City of Oroville

Sewer System Management Plan

Final – October 7, 2019 Adopted – October 7, 2019

City of Oroville

PUBLIC WORKS DEPARTMENT - ENGINEERING

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City Administrator

The City of Oroville's Sewer System Management Plan (SSMP) document has been prepared by Bennett Engineering Services and the contract City Engineer.

This Document was recommended for approval to the City Council on October 22nd, 2019, in compliance with State Water Resources Control Board Order Numbers 2006-0003-DWQ and 2013-0058-EXEC.

10/24/2019

Mike Massaro, P.E. Date
Contract City Engineer

This amended SSMP document was approved and adopted by the City Council during a public City Council Meeting on October 22nd, 2019.

ATTEST:

Chuck Reynolds Date
Mayor

Scott E. Huber Date
City Attorney

Document Version Control

This Sewer System Management Plan (SSMP) is a living document that is anticipated to change over time. This version control sheet is intended to support the City's efforts to keep the copies of the SSMP that have been assigned to City Staff current. Please contact the Public Works Department prior to making copies for use by others, initiating changes, or for information regarding the current version of this document.

SSMP Version No.: 2

SSMP Version Date: October 7, 2019, 2019

SSMP Section	Original Version Date	Current Version Date
Introduction	October 30, 2009	October 7, 2019
Goals	October 30, 2009	October 7, 2019
Organization	October 30, 2009	October 7, 2019
Legal Authority	October 30, 2009	October 7, 2019
Operations & Maintenance Program	October 30, 2009	October 7, 2019
Design and Performance Provisions	October 30, 2009	October 7, 2019
Overflow Emergency Response Plan	October 30, 2009	October 7, 2019
FOG Control Program	October 30, 2009	October 7, 2019
System Evaluation and Capacity Assurance Plan	October 30, 2009	October 7, 2019
Monitoring, Measurement, and Program Modifications	October 30, 2009	October 7, 2019
SSMP Program Audit	October 30, 2009	October 7, 2019
Communications Program	October 30, 2009	October 7, 2019

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Introduction

Background

This Sewer System Management Plan (SSMP) has been prepared in compliance with the State Water Resources Control Board (SWRCB) Order 2006-0003-DWQ, Statewide General Waste Discharge Requirements (WDR's) for Sanitary Sewer Systems, as adopted by the SWRCB on May 2, 2006 and revised in 2008. The WDR's prohibit sanitary sewer overflows (SSOs) and requires the reporting of SSO's using the statewide electronic reporting system. This SSMP has been prepared for the City of Oroville (City) with assistance from Bennett Engineering Services (2019 Update).

System Description

The City of Oroville is located in Butte County, approximately 85 miles southeast of Redding and 65 miles north of Sacramento. The City owns and operates a sanitary sewer collection system for the benefit of residents and businesses in the Oroville city limits. The City's estimated population in 2017 was 19,121 and the City occupies an area of approximately 12.1 square miles. The sanitary sewer crew maintain approximately 66.6 miles of sanitary sewer gravity mains with approximately 1,189 manholes and over 2.1 miles of force main. The City also maintains seven primary sewer lift stations, one secondary lift station, and two flow meters. The sanitary sewer crew consists of six workers and one manager. Since the last SSMP update, the City has adequately staffed the sanitary sewer crew with knowledgeable and trained crew members. At this time, the crew is meeting or exceeding maintenance expectations and completing many projects before the goal date.

The Sewerage Commission-Oroville Region (SC-OR) provides wastewater treatment and disposal for the Oroville Region through the operation of a treatment plant located on South 5th Avenue, south of downtown Oroville. Average dry weather wastewater flows (ADWFs) conveyed through the City's collection system are 1.9 MGD.

Due to the recent Camp Fire affecting the nearby Town of Paradise, future expansion is likely. There is currently one subdivision being added to the system, and a pending future expansion to the City's hospital. The system is expected to grow to approximately 6.45 MGD through build out of the collection system per the Sewer Master Plan Update in 2013 (Carollo).

Organization of SSMP

The structure of this document follows the section numbering and nomenclature specified in the General Waste Discharge Requirements (WDR). The Sewer System Management Plan (SSMP) includes eleven sections:

1. Goals
2. Organization
3. Legal Authority
4. Operation and Maintenance Program
5. Design and Performance Provisions
6. Overflow Emergency Response Plan
7. Fats, Oils and Grease (FOG) Control Program
8. System Evaluation and Capacity Assurance Plan
9. Monitoring, Measurement, and Program Modifications
10. SSMP Audits
11. Communication Program

Definitions, Acronyms, and Abbreviations

Best Management Practices (BMP's) - Refers to the procedures employed in commercial kitchens to minimize the quantity of grease that is discharged to the sanitary sewer system. Examples include scraping food scraps into the garbage can and dry wiping dishes and utensils prior to washing.

Building Sewer - Refers to the piping that conveys sewage within a building or residence.

Butte County Department of Public Health (County Health)

Calendar Year (CY)

California Integrated Water Quality System (CIWQS) - Refers to the State Water Resources Control Board online electronic reporting system that is used to report SSOs, certify completion of the SSMP, and provide information on the sanitary sewer system.

Capital Improvement Program (CIP) - Refers to the document that identifies planned capital improvements to the City's sanitary sewer system.

Certification of SSO Reports - The SWRCB requires the Legally Responsible Official to login to CIWQS within a given time period to electronically sign submitted reports thereby stating that to the best of his/her knowledge and belief, the information submitted is true, accurate, and complete.

City - Refers to the City of Oroville.

Closed Circuit Television (CCTV) - Refers to the process and equipment that is used to internally inspect the condition of gravity sewers.

Collection System – See Sewer System.

Computerized Maintenance Management System (CMMS) - Refers to software and a database that is used to manage maintenance and condition assessment data including the production of work orders and the recording of work completed.

Dry Weather Flows (DWF's) – Refers to the average daily volume of wastewater conveyed through the collection system during periods of dry weather (non-rainy season flows)

Environmental Protection Agency (EPA) - Refers to the United States Environmental Protection Agency.

Fats, Oils, and Grease (FOG) - Refers to fats, oils, and grease typically associated with food preparation and cooking activities that can cause blockages in the sanitary sewer system.

Fiscal Year (FY)

Food Service Establishment (FSE) - Refers to commercial or industrial facilities where food is handled/prepared/served that discharge to the sewer system.

Force Main - Refers to a pressure sewer used to convey wastewater from a lift station to the point of discharge.

Full-time Equivalent (FTE) - Refers to the equivalent of 2,080 paid labor hours per year by a regular, temporary, or contract employee.

Gallons per Day (gpd)

Gallons per Minute (gpm)

General Waste Discharge Requirements (WDR) - Refers to the State Water Resources Control Board Order No. 2006-0003, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, dated May 2, 2006, as revised on February 20, 2008.

Geographic Information System (GIS) - Refers to the City's system that it uses to capture, store, analyze, and manage geospatial data associated with the City's sanitary sewer system assets.

Global Positioning System (GPS) - Refers to the handheld unit used to determine the longitude and latitude of sanitary sewer overflows for use in meeting the Online SSO Reporting System reporting requirements.

Grease Removal Device (GRD) - Refers to grease traps or grease interceptors that are installed to remove FOG from the wastewater flow at food service establishments.

Hotspot - A gravity sewer identified as requiring frequent preventive maintenance to reduce the likelihood of SSOs.

Infiltration/Inflow (I/I) - Refers to water that enters the sanitary sewer system from stormwater and groundwater that increases the quantity of flow. Infiltration enters through defects in the sanitary sewer system after flowing through the soil. Inflow enters the sanitary sewer without flowing through the soil. Typical points of inflow are

holes in manhole lids and direct connections to the sanitary sewer (e.g. storm drains, area drains, and roof leaders).

Lateral - See sewer service lateral.

Legally Responsible Official (LRO) - Refers to the individual who has the authority to certify reports and other actions that are submitted through the Online SSO Reporting System.

Manhole (MH) - Refers to an engineered structure that is intended to provide access to a sanitary sewer for maintenance and inspection.

Monitoring, Measurement, and Program Modifications (MMPM)

National Pollution Discharge Elimination System (NPDES)

Not Applicable (NA)

Notification of an SSO - Refers to the time at which the City becomes aware of an SSO event through observation or notification by the public or other source.

Office of Emergency Services (OES) - Refers to the California Governor's Office of Emergency Services.

Online SSO Reporting System - Refers to the California Integrated Water Quality System (CIWQS).

Operations and Maintenance (O&M)

Overflow Emergency Response Plan (OERP)

Personal Protective Equipment (PPE)

Preventative Maintenance (PM) - Refers to maintenance activities intended to prevent failures of the sewer system facilities (e.g. cleaning, CCTV, inspection).

Private Lateral Sewage Discharges - Sewage discharges that are caused by blockages or other problems within a privately owned lateral***.***

Property Damage Overflow - Property damage overflow refers to a sewer overflow or backup that damages private property.

Regional Water Quality Control Board (RWQCB) - Refers to the Regional Water Quality Control Board for Region 5R – Central Valley-Redding.

Sanitary Sewer Overflow (SSO) - Any overflow, spill, release, discharge or diversion of untreated or partially treated wastewater from a sanitary sewer system. SSOs include:

(i) Overflows or releases of untreated or partially treated wastewater that reach waters of the United States;

(ii) Overflows or releases of untreated or partially treated wastewater that do not reach waters of the United States; and

(iii) Wastewater backups into buildings and on private property that are caused by blockages or flow conditions within the publicly owned portion of a sanitary sewer system.

Sanitary Sewer System – Refers to the portion of the sanitary sewer facilities that are owned and operated by the City of Oroville.

Sensitive Area - Refers to areas where an SSO could result in a fish kill or pose an imminent or substantial danger to human health (e.g. parks, aquatic habitats, etc.).
Sewer Service Lateral - Refers to the piping that conveys sewage from the building to the City's sanitary sewer main.

Sewer System – See sanitary sewer system.

Sewer System Management Plan (SSMP)

Square Feet (sf)

Standard Operating Procedures (SOP) - Refers to written procedures that pertain to specific activities employed in the operation and maintenance of the sanitary sewer system.

State Water Resources Control Board (SWRCB) - Refers to the California Environmental Protection Agency (EPA) State Water Resources Control Board and staff responsible for protecting the State's water resources.

Surface Waters - See waters of the State.

System Evaluation and Capacity Assurance Plan (SECAP)

Vitrified Clay Pipe (VCP)

Volume Captured - The amount of spilled sewage that is returned to the sanitary sewer system. When recording the volume that is captured, the volume of water used for flushing and/or cleaning should not be included.

Wastewater Collection System – See sewer system.

Water Body - A water body is any stream, creek, river, pond, impoundment, lagoon, wetland, or bay.

Waters of the State - Waters of the State (or waters of the United States) means any water, surface or underground, including saline waters, within the boundaries of California. In case of a sewage spill, storm drains are considered to be waters of the State unless the sewage is completely contained and returned to the sanitary sewer system and that portion of the storm drain is cleaned.

Work Order (WO) - Refers to a document (paper or electronic) that is used to assign work and to record the results of the completed work.

References

State Water Resources Control Board Order No. 2006-0003 Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, California State Water Resources Control Board, May 2, 2006.

Monitoring and Reporting Program 2006-0003 Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, State Water Resources Control Board,May 2, 2006

State Water Resources Control Board Monitoring and Reporting Program No.2006·0003-DWQ (as revised by Order No. WQ 2008-0002.EXEC) Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, California State Water Resources Control Board, February 20, 2008.

Section 1. Goals

1.1. Introduction

This section of the SSMP formally states the City's goals for its SSMP.

1.2. WDR Requirements

The WDR requirements for the Goals section of the SSMP are:

The collection system agency must develop goals to properly manage, operate, and maintain all parts of its wastewater collection system in order to reduce and prevent SSOs, as well as to mitigate any SSOs that occur.

1.3. SSMP Goals

The City's goals are:

1. To properly manage, operate, and maintain all parts of the City's sanitary sewer system.
2. To provide adequate capacity to convey the peak wastewater flows. Adequate capacity, for the purposes of this SSMP, is defined as the capacity to convey the peak wastewater flows that are associated with the design storm event.
3. To reduce the frequency of SSOs and, wherever possible, to prevent SSOs.
4. To mitigate the impacts that are associated with any SSO that may occur.
5. To meet all applicable regulatory notification and reporting requirements.

Section 2. Organization

2.1. Introduction

This section of the SSMP identifies City staff responsible for implementing this SSMP, responding to SSO events, and meeting the SSO reporting requirements.

2.2. WDR Requirements

The requirements for the Organization element of the SSMP are summarized below. The SSMP must identify:

1. The name of the responsible or authorized representative;
2. The names and telephone numbers for management, administrative, and maintenance positions responsible for implementing specific measures in the SSMP program. The lines of authority as shown in an organization chart or similar document with a narrative explanation are to be included; and
3. 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)).

2.3. Organization

The organization chart for the management, operation, and maintenance of the City's sanitary sewer system is shown on Figure 2-1.

2.4. Authorized Representative

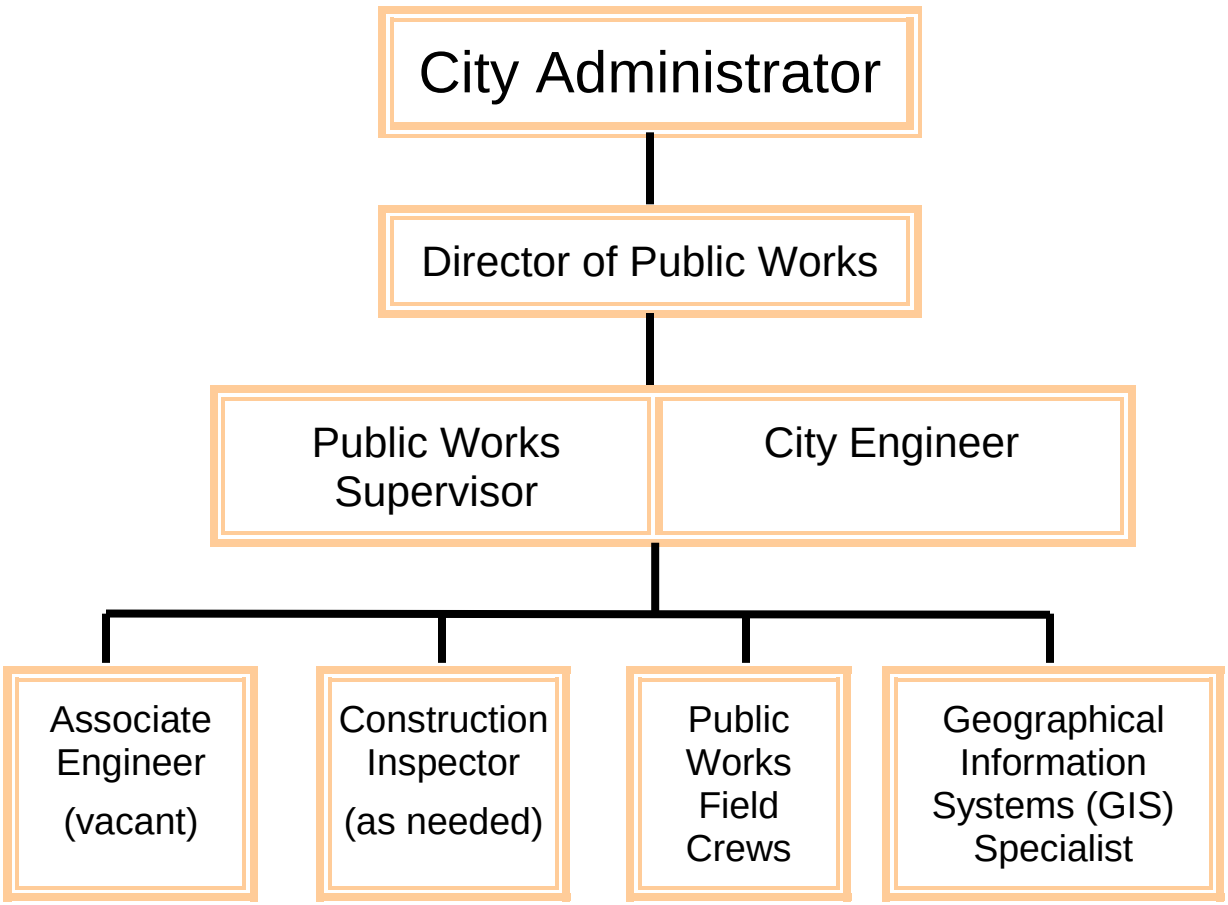
The City's Authorized Representative in all sewer system matters is the City Administrator. The City Administrator. is authorized to submit verbal, electronic, and written spill reports to the RWQCB, SWRCB, County Health Agency, and OES. The City Administrator is authorized to certify electronic spill reports submitted to the SWRCB.

The Public Works Supervisor is authorized to act in the City Administrator's absence. The City Administrator is authorized to submit verbal, electronic, and written spill reports to the RWQCB, SWRCB, County Health Agency, and OES. The City Administrator is authorized to certify electronic spill reports submitted to the SWRCB.

2.5. Responsibility for SSMP Implementation

The City Engineer is responsible for developing, implementing, and maintaining all elements of the City's SSMP (Appendix 2-A).

Figure 2-1: Organization Chart



2.6. SSO Reporting Chain of Communication

The SSO Reporting Chain of Command follows the Organization Chart shown on Figure 2-1. The SSO Reporting process and responsibilities are described in detail in Section 6 - Overflow Emergency Response Plan.

Appendix 2-A: SSMP Development, Implementation, and Maintenance Responsibilities

Name	Job Title	Phone Number	SSMP Responsibility
Mike Massaro, P.E.	Sr. Civil Engineer Contract City Engineer	(916) 549-6935	All Sections
Cody Nissen	Public Works Supervisor	(530) 538-2490	Operations & Maintenance

Section 3. Legal Authority

3.1. Introduction

This section of the SSMP presents the City's legal authority to comply with the SSMP requirements, as provided in its Municipal Code and agreements with other agencies.

3.2. WDR Requirements

The summarized requirements for the Legal Authority element of the SSMP are:

The City must demonstrate, through collection system use ordinances, service agreements, or other legally binding procedures, that it possesses the necessary legal authority to:

a) Prevent illicit discharges into its wastewater collection system (examples may include infiltration and inflow (I/I), storm water, chemical dumping, unauthorized debris and cut roots, etc.);

b) Require that sewers and connections be properly designed and constructed;

c) Ensure access for maintenance, inspection, or repairs for portions of the lateral owned or maintained by the City;

d) Limit the discharge of fats, oils, and grease and other debris that may cause blockages;

e) Enforce any violation of its sewer ordinances;

f) Inspect grease producing dischargers

3.3. Municipal Code

The Oroville Municipal Code describes the City's current legal authorities for the collection system. The legal authorities provided in the Municipal Code that address the specific requirements for this SSMP are summarized on Table 3-1.

Table 3-1: Legal Authority

Requirement	Municipal Code Reference	Meets WDR Requirements?
General		
Prevent illicit discharges into the sanitary sewer system	13.04.210	Yes
Limit the discharge of fats, oils, and grease and other debris that may cause blockages	13.04.210	Yes
Require that sewers and connections be properly designed and constructed	13.04.040	Yes
Require proper installation, testing, and inspection of new and rehabilitated sewers	13.04.040	Yes
Laterals		
Clearly define City responsibility	13.12.140	Yes
Ensure access for maintenance, inspection, or repairs for portions of the service lateral owned or maintained by the City	NA	NA
Control infiltration and inflow (I/I) from private service laterals	13.04.070	Yes
FOG Source Control		
Requirements to install grease removal devices (such as traps or interceptors), design standards for the grease removal devices, maintenance requirements, BMP requirements, record keeping and reporting requirements	13.04.080	Yes
Authority to inspect grease producing facilities	13.04.180	Yes
Enforcement		
Enforce any violation of its sewer ordinances	13.04.110	Yes

Section 4. Operations and Maintenance Program

4.1. Introduction

This section of the SSMP provides an overview of the City's operations and maintenance program.

4.2. WDR Requirements

The summarized requirements for the Operations and Maintenance (O&M) Program are:

(a) Maintain an up-to-date map of the sanitary sewer system, showing all gravity line segments and manholes, pumping facilities, pressure pipes and valves, and applicable storm water conveyance facilities;

(b) Describe routine preventive operation and maintenance activities by staff and contractors, including a system for scheduling regular maintenance and cleaning of the sanitary sewer system with more frequent cleaning and maintenance targeted at known problem areas. The preventative maintenance (PM) program should have a system to document scheduled and conducted activities, such as work orders;

(c) Develop a rehabilitation and replacement plan to identify and prioritize system deficiencies and implement short-term and long-term rehabilitation actions to address each deficiency. The program should include regular visual and TV inspections of manholes and sewer pipes, and a system for ranking the condition of sewer pipes and scheduling rehabilitation. Rehabilitation and replacement should focus on sewer pipes that are at risk of collapse or prone to more frequent blockages due to pipe defects. Finally, the rehabilitation and replacement plan should include a capital improvement plan that addresses proper management and protection of the infrastructure assets. The plan shall include a time schedule for implementing the short- and long-term plans plus a schedule for developing the funds needed for the capital improvement plan;

(d) Provide training on a regular basis for staff in sanitary sewer system operations and maintenance, and require contractors to be appropriately trained; and

(e) Provide equipment and replacement part inventories, including identification of critical replacement parts.

4.3. Collection System Maps

The City maintains its collection system maps using Geographic Information System (GIS). The maps include all gravity line segments and manholes, pumping facilities, pressure pipes and valves, and applicable storm water conveyance facilities. The field crews use hard copy maps that are produced from GIS. The hard copy maps are updated on an as-needed basis. Corrections that are identified by the field crews are forwarded to Engineering Division for action. High-priority corrections are completed as soon as possible. High-priority corrections refer to mapping information that could cause

the field crews to act in a manner that could cause an SSO. Low-priority corrections are completed once a year.

4.4. Operation and Maintenance Program

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

- Proactive, preventive, and corrective maintenance of gravity sewers;
- Ongoing CCTV inspection program to determine the condition of the gravity sewers;
- Rehabilitation and replacement of collection system facilities that are in poor condition; and
- Periodic inspection and preventive maintenance for lift station and force main facilities.

Please see Attachment A for an example of the maintenance logs used by the City. The details of the City's O&M programs are:

4.4.1. Gravity Sewers

The City proactively cleans all sewers 12 inches in diameter and smaller every two years, and it preventively cleans sewers with a history of problems every 1, 2, or 3 months. The City's standard operating procedure for sewer cleaning is included as Appendix 4-A.

Gravity sewer cleaning is currently scheduled using paper work orders. The City attempted transitioning to a computer-based maintenance management system to initiate work orders, record completed work, and compile a maintenance history for each individual sewer system asset but the software has since been abandoned. Everything is documented and scheduled using paper work orders.

The City will visually inspect the condition of its entire system greater than 6 inches every five years and provide cleaning if needed. The City uses CCTV to determine the cause of its gravity sewer blockages and SSOs.

The City completes repairs in priority order using its field crews and underground contractors when required during difficult repairs.

The public works field crews maintain a list of known structural problems for use in providing input to the Public Works Engineering Division on the Capital Improvement Program.

4.4.2. Lift Stations

The City's lift station O&M program consists of operational inspections, preventive maintenance, and corrective maintenance activities.

The operation of the lift stations is inspected at least once weekly. Critical lift stations such as those with close proximity to the river and high flows are inspected three times per week. The critical stations include Riverview, Orangewood, Olive Glen, and Butte Woods lift stations. Facility or equipment problems observed during the operational

inspections are noted on logs maintained at the lift stations and on reports for follow-up action. Emergency generators are exercised on the first working day of the month along with any alarm system testing. At this time, Accularm Security Systems is contracted to complete the testing and control the system.

Repairs and major maintenance of lift stations are completed by City staff. Specialty repairs, maintenance, or rehabilitation/replacement are put out to bid.

4.4.3. Force Mains

The City's force main O&M program consists of periodic inspections, preventive maintenance, and corrective maintenance activities.

The City is a member of Underground Service Alert and marks the location of its force mains to prevent damage by others during underground construction.

Formal inspections are difficult due to either accessibility issues or the small diameter of the force mains which does not allow for CCTVing. Instead a flow meter gauge is checked 2-3 times a week, depending on the history of the force main.

4.4.4. Non-Routine Maintenance

Non-routine maintenance activities include investigation and response to any complaints regarding a sanitary sewer overflow, missing or shifted manhole covers, manhole covers that are excessively noisy, residential plumbing troubles, lift station malfunction, unexpected sewer odor, etc. Sewer complaints are investigated and appropriate actions are taken to resolve the source of the problem.

4.5. Rehabilitation and Replacement Plan

The City has a Capital Improvement Program that includes the rehabilitation and replacement of its collection system assets where conditions warrant.

The sewer system projects that are included in the City's Capital Improvement Program are shown in Appendix 4-B.

4.6. Training Program

The City currently uses a combination of on-the-job training, and conferences, seminars, and other opportunities to train its collection system staff through Target Solution. A partial list of available training resources is shown on Table 4-1. Please see Attachment B, for the most current California Water Environment Association Collection System Maintenance certificates. The goal is to continue training until each member of the crew has at least a Grade 2 or Grade 3 certificate.

Table 4-1: Training Resources

Sponsor	Event	Timeframe	References
California Water Environment Association	State Conference	April	www.cwea.org
	Northern Regional Safety Conference	May	
	Northern Regional Training Conference	September	
	Northern Sacramento Valley Section	Periodic	
	Sacramento Area Section Collection Systems Committee	Quarterly	
Central Valley Clean Water Association	Collection System Committee	Periodic	http://www.cvcwa.org
Tri-State Conference	Annual Conference	September	www.tristateseminar.com
California State University, Sacramento	Videos, manuals, home study courses	Continuous	www.owp.csus.edu
USEPA	On-line courses	Continuous	www.epacampus.com

The City's contract language requires contractors working in the collection system to provide training for their employees in collection system operations and response to collection system blockages/overflows.

4.7. Equipment and Parts Inventory

The list of the major equipment that the City uses in the operation and maintenance of its sewer system is included in Appendix 4-C.

Appendix 4-A: Standard Operating Procedure for Sewer Cleaning

Purpose

The purpose of this Standard Operating Procedure is to ensure that sewer cleaning is performed in a manner that will produce a high quality work product. Quality is important because it ensures that the sanitary sewers will not experience problems prior to their next scheduled cleaning.

Goal

The goal of cleaning a gravity sewer is to restore the flow area to 95% of the original flow area of the pipe.

Required Equipment and Tools

1. Personal protective equipment (hardhat, steel toe boots, gloves, eye/face protection, hearing protection)
2. Calibrated gas detector
3. Proper safety cones, barricades, flagging, signs or other traffic control devices
4. Confined space equipment (tripod, harness, and ventilation blower)
5. Sanitary sewer system map book
6. Combo sewer cleaner
7. Warthog sewer cleaning nozzle
8. Six-wire skid ("proofer") in sizes that will be encountered during the day
9. Root saw
10. Debris traps in the sizes that will be encountered during the day
11. Manhole hook or pick-axe
12. Measuring wheel
13. Disinfectant

Procedures for Sewer Cleaning Crew

Prior to Leaving the Yard

1. Plan the work so that it starts in the upstream portion of the area and moves downstream.
2. Wherever possible, plan to clean sewers from the downstream manhole.
3. Inspect the sewer cleaning nozzles for wear. Replace nozzles that are excessively worn.

4. If this is the first day that this cleaning unit is being used this week, inspect the first 200 feet of hose and couplings for damage or wear.

At the Jobsite

1. Wear proper personnel protective equipment (PPE).
2. Fill the water tank at or near the first jobsite.
3. Determine and confirm location of upstream and downstream manholes (use street addresses, if possible).
4. Look for any overhead utilities that may come into contact with the vacuum boom during the cleaning operation.
5. Set up proper traffic control by placing traffic signs, flags, cones and other traffic control devices.
6. Move the cleaning unit into the traffic control so that the hose reel is positioned over the manhole.
7. Open the manhole and use the gas detector to determine if it is safe to proceed with the cleaning operation.
8. Install the Warthog nozzle on the hose.

Cleaning Operation

1. Insert the debris trap.
2. Start the auxiliary engine.
3. Lower the hose, with a guide or roller to protect the hose, into the manhole and direct it into the sewer to be cleaned.
4. Start the high pressure pump and set the engine speed to provide adequate pressure for the sewer cleaning operation.
5. Open the water valve and allow the hose to proceed up the sewer. The hose speed should not exceed 3 feet per minute.
6. Allow the hose to proceed 25% of the length of the sewer and pull the hose back.
7. Observe the nature and the quantity of debris pulled back to the manhole.
8. If there is little or no debris, allow the hose to proceed to the upstream manhole.
9. If there is moderate to heavy debris, clean the remaining portion of the sewer in steps not to exceed 25% of the length of the sewer.
10. Open the upstream manhole and verify that the nozzle is at or past the manhole.
11. The sewer has been adequately cleaned when successive passes with a cleaning nozzle do not produce any additional debris, and the sewer is able to pass a full size, six-wire skid (“proofer”) for its entire length.
12. Determine the nature and quantity of the debris removed during the cleaning operation. Use the codes in Table 4-1 to report the nature and quantity of debris. Figure 4-1 is an excerpt from the CWEA “Best Practices Cleaning Results” publication and sets guidelines for coding debris found during field work.

Table 4-2: Criterion for Coding Debris Found During Cleaning

Type of Debris	Clear (no debris)	Light	Moderate	Heavy
Sand, grit, rock	CLR	DL	DM	DH
Grease	CLR	GL	GM	GH
Roots	CLR	RL	RM	RH
Other (specify)	CLR	OL	OM	OH

13. Remove the debris from the manhole using the vacuum unit.
14. Rewind the hose on the reel.
15. Remove the debris trap.
16. Clean the mating surface and close the manhole. Ensure that the manhole is properly seated.
17. Enter the results on the Work Order.
18. Move the cleaning unit, break down and stow the traffic controls.
19. Proceed to the next cleaning jobsite.

At the End of the Day

1. Inspect the equipment and tools for problems.
2. Report any problems with equipment, tools, or sewers that were cleaned during the day.
3. Turn in all completed Cleaning Work Orders at end of shift.

Figure 4-1: Excerpt from CWEA publication, "Best Practices Cleaning Results"

Standard Measures of Observed Results

Next to cleaning the sewer line, effective observation of results is the most important work product of the crew. This information is the basis for defining future maintenance activities. Consistency is important. The standards for "results" for six- and eight-inch diameter sewers are:

	Clear	Moderate	Heavy
Grit	No observable grit	Less than 5 gallons 15-20 minutes to clean 1-2 passes required Requires cleaning twice or less per year Only fine grit	More than 5 gallons More than 30 minutes to clean More than 4 passes required Requires cleaning four times per year
Grease	No observable grease	Small chunks/no "logs" 15-20 minutes to clean 1-2 passes required Requires cleaning twice or less per year	Big chunks/"logs" Operator concern for downstream plugging More than 30 minutes to clean More than 4 passes required
Liquefied grease		Vacuuming not required	Vacuuming not required
Roots	No observable roots	Thin/stringy roots present; no large clumps 15-20 minutes to clean 1-2 passes required	Thick roots present Large "clumps" More than 30 minutes to clean More than 4 passes
Other condition observations: - Pipe material fragments - Soil/dirt - Rock (pipe bedding) - Lost nozzle			

Appendix 4–B: Capital Improvement Program

Project Number	Project Title	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26
1	Oroville Dam Blvd Relief Sewer		✓	✓				
2	Stanford Avenue Sewer	✓	✓					
3	Grace Baptist Church	✓						
4	Montgomery Street Sewer	✓						
5	Table Mountain Blvd Sewer	✓						
6	Grand Avenue Sewer					✓		
7	Downtown Sewer			✓				
8	5th Avenue Sewer			✓				
9	Feather River Blvd Sewer				✓			
10	Oroville Industrial Park Sewer				✓			
11	Olive Highway Expansion					✓		
12	Oroville Quincy Highway Expansion						✓	
13	Dry Creek Pump Station and Pipeline Expansion		✓					
14	Zepher Way Expansion						✓	
15	Orange Avenue Sewer				✓			
16	Larkin Rd Bypass Sewer							✓
17	West Oroville Dam Blvd Expansion							✓
18	TWSD East Interceptor							✓
19	Ruddy Creek Pump Station Upgrade 1					✓		
Additional CIP projects will be added as televising, condition assessment and flow monitoring (I&I investigation) of the collection system progresses								

Appendix 4–C: Major Sewer System Equipment Inventory

Equipment Number	Major Equipment Type	Year Purchased
1	Vactor Combination Truck	2001
2	Ford F-350 Service Truck	2012
3	Ingersoll Rand 63KVA Portable Electric Generator	2000
4	Ford F-250 Service Truck	1992
5	QUES Closed Circuit Televising Van	2009
6	Vac-Con Combination Truck	2012

Section 5. Design and Performance Provisions

5.1. Introduction

Design standards are incorporated into the City's standard details by the City's Public Works Department for the design of new and rehabilitated collection system facilities. The City's standard details can be found at http://www.cityoforoville.org/services/public-works-department/engineering-division/improvement-standards.

5.2. WDR Requirements

The summarized requirements for the Design and Performance Provisions element of the SSMP are:

The Agency must have design and construction standards and specifications for the installation of new sewer systems and for the rehabilitation and repair of existing sewer systems.

The Agency must also have procedures and standards for inspecting and testing the installation of new sewers, pump stations, and other appurtenances; and for rehabilitation and repair projects.

5.3. Design Criteria

The City's Sanitary Sewer System Design Criteria are:

5.3.1. General

1. Any situation that varies from the standard conditions will require additional or specialized design features to ensure reliability, access for maintenance, and economical operation and maintenance. Design conditions that differ from these standards require approval from the City Engineer.
2. Sewer lift stations require telemetry equipment to be incorporated into the design of the facility. The Public Works Department will provide specific design requirements when improvement plans are submitted for plan check.

5.3.2. Mains

1. Minimum size shall be eight inches.
2. The maximum depth of flow during peak dry weather flow shall not exceed 3/4 of the diameter for new pipes.
3. No vertical or horizontal curves shall be permitted, unless otherwise approved by the Public Works Department.
4. The deflection between any two successive joints will not exceed 80% of the maximum deflection recommended in writing by the pipe manufacturer. The minimum pipe length used to construct short radius curves will be two feet.

5. Sewer main locations shall be located in the center of the street or easement. A minimum ten foot horizontal separation outside-of-pipe to outside-of-pipe from waterlines shall be maintained.
6. Minimum cover for sewer pipe shall be 36 inches below the finished grade, unless otherwise approved by the Public Works Department.
7. Minimum Grade: A minimum velocity shall be two feet per second (fps) at peak daily dry weather flow. The minimum grade shall be 0.35% for an 8" pipe diameter and 0.25% for a 10" or larger pipe diameter.
8. Wastewater Flow Projection Criteria shall be:

Category	Unit	Flowrate - GPD[1]
Auditorium/Assembly Hall	Seat	5
Bowling Alley	Per Lane	200
Carwash - Coin Operated	Stall	200
Commercial	1,000 GSF	100
Department Store	Toilet Room	550
Department Store	Employee	10
Hospital Bed	Bed	250
Hospital Employee	Employee	10
Hotels & Motels	Room	150
Laundry - Self Service	Machine	500
Medical Building	1,000 GSF[2]	300
Office Building	1,000 GSF	200
Prison Employee	Employee	10
Prison Inmate	Inmate	120
Residential - 1 Bedroom Apartment	Dwelling Unit	150
Residential - 2 Bedroom Apartment	Dwelling Unit	200
Residential - Mobile Home	Dwelling Unit	200
Residential - Single Family Dwelling	Dwelling Unit	260
Rest Home	Bed	100
Restaurant	Fixed Seat	50
School w/cafeteria only	Student	15
School w/cafeteria, gym & showers	Student	25
School w/o cafeteria, gym & showers	Student	10
Shopping Center	Parking Space	2
Shopping Center	Employee	10

(1) Flowrate = Average dry weather flow gallons per day
(2) GSF = Gross square feet

9. Peak daily flows for new residential developments shall be based on a ratio of peak to average flow of 2.5.
10. All sewer mains not located within the public right-of-way shall be provided with a minimum 15-foot wide sewer easement. In some special cases a wider easement may be required; easement width shall be determined by the City Engineer. All easements shall be easily accessible to City's maintenance equipment.
11. Where water and sewer mains are located within the same easement, the minimum easement width shall be 20 feet. All easements shall be easily accessible to the City for maintenance.
12. The standards for rehabilitation shall be:
    a. All sewer main replacements in easements should be constructed using trenchless construction methods where feasible and/or acceptable. The materials shall be SDR-35 PVC. Creek, railroad, and freeway crossings shall be SDR-35 HDPE or C900 PVC and the sewer main shall be installed in a steel casing with appropriate corrosion protection.
    b. All sewer main replacements in streets and other paved areas shall be constructed using open cut or trenchless construction methods. Mains with less than 3.5 feet of cover shall be constructed using open trench construction methods. The materials shall be SDR-35. Protection from surface loads shall be approved by the Public Works Department.
    c. All sags deeper than 1.5 inches shall be eliminated using spot repairs prior to proceeding with the rehabilitation method.
    d. All connecting manholes, lamp holes, and clean outs shall be replaced or rehabilitated at the time the sewer main is rehabilitated or replaced.
    e. All laterals shall be reconnected to the main at a 45 degree angle.

5.3.3. Manholes

1. Minimum drop through manholes shall be 0.10 feet.
2. Manholes shall be required:
    a. At all changes of slope.
    b. At all changes in size or material.
    c. At all changes of direction.
    d. At all intersections of with other mains.
    e. At all ends of lines and beginning of all mains.
3. All manholes shall be numbered on the plans.
4. Manhole spacing shall be 300 feet maximum or as approved by the Public Works Department.

5. For all industrial users, an inspection manhole shall be provided immediately behind the property line.
6. For all residential uses, a cleanout shall be provided within two feet of the property line.
7. Match soffit elevation at all locations where sewers of different size are connected in a manhole.

5.3.4. Laterals

1. Each parcel or lot shall have only one connection to public sewer main.
2. Minimum size shall be four inches. Six-inch laterals shall be provided for properties with five or more connected units and all commercial connections.
3. Sewer laterals six inches and larger, shall be connected to an existing manhole or a new manhole shall be constructed.
4. Minimum slope shall be 1/4 inch per foot.
5. An inspection manhole shall be provided at the property line for industrial projects where the flow will exceed 5,000 gallons per day.
6. All laterals are to be shown on improvement plans by stationing or a lateral table. On “As-Built” plans all laterals shall be shown in plan view to scale and dimensioned from the nearest sewer manhole.
7. Location:
    a. Perpendicular to the sewer main.
    b. Standard is from the center of lot to five feet above downstream lot line (shown on “As-Built” plans).
    c. Services shall not be located in the driveway.
8. An “S” shall be stamped on the curb face at the lateral location.
9. Separation between sewer and water laterals shall be per City Standard Details and State regulations.
10. Minimum cover shall be three (3) feet minimum at the property line.
11. Any lot with a finished pad elevation lower than the top of the finished street grade where the sewer main is located that serves this lot, must install a sewer back flow prevention valve on private property. The valve must be installed in a valve box for easy access and be visible from the public right-of–way. The property owner shall be responsible for the installation and maintenance of the sewer backflow prevention valve. The backflow prevention valve shall be shown on the precise grading and improvement plans.

a. The backflow certification shall be completed by the developer in accordance with City standards.

b. The property owner is responsible for maintaining the backflow prevention valve in proper operating condition at all times.

5.3.5. Lift Station

Lift stations shall not be employed unless deemed essential by the Public Works Department. Design criteria to be provided by the Public Works Department.

5.3.6. City Sanitary Sewer System – Authorized Materials

The authorized materials for the City's sewer system are shown on Table 5-1.

Table 5-1: Acceptable Pipe Materials for New Gravity Sewers

Material	Designation	Standard
Polyvinylchloride Pipe (PVC)	SDR-35 C900	ASTM D3033 or D3034 AWWA C900

5.3.7. Private Sewer Systems

1. All private sewer systems serving more than one building shall be governed by and permitted through the Building Department. A manhole shall be set at the property line and at the mainline, if required.
2. The sewer system upstream of the manhole at the property line shall be considered private.
3. In the event that a private sewer system is proposed to be converted to a public system, the entire system must be upgraded to meet the public standards as presented in this section.
4. Acceptable pipe materials for buried main and trunk sewers 24 inches in diameter and smaller are shown in Table 5-1. Materials for other applications require the approval of the Public Works Department.

5.3.8. Inspection and Testing Criteria

The City's Sanitary Sewer System Inspection and Testing Criteria are based on the City's Engineering Standards. The City's inspection and testing criteria are:

<u>New Gravity Sewers</u>

Inspection during construction – All new gravity sewers will be periodically inspected during construction to ensure that the sewer is constructed using the specified materials and methods. Specific approvals will be required by the inspector prior to backfilling the trench, prior to paving, and prior to acceptance by the City. The contractor will be required to provide survey controls so that the

inspector can verify line and grade (slope). Unusual conditions and special features will be recorded for future reference.

Leakage – All new gravity sewers will be tested to verify that they have been properly constructed. Sewers will be tested using a low air pressure test in accordance with City standards. Gravity sewers that fail the test shall be repaired and retested.

Deflection – All flexible pipe will be tested for deflection following backfill and prior to paving in accordance with City standards. Gravity sewers that fail the test shall be repaired and retested. "Re-rounding" is not allowed.

CCTV inspection – All new gravity sewers will be inspected using a closed circuit television to verify that the pipe is free from defects/damage, that the joints have been correctly construct, and that the sewer is free from sags that will cause future operational problems. Gravity sewers shall be cleaned prior to inspection and shall be flushed with water so that sags can be identified and recorded.

Warranty inspection – All new gravity sewers will be inspected using CCTV prior to the end of the warranty period to ensure that there are no latent defects. Repairs shall be completed in a timely manner at the Contractor's expense.

New Manholes

Inspection during construction - All new manholes will be periodically inspected during construction to ensure that the sewer is constructed using the specified materials and methods. Unusual conditions and special features will be recorded for future reference.

Leakage – All new manholes will be vacuum tested to verify that the joints, connections, and frame/cover are tight. The vacuum test will follow ASTM C1244. The test will be conducted at a 10 inch Hg vacuum. The vacuum loss shall be less than one inch Hg for the time shown on Table 5-2.

Table 5-2: Minimum Manhole Vacuum Test Time in Seconds

Depth / Diameter	4 foot diameter	5 foot diameter	6 foot diameter
Depth = 15 feet or less	60	75	90

Manholes that fail the vacuum test shall be repaired using materials and methods approved by the Public Works Department and retested.

New and Rehabilitated Lift Stations

Inspection during construction – All new and rehabilitated lift stations will be periodically inspected during construction to ensure that they are constructed using the specified materials and methods. Unusual conditions and special features will be recorded for future reference.

Functional test – All systems in new and rehabilitated lift stations will be tested to ensure they function as intended.

Performance test – All new and rehabilitated lift stations will be required to pass an extended performance test to ensure that they are capable of reliably meeting the design performance for a period of at least 120 hours of continuous operation without failure or alarms. The results of these performance tests will be recorded for use as a basis for evaluating future performance evaluations.

Section 6. Overflow Emergency Response Plan

6.1. Introduction

The purpose of this Overflow Emergency Response Plan (OERP) is to support an orderly and effective response to SSOs.

6.2. WDR Requirements

The collection system agency shall develop and implement an overflow emergency response plan that identifies measures to protect public health and the environment. At a minimum, this plan must include the following:

(a) Proper notification procedures so that the primary responders and regulatory agencies are informed of all SSOs in a timely manner;

(b) A program to ensure appropriate response to all overflows;

(c) Procedures to ensure prompt notification to appropriate regulatory agencies and other potentially affected entities (e.g. health agencies, regional water boards, water suppliers, etc.) of all SSOs that potentially affect public health or reach the waters of the State in accordance with the Monitoring and Reporting Program (MRP). All SSOs shall be reported in accordance with this MRP, the California Water Code, other State Law, and other applicable Regional Water Board Waste Discharge Requirements or National Pollutant Discharge Elimination System (NPDES) permit requirements. The Sewer System Management Plan should identify the officials who will receive immediate notification;

(d) Procedures to ensure that appropriate staff and contractor personnel are aware of and follow the Emergency Response Plan and are appropriately trained;

(e) Procedures to address emergency operations, such as traffic and crowd control and other necessary response activities; and

(f) A program to ensure that all reasonable steps are taken to contain untreated wastewater and prevent discharge of untreated wastewater to waters of the United States and minimize or correct any adverse impact on the environment resulting from the SSOs, including such accelerated or additional monitoring as may be necessary to determine the nature and impact of the discharge.

6.3. Goals

The City's goals with respect to responding to SSOs are:

- Respond quickly to minimize the volume of the SSO;
- Eliminate the cause of the SSO;
- Contain the spilled wastewater to the extent feasible;
- Minimize public contact with the spilled wastewater;
- Mitigate the impact of the SSO;
- Meet the regulatory reporting requirements; and
- Notify the public when a threat to public health exists.

6.4. SSO Detection

The processes that are employed to notify the City of the occurrence of an SSO include: observation by the public, receipt of an alarm, or observation by City staff during the normal course of their work.

6.4.1. Public Observation

Public observation is the most common way that the City is notified of blockages and spills. Contact information for reporting sewer spills and backups are on the City's website: http://www.cityoforoville.org/services/public-works-department/engineering-division/sanitary-sewers and the Public Works Department is in the process of installing signs near lift stations with emergency contact information. The working hours telephone number for reporting sewer problems is (530) 538-2420. The after hours telephone number is (530) 538-2448 (Police Dispatch).

6.4.1.1. Normal Work Hours

The City's regular working hours for the sewer crew is Monday through Friday from 7:00 a.m. to 3:30 p.m. except holidays. When a report of a sewer spill or backup is made, City Staff receives the call, takes the information from the caller, fills out the first section of the Sewer Report Form (See Appendix 6-B), and communicates it to the field crew who responds to the site.

6.4.1.2. After Hours

The Police Dispatcher receives the call, takes the information from the caller, and communicates it to the Public Works Standby Person. The Police Dispatcher also notifies Public Works if an alarm is set off after hours. See Appendix 6-A for additional after hours personnel contact information.

6.4.2. Receipt of Alarm

If an alarm is set off during normal working hours, Accularm will contact the City Staff; however, after hours they will contact the Police Dispatcher as well as the Public Works Supervisor if available.

6.4.3. City Staff Observation

City Staff conduct periodic inspections of the sewer system facilities as part of their routine activities. Any problems noted with the sewer system facilities are reported to appropriate City personnel who, in turn, respond to emergency situations.

6.5. SSO Response Procedures

Sewer service calls and lift station alarms are considered high priority events that demand a prompt response. The notification and response procedure flow chart is shown on Figure 6-1. Emergency contact information is included in Appendix 6-A.

6.5.1. First Responder's Role

- To protect public health, environment and property from sewage spill events and restore area back to normal as soon as possible.
- To establish perimeters and control zones with traffic cones, barricades, vehicles or terrain.
- To promptly identify major SSO events and/or the need for additional resources (e.g. people, equipment, etc.).
- To contain and control the sewage discharged to the maximum extent possible. Every effort must be made to prevent the discharge of sewage into waterways above and below ground.

6.5.2. First Responder Priorities

The first responder's priorities are to:

- Follow safe work practices.
- Respond promptly with the appropriate equipment.
- Contain the spill whenever feasible.
- Restore the flow as soon as practicable.
- Minimize public access to and/or contact with the spilled sewage.
- Promptly notify Public Works Operations Manager in event of major SSO.
- Return the spilled sewage to the sewer system.
- Restore the area to its original condition (or as close as possible).

6.5.3. Safety

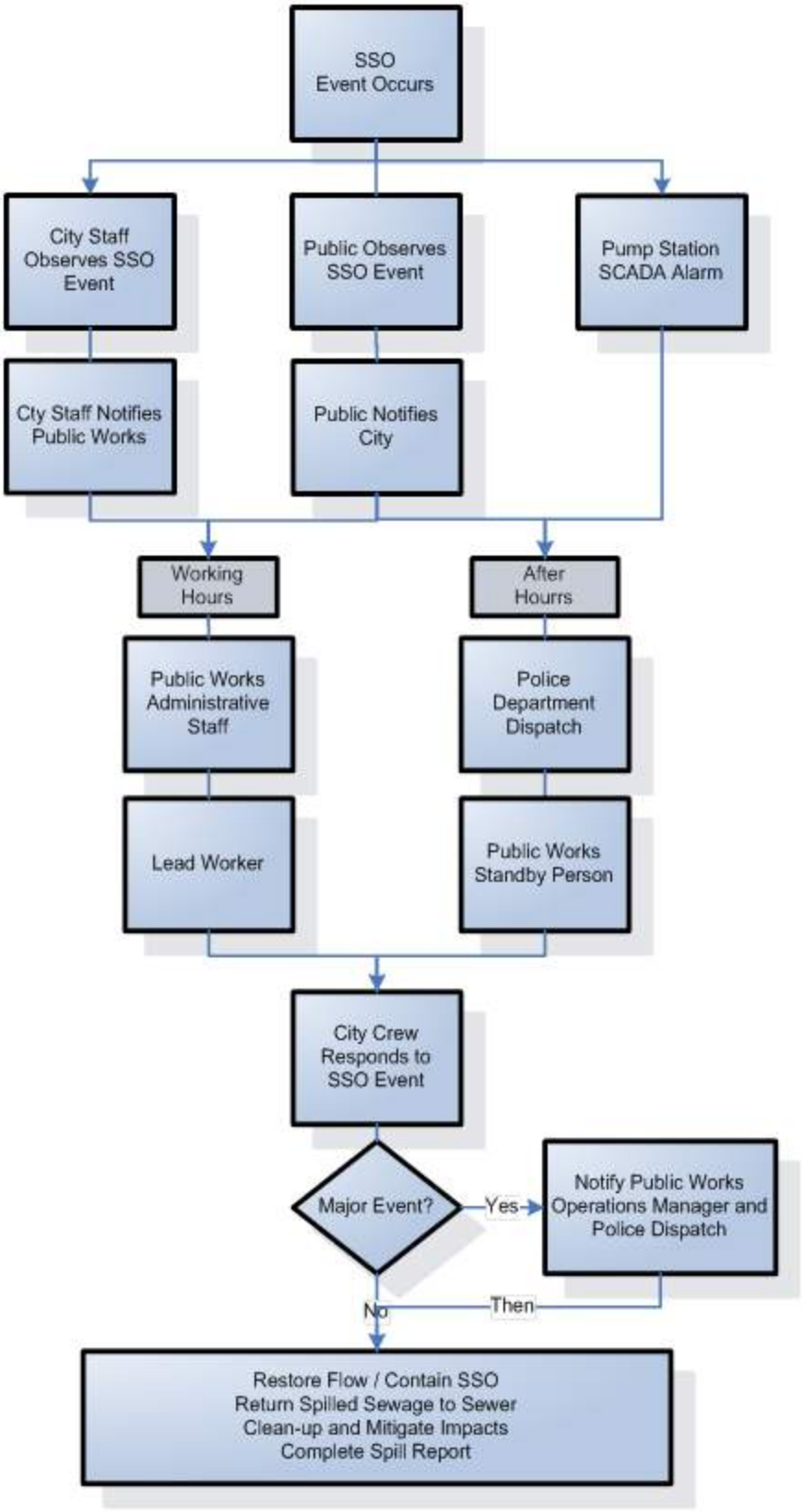
The first responder is responsible for following safety procedures at all times. Special safety precautions must be observed when performing sewer system work.

There may be times when City personnel responding to a sewer system event are not familiar with potential safety hazards peculiar to sewer system work. In such cases it is appropriate to take the time to discuss safety issues, consider the order of work, and check safety equipment before starting the job.

6.5.4. Initial Response

All sewer system calls require a response to the reported location of the event in an attempt to minimize or eliminate an overflow. The first responder must respond to the reporting party, lift station, or site of the problem immediately and visually check for potential sewer stoppages or overflows.

Figure 6-1: SSO Response Procedure Flow Chart



The first responder should:

- Get a brief description of the nature of the problem from the caller. Determine appropriate response measures based on the circumstances and information provided by the caller (e.g. weather and traffic conditions, small back up vs. sewage flowing on the ground, etc.).
- If the situation requires, call the Public Works Operations Manager (working hours) or the Police Dispatcher (after hours) to call other Public Works employees to assist in the SSO response. See Appendix 6-A for After Hours and Emergency Contact Information.
- Note arrival time, document conditions with photographs, contact caller if time permits.
- Verify the existence of a sewer system spill or backup.
- Regardless of whether the spill/backup is caused by a private lateral or other agency sewer system, the responding crew should always contain/mitigate the spilled sewage to the extent feasible and standby until representatives of the responsible party arrive and are fully operational.

6.5.5. Restore Flow

Relieve the stoppage or restore the lift station operation as soon as possible by use of the appropriate equipment.

If addressing a stoppage, set up downstream of the blockage and hydro clean or rod upstream from a clear manhole. Attempt to remove the blockage from the system and observe the flows to ensure that the blockage does not recur downstream.

If the blockage cannot be cleared within a reasonable time (15 minutes), or the sewer requires construction repairs to restore flow, or if the lift station operation cannot be restored within the wet well holding time, then initiate containment and/or bypass pumping. If assistance is required, immediately contact the Public Works Operations Manager (working hours) or the Police Dispatch (after hours) or call other employees directly.

6.5.6. Initiate Spill Containment Measures

The first responder should attempt to contain as much of the spilled sewage as possible using the following steps:

- When a spill, leak, and/or overflow occurs, keep sewage from entering the storm drain system to the maximum extent practicable by covering or blocking storm drain inlets and catch basins, or by containing and diverting the sewage away from open channels and other storm drain facilities (using sandbags, inflatable dams, plastic mats, etc.).
- Determine the immediate destination of the overflowing sewage.
- Review sewer maps for possible temporary upstream flow diversion bypassing.

- Pump around the blockage/pipe failure/lift station.
- Dike/dam (or sandbag) the spill by building a temporary berm to collect the spilled sewage.
- If overflowing sewage has made contact with the storm drainage system, attempt to contain the spilled sewage by plugging downstream storm drainage facilities.
- Modify these methods as needed to accommodate wet weather conditions where the feasibility of containment may be impacted by the quantity of stormwater runoff.

6.6. Recovery and Clean Up

The recovery and clean up phase begins when the flow has been restored and the spilled sewage has been contained to the extent possible. The SSO recovery and clean up procedures are:

6.6.1. Water Quality Sampling and Testing

Water quality sampling and testing is required whenever more than 1,000 gallons of spilled sewage enters a surface water to determine the extent and impact of the SSO. The water quality sampling procedures are:

- The first responder should collect samples. Samples should be collected as soon as possible after the discovery of the SSO event.
- For discharges into flowing water (e.g. rivers, creeks), the water quality samples should be collected from 100 feet upstream of the spill, from the spill area, and for 1,000 feet downstream of the spill at 100-foot intervals.
- For discharges into stationary water (e.g. lakes, ponds), the water quality samples should be collected from the spill area, and for 1,000 feet on either side of the spill at 100-foot intervals.
- A laboratory will analyze the results to determine the nature and impact of the discharge. Additional samples will be taken to determine when posting of warning signs can be discontinued. The basic analyses should include total coliform, fecal coliform, biochemical oxygen demand (BOD), dissolved oxygen, and ammonia nitrogen.

6.6.2. Public Notification

The public that may be at risk should be warned to avoid contact with sewage or sewage-contaminated water from an SSO. The notification methods are described in below subsections.

Local agencies and individuals may need to be contacted as soon as possible, depending on the situation, including:

- Police Department to control traffic;

- Public Works to close the areas (i.e. parks) and to mitigate impact on surface waters; and
- Local residents who may be impacted by the sewage spill.

6.6.2.1. Sign Posting and Barricading

Post warning signs and block the contaminated areas with “Yellow Caution Tape” and barricades to keep vehicles and pedestrians away from contact with spilled sewage. Do not remove these until results of the lab tests show that the area is safe for human contact. A sample warning sign is included as Appendix 6-H.

Property, creeks, rivers, or beaches that have been contaminated as a result of an SSO should be posted at visible access locations until the risk of contamination has subsided to background levels. The warning signs, once posted, should be checked every day to ensure that they are still in place.

6.6.2.2. Notification of Media

Major spills may warrant broader public notice. The Director of Public Works will contact local media when significant areas may have been contaminated by sewage. The Director of Public Works will maintain contact information for local media.

6.6.3. Estimate the Volume of Spilled Sewage

Use the methods outlined in Appendices 6-F and 6-G to estimate the volume of the spilled sewage. Wherever possible, document the estimate using photos of the SSO site before and during the recovery operation.

6.6.4. Recovery of Spilled Sewage

Vacuum up or pump the spilled sewage and discharge it back into the sanitary sewer system.

6.6.5. Clean up and Disinfection

When disinfecting a sewage-contaminated area, take every effort to ensure that the disinfectant or sewage treated with the disinfectant is not discharged to the storm drain system or surface waters. Methods may include blocking storm drain inlets, containing and diverting disinfectant and sewage away from open channels and other storm drain fixtures, and removing the material with vacuum equipment.

Clean up and disinfection procedures should be implemented to reduce the potential for human health issues and adverse environmental impacts that are associated with an SSO event. The procedures described are for dry weather conditions and should be modified as required for wet weather conditions. Where cleanup is beyond the capabilities of City staff, a cleanup contractor will be used.

6.6.5.1. Hard Surface Areas

- Collect all signs of sewage solids and sewage-related material either by hand or with the use of rakes, brooms and shovels.
- Wash down the affected area with clean water until the water runs clear. Take reasonable steps to contain and vacuum up the wastewater.
- Disinfect all areas that were contaminated from the overflow using the disinfectant solution of household bleach diluted 10:1 with water. Apply minimal amounts of the disinfectant solution using a hand sprayer. Document the volume and application method of disinfectant that was employed.
- Allow the area to dry. Repeat the process if additional cleaning is required.
- Do not apply disinfectant solution during wet weather conditions.

6.6.5.2. Landscaped and Unimproved Natural Vegetation

- Collect all signs of sewage solids and sewage-related material either by hand or with the use of rakes, brooms, and shovels.
- Wash down the affected area with clean water until the water runs clear. The flushing volume should be approximately three times the estimated volume of the spill.
- Either contain or vacuum up the wash water so that none is released.
- Allow the area to dry. Repeat the process if additional cleaning is required.
- Do not apply disinfectant solution to landscaped areas or unimproved natural vegetation.

6.6.5.3. Natural Waterways

The California Department of Fish and Wildlife should be notified in the event an SSO impacts any natural waterways. Fish and Wildlife will provide the professional guidance needed to effectively clean up spills that occur in these sensitive environments.

Clean up should proceed quickly in order to minimize negative impact. Any water that is used in the cleanup process should be de-chlorinated prior to use.

6.6.5.4. Wet Weather Modifications

Omit flushing during heavy storm events with heavy runoff where flushing is not required.

6.6.6. Follow-Up Activities

If sewage has reached the storm drain system, the Sewer Cleaning Truck should be used to vacuum/pump out the catch basin and any other portion of the storm drain that may contain sewage.

In the event that an overflow occurs at night, the location should be re-inspected as soon as possible the following day. The operator should look for any signs of

sewage solids and sewage-related material that may warrant additional cleanup activities.

6.7. Failure Analysis Investigation

The objective of a failure analysis investigation is to determine the “root cause” of the SSO and to identify corrective action(s) needed that will reduce or eliminate future potential for the SSO to recur.

The investigation should include reviewing all relevant data to determine appropriate corrective action(s). The investigation should include:

- Reviewing and completing the Sewer Report Form;
- Reviewing past maintenance records;
- Reviewing available photographs;
- Conducting a CCTV inspection to determine the condition of the line segment immediately following the SSO and reviewing the video and logs; and
- Interviewing staff who responded to the spill.

The product of the failure analysis investigation should be the determination of the root cause and the identification of the corrective actions. The Collection System SSO Analysis Form (Appendix 6-D) should be used to document the investigation.

6.8. SSO Categories

The SWRCB has established guidelines for classifying and reporting SSOs. Reporting and documentation requirements vary based on the type of SSO. There are three categories of SSOs as defined by the SWRCB:

- Category 1 - All discharges of any volume of sewage that:
  A. Result in a discharge to a drainage channel and/or surface water; or
  B. Discharge to a storm drain pipe that was not fully captured and returned to the sanitary sewer system.
- Category 2 – Discharges of untreated or partially treated sewage equal to or greater than 1,000 gallons due to failure or flow conditions that does not reach surface water and or drainage channel. Unless the entire SSO is fully recovered and disposed.
- Category 3 – All other discharges of untreated or partially treated wastewater resulting from a sanitary sewer system failure or a flow condition.
- Private Lateral Sewage Discharges - Sewage discharges that are caused by blockages or other problems within a privately owned lateral.

6.9. SSO Documentation and Reporting

All SSOs should be thoroughly investigated and documented for use in managing the sewer system and meeting established reporting requirements. The procedures for investigating and documenting SSOs are:

6.9.1. Internal SSO Reporting Procedures

6.9.1.1. Category 1 SSOs

The first responder will immediately notify the Public Works Operations Manager (working hours) or Police Dispatch (after hours) who will notify the Public Works Operations Manager.

The Public Works Operations Manager or his/her designee will meet with field crew(s) at the site of the SSO event to assess the situation and to document the conditions with photos.

The first responder will fill out the Sewer Report Form and turn it in to the Public Works Operations Manager. The Public Works Operations Manager will review the form for completeness and accuracy and will forward it in to the Legally Responsible Official (LRO).

In the event of a large overflow or an overflow in a sensitive area, Public Works Operations Manager will notify the Director of Public Works. The Director of Public Works may notify the City Administrator and City Council.

6.9.1.2. Category 2 SSOs

The first responder will fill out the Sewer Report Form and turn it in to the Public Works Operations Manager. The Public Works Operations Manager will review the form for completeness and accuracy and will forward it in to the LRO.

6.9.1.3. Category 3 SSOs

The first responder will fill out the Sewer Report Form and turn it in to the Public Works Operations Manager. The Public Works Operations Manager will review the form for completeness and accuracy and will forward it in to the LRO.

6.9.2. External SSO Reporting Procedures

The California Integrated Water Quality System (CIWQS) electronic reporting system will be used for reporting SSO information to the SWRCB whenever possible. A flow chart is included as Figure 6-2 showing the external reporting response requirements based on the type of SSO. An external reporting response checklist with contact information is included as Figure 6-3.

6.9.2.1. Category 1 SSOs that reach Waters of the State

If a Category 1 SSO results in a discharge to waters of the State (a drainage channel or surface water, if not fully recovered), the following reporting requirements apply:

- **Within two hours** of being notified of the spill event, the Public Works Operations Manager or his/her designee will:
    - Notify OES (and obtain spill number for use in other reports),
    - Notify the Butte County Department of Health (County Health), and
    - Notify the RWQCB.
- **Within 24 hours** of being notified of the spill event, the Public Works Operations Manager or his/her designee will certify to the RWQCB that OES and County Health were notified of the SSO event.
- **Within 3 business days** of being notified of the spill event, the LRO or his/her designee will certify the initial report using CIWQS.
- **Within 15 calendar days** of the conclusion of SSO response and remediation, the LRO or his/her designee will certify the final report using CIWQS.
- The LRO or his/her designee will update the certified report as new or changed information becomes available. The updates can be submitted at any time and must be certified.

6.9.2.2. Category 2 SSOs

- **Within 3 business days** of being notified of the spill event, the LRO or his/her designee will certify the initial report using CIWQS.
- **Within 15 calendar days** of the conclusion of SSO response and remediation, the LRO or his/her designee will certify the final report using CIWQS.
- **Within 30 calendar days** after the end of the calendar month in which the SSO occurs, the Public Works Operations Manager or his/her designee will submit an electronic report using CIWQS and the LRO will certify the report. The report will include the information to meet the WDR requirements.

6.9.2.3. Category 3 SSOs

- **Within 30 calendar days** after the end of the calendar month in which the SSO occurs, the Public Works Operations Manager or his/her designee will submit an electronic report using CIWQS and the LRO will certify the report. The report will include the information to meet the WDR requirements.

6.9.2.4. Private Lateral Sewage Discharges

The Public Works Operations Manager or his/her designee may report private lateral SSOs using CIWQS, specifying that the sewage discharge occurred and was caused by a private lateral and identifying the responsible party (other than the City), if known.

6.9.2.5. No Spill Certification (Monthly)

If there are no SSOs during the calendar month, the Public Works Operations Manager or his/her designee will submit an electronic report and the LRO will

certify the report that the City did not have any SSOs within 30 calendar days after the end of each calendar month.

6.9.2.6. CIWQS Not Available

In the event that CIWQS is not available, the Public Works Operations Manager or his/her designee will fax all required information to the RWQCB office in accordance with the time schedules identified above. In such event, the City will submit the appropriate reports using CIWQS as soon as practical. The RWQCB fax number for Region 5R is (530) 224-4857. A sample form with required information is included as Appendix 6-C.

6.9.3. Internal SSO Documentation

6.9.3.1. Category 1, 2 and 3 SSOs

The first responder will complete a work order and the Sewer Report Form (Appendix 6-B) and provide copies to the Public Works Operations Manager.

The Public Works Operations Manager will prepare a file for each individual SSO. The file should include the following information:

- Initial service call information
- Sewer Report Form
- Copies of the CIWQS report forms
- Volume estimate
- Failure analysis investigation results

The following are optional for Category 2 SSOs:

- Appropriate maps showing the spill location
- Photographs of spill location
- Water quality sampling and test results, if applicable

Figure 6-2: SSO External Reporting Requirement Flow Chart

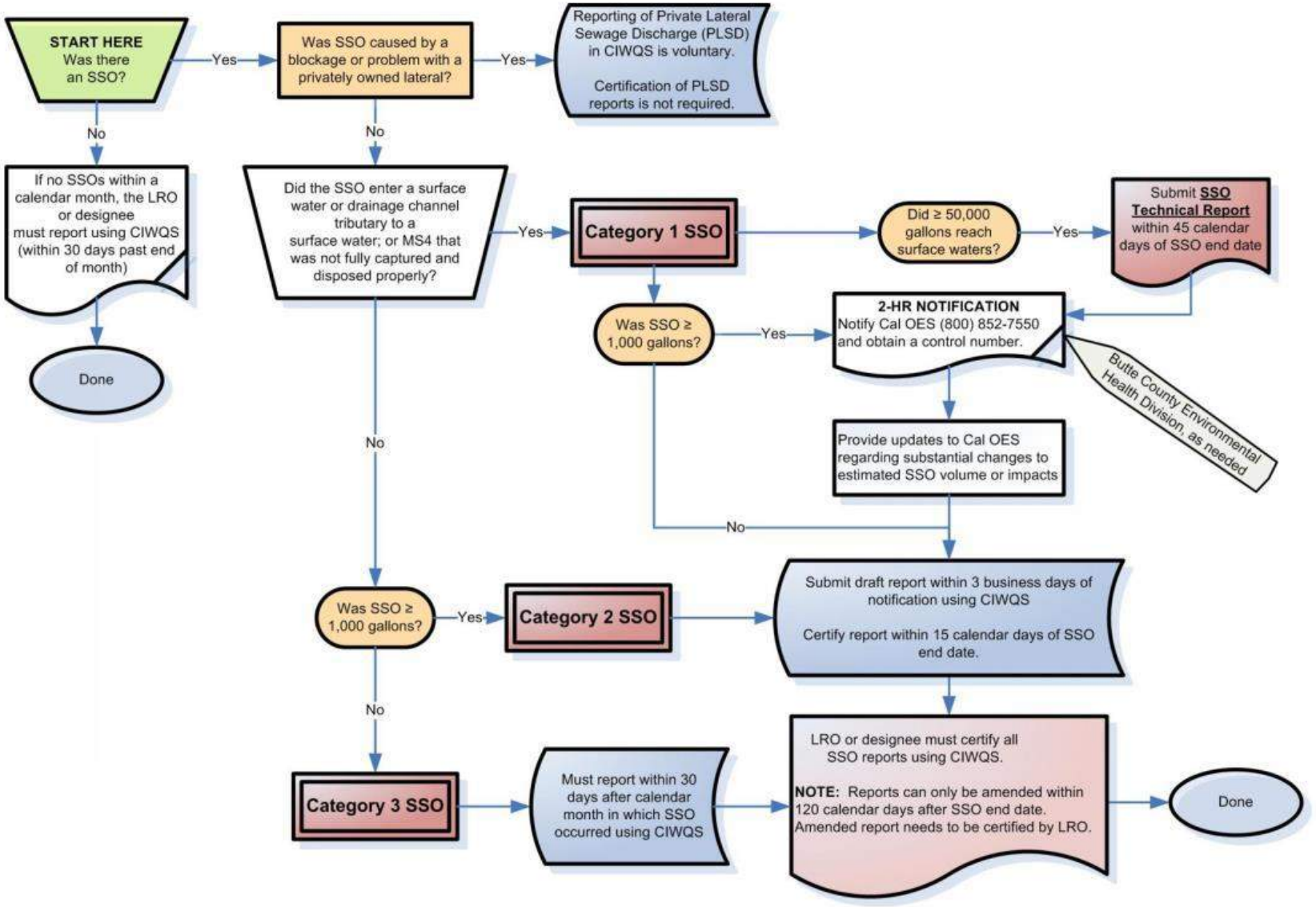


Figure 6-3: SSO External Reporting Checklist and Contact Information

Reporting & Certification Checklist

Category 1 SSOs (reaches surface waters or MS4, and not fully captured)

2-Hour Notification:

Regulatory Agencies (OES, County Health) must be notified within two hours of discharge ≥ 1,000 gallons of sewage (untreated/partially treated) to a surface water or drainage channel (that is not fully captured and returned to sewer).

Within 3 Business Days of Notification:

As a Category I SSO, it must be reported to SWRCB using CIWQS.

Within 15 Calendar Days of Conclusion of Response/Remediation:

Must be certified by LRO using CIWQS.

Category 2 SSOs (≥ 1,000 gallons)

Within 3 Business Days of Notification (SWRCB/CIWQS):

Submit draft report to SWRCB using CIWQS.

Within 15 calendar Days of Conclusion of Response/Remediation:

Must be certified by LRO using CIWQS.

Category 3 SSOs (<1,000 gallons)

Within 30-Days After End of Calendar Month with SSO Event:

Must be reported to SWRCB using CIWQS.
Must be certified by LRO using CIWQS.

Negative Reporting (No SSOs in Month/Quarter)

Within 30 days past the end of the month

The LRO or designee must report using CIWQS.

California Integrated Water Quality Systems (CIWQS)

SWRCB Reporting Timeframes Depend on the Size and Final Destination of the SSO.

- CIWQS must be used for reporting if the website is available (http://ciwqs.waterboards.ca.gov)
  - User Name: xxxx Password: xxxx
  - Waste Discharge Identification Number (WDID) #10799
  - The SSO database will automatically generate an email notification with customized information about the SSO upon initial reporting and final certification for all Category I SSOs.
  - Emails will be sent to the EHD and the Central Valley RWQCB
- Fax RWQCB (only if website is down)
  - Fax: (530) 224-4857

Two-Hour Notification / 24-Hour Certification

1. **State Office of Emergency Services (OES, formerly Emergency Management Agency)**
   Phone: (800) 852-7550; (916) 845-8911 (Branch Manager of OES Warning Center)
2. **County of Butte Environmental Health Division (EHD)**
   Phone: (530) 552-4000 Fax: (530) 552-4000

Sanitary Sewer Overflow (SSO)

Any overflow, spill, release, discharge or diversion of untreated or partially treated wastewater from a sanitary sewer system that:

(i) Reach waters of the United States (including storm drains, unless fully captured and returned to sanitary sewer system);
(ii) Do not reach waters of the United States; and
(iii) Backs up into buildings and on private property that are caused by City owned lines.

6.9.4. External SSO Record Keeping Requirements

The WDR requires that individual SSO records be maintained by the City for a minimum of five years from the date of the SSO. This period may be extended when requested by the RWQCB Executive Officer. All records shall be made available for review upon SWRCB or RWQCB staff's request. Records shall be retained for all SSOs, including but not limited to the following when applicable:

- Copy of Certified CIWQS report;
- All original recordings for continuous monitoring instrumentation;
- Service call records and complaint logs of calls received by the City;
- SSO records;
- Steps that have been and will be taken to prevent the SSO from recurring and a schedule to implement those steps;
- Work orders, work completed, and any other maintenance records from the previous five years which are associated with responses and investigations of system problems related to SSOs;
- A list and description of complaints from customers or others from the previous five years; and
- Documentation of performance and implementation measures for the previous five years.

If water quality monitoring is conducted by the City or its agent(s), as a result of any SSO, records of monitoring information shall include:

- The date, exact place, and time of sampling or measurements;
- The individual(s) who performed the sampling or measurements;
- The date(s) analyses were performed;
- The individual(s) who performed the analyses;
- The analytical technique or method used; and
- The results of such analyses.

6.10. Post-SSO Event Debriefing

Every SSO event is an opportunity to evaluate the response and reporting procedures. Each overflow event is unique, with its own elements and challenges including volume, cause, location, terrain, and other parameters.

As soon as possible after major SSO events, all of the participants, from the person who received the call to the last person to leave the site, should meet to review the procedures used and to discuss what worked and where improvements could be made in responding to and mitigating future SSO events. The results of the debriefing should be recorded and tracked to ensure the action items are completed.

6.11. Equipment

This section provides a list of specialized equipment that is required to support this Overflow Emergency Response Plan.

Closed Circuit Television (CCTV) Inspection Unit – A CCTV Inspection Unit is required to determine the root cause for all SSOs from gravity sewers.

Camera – A digital or disposable camera is required to record the conditions upon arrival, during clean up, and upon departure.

Emergency Response Truck – A utility body pickup truck is required to store and transport the equipment needed to effectively respond to sewer emergencies. The equipment and tools should include containment and clean up materials.

GPS Unit (Global Positioning System) – A hand held GPS unit is required to determine the coordinates of spills for use in meeting SWRCB SSO reporting requirements.

Combination Sewer Cleaning Truck – A combination high velocity sewer cleaning truck with vacuum tank is required to clear blockages in gravity sewers, vacuum spilled sewage, and wash-down the impacted area following an SSO event.

Portable Generators, Portable Pumps, Piping, and Hoses – The list of portable equipment that is required to support this plan is included as Appendix 6-J.

6.12. SSO Response Training

This section provides information on the training that is required to support this Overflow Emergency Response Plan.

6.12.1. Initial and Annual Refresher Training

All City personnel who may have a role in responding to, reporting, and/or mitigating a sewer system overflow should receive training on the contents of this OERP. All new employees should receive training before they are placed in a position where they may have to respond. Current employees are receiving annual refresher training on this plan and the procedures to be followed.

6.12.2. SSO Training Record Keeping

Records should be kept of all training that is provided in support of this plan. The records for all scheduled training courses and for each overflow emergency response training event should include date, time, place, content, name of trainer(s), and names of attendees.

Contractors Working on City Sewer Facilities

All contractors working on City sewer facilities will be contractually required to develop a project-specific Overflow Response Plan. All contractor personnel will be required to receive training in the contractor's Overflow Response Plan and to follow it in the event that they cause or observe an SSO.

Appendix 6-A: After Hours/Emergency Contact Info

City Personnel

Name	Role/Title	Phone Number
Dispatch	After Hours Emergency Notification	(530) 538-2448
Cody Nissen	Responder/Operator 3	(530) 693-0594
William Cantrell	Responder/Operator 1	(530) 693-0762
Michael Giese	Responder/City Electrician	(530) 693-0596
Mike Massaro	Contract City Engineer	(916) 549-6935
Bill LaGrone	City Administrator/Management	(530) 777-1750

Appendix 6-B: Sewer Report Form

SEWER REPORT FORM – PAGE 1

INITIAL INFORMATION

DATE: _____ CALL RECEIVED: _____AM/PM

RECEIVED BY:_____ CALLER'S NAME: _____

CALLER'S PHONE #:_____ CALLER'S ADDRESS: _____

LOCATION OF OVERFLOW:_____CROSS STREET: _____

TIME AND NAMES OF CREW MEMBERS CONTACTED: _____

DESCRIPTION OF COMPLAINT: _____

FIELD REPORT: FOR RESPONSE CREW'S USE

TIME ARRIVED AT SITE: _____AM/PM CREW NAMES: _____

ASSET #: _____ U/S ASSET#: _____ D/S ASSET#:_____

SIZE OF LINE:_____ LENGTH OF LINE: _____ EASEMENT: YES ☐ NO ☐

GPS COORDINATES: LATITUDE: 34._____ LONGITUDE: -118._____

COMMENTS: _____

COMPLETE REMAINDER OF FORM IF AN OVERFLOW HAS OCCURRED

TIME SSO STARTED:_____ TIME SSO STOPPED: _____ DURATION OF SSO: _____(DAYS/HOURS)

EST. TOTAL VOLUME: _____(GALLONS) RETURNED TO SEWER SYSTEM: _____(GALLONS)

DID SSO REACH SURFACE WATERS? YES ☐ NO ☐

VOLUME TO WATERS (INCLUDING STORM DRAIN) THAT WAS NOT RECOVERED: _____(GALLONS)

SURFACE/RECEIVING WATER LOCATION: _____

DESCRIBE HOW OVERFLOW QUANTITY WAS CALCULATED: EYEBALL ESTIMATE ☐ DURATION/FLOWRATE ☐
MEASURED VOLUME ☐ OTHER _____

WEATHER: SUNNY ☐ CLOUDY ☐ RAINY ☐ RAIN FOR SEVERAL DAYS _____

PRIMARY CAUSE: ROOTS ☐ GREASE ☐ DEBRIS ☐ VANDALISM ☐ CONSTRUCTION DAMAGE ☐ PIPE FAILURE ☐
PUMP STATION FAILURE ☐ POWER FAILURE ☐ CAPACITY (HEAVY RAIN) ☐ OTHER _____

SOURCE OF SSO: MANHOLE ☐ GRAVITY MAIN ☐ FORCE MAIN ☐ CLEAN OUT ☐ PRIVATE LATERAL ☐
PUMP STATION ☐ _____(NAME) OTHER _____

FINAL SSO DESTINATION: STORM DRAIN ☐ CAPTURED FROM STORM DRAIN (100%) ☐ BUILDING ☐
YARD/LAND ☐ SURFACE WATERS ☐ NO SURFACE WATERS INVOLVED ☐ OTHER _____

ADDITIONAL INFORMATION: _____

Sewer Report Form – Page 2

Spill Magnitude:
- SSO reached drainage channel and was not fully recovered ☐
- More than 1,000 gallons, but fully recovered and returned to sewer ☐
- Backed up into a residence or business ☐
- Less than 1,000 gallons and did not reach drainage channel ☐

Time Cleanup Began: _____ Time Cleanup Complete: _____

Describe Cleanup Method/Actions Taken: _____

Disinfection: No ☐ If Yes, Disinfection Amount/Type: _____

Signs Posted: Yes ☐ No ☐ Barricaded: Yes ☐ No ☐ Neighbors Notified: Yes ☐ No ☐

List all Personnel Responding to Spill: _____

Pictures/Video Taken: No ☐ Yes / By: _____ Saved Location: _____

Samples Taken By: _____ Location of Samples: _____

Caller/Customer Notified re: Status: Yes ☐ No ☐ If not, reason: _____

Regulatory Agencies Notified: Yes ☐ No ☐ OES Spill #: _____

	Name of Contact	Date/Time
OES:		
County Health:		
RWQCB (2-Hr/24-Hr):		
CIWQS (SWRCB):		
Fish/Game:		
Other:		

Name of Person making Notifications: _____

If Asset was Manhole, Pipe, or Clean Out, complete the following:

Overflowing Manhole: #_____ Longitude/Latitude: _____

Upstream Manhole: #_____ Longitude/Latitude: _____

Downstream Manhole: #_____ Longitude/Latitude: _____

Clean Out: #_____ Longitude/Latitude: _____

Sewer Main: #_____ Size: _____(inches) Material: _____

Sketch Area: Include manholes, Intersections, Location of Stoppage, etc.

Report Completed By: _____ ___/_____/_____ Date Submitted: ___/____/_____

Submit Report to Public Works Superintendent as soon as possible.

Appendix 6-C: Sample Fax Form for SSO Reporting

FAX FORM FOR SSO REPORTING

THIS FORM IS BEING SUBMITTED TO REPORT AN SSO TO SATISFY THE CALIFORNIA SWRCB 2-HOUR/24-HOUR REPORTING REQUIREMENT OR BECAUSE THE CIWQS WEBSITE IS UNAVAILABLE.

TO: RWQCB, REGION 5R – CENTRAL VALLEY-REDDING **FAX NUMBER: (530) 224-4857**

REPORTING AGENCY: CITY OF OROVILLE **WDID: 5SSO10799**

COUNTY WHERE SSO OCCURRED: **BUTTE** ONGOING INVESTIGATION: YES ☐ NO / COMPLETE ☐

FAX SENT AT: ___/_____/____ AT ___:____ (24-HOUR) VOICE MESSAGE: ___/____/____ AT ___:____

OES CONTROL NUMBER: _____ COUNTY HEALTH CALLED: ___/____/____ AT ___:____

OVERFLOW LOCATION: LATITUDE: 34._____ LONGITUDE: -118._____

STREET ADDRESS: _____

CROSS STREET: _____

CITY: _____ ZIPCODE:_____

DATE/TIME CITY WAS NOTIFIED OF SSO: ___/_____/____ AT ___:____

CITY STAFF ARRIVED: ___/_____/____ AT ___:____ SSO ENDED: ___/_____/____ AT ___:____

WAS A PRIVATE LATERAL THE CAUSE OF THE SSO?	YES ☐ NO ☐
DID SSO ENTER DRAINAGE CHANNEL OR SURFACE WATERS?	YES ☐ NO ☐
WAS 100% OF THE SSO RECOVERED AND RETURNED TO SEWER?	YES ☐ NO ☐
WERE BEACHES IMPACTED?	YES ☐ NO ☐
WAS SSO POSTED?	YES ☐ NO ☐

ESTIMATED SSO VOLUME TOTAL: _____(GALLONS) VOLUME RECOVERED:_____(GALLONS)

ESTIMATED SPILLED SEWAGE VOLUME THAT REACHED SURFACE WATERS: _____(GALLONS)

SSO SOURCE: MANHOLE ☐ GRAVITY MAIN ☐ FORCE MAIN ☐ CLEAN OUT ☐ PRIVATE LATERAL ☐
PUMP STATION ☐ OTHER _____

SSO DESTINATION: STORM DRAIN ☐ CAPTURED FROM STORM DRAIN (100%) ☐ BUILDING ☐ YARD/LAND ☐
SURFACE WATERS ☐ NO SURFACE WATERS INVOLVED ☐ OTHER _____

SSO CAUSE: ROOTS ☐ GREASE ☐ DEBRIS ☐ VANDALISM ☐ CONSTRUCTION DAMAGE ☐ PIPE FAILURE ☐
PUMP STATION FAILURE ☐ POWER FAILURE ☐ CAPACITY (HEAVY RAIN) ☐
OTHER _____

DESCRIBE RESPONSE AND CORRECTIVE ACTION TAKEN:_____

_____

WERE SAMPLES TAKEN? NO ☐ YES: _____ (AGENCY/LABORATORY)

IF YES, TESTING FOR: TOTAL COLIFORM ☐ FECAL COLIFORM ☐ BOD ☐ DISSOLVED OXYGEN ☐ AMMONIA ☐

REPORTING PERSON NAME: _____ PHONE NUMBER: _____

LRO'S NAME: _____ LRO'S PHONE NUMBER: _____

Revised September 2008

Appendix 6-D: Collection System SSO Analysis Form

COLLECTION SYSTEM FAILURE ANALYSIS FORM

INCIDENT REPORT #: _____ PREPARED BY:_____

ADDRESS/LOCATION OF SSO:_____

TOTAL SSO VOLUME: _____ (GALLONS) VOLUME RECOVERED: _____ (GALLONS)

CAUSE: ROOTS ☐ GREASE ☐ DEBRIS ☐ VANDALISM ☐ CONSTRUCTION DAMAGE ☐ PIPE FAILURE ☐
PUMP STATION FAILURE ☐ POWER FAILURE ☐ CAPACITY (HEAVY RAIN) ☐ OTHER _____

SUMMARY OF HISTORICAL SSOS, BACKUPS, SERVICE CALLS, OTHER PROBLEMS

RECORDS REVIEWED BY: _____ RECORD REVIEW DATE: _____

EVENT DATE	CAUSE/PROBLEM	DATE PREVIOUSLY CLEANED	CREW RESPONDING TO CALL

SUMMARY OF CCTV INFORMATION

CCTV INSPECTION DATE: _____TAPE NAME/NUMBER: _____

CCTV TAPE REVIEWED BY: _____ CCTV REVIEW DATE: _____

CCTV OBSERVATIONS: _____

_____

RECOMMENDATIONS

☐ NO CHANGES OR REPAIRS REQUIRED

☐ MAINTENANCE EQUIPMENT _____

☐ MAINTENANCE FREQUENCY _____

☐ REPAIR (LOCATION AND TYPE) _____

☐ ADD TO CAPITAL IMPROVEMENT REHABILITATION/REPLACEMENT LIST _____

ADDITIONAL INFORMATION: _____

_____

_____

PUBLIC WORKS SUPERINTENDENT REVIEW DATE: _____/_____/_____

Appendix 6-E: Private Property Damage Procedures

Customer Relations Guidelines

It is important for employees to communicate effectively with the City's customers, especially in a sewage backup situation. How we communicate – on the phone, in writing, or in person – is how we are perceived. Good communication with the homeowner results in greater confidence in our ability to address the problem satisfactorily, less time to resolve the claim, and less damage done to the property.

As a representative of the City, you will occasionally have to deal with an irate homeowner. A backup is a stressful event and even a reasonable homeowner can become irate should he/she perceive us as being indifferent, uncaring, unresponsive, or incompetent.

Although sometimes difficult, effective management of a sewage backup situation is critical. If it is not managed well, the situation can end up in a costly, prolonged process with the homeowner. We want the homeowner to feel assured that we are responsive and the homeowner's best interest is a top priority.

Communication Tips

- Give the homeowner ample time to explain the situation or to vent. Show interest in what the homeowner has to say, no matter how many times you have heard it before, or how well you understand the problem.
- As soon as possible, let the customer know that you will determine if the source of the sewer backup is in the sewer main and, if it is, will have it corrected as quickly as you can.
- Acknowledge the homeowner's concerns. For example, if the homeowner seems angry or worried about property damage, say something like, "I understand you're concerned about the possible damage to your property, but a professional cleanup crew can restore the area, and if it is determined that the City is at fault, the property owner has the right to file a claim for any reasonable repairs or losses resulting from this incident".
- Express regret for any inconveniences caused by the incident, but do not admit fault.
- As much as possible, keep the homeowner informed on what is being done and will be done to correct the problem.
- Keep focused on getting the job done in a very professional manner. Don't wander from the problem with too much unnecessary small talk with the homeowner.
- Don't find fault or lay blame on anyone.
- Make sure someone follows up with a telephone call to ensure everything is being handled as it should be.

Before you leave, make sure the homeowner has the name and telephone number of someone at the City to call if he/she has questions or wants information. The customer information letter contains this information and you should take the time to review this with the homeowner.

Appendix 6-F: Methods for Estimating Spill Volume

A variety of approaches exist for estimating the volume of a sanitary sewer spill. This appendix documents the three methods that are most often employed. The person preparing the estimate should use the method most appropriate to the sewer overflow in question and use the best information available.

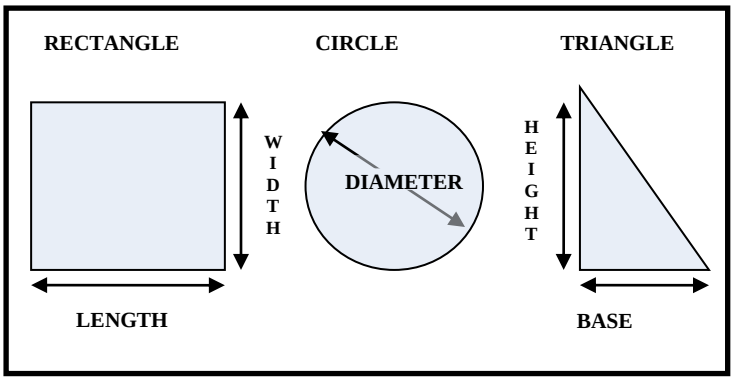
Method 1 Eyeball Estimate

The volume of small spills can be estimated using an "eyeball estimate". To use this method imagine the amount of water that would spill from a bucket or a barrel. A bucket contains 5 gallons and a barrel contains 50 gallons. If the spill is larger than 50 gallons, try to break the standing water into barrels and then multiply by 50 gallons. This method is useful for contained spills up to approximately 200 gallons.

Method 2 Measured Volume

The volume of most small spills that have been contained can be estimated using this method. The shape, dimensions, and the depth of the contained wastewater are needed. The shape and dimensions are used to calculate the area of the spills and the depth is used to calculate the volume.

Common Shapes and Dimensions



Step 1 Sketch the shape of the contained sewage (see figure above).

Step 2 Measure or pace off the dimensions.

Step 3 Measure the depth at several locations and select an average.

Step 4 Convert the dimensions, including depth, to feet.

Step 5 Calculate the area in square feet using the following formulas:

Rectangle: Area = length (feet) x width (feet)

Circle: Area = diameter (feet) x diameter (feet) x 0.785

Triangle: Area = base (feet) x height (feet) x 0.5

Step 6 Multiply the area (square feet) times the depth (in feet) to obtain the volume in cubic feet.

Step 7 Multiply the volume in cubic feet by 7.5 to convert it to gallons.

Method 3 Duration and Flowrate

Calculating the volume of larger spills, where it is difficult or impossible to measure the area and depth, requires a different approach. In this method, separate estimates are made of the duration of the spill and the flowrate. The methods of estimating duration and flowrate are:

Duration: The duration is the elapsed time from the time the spill started to the time that the flow was restored.

Start time: The start time is sometimes difficult to establish. Here are some approaches:

- Local residents can be used to establish start time. Inquire as to their observations. Spills that occur in rights-of-way are usually observed and reported promptly. Spills that occur out of the public view can go on longer. Sometimes observations like odors or sounds (e.g. water running in a normally dry creek bed) can be used to estimate the start time.
- Changes in flow on a downstream flowmeter can be used to establish the start time. Typically the daily flow peaks are "cut off" or flattened by the loss of flow. This can be identified by comparing hourly flow data during the spill event with flow data from prior days.
- Conditions at the spill site change over time. Initially there will be limited deposits of toilet paper and other sewage solids. After a few days to a week, the sewage solids form a light-colored residue. After a few weeks to a month, the sewage solids turn dark. The quantity of toilet paper and other materials of sewage origin increase over time. These observations can be used to estimate the start time in the absence of other information. Taking photographs to document the observations can be helpful if questions arise later in the process.
- It is important to remember that spills may not be continuous. Blockages are not usually complete (some flow continues). In this case the spill would occur during the peak flow periods (typically 10:00 to 12:00 and 13:00 to 16:00 each day). Spills that occur due to peak flows in excess of capacity will occur only during, and for a short period after, heavy rainfall.

End time: The end time is usually much easier to establish. Field crews on-site observe the "blow down" that occurs when the blockage has been removed. The "blow down" can also be observed in downstream flowmeters.

Flow Rate: The flowrate is the average flow that left the sewer system during the time of the spill.

There are three common ways to estimate the flowrate:

- The San Diego Manhole Flowrate Chart: This chart, included as Appendix 6-H, shows sewage flowing from manhole covers at a variety of flowrates. The observations of the field crew can be used to select the appropriate flowrate from the chart. If possible, photographs are useful in documenting basis for the flowrate estimate.

- Flowmeter: Changes in flows in downstream flowmeters can be used to estimate the flowrate during the spill.
- Counting Connections: Once the location of the spill is known, the number of upstream connections can be determined from the sewer maps. Multiply the number of connections by 200 to 250 gallons per day per connection or 8 to 10 gallons per hour per connection.

  For example: 22 upstream connections x 9 gallons per hour per connection

  = 198 gallons per hour / 60 minutes per hour

  = 3.3 gallons per minute

Spill Volume: Once duration and flowrate have been estimated, the volume of the spill is the product of the duration in hours or days and the flowrate in gallons per hour or gallons per day.

For example:

Spill start time = 11:00

Spill end time = 14:00

Spill duration = 3 hours

3.3 gallons per minute x 3 hours x 60 minutes/hour = 594 gallons

Appendix 6-G: Manhole Overflow Flowrate Guide

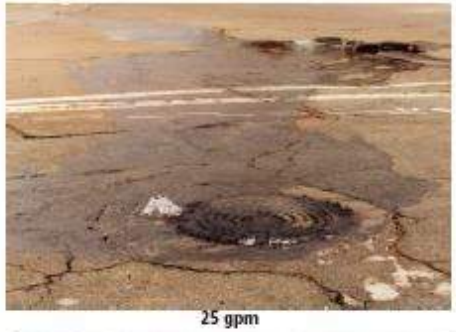
City of San Diego
Metropolitan Wastewater Department

Reference Sheet for Estimating Sewer Spills from Overflowing Sewer Manholes

All estimates are calculated in gallons per minute (gpm)

Wastewater Collection Division
(619) 654-4160

5 gpm



25 gpm

50 gpm

100 gpm

150 gpm

200 gpm

225 gpm

250 gpm

275 gpm

All photos were taken during a demonstration using metered water from a hydrant in cooperation with the City of San Diego's Water Department.

rev. 4/99

Appendix 6-H: Sample Warning Sign

Appendix 6-I: Emergency Response Equipment

Items	No.	Quantity	Comments
Vactor		1	
Flex Rodder		1	
Jet Rodder		1	
Service Truck		1	
Trash Pump		1	

Section 7. FOG Control Program

7.1. Introduction

This section of the SSMP presents the City's approach to preventing FOG-related SSOs. The FOG Control program occurs on an administrative staff level due to the necessity of a program.

7.2. WDR Requirements

The summarized requirements for the FOG Control element of the SSMP are:

The collection system agency shall evaluate its service area to determine whether a FOG control program is needed. If the collection system agency determines that a FOG program is not needed, the collection system agency must provide justification for why it is not needed. If FOG is found to be a problem, the collection system agency must prepare and implement a FOG source control program to reduce the amount of these substances discharged to the sanitary sewer system. The FOG source control program shall include the following as appropriate:

(a) An implementation plan and schedule for a public education outreach program that promotes proper disposal of FOG;

(b) A plan and schedule for the disposal of FOG generated within the sanitary sewer system service area. This may include a list of acceptable disposal facilities and/or additional facilities needed to adequately dispose of FOG generated within a sanitary sewer system service area;

(c) The legal authority to prohibit discharges to the system and identify measures to prevent SSOs and blockages caused by FOG;

(d) Requirements to install grease removal devices (such as traps or interceptors), design standards for the grease removal devices, maintenance requirements, BMP requirements, record keeping and reporting requirements;

(e) Authority to inspect grease producing facilities, enforcement authorities, and a determination of whether the Agency has sufficient staff to inspect and enforce the FOG ordinance;

(f) An identification of sewer system sections subject to FOG blockages and the establishment of a cleaning maintenance schedule for each section; and

(g) Development and implementation of source control measures, for all sources of FOG discharged to the sewer system, for each sewer system section identified in (f) above.

7.3. Nature and Extent of FOG Problem

Due to the frequency of CCTVing that occurs in the city, areas where FOG related issues have a higher probability of occurring have been determined and put on a 1 to 2 month cleaning schedule. The FOG is then disposed of at the Sewage Treatment Plant operated by Sewerage Commission – Oroville Region (SC-OR). The City has only experienced one SSO due to FOG since 2014. The city also intends to send out public education brochures regarding FOG to homeowners with the property tax and sewer fee invoice. The most recent SSO events in the past 5 years is shown in Table7-1.

Table 7-1: FOG-Related SSO Events

Date	CIWQS SSO Event ID	Location	Volume to Surface Waters, gallons
2014	804349	MH A-11A	200
Total			**200**

The City requires new and remodeled FOG sources to install grease removal equipment as a condition of the building permit.

7.4. FOG Source Control Program

The performance of the City's chosen approach to preventing FOG-related SSOs has been effective and it will continue to follow this approach. The City will continue to require new and remodeled commercial FOG sources to install grease removal equipment. It will collect data to support a more comprehensive evaluation of the nature and extent of its FOG-related blockages and SSOs. The City will revisit the need for a commercial FOG Control Program every time the SSMP is updated.

Section 8. System Evaluation and Capacity Assurance Plan

8.1. Introduction

This section of the SSMP presents the City's programs and activities to provide adequate sewer system capacity.

8.2. WDR Requirements

The summarized requirements for the System Evaluation and Capacity Assurance Plan (SECAP) element of the SSMP are:

The Agency shall prepare and implement a capital improvement plan (CIP) that will provide hydraulic capacity of key sanitary sewer system elements for dry weather peak flow conditions, as well as the appropriate design storm or wet weather event. At a minimum, the plan must include:

(a) Evaluation: Actions needed to evaluate those portions of the sanitary sewer system that are experiencing or contributing to an SSO discharge caused by hydraulic deficiency. The evaluation must provide estimates of peak flows (including flows from SSOs that escape from the system) associated with conditions similar to those causing overflow events, estimates of the capacity of key system components, hydraulic deficiencies (including components of the system with limiting capacity) and the major sources that contribute to the peak flows associated with overflow events.

(b) Design Criteria: Where design criteria do not exist or are deficient, undertake the evaluation identified in (a) above to establish appropriate design criteria.

(c) Capacity Enhancement Measures: The steps needed to establish a short- and long-term CIP to address identified hydraulic deficiencies, including prioritization, alternatives analysis, and schedules. The CIP may include increases in pipe size, inflow and infiltration (I/I) reduction programs, increases and redundancy in pumping capacity, and storage facilities. The CIP shall include an implementation schedule and shall identify sources of funding.

(d) Schedule: The Agency shall develop a schedule of completion dates for all portions of the capital improvement program developed in (a)-(c) above. This schedule shall be reviewed and updated consistent with the SSMP review and update requirements as described in Section D. 14 (of the WDR).

8.3. Evaluation – Sanitary Sewer Master Plan

The City completed a Sanitary Sewer Master Plan Update (Master Plan) in 2013. The master planning effort included flow monitoring and the development of a hydraulic model.

The flows were estimated for gravity sewers 10 inches in diameter and larger (some 8 inch sewers were included in the model) and a 10-year/24-hour return interval design storm. Approximately 75 pipes and 57 manholes did not meet the City's wet weather surcharge of 3 feet below the rim elevation.

The Master Plan identified two locations where capacity deficiencies exist for the peak wet weather flow (PWWF) design storm and five additional areas of concern. More information regarding these locations can be found in Section 6.4.4 of the 2013 Sanitary Sewer Master Plan.

The Capital Improvement Program (CIP) is reviewed and updated annually.

8.4. Design Criteria

The capacity-related design criteria, including base wastewater flow and peaking factors, are included in Section 5 of the SSMP, Design and Performance Provisions.

8.5. Capacity Enhancement Measures – CIP

The City's Capital Improvement Program for sewer main capacity improvements is shown in Appendix 4-B.

Section 9. Monitoring, Measurement, and Program Modifications

9.1. Introduction

This section presents the City's approach to Monitoring, Measurement, and Program Modifications.

9.2. WDR Requirements

The requirements for the Monitoring, Measurement, and Program Modifications (MMPM) section of the SSMP are:

The Enrollee shall:

(a) Maintain relevant information that can be used to establish and prioritize appropriate SSMP activities;

(b) Monitor the implementation and, where appropriate, measure the effectiveness of each element of the SSMP;

(c) Assess the success of the preventative maintenance program;

(d) Update program elements, as appropriate, based on monitoring or performance evaluations; and

(e) Identify and illustrate SSO trends, including: frequency, location, and volume.

9.3. Performance Measures

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

- Total number of SSOs;
- Number of SSOs for each cause (roots, grease, debris, pipe failure, capacity, lift station failure, and other);
- Portion of sewage contained compared to total volume spilled;
- Volume of spilled sewage discharged to surface water; and
- Planned to actual performance for preventive maintenance.

9.4. Historical Performance Data

The City has limited historical performance data at this time. The City has been reporting SSOs through CIWQS since September 2, 2007.

9.5. Baseline Performance

The baseline performance, which shows the performance of the City's sanitary sewer system prior to implementation of the SSMP, is shown on Table 9-1.

Table 9-1: Baseline Performance as of August 6, 2019 covering period of January, 2011 through August 6, 2019

Performance Measure		Value
Number of SSOs/year		34
SSO Rate, SSOs/100 miles/year		6
Median SSO Volume, gallons/year		65235
Portion of SSOs ≤ 100 gallons		56%
SSO Causes	Roots	35%
	Grease	9%
	Debris	26.5%
	Pipe/ Lift Station Failure	6%
	Conditions	3%
	Other	20.5%
Portion of Spilled Sewage Contained/Recovered		11%
Portion of Spilled Sewage Entering Storm Drains and/or Surface Waters		11%
Data Source: CIWQS		

9.6. Performance Monitoring and Program Changes

The City will evaluate the performance of its sanitary sewer system annually using the performance measures identified in Section 9.3, Performance Measures (above) using the baseline performance to determine the trends. The City may use other performance measures in its evaluation.

9.7. SSMP Updates

The City will update its SSMP at least every five years. The next update will be completed on or before November 1, 2024.

The City will determine the need to update its SSMP more frequently based on the results of the semi-annual audit and the performance of its sanitary sewer system. In the event that the City decides that an update is warranted, the process to

complete the update will be identified at that time. The City will complete the update within one year following identification of the need for the update.

City Staff will seek approval from the City Council for any significant changes to the SSMP. The authority for approval of minor changes such as employee names, contact information, or minor procedural changes is delegated to Public Works Director.

Section 10. SSMP Program Audits

10.1. Introduction

This section of the SSMP presents the process that the City will follow to audit its SSMP program.

10.2. WDR Requirements

The summarized regulatory requirements for the SSMP are:

As part of the SSMP, the City shall conduct periodic internal audits, appropriate to the size of the system and the number of SSOs. At a minimum, these audits must occur every two years and a report must be prepared and kept on file. The audit shall focus on evaluating the effectiveness of the SSMP and the Enrollee's compliance with the SSMP requirements identified in Subsection D.13 of the WDR, including identification of any deficiencies in the SSMP and steps to correct them.

10.3. SSMP Audits

The City will audit its SSMP every two years. The audit will determine whether the SSMP meets the current requirements of the WDR, whether the SSMP reflects the City's current practices, and whether the City is following the SSMP. The next audit be performed in 2021.The most recent SSMP Audit will be included in Attachment C.

The audit will be conducted by a team consisting of City Staff. The City may choose to include representatives from nearby agencies and/or consultants on the audit team.

The scope of the audit will cover each of the sections of the SSMP. The SSMP Audit is based on the requirements in the WDR.

The results of the audit will be included in the SSMP Audit Report. The SSMP Audit Report will focus on the effectiveness of the SSMP program, compliance with the WDR requirements, and identification of any deficiencies in the SSMP. The SSMP Audit Report will identify revisions that may be needed for a more effective program. Information collected as part of Section 9 – Monitoring, Measurement, and Program Modifications will be used in preparing the audit. Tables and figures or charts will be used to summarize information about performance indicators.

The City will certify that it has completed the semi-annual audit using CIWQS. Copies of the semi-annual Audit Reports will be retained by the City for five years.

Section 11. Communication Program

11.1. Introduction

This section of the SSMP is intended to outline the process involved in communicating with interested members of the public regarding the development, implementation, and performance of this plan.

11.2. WDR Requirements

The requirements for the Communication Program section of the SSMP are:

The Agency shall:

(a) Communicate on a regular basis with the public on the development, implementation, and performance of its SSMP. The communication system shall provide the public the opportunity to provide input to the Agency as the program is developed and implemented.

(b) Create a plan of communication with systems that are tributary and/or satellite to the Agency's sanitary sewer system.

11.3. Communication during SSMP Development and Implementation

The City posted a notice on its website to inform interested members of the public during development of the SSMP. The notice read:

> The City of Oroville is developing and implementing a Sewer System Management Plan (SSMP) pursuant to State Water Resources Control Board Order 2006-0003, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems. The goal of the SSMP is to minimize the frequency and severity of sanitary sewer overflows. The SSMP will cover the management, planning, design, and operation and maintenance of the City's sanitary sewer system. The development process began in June 2009 and a public draft SSMP was completed in October 2009. Interested parties can contact Richard Walls at (530) 538-2507 or wallsr@cityoforoville.org for additional information regarding the SSMP.

11.4. Communicating Sanitary Sewer System Performance

The City reports SSOs electronically to the California Integrated Water Quality System (CIWQS). The electronic SSO data, as well as information regarding regulatory actions, is available at:

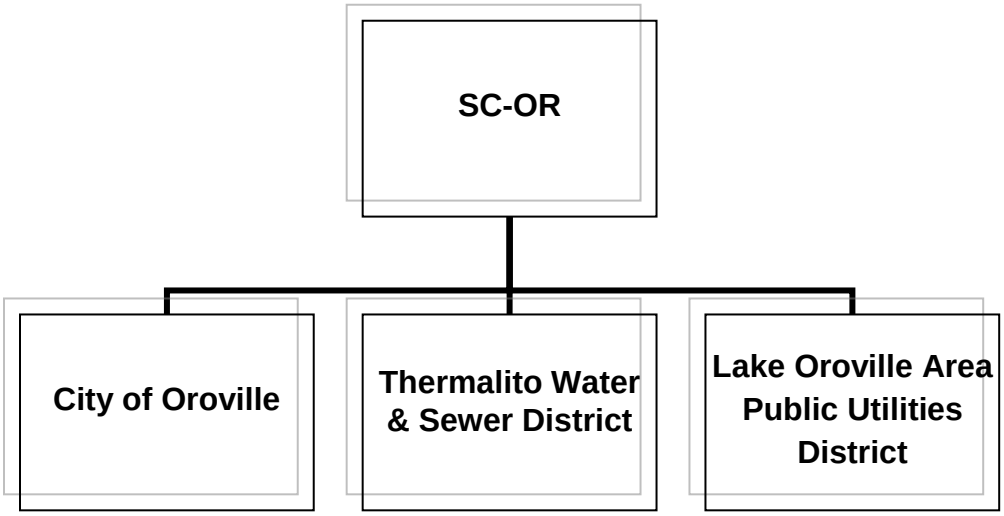
http://www.waterboards.ca.gov/ciwqs/publicreports.html.

The City will place a notice on its website that the sanitary sewer performance information is available at the CIWQS public access website.

11.5. Communication w/Tributary/Satellite SS Systems

The City is one-third of a Joint Powers Agreement (JPA) with SC-OR that handles the wastewater treatment and disposal. The three entities that make up the JPA are City of Oroville, Lake Oroville Area Public utilities District (LOAPUD) and Thermalito Water and Sewer District (TWSD). The City provides the wastewater collection services which discharge into a SC-OR interceptor pipeline.

Figure 11-1: JPA Organization Chart



Attachment A
Maintenance Logs

BI-MONTHLY PROBLEM LIST		M.H.#	FOOTAGE	DATE	COMMENTS
					Revised 10/10
Papa Murphy's		CC-3 TO CC-4	70		
Papa Murphy's		CC-4 TO CC4A	190		
Papa Murphy's		CC-4A TO CC-5	340		
City Hall		R-1 to LH EAST	265		
D.A.'s Line		J-21 TO LH EAST	225		
Oroville Inn		S13A TO LH WEST	275		
Pine & Montgomery		33 TO L-1	315		
6th & Robinson		23 TO E-1	315		
5th & Robinson		24 TO D-1	345		
Linda Dr.		KK-38 TO KK-39	350		
Clemo & Linden		EE-10 TO EE-11	290		
Foothill		MM-4 to MM-6	550		
Fay Way		Y-27C TO Y-28	140		
Fay Way		Y-28 TO Y-29	304		
Rockridge		KK-57 TO KK-58	250		
Rockridge		KK-57 TO LH SOUTH	205		
2nd & Hammon		PP-47 TO PP-52A	1000		
Nelson Ave		PP-74 TO LH EAST	120		
Nelson Ave		PP-72 TO PP-74	604		
Nelson Ave		PP-71 TO PP-72	331		
Fogg Ave		PP-70A TO PP-71	240		
Fogg Ave		PP-69 TO PP-70A	230		
Fogg Ave		PP-66 TO PP-69	470		
Fogg Ave		PP-65 TO PP-66	340		
Fogg Ave		PP-64 TO PP-65	305		
Fogg Ave		PP-63 TO PP-64	345		
Fogg Ave		PP-56 TO PP-63	115		
Mesa Ave		Y-12A TO Y-14	500		
TOTAL			**9029**		

Bi- Monthly Problem Lines	M/H +Direction	Map #	Footage	Date	Comments Revised 8-4-15 T
5th / Robinson	24-D1 (s)	11	337		
6th / Robinson	23-E1 (s)	11	308		
Huntoon / Robinson	J21-J21L/H (e)	9	227		D.A.
Lincoln / Miners Alley	R1-R1L/H (w)	9	269		city hall
Pine / Montgomery	33-L1 (n)	9	312		
Downer / Miners Alley	S13A-S13AL/H(s)	9	268		
Pappa Murrphy's	CC3_CC4 (e)	14	74		
Pappa Murrphy's	CC4_CC4A (e)	14	192		
Pappa Murrphy's	CC4A-CC5 (e)	14	334		
Mesa Ave. / Alley Way	Y12A-Y13 (s)	15	168		
Mesa Ave. / Alley Way	Y13_Y14 (s)	15	299		
Fay Way	Y27C_Y28 (s)	10	137		
Fay Way	Y28_Y29 (s)	10	303		
Rockridge	KK57_KK57L/H(s)	5	183		
Rockridge	KK57_KK58 (n)	5	241		
Orange / Linden	EE10_EE11 (s)	6	288		
2nd / Hammon	PP52_PP52A (e)	3	207		
2nd / Hammon	PP51_PP52 (e)	3	391		
2nd / Hammon	PP47-PP51 (e)	3	395		
Nelson Ave.	PP74_PP74L/H (e)	2	119		
Nelson Ave.	PP73A_PP74 (e)	4	289		
Nelson Ave.	PP73_PP73A (e)	4	186		
Nelson Ave.	PP72_PP73 (e)	4	330		
Nelson Ave.	PP71_PP72 (e)	4	129		
Fog Ave.	PP70A_PP71 (n)	4	239		
Fog Ave.	PP70_PP70A	4	110		
Fog Ave.	PP69-PP70 (n)	4	117		
Fog Ave.	PP66_PP69 (n)	4	468		
Fog Ave.	PP65_PP66 (n)	4	330		
Fog Ave.	PP64_PP65 (n)	4	307		
Fog Ave.	PP63A-PP64 (n)	4	153		
Fog Ave.	PP63_PP63A (n)	4	185		
Fog Ave.	PP56_PP63 (n)	4	112		
TOTAL			8007		

RESTAURANT LINES	M/H #'s	FOOTAGE	DATE	COMMENTS
Wendy's	SAS-16 TO LHN	150		
Wal-mart	SAS-16 TO WEST	185		
Taco Bell	SAS-42A TO SAS 42B	310		
McDonalds	SAS-15 to SAS-16	230		
Pizza Hut	SAS-14 TO SAS-15	140		
Cassidy's	SAS-13 TO SAS-14	340		
Cassidy's	SAS-13 TO LHN	70		
Cassidy's	SAS-11A TO SAS-13	150		
Cassidy's	SAS-11 TO SAS-11A	170		
Burger King	10-C to 10-D	310		
Papa Murphy's	CC-4A TO CC-5	335		
Papa Murphy's	CC-4 TO CC-4A	195		
Papa Murphy's	CC-3 TO CC-4	80		
Papa Murphy's	CC-1 TO CC-3	175		
Papa Murphy's	62 TO CC-1	150		**NIGHT TIME**
K.F.C	BB-1 TO LHW	250		
Jack in the Box	BB-1A TO BB-4	330		Through BB-2&BB-3
Mountain Mike's Pizza	Z-9 TO Z-10	300		
Mountain Mike's Pizza	Z-5 TO Z-9	235		
Laundromat	Z-4 TO Z-5	200		Be prepared to catch debris
Western Pacific Brewing	S-14A TO LHE	175		
Tong Fong Low	S-19 TO S-20	315		
Copa de Oro	S-11 TO S-19	325		
Francisco's	49-A TO LHN	90		
Li's Cuisine	71-A TO 71-B	170		
Big Lems	Z-16 TO Z-17	150		
Oroville Inn	S-13A TO LHW	275		
Uncle Pings	J-21 TO LHE	220		
Casa Vieja	J-20 TO J-21	310		
Shadowbrook	Y-33 TO Y-33A	120		
Taqueria Maria's	UU-1 TO LHS	360		
Checkers	NN-15 TO NN-16	360		
Waffle Barn	AA-3 TO LHS	550		
Taqueria #462,876	A-2 TO A-3	380		
Cornucopia	A-3 TO A-4	320		
Ron's Drive In	103 TO 104	100		**NIGHT TIME**
Grande Burger	102 TO 103	450		**NIGHT TIME**
Shakey's	101 TO 102	480		**NIGHT TIME**
Oroville Hospital	101 TO 101A	45		**NIGHT TIME**
Arby's	100 TO 101	460		**NIGHT TIME**
Taco Bell	99 TO 100	470		**NIGHT TIME**
Donut Tree/Celestinos	98 TO 99	540		**NIGHT TIME**
AM-PM Olive Hwy.	Y-23 TO Y-23A	270		**M/H IS HISTORICALLY**
AM-PM Olive Hwy.	Y-4 TO Y-23	310		**BELOW GRADE AND HOLDS WATER**
Hoffbrau	AA-8A TO AA-7	490		
		12040		

MONTHLY PROBLEM LINES	M/H AND DIRECTION	MAP#	FOOTAGE	DATE
2110 Montgomery / In Alley	S3A_S3ALH	9	223	
Daryl Porter / Baldwin	T2_T2LH	9	335	
Pine / Pomona	J11_J12	12	351	
Pine / Robinson	J14_J14LHN	9	248	
Veatch / Robinson	J1_J2	12	325	
High / 2nd	F6_F6LHN	11	181	
6th Ave	E4_E4LHS	11	103	
6th Ave	E4_E4LHE	11	222	
6th Ave / Gardella	E3_E4	11	140	
6th Ave / Gardella	E3_E3LHW	11	270	
6th Ave / Gardella	E3_E3LHE	11	174	
6th Ave / Pomona	E2_E3	11	304	
Feather River	AA4_AA4LHS	13	34	
Feather River / Dahls Motel	AA3_AA4	13	510	
Feather River /High	A5_A6	11	444	
Feather River / Robinson	A1_A5	11	345	
Feather River / Montgomery	A3_A4	13	323	
Feather River / Montgomery	A3_LHN	13	234	
Feather River / Bird	A2A_A3	11	227	
Feather River / Bird	A2_A2A	11	151	
Tucker @ Franciscos	49A_49ALHS	12	29	
Tucker @ Franciscos	49A_49ALHN	12	90	
U.S. Bank Drive through	Z27_Z28	14	320	
Walgreens	Y27_Y32	10	292	
Gilmore Ln.	Y33_Y34	10	396	
Gilmore Ln.	Y33_Y33A	10	122	
Pamela Jane	JJ15_JJ17	6	266	
Table Mountain Blvd.	XX5_XX7	2	230	
Table Mountain Blvd.	XX4_XX5	2	304	
Table Mountain Blvd.	XX3_XX4	2	414	
Table Mountain Blvd	XX2_XX3	2	371	
Table Mountain Blvd	XX1_XX2	2	32	
Table Mountain Blvd	TT15_XX1	2	103	
Table Mountain Blvd	TT15_UU1	2	220	
Table Mountain Blvd / Mono	TT14_TT15	2	227	
Grand Ave	NN16_NN16LH	4	386	
Grand Ave / Table Mtn	NN15_NN16	4	361	
Bird / State Theater	S19_S19LHS	9	165	
Table Mtn. Roundabout	TT8A SWEEP_TT7 SWEEP		607	
Pine / Osage	J12_J13 J13_J13A		698	
TOTAL			**9595**	
Corp Yard Wash Rack	Vac out			

OFF ROAD JET LIST

LOCATION		MANHOLE #	DATE	COMMENTS
Easement off Highlands Blvd		KK-33 TO KK-33A		
Easement off Highlands Blvd		KK-33 TO KK-37		
Central School		Y-20 TO LH SOUTH		
Central School		Y-19 TO Y-20		
Central School		Y-18A TO Y-19		
Central School		Y-18 TO Y-18A		
Central School		Y-17 TO Y-18		
Taco Bell basin Olive Hwy		Y-12 TO Y-17		
Spencer Ave		Y-7 TO Y-12		
Spencer Ave		Y-7 TO Y-7A		
New Montgomery		DD-12 TO LH EAST		533-0921
New Montgomery		DD-11A TO DD-12		533-0921
New Montgomery		DD-11B TO DD-11A		533-0921
New Montgomery		DD-11C TO DD-11B		533-0921
Behind Stanford School		JJ-77 TO JJ-78		jet JJ-73 through 76&77 to JJ-78 454'
Behind Stanford School		JJ-76 TO JJ-77		
Behind Stanford School		JJ-73 TO JJ-76		
Behind Stanford School		JJ-73 TO JJ-74		
Church off of Acacia		JJ-72 TO JJ-73		
Behind Oroville Manor (Lincoln)		CC-13 TO LH EAST		
Behind Oroville Manor (Lincoln)		CC-13 TO LH WEST		
Foothill to Olive Highway		LL-4 TO LL-5		
Foothill to Olive Highway		LL-3 TO LL-4		
Foothill to Olive Highway		LL-1 TO LL-3		
Foothill to Olive Highway		LL-1 TO LL-2		
Foothill to Olive Highway		113 TO LL-1		
Foothill to Olive Highway		112 TO 113		
Oro Dam/Gilmore		Y-32 TO Y-33		
F.R.B. behind D&D Homes		AA-21 TO AA-11		
F.R.B. behind D&D Homes		AA-20 TO AA-21		
Airport industrial area		AP-4 TO AP-3		
Airport industrial area		AP-5 TO AP-4		
Airport industrial area		AP-6 TO AP-5		
Olive Glen line 48 Rossmore Ln		MM-16 MM-18		Tom Stanton 534-7766
Olive Glen line 48 Rossmore Ln		MM-15 TO MM-16		Tom Stanton 534-7766
Olive Glen line 48 Rossmore Ln		MM-14 TO MM-15		Tom Stanton 534-7766
Olive Glen line 48 Rossmore Ln		MM-13 TO MM-14		
Olive Glen line Baton Rouge Rd		MM-12 to MM-13		
Olive Glen line Baton Rouge Rd		MM-11A TO MM-12		
Olive Glen line Baton Rouge Rd		MM-11A TO LH S		
Olive Glen line Baton Rouge Rd		MM-11 TO MM-11A		
Olive Glen line Baton Rouge Rd		MM-1O TO MM-11		
Olive Glen line 3532 Glen Ave		MM-9 TO MM-10		Call Vivian Percanti 534-0159
Olive Glen line 3532 Glen Ave		MM-8 TO MM-9		call Vivian Percanti 534-0159
Olive Glen line 3532 Glen Ave		MM-7 TO MM-8		
Olive Glen line 3532 Glen Ave		MM-6 TO MM-7		
Olive Glen line 2695 Foothill Blvd		MM-5 TO MM-6		
Olive Glen line 2695 Foothill Blvd		MM-4 TO MM-5		

Acacia near Church		JJ-28 TO JJ-29		
Acacia near Church		JJ-27 TO JJ-28		
Acacia near Church		JJ-26 TO JJ-27		
Acacia near Church		JJ-25 TO JJ-26		
Acacia near Church		JJ-24 TO JJ-25		
Acacia near Church		JJ-23 TO JJ-24		
Acacia near Church		JJ-22 TO JJ-23		
Stanford near Pamela Jane		JJ-5 TO JJ-22		
Oro Dam/Stanford to Orange		FF-14 TO FF-15		
Oro Dam/Stanford to Orange		FF-13 TO FF-14		
Oro Dam/Stanford to Orange		FF-12A TO FF-13		
Pamela Jane		JJ-17 to JJ-18		
Easement off Highlands Blvd		KK-33 TO KK-49		
Easement off Highlands Blvd		KK-37 TO KK-38		
Easement off Highlands Blvd		JJ-36 TO JJ-37		
Easement off Highlands Blvd		JJ-35 TO JJ-36		
Easement off Highlands Blvd		JJ-34 TO JJ-35		

Quarterly Problem Lines	M/H + Direction	Map #	Footage	Date	Comments Revised 8-4-15 T
Gardella / 7th ave	A11A-A12 (s)	11	47		
Pomona / 7th	A11_A11A	11	262		
Pomona / 8th	A10_A10a (e)	11	116		
Pomona / 8th	A10_A10A(e)	11	208		
Pomona / 8th	A10_A9 (e)	11	300		
High / 8th	A6_A7 (e)	11	300		
Bird / 2nd	I1L/H_I1 (n)	11	275		
High / Oak	J16_J17 (s)	12	250		
Gray / Osage	**J9-9AL/H (s)**	**12**	**160**		
Gray / Osage	J8_J9 (s)	12	300		
Hewitt / Wilcox	X2_ X3 (n)	12	500		
Wilcox / Myers	47_X4 (e)	12	500		
Gilmore	Y32_Y33 (s)	10	420		
Mitchell	76_77 (n)	12	450		
Canyon Highlands	GG16_GG23 (e)	10	500		
Canyon Highlands	GG14_GG16 (e)	10	300		
Canyon Highlands	GG13_GG14 (e)	10	100		
Eucalypus	GG6_GG7 (n)	10	400		
Stauss	GG20_GG21 (s)	10	325		
Oro Dam Paws Clinic	JJ10_JJ11 (e)	6	315		
Service	KK6_KK16 (n)	7	**450**		
Parkwood Rockridge	KK56_KK56LH (n)	5	160		
4th st	PP6_PP7 (n)	3	399		
4th st	PP5_PP6 (n)	3	339		775-835-3557 CALL
Grand / 5th	PP4_PP5 (e)	3	345		
Table Mtn	SS24_SS24L/H (n)	2	220		
Morningstar	SS25_SS25L/H (s)	2	300		
RXR right of way	DD4_DD2		531		
TOTAL			2671		

Attachment B
Staff Training Certificates

CALIFORNIA WATER ENVIRONMENT ASSOCIATION

Certification of Competence

THIS IS TO CERTIFY THAT

Rick Seals

HAVING SUBMITTED ACCEPTABLE EVIDENCE OF QUALIFICATIONS
BY EDUCATION, TRAINING AND EXPERIENCE IS HEREBY
GRANTED THIS CERTIFICATION OF COMPETENCY IN

Collection System Maintenance

Grade 1

Expires: 7/31/2020

Certificate Number 80721121

Kevin Calderwood, President
California Water Environment Association

Gilbert G. Barela, Chair
Technical Certification Program

CALIFORNIA WATER ENVIRONMENT ASSOCIATION

Certification of Competence

THIS IS TO CERTIFY THAT

Jamie McGuire

HAVING SUBMITTED ACCEPTABLE EVIDENCE OF QUALIFICATIONS
BY EDUCATION, TRAINING AND EXPERIENCE IS HEREBY
GRANTED THIS CERTIFICATION OF COMPETENCY IN

Collection System Maintenance

Grade 2

Expires: 8/31/2020

Certificate Number 1308217635

Kevin Calderwood, President
California Water Environment Association

CALIFORNIA WATER ENVIRONMENT ASSOCIATION
Founded 1928

Gilbert G. Barela, Chair
Technical Certification Program

CALIFORNIA WATER ENVIRONMENT ASSOCIATION

Certification of Competence

THIS IS TO CERTIFY THAT

Cody Nissen

HAVING SUBMITTED ACCEPTABLE EVIDENCE OF QUALIFICATIONS
BY EDUCATION, TRAINING AND EXPERIENCE IS HEREBY
GRANTED THIS CERTIFICATION OF COMPETENCY IN

Collection System Maintenance

Grade 2

Expires: 2/28/2020

Certificate Number 90222001

Constance Leonard, President
California Water Environment Association

Tony Pirondini, Chair
Technical Certification Program

Attachment C
SSMP Audit

Sewer System Management Plan Self-Audit Report

Name of agency	City of Oroville
Date of audit	10/4/2019
Name of auditor	Mike Massaro

System Overview	
LF of gravity sewer mains	351,648
LF of force mains	11,088
Total LF of all sewer lines	362,736
Number of pump stations	7
Population served	19,121

I. GOALS

1. Are the goals stated in the SSMP still appropriate and accurate? (circle one) **YES / NO**

2. If you answered NO to question 1, or have made any changes/updates to this element in the SSMP, please describe in detail.

II. ORGANIZATION

REFERENCE MATERIAL

- **Organization chart**
- **Phone list**

3. Is the SSMP up-to-date with City organization and staffing contact information? **YES / NO**

4. If you answered NO to question 3, or have made any changes/updates to this element in the SSMP, please describe in detail.

III. LEGAL AUTHORITY

REFERENCE MATERIAL

- **Ordinances**
- **Enforcement actions**

5. Does the SSMP contain up-to-date information about the City's legal authority? **YES / NO**

6. Does the City have sufficient legal authority to control sewer use and maintenance? **YES / NO**

7. If you answered NO to questions 5 and/or 6, or have made any changes/updates to this element in the SSMP, please describe in detail.

IV. OPERATION AND MAINTENANCE PROGRAM

a. COLLECTION SYSTEM MAPS

REFERENCE MATERIAL

- **Summary of information included in mapping system**

8. Does the SSMP contain up-to-date information about the City's maps? **YES / NO**

9. Are the City's collection system maps complete, up-to-date, and sufficiently detailed? **YES / NO**

10. If you answered NO to questions 8 and/or 9, or have made any changes/updates to this subsection in the SSMP, please describe in detail.

b. RESOURCES AND BUDGET

REFERENCE MATERIAL

- **Current Capital Improvement Plan (CIP)**
- **Current operating budget**

11. Does the SSMP contain up-to-date information about the City's resources? **YES / NO**

12. Are the City's resources and budget sufficient to support effective sewer system management? **YES / NO**

13. Do the City's planning efforts support long-term goals? **YES / NO**

14. If you answered NO to questions 11, 12, and/or 13, or have made any changes/updates to this subsection in the SSMP, please describe in detail.

c. PRIORITIZED PREVENTATIVE MAINTENANCE

REFERENCE MATERIAL

- **Cleaning schedules**
- **List or map of hotspots**
- **Work orders**
- **Service call data**
- **Customer feedback**

15. Does the SSMP contain up-to-date information about the City's preventative maintenance activities? **YES / NO**

16. Considering the information in Tables 1 and 2 (later in the form), are the City's preventative maintenance activities sufficient and effective in reducing and preventing SSOs and blockages? **YES / NO**

17. If you answered NO to questions 15 and/or 16, or have made any changes/updates to this subsection in the SSMP, please describe in detail.

d. SCHEDULED INSPECTIONS AND CONDITION ASSESSMENT

REFERENCE MATERIAL

- **Inspection reports**
- **Infiltration and Inflow (I/I) monitoring studies and reports**
- **Pipe and manhole condition data**

18. Does the SSMP contain up-to-date information about the City's rehabilitation and replacement program? **YES / NO**

19. Are the City's scheduled inspections and condition assessment system effective in locating, identifying, and addressing deficiencies? **YES / NO**

20. Does the SSMP contain up-to-date information about Closed Circuit Television (CCTV) inspections? **YES / NO**

21. Does the Capital Improvement Plan (CIP) address prioritized projects for collection system assets? **YES / NO**

22. If you answered NO to questions 18, 19, 20 and/or 21, or have made any changes/updates to this subsection in the SSMP, please describe in detail.

e. CONTINGENCY EQUIPMENT AND REPLACEMENT INVENTORIES

REFERENCE MATERIAL

- **Funds spent on equipment and materials**
- **Equipment and parts inventory**

23. Does the SSMP contain up-to-date information about equipment and replacement inventories? **YES / NO**

24. Are contingency equipment and replacement parts sufficient to respond to emergencies and properly conduct regular maintenance? **YES / NO**

25. If you answered NO to questions 23 and/or 24, or have made any changes/updates to this subsection in the SSMP, please describe in detail.

f. TRAINING

REFERENCE MATERIAL

- **Employee training records**

26. Does the SSMP contain up-to-date information about the City's training expectations and programs? **YES / NO**

27. Do supervisors believe that their staff is sufficiently trained? **YES / NO**

28. Are staff satisfied with the training opportunities and support offered to them? **YES / NO**

29. If you answered NO to questions 26, 27, and/or 28, or have made any changes/updates to this subsection in the SSMP, please describe in detail.

V. DESIGN AND PERFORMANCE PROVISIONS

REFERENCE MATERIAL

- **Design and construction standards**
- **Ordinances**

30. Does the SSMP contain up-to-date information about the City's design and construction standards? **YES / NO**

31. If you answered NO to question 30, or have made any changes/updates to this element in the SSMP, please describe in detail.

VI. OVERFLOW EMERGENCY RESPONSE PLAN

REFERENCE MATERIAL

- **Data submitted to CIWQS**
- **Service call data**

Table 1. Annual SSO Statistics

	2015	2016	2017	2018	2019
Number of SSOs	3	3	3	3	3
Median SSO Volume, gallons	50,036	19.67	48.33	3,300	81
Portion of SSOs less than or equal to 100 gallons	66.7%	100%	66.7%	0	66.7%
Portion of Spilled Sewage Entering Surface Waters	150,000	0	0	200	0
Portion of Spilled Sewage Contained/Recovered	60	4	32	6100	243
Net volume of SSOs (total minus recovered)	149,940	55	113	3,800	0
SSOs caused by:					
Roots	2	1	1	0	1
Grease	0	0	0	0	0
Debris	1	2	1	2	2
Pipe failure	0	0	0	0	0
Pump station failure	0	0	0	0	0
Other	0	0	1	1	0

32. Does the SSMP contain an up-to-date version of the City's Overflow Emergency Response Plan? **YES / NO**

33. Considering the information in Table 1, is the Overflow Emergency Response Plan effective in handling SSOs? **YES / NO**

34. If you answered NO to questions 32 and/or 33, or have made any changes/updates to this element in the SSMP, please describe in detail.

VII. FATS, OILS, AND GREASE (FOG) CONTROL PLAN

REFERENCE MATERIAL

- **List or map of FOG sources in service area**
- **List or map of hotspots**
- **Cleaning schedules**
- **Restaurant inspection reports or summaries**
- **Data submitted to CIWQS**
- **Service call data**

Table 2. FOG Control Statistics

	2015	2016	2017	2018	2019
Number of SSOs caused by FOG	0	0	0	0	0

35. Does the SSMP contain up-to-date information about the City's FOG control program? **YES / NO**

36. Considering the information in Table 2, is the current FOG program effective in documenting and controlling FOG sources? **YES / NO**

37. If you answered NO to questions 35, and/or 36, or have made any changes/updates to this element in the SSMP, please describe in detail.

VIII. SYSTEM EVALUATION AND CAPACITY ASSURANCE PLAN

REFERENCE MATERIAL

- **Capacity assessment reports**
- **CIP**
- **SSO data**

38. Does the SSMP contain up-to-date information about the City's capacity assessment? **YES / NO**

39. Has the City completed a capacity assessment and identified and addressed any hydraulic deficiencies in the system? **YES / NO**

40. If you answered NO to questions 38 and/or 39, or have made any changes/updates to this element in the SSMP, please describe in detail.

IX. MONITORING, MEASUREMENT, AND PROGRAM MODIFICATIONS

41. Does the SSMP contain up-to-date information about the City's data collection and organization? **YES / NO**

42. Is the City's data collection and organization sufficient to evaluate the effectiveness of your SSMP? **YES / NO**

43. If you answered NO to questions 41 and/or 42, or have made any changes/updates to this element in the SSMP, please describe in detail.

X. SSMP AUDITS

44. Will a copy of this SSMP Audit be included in the SSMP Document as an appendix? **YES / NO**

XI. COMMUNICATION PROGRAM

REFERENCE MATERIAL

- **Mailings and mailing lists**
- **Website**
- **Other communication records such as newspaper ads, site postings, or other outreach**
- **Customer feedback**

45. Does the SSMP contain up-to-date information about the City's public outreach activities? **YES / NO**

46. If you answered NO to question 45 or have made any changes/updates to this element in the SSMP, please describe in detail.