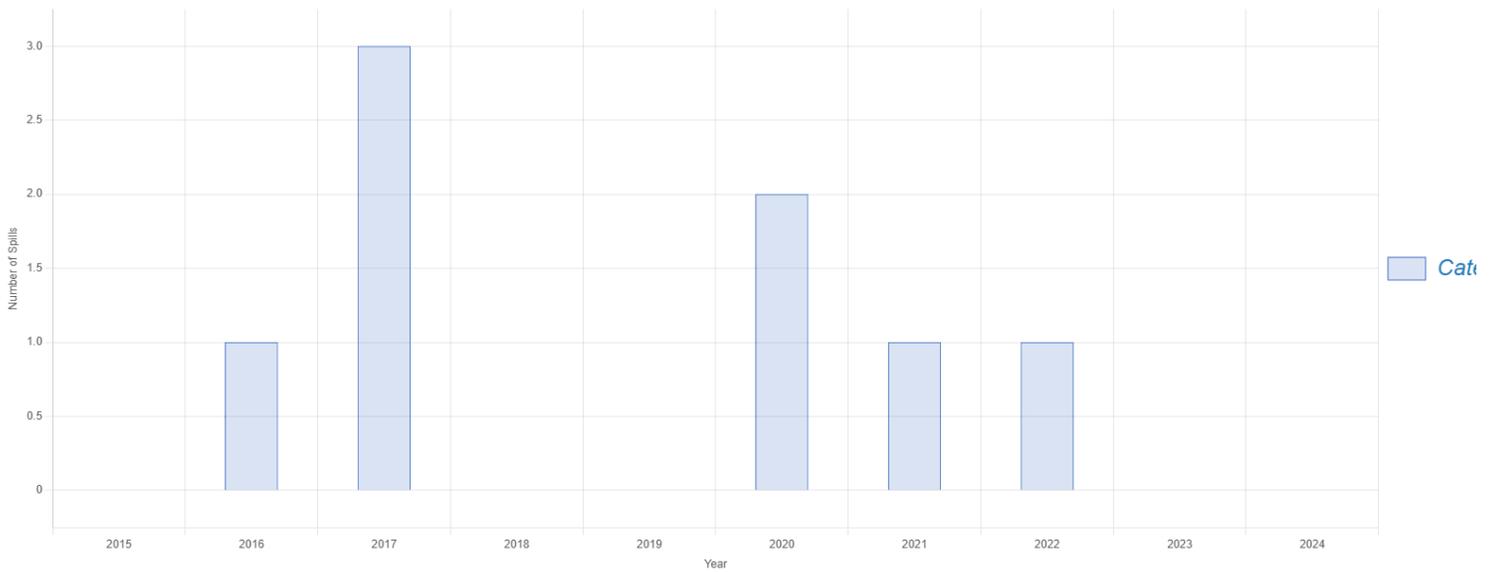
Category 3 - Total Spill Volume per Year



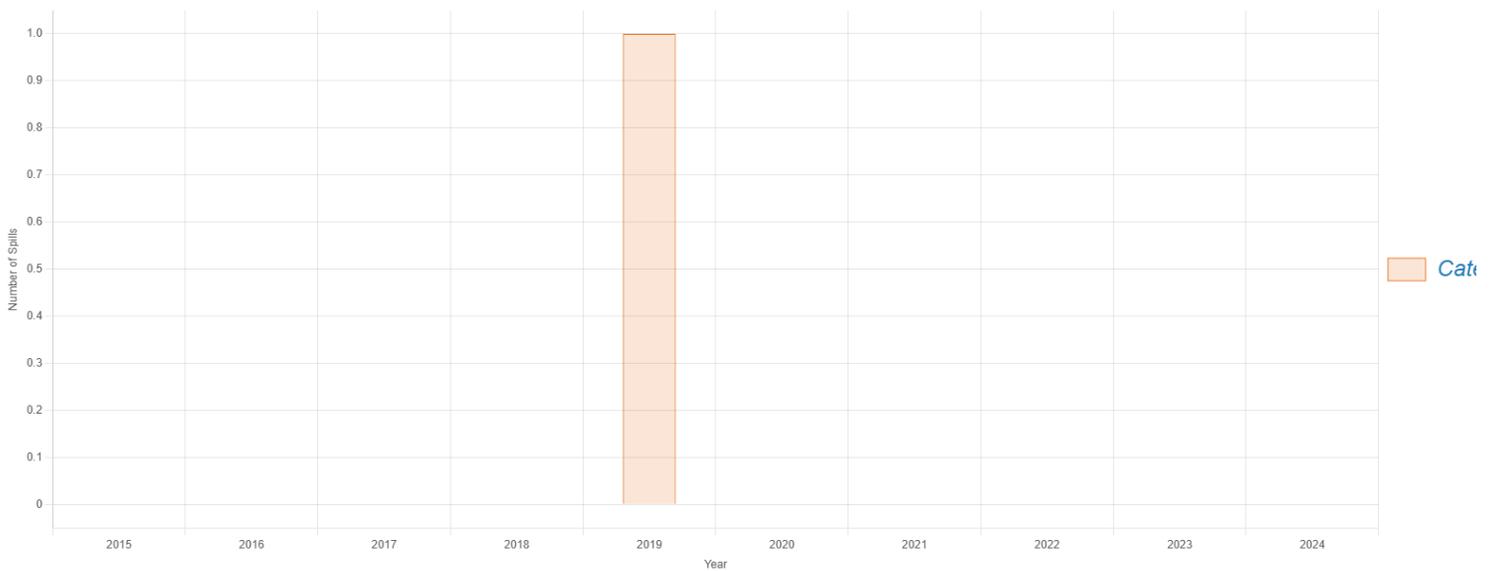
Category 4 - Total Spill Volume per Year



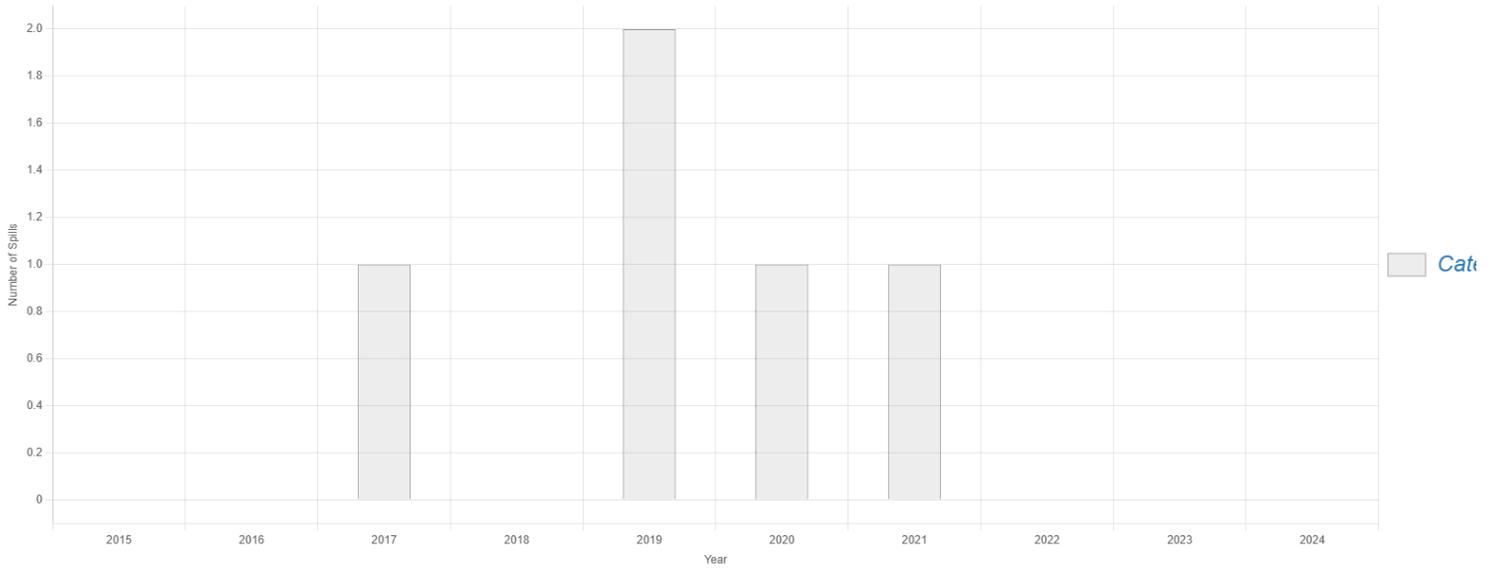
Category 1 - Total Number of Spills per Year



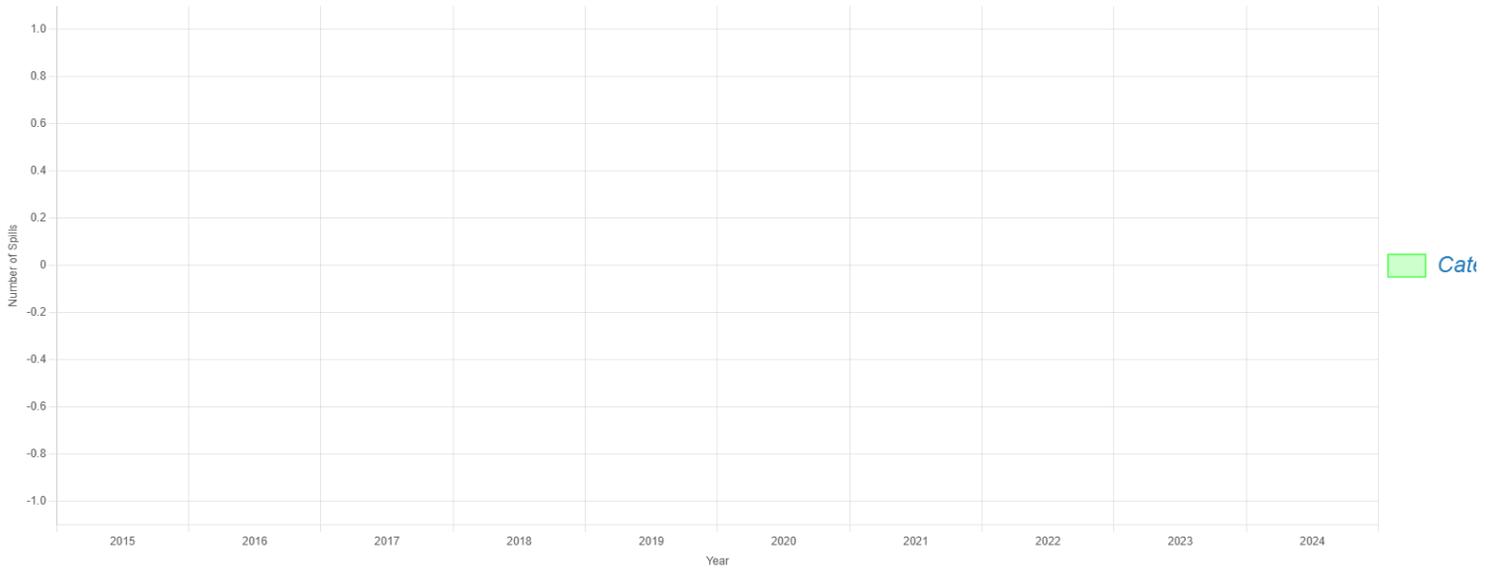
Category 2 - Total Number of Spills per Year



Category 3 - Total Number of Spills per Year



Category 4 - Total Number of Spills per Year



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Appendix C
SSMP Audit Checklist

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Appendix C.1 Internal Audit Procedures

The purpose of completing internal audits of the SSMP are to:

- Evaluate the implementation and effectiveness of the City's SSMP in preventing spills.
- Evaluate the City's compliance with the General Order.
- Identify SSMP deficiencies in addressing ongoing spills and discharges to waters of the State.
- Identify necessary modifications to the SSMP to correct deficiencies.

Internal audits of this SSMP shall be completed in accordance with the schedule outlined in Section 1 of the SSMP and shall include the following procedure:

1. Completion of the CIWQS Annual Report

In compliance with the General Order, every year the LRO shall complete and certify the CIWQS Annual Report.

2. Completion of the SSMP Evaluation Checklist

The LRO shall review each section of the SSMP as outlined in the SSMP Evaluation Checklist (Appendix C.2) and determine whether or not the SSMP a) meets the requirements of the General Order, b) properly documents the current state of operations and maintenance work on the collection system, and c) helps attain the goal of reducing or eliminating spills.

3. Completion of the Performance Indicators worksheet

The LRO shall complete the Performance Indicator worksheet and compare the results with previous years to determine if modifications or changes to the Operations and Maintenance programs (discussed in Section 4) are required to better attain the goal of reducing or eliminating spills.

Following the completion of these items and review by the City's system operators, the LRO shall prepare an audit report that includes:

- Hardcopies of the above documents, including the latest three years of CIWQS Annual Reports;
- Hardcopies of certified spill reports from CIWQS, if any;
- A summary of audit findings and recommended corrective action;
- A statement that sewer system operators' input on the audit findings has been considered; and
- A proposed schedule for the City to address identified deficiencies (if any).

The completed audit report will be approved at a public meeting by the City Council.

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C.2 - SSMP Internal Audit Checklist

The purpose of the SSMP Audit is to evaluate the effectiveness of the City of Shasta Lake's SSMP and to identify any needed for improvement.

Directions: Please check YES or NO for each question. If NO is answered for any question, describe the updates/changes needed and the timeline to complete those changes.

Section 1: Sewer System Management Plan (SSMP) Goals and Introduction		Yes	No
A.	Are the goals stated in the SSMP still appropriate and accurate?		
Discussion:			

Section 2: Organization		Yes	No
A.	Is the City Organization Chart current? (Figure 2-A)		
B.	Is the Authorized Representative list current, and are the position descriptions accurate? (Section 2-B)		
C.	Is the list of City staff responsible for SSMP Implementation and Maintenance current? (Table 2-A)		
D.	Is the SSO Reporting Chain of Communication accurate and up-to-date? (Figure 2-B)		
Discussion:			

Section 3: Legal Authority		Yes	No
Does the SSMP contain current references to the City of Shasta Lake's Municipal Code documenting the City's legal authority to:			
A.	Prevent illicit discharges into the sanitary sewer system?		
B.	Properly design and construct sewer appurtenances?		
C.	Ensure access?		
D.	Fats, oils, and grease (FOG) control?		
E.	Enforce any violation of City sewer ordinances?		
F.	Were any changes or modifications made to City Sewer Ordinances, Regulations or standards since the last audit?		
Discussion:			

Section 4: Operations and Maintenance Program		Yes	No
A.	Does the SSMP reference the current process and procedures for maintaining the City's wastewater collection system maps? (Section 4.1)		
B.	Are the City's wastewater collection system maps complete, current, and sufficiently detailed? (Section 4.1)		
C.	Are storm drainage facilities identified on the collection system maps? (Section 4.1) If not, are spill responders able to determine locations of storm drainage inlets and pipes for possible discharge to waters of the state?		
D.	Does the SSMP describe current preventive operations and maintenance activities and the system for prioritizing the cleaning of sewers? (Section 4.2)		
E.	Based upon information in the Annual Report, are the City's preventive maintenance activities sufficient and effective in minimizing spills and blockages? (Section 4.2)		
F.	Are the procedures outlined for the repair and rehabilitation of the sanitary sewer system current? (Section 4.2)		
G.	Does the SSMP accurately reflect the current training objectives and programs? (Table 4.B)		
H.	Does the SSMP list the major vehicles and equipment currently used in the operation and maintenance of the collection system? (Table 4-C)		
I.	Are contingency and replacement parts sufficient to respond to emergencies and properly conduct regular maintenance? (Tables 4-D and 4-E)		
Discussion:			
Section 5: Design and Performance Provisions		Yes	No
A.	Does the SSMP reference current design and construction standards for the installation for new sanitary sewer systems, lift stations and other appurtenances and for the rehabilitation and repair of existing sanitary sewer systems? (Section 5.1)		
B.	Does the SSMP document current procedures and standards for inspecting and testing the installation of new sewers, pumps, and other appurtenances and the rehabilitation and repair of existing sewer lines? (Section 5.2)		
Discussion:			

Section 6: Emergency Spill Response		Yes	No
A.	Does the City's Spill Emergency Response Plan establish procedures for the emergency response, notification, and reporting of spills? (Sections 6.1, 6.2, and 6.3)		
B.	Is City staff appropriately trained on the procedures of the Spill Emergency Response Plan? (Section 6.3)		
C.	Considering spill performance data, is the Spill Emergency Response Plan effective in handling spills in order to safeguard public health and the environment? (Section 6.3)		
D.	Was required training on SSMP and SERP completed and documented? Were field exercises with field staff on spill volume estimation conducted and documented? (Section 6.3)		
E.	Are all spills and claims reporting forms current or do they require revisions or additions? (Appendix D)		
F.	Does all spill event recordkeeping meet the General Order requirements? Are all spill event files complete and certified in the CIWQS system? (Appendix D)		
G.	Is all information in the CIWQS system current and correct? Have periodic reviews of the data been made during the year to assure compliance with General Order? Have all Technical Report and Water Quality Sampling requirements been met and uploaded to the CIWQS data management system? (Online)		
H.	Were all Contractors working on wastewater projects provided a copy of the SREP? Were spill procedures covered during the preconstruction meeting? (Section 6.4)		
Discussion:			

Section 7: Sewer Pipe Blockage Control Program		Yes	No
A.	Does the FOG Control Program include efforts to educate the public on proper handling and disposal of FOG? (Section 7.2)		
B.	Are requirements for grease removal devices, best management practices (BMP), record keeping, and reporting established in the City's FOG Control Program? (Section 7.2)		
C.	Does the City have sufficient legal authority to implement and enforce the FOG Control Program? (Section 7.2)		
D.	Does the FOG Control Program identify sections of the collection system subject to FOG blockages, establish a cleaning schedule, and address source control measures to minimize these blockages? (Section 7.2)		
E.	Is the current FOG program effective in minimizing blockages of sewer lines resulting from discharges of FOG to the system? (Section 7.2)		
Discussion:			

Element 8: System Evaluation, Capacity Assurance, and Capital Improvements		Yes	No
A.	Does the Wastewater Master Plan evaluate hydraulic deficiencies in the system, establish sufficient design criteria, and recommend both short and long-term capacity enhancement and improvement projects? (Sections 8.1 and 8.2)		
B.	Does the City's Capital Improvement Plan (CIP) establish a schedule of approximate completion dates for both short and long-term capacity improvements and is the schedule reviewed and updated to reflect current budgetary capabilities and activity accomplishment? (Section 8.4)		
Discussion:			

Section 9: Monitoring, Measurement, and Program Modifications		Yes	No
A.	Does the SSMP accurately portray the methods of tracking and reporting selected performance indicators? (Sections 9.1, 9.2, and 9.3)		
B.	Is the City able to sufficiently evaluate the effectiveness of the SSMP elements based on relevant information? (Section 9.4)		
Discussion:			

Section 10: Internal Audits		Yes	No
A.	Will the SSMP triennial Internal Audit be completed, reviewed and approved by the City Council, and filed in Appendix B?		
B.	Will the SSMP be reviewed, revised, and recertified a minimum of every 6 years? (Section 10)		
Discussion:			

Section 11: Communication Program		Yes	No
A.	Does the City effectively communicate with the public and other agencies about the implementation of the SSMP and continue to address any feedback?		
Discussion:			

Change Log (Appendix H)		Yes	No
A.	Is the SSMP Change Log current and up to date?		
Discussion:			

Audit prepared by: _____

Date: _____

Audit reviewed and approved by Shasta Lake City Council
(place copy of CC agenda with Audit Report)

Date: _____

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Appendix C.3 - Performance Indicators

Number of Spills (by season):

Wet Season (October to May):

Dry Season (June to September):

Number of Spills (by volume):

<10 gal:

10 - 99 gal:

100 - 999 gal:

>1000 gal:

Number of Spills (by cause):

Debris:

Roots:

FOG:

Structural:

Vandalism:

Other:

Spill Volume (gallons):

Total:

Recovered:

Number of spills per mile of sewer gravity main per year:

Volume of spills per capita per year:

Maintenance Activities:

Hot Lines Cleaned (total mi):

Hot-Hot Lines Cleaned (total mi):

CCTV Inspection (total mi):

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Appendix D
Spill Emergency Response Plan

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Appendix D Spill Emergency Response Plan

The Spill Emergency Response Plan narrative and workbook are available for review on the City's website: www.cityofshastalake.gov.

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Appendix E
Fats, Oil, and Grease Control Program

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Article VII. - Fats, Oils and Grease Control

13.16.670 - Scope and purpose.

The purpose of this article is to assist in limiting the introduction and accumulation of fats, oils and grease (FOG) from food service establishments (FSE) into the city's sewer collection and treatment system in order to reduce the potential for sanitary sewer overflows. This article does not apply to individual dwelling units or for any private living quarters. (Ord. No. 12-226, § 1(3), 8-7-2012)

13.16.680 - Definitions.

Unless a provision explicitly states otherwise, the following terms and phrases, as used in this article, shall have the meaning hereinafter designated:

- A. Alternative pretreatment technology includes, but is not limited to, appropriately sized devices that are used to trap, separate and hold grease from wastewater and prevent it from being discharged into the sanitary sewer collection system.
- B. Best management practices (BMP). Schedules of activities, prohibitions of practices, maintenance procedures and other management practices to prevent or reduce the introduction of FOG to the sewer facilities.
- C. Development services director. The individual, or his/her designee, designated by the city manager to approve the type of grease control device used in a FSE and ensure the correct installation of the device.
- D. Effluent. Any liquid outflow from the FSE that is discharged to the sewer.
- E. Fats, oils, and grease (FOG). Any substance such as vegetable or animal product that is used in, or is a by-product of the cooking or food preparation process, and that turns or may turn viscous or solidifies with a change in temperature or other conditions.
- F. FOG control program. The FOG control program required by and developed pursuant to RWQCB Order No. 2006-0003-DWQ, Section D.13.vii, as established in the most current version of the city's sewer system management plan.
- G. FOG control program manager. The wastewater treatment plant superintendent, or his/her designee, designated by the city manager to administer the FOG control program. The FOG control program manager is responsible for all determinations of compliance with the program in regard to the correct use of best management practices (BMP) and operation of grease control devices.
- H. Food service establishment (FSE). Facilities defined in California Retail Food Code (CRFC), and any establishment engaged primarily in activities of preparing, serving, manufacturing, packaging or otherwise making available food for consumption by the public (e.g., restaurants, commercial kitchens, caterers, hotels, schools, hospitals, prisons, correctional facilities, care institutions, etc.) which has any process or device that uses or produces FOG, or grease vapors, steam, fumes, smoke or odors that are required to be removed by a Type I or Type II hood, as defined in CRFC.
- I. Food grinder. Any device installed in the plumbing or sewer system for the purpose of grinding food waste or food preparation by-products for the purpose of disposing it in the sewer system.
- J. Grease control device. Any grease interceptor, grease trap or other mechanism, device, or process, which attaches to, or is applied to, wastewater plumbing fixtures and lines, the purpose of which is to trap or collect or treat FOG prior to it being discharged into the sewer system. "Grease control device" may also include any other proven method to reduce FOG subject to the approval of the development services director.
- K. Grease interceptor. A multi-compartment structure or device that is constructed in different sizes and is generally required to be located underground in outside areas between the FSE and the connection to the sewer system for the purpose of removing and preventing fats, oils and grease from entering the sanitary sewer collection system. These devices retain grease-containing flow long enough so that grease and some solids can rise to the water surface, most of the solids settle to the bottom, and clarified water can eventually be discharged to the sanitary sewer.
- L. Grease trap. A device used to serve from one to four plumbing fixtures for separating and retaining waterborne greases and grease complexes prior to the wastewater exiting the trap and entering the sanitary sewer system.
- M. Manifest. That receipt which is retained by the generator of wastes for disposing recyclable wastes or liquid FOG wastes as required by this article.
- N. Monitoring/sampling facilities. Structure(s) provided at the FSE's expense for the city or FSE to collect a representative wastewater sample, measure and record wastewater constituent mass and concentrations, or provide access to plug or terminate the discharge.
- O. Remodeling. A physical or operational change causing generation of the amount of FOG that exceeds the current amount of FOG discharged to the sewer system in an amount that alone or collectively causes or creates a

potential for sanitary sewer overflows (SSO) to occur; or to a FSE that requires a building permit and involves any one or combination of the following: (1) Under slab plumbing in the food processing area, (2) a thirty (30%) percent increase in the net public seating area, (3) a thirty (30%) percent increase in the size of the kitchen area, or (4) any change in the size or type of food preparation equipment.

- P. Sanitary sewer overflow (SSO). Any overflow, spill, release, discharge or diversion of untreated or partially treated wastewater from a sanitary sewer system. SSO's often contain high levels of suspended solids, pathogenic organisms, toxic pollutants, nutrients, oil, and grease. SSO's pollute surface and ground waters, threaten public health, adversely affect aquatic life, and impair the recreational use of surface waters.
- Q. Sewer facility or system. Any devices or systems belonging to the city used in the collection, storage, treatment, recycling, reclamation, reuse, transportation, or disposal of wastewater or sludge.
- R. Sewer lateral. That portion of the sanitary sewer line conveying wastewater from the building to the city's sewer system. The sewer lateral is owned and maintained by the property owner.
- S. Twenty-five (25%) percent rule. Requirement for grease control devices to be maintained such that the combined FOG and solids accumulation does not exceed twenty-five (25%) percent of the total depth of the grease control device. This is to ensure that the minimum hydraulic retention time and required available hydraulic volume is maintained to effectively intercept and retain FOG discharged to the sewer system.

(Ord. No. 12-226, § 1(3), 8-7-2012)

13.16.690 - FOG program notice.

All new and existing FSE's shall be issued a FOG program notice by the FOG control program manager. The notice shall contain the current FOG control program rules and regulations. The FSE is required to comply with all of the applicable rules and regulations.

(Ord. No. 12-226, § 1(3), 8-7-2012)

13.16.700 - Food service establishment discharge prohibitions.

All FSE's are prohibited from any of the following:

- A. The discharge of wastes containing FOG of animal or vegetable origin in concentrations greater than three hundred (300) milligrams per liter (mg/l).
- B. The discharge into the sewer system of FOG that may accumulate and/or cause or contribute to blockages in the sewer system or at the sewer system lateral except as provided herein.
- C. Operation of food grinders in the plumbing system.
- D. The introduction of any additives into a FSE's wastewater system for the purpose of emulsifying FOG, unless a specific written authorization from the FOG control program manager is obtained.
- E. The disposal of cooking oil into drainage pipes. All waste cooking oils shall be collected, stored and labeled properly in receptacles such as barrels or drums for recycling or other acceptable methods of disposal.
- F. The use of biological additives for grease remediation or as a supplement to interceptor maintenance, without prior authorization from the FOG control program manager.
- G. The discharge of waste from toilets, urinals, washbasins, and other fixtures containing fecal materials to sewer lines intended for grease interceptor service.
- H. The discharge to the sewer system of any waste, including FOG and solid materials, removed from the grease control device. Grease removed from grease interceptors shall be disposed of as necessary as part of the operation and maintenance requirements for grease interceptors pursuant to Section [13.16.780](#) of this article. Grease removed from grease traps shall be disposed of as necessary as part of the operation and maintenance requirements for grease traps pursuant to Section [13.16.800](#) of this article.
- I. No FSE shall increase the use of water or in any other manner attempt to dilute a discharge as a way of achieving compliance with this article and the FOG control program.

(Ord. No. 12-226, § 1(3), 8-7-2012)

13.16.710 - Requirement to install grease interceptor.

- A. All new FSE's or FSE's remodeled pursuant to Section [13.16.680](#)(O) of this article shall have a grease interceptor that complies with the requirements of this article unless a waiver or variance is granted pursuant to Section [13.16.720](#) of this article. Flows from sinks and drains, such as floor drains, floor sinks and other fixtures, or equipment that discharges wastewater containing excessive amounts of FOG, must be connected to a grease interceptor. Pipes draining to a grease interceptor shall be labeled "GW" (grease waste).

- B. Facilities other than FSE's which introduce FOG into the sewer system in quantities that can affect line stoppage or hinder sewage treatment may be required to install a grease interceptor as determined by the FOG control program manager
 - C. A grease control device shall not be required for individual dwelling units or for any private living quarters.
- (Ord. No. 12-226, § 1(3), 8-7-2012)

13.16.720 - Exceptions to requirement for grease control device.

A FSE may submit an application, on a form prescribed by the city, for a waiver or variance from the requirement for a grease control device to the development services director as provided in this section. Upon determination by the development services director, in consultation with the FOG control program manager, that reasons are sufficient to justify a waiver or variance, the permit will be issued, issued with conditions, or denied. The FSE may appeal the development services director's decision to the city council as provided in Section [13.16.720\(F\)](#) of this article.

- A. Conditional Waiver for Existing FSE's. FSE's that existed on the effective date of the ordinance codified in this article that do not have a grease control device installed will be issued a conditional waiver. The conditional waiver will specify requirements with which the FSE must comply in order to operate without a grease control device. The conditional waiver may be revoked at any time pursuant to Section [13.16.720\(E\)](#) of this article.
- B. Conditional Waiver Due to Business Type. A new or remodeled FSE may submit an application for a conditional waiver from the requirement for a grease control device to the development services director for the following business types. A conditional waiver may be revoked at any time pursuant to Section [13.16.720\(E\)](#) of this article. Although a waiver may be granted, a newly constructed FSE may be required to provide space and plumbing segregation for future installation of a grease interceptor or grease trap.
 - 1. Establishments serving only beverages.
 - 2. Establishments engaged in only reheating, hot holding or assembly of ready-to-eat food products without any baking or other food preparation.
 - 3. Other establishments that can demonstrate that food preparation and service do not generate fats, oils and grease in a quantity sufficient to require a grease interceptor due to menu and number of meals served, or a combination of the two.
- C. Variance from Grease Interceptor Requirements Due to Installation Restrictions.
 - 1. If a new or remodeled FSE can demonstrate that installation of a grease interceptor is not feasible due to one or both of the following conditions, the development services director, taking into consideration Shasta County Department of Environmental Health standards, may authorize the installation of an indoor grease trap or other alternative pretreatment technology. A variance may be revoked at any time pursuant to Section [13.16.720\(E\)](#) of this article. Although a variance may be granted, a newly constructed FSE may be required to provide space and plumbing segregation for future installation of a grease interceptor or grease trap.
 - a. Adequate physical space cannot be provided at the site for installation and/or maintenance of a grease interceptor.
 - b. Adequate slope cannot be provided for gravity flow between kitchen plumbing fixtures and the proposed location of the grease interceptor or from the interceptor to the sewer.
 - 2. If a FSE believes the installation of a grease interceptor is infeasible because of documented space constraints, the variance request shall contain the following information:
 - a. Location of sewer main and any easements in relation to available exterior space outside the building;
 - b. Existing building and site plumbing line plan that uses common plumbing for all services at the site.
- D. Terms and Conditions of Variance or Waiver. A waiver or variance shall contain the terms and conditions that serve as the basis for its issuance. The waiver or variance shall be valid as long as the FSE remains in compliance with the terms and conditions, or until any expiration date specified in the waiver or variance.
- E. Revocation of Waiver or Variance.
 - 1. The development services director or FOG control program manager may periodically review FSE compliance with the waiver or variance requirements. A waiver or variance may be revoked by the development services director or FOG control program manager at any time for any of the following reasons:
 - a. Quantity of FOG discharge as measured or as indicated by the size of FSE's based on seating capacity, number of meals served, menu, water usage, amount of on-site consumption of prepared food and other conditions have changed since the granting of said waiver or variance such that the FSE is contributing to FOG discharges.
 - b. Identification of the FSE as a significant contributor of FOG into the sewer system, which is based on inspection or sampling of the FOG discharged from the FSE's sewer lateral to the sewer system.

- c. Failure to adequately implement and comply with kitchen best management practice (BMP) requirements.
- d. Change in sewer lateral size, grade, or condition based on visual information.
- e. Changes in operations that significantly affect FOG discharge.
- f. Failure to comply with any of the conditions set forth in the waiver or variance.
- g. Any other condition deemed reasonably related to the generation of FOG discharges by the FOG control program manager.

2. If a waiver or variance is revoked, grease interceptors or grease traps shall be installed as directed. If a waiver or variance is revoked, the FSE shall submit the plans identified in SLMC Section [13.16.740](#) to the city within ninety (90) days of receipt of the written notice of revocation. Any required interceptor, grease trap or alternative pretreatment technology shall be installed within one hundred eighty (180) days of issuance of a building permit by the city.

F. Appeal. A FSE which disagrees with the development services director's or FOG control program manager's decision to issue, issue with conditions, deny or revoke a waiver or variance permit may appeal such decision to the city council if the appeal is submitted in writing to the city clerk within ten (10) calendar days following receipt of the development services director's or FOG control program manager's written decision.

(Ord. No. 12-226, § 1(3), 8-7-2012)

13.16.730 - Monitoring/sampling facilities requirements.

- A. The city may require a FSE to construct and maintain in proper operating condition at a FSE's sole expense, flow monitoring, constituent monitoring and/or sampling facilities per the city's construction standards.
- B. The location of the monitoring or metering facilities shall be subject to approval by the FOG control program manager.
- C. FSE's shall provide, during regular business hours, immediate and safe access to the FSE's grease interceptor or grease trap monitoring and metering facilities to the FOG control program manager, development services director, Shasta County department of environmental health, or their designees.

(Ord. No. 12-226, § 1(3), 8-7-2012)

13.16.740 - New grease control device or monitoring/sampling facilities plan submittal requirements.

A new, remodeled, or existing FSE or other establishment required to install a grease interceptor, grease trap or monitoring/sampling facility shall submit facility site plans, mechanical and plumbing plans, and other details to show the sewer locations and connections for its facility or premises to the city sewer system. The submittal shall be in a form and content acceptable to the development services director.

The development services director shall have the authority to require any revisions to the plans as necessary to comply with all provisions of this article and the city's construction standards. The review and approval of the plans and procedures shall in no way relieve a FSE of the responsibility of modifying the facilities or procedures in the future, as necessary to meet the requirements of this article, the FOG control program or any requirements of other regulatory agencies. All submitted plans and drawings shall be prepared by a qualified professional engineer.

(Ord. No. 12-226, § 1(3), 8-7-2012)

13.16.750 - Existing grease interceptor/grease trap plan submittal requirements.

An existing FSE that owned and operated a grease interceptor or grease trap prior to the effective date of the ordinance codified in this article shall submit any available plans for the existing device within ninety (90) days of receiving a FOG program notice sent by the city. If no plans are available, the FSE shall notify the development services director so an inspection of the grease interceptor and/or grease trap can be scheduled. The purpose of the inspection shall be to provide the owner of the FSE with suggestions for operating, maintaining and possibly modifying the grease interceptor or grease trap.

This section shall not apply to existing grease interceptors or grease traps installed pursuant to a building permit issued by the city of Shasta Lake.

(Ord. No. 12-226, § 1(3), 8-7-2012)

13.16.760 - Notification regarding change in operations.

- A. The FSE shall notify the development services director in writing at least sixty (60) days prior to any facility expansion and/or remodel, or process modifications that may result in new or substantially increased FOG discharges, or a change in the nature of the discharge.

- B. The written notification shall state the following:
1. FSE name.
 2. Name and title of the FSE's contact person or person most knowledgeable concerning the facility expansion, remodeling or process modifications.
 3. Address and telephone number of the owner of the FSE.
 4. Date of the proposed facility expansion, remodeling or process modifications and the reasons for the same.
 5. Any additional information requested by the development services director or FOG control program manager for evaluation of the effect of such expansion and/or remodeling or process modifications on the FSE's FOG discharge to the sewer system.

(Ord. No. 12-226, § 1(3), 8-7-2012)

13.16.770 - Grease interceptor design and construction standards.

- A. Grease interceptors shall be designed and sized according to the most recently adopted California plumbing code and City of Shasta Lake construction standards.
- B. Grease interceptors shall be constructed and installed according to the most recently adopted city of Shasta Lake construction standards.
- C. Grease interceptors shall be installed at a location where it shall be easily accessible for inspection, cleaning and removal of intercepted grease.

(Ord. No. 12-226, § 1(3), 8-7-2012)

13.16.780 - Grease interceptor operation and maintenance requirements.

All existing and new grease interceptors shall be operated in accordance with the manufacturer's specifications. The maintenance frequency for all FSE's with a grease interceptor shall be determined by one of the following methods:

- A. Grease interceptors shall be maintained in efficient operating condition and shall be fully pumped out and cleaned by a qualified grease hauler pursuant to Section [13.16.800](#) of this article at a minimum frequency of once every ninety (90) calendar days. The FOG control program manager may mandate a more frequent cleaning schedule to ensure compliance with item B. below or if it is found that FOG is accumulating in the downstream sewers.
- B. In no event shall the combined FOG and solids accumulation exceed twenty-five (25%) percent of the total depth of the grease interceptor. This is to ensure that the minimum hydraulic retention time and required available volume is maintained to effectively intercept and retain FOG. If the grease interceptor, at any time, contains FOG and solids accumulation that does not meet this requirement, the FSE shall be required to have the grease interceptor serviced as soon as possible, but not more than forty-eight (48) hours later, such that all FOG, sludge, and other materials are completely removed from the grease interceptor.
- C. The FOG control program manager may approve a less frequent cleaning schedule than required in item A. above at the request of the FSE. The FSE has the burden of responsibility to demonstrate that the requested change in frequency reflects actual operation conditions based on the average FOG accumulation over time. In order to approve a less frequent cleaning schedule, the FOG control program manager must verify the FSE is in full compliance with all provisions of this article and the FOG control program. Upon determination by the FOG control program manager that the requested revision is justified, the FSE shall be notified in writing of the revised maintenance frequency.

(Ord. No. 12-226, § 1(3), 8-7-2012)

13.16.790 – Grease trap design and construction standards.

- A. Grease trap sizing and installation shall conform to the most recently adopted California Plumbing Code (CPC).
- B. The number of drainage fixture units to be connected to the grease trap shall not include floor drains, urinals, lavatories, or other fixtures not approved for connection to the grease trap per CPC requirements.
- C. Only automatic hydromechanical grease traps shall be approved. Approved grease traps shall include the following functions:
 1. Automatic grease skimmer or pump with programmable timer or grease level sensor.
 2. Removable grease collection container for automatically removed grease.
 3. Minimum ninety (90%) percent grease removal efficiency and maximum three hundred (300) milligrams per liter (mg/l) grease effluent water quality shown by independent testing.
 4. Pre-set maximum inlet flow control.
 5. Gas trap and ventilation piping.
 6. Solids strainer with maximum 0.125" pass-through diameter, removable for manual cleaning.

7. Inlet baffle (to isolate grease layer from inlet turbulence) and outlet baffle (to prevent grease from exiting grease trap).
8. Thermostatically controlled emersion heater to maintain grease in liquid state.
9. Stainless steel construction.

(Ord. No. 12-226, § 1(3), 8-7-2012)

13.16.800 - Grease trap operation and maintenance requirements.

All grease traps shall be operated in accordance with the manufacturer's specifications and the following requirements:

- A. Grease traps shall be maintained in efficient operational condition by removing accumulated grease on an as-needed basis, or the frequency specified by the manufacturer, but no less than on a weekly basis.
- B. Grease traps shall be maintained free of all food residues and any FOG waste removed during the cleaning and scraping process.
- C. Grease traps shall be inspected periodically by the FSE, but in no event less than once a month, to check for leaking seams and pipes, and for effective operation of the baffles and flow-regulating device. Grease traps and their baffles shall be maintained free of all caked-on FOG and waste. Removable baffles shall be removed and cleaned during the maintenance process.
- D. Dishwashing machines and food disposal/grinding units shall not be connected to or discharged into any grease trap. FSEs operating with grease traps only must implement a warm wash pre-rinse procedure, in which all cookware, plates, and utensils are pre-rinsed without detergent in a pre-rinse sink that is connected to the grease trap, prior to placing in a dishwasher that is not connected to a grease interceptor or grease trap.
- E. Wastewater in excess of one hundred forty degrees (140°) F/sixty degrees (60° C) shall not be discharged into a grease trap.

(Ord. No. 12-226, § 1(3), 8-7-2012)

13.16.810 – Grease disposal and grease hauling requirements.

- A. Grease accumulated in grease interceptors shall not be removed by FSE employees. Accumulated grease shall be removed by grease haulers licensed by the California Department of Food and Agriculture (CDFA) in accordance with the California Food and Agricultural Code, or other qualified individual as determined by the FOG control program manager.
- B. Grease accumulated in grease traps shall be periodically removed by FSE employees and stored in secure grease recycling bins. Grease stored in grease recycling bins cannot be removed from the FSE premises by FSE employees, and must be collected by grease haulers licensed by the California Department of Food and Agriculture (CDFA) in accordance with the California Food and Agricultural Code, or other qualified individual as determined by the FOG control program manager.

(Ord. No. 12-226, § 1(3), 8-7-2012)

13.16.820 - Kitchen best management practices (BMPs).

All FSEs shall be required, at a minimum to implement and comply with the following Kitchen BMPs, whenever applicable:

- A. Undiluted cooking oil, grease, or meat fat shall be dumped only into a separate recycling container which is used specifically to store these wastes for future removal by qualified grease haulers pursuant to Section [13.16.810](#) of this article.
- B. For FSEs operating with grease traps only, a warm water pre-rinse procedure shall be followed. For FSEs operating under a waiver or variance pursuant to Section [13.16.720](#) of this article, all cookware that has been used where FOG is involved shall be thoroughly dry wiped before being rinsed or washed to remove as much FOG as possible.
- C. Drain screens shall be installed on all drainage pipes in food preparation areas.
- D. All waste cooking oil shall be collected and stored properly in recycling receptacles such as barrels or drums. Such recycling receptacles shall be maintained properly to ensure that they do not leak. Qualified grease haulers and a licensed grease recycling or rendering facility must be used to dispose of waste cooking oil, in accordance with Section [13.16.810](#) of this article.
- E. All garbage and food waste shall be disposed of directly into trash bins or containers, and not in sinks, garbage disposals or food grinders. Double-bagging food wastes that have the potential to leak in trash bins is highly recommended.
- F. Exhaust filters shall be maintained in good operating condition utilizing frequent cleaning practices. The sewage generated from cleaning the exhaust filter shall be disposed of properly.

- G. Kitchen BMP signs, posters, or similar information in appropriate language(s) shall be prominently displayed in the food preparation and dishwashing areas at all times.
- H. Absorbent materials shall be placed under the fryers or other areas where FOG typically or frequently drips or spills.
- I. Covered conveyance devices shall be used in order to transport FOG without spilling.
- J. FOG containers shall be emptied or removed by qualified grease haulers pursuant to Section [13.16.810](#) of this article in a manner to avoid accidental or incidental spills.
- K. "Spill kits" (e.g., absorbent materials) shall be created and shall be well marked and readily accessible in the event a spill does occur.

(Ord. No. 12-226, § 1(3), 8-7-2012)

13.16.830 - Food service establishment employee training.

Employees of all FSEs existing as of the effective date of this article shall be trained to implement kitchen FOG disposal BMPs within ninety (90) calendar days of the effective date of this article. New employees shall be trained within one week of employment. All employees shall receive refresher training on an annual basis. Training shall be documented and employee signatures retained indicating each employee's attendance and understanding of the practices reviewed. Training records shall be available for review at any reasonable time by the FOG control program manager, Shasta County Department of Environmental Health, or their designees. Training shall be completed and documented in the following areas:

- A. Overview of the requirements and recommendations of this article. Employees must have a general knowledge of the function of a grease trap and/or interceptor. Training shall also include instruction on the physical location(s) of the FOG removal device(s), their capacities and the drains and fixtures that are connected to them.
- B. How to "dry wipe/scrape" pots, pans, dishware and work areas before washing to remove FOG.
- C. How to properly dispose of garbage, food waste and solids in trash bins or containers to prevent leaking and odors.
- D. The location and use of absorption products to clean under fryer baskets and other locations where FOG may be spilled or accumulated.
- E. How to properly dispose of FOG from cooking equipment into a FOG receptacle such as a barrel or drum without spilling.

(Ord. No. 12-226, § 1(3), 8-7-2012)

13.16.840 - Recordkeeping requirements.

The following records shall be maintained for no less than five years and the FSE shall make them available to the FOG control program manager, Shasta County Department of Environmental Health, or their designees:

- A. For FSEs with grease traps or grease interceptors, the following must be documented:
 - 1. Dates cleaned.
 - 2. Dates and nature of maintenance or repair activities.
 - 3. Copies of records and manifests of grease hauling activities, which will include:
 - a. Name of hauling company.
 - b. Name and signature of operator performing the pump-out/hauling.
 - c. Documentation of full pump-out with volume of water and FOG removed from grease interceptors.
 - d. Documentation of volume of stored grease hauled from grease traps.
 - e. Documentation of the level of floating FOG and settled solids for grease interceptors (to determine if volume exceeds twenty-five (25%) percent of the total depth of the grease removal equipment).
 - f. Documentation if repairs to the grease interceptor or trap are required.
 - g. Identification of the facility where the qualified waste hauler is planning to dispose of the waste.
 - 4. Records of sampling data and/or sludge height monitoring for FOG and solids accumulation in the grease interceptors.
- B. Records of any spills and/or cleaning of the lateral or sewer system. Receipts shall be retained for sewer lateral cleaning or inspection services provided by contractors.
- C. A record or logbook of kitchen BMPs being implemented including employee training as described in Section [13.16.830](#) of this article.
- D. Any other information deemed appropriate by the FOG control program manager to ensure compliance with this article and the FOG control program.

(Ord. No. 12-226, § 1(3), 8-7-2012)

13.16.850 - Compliance inspections.

The FOG control program manager, development services director, Shasta County Department of Environmental Health, or their designees may conduct periodic inspections of FSEs to determine compliance with this article. Inspections may be unannounced, and will occur during regular business hours. FSE operators shall make all FOG disposal records maintained per Section [13.16.840](#) of this article available to the individual or agency completing the inspection. (Ord. No. 12-226, § 1(3), 8-7-2012)

13.16.860 – Monitoring and reporting of conditions requirements.

- A. The FOG control program manager may require periodic reporting of the status of implementation of kitchen BMPs in accordance with the FOG control program.
- B. If previous visual monitoring completed by the city has revealed an accumulation of FOG, the FOG control program manager may require additional visual monitoring at the sole expense of the FSE to observe the actual conditions of the FSE's sewer lateral and sewer lines downstream.
- C. The FOG control program manager may require reports for self-monitoring of FOG characteristics of the FSE needed for determining compliance with any conditions or requirements of this article and the FOG control program. The FOG control program manager shall approve monitoring reports of the analyses of sewage constituents and FOG characteristics. Failure by the FSE to perform any required monitoring or to submit monitoring reports required by the FOG control program manager constitutes a violation of this article. The FSE shall be responsible for any and all expenses of the city in undertaking such monitoring analyses and preparation of reports required of the FSE.

(Ord. No. 12-226, § 1(3), 8-7-2012)

13.16.870 – Illicit discharge notification requirements.

- A. In the event a FSE is unable to comply with this article and/or the FOG control program due to a breakdown of equipment, accidents, or human error, or if the FSE has reasonable belief that its discharge will violate this article and/or the FOG control program, the FSE or its representative shall immediately notify the FOG control program manager by telephone at the telephone number listed on the FOG program notice.
- B. Confirmation of this notification shall be made in writing to the FOG control program manager no later than five working days from the date of the incident at the address listed in the FOG program notice. The written notification shall state the date of the incident, the reasons for the discharge or spill, what steps were taken to immediately correct the problem, and what steps are being taken to prevent a recurrence.
- C. Such notification shall not relieve the FSE of any expense, loss, damage or other liability that may be incurred as a result of damage or otherwise arising out of a violation of this article or any other section of the Shasta Lake Municipal Code (SLMC) or other applicable law.

(Ord. No. 12-226, § 1(3), 8-7-2012)

13.16.880 - Enforcement of the FOG control program.

Any FSE found to be in violation of any of the requirements set forth in this article is guilty of an infraction and subject to penalty per SLMC Section [13.16.630](#). If necessary, any FSE shall correct any conditions resulting in the violation per SLMC Section [13.16.640](#). The FOG control program manager will provide written notification of violations and meet with owners of property or their representatives on the site to discuss the exact locations of the observed violations per SLMC Section [13.16.650](#).

Violations occurring at FSEs which are operating under a waiver or variance may result in a requirement to install a grease interceptor or grease trap. Violations resulting from the operation of existing grease traps or grease interceptors may result in a compliance schedule for modifications to those devices, or required implementation of more stringent maintenance requirements.

The city building division shall issue a building permit for any necessary improvements and conduct an inspection to ensure that the proper corrections have been made.

(Ord. No. 12-226, § 1(3), 8-7-2012)



CITY OF SHASTA LAKE

DEPARTMENT OF PUBLIC WORKS



NEEDS YOU TO KEEP YOUR PIPES RUNNING FREE!!!

Fats, cooking oils, and grease are great for cooking but they also clog drain pipes and cause sewer pipes to back up AFFECTING YOU AND YOUR WALLET!

Cool down fats, oils, and greases left in cookware and pour into a can, NOT the drain!

Dispose of the can in the trash when cooled.

Wipe fats, oils, and greases off of cookware with a paper towel before washing.



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City of Shasta Lake

4477 Main Street, Shasta Lake, CA 96019

530.275.7448

11-17-2025

To: All Food Service Establishments Operating a Grease Trap or Grease Interceptor
Subject: Fats, Oils, and Grease (FOG) Program Compliance Requirements

Dear Business Owner/Operator,

The City of Shasta Lake is providing this formal notice to all Food Service Establishments (FSEs) regarding the requirements of the **City's Fats, Oils, and Grease (FOG) Control Program**. This program, established under Article VII of the City's Sewer Service System Ordinance, is designed to prevent blockages, protect public health, and reduce the risk of sanitary sewer overflows.

Purpose of the FOG Program

Fats, oils, and grease from food preparation can solidify in sewer pipes and cause system blockages. To safeguard the City's wastewater collection and treatment system, all FSEs are required to follow the regulations governing grease traps, grease interceptors, maintenance practices, employee training, and waste-oil handling.

Grease Trap/Interceptor Requirements

All businesses operating a grease control device must ensure the following:

- **Grease interceptors** must be **pumped and fully cleaned at least once every 90 days**, or more frequently if the 25% capacity rule is exceeded.
- **Grease traps** must be cleaned **no less than weekly** and inspected **monthly**.
- FOG and solids must not exceed **25% of total depth** in any interceptor.
- Only **licensed grease haulers** may remove and transport accumulated grease.
- Cooking oil may **not** be discharged into any drain and must be stored in approved recycling containers.

Operational Responsibilities

Food service businesses are required to:

- Prevent discharge of FOG at levels that could obstruct the sewer system.
- Avoid use of food grinders and unapproved additives or detergents intended to emulsify grease.
- Maintain all grease control devices in proper working order.
- Notify the City immediately of any spills, equipment failures, or conditions that may lead to a violation.

Kitchen Best Management Practices

To ensure compliance, all FSEs must implement the following BMPs:

- Dry-wipe and scrape cookware prior to washing.
- Use drain screens on all sinks in food preparation areas.
- Properly store and recycle all used cooking oil.
- Dispose of food waste directly into trash containers, never into sinks or floor drains.
- Keep exhaust filters, floors, and food-prep areas clean to reduce grease accumulation.

Recordkeeping Requirements

All grease pump-outs, cleaning records, manifests, training logs, maintenance activities, and any related documentation must be retained **for a minimum of five years** and made available to the City upon request.

Inspections and Enforcement

City staff may conduct **unannounced inspections** during regular business hours to verify compliance. Failure to follow FOG Program requirements may result in notices of violation, mandatory corrective actions, installation or upgrade of grease control devices, and/or enforcement measures consistent with the Shasta Lake Municipal Code.

Changes in Operations

If your business plans to remodel, expand, or increase food preparation activities, you must notify the City **at least 60 days in advance**, as operational changes may affect grease-control requirements.

The City of Shasta Lake appreciates your cooperation in helping protect our wastewater infrastructure and the environment. If you have questions about your grease trap, interceptor requirements, BMPs, or recordkeeping, please contact:

Stephen Rickel, Wastewater Superintendent

(530) 275-7488

srickel@cityofshastalake.gov

Thank you for your continued partnership.

Appendix F
Water Quality Monitoring Program

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City of Shasta Lake

Water Quality Monitoring Program Plan

February 2015

Water Quality Monitoring – Key Elements

- **Trigger for Sampling.** Water quality sampling must be performed for sanitary sewer overflows (SSOs) that are 50,000 gallons or greater and reach a surface water.
- **Safety and Access.** Water quality sampling should only be performed if it is safe to do so and access to the surface water is not restricted. Unsafe conditions include, but are not limited to, heavy rains, steep hillsides, and fog/visibility issues. When sampling is not possible, details of the situation will be recorded in the certified Category 1 SSO Report and the SSO Technical Report submitted to the CIWQS Online SSO Database.
- **When to Sample.** Sampling must be performed (when and if it is safe to do so) within 48 hours of the City of Shasta Lake (City) becoming aware of an SSO that resulted in 50,000 gallons or greater being spilled to a surface water. All of the surface waters located within City boundaries are defined by the United States Geological Survey (USGS) as intermittent, which means that they normally cease flowing for weeks or months each year. Therefore, sampling shall be conducted when an appreciable surface flow is observed in the associated waterway. Water quality sampling should not interfere with stopping or recovering the SSO. **Figure A-1**, found in **Appendix A**, shows the surface waters that are located within the City boundaries according to USGS. The associated **Table A-1** lists the surface waters with known names that are numbered on **Figure A-1**.
- **Where to Sample.** Sampling should account for spill travel time in surface water (see Sample Collection Procedure below).
- **Required Water Quality Analyses.** At a minimum, analyze for ammonia and appropriate bacterial indicators per the RWQCB Basin Plan (see Sampling Parameters below).

Water Quality Sampling - Protocol

SSO Sample Collection Kit Inventory:

- Cooler
- Ice Packs (stored in freezer)
- 3 sample bottles labeled A (for ammonia analyses)
- 3 sample bottles labeled B (for bacteria indicator analyses)
- 3 sample bottles labeled C (for pH, temperature, and dissolved oxygen analyses)
- 3 secondary containers (for transfer of sample to A-labeled sample bottles)
- Safety gloves
- Safety glasses
- Sodium thiosulfate tablets (to be used when collecting bacteria samples)
- Paper towels
- Quart bags
- Gallon bags
- Thermometer / pH meter



- HACH Dissolved Oxygen Meter Product #2968800 (or approved equal)
- Floating object
- Measuring tape
- Stopwatch
- Pen/Pencil
- Basic Laboratory Inc. Chain of Custody Form(s)

Sampling Parameters:

- Ammonia
- Total Coliform
- Fecal Coliform
- Dissolved Oxygen
- pH
- Temperature

Sampling Locations (further details on location provided in subsequent sections):

- “Upstream” of SSO
- Immediate vicinity where SSO enters water body (“source”)
- “Downstream” of SSO

Sample Collection Procedure:

- 1) If possible, determine the point that the SSO entered the waterway and photograph this location (include a reference point in the photo, i.e. an immovable part of the terrain that would allow someone to easily identify where the SSO entrance point is located by looking for the reference point in the photo).
- 2) If sampling is performed after the SSO has stopped, estimate SSO travel time. This may be done by observing or dropping floatable debris or object in the surface water and timing how long it takes to travel over a measured distance (e.g., 100 feet). Include sections in the surface water where there are bends, bottlenecks, or other characteristics that may slow down the flow. If the first measurement is uncertain, this time estimate may be performed three times, and the values averaged to determine the estimated travel time. The velocity of the water body can then be calculated by dividing the measured distance by the average time.
- 3) Determine the location where the “source” sample collection will take place by accounting for SSO travel time.
 - If the SSO is occurring, the “source” location is the point where the SSO is entering the waterway.
 - If the SSO has stopped, calculate the approximate downstream distance from the original SSO location by multiplying the time since the SSO occurred by the estimated velocity. This is the approximate downstream distance from the SSO discharge point to the “source” sampling location.
- 4) Put on the safety gloves and safety glasses.
- 5) **Upstream Sample Collection:** Collect the upstream samples first. Move approximately one hundred feet (100’) upstream of Source location. Label one each of the sample bottles marked “Upstream A”, “Upstream B”, and “Upstream C” with the date and time.



- a. Take a photo of the sample location, including a reference point in the photo.
 - b. Ensure the sampling location is well away from the bank at a point where water is visibly flowing. Take care to avoid sampling debris or scum layer from the surface.
 - c. Starting with collection of the ammonia sample, remove the lid from one of the unused and clean secondary containers. Fill this container against the direction of water flow while following the instructions of Step 5b. *Never dip the "Upstream A" sample bottle into the water.* After carefully opening an unused "Upstream A" ammonia sample bottle containing sulfuric acid, slowly transfer the sample from the secondary container to the sample bottle. *Due to potential contact with sulfuric acid, a highly corrosive compound, safety glasses and gloves must be worn when sampling for ammonia.* Secure the lid of the sample bottle, making sure that no leaking occurs. After drying the outside of the bottle with a paper towel, immediately place it inside a quart bag. Place this quart bag along with two ice packs into a gallon bag. Do not place the ice packs inside of the quart bag that holds the sample bottle. Place the sample in the cooler after collection.
 - d. Moving on to collection of the bacteria sample, remove the lid from an unused "Upstream B" bacteria sample bottle and confirm that a sodium thiosulfate preservative tablet is inside. Fill the bottle against the direction of water flow while following the instructions of Step 5b. Secure the lid of the sample bottle, making sure that no leaking occurs. After drying the outside of the bottle with a paper towel, immediately place it inside a quart bag. Place this quart bag along with two ice packs into a gallon bag. Do not place the ice packs inside of the quart bag that holds the sample bottle. Place the sample in the cooler after collection.
 - e. Moving on to the last set of samples for pH and dissolved oxygen, remove the lid from an unused "Upstream C" sample bottle. Fill the bottle against the direction of water flow while following the instructions of Step 5b. Use the thermometer to measure the temperature of the "Upstream C" sample three times and record the results. Use the dissolved oxygen meter to measure the concentration of dissolved oxygen in the "Upstream C" sample and record the results. Secure the lid of the sample bottle, making sure that no leaking occurs. After drying the outside of the bottle with a paper towel, immediately place it inside a quart bag. Place this quart bag along with two ice packs into a gallon bag. Do not place the ice packs inside of the quart bag that holds the sample bottle. Place the sample in the cooler after collection.
- 6) **Source Sample Collection:** Collect the "source" samples next. Move approximately ten feet (10') downstream of the Source location. Label one each of the sample bottles marked "Source A", "Source B", and "Source C" with the date and time. Follow steps 5a-e for sampling at the Source location, using appropriately marked bottles "Source A", "Source B", and "Source C".
- 7) **Downstream Sample Collection:** Lastly, collect the downstream sample. Move one hundred feet (100') downstream of the source location. Label one each of the sample bottles marked "Downstream A", "Downstream B", and "Downstream C" with the date and time. Follow steps 5a-e for sampling at the Downstream location, using appropriately marked bottles "Downstream A", "Downstream B", and "Downstream C".



- 8) Complete the Basic Laboratory Inc. Chain of Custody (COC) form.
- 9) Transport the cooler containing the samples and the completed COC form to Basic Laboratory, Inc. as soon as possible after first sample collection. The facility is located at 2218 Railroad Avenue, Redding, California 96001. The parameter with the shortest holding time is bacteria at 6 hours (from sample collection to beginning of analysis), but sample analysis should begin as soon as possible after sample collection.
- 10) Restock the SSO Sample Collection Kit with the items listed on pages 1 and 2.

Warnings for Sample Collection:

- **Avoid Contamination.** Make every effort not to touch the sample contents, because the sample containers may contain hazardous chemicals and the sample results may be easily affected by human contamination.
- **Deliver Sample to Lab.** All samples need to be delivered to the laboratory as soon as possible due to the limited holding time required for maintaining sample integrity.

Water Quality Analyses – Protocols

Laboratory Analyses:

Basic Laboratory Inc. is accredited by the Environmental Laboratory Accreditation Program (ELAP).

Maintenance and Calibration of Monitoring Instruments and Devices:

The SSO Sample Collection Kit is checked by the field crew staff periodically to verify its contents, and the field crew staff replace sample bottles as needed according to their shelf life.

Reporting Requirements

City staff is responsible for submitting water quality monitoring information with the certified Category 1 SSO report in the CIWQS Online SSO Database, which must be submitted within 15 calendar days of the SSO end date.

City staff is responsible for submitting information related to the Technical Report in the CIWQS Online SSO Database, which must be done within 45 calendar days of the SSO end date. The SSO Technical Report must include the following water quality monitoring information:

- Description of all water quality sampling activities conducted
- Analytical results and evaluation of the results
- Detailed location map showing all water quality sampling points

Appendix G
FY 2025 – 2030 Capital Projects Budget

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Table 2-7: Existing and Proposed Debt Service

Line	Debt Service	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030
1	Existing Debt Service						
2	SRF Loan - Principal	\$404,882	\$411,765	\$418,765	\$425,884	\$433,124	\$440,487
3	SRF Loan - Interest	\$222,704	\$215,821	\$208,821	\$201,702	\$194,462	\$187,099
4	Subtotal	\$627,586	\$627,586	\$627,586	\$627,586	\$627,586	\$627,586
5							
6	Proposed Debt Service						
7	Proposed FY 2027 Loan	\$0	\$0	\$443,847	\$443,847	\$443,847	\$443,847
8	Subtotal	\$0	\$0	\$443,847	\$443,847	\$443,847	\$443,847
9							
10	Total - Debt Service	\$627,586	\$627,586	\$1,071,433	\$1,071,433	\$1,071,433	\$1,071,433

2.5 CAPITAL IMPROVEMENT PLAN

CAPITAL IMPROVEMENT PROJECTS

Table 2-8 shows the City’s six-year CIP; project costs are inflated by 5% per year starting in FY 2027.

Table 2-8: Capital Improvement Projects

Line	Capital Improvement Projects	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030
1	Wastewater Rate Study	\$50,000	\$0	\$0	\$0	\$0	\$0
2	Infiltration & Inflow Study	\$75,000	\$0	\$0	\$0	\$0	\$0
3	LS3 & LS5 Force Main	\$0	\$0	\$7,350,000	\$0	\$0	\$0
4	WWTP Shade Structure for Filter/UV	\$100,000	\$0	\$210,000	\$0	\$0	\$0
5	WWTP Bar Screen Rehabilitation	\$30,000	\$0	\$0	\$0	\$0	\$0
6	WWTP HVAC Replacement	\$40,000	\$0	\$0	\$0	\$0	\$0
7	Wastewater Collection System Cleaning & CCTV Phase 1	\$550,000	\$0	\$0	\$0	\$0	\$0
8	Wastewater Collection System Cleaning & CCTV Phase 2	\$0	\$450,000	\$0	\$0	\$0	\$0
9	Water Effects Ration - Translator Study	\$150,000	\$0	\$0	\$0	\$0	\$0
10	WWTP Scum Trough Mixers	\$0	\$75,000	\$0	\$0	\$0	\$0
11	Wastewater Master Plan update (2026-2036)	\$0	\$200,000	\$0	\$0	\$0	\$0
12	Summit City Septic to Sewer Design & Environmental	\$0	\$0	\$2,100,000	\$0	\$0	\$0
13	Zinc Mitigation Design	\$0	\$0	\$1,575,000	\$0	\$0	\$0
14	Lift Station 2 - Rehabilitation	\$0	\$0	\$0	\$551,250	\$0	\$0
15	Wastewater Improvements 2028 (Project TBD)	\$0	\$0	\$0	\$0	\$578,813	\$607,753
16	Total - Capital Projects (Inflated)	\$995,000	\$725,000	\$11,235,000	\$551,250	\$578,813	\$607,753

CAPITAL FINANCING PLAN

Table 2-9 shows the capital financing plan. The City is seeking grant funding for 50% of the Force Main project (Line 3 in **Table 2-8**) and 100% grant funding for the Summit City Septic and Zinc Mitigation projects (Lines 12 and 13 in **Table 2-8**). The total projected grant funding is \$7 million for the three projects in FY 2027 (Line 1). The proposed short-term loan will fund \$3.6 million in capital projects in FY 2027 (Line 2). All other project costs will be funded by wastewater rates or reserves (Line 3).

Table 2-9: Capital Financing Plan

Line	Capital Financing Plan	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030
1	Grant Funded CIP	\$0	\$0	\$7,000,000	\$0	\$0	\$0
2	Debt Funded CIP	\$0	\$0	\$3,600,000	\$0	\$0	\$0
3	Rate Funded CIP	\$995,000	\$725,000	\$635,000	\$551,250	\$578,813	\$607,753
4	Total - Capital Financing Plan	\$995,000	\$725,000	\$11,235,000	\$551,250	\$578,813	\$607,753

2.6 FINANCIAL POLICIES

RESERVE POLICY

The City’s current reserve policy maintains cash on hand to meet short-term cash imbalances, to execute CIP projects, and to cover unexpected repairs.

The City currently has an adopted reserve policy that consists of the following components:

- Operating Reserve Target: 5% of annual operating expenses
- Capital Projects Reserve Target: \$500,000

WRE proposes several revisions to the City’s current reserve policy to be more in line with the City’s operation and risk profile as well as industry standards.

- Operating Reserve Target: 25% of annual operating expenses
- Capital Reserve Target: 50% of five-year average rate-funded CIP costs
- Emergency Reserve Target: Net replacement cost of a major asset (\$100,000)

The reserve target for the study period ranges from approximately \$1.2 to \$1.3 million in the City’s reserve funds.

DEBT COVERAGE REQUIREMENT

The City’s current debt coverage requirement is 110% of annual debt service. To meet coverage requirements, net revenues (revenues less operating expenses) must be 110% or more of annual debt service. This requirement excludes the proposed short-term loan of \$3.6 million.

Appendix H
SSMP Change Log

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SSMP Change/Record Log

Date	SSMP Element	Description of Change or Revision	Change Made By
08/18/09	General	Initial SSMP Adoption - CC 09-82	JG
02/01/11	Various	Standardization on Flygt Pumps for Lift Stations	JT
02/24/12	General	2010-2011 SSMP Performance Review. CC Presentation by City Manager	JT
02/24/12	Element IV	Deleted use of MS Access forms for work order processing. Continuing to use existing work order process at request of City staff.	JT
02/24/12	Element IV	Proposed data collection sheets for lift stations in SSMP replaced with tracking sheets being used at lift stations	JT
02/24/12	Element IV	Modified GIS tracking fields to include only hot lines and hot-hot lines (hydroflushing). No need for additional tracking for root and grease issues. Change to be implemented once wastewater GIS is updated.	JT
02/24/12	Element VII	FOG discharge permits eliminated, as they are not needed.	JT
02/24/12	Element IX	Eliminated GIS tracking of SSOs, due to the few number of SSOs experienced by the City. Tracking via CIWQS SSO Database instead.	JT
08/07/12	Element VII	FOG ordinance adopted by City Council and inserted into SSMP.	JT
04/07/14	General	2012-2013 SSMP Performance Review. Written audit report provided directly to City Council.	JT
04/07/14	Various	Adjusted dates of GIS implementation throughout SSMP, due to not having anyone with GIS capability employed at the City.	JT
04/07/14	Element IV	CCTV completion date modified to reflect completion of Citywide CCTV project scheduling in FY 14-15 and FY 15-16	JT
04/07/14	Element VII	FOG filing system date changed to 'as needed', due to the few number of FSEs. Task to be completed as needed.	JT
04/07/14	Element VII	Elimination of FOG discharge permits finalized with adoption of FOG program ordinance.	JT
04/07/14	Element VII	Elimination of GIS tracking of permitted FSEs, due to the low number of FSEs within the City.	JT
04/07/14	Element VII	Changed completion date of FSE FOG control inspections to 'as needed'.	JT
04/07/14	Element VIII	Schedule date for completing sewer improvements change to 'ongoing' to reflect update of Wastewater Master Plan in FY 15-16.	JT
04/07/14	Element VIII	Schedule date for completing CCTV inspections changed to reflect completion of Citywide CCTV project scheduling in FY 14-15 and FY 15-16.	JT
04/07/14	Element VIII	Schedule date for completing I/I reduction project changed to 'pending' to reflect completion of Citywide CCTV project scheduling in FY 14-15 and FY 15-16 and the Wastewater Master Plan in FY 15-16.	JT

11/23/14	General	SSMP Gap Analysis and Overview Audit completed. Comments to be integrated into revised SSMP in 2015.	JT
05/19/15	General	Revised SSMP Adoption - CC 15-35	JT
02/01/16	General	2014-2015 SSMP Performance Review. Written audit report provided directly to City Council. No changes recommended.	JT
01/22/18	General	2016-2017 SSMP Performance Review. Written audit report provided directly to City Council. No changes recommended.	JT
05/03/2019	General	SSMP Overview Audit completed. Comments to be integrated into revised SSMP in 2020.	JT
01/08/20	General	2018-2019 SSMP Performance Review. Written audit report provided directly to City Council. No changes recommended, but CC was notified that a revised SSMP would be brought before them for recertification in 2020.	JT
08/06/20	General	SSMP heavily revised to both reflect 5-year audit comments and to mirror City of Morgan Hill's SSMP, both prepared by Paul Causey. Revised SSMP adopted by City Council on 08/04/20.	JT
1/11/2022	Element II	SSMP modified to reflect staffing changes	WB
7/15/2025	Element II	SSMP modified to reflect staffing changes	WB
7/15/2025	Element X	SSMP Audit denoted upcoming SSMP update required by Order WQ 2022-0103-DWQ	WB
12/31/2025	General	SSMP revised to comply with Order WQ 2022-0103-DWQ	WB